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(c) Only one AWOS, ASOS, or ATIS will be licensed at an airport.

[53 FR 28940, Aug. 1, 1988, as amended at 64 FR 27476, May 20, 1999]

§ 87.529 Frequencies.

Prior to submitting an application, each applicant must notify the applicable FAA Regional Frequency Management Office. Each application must be accompanied by a statement showing the name of the FAA Regional Office and date notified. The Commission will assign the frequency. Normally, frequencies available for air traffic control operations set forth in subpart E will be assigned to an AWOS, ASOS, or to an ATIS. When a licensee has entered into an agreement with the FAA to operate the same station as both an AWOS and as an ATIS, or as an ASOS and an ATIS, the same frequency will be used in both modes of operation.

[69 FR 52886, June 14, 2004]

PART 90—PRIVATE LAND MOBILE RADIO SERVICES

Subpart A—General Information

Sec.
90.1 Basis and purpose.
90.5 Other applicable rule parts.
90.7 Definitions.

Subpart B—Public Safety Radio Pool

90.15 Scope.
90.16 Public Safety National Plan.
90.19 Nationwide Public Safety Broadband Network.
90.20 Public Safety Pool.
90.22 Paging operations.

Subpart C—Industrial/Business Radio Pool

90.31 Scope.
90.33 General eligibility.
90.35 Industrial/Business Pool.

Subparts D–E [Reserved]

Subpart F—Radiolocation Service

90.101 Scope.
90.103 Radiolocation Service.

Subpart G—Applications and Authorizations

90.111 Scope.
90.115 Foreign government and alien eligibility.
90.119 Application requirements.
90.121 Canadian registration.
90.127 Submission and filing of applications.
90.129 Supplemental information to be routinely submitted with applications.
90.135 Modification of license.
90.137 Applications for operation at temporary locations.
90.138 Applications for itinerant frequencies.
90.149 License term.
90.155 Time in which station must be placed in operation.
90.157 Discontinuance of station operation.
90.159 Temporary and conditional permits.

SPECIAL RULES GOVERNING FACILITIES USED TO PROVIDE COMMERCIAL MOBILE RADIO SERVICES

90.165 Procedures for mutually exclusive applications.
90.168 Equal employment opportunities.
90.169 Construction prior to grant of application.

Subpart H—Policies Governing the Assignment of Frequencies

90.171 Scope.
90.173 Policies governing the assignment of frequencies.
90.175 Frequency coordination requirements.
90.176 Coordinator notification requirements on frequencies below 512 MHz, at 769–775/799–805 MHz, or at 1427–1432 MHz.
90.179 Shared use of radio stations.
90.185 Multiple licensing of radio transmitting equipment in the mobile radio service.
90.187 Trunking in the bands between 150 and 512 MHz.

Subpart I—General Technical Standards

90.201 Scope.
90.203 Certification required.
90.205 Power and antenna height limits.
90.207 Types of emissions.
90.209 Bandwidth limitations.
90.210 Emission masks.
90.211 XXX
90.212 Provisions relating to the use of scrambling devices and digital voice modulation.
90.213 Frequency stability.
90.214 Transient frequency behavior.
90.215 Transmitter measurements.
90.217 Exemption from technical standards.
90.219 Use of signal boosters.
90.221 Adjacent channel power limits.

Subpart J—Non-Voice and Other Specialized Operations

90.231 Scope.
90.233 Base/mobile non-voice operations.

90.235 Secondary fixed signaling operations.
90.237 Interim provisions for operation of radioteleprinter and radiofacsimile devices.
90.238 Telemetry operations.
90.239 [Reserved]
90.241 Radio call box operations.
90.242 Travelers' information stations.
90.243 Mobile relay stations.
90.245 Fixed relay stations.
90.247 Mobile repeater stations.
90.248 Wildlife and ocean buoy tracking.
90.249 Control stations.
90.250 Meteor burst communications.

Subpart K—Standards for Special Frequencies or Frequency Bands

90.251 Scope.
90.253 Use of frequency 5167.5 kHz.
90.255 [Reserved]
90.257 Assignment and use of frequencies in the band 72–76 MHz.
90.259 Assignment and use of frequencies in the bands 216–220 MHz and 1427–1432 MHz.
90.261 Assignment and use of the frequencies in the band 450–470 MHz for fixed operations.
90.263 Substitution of frequencies below 25 MHz.
90.264 Disaster communications between 2 and 10 MHz.
90.265 Assignment and use of frequencies in the bands allocated for Federal use.
90.266 Long distance communications on frequencies below 25 MHz.
90.267 Assignment and use of frequencies in the 450–470 MHz band for low-power use.
90.269 Use of frequencies for self-powered vehicle detectors.
90.273 Availability and use of frequencies in the 421–430 MHz band.
90.275 Selection and assignment of frequencies in the 421–430 MHz band.
90.279 Power limitations applicable to the 421–430 MHz band.
90.281 Restrictions on operational fixed stations in the 421–430 MHz band.
90.283 [Reserved]

Subpart L—Authorization in the Band 470–512 MHz (UHF-TV Sharing)

90.301 Scope.
90.303 Availability of frequencies.
90.305 Location of stations.
90.307 Protection criteria.
90.309 Tables and figures.
90.311 Frequencies.
90.313 Frequency loading criteria.
90.315 Special provisions governing use of frequencies in the 476–494 MHz band (TV Channels 15, 16, 17) in the Southern Louisiana-Texas Offshore Zone.
90.317 Fixed ancillary signaling and data transmissions.

Subpart M—Intelligent Transportation Systems Radio Service

90.350 Scope.
90.351 Location and Monitoring Service.
90.353 LMS operations in the 902–928 MHz band.
90.355 LMS operations below 512 MHz.
90.357 Frequencies for LMS systems in the 902–928 MHz band.
90.359 Field strength limits for EA-licensed LMS systems.
90.361 Interference from part 15 and Amateur operations.
90.363 Grandfathering provisions for existing AVM licensees.
90.365 Partitioned licenses and disaggregated spectrum.

REGULATIONS GOVERNING THE LICENSING AND USE OF FREQUENCIES IN THE 5850–5925 MHZ BAND FOR DEDICATED SHORT-RANGE COMMUNICATIONS SERVICE (DSRCS)

90.371 Dedicated short range communications service.
90.373 Eligibility in the DSRCS.
90.375 RSU license areas, communication zones and registrations
90.377 Frequencies available; maximum EIRP and antenna height, and priority communications.
90.379 ASTM E2213–03 DSRC Standard (ASTM-DSRC Standard).
90.383 RSU sites near the U.S./Canada or U.S./Mexico border.

Subpart N—Operating Requirements

90.401 Scope.
90.403 General operating requirements.
90.405 Permissible communications.
90.407 Emergency communications.
90.411 Civil defense communications.
90.415 Prohibited uses.
90.417 Interstation communication.
90.419 Points of communication.
90.421 Operation of mobile station units not under the control of the licensee.
90.423 Operation on board aircraft.
90.425 Station identification.
90.427 Precautions against unauthorized operation.
90.429 Control point and dispatch point requirements.
90.431 Unattended operation.
90.433 Operator requirements.
90.437 Posting station licenses.
90.439 Inspection of stations.
90.441 Inspection and maintenance of antenna structure marking and associated control equipment.
90.443 Content of station records.
90.445 Form of station records.
90.447 Retention of station records.

Subpart O—Transmitter Control

90.460 Scope.
90.461 Direct and remote control of transmitters.
90.463 Transmitter control points.
90.465 Control of systems of communication.
90.467 Dispatch points.
90.469 Unattended operation.

INTERNAL TRANSMITTER CONTROL SYSTEMS

90.471 Points of operation in internal transmitter control systems.
90.473 Operation of internal transmitter control systems through licensed fixed control points.
90.475 Operation of internal transmitter control systems in specially equipped systems.

INTERCONNECTED SYSTEMS

90.476 Interconnection of fixed stations and certain mobile stations.
90.477 Interconnected systems.
90.483 Permissible methods and requirements of interconnecting private and public systems of communications.

Subpart P—Paging Operations

90.490 One-way paging operations in the private services.
90.492 One-way paging operations in the 806–824/851–869 MHz and 896–901/935–940 MHz bands.
90.493 Paging operations on exclusive channels in the 929–930 MHz band.
90.494 Paging operations on shared channels in the 929–930 MHz band.

Subpart Q [Reserved]

Subpart R—Regulations Governing the Licensing and Use of Frequencies in the 758–775 and 788–805 MHz Bands

90.521 Scope.
90.523 Eligibility.
90.525 Administration of Interoperability channels
90.527 Regional plan requirements.
90.529 State License.
90.531 Band plan.
90.532 Licensing of the 758–769 MHz and 788–799 MHz Bands.
90.533 Transmitting sites near the U.S./Canada or U.S./Mexico border.
90.535 Modulation and spectrum usage efficiency requirements.
90.537 Trunking requirement.
90.539 Frequency stability.
90.541 Transmitting power limits.
90.542 Broadband transmitting power limits.
90.543 Emission limitations.
90.545 TV/DTV interference protection criteria.
90.547 Narrowband Interoperability channel capability requirement.
90.548 Interoperability technical standards.
90.549 Transmitter certification.
90.551 Construction requirements.
90.553 Encryption.
90.555 Information exchange.
90.557 Secondary fixed signaling operations.
90.559 Station Identification.

Subpart S—Regulations Governing Licensing and Use of Frequencies in the 806–824, 851–869, 896–901, and 935–940 MHz Bands

90.601 Scope.

APPLICATION FOR AUTHORIZATIONS

90.603 Eligibility.
90.605 Forms to be used.
90.607 Supplemental information to be furnished by applicants for facilities under this subpart.
90.609 Special limitations on amendment of applications for assignment or transfer of authorizations for radio systems above 800 MHz.

POLICIES GOVERNING THE PROCESSING OF APPLICATIONS AND THE SELECTION AND ASSIGNMENT OF FREQUENCIES FOR USE IN THE 806–824 MHZ, 851–869 MHZ, 896–901 MHZ, AND 935–940 MHZ BANDS

90.613 Frequencies available.
90.614 Segments of the 806–824/851–869 MHz band for non-border areas.
90.615 Individual channels available in the General Category in 806–824/851–869 MHz band.
90.617 Frequencies in the 809.750–824/854.750–869 MHz, and 896–901/935–940 MHz bands available for trunked, conventional or cellular system use in non-border areas.
90.619 Operations within the U.S./Mexico and U.S./Canada border areas.
90.621 Selection and assignment of frequencies.
90.623 Limitations on the number of frequencies assignable for conventional systems.
90.625 Other criteria to be applied in assigning channels for use in conventional systems of communication.
90.627 Limitation on the number of frequency pairs that may be assignable for trunked systems and on the number of trunked systems.
90.629 Extended implementation period.
90.631 Trunked systems loading, construction and authorization requirements.
90.633 Conventional systems loading requirements.

TECHNICAL REGULATIONS REGARDING THE USE OF FREQUENCIES IN THE 806–824 MHZ, 851–869 MHZ, 896–901 MHZ, AND 935–940 MHZ BANDS

90.635 Limitations on power and antenna height.
90.637 Restrictions on operational fixed stations.
90.645 Permissible operations.
90.647 Station identification.
90.651 Supplemental reports required of licensees authorized under this subpart.
90.655 Special licensing requirements for Specialized Mobile Radio systems.
90.656 Responsibilities of base station licensees of Specialized Mobile Radio systems.

POLICIES GOVERNING THE LICENSING AND USE OF MTA-BASED SMR SYSTEMS IN THE 896–901/935–940 MHZ BAND

90.661 MTA-based SMR service areas.
90.663 MTA-based SMR system operations.
90.665 Authorization, construction and implementation of MTA licenses.
90.667 Grandfathering provisions for incumbent licensees.
90.669 Emission limits.
90.671 Field strength limits.

PROCEDURES AND PROCESS—UNACCEPTABLE INTERFERENCE

90.672 Unacceptable interference to non-cellular 800 MHz licensees from 800 MHz cellular systems or part 22 Cellular Radiotelephone systems, and within the 900 MHz Business/Industrial Land Transportation Pool.
90.673 Obligation to abate unacceptable interference.
90.674 Interference resolution procedures before, during and after band reconfiguration.
90.675 Information exchange.
90.676 Transition administrator for reconfiguration of the 806–824/851–869 MHz band in order to separate cellular systems from non-cellular systems.
90.677 Reconfiguration of the 806–824/851–869 MHz band in order to separate cellular systems from non-cellular systems.

POLICIES GOVERNING THE LICENSING AND USE OF EA-BASED SMR SYSTEMS IN THE 809–824/851–869 MHZ BAND

90.681 EA-based SMR service areas.
90.683 EA-based SMR system operations.
90.685 Authorization, construction and implementation of EA licenses.
90.687 Special provisions regarding assignments and transfers of authorizations for incumbent SMR licensees in the 809–824/854–869 MHz band.
90.689 Field strength limits.
90.691 Emission mask requirements for EA-based systems.
90.699 Transition of the upper 200 channels in the 800 MHz band to EA licensing.

Subpart T—Regulations Governing Licensing and Use of Frequencies in the 220–222 MHz Band

90.701 Scope.
90.703 Eligibility.
90.705 Forms to be used.
90.709 Special limitations on amendment of applications and on assignment or transfer of authorizations licensed under this subpart.
90.711 Processing of Phase II applications.
90.713 Entry criteria.
90.715 Frequencies available.
90.717 Channels available for nationwide systems in the 220–222 MHz band.
90.719 Individual channels available for assignment in the 220–222 MHz band.
90.720 Channels available for public safety/mutual aid.
90.721 Other channels available for non-nationwide systems in the 220–222 MHz band.
90.723 Selection and assignment of frequencies.
90.725 Construction requirements for Phase I licensees.
90.727 Extended implementation schedules for Phase I licensees.
90.729 Limitations on power and antenna height.
90.733 Permissible operations.
90.735 Station identification.
90.739 Number of systems authorized in a geographical area.
90.741 Urban areas for Phase I nationwide systems.
90.743 Renewal expectancy.
90.745 Phase I licensee service areas.
90.751 Minor modifications of Phase I, non-nationwide licenses.
90.753 Conditions of license modification.
90.757 Construction requirements.

POLICIES GOVERNING THE LICENSING AND USE OF PHASE II EA, REGIONAL AND NATIONWIDE SYSTEMS

90.761 EA and Regional licenses.
90.763 EA, Regional and nationwide system operations.
90.765 Licenses term for Phase II licenses.
90.767 Construction and implementation of EA and Regional licenses.
90.769 Construction and implementation of Phase II nationwide licenses.
90.771 Field strength limits.

Subpart U—Competitive Bidding Procedures for 900 MHz Specialized Mobile Radio Service

90.801 900 MHz SMR subject to competitive bidding.
90.802–90.803 [Reserved]

90.804 Aggregation of 900 MHz SMR licenses.
90.805–90.806 [Reserved]
90.807 Submission of upfront payments.
90.808 [Reserved]
90.809 License grants.
90.810 Bidding credits for small businesses.
90.811 Reduced down payment for licenses won by small businesses.
90.812 [Reserved]
90.813 Partitioned licenses and disaggregated spectrum.
90.814 Definitions.
90.815 Records maintenance and definitions.
90.816 Criteria for comparative 900 MHz SMR renewal proceedings.

Subpart V—Competitive Bidding Procedures for 800 MHz Specialized Mobile Radio Service

90.901 800 MHz SMR spectrum subject to competitive bidding.
90.902 [Reserved]
90.903 Competitive bidding design for 800 MHz SMR licensing.
90.904 Aggregation of EA licenses.
90.905–90.908 [Reserved]
90.909 License grants.
90.910 Bidding credits.
90.911 Partitioned licenses and disaggregated spectrum.
90.912 Definitions.
90.913 Record maintenance and definitions.

Subpart W—Competitive Bidding Procedures for the 220 MHz Service

90.1001 220 MHz service subject to competitive bidding.
90.1003–90.1015 [Reserved]
90.1017 Bidding credits for small businesses and very small businesses.
90.1019 Eligibility for partitioned licenses.
90.1021 Definitions concerning competitive bidding process.
90.1023 Records maintenance and definitions.
90.1025 Limitations on settlements.

Subpart X—Competitive Bidding Procedures for Location and Monitoring Service

90.1101 Location and Monitoring Service subject to competitive bidding.
90.1103 Designated entities.

Subpart Y—Regulations Governing Licensing and Use of Frequencies in the 4940–4990 MHz Band

90.1201 Scope.
90.1203 Eligibility.
90.1205 Permissible operations.
90.1207 Licensing.
90.1209 Policies governing the use of the 4940–4990 MHz band.
90.1211 Regional plan.
90.1213 Band plan.
90.1215 Power limits.
90.1217 RF hazards.

Subpart Z—Wireless Broadband Services in the 3650–3700 MHz Band

90.1301 Scope.
90.1303 Eligibility.
90.1305 Permissible operations.
90.1307 Licensing.
90.1309 Regulatory status.
90.1311 License term.
90.1312 Assignment and transfer.
90.1319 Policies governing the use of the 3650–3700 MHz band.
90.1321 Power and antenna limits.
90.1323 Emission limits.
90.1331 Restrictions on the operation of base and fixed stations.
90.1333 Restrictions on the operation of mobile and portable stations.
90.1335 RF safety.
90.1337 Operation near Canadian and Mexican borders.

AUTHORITY: Sections 4(i), 11, 303(g), 303(r), and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 161, 303(g), 303(r), and 332(c)(7), and Title VI of the Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. 112–96, 126 Stat. 156.

SOURCE: 43 FR 54791, Nov. 22, 1978, unless otherwise noted.

Subpart A—General Information

§ 90.1 Basis and purpose.

(a) *Basis.* The rules in this part are promulgated under Title III of the Communications Act of 1934, as amended which vests authority in the Federal Communications Commission to regulate radio transmission and to issue licenses for radio stations. All rules in this part are in accordance with applicable treaties and agreements to which the United States is a party.

(b) *Purpose.* This part states the conditions under which radio communications systems may be licensed and used in the Public Safety, Industrial/Business Radio Pool, and Radiolocation Radio Services. These rules do not govern the licensing of radio systems belonging to and operated by the United States.

[43 FR 54791, Nov. 22, 1978, as amended at 65 FR 66650, Nov. 7, 2000]

§ 90.5 Other applicable rule parts.

Other Commission rule parts of importance that may be referred to with respect to licensing and operations in radio services governed under this part include the following:

(a) Part 0 of the Commission's Rules describes the Commission's organization and delegations of authority. This part also lists available Commission publications, and standards and procedures for access to Commission records, and location of Commission Field Offices.

(b) *Part 1* includes rules of practice and procedure for the filing of applications for stations to operate in the Wireless Telecommunications Services, adjudicatory proceedings including hearing proceedings, and rule making proceedings; procedures for reconsideration and review of the Commission's actions; provisions concerning violation notices and forfeiture proceedings; and the environmental processing requirements that, together with the procedures specified in § 17.4(c) of this chapter, if applicable, must be complied with prior to initiating construction.

(c) Part 2 contains the table of frequency allocations and special requirements in International regulations, agreements, and treaties. This part also contains standards and procedures concerning marketing of radio frequency devices, and for obtaining equipment certification.

(d) Part 5 contains standards and procedures for obtaining experimental authorizations.

(e) Part 15 provides for the operation of incidental and restricted radio frequency devices that do not require an individual license.

(f) *Part 17* contains requirements for construction, marking and lighting of antenna towers, and the environmental notification process that must be completed before filing certain antenna structure registration applications.

(g) Part 18 deals with the operation of industrial, scientific, and medical (ISM) devices that are not intended for radio communication,

(h) Part 20 contains rules relating to commercial mobile radio services.

(i) Part 20 which governs commercial mobile radio service applicable to certain providers in the following services in this part:

(1) Industrial/business pool.

(2) Private paging;

(3) Land mobile service on 220–222 MHz;

(4) Specialized Mobile Radio Service.

(j) Part 22 contains regulations for public (common carrier) mobile radio services.

(k) Part 27 contains rules relating to miscellaneous wireless communications services.

(l) Part 51 contains rules relating to interconnection.

(m) Part 68 contains technical standards for connection of private land mobile radio equipment to the public switched telephone network.

(n) Part 101 governs the operation of fixed microwave services.

[43 FR 54791, Nov. 22, 1978, as amended at 50 FR 39677, Sept. 30, 1985; 55 FR 20398, May 16, 1990; 58 FR 21407, Apr. 21, 1993; 59 FR 18499, Apr. 19, 1994; 59 FR 59957, Nov. 21, 1994; 61 FR 45635, Aug. 29, 1996; 63 FR 36608, July 7, 1998; 63 FR 68958, Dec. 14, 1998; 72 FR 35190, June 27, 2007; 72 FR 48858, Aug. 24, 2007; 77 FR 3955, Jan. 26, 2012]

§ 90.7 Definitions.

220 MHz service. The radio service for the licensing of frequencies in the 220–222 MHz band.

800 MHz Cellular System. In the 806–824 MHz/ 851–869 MHz band, a system that uses multiple, interconnected, multichannel transmit/receive cells capable of frequency reuse and automatic handoff between cell sites to serve a larger number of subscribers than is possible using non-cellular technology.

800 MHz High Density Cellular System. In the 806–824 MHz/ 851–869 MHz band, a high density cellular system is defined as a cellular system which:

(1) Has more than five overlapping interactive sites featuring hand-off capability; and

(2) Any one of such sites has an antenna height of less than 30.4 meters (100 feet) above ground level with an antenna height above average terrain (HAAT) of less than 152.4 meters (500 feet) and twenty or more paired frequencies.

900 MHz SMR MTA-based license or *MTA license*. A license authorizing the right to use a specified block of 900 MHz SMR spectrum within one of the

47 Major Trading Areas (''MTAs''), as embodied in Rand McNally's Trading Areas System MTA Diskette and geographically represented in the map contained in Rand McNally's Commercial Atlas & Marketing Guide (the ''MTA Map''), with the following exceptions and additions:

(1) Alaska is separated from the Seattle MTA and is licensed separately.

(2) Guam and the Northern Mariana Islands are licensed as a single MTA-like area.

(3) Puerto Rico and the United States Virgin Islands are licensed as a single MTA-like area.

(4) American Samoa is licensed as a single MTA-like area.

The MTA map is available for public inspection in the Reference Information Center (Room CY-A257), 445 12th Steet, SW., Washington, DC.

Antenna height above average terrain (AAT). Height of the center of the radiating element of the antenna above the average terrain. (See § 90.309(a)(4) for calculation method.)

Antenna height above sea level. The height of the topmost point of the antenna above mean sea level.

Antenna structure. Structure on which an antenna is mounted.

Assigned frequency. Center of a frequency band assigned to a station.

Assigned frequency band. The frequency band the center of which coincides with the frequency assigned to the station and the width of which equals the necessary bandwidth plus twice the absolute value of the frequency tolerance.

Authorized bandwidth. The frequency band, specified in kilohertz and centered on the carrier frequency containing those frequencies upon which a total of 99 percent of the radiated power appears, extended to include any discrete frequency upon which the power is at least 0.25 percent of the total radiated power.

Automobile emergency licensee. Persons regularly engaged in any of the following activities who operate radio stations for transmission of communications required for dispatching repair trucks, tow trucks, or other road service vehicles to disabled vehicles:

(1) The operation of a private emergency road service for disabled vehicles by associations of owners of private automobiles; or

(2) The business of providing to the general public an emergency road service for disabled vehicles.

Average terrain. The average elevation of terrain between 3.2 and 16 km (2 and 10 miles) from the antenna site.

Base station. A station at a specified site authorized to communicate with mobile stations.

Basic trading areas. Service areas that are based on the Rand McNally *1992 Commercial Atlas & Marketing Guide*, 123rd Edition, at pages 38–39, with the following additions licensed separately as BTA-like areas: American Samoa; Guam, Northern Mariana Islands; Mayaguez/Aguadilla-Ponce, Puerto Rico; San Juan, Puerto Rico; and the United States Virgin Islands. The Mayaguez/Aguadilla-Ponce BTA-like service area consists of the following municipios: Adjuntas, Aguada, Aguadilla, Anasco, Arroyo, Cabo Rojo, Coamo, Guanica, Guayama, Guayanilla, Hormigueros, Isabela, Jayuya, Juana Diaz, Lajas, Las Marias, Maricao, Maunabo, Mayaguez, Moca, Patillas, Penuelas, Ponce, Quebradillas, Rincon, Sabana Grande, Salinas, San German, Santa Isabel, Villalba, and Yauco. The San Juan BTA-like service area consists of all other municipios in Puerto Rico.

Carrier frequency. The frequency of an unmodulated electromagnetic wave.

Centralized trunked system. A system in which there is dynamic assignment of communications paths by automatically searching all communications paths in the system and assigning to a user an open communications path within that system. Individual communications paths within a trunked system may be classified as centralized or decentralized in accordance with the requirements of § 90.187.

Channel loading. The number of mobile transmitters authorized to operate on a particular channel within the same service area.

Communications zone. The service area associated with an individual fixed Roadside Unit (RSU). The communications zone is determined based on the RSU equipment class specified in section 90.375.

Contention-based protocol. A protocol that allows multiple users to share the

same spectrum by defining the events that must occur when two or more transmitters attempt to simultaneously access the same channel and establishing rules by which a transmitter provides reasonable opportunities for other transmitters to operate. Such a protocol may consist of procedures for initiating new transmissions, procedures for determining the state of the channel (available or unavailable), and procedures for managing retransmissions in the event of a busy channel. Contention-based protocols shall fall into one of two categories:

(1) An unrestricted contention-based protocol is one which can avoid co-frequency interference with devices using all other types of contention-based protocols.

(2) A restricted contention-based protocol is one that does not qualify as unrestricted.

Control point. Any place from which a transmitter's functions may be controlled.

Control station. An Operational Fixed Station, the transmissions of which are used to control automatically the emissions or operation of another radio station at a specified location.

Conventional radio system. A method of operation in which one or more radio frequency channels are assigned to mobile and base stations but are not employed as a trunked group. An ''urban-conventional system'' is one whose transmitter site is located within 24 km (15 miles) of the geographic center of any of the first 50 urbanized areas (ranked by population) of the United States. A ''sub-urban-conventional system'' is one whose transmitter site is located more than 24 km (15 miles) from the geographic center of the first 50 urbanized areas. See Table 21, Rank of Urbanized Areas in the United States by Population, page 1–87, U.S. Census (1970); and table 1 of §90.635.

Critical Infrastructure Industry (CII). State, local government and non-government entities, including utilities, railroads, metropolitan transit systems, pipelines, private ambulances, volunteer fire departments, and not-for-profit organizations that offer emergency road services, providing private internal radio services provided these private internal radio services are used to protect safety of life, health, or property; and are not made commercially available to the public.

Decentralized trunked system. A system which monitors the communications paths within its assigned channels for activity within and outside of the trunked system and transmits only when an available communications path is found. Individual communications paths within a trunked system may be classified as centralized or decentralized in accordance with the requirements of §90.187.

Dedicated Short-Range Communications Services (DSRCS). The use of radio techniques to transfer data over short distances between roadside and mobile units, between mobile units, and between portable and mobile units to perform operations related to the improvement of traffic flow, traffic safety, and other intelligent transportation service applications in a variety of environments. DSRCS systems may also transmit status and instructional messages related to the units involved.

Dispatch point. Any place from which radio messages can be originated under the supervision of a control point.

EA-based or EA license. A license authorizing the right to use a specified block of SMR or LMS spectrum within one of the 175 Economic Areas (EAs) as defined by the Department of Commerce Bureau of Economic Analysis. The EA Listings and the EA Map are available for public inspection at the Reference Information Center (Room CY-A257), 445 12th Steet, SW., Washington, DC 20554.

Economic Areas (EAs). A total of 175 licensing regions based on the United States Department of Commerce Bureau of Economic Analysis Economic Areas defined as of February 1995, with the following exceptions:

(1) Guam and Northern Mariana Islands are licensed as a single EA-like area (identified as *EA 173* in the 220 MHz Service);

(2) Puerto Rico and the U.S. Virgin Islands are licensed as a single EA-like area (identified as *EA 174* in the 220 MHz Service); and

(3) American Samoa is licensed as a single EA-like area (identified as *EA 175* in the 220 MHz Service).

Effective radiated power (ERP). The power supplied to an antenna multiplied by the relative gain of the antenna in a given direction.

Emergency medical licensee. Persons or entities engaged in the provision of basic or advanced life support services on an ongoing basis that operate radio stations for transmission of communications essential for the delivery or rendition of emergency medical services for the provision of basic or advanced life support.

Enhanced Specialized Mobile Radio System (ESMR). A specialized mobile radio (SMR) system operating in the 800 MHz band which employs an 800 MHz cellular system as defined in this section.

Film and video production licensee. Persons primarily engaged in or providing direct technical support to the production, videotaping, or filming of motion pictures or television programs, such as movies, programs, news programs, special events, educational programs, or training films, regardless of whether the productions are prepared primarily for final exhibition at theatrical outlets or on television or for distribution through other mass communications outlets.

Fire licensee. Any territory, possession, state, city, county, town, or similar governmental entity, and persons or organizations charged with specific fire protection activities that operate radio stations for transmission of communications essential to official fire activities.

First Responder Network Authority. An entity established by the Middle Class Tax Relief and Job Creation Act of 2012 as an independent authority within the National Telecommunications and Information Administration and designated by that statute to hold a nationwide license associated with the 758–769 MHz and 788–799 MHz bands for use in deploying a nationwide public safety broadband network.

Fixed relay station. A station at a specified site used to communicate with another station at another specified site.

Forest products licensee. Persons primarily engaged in tree logging, tree farming, or related woods operations, including related hauling activities, if the hauling activities are performed under contract to, and exclusively for, persons engaged in woods operations or engaged in manufacturing lumber, plywood, hardboard, or pulp and paper products from wood fiber.

Forward links. Transmissions in the frequency bands specified in § 90.357(a) and used to control and interrogate the mobile units to be located by multilateration LMS systems.

Frequency coordination. The process of obtaining the recommendation of a frequency coordinator for a frequency(ies) that will most effectively meet the applicant's needs while minimizing interference to licensees already operating within a given frequency band.

Frequency coordinator. An entity or organization that has been certified by the Commission to recommend frequencies for use by licensees in the Private Land Mobile Radio Services.

Geographic center. The geographic center of an urbanized area is defined by the coordinates given at table 1 of § 90.635.

Geophysical telemetry. Telemetry involving the simultaneous transmission of seismic data from numerous locations to a central receiver and digital recording unit.

Harmful interference. For the purposes of resolving conflicts between stations operating under this part, any emission, radiation, or induction which specifically degrades, obstructs, or interrupts the service provided by such stations.

Interconnection. Connection through automatic or manual means of private land mobile radio stations with the facilities of the public switched telephone network to permit the transmission of messages or signals between points in the wireline or radio network of a public telephone company and persons served by private land mobile radio stations. Wireline or radio circuits or links furnished by common carriers, which are used by licensees or other authorized persons for transmitter control (including dial-up transmitter control circuits) or as an integral part of an authorized, private, internal system of communication or as an integral part of dispatch point circuits in a private land mobile radio

station are not considered to be interconnection for purposes of this rule part.

Internal system. An internal system of communication is one in which all messages are transmitted between the fixed operating positions located on premises controlled by the licensee and the associated mobile stations or paging receivers of the licensee. (See subpart O).

Interoperability. An essential communication link within public safety and public service wireless communications systems which permits units from two or more different entities to interact with one another and to exchange information according to a prescribed method in order to achieve predictable results.

Itinerant operation. Operation of a radio station at unspecified locations for varying periods of time.

Land mobile radio service. A mobile service between base stations and land mobile stations, or between land mobile stations.

Land mobile radio system. A regularly interacting group of base, mobile and associated control and fixed relay stations intended to provide land mobile radio communications service over a single area of operation.

Land station. A station in the mobile service not intended to be used while in motion. [As used in this part, the term may be used to describe a base, control, fixed, operational fixed or fixed relay station, or any such station authorized to operate in the ''temporary'' mode.]

Line A. An imaginary line within the U.S., approximately paralleling the U.S.-Canadian border, north of which Commission coordination with the Canadian authorities in the assignment of frequencies is generally required. It begins at Aberdeen, Washington, running by great circle arc to the intersection of 48° N., 120° W., then along parallel 48° N., to the intersection of 95° W., thence by great circle arc through the southernmost point of Duluth, Minnesota, thence by great circle arc to 45° N., 85° W., thence southward along meridian 85° W. to its intersection with parallel 41° N., to its intersection with meridian 82° W., thence by great circle arc through the southernmost point of Bangor, Maine, thence by great circle arc through the southernmost of Searsport, Maine, at which point it terminates.

Line C. An imaginary line in Alaska approximately paralleling the border with Canada, East of which Commission coordination with Canadian authorities in the assignment of frequencies is generally required. It begins at the intersection of 70° N., 144° W., thence by great circle arc to the intersection of 60° N., 143° W., thence by great circle arc so as to include all the Alaskan Panhandle.

Location and Monitoring Service (LMS). The use of non-voice signaling methods to locate or monitor mobile radio units. LMS systems may transmit and receive voice and non-voice status and instructional information related to such units.

Major trading areas. Service areas based on the Rand McNally *1992 Commercial Atlas & Marketing Guide,* 123rd Edition, at pages 38–39, with the following exceptions and additions:

(a) Alaska is separated from the Seattle MTA and is licensed separately.

(b) Guam and the Northern Mariana Islands are licensed as a single MTA-like area.

(c) Puerto Rico and the United States Virgin Islands are licensed as a single MTA-like area.

(d) American Samoa is licensed as a single MTA-like area.

Manufacturers licensee. Persons primarily engaged in any of the following manufacturing activities:

(1) The mechanical or chemical transformation of substances into new products within such establishments as plants, factories, shipyards, or mills which employ, in that process, powerdriven machines and materials-handling equipment;

(2) The assembly of components of manufactured products within such establishments as plants, factories, shipyards, or mills where the new product is neither a new structure nor other fixed improvement. Establishments primarily engaged in the wholesale or retail trade, or in service activities, even though they fabricate or assemble any or all the products or commodities handled, are not included in this category; or

(3) The providing of supporting services or materials by a corporation to its parent corporation, to another subsidiary of its parent or to its own subsidiary, where such supporting services or materials are directly related to those regular activities of such parent or subsidiary which are eligible under paragraphs (1) or (2) of this definition.

Meteor burst communications. Communications by the propagation of radio signals reflected off ionized meteor trails.

Mobile relay station. A base station in the mobile service authorized to retransmit automatically on a mobile service frequency communications which originate on the transmitting frequency of the mobile station.

Mobile repeater station. A mobile station authorized to retransmit automatically on a mobile service frequency, communications to or from hand-carried transmitters.

Mobile service. A service of radiocommunication between mobile and base stations, or between mobile stations.

Mobile station. A station in the mobile service intended to be used while in motion or during halts at unspecified points. This includes hand carried transmitters.

Motor carrier licensee. Persons primarily engaged in providing a common or contract motor carrier transportation service in any of the following activities: Provided, however, that motor vehicles used as taxicabs, livery vehicles, or school buses, and motor vehicles used for sightseeing or special charter purposes, shall not be included within the meaning of this term. For purposes of this definition, an urban area is defined as being one or more contiguous, incorporated or unincorporated cities, boroughs, towns, or villages, having an aggregate population of 2,500 or more persons.

(1) The transportation of passengers between urban areas;

(2) The transportation of property between urban areas;

(3) The transportation of passengers within a single urban area; or

(4) The transportation, local distribution or collection of property within a single urban area.

MTA-based license or MTA license. A license authorizing the right to use a specified block of SMR spectrum within one of the 51 Major Trading Areas (''MTAs''), as embodied in Rand McNally's Trading Area System MTA Diskette and geographically represented in the map contained in Rand McNally's Commercial Atlas & Marketing Guide (the ''MTA Map''). The MTA Listings, the MTA Map and the Rand McNally/AMTA license agreement are available for public inspection at the Reference Information Center in the Consumer and Governmental Affairs Bureau.

Multilateration LMS system. A system that is designed to locate vehicles or other objects by measuring the difference of time of arrival, or difference in phase, of signals transmitted from a unit to a number of fixed points or from a number of fixed points to the unit to be located.

Mutually exclusive application. Two or more pending applications are mutually exclusive if the grant of one application would effectively preclude the grant of one or more of the others under Commission rules governing the services involved.

Non-multilateration LMS System. A system that employs any of a number of non-multilateration technologies to transmit information to and/or from vehicular units.

On-Board unit (OBU). An On-Board Unit is a DSRCS transceiver that is normally mounted in or on a vehicle, or which in some instances may be a portable unit. An OBU can be operational while a vehicle or person is either mobile or stationary. The OBUs receive and contend for time to transmit on one or more radio frequency (RF) channels. Except where specifically excluded, OBU operation is permitted wherever vehicle operation or human passage is permitted. The OBUs mounted in vehicles are licensed by rule under part 95 of this chapter and communicate with Roadside Units (RSUs) and other OBUs. Portable OBUs are also licensed by rule under part 95 of this chapter. OBU operations in the Unlicensed National Information Infrastructure (UNII) Bands follow the rules in those bands.

Operational fixed station. A fixed station, not open to public correspondence, operated by, and for the sole use of those agencies operating their own radiocommunication facilities in the Public Safety, Industrial, Land Transportation, Marine, or Aviation Radio Services. (This includes all stations in the fixed service under this part.)

Output power. The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load of the impedance recommended by the manufacturer.

Paging. A one-way communications service from a base station to mobile or fixed receivers that provide signaling or information transfer by such means as tone, tone-voice, tactile, optical readout, etc.

Person. An individual, partnership, association, joint stock company, trust or corporation.

Petroleum licensee. Persons primarily engaged in prospecting for, producing, collecting, refining, or transporting by means of pipeline, petroleum or petroleum products (including natural gas).

Police licensee. Any territory, possession, state, city, county, town, or similar governmental entity including a governmental institution authorized by law to provide its own police protection that operate radio stations for transmission of communications essential to official police activities.

Power licensee. Persons primarily engaged in any of the following activities:

(1) The generation, transmission, or distribution of electrical energy for use by the general public or by the members of a cooperative organization;

(2) The distribution of manufactured or natural gas by means of pipe line, for use by the general public or by the members of a cooperative organization, or, in a combination of that activity with the production, transmission or storage of manufactured or natural gas preparatory to such distribution;

(3) The distribution of steam by means of pipeline or, of water by means of pipeline, canal, or open ditch, for use by the general public or by the members of a cooperative organization, or in a combination of that activity with the collection, transmission, storage, or purification of water or the generation of steam preparatory to such distribution; or

(4) The providing of a supporting service by a corporation directly related to activities of its parent corporation, of another subsidiary of the same parent, or of its own subsidiary, where the party served is regularly engaged in any of the activities set forth in this definition.

Private carrier. An entity licensed in the private services and authorized to provide communications service to other private services on a commercial basis.

Radio call box. A transmitter used by the public to request fire, police, medical, road service, or other emergency assistance.

Radio teleprinting. Radio transmissions to a printing telegraphic instrument having a signal-actuated mechanism for automatically printing received messages.

Radiodetermination. The determination of position, or the obtaining of information relating to position, by means of the propagation of radio waves.

Radiofacsimile. A system of radiocommunication for the transmission of fixed images, with or without halftones, with a view to their reproduction in a permanent form.

Radiolocation. Radiodetermination used for purposes other than those of radionavigation.

Radionavigation. Radiodetermination used for the purposes of navigation, including obstruction warning.

Railroad licensee. Railroad common carriers which are regularly engaged in the transportation of passengers or property when such passengers or property are transported over all or part of their route by railroad.

Regional Economic Area Groupings (REAGs). The six geographic areas for Regional licensing in the 220–222 MHz band, based on the United States Department of Commerce Bureau of Economic Analysis Economic Areas (see 60 FR 13114 (March 10, 1995)) defined as of February 1995, and specified as follows:

REAG 1 (Northeast): REAG 1 consists of the following EAs: EA 001 (Bangor, ME) through EA 011 (Harrisburg-Lebanon-Carlisle, PA); and EA 054 (Erie, PA).

REAG 2 (Mid-Atlantic): REAG 2 consists of the following EAs: EA 012 (Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD) through EA 026 (Charleston-North Charleston, SC); EA 041 (Greenville-Spartanburg-Anderson, SC-NC); EA 042 (Asheville, NC); EA 044 (Knoxville, TN) through EA 053 (Pittsburgh, PA-WV); and EA 070 (Louisville, KY-IN).

REAG 3 (Southeast): REAG 3 consists of the following EAs: EA 027 (Augusta-Aiken, GA-SC) through EA 040 (Atlanta, GA-AL-NC); EA 043 (Chattanooga, TN-GA); EA 069 (Evansville-Henderson, IN-KY-IL); EA 071 (Nashville, TN-KY) through EA 086 (Lake Charles, LA); EA 088 (Shreveport-Bossier City, LA-AR) through EA 090 (Little Rock-North Little Rock, AR); EA 095 (Jonesboro, AR-MO); EA 096 (St. Louis, MO-IL); and EA 174 (Puerto Rico and the U.S. Virgin Islands).

REAG 4 (Great Lakes): REAG 4 consists of the following EAs: EA 055 Cleveland-Akron, OH-PA) through EA 068 (Champaign-Urbana, IL); EA 097 (Springfield, IL-MO); and EA 100 (Des Moines, IA-IL-MO) through EA 109 (Duluth-Superior, MN-WI).

REAG 5 (Central/Mountain): REAG 5 consists of the following EAs: EA 087 (Beaumont-Port Arthur, TX); EA 091 (Forth Smith, AR-OK) through EA 094 (Springfield, MO); EA 098 (Columbia, MO); EA 099 (Kansas City, MO-KS); EA 110 (Grand Forks, ND-MN) through EA 146 (Missoula, MT); EA 148 (Idaho Falls, ID-WY); EA 149 (Twin Falls, ID); EA 152 (Salt Lake City-Ogden, UT-ID); and EA 154 (Flagstaff, AZ-UT) through EA 159 (Tucson, AZ).

REAG 6 (Pacific): REAG 6 consists of the following EAs: EA 147 (Spokane, WA-ID); EA 150 (Boise City, ID-OR); EA 151 (Reno, NV-CA); EA 153 (Las Vegas, NV-AZ-UT); EA 160 (Los Angeles-Riverside-Orange County, CA-AZ) through EA 173 (Guam and the Northern Mariana Islands); and EA 175 (American Samoa).

Regional license. A license authorizing the right to use a specified block of 220–222 MHz spectrum within one of six Regional Economic Area Groupings (REAGs).

Relay press licensee. Persons primarily engaged in the publication of a newspaper or in the operation of an established press association.

Roadside unit (RSU). A Roadside Unit is a DSRC transceiver that is mounted along a road or pedestrian passageway. An RSU may also be mounted on a vehicle or is hand carried, but it may only operate when the vehicle or hand-carried unit is stationary. Furthermore, an RSU operating under this part is restricted to the location where it is licensed to operate. However, portable or hand-held RSUs are permitted to operate where they do not interfere with a site-licensed operation. A RSU broadcasts data to OBUs or exchanges data with OBUs in its communications zone. An RSU also provides channel assignments and operating instructions to OBUs in its communications zone, when required.

Roadway bed surface. For DSRCS, the road surface at ground level.

Secondary operation. Radio communications which may not cause interference to operations authorized on a primary basis and which are not protected from interference from those primary operations.

Service availability. The use of a public safety broadband network on a day-to-day basis for operational purposes by at least fifty users.

Signal amplifier. A device that amplifies radio frequency signals and is connected to a mobile radio transceiver, portable or handset, typically to the antenna connector. Note that a signal amplifier is not the same thing as a signal booster.

Signal booster. A device at a fixed location which automatically receives, amplifies, and retransmits on a one-way or two-way basis, the signals received from base, fixed, mobile, and portable stations, with no change in frequency or authorized bandwidth. A signal booster may be either narrowband (Class A), in which case the booster amplifies only those discrete frequencies intended to be retransmitted, or broadband (Class B), in which case all signals within the passband of the signal booster filter are amplified.

SMSA (Standard Metropolitan Statistical Area). A city of 50,000 or more population and the surrounding counties.

Special industrial licensee. Persons regularly engaged in any of the following activities:

(1) The operation of farms, ranches, or similar land areas, for the quantity production of crops or plants; vines or trees (excluding forestry operations); or for the keeping, grazing or feeding of livestock for animal products, animal increase, or value enhancement;

(2) Plowing, soil conditioning, seeding, fertilizing, or harvesting for agricultural activities;

(3) Spraying or dusting of insecticides, herbicides, or fungicides, in areas other than enclosed structures;

(4) Livestock breeding service;

(5) The operation of a commercial business regularly engaged in the construction of roads, bridges, sewer systems, pipelines, airfields, or water, oil, gas, or power production, collection, or distribution systems. The construction of buildings is not included in this category;

(6) The operation of mines for the recovery of solid fuels, minerals, metal, rock, sand and gravel from the earth or the sea, including the exploration for and development of mining properties;

(7) Maintaining, patrolling or repairing gas or liquid transmission pipelines, tank cars, water or waste disposal wells, industrial storage tanks, or distribution systems of public utilities;

(8) Acidizing, cementing, logging, perforating, or shooting activities, and services of a similar nature incident to the drilling of new oil or gas wells, or the maintenance of production from established wells;

(9) Supplying chemicals, mud, tools, pipe, and other materials or equipment unique to the petroleum and gas production industry, as the primary activity of the applicant if delivery, installation or application of these materials requires the use of specifically fitted conveyances;

(10) The delivery of ice or fuel to the consumer for heating, lighting, refrigeration or power generation purposes, by means other than pipelines or railroads when such products are not to be resold following their delivery; or

(11) The delivery and pouring of ready mixed concrete or hot asphalt mix.

Specialized Mobile Radio system. A radio system in which licensees provide land mobile communications services (other than radiolocation services) in the 800 MHz and 900 MHz bands on a commercial basis to entities eligible to be licensed under this part, Federal Government entities, and individuals.

State. Any of the 50 United States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, the U.S. Virgin Islands, American Samoa, and Guam.

Station authorization. A license issued by the Commission for the operation of a radio station.

Taxicab licensee. Persons regularly engaged in furnishing to the public for hire a nonscheduled passenger land transportation service (which may also include the occasional transport of small items of property) not operated over a regular route or between established terminals.

Telecommand. The transmission of non-voice signals for the purpose of remotely controlling a device.

Telemetering (also telemetry). The transmission of non-voice signals for the purpose of automatically indicating or recording measurements at a distance from the measuring instrument.

Telephone maintenance licensee. Communications common carriers engaged in the provision of landline local exchange telephone service, or inter-exchange communications service, and radio communications common carriers authorized under part 21 of this chapter. Resellers that do not own or control transmission facilities are not included in this category.

Travelers' information station. A base station in the Public Safety Pool used to transmit non-commercial, voice information pertaining to traffic and road conditions, traffic hazard and traveler advisories, directions, availability of lodging, rest stops, and service stations, and descriptions of local points of interest.

Trunk group. All of the trunks of a given type of characteristic that extend between two switching points.

Trunk (telephony). A one or two-way channel provided as a common traffic artery between switching equipment.

Trunked radio system. A radio system employing technology that provides the ability to search two or more available communications paths and automatically assigns an open communications path to a user.

Universal Licensing System (ULS). The consolidated database, application filing system and processing system for

all Wireless Telecommunications Services. The ULS offers Wireless Telecommunications Bureau (WTB) applicants and the general public electronic filing of all applications requests, and full public access to all WTB licensing data.

Urbanized area. A city and the surrounding closely settled territories.

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.7, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

Subpart B—Public Safety Radio Pool

SOURCE: 62 FR 18845, Apr. 17, 1997, unless otherwise noted.

§ 90.15 Scope.

The Public Safety Radio Pool covers the licensing of the radio communications of governmental entities and the following category of activities: Medical services, rescue organizations, veterinarians, persons with disabilities, disaster relief organizations, school buses, beach patrols, establishments in isolated places, communications standby facilities, and emergency repair of public communications facilities. Entities not meeting these eligibility criteria may also be licensed in the Public Safety Radio Pool solely to provide service to eligibles on one-way paging-only frequencies below 800 MHz, *i.e.*, those frequencies with the assignment limitations appearing at § 90.20(d)(13) or (d)(60). Private carrier systems licensed on other channels prior to June 1, 1990, may continue to provide radio communications service to eligibles. Rules as to eligibility for licensing, frequencies available, permissible communications and classes and number of stations, and any special requirements are set forth in the following sections.

§ 90.16 Public Safety National Plan.

The Commission has established a National Plan which specifies special policies and procedures governing the Public Safety Pool (formally Public Safety Radio Services and the Special Emergency Radio Service). The National Plan is contained in the Report and Order in General Docket No. 87–112. The principal spectrum resource for the National Plan is the 806–809 MHz and the 851–854 MHz bands at locations farther then 110 km (68.4 miles) from the U.S./Mexico border and 140 km (87 miles) from the U.S./Canadian border (''border regions''). In the border regions, the principal spectrum for the National Plan may be different. The National plan establishes planning regions covering all parts of the United States, Puerto Rico, and the U.S. Virgin Islands. No assignments will be made in the spectrum designated for the National Plan until a regional plan for the area has been accepted by the Commission.

[69 FR 67837, Nov. 22, 2004]

§ 90.19 Nationwide Public Safety Broadband Network.

Pursuant to the Middle Class Tax Relief and Job Creation Act of 2012, Public Law 112–96, 126 Stat. 156 (2012), the 758–769 MHz and 788–799 MHz bands are allocated for use by the First Responder Network Authority to deploy a nationwide public safety broadband network as prescribed by statute.

[77 FR 62462, Oct. 15, 2012]

§ 90.20 Public Safety Pool.

(a) *Eligibility*. The following are eligible to hold authorizations in the Public Safety Pool.

(1) Any territory, possession, state, city, county, town or similar governmental entity is eligible to hold authorizations in the Public Safety Pool to operate radio stations for transmission of communications essential to official activities of the licensee, including:

(i) A district and an authority;

(ii) A governmental institution authorized by law to provide its own police protection;

(iii) Persons or entities engaged in the provision of basic or advanced life support services on an ongoing basis are eligible to hold authorization to operate stations for transmission of communications essential for the delivery or rendition of emergency medical services for the provision of basic or advanced life support. Applications

submitted by persons or organizations (governmental or otherwise) other than the governmental body having jurisdiction over the state's emergency medical service plans must be accompanied by a statement prepared by the governmental body having jurisdiction over the state's emergency medical services plan indicating that the applicant is included in the state's emergency plan or otherwise supporting the application;

(iv) Governmental entities and governmental agencies for their own medical activities; and

(v) Governmental entities and governmental agencies for providing medical services communications to other eligible persons through direct participation in and direct operational control of the system, such as through central dispatch service.

(2) Persons or organizations other than governmental entities are eligible to hold authorizations in the Public Safety Pool to operate radio stations for transmission of communications, as listed below. When requesting frequencies not designated by a ''PS'' in the coordinator column of the frequency table in paragraph (c)(3) of this section, applications must be accompanied by a statement from the governmental entity having legal jurisdiction over the area to be served, supporting the request:

(i) Persons or organizations charged with specific fire protection activities;

(ii) Persons or organizations charged with specific forestry-conservation activities;

(iii) Persons or organizations, listed below, engaged in the delivery or rendition of medical services to the public and on a secondary basis, for transmission of messages related to the efficient administration of organizations and facilities engaged in medical services operations:

(A) Hospital establishments that offer services, facilities, and beds for use beyond 24 hours in rendering medical treatment;

(B) Institutions and organizations regularly engaged in providing medical services through clinics, public health facilities, and similar establishments;

(C) Ambulance companies regularly engaged in providing medical ambulance services;

(D) Rescue organizations for the limited purpose of participation in providing medical services;

(E) Associations comprised of two or more of the organizations eligible under paragraph (a)(2)(iii) (A), (B), (C), and (D) of this section, for the purpose of active participation in and direct operational control of the medical services communication activities of such organizations; or

(F) Physicians, schools of medicine, oral surgeons, and associations of physicians or oral surgeons;

(iv) Persons or organizations operating a rescue squad for transmission of messages pertaining to the safety of life or property and urgent messages necessary for the rendition of an efficient emergency rescue service.

(A) Each rescue squad will normally be authorized to operate one base station, and a number of mobile units (excluding hand carried mobile units) not exceeding the number of vehicles actually used in emergency rescue operations.

(B) In addition, each rescue squad will be authorized to operate a number of hand carried mobile units not exceeding two such units for each radio equipped vehicle actually used in emergency rescue operations.

(v) *Persons with disabilities*. The initial application from a person claiming eligibility under this paragraph shall be accompanied by a statement from a physician attesting to the condition of the applicant or the applicant's child (or ward in case of guardianship).

(A) Any person having a hearing deficiency such that average hearing threshold levels are 90 dB above ANSI (American National Standards Institute) 1969 or ISO (International Standards Organization) 1964 levels and such other persons who submit medical certification of similar hearing deficiency.

(B) Any person having visual acuity corrected to no better than 20/200 in the better eye or having a field of vision of less than 20 degrees.

(C) Any person, who, through loss of limbs or motor function, is confined to a wheelchair, or is non-ambulatory.

(D) Any person actively awaiting an organ transplant.

(E) Parents or guardians of persons under 18 years eligible under paragraphs (a)(2)(v)(A), (a)(2)(v)(B), (a)(2)(v)(C) of this section, or institutions devoted to the care or training of those persons.

(vi) A veterinarian, veterinary clinic, or a school of veterinary medicine for the transmission of messages pertaining to the care and treatment of animals. Each licensee may be authorized to operate one base station and two mobile units. Additional base stations or mobile units will be authorized only on a showing of need.

(vii) Organizations established for disaster relief purposes having an emergency radio communications plan for the transmission of communications relating to the safety of life or property, the establishment and maintenance of temporary relief facilities, and the alleviation of the emergency situation during periods of actual or impending emergency, or disaster, and until substantially normal conditions are restored. In addition, the stations may be used for training exercises, incidental to the emergency communications plan, and for operational communications of the disaster relief organization or its chapter affiliates. The initial application from a disaster relief organization shall be accompanied by a copy of the charter or other authority under which the organization was established and a copy of its communications plan. The plan shall fully describe the operation of the radio facilities and describe the method of integration into other communications facilities which normally would be available to assist in the alleviation of the emergency condition.

(viii) Persons or organizations operating school buses on a regular basis over regular routes for the transmission of messages pertaining to either the efficient operation of the school bus service or the safety or general welfare of the students they are engaged in transporting. Each school bus operator may be authorized to operate one base station and a number of mobile units not in excess of the total of the number of buses and maintenance vehicles regularly engaged in the school bus operation. Additional base stations or mobile units will be authorized only in exceptional circumstances when the applicant can show a specific need.

(ix) Persons or organizations operating beach patrols having responsibility for life-saving activities for the transmission of messages required for the safety of life or property.

(x) Persons or organizations maintaining establishment in isolated areas where public communications facilities are not available and where the use of radio is the only feasible means of establishing communication with a center of population, or other point from which emergency assistance might be obtained if needed, for the transmission of messages only during an actual or impending emergency endangering life, health or property for the transmission of essential communications arising from the emergency. The transmission of routine or non-emergency communications is strictly prohibited.

(A) *Special eligibility showing*. The initial application requesting a station authorization for an establishment in an isolated area shall be accompanied by a statement describing the status of public communication facilities in the area of the applicant's establishment; the results of any attempts the applicant may have made to obtain public communication service, and; in the event radio communications service is to be furnished under paragraph (a)(2)(x)(C)(*2*) of this section, a copy of the agreement involved must be submitted.

(B) *Class and number of stations available*. Persons or organizations in this category may be authorized to operate not more than one fixed station at any isolated establishment and not more than one fixed station in a center of population.

(C) *Communication service rendered and received*. (*1*) The licensee of a station at any establishment in an isolated area shall make the communication facilities of such station available at no charge to any person desiring the transmission of any communication permitted by paragraph (a) of this section.

(*2*) For the purpose of providing the communications link desired the licensee of a station at an establishment in an isolated area either may be the licensee of a similar station at another location or may obtain communication service under a mutual agreement from the licensee of any station in the Public Safety Pool or any other station which is authorized to communicate with the fixed station.

(xi) A communications common carrier operating communications circuits that normally carry essential communication of such a nature that their disruption would endanger life or public property is eligible to hold authorizations for standby radio facilities for the transmission of messages only during periods when the normal circuits are inoperative due to circumstances beyond the control of the user. During such periods the radio facilities may be used to transmit any communication which would be carried by the regular circuit. Initial applications for authorization to operate a standby radio facility must include a statement describing radio communication facilities desired, the proposed method of operation, a description of the messages normally being carried, and an explanation of how their disruption will endanger life or public property.

(xii) Communications common carriers for radio facilities to be used in effecting expeditious repairs to interruption of public communications facilities where such interruptions have resulted in disabling intercity circuits or service to a multiplicity of subscribers in a general area. Stations authorized under this section may be used only when no other means of communication is readily available, for the transmission of messages relating to the safety of life and property and messages which are necessary for the efficient restoration of the public communication facilities which have been disrupted.

(xiii) Persons or entities engaged in the provision of basic or advanced life support services on an ongoing basis are eligible to hold authorization to operate stations for transmission of communications essential for the delivery or rendition of emergency medical services for the provision of basic or advanced life support. Applications submitted by persons or organizations (governmental or otherwise) other than the governmental body having jurisdiction over the state's emergency medical service plans must be accompanied by a statement prepared by the governmental body having jurisdiction over the state's emergency medical services plan indicating that the applicant is included in the state's emergency plan or otherwise supporting the application.

(b) *International police radiocommunication*. Police licensees which are located in close proximity to the borders of the United States may be authorized to communicate internationally. Request for such authority shall be written and signed and submitted in duplicate. The request shall include information as to the station with which communication will be conducted, and the frequency, power, emission, etc., that will be used. If authorized, such international communication must be conducted in accordance with Article 5 of the Inter-American Radio Agreement, Washington, DC, 1949, which reads as follows:

Article 5. *Police radio stations*. When the American countries authorize their police radio stations to exchange emergency information by radio with similar stations of another country, the following rules shall be applied.

(a) Only police radio stations located close to the boundaries of contiguous countries shall be allowed to exchange this information.

(b) In general, only important police messages shall be handled, such as those which would lose their value, because of slowness and time limitations if sent on other communication systems.

(c) Frequencies used for radiotelephone communications with mobile police units shall not be used for radiotelegraph communications.

(d) Radiotelephone communications shall be conducted only on frequencies assigned for radiotelephony.

(e) Radiotelegraph communications shall be conducted on the following frequencies: 2804 kHz calling, 2808 kHz working, 2812 kHz working, 5195 kHz day calling, 5185 kHz day working, 5140 kHz day working.

(f) The characteristics of police radio stations authorized to exchange information shall be notified to the International Telecommunication Union, Geneva, Switzerland.

(g) The abbreviations contained in Appendix 9 of the Atlantic City Radio Regulations shall be used to the greatest possible extent. Service indications are as follows: ''P'', priority, for messages that are to be sent immediately, regardless of the number of other messages on file. If no service indication is given, the messages are to be transmitted in the order of receipt.

(h) The message shall contain the preamble, address, text and signature, as follows:

Preamble. The preamble of the message shall consist of the following: The serial number preceded by the letters ''NR'', service indications, as appropriate; the group count according to standard cable count system; the letters ''CK'', followed by numerals indicating the number of words contained in the text of the message: Office and country of origin (not abbreviations): Day, month, and hour of filing;

Address. The address must be as complete as possible and shall include the name of the addressee with any supplementary particulars necessary for immediate delivery of the message;

Text. The text may be either in plain language or code;

Signature. The signature shall include the name and title of the person originating the message.

(c) *Public Safety frequencies*. (1) The following table indicates frequencies available for assignment to Public Safety stations, together with the class of station(s) to which they are normally assigned, the specific assignment limitations which are explained in paragraph (d) of this section, and the certified frequency coordinator for each frequency:

(2)(i) The letter symbol(s) listed in the Coordinator column of the frequency table in paragraph (c)(3) of this section specifies the frequency coordinator(s) for each frequency as follows:

PF—Fire Coordinator
PH—Highway Maintenance Coordinator
PM—Emergency Medical Coordinator
PO—Forestry-Conservation Coordinator
PP—Police Coordinator
PS—Special Emergency Coordinator
PX—Any Public Safety Coordinator, except the Special Emergency Coordinator

(ii) Frequencies without any coordinator specified may be coordinated by any coordinator certified in the Public Safety Pool.

(3) *Frequencies*.

PUBLIC SAFETY POOL FREQUENCY TABLE

Frequency or band	Class of station(s)	Limitations	Coordinator
Kilohertz			
530 to 1700	Base (T.I.S.)	1	PX
1610	Base (T.I.S.)	1	PX
1722	do	2, 3	PP
1730	do	2, 3	PP
2212	do	4	PO
2226	do	4	PO
2236	do	4	PO
2244	do	4	PO
2366	do	2, 4	PP
2382	do	2	PP
2390	do	2, 4	PP
2406	do	2	PP
2430	do	2	PP
2442	do	2	PP
2450	do	2	PP
2458	do	2	PP
2482	do	2	PP
2490	do	2, 3	PP
2726	do	5	PX, PS
3201	do		PS
2000 to 3000	Fixed	75	PS
2000 to 10,000	Fixed, base, or mobile.	6, 89	PX.
Megahertz			
30.86	Base or mobile	7	PO
30.90	do	7	PO
30.94	do	7	PO
30.98	do	7	PO
31.02	do	7	PO
31.06	do	7, 8, 9	PO
31.10	do	7, 8, 9	PO
31.14	do	7, 8, 9	PO
31.18	do	8, 9	PO
31.22	do	8, 9	PO
31.26	do	8, 9	PO
31.30	do	8, 9	PO
31.34	do	8, 9	PO
31.38	do	8, 9	PO
31.42	do	8, 9	PO
31.46	do	8, 9	PO
31.50	do	8, 9	PO
31.54	do	8, 9	PO
31.58	do	8, 9	PO
31.62	do	8, 9	PO
31.66	do	8, 9	PO
31.70	do	8, 9	PO
31.74	do	8, 9	PO
31.78	do	8, 9	PO
31.82	do	8, 9	PO
31.86	do	8, 9	PO
31.90	do	8, 9	PO
31.94	do	8, 9	PO
31.98	do	8, 9	PO
33.02	do	10	PH, PS
33.04	do		PS
33.06	do	10	PH, PS
33.08	do		PS
33.10	do	10	PH, PS
33.42	Mobile or fixed	11	PF
33.44	Base or mobile		PF
33.46	Mobile		PF
33.48	Base or mobile		PF
33.50	Mobile		PF
33.52	Base or mobile		PF
33.54	Mobile		PF
33.56	Base or mobile		PF
33.58	Mobile		PF
33.60	Base or mobile		PF

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
33.62	Mobile		PF
33.64	Base or mobile		PF
33.66	Mobile		PF
33.68	Base or mobile		PF
33.70	do		PF
33.72	do		PF
33.74	do		PF
33.76	do		PF
33.78	do		PF
33.80	do		PF
33.82	do		PF
33.84	do		PF
33.86	do		PF
33.88	do		PF
33.90	do		PF
33.92	do		PF
33.94	do		PF
33.96	do		PF
33.98	do		PF
35.02	Mobile	12, 78	PS
35.64	Base	13	PS
35.68	do	13	PS
37.02	Mobile		PP
37.04	Base or mobile		PP
37.06	do		PP
37.08	do		PP
37.10	do		PX
37.12	do		PP
37.14	do		PP
37.16	do		PP
37.18	do		PX
37.20	do		PP
37.22	do		PP
37.24	do		PP
37.26	do		PX
37.28	do		PP
37.30	do		PP
37.32	do		PP
37.34	Mobile		PP
37.36	Base or mobile		PP
37.38	Mobile		PP
37.40	Base or mobile		PP
37.42	Mobile		PP
37.90	Base or mobile	10	PH, PS
37.92	do		PH
37.94	do	10	PH, PS
37.96	do		PH
37.98	do	10	PH, PS
39.02	do		PP
39.04	do		PP
39.06	do	14	PX
39.08	do		PP
39.10	do		PX
39.12	do		PP
39.14	do		PP
39.16	do		PP
39.18	do		PX
39.20	do		PP
39.22	do		PP
39.24	do		PP
39.26	Mobile		PP
39.28	Base or mobile		PP
39.30	Mobile		PP
39.32	Base or mobile		PP
39.34	Mobile		PP
39.36	Base or mobile		PP
39.38	Mobile		PP
39.40	Base or mobile		PP
39.42	do		PP
39.44	do		PP

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
39.46	do	15	PP
39.48	do		PP
39.50	do		PX
39.52	do		PP
39.54	do		PP
39.56	do		PP
39.58	do		PX
39.60	do		PP
39.62	do		PP
39.64	do		PP
39.66	Mobile		PP
39.68	Base or mobile		PP
39.70	Mobile		PP
39.72	Base or mobile		PP
39.74	Mobile		PP
39.76	Base or mobile		PP
39.78	Mobile		PP
39.80	Base or mobile		PP
39.82	do		PX
39.84	do		PP
39.86	do		PP
39.88	do		PP
39.90	do		PX
39.92	do		PP
39.94	do		PP
39.96	do		PP
39.98	do		PX
42.02	do	2, 3, 16	PP
42.04	do	2, 3, 16	PP
42.06	do	2, 3, 16	PP
42.08	do	2, 3, 16	PP
42.10	do	2, 3, 16	PP
42.12	do	2, 3, 16	PP
42.14	do	2, 3, 16	PP
42.16	do	2, 3, 16	PP
42.18	Mobile	2, 16	PP
42.20	do	2, 16	PP
42.22	do	2, 16	PP
42.24	do	2, 16	PP
42.26	do	2, 16	PP
42.28	do	2, 16	PP
42.30	do	2, 16	PP
42.32	Base or mobile	2, 3, 16	PP
42.34	do	2, 3, 16	PP
42.36	do	2, 3, 16	PP
42.38	do	2, 3, 16	PP
42.40	do	2, 3, 16, 17.	PP
42.42	do	2, 3, 16	PP
42.44	do	2, 3, 16	PP
42.46	do	2, 3, 16	PP
42.48	do	2, 3, 16	PP
42.50	do	2, 3, 16	PP
42.52	do	2, 3, 16	PP
42.54	do	2, 3, 16	PP
42.56	do	2, 3, 16	PP
42.58	do	2, 3, 16	PP
42.60	do	2, 3, 16	PP
42.62	do	2, 3, 16	PP
42.64	do	2, 3, 16	PP
42.66	Mobile	2, 16	PP
42.68	do	2, 16	PP
42.70	do	2, 16	PP
42.72	do	2, 16	PP
42.74	do	2, 16	PP
42.76	do	2, 16	PP
42.78	do	2, 16	PP
42.80	Base or mobile	13	PP
42.82	do	2, 3, 16	PP
42.84	do	2, 3, 16	PP

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
42.86	do	2, 3, 16	PP
42.88	do	2, 3, 16	PP
42.90	do	2, 3, 16	PP
42.92	do	2, 3, 16	PP
42.94	do	2, 3, 16	PP
43.64	Base	13, 18	PS
43.68	do	13	PS
44.62	Base or mobile	2, 3, 16	PP
44.64	do		PO
44.66	do	2, 3, 16	PP
44.68	do		PO
44.70	do	2, 3, 16	PP
44.72	do		PO
44.74	do	2, 3, 16	PP
44.76	do		PO
44.78	Mobile	2, 16	PP
44.80	Base or mobile		PO
44.82	Mobile	2, 16	PP
44.84	Base or mobile		PO
44.86	Mobile	2, 16	PP
44.88	Base or mobile		PO
44.90	Mobile	2, 16	PP
44.92	Base or mobile		PO
44.94	do	2, 3, 16	PP
44.96	do		PO
44.98	do	2, 3, 16	PP
45.00	do		PO
45.02	do	2, 3, 16	PP
45.04	do		PO
45.06	do	2, 3, 16	PP
45.08	do		PX
45.10	do		PP
45.12	do		PX
45.14	do		PP
45.16	do		PX
45.18	do		PP
45.20	do		PX
45.22	do		PP
45.24	do		PX
45.26	Mobile		PP
45.28	Base or mobile		PX
45.30	Mobile		PP
45.32	Base or mobile		PX
45.34	Mobile		PP
45.36	Base or mobile		PX
45.38	Mobile		PP
45.40	Base or mobile		PX
45.42	do		PP
45.44	do		PX
45.46	do		PP
45.48	do		PX
45.50	do		PP
45.52	do		PX
45.54	do		PP
45.56	do		PX
45.58	do		PP
45.60	do		PX
45.62	do		PP
45.64	do		PX
45.66	do		PP
45.68	do		PH
45.70	do		PP
45.72	do		PH
45.74	Mobile		PP
45.76	Base or mobile		PH
45.78	Mobile		PP
45.80	Base or mobile		PH
45.82	Mobile		PP
45.84	Base or mobile		PH
45.86	do	15	PP

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
45.88	do	19	PF
45.90	do	20	PP
45.92	do	10	PS
45.94	do		PP
45.96	do	10	PS
45.98	do		PP
46.00	do	10	PS
46.02	do		PP
46.04	do	10	PS
46.06	do		PF
46.08	do		PF
46.10	do		PF
46.12	do		PF
46.14	do		PF
46.16	do		PF
46.18	do		PF
46.20	do		PF
46.22	Mobile		PF
46.24	do		PF
46.26	do		PF
46.28	do		PF
46.30	Mobile or fixed	11	PF
46.32	Mobile		PF
46.34	do		PF
46.36	Base or mobile		PF
46.38	do		PF
46.40	do		PF
46.42	do		PF
46.44	do		PF
46.46	do		PF
46.48	do		PF
46.50	do		PF
46.52	do		PX
46.54	do		PX
46.56	do		PX
46.58	do		PX
47.02	do	21, 22	PH
47.04	do	21, 22	PH
47.06	do	21, 22	PH
47.08	do	21, 22	PH
47.10	do	21, 22	PH
47.12	do	21, 22	PH
47.14	do	21, 22	PH
47.16	do	21, 22	PH
47.18	do	21, 22	PH
47.20	do	21, 22	PH
47.22	do	21, 22	PH
47.24	do	21, 22	PH
47.26	do	21, 22	PH
47.28	do	21, 22	PH
47.30	do	21, 22	PH
47.32	do	21, 22	PH
47.34	do	21, 22	PH
47.36	do	21, 22	PH
47.38	do	21, 22	PH
47.40	do	21, 22	PH
47.42	do	10, 23	PS
47.46	do	10	PS
47.50	do	10	PS
47.54	do	10	PS
47.58	do	10	PS
47.62	do	10	PS
47.66	do	10	PS
72.00 to 76.00	Operational fixed.	24	
72.44	Mobile	25	PF
72.48	do	25	PF
72.52	do	25	PF
72.56	do	25	PF
72.6	do	25	PF

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
75.44	do	25	PF
75.48	do	25	PF
75.52	do	25	PF
75.56	do	25	PF
75.6	do	25	PF
150 to 170	Base or mobile	26	
150.775	Mobile	87	PM.
150.7825	do	88	PM
150.790	do	87	PM.
150.7975	do	88	PM.
150.805	do		PM
150.995	Base or mobile	28	PH
151.0025	do	27, 28	PH
151.010	do	28	PH
151.0175	do	28	PH
151.025	do	28	PH
151.0325	do	27, 28	PH
151.040	do	28	PH
151.0475	do	27, 28	PH
151.055	do	28	PH
151.0625	do	27, 28	PH
151.070	do	28	PH
151.0775	do	27, 28	PH
151.085	do	28	PH
151.0925	do	27, 28	PH
151.100	do	28	PH
151.1075	do	27, 28	PH
151.115	do	28	PH
151.1225	do	27, 28	PH
151.130	do	28, 81	PH
151.1375	do	27, 28, 80	PH
151.145	do	28, 81	PO
151.1525	do	27, 28	PO
151.160	do	28	PO
151.1675	do	27, 28	PO
151.175	do	28	PO
151.1825	do	27, 28	PO
151.190	do	28	PO
151.1975	do	27, 28	PO
151.205	do	28	PO
151.2125	do	27, 28	PO
151.220	do	28	PO
151.2275	do	27, 28	PO
151.235	do	28	PO
151.2425	do	27, 28	PO
151.250	do	28	PO
151.2575	do	27, 28	PO
151.265	do	28	PO
151.2725	do	27, 28	PO
151.280	do	28	PO
151.2875	do	27, 28	PO
151.295	do	28	PO
151.3025	do	27, 28	PO
151.310	do	28	PO
151.3175	do	27, 28	PO
151.325	do	28	PO
151.3325	do	27, 28	PO
151.340	do	28	PO
151.3475	do	27, 28	PO
151.355	do	28	PO
151.3625	do	27, 28	PO
151.370	do	28	PO
151.3775	do	2728	PO
151.385	do	28	PO
151.3925	do	27, 28	PO
151.400	do	28	PO
151.4075	do	27, 28	PO
151.415	do	28	PO
151.4225	do	27, 28	PO
151.430	do	28	PO

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
151.4375	do	27, 28	PO
151.445	do	28	PO
151.4525	do	27, 28	PO
151.460	do	28	PO
151.4675	do	27, 28	PO
151.475	do	28	PO
151.4825	do	27, 28	PO
151.490	do	7, 28	PO
151.4975	do	7, 27, 28	PO
152.0075	Base	13, 29, 30	PS
153.740	Mobile		PX
153.7475	do	27	PX
153.755	do		PX
153.7625	do	27	PX
153.770	do		PF
153.7775	do	27	PF
153.785	do		PX
153.7925	do	27	PX
153.800	do		PX
153.8075	do	27	PX
153.815	do		PX
153.8225	do	27	PX
153.830	do	31	PF
153.8375	do	27, 31	PF
153.845	do		PX
153.8525	do	27	PX
153.860	do		PX
153.8675	do	27	PX
153.875	do		PX
153.8825	do	27	PX
153.890	do		PF
153.8975	do	27	PF
153.905	do		PX
153.9125	do	27	PX
153.920	do		PX
153.9275	do	27	PX
153.935	do		PX
153.9425	do	27	PX
153.950	do		PF
153.9575	do	27	PF
153.965	do		PX
153.9725	do	27	PX
153.980	do		PX
153.9875	do	27	PX
153.995	do		PX
154.0025	do	27	PX
154.010	do		PF
154.0175	do	27	PF
154.025	Base or mobile		PX
154.0325	do	27	PX
154.040	do	28	PX
154.0475	do	27, 28	PX
154.055	do	28	PX
154.0625	do	27, 28	PX
154.070	Mobile	28	PF
154.0775	do	27, 28	PF
154.085	Base or mobile	28	PX
154.0925	do	2728	PX
154.100	do	28	PX
154.1075	do	27, 28	PX
154.115	do	28	PX
154.1225	do	27, 28	PX
154.130	do	28	PF
154.1375	do	27, 28	PF
154.145	do	28	PF
154.1525	do	27, 28	PF
154.160	do	28	PF
154.1675	do	27, 28	PF
154.175	do	28	PF
154.1825	do	27, 28	PF

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
154.190	do	28	PF
154.1975	do	27, 28	PF
154.205	do	28	PF
154.2125	do	27, 28	PF
154.220	do	28	PF
154.2275	do	27, 28	PF
154.235	do	28	PF
154.2425	do	27. 28	PF
154.250	do	28	PF
154.2575	do	27, 28	PF
154.265	do	19, 28	PF
154.2725	do	19, 27, 28	PF
154.280	do	19, 28	PF
154.2875	do	19, 27, 28	PF
154.295	do	19, 28	PF
154.3025	do	19, 27, 28	PF
154.310	do	28	PF
154.3175	do	27, 28	PF
154.325	do	28	PF
154.3325	do	27, 28	PF
154.340	do	28	PF
154.3475	do	27, 28	PF
154.355	do	28	PF
154.3625	do	27, 28	PF
154.370	do	28	PF
154.3775	do	27, 28	PF
154.385	do	28	PF
154.3925	do	27, 28	PF
154.400	do	28	PF
154.4075	do	27, 28	PF
154.415	do	28	PF
154.4225	do	27, 28	PF
154.430	do	28	PF
154.4375	do	27, 28	PF
154.445	do	28, 81	PF
154.4525	do	27, 28, 80.	PF
154.45625	Fixed or mobile	32, 33, 34, 35.	PX
154.46375	do	33, 34, 35, 36, 37.	PX
154.47125	do	33, 34, 35, 36.	PX
154.47875	do	33, 34, 35, 37.	PX
154.650	Mobile		PP
154.6575	do	27	PP
154.665	Base or mobile	16	PP
154.6725	do	16, 27	PP
154.680	do	16	PP
154.6875	do	16, 27	PP
154.695	do	16	PP
154.7025	do	16, 27	PP
154.710	Mobile		PP
154.7175	do	27	PP
154.725	Base or mobile		PP
154.7325	do	27	PP
154.740	do		PP
154.7475	do	27	PP
154.755	do		PP
154.7625	do	27	PP
154.770	Mobile		PP
154.7775	do	27	PP
154.785	Base or mobile		PP
154.7925	do	27	PP
154.800	do		PP
154.8075	do	27	PP
154.815	do		PP
154.8225	do	27	PP
154.830	Mobile		PP
154.8375	do	27	PP

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
154.845	Base or mobile		PP
154.8525	do	27	PP
154.860	do		PP
154.8675	do	27	PP
154.875	do		PP
154.8825	do	27	PP
154.890	Mobile		PP
154.8975	do	27	PP
154.905	Base or mobile	16	PP
154.9125	do	16	PP
154.920	do	16	PP
154.9275	do	16, 27	PP
154.935	do	16	PP
154.9425	do	16, 27	PP
154.950	Mobile		PP
154.9575	do	27	PP
154.965	Base or mobile		PX
154.9725	do	27	PX
154.980	do		PX
154.9875	do	27	PX
154.995	do		PX
155.0025	do	27	PX
155.010	do		PP
155.0175	do	27	PP
155.025	do		PX
155.0325	do	27	PX
155.040	do		PX
155.0475	do	27	PX
155.055	do		PX
155.0625	do	27	PX
155.070	do		PP
155.0775	do	27	PP
155.085	do		PX
155.0925	do	27	PX
155.100	do		PX
155.1075	do	27	PX
155.115	do		PX
155.1225	do	27	PX
155.130	do		PP
155.1375	do	27	PP
155.145	do		PX
155.1525	do	27	PX
155.160	do	10	PS
155.1675	do	10, 27	PS
155.175	do	10	PS
155.1825	do	10, 27	PS
155.190	do		PP
155.1975	do	27	PP
155.205	do	10	PS
155.2125	do	10, 27	PS
155.220	do	10	PS
155.2275	do	10, 27	PS
155.235	do	10	PS
155.2425	do	10, 27	PS
155.250	do		PP
155.2575	do	27	PP
155.265	do	10	PS
155.2725	do	10, 27	PS
155.280	do	10	PS
155.2875	do	10, 27	PS
155.295	do	10	PS
155.3025	do	10, 27	PS
155.310	do		PP
155.3175	do	27	PP
155.325	do	10, 39	PM
155.3325	do	27, 10, 39	PM
155.340	do	39, 40	PM
155.3475	do	27, 39, 40	PM
155.355	do	10, 39	PM
155.3625	do	27, 10, 39	PM

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
155.370	do		PP
155.3775	do	27	PP
155.385	do	10, 39	PM
155.3925	do	27, 10, 39	PM
155.400	do	10, 39	PM
155.4075	do	27, 10, 39	PM
155.415	do		PP
155.4225	do	27	PP
155.430	do		PP
155.4375	do	27	PP
155.445	do	16	PP
155.4525	do	16, 27	PP
155.460	do	16	PP
155.4675	do	16, 27	PP
155.475	do	41	PP
155.4825	do	27, 41	PP
155.490	do		PP
155.4975	do	27	PP
155.505	do	16	PP
155.5125	do	16, 27	PP
155.520	do		PP
155.5275	do	27	PP
155.535	do		PP
155.5425	do	27	PP
155.550	do		PP
155.5575	do	27	PP
155.565	do		PP
155.5725	do	27	PP
155.580	do		PP
155.5875	do	27	PP
155.595	do		PP
155.6025	do	27	PP
155.610	do		PP
155.6175	do	27	PP
155.625	do		PP
155.6325	do	27	PP
155.640	do		PP
155.6475	do	27	PP
155.655	do		PP
155.6625	do	27	PP
155.670	do		PP
155.6775	do	27	PP
155.685	do		PP
155.6925	do	27	PP
155.700	do		PP
155.7075	do	27	PP
155.715	do		PX
155.7225	do	27	PX
155.730	do		PP
155.7375	do	27	PP
155.745	do	81	PX
155.7525	do	27, 80, 83	PX
155.760	do	81	PX
155.7675	do	27	PX
155.775	do		PX
155.7825	do	27	PX
155.790	do		PP
155.7975	do	27	PP
155.805	do		PX
155.8125	do	27	PX
155.820	do		PX
155.8275	do	27	PX
155.835	do		PX
155.8425	do	27	PX
155.850	Mobile		PP
155.8575	do	27	PP
155.865	Base or mobile		PX
155.8725	do	27	PX
155.880	do		PX
155.8875	do	27	PX

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
155.895	do		PX
155.9025	do	27	PX
155.910	Mobile		PP
155.9175	do	27	PP
155.925	Base or mobile		PX
155.9325	do	27	PX
155.940	do		PX
155.9475	do	27	PX
155.955	do		PX
155.9625	do	27	PX
155.970	Mobile		PP
155.9775	do	27	PP
155.985	do		PX
155.9925	do	27	PX
156.000	do		PX
156.0075	do	27	PX
156.015	do		PX
156.0225	do	27	PX
156.030	do		PP
156.0375	do	27	PP
156.045	do	42	PH
156.0525	do	27, 42	PH
156.060	do	42	PH
156.0675	do	27, 42	PH
156.075	do		PH
156.0825	do	27	PH
156.090	do		PP
156.0975	do	27	PP
156.105	Base or mobile		PH
156.1125	do	27	PH
156.120	do		PH
156.1275	do	27	PH
156.135	do		PH
156.1425	do	27	PH
156.150	Mobile		PP
156.1575	do	27	PP
156.165	Base or mobile	42	PH
156.1725	do	27, 42	PH
156.180	do	42	PH
156.1875	do	27, 42	PH
156.195	do		PH
156.2025	do	27	PH
156.210	do		PP
156.2175	do	27	PP
156.225	do		PH
156.2325	do	27, 10	PH
156.240	do	79	PH
157.450	Base	13, 30, 45	PS
158.7225	Base or Mobile	44	PP
158.730	do	81	PP
158.7375	do	27, 80	PP
158.745	do	81	PX
158.7525	do	27	PX
158.760	do		PX
158.7675	do	27	PX
158.775	do		PX
158.7825	do	27	PX
158.790	do		PP
158.7975	do	27	PP
158.805	do		PX
158.8125	do	27	PX
158.820	do		PX
158.8275	do		PX
158.835	do		PX
158.8425	do	27	PX
158.850	do		PP
158.8575	do	27	PP
158.865	Mobile		PX
158.8725	do	27	PX
158.880	do		PX

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
158.8875	do		PX
158.895	do		PX
158.9025	do	27	PX
158.910	do		PP
158.9175	do	27	PP
158.925	do		PX
158.9325	do	27	PX
158.940	do		PX
158.9475	do		PX
158.955	do		PX
158.9625	do	27	PX
158.970	do		PP
158.9775	do	27	PP
158.985	do		PH
158.9925	do	27	PH
159.000	do		PH
159.0075	do	27	PH
159.015	do		PH
159.0225	do	27	PH
159.030	do		PP
159.0375	do	27	PP
159.045	do		PH
159.0525	do	27	PH
159.060	do		PH
159.0675	do	27	PH
159.075	do		PH
159.0825	do	27	PH
159.090	Base or mobile		PP
159.0975	do	27	PP
159.105	do		PH
159.1125	do	27	PH
159.120	do		PH
159.1275	do	27	PH
159.135	do		PH
159.1425	do	27	PH
159.150	do		PP
159.1575	do	27	PP
159.165	do		PH
159.1725	do	27	PH
159.180	do		PH
159.1875	do	27	PH
159.195	do		PH
159.2025	do	27	PH
159.210	do		PP
159.2175	do	27	PP
159.225	do		PO
159.2325	do	27	PO
159.240	do	46	PO
159.2475	do	27, 46	PO
159.255	do	46	PO
159.2625	do	27, 46	PO
159.270	do	46	PO
159.2775	do	27, 46	PO
159.285	do	46	PO
159.2925	do	27, 46	PO
159.300	do	46	PO
159.3075	do	27, 46	PO
159.315	do	46	PO
159.3225	do	27, 46	PO
159.330	do	46	PO
159.3375	do	27, 46	PO
159.345	do	46	PO
159.3525	do	27, 46	PO
159.360	do	46	PO
159.3675	do	27, 46	PO
159.375	do	46	PO
159.3825	do	27, 46	PO
159.390	do	46	PO
159.3975	do	27, 46	PO
159.405	do	46	PO

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
159.4125	do	27, 46	PO
159.420	do	46	PO
159.4275	do	27, 46	PO
159.435	do	46	PO
159.4425	do	27, 46	PO
159.450	do		PO
159.4575	do	27	PO
159.465	do	81	PO
159.4725	do	80	PO
163.250	Base	13, 30	PS
166.250	Base or mobile	47	PF
169 to 172	Mobile or operational fixed.	48.	
170.150	Base or mobile	47	PF
170.425	do	9, 49	PO.
170.475	do	9, 49	PO.
170.575	do	9, 49	PO.
171.425	do	9, 49	PO.
171.475	do	9, 49	PO.
171.575	do	9, 49	PO.
172.225	do	9, 49	PO.
172.275	do	9, 49	PO.
172.375	do	9, 49	PO.
173.075	do	53	PP
173.20375	Fixed or mobile	33, 34, 35, 36.	PX
173.210	do	34, 35, 36, 54.	PX
173.2375	do	32, 33, 34, 35.	PX
173.2625	do	32, 33, 34, 35.	PX
173.2875	do	32, 33, 34, 35.	PX
173.3125	do	32, 33, 34, 35.	PX
173.3375	do	32, 33, 34, 35.	PX
173.3625	do	32, 33, 34, 35.	PX
173.390	do	34, 35, 36, 54.	PX
173.39625	do	33, 34, 35, 36.	PX
220 to 222	Base or mobile	55.	
220.8025	Base	55	
220.8075	do	55	
220.8125	do	55	
220.8175	do	55	
220.8225	do	55	
220.8275	do	55	
220.8325	do	55	
220.8375	do	55	
220.8425	do	55	
220.8475	do	55	
220.9025	do	55	PM
220.9075	do	55	PM
220.9125	do	55	PM
220.9175	do	55	PM
220.9225	do	55	PM
221.8025	Mobile	55	
221.8075	do	55	
221.8125	do	55	
221.8175	do	55	
221.8225	do	55	
221.8275	do	55	
221.8325	do	55	
221.8375	do	55	
221.8425	do	55	
221.8475	do	55	

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
221.9025	do	55	PM
221.9075	do	55	PM
221.9125	do	55	PM
221.9175	do	55	PM
221.9225	do	55	PM
406 to 416	Operational fixed.	48.	
450 to 470	Fixed, base, or mobile.	26, 56	
453.0125	Mobile	57, 78	PX
453.03125	Base or mobile	44, 59, 62, 84.	PM
453.0375	do	27, 59, 62, 84.	PX
453.04375	do	44, 59, 62, 84.	PM
453.050	do		PX
453.05625	do	44, 84	PX
453.0625	do	27, 84	PX
453.06875	do	44, 84	PX
453.075	Central control, fixed base, or mobile.	58, 59, 60, 61, 62.	PM
453.08125	Base or mobile	44, 59, 62, 84.	PM
453.0875	do	27, 59, 62, 84.	PX
453.09375	do	44, 59, 62, 84.	PM
453.100	do		PX
453.10625	do	44, 84	PX
453.1125	do	27, 84	PX
453.11875	do	44, 84	PX
453.125	Central control, fixed base, or mobile.	58, 59, 60, 61, 62.	PM
453.13125	Base or mobile	44, 59, 62, 84.	PM
453.1375	do	27, 59, 62, 84.	PX
453.14375	do	44, 59, 62, 84.	PM
453.150	do		PX
453.15625	do	44	PX
453.1625	do	27	PX
453.16875	do	44	PX
453.175	Central control, fixed base, or mobile.	58, 59, 60, 61, 62.	PM
453.18125	Base or mobile	44, 59, 62	PM
453.1875	do	27, 59, 62	PX
453.19375	do	44, 59, 62	PM
453.200	do	81	PX
453.20625	do	44, 82	PX
453.2125	do	27, 80, 83	PX
453.21875	do	44, 82	PX
453.225	do	81	PX
453.23125	do	44	PX
453.2375	do	27	PX
453.24375	do	44	PX
453.250	do		PX
453.25625	do	44	PX
453.2625	do	27	PX
453.26875	do	44	PX
453.275	do		PX
453.28125	do	44	PX
453.2875	do	27	PX
453.29375	do	44	PX
453.300	do		PX
453.30625	do	44	PX

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
453.3125	do	27	PX
453.31875	do	44	PX
453.325	do		PX
453.33125	do	44	PX
453.3375	do	27	PX
453.34375	do	44	PX
453.350	do		PX
453.35625	do	44	PX
453.3625	do	27	PX
453.36875	do	44	PX
453.375	do		PX
453.38125	do	44	PX
453.3875	do	27	PX
453.39375	do	44	PX
453.400	do		PX
453.40625	do	44	PX
453.4125	do	27	PX
453.41875	do	44	PX
453.425	do		PX
453.43125	do	44	PX
453.4375	do	27	PX
453.44375	do	44	PX
453.450	do	81	PX
453.45625	do	44, 82	PX
453.4625	do	27, 80	PX
453.46875	do	44, 82	PX
453.475	do	81	PX
453.48125	do	44	PX
453.4875	do	27	PX
453.49375	do	44	PX
453.500	do		PX
453.50625	do	44	PX
453.5125	do	27	PX
453.51875	do	44	PX
453.525	do		PX
453.53125	do	44	PX
453.5375	do	27	PX
453.54375	do	44	PX
453.550	do		PX
453.55625	do	44	PX
453.5625	do	27	PX
453.56875	do	44	PX
453.575	do		PX
453.58125	do	44	PX
453.5875	do	27	PX
453.59375	do	44	PX
453.600	do		PX
453.60625	do	44	PX
453.6125	do	27	PX
453.61875	do	44	PX
453.625	do		PX
453.63125	do	44	PX
453.6375	do	27	PX
453.64375	do	44	PX
453.650	do		PX
453.65625	do	44	PX
453.6625	do	27	PX
453.66875	do	44	PX
453.675	do		PX
453.68125	do	44	PX
453.6875	do	27	PX
453.69375	do	44	PX
453.700	do	81	PX
453.70625	do	44, 82	PX
453.7125	do	27, 80	PX
453.71875	do	44, 82	PX
453.725	do	81	PX
453.73125	do	44	PX
453.7375	do	27	PX
453.74375	do	44	PX

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
453.750	do		PX
453.75625	do	44	PX
453.7625	do	27	PX
453.76875	do	44	PX
453.775	do		PX
453.78125	do	44	PX
453.7875	do	27	PX
453.79375	do	44	PX
453.800	do		PX
453.80625	do	44	PX
453.8125	do	27	PX
453.81875	do	44	PX
453.825	do		PX
453.83125	do	44	PX
453.8375	do	27	PX
453.84375	do	44	PX
453.850	do	81	PX
453.85625	do	44, 82	PX
453.8625	do	27, 80	PX
453.86875	do	44, 82	PX
453.875	do	81	PX
453.88125	do	44, 84	PX
453.8875	do	27, 84	PX
453.89375	do	44, 84	PX
453.900	do		PX
453.90625	do	44, 84	PX
453.9125	do	27, 84	PX
453.91875	do	44, 84	PX
453.925	do		PX
453.93125	do	44, 84	PX
453.9375	do	27, 84	PX
453.94375	do	44, 84	PX
453.950	do		PX
453.95625	do	44, 84	PX
453.9625	do	27, 84	PX
453.96875	do	44, 84	PX
453.975	do		PX
453.98125	do	44, 84	PX
453.9875	do	27, 84	PX
453.99375	do	44, 84	PX
458.0125	Mobile	57	PS
458.025	Central control, fixed base, or mobile.	58, 59, 61, 62, 63.	PM
458.03125	Mobile	44, 59, 61, 62, 84.	PM
458.0375	do	27, 59, 61, 62, 84.	PX
458.04375	do	44, 59, 61, 62, 84.	PM
458.050	do		PX
458.05625	do	44, 84	PX
458.0625	do	27, 84	PX
458.06875	do	44, 84	PX
458.075	Central control, fixed base, or mobile.	58, 59, 61, 62, 63.	PM
458.08125	Mobile	44, 59, 61, 62, 84.	PM
458.0875	do	27, 59, 61, 62, 84.	PX
458.09375	do	44, 59, 61, 62, 84.	PM
458.100	do		PX
458.10625	do	44, 84	PX
458.1125	do	27, 84	PX
458.11875	do	44, 84	PX
458.125	Central control, fixed base, or mobile.	58, 59, 61, 62, 63.	PM

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
458.13125	Mobile	44, 59, 61, 62, 84.	PM
458.1375	do	27, 59, 61, 62, 84.	PX
458.14375	do	44, 59, 61, 62, 84.	PM
458.150	do		PX
458.15625	do	44	PX
458.1625	do	27	PX
458.16875	do	44	PX
458.175	Central control, fixed base, or mobile.	58, 59, 61, 62, 63.	PM
458.18125	Mobile	44, 59, 61, 62.	PM
458.1875	do	27, 59, 61, 62.	PX
458.19375	do	44, 59, 61, 62.	PM
458.200	do	81	PX
458.20625	do	44, 82	PX
458.2125	do	27, 80, 83	PX
458.21875	do	44, 82	PX
458.225	do	81	PX
458.23125	do	44	PX
458.2375	do	27	PX
458.24375	do	44	PX
458.250	do		PX
458.25625	do	44	PX
458.2625	do	27	PX
458.26875	do	44	PX
458.275	do		PX
458.28125	do	44	PX
458.2875	do	27	PX
458.29375	do	44	PX
458.300	do		PX
458.30625	do	44	PX
458.3125	do	27	PX
458.31875	do	44	PX
458.325	do		PX
458.33125	do	44	PX
458.3375	do	27	PX
458.34375	do	44	PX
458.350	do		PX
458.35625	do	44	PX
458.3625	do	27	PX
458.36875	do	44	PX
458.375	do		PX
458.38125	do	44	PX
458.3875	do	27	PX
458.39375	do	44	PX
458.400	do		PX
458.40625	do	44	PX
458.4125	do	27	PX
458.41875	do	44	PX
458.425	do		PX
458.43125	do	44	PX
458.4375	do	27	PX
458.44375	do	44	PX
458.450	do	81	PX
458.45625	do	44, 82	PX
458.4625	do	27, 80	PX
458.46875	do	44, 82	PX
458.475	do	81	PX
458.48125	do	44	PX
458.4875	do	27	PX
458.49375	do	44	PX
458.500	do		PX
458.50625	do	44	PX
458.5125	do	27	PX

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
458.51875	do	44	PX
458.525	do		PX
458.53125	do	44	PX
458.5375	do	27	PX
458.54375	do	44	PX
458.550	do		PX
458.55625	do	44	PX
458.5625	do	27	PX
458.56875	do	44	PX
458.575	do		PX
458.58125	do	44	PX
458.5875	do	27	PX
458.59375	do	44	PX
458.600	do		PX
458.60625	do	44	PX
458.6125	do	27	PX
458.61875	do	44	PX
458.625	do		PX
458.63125	do	44	PX
458.6375	do	27	PX
458.64375	do	44	PX
458.650	do		PX
458.65625	do	44	PX
458.6625	do	27	PX
458.66875	do	44	PX
458.675	do		PX
458.68125	do	44	PX
458.6875	do	27	PX
458.69375	do	44	PX
458.700	do		PX
458.70625	do	44	PX
458.7125	do	27	PX
458.71875	do	44	PX
458.725	do		PX
458.73125	do	44	PX
458.7375	do	27	PX
458.74375	do	44	PX
458.750	do		PX
458.75625	do	44	PX
458.7625	do	27	PX
458.76875	do	44	PX
458.775	do		PX
458.78125	do	44	PX
458.7875	do	27	PX
458.79375	do	44	PX
458.800	do		PX
458.80625	do	44	PX
458.8125	do	27	PX
458.81875	do	44	PX
458.825	do		PX
458.83125	do	44	PX
458.8375	do	27	PX
458.84375	do	44	PX
458.850	do	81	PX
458.85625	do	44, 82	PX
458.8625	do	27, 80	PX
458.86875	do	44, 82	PX
458.875	do	81	PX
458.88125	do	44, 84	PX
458.8875	do	27, 84	PX
458.89375	do	44, 84	PX
458.900	do		PX
458.90625	do	44, 84	PX
458.9125	do	27, 84	PX
458.91875	do	44, 84	PX
458.925	do		PX
458.93125	do	44, 84	PX
458.9375	do	27, 84	PX
458.94375	do	44, 84	PX
458.950	do		PX

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
458.95625	do	44, 84	PX
458.9625	do	27, 84	PX
458.96875	do	44, 84	PX
458.975	do		PX
458.98125	do	44, 84	PX
458.9875	do	27, 84	PX
458.99375	do	44, 84	PX
460.0125	do	27, 64	PP
460.01875	Base or mobile	44	PP
460.025	do		PP
460.03125	do	44	PP
460.0375	do	27	PP
460.04375	do	44	PP
460.050	do		PP
460.05625	do	44	PP
460.0625	do	27	PP
460.06875	do	44	PP
460.075	do		PP
460.08125	do	44	PP
460.0875	do	27	PP
460.09375	do	44	PP
460.100	do		PP
460.10625	do	44	PP
460.1125	do	27	PP
460.11875	do	44	PP
460.125	do		PP
460.13125	do	44	PP
460.1375	do	27	PP
460.14375	do	44	PP
460.150	do		PP
460.15625	do	44	PP
460.1625	do	27	PP
460.16875	do	44	PP
460.175	do		PP
460.18125	do	44	PP
460.1875	do	27	PP
460.19375	do	44	PP
460.200	do		PP
460.20625	do	44	PP
460.2125	do	27	PP
460.21875	do	44	PP
460.225	do		PP
460.23125	do	44	PP
460.2375	do	27	PP
460.24375	do	44	PP
460.250	do		PP
460.25625	do	44	PP
460.2625	do	27	PP
460.26875	do	44	PP
460.275	do		PP
460.28125	do	44	PP
460.2875	do	27	PP
460.29375	do	44	PP
460.300	do		PP
460.30625	do	44	PP
460.3125	do	27	PP
460.31875	do	44	PP
460.325	do		PP
460.33125	do	44	PP
460.3375	do	27	PP
460.34375	do	44	PP
460.350	do		PP
460.35625	do	44	PP
460.3625	do	27	PP
460.36875	do	44	PP
460.375	do		PP
460.38125	do	44	PP
460.3875	do	27	PP
460.39375	do	44	PP
460.400	do		PP

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
460.40625	do	44	PP
460.4125	do	27	PP
460.41875	do	44	PP
460.425	do		PP
460.43125	do	44	PP
460.4375	do	27	PP
460.44375	do	44	PP
460.450	do		PP
460.45625	do	44	PP
460.4625	do	27	PP
460.46875	do	44	PP
460.475	do		PP
460.48125	do	44, 84	PP
460.4875	do	27, 84	PP
460.49375	do	44, 84	PP
460.500	do		PP
460.50625	do	44, 84	PP
460.5125	do	27, 84	PP
460.51875	do	44, 84	PP
460.525	do		PP, PF, PM
460.53125	do	44, 84	PP, PF, PM
460.5375	do	27, 84	PP, PF, PM
460.54375	do	44, 84	PP, PF, PM
460.550	do		PP, PF, PM
460.55625	do	44, 84	PP, PF, PM
460.5625	do	27, 84	PP, PF, PM
460.56875	do	44, 84	PP, PF, PM
460.575	do		PF
460.58125	do	44	PF
460.5875	do	27	PF
460.59375	do	44	PF
460.600	do		PF
460.60625	do	44	PF
460.6125	do	27	PF
460.61875	do	44	PF
460.625	do		PF
460.63125	do	44	PF
460.6375	do	27	PF
460.64375	do	44	PF
462.9375	do	57	PF
462.950	do	10, 65	PM
462.95625	do	10, 44, 65	PM
462.9625	do	27, 10, 65	PM
462.96875	do	10, 44, 65	PM
462.975	do	10, 65	PM
462.98125	do	10, 44, 65	PM
462.9875	do	27, 10, 65	PM
462.99375	do	10, 44, 65	PM
463.000	do	59, 66, 67	PM
463.00625	do	44, 59, 66, 67.	PM
463.0125	do	27, 59, 66, 67.	PM
463.01875	do	44, 59, 66, 67.	PM
463.025	do	59, 66, 67	PM
463.03125	do	44, 59, 66, 67.	PM
463.0375	do	27, 59, 66, 67.	PM
463.04375	do	44, 59, 66, 67.	PM

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
463.050	do	59, 66, 67	PM
463.05625	do	44, 59, 66, 67.	PM
463.0625	do	27, 59, 66, 67.	PM
463.06875	do	44, 59, 66, 67.	PM
463.075	do	59, 66, 76	PM
463.08125	do	44, 59, 66, 76.	PM
463.0875	do	27, 59, 66, 76.	PM
463.09375	do	44, 59, 66, 76.	PM
463.100	do	59, 66, 76	PM
463.10625	do	44, 59, 66, 76.	PM
463.1125	do	27, 59, 66, 76.	PM
463.11875	do	44, 59, 66, 76.	PM
463.125	do	59, 66, 76	PM
463.13125	do	44, 59, 66, 76.	PM
463.1375	do	27, 59, 66, 76.	PM
463.14375	do	44, 59, 66, 76.	PM
463.150	do	59, 66, 76	PM
463.15625	do	44, 59, 66, 76.	PM
463.1625	do	27, 59, 66, 76.	PM
463.16875	do	44, 59, 66, 76.	PM
463.175	do	59, 66, 76	PM
463.18125	do	44, 59, 66, 76.	PM
463.1875	do	27, 59, 66, 76.	PM
463.19375	do	44, 59, 66, 76.	PM
465.0125	Mobile	57	PP
465.025	do		PP
465.03125	do	44	PP
465.0375	do	27	PP
465.04375	do	44	PP
465.050	do		PP
465.05625	do	44	PP
465.0625	do	27	PP
465.06875	do	44	PP
465.075	do		PP
465.08125	do	44	PP
465.0875	do	27	PP
465.09375	do	44	PP
465.100	do		PP
465.10625	do	44	PP
465.1125	do	27	PP
465.11875	do	44	PP
465.125	do		PP
465.13125	do	44	PP
465.1375	do	27	PP
465.14375	do	44	PP
465.150	do		PP
465.15625	do	44	PP
465.1625	do	27	PP
465.16875	do	44	PP
465.175	do		PP
465.18125	do	44	PP
465.1875	do	27	PP

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
465.19375	do	44	PP
465.200	do		PP
465.20625	do	44	PP
465.2125	do	27	PP
465.21875	do	44	PP
465.225	do		PP
465.23125	do	44	PP
465.2375	do	27	PP
465.24375	do	44	PP
465.250	do		PP
465.25625	do	44	PP
465.2625	do	27	PP
465.26875	do	44	PP
465.275	do		PP
465.28125	do	44	PP
465.2875	do	27	PP
465.29375	do	44	PP
465.300	do		PP
465.30625	do	44	PP
465.3125	do	27	PP
465.31875	do	44	PP
465.325	do		PP
465.33125	do	44	PP
465.3375	do	27	PP
465.34375	do	44	PP
465.350	do		PP
465.35625	do	44	PP
465.3625	do	27	PP
465.36875	do	44	PP
465.375	do		PP
465.38125	do	44	PP
465.3875	do	27	PP
465.39375	do	44	PP
465.400	do		PP
465.40625	do	44	PP
465.4125	do	27	PP
465.41875	do	44	PP
465.425	do		PP
465.43125	do	44	PP
465.4375	do	27	PP
465.44375	do	44	PP
465.450	do		PP
465.45625	do	44	PP
465.4625	do	27	PP
465.46875	do	44	PP
465.475	do		PP
465.48125	do	44, 84	PP
465.4875	do	27, 84	PP
465.49375	do	44, 84	PP
465.500	do		PP
465.50625	do	44, 84	PP
465.5125	do	27, 84	PP
465.51875	do	44, 84	PP
465.525	do		PP, PF, PM
465.53125	do	44, 84	PP, PF, PM
465.5375	do	27, 84	PP, PF, PM
465.54375	do	44, 84	PP, PF, PM
465.550	Base or mobile		PP, PF, PM
465.55625	do	44, 84	PP, PF, PM
465.5625	do	27, 84	PP, PF, PM
465.56875	do	44, 84	PP, PF, PM
465.575	Mobile		PF

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
465.58125	do	44	PF
465.5875	do	27	PF
465.59375	do	44	PF
465.600	do		PF
465.60625	do	44	PF
465.6125	do	27	PF
465.61875	do	44	PF
465.625	do		PF
465.63125	do	44	PF
465.6375	do	27	PF
465.64375	do	44	PF
467.9375	do	57	PS
467.950	do	10, 65	PM
467.95625	do	10, 44, 65	PM
467.9625	do	10, 27, 65	PM
467.96875	do	10, 44, 65	PM
467.975	do	10, 65	PM
467.98125	do	10, 44, 65	PM
467.9875	do	10, 27, 65	PM
467.99375	do	10, 44, 65	PM
468.000	do	59, 66, 67	PM
468.00625	do	44, 59, 66, 67.	PM
468.0125	do	27, 59, 66, 67.	PM
468.01875	do	44, 59, 66, 67.	PM
468.025	do	59, 66, 67	PM
468.03125	do	44, 59, 66, 67.	PM
468.0375	do	27, 59, 66, 67.	PM
468.04375	do	44, 59, 66, 67.	PM
468.050	do	59, 66, 67	PM
468.05625	do	44, 59, 66, 67.	PM
468.0625	do	27, 59, 66, 67.	PM
468.06875	do	44, 59, 66, 67.	PM
468.075	do	59, 66, 76	PM
468.08125	do	44, 59, 66, 76.	PM
468.0875	do	27, 59, 66, 76.	PM
468.09375	do	44, 59, 66, 76.	PM
468.100	do	59, 66, 76	PM
468.10625	do	44, 59, 66, 76.	PM
468.1125	do	27, 59, 66, 76.	PM
468.11875	do	44, 59, 66, 76.	PM
468.125	do	59, 66, 76	PM
468.13125	do	44, 59, 66, 76.	PM
468.1375	do	27, 59, 66, 76.	PM
468.14375	do	44, 59, 66, 76.	PM
468.150	do	59, 66, 76	PM
468.15625	do	44, 59, 66, 76.	PM
468.1625	do	27, 59, 66, 76.	PM
468.16875	do	44, 59, 66, 76.	PM
468.175	do	59, 66, 76	PM

PUBLIC SAFETY POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
468.18125	.....do	44, 59, 66, 76.	PM
468.1875	.....do	27, 59, 66, 76.	PM
468.19375	.....do	44, 59, 66, 76.	PM
470 to 512	Base or mobile	68.	
758 to 775	Base, mobile	77	PX
788 to 805	Mobile	77	PX
806 to 817	.....do	69.	
851 to 862	Base or mobile	69	
928 and above	Operational fixed.	70.	
929 to 930	Base only	71.	
1,427 to 1,432	Base, mobile or operational fixed.	72.	
2,450 to 2,500	Base or mobile	73.	
4940 to 4990	Fixed, base or mobile.	85	
5850–5925	Base or mobile	86	Not applicable.
10,550 to 10,680.	.....do	74.	

(d) Explanation of assignment limitations appearing in the frequency table of paragraph (c)(3) of this section:

(1) This frequency is available for use by Travelers' Information Stations in accordance with § 90.242.

(2) The frequency is available for assignment only in accordance with a geographical assignment plan.

(3) Base stations operating on this frequency and rendering service to state police mobile units may be authorized to use a maximum output power in excess of the maximum indicated in § 90.205 but not in excess of 7500 watts: Provided, That such operation is secondary to other stations.

(4) The use of this frequency is on a secondary basis to any Canadian station.

(5) In addition to base and mobile stations, this frequency may be assigned to fixed stations on a secondary basis to base or mobile stations. Upon a showing of need, the use of a second frequency in the band 2505–3500 kHz may be made available to governmental entities through appropriate arrangements with Federal Government agencies for restricted area use on a shared basis with maximum power output, emission, and hours of operation determined on the basis of the technical conditions involved in using the selected frequency in the particular area.

(6) Only the central governments of the fifty individual States, the District of Columbia, and the insular areas of the Commonwealth of the Northern Mariana Islands, the Commonwealth of Puerto Rico, and the unincorporated territories of American Samoa, Guam and the United States Virgin Islands are eligible to be licensed to use this spectrum, and then only for disaster communications purposes. Licensees may not use this spectrum to provide operational communications circuits. See also, § 90.264.

(7) This frequency is shared with the Industrial/Business Pool.

(8) This frequency is available for assignment only in accordance with a geographical assignment plan. This frequency may be used for conservation activities on a secondary basis to any station using the frequency for forest fire prevention, detection, and suppression.

(9) This frequency is reserved primarily for assignment to state licensees. Assignments to other licensees will be made only where the frequency is required for coordinated operation with the State system to which the frequency is assigned. Any request for such assignment must be supported by a statement from the State system concerned, indicating that the assignment is necessary for coordination of activities.

(10) A licensee regularly conducting two-way communication operations on this frequency may, on a secondary basis, also transmit one-way alert-paging signals to ambulance and rescue squad personnel.

(11) The maximum output power of any transmitter authorized to operate on this frequency shall not exceed 10 watts.

(12) This frequency is available in this service only to persons eligible under the provisions of paragraph (a)(2)(v) of this section for operation of transmitters having a maximum power output of three watts using A1A, A1D, A2B, A2D, F1B, F1D, F2B, F2D, G1B, G1D, G2B, or G2D emission. This frequency is also available in the Industrial/Business Pool on a co-equal basis with the Public Safety licensees.

(13) This frequency will be assigned only for one-way paging communications to mobile receivers. Transmissions for the purpose of activating or controlling remote objects on this frequency are not authorized.

(14) The maximum output power of any transmitter authorized to operate on this frequency, after June 1, 1956, shall not exceed two watts. Licensees holding a valid authorization as of June 1, 1956, for base or mobile station operation on this frequency, with a power in excess of two watts, may continue to be authorized for such operation without regard to this power limitation.

(15) This frequency is reserved for assignment to stations for intersystem operations only: Provided, however, That licensees holding a valid authorization to use this frequency for local base or mobile operations as of June 1, 1956, may continue to be authorized for such use.

(16) This frequency is reserved primarily for assignment to state police licensees. Assignments to other police licensees will be made only where the frequency is required for coordinated operation with the state police system to which the frequency is assigned. Any request for such assignment must be supported by a statement from the state police system concerned indicating that the assignment is necessary for coordination of police activities.

(17) In the State of Alaska only, the frequency 42.40 MHz is available for assignment on a primary basis to stations in the Common Carrier Rural Radio Service utilizing meteor burst communications. The frequency may be used by private radio stations for meteor burst communications on a secondary, noninterference basis. Usage shall be in accordance with part 22 of this chapter or part 90. Stations utilizing meteor burst communications shall not cause harmful interference to stations of other radio services operating in accordance with the allocation table.

(18) No new licenses will be granted for one-way paging under §90.487 for use on this frequency after August 1, 1980. This frequency is available to persons eligible for station licenses under the provisions of paragraph (a)(2)(v) of this section on a co-equal basis with one-way paging users under §90.487 prior to August 1, 1985, and on a primary basis after August 1, 1985. Only A1A, A1D, A2B, A2D, F1B, F1D, F2B, F2D, G1B, G1D, G2B, G2D emissions and power not exceeding 10 watts will be authorized. Antennas having gain greater than 0 dBd will not be authorized. Transmissions shall not exceed two seconds duration.

(19) This frequency is reserved for assignment to stations in this service for intersystem operations only and these operations must be primarily base-mobile communications.

(20) In the State of Alaska only, the frequency 45.90 MHz is available for assignment on a primary basis to private land mobile radio stations utilizing meteor burst communications. The frequency may be used by common carrier stations for meteor burst communications on a secondary, noninterference basis. Usage shall be in accordance with part 22 of this chapter and part 90. Stations utilizing meteor burst communications shall not cause harmful interference to stations of other radio services operating in accordance with the allocation table.

(21) This frequency will be assigned only in accordance with a geographical assignment plan and is reserved primarily for assignment to Highway maintenance systems operated by states. The use of this frequency by other Highway maintenance licensees will be authorized only where such use is necessary to coordinate activities with the particular state to which the frequency is assigned. Any request for such use must be supported by a statement from the state concerned.

(22) Notwithstanding the provisions of paragraph (d)(21) of this section, this frequency may be used by any licensees in the Public Safety Pool without a separate license for the purpose of operating self-powered vehicle detectors for traffic control and safety purposes, on a secondary basis, in accordance with §90.269.

(23) Thus frequency is reserved for assignment only to national organizations eligible for disaster relief operations under paragraph (a)(2)(vii) of this section.

(24) Assignment and use of frequencies in the band 72–76 MHz are governed by § 90.257 for operational-fixed stations and by § 90.241 for emergency call box operations. Specific frequencies are listed at § 90.257(a)(1).

(25) This frequency is available to Public Safety Pool licensees for fire call box operations on a shared basis in Industrial/Business Pool. All communications on this frequency must be conducted with persons or organizations charged with specific fire protection responsibility. All operations on this frequency are subject to the provisions of § 90.257(b).

(26) Assignment of frequencies in this band are subject to the provisions of § 90.173. Licensees as of August 18, 1995 who operate systems in the 150–170 MHz band that are 2.5 kHz removed from regularly assignable frequencies may continue to operate on a secondary, non-interference basis after August 1, 2003.

(27) This frequency will be assigned with an authorized bandwidth not to exceed 11.25 kHz. In the 450–470 MHz band, secondary telemetry operations pursuant to § 90.238(e) will be authorized on this frequency.

(28) This frequency is not available for assignment in this service in Puerto Rico or the Virgin Islands.

(29) This frequency is removed by 22.5 kHz from frequencies assigned to other radio services. Utilization of this frequency may result in, as well as be subject to, interference under certain operating conditions. In considering the use of this frequency, adjacent channel operations should be taken into consideration. If interference occurs, the licensee may be required to take the necessary steps to resolve the problem. See § 90.173(b).

(30) This frequency will be authorized a channel bandwidth of 25 kHz.

(31) The maximum output power of any transmitter authorized to operate on this frequency shall not exceed 100 watts. Stations authorized prior to July 15, 1992 for fixed operations will be permitted to continue such operations, but at a maximum transmitter power output of 10 watts.

(32) The maximum effective radiated power (ERP) may not exceed 20 watts for fixed stations and 2 watts for mobile stations. The height of the antenna system may not exceed 15.24 meters (50 ft.) above ground. All such operation is on a secondary basis to adjacent channel land mobile operations.

(33) For FM transmitters, the sum of the highest modulating frequency in Hertz and the amount of the frequency deviation or swing in Hertz may not exceed 2800 Hz and the maximum deviation may not exceed 2.5 kHz. For AM transmitters, the highest modulation frequency may not exceed 2000 Hz. The carrier frequency must be maintained within .0005 percent of the center of the frequency band, and the authorized bandwidth may not exceed 6 kHz.

(34) This frequency is available on a shared basis with the Industrial/Business Pool for remote control and telemetry operations.

(35) Operational fixed stations must employ directional antennas having a front-to-back ratio of at least 20 dB. Omnidirectional antennas having unity gain may be employed for stations communicating with at least three receiving locations separated by 160 degrees of azimuth.

(36) The maximum power output of the transmitter may not exceed 50 watts for fixed stations and 1 watt for mobile stations. A1A, A1D, A2B, A2D, F1B, F1D, F2D, G1B, G1D, G2B, or G2D emission may be authorized.

(37) Use of this frequency is limited to stations located at least 120.7 km (75 miles) from the center of any urbanized area of 200,000 or more population (U.S. Census of Population 1970). Operation is on a secondary basis to licensees of the Industrial/Business Pool.

(38) [Reserved]

(39) In addition to other authorized uses, the use of F1B, F1D, F2B or F2D emission is permitted on this frequency for the operation of biomedical telemetry systems except in the following geographic locations:

(i) New York, N.Y.-Northeastern New Jersey; Los Angeles-Long Beach, Calif.; Chicago, Ill.-Northwestern Indiana; Philadelphia, Pa.-N.J.; Detroit, Mich.; San Francisco-Oakland, Calif.; Boston, Mass.; Washington, D.C.-Md.-Va.; Cleveland, Ohio; St. Louis, Mo.-Ill.; Pittsburgh, Pa.; Minneapolis-St. Paul, Minn.; Houston, Tex.; Baltimore, Md.; Dallas, Tex.; Milwaukee, Wis.; Seattle-

Everett, Wash.; Miami, Fla.; San Diego, Calif.; Atlanta, Ga.; Cincinnati, Ohio-Ky.; Kansas City, Mo.-Kans.; Buffalo, N.Y.; Denver, Colo.; San Jose, Calif.; New Orleans, La.; Phoenix, Ariz.; Portland, Oreg.-Wash.; Indianapolis, Ind.; Providence-Pawtucket-Warwick, R.I.-Mass.; Columbus, Ohio; San Antonio, Tex.; Louisville, Ky.-Ind.; Dayton, Ohio; Forth Worth, Tex.; Norfolk-Portsmouth, Va.; Memphis, Tenn.-Miss.; Sacramento, Calif.; Fort Lauderdale-Hollywood, Fla.; Rochester, N.Y.; Tampa-St. Petersburg, Fla;

(ii) The continuous carrier mode of operation may be used for telemetry transmissions on this frequency for periods up to two-minutes duration; following which there must be a break in the carrier for at least a one-minute period; and

(iii) Geographical coordinates for the above-listed urbanized areas may be found at Table 1 of § 90.635.

(40) This frequency may be designated by common consent as an intersystem mutual assistance frequency under an area-wide medical communications plan.

(41) This frequency is available nationwide for use in police emergency communications networks operated under statewide law enforcement emergency communications plans.

(42) This frequency may not be assigned within 161 km (100 miles) of New Orleans, La. (coordinates 29°56′53″ N and 90°04′10″ W).

(43) [Reserved]

(44) This frequency will be assigned with an authorized bandwidth not to exceed 6 kHz.

(45) Operations on this frequency are limited to 30 watts transmitter output power.

(46) This frequency is shared with the Industrial/Business Pool in Puerto Rico and the Virgin Islands.

(47) This frequency may be assigned to stations in the Public Safety Pool in accordance with the provisions of § 90.265.

(48) Frequencies in this band will be assigned only for transmitting hydrological or meteorological data or for low power wireless microphones in accordance with the provisions of § 90.265.

(49) This frequency may be assigned only for forest firefighting and conservation activities in accordance with the provisions of § 90.265.

(50)–(51) [Reserved]

(52) In addition to agencies responsible for forest fire prevention, detection, and suppression, this frequency may be assigned to conservation agencies which do not have forest fire responsibilities on a secondary basis to any U.S. Government stations, *Provided*, That such assignment is necessary to permit mobile relay operation by such agencies.

(53) This frequency is subject to the provisions of paragraph (e)(6) of this section.

(54) For FM transmitters, the sum of the highest modulating frequency in hertz and the amount of the frequency deviation or swing in hertz may not exceed 1700 Hz and the maximum deviation may not exceed 1.2 kHz. For AM transmitters, the highest modulating frequency may not exceed 1200 Hz. The carrier frequency must be maintained within .0005 percent of the center of the frequency band, and the authorized bandwidth may not exceed 3 kHz.

(55) Subpart T of this part contains rules for assignment of frequencies in the 220–222 MHz band.

(56) The frequencies available for use at fixed stations in this band and the requirements for assignment are set forth in § 90.261. Operation on these frequencies is secondary to stations in the Industrial/Business Pool where they are assigned for land mobile operations.

(57) This frequency is available for systems first licensed prior to August 18, 1995. No new systems will be authorized after August 18, 1995, but prior authorized systems may be modified, expanded, and renewed.

(58) This frequency is available for systems first licensed prior to March 31, 1980, for radio call box communications related to safety on highways in accordance with the provisions of § 90.241(c). No new systems will be authorized of this nature, but systems authorized prior to March 31, 1980 may be modified, expanded, and renewed.

(59) The continuous carrier mode of operation may be used for telemetry transmission on this frequency.

(60) Paging licensees as of March 20, 1991, may continue to operate on a primary basis until January 14, 1998.

(61) Highway radio call box operations first licensed prior to March 31, 1980 on this frequency may continue to operate in accordance with paragraph (d)(58) of this section.

(62) This frequency is also authorized for use by biomedical telemetry stations. F1B, F1D, F2B, F2D, F3E, G1B, G1D, G2B, G2D, and G3E emissions may be authorized for biomedical transmissions.

(63) Available for medical services mobile operations in the Public Safety Pool in accordance with paragraph (d)(61) of this section.

(64) Use of this frequency is on a secondary basis, limited to 2 watts output power and subject to the provisions of 90.267(h)(1), (h)(2), (h)(3), and (h)(4).

(65) This frequency is primarily authorized for use in the dispatch of medical care vehicles and personnel for the rendition or delivery of medical services. This frequency may also be assigned for intra-system and inter-system mutual assistance purposes. For uniformity in usage these frequency pairs may be referred to by channel name as follows:

Frequencies base and mobile (megahertz)	Mobile only (MHz)	Channel name
462.950	467.950	MED–9
462.95625	467.95625	MED–91
462.9625	467.9625	MED–92
462.96875	467.96875	MED–93
462.975	467.975	MED–10
462.98125	467.98125	MED–101
462.9875	467.9875	MED–102
462.99375	467.99375	MED–103

(66) For applications for new radio systems, the thirty-two frequency pairs listed in paragraph (d)(66)(i) of this section will be assigned in a block for shared operation under § 90.20(a)(1)(iii) or § 90.20(a)(2)(xiii) subject to the following:

(i) For uniformity in usage, these frequency pairs may be referred to by channel name as follows:

Frequencies base and mobile (megahertz)	Mobile only (MHz)	Channel name
463.000	468.000	MED–1
463.00625	468.00625	MED–11
463.0125	468.0125	MED–12
463.01875	468.01875	MED–13
463.025	468.025	MED–2
463.03125	468.03125	MED–21
463.0375	468.0375	MED–22
463.04375	468.04375	MED–23
463.050	468.050	MED–3
463.05625	468.05625	MED–31
463.0625	468.0625	MED–32
463.06875	468.06875	MED–33
463.075	468.075	MED–4
463.08125	468.08125	MED–41
463.0875	468.0875	MED–42
463.09375	468.09375	MED–43
463.100	468.100	MED–5
463.10625	468.10625	MED–51
463.1125	468.1125	MED–52
463.11875	468.11875	MED–53
463.125	468.125	MED–6
463.13125	468.13125	MED–61
463.1375	468.1375	MED–62
463.14375	468.14375	MED–63
463.150	468.150	MED–7
463.15625	468.15625	MED–71
463.1625	468.1625	MED–72
463.16875	468.16875	MED–73
463.175	468.175	MED–8
463.18125	468.18125	MED–81
463.1875	468.1875	MED–82
463.19375	468.19375	MED–83

(ii) Except as provided in paragraphs (d)(66)(iv) and (v) of this section, mobile or portable stations licensed prior to July 6, 2000, must employ equipment that is both wired and equipped to transmit/receive, respectively, on each of the following MED frequency pairs with transmitters operated on the 468 MHz frequencies: MED–1, MED–2, MED–3, MED–4, MED–5, MED–6, MED–7, and MED–8.

(iii) Except as provided in paragraphs (d)(66)(v) and (vi) of this section, mobile or portable stations licensed on or after July 6, 2000, must employ equipment that is both wired and equipped to transmit/receive, respectively, on each of the following MED frequency pairs with transmitters operated on the 468 MHz frequencies: MED–1, MED–12, MED–2, MED–22, MED–3, MED–32, MED–4, MED–42, MED–5, MED–52, MED–6 MED–62, MED–7, MED–72, MED–8, and MED–82.

(iv) Except as provided in paragraphs (d)(66)(v) and (vi) of this section, mobile or portable stations licensed on or after January 1, 2006, must employ equipment that is both wired and equipped to transmit/receive, respectively, on each of these MED frequency pairs with transmitters operated on the 468 MHz frequencies.

(v) Portable (hand-held) units operated with a maximum output power of 2.5 watts are exempted from the multi-

channel equipment requirements specified in paragraphs (d)(66)(ii), (d)(66)(iii), and (d)(66)(iv) of this section.

(vi) Stations located in areas above line A, as defined in § 90.7 will be required to meet multi-channel equipment requirements only for those frequencies up to the number specified in paragraphs (d)(66)(ii), (d)(66)(iii), and (d)(66)(iv) of this section that have been assigned and coordinates with Canada in accordance with the applicable U.S.-Canada agreement.

(67) This frequency is authorized for use only for operations in biomedical telemetry stations. F1B, F1D, F2B, F2D, F3E, G1B, G1D, G2B, G2D and G3E emissions may be authorized. Entities eligible in the Public Safety Pool may use this frequency on a secondary basis for any other permissible communications consistent with § 90.20(a)(1)(iii) or § 90.20(a)(2)(xiii).

(68) Subpart L of this part contains rules for assignment of frequencies in the 470–512 MHz band.

(69) Subpart S of this part contains rules for assignment of frequencies in the 806–817 MHz and 851–862 MHz bands.

(70) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by part 101 of this chapter.

(71) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.

(72) This frequency band is available to stations in this service subject to the provisions of § 90.259.

(73) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the band 2483.5–2500 MHz, no applications for new stations or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, and licensees whose initial applications were filed on or before July 25, 1985, are grandfathered and their operations are on a co-primary basis with the mobile-satellite and radiodetermination-satellite services, and in the segment 2495–2500 MHz, their operations are also on a co-primary basis with part 27 fixed and mobile except aeronautical mobile service operations.

(74) This band is available for Digital Termination Systems and for associated internodal links in the Point-to-Point Microwave Radio Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(75) Appropriate frequencies in the band 2000–3000 kHz which are designated in part 80 of this chapter as available to Public Ship Stations for telephone communications with Public Coast Stations may be assigned on a secondary basis to fixed Stations in the Public Safety Pool for communication with Public Coast Stations only, provided such stations are located in the United States and the following conditions are met:

(i) That such fixed station is established pursuant to the eligibility provisions of (§ 90.47) and that the isolated area involved is an island or other location not more than 480 km (300 statute miles) removed from the desired;

(ii) That evidence is submitted showing that an arrangement has been made with the coast station licensee for the handling of emergency communications permitted by § 80.453 of this chapter and § 90.20(a)(2)(x)(C); and

(iii) That operation of the Public Safety fixed station shall at no time conflict with any provision of part 80 of this chapter and further, that such operation in general shall conform to the practices employed by Public Ship Stations for radiotelephone communication with the same Public Coast Station.

(76) This frequency is authorized only for communications between medical facilities vehicles and personnel related to medical supervision and instruction for the treatment and transport of patients in the rendition or delivery of medical services. F1B, F1D, F2B, F2D, G1B, G1D, G2B, F3E and G3E emissions are authorized. Public Safety entities may use this frequency on a secondary basis for any other permissible communications consistent with § 90.20(a)(1)(iii) or § 90.20(a)(2)(xiii).

(77) Subpart R of this part contains rules for assignment of channels in the 758–775 MHz and 788–805 MHz bands.

(78) Paging operations are not permitted on this frequency.

(79) This frequency will be secondary to marine port operations within 161 km (100 miles) of Los Angeles, Calif. (coordinates 34°03′15″ N and 118°14′28″ W).

(80) After December 7, 2000 this frequency is available primarily for public safety interoperability only communications. Stations licensed prior to December 7, 2000 may continue to use this frequency on a co-primary basis until January 1, 2005. After January 1, 2005, all operations will be secondary to co-channel interoperability communications.

(81) After December 7, 2000 new stations will only be licensed with an authorized bandwidth not to exceed 1125 kHz. Licensees authorized prior to December 7, 2000 may continue to use bandwidths wider that 1125 kHz on a co-primary basis until January 1, 2005. After January 1, 2005, all stations operating with an authorized bandwidth greater than 11.25 kHz will be secondary to adjacent channel interoperability operations.

(82) This frequency is reserved for assignment only in support of, and on a secondary basis to, nationwide interoperability use.

(83) This interoperability frequency is dedicated for the express purpose of nationwide interoperability calling.

(84) Operation on this frequency is subject to the low power provisions of § 90.267. This frequency is assigned to the Public Safety Group in the low power pool.

(85) Subpart Y of this part contains rules for assignment of frequencies in the 4940–4990 MHz band.

(86) Subpart M of this part contains rules for assignment of frequencies in the 5850–5925 MHz band.

(87) The use the frequencies 150.775 MHz and 150.790 MHz are limited to a transmitter output power of 100 watts Effective Radiated Power (ERP) as of May 27, 2005.

(88) Use of this frequency is limited to stations licensed as of May 27, 2005.

(89) As of March 25, 2007, the FCC will cease to issue licenses for new stations in the fixed and mobile services in the following bands: 5900–5950 kHz, 7300–7350 kHz and 9400–9500 kHz. As of March 29, 2009, the FCC will cease to issue licenses for new stations in the fixed and mobile services in the band 7350–7400 kHz and, in the U.S. Pacific insular areas in Region 3, the band 7400–7450 kHz. Stations licensed as of March 25, 2007 in the bands 5900–5950 kHz, 7300–7350 kHz and 9400–9500 kHz and as of March 29, 2009 for the band 7350–7400 kHz in Region 2 and the band 7350–7450 kHz in Region 3 shall:

(1) Be limited to communications only within the United States and its insular areas;

(2) Not cause harmful interference to the broadcasting service;

(3) Be limited to the minimum power needed to achieve communications; and

(4) Take account of the seasonal use of frequencies by the broadcasting service published in accordance with Article 12 of the ITU *Radio Regulations*.

(e) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253.)

(1) Substitution of frequencies available below 25 MHz may be made in accordance with the provisions of § 90.263.

(2) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized their use on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted. See also § 90.257.

(3) [Reserved]

(4) Frequencies in the 421–430 MHz band are available in the Detroit, Mich., Cleveland, Ohio and Buffalo, N.Y. areas in accordance with the rules in §§ 90.273 through 90.281.

(5) A Police licensee may use transmitters on the frequencies indicated below in connection with official police activities without specific authorization from the Commission, provided that such use shall be on a secondary basis and shall not cause harmful interference to services of other licensees operating on regularly assigned frequencies, and further provided that all such use complies with the requirements of Federal, State and local laws. The provisions of § 90.429 shall not apply to transmitters authorized under this paragraph. To be eligible for operations in this manner, the transmitter

must comply with all of the following requirements.

(i) In accordance with §§ 90.203 and 2.803 of this chapter, the transmitter must be of a type which has been certificated by the Commission.

(ii) The carrier frequency shall be within the bands listed below and must be maintained within 0.005 percent of the frequency of operation. Use on assigned channel center frequencies is not required.

30.85–30.87 MHz	31.97–32.00 MHz
30.89–30.91 MHz	33.00–33.03 MHz
30.93–30.95 MHz	33.05–33.07 MHz
30.97–30.99 MHz	33.41–34.00 MHz
31.01–31.03 MHz	37.00–37.43 MHz
31.05–31.07 MHz	37.89–38.00 MHz
31.09–31.11 MHz	39.00–40.00 MHz
31.13–31.15 MHz	42.00–42.91 MHz
31.17–31.19 MHz	44.61–45.91 MHz
31.21–31.23 MHz	45.93–45.95 MHz
31.25–31.27 MHz	45.97–45.99 MHz
31.29–31.31 MHz	46.01–46.03 MHz
31.33–31.35 MHz	46.05–46.60 MHz
31.37–31.39 MHz	47.00–47.41 MHz
31.41–31.43 MHz	150.995–151.490 MHz
31.45–31.47 MHz	153.740–154.445 MHz
31.49–31.51 MHz	154.635–155.195 MHz
31.53–31.55 MHz	155.415–156.250 MHz
31.57–31.59 MHz	158.715–159.465 MHz
31.61–31.63 MHz	453.0125–453.9875 MHz
31.65–31.67 MHz	458.0125–458.9875 MHz
31.69–31.71 MHz	460.0125–460.5125 MHz
31.73–31.75 MHz	460.5625–460.6375 MHz
31.77–31.79 MHz	462.9375–462.9875 MHz
31.81–31.83 MHz	465.0125–465.5125 MHz
31.85–31.87 MHz	465.5625–465.6375 MHz
31.89–31.91 MHz	467.9375–467.9875 MHz
31.93–31.95 MHz	

(iii) The emitted signal shall be non-voice modulation (type PO emission).

(iv) The maximum occupied bandwidth, containing 99 percent of the radiated power, shall not exceed 2.0 kHz.

(v) The transmitter output power shall not exceed a mean power of 30 mW nor shall any peak exceed 1 watt peak power, as measured into a 50 ohm resistive load. Should the transmitter be supplied with a permanently attached antenna or should the transmitter and antenna combination be contained in a sealed unit, the following standard may be used in lieu of the above: the field strength of the fundamental signal of the transmitter and antenna combination shall not exceed 0.4 V/m mean or 2.3 V/m peak when measured at a distance of 3 meters.

(vi) The transmitter shall contain positive means to limit the transmission time to no more than 10 days. In the event of a malfunction of this positive means, the transmitter signal shall cease. The use of battery life to accomplish the transmission time limitation is permissible.

(6) The frequency 173.075 MHz is available for stolen vehicle recovery systems on a shared basis with Federal stations in the fixed and mobile services.

(i) Stolen vehicle recovery systems are limited to tracking and recovering vehicles, cargo, and hazardous materials that have been reported stolen or missing; missing or wanted persons; and individuals at risk, or individuals of interest to law enforcement, only when established boundaries are violated. Stolen vehicle recovery systems are not authorized for general purpose tracking or monitoring. Mobile units may also transmit automatic collision notifications, vehicle fire notifications, and carjacking alerts.

(ii) Any type of emission may be used within a maximum authorized bandwidth of 12.5 kHz, except that stations that operate as part of a stolen vehicle recovery system that was authorized and in operation prior to May 27, 2005 may operate with a maximum authorized bandwidth of 20 kHz until May 27, 2019. For a complete listing of emission symbols allowable under this part, see § 2.201 of this chapter.

(iii) Mobile transmitters operating on this frequency with emissions authorized in a maximum bandwidth of 12.5 kHz are limited to 5.0 watts power output. Mobile transmitters operating on this frequency with emissions authorized in a maximum bandwidth of 20 kHz are limited to 2.5 watts power output.

(iv) Base station transmitters operating on this frequency with emissions authorized in a maximum bandwidth of 12.5 kHz are limited to 300 watts ERP before February 18, 2009, and 500 watts ERP thereafter. Base station transmitters operating on this frequency with emissions authorized in a maximum bandwidth of 20 kHz are limited to 300 watts ERP.

(v) Transmissions from mobiles shall be limited to 400 milliseconds for every

10 seconds, except when a vehicle is being tracked actively transmissions are limited to 400 milliseconds for every second. Alternatively, transmissions from mobiles shall be limited to 7200 milliseconds for every 300 seconds with a maximum of six such messages in any 30 minute period.

(vi) Transmissions from base stations shall be limited to a total rate of five seconds every minute.

(vii) Any entity eligible to hold authorizations in the Public Safety Pool in accordance with §§ 90.20(a) and 90.111 of this chapter is authorized by this rule to operate mobile transmitters on this frequency. No license will be issued for mobile transmitters.

(viii) Applications for base stations operating on this frequency shall require coordination with the Federal Government. Applicants shall perform an analysis for each base station that is located within 169 km (105 miles) of a TV Channel 7 transmitter of potential interference to TV Channel 7 viewers. Applicants shall serve a copy of the analysis to the licensee of the affected TV Channel 7 transmitter upon filing the application with the Commission. Such base stations will be authorized if the applicant has limited the interference contour to include fewer than 100 residences or if the applicant:

(A) Shows that the proposed site is the only suitable location (which, at the application stage, requires a showing that the proposed site is especially well-suited to provide the proposed service);

(B) Develops a plan to control any interference caused to TV reception from operations; and

(C) Agrees to make such adjustments in the TV receivers affected as may be necessary to eliminate interference caused by its operations.

(ix) The licensee must eliminate any interference caused by its operation to TV Channel 7 reception within 30 days after notification in writing by the Commission. If this interference is not removed within this 30-day period, operation of the base station must be discontinued. The licensee is expected to help resolve all complaints of interference.

(7) Frequencies governed by § 90.35(c)(17).

(f) *Limitation on number of frequencies assignable.* Normally only two frequencies or pairs of frequencies in the paired frequency mode of operation will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with the operation of mobile repeaters in accordance with § 90.247 notwithstanding this limitation;

(2) The frequency 39.06 MHz may be assigned notwithstanding this limitation;

(3) Frequencies in the 25–50 MHz, 150–170 MHz, 450–512 MHz and 902–928 MHz bands may be assigned for the operation of Location and Monitoring Service (LMS) systems in accordance with the provisions of subpart M of this part, notwithstanding this limitation;

(4) A licensee of a radio station in this service may operate radio units for the purpose of determining distance, direction, speed, or position by means of a radiolocation device on any frequency available for radiolocation purposes without additional authorization from the Commission, provided type accepted equipment or equipment authorized pursuant to § 90.203(b)(4) and (b)(5) of this part is used, and all other rule provisions are satisfied. A licensee in this service may also operate, subject to all of the foregoing conditions and on a secondary basis, radio units at fixed locations and in emergency vehicles that transmit on the frequency 24.10 GHz, both unmodulated continuous wave radio signals and modulated FM digital signals for the purpose of alerting motorists to hazardous driving conditions or the presence of an emergency vehicle. Unattended and continuous operation of such transmitters will be permitted.

(5) A Police licensee may use, without special authorization from the Commission, any mobile service frequency between 40 and 952 MHz, listed in paragraph (c)(3) of this section, for communications in connection with physical surveillance, stakeouts, raids,

and other such activities. Such use shall be on a secondary basis to operations of licensees regularly authorized on the assigned frequencies. The maximum output power that may be used for such communications is 2 watts. Transmitters, operating under this provision of the rules, shall be exempted from the station identification requirements of §90.425. Use of frequencies not designated by a ''PP'' in the coordinator column of the frequency table in paragraph (c)(3) of this section, is conditional on the approval of the coordinator corresponding to each frequency. Spread spectrum transmitters may be operated on Public Safety Pool frequencies between 37 and 952 MHz, providing that they are certificated by the Commission under the provisions of §2.803 of this chapter and §90.203, and meet the following conditions:

(i) Frequency hopping transmitters can be operated, with a maximum output power of 2 watts, on any Public Safety Pool frequency between 37 and 952 MHz listed in paragraph (c)(3) of this section. At least 20 hopping frequencies shall be used and the average time of occupancy on any frequency shall not be greater than 1/10 second in every 2 seconds;

(ii) Use of spread spectrum transmitters under paragraph (f)(4) of this section is subject to approval by the applicable frequency coordinator of the radio services of the district in which the license and equipment are to be used; and

(iii) The use of direct sequence spread spectrum equipment is also permitted. Equipment must meet the technical standards of §15.247 of this chapter.

(6) In addition to the frequencies assigned for mobile service operation, one base station frequency above 152 MHz may be assigned as a common frequency to all licensees in a particular area to permit intersystem communication between base stations or mobile stations or both. This frequency use will not be authorized in any area where all available frequencies are required for independent systems.

(7) A licensee may use, without a specific authorization from the Commission, transmitters on the frequencies indicated below in connection with wildlife tracking and/or telemetry and in connection with official forestry-conservation activities, provided that such use shall be on a secondary basis and shall not cause harmful interference to services of other licensees operating on regularly assigned frequencies. The provisions of §§90.203, 90.425, and 90.429 shall not apply to transmitters complying with this paragraph. To be eligible for operations in this manner, the transmitter must comply with all of the following requirements.

(i) The carrier frequency shall be within the bands listed below. The carrier frequency must be maintained within 0.005 percent of the frequency of operation.

Use on assigned channel center frequencies is not required.

(MHz)

31.17 to 31.19	31.85 to 31.87
31.21 to 31.23	31.89 to 31.91
31.25 to 31.27	31.93 to 31.95
31.29 to 31.31	31.97 to 31.99
31.33 to 31.35	44.63 to 44.65
31.37 to 31.39	44.67 to 44.69
31.41 to 31.43	44.71 to 44.73
31.45 to 31.47	44.75 to 44.77
31.49 to 31.51	44.79 to 44.81
31.53 to 31.55	44.83 to 44.85
31.57 to 31.59	44.87 to 44.89
31.61 to 31.63	44.91 to 44.93
31.65 to 31.67	44.95 to 44.97
31.69 to 31.71	44.99 to 45.01
31.73 to 31.75	45.03 to 45.05
31.77 to 31.79	151.145 to 151.475
31.81 to 31.83	159.225 to 159.465

(ii) The emitted signal shall be non-voice modulation (A1D, A2D, F1D, or F2D emission).

(iii) The maximum occupied bandwidth, containing 99 percent of the radiated power, shall not exceed 0.25 kHz.

(iv) The transmitter output power shall not exceed a mean power of 5 mW nor shall any peak exceed 100 mW peak power, as measured into a permanently attached antenna; or if the transmitter and antenna combination are contained in a sealed unit, the field strength of the fundamental signal of the transmitter and antenna combination shall not exceed 0.29 V/m mean or 1.28 V/m peak when measured at a distance of 3 meters.

(v) The requirements of §90.175 regarding frequency coordination apply.

(8) An additional frequency may be assigned for paging operations from those frequencies available under paragraph (d)(13) of this section.

(9) The frequency 155.340 MHz may be assigned as an additional frequency when it is designated as a mutual assistance frequency as provided in paragraph (d)(40) of this section.

(10) Additional frequencies may be assigned for fixed station operations.

(11) The assignment of an additional frequency or frequencies may be authorized notwithstanding this limitation for common, intra-county, intra-fire-district, or intrastate fire coordination operations. The frequency or frequencies requested must be in accordance with a frequency utilization plan, for the area involved, on file with the Commission.

(g) *Former public correspondence working channel in the maritime VHF (156–162 MHz) band allocated for public safety use in 33 inland Economic Areas.* (1) We define service areas in the marine VHF (156–162 MHz) band by forty-two geographic areas called VHF Public Coast Service Areas (VPCSAs). See § 80.371(c)(1)(ii) of this chapter (Public correspondence frequencies). VPCSAs are based on, and composed of one or more of, the U.S. Department of Commerce's 172 Economic Areas (EAs). See 60 Fed Reg. 13114 (Mar. 10, 1995). You may inspect and copy maps of the EAs and VPCSAs at the FCC Reference Center, Room CY A–257, 445 12th St., SW., Washington, DC 20554. These maps and data are also available on the FCC website at *http://www.fcc.gov/oet/info/maps/areas/*. We number public correspondence channels in the maritime VHF (156–162 MHz) band as channels 24 to 28 and channels 84 to 88. Each channel number represents a channel pair. See § 80.371(c) of this chapter.

(2) In VHF Public Coast Service Areas (VPCSAs) 10–42, the duplex channel pair 157.250 MHz/161.850 MHz (VHF Maritime Channel 25) is allocated for public safety use by entities eligible for licensing under paragraph (a) of this section, and is designated primarily for the purpose of interoperability communications. *See* 47 CFR 80.371(c)(1)(ii) for the definitions of VPCSAs.

(i) The channel pair 157.250 MHz/161.850 MHz was formerly allocated and assigned (under § 80.371(c) (1997) of this chapter) as a public correspondence working channel in the maritime VHF 156–162 MHz band, and was also shared (under former § 90.283 (1997) of this chapter) with private land mobile stations, including grandfathered public safety licensees. Thus, there are grandfathered licensees nationwide (maritime and private land mobile radio stations, including by rule waiver) operating on this channel both inside and outside of VPCSAs 10–42.

(ii) The channel pairs 157.225 MHz/161.825 MHz and 157.275 MHz/161.875 MHz were formerly allocated and assigned under this section as public safety interoperability channels but were reallocated for assignment as VHF public coast station channels under § 80.371(c) of this chapter. Public safety operations licensed on these channels as of March 2, 2009 or licensed pursuant to an application filed prior to September 19, 2008, may remain authorized to operate on the channels on a primary basis until March 2, 2024.

(3) All applicants and licensees under this paragraph must comply with the relevant technical sections under this part unless otherwise stated in this paragraph (g) of this section using the following standards and procedures:

(i) Provide evidence of frequency coordination in accordance with § 90.175. Public safety coordinators except the Special Emergency Coordinator are certified to coordinate applications for the channel pair 157.250 MHz/161.850 MHz (*i.e.*, letter symbol PX under paragraph (c)(2) of this section).

(ii) Station power, as measured at the output terminals of the transmitter, must not exceed 50 Watts for base stations and 20 Watts for mobile stations, except in accordance with the provisions of paragraph (g)(3)(vi) of this section. Antenna height (HAAT) must not exceed 122 meters (400 feet) for base stations and 4.5 meters (15 feet) for mobile stations, except in accordance with paragraph (g)(3)(vi) of this section. Antenna height (HAAT) must not exceed 122 meters (400 feet) for base stations and 4.5 meters (15 feet) for mobile stations, except in accordance with paragraph (g)(3)(vi) of

this section. Such base and mobile channels shall not be operated on board aircraft in flight.

(iii) Frequency protection must be provided to other stations in accordance with the following guidelines for each channel and for each area and adjacent area:

(A) Protect coast stations licensed prior to July 6, 1998, by the required separations shown in Table C below.

(B) Protect stations described in paragraph (g)(2)(i) of this section, by frequency coordination in accordance §90.175 of this part.

(C) Protect public safety stations granted under paragraph (g) of this section by frequency coordination in accordance with §90.175 of this part.

(D) *Where the Public safety designated channel is not a Public safety designated channel in an adjacent VPCSA:* Applicants shall engineer base stations such that the maximum signal strength at the boundary of the adjacent VPCSA does not exceed 5dBμV/m.

(iv) The following table, along with the antenna height (HAAT) and power (ERP), must be used to determine the minimum separation required between proposed base stations and co-channel public coast stations licensed prior to July 6, 1998 under part 80 of this chapter. Applicants whose exact ERP or HAAT are not reflected in the table must use the next highest figure shown.

TABLE C—REQUIRED SEPARATION IN KILOMETERS (MILES) OF BASE STATION FROM PUBLIC COAST STATIONS

Base Station Characteristics					
HAAT	ERP (watts)				
Meters (feet)	400	300	200	100	50
15 (50)	138 (86)	135 (84)	129 (80)	129 (80)	116 (72)
30 (100)	154 (96)	151 (94)	145 (90)	137 (85)	130 (81)
61 (200)	166 (103)	167 (104)	161 (100)	153 (95)	145 (90)
122 (400)	187 (116)	177 (110)	183 (114)	169 (105)	159 (99)

(v) In the event of interference, the Commission may require, without a hearing, licensees of base stations authorized under this section that are located within 241 kilometers (150 miles) of a co-channel public coast, I/LT, or grandfathered public safety station licensed prior to July 6, 1998, or an international border, to reduce power, decrease antenna height, and/or install directional antennas.

Mobile stations must be operated only within radio range of their associated base station.

(vi) Applicants seeking to be licensed for stations exceeding the power/antenna height limits of the table in paragraph (g)(3)(iv) of this section must request a waiver of that paragraph and must submit with their application an interference analysis, based upon an appropriate, generally-accepted terrain-based propagation model, that shows that co-channel protected entities, described in paragraph (g)(3)(iii) of this section, would receive the same or greater interference protection than the relevant criteria outlined in paragraph (g)(3)(iii) of this section.

(h) *Spectrum leasing arrangements.* Notwithstanding any other provisions of this section to the contrary, licensees in the Public Safety Radio Services (*see* part 90, subpart B) may enter into spectrum leasing arrangements (*see* part 1, subpart X of this chapter) with entities providing communications in support of public safety operations.

[62 FR 18845, Apr. 17, 1997]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §90.20, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov.*

§90.22 Paging operations.

Unless specified elsewhere in this part, paging operations may be authorized in the Public Safety Pool on any frequency except those assigned under the provisions of §90.20(d)(78). Paging operations on frequencies subject to §90.20(d)(78) authorized before August

17, 1974, may be continued only if they do not cause harmful interference to regular operations on the same frequencies. Such paging operations may be renewed indefinitely on a secondary basis to regular operations, except within 125 km (75 mi) of the following urbanized areas:

Urbanized area	North latitude	West longitude
New York, NY-Northeastern NJ	40-45-06.4	73-59-37.5
Los Angeles-Long Beach, CA	34-03-15.0	118-14-31.3
Chicago, IL	41-52-28.1	87-38-22.2
Philadelphia, PA-NJ	39-56-58.4	75-09-19.6
Detroit, MI	42-19-48.1	83-02-56.7
San Francisco-Oakland, CA	37-46-38.7	122-24-43.9
Boston, MA	42-21-24.4	71-03-23.2
Washington, DC-MD-VA	38-53-51.4	77-00-31.9
Cleveland, OH	41-29-51.2	81-41-49.5
St Louis, MO-IL	38-37-45.2	90-12-22.4
Pittsburgh, PA	40-26-19.2	79-59-59.2
Minneapolis-St Paul, MN	44-58-56.9	93-15-43.8
Houston, TX	29-45-26.8	95-21-37.8
Baltimore, MD	39-17-26.4	76-36-43.9
Dallas, TX	32-47-09.5	96-47-38.0
Milwaukee, WI	43-02-19.0	87-54-15.3
Seattle-Everett, WA	47-36-31.4	122-20-16.5
Miami, FL	25-46-38.4	80-11-31.2
San Diego, CA	32-42-53.2	117-09-24.1
Atlanta, GA	33-45-10.4	84-23-36.7
Cincinnati, OH-KY	39-06-7.2	84-30-34.8
Kansas City, MO-KS	39-04-56.0	94-35-20.8
Buffalo, NY	42-52-52.2	78-52-20.1
Denver, CO	39-44-58.0	104-59-23.9

[63 FR 68959, Dec. 14, 1998, as amended at 64 FR 36262, July 6, 1999; 65 FR 60874, Oct. 13, 2000]

Subpart C—Industrial/Business Radio Pool

SOURCE: 62 FR 18874, Apr. 17, 1997, unless otherwise noted.

§ 90.31 Scope.

The Industrial/Business Radio Pool covers the licensing of the radio communications of entities engaged in commercial activities, engaged in clergy activities, operating educational, philanthropic, or ecclesiastical institutions, or operating hospitals, clinics, or medical associations. Rules as to eligibility for licensing, frequencies available, permissible communications and classes and number of stations, and any special requirements are set forth in the following sections.

§ 90.33 General eligibility.

(a) In addition to the eligibility shown in the Industrial/Business Pool, eligibility is also provided for any corporation proposing to furnish nonprofit radiocommunication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary. This corporate eligibility is not subject to the cooperative use provision of § 90.179.

(b) Eligibility is also provided for a nonprofit corporation or association that is organized for the purpose of furnishing a radiocommunications service to persons who meet the eligibility requirements of the Industrial/Business Pool. Such use is subject to the cooperative use provisions of § 90.179.

§ 90.35 Industrial/Business Pool.

(a) *Eligibility*. Persons primarily engaged in any of the following activities are eligible to hold authorizations in the Industrial/Business Pool to provide commercial mobile radio service as defined in part 20 of this chapter or to operate stations for transmission of communications necessary to such activities of the licensee:

(1) The operation of a commercial activity;

(2) The operation of educational, philanthropic, or ecclesiastical institutions;

(3) Clergy activities; or

(4) The operation of hospitals, clinics, or medical associations.

(5) Public Safety Pool eligibles are eligible for Industrial/Business Pool spectrum only to The extent that they are engaged in activities listed in paragraphs (a)(1) through (4) of this section. Industrial/Business Pool spectrum many not be utilized for the purposes set forth in § 90.20(a).

(b) *Industrial/Business Pool frequencies*. (1) The following table indicates frequencies available for assignment to Industrial/Business Pool stations, together with the class of station(s) to which they are normally assigned, the specific assignment limitations which are explained in paragraph (b) of this section, and the certified frequency coordinator for each frequency:

(2) Unless otherwise specified, coordination of frequencies in the Industrial/

Business pool must be done in accordance with the following:

(i) Unless specified elsewhere in this part, frequencies without any coordinator specified in the Coordinator column of paragraph (b)(3) of this section may be coordinated by any frequency coordinator certified in the Industrial/Business Pool.

(ii) A letter symbol in the Coordinator column of the frequency table in paragraph (b)(3) of this section designates the mandatory certified frequency coordinator for the associated frequency in the table. However, any coordinator certified in the Industrial/Business Pool may coordinate applications on such frequencies provided the prior written consent of the designated coordinator is obtained. Frequencies for which two coordinators are listed may be coordinated by either of the listed coordinators.

(iii) For frequencies above 150 MHz, applications for new or modified facilities on frequencies shared prior to radio service consolidation by the former Manufacturers Radio Service, the Forest Products Radio Service, the Power Radio Service, the Petroleum Radio Service, the Motor Carrier Radio Service, the Railroad Radio Service, the Telephone Maintenance Radio Service and the Automobile Emergency Radio Service may be coordinated by any certified Industrial/Business Pool coordinator. However, in the event that the interference contour of a proposed station would overlap the service contour of an existing station licensed on one of these previously shared frequencies, the written concurrence of the coordinator associated with the industry for which the existing station license was issued, or the written concurrence of the licensee of the existing station, shall be obtained. For the purposes of this § 90.35, the service contour for UHF stations is the 39 dBu contour; and the interference contour for UHF stations is the 21 dBu contour; the service contour for VHF stations is the 37 dBu contour; and the interference contour for VHF stations is the 19 dBu contour.

(iv) The letter symbols listed in the Coordinator column of the frequency table in paragraph (b)(3) of this section refer to specific frequency coordinators as follows:

IP—Petroleum Coordinator
IW—Power Coordinator
LR—Railroad Coordinator
LA—Automobile Emergency Coordinator

(3) *Frequencies.*

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE

Frequency or band	Class of station(s)	Limitations	Coordinator
Kilohertz			
2000 to 25,000	Fixed, base or mobile.	1, 90	
2292	Base or mobile	4, 5, 7.	
2398	do	5, 7.	
4637.5	do	5, 7.	
Megahertz			
25.02	do	3, 4	IP
25.04	do	8	IP
25.06	do	3, 4	IP
25.08	do	8, 9	IP
25.10	do	3, 4, 9	IP
25.12	do	9	IP
25.14	do	3, 4, 9	IP
25.16	do	9	IP
25.18	do	3, 4, 9	IP
25.20	do	9	IP
25.22	do	4, 7	IP
25.24	do		IP
25.26	do	4, 7	IP
25.28	do		IP
25.30	do	4, 7	IP
25.32	do		IP
27.43	do.		
27.45	do.		
27.47	do.		
27.49	do	10.	
27.51	Mobile	11.	
27.53	do	11.	
27.555	Base or mobile	89	
27.615	do	89	
27.635	do	89	
27.655	do	89	
27.765	do	89	
27.86	Base or mobile	89	
29.71	do		
29.73	do.		
29.75	do.		
29.77	do.		
29.79	do.		
30.58	do.		
30.60	do.		
30.62	do.		
30.64	do.		
30.66	do	4, 7.	
30.68	do.		
30.70	do	4, 7	IP
30.72	do.		
30.74	do	4, 7.	
30.76	do.		
30.78	do	4, 7	IP
30.80	do.		
30.82	do	4, 7.	
30.84	Mobile	11, 12.	
30.86	Base or mobile	13	
30.88	do.		
30.90	do	13.	
30.92	do.		

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
30.94	do	13.	
30.96	do.		
30.98	do	13.	
31.00	do.		
31.02	do	13.	
31.04	do.		
31.06	do	13.	
31.08	do.		
31.10	do	13.	
31.12	do.		
31.14	do	13.	
31.16	do.		
31.20	do.		
31.24	do.		
31.28	do.		
31.32	do.		
31.36	do.		
31.40	do.		
31.44	do.		
31.48	do.		
31.52	do.		
31.56	do.		
31.60	do.		
31.64	do.		
31.68	do.		
31.72	do.		
31.76	do.		
31.80	do.		
31.84	do.		
31.88	do.		
31.92	do.		
31.96	do.		
33.12	Mobile	11	
33.14	Mobile	11, 12.	
33.16	Base or mobile		
33.18	do		IP
33.20	do		IP
33.22	do		IP
33.24	do		IP
33.26	do		IP
33.28	do		IP
33.30	do		IP
33.32	do		IP
33.34	do		IP
33.36	do		IP
33.38	do		IP
33.40	Mobile	12, 14.	
35.02	do	11, 12, 13.	
35.04	Base or Mobile	10.	
35.06	do.		
35.08	do.		
35.10	do.		
35.12	do.		
35.14	do.		
35.16	do.		
35.18	do.		
35.28	do.		
35.32	do.		
35.36	do.		
35.40	do.		
35.44	do		
35.48	do		
35.52	do		
35.70	do.		
35.72	do.		
35.74	do.		
35.76	do.		
35.78	do.		
35.80	do.		
35.82	do.		

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
35.84	do.		
35.86	do.		
35.88	do.		
35.90	do.		
35.92	do.		
35.94	do.		
35.96	do.		
35.98	do.		
36.25	do	15	IP
37.44	do.		
37.46	do		IW
37.48	do		IW
37.50	do		IW
37.52	do		IW
37.54	do		IW
37.56	do		IW
37.58	do		IW
37.60	Base, mobile, or operational fixed.	16	IW
37.62	Base or mobile		IW
37.64	do		IW
37.66	do		IW
37.68	do		IW
37.70	do		IW
37.72	do		IW
37.74	do		IW
37.76	do		IW
37.78	do		IW
37.80	do		IW
37.82	do		IW
37.84	Base, mobile, or operational fixed.	16	IW
37.86	Base or mobile		IW
37.88	do.		
41.71	do	15	IP
42.96	do.		
42.98	Mobile	11, 12.	
43.00	Base or mobile		
43.02	do.		
43.04	do	17.	
43.06	do.		
43.08	do.		
43.10	do.		
43.12	do.		
43.14	do.		
43.16	Mobile.		
43.18	Base or mobile.		
43.28	do.		
43.32	do.		
43.36	do.		
43.40	do.		
43.44	do.		
43.48	do.		
43.52	do.		
43.70	do.		
43.72	do	18.	
43.74	do	18.	
43.76	do.		
43.78	do.		
43.80	do.		
43.82	do	18.	
43.84	do	18.	
43.86	do	19.	
43.88	do	19.	
43.90	do	19.	
43.92	do	18, 19.	
43.94	do	19.	
43.96	do	18.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
43.98	do.		
44.00	do.		
44.02	do.		
44.04	do.		
44.06	do.		
44.08	do.		
44.10	do	20.	
44.12	do	18.	
44.14	do.		
44.16	do	18.	
44.18	do	18.	
44.20	do	18, 21.	
44.22	do.		
44.24	do.		
44.26	do.		
44.28	do.		
44.30	do.		
44.32	do	18.	
44.34	do.		
44.36	do	18, 19.	
44.38	do	19.	
44.40	do	18, 19.	
44.42	do	19.	
44.44	do	19.	
44.46	do	18.	
44.48	do	18.	
44.50	do.		
44.52	do.		
44.54	do.		
44.56	do.		
44.58	do.		
44.60	do.		
47.44	do.		
47.48	do.		
47.52	do.		
47.56	do.		
47.60	do.		
47.64	do.		
47.68	do.		
47.70	do		IW
47.72	do		IW
47.74	do		IW
47.76	do		IW
47.78	do		IW
47.80	do		IW
47.82	do		IW
47.84	do		IW
47.86	do		IW
47.88	do		IW
47.90	do		IW
47.92	do		IW
47.94	do		IW
47.96	do		IW
47.98	do		IW
48.00	do		IW
48.02	do		IW
48.04	do		IW
48.06	do		IW
48.08	do		IW
48.10	do		IW
48.12	do		IW
48.14	do		IW
48.16	do		IW
48.18	do		IW
48.20	do		IW
48.22	do		IW
48.24	do		IW
48.26	do		IW
48.28	do		IW
48.30	do		IW

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
48.32	do		IW
48.34	do		IW
48.36	do		IW
48.38	do		IW
48.40	do		IW
48.42	do		IW
48.44	do		IW
48.46	do		IW
48.48	do		IW
48.50	do		IW
48.52	do		IW
48.54	do		IW
48.56	do.		
48.58	do.		
48.60	do.		
48.62	do.		
48.64	do.		
48.66	do.		
48.68	do.		
48.70	do.		
48.72	do.		
48.74	do.		
48.76	do	18.	
48.78	do.		
48.80	do.		
48.82	do.		
48.84	do	18.	
48.86	do	18.	
48.88	do.		
48.90	do.		
48.92	do	18.	
48.94	do.		
48.96	do.		
48.98	do.		
49.00	do.		
49.02	do	18.	
49.04	do.		
49.06	do.		
49.08	do	18.	
49.10	do	18.	
49.12	do.		
49.14	do.		
49.16	do	18.	
49.18	do.		
49.20	do	18.	
49.22	do.		
49.24	do	18.	
49.26	do	18.	
49.28	do	18.	
49.30	do.		
49.32	do.		
49.34	do.		
49.36	do	18.	
49.38	do.		
49.40	do	18.	
49.42	do.		
49.44	do.		
49.46	do	18.	
49.48	do.		
49.50	do	18.	
49.52	do.		
49.54	do.		
49.56	do.		
49.58	do.		
72 to 76	Operational fixed.	22.	
72.02	Mobile	23, 24.	
72.04	do	23, 24.	
72.06	do	23, 24.	
72.08	do	23, 24, 25.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
72.10	do	23, 24.	
72.12	do	23, 24.	
72.14	do	23, 24.	
72.16	do	23, 24, 25.	
72.18	do	23, 24.	
72.20	do	23, 24.	
72.22	do	23, 24.	
72.24	do	23, 24, 25.	
72.26	do	23, 24.	
72.28	do	23, 24.	
72.30	do	23, 24.	
72.32	do	23, 24, 25.	
72.34	do	23, 24.	
72.36	do	23, 24.	
72.38	do	23, 24.	
72.40	do	23, 24, 25.	
72.44	do	13, 24, 77.	
72.48	do	13, 24, 77.	
72.52	do	13, 24, 77.	
72.56	do	13, 24, 77.	
72.60	do	13, 24, 77.	
74.61	do	26, 77.	
74.63	do	26, 77.	
74.65	do	26, 77.	
74.67	do	26, 77.	
74.69	do	26, 77.	
74.71	do	26, 77.	
74.73	do	26, 77.	
74.75	do	26, 77.	
74.77	do	26, 77.	
74.79	do	26, 77.	
75.21	do	26, 77.	
75.23	do	26, 77.	
75.25	do	26, 77.	
75.27	do	26, 77.	
75.29	do	26, 77.	
75.31	do	26, 77.	
75.33	do	26, 77.	
75.35	do	26, 77.	
75.37	do	26, 77.	
75.39	do	26, 77.	
75.44	do	13, 24, 77.	
75.48	do	13, 24, 77.	
75.52	do	13, 24, 77.	
75.56	do	13, 24, 77.	
75.60	do	13, 24, 77.	
150 to 170	Base or mobile	27.	
150.815	do		LA
150.830	do	28, 29	LA
150.845	do		LA
150.8525	do	30	LA
150.860	do		LA
150.8675	do	30	LA
150.875	do		LA
150.8825	do	30	LA
150.890	do		LA
150.8975	do	30	LA
150.905	do		LA
150.920	do	28, 29	LA
150.935	do		LA
150.9425	do	30	LA
150.950	do		LA
150.9575	do	30	LA
150.965	do		LA
150.9725	do	30	LA
150.980	do	8	IP
150.9875	do	8, 30	IP
150.995	do	31.	
151.0025	do	30, 31	
151.010	do	31.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
151.0175	do	30, 31	
151.025	do	31.	
151.0325	do	30, 31	
151.040	do	31.	
151.0475	do	3031	
151.055	do	31.	
151.070	Base	28, 29, 31.	
151.085	Base or mobile	31.	
151.0925	do	30, 31	
151.100	do	31.	
151.1075	do	30, 31	
151.115	do	31.	
151.1225	do	30, 31	
151.130	do	31.	
151.1375	do	30, 31	
151.145	do	31.	
151.1525	do	30, 31	
151.160	do	31.	
151.1675	do	30, 31	
151.175	do	31.	
151.190	Base	28, 29, 31.	
151.205	Base or mobile	31.	
151.2125	do	30, 31	
151.220	do	31.	
151.2275	do	30, 31	
151.235	do	31.	
151.2425	do	30, 31	
151.250	do	31.	
151.2575	do	30, 31	
151.265	do	31.	
151.2725	do	30, 31	
151.280	do	31.	
151.2875	do	30, 31	
151.295	do	31.	
151.310	Base	28, 29, 31.	
151.325	Base or mobile	31.	
151.3325	do	30, 31	
151.340	do	31.	
151.3475	do	30, 31	
151.355	do	31.	
151.3625	do	30, 31	
151.370	do	31.	
151.3775	do	30, 31	
151.385	do	31.	
151.3925	do	30, 31	
151.400	do	31.	
151.4075	do	30, 31	
151.415	do	31.	
151.4225	do	30, 31	
151.430	do	31.	
151.4375	do	30, 31	
151.445	do	31.	
151.4525	do	30, 31	
151.460	do	31.	
151.4675	do	30, 31	
151.475	do	31.	
151.4825	do	30, 31	
151.490	do	13, 32.	
151.4975	do	30, 32	
151.505	do	17.	
151.5125	do	30, 17	
151.520	do.		
151.5275	do	30	
151.535	do.		
151.5425	do	30	
151.550	do.		
151.5575	do	30	
151.565	do.		
151.5725	do	30	
151.580	do.		

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
151.5875	do	30	
151.595	do.		
151.6025	do	30	
151.625	do	10.	
151.640	do	10, 33.	
151.6475	do	30	
151.655	do.		
151.6625	do	30	
151.670	do	30	
151.6775	do	30	
151.685	do.		
151.700	do	10, 30, 34.	
151.715	do.		
151.7225	do	30	
151.730	do	30	
151.7375	do	30	
151.745	do.		
151.760	do	10, 30, 34.	
151.775	do.		
151.7825	do	30	
151.790	do	30	
151.7975	do	30	
151.805	do.		
151.835	Base or mobile.		
151.8425	do	30	
151.850	do	30	
151.8575	do	30	
151.865	do.		
151.895	do		
151.9025	do	30	
151.910	do	30	
151.9175	do	30	
151.925	do.		
151.955	do		
151.9625	do	30	
151.970	do	30	
151.9775	do	30	
151.985	do.		
152.2625	do	33.	
152.270	do	6.	
152.2775	do	6, 30	
152.285	do	6.	
152.2925	do	6, 30	
152.300	do	6.	
152.3075	do	6, 30	
152.315	do	6.	
152.3225	do	6, 30	
152.330	do	6.	
152.3375	do	6, 30	
152.345	do	6.	
152.3525	do	6, 30	
152.360	do	6.	
152.3675	do	6, 30	
152.375	do	6.	
152.3825	do	6, 30	
152.390	do	6.	
152.3975	do	6, 30	
152.405	do	6.	
152.4125	do	6, 30	
152.420	do	6.	
152.4275	do	6, 30	
152.435	do	6.	
152.4425	do	6, 30	
152.450	do	6.	
152.4575	do	6, 30	
152.465	do	79.	
152.480	do	29, 36, 37, 38.	
152.8625	do	33.	
152.870	do		

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
152.8775	do	30	
152.885	do.		
152.8925	do	30	
152.900	do.		
152.9075	do	30	
152.915	do.		
152.9225	do	30	
152.930	do.		
152.9375	do	30	
152.945	do.		
152.9525	do	30	
152.960	do.		
152.9675	do	30	
152.975	do.		
152.9825	do	30	
152.990	do.		
152.9975	do	30	
153.005	do.		
153.0125	do	30	
153.020	do.		
153.0275	do	30	
153.035	do		IP
153.0425	do	30.	
153.050	do	4, 7	IP
153.0575	do	4, 7, 30.	
153.065	do		IP
153.0725	do	30.	
153.080	do	4, 7	IP
153.0875	do	4, 7, 30.	
153.095	do		IP
153.1025	do	30, 80.	
153.110	do	4, 7	IP
153.1175	do	4, 7, 30.	
153.125	do		IP
153.1325	do	30.	
153.140	do	4, 7	IP
153.1475	do	4, 7, 30.	
153.155	do		IP
153.1625	do	30.	
153.170	do	4, 7	IP
153.1775	do	4, 7, 30.	
153.185	do		IP
153.1925	do	30.	
153.200	do	4, 7	IP
153.2075	do	4, 7, 30.	
153.215	do		IP
153.2225	do	30.	
153.230	do	4, 7	IP
153.2375	do	4, 7, 30.	
153.245	do		IP
153.2525	do	30.	
153.260	do	4, 7	IP
153.2675	do	4, 7, 30.	
153.275	do		IP
153.2825	do	30.	
153.290	do	4, 7	IP
153.2975	do	4, 7, 30.	
153.305	do		IP
153.3125	do	30.	
153.320	do	4, 7	IP
153.3275	do	4, 7, 30.	
153.335	do		IP
153.3425	do	30.	
153.350	do	4, 7	IP
153.3575	do	4, 7, 30.	
153.365	do		IP
153.3725	do	30.	
153.380	do		IP
153.3875	do	30.	
153.395	do		IP

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
153.4025	do	30.	
153.410	do		IW
153.4175	do	30	IW
153.425	do	80	IP, IW
153.4325	do	30, 80	IP, IW
153.440	do	80	IP, IW
153.4475	do	30, 80	IP, IW
153.455	do	80	IP, IW
153.4625	do	30, 80	IP, IW
153.470	do		IW
153.4775	do	30	IW
153.485	do	80	IP, IW
153.4925	do	30, 80	IP, IW
153.500	do	80	IP, IW
153.5075	do	30, 80	IP, IW
153.515	do	80	IP, IW
153.5225	do	30, 80	IP, IW
153.530	do		IW
153.5375	do	30	IW
153.545	do	80	IP, IW
153.5525	do	30, 80	IP, IW
153.560		30, 80	IP, IW
153.5675	do	30, 80	IP, IW
153.575	do	80	IP, IW
153.5825	do	30, 80	IP, IW
153.590	do		IW
153.5975	do	30	IW
153.605	do	80	IP, IW
153.6125	do	30, 80	IP, IW
153.620	do	80	IP, IW
153.6275	do	30, 80	IP, IW
153.635	do	80	IP, IW
153.6425	do	30, 80	IP, IW
153.650	do		IW
153.6575	do	30	IW
153.665	do	80	IP, IW
153.6725	do	30, 80	IP, IW
153.680	do	80	IP, IW
153.6875	do	30, 80	IP, IW
153.695	do		IW
153.7025	do	30	IW
153.710	do		IW
153.7175	do	30	IW
153.725	do		IW
153.7325	do	30	IW
154.45625	Fixed or mobile	39, 40, 41, 42.	
154.46375	do	39, 40, 43.	
154.47125	do	39, 40, 41, 44.	
154.47875	do	39, 40, 41, 42.	
154.4825	Base or mobile	30	
154.490	do.		
154.4975	do	30	
154.505	do	30	
154.515	do.		
154.5275	Mobile	10, 30, 34	
154.540	Base or mobile.		
154.5475	do	30	
154.555	do	33.	
154.585	Mobile	8, 46	IP
154.610	Base or mobile	33.	
154.625	do	36, 37, 48.	
154.640	Base	36, 37, 48.	
157.470	Base or mobile	12	LA
157.4775	do	12, 30	LA
157.485	do	12	LA
157.4925	do	12, 30	LA

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
157.500	do	12	LA
157.5075	do	12, 30	LA
157.515	do	12	LA
157.5225	do	12, 30	LA
157.530	Mobile	6.	
157.5375	do	6, 30	
157.545	do	6.	
157.5525	do	6, 30	
157.560	Base or mobile	6.	
157.5675	do	6, 30	
157.575	Mobile	6.	
157.5825	do	6, 30	
157.590	do	6.	
157.5975	do	6, 30	
157.605	do	6.	
157.6125	do	6, 30	
157.620	Base or mobile	6.	
157.6275	do	6, 30	
157.635	Mobile	6.	
157.6425	do	6, 30	
157.650	do	6.	
157.6575	do	6, 30	
157.665	do	6.	
157.6725	do	6, 30	
157.680	do	6.	
157.6875	do	6, 30	
157.695	do	6.	
157.7025	do	6, 30	
157.710	do	6.	
157.7175	do	6, 30	
157.725	Base or mobile	79.	
157.740	do	29, 36, 37, 38.	
158.1225	do	33	IW
158.130	do		IW
158.1375	do	6, 30	IW
158.145	do		IP, IW
158.1525	do	6, 30	IP, IW
158.160	do		IP, IW
158.1675	do	6, 30	IP, IW
158.175	do	81	IP, IW
158.1825	do	30, 81	IP, IW
158.190	do		IW
158.1975	do	30	IW
158.205	do	81	IP, IW
158.2125	do	30, 81	IP, IW
158.220	do	81	IP, IW
158.2275	do	30, 81	IP, IW
158.235	do	81	IP, IW
158.2425	do	30, 81	IP, IW
158.250	do		IW
158.2575	do	30	IW
158.265	do	81	IP, IW
158.2725	do	30, 81	IP, IW
158.280	do		IP
158.2875	do	30	IP
158.295	do		IP
158.3025	do	30	IP
158.310	do	4, 7	IP
158.3175	do	4, 7, 30	IP
158.325	do		IP
158.3325	do	30	IP
158.340	Mobile.		
158.3475	do	30	
158.355	Base or mobile		IP
158.3625	do	30	IP
158.370	do	4, 7	IP
158.3775	do	4, 7, 30	IP
158.385	do.		
158.3925	do	30	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
158.400	do	17.	
158.4075	do	17, 30	
158.415	do		IP
158.4225	do	30	IP
158.430	do	4, 7	IP
158.4375	do	4, 7, 30	IP
158.445	Mobile	8, 49	IP
158.460	Base or mobile	29, 36, 37, 38, 48.	
159.480	do	8, 82	IP
159.4875	do	8, 30	IP
159.495	do.		
159.5025	do	30	
159.510	do.		
159.5175	do	30	
159.525	do.		
159.5325	do	30	
159.540	do.		
159.5475	do	30	
159.555	do.		
159.5625	do	30	
159.570	do.		
159.5775	do	30	
159.585	do.		
159.5925	do	30	
159.600	do.		
159.6075	do	30	
159.615	do.		
159.6225	do	30	
159.630	do.		
159.6375	do	30	
159.645	do.		
159.6525	do	30	
159.660	do.		
159.6675	do	30	
159.675	do.		
159.6825	do	30	
159.690	do.		
159.6975	do	30	
159.705	do.		
159.7125	do	30	
159.720	do.		
159.7275	do	30	
159.735	do.		
159.7425	do	30	
159.750	do.		
159.7575	do	30	
159.765	do.		
159.7725	do	30	
159.780	do.		
159.7875	do	30	
159.795	do.		
159.8025	do	30	
159.810	do.		
159.8175	do	30	
159.825	do.		
159.8325	do	30	
159.840	do.		
159.8475	do	30	
159.855	do.		
159.8625	do	30	
159.870	do.		
159.8775	do	30	
159.885	do.		
159.8925	do	30	
159.900	do.		
159.9075	do	30	
159.915	do.		
159.9225	do	30	
159.930	do.		

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
159.9375	do	30	
159.945	do.		
159.9525	do	30	
159.960	do.		
159.9675	do	30	
159.975	do.		
159.9825	do	30	
159.990	do.		
159.9975	do	30	
160.005	do.		
160.0125	do	30	
160.020	do.		
160.0275	do	30	
160.035	do.		
160.0425	do	30	
160.050	do.		
160.0575	do	30	
160.065	do.		
160.0725	do	30	
160.080	do.		
160.0875	do	30	
160.095	do.		
160.1025	do	30	
160.110	do.		
160.1175	do	30	
160.125	do.		
160.1325	do	30	
160.140	do.		
160.1475	do	30	
160.155	do.		
160.1625	do	30	
160.170	do.		
160.1775	do	30	
160.185	do.		
160.1925	do	30	
160.200	do.		
160.2075	do	30	
160.215	do	50	LR
160.2225	do	30, 50	LR
160.230	do	50	LR
160.2375	do	30, 50	LR
160.245	do	50	LR
160.2525	do	30, 50	LR
160.260	do	50	LR
160.2675	do	30, 50	LR
160.275	do	50	LR
160.2825	do	30, 50	LR
160.290	do	50	LR
160.2975	do	30, 50	LR
160.305	do	50	LR
160.3125	do	30, 50	LR
160.320	do	50	LR
160.3275	do	30, 50	LR
160.335	do	50	LR
160.3425	do	30, 50	LR
160.350	do	50	LR
160.3575	do	30, 50	LR
160.365	do	50	LR
160.3725	do	30, 50	LR
160.380	do	50	LR
160.3875	do	30, 50	LR
160.395	do	50	LR
160.4025	do	30, 50	LR
160.410	do	50, 52	LR
160.4175	do	30, 50, 52	LR
160.425	do	50, 52	LR
160.4325	do	30, 50, 52	LR
160.440	do	50, 52	LR
160.4475	do	30, 50, 52	LR
160.455	do	50, 52	LR

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
160.4625	do	30, 50, 52	LR
160.470	do	50, 52	LR
160.4775	do	30, 50, 52	LR
160.485	do	50, 52	LR
160.4925	do	30, 50, 52	LR
160.500	do	50, 52	LR
160.5075	do	30, 50, 52	LR
160.515	do	50, 52	LR
160.5225	do	30, 50, 52	LR
160.530	do	50, 52	LR
160.5375	do	30, 50, 52	LR
160.545	do	50, 52	LR
160.5525	do	30, 50, 52	LR
160.560	do	50, 52	LR
160.5675	do	30, 50, 52	LR
160.575	do	50, 52	LR
160.5825	do	30, 50, 52	LR
160.590	do	50, 52	LR
160.5975	do	30, 50, 52	LR
160.605	do	50, 52	LR
160.6125	do	30, 50, 52	LR
160.620	do	50	LR
160.6275	do	30, 50	LR
160.635	do	50	LR
160.6425	do	30, 50	LR
160.650	do	50	LR
160.6575	do	30, 50	LR
160.665	do	50	LR
160.6725	do	30, 50	LR
160.680	do	50	LR
160.6875	do	30, 50	LR
160.695	do	50	LR
160.7025	do	30, 50	LR
160.710	do	50	LR
160.7175	do	30, 50	LR
160.725	do	50	LR
160.7325	do	30, 50	LR
160.740	do	50	LR
160.7475	do	30, 50	LR
160.755	do	50	LR
160.7625	do	30, 50	LR
160.770	do	50	LR
160.7775	do	30, 50	LR
160.785	do	50	LR
160.7925	do	30, 50	LR
160.800	do	50	LR
160.8075	do	30, 50	LR
160.815	do	50	LR
160.8225	do	30, 50	LR
160.830	do	50	LR
160.8375	do	30, 50	LR
160.845	do	50	LR
160.8525	do	30, 50	LR
160.860	do	50, 51	LR
160.8675	do	30, 50, 51	LR
160.875	do	50, 51	LR
160.8825	do	30, 50, 51	LR
160.890	do	50, 51	LR
160.8975	do	30, 50, 51	LR
160.905	do	50, 51	LR
160.9125	do	30, 50, 51	LR
160.920	do	50, 51	LR
160.9275	do	30, 50, 51	LR
160.935	do	50, 51	LR
160.9425	do	30, 50, 51	LR
160.950	do	50, 51	LR
160.9575	do	30, 50, 51	LR
160.965	do	50, 51	LR
160.9725	do	30, 50, 51	LR
160.980	do	50, 51	LR

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
160.9875	do	30, 50, 51	LR
160.995	do	50, 51	LR
161.0025	do	30, 50, 51	LR
161.010	do	50, 51	LR
161.0175	do	30, 50, 51	LR
161.025	do	50, 51	LR
161.0325	do	30, 50, 51	LR
161.040	do	50, 51	LR
161.0475	do	30, 50, 51	LR
161.055	do	50, 51	LR
161.0625	do	30, 50, 51	LR
161.070	do	50, 51	LR
161.0775	do	30, 50, 51	LR
161.085	do	50, 51	LR
161.0925	do	30, 50, 51	LR
161.100	do	50, 51	LR
161.1075	do	30, 50, 51	LR
161.115	do	50, 51	LR
161.1225	do	30, 50, 51	LR
161.130	do	50, 51	LR
161.1375	do	30, 50, 51	LR
161.145	do	50, 51	LR
161.1525	do	30, 50, 51	LR
161.160	do	50, 51	LR
161.1675	do	30, 50, 51	LR
161.175	do	50, 51	LR
161.1825	do	30, 50, 51	LR
161.190	do	50, 51	LR
161.1975	do	30, 50, 51	LR
161.205	do	50, 51	LR
161.2125	do	30, 50, 51	LR
161.220	do	50, 51	LR
161.2275	do	30, 50, 51	LR
161.235	do	50, 51	LR
161.2425	do	30, 50, 51	LR
161.250	do	50, 51	LR
161.2575	do	30, 50, 51	LR
161.265	do	50, 51	LR
161.2725	do	30, 50, 51	LR
161.280	do	50, 51	LR
161.2875	do	30, 50, 51	LR
161.295	do	50, 51	LR
161.3025	do	30, 50, 51	LR
161.310	do	50, 51	LR
161.3175	do	30, 50, 51	LR
161.325	do	50, 51	LR
161.3325	do	30, 50, 51	LR
161.340	do	50, 51	LR
161.3475	do	30, 50, 51	LR
161.355	do	50, 51	LR
161.3625	do	30, 50, 51	LR
161.370	do	50, 51	LR
161.3775	do	30, 50, 51	LR
161.385	do	50, 52	LR
161.3925	do	30, 50, 52	LR
161.400	do	50, 52	LR
161.4075	do	30, 50, 52	LR
161.415	do	50, 52	LR
161.4225	do	30, 50, 52	LR
161.430	do	50, 52	LR
161.4375	do	30, 50, 52	LR
161.445	do	50, 52	LR
161.4525	do	30, 50, 52	LR
161.460	do	50, 52	LR
161.4675	do	30, 50, 52	LR
161.475	do	50, 52	LR
161.4825	do	30, 50, 52	LR
161.490	do	50, 52	LR
161.4975	do	30, 50, 52	LR
161.505	do	50, 52	LR

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
161.5125	do	30, 50, 52	LR
161.520	do	50, 52	LR
161.5275	do	30, 50, 52	LR
161.535	do	50, 52	LR
161.5425	do	30, 50, 52	LR
161.550	do	50, 52	LR
161.5575	do	30, 50, 52	LR
161.565	do	50, 52	LR
161.610	do	78	LR
169 to 172	Mobile, operational fixed.	53.	
173.20375	Fixed or mobile	39, 40, 41, 44.	
173.210	do	40, 41, 44, 54.	
173.225	Base or mobile.		
173.2375	Fixed or mobile	39, 40, 41, 42.	
173.250	Base or mobile		IP, IW
173.2625	Fixed or mobile	39, 40, 41, 42.	
173.275	Base or mobile.		
173.2875	Fixed or mobile	39, 40, 41, 42.	
173.300	Base or mobile		IP, IW
173.3125	Fixed or mobile	39, 40, 41, 42.	
173.325	Base or mobile.		
173.3375	Fixed or mobile	39, 40, 41, 42.	
173.350	Base or mobile		
173.3625	Fixed or mobile	39, 40, 41, 42.	
173.375	Base or mobile.		
173.390	Fixed or mobile	40, 41, 44, 54.	
173.39625	do	39, 40, 41, 44.	
216 to 217	Base or mobile	55	
217 to 220	Base, mobile, or operational fixed.	55	
220 to 222	Base or mobile		
406 to 416	Operational fixed.	53.	
450 to 470	Fixed, base, or mobile.	27, 57.	
451.01875	Base or mobile	33	IW
451.025	do		IW
451.03125	do	33	IW
451.0375	do	30	IW
451.04375	do	33	IW
451.050	do		IW
451.05625	do	33	IW
451.0625	do	30	IW
451.06875	do	33	IW
451.075	do		IW
451.08125	do	33	IW
451.0875	do	30	IW
451.09375	do	33	IW
451.100	do		IW
451.10625	do	33	IW
451.1125	do	30	IW
451.11875	do	33	IW
451.125	do		IW
451.13125	do	33	IW
451.1375	do	30	IW
451.14375	do	33	IW
451.150	do		IW
451.15625	do	33	IW

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
451.1625	do	30	IW
451.16875	do	33	IW
451.175	do		IP, IW
451.18125	do	33, 84.	
451.1875	do	30, 84.	
451.19375	do	33, 84.	
451.200	do		IW
451.20625	do	33	IW
451.2125	do	30	IW
451.21875	do	33	IW
451.225	do		IP, IW
451.23125	do	33, 84.	
451.2375	do	30, 84.	
451.24375	do	33, 84.	
451.250	do		IW
451.25625	do	33	IW
451.2625	do	30	IW
451.26875	do	33	IW
451.275	do		IP, IW
451.28125	do	33, 84.	
451.2875	do	30, 84.	
451.29375	do	33, 84.	
451.300	do.		
451.30625	do	33, 84.	
451.3125	do	30, 84.	
451.31875	do	33, 84.	
451.325	do.		
451.33125	do	33, 84.	
451.3375	do	30, 84.	
451.34375	do	33, 84.	
451.350	do.		
451.35625	do	33, 84.	
451.3625	do	30, 84.	
451.36875	do	33, 84.	
451.375	do		IP, IW
451.38125	do	33, 84.	
451.3875	do	30, 84.	
451.39375	do	33, 84.	
451.400	do.		
451.40625	do	33, 84.	
451.4125	do	30, 84.	
451.41875	do	33, 84.	
451.425	do		IP, IW
451.43125	do	33, 84.	
451.4375	do	30, 84.	
451.44375	do	33, 84.	
451.450	do.		
451.45625	do	33, 84.	
451.4625	do	30, 84.	
451.46875	do	33, 84.	
451.475	do		IP, IW
451.48125	do	33, 84.	
451.4875	do	30, 84.	
451.49375	do	33, 84.	
451.500	do.		
451.50625	do	33, 84.	
451.5125	do	30, 84.	
451.51875	do	33, 84.	
451.525	do		IP, IW
451.53125	do	33, 84.	
451.5375	do	30, 84.	
451.54375	do	33, 84.	
451.550	do	4, 7	IP
451.55625	do	4, 7, 33, 84.	
451.5625	do	4, 7, 30, 84.	
451.56875	do	4, 7, 33, 84.	
451.575	do		IP, IW

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
451.58125	do	33, 84.	
451.5875	do	30, 84.	
451.59375	do	33, 84.	
451.600	do	4, 7	IP
451.60625	do	4, 7, 33, 84.	
451.6125	do	4, 7, 30, 84.	
451.61875	do	4, 7, 33, 84.	
451.625	do		IP, IW
451.63125	do	33, 84.	
451.6375	do	30, 84.	
451.64375	do	33, 84.	
451.650	do	4, 7	IP
451.65625	do	4, 7, 33, 84.	
451.6625	do	4, 7, 30, 84.	
451.66875	do	4, 7, 33, 84.	
451.675	do		IP, IW
451.68125	do	33, 84.	
451.6875	do	30, 84.	
451.69375	do	33, 84.	
451.700	do	4, 7	IP
451.70625	do	4, 7, 33, 84.	
451.7125	do	4, 7, 30, 84.	
451.71875	do	4, 7, 33, 84.	
451.725	do.		
451.73125	do	33, 84.	
451.7375	do	30, 84.	
451.74375	do	33, 84.	
451.750	do	4, 7	IP
451.75625	do	4, 7, 33, 84.	
451.7625	do	4, 7, 30, 84.	
451.76875	do	4, 7, 33, 84.	
451.775	do.		
451.78125	do	33.	
451.7875	do	30.	
451.79375	do	33.	
451.800	Base, mobile, or operational fixed.	17, 58.	
451.80625	do	17, 33, 58.	
451.8125	do	17, 30, 58.	
451.81875	do	17, 33, 58.	
451.825	Base or mobile.		
451.83125	do	33.	
451.8375	do	30.	
451.84375	do	33.	
451.850	do.		
451.85625	do	33.	
451.8625	do	30.	
451.86875	do	33.	
451.875	do.		
451.88125	do	33.	
451.8875	do	30.	
451.89375	do	33.	
451.900	do.		
451.90625	do	33.	
451.9125	do	30.	
451.91875	do	33.	
451.925	do.		

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
451.93125	do	33.	
451.9375	do	30.	
451.94375	do	33.	
451.950	do.		
451.95625	do	33.	
451.9625	do	30.	
451.96875	do	33.	
451.975	do.		
451.98125	do	33.	
451.9875	do	30.	
451.99375	do	33.	
452.000	do.		
452.00625	do	33.	
452.0125	do	30.	
452.01875	do	33.	
452.025	do.		
452.03125	do	33, 84.	
452.0375	do	30, 84.	
452.04375	do	33, 84.	
452.050	do.		
452.05625	do	33, 84.	
452.0625	do	30, 84.	
452.06875	do	33, 84.	
452.075	do.		
452.08125	do	33, 84.	
452.0875	do	30, 84.	
452.09375	do	33, 84.	
452.100	do.		
452.10625	do	33, 84.	
452.1125	do	30, 84.	
452.11875	do	33, 84.	
452.125	do.		
452.13125	do	33, 84.	
452.1375	do	30, 84.	
452.14375	do	33, 84.	
452.150	do.		
452.15625	do	33, 84.	
452.1625	do	30, 84.	
452.16875	do	33, 84.	
452.175	do.		
452.18125	do	33, 84.	
452.1875	do	30, 84.	
452.19375	do	33, 84.	
452.200	do.		
452.20625	do	33.	
452.2125	do	30.	
452.21875	do	33.	
452.225	do		
452.23125	do	33.	
452.2375	do	30.	
452.24375	do	33.	
452.250	do.		
452.25625	do	33.	
452.2625	do	30.	
452.26875	do	33.	
452.275	do.		
452.28125	do	33, 84.	
452.2875	do	30, 84.	
452.29375	do	33, 84.	
452.300	do.		
452.30625	do	33, 84.	
452.3125	do	30, 84.	
452.31875	do	33, 84.	
452.325	do		LR
452.33125	do	33.	
452.3375	do	30.	
452.34375	do	33.	
452.350	do.		
452.35625	do	33.	
452.3625	do	30.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
452.36875	do	33.	
452.375	do		LR
452.38125	do	33.	
452.3875	do	30.	
452.39375	do	33.	
452.400	do.		
452.40625	do	33, 84.	
452.4125	do	30, 84.	
452.41875	do	33, 84.	
452.425	do		LR
452.43125	do	33.	
452.4375	do	30.	
452.44375	do	33.	
452.450	do.		
452.45625	do	33.	
452.4625	do	30.	
452.46875	do	33.	
452.475	do		LR
452.48125	do	33, 84.	
452.4875	do	30, 84.	
452.49375	do	33, 84.	
452.500	do.		
452.50625	do	33, 84.	
452.5125	do	30, 84.	
452.51875	do	33, 84.	
452.525	do		LA
452.53125	do	33, 84	LA
452.5375	do	30, 84	LA
452.54375	do	33, 84	LA
452.550	do		LA
452.55625	do	33	LA
452.5625	do	30	LA
452.56875	do	33	LA
452.575	do		LA
452.58125	do	33	LA
452.5875	do	30	LA
452.59375	do	33	LA
452.600	do		LA
452.60625	do	33	LA
452.6125	do	30	LA
452.61875	do	33	LA
452.625	do.		
452.63125	do	33, 84.	
452.6375	do	30, 84.	
452.64375	do	33, 84.	
452.650	do.		
452.65625	do	33, 84.	
452.6625	do	30, 84.	
452.66875	do	33, 84.	
452.675	do.		
452.68125	do	33, 84.	
452.6875	do	30, 84.	
452.69375	do	33, 84.	
452.700	do.		
452.70625	do	33, 84.	
452.7125	do	30, 84.	
452.71875	do	33, 84.	
452.725	do.		
452.73125	do	33.	
452.7375	do	30.	
452.74375	do	33.	
452.750	do.		
452.75625	do	33, 84.	
452.7625	do	30, 84.	
452.76875	do	33, 84.	
452.775	do		LR
452.78125	do	33, 84.	
452.7875	do	30, 84.	
452.79375	do	33, 84.	
452.800	do.		

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
452.80625	do	33, 84.	
452.8125	do	30, 84.	
452.81875	do	33, 84.	
452.825	do		LR
452.83125	do	33, 84.	
452.8375	do	30, 84.	
452.84375	do	33, 84.	
452.850	do.		
452.85625	do	33, 84.	
452.8625	do	30, 84.	
452.86875	do	33, 84.	
452.875	do		LR
452.88125	do	33, 84.	
452.8875	do	30, 84.	
452.89375	do	33, 84.	
452.900	do		LR
452.90625	do	33	LR
452.9125	do	30	LR
452.91875	do	33	LR
452.925	do	59	LR
452.93125	do	33, 59	LR
452.9375	do	30, 59	LR
452.94375	do	33, 59	LR
452.950	do	59	LR
452.95625	do	33, 59	LR
452.9625	do	30, 59	LR
452.96875	do	33, 59	LR
452.975	do.		
452.98125	do	33, 84.	
452.9875	do	30, 84.	
452.99375	do	33, 84.	
453.000	do.		
453.00625	do	33.	
453.0125	do	30.	
453.01875	do	33.	
454.000	do	8	IP
456.01875	do	33	IW
456.025	Mobile		IW
456.03125	do	33	IW
456.0375	do	30	IW
456.04375	do	33	IW
456.050	do		IW
456.05625	do	33	IW
456.0625	do	30	IW
456.06875	do	33	IW
456.075	do		IW
456.08125	do	33	IW
456.0875	do	30	IW
456.09375	do	33	IW
456.100	do		IW
456.10625	do	33	IW
456.1125	do	30	IW
456.11875	do	33	IW
456.125	do		IW
456.13125	do	33	IW
456.1375	do	30	IW
456.14375	do	33	IW
456.150	do		IW
456.15625	do	33	IW
456.1625	do	30	IW
456.16875	do	33	IW
456.175	do		IP, IW
456.18125	do	33, 84.	
456.1875	do	30, 84.	
456.19375	do	33, 84.	
456.200	do		IW
456.20625	do	33	IW
456.2125	do	30	IW
456.21875	do	33	IW
456.225	do		IP, IW

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
456.23125	do	33, 84.	
456.2375	do	30, 84.	
456.24375	do	33, 84.	
456.250	do		IW
456.25625	do	33	IW
456.2625	do	30	IW
456.26875	do	33	IW
456.275	do		IP, IW
456.28125	do	33, 84.	
456.2875	do	30, 84.	
456.29375	do	33, 84.	
456.300	do.		
456.30625	do	33, 84.	
456.3125	do	30, 84.	
456.31875	do	33, 84.	
456.325	do.		
456.33125	do	33, 84.	
456.3375	do	30, 84.	
456.34375	do	33, 84.	
456.350	do.		
456.35625	do	33, 84.	
456.3625	do	30, 84.	
456.36875	do	33, 84.	
456.375	do		IP, IW
456.38125	do	33, 84.	
456.3875	do	30, 84.	
456.39375	do	33, 84.	
456.400	do.		
456.40625	do	33, 84.	
456.4125	do	30, 84.	
456.41875	do	33, 84.	
456.425	do		IP, IW
456.43125	do	33, 84.	
456.4375	do	30, 84.	
456.44375	do	33, 84.	
456.450	do.		
456.45625	do	33, 84.	
456.4625	do	30, 84.	
456.46875	do	33, 84.	
456.475	do		IP, IW
456.48125	do	33, 84.	
456.4875	do	30, 84.	
456.49375	do	33, 84.	
456.500	do.		
456.50625	do	33, 84.	
456.5125	do	30, 84.	
456.51875	do	33, 84.	
456.525	do		IP, IW
456.53125	do	33, 84.	
456.5375	do	30, 84.	
456.54375	do	33, 84.	
456.550	do		IP
456.55625	do	33, 84.	
456.5625	do	30, 84.	
456.56875	do	33, 84.	
456.575	do		IP, IW
456.58125	do	33, 84.	
456.5875	do	30, 84.	
456.59375	do	33, 84.	
456.600	do		IP
456.60625	do	33, 84.	
456.6125	do	30, 84.	
456.61875	do	33, 84.	
456.625	do		IP, IW
456.63125	do	33, 84.	
456.6375	do	30, 84.	
456.64375	do	33, 84.	
456.650	do		IP
456.65625	do	33, 84.	
456.6625	do	30, 84.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
456.66875	do	33, 84.	
456.675	do		IP, IW
456.68125	do	33, 84.	
456.6875	do	30, 84.	
456.69375	do	33, 84.	
456.700	do		IP
456.70625	do	33, 84.	
456.7125	do	30, 84.	
456.71875	do	33, 84.	
456.725	do.		
456.73125	do	33, 84.	
456.7375	do	30, 84.	
456.74375	do	33, 84.	
456.750	do		IP
456.75625	do	33, 84.	
456.7625	do	30, 84.	
456.76875	do	33, 84.	
456.775	do.		
456.78125	do	33.	
456.7875	do	30.	
456.79375	do	33.	
456.800	Base, mobile, or operational fixed.	17, 58.	
456.80625	do	17, 33, 58.	
456.8125	do	17, 30, 58.	
456.81875	do	17, 33, 58.	
456.825	Mobile.		
456.83125	do	33.	
456.8375	do	30.	
456.84375	do	33.	
456.850	do.		
456.85625	do	33.	
456.8625	do	30.	
456.86875	do	33.	
456.875	do.		
456.88125	do	33.	
456.8875	do	30.	
456.89375	do	33.	
456.900	do.		
456.90625	do	33.	
456.9125	do	30.	
456.91875	do	33.	
456.925	do.		
456.93125	do	33.	
456.9375	do	30.	
456.94375	do	33.	
456.950	do.		
456.95625	do	33.	
456.9625	do	30.	
456.96875	do	33.	
456.975	do.		
456.98125	do	33.	
456.9875	do	30.	
456.99375	do	33.	
457.000	do.		
457.00625	do	33.	
457.0125	do	30.	
457.01875	do	33.	
457.025	do.		
457.03125	do	33, 84.	
457.0375	do	30, 84.	
457.04375	do	33, 84.	
457.050	do.		
457.05625	do	33, 84.	
457.0625	do	30, 84.	
457.06875	do	33, 84.	
457.075	do.		
457.08125	do	33, 84.	
457.0875	do	30, 84.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
457.09375	do	33, 84.	
457.100	do.		
457.10625	do	33, 84.	
457.1125	do	30, 84.	
457.11875	do	33, 84.	
457.125	do.		
457.13125	do	33, 84.	
457.1375	do	30, 84.	
457.14375	do	33, 84.	
457.150	do.		
457.15625	do	33, 84.	
457.1625	do	30, 84.	
457.16875	do	33, 84.	
457.175	do.		
457.18125	do	33, 84.	
457.1875	do	30, 84.	
457.19375	do	33, 84.	
457.200	do.		
457.20625	do	33.	
457.2125	do	30.	
457.21875	do	33.	
457.225	do.		
457.23125	do	33.	
457.2375	do	30.	
457.24375	do	33.	
457.250	do.		
457.25625	do	33.	
457.2625	do	30.	
457.26875	do	33.	
457.275	do.		
457.28125	do	33, 84.	
457.2875	do	30, 84.	
457.29375	do	33, 84.	
457.300	do.		
457.30625	do	33, 84.	
457.3125	do	30, 84.	
457.31875	do	33, 84.	
457.325	do		LR
457.33125	do	33.	
457.3375	do	30.	
457.34375	do	33.	
457.350	do.		
457.35625	do	33.	
457.3625	do	30.	
457.36875	do	33.	
457.375	do		LR
457.38125	do	33.	
457.3875	do	30.	
457.39375	do	33.	
457.400	do.		
457.40625	do	33, 84.	
457.4125	do	30, 84.	
457.41875	do	33, 84.	
457.425	do		LR
457.43125	do	33.	
457.4375	do	30.	
457.44375	do	33.	
457.450	do.		
457.45625	do	33.	
457.4625	do	30.	
457.46875	do	33.	
457.475	do		LR
457.48125	do	33, 84.	
457.4875	do	30, 84.	
457.49375	do	33, 84.	
457.500	do.		
457.50625	do	33, 84.	
457.5125	do	30, 84.	
457.51875	do	33, 84.	
457.525	do	12, 47, 60.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
457.53125	do	11, 12, 33, 47, 60.	
457.5375	do	11, 12, 30, 47, 60.	
457.54375	do	11, 12, 33, 47, 60.	
457.550	do	12, 47, 60.	
457.55625	do	11, 12, 33, 47, 60.	
457.5625	do	12, 30, 47, 60.	
457.56875	do	11, 12, 33, 47, 60.	
457.575	do	12, 47, 60.	
457.58125	do	11, 12, 33, 47, 60.	
457.5875	do	12, 30, 47, 60.	
457.59375	do	11, 12, 33, 47, 60.	
457.600	do	12, 47, 60.	
457.60625	do	11, 12, 33, 47, 60.	
457.6125	do	12, 30, 47, 60.	
457.61875	do	11, 12, 33, 47, 60.	
457.625	do.		
457.63125	do	33, 84.	
457.6375	do	30, 84.	
457.64375	do	33, 84.	
457.650	do.		
457.65625	do	33, 84.	
457.6625	do	30, 84.	
457.66875	do	33, 84.	
457.675	do.		
457.68125	do	33, 84.	
457.6875	do	30, 84.	
457.69375	do	33, 84.	
457.700	do.		
457.70625	do	33, 84.	
457.7125	do	30, 84.	
457.71875	do	33, 84.	
457.725	do.		
457.73125	do	33.	
457.7375	do	30.	
457.74375	do	33.	
457.750	do.		
457.75625	do	33.	
457.7625	do	30.	
457.76875	do	33.	
457.775	do		LR
457.78125	do	33, 84.	
457.7875	do	30, 84.	
457.79375	do	33, 84.	
457.800	do.		
457.80625	do	33, 84.	
457.8125	do	30, 84.	
457.81875	do	33, 84.	
457.825	do		LR
457.83125	do	33, 84.	
457.8375	do	30, 84.	
457.84375	do	33, 84.	
457.850	do.		
457.85625	do	33, 84.	
457.8625	do	30, 84.	
457.86875	do	33, 84.	
457.875	do		LR
457.88125	do	33, 84.	
457.8875	do	30, 84.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
457.89375	do	33, 84.	
457.900	do		LR
457.90625	do	33	LR
457.9125	do	30	LR
457.91875	do	33	LR
457.925	do	59	LR
457.93125	do	33, 59	LR
457.9375	do	30, 59	LR
457.94375	do	33, 59	LR
457.950	do	59	LR
457.95625	do	33, 59	LR
457.9625	do	30, 59	LR
457.96875	do	33, 59	LR
457.975	do.		
457.98125	do	33, 84.	
457.9875	do	30, 84.	
457.99375	do	33, 84.	
458.000	do.		
458.00625	do	33.	
458.0125	do	30.	
458.01875	do	33.	
459.000	Base or mobile	8	IP
460.650	do	61, 62.	
460.65625	do	33, 61, 62.	
460.6625	do	30, 61, 62, 69.	
460.66875	do	33, 61, 62.	
460.675	do	61, 62.	
460.68125	do	33, 61, 62.	
460.6875	do	30, 61, 62, 69.	
460.69375	do	33, 61, 62.	
460.700	do	61, 62.	
460.70625	do	33, 61, 62.	
460.7125	do	30, 61, 62, 69.	
460.71875	do	33, 61, 62.	
460.725	do	61, 62.	
460.73125	do	33, 61, 62.	
460.7375	do	30, 61, 62, 69.	
460.74375	do	33, 61, 62.	
460.750	do	61, 62.	
460.75625	do	33, 61, 62.	
460.7625	do	30, 61, 62, 69.	
460.76875	do	33, 61, 62.	
460.775	do	61, 62.	
460.78125	do	33, 61, 62.	
460.7875	do	30, 61, 62, 69.	
460.79375	do	33, 61, 62.	
460.800	do	61, 62.	
460.80625	do	33, 61, 62.	
460.8125	do	30, 61, 62, 69.	
460.81875	do	33, 61, 62.	
460.825	do	61, 62.	
460.83125	do	33, 61, 62.	
460.8375	do	30, 61, 62, 69.	
460.84375	do	33, 61, 62.	
460.850	do	61, 62.	
460.85625	do	33, 61, 62.	
460.8625	do	30, 61, 62, 69.	
460.86875	do	33, 61, 62.	
460.875	do	61, 62.	
460.88125	do	33, 61, 62.	
460.8875	do	30, 61, 62, 69.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
460.89375	do	33, 61, 62.	
460.900	do	63, 64, 65.	
460.90625	do	33, 63, 65, 87.	
460.9125	do	63, 65, 83 87.	
460.91875	do	33, 63, 65, 87.	
460.925	do	63, 64, 65.	
460.93125	do	33, 63, 65, 87.	
460.9375	do	63, 65, 83, 87.	
460.94375	do	33, 63, 65, 87.	
460.950	do	63, 64, 65.	
460.95625	do	33, 63, 65, 87.	
460.9625	do	63, 65, 83, 87.	
460.96875	do	33, 63, 65, 87.	
460.975	do	64, 65, 66	
460.98125	do	33, 65, 66, 87.	
460.9875	do	65, 66, 83, 87.	
460.99375	do	33, 65, 66, 87.	
461.000	do	64, 65, 66.	
461.00625	do	33, 65, 66, 87.	
461.0125	do	65, 66, 83, 87.	
461.01875	do	33, 65, 66, 87.	
461.025	do	62.	
461.03125	do	33, 86.	
461.0375	do	83, 86.	
461.04375	do	33, 86.	
461.050	do	62.	
461.05625	do	33, 86.	
461.0625	do	83, 86.	
461.06875	do	33, 86.	
461.075	do	62.	
461.08125	do	33, 86.	
461.0875	do	83, 86.	
461.09375	do	33, 86.	
461.100	do	62.	
461.10625	do	33, 86.	
461.1125	do	83, 86.	
461.11875	do	33, 86.	
461.125	do	62.	
461.13125	do	33, 86.	
461.1375	do	83, 86.	
461.14375	do	33, 86.	
461.150	do	62.	
461.15625	do	33, .	
461.1625	do	83, 86.	
461.16875	do	33, 86.	
461.175	do	62.	
461.18125	do	33, 86.	
461.1875	do	83, 86.	
461.19375	do	33, 86.	
461.200	do	62.	
461.20625	do	33, 86.	
461.2125	do	83, 86.	
461.21875	do	33, 86.	
461.225	do	62.	
461.23125	do	33, 86.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
461.2375	do	83, 86.	
461.24375	do	33, 86.	
461.250	do	62.	
461.25625	do	33, 86.	
461.2625	do	83, 86.	
461.26875	do	33, 86.	
461.275	do	62.	
461.28125	do	33, 86.	
461.2875	do	83, 86.	
461.29375	do	33, 86.	
461.300	do	62.	
461.30625	do	33, 86.	
461.3125	do	83, 86.	
461.31875	do	33, 86.	
461.325	do	62.	
461.33125	do	33, 86.	
461.3375	do	83, 86.	
461.34375	do	33, 86.	
461.350	do	62.	
461.35625	do	33, 86.	
461.3625	do	83, 86.	
461.36875	do	33, 86.	
461.375	do	62.	
461.38125	do	33, 62.	
461.3875	do	30, 62.	
461.39375	do	33, 62.	
461.400	do	62.	
461.40625	do	33, 62.	
461.4125	do	30, 62.	
461.41875	do	33, 62.	
461.425	do	62.	
461.43125	do	33, 62.	
461.4375	do	30, 62.	
461.44375	do	33, 62.	
461.450	do	62.	
461.45625	do	33, 62.	
461.4625	do	30, 62.	
461.46875	do	33, 62.	
461.475	do	62.	
461.48125	do	33, 62.	
461.4875	do	30, 62.	
461.49375	do	33, 62.	
461.500	do	62.	
461.50625	do	33, 62.	
461.5125	do	30, 62.	
461.51875	do	33, 62.	
461.525	do	62.	
461.53125	do	33, 62.	
461.5375	do	30, 62.	
461.54375	do	33, 62.	
461.550	do	62.	
461.55625	do	33, 62.	
461.5625	do	30, 62.	
461.56875	do	33, 62.	
461.575	do	62.	
461.58125	do	33, 62.	
461.5875	do	30, 62.	
461.59375	do	33, 62.	
461.600	do	62.	
461.60625	do	33, 62.	
461.6125	do	30, 62.	
461.61875	do	33, 62.	
461.625	do	62.	
461.63125	do	33, 62.	
461.6375	do	30, 62.	
461.64375	do	33, 62.	
461.650	do	62.	
461.65625	do	33, 62.	
461.6625	do	30, 62.	
461.66875	do	33, 62.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
461.675	do	62.	
461.68125	do	33, 62.	
461.6875	do	30, 62.	
461.69375	do	33, 62.	
461.700	do	62.	
461.70625	do	33, 62.	
461.7125	do	30, 62.	
461.71875	do	33, 62.	
461.725	do	62.	
461.73125	do	33, 62.	
461.7375	do	30, 62.	
461.74375	do	33, 62.	
461.750	do	62.	
461.75625	do	33, 62.	
461.7625	do	30, 62.	
461.76875	do	33, 62.	
461.775	do	62.	
461.78125	do	33, 62.	
461.7875	do	30, 62.	
461.79375	do	33, 62.	
461.800	do	62.	
461.80625	do	33, 62.	
461.8125	do	30, 62.	
461.81875	do	33, 62.	
461.825	do	62.	
461.83125	do	33, 62.	
461.8375	do	30, 62.	
461.84375	do	33, 62.	
461.850	do	62.	
461.85625	do	33, 62.	
461.8625	do	30, 62.	
461.86875	do	33, 62.	
461.875	do	62.	
461.88125	do	33, 62.	
461.8875	do	30, 62.	
461.89375	do	33, 62.	
461.900	do	62.	
461.90625	do	33, 62.	
461.9125	do	30, 62.	
461.91875	do	33, 62.	
461.925	do	62.	
461.93125	do	33, 62.	
461.9375	do	30, 62.	
461.94375	do	33, 62.	
461.950	do	62.	
461.95625	do	33, 62.	
461.9625	do	30, 62.	
461.96875	do	33, 62.	
461.975	do	62.	
461.98125	do	33, 62.	
461.9875	do	30, 62.	
461.99375	do	33, 62.	
462.000	do	62.	
462.00625	do	33, 62.	
462.0125	do	30, 62.	
462.01875	do	33, 62.	
462.025	do	62.	
462.03125	do	33, 62.	
462.0375	do	30, 62.	
462.04375	do	33, 62.	
462.050	do	62.	
462.05625	do	33, 62.	
462.0625	do	30, 62.	
462.06875	do	33, 62.	
462.075	do	62.	
462.08125	do	33, 62.	
462.0875	do	30, 62.	
462.09375	do	33, 62.	
462.100	do	62.	
462.10625	do	33, 62.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
462.1125	do	30, 62.	
462.11875	do	33, 62.	
462.125	do	62.	
462.13125	do	33, 62.	
462.1375	do	30, 62.	
462.14375	do	33, 62.	
462.150	do	62.	
462.15625	do	33, 62.	
462.1625	do	30, 62.	
462.16875	do	33, 62.	
462.175	do	62.	
462.18125	do	33, 84.	
462.1875	do	83, 84.	
462.19375	do	33, 84.	
462.200	do.		
462.20625	do	33, 85.	
462.2125	do	83, 85.	
462.21875	do	33, 85.	
462.225	do.		
462.23125	do	33, 85.	
462.2375	do	83, 85.	
462.24375	do	33, 85.	
462.250	do.		
462.25625	do	33, 85.	
462.2625	do	83, 85.	
462.26875	do	33, 85.	
462.275	do.		
462.28125	do	33, 85.	
462.2875	do	83, 85.	
462.29375	do	33, 85.	
462.300	do.		
462.30625	do	33, 85.	
462.3125	do	83, 85.	
462.31875	do	33, 85.	
462.325	do.		
462.33125	do	33, 85.	
462.3375	do	83, 85.	
462.34375	do	33, 85.	
462.350	do.		
462.35625	do	33, 85.	
462.3625	do	83, 85.	
462.36875	do	33, 85.	
462.375	do.		
462.38125	do	33, 85.	
462.3875	do	83, 85.	
462.39375	do	33, 85.	
462.400	do.		
462.40625	do	33, 85.	
462.4125	do	83, 85.	
462.41875	do	33, 85.	
462.425	do.		
462.43125	do	33, 85.	
462.4375	do	83, 85.	
462.44375	do	33, 85.	
462.450	do.		
462.45625	do	33, 84.	
462.4625	do	83, 84.	
462.46875	do	33, 84.	
462.475	do		IP, IW
462.48125	do	33, 84.	
462.4875	do	83, 84.	
462.49375	do	84.	
462.500	do.		
462.50625	do	33, 84.	
462.5125	do	83, 84.	
462.51875	do	33, 84.	
462.525	do		IP, IW
462.53125	do	33.	
462.750	Base	29, 36.	
462.7625	Mobile	67, 86.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
462.775	Base	29, 36.	
462.7875	Mobile	67, 86.	
462.800	Base	29, 36.	
462.8125	Mobile	67, 86.	
462.825	Base	29, 36.	
462.8375	Mobile	67, 86.	
462.850	Base	29, 36.	
462.8625	Mobile	67, 86.	
462.875	Base	29, 36.	
462.8875	Mobile	67, 86.	
462.900	Base	29, 36.	
462.9125	Mobile	67, 86.	
462.925	Base	29, 36.	
462.9375	Mobile	88	
462.94375	Base or mobile	33.	
463.200	do	62.	
463.20625	do	33, 62.	
463.2125	do	30, 62.	
463.21875	do	33, 62.	
463.225	do	62.	
463.23125	do	33, 62.	
463.2375	do	30, 62.	
463.24375	do	33, 62.	
463.250	do	62.	
463.25625	do	33, 62.	
463.2625	do	30, 62.	
463.26875	do	33, 62.	
463.275	do	62.	
463.28125	do	33, 62.	
463.2875	do	30, 62.	
463.29375	do	33, 62.	
463.300	do	62.	
463.30625	do	33, 62.	
463.3125	do	30, 62.	
463.31875	do	33, 62.	
463.325	do	62.	
463.33125	do	33, 62.	
463.3375	do	30, 62.	
463.34375	do	33, 62.	
463.350	do	62.	
463.35625	do	33, 62.	
463.3625	do	30, 62.	
463.36875	do	33, 62.	
463.375	do	62.	
463.38125	do	33, 62.	
463.3875	do	30, 62.	
463.39375	do	33, 62.	
463.400	do	62.	
463.40625	do	33, 62.	
463.4125	do	30, 62.	
463.41875	do	33, 62.	
463.425	do	62.	
463.43125	do	33, 62.	
463.4375	do	30, 62.	
463.44375	do	33, 62.	
463.450	do	62.	
463.45625	do	33, 62.	
463.4625	do	30, 62.	
463.46875	do	33, 62.	
463.475	do	62.	
463.48125	do	33, 62.	
463.4875	do	30, 62.	
463.49375	do	33, 62.	
463.500	do	62.	
463.50625	do	33, 62.	
463.5125	do	30, 62.	
463.51875	do	33, 62.	
463.525	do	62.	
463.53125	do	33, 62.	
463.5375	do	30, 62.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
463.54375	do	33, 62.	
463.550	do	62.	
463.55625	do	33, 62.	
463.5625	do	30, 62.	
463.56875	do	33, 62.	
463.575	do	62.	
463.58125	do	33, 62.	
463.5875	do	30, 62.	
463.59375	do	33, 62.	
463.600	do	62.	
463.60625	do	33, 62.	
463.6125	do	30, 62.	
463.61875	do	33, 62.	
463.625	do	62.	
463.63125	do	33, 62.	
463.6375	do	30, 62.	
463.64375	do	33, 62.	
463.650	do	62.	
463.65625	do	33, 62.	
463.6625	do	30, 62.	
463.66875	do	33, 62.	
463.675	do	62.	
463.68125	do	33, 62.	
463.6875	do	30, 62.	
463.69375	do	33, 62.	
463.700	do	62.	
463.70625	do	33, 62.	
463.7125	do	30, 62.	
463.71875	do	33, 62.	
463.725	do	62.	
463.73125	do	33, 62.	
463.7375	do	30, 62.	
463.74375	do	33, 62.	
463.750	do	62.	
463.75625	do	33, 62.	
463.7625	do	30, 62.	
463.76875	do	33, 62.	
463.775	do	62.	
463.78125	do	33, 62.	
463.7875	do	30, 62.	
463.79375	do	33, 62.	
463.800	do	62.	
463.80625	do	33, 62.	
463.8125	do	30, 62.	
463.81875	do	33, 62.	
463.825	do	62.	
463.83125	do	33, 62.	
463.8375	do	30, 62.	
463.84375	do	33, 62.	
463.850	do	62.	
463.85625	do	33, 62.	
463.8625	do	30, 62.	
463.86875	do	33, 62.	
463.875	do	62.	
463.88125	do	33, 62.	
463.8875	do	30, 62.	
463.89375	do	33, 62.	
463.900	do	62.	
463.90625	do	33, 62.	
463.9125	do	30, 62.	
463.91875	do	33, 62.	
463.925	do	62.	
463.93125	do	33, 62.	
463.9375	do	30, 62.	
463.94375	do	33, 62.	
463.950	do	62.	
463.95625	do	33, 62.	
463.9625	do	30, 62.	
463.96875	do	33, 62.	
463.975	do	62.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
463.98125	do	33, 62.	
463.9875	do	30, 62.	
463.99375	do	33, 62.	
464.000	do	62.	
464.00625	do	33, 62.	
464.0125	do	30, 62.	
464.01875	do	33, 62.	
464.025	do	62.	
464.03125	do	33, 62.	
464.0375	do	30, 62.	
464.04375	do	33, 62.	
464.050	do	62.	
464.05625	do	33, 62.	
464.0625	do	30, 62.	
464.06875	do	33, 62.	
464.075	do	62.	
464.08125	do	33, 62.	
464.0875	do	30, 62.	
464.09375	do	33, 62.	
464.100	do	62.	
464.10625	do	33, 62.	
464.1125	do	30, 62.	
464.11875	do	33, 62.	
464.125	do	62.	
464.13125	do	33, 62.	
464.1375	do	30, 62.	
464.14375	do	33, 62.	
464.150	do	62.	
464.15625	do	33, 62.	
464.1625	do	30, 62.	
464.16875	do	33, 62.	
464.175	do	62.	
464.18125	do	33, 62.	
464.1875	do	30, 62.	
464.19375	do	33, 62.	
464.200	do	62.	
464.20625	do	33, 62.	
464.2125	do	30, 62.	
464.21875	do	33, 62.	
464.225	do	62.	
464.23125	do	33, 62.	
464.2375	do	30, 62.	
464.24375	do	33, 62.	
464.250	do	62.	
464.25625	do	33, 62.	
464.2625	do	30, 62.	
464.26875	do	33, 62.	
464.275	do	62.	
464.28125	do	33, 62.	
464.2875	do	30, 62.	
464.29375	do	33, 62.	
464.300	do	62.	
464.30625	do	33, 62.	
464.3125	do	30, 62.	
464.31875	do	33, 62.	
464.325	do	62.	
464.33125	do	33, 62.	
464.3375	do	30, 62.	
464.34375	do	33, 62.	
464.350	do	62.	
464.35625	do	33, 62.	
464.3625	do	30, 62.	
464.36875	do	33, 62.	
464.375	do	62.	
464.38125	do	33, 62.	
464.3875	do	30, 62.	
464.39375	do	33, 62.	
464.400	do	62.	
464.40625	do	33, 62.	
464.4125	do	30, 62.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
464.41875	do	33, 62.	
464.425	do	62.	
464.43125	do	33, 62.	
464.4375	do	30, 62.	
464.44375	do	33, 62.	
464.450	do	62.	
464.45625	do	33, 62.	
464.4625	do	30, 62.	
464.46875	do	33, 62.	
464.475	do	62.	
464.48125	do	33, 86.	
464.4875	do	83, 86.	
464.500	do	10, 34.	
464.5125	do	83, 86.	
464.51875	do	33, 86.	
464.525	do	62.	
464.53125	do	33, 86.	
464.5375	do	83, 86.	
464.550	do	10, 34.	
464.5625	do	83, 86.	
464.56875	do	33, .	
464.575	do	62.	
464.58125	do	33, 62.	
464.5875	do	30, 62.	
464.59375	do	33, 62.	
464.600	do	62.	
464.60625	do	33, 62.	
464.6125	do	30, 62.	
464.61875	do	33, 62.	
464.625	do	62.	
464.63125	do	33, 62.	
464.6375	do	30, 62.	
464.64375	do	33, 62.	
464.650	do	62.	
464.65625	do	33, 62.	
464.6625	do	30, 62.	
464.66875	do	33, 62.	
464.675	do	62.	
464.68125	do	33, 62.	
464.6875	do	30, 62.	
464.69375	do	33, 62.	
464.700	do	62.	
464.70625	do	33, 62.	
464.7125	do	30, 62.	
464.71875	do	33, 62.	
464.725	do	62.	
464.73125	do	33, 62.	
464.7375	do	30, 62.	
464.74375	do	33, 62.	
464.750	do	62.	
464.75625	do	33, 62.	
464.7625	do	30, 62.	
464.76875	do	33, 62.	
464.775	do	62.	
464.78125	do	33, 62.	
464.7875	do	30, 62.	
464.79375	do	33, 62.	
464.800	do	62.	
464.80625	do	33, 62.	
464.8125	do	30, 62.	
464.81875	do	33, 62.	
464.825	do	62.	
464.83125	do	33, 62.	
464.8375	do	30, 62.	
464.84375	do	33, 62.	
464.850	do	62.	
464.85625	do	33, 62.	
464.8625	do	30, 62.	
464.86875	do	33, 62.	
464.875	do	62.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
464.88125	do	33, 62.	
464.8875	do	30, 62.	
464.89375	do	33, 62.	
464.900	do	62.	
464.90625	do	33, 62.	
464.9125	do	30, 62.	
464.91875	do	33, 62.	
464.925	do	62.	
464.93125	do	33, 62.	
464.9375	do	30, 62.	
464.94375	do	33, 62.	
464.950	do	62.	
464.95625	do	33, 62.	
464.9625	do	30, 62.	
464.96875	do	33, 62.	
464.975	do	62.	
464.98125	do	33, 62.	
464.9875	Mobile	67.	
465.000	Base	29, 34, 36.	
465.0125	Mobile	88.	
465.01875	do	33, 34.	
465.650	do	62, 68.	
465.65625	do	33, 62, 68.	
465.6625	do	30, 62, 68, 69.	
465.66875	do	33, 62, 68.	
465.675	do	62, 68.	
465.68125	do	33, 62, 68.	
465.6875	do	30, 62, 68, 69.	
465.69375	do	33, 62, 68.	
465.700	do	62, 68.	
465.70625	do	33, 62, 68.	
465.7125	do	30, 62, 68, 69.	
465.71875	do	33, 62, 68.	
465.725	do	62, 68.	
465.73125	do	33, 62, 68.	
465.7375	do	30, 62, 68, 69.	
465.74375	do	33, 62, 68.	
465.750	do	62, 68.	
465.75625	do	33, 62, 68.	
465.7625	do	30, 62, 68, 69.	
465.76875	do	33, 62, 68.	
465.775	do	62, 68.	
465.78125	do	33, 62, 68.	
465.7875	do	30, 62, 68, 69.	
465.79375	do	33, 62, 68.	
465.800	do	62, 68.	
465.80625	do	33, 62, 68.	
465.8125	do	30, 62, 68, 69.	
465.81875	do	33, 62, 68.	
465.825	do	62, 68.	
465.83125	do	33, 62, 68.	
465.8375	do	30, 62, 68, 69.	
465.84375	do	33, 62, 68.	
465.850	do	62, 68.	
465.85625	do	33, 62, 68.	
465.8625	do	30, 62, 68, 69.	
465.86875	do	33, 62, 68.	
465.875	do	62, 68.	
465.88125	do	33, 62, 68.	
465.8875	do	30, 62, 68, 69.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
465.89375	do	33, 62, 68.	
465.900	do	63, 64.	
465.90625	do	33, 63, 87.	
465.9125	do	63, 83, 87.	
465.91875	do	33, 63, 87.	
465.925	do	63, 64.	
465.93125	do	33, 63, 87.	
465.9375	do	63, 83, 87.	
465.94375	do	33, 63, 87.	
465.950	do	63, 64.	
465.95625	do	33, 63, 87.	
465.9625	do	63, 83, 87.	
465.96875	do	33, 63, 64.	
465.975	do	64, 66.	
465.98125	do	33, 66, 87.	
465.9875	do	66, 83, 87.	
465.99375	do	33, 66, 87.	
466.000	do	64, 66.	
466.00625	do	33, 66, 87.	
466.0125	do	66, 69, 83, 87.	
466.01875	do	33, 66, 87.	
466.025	do	62.	
466.03125	do	33, 86.	
466.0375	do	83, 86.	
466.04375	do	33, 86.	
466.050	do	62.	
466.05625	do	33, 86.	
466.0625	do	83, 86.	
466.06875	do	33, 86.	
466.075	do	62.	
466.08125	do	33, 86.	
466.0875	do	83, 86.	
466.09375	do	33, 86.	
466.100	do	62.	
466.10625	do	33, 86.	
466.1125	do	83, 86.	
466.11875	do	33, 86.	
466.125	do	62.	
466.13125	do	33, 86.	
466.1375	do	83, 86.	
466.14375	do	33, 86.	
466.150	do	62.	
466.15625	do	33, 86.	
466.1625	do	83, 86.	
466.16875	do	33, 86.	
466.175	do	62.	
466.18125	do	33, 84.	
466.1875	do	83, 84.	
466.19375	do	33, 84.	
466.200	do	62.	
466.20625	do	33, 85.	
466.2125	do	83, 85.	
466.21875	do	33, 85.	
466.225	do	62.	
466.23125	do	33, 85.	
466.2375	do	83, 85.	
466.24375	do	33, 85.	
466.250	do	62.	
466.25625	do	33, 85.	
466.2625	do	83, 85.	
466.26875	do	33, 85.	
466.275	do	62.	
466.28125	do	33, 85.	
466.2875	do	83, 85.	
466.29375	do	33, 85.	
466.300	do	62.	
466.30625	do	33, 85.	
466.3125	do	83, 85.	
466.31875	do	33, 85.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
466.325	do	62.	
466.33125	do	33, 85.	
466.3375	do	83, 85.	
466.34375	do	33, 85.	
466.350	do	62.	
466.35625	do	33, 85.	
466.3625	do	83, 85.	
466.36875	do	33, 85.	
466.375	do	62.	
466.38125	do	33, 85.	
466.3875	do	83, 85.	
466.39375	do	33, 85.	
466.400	do	62.	
466.40625	do	33, 85.	
466.4125	do	83, 85.	
466.41875	do	33, 85.	
466.425	do	62.	
466.43125	do	33, 85.	
466.4375	do	83, 85.	
466.44375	do	33, 85.	
466.450	do	62.	
466.45625	do	33, 84.	
466.4625	do	83, 84.	
466.46875	do	33, 84.	
466.475	do	62.	
466.48125	do	33, 84.	
466.4875	do	83, 84.	
466.49375	do	33, 84.	
466.500	do	62.	
466.50625	do	33, 84.	
466.5125	do	83, 84.	
466.51875	do	33, 84.	
466.525	do	62.	
466.53125	do	33, 62.	
466.5375	do	30, 62.	
466.54375	do	33, 62.	
466.550	do	62.	
466.55625	do	33, 62.	
466.5625	do	30, 62.	
466.56875	do	33, 62.	
466.575	do	62.	
466.58125	do	33, 62.	
466.5875	do	30, 62.	
466.59375	do	33, 62.	
466.600	do	62.	
466.60625	do	33, 62.	
466.6125	do	30, 62.	
466.61875	do	33, 62.	
466.625	do	62.	
466.63125	do	33, 62.	
466.6375	do	30, 62.	
466.64375	do	33, 62.	
466.650	do	62.	
466.65625	do	33, 62.	
466.6625	do	30, 62.	
466.66875	do	33, 62.	
466.675	do	62.	
466.68125	do	33, 62.	
466.6875	do	30, 62.	
466.69375	do	33, 62.	
466.700	do	62.	
466.70625	do	33, 62.	
466.7125	do	30, 62.	
466.71875	do	33, 62.	
466.725	do	62.	
466.73125	do	33, 62.	
466.7375	do	30, 62.	
466.74375	do	33, 62.	
466.750	do	62.	
466.75625	do	33, 62.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
466.7625	do	30, 62.	
466.76875	do	33, 62.	
466.775	do	62.	
466.78125	do	33, 62.	
466.7875	do	30, 62.	
466.79375	do	33, 62.	
466.800	do	62.	
466.80625	do	33, 62.	
466.8125	do	30, 62.	
466.81875	do	33, 62.	
466.825	do	62.	
466.83125	do	33, 62.	
466.8375	do	30, 62.	
466.84375	do	33, 62.	
466.850	do	62.	
466.85625	do	33, 62.	
466.8625	do	67, 86.	
466.86875	do	33, 62.	
466.875	do	62.	
466.88125	do	33, 62.	
466.8875	do	67, 86.	
466.89375	do	33, 62.	
466.900	do	62.	
466.90625	do	33, 62.	
466.9125	do	67, 86.	
466.91875	do	33, 62.	
466.925	do	62.	
466.93125	do	33, 62.	
466.9375	do	88.	
466.94375	do	33, 62.	
466.950	do	62.	
466.95625	do	33, 62.	
466.9625	do	30, 62.	
466.96875	do	33, 62.	
466.975	do	62.	
466.98125	do	33, 62.	
466.9875	do	30, 62.	
466.99375	do	33, 62.	
467.000	do	62.	
467.00625	do	33, 62.	
467.0125	do	30, 62.	
467.01875	do	33, 62.	
467.025	do	62.	
467.03125	do	33, 62.	
467.0375	do	30, 62.	
467.04375	do	33, 62.	
467.050	do	62.	
467.05625	do	33, 62.	
467.0625	do	30, 62.	
467.06875	do	33, 62.	
467.075	do	62.	
467.08125	do	33, 62.	
467.0875	do	30, 62.	
467.09375	do	33, 62.	
467.100	do	62.	
467.10625	do	33, 62.	
467.1125	do	30, 62.	
467.11875	do	33, 62.	
467.125	do	62.	
467.13125	do	33, 62.	
467.1375	do	30, 62.	
467.14375	do	33, 62.	
467.150	do	62.	
467.15625	do	33, 62.	
467.1625	do	30, 62.	
467.16875	do	33, 62.	
467.175	do	62.	
467.18125	do	33, 62.	
467.1875	do	30, 62.	
467.19375	do	33, 62.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
467.200	do.		
467.20625	do	33.	
467.2125	do	30.	
467.21875	do	33.	
467.225	do.		
467.23125	do	33.	
467.2375	do	30.	
467.24375	do	33.	
467.250	do.		
467.25625	do	33.	
467.2625	do	30.	
467.26875	do	33.	
467.275	do.		
467.28125	do	33.	
467.2875	do	30.	
467.29375	do	33.	
467.300	do.		
467.30625	do	33.	
467.3125	do	30.	
467.31875	do	33.	
467.325	do.		
467.33125	do	33.	
467.3375	do	30.	
467.34375	do	33.	
467.350	do.		
467.35625	do	33.	
467.3625	do	30.	
467.36875	do	33.	
467.375	do.		
467.38125	do	33.	
467.3875	do	30.	
467.39375	do	33.	
467.400	do.		
467.40625	do	33.	
467.4125	do	30.	
467.41875	do	33.	
467.425	do.		
467.43125	do	33.	
467.4375	do	30.	
467.44375	do	33.	
467.450	do.		
467.45625	do	33.	
467.4625	do	30.	
467.46875	do	33.	
467.475	do		IP, IW
467.48125	do	33.	
467.4875	do	30.	
467.49375	do	33.	
467.500	do.		
467.50625	do	33.	
467.5125	do	30.	
467.51875	do	33.	
467.525	do		IP, IW
467.53125	do	33.	
467.74375	do	33, 62.	
467.750	do	11, 12, 35, 60.	
467.75625	do	11, 12, 33, 35, 60.	
467.7625	do	11, 12, 30, 35, 60.	
467.76875	do	11, 12, 33, 35, 60.	
467.775	do	11, 12, 35, 60.	
467.78125	do	11, 12, 33, 35, 60.	
467.7875	do	11, 12, 30, 35, 60.	
467.79375	do	11, 12, 33, 35, 60.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
467.800	do	11, 12, 35, 60.	
467.80625	do	11, 12, 33, 35, 60.	
467.8125	do	11, 12, 30, 35, 60.	
467.81875	do	11, 12, 33, 35, 60.	
467.825	do	11, 12, 35, 60.	
467.83125	do	11, 12, 33, 35, 60.	
467.8375	do	11, 12, 30, 35, 60.	
467.850	do	11, 12, 35.	
467.8625	do	67.	
467.875	do	11, 12, 35.	
467.8875	do	67.	
467.900	do	11, 12, 35.	
467.9125	do	67.	
467.925	do	11, 12, 35.	
467.93125	do	33.	
467.9375	do	30, 67.	
467.94375	do	33.	
468.200	do	62.	
468.20625	do	33, 62.	
468.2125	do	30, 62.	
468.21875	do	33, 62.	
468.225	do	62.	
468.23125	do	33, 62.	
468.2375	do	30, 62.	
468.24375	do	33, 62.	
468.250	do	62.	
468.25625	do	33, 62.	
468.2625	do	30, 62.	
468.26875	do	33, 62.	
468.275	do	62.	
468.28125	do	33, 62.	
468.2875	do	30, 62.	
468.29375	do	33, 62.	
468.300	do	62.	
468.30625	do	33, 62.	
468.3125	do	30, 62.	
468.31875	do	33, 62.	
468.325	do	62.	
468.33125	do	33, 62.	
468.3375	do	30, 62.	
468.34375	do	33, 62.	
468.350	do	62.	
468.35625	do	33, 62.	
468.3625	do	30, 62.	
468.36875	do	33, 62.	
468.375	do	62.	
468.38125	do	33, 62.	
468.3875	do	30, 62.	
468.39375	do	33, 62.	
468.400	do	62.	
468.40625	do	33, 62.	
468.4125	do	30, 62.	
468.41875	do	33, 62.	
468.425	do	62.	
468.43125	do	33, 62.	
468.4375	do	30, 62.	
468.44375	do	33, 62.	
468.450	do	62.	
468.45625	do	33, 62.	
468.4625	do	30, 62.	
468.46875	do	33, 62.	
468.475	do	62.	
468.48125	do	33, 62.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
468.4875	do	30, 62.	
468.49375	do	33, 62.	
468.500	do	62.	
468.50625	do	33, 62.	
468.5125	do	30, 62.	
468.51875	do	33, 62.	
468.525	do	62.	
468.53125	do	33, 62.	
468.5375	do	30, 62.	
468.54375	do	33, 62.	
468.550	do	62.	
468.55625	do	33, 62.	
468.5625	do	30, 62.	
468.56875	do	33, 62.	
468.575	do	62.	
468.58125	do	33, 62.	
468.5875	do	30, 62.	
468.59375	do	33, 62.	
468.600	do	62.	
468.60625	do	33, 62.	
468.6125	do	30, 62.	
468.61875	do	33, 62.	
468.625	do	62.	
468.63125	do	33, 62.	
468.6375	do	30, 62.	
468.64375	do	33, 62.	
468.650	do	62.	
468.65625	do	33, 62.	
468.6625	do	30, 62.	
468.66875	do	33, 62.	
468.675	do	62.	
468.68125	do	33, 62.	
468.6875	do	30, 62.	
468.69375	do	33, 62.	
468.700	do	62.	
468.70625	do	33, 62.	
468.7125	do	30, 62.	
468.71875	do	33, 62.	
468.725	do	62.	
468.73125	do	33, 62.	
468.7375	do	30, 62.	
468.74375	do	33, 62.	
468.750	do	62.	
468.75625	do	33, 62.	
468.7625	do	30, 62.	
468.76875	do	33, 62.	
468.775	do	62.	
468.78125	do	33, 62.	
468.7875	do	30, 62.	
468.79375	do	33, 62.	
468.800	do	62.	
468.80625	do	33, 62.	
468.8125	do	30, 62.	
468.81875	do	33, 62.	
468.825	do	62.	
468.83125	do	33, 62.	
468.8375	do	30, 62.	
468.84375	do	33, 62.	
468.850	do	62.	
468.85625	do	33, 62.	
468.8625	do	30, 62.	
468.86875	do	33, 62.	
468.875	do	62.	
468.88125	do	33, 62.	
468.8875	do	30, 62.	
468.89375	do	33, 62.	
468.900	do	62.	
468.90625	do	33, 62.	
468.9125	do	30, 62.	
468.91875	do	33, 62.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
468.925	do	62.	
468.93125	do	33, 62.	
468.9375	do	30, 62.	
468.94375	do	33, 62.	
468.950	do	62.	
468.95625	do	33, 62.	
468.9625	do	30, 62.	
468.96875	do	33, 62.	
468.975	do	62.	
468.98125	do	33, 62.	
468.9875	do	30, 62.	
468.99375	do	33, 62.	
469.000	do	62.	
469.00625	do	33, 62.	
469.0125	do	30, 62.	
469.01875	do	33, 62.	
469.025	do	62.	
469.03125	do	33, 62.	
469.0375	do	30, 62.	
469.04375	do	33, 62.	
469.050	do	62.	
469.05625	do	33, 62.	
469.0625	do	30, 62.	
469.06875	do	33, 62.	
469.075	do	62.	
469.08125	do	33, 62.	
469.0875	do	30, 62.	
469.09375	do	33, 62.	
469.100	do	62.	
469.10625	do	33, 62.	
469.1125	do	30, 62.	
469.11875	do	33, 62.	
469.125	do	62.	
469.13125	do	33, 62.	
469.1375	do	30, 62.	
469.14375	do	33, 62.	
469.150	do	62.	
469.15625	do	33, 62.	
469.1625	do	30, 62.	
469.16875	do	33, 62.	
469.175	do	62.	
469.18125	do	33, 62.	
469.1875	do	30, 62.	
469.19375	do	33, 62.	
469.200	do	62.	
469.20625	do	33, 62.	
469.2125	do	30, 62.	
469.21875	do	33, 62.	
469.225	do	62.	
469.23125	do	33, 62.	
469.2375	do	30, 62.	
469.24375	do	33, 62.	
469.250	do	62.	
469.25625	do	33, 62.	
469.2625	do	30, 62.	
469.26875	do	33, 62.	
469.275	do	62.	
469.28125	do	33, 62.	
469.2875	do	30, 62.	
469.29375	do	33, 62.	
469.300	do	62.	
469.30625	do	33, 62.	
469.3125	do	30, 62.	
469.31875	do	33, 62.	
469.325	do	62.	
469.33125	do	33, 62.	
469.3375	do	30, 62.	
469.34375	do	33, 62.	
469.350	do	62.	
469.35625	do	33, 62.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
469.3625	do	30, 62.	
469.36875	do	33, 62.	
469.375	do	62.	
469.38125	do	33, 62.	
469.3875	do	30, 62.	
469.39375	do	33, 62.	
469.400	do	62.	
469.40625	do	33, 62.	
469.4125	do	30, 62.	
469.41875	do	33, 62.	
469.425	do	62.	
469.43125	do	33, 62.	
469.4375	do	30, 62.	
469.44375	do	33, 62.	
469.450	do	62.	
469.45625	do	33, 62.	
469.4625	do	30, 62.	
469.46875	do	33, 62.	
469.475	do	62.	
469.48125	do	33, 86.	
469.4875	do	83, 86.	
469.500	do	10, 34.	
469.5125	do	83, 86.	
469.51875	do	33, 86.	
469.525	do	62.	
469.53125	do	33, 86.	
469.5375	do	83, 86.	
469.550	do	10, 34.	
469.5625	do	83, 86.	
469.56875	do	33, 86.	
469.575	do	62.	
469.58125	do	33, 62.	
469.5875	do	30, 62.	
469.59375	do	33, 62.	
469.600	do	62.	
469.60625	do	33, 62.	
469.6125	do	30, 62.	
469.61875	do	33, 62.	
469.625	do	62.	
469.63125	do	33, 62.	
469.6375	do	30, 62.	
469.64375	do	33, 62.	
469.650	do	62.	
469.65625	do	33, 62.	
469.6625	do	30, 62.	
469.66875	do	33, 62.	
469.675	do	62.	
469.68125	do	33, 62.	
469.6875	do	30, 62.	
469.69375	do	33, 62.	
469.700	do	62.	
469.70625	do	33, 62.	
469.7125	do	30, 62.	
469.71875	do	33, 62.	
469.725	do	62.	
469.73125	do	33, 62.	
469.7375	do	30, 62.	
469.74375	do	33, 62.	
469.750	do	62.	
469.75625	do	33, 62.	
469.7625	do	30, 62.	
469.76875	do	33, 62.	
469.775	do	62.	
469.78125	do	33, 62.	
469.7875	do	30, 62.	
469.79375	do	33, 62.	
469.800	do	62.	
469.80625	do	33, 62.	
469.8125	do	30, 62.	
469.81875	do	33, 62.	

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitations	Coordinator
469.825	do	62.	
469.83125	do	33, 62.	
469.8375	do	30, 62.	
469.84375	do	33, 62.	
469.850	do	62.	
469.85625	do	33, 62.	
469.8625	do	30, 62.	
469.86875	do	33, 62.	
469.875	do	62.	
469.88125	do	33, 62.	
469.8875	do	30, 62.	
469.89375	do	33, 62.	
469.900	do	62.	
469.90625	do	33, 62.	
469.9125	do	30, 62.	
469.91875	do	33, 62.	
469.925	do	62.	
469.93125	do	33, 62.	
469.9375	do	30, 62.	
469.94375	do	33, 62.	
469.950	do	62.	
469.95625	do	33, 62.	
469.9625	do	30, 62.	
469.96875	do	33, 62.	
469.975	do	62.	
469.98125	do	33, 62.	
470 to 512	Base or mobile	70.	
809 to 824	Mobile	71	
854 to 869	Base or mobile	71	
896 to 901	Mobile	71.	
928 and above	Operational fixed.	72.	
929 to 930	Base only	73.	
935 to 940	Base or mobile	71.	
1427 to 1432	Base, mobile or operational fixed..	55	
2,450 to 2,500	Base or mobile	74.	
5850–5925	do	90, 91	Not applicable.
10,550 to 10,680.	do	76.	

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b)(3) of this section:

(1) Use of this frequency is permitted as follows:

(i) Only entities engaged in the following activities are eligible to use this spectrum, and then only in accordance with § 90.266:

(A) Prospecting for petroleum, natural gas or petroleum products;

(B) Distribution of electric power or the distribution by pipeline of fuels or water;

(C) Exploration, its support services, and the repair of pipelines; or

(D) The repair of telecommunications circuits.

(ii) Except as provided in this part, licensees may not use these frequencies in the place of other operational circuits permitted by the Commission's rules. Circuits operating on these frequencies may be used only for the following purposes:

(A) Providing standby backup communications for circuits which have been disrupted and which directly affect the safety of life, property, or the national interest or are used for coordinating inter-utility, intra-utility, and power pool distribution of electric power;

(B) Providing operational circuits during exploration;

(C) Coordinating the repair of inter-utility, intra-utility, and power pool electric power distribution networks, or the repair of pipelines;

(D) Exploratory efforts in mining for solid fuels, minerals, and metals important to the national interest;

(E) Repair of pipelines used for the transmission of fuel or water;

(F) Services supporting the exploration for energy or mineral resources important to the national interest, without which such exploration cannot be conducted; or

(G) Coordinating the repair of wireline or point-to-point microwave circuits.

(2) [Reserved]

(3) This frequency is available for assignment only to stations utilized for geophysical purposes.

(4) Geophysical operations may use tone or impulse signaling for purposes other than indicating failure of equipment or abnormal conditions on this frequency. All such tone or impulse signaling shall be on a secondary basis and subject to the following limitations:

(i) Maximum duration of a single non-voice transmission may not exceed 3 minutes;

(ii) The bandwidth utilized for secondary tone or impulse signaling shall not exceed that authorized to the licensee for voice emission on the frequency concerned;

(iii) Frequency loading resulting from the use of secondary tone or impulse signaling will not be considered in whole or in part, as a justification for authorizing additional frequencies in the licensee's mobile service system; and

(iv) The maximum transmitter output power for tone or impulse transmissions shall not exceed 50 watts.

(5) Frequencies below 25 MHz will be assigned to base or mobile stations only upon a satisfactory showing that, from a safety of life standpoint, frequencies above 25 MHz will not meet the operational requirements of the applicant.

(6) Frequencies may be assigned in pairs with the separation between base and mobile transmit frequencies being 5.26 MHz. A mobile station may be assigned the frequency which would normally be assigned to a base station for single frequency operation. However, this single-frequency operation may be subject to interference that would not occur to a two-frequency system. Base or mobile stations operating wholly within Standard Metropolitan Areas having 50,000 or more population (1950 Census) must be operated in the half-duplex mode.

(7) This frequency is available for assignment to geophysical stations on a secondary basis to other licensees. Geophysical stations must cease operations on this frequency immediately upon receiving notice that interference is being caused to mobile service stations.

(8) This frequency is primarily available for oil spill containment and cleanup operations and for training and drills essential in the preparations for the containment and cleanup of oil spills. It is secondarily available for general base-mobile operations on a noninterference basis. Secondary users of this frequency are required to forego its use should oil spill containment and cleanup activities be present in their area of operation or upon notice by the Commission or a primary user that harmful interference is being caused to oil spill containment or cleanup activities in other areas.

(9) Operation on this frequency is secondary to stations in the maritime mobile service operating in accordance with the International table of frequency allocations.

(10) This frequency will be assigned only to stations used in itinerant operations, except within 56 km (35 miles) of Detroit, Mich., where it may be assigned for either itinerant or permanent area operations (*i.e.*, general use).

(11) Operation on this frequency is limited to a maximum output power of 2 watts; and each station authorized will be classified and licensed as a mobile station. Any units of such a station, however, may provide the operational functions of a base or fixed station on a secondary basis to mobile service operations, Provided, that the separation between the control point and the center of the radiating portion of the antenna of any units so used does not exceed 8 m (25 ft.).

(12) This frequency may not be used aboard aircraft in flight.

(13) This frequency is shared with the Public Safety Pool.

(14) Operation on this frequency is limited to a maximum output power of 1 watt and each station authorized will be classified and licensed as a mobile station. Any units of such a station, however, may provide the operational functions of a base or fixed station on a secondary basis to mobile service operations, provided that the separation between the control point and the center of the radiating portion of the antenna of any units so used does not exceed 8m (25 ft.).

(15) This Government frequency is available for shared Government/non-Government use by stations engaged in oil spill containment and cleanup operations and for training and drills essential in the preparation for containment and cleanup of oil spills. Such use will be confined to inland and coastal waterways.

(16) This frequency may be assigned only to stations operating in an interconnected or coordinated utility system in accordance with an operational communications plan which sets forth all points of communications. Authorizations at variance with an established operational communications plan will be made only on a secondary basis.

(17) This frequency will be assigned only to stations used in itinerant operations.

(18) This frequency is also used on a secondary basis for cordless telephones under part 15 of this chapter.

(19) In addition to single frequency operation, this frequency is available

to base and mobile stations for the paired frequency mode of operation. For two frequency systems, the separation between base and mobile transmit frequencies is 500 kHz with the base stations transmitting on the higher of the two frequencies.

(20) In the State of Alaska only, the frequency 44.10 MHz is available for assignment on a primary basis to stations in the Common Carrier Rural Radio Service utilizing meteor burst communications. The frequency may be used by private radio stations for meteor burst communications on a secondary, non-interference basis. Usage shall be in accordance with parts 22 and 90 of this chapter. Stations utilizing meteor burst communications shall not cause harmful interference to stations of other radio services operating in accordance with the allocation table.

(21) In the State of Alaska only, the frequency 44.20 MHz is available for assignment on a primary basis to private land mobile radio stations utilizing meteor burst communications. The frequency may be used by common carrier stations for meteor burst communications on a secondary, non-interference basis. Usage shall be in accordance with parts 22 and 90 of this chapter. Stations utilizing meteor burst communications shall not cause harmful interference to stations of other radio services operating in accordance with the allocation table.

(22) The frequencies available for use at operational fixed stations in the band 72-76 MHz are listed in § 90.257(a)(1). These frequencies are shared with other services and are available only in accordance with the provisions of § 90.257. Seismic telemetry transmitters certificated with 1 watt or less power and a frequency tolerance not exceeding ±0.005% may be used as temporary operational fixed stations.

(23) This frequency is shared with fixed stations in other services and is subject to no protection from interference.

(24) All operations on this frequency are subject to the provisions of § 90.257(b).

(25) This frequency is shared with the Radio Control (R/C) Service, of the part 95 Personal Radio Services, where it is used solely for the radio control of models.

(26) Pulsed modulations will not be authorized on this frequency.

(27) Assignment of frequencies in this band are subject to the provisions of § 90.173. In the 150–170 MHz band, licensees as of August 18, 1995 who operate systems that are 2.5 kHz removed from regularly assignable frequencies may continue to operate on a secondary, non-interference basis after August 1, 2003.

(28) In Puerto Rico and the Virgin Islands this frequency is subject to the following:

(i) This frequency is assigned only for one-way paging communications to mobile receivers. Only A1D, A2D, A3E, F1D, F2D, F3E, or G3E emissions may be authorized. Licensees may provide one-way paging communications on this frequency to individuals, persons eligible for licensing under subparts B or C of this part, to representatives of Federal Government agencies, and foreign governments and their representatives; and

(ii) This frequency will not be assigned to stations for use at temporary locations.

(29) This frequency will be authorized a channel bandwidth of 25 kHz. Except when limited elsewhere, one-way paging transmitters on this frequency may operate with an output power of 350 watts.

(30) This frequency will be assigned with an authorized bandwidth not to exceed 11.25 kHz. In the 450–470 MHz band, secondary telemetry operations pursuant to § 90.238(e) will be authorized on this frequency.

(31) Use of this frequency is limited to stations located in Puerto Rico and the Virgin Islands.

(32) This frequency is not available to stations located in Puerto Rico and the Virgin Islands.

(33) This frequency will be assigned with an authorized bandwidth not to exceed 6 kHz.

(34) Operation on this frequency is limited to a maximum output power of 35 watts.

(35) This frequency may be used for mobile operation for radio remote control and telemetering functions. A1D,

A2D, F1D, or F2D emission may be authorized and mobile stations used to control remote objects or devices may be operated on the continuous carrier transmit mode.

(36) This frequency is assigned only for one-way paging communications to mobile receivers. Only A1D, A2D, A3E, F1D, F2D, F3E, or G3E emissions may be authorized. Licensees may provide one-way paging communications on this frequency to individuals, persons eligible for licensing under subparts B or C of this part, to representatives of Federal Government agencies, and foreign governments and their representatives.

(37) This frequency is available on a secondary basis to one-way paging communications.

(38) This frequency will not be assigned to stations for use at temporary locations.

(39) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 2.8 kHz and the maximum frequency deviation may not exceed 2.5 kHz. For AM transmitters the highest modulating frequency may not exceed 2.0 kHz. The carrier frequency must be maintained within 0.0005 percent, and the authorized bandwidth may not exceed 6 kHz.

(40) This frequency is shared with the Public Safety Pool for remote control and telemetry operations.

(41) Operational fixed stations must employ directional antennas having a front-to-back ratio of at least 20 dB. Omnidirectional antennas having unity gain may be employed for stations communicating with at least three receiving locations separated by 160 deg. of azimuth.

(42) The maximum effective radiated power (ERP) may not exceed 20 watts for fixed stations and 2 watts for mobile stations. The height of the antenna system may not exceed 15.24 meters (50 ft.) above the ground. All such operation is on a secondary basis to adjacent channel land mobile operations.

(43) This frequency is available for the following:

(i) Assignment to multiple address fixed stations employing omnidirectional antennas used for power utility peak load shaving and shedding and to mobile stations used for the remote control of objects and devices. The maximum power that may be authorized to fixed stations is 300 watts output, and the maximum power that may be authorized for mobile stations is 1 watt output. This frequency may also be assigned to operational fixed stations employing directional antenna systems (front-to-back ratio of 20 dB) when such stations are located at least 120 km. (75 mi.) from the boundaries of any urbanized area of 200,000 or more population. (U.S. Census of Population, 1960). The maximum power output of the transmitter for such fixed stations may not exceed 50 watts. A1A, A1D, A2B, A2D, F1B, F1D, F2B, F2D, G1B, G1D, G2B, or G2D emission may be authorized; or

(ii) On a secondary basis for remote control and telemetry operations, subject to paragraphs (c)(41), (42), (43), (46), and (47) of this section.

(44) The maximum output power of the transmitter may not exceed 50 watts for fixed stations and 1 watt for mobile stations. A1A, A1D, A2B, A2D, F1B, F1D, F2B, F2D, G1B, G1D, G2B, or G2D emission may be authorized, and mobile stations used to control remote objects and devices may be operated in the continuous transmit mode.

(45) [Reserved]

(46) This frequency is limited to a maximum power of 20 watts.

(47) This frequency may be used for mobile operation for remote control and telemetering functions. A1D, A2D, F1D, or F2D emission may be authorized. The use of the continuous carrier transmit mode for these purposes is permitted only for stations authorized and continuously licensed since before May 21, 1971.

(48) Operation on this frequency is limited to a maximum output power of 20 watts.

(49) Operation on this frequency is limited to a maximum output power of 75 watts.

(50) This frequency may also be used for the transmission of tone or voice communications, including such communications when prerecorded, for purposes of automatically indicating abnormal conditions of trackage and railroad rolling stock when in motion, on a secondary basis to other stations on

this frequency. All such operations shall be subject to the following:

(i) The output power shall not exceed 30 watts;

(ii) The bandwidth used shall not exceed that authorized to the licensee for voice transmissions on the frequency concerned;

(iii) The station shall be so designed and installed that it can normally be activated only by its associated automatic control equipment and, in addition, it shall be equipped with a time delay or clock device which will deactivate the station within three (3) minutes following activation by the last car in the train; and

(iv) Stations authorized pursuant to the provisions of this paragraph are exempt from the station identification requirements of § 90.425.

(51) In Puerto Rico and the Virgin Islands only, this frequency is available on a shared basis with remote pickup broadcast stations.

(52) In Puerto Rico and the Virgin Islands only, this frequency is available to all stations operating in the Industrial/Business Pool and may be coordinated by any frequency coordinator certified in the Industrial/Business Pool.

(53) Frequencies in this band will be assigned only for transmitting hydrological or meteorological data or for low power wireless microphones in accordance with the provisions of § 90.265.

(54) For FM transmitters the sum of the highest modulating frequency and the amount of frequency deviation may not exceed 1.7 kHz and the maximum deviation may not exceed 1.2 kHz. For AM transmitters the highest modulating frequency may not exceed 1.2 kHz. The carrier frequency must be maintained within 0.0005 percent and the authorized bandwidth may not exceed 3 kHz.

(55) This band is available to stations operating in this service subject to the provisions of § 90.259.

(56) Subpart T of this part contains rules for assignment of frequencies in the 220–222 MHz band.

(57) The requirements for secondary fixed use of frequencies in this band are set forth in § 90.261.

(58) Operational fixed assignments on this frequency will only be made to an itinerant fixed control or relay station on a secondary basis to land-mobile stations in the Industrial/Business Pool, provided that the fixed relay or control station is to be associated with base and mobile facilities authorized to use other frequencies available for itinerant operation in the Industrial/Business Pool. All such use of these frequencies for fixed systems is limited to locations 161 or more km. (100 mi.) from the center of any urbanized area of 200,000 or more population, except that the distance may be 120 km. (75 mi.) if the output power does not exceed 20 watts. All such fixed systems are limited to a maximum of two frequencies and must employ directional antennas with a front-to-back ratio of at least 15 dB. The centers of urbanized areas of 200,000 or more population are determined from the appendix, page 226, of the U.S. Commerce publication, ''Air Line Distance Between Cities in the United States.'' Urbanized areas of 200,000 or more population are defined in the U.S. Census of Population, 1960, volume 1, table 23, page 1–50.

(59) This frequency may be assigned primarily for stations used for the purpose of controlling slave locomotives that are placed within a train to assist the lead locomotive by providing, among other functions, auxiliary starting, pulling, and braking actions. Additionally, on a secondary basis this frequency may be assigned for remote control of all types of locomotives and, within a railroad yard or terminal area, for remote control of cab indicator devices placed with a locomotive to give visual signals to the operator of the locomotive. (A1, A2, F1 or F2 emissions may be authorized.)

(60)(i) This frequency is available for voice or non-voice communications concerned with cargo handling from a dock or cargo handling facility, a vessel alongside the dock, or cargo handling facility. The effective radiated power (ERP) shall not exceed 2 watts. Mobile relay stations may be temporarily installed on vessels located at or in the vicinity of a dock or cargo handling facility. The center of the radiating system of the mobile relay shall be located no more than 3 meters (10

feet) above the vessel's highest working dock.

(ii) This frequency is also available for low power non-cargo handling operations, both voice and non-voice, on a secondary basis to cargo handling communications. Such operations are not subject to the power limitations in paragraph (c)(60)(i) of this section on the following frequencies: 457.525 MHz, 457.550 MHz, 457.5625 MHz, 457.575 MHz, 457.5875 MHz, 457.600 MHz, and 457.6125 MHz. This frequency will not be assigned for non-cargo handling operations at temporary locations.

(iii) For mobile relay operations under paragraph (c)(60)(i) of this section, frequency pairing is as follows:

Mobile relay (MHz) [1]	Mobile (MHz)
457.525	467.750
457.53125	467.75625
457.5375	467.7625
457.54375	467.76875
457.550	467.775
457.55625	467.78125
457.5625	467.7875
457.56875	467.79375
457.575	467.800
457.58125	467.80625
457.5875	467.8125
457.59375	467.81875
457.600	467.825
457.60625	467.83125
457.6125	.....
457.61875	.....

[1] The mobile relay frequencies may also be used for single frequency simplex.

(61) This frequency is available for assignment as follows:

(i) To persons furnishing commercial air transportation service or, pursuant to § 90.179, to an entity furnishing radio communications service to persons so engaged, for stations located on or near the airports listed in paragraph (c)(61)(iv) of this section. Stations will be authorized on a primary basis and may be used only in connection with servicing and supplying of aircraft. Operation on this frequency is limited to a maximum effective radiated power (ERP) of 100 watts at locations within 16 km (10 miles) of the coordinates of the listed airports.

(ii) To stations in the Industrial/Business Pool for secondary use at locations 80 km (approximately 50 miles) or more from the coordinates of the listed airports. Operation will be limited to a maximum ERP of 300 watts.

(iii) To stations in the Industrial/Business Pool for secondary use at locations greater than 16 km (approximately 10 miles) but less than 80 km (approximately 50 miles) from the coordinates of the listed airports. Operation will be limited to a maximum ERP of 10 watts. Use of this frequency is restricted to the confines of an industrial complex or manufacturing yard area. Stations licensed prior to April 25, 2005, may continue to operate with facilities authorized as of that date.

(iv) The airports and their respective reference coordinates are (coordinates are referenced to North American Datum 1983 (NAD83)):

City and airport	Reference coordinates	
	N. Latitude	W. Longitude
Aberdeen, SD: Aberdeen Regional (ABR)	45°26′56.6″	98°25′18.6″
Agana, GU: Guam International (GUM)	13°29′00.4″	144°47′45.5″ E
Akron, OH: Akron-Canton Regional (CAK)	40°54′58.7″	81°26′32.9″
Alamosa, CO: San Luis Valley Regional/Bergman Field (ALS)	37°26′05.7″	105°51′59.6″
Albany, NY: Albany Int'l (ALB)	42°44′53.2″	73°48′10.7″
Albuquerque, NM: Albuquerque International Sunport (ABQ)	35°02′24.8″	106°36′33.1″
Allentown-Bethlehem, PA: Lehigh Valley Int'l (ABE)	40°39′08.5″	75°26′25.5″
Amarillo, TX: Amarillo International (AMA)	35°13′09.7″	101°42′21.3″
Anchorage, AK: Ted Stevens Anchorage International (ANC)	61°10′27.6″	149°59′46.3″
Appleton, WI: Outagamie County Regional (ATW)	44°15′26.7″	88°31′10.1″
Aspen, CO: Aspen-Pitkin County/Sardy Field (ASE)	39°13′23.4″	106°52′07.9″
Atlanta, GA:		
Atlanta International (ATL)	33°38′25.6″	84°25′37.0″
Dekalb-Peachtree (PDK)	33°52′32.2″	84°18′07.1″
Fulton County (FTY)	33°46′44.9″	84°31′16.9″
Austin, TX: Austin Bergstrom International (AUS)	30°11′40.3″	97°40′11.5″
Bakersfield, CA: Meadows Field (BFL)	35°26′00.9″	119°03′24.4″
Baltimore, MD: Baltimore-Washington Int'l (BWI)	39°10′31.5″	76°40′05.5″
Baton Rouge, LA: Baton Rouge Metropolitan (BTR)	30°31′59.4″	91°08′58.7″
Billings, MT: Billings Logan International (BIL)	45°48′27.6″	108°32′34.3″
Birmingham, AL: Birmingham Int'l (BHM)	33°33′46.6″	86°45′12.8″

City and airport	Reference coordinates	
	N. Latitude	W. Longitude
Bismarck, ND: Bismarck Municipal (BIS)	46°46′21.8″	100°44′44.7″
Boise, ID: Boise Air Terminal (BOI)	43°33′52.0″	116°13′22.0″
Boston, MA: Logan International (BOS)	42°21′51.7″	71°00′18.7″
Bozeman, MT: Gallatin Field (BZN)	45°46′36.8″	111°09′10.8″
Bridgeport, CT: Sikorsky Memorial (BDR)	41°09′48.5″	73°07′34.2″
Buffalo, NY: Buffalo Niagara Int'l (BUF)	42°56′25.9″	78°43′55.8″
Burlington, VT: Burlington Int'l (BTV)	44°28′18.7″	73°09′11.8″
Cedar Rapids, IA: The Eastern Iowa (CID)	41°53′04.5″	91°42′39.1″
Charleston, SC: Charleston AFB/International (CHS)	32°53′55.1″	80°02′25.8″
Charlotte, NC: Charlotte-Douglas Int'l (CLT)	35°12′50.4″	80°56′35.3″
Chattanooga, TN: Lovell (CHA)	35°02′06.9″	85°12′13.6″
Chicago, IL-Northwest, IN:		
Chicago-Wheeling-Palwaukee (PWK)	42°06′51.1″	87°54′05.3″
Meigs (CGX)	41°51′31.8″	87°36′28.5″
South Bend Regional (SBN)	41°42′32.2″	86°19′06.5″
Midway (MDW)	41°47′09.5″	87°45′08.7″
O'Hare International (ORD)	41°58′46.5″	87°54′16.1″
West Chicago-Dupage (DPE)	41°54′24.8″	88°14′54.3″
Cincinnati, OH:		
Cincinnati-Blue Ash (ISZ)	39°14′48.1″	84°23′20.3″
Lunken (LUK)	39°06′12.0″	84°25′07.0″
Cleveland, OH:		
Burke Lakefront (BKL)	41°31′03.0″	81°41′00.0″
Cuyahoga County (CGF)	41°33′54.5″	81°29′10.9″
Hopkins International (CLE)	41°24′39.2″	81°50′57.8″
Columbia, SC: Columbia Metropolitan (CAE)	33°56′19.8″	81°07′10.3″
Columbus, GA: Columbus Metropolitan (CSG)	32°30′58.8″	84°56′19.9″
Columbus, OH:		
Port Columbus Int'l (CMH)	39°59′52.8″	82°53′30.8″
Rickenbacker International (LCK)	39°48′49.5″	82°55′40.3″
Corpus Christi, TX: Corpus Christi International (CRP)	27°46′13.3″	97°30′04.4″
Covington/Cincinnati, KY: Cincinnati/Northern Kentucky Int'l (CVG)	39°02′46.1″	84°39′43.8″
Crescent City, CA: Jack McNamara Field (CEC)	41°46′48.6″	124°14′11.5″
Dallas, TX:		
Addison (ADS)	32°58′06.8″	96°50′11.2″
Dallas-Ft. Worth Int'l (DFW)	32°53′45.4″	97°02′13.9″
Dallas-Love Field (DAL)	32°50′49.6″	96°51′06.4″
Red Bird (RBD)	32°40′51.1″	96°52′05.5″
Davenport, IA (Rock Island, Moline, IL):		
Davenport Municipal (DVN)	41°36′37.0″	90°35′18.0″
Quad City (MLI)	41°26′54.7″	90°30′27.1″
Dayton, OH: Dayton International (DAY)	39°54′08.6″	84°13′09.8″
Denver, CO:		
Centennial (APA)	39°34′12.5″	104°50′57.5″
Colorado Springs Municipal (COS)	38°48′20.9″	104°42′00.9″
Jeffco (BJC)	39°54′31.6″	105°07′01.9″
Denver International (DEN)	39°51′30.3″	104°40′01.2″
Des Moines, IA: Des Moines Int'l (DSM)	41°32′05.8″	93°39′38.5″
Detroit, MI:		
Detroit City (DET)	42°24′33.1″	83°00′35.5″
Detroit Metro-Wayne County (DTW)	42°12′43.4″	83°20′55.8″
Oakland-Pontiac (PTK)	42°39′54.7″	83°25′07.4″
Willow Run (YIP)	42°14′16.5″	83°31′49.5″
Duluth, MN: Duluth International (DLH)	46°50′31.5″	92°11′37.1″
Durango, CO: Durango-La Plata County (DRO)	37°09′05.5″	107°45′13.6″
Eagle, CO: Eagle County Regional (EGE)	39°38′33.2″	106°55′03.7″
El Paso, TX: El Paso International (ELP)	31°48′24.0″	106°22′40.1″
Eugene, OR: Mahlon Sweet Field (EUG)	44°07′23.7″	123°13′07.3″
Eureka, CA: Eureka Municipal (033)	40°46′51.4″	124°12′44.2″
Fargo, ND: Hector International (FAR)	46°55′09.7″	96°48′53.9″
Flint, MI: Bishop (FNT)	42°57′55.8″	83°44′36.4″
Ft. Lauderdale-Hollywood, FL:		
Ft. Lauderdale Executive (FXE)	26°11′50.2″	80°10′14.6″
Ft. Lauderdale-Hollywd Int'l (FLL)	26°04′21.3″	80°09′09.9″
Ft. Meyers, FL: Page Field (FMY)	26°35′11.8″	81°51′47.7″
Ft. Meyers, FL: Southwest Florida International (RSW)	26°32′10.2″	81°45′18.6″
Ft. Wayne, IN: Fort Wayne International (FWA)	40°58′42.5″	85°11′42.5″
Ft. Worth, TX:		
Fort Worth Alliance (AFW)	32°59′12.5″	97°19′07.7″
Meacham (FTW)	32°49′11.2″	97°21′44.8″
Fresno, CA:		
Fresno-Chandler Downtown (FCH)	36°43′56.5″	119°49′11.6″

City and airport	Reference coordinates	
	N. Latitude	W. Longitude
Fresno Yosemite Int'l (FAT)	36°46′34.3″	119°43′05.3″
Gainesville, FL: Gainesville Regional (GNV)	29°41′24.2″	82°16′18.4″
Grand Forks, ND: Grand Forks International (GFK)	47°56′57.3″	97°10′34.0″
Grand Rapids, MI: Gerald R. Ford Int'l (GRR)	42°52′51.0″	85°31′22.1″
Great Falls, MT: Great Falls International (GTF)	47°28′55.2″	111°22′14.5″
Green Bay, WI: Austin Straubel Int'l (GRB)	44°29′06.3″	88°07′46.5″
Greensboro, NC: Piedmont Tirad International (GSO)	36°05′51.9″	79°56′14.3″
Greer, SC: Greenville-Spartanburg Int'l (GSP)	34°53′44.4″	82°13′07.9″
Gunnison, CO: Gunnison County (GUC)	38°32′02.2″	106°55′58.9″
Hana, HI: Hana (HNM)	20°47′44.3″	156°00′52.0″
Harlingen, TX: Valley International (HRL)	26°13′42.6″	97°39′15.8″
Harrisburg, PA:		
Capital City (CXY)	40°13′01.7″	76°51′05.3″
Harrisburg Int'l (MDT)	40°11′36.6″	76°45′48.3″
Hartford, CT (Windsor Locks):		
Bradley Int'l (BDL)	41°56′20.0″	72°40′59.6″
Hartford-Brainard (HFD)	41°44′10.6″	72°39′00.8″
Hayden, CO: Yampa Valley (HDN)	40°28′52.2″	107°13′03.6″
Hilo, HI: Hilo Int'l (ITO)	19°43′12.9″	155°02′54.5″
Honolulu, HI: Honolulu International (HNL)	21°19′07.3″	157°55′20.7″
Houston, TX:		
W.P. Hobby (HOU)	29°38′43.5″	95°16′44.0″
D.W. Hooks Memorial (DWH)	30°03′42.7″	95°33′10.0″
George Bush Intercontinental (IAH)	29°58′49.7″	95°20′23.0″
Indianapolis, IN: Indianapolis Int'l (IND)	39°43′02.4″	86°17′39.8″
Jackson Hole, WY: Jackson Hole (JAC)	43°36′26.4″	110°44′15.9″
Jacksonville, FL:		
Craig Municipal (CRG)	30°20′10.8″	81°30′52.0″
Jacksonville Int'l (JAX)	30°29′38.6″	81°41′16.3″
Kalamazoo, MI: Kalamazoo/Battle Creek International (AZO)	42°14′05.5″	85°33′07.4″
Kalispell, MT: Glacier Park International (FCA)	48°18′41.1″	114°15′18.2″
Kansas City, MO-KS:		
Kansas City Int'l (MCI)	39°17′51.4″	94°42′50.1″
Kansas City Municipal Dntn (MKC)	39°07′23.7″	94°35′33.9″
Kauna Kakai, HI: Molokai (MKK)	21°09′10.4″	157°05′46.5″
Knoxville, TN: McGhee Tyson (TYS)	35°48′44.9″	83°59′34.3″
Lacrosse, WI: Lacrosse Municipal (LSE)	43°52′46.5″	91°15′24.6″
Lansing, MI: Capital City (LAN)	42°46′43.3″	84°35′14.5″
Las Vegas, NV: McCarran Int'l (LAS)	36°04′49.3″	115°09′08.4″
Lihue, HI: Lihue (LIH)	21°58′33.5″	159°20′20.3″
Lincoln, NE: Lincoln Municipal (LNK)	40°51′03.5″	96°45′33.3″
Little Rock, AR: Adams Field (LIT)	34°43′48.8″	92°13′27.3″
Los Angeles,CA:		
Burbank-Glendale-Pasadena (BUR)	34°12′02.2″	118°21′30.6″
Catalina (AVX)	33°24′17.8″	118°24′57.1″
Long Beach-Daugherty Field (LGB)	33°49′03.8″	118°09′05.8″
Los Angeles Int'l (LAX)	33°56′33.1″	118°24′29.1″
Ontario Int'l (ONT)	34°03′21.6″	117°36′04.3″
Santa Ana-John Wayne-Orange City (SNA)	33°40′32.4,″	117°52′05.6″
Louisville, KY: Louisville Int'l-Standiford Field (SDF)	38°10′27.8″	85°44′09.6″
Lubbock, TX: Lubbock International (LBB)	33°39′49.1″	101°49′22.0″
Lynchburg, VA: Lynchburg Regional-Preston Glen Field (LYH)	37°19′36.1″	79°12′01.6″
Madison, WI: Dane County Regional-Truax Field (MSN)	43°08′23.5″	89°20′15.1″
Manchester, NH: Manchester (MHT)	42°56′04.3″	71°26′13.4″
Memphis, TN: Memphis Int'l (MEM)	35°02′32.7″	89°58′36.0″
Miami, FLA:		
Miami Int'l (MIA)	25°47′35.7″	80°17′26.0″
Opa Locka (OPF)	25°54′25.2″	80°16′42.2″
Kendall-Tamiami Executive (TMB)	25°38′52.4″	80°25′58.0″
Milwaukee, WI: General Mitchell Int'l (MKE)	42°56′50.0″	87°53′47.7″
Minneapolis-St. Paul, MN: Minneapolis-St. Paul Int'l (MSP)	44°52′49.9″	93°13′00.9″
Minot, ND: Minot International (MOT)	48°15′33.8″	101°16′49.2″
Missoula, MT: Missoula International (MSO)	46°54′58.7″	114°05′26.0″
Mobile, AL: Mobile Regional (MOB)	30°41′29.1″	88°14′34.2″
Modesto, CA: Modesto City-County (MOD)	37°37′32.9″	120°57′15.9″
Monterey, CA: Monterey Peninsula (MRY)	36°35′13.1″	121°50′34.6″
Montrose, CO: Montrose Regional (MTJ)	38°30′31.9″	107°53′37.8″
Nashville, TN: Nashville Int'l (BNA)	36°07′28.1″	86°40′41.5″
New Haven, CT: Tweed-New Haven Municipal (HVN)	41°15′50.0″	72°53′13.6″
New Orleans, LA:		
Lakefront (NEW)	30°02′32.7″	90°01′41.7″
New Orleans Int'l (MYS)	29°59′36.2″	90°15′28.9″

City and airport	Reference coordinates	
	N. Latitude	W. Longitude
Newburgh, NY: Stewart International (SWF)	41°30′14.7″	74°06′17.4″
Newport News-Hampton,VA: Newport News/Williamsburg (PHF)	37°07′54.8″	76°29′34.8″
New York-Northeast, NJ:		
Republic (FRG)	40°43′43.6″	73°24′48.3″
JFK International (JFK)	40°38′23.1″	73°46′44.1″
LaGuardia (LGA)	40°46′38.1″	73°52′21.4″
Long Island-McArthur (ISP)	40°47′42.8″	73°06′00.8″
Morristown Municipal (NJ) (MMU)	40°47′57.7″	74°24′53.5″
Newark Int'l (FWR)	40°41′32.9″	74°10′07.2″
Teterboro (NJ) (TEB)	40°51′00.4″	74°03′39.0″
Norfolk, VA: Norfolk Int'l (ORF)	36°53′40.6″	76°12′04.4″
Oklahoma City, OK:		
Wiley Post (PWA)	35°32′04.4″	97°38′49.9″
Will Rogers World (OKC)	35°23′35.1″	97°36′02.6″
Omaha, NE: Eppley Airfield (OMA)	41°18′09.1″	95°53′39.0″
Orlando, FL:		
Orlando Executive (ORL)	28°32′43.7″	81°19′58.6″
Orlando Int'l (MCO)	28°25′44.0″	81°18′57.7″
Palm Springs, CA: Palm Springs International (PSP)	33°49′46.8″	116°30′24.1″
Peoria, IL: Greater Peoria Regional (PIA)	40°39′51.3″	89°41′35.9″
Philadelphia, PA-NJ:		
Northeast Philadelphia (PNE)	40°04′55.0″	75°00′38.1″
Philadelphia Int'l (PHL)	39°52′19.0″	75°14′28.1″
Phoenix, AZ:		
Phoenix-Sky Habor Int'l (PHX)	33°26′03.0″	112°00′29.0″
Scottsdale (SDL)	33°37′22.3″	111°54′37.9″
Pittsburgh, PA:		
Allegheny County (AGC)	40°21′15.9″	79°55′48.9″
Pittsburgh Int'l (PIT)	40°29′29.3″	80°13′58.3″
Portland, ME: Portland International Jetport (PWM)	43°38′46.2″	70°18′31.5″
Portland, OR:		
Portland-Hillsboro (HIO)	45°32′25.4″	122°56′59.4″
Portland International (PDX)	45°35′19.4″	122°35′51.0″
Portland-Troutdale (TTD)	45°32′57.7″	122°24′04.5″
Providence-Pawtucket, RI-MA:		
North Central State (SFZ)	41°55′14.7″	71°29′29.0″
T.F. Green State (PVD)	41°43′26.4″	71°25′41.6″
Pueblo, CO: Pueblo Memorial (PUB)	38°17′20.7″	104°29′47.7″
Raleigh/Durham, NC: Raleigh-Durham International (RDU)	35°52′39.5″	78°47′14.9″
Rapid City, SD: Rapid City Regional (RAP)	44°02′43.2″	103°03′26.5″
Reno, NV: Reno/Tahoe International (RNO)	39°29′54.8″	119°46′05.0″
Richmond, VA: Richmond International (RIC)	37°30′18.6″	77°19′10.8″
Roanoke, VA: Roanoke Regional/Woodrum Field (ROA)	37°19′31.7″	79°58′31.5″
Rochester, MN: Rochester International (RST)	43°54′26.0″	92°29′56.4″
Rochester, NY: Greater Rochester Int'l (ROC)	43°07′07.9″	77°40′20.6″
Sacramento, CA:		
Sacramento Executive (SAC)	38°30′45.1″	121°29′36.5″
Sacramento Int'l (SMF)	38°41′43.5″	121°35′26.8″
Saginaw, MI: MBS International (MBS)	43°31′58.5″	84°04′46.7″
Saipan Isl., CQ: Saipan International (GSN)	15°07′08.4″	145°43′45.7″ E
St. Louis, MO-IL:		
Spirit of St. Louis (SUS)	38°39′42.7″	90°39′04.4″
St. Louis-Lambert Int'l (STC)	38°44′51.7″	90°21′35.9″
St. Petersburg, FL:		
Albert Whitted Municipal (SPG)	27°45′54.4″	82°37′37.1″
St. Petersburg Clearwater Int'l (PIE)	27°54′38.8″	82°41′14.9″
Salt Lake City, UT: Salt Lake City Int'l (SLC)	40°47′18.2″	111°58′39.9″
San Antonio, TX: San Antonio Int'l (SAT)	29°32′01.3″	98°28′11.2″
San Diego, CA: San Diego Lindbergh Int'l (SAN)	32°44′00.8″	117°11′22.8″
San Francisco-Oakland, CA:		
Metropolitan Oakland Int'l (OAK)	37°43′16.7″	122°13′14.6″
San Francisco Int'l (SFO)	37°37′08.4″	122°22′29.4″
San Jose, CA: San Jose Int'l (SJC)	37°21′42.7″	121°55′44.4″
San Juan, PR: Luis Munoz (SJU)	18°26′21.9″	66°00′06.6″
Santa Barbara, CA: Santa Barbara Municipal (SBA)	34°25′34.4″	119°50′25.3″
Santa Fe, NM: Santa Fe Municipal (SAF)	35°37′00.4″	106°05′17.3″
Sarasota, FL: Sarasota/Bradenton International (SRQ)	27°23′43.2″	82°33′14.8″
Savannah, GA: Savannah International (SAV)	32°07′39.3″	81°12′07.7″
Seattle, WA:		
Boeing/King County Int'l (BFI)	47°26′47.9″	122°18′33.5″
Seattle-Tacoma Int'l (SEA)	47°26′56.3″	122°18′33.5″
Shreveport, LA:		
Shreveport Downtown (DTN)	32°32′24.8″	93°44′42.1″

City and airport	Reference coordinates	
	N. Latitude	W. Longitude
Shreveport Regional (SHV)	32°26′47.9″	93°49′32.2″
Sioux City, IA: Sioux Gateway (SUX)	42°24′09.4″	96°23′03.7″
Sioux Falls, SD: Joe Foss Field (FSD)	43°34′52.9″	96°44′30.1″
South Bend, IN: South Bend Regional (SBN)	41°42′32.2″	86°19′06.5″
Spokane, WA:		
Grant County Int'l (MWH)	47°12′27.5″	119°19′12.7″
Spokane Int'l (GEG)	47°37′11.5″	117°32′01.8″
Springfield, MA:		
Barnes Municipal (BAF)	42°09′27.8″	72°42′56.2″
Westover ARB/Metropolitan (CEF)	42°11′53.8″	72°32′03.3″
Springfield, MO: Springfield-Branson Regional (SGF)	37°14′39.6″	93°23′12.7″
Syracuse, NY: Syracuse-Hancock Int'l (SYR)	43°06′40.3″	76°06′22.7″
Tacoma, WA: Tacoma Narrows (TIW)	47°16′04.6″	122°34′41.2″
Tallahassee, FL: Tallahassee Regional (TLH)	30°23′47.5″	84°21′01.2″
Tampa, FL: Tampa Int'l (TPA)	27°58′31.7″	82°31′59.7″
Telluride, CO: Telluride Regional (TEX)	37°57′13.5″	107°54′30.5″
Toledo, OH: Toledo Express (TOL)	41°35′12.5″	83°48′28.2″
Trenton, NJ-PA: Trenton Mercer (TTN)	40°16′36.1″	74°48′48.5″
Tucson, AZ: Tucson Int'l (TUS)	32°06′57.9″	110°56′27.7″
Tulsa, OK:		
R.L. Jones, Jr. (RVS)	36°02′22.7″	95°59′04.7″
Tulsa Int'l (TUL)	36°11′54.1″	95°53′17.7″
Washington, DC:		
Dulles International (IAD)	38°56′40.3″	77°27′20.9″
Ronald Reagan National (DCA)	38°51′07.5″	77°02′15.8″
Waterloo, IA: Waterloo Municipal (ALO)	42°33′25.5″	92°24′01.2″
West Palm Beach, FL: Palm Beach International (PBI)	26°40′59.4″	80°05′44.1″
White Plains, NY: Westchester County (HPN)	41°04′01.1″	73°42′27.3″
Wichita, KS: Mid-Continent (ICT)	37°38′59.9″	97°25′58.9″
Scranton, PA: Wilkes-Barre/Scranton Int'l (AVP)	41°20′17.3″	75°43′27.4″
Wilmington, DE: New Castle County (ILG)	39°40′43.4″	75°36′23.5″
Worcester, MA: Worcester Regional (ORH)	42°16′02.4″	71°52′32.6″
Youngstown-Warren, OH-PA: Youngstown-Warren Regional (YNG)	41°15′38.7″	80°40′44.8″

[1] Coordinates followed by an "E" are east longitude.

(62) This frequency may be assigned to fixed stations in the Industrial/Business Pool in accordance with the provisions of § 90.261.

(63) Within the boundaries of urbanized areas of 200,000 or more population, defined in the United States Census of Population, 1960, vol. 1, table 23, page 1–50, this frequency may be used only by persons rendering a central station commercial protection service within the service area of the radio station utilizing the frequency and may be used only for communications pertaining to safety of life and property, and for maintenance or testing of the protection facilities. Central Station commercial protection service is defined as an electrical protection and supervisory service rendered to the public from and by a central station accepted and certified by one or more of the recognized rating agencies, or the Underwriters Laboratories' (UL), or Factory Mutual System. Other stations in the Industrial/Business Pool may be licensed on this frequency only when all base, mobile relay and control stations are located at least 120 km (75 miles) from the city center or centers of the specified urbanized areas of 200,000 or more population. With respect to combination urbanized areas containing more than one city, 120 km (75 mile) separation shall be maintained from each city center which is included in the urbanized area. The locations of centers of cities are determined from appendix, page 226, of the U.S. Commerce publication ''Air Line Distance Between Cities in the United States.''

(64) Persons who render a central station commercial protection service are authorized to operate fixed stations on this frequency for the transmission of tone or impulse signals on a secondary, noninterference base-to-base/mobile operations subject to the following conditions and limitations:

(i) Secondary fixed operations may be used only for the following purposes:

(A) Indication of equipment malfunction;

(B) Actuation of a device to indicate the presence of an intruder, fire, or other hazardous condition on the property under the protection of the licensee;

(C) Indication of an abnormal condition in facilities under the protection of the licensee that, if not promptly reported, would result in danger to human life;

(D) Transmission, as may be necessary, to verify status of equipment; adjust operating conditions; or correct any abnormal condition; or

(E) Confirmation of status, or that an operation or correction has been accomplished.

(ii) The maximum duration of any one non-voice signal may not exceed 2 seconds and shall not be transmitted more than three times.

(iii) Systems employing automatic interrogation shall be limited to non-voice techniques and shall not be activated for this purpose more than 10 seconds out of any 60-second period. This 10-second frame includes both transmit and response times.

(iv) The bandwidth shall not exceed that authorized to the licensee for the primary operation on the frequency concerned.

(v) Frequency loading resulting from the use of secondary signaling will not be considered in whole or in part as a justification for authorizing additional frequencies in the licensee's mobile system.

(vi) A mobile service frequency may not be used exclusively for secondary signaling.

(vii) The output power shall not exceed 30 watts (at the remote site).

(viii) A1D, A2D, F1D, or F2D emission may be authorized.

(ix) The transmitter shall be designed to deactivate automatically after 3 minutes of continuous carrier radiation.

(x) Operational fixed stations authorized under this paragraph are exempt from the requirements of §§ 90.137(b), 90.429(d), 90.425 and 90.433.

(xi) On these frequencies, base, mobile relay or mobile stations may transmit secondary tone or impulse signals to receivers, as provided in this section.

(65) Licensees providing a central station commercial protection service may communicate with police or fire stations, or vehicles, on this frequency, and may install licensed transmitting units which operate on this frequency at police or fire stations, or in police or fire vehicles, if the frequency's primary use is in a base/mobile system for a central station commercial protection service.

(66) This frequency may be assigned only to persons rendering a central station commercial protection service, which is defined in paragraph (c)(63) of this section, within the service area of the radio station utilizing the frequency.

(67) Medical telemetry operations are authorized on this frequency on a secondary basis. Medical telemetry operations are subject to the provisions of § 90.267(h)(2).

(68) Each station authorized on this frequency will be classified and licensed as a mobile station. Any units of such a station, however, may provide the operational functions of a base station on a secondary basis to mobile service operations provided that the vertical separation between control point or ground level and the center of the radiating portion of the antenna of any units so used does not exceed 8 meters (approximately 25 feet). This frequency is available for assignment as follows:

(i) To persons furnishing commercial air transportation service or, pursuant to § 90.179, to an entity furnishing radio communications service to persons so engaged, for stations located on or near the airports listed in paragraph (c)(61)(iv) of this section. Stations will be authorized on a primary basis and may be used only in connection with servicing and supplying of aircraft. Operation on this frequency is limited to a maximum effective radiated power (ERP) of 40 watts at locations within 16 km (approximately 10 miles) of the coordinates of the listed airports.

(ii) To stations in the Industrial/Business Pool for secondary use at locations 80 km (approximately 50 miles) or more from the coordinates of the listed airports. Operation will be limited to a maximum ERP of 120 watts.

Wide area operation will not be permitted. The area of normal, day-to-day operations will be described in the application.

(iii) To stations in the Industrial/Business Pool for secondary use at locations greater than 16 km (approximately 10 miles) but less than 80 km (approximately 50 miles) from the coordinates of the listed airports. Operation will be limited to a maximum ERP of 6 watts. Use of this frequency is restricted to the confines of an industrial complex or manufacturing yard area. Stations licensed prior to April 25, 2005, may continue to operate with facilities authorized as of that date.

(69) This frequency may be used on a secondary, non-interference basis by a hospital or health care institution holding a license to operate a radio station under this part to operate a medical radio telemetry device with an output power not to exceed 20 milliwatts without specific authorization from the Commission.

(70) Subpart L of this part contains rules for assignment of frequencies in the 470–512 MHz band.

(71) Subpart S of this part contains rules for assignment of frequencies in the 806–821/851–866 and 896–901/935–940 MHz bands.

(72) Assignment of frequencies above 928 MHz for operational-fixed stations is governed by part 101 of this chapter.

(73) Frequencies in this band are available only for one-way paging operations in accordance with § 90.494.

(74) Available only on a shared basis with stations in other services, and subject to no protection from interference due to the operation of industrial, scientific, or medical (ISM) devices. In the band 2483.5–2500 MHz, no applications for new stations or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, and licensees whose initial applications were filed on or before July 25, 1985, are grandfathered and their operations are on a co-primary basis with the mobile-satellite and radiodetermination-satellite services, and in the segment 2495–2500 MHz, their operations are also on a co-primary basis with part 27 fixed and mobile except aeronautical mobile service operations.

(75) [Reserved]

(76) The frequencies in the band 10.55–10.68 GHz are available for Digital Termination Systems and for associated intermodal links in the Point-to-Point Microwave Service. No new licenses will be issued under this subpart but current licenses will be renewed.

(77) All communications on this frequency must be conducted within the boundaries or confines of the licensee's business premises.

(78) Base and mobile stations authorized as of April 1, 1968, may continue to be authorized for such operation on a secondary basis to the Maritime Mobile Service. The licensees of such stations may renew, modify, reinstate, or assign their licenses in those cases where such assignment accompanies a change of ownership of the licensee's business to the assignee, and may expand existing systems when using that frequency; however, they will not be authorized to establish any new systems.

(79) Frequencies may be assigned in pairs with the separation between base and mobile transmit frequencies being 5.26 MHz. A mobile station may be assigned the frequency which would normally be assigned to a base station for single frequency operation. However, this single-frequency operation may be subject to interference that would not occur to a two-frequency system. Base or mobile stations located 80.5 km (50 miles) or less from the center or any urbanized area of 600,000 or more population (U.S. Census of Population, 1970) must be operated in the half-duplex mode.

(80) Concurrence from the Petroleum Coordinator is required only for applications for this frequency that request authorization for transmitters in Arkansas, Louisiana, Oklahoma, or Texas.

(81) Concurrence from the Petroleum Coordinator is required only for applications for this frequency that request authorization for transmitters in Arkansas, Louisiana, Oklahoma, Oregon, Texas, or Washington.

(82) After December 7, 2000 new stations will only be licensed with an authorized bandwidth not to exceed 11.25 kHz. Licensees authorized prior to December 7, 2000 may continue to use

bandwidths wider than 11.25 kHz on a co-primary basis until January 1, 2005. After January 1, 2005, all stations operating with an authorized bandwidth greater than 11.25 kHz will be secondary to adjacent channel public safety interoperability operations. (*See* § 90.20(c)(3)).

(83) Telemetry operations on this frequency will be authorized pursuant to § 90.267.

(84) Operation on this frequency is subject to the low power provisions of § 90.267. This frequency is assigned to Group A in the low power pool.

(85) Operation on this frequency is subject to the low power provisions of § 90.267. This frequency is assigned to Group B in the low power pool.

(86) Operation on this frequency is subject to the low power provisions of § 90.267. This frequency is assigned to Group C in the low power pool.

(87) Operation on this frequency is subject to the low power provisions of § 90.267. This frequency is assigned to Group D in the low power pool.

(88) Use of this frequency is on a secondary basis limited to 2 watts output power and subject to the provisions of § 90.267(h)(1), (h)(2), (h)(3) and (h)(4).

(89) The frequency may be assigned only to entities meeting the definition of a forest product licensee (*see* § 90.7). Operations are on a secondary basis to Federal Government operations including experimental stations, will not exceed 150 watts output power, and are limited to the states of Washington, Oregon, Maine, North Carolina, South Carolina, Tennessee, Georgia, Florida, Alabama, Mississippi, Louisiana, and Texas (eastern portion).

(90) As of March 25, 2007, the FCC will cease to issue licenses for new stations in the fixed and mobile services in the following bands: 5900–5950 kHz, 7300–7350 kHz, 9400–9500 kHz, 11600–11650 kHz, 12050–12100 kHz, 13800–13870 kHz, and 15600–15800 kHz. As of March 29, 2009, the FCC will cease to issue licenses for new stations in the fixed and mobile services in the band 7350–7400 kHz and, in the U.S. Pacific insular areas in Region 3, the band 7400–7450 kHz. Stations licensed as of March 25, 2007 in the bands 5900–5950 kHz, 7300–7350 kHz, 9400–9500 kHz, 11600–11650 kHz, 12050–12100 kHz, 13800–13870 kHz, and 15600–15800 kHz and as of March 29, 2009 for the band 7350–7400 kHz in Region 2 and the band 7350–7450 kHz in Region 3 shall:

(1) Be limited to communications only within the United States and its insular areas;

(2) Not cause harmful interference to the broadcasting service;

(3) Be limited to the minimum power needed to achieve communications; and

(4) Take account of the seasonal use of frequencies by the broadcasting service published in accordance with Article 12 of the ITU Radio Regulations.

(91) Subpart M of this part contains rules for assignment of frequencies in the 5850–5925 MHz band.

(d) *Additional frequencies available.* In addition to the frequencies shown in the frequency table of this section, the following frequencies are available in this service. (See also § 90.253.)

(1) Frequencies may be substituted for those available below 25 MHz in accordance with the provisions of § 90.263.

(2) Frequencies in the band 73.0–74.6 MHz may be assigned to stations authorized on or before December 1, 1961, but no new stations will be authorized in this band, nor will expansion of existing systems be permitted. (See also § 90.257).

(3) Frequencies in the 421–430 MHz band are available in the Detroit, Cleveland, and Buffalo areas in accordance with the rules in §§ 90.273 through 90.281.

(4) The following frequencies are available only in Puerto Rico and the Virgin Islands. These ''Base and Mobile'' and ''Mobile only'' frequencies are available on a shared basis with the Public Safety Pool. These ''Mobile only'' frequencies may be assigned to a control station associated with a mobile relay system if it is also assigned to the associated mobile station.

Base and mobile	Mobile only
159.240	160.410
159.2475	160.4175
159.255	160.425
159.2625	160.4325
159.270	160.440
159.2775	160.4475
159.285	160.455
159.2925	160.4625
159.300	160.470
159.3075	160.4775

Base and mobile	Mobile only
159.315	160.485
159.3225	160.4925
159.330	160.500
159.3375	160.5075
159.345	160.515
159.3525	160.5225
159.360	160.530
159.3675	160.5375
159.375	160.545
159.3825	160.5525
159.390	160.560
159.3975	160.5675
159.405	160.575
159.4125	160.5825
159.420	160.590
159.4275	160.5975
159.435	160.605
159.4425	160.6125

(5) Low power mobile stations of 100 mw or less output power used for one-way, non-voice medical telemetry operations in hospitals or in medical convalescent centers are subject to the provisions of § 90.238.

(6) [Reserved]

(7) A railroad licensee, i.e., a licensee eligible for frequencies listed in § 90.35(b)(3) of this section that are coordinated by the railroad coordinator (LR), may operate radio units at fixed locations and in moving railroad locomotives/cars that transmit on the frequency 24.10 GHz, both unmodulated continuous wave radio signals and modulated FM digital signals for the purpose of alerting motorists to the presence of an approaching train. Unattended and continuous operation of such transmitters will be permitted without additional authorization from the Commission, provided type accepted equipment or equipment authorized pursuant to §§ 90.203(b)(4) and (b)(5) of this part is used, and all other rule provisions are satisfied.

(e) *Limitation on number of frequencies assignable.* Normally only one frequency, or pair of frequencies in the paired frequency mode of operation, will be assigned for mobile service operations by a single applicant in a given area. The assignment of an additional frequency or pair of frequencies will be made only upon a satisfactory showing of need, except that:

(1) Additional frequencies above 25 MHz may be assigned in connection with operation of mobile repeaters in accordance with § 90.247 notwithstanding this limitation.

(2) [Reserved]

(3) Frequencies in the 25–50 MHz, 150–170 MHz, 450–512 MHz and 902–928 MHz bands may be assigned for the operation of Location and Monitoring Service (LMS) systems in accordance with the provisions of subpart M of this part, notwithstanding this limitation.

(4) Authorizations for multiple frequencies for geophysical operations will be granted on the frequencies governed by the limitations in paragraphs (c)(3) and (c)(4) of this section. However, each geophysical exploration party may use a maximum of four frequencies at any one time.

(5) Authorization for more than one mobile frequency in the band 72–76 MHz will be issued notwithstanding this limitation.

(6) This limitation shall not apply to paragraph (c)(1) of this section.

(7) Frequencies in the 457 and 467 MHz bands may be assigned collectively as provided by paragraph (c)(60) of this section notwithstanding this limitation.

(f) *Limitation on itinerant operation.* Base or mobile stations being utilized in itinerant operation will be authorized only on base or mobile frequencies designated for itinerant operation under paragraphs (c)(10) or (c)(17) of this section, or on other frequencies not designated for permanent use.

(g) The frequencies 9–490 kHz are used to operate electric utility Power Line Carrier (PLC) systems on power transmission lines for communications essential to the reliability and security of electric service to the public, in accordance with part 15 of this chapter. Any electric utility that generates, transmits, or distributes electrical energy for use by the general public or by the members of a cooperative organization may operate PLC systems and shall supply to a Federal Communications Commission/National Telecommunications and Information Administration recognized industry-operated entity, information on all existing, changes to existing, and proposed systems for inclusion in a data base. Such information shall include the frequency, power, location of transmitter(s), location of receivers and other technical and operational parameters, which would characterize the

system's potential both to interfere with authorized radio users, and to receive harmful interference from these users. In an agreed upon format, the industry-operated entity shall inform the FCC and the NTIA of these system characteristics prior to implementation of any proposed PLC system and shall provide monthly or periodic lists with supplements of PLC systems. The FCC and NTIA will supply appropriate application and licensing information to the notification activity regarding authorized radio stations operating in the band. PLC systems in this band operate on a non-interference basis to radio systems assigned frequencies by the NTIA or licensed by the FCC and are not protected from interference due to these radio operations.

[62 FR 18874, Apr. 17, 1997]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.35, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

EFFECTIVE DATE NOTE: At 64 FR 36262, July 6, 1999, § 90.35 was amended by revising entries in the table in paragraph (b)(3) and by adding paragraphs (c)(80) and (c)(81), effective Aug. 5, 1999. At 64 FR 50467, Sept. 17, 1999, paragraphs (c)(80), (c)(81), and the following entries in the table in paragraph (b)(3) were stayed:

153.035 MHz through 153.4025 MHz, 153.4025 MHz through 153.4625 MHz, 153.485 MHz through 153.5225 MHz, 153.545 MHz through 153.5825 MHz, 153.605 MHz through 153.6425 MHz, 153.665 MHz through 153.6675 MHz, 158.145 MHz through 158.1825 MHz, 158.205 MHz through 158.2425 MHz, 158.265 MHz through 158.3325 MHz, 158.355 MHz through 158.3775 MHz, 158.415 MHz through 158.4375 MHz, 173.250 MHz, 173.300 MHz, 173.350 MHz, 451.175 MHz, 451.225 MHz, 451.275 MHz, 451.375 MHz, 451.425 MHz, 451.475 MHz, 451.525 MHz, 451.550 MHz, 451.575 MHz, 451.600 MHz, 451.625 MHz, 451.650 MHz, 451.675 MHz, 451.700 MHz, 451.750 MHz, 452.325 MHz, 452.375 MHz, 452.425 MHz, 452.475 MHz, 452.775 MHz, 452.825 MHz, 452.875 MHz, 456.175 MHz, 456.225 MHz, 456.275 MHz, 456.375 MHz, 456.425 MHz, 456.475 MHz, 456.525 MHz, 456.550 MHz, 456.575 MHz, 456.600 MHz, 456.625 MHz, 456.650 MHz, 456.675 MHz, 456.700 MHz, 456.750 MHz, 457.325 MHz, 457.375 MHz, 457.425 MHz, 457.475 MHz, 457.775 MHz, 457.825 MHz, 457.875 MHz, 462.475 MHz, 462.525 MHz, 467.475 MHz, and 467.525 MHz

Subparts D–E [Reserved]

Subpart F—Radiolocation Service

§ 90.101 Scope.

The Radiolocation Service accommodates the use of radio methods for determination of direction, distance, speed, or position for purposes other than navigation. Rules as to eligibility for licensing, permissible communications, frequency available, and any special requirements are set forth in § 90.103. Provisions for the Location and Monitoring Service (LMS) are contained in subpart M of this part.

[60 FR 15252, Mar. 23, 1995]

§ 90.103 Radiolocation Service.

(a) *Eligibility*. The following persons are eligible for authorizations in the Radiolocation Service to operate stations to determine distance, direction, speed, or position by means of radiolocation devices, for purposes other than navigation:

(1) Any person engaged in a commercial, industrial, scientific, educational, or local government activity

(2) A corporation or association that will furnish radiolocation service to other persons.

(3) A corporation that will furnish a nonprofit radio communication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary where the party to be served is regularly engaged in any of the eligibility activities set forth in this paragraph.

(b) *Frequencies available*. The following table indicates frequencies available for assignment to stations in the Radiolocation Service, together with the class of station(s) to which they are normally assigned, and the specific assignment limitations, which are explained in paragraph (c) of this section:

RADIOLOCATION SERVICE FREQUENCY TABLE

Frequency or band	Class of station(s)	Limitation
Kilohertz		
70 to 90	Radiolocation land or mobile.	1
90 to 110	Radiolocation land	2
110 to 130	Radiolocation land or mobile.	1
1705 to 1715	do	4, 5, 6
1715 to 1750	do	5, 6
1750 to 1800	do	5, 6

RADIOLOCATION SERVICE FREQUENCY TABLE—Continued

Frequency or band	Class of station(s)	Limitation
1900 to 1950	.....do	6, 25, 26, 27 and 28
1950 to 2000	.....do	6, 25, 27 and 28
3230 to 3400	.....do	6, 8
Megahertz		
420 to 450	.....do	21
2450 to 2500	.....do	9, 22, 23
2900 to 3100	.....do	10, 11
3100 to 3300	.....do	12
3300 to 3500	.....do	12, 13
3500 to 3650	.....do	12
5250 to 5350	.....do	12
5350 to 5460	.....do	10, 14
5460 to 5470	.....do	10, 15
5470 to 5600	.....do	10, 11
5600 to 5650	.....do	10, 16
8500 to 9000	.....do	12, 17
9000 to 9200	.....do	10, 14
9200 to 9300	.....do	12
9300 to 9500	.....do	10, 15, 18
9500 to 10,000	.....do	12
10,000 to 10,500	.....do	12, 13, 19
10,500 to 10,550	.....do	20, 22, 24
13,400 to 13,750	.....do	12
13,750 to 14,000	.....do	29
15,700 to 17,300	.....do	
24,050 to 24,250	.....do	12, 22, 24
33,400 to 36,000	.....do	12
78,000–81,000	.....do	30

(c) Explanation of assignment limitations appearing in the frequency table of paragraph (b) of this section:

(1) This frequency band is shared with and stations operating in this frequency band in this service are on a secondary basis to stations licensed in the Maritime Mobile Service.

(2) This frequency band is shared with and stations operating in this frequency band in this service are on a secondary basis to the LORAN Navigation System; all operations are limited to radiolocation land stations in accordance with footnote US104, § 2.106 of this chapter.

(3) [Reserved]

(4) The non-Federal Government radiolocation service in this band is on a secondary basis to stations in the aeronautical radionavigation service operating on 1708 kHz.

(5) Station assignments on frequencies in this band will be made subject to the conditions that the maximum output power shall not exceed 375 watts and the maximum authorized bandwidth shall not exceed 2 kHz.

(6) Because of the operation of stations having priority on the same or adjacent frequencies in this or in other countries, frequency assignments in this band may either be unavailable or may be subject to certain technical or operational limitations. Therefore, applications for frequency assignments in this band shall include information concerning the transmitter output power, the type and directional characteristics of the antenna and the minimum hours of operation (GMT).

(7) [Reserved]

(8) Frequencies in this band may only be assigned to radiolocation stations which are also assigned frequencies in the 1605–1800 kHz band, provided the use of frequencies in this band is necessary for the proper functioning of the particular radiolocation system. Operations in this band are on a secondary basis to stations operating in accordance with the Commission's table of frequency allocations contained in § 2.106 of this chapter.

(9) This band is allocated to the Radiolocation Service on a secondary basis to other fixed or mobile services and must accept any harmful interference that may be experienced from such services or from the industrial, scientific, and medical (ISM) equipment operating in accordance with part 18 of this chapter. In the 2483.5–2500 MHz band, no applications for new or modification to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service.

(10) Speed measuring devices will not be authorized in this band.

(11) This frequency band is shared with and is on a secondary basis to the Maritime Radionavigation Stations (part 80) and to the Government Radiolocation Service.

(12) This frequency is shared with and is on a secondary basis to the Government Radiolocation Service.

(13) Operations in this band are limited to survey operations using transmitters with a peak power not to exceed 5 watts into the antenna.

(14) This frequency band is shared with and is on a secondary basis to the

Aeronautical Radionavigation Service (part 87) and to the Government Radiolocation Service.

(15) The non-Government Radiolocation Service in this band is secondary to the Maritime Radionavigation Stations (part 80), the Aeronautical Radionavigation Service (part 87) and the Government Radiolocation Service.

(16) This frequency band is shared with and is on a secondary basis to the Maritime Radionavigation Stations (part 80) and the Government Meteorological Aids Service.

(17) Operation in this frequency band is on a secondary basis to airborne Doppler radars at 8800 MHz.

(18) Radiolocation installations will be coordinated with the Government Meteorological Aids Service, and insofar as practicable, will be adjusted to meet the needs of that service.

(19) Operations in this band are on a secondary basis to the Amateur Radio Service (part 97). Pulsed emissions are prohibited.

(20) This band is restricted to radiolocation systems using type N0N emission with a power not to exceed 40 watts into the antenna.

(21) Non-Government radiolocation stations in the band are secondary to the Government Radiolocation Service, the Amateur Radio Service and the Amateur-Satellite Service. Pulse-ranging radiolocation stations in this band may be authorized along the shorelines of Alaska and the contiguous 48 states. Radiolocation stations using spread spectrum techniques may be authorized in the band 420–435 MHz for operation within the contiguous 48 states and Alaska. Also, stations using spread spectrum techniques shall be limited to a maximum output power of 50 watts, shall be subject to the applicable technical standards in § 90.209 until such time as more definitive standards are adopted by the Commission and shall identify in accordance with § 90.425(c)(2). Authorizations will be granted on a case-by-case basis; however, operations proposed to be located within the zones set forth in footnote US269, § 2.106 of this chapter should not expect to be accommodated.

(22) For frequencies 2455 MHz, 10,525 MHz, and 24,125 MHz, only unmodulated, continuous wave (NON) emission shall be employed. The frequency 24.10 GHz, and frequencies in the 24.20–24.25 GHz band may use NON emission along with an ancillary FM digital emission. The frequency 24.10 GHz will be used for the purpose of alerting motorists of hazardous driving conditions and the presence of emergency vehicles. Equipment operating on 24.10 GHz must keep the deviation of the FM digital signal within ±5 MHz. Equipment operating on this frequency must have a frequency stability of at least 2000 ppm and is exempt from the requirements of §§ 90.403(c), 90.403(f), and 90.429 of this part.

(23) Devices designed to operate as field disturbance sensors on frequencies between 2450 and 2500 MHz with a field strength equal to or less than 50,000 microvolts per meter at 30 meters, on a fundamental frequency, will not be licensed or certificated for use under this part. Such equipment must comply with the requirements for field disturbance sensors as set forth in part 15 of this chapter.

(24) Devices designed to operate as field disturbance sensors on frequencies between 10,500 and 10,550 MHz and between 24,050 and 24,250 MHz, with field strength equal to or less than 250,000 microvolts per meter at 30 meters, on the fundamental frequency, will not be licensed or certificated for use under this part. Such equipment must comply with the requirements for field disturbance sensors as set forth in part 15 of this chapter.

(25) Station assignments on frequencies in this band will be made subject to the conditions that the maximum output power shall not exceed 375 watts and the maximum authorized bandwidth shall not exceed 1.0 kHz.

(26) Each frequency assignment in this band is on an exclusive basis within the primary service area to which assigned. The primary service area is the area where the signal intensities are adequate for radiolocation purposes from all stations in the radiolocation system of which the station in question is a part; that is, the primary service area of the station coincides with the primary service area of the system. The normal minimum geographical

separation between stations of different licensees shall be at least 1931 km (1200 miles) when the stations are operated on the same frequency or on different frequencies separated by less than 1.0 kHz. Where geographical separation of less than 1931 km (1200 miles) is requested under these circumstances, it must be shown that the desired separation will result in a protection ratio of at least 20 decibels throughout the primary service area of other stations.

(27) Notwithstanding the bandwidth limitations otherwise set forth in this section of the rules, wideband systems desiring to operate in this band may use such bandwidth as is necessary for proper operation of the system provided that the field strength does not exceed 120 microvolts per meter per square root Hertz (120 uv/m/Hz½) at 1.6 km (1 mile). Such wideband operations shall be authorized on a secondary basis to stations operating within otherwise applicable technical standards. Applications for wideband systems in this band will be accepted beginning December 15, 1985.

(28) Until July 1, 1988, this band will be available only for licensees of existing systems operating in the 1605–1705 kHz portion of the 1605–1715 kHz band requesting modification of their authorizations to change frequencies to this band and for licensees of wideband systems. On July 1, 1988, requests for new station authorizations in this band will be accepted and, if necessary, will be subject to the random selection procedures outlined in § 1.972 of the Commission's Rules.

(29) This frequency band is shared with and is on secondary basis to the Fixed-Satellite Service and to the Government's Radiolocation, Space Research and Earth Exploration-Satellite Services. After January 1, 2000, the Government's Space Research and Earth Exploration-Satellite Services shall operate on a co-equal secondary basis with the non-Government Radiolocation Service, except that grandfathered space stations in the Tracking and Data Relay Satellite System shall continue to be protected from harmful interference.

(30) Use is limited to foreign object debris detection in airport air operations areas (see section 87.5 of this chapter). The radar must be mounted and utilized so when in use it does not, within the main beamwidth of the antenna (azimuth or elevation), illuminate a public roadway near the airport.

(d) *Other additional frequencies available.* Radiolocation stations in this service may be authorized, on request, to use frequencies allocated exclusively to Federal Government stations, in those instances where the Commission finds, after consultation with the appropriate Government agency or agencies, that such assignment is necessary or required for coordination with Government activities.

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.103, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov.*

Subpart G—Applications and Authorizations

§ 90.111 Scope.

This subpart supplements title 47, chapter 1, subpart F of the Code of Federal Regulations which establishes the requirements and conditions under which commercial and private radio stations may be licensed and used in the Wireless Telecommunications Services. The provisions of this subpart contain additional pertinent information for current and prospective licensees specific to the services governed by this part 90.

[63 FR 68963, Dec. 14, 1998]

§ 90.115 Foreign government and alien eligibility.

(a) No station authorization in the radio services governed by this part shall be granted to or held by a foreign government or its representative.

(b) No station authorization in the radio services governed by this part shall be granted to or held by an entity providing or seeking to provide commercial mobile radio services (except such entities meeting the requirements of § 20.9(c) of this chapter) if such entity is:

(1) An alien or the representative of any alien;

(2) A corporation organized under the laws of any foreign government;

(3) A corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof, or by any corporation organized under the laws of a foreign country;

(4) A corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof, or by any corporation organized under the laws of a foreign country, if the Commission finds that the public interest will be served by the refusal or revocation of such license.

[59 FR 59957, Nov. 21, 1994, as amended at 61 FR 55581, Oct. 28, 1996]

§ 90.119 Application requirements.

(a) Part 1, subpart F of this chapter contains the application filing procedures for the Wireless Telecommunications Services, including applications for new base, fixed, or mobile station authorizations governed by this part.

(b) If the control station(s) will operate on the same frequency as the mobile station, and if the height of the control station(s) antenna(s) will not exceed 6.1 meters (20 feet) above ground or an existing man-made structure (other than an antenna structure), there is no limit on the number of such stations which may be authorized. Appropriate items on FCC Form 601 shall be completed showing the frequency, the station class, the total number of control stations, the emission, and the output power of the highest powered control station. Applicants in the 470–512 MHz band must furnish the relevant information for all control stations.

[63 FR 68963, Dec. 14, 1998]

§ 90.121 Canadian registration.

Form 410 shall be filed by Canadian licensees desiring to operate in the United States under the terms of Article 2 and 3 of the Convention between the United States and Canada concerning operation of Certain Radio Equipment or Stations (which entered into force May 15, 1952). This form may be obtained from the Department of Communications, Ottawa, Canada. That department should also be consulted by U.S. licensees desiring to operate in Canada.

§ 90.127 Submission and filing of applications.

(a) Applications should be filed in accordance with part 1, subpart F of this chapter.

(b) Each application shall limit its request for authorized mobile transmitters and paging receivers to:

(1) Mobile transmitters and paging receivers that will be installed and operated immediately after authorization issuance.

(2) Mobile transmitters and paging receivers for which purchase orders have already been signed and which will be in use within eight months of the authorization date.

(c) All applications for modification of license and renewal of license must include the number of mobile transmitters and paging receivers in use on the licensed facilities.

[63 FR 68963, Dec. 14, 1998]

§ 90.129 Supplemental information to be routinely submitted with applications.

Each application under this part that is received by the Commission, through the application process outlined in part 1, subpart F, must be accompanied by the applicable information listed below:

(a) Evidence of frequency coordination as required by § 90.175.

(b) Description of any equipment proposed to be used if it is not approved for use under this part.

(c) [Reserved]

(d) Applicants proposing to share their authorized transmitters pursuant to § 90.179 shall so indicate in their application.

(e)–(f) [Reserved]

(g) The environmental assessment required by §§ 1.1307 and 1.1311 of this chapter, if applicable. If an application filed under this part proposes the use of one or more new or existing antenna

structures that require registration under part 17 of this chapter, any required environmental assessment should be submitted pursuant to the process set forth in § 17.4(c) of this chapter rather than with the application filed under this part.

(h) Requests for authorization to communicate with foreign stations in accordance with § 90.20(b) or § 90.417;

(i) Showings required in connection with the use of frequencies as specified in subpart S of this chapter.

(j) Any other statements or other data specifically required under special circumstances which are set forth in the applicable subpart of this part, by the particular form on which the application is filed or upon request by the Commission.

(k) If the applicant proposes to use a multiple-licensed transmitter, he must provide the name of the owner and the names and call signs of any other licensees of that transmitter.

(l) Applicants for new land stations to be interconnected with the public switched telephone network must indicate on their applications that their stations will be interconnected.

(m) Applicants requesting licenses to operate on frequencies pursuant to § 90.20(d)(6) must submit disaster communications plans containing the following information:

(1) A system network/system use diagram including a showing of emergency power and methods of deployment to all parts of the State or insular area;

(2) A designation of the responsible governmental authority within the State or insular area who will be the controlling agency for the licensee;

(3) A schedule of proposed drills and/or exercises by the participants;

(4) The number of frequencies in each band, and the type of emission required by the applicant;

(5) The distances expected to be covered within that State or insular area;

(6) The adjacent states and insular areas expected to be communicated with during a regional disaster or emergency;

(7) The point of contact for emergencies involving more than one State or insular area;

(8) The common frequency band(s) and number of frequencies in each band required for interstate communication, and the point(s) of contact for these adjacent States or insular areas;

(9) The format and emission parameters of radio teletype transmissions to be used for interstate communications.

(n) All applications for renewal of base/mobile station licenses by licensees who also operate wildlife tracking telemetry transmitters, as described in § 90.20(f)(7), must include a statement detailing the number of units in service, by frequency, on Public Safety Pool frequencies at the time the renewal application is filed.

(o) Applicants requesting licenses to operate on frequencies pursuant to § 90.35(c)(1) must submit communications plans containing the following information:

(1) A description of the communication requirement sufficient to demonstrate that no alternative to the link is appropriate and that there is no reasonable way to abbreviate the link;

(2) The frequency bands and the number of frequencies necessary for the link(s);

(3) The name and phone number of the person(s) responsible for ceasing operations of the licensee's stations in the event of interference; and,

(4) Where the link(s) provides a standby backup circuit for another communications circuit, a brief description of the supported circuit and its vulnerability to disruption.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.129, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§ 90.135 Modification of license.

(a) In addition to those changes listed in § 1.929(k) of this chapter and in accordance with § 1.947 of this chapter the following modifications may be made to an existing authorization without prior Commission approval:

(1) Change in the number and location of station control points or of control stations operating below 470 or above 800 MHz meeting the requirements of § 90.119(b).

(2) Change in the number of mobile units operated by Radiolocation Service licensees.

(b) Unless specifically exempted in § 90.175, licensees must submit a Form 601 application for modification to the applicable frequency coordinator for any change listed in § 1.929(c)(4) of this chapter.

[65 FR 60875, Oct. 13, 2000]

§ 90.137 Applications for operation at temporary locations.

(a) An application for authority to operate a base or a fixed transmitter at temporary locations shall be filed in accordance with § 1.931 of this chapter and the following:

(1) When one or more individual transmitters are to be operated by a licensee as a base station or as a fixed station at unspecified or temporary locations for indeterminate periods, such transmitters may be considered to comprise a single station intended to be operated at temporary locations.

(2) The application must specify the general geographic area within which the operation will be confined. The area may be specified as a city, a county or counties, a state or states or other definable geographic area such as a specified radius around a particular city or known geographic site.

(3) Applications for operation at temporary locations exceeding 180 days must be accompanied by evidence of frequency coordination, except that applications for operation at temporary locations exceeding 180 days by applicants using 220–222 MHz spectrum for geophysical telemetry operations need not be accompanied by evidence of frequency coordination.

(b) When any unit or units of a base station or fixed station which are authorized for operation at temporary locations actually remain or are intended to remain at the same location for more than 1 year, an application for a separate authorization specifying the fixed location shall be made as soon as possible, but not later than 30 days after the expiration of the 1-year period.

(c) The provisions of this section do not apply to the 4940–4990 MHz band.

[43 FR 54791, Nov. 22, 1978, as amended at 45 FR 63862, Sept. 26, 1980; 51 FR 14997, Apr. 22, 1986; 58 FR 44956, Aug. 25, 1993; 62 FR 15992, Apr. 3, 1997; 63 FR 68963, Dec. 14, 1998; 68 FR 38639, June 30, 2003]

§ 90.138 Applications for itinerant frequencies.

An application for authority to conduct an itinerant operation in the Industrial/Business Pool must be restricted to use of itinerant frequencies or other frequencies not designated for permanent use and need not be accompanied by evidence of frequency coordination. Users should be aware that no interference protection is provided from other itinerant operations.

[72 FR 35194, June 27, 2007]

§ 90.149 License term.

(a) Except as provided in subpart R of this part, licenses for stations authorized under this part will be issued for a term not to exceed ten (10) years from the date of the original issuance or renewal.

(b) Non-exclusive geographic area licenses for DSRCS Roadside Units (RSUs) in the 5850–5925 MHz band will be issued for a term not to exceed ten years from the date of original issuance or renewal. The registration dates of individual RSUs (see § 90.375) will not change the overall renewal period of the single license.

[43 FR 54791, Nov. 22, 1978, as amended at 49 FR 36376, Sept. 17, 1984; 56 FR 19602, Apr. 29, 1991; 56 FR 65858, Dec. 19, 1991; 59 FR 59958, Nov. 21, 1994; 62 FR 18924, Apr. 17, 1997; 63 FR 68964, Dec. 14, 1998; 65 FR 60875, Oct. 13, 2000; 69 FR 46442, Aug. 3, 2004; 70 FR 61061, Oct. 20, 2005; 78 FR 25175, Apr. 29, 2013]

§ 90.155 Time in which station must be placed in operation.

(a) All stations authorized under this part, except as provided in §§ 90.528, 90.529, 90.629, 90.631(f), 90.665, 90.685, and 90.1209, must be placed in operation within twelve (12) months from the date of grant or the authorization cancels automatically and must be returned to the Commission.

(b) A local government entity in the Public Safety Pool, applying for any frequency in this part, may also seek

extended implementation authorization pursuant to § 90.629.

(c) For purposes of this section, a base station is not considered to be placed in operation unless at least one associated mobile station is also placed in operation. See also §§ 90.633(d) and 90.631(f).

(d) Multilateration LMS EA-licensees, authorized in accordance with § 90.353, must construct and place in operation a sufficient number of base stations that utilize multilateration technology (*see* paragraph (e) of this section) to provide multilateration location service to one-third of the EA's population within five years of initial license grant, and two-thirds of the population within ten years. Licensees may, in the alternative, provide substantial service to their licensed area within the appropriate five- and ten-year benchmarks. In demonstrating compliance with the construction and coverage requirements, the Commission will allow licensees to individually determine an appropriate field strength for reliable service, taking into account the technologies employed in their system design and other relevant technical factors. At the five- and ten-year benchmarks, licensees will be required to file a map and FCC Form 601 showing compliance with the coverage requirements (*see* § 1.946 of this chapter).

(e) A multilateration LMS station will be considered constructed and placed in operation if it is built in accordance with its authorized parameters and is regularly interacting with one or more other stations to provide location service, using multilateration technology, to one or more mobile units. Specifically, LMS multilateration stations will only be considered constructed and placed in operation if they are part of a system that can interrogate a mobile, receive the response at 3 or more sites, compute the location from the time of arrival of the responses and transmit the location either back to the mobile or to a subscriber's fixed site.

(f) For purposes of this section, a station licensed to provide commercial mobile radio service is not considered to have commenced service unless it provides service to at least one unaffiliated party.

(g) Application for extension of time to commence service may be made on FCC Form 601. Extensions of time must be filed prior to the expiration of the construction period. Extensions will be granted only if the licensee shows that the failure to commence service is due to causes beyond its control. No extensions will be granted for delays caused by lack of financing, lack of site availability, for the assignment or transfer of control of an authorization, or for failure to timely order equipment. If the licensee orders equipment within 90 days of the license grant, a presumption of due diligence is created.

(h) An application for modification of an authorization (under construction) at the existing location does not extend the initial construction period. If additional time to commence service is required, a request for such additional time must be submitted on FCC Form 601, either separately or in conjunction with the submission of the FCC Form 601 requesting modification.

(i) DSRCS Roadside Units (RSUs) in the 5850–5925 MHz band must be placed in operation within 12 months from the date of registration (*see* § 90.375) or the authority to operate the RSUs cancels automatically (*see* § 1.955 of this chapter). Such registration date(s) do not change the overall renewal period of the single license. Licensees must notify the Commission in accordance with § 1.946 of this chapter when registered units are placed in operation within their construction period.

[65 FR 60875, Oct. 13, 2000, as amended at 68 FR 38639, June 30, 2003; 69 FR 46443, Aug. 3, 2004; 69 FR 75172, Dec. 15, 2004; 71 FR 52749, Sept. 7, 2006; 72 FR 48859, Aug. 24, 2007]

§ 90.157 Discontinuance of station operation.

(a) An authorization shall cancel automatically upon permanent discontinuance of operations. Unless stated otherwise in this part or in a station authorization, for the purposes of this section, any station which has not operated for one year or more is considered to have been permanently discontinued.

(b) For DSRCS Roadside Units (RSUs) in the 5850–5925 MHz band, it is

the DSRCS licensee's responsibility to delete from the registration database any RSUs that have been discontinued.

[72 FR 44423, Aug. 8, 2007]

§ 90.159 Temporary and conditional permits.

(a) An applicant for a license under this part (other than a commercial mobile radio license) utilizing an already licensed facility may operate the radio station(s) for a period of up to one hundred eighty (180) days after submitting a Form 601 application for a station license in accordance with § 90.127 of this part, provided that all the antennas employed by control stations are 6.1 meters (20 feet) or less above ground or 6.1 meters (20 feet) or less above a man-made structure other than an antenna tower to which it is affixed. When required by § 90.175 of this part, applications must be accompanied by evidence of frequency coordination. The temporary operation of stations, other than mobile stations within the Canadian coordination zone is limited to stations with a maximum of 5 watts effective radiated power and a maximum antenna height of 6.1 meters (20 ft) above average terrain.

(b) An applicant proposing to operate a new land mobile radio station or modify an existing station below 470 MHz or in the one-way paging 929–930 MHz band (other than a commercial mobile radio service applicant or licensee on these bands) that is required to submit a frequency recommendation pursuant to paragraphs (b) through (h) of § 90.175 of this part may operate the proposed station during the pendency of its application for a period of up to one hundred eighty (180) days upon the filing of a properly completed formal Form 601 application that complies with § 90.127 of this part if the application is accompanied by evidence of frequency coordination in accordance with § 90.175 of this part and provided that the following conditions are satisfied:

(1) For applicants proposing to operate below 470 MHz, that the proposed station location is south of Line A or west of Line C as defined in § 90.7; for applicants in the one-way paging 929–930 MHz band, that the proposed station location is west of Line C as defined in § 90.7.

(2) The proposed antenna structure has been previously studied by the Federal Aviation Administration and determined to pose no hazard to aviation safety as required by § 17.4 of the Commission's Rules; or the proposed antenna or tower structure does not exceed 6.1 meters (20 feet) above ground level or above an existing man-made structure (other than an antenna structure), if the antenna or tower has not been previously studied by the Federal Aviation Administration and cleared by the FCC.

(3) The grant of the application does not require a waiver of the Commission's Rules.

(4) The applicant has determined that the proposed facility will not significantly affect the environment as defined in § 1.1307.

(5) The applicant has determined that the proposed station affords the level of protection to radio quiet zones and radio receiving facilities as specified in § 1.924 of this chapter.

(6) The applicant has submitted an application to the Commission stating the frequency the applicant intends to use and that the frequency coordination requirements specified in § 90.175 for selection and use of this frequency have been met and a minimum of ten business days has passed between submission of the application to the Commission and the onset of operation.

(c) An applicant proposing to operate an itinerant station or an applicant seeking the assignment of authorization or transfer of control of a license for an existing station below 470 MHz or in the 929–930 MHz band (other than a commercial mobile radio service applicant or licensee on these bands) may operate the proposed station during the pendency of the application for a period not to exceed one hundred eighty (180) days upon the filing of a properly completed formal Form 601 application that complies with § 90.127 of this part. Conditional authority ceases immediately if the application is dismissed by the Commission. All other categories of applications listed in

§ 90.175(i) of this part that do not require evidence of frequency coordination are excluded from the provisions of this section.

(d) Conditional authorization does not prejudice any action the Commission may take on the subject application. Conditional authority is accepted with the express understanding that such authority may be modified or canceled by the Commission at any time without hearing if, in the Commission's discretion, the need for such action arises. Consistent with § 90.175(g) of this part, the applicant assumes all risks associated with operation under conditional authority, the termination or modification of conditional authority, or the subsequent dismissal or denial of its application. Authority reverts back to the original licensee if an assignee or transferee's conditional authority is canceled.

(e) The transmissions of new stations operating pursuant to conditional authority shall be identified by a temporary call sign consisting of the prefix ''WT'' followed by the applicant's local seven digit business telephone number as provided in § 2.302. Transmissions by applicants for the modification, assignment of authorization or transfer of control of an existing station shall be identified by the station's call sign.

[51 FR 14997, Apr. 22, 1986, as amended at 54 FR 50239, Dec. 5, 1989; 58 FR 44956, Aug. 25, 1993; 58 FR 62291, Nov. 26, 1993; 59 FR 59959, Nov. 21, 1994; 62 FR 18924, Apr. 17, 1997; 63 FR 68964, Dec. 14, 1998; 69 FR 17959, Apr. 6, 2004]

SPECIAL RULES GOVERNING FACILITIES USED TO PROVIDE COMMERCIAL MOBILE RADIO SERVICES

SOURCE: 59 FR 59959, Nov. 21, 1994; 63 FR 68964, Dec. 14, 1998, unless otherwise noted.

NOTE: The following rules (§§ 90.165 through 90.169) govern applications, licensing, and operation of radio facilities in the 220–222 MHz (subpart T), Business Radio (subpart D), 929–930 MHz Paging (subpart P), and Specialized Mobile Radio (subpart S) services that are used to provide commercial mobile radio services (see §§ 20.3 and 20.9 of this chapter). Compliance with the rules relating to applications and licensing of facilities on paging-only channels in the Business Radio Service (see § 90.75(c)(10)) and 929–930 MHz paging channels (see § 90.494(a),(b)) is not required prior to August 10, 1996. Compliance with § 90.168 is also not required prior to August 10, 1996 for reclassified commercial mobile radio service providers who are to be regulated as private carriers until August 10, 1996 as provided in the Second Report and Order in GN Docket No. 93–252, 9 FCC Rcd 2348 (1994), paras. 280–284. The licensing and operation of radio facilities in the 220–222 MHz (subpart T), Business Radio (subpart D), 929–930 MHz Paging (subpart P), and Specialized Mobile Radio (subpart S) services that are used to provide commercial mobile radio services are also subject to rules elsewhere in this part that apply generally to Private Land Mobile Radio Services. In the case of any conflict between rules set forth in §§ 90.165 through 90.169 and other rules in this part, §§ 90.165 through 90.169 apply. 14–23. New §§ 90.165 through 90.169 are added to subpart G to read as follows:

§ 90.165 Procedures for mutually exclusive applications.

Mutually exclusive commercial mobile radio service applications are processed in accordance with part 1 of this chapter and with the rules in this section, except for mutually exclusive applications for licenses in the 220–222 MHz service and the 929–930 MHz Paging service, which are processed in accordance with the rules in subpart P and subpart T of this part.

Two or more pending applications are mutually exclusive if the grant of one application would effectively preclude the grant of one or more of the others under Commission rules governing the services involved.

(a) *Separate applications.* Any applicant that files an application knowing that it will be mutually exclusive with one or more applications should not include in the mutually exclusive application a request for other channels or facilities that would not, by themselves, render the application mutually exclusive with those other applications. Instead, the request for such other channels or facilities should be filed in a separate application.

(b) *Filing groups.* Pending mutually exclusive applications are processed in filing groups. Mutually exclusive applications in a filing group are given concurrent consideration. The Commission may dismiss as defective (pursuant to § 1.934 of this chapter) any mutually exclusive application(s) whose filing date is outside of the date range for inclusion in the filing group. The types of

filing groups used in day-to-day application processing are specified in paragraph (c)(3) of this section. A filing group is one of the following types:

(1) *Renewal filing group.* A renewal filing group comprises a timely-filed application for renewal of an authorization and all timely-filed mutually exclusive competing applications (see section 1.949 of this chapter).

(2) *Same-day filing group.* A same-day filing group comprises all mutually exclusive applications whose filing date is the same day, which is normally the filing date of the first-filed applications(s).

(3) *Thirty-day notice and cut-off filing group.* A 30-day notice and cut-off filing group comprises mutually exclusive applications whose filing date is no later than thirty (30) days after the date of the Public Notice listing the first-filed application(s) (according to the filing dates) as acceptable for filing.

(4) *Window filing group.* A window filing group comprises mutually exclusive applications whose filing date is within an announced filing window. An announced filing window is a period of time between and including two specific dates, which are the first and last dates on which applications (or amendments) for a particular purpose may be accepted for filing. In the case of a one-day filing window, the two dates are the same. The dates are made known to the public in advance.

(c) *Procedures.* Generally, the Commission may grant one application in a filing group of mutually exclusive applications and dismiss the other application(s) in the filing group that are excluded by the grant, pursuant to § 1.935 of this chapter.

(1) *Selection methods.* In selecting the application to grant, the Commission may use competitive bidding, random selection, or comparative hearings, depending on the type of applications involved.

(2) *Dismissal of applications.* The Commission may dismiss any application in a filing group that is defective or otherwise subject to dismissal under § 1.934 of this chapter, either before or after employing selection procedures.

(3) *Type of filing group used.* Except as otherwise provided in this part, the type of filing group used in processing of two or more mutually exclusive applications depends on the purpose(s) of the applications.

(i) If one of the mutually exclusive applications is a timely-filed application for renewal of an authorization, a renewal filing group is used.

(ii) If any mutually exclusive application filed on the earliest filing date is an application for modification and none of the mutually exclusive applications is a timely-filed application for renewal, a same-day filing group is used.

(iii) If all of the mutually exclusive applications filed on the earliest filing date are applications for initial authorization, a 30-day notice and cut-off filing group is used.

(4) *Disposition.* If there is only one application in any type of filing group, the Commission may grant that application and dismiss without prejudice any mutually exclusive applications not in the filing group. If there is more than one mutually exclusive application in a filing group, the Commission disposes of these applications as follows:

(i) Applications in a renewal filing group. All mutually exclusive applications in a renewal filing group are designated for comparative consideration in a hearing.

(ii) Applications in a 30-day notice and cut-off filing group.

(A) If all of the mutually exclusive applications in a 30-day notice and cut-off filing group are applications for initial authorization, the Commission administers competitive bidding procedures in accordance with subpart Q of part 1 of this chapter. After such procedures, the application of the successful bidder may be granted and the other applications may be dismissed without prejudice.

(B) If any of the mutually exclusive applications in a 30-day notice and cut-off filing group is an application for modification or an application for facilities, the Commission may attempt to resolve the mutual exclusivity by facilitating a settlement between the applicants. If a settlement is not reached within a reasonable time, the Commission may designate all applications in

the filing group for comparative consideration in a hearing. In this event, the result of the hearing disposes all of the applications in the filing group.

(iii) Applications in a same-day filing group. If there are two or more mutually exclusive applications in a same-day filing group, the Commission may attempt to resolve the mutual exclusivity by facilitating a settlement between the applicants. If a settlement is not reached within a reasonable time, the Commission may designate all applications in the filing group for comparative consideration in a hearing. In this event, the result of the hearing disposes all of the applications in the filing group.

(iv) Applications in a window filing group. Applications in a window filing group are processed in accordance with the procedures for a 30-day notice and cut-off filing group in paragraph (c)(4)(ii) of this section.

(d) *Terminology*. For the purposes of this section, terms have the following meanings:

(1) The ''filing date'' of an application is the date on which that application was received in a condition acceptable for filing or the date on which the most recently filed major amendment to that application was received, whichever is later, excluding major amendments in the following circumstances:

(i) The major amendment reflects only a change in ownership or control found by the Commission to be in the public interest;

(ii) The major amendment as received is defective or otherwise found unacceptable for filing; or

(iii) The application being amended has been designated for hearing and the Commission or the presiding officer accepts the major amendment.

(2) An ''application for initial authorization'' is:

(i) Any application requesting an authorization for a new system or station;

(ii) Any application requesting authorization for an existing station to operate on an additional channel, unless the additional channel is for paired two-way radiotelephone operation, is in the same frequency range as the existing channel(s), and will be operationally integrated with the existing channel(s) such as by trunking; or

(iii) any application requesting authorization for a new transmitter at a location more than 2 kilometers (1.2 miles) from any existing transmitters of the applicant licensee on the requested channel or channel block.

[59 FR 59959, Nov. 21, 1994, as amended at 63 FR 68964, 68965, Dec. 14, 1998]

§ 90.168 Equal employment opportunities.

Commercial Mobile Radio Services licensees shall afford equal opportunity in employment to all qualified persons, and personnel must not be discriminated against in employment because of sex, race, color, religion, or national origin.

(a) *Equal employment opportunity program*. Each licensee shall establish, maintain, and carry out a positive continuing program of specific practices designed to assure equal opportunity in every aspect of employment policy and practice.

(1) Under the terms of its program, each licensee shall:

(i) Define the responsibility of each level of management to insure a positive application and vigorous enforcement of the policy of equal opportunity, and establish a procedure to review and control managerial and supervisory performance.

(ii) Inform its employees and recognized employee organizations of the positive equal employment opportunity policy and program and enlist their cooperation.

(iii) Communicate its equal employment opportunity policy and program and its employment needs to sources of qualified applicants without regard to sex, race, color, religion or national origin, and solicit their recruitment assistance on a continuing basis.

(iv) Conduct a continuing campaign to exclude every form of prejudice or discrimination based upon sex, race, color, religion, or national origin, from the licensee's personnel policies and practices and working conditions.

(v) Conduct a continuing review of job structure and employment practices and adopt positive recruitment, training, job design and other measures needed in order to insure genuine

equality of opportunity to participate fully in all organizational units, occupations and levels of responsibility.

(2) The program must reasonably address specific concerns through policies and actions as set forth in this paragraph, to the extent that they are appropriate in consideration of licensee size, location and other factors.

(i) To assure nondiscrimination in recruiting.

(A) Posting notices in the licensee's offices informing applicants for employment of their equal employment rights and their right to notify the Equal Employment Opportunity Commission (EEOC), the Federal Communications Commission (Commission), or other appropriate agency. Where a substantial number of applicants are Spanish-surnamed Americans, such notice should be posted in both Spanish and English.

(B) Placing a notice in bold type on the employment application informing prospective employees that discrimination because of sex, race, color, religion, or national origin is prohibited, and that they may notify the EEOC, the Commission, or other appropriate agency if they believe they have been discriminated against.

(C) Placing employment advertisements in media which have significant circulation among minority groups in the recruiting area.

(D) Recruiting through schools and colleges with significant minority group enrollments.

(E) Maintaining systematic contacts with minority and human relations organizations, leaders and spokespersons to encourage referral of qualified minority or female applicants.

(F) Encouraging present employees to refer minority or female applicants.

(G) Making known to the appropriate recruitment sources in the employer's immediate area that qualified minority members are being sought for consideration whenever the licensee hires.

(ii) To assure nondiscrimination in selection and hiring.

(A) Instructing employees of the licensee who make hiring decisions that all applicants for all jobs are to be considered without discrimination.

(B) Where union agreements exist, cooperating with the union or unions in the development of programs to assure qualified minority persons or females of equal opportunity for employment, and including an effective nondiscrimination clause in new or renegotiated union agreements.

(C) Avoiding use of selection techniques or tests that have the effect of discriminating against minority groups or females.

(iii) To assure nondiscriminatory placement and promotion.

(A) Instructing employees of the licensee who make decisions on placement and promotion that minority employees and females are to be considered without discrimination, and that job areas in which there is little or no minority or female representation should be reviewed to determine whether this results from discrimination.

(B) Giving minority groups and female employees equal opportunity for positions which lead to higher positions. Inquiring as to the interest and skills of all lower-paid employees with respect to any of the higher-paid positions, followed by assistance, counseling, and effective measures to enable employees with interest and potential to qualify themselves for such positions.

(C) Reviewing seniority practices to insure that such practices are nondiscriminatory and do not have a discriminatory effect.

(D) Avoiding use of selection techniques or tests that have the effect of discriminating against minority groups or females.

(iv) to assure nondiscrimination in other areas of employment practices.

(A) Examining rates of pay and fringe benefits for present employees with equivalent duties and adjusting any inequities found.

(B) Providing opportunity to perform overtime work on a basis that does not discriminate against qualified minority groups or female employees.

(b) *EEO statement*. Each licensee having sixteen (16) or more full-time employees shall file with the Commission, no later than May 31st following the grant of that licensee's first Commercial Mobile Radio Services authorization, a statement describing fully its current equal employment opportunity

program, indicating specific practices to be followed in order to assure equal employment opportunity on the basis of sex, race, color, religion, or national origin in such aspects of employment practices as regards recruitment, selection, training, placement, promotion, pay, working conditions, demotion, layoff, and termination. Any licensee having sixteen (16) or more full-time employees that changes its existing equal employment opportunity program shall file with the Commission, no later than May 31st thereafter, a revised statement reflecting the change(s).

NOTE: Commercial mobile radio service licensees having sixteen (16) or more full-time employees that do not have a current EEO statement on file with the Commission as of January 2, 1995, must file the statement required by this paragraph no later than May 31, 1995.

(c) *Report of complaints filed against licensees.* Each licensee, regardless of how many employees it has, shall submit an annual report to the Commission no later than May 31st of each year indicating whether any complaints regarding violations by the licensee or equal employment provisions of Federal, State, Territorial, or local law have been filed before anybody having competent jurisdiction.

(1) The report should state the parties involved, the date filing, the courts or agencies before which the matters have been heard, the appropriate file number (if any), and the respective disposition or current status of any such complaints.

(2) Any licensee who has filed such information with the EEOC may file a notification of such filing with the Commission in lieu of a report.

(d) *Complaints of violations of Equal Employment Programs.* Complaints alleging employment discrimination against a common carrier licensee are considered by the Commission in the following manner:

(1) If a complaint raising an issue of discrimination is received against a licensee who is within the jurisdiction of the EEOC, it is submitted to that agency. The Commission maintains a liaison with that agency that keeps the Commission informed of the disposition of complaints filed against common carrier licensees.

(2) Complaints alleging employment discrimination against a common carrier licensee who does not fall under the jurisdiction of the EEOC but is covered by appropriate enforceable State law, to which penalties apply, may be submitted by the Commission to the respective State agency.

(3) Complaints alleging employment discrimination against a common carrier licensee who does not fall under the jurisdiction of the EEOC or an appropriate State law, are accorded appropriate treatment by the Commission.

(4) The Commission will consult with the EEOC on all matters relating to the evaluation and determination of compliance by the common carrier licensees with the principles of equal employment as set forth herein.

(5) Complaints indicating a general pattern of disregard of equal employment practices which are received against a licensee that is required to file an employment report to the Commission under § 1.815(a) of this chapter are investigated by the Commission.

(e) *Commission records.* A copy of every annual employment report, equal employment opportunity program statement, reports on complaints regarding violation of equal employment provisions of Federal, State, Territorial, or local law, and copies of all exhibits, letters, and other documents filed as part thereof, all amendments thereto, all correspondence between the licensee and the Commission pertaining to the reports after they have been filed and all documents incorporated therein by reference, are open for public inspection at the offices of the Commission.

(f) *Licensee records.* Each licensee required to file annual employment reports (pursuant to § 1.815(a) of this chapter), equal employment opportunity program statements, and annual reports on complaints regarding violations of equal employment provisions of Federal, State, Territorial, or local law shall maintain for public inspection a file containing a copy of each such report and copies of all exhibits, letters, and other documents filed as

part thereto, all correspondence between the licensee and the Commission pertaining to the reports after they have been filed and all documents incorporated therein by reference. The documents must be retained for a period of two (2) years.

§ 90.169 Construction prior to grant of application.

Applicants may construct facilities prior to grant of their applications, subject to the provisions of this section, but must not operate such facilities until the Commission grants an authorization. If the conditions stated in this section are not met, applicants must not begin to construct facilities.

(a) *When applicants may begin construction.* An applicant may begin construction of a facility thirty-five (35) days after the date of the Public Notice listing the application for that facility as acceptable for filing.

(b) *Notification to stop.* If the Commission for any reason determines that construction should not be started or should be stopped while an application is pending, and so notifies the applicant, orally (followed by written confirmation) or in writing, the applicant must not begin construction or, if construction has begun, must stop construction immediately.

(c) *Assumption of risk.* Applicants that begin construction pursuant to this section before receiving an authorization do so at their own risk and have no recourse against the United States for any losses resulting from:

(1) Applications that are not granted;

(2) Errors or delays in issuing Public Notices;

(3) Having to alter, relocate, or dismantle the facility; or

(4) Incurring whatever costs may be necessary to bring the facility into compliance with applicable laws, or Commission rules and orders.

(d) *Conditions.* Except as indicated, all pre-grant construction is subject to the following conditions:

(1) The application is not mutually exclusive with any other application;

(2) No petitions to deny the application have been filed;

(3) The application does not include a request for a waiver of one or more Commission rules;

(4) For any construction or alteration that would exceed the requirements of § 17.7 of this chapter, the licensee has notified the appropriate Regional Office of the Federal Aviation Administration (FAA Form 7460–1), filed a request for antenna height clearance and obstruction marking and lighting specifications (FCC Form 854) with the Commission;

(5) The applicant has indicated in the application that the proposed facility would not have a significant environmental effect, in accordance with §§ 1.1301 through 1.1319 of this chapter; and,

(6) Under applicable international agreements and rules in this part, individual coordination of the proposed channel assignment(s) with a foreign administration is not required.

Subpart H—Policies Governing the Assignment of Frequencies

§ 90.171 Scope.

This subpart contains detailed information concerning the policies under which the Commission assigns frequencies for the use of licensees under this part, frequency coordination procedures, and procedures under which licensees may cooperatively share radio facilities.

§ 90.173 Policies governing the assignment of frequencies.

(a) Except as indicated in paragraph (j) of this section, the frequencies which ordinarily may be assigned to stations in the services governed by this part are listed in subparts B, C and F of this part. Except as otherwise specifically provided in this part, frequencies assigned to land mobile stations are available on a shared basis only and will not be assigned for the exclusive use of any licensee.

(b) All applicants and licensees shall cooperate in the selection and use of frequencies in order to reduce interference and make the most effective use of the authorized facilities. Licensees of stations suffering or causing harmful interference are expected to cooperate and resolve this problem by mutually satisfactory arrangements. If the licensees are unable to do so, the Commission may impose restrictions

including specifying the transmitter power, antenna height, or area or hours of operation of the stations concerned. Further the use of any frequency at a given geographical location may be denied when, in the judgment of the Commission, its use in that location is not in the public interest; the use of any frequency may be restricted as to specified geographical areas, maximum power, or such other operating conditions, contained in this part or in the station authorization.

(c) Frequencies allocated for Federal Government radio stations under Executive order of the President may be authorized for the use of stations in these services upon appropriate showing by the applicant that such assignment is necessary for inter-communication with government stations or required for coordination with activities of the Federal Government, and where the Commission finds, after consultation with the appropriate government agency or agencies, that such assignment is necessary.

(d) The radio facilities authorized under this part are intended for use in connection with and as an adjunct to the primary governmental or business activities of the licensee.

(e) Persons requesting authority to operate in the band 25–50 MHz should recognize that this band is shared with various services in other countries and that harmful interference may be caused by the propagation of signals in this band from distant stations. No protection from such harmful interference generally can be expected.

(f) Applications for stations in the 150–174 MHz and 421–512 MHz bands for operation on frequencies 15 kHz or less removed from existing stations in the same geographic area will be granted based upon a recommendation from the applicable frequency coordinator as specified in §§ 90.20(c)(2) and 90.35(b)(2).

(g) In the states of Alaska and Hawaii, and in areas outside the continental limits of the United States and the adjacent waters, the frequencies above 150.8 MHz which are listed elsewhere in this part as available for assignment to base stations or mobile stations in the Industrial/Business Pool are also available for assignment to operational fixed stations in the Industrial/Business Pool on a secondary basis.

(h) In the Public Safety Pool, base stations may be authorized to operate on a secondary basis on frequencies below 450 MHz which are available to mobile stations.

(i) In the 450–470 MHz band, the frequencies are ordinarily assigned in pairs, with the mobile station transmit frequency 5 MHz above the paired base station transmit frequency. In the 470–512 MHz band, the frequencies are ordinarily assigned in pairs with the mobile station transmit frequency 3 MHz above the paired base station transmit frequency. In the Industrial/Business Pool, in the 150 MHz band, the frequencies subject to § 90.35(c)(6) may be assigned in pairs with the separation between base and mobile frequencies being 5.26 MHz. A mobile station may be assigned the frequency which would normally be assigned to a base station for single-frequency operation. However, this single-frequency operation may be subject to interference that would not occur to a two-frequency system.

(j) Frequencies other than those listed in subparts B and C of this part may be assigned in the 150–174 MHz, 421–430 MHz, 450–470 MHz, and 470–512 MHz bands, provided the following conditions are met:

(1) Such applications must be accompanied by a showing of frequency coordination in accordance with the requirements of § 90.175;

(2) The frequencies must not be available in any other rule part of this chapter; and

(3) The authorized bandwidth of any system operating in accordance with this paragraph must not overlap spectrum available in other rule parts of this chapter unless that spectrum is also allocated in part 90.

(k) This paragraph is only applicable to entities with Finder's Preference requests pending before the Commission as of July 29, 1998. Notwithstanding any other provisions of this part, any eligible person shall be given a dispositive preference for a channel assignment on an exclusive basis in the 220–222 MHz, 470–512 MHz, and 800/900 MHz (except on frequencies designated exclusively for SMR service) bands by

submitting information that leads to the recovery of channels in these bands. Recovery of such channels must result from information provided regarding the failure of existing licensees to comply with the provisions of § 90.155, § 90.157, § 90.629, § 90.631 (e) or (f), or § 90.633 (c) or (d).

(l) In the 150–174 MHz band, except where otherwise specifically provided, authorizations for frequencies that were available prior to August 18, 1995 will be granted with channel bandwidths of 25 kHz or less. Authorizations for all other frequencies in this band will be granted with channel bandwidths of 12.5 kHz or less (*i.e.*, in the Public Safety Pool, frequencies subject to §§ 90.20 (d)(27) and (d)(44), and in the Industrial/Business Pool, frequencies subject to §§ 90.35 (c)(30) and (c)(33)).

(m) In the 421–512 MHz band, except where otherwise specifically provided, authorizations for frequencies that were available prior to August 18, 1995 will be granted with channel bandwidths of 25 kHz or less. New authorizations for frequencies 12.5 kHz removed from these frequencies will be made for channel bandwidths of 12.5 kHz or less (*i.e.*, in the Public Safety Pool, frequencies subject to § 90.20(d)(27) and in the Industrial/Business Pool, frequencies subject to § 90.35(c)(30)). Authorizations for frequencies 6.25 kHz removed from these frequencies will be granted with channel bandwidths of 6.25 kHz or less (*i.e.*, in the Public Safety Pool, frequencies subject to § 90.20(d)(44), and in the Industrial/Business Pool, frequencies subject to § 90.35(c)(33)).

(n) Any recovered channels in the 800 MHz SMR service will revert automatically to the holder of the EA license within which such channels are included. If there is no EA licensee for recovered channels, such channels will be retained by the Commission for future licensing.

(Secs. 4, 303, 307, 48 Stat., as amended, 1066, 1082, 1083; 47 U.S.C. 154, 303, 307)

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.173, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§ 90.175 Frequency coordinator requirements.

Except for applications listed in paragraph (j) of this section, each application for a new frequency assignment, for a change in existing facilities as listed in § 90.135(a), or for operation at temporary locations in accordance with § 90.137 must include a showing of frequency coordination as set forth further.

(a) Frequency coordinators may request, and applicants are required to provide, all appropriate technical information, system requirements, and justification for requested station parameters when such information is necessary to identify and recommend the most appropriate frequency. Additionally, applicants bear the burden of proceeding and the burden of proof in requesting the Commission to overturn a coordinator's recommendation.

(b) *For frequencies between 25 and 470 MHz:* (1) A statement is required from the applicable frequency coordinator as specified in §§ 90.20(c)(2) and 90.35(b) recommending the most appropriate frequency. In addition, for frequencies above 150 MHz, if the interference contour of a proposed station would overlap the service contour of a station on a frequency formerly shared prior to radio service consolidation by licensees in the Manufacturers Radio Service, the Forest Products Radio Service, the Power Radio Service, the Petroleum Radio Service, the Motor Carrier Radio Service, the Railroad Radio Service, the Telephone Maintenance Radio Service or the Automobile Emergency Radio Service, the written concurrence of the coordinator for the industry-specific service, or the written concurrence of the licensee itself, must be obtained. Requests for concurrence must be responded to within 20 days of receipt of the request. The written request for concurrence shall advise the receiving party of the maximum 20 day response period. The coordinator's recommendation may include comments on technical factors such as power, antenna height and gain, terrain and other factors which may serve to minimize potential interference. In addition:

(2) On frequencies designated for coordination or concurrence by a specific

frequency coordinator as specified in §§ 90.20(c)(3) and 90.35(b), the applicable frequency coordinator shall provide a written supporting statement in instances in which coordination or concurrence is denied. The supporting statement shall contain sufficient detail to permit discernment of the technical basis for the denial of concurrence. Concurrence may be denied only when a grant of the underlying application would have a demonstrable, material, adverse effect on safety.

(3) In instances in which a frequency coordinator determines that an applicant's requested frequency or the most appropriate frequency is one designated for coordination or concurrence by a specific frequency coordinator as specified in § 90.20(c)(3) or § 90.35(b), that frequency coordinator may forward the application directly to the appropriate frequency coordinator. A frequency coordinator may only forward an application as specified above if consent is received from the applicant.

(c) *For frequencies above 800 MHz:* When frequencies are shared by more than one service, concurrence must be obtained from the other applicable certified coordinators.

(d) *For frequencies in the 450–470 MHz band:* When used for secondary fixed operations, frequencies shall be assigned and coordinated pursuant to § 90.261.

(e) *For frequencies between 470–512 MHz, 769–775/799–805 MHz, 806–824/851–869 MHz and 896–901/935–940 MHz:* A recommendation of the specific frequencies that are available for assignment in accordance with the loading standards and mileage separations applicable to the specific radio service, frequency pool, or category of user involved is required from an applicable frequency coordinator.

(f) *For frequencies in the 929–930 MHz band listed in paragraph (b) of § 90.494:* A statement is required from the coordinator recommending the most appropriate frequency.

(g) *For frequencies between 1427–1432 MHz:* A statement is required from the coordinator recommending the most appropriate frequency, operating power and area of operation in accordance with the requirements of § 90.259(b).

(h) Any recommendation submitted in accordance with paragraphs (a), (c), (d), or (e) of this section is advisory in character and is not an assurance that the Commission will grant a license for operation on that frequency. Therefore, applicants are strongly advised not to purchase radio equipment operating on specific frequencies until a valid authorization has been obtained from the Commission.

(i) Applications for facilities near the Canadian border north of line A or east of line C in Alaska may require coordination with the Canadian government. *See* § 1.928 of this chapter.

(j) The following applications need not be accompanied by evidence of frequency coordination:

(1) Applications for frequencies below 25 MHz.

(2) Applications for a Federal Government frequency.

(3) Applications for frequencies in the 72–76 MHz band except for mobile frequencies subject to § 90.35(c)(77).

(4) [Reserved]

(5) Applications in the Industrial/Business Pool requesting a frequency designated for itinerant operations.

(6) Applications in the Radiolocation Service.

(7) Applications filed exclusively to modify channels in accordance with band reconfiguration in the 806–824/851–869 band.

(8) Applications for SMR frequencies contained in §§ 90.617(d) Table 4A, 90.617(e), 90.617(f) and 90.619(b)(2).

(9) Applications indicating license assignments such as change in ownership, control or corporate structure if there is no change in technical parameters.

(10) Applications for mobile stations operating in the 470–512 MHz band, 799–805 MHz band, or above 800 MHz if the frequency pair is assigned to a single system on an exclusive basis in the proposed area of operation.

(11) Applications for add-on base stations in multiple licensed systems operating in the 470–512 MHz, 769–775 MHz band, or above 800 MHz if the frequency pair is assigned to a single system on an exclusive basis.

(12) Applications for control stations operating below 470 MHz, 769–775/799–805

MHz, or above 800 MHz and meeting the requirements of § 90.119(b).

(13) Except for applications for the frequencies set forth in § 90.719(c) and § 90.720, applications for frequencies in the 220–222 MHz band.

(14) Applications for a state license under § 90.529.

(15) Applications for narrowband low power channels listed for itinerant use in § 90.531(b)(4).

(16) Applications for DSRCS licenses (as well as registrations for Roadside Units) in the 5850–5925 GHz band.

(17) Applications for the deletion of a frequency and/or transmitter site location.

(18) Applications for base, mobile, or control stations in the 763–768 MHz and 793–798 MHz bands.

(19) Applications filed exclusively to return channels that had been authorized for commercial operation pursuant to § 90.621(e) or (f) to non-commercial operation (including removal of the authorization to interconnect with the public switched telephone network).

(20) Applications for a reduction in the currently authorized emission bandwidth or a deletion of an existing emission designator.

(21) Applications for a reduction in antenna height or authorized power.

(22) Applications for frequencies in the 4940–4990 MHz band. See § 90.1209 of this chapter for further information.

[67 FR 41858, June 20, 2002, as amended at 67 FR 63289, Oct. 11, 2002; 68 FR 38639, June 30, 2003; 69 FR 39867, July 1, 2004; 69 FR 46443, Aug. 3, 2004; 70 FR 61061, Oct. 20, 2005; 70 FR 76708, Dec. 28, 2005; 72 FR 48859, Aug. 24, 2007; 75 FR 19284, Apr. 14, 2010; 77 FR 45506, Aug. 1, 2012; 78 FR 25175, Apr. 29, 2013]

§ 90.176 Coordinator notification requirements on frequencies below 512 MHz, at 769–775/799–805 MHz, or at 1427–1432 MHz.

(a) Frequencies below 470 MHz. Within one business day of making a frequency recommendation, each frequency coordinator must notify and provide the information indicated in paragraph (g) of this section to all other frequency coordinators who are also certified to coordinate that frequency.

(1) The applicable frequency coordinator for each frequency is specified in the coordinator column of the frequency tables of §§ 90.20(c)(3) and 90.35(b)(3).

(2) For frequencies that do not specify any frequency coordinator, all certified in-pool coordinators must be notified.

(3) For frequencies that are shared between the Public Safety Pool and the Industrial/Business Pool (frequencies subject to §§ 90.20(d)(7), (d)(25), (d)(34), or (d)(46) in the Public Safety Pool, and subject to §§ 90.35(c)(13), (c)(25), or (d)(4) in the Industrial/Business Pool), all certified coordinators of both pools must be notified.

(b) Frequencies in the 470–512 MHz band. Within one business day of making a frequency recommendation, each frequency coordinator must notify and provide the information indicated in paragraph (g) of this section to all other certified frequency coordinators in the Public Safety Pool and the Industrial/Business Pool.

(c) *Frequencies in the 769–775/799–805 MHz band.* Within one business day of making a frequency recommendation, each frequency coordinator must notify and provide the information indicated in paragraph (g) of this section to all other certified frequency coordinators in the Public Safety Pool.

(d) Frequencies in the 1427–1432 MHz band. Within one business day of making a frequency recommendation, each frequency coordinator must notify and provide the information indicated in paragraph (g) of this section to the WMTS frequency coordinator designated in § 95.113 and to all other frequency coordinators who are also certified to coordinate that frequency.

(e) Each frequency coordinator must also notify all other certified in-pool coordinators on any day that the frequency coordinator does not make any frequency recommendations.

(f) Notification must be made to all coordinators at approximately the same time and can be made using any method that ensures compliance with the one business day requirement.

(g) At a minimum the following information must be included in each notification:

(1) Name of applicant;

(2) Frequency or frequencies recommended;

(3) Antenna locations and heights;

(4) Effective radiated power (ERP);

(5) Type(s) of emissions;

(6) Description of the service area; and

(7) Date and time of recommendation.

(h) Upon request, each coordinator must provide any additional information requested from another certified coordinator regarding a pending recommendation that it has processed but has not yet been granted by the Commission.

(i) It is the responsibility of each coordinator to insure that its frequency recommendations do not conflict with the frequency recommendations of any other frequency coordinator. Should a conflict arise, the affected coordinators are jointly responsible for taking action to resolve the conflict, up to and including notifying the Commission that an application may have to be returned.

[57 FR 41859, June 20, 2002, as amended at 72 FR 48859, Aug. 24, 2007]

§ 90.179 Shared use of radio stations.

Licensees of radio stations authorized under this rule part may share the use of their facilities. A station is shared when persons not licensed for the station control the station for their own purposes pursuant to the licensee's authorization. Shared use of a radio station may be either on a non-profit cost shared basis or on a for-profit private carrier basis. Shared use of an authorized station is subject to the following conditions and limitations:

(a) Persons may share a radio station only on frequencies for which they would be eligible for a separate authorization.

(b) The licensee of the shared radio station is responsible for assuring that the authorized facility is used only by persons and only for purposes consistent with the requirements of this rule part.

(c) Participants in the sharing arrangement may obtain a license for their own mobile units (including control points and/or control stations for control of the shared facility), or they may use mobile stations, and control stations or control points authorized to the licensee.

(d) If the licensee shares the land station on a non-profit, cost shared basis to the licensee, this shared use must be pursuant to a written agreement between the licensee and each participant which sets out (1) the method of operation, (2) the components of the system which are covered by the sharing arrangements, (3) the method by which costs are to be apportioned, and (4) acknowledgement that all shared transmitter use must be subject to the licensee's control. These agreements must be kept as part of the station records.

(e) If the land station which is being shared is interconnected with the public switched telephone network, the provisions of § 90.477 *et seq*. apply.

(f) Above 800 MHz, shared use on a for-profit private carrier basis is permitted only by SMR, Private Carrier Paging, LMS, and DSRCS licensees. See subparts M, P, and S of this part.

(g) Notwithstanding paragraph (a) of this section, licensees authorized to operate radio systems on Public Safety Pool frequencies designated in § 90.20 may share their facilities with Federal Government entities on a non-profit, cost-shared basis. Such a sharing arrangement is subject to the provisions of paragraphs (b), (d), and (e) of this section, and § 2.103(c) of this chapter concerning operations in the 758–769 MHz and 788–799 MHz bands. State governments authorized to operate radio systems under § 90.529 may share the use of their systems (for public safety services not made commercially available to the public) with any entity that would be eligible for licensing under § 90.523 and Federal government entities.

(h) Notwithstanding paragraph (a) of this section, licensees authorized to operate radio systems on Industrial/Business Pool frequencies designated in § 90.35 may share their facilities with Public Safety Pool entities designated in § 90.20 and with Federal Government entities on a non-profit, cost-shared basis. Such a sharing arrangement is subject to the provisions of paragraphs (b), (d), and (e) of this section.

(i) The provisions of this section do not apply to licensees authorized to provide commercial mobile radio service under this part, including licensees

authorized to use channels transferred or assigned pursuant to § 90.621(e)(2).

(j) On the Interoperability Channels in the 700 MHz Public Safety Band (*See* 90.531(b)(1)), hand-held and vehicular units operated by any licensee holding a license in the 700 MHz Public Safety Band or by any licensee for any public safety frequency pursuant to part 90 of the Commission's rules may communicate with or through land stations without further authorization and without a sharing agreement.

[48 FR 26620, June 9, 1983]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.179, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§ 90.185 Multiple licensing of radio transmitting equipment in the mobile radio service.

Two or more persons eligible for licensing under this rule part may be licensed for the same land station under the following terms and conditions.

(a) Each licensee complies with the general operating requirements set out in § 90.403 of the rules.

(b) Each licensee is eligible for the frequency(ies) on which the land station operates.

(c) If the multiple licensed base station is interconnected with the public switched telephone network, the provisions of § 90.477 *et seq*. apply.

[48 FR 26621, June 9, 1983]

§ 90.187 Trunking in the bands between 150 and 512 MHz.

(a) Applicants for centralized and decentralized trunked systems operating on frequencies between 150 and 512 MHz (except 220–222 MHz) must indicate on their applications (radio service and class of station code, instructions for FCC Form 601) that their system will be trunked. Licensees of stations that are not trunked may trunk their systems only after modifying their license (see § 1.927 of this chapter).

(b) Except as provided in paragraphs (c) and (d) of this section, trunked systems operating under this section must employ equipment that prevents transmission on a trunked frequency if a signal from another system is present on that frequency. The level of monitoring must be sufficient to avoid harmful interference to other systems.

(c) The monitoring requirement in paragraph (b) of this section does not apply to trunked systems operating in the 470–512 MHz band that meet the loading requirements of § 90.313 and have exclusive use of their frequencies in their service area.

(d) The monitoring requirement in paragraph (b) of this section does not apply if the application is accompanied by written consent from all affected licensees.

(1) Affected licensees for the purposes of this section are licensees (and previously filed pending applicants) meeting both a spectral and a contour overlap as defined:

(i) *Spectral overlap*. Licensees (and filers of previously filed pending applications) with an assigned (or proposed) frequency having a spectral separation from a frequency of the proposed centralized trunked station that does not exceed these values:

Proposed station	Incumbent authorized bandwidth		
	25 kHz	*12.5 kHz*	*6.25 kHz*
25 kHz	15.0 kHz	15.0 kHz	15.0 kHz
12.5 kHz	15.0 kHz	7.5 kHz	7.5 kHz
6.25 kHz	15.0 kHz	7.5 kHz	5.0 kHz

The left column is the authorized bandwidth requested for the proposed trunked station. The second row is the authorized bandwidth of the incumbent. The other cells in the table show the frequency range above and below the frequency of the proposed centralized trunked station that must be considered.

(ii) *Contour overlap*. (A) Licensees (and filers of previously filed pending applications) with a service contour (37 dBu for stations in the 150–174 MHz band, and 39 dBu for stations in the 421–512 MHz band) that is overlapped by the proposed centralized trunked station's interference contour (19 dBu for stations in the 150–174 MHz band, and 21 dBu for stations in the 421–512 MHz

band). Contour calculations are required for base station facilities and not for mobile stations associated with those base stations.

(B) The calculation of service and interference contours shall be performed using generally accepted engineering practices and standards, including appropriate derating factors, agreed to by a consensus of all certified frequency coordinators. Frequency coordinators shall make this information available to the Commission upon request.

(C) For purposes of this section, the authorized operating area of a station or proposed station with no associated base station shall be used as both the station's service contour and its interference contour.

(D) After January 1, 2013, licensees with an authorized bandwidth exceeding 12.5 kHz will not be deemed affected licensees, unless the licensee meets the efficiency standard set forth in § 90.203(j)(3) or the licensee was granted a waiver of § 90.209(b).

(2) The written consent from an affected licensee shall state all terms agreed to by the parties and shall be signed by the parties. The written consent shall be maintained by the operator of the centralized trunked station and be made available to the Commission upon request. An application for a centralized trunked station shall include either a certification from the applicant that written consent has been obtained from all affected licensees, or a certification from the frequency coordinator that there are no affected licensees.

(3) In addition, the service contour for proposed centralized trunked stations shall not be overlapped by an incumbent licensee's interference contour.

(e) The exclusive service area of a station that has been authorized for centralized trunked operation will be protected from proposed centralized trunked, decentralized trunked or conventional operations in accordance with the standards of paragraph (d) of this section.

(f) Trunking of systems licensed on paging-only channels or licensed in the Radiolocation Service (subpart F) is not permitted.

(g) *Channel limits.* (1) No more than 10 channels for new centralized trunked operation in the Industrial/Business Pool may be applied for at a single transmitter location or at locations with overlapping service contours as specified in paragraph (d) of this section. Subsequent applications for centralized trunked operation are limited to no more than an additional 10 channels, and must be accompanied by a certification, submitted to the certified frequency coordinator coordinating the application, that all of the applicant's existing channels authorized for centralized trunked operation at that location or at locations with overlapping service contours have been constructed and placed in operation. Certified frequency coordinators are authorized to require documentation in support of the applicant's certification that existing channels have been constructed and placed in operation.

(2) Applicants for Public Safety Pool channels may request more than 10 centralized trunked channels at a single location or at locations with overlapping service contours if accompanied by a showing of sufficient need. The requirement for such a showing may be satisfied by submission of loading studies demonstrating that requested channels in excess of 10 will be loaded with 50 mobiles per channel within a five year period commencing with the grant of the application.

(h) If a licensee authorized for centralized trunked operation discontinues trunked operation for a period of 30 consecutive days, the licensee, within 7 days thereafter, shall file a conforming application for modification of license with the Commission.

[78 FR 28754, May 16, 2013]

Subpart I—General Technical Standards

§ 90.201 Scope.

This subpart sets forth the general technical requirements for use of frequencies and equipment in the radio services governed by this part. Such requirements include standards for acceptability of equipment, frequency tolerance, modulation, emissions,

power, and bandwidths. Special additional technical standards applicable to certain frequency bands and certain specialized uses are set forth in subparts J, K, N, and R.

[67 FR 76700, Dec. 13, 2002]

§ 90.203 Certification required.

(a) Except as specified in paragraphs (b) and (l) of this section, each transmitter utilized for operation under this part and each transmitter marketed as set forth in § 2.803 of this chapter must be of a type which has been certificated for use under this part.

(1) Effective October 16, 2002, except in the 1427–1432 MHz band, an equipment approval may no longer be obtained for in-hospital medical telemetry equipment operating under the provisions of this part. The requirements for obtaining an approval for medical telemetry equipment after this date are found in subpart H of part 95 of this chapter.

(2) Any manufacturer of radio transmitting equipment (including signal boosters) to be used in these services may request certification for such equipment following the procedures set forth in subpart J of part 2 of this chapter. Certification for an individual transmitter or signal booster also may be requested by an applicant for a station authorization by following the procedure set forth in part 2 of this chapter. Such equipment if approved will be individually enumerated on the station authorization.

(b) Certification is not required for the following:

(1) [Reserved]

(2) Transmitters used for police zone and interzone stations authorized as of January 1, 1965.

(3) Transmitting equipment used in the band 1427–1435 MHz.

(4) Transmitters used in radiolocation stations in accordance with subpart F authorized prior to January 1, 1974, for public safety and land transportation applications (old parts 89 and 93).

(5) Transmitters used in radiolocation stations in accordance with subpart F authorized for industrial applications (old part 91) prior to January 1, 1978.

(6) [Reserved]

(7) Transmitters imported and marketed prior to September 1, 1996 for use by LMS systems.

(c) Radiolocation transmitters for use in public safety and land transportation applications marketed prior to January 1, 1974, must meet the applicable technical standards in this part, pursuant to § 2.803 of this chapter.

(d) Radiolocation transmitters for use in public safety and land transportation applications marketed after January 1, 1974, must comply with the requirements of paragraph (a) of this section.

(e) Except as provided in paragraph (g) of this section, transmitters designed to operate above 25 MHz shall not be certificated for use under this part if the operator can program and transmit on frequencies, other than those programmed by the manufacturer, service or maintenance personnel, using the equipment's external operation controls.

(f) Except as provided in paragraph (g) of this section, transmitters designed to operate above 25 MHz that have been approved prior to January 15, 1988, and that permit the operator, by using external controls, to program the transmitter's operating frequencies, shall not be manufactured in, or imported into the United States after March 15, 1988. Marketing of these transmitters shall not be permitted after March 15, 1989.

(g) Transmitters having frequency programming capability and that are designed to operate above 25 MHz are exempt from paragraphs (e) and (f) of this section if the design of such transmitters:

(1) Is such that transmitters with external controls normally available to the operator must be internally modified to place the equipment in the programmable mode. Further, while in the programmable mode, the equipment shall not be capable of transmitting. The procedures for making the modification and altering the frequency program shall not be made available with the operating information normally supplied to the end user of the equipment; or

(2) Requires the tramsitter to be programmed for frequencies through controls normally inaccessible to the operator; or

(3) Requires equipment to be programmed for frequencies through use of external devices or specifically programmed modules made available only to service/maintenance personnel; or

(4) Requires equipment to be programmed through cloning (copying a program directly from another transmitter) using devices and procedures made available only to service/maintenance personnel.

(h) The requirements of paragraphs (e), (f), and (g) of this section shall not apply if:

(1) The equipment has been designed and manufactured specifically for aircraft use; and

(2) The part 90 certification limits the use of the equipment to operations only under § 90.423.

(i) Equipment certificated after February 16, 1988 and marketed for public safety operation in the 806–809/851–854 MHz bands must have the capability to be programmed for operation on the mutual aid channels as designated in § 90.617(a)(1) of the rules.

(j) Except where otherwise specially provided for, transmitters operating on frequencies in the 150–174 MHz and 406–512 MHz bands must comply with the following:

(1) Applications for certification received on or after January 1, 2005, for mobile and portable transmitters designed to transmit voice on public safety frequencies in the 150–174 MHz band will be granted only if the mobile/portable equipment is capable of operating on the nationwide public safety interoperability calling channel in the 150–174 MHz band. (See § 90.20(c), (d) of this part.) Applications for certification received on or after January 1, 2005, for mobile and portable transmitters designed to transmit voice on public safety frequencies in the 450–470 MHz band will be granted only if the mobile/portable equipment is capable of operating on the nationwide public safety interoperability calling channel in the 450–470 MHz band. (See § 90.20(c), (d) of this part.)

(2) Applications for certification received on or after February 14, 1997 but before January 1, 2005 will only be granted for equipment with the following channel bandwidths:

(i) 12.5 kHz or less for single bandwidth mode equipment or multi-bandwidth mode equipment with a maximum channel bandwidth of 12.5 kHz;

(ii) 25 kHz for multi-bandwidth mode equipment with a maximum channel bandwidth of 25 kHz if it is capable of operating on channels of 12.5 kHz or less; and

(iii) 25 kHz if the equipment meets the efficiency standard of paragraph (j)(3) of this section.

(3) Applications for part 90 certification of transmitters designed to operate on frequencies in the 150.8–162.0125 MHz, 173.2–173.4 MHz, and/or 421–512 MHz bands, received on or after February 14, 1997 must include a certification that the equipment meets a spectrum efficiency standard of one voice channel per 12.5 kHz of channel bandwidth. Additionally, if the equipment is capable of transmitting data, has transmitter output power greater than 500 mW, and has a channel bandwidth of more than 6.25 kHz, the equipment must be capable of supporting a minimum data rate of 4800 bits per second per 6.25 kHz of channel bandwidth.

(4) Applications for part 90 certification of transmitters designed to operate on frequencies in the 150.8–162.0125 MHz, 173.2–173.4 MHz, and/or 421–512 MHz bands, received on or after January 1, 2011, except for hand-held transmitters with an output power of two watts or less, will only be granted for equipment with the following channel bandwidths:

(i) 6.25 kHz or less for single bandwidth mode equipment;

(ii) 12.5 kHz for multi-bandwidth mode equipment with a maximum channel bandwidth of 12.5 kHz if it is capable of operating on channels of 6.25 kHz or less;

(iii) 25 kHz for multi-bandwidth mode equipment with a maximum channel bandwidth of 25 kHz if it is capable of operating on channels of 6.25 kHz or less; and

(iv) Up to 25 kHz if the equipment meets the efficiency standard of paragraph (j)(5) of this section.

(5) Applications for part 90 certification of transmitters designed to operate on frequencies in the 150.8–162.0125 MHz, 173.2–173.4 MHz, and/or 421–512 MHz bands, received on or after January 1, 2011, must include a certification that the equipment meets a spectrum efficiency standard of one voice channel per 6.25 kHz of channel bandwidth. Additionally, if the equipment is capable of transmitting data, has transmitter output power greater than 500 mW, and has a channel bandwidth of more than 6.25 kHz, the equipment must be capable of supporting a minimum data rate of 4800 bits per second per 6.25 kHz of channel bandwidth.

(6) Modification and permissive changes to certification grants.

(i) The Commission's Equipment Authorization Division will not allow adding a multi-mode or narrowband operation capability to single bandwidth mode transmitters, except under the following conditions:

(A) Transmitters that have the inherent capability for multi-mode or narrowband operation allowed in paragraphs (j)(2) and (j)(4) of this section, may have their grant of certification modified (reissued) upon demonstrating that the original unit complies with the technical requirements for operation; and

(B) New FCC Identifiers will be required to identify equipment that needs to be modified to comply with the requirements of paragraphs (j)(2) and (j)(4) of this section.

(ii) All other applications for modification or permissive changes will be subject to the Rules of part 2 of this chapter.

(7) Transmitters designed only for one-way paging operations may be certificated with up to a 25 kHz bandwidth and are exempt from the spectrum efficiency requirements of paragraphs (j)(3) and (j)(5) of this section.

(8) The Commission's Equipment Authorization Division may, on a case by case basis, grant certification to equipment with slower data rates than specified in paragraphs (j)(3) and (j)(5) of this section, provided that a technical analysis is submitted with the application which describes why the slower data rate will provide more spectral efficiency than the standard data rate.

(9) Transmitters used for stolen vehicle recovery on 173.075 MHz must comply with the requirements of § 90.20(e)(6).

(10) Except as provided in this paragraph, single-mode and multi-mode transmitters designed to operate in the 150–174 MHz and 421–512 MHz bands that operate with a maximum channel bandwidth greater than 12.5 kHz shall not be manufactured in, or imported into, the United States after January 1, 2011, except as follows:

(i) To the extent that the equipment meets the efficiency standard of paragraph (j)(3) of this section, or

(ii) Where operation with a bandwidth greater than 12.5 kHz is specified elsewhere.

(k) For transmitters operating on frequencies in the 220–222 MHz band, certification will only be granted for equipment with channel bandwidths up to 5 kHz, except that certification will be granted for equipment operating on 220–222 MHz band Channels 1 through 160 (220.0025 through 220.7975/221.0025 through 221.7975), 171 through 180 (220.8525 through 220.8975/221.8525 through 221.8975), and 186 through 200 (220.9275 through 220.9975/221.9275 through 221.9975) with channel bandwidths greater than 5 kHz.

(l) Ocean buoy and wildlife tracking transmitters operating in the band 40.66–40.70 MHz or 216–220 MHz under the provisions of § 90.248 of this part shall be authorized under verification procedure pursuant to subpart J of part 2 of this chapter.

(m) Applications for part 90 certification received after December 31, 2014 will only be granted to transmitters designed to operate in the voice mode on channels designated in § 90.531.(b)(5) or § 90.531(b)(6) that provide at least one voice path per 6.25 kHz of spectrum bandwidth.

(n) Transmitters designed to operate in the voice mode on channels designated in §§ 90.531(b)(5) or 90.531(b)(6) that do not provide at least one voice path of 6.25 kHz of spectrum bandwidth shall not be manufactured in or imported into the United States after December 31, 2014. Marketing of these transmitters shall not be permitted after December 31, 2014.

(o) *Equipment certification for transmitters in the 3650–3700 MHz band.* (1) Applications for all transmitters must describe the methodology used to meet the requirement that each transmitter employ a contention based protocol and indicate whether it is capable of avoiding co-frequency interference with devices using all other types of contention-based protocols (see §§ 90.7, 90.1305 and 90.1321 of this part);

(2) Applications for mobile transmitters must identify the base stations with which they are designed to communicate and describe how the requirement to positively receive and decode an enabling signal is incorporated (see § 90.1333 of this part); and

(3) Applications for systems using advanced antenna technology must provide the algorithm used to reduce the equivalent isotropically radiated power (EIRP) to the maximum allowed in the event of overlapping beams (see § 90.1321 of this part).

(4) Applications for fixed transmitters must include a description of the installation instructions and guidelines for RF safety exposure requirements that will be included with the transmitter. (See § 90.1335).

(p) Certification requirements for signal boosters are set forth in § 90.219.

[43 FR 54791, Nov. 22, 1978; 44 FR 32219, June 5, 1979]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.203, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§ 90.205 Power and antenna height limits.

Applicants for licenses must request and use no more power than the actual power necessary for satisfactory operation. Except where otherwise specifically provided for, the maximum power that will be authorized to applicants whose license applications for new stations are filed after August 18, 1995 is as follows:

(a) *Below 25 MHz.* For single sideband operations (J3E emission), the maximum transmitter peak envelope power is 1000 watts.

(b) *25–50 MHz.* The maximum transmitter output power is 300 watts.

(c) *72–76 MHz.* The maximum effective radiated power (ERP) for stations operating on fixed frequencies is 300 watts. Stations operating on mobile-only frequencies are limited to one watt transmitter output power.

(d) *150–174 MHz.* (1) The maximum allowable station ERP is dependent upon the station's antenna HAAT and required service area and will be authorized in accordance with table 1. Applicants requesting an ERP in excess of that listed in table 1 must submit an engineering analysis based upon generally accepted engineering practices and standards that includes coverage contours to demonstrate that the requested station parameters will not produce coverage in excess of that which the applicant requires.

(2) Applications for stations where special circumstances exist that make it necessary to deviate from the ERP and antenna heights in Table 1 will be submitted to the frequency coordinator accompanied by a technical analysis, based upon generally accepted engineering practices and standards, that demonstrates that the requested station parameters will not produce a signal strength in excess of 37 dBu at any point along the edge of the requested service area. The coordinator may then recommend any ERP appropriate to meet this condition.

(3) An applicant for a station with a service area radius greater than 40 km (25 mi) must justify the requested service area radius, which will be authorized only in accordance with table 1, note 4. For base stations with service areas greater than 80 km, all operations 80 km or less from the base station will be on a primary basis and all operations outside of 80 km from the base station will be on a secondary basis and will be entitled to no protection from primary operations.

TABLE 1—150–174MHz—MAXIMUM ERP/REFERENCE HAAT FOR A SPECIFIC SERVICE AREA RADIUS

	Service area radius (km)									
	3	8	13	16	24	32	40	48 [4]	64 [4]	80 [4]
Maximum ERP (w) [1]	1	28	178	[2] 500	[2] 500	[2] 500	500	[2] 500	[2] 500	[2] 500
Up to reference HAAT (m) [3]	15	15	15	15	33	65	110	160	380	670

[1] Maximum ERP indicated provides for a 37 dBu signal strength at the edge of the service area per FCC Report R–6602, Fig. 19 (See § 73.699, Fig. 10).
[2] Maximum ERP of 500 watts allowed. Signal strength at the service area contour may be less than 37 dBu.
[3] When the actual antenna HAAT is greater than the reference HAAT, the allowable ERP will be reduced in accordance with the following equation: $ERP_{allow} = ERP_{max} \times (HAAT_{ref} / HAAT_{actual})^2$.
[4] Applications for this service area radius may be granted upon specific request with justification and must include a technical demonstration that the signal strength at the edge of the service area does not exceed 37 dBu.

(e) *217–220 MHz*. Limitations on power and antenna heights are specified in § 90.259.

(f) *220–222 MHz*. Limitations on power and antenna heights are specified in § 90.729.

(g) *421–430 MHz*. Limitations on power and antenna heights are specified in § 90.279.

(h) *450–470 MHz*. (1) The maximum allowable station effective radiated power (ERP) is dependent upon the station's antenna HAAT and required service area and will be authorized in accordance with table 2. Applicants requesting an ERP in excess of that listed in table 2 must submit an engineering analysis based upon generally accepted engineering practices and standards that includes coverage contours to demonstrate that the requested station parameters will not produce coverage in excess of that which the applicant requires.

(2) Applications for stations where special circumstances exist that make it necessary to deviate from the ERP and antenna heights in Table 2 will be submitted to the frequency coordinator accompanied by a technical analysis, based upon generally accepted engineering practices and standards, that demonstrates that the requested station parameters will not produce a signal strength in excess of 39 dBu at any point along the edge of the requested service area. The coordinator may then recommend any ERP appropriate to meet this condition.

(3) An applicant for a station with a service area radius greater than 32 km (20 mi) must justify the requested service area radius, which may be authorized only in accordance with table 2, note 4. For base stations with service areas greater than 80 km, all operations 80 km or less from the base station will be on a primary basis and all operations outside of 80 km from the base station will be on a secondary basis and will be entitled to no protection from primary operations.

TABLE 2—450–470 MHz—MAXIMUM ERP/REFERENCE HAAT FOR A SPECIFIC SERVICE AREA RADIUS

	Service area radius (km)									
	3	8	13	16	24	32	40 [4]	48 [4]	64 [4]	80 [4]
Maximum ERP (w) [1]	2	100	[2] 500	[2] 500	[2] 500	[2] 500	[2] 500	[2] 500	[2] 500	[2] 500
Up to reference HAAT (m) [3]	15	15	15	27	63	125	250	410	950	2700

[1] Maximum ERP indicated provides for a 39 dBu signal strength at the edge of the service area per FCC Report R–6602, Fig. 29 (See § 73.699, Fig. 10 b).
[2] Maximum ERP of 500 watts allowed. Signal strength at the service area contour may be less than 39 dBu.
[3] When the actual antenna HAAT is greater than the reference HAAT, the allowable ERP will be reduced in accordance with the following equation: $ERP_{allow} = ERP_{max} \times (HAAT_{ref} / HAAT_{actual})^2$.
[4] Applications for this service area radius may be granted upon specific request with justification and must include a technical demonstration that the signal strength at the edge of the service area does not exceed 39 dBu.

(i) *470–512 MHz*. Power and height limitations are specified in §§ 90.307 and 90.309.

(j) *758–775 MHz and 788–805 MHz*. Power and height limitations are specified in §§ 90.541 and 90.542.

(k) *806–824 MHz, 851–869 MHz, 896–901 MHz and 935–940 MHz.* Power and height limitations are specified in § 90.635

(l) *902–928 MHz.* LMS systems operating pursuant to subpart M of this part in the 902–927.25 MHz band will be authorized a maximum of 30 watts ERP. LMS equipment operating in the 927.25–928 MHz band will be authorized a maximum of 300 watts ERP. ERP must be measured as peak envelope power. Antenna heights will be as specified in § 90.353(h).

(m) *929–930 MHz.* Limitations on power and antenna heights are specified in § 90.494.

(n) *1427–1429.5 MHz and 1429.5–1432 MHz.* Limitations on power are specified in § 90.259.

(o) *2450–2483.5 MHz.* The maximum transmitter power is 5 watts.

(p) *4940–4990 MHz.* Limitations on power are specified in § 90.1215.

(q) *5850–5925 MHz.* Power and height limitations are specified in subpart M of this part.

(r) *All other frequency bands.* Requested transmitter power will be considered and authorized on a case by case basis.

(s) The output power shall not exceed by more than 20 percent either the output power shown in the Radio Equipment List [available in accordance with § 90.203(a)(1)] for transmitters included in this list or when not so listed, the manufacturer's rated output power for the particular transmitter specifically listed on the authorization.

[60 FR 37262, July 19, 1995, as amended at 62 FR 2039, Jan. 15, 1997; 63 FR 58651, Nov. 2, 1998; 64 FR 66409, Nov. 26, 1999; 67 FR 41860, June 20, 2002; 68 FR 38639, June 30, 2003; 69 FR 46443, Aug. 3, 2004; 72 FR 48860, Aug. 24, 2007; 79 FR 600, Jan. 6, 2014]

§ 90.207 Types of emissions.

Unless specified elsewhere in this part, stations will be authorized emissions as provided for in paragraphs (b) through (n) of this section.

(a) *Most common emission symbols.* For a complete listing of emission symbols allowable under this part, see § 2.201 of this chapter.

(1) The first symbol indicates the type of modulation on the transmitter carrier.

A—Amplitude modulation, double sideband with identical information on each sideband.
F—Frequency modulation.
G—Phase modulation.
J—Single sideband with suppressed carrier.
P—Unmodulated pulse.
W—Cases not covered above, in which an emission consists of the main carrier modulated, either simultaneously or in a preestablished sequence, in a combination of two or more of the following modes: amplitude, angle, pulse.

(2) The second symbol indicates the type of signal modulating the transmitter carrier.

0—No modulation.
1—Digital modulation, no subcarrier.
2—Digital modulation, modulated subcarrier.
3—Analog modulation.

(3) The third symbol indicates the type of transmitted information.

A—Telegraphy for aural reception.
B—Telegraphy for machine reception.
C—Facsimile.
D—Data, telemetry, and telecommand.
E—Voice.
N—No transmitted information.
W—Combination of the above.

(b) Authorizations to use A3E, F3E, or G3E emission also include the use of emissions for tone signals or signaling devices whose sole functions are to establish and to maintain communications, to provide automatic station identification, and for operations in the Public Safety Pool, to activate emergency warning devices used solely for the purpose of advising the general public or emergency personnel of an impending emergency situation.

(c) The use of F3E or G3E emission in these services will be authorized only on frequencies above 25 MHz.

(d) Except for Traveler's Information stations in the Public Safety Pool authorized in accordance with § 90.242, only J3E emission will be authorized for telephony systems on frequencies below 25 MHz.

(e) For non-voice paging operations, only A1A, A1D, A2B, A2D, F1B, F1D, F2B, F2D, G1B, G1D, G2B, or G2D emissions will be authorized.

(f) For radioteleprinter operations that may be authorized in accordance with § 90.237, only F1B, F2B, G1B or G2B emissions will be authorize above 25

MHz, and A1B or A2B emissions below 25 MHz.

(g) For radiofacsimile operations that may be authorized in accordance with § 90.237, only F3C or G3C emissions will be authorized above 25 MHz, and A3C emissions below 25 MHz.

(h) [Reserved]

(i) For telemetry operations, when specifically authorized under this part, only A1D, A2D, F1D, or F2D emissions will be authorized.

(j) For call box operations that may be authorized in accordance with § 90.241, only A1A, A1D, A2B, A2D, F1B, F1D, F2B, F2D, G1B, G1D, G2B, G2D, F3E or G3E emissions will be authorized.

(k) For radiolocation operations as may be authorized in accordance with subpart F, unless otherwise provided for any type of emission may be authorized upon a satisfactory showing of need.

(l) For stations in the Public Safety and Industrial/Business Pools utilizing digital voice modulation, in either the scrambled or unscrambled mode, F1E or G1E emission will be authorized. Authorization to use digital voice emissions is construed to include the use of F1D, F2D, G1D, or G2D emission subject to the provisions of § 90.233.

(m) For narrowband operations in a 3.6 kHz maximum authorized bandwith, any modulation type may be used which complies with the emission limitations of § 90.209.

(n) *Other emissions*. Requests for emissions other than those listed in paragraphs (c) through (e) of this section will be considered on a case-by-case basis to ensure that the requested emission will not cause more interference than other currently permitted emissions.

[49 FR 48711, Dec. 14, 1984, as amended at 50 FR 13606, Apr. 5, 1985; 50 FR 25240, June 18, 1985; 52 FR 29856, Aug. 12, 1987; 54 FR 38681, Sept. 20, 1989; 60 FR 15252, Mar. 23, 1995; 60 FR 37263, July 19, 1995; 62 FR 2039, Jan. 15, 1997; 62 FR 18927, Apr. 17, 1997; 64 FR 36270, July 6, 1999; 72 FR 35194, June 27, 2007]

§ 90.209 Bandwidth limitations.

(a) Each authorization issued to a station licensed under this part will show an emission designator representing the class of emission authorized. The designator will be prefixed by a specified necessary bandwidth. This number does not necessarily indicate the bandwidth occupied by the emission at any instant. In those cases where § 2.202 of this chapter does not provide a formula for the computation of necessary bandwidth, the occupied bandwidth, as defined in part 2 of this chapter, may be used in lieu of the necessary bandwidth.

(b) The maximum authorized single channel bandwidth of emission corresponding to the type of emission specified in § 90.207 is as follows:

(1) For A1A or A1B emissions, the maximum authorized bandwidth is 0.25 kHz. The maximum authorized bandwidth for type A3E emission is 8 kHz.

(2) For operations below 25 MHz utilizing J3E emission, the bandwidth occupied by the emission shall not exceed 3000 Hz. The assigned frequency will be specified in the authorization. The authorized carrier frequency will be 1400 Hz lower in frequency than the assigned frequency. Only upper sideband emission may be used. In the case of regularly available double sideband radiotelephone channels, an assigned frequency for J3E emissions is available either 1600 Hz below or 1400 Hz above the double sideband radiotelephone assigned frequency.

(3) For all other types of emissions, the maximum authorized bandwidth shall not be more than that normally authorized for voice operations.

(4) Where a frequency is assigned exclusively to a single licensee, more than a single emission may be used within the authorized bandwidth. In such cases, the frequency stability requirements of § 90.213 must be met for each emission.

(5) Unless specified elsewhere, channel spacings and bandwidths that will be authorized in the following frequency bands are given in the following table.

STANDARD CHANNEL SPACING/BANDWIDTH

Frequency band (MHz)	Channel spacing (kHz)	Authorized bandwidth (kHz)
Below 25 [2].		
25–50	20	20
72–76	20	20
150–174	[1]7.5	[1 3]20/11.25/6
216–220 [5]	6.25	20/11.25/6

STANDARD CHANNEL SPACING/BANDWIDTH—Continued

Frequency band (MHz)	Channel spacing (kHz)	Authorized bandwidth (kHz)
220–222	5	4
406–512 [2]	[1] 6.25	[1 3] 20/11.25/6
806–809/851–854	12.5	20
809–824/854–869	25	20
896–901/935–940	12.5	13.6
902–928 [4].		
929–930	25	20
1427–1432 [5]	12.5	12.5
[3] 2450–2483.5 [2].		
Above 2500 [2].		

[1] For stations authorized on or after August 18, 1995.

[2] Bandwidths for radiolocation stations in the 420–450 MHz band and for stations operating in bands subject to this footnote will be reviewed and authorized on a case-by-case basis.

[3] Operations using equipment designed to operate with a 25 kHz channel bandwidth will be authorized a 20 kHz bandwidth. Operations using equipment designed to operate with a 12.5 kHz channel bandwidth will be authorized a 11.25 kHz bandwidth. Operations using equipment designed to operate with a 6.25 kHz channel bandwidth will be authorized a 6 kHz bandwidth. All stations must operate on channels with a bandwidth of 12.5 kHz or less beginning January 1, 2013, unless the operations meet the efficiency standard of § 90.203(j)(3).

[4] The maximum authorized bandwidth shall be 12 MHz for non-multilateration LMS operations in the band 909.75–921.75 MHz and 2 MHz in the band 902.00–904.00 MHz. The maximum authorized bandwidth for multilateration LMS operations shall be 5.75 MHz in the 904.00–909.75 MHz band; 2 MHz in the 919.75–921.75 MHz band; 5.75 MHz in the 921.75–927.25 MHz band and its associated 927.25–927.50 MHz narrowband forward link; and 8.00 MHz if the 919.75–921.75 MHz and 921.75–927.25 MHz bands and their associated 927.25–927.50 MHz and 927.50–927.75 MHz narrowband forward links are aggregated.

[5] See § 90.259.

[6] Operations using equipment designed to operate with a 25 kHz channel bandwidth may be authorized up to a 22 kHz bandwidth if the equipment meets the Adjacent Channel Power limits of § 90.221.

(6)(i) Beginning January 1, 2011, no new applications for the 150–174 MHz and/or 421–512 MHz bands will be acceptable for filing if the applicant utilizes channels with an authorized bandwidth exceeding 11.25 kHz, unless specified elsewhere or the operations meet the efficiency standards of § 90.203(j)(3).

(ii) Beginning January 1, 2011, no modification applications for stations in the 150–174 MHz and/or 421–512 MHz bands that increase the station's authorized interference contour, will be acceptable for filing if the applicant utilizes channels with an authorized bandwidth exceeding 11.25 kHz, unless specified elsewhere or the operations meet the efficiency standards of § 90.203(j)(3). See § 90.187(b)(2)(iii) and (iv) for interference contour designations and calculations. Applications submitted pursuant to this paragraph must comply with frequency coordination requirements of § 90.175.

(7) Economic Area (EA)-based licensees in frequencies 817–824/862–869 MHz (813.5–824/858.5–869 MHz in the counties listed in § 90.614(c)) may exceed the standard channel spacing and authorized bandwidth listed in paragraph (b)(5) of this section in any National Public Safety Planning Advisory Committee Region when all 800 MHz public safety licensees in the Region have completed band reconfiguration consistent with this part. In any National Public Safety Planning Advisory Committee Region where the 800 MHz band reconfiguration is incomplete, EA-based licensees in frequencies 817–821/862–866 MHz (813.5–821/858.5–866 MHz in the counties listed in § 90.614(c)) may exceed the standard channel spacing and authorized bandwidth listed in paragraph (b)(5) of this section. Upon all 800 MHz public safety licensees in a National Public Safety Planning Advisory Committee Region completing band reconfiguration, EA-based 800 MHz SMR licensees in the 821–824/866–869 MHz band may exceed the channel spacing and authorized bandwidth in paragraph (b)(5) of this section. Licensees authorized to exceed the standard channel spacing and authorized bandwidth under this paragraph must provide at least 30 days written notice prior to initiating such service in the bands listed herein to every 800 MHz public safety licensee with a base station in an affected National Public Safety Planning Advisory Committee Region, and every 800 MHz public safety licensee with a base station within 113 kilometers (70 miles) of an affected National Public Safety Planning Advisory Committee Region. Such notice shall include the estimated date upon which the EA-based 800 MHz SMR licensee intends to begin operations that exceed the channel spacing and authorized bandwidth in paragraph (b)(5) of this section.

[60 FR 37263, July 19, 1995, as amended at 67 FR 41860, June 20, 2002; 68 FR 42314, July 17, 2003; 68 FR 54769, Sept. 18, 2003; 69 FR 39867, July 1, 2004; 69 FR 67837, Nov. 22, 2004; 70 FR 21661, Apr. 27, 2005; 70 FR 34693, June 15, 2005; 72 FR 35194, June 27, 2007; 73 FR 34201, June 17, 2008; 77 FR 33979, June 8, 2012; 77 FR 61537, Oct. 10, 2012]

§ 90.210 Emission masks.

Except as indicated elsewhere in this part, transmitters used in the radio services governed by this part must comply with the emission masks outlined in this section. Unless otherwise stated, per paragraphs (d)(4), (e)(4), and (o) of this section, measurements of emission power can be expressed in either peak or average values provided that emission powers are expressed with the same parameters used to specify the unmodulated transmitter carrier power. For transmitters that do not produce a full power unmodulated carrier, reference to the unmodulated transmitter carrier power refers to the total power contained in the channel bandwidth. Unless indicated elsewhere in this part, the table in this section specifies the emission masks for equipment operating under this part.

APPLICABLE EMISSION MASKS

Frequency band (MHz)	Mask for equipment with audio low pass filter	Mask for equipment without audio low pass filter
Below 25 [1]	A or B	A or C
25–50	B	C
72–76	B	C
150–174 [2]	B, D, or E	C, D or E
150 paging only	B	C
220–222	F	F
421–512 [2 5]	B, D, or E	C, D, or E
450 paging only	B	G
806–809/851–854	B	H
809–824/854–869 [3 5]	B	G
896–901/935–940	I	J
902–928	K	K
929–930	B	G
4940–4990 MHz	L or M	L or M
5850–5925 [4].		
All other bands	B	C

[1] Equipment using single sideband J3E emission must meet the requirements of Emission Mask A. Equipment using other emissions must meet the requirements of Emission Mask B or C, as applicable.
[2] Equipment designed to operate with a 25 kHz channel bandwidth must meet the requirements of Emission Mask B or C, as applicable. Equipment designed to operate with a 12.5 kHz channel bandwidth must meet the requirements of Emission Mask D, and equipment designed to operate with a 6.25 kHz channel bandwidth must meet the requirements of Emission Mask E.
[3] Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of § 90.691 of this chapter.
[4] DSRCS Roadside Units equipment in the 5850–5925 MHz band is governed under subpart M of this part.
[5] Equipment may alternatively meet the Adjacent Channel Power limits of § 90.221.

(a) *Emission Mask A*. For transmitters utilizing J3E emission, the carrier must be at least 40 dB below the peak envelope power and the power of emissions must be reduced below the output power (P in watts) of the transmitter as follows:

(1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 150 percent of the authorized bandwidth: At least 25 dB.

(2) On any frequency removed from the assigned frequency by more than 150 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 + 10 log P dB.

(b) *Emission Mask B*. For transmitters that are equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

(1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.

(2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB.

(c) *Emission Mask C*. For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier output power (P) as follows:

(1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5 kHz, but not more than 10 kHz: At least 83 log (f_d/5) dB;

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 10 kHz, but not more than 250 percent of the authorized bandwidth: At least 29 log (f_d^2/11) dB or 50 dB, whichever is the lesser attenuation;

(3) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB.

(d) *Emission Mask D—12.5 kHz channel bandwidth equipment*. For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

(1) On any frequency from the center of the authorized bandwidth f_0 to 5.625 kHz removed from f_0: Zero dB.

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5.625 kHz but no more than 12.5 kHz: At least 7.27(f_d − 2.88 kHz) dB.

(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz: At least 50 + 10 log (P) dB or 70 dB, whichever is the lesser attenuation.

(4) The reference level for showing compliance with the emission mask shall be established using a resolution bandwidth sufficiently wide (usually two or three times the channel bandwidth) to capture the true peak emission of the equipment under test. In order to show compliance with the emission mask up to and including 50 kHz removed from the edge of the authorized bandwidth, adjust the resolution bandwidth to 100 Hz with the measuring instrument in a peak hold mode. A sufficient number of sweeps must be measured to insure that the emission profile is developed. If video filtering is used, its bandwidth must not be less than the instrument resolution bandwidth. For emissions beyond 50 kHz from the edge of the authorized bandwidth, see paragraph (o) of this section. If it can be shown that use of the above instrumentation settings do not accurately represent the true interference potential of the equipment under test, an alternate procedure may be used provided prior Commission approval is obtained.

(e) *Emission Mask E—6.25 kHz or less channel bandwidth equipment*. For transmitters designed to operate with a 6.25 kHz or less bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

(1) On any frequency from the center of the authorized bandwidth f_0 to 3.0 kHz removed from f_0: Zero dB.

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 3.0 kHz but no more than 4.6 kHz: At least 30 + 16.67(f_d − 3 kHz) or 55 + 10 log (P) or 65 dB, whichever is the lesser attenuation.

(3) On any frequency removed from the center of the authorized bandwidth by more than 4.6 kHz: At least 55 + 10 log (P) or 65 dB, whichever is the lesser attenuation.

(4) The reference level for showing compliance with the emission mask shall be established using a resolution bandwidth sufficiently wide (usually two or three times the channel bandwidth) to capture the true peak emission of the equipment under test. In order to show compliance with the emission mask up to and including 50 kHz removed from the edge of the authorized bandwidth, adjust the resolution bandwidth to 100 Hz with the measuring instrument in a peak hold mode. A sufficient number of sweeps must be measured to insure that the emission profile is developed. If video filtering is used, its bandwidth must not be less than the instrument resolution bandwidth. For emissions beyond 50 kHz from the edge of the authorized bandwidth, see paragraph (o) of this

section. If it can be shown that use of the above instrumentation settings do not accurately represent the true interference potential of the equipment under test, an alternate procedure may be used provided prior Commission approval is obtained.

(f) *Emission Mask F.* For transmitters operating in the 220–222 MHz frequency band, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

(1) On any frequency from the center of the authorized bandwidth f_o to the edge of the authorized bandwidth f_c: Zero dB.

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 2 kHz up to and including 3.75 kHz: 30 + 20(f_d -2) dB or 55 + 10 log (P), or 65 dB, whichever is the lesser attenuation.

(3) On any frequency beyond 3.75 kHz removed from the center of the authorized bandwidth $f_d \leqq$ At least 55 + 10 log (P) dB.

(g) *Emission Mask G.* For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

(1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 10 kHz, but no more than 250 percent of the authorized bandwidth: At least 116 log (f_d/6.1) dB, or 50 + 10 log (P) dB, or 70 dB, whichever is the lesser attenuation;

(2) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB.

(h) *Emission Mask H.* For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

(1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of 4 kHz or less: Zero dB.

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 4 kHz, but no more than 8.5 kHz: At least 107 log (f_d/4) dB;

(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 8.5 kHz, but no more than 15 kHz: At least 40.5 log (f_d/1.16) dB;

(4) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 15 kHz, but no more than 25 kHz: At least 116 log (f_d/6.1) dB;

(5) On any frequency removed from the center of the authorized bandwidth by more than 25 kHz: At least 43 + log (P) dB.

(i) *Emission Mask I.* For transmitters that are equipped with an audio low pass filter, the power of any emission must be attenuated below the unmodulated carrier power of the transmitter (P) as follows:

(1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency of more than 6.8 kHz, but no more than 9.0 kHz: At least 25 dB;

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency of more than 9.0 kHz, but no more than 15 kHz: At least 35 dB;

(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency of more than 15 kHz: At least 43 + 10 log (P) dB, or 70 dB, whichever is the lesser attenuation.

(j) *Emission Mask J.* For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power of the transmitter (P) as follows:

(1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 2.5 kHz, but no more than 6.25 kHz: At least 53 log (f_d/2.5) dB;

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 6.25 kHz, but no more than 9.5 kHz: At least 103 log (f_d/3.9) dB;

(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 9.5 kHz: At least 157 log

(f_d/5.3) dB, or 50 + 10 log (P) dB or 70 dB, whichever is the lesser attenuation.

(k) *Emission Mask K*—(1) *Wideband multilateration transmitters*. For transmitters authorized under subpart M to provide forward or reverse links in a multilateration system in the subbands 904–909.75 MHz, 921.75–927.25 MHz and 919.75–921.75 MHz, and which transmit an emission occupying more than 50 kHz bandwidth: in any 100 kHz band, the center frequency of which is removed from the center of authorized sub-band(s) by more than 50 percent of the authorized bandwidth, the power of emissions shall be attenuated below the transmitter output power, as specified by the following equation, but in no case less than 31 dB:

$A=16+0.4\ (D-50)+10\ \log B$ (attenuation greater than 66 dB is not required)

Where:

A = attenuation (in decibels) below the maximum permitted output power level

D = displacement of the center frequency of the measurement bandwidth from the center frequency of the authorized sub-band, expressed as a percentage of the authorized bandwidth B

B = authorized bandwidth in megahertz.

(2) *Narrowband forward link transmitters*. For LMS multilateration narrowband forward link transmitters operating in the 927.25–928 MHz frequency band the power of any emission shall be attenuated below the transmitter output power (P) in accordance with following schedule:

On any frequency outside the authorized sub-band and removed from the edge of the authorized sub-band by a displacement frequency (f_d in kHz): at least 116 log ((f_d+10)/6.1) dB or 50 + 10 log (P) dB or 70 dB, whichever is the lesser attenuation.

(3) *Other transmitters*. For all other transmitters authorized under subpart M that operate in the 902–928 MHz band, the peak power of any emission shall be attenuated below the power of the highest emission contained within the licensee's sub-band in accordance with the following schedule:

(i) On any frequency within the authorized bandwidth: Zero dB.

(ii) On any frequency outside the licensee's sub-band edges: 55 + 10 log(P) dB, where (P) is the highest emission (watts) of the transmitter inside the licensee's sub-band.

(4) In the 902–928 MHz band, the resolution bandwidth of the instrumentation used to measure the emission power shall be 100 kHz, except that, in regard to paragraph (2) of this section, a minimum spectrum analyzer resolution bandwidth of 300 Hz shall be used for measurement center frequencies with 1 MHz of the edge of the authorized subband. The video filter bandwidth shall not be less than the resolution bandwidth.

(5) Emission power shall be measured in peak values.

(6) The LMS sub-band edges for non-multilateration systems for which emissions must be attenuated are 902.00, 904.00, 909.5 and 921.75 MHz.

(l) *Emission Mask L*. For low power transmitters (20 dBm or less) operating in the 4940–4990 MHz frequency band, the power spectral density of the emissions must be attenuated below the output power of the transmitter as follows:

(1) On any frequency removed from the assigned frequency between 0–45% of the authorized bandwidth (BW): 0 dB.

(2) On any frequency removed from the assigned frequency between 45–50% of the authorized bandwidth: 219 log (% of (BW)/45) dB.

(3) On any frequency removed from the assigned frequency between 50–55% of the authorized bandwidth: 10 + 242 log (% of (BW)/50) dB.

(4) On any frequency removed from the assigned frequency between 55–100% of the authorized bandwidth: 20 + 31 log (% of (BW)/55) dB attenuation.

(5) On any frequency removed from the assigned frequency between 100–150% of the authorized bandwidth: 28 + 68 log (% of (BW)/100) dB attenuation.

(6) On any frequency removed from the assigned frequency above 150% of the authorized bandwidth: 40 dB.

(7) The zero dB reference is measured relative to the highest average power of the fundamental emission measured across the designated channel bandwidth using a resolution bandwidth of at least one percent of the occupied bandwidth of the fundamental emission and a video bandwidth of 30 kHz. The power spectral density is the power

measured within the resolution bandwidth of the measurement device divided by the resolution bandwidth of the measurement device. Emission levels are also based on the use of measurement instrumentation employing a resolution bandwidth of at least one percent of the occupied bandwidth.

(m) *Emission Mask M.* For high power transmitters (greater that 20 dBm) operating in the 4940–4990 MHz frequency band, the power spectral density of the emissions must be attenuated below the output power of the transmitter as follows:

(1) On any frequency removed from the assigned frequency between 0–45% of the authorized bandwidth (BW): 0 dB.

(2) On any frequency removed from the assigned frequency between 45–50% of the authorized bandwidth: 568 log (% of (BW)/45) dB.

(3) On any frequency removed from the assigned frequency between 50–55% of the authorized bandwidth: 26 + 145 log (% of BW/50) dB.

(4) On any frequency removed from the assigned frequency between 55–100% of the authorized bandwidth: 32 + 31 log (% of (BW)/55) dB.

(5) On any frequency removed from the assigned frequency between 100–150% of the authorized bandwidth: 40 + 57 log (% of (BW)/100) dB.

(6) On any frequency removed from the assigned frequency between above 150% of the authorized bandwidth: 50 dB or 55 + 10 log (P) dB, whichever is the lesser attenuation.

(7) The zero dB reference is measured relative to the highest average power of the fundamental emission measured across the designated channel bandwidth using a resolution bandwidth of at least one percent of the occupied bandwidth of the fundamental emission and a video bandwidth of 30 kHz. The power spectral density is the power measured within the resolution bandwidth of the measurement device divided by the resolution bandwidth of the measurement device. Emission levels are also based on the use of measurement instrumentation employing a resolution bandwidth of at least one percent of the occupied bandwidth.

NOTE TO PARAGRAPH (m): Low power devices may as an option, comply with paragraph (m).

(n) *Other frequency bands.* Transmitters designed for operation under this part on frequencies other than listed in this section must meet the emission mask requirements of Emission Mask B. Equipment operating under this part on frequencies allocated to but shared with the Federal Government, must meet the applicable Federal Government technical standards.

(o) *Instrumentation.* The reference level for showing compliance with the emission mask shall be established, except as indicated in §§ 90.210 (d), (e), and (k), using standard engineering practices for the modulation characteristic used by the equipment under test. When measuring emissions in the 150–174 MHz and 421–512 MHz bands the following procedures will apply. A sufficient number of sweeps must be measured to insure that the emission profile is developed. If video filtering is used, its bandwidth must not be less than the instrument resolution bandwidth. For frequencies more than 50 kHz removed from the edge of the authorized bandwidth a resolution of at least 100 kHz must be used for frequencies below 1000 MHz. Above 1000 MHz the resolution bandwidth of the instrumentation must be at least 1 MHz. If it can be shown that use of the above instrumentation settings do not accurately represent the true interference potential of the equipment under test, then an alternate procedure may be used provided prior Commission approval is obtained.

[60 FR 37264, July 19, 1995, as amended at 61 FR 4235, Feb. 5, 1996; 61 FR 6155, Feb. 16, 1996; 61 FR 18986, Apr. 30, 1996; 62 FR 41214, July 31, 1997; 62 FR 52044, Oct. 6, 1997; 64 FR 66409, Nov. 26, 1999; 67 FR 63288, Oct. 11, 2002; 68 FR 38639, June 30, 2003; 69 FR 46443, Aug. 3, 2004; 69 FR 67838, Nov. 22, 2004; 70 FR 28466, May 18, 2005; 70 FR 61061, Oct. 20, 2005; 72 FR 35195, June 27, 2007; 77 FR 61538, Oct. 10, 2012; 78 FR 28755, May 16, 2013]

§ 90.212 Provisions relating to the use of scrambling devices and digital voice modulation.

(a) Analog scrambling techniques may be employed at any station authorized the use of A3E, F3E, or G3E

emission, subject to the provision of paragraph (d) of this section.

(b) The use of digital scrambling techniques or digital voice modulation requires the specific authorization of F1E or G1E emission, and these emissions will only be authorized subject to the provisions of paragraph (d) of this section.

(c) The transmission of any non-voice information or data under the authorization of F1E or G1E emission is prohibited. However, stations authorized the use of F1E or G1E emission may also be authorized F1D, F2D, G1D or G2D emission for non-voice communication purposes, pursuant to § 90.207(l).

(d) Station identification shall be transmitted in the unscrambled analog mode (clear voice) or Morse code in accordance with the provisions of § 90.425. All digital encoding and digital modulation shall be disabled during station identification.

[43 FR 54791, Nov. 22, 1978, as amended at 47 FR 15340, Apr. 9, 1982; 49 FR 48711, Dec. 14, 1984; 72 FR 35195, June 27, 2007]

§ 90.213 Frequency stability.

(a) Unless noted elsewhere, transmitters used in the services governed by this part must have a minimum frequency stability as specified in the following table.

MINIMUM FREQUENCY STABILITY

[Parts per million (ppm)]

Frequency range (MHz)	Fixed and base stations	Mobile stations	
		Over 2 watts output power	2 watts or less output power
Below 25	[1 2 3] 100	100	200
25–50	20	20	50
72–76	5	.....	50
150–174	[5 11] 5	[6] 5	[4 6] 50
216–220	1.0	.....	1.0
220–222 [12]	0.1	1.5	1.5
421–512	[7 11 14] 2.5	[8] 5	[8] 5
806–809	[14] 1.0	1.5	1.5
809–824	[14] 1.5	2.5	2.5
851–854	1.0	1.5	1.5
854–869	1.5	2.5	2.5
896–901	[14] 0.1	1.5	1.5
902–928	2.5	2.5	2.5
902–928 [13]	2.5	2.5	2.5
929–930	1.5	.....	.....
935–940	0.1	1.5	1.5
1427–1435	[9] 300	300	300

MINIMUM FREQUENCY STABILITY—Continued

[Parts per million (ppm)]

Frequency range (MHz)	Fixed and base stations	Mobile stations	
		Over 2 watts output power	2 watts or less output power
Above 2450 [10]	.....	.....	.....

[1] Fixed and base stations with over 200 watts transmitter power must have a frequency stability of 50 ppm except for equipment used in the Public Safety Pool where the frequency stability is 100 ppm.

[2] For single sideband operations below 25 MHz, the carrier frequency must be maintained within 50 Hz of the authorized carrier frequency.

[3] Travelers information station transmitters operating from 530–1700 kHz and transmitters exceeding 200 watts peak envelope power used for disaster communications and long distance circuit operations pursuant to §§ 90.242 and 90.264 must maintain the carrier frequency to within 20 Hz of the authorized frequency.

[4] Stations operating in the 154.45 to 154.49 MHz or the 173.2 to 173.4 MHz bands must have a frequency stability of 5 ppm.

[5] In the 150–174 MHz band, fixed and base stations with a 12.5 kHz channel bandwidth must have a frequency stability of 2.5 ppm. Fixed and base stations with a 6.25 kHz channel bandwidth must have a frequency stability of 1.0 ppm.

[6] In the 150–174 MHz band, mobile stations designed to operate with a 12.5 kHz channel bandwidth or designed to operate on a frequency specifically designated for itinerant use or designed for low-power operation of two watts or less, must have a frequency stability of 5.0 ppm. Mobile stations designed to operate with a 6.25 kHz channel bandwidth must have a frequency stability of 2.0 ppm.

[7] In the 421–512 MHz band, fixed and base stations with a 12.5 kHz channel bandwidth must have a frequency stability of 1.5 ppm. Fixed and base stations with a 6.25 kHz channel bandwidth must have a frequency stability of 0.5 ppm.

[8] In the 421–512 MHz band, mobile stations designed to operate with a 12.5 kHz channel bandwidth must have a frequency stability of 2.5 ppm. Mobile stations designed to operate with a 6.25 kHz channel bandwidth must have a frequency stability of 1.0 ppm.

[9] Fixed stations with output powers above 120 watts and necessary bandwidth less than 3 kHz must operate with a frequency stability of 100 ppm. Fixed stations with output powers less than 120 watts and using time-division multiplex, must operate with a frequency stability of 500 ppm.

[10] Except for DSRCS equipment in the 5850–5925 MHz band, frequency stability is to be specified in the station authorization. Frequency stability for DSRCS equipment in the 5850–5925 MHz band is specified in subpart M of this part.

[11] Paging transmitters operating on paging-only frequencies must operate with frequency stability of 5 ppm in the 150–174 MHz band and 2.5 ppm in the 421–512 MHz band.

[12] Mobile units may utilize synchronizing signals from associated base stations to achieve the specified carrier stability.

[13] Fixed non-multilateration transmitters with an authorized bandwidth that is more than 40 kHz from the band edge, intermittently operated hand-held readers, and mobile transponders are not subject to frequency tolerance restrictions.

[14] Control stations may operate with the frequency tolerance specified for associated mobile frequencies.

(b) For the purpose of determining the frequency stability limits, the power of a transmitter is considered to be the maximum rated output power as specified by the manufacturer.

[60 FR 37266, July 19, 1995, as amended at 61 FR 4235, Feb. 5, 1996; 61 FR 18986, Apr. 30, 1996; 61 FR 38403, July 24, 1996; 62 FR 2040, Jan. 15, 1997; 62 FR 18927, Apr. 17, 1997; 67 FR 41860, June 20, 2002; 69 FR 46443, Aug. 3, 2004; 69 FR 67838, Nov. 22, 2004]

§ 90.214 Transient frequency behavior.

Transmitters designed to operate in the 150–174 MHz and 421–512 MHz frequency bands must maintain transient frequencies within the maximum frequency difference limits during the time intervals indicated:

Time intervals [1] [2]	Maximum frequency difference [3]	All equipment	
		150 to 174 MHz	421 to 512 MHz
Transient Frequency Behavior for Equipment Designed to Operate on 25 kHz Channels			
t_1 [4]	±25.0 kHz	5.0 ms	10.0 ms
t_2	±12.5 kHz	20.0 ms	25.0 ms
t_3 [4]	±25.0 kHz	5.0 ms	10.0 ms
Transient Frequency Behavior for Equipment Designed to Operate on 12.5 kHz Channels			
t_1 [4]	±12.5 kHz	5.0 ms	10.0 ms
t_2	±6.25 kHz	20.0 ms	25.0 ms
t_3 [4]	±12.5 kHz	5.0 ms	10.0 ms
Transient Frequency Behavior for Equipment Designed to Operate on 6.25 kHz Channels			
t_1 [4]	±6.25 kHz	5.0 ms	10.0 ms
t_2	±3.125 kHz	20.0 ms	25.0 ms
t_3 [4]	±6.25 kHz	5.0 ms	10.0 ms

[1] t_{on} is the instant when a 1 kHz test signal is completely suppressed, including any capture time due to phasing.
t_1 is the time period immediately following t_{on}.
t_2 is the time period immediately following t_1.
t_3 is the time period from the instant when the transmitter is turned off until t_{off}.
t_{off} is the instant when the 1 kHz test signal starts to rise.
[2] During the time from the end of t_2 to the beginning of t_3, the frequency difference must not exceed the limits specified in § 90.213.
[3] Difference between the actual transmitter frequency and the assigned transmitter frequency.
[4] If the transmitter carrier output power rating is 6 watts or less, the frequency difference during this time period may exceed the maximum frequency difference for this time period.

[62 FR 2040, Jan. 15, 1997]

§ 90.215 Transmitter measurements.

(a) The licensee of each station shall employ a suitable procedure to determine that the carrier frequency of each transmitter authorized to operate with an output power in excess of two watts is maintained within the tolerence prescribed in § 90.213. This determination shall be made, and the results entered in the station records in accordance with the following:

(1) When the transmitter is initially installed;

(2) When any change is made in the transmitter which may affect the carrier frequency or its stability.

(b) The licensee of each station shall employ a suitable procedure to determine that each transmitter authorized to operate with an output power in excess of two watts does not exceed the maximum figure specified on the current station authorization. On authorizations stating only the input power to the final radiofrequency stage, the maximum permissible output power is 75 percent for frequencies below 25 MHz and 60 percent of the input power for frequencies above 25 MHz. If a non-DC final radiofrequency stage is utilized, then the output power shall not exceed 75 percent of the input power. This determination shall be made, and the results thereof entered into the station records, in accordance with the following:

(1) When the transmitter is initially installed;

(2) When any change is made in the transmitter which may increase the transmitter power input.

(c) The licensee of each station shall employ a suitable procedure to determine that the modulation of each transmitter, which is authorized to operate with an output power in excess of two watts, does not exceed the limits specified in this part. This determination shall be made and the following results entered in the station records, in accordance with the following:

(1) When the transmitter is initially installed;

(2) When any change is made in the transmitter which may affect the modulation characteristics.

(d) The determinations required by paragraphs (a), (b), and (c) of this section may, at the opinion of the licensee, be made by a qualified engineering measurement service, in which case the required record entries shall show the name and address of the engineering measurement service as well as the name of the person making the measurements.

(e) In the case of mobile transmitters, the determinations required by paragraphs (a) and (c) of this section may be made at a test or service bench: *Provided*, That the measurements are made under load conditions equivalent to actual operating conditions; and provided further, that after installation in the mobile unit the transmitter is given a routine check to determine that it is capable of being received

satisfactorly by an appropriate receiver.

§ 90.217 Exemption from technical standards.

Except as noted herein, transmitters used at stations licensed below 800 MHz on any frequency listed in subparts B and C of this part or licensed on a business category channel above 800 MHz which have an output power not exceeding 120 milliwatts are exempt from the technical requirements set out in this subpart, but must instead comply with the following:

(a) For equipment designed to operate with a 25 kHz channel bandwidth, the sum of the bandwidth occupied by the emitted signal plus the bandwidth required for frequency stability shall be adjusted so that any emission appearing on a frequency 40 kHz or more removed from the assigned frequency is attenuated at least 30 dB below the unmodulated carrier.

(b) For equipment designed to operate with a 12.5 kHz channel bandwidth, the sum of the bandwidth occupied by the emitted signal plus the bandwidth required for frequency stability shall be adjusted so that any emission appearing on a frequency 25 kHz or more removed from the assigned frequency is attenuated at least 30 dB below the unmodulated carrier.

(c) For equipment designed to operate with a 6.25 kHz channel bandwidth, the sum of the bandwidth occupied by the emitted signal plus the bandwidth required for frequency stability shall be adjusted so that any emission appearing on a frequency 12.5 kHz or more removed from the assigned frequency is attenuated at least 30 dB below the unmodulated carrier.

(d) Transmitters may be operated in the continuous carrier transmit mode.

(e) Transmitters used for wireless microphone operations and operating on frequencies allocated for Federal use must comply with the requirements of § 90.265(b).

[60 FR 37267, July 19, 1995, as amended at 62 FR 2041, Jan. 15, 1997; 62 FR 18927, Apr. 17, 1997; 70 FR 21661, Apr. 27, 2005]

§ 90.219 Use of signal boosters.

This section contains technical and operational rules allowing the use of signal boosters in the Private Land Mobile Radio Services (PLMRS). Rules for signal booster operation in the Commercial Mobile Radio Services under part 90 are found in § 20.21 of this chapter.

(a) *Definitions*. The definitions in this paragraph apply only to the rules in this section.

Class A signal booster. A signal booster designed to retransmit signals on one or more specific channels. A signal booster is deemed to be a Class A signal booster if none of its passbands exceed 75 kHz.

Class B signal booster. A signal booster designed to retransmit any signals within a wide frequency band. A signal booster is deemed to be a Class B signal booster if it has a passband that exceeds 75 kHz.

Coverage area of a PLMRS station. All locations within the normal reliable operating range (service contour) of a PLMRS station.

Deploy a signal booster. Install and/or initially adjust a signal booster.

Distributed Antenna System (DAS). A network of spatially separated antenna nodes connected to a common source via a transport medium that provides wireless service within a geographic area or structure.

Operate a signal booster. Maintain operational control over, and responsibility for the proper functioning of, a signal booster.

Signal booster. A device or system that automatically receives, amplifies, and retransmits signals from wireless stations into and out of building interiors, tunnels, shielded outdoor areas and other locations where these signals would otherwise be too weak for reliable communications. Signal booster systems may contain both Class A and Class B signal boosters as components.

(b) *Authority to operate*. PLMRS licensees for stations operating on assigned channels higher than 150 MHz may operate signal boosters, limited to the service band for which they are authorized, as needed anywhere within the PLMRS stations' service contour, but may not extend the stations' service contour.

(1) PLMRS licensees may also consent to operation of signal boosters by non-licensees (such as a building owner

or a signal booster installation contractor) within their service contour and across their applicable frequencies, but must maintain a reasonable level of control over these operations in order to resolve interference problems.

(i) Non-licensees seeking to operate signal boosters must obtain the express consent of the licensee(s) of the frequencies for which the device or system is intended to amplify. The consent must be maintained in a recordable format that can be presented to an FCC representative or other relevant licensee investigating interference.

(ii) Consent is not required from third party (unintended) licensees whose signals are incidentally retransmitted. However, signal booster operation is on a non-interference basis and operations may be required to cease or alter the operating parameters due to a request from an FCC representative or a licensee's request to resolve interference.

(2) [Reserved]

(c) *Licensee responsibility; interference.* PLMRS licensees that operate signal boosters are responsible for their proper operation, and are responsible for correcting any harmful interference that signal booster operation may cause to other licensed communications services. Normal co-channel transmissions are not considered to be harmful interference. Licensees are required to resolve interference problems pursuant to § 90.173(b). Licensees shall act in good faith regarding the operation of signal boosters and in the resolution of interference due to signal booster operation. Licensees who are unable to determine the location or cause of signal booster interference may seek assistance from the FCC to resolve such problems.

(d) *Deployment rules.* Deployment of signal boosters must be carried out in accordance with the rules in this paragraph.

(1) Signal boosters may be used to improve coverage in weak signal areas only.

(2) Signal boosters must not be used to extend PLMRS stations' normal operating range.

(3) Signal boosters must be deployed such that the radiated power of the each retransmitted channel, on the forward link and on the reverse link, does not exceed 5 Watts effective radiated power (ERP).

(4) Class B signal boosters may be deployed only at fixed locations; mobile operation of Class B signal boosters is prohibited after November 1, 2014.

(5) Class B signal booster installations must be registered in the FCC signal booster database that can be accessed at the following URL: *www.fcc.gov/signal-boosters/registration.*

(6) Good engineering practice must be used in regard to the radiation of intermodulation products and noise, such that interference to licensed communications systems is avoided. In the event of harmful interference caused by any given deployment, the FCC may require additional attenuation or filtering of the emissions and/or noise from signal boosters or signal booster systems, as necessary to eliminate the interference.

(i) In general, the ERP of intermodulation products should not exceed −30 dBm in 10 kHz measurement bandwidth.

(ii) In general, the ERP of noise within the passband should not exceed −43 dBm in 10 kHz measurement bandwidth.

(iii) In general, the ERP of noise on spectrum more than 1 MHz outside of the passband should not exceed −70 dBm in a 10 kHz measurement bandwidth.

(7) Signal booster passbands are limited to the service band or bands for which the operator is authorized. In general, signal boosters should utilize the minimum passband that is sufficient to accomplish the purpose. Except for distributed antenna systems (DAS) installed in buildings, the passband of a Class B booster should not encompass both commercial services (such as ESMR and Cellular Radiotelephone) and part 90 Land Mobile and Public Safety Services.

(e) *Device Specifications.* In addition to the general rules for equipment certification in § 90.203(a)(2) and part 2, subpart J of this chapter, a signal booster must also meet the rules in this paragraph.

(1) The output power capability of a signal booster must be designed for deployments providing a radiated power

not exceeding 5 Watts ERP for each retransmitted channel.

(2) The noise figure of a signal booster must not exceed 9 dB in either direction.

(3) Spurious emissions from a signal booster must not exceed −13 dBm within any 100 kHz measurement bandwidth.

(4) A signal booster must be designed such that all signals that it retransmits meet the following requirements:

(i) The signals are retransmitted on the same channels as received. Minor departures from the exact provider or reference frequencies of the input signals are allowed, *provided that* the retransmitted signals meet the requirements of § 90.213.

(ii) There is no change in the occupied bandwidth of the retransmitted signals.

(iii) The retransmitted signals continue to meet the unwanted emissions limits of § 90.210 applicable to the corresponding received signals (assuming that these received signals meet the applicable unwanted emissions limits by a reasonable margin).

(5) On or after March 1, 2014, a signal booster must be labeled to indicate whether it is a Class A or Class B device, and the label must include the following advisory

(1) In on-line point-of-sale marketing materials,

(2) In any print or on-line owner's manual and installation instructions,

(3) On the outside packaging of the device, and

(4) On a label affixed to the device:

''WARNING. This is NOT a CONSUMER device. It is designed for installation by FCC LICENSEES and QUALIFIED INSTALLERS. You MUST have an FCC LICENSE or express consent of an FCC Licensee to operate this device. You MUST register Class B signal boosters (as defined in 47 CFR 90.219) online at *www.fcc.gov/signal-boosters/registration*. Unauthorized use may result in significant forfeiture penalties, including penalties in excess of $100,000 for each continuing violation.''

[78 FR 21564, Apr. 12, 2013]

§ 90.221 Adjacent channel power limits.

(a) For the frequency bands indicated below, operations using equipment designed to operate with a 25 kHz channel bandwidth may be authorized up to a 22 kHz bandwidth if the equipment meets the adjacent channel power (ACP) limits below. The table specifies a value for the ACP as a function of the displacement from the channel center frequency and a measurement bandwidth of 18 kHz.

(b)(1) Maximum adjacent power levels for frequencies in the 450–470 MHz band:

Frequency offset	Maximum ACP (dBc) for devices 1 watt and less	Maximum ACP (dBc) for devices above 1 watt
25 kHz	−55 dBc	−60 dBc
50 kHz	−70 dBc	−70 dBc
75 kHz	−70 dBc	−70 dBc

(2) In any case, no requirement in excess of −36 dBm shall apply.

(c)(1) Maximum adjacent power levels for frequencies in the 809–824/854–869 MHz band:

Frequency offset	Maximum ACP (dBc) for devices less than 15 watts	Maximum ACP (dBc) for devices 15 watts and above
25 kHz	−55 dBc	−55 dBc
50 kHz	−65 dBc	−65 dBc
75 kHz	−65 dBc	−70 dBc

(2) In any case, no requirement in excess of −36 dBm shall apply.

(d) On any frequency removed from the assigned frequency by more than 75 kHz, the attenuation of any emission must be at least 43 + 10 log (P_{watts}) dB.

[77 FR 61538, Oct. 10, 2012]

Subpart J—Non-Voice and Other Specialized Operations

§ 90.231 Scope.

This subpart sets forth requirements and standards for licensing and operation of non-voice and other specialized radio uses (other than radiolocation). Such uses include secondary signaling, telemetry, radioteleprinter,

radiofacsimile, automatic vehicle monitoring (AVM), radio call box, relay, vehicular repeater, and control station operations.

§ 90.233 Base/mobile non-voice operations.

The use of A1D, A2D, F1D, F2D, G1D, or G2D emission may be authorized to base/mobile operations in accordance with the following limitations and requirements.

(a) Licensees employing non-voice communications are not relieved of their responsibility to cooperate in the shared use of land mobile radio channels. See also §§ 90.403 and 90.173(a) and (b).

(b) Authorization for non-voice emission may be granted only on frequencies subject to the coordination requirements set forth in § 90.175. Non-voice operations on frequencies not subject to these requirements are permitted only a secondary basis to voice communications.

(c) Provisions of this section do not apply to authorizations for paging, telemetry, radiolocation, automatic vehicle monitoring systems (AVM), radioteleprinter, radio call box operations, or authorizations granted pursuant to subpart T of this part.

[48 FR 2794, Feb. 3, 1983, as amended at 49 FR 48711, Dec. 14, 1984; 56 FR 19602, Apr. 29, 1991; 72 FR 35195, June 27, 2007]

§ 90.235 Secondary fixed signaling operations.

Fixed operations may, subject to the following conditions, be authorized on a secondary basis for voice, tone or impulse signaling on a licensee's mobile service frequency(ies) above 25 MHz within the area normally covered by the licensee's mobile system. Voice signaling will be permitted only in the Public Safety Pool.

(a) The bandwidth shall not exceed that authorized to the licensee for the primary operations on the frequency concerned.

(b) The output power shall not exceed 30 watts at the remote site.

(c) A1D, A2D, F1D, F2D, G1D and G2D emissions may be authorized. In the Police Radio Service, A3E, F1E, F2E, F3E, G1E, G2E, or G3E emissions may also be authorized.

(d) Except for those systems covered under paragraph (e) of this section, the maximum duration of any non-voice signaling transmission shall not exceed 2 seconds and shall not be repeated more than 3 times. Signaling transmissions may be staggered at any interval or may be continuous. In the Public Safety Pool, the maximum duration of any voice signaling transmission shall not exceed 6 seconds and shall not be repeated more than 3 times.

(e) Until December 31, 1999, for systems in the Public Safety Pool authorized prior to June 20, 1975, and Power and Petroleum licensees as defined in § 90.7 authorized prior to June 1, 1976, the maximum duration of any signaling transmission shall not exceed 6 seconds and shall not be repeated more than 5 times. For Power licensees authorized between June 1, 1976, and August 14, 1989, signaling duration shall not exceed 2 seconds and shall not be repeated more than 5 times. Such systems include existing facilities and additional facilities which may be authorized as a clear and direct expansion of existing facilities. After December 31, 1999, all signaling systems shall be required to comply with the 2 second message duration and 3 message repetition requirements.

(f) Systems employing automatic interrogation shall be limited to non-voice techniques and shall not be activated for this purpose more than 10 seconds out of any 60 second period. This 10 second timeframe includes both transmit and response times.

(g) Automatic means shall be provided to deactivate the transmitter in the event the r.f. carrier remains on for a period in excess of 3 minutes or if a transmission for the same signaling function is repeated consecutively more than five times.

(h) Fixed stations authorized pursuant to the provisions of this section are exempt from the requirements of §§ 90.137(b), 90.425, and 90.429.

(i) Base, mobile, or mobile relay stations may transmit secondary signaling transmissions to receivers at fixed locations subject to the conditions set forth in this section.

(j) Under the provisions of this section, a mobile service frequency may

not be used exclusively for secondary signaling.

(k) The use of secondary signaling will not be considered in whole or in part as a justification for authorizing additional frequencies in a licensee's land mobile radio system.

(l) Secondary fixed signaling operations conducted in accordance with the provisions of §§ 90.317(a), 90.557 and 90.637 are exempt from the foregoing provisions of this section.

[54 FR 28679, July 7, 1989, as amended at 57 FR 34693, Aug. 6, 1992; 58 FR 30996, May 28, 1993; 60 FR 50123, Sept. 28, 1995; 62 FR 18927, Apr. 17, 1997; 72 FR 35195, June 27, 2007; 72 FR 44424, Aug. 8, 2007; 79 FR 39339, July 10, 2014]

§ 90.237 Interim provisions for operation of radioteleprinter and radiofacsimile devices.

These provisions authorize and govern the use of radioteleprinter and radiofacsimile devices for base station use (other than on mobile-only or paging-only frequencies) in all radio pools and services except Radiolocation in this part.

(a) Information must be submitted with an application to establish that the minimum separation between a proposed radioteleprinter or radiofacsimile base station and the nearest co-channel base station of another licensee operating a voice system is 120 km (75 mi) for a single frequency mode of operation, or 56 km (35 mi) for two frequency mode of operation. Where this minimum mileage separation cannot be achieved, either agreement to the use of F1B, F2B, F3C, G1B, G2B or G3C emission must be received from all existing co-channel licensees using voice emission within the applicable mileage limits, or if agreement was not received, the licensee of the radioteleprinter or radiofacsimile system is responsible for eliminating any interference with preexisting voice operations. New licensees of voice operations will be expected to share equally any frequency occupied by established radioteleprinter or radiofacsimile operations.

(b) [Reserved]

(c) Transmitters certificated under this part for use of G3E or F3E emission may also be used for F1B, F2B, F3C, G1B, G2B or G3C emission for radioteleprinter or radiofacsimile, provided the keying signal is passed through the low pass audio frequency filter required for G3E or F3E emission. The transmitter must be so adjusted and operated that the instantaneous frequency deviation does not exceed the maximum value allowed for G3E or F3E.

(d) Frequencies will not be assigned exclusively for F1B, F2B, F3C, G1B, G2B or G3C emission for radioteleprinter or radiofacsimile (except where specifically provided for in the frequency limitations).

(e) The requirements in this part applicable to the use of G3E or F3E emission are also applicable to the use of F1B, F2B, F3C, G1B, G2B or G3C emission for radioteleprinter and radiofacsimile transmissions.

(f) The station identification required by § 90.425 must be given by voice or Morse code.

(g) For single sideband operations in accordance with § 90.266, transmitters certified under this part for use of J3E emission may also be used for A2B and F2B emissions for radioteleprinter transmissions. Transmitters certified under this part for use of J3E emission in accordance with §§ 90.35(c)(1)(A), 90.35(c)(1)(B), 90.35(c)(1)(C) and 90.257(a) may also be used for A1B, A2B, F1B, F2B, J2B, and A3C emissions to provide standby backup circuits for operational telecommunications circuits which have been disrupted, where so authorized in other sections of this part.

[43 FR 54791, Nov. 22, 1978, as amended at 49 FR 48712, Dec. 14, 1984; 51 FR 14998, Apr. 22, 1986; 62 FR 18927, Apr. 17, 1997; 63 FR 36610, July 7, 1998; 63 FR 68965, Dec. 14, 1998; 72 FR 35195, June 27, 2007]

§ 90.238 Telemetry operations.

The use of telemetry is authorized under this part on the following frequencies.

(a) 72–76 MHz (in accordance with § 90.257 and subject to the rules governing the use of that band).

(b) 154.45625, 154.46375, 154.47125, and 154.47875 MHz (subject to the rules governing the use of those frequencies).

(c) 173.20375, 173.210, 173.2375, 173.2625, 173.2875, 173.3125, 173.3375, 173.3625, 173.390, and 173.39625 MHz (subject to

the rules governing the use of those frequencies).

(d) 216–220 and 1427–1435 MHz (as available in the Public Safety and Industrial/Business Pools and in accordance with § 90.259).

(e) In the 450–470 MHz band, telemetry operations will be authorized on a secondary basis with a transmitter output power not to exceed 2 watts on frequencies subject to § 90.20(d)(27) or § 90.35(c)(30), except that telemetry operations used by Railroad licensees may be authorized on frequency pair 452/457.9375 MHz with a transmitter output power not to exceed 8 watts.

(f) 220–222 MHz as available under subpart T of this part.

(g) 450–470 MHz band (as available for secondary fixed operations in accordance with § 90.261 and for low power operations in accordance with § 90.267).

(h) 458–468 MHz band (as available in the Public Safety Pool for bio-medical telemetry operations).

(i) For Industrial/Business frequencies which are not governed by paragraphs (a) through (h), on frequencies available for operations up to 2 watts.

[44 FR 17183, Mar. 21, 1979, as amended at 46 FR 45955, Sept. 16, 1981; 50 FR 39680, Sept. 30, 1985; 50 FR 40976, Oct. 8, 1985; 56 FR 19603, Apr. 29, 1991; 60 FR 37268, July 19, 1995; 61 FR 6576, Feb. 21, 1996; 62 FR 18927, Apr. 17, 1997; 68 FR 19460, Apr. 21, 2003; 78 FR 28756, May 16, 2013]

§ 90.239 [Reserved]

§ 90.241 Radio call box operations.

(a) The frequencies in the 72–76 MHz band listed in § 90.257(a)(1) may be assigned in the Public Safety Pool for operation of radio call boxes to be used by the public to request fire, police, ambulance, road service, and other emergency assistance, subject to the following conditions and limitations:

(1) Maximum transmitter power will be either 2.5 watts plate input to the final stage or 1 watt output.

(2) Antenna gain shall not exceed zero dBd (referred to a half-wave dipole) in any horizontal direction.

(3) Only vertical polarization of antennas shall be permitted.

(4) The antenna and its supporting structure must not exceed 6.1 m (20 feet) in height above the ground.

(5) Only A1D, A2D, F1D, F2D, G1D, or G2D emission shall be authorized.

(6) The transmitter frequency tolerance shall be 0.005 percent.

(7) Except for test purposes, each transmission must be limited to a maximum of two seconds and shall not be automatically repeated more than two times at spaced intervals within the following 30 seconds. Thereafter, the authorized cycle may not be reactivated for one minute.

(8) All transmitters installed after December 10, 1970, shall be furnished with an automatic means to deactivate the transmitter in the event the carrier remains on for a period in excess of three minutes. The automatic cutoff system must be designed so the transmitter can be only manually reactivated.

(9) Frequency selection must be made with regard to reception of television stations on channels 4 (66–72 MHz) and 5 (76–82 MHz) and should maintain the greatest possible frequency separation from either or both of these channels, if they are assigned in the area.

(b) [Reserved]

(c) Frequencies in the 450–470 MHz band which are designated as available for assignment to central control stations and radio call box installations in § 90.20(c) or § 90.20(d)(58) may be assigned in the Public Safety Pool for highway call box systems subject to the following requirements:

(1) Call box transmitters shall be installed only on limited access highways and may communicate only with central control stations of the licensee.

(2) Maximum transmitter power for call boxes will be either 2.5 watts input to the final amplifier stage or one watt output. The central control station shall not exceed 25 watts effective radiated power (ERP).

(3) The height of a call box antenna may not exceed 6.1 meters (20 feet) above the ground, the natural formation, or the existing man-made structure (other than an antenna supporting structure) on which it is mounted. A central station transmitting antenna, together with its supporting structure shall not exceed 15 m. (50 ft.) above the ground surface.

(4) Only F1D, F2D, F3E, G1D, G2D, or G3E, emission may be authorized for

nonvoice signaling, radiotelephony, and multiplexed voice and nonvoice use. The provisions in this part applicable to the use of F3E or G3E emission are also applicable to the use of F1D, F2D, G1D or G2D emission for call box transmitters.

(5) The station identification required by § 90.425 shall be by voice and may be transmitted for the system from the central control station. Means shall be provided at each central control station location to automatically indicate the call box unit identifier when a call box unit is activated.

(6) Call box installations must be so designed that their unit identifier is automatically transmitted when the handset is lifted.

(7) Each application for a call box system must contain information on the nonvoice transmitting equipment, including the character structure, bit rate, modulating tone frequencies, identification codes, and the method of modulation (i.e., frequency shift, tone shift, or tone phase shift).

(8) Call box installations may be used secondarily for the transmission of information from roadside sensors. Central control station transmitters may be used secondarily to interrogate call box roadside sensors and for the transmission of signals to activate roadside signs.

(9) Each call box transmitter must be provided with a timer which will automatically deactivate the transmitter after 2 minutes unless the central control station operator reactivates the timer cycle.

(10) The central control station must include facilities that permit direct control of any call box in the system.

(11) Call box transmitter frequency tolerance shall be 0.001 percent.

(12) Transmitters certificated under this part for use of F3E or G3E emission may be used for F1D, F2B, G2B or G2D emission provided that the audio tones or digital data bits are passed through the low pass audio filter required to be provided in the transmitter for F3E or G3E emission. The transmitter must be adjusted and operated so that the instantaneous frequency deviation does not exceed the maximum value allowed for F3E or G3E emission.

(d) In addition to the frequencies available pursuant to § 90.20(c) the frequencies set forth in § 90.20(d)(58) may be used for central control station and call box installations in areas where such frequencies are available for fixed system use subject to the requirements and limitations of that section and subject to the provisions of paragraphs (c) (1), (4), (5), (6), (7), (8), (9), (10), and (12) of this section.

[43 FR 54791, Nov. 22, 1978; 44 FR 32219, June 5, 1979; 49 FR 48712, Dec. 14, 1984; 50 FR 39680, Sept. 30, 1985; 50 FR 40976, Oct. 8, 1985; 54 FR 38681, Sept. 20, 1989; 54 FR 45891, Oct. 31, 1989; 58 FR 44957, Aug. 25, 1993; 62 FR 18927, Apr. 17, 1997; 63 FR 36610, July 7, 1998; 63 FR 68965, Dec. 14, 1998; 72 FR 35195, June 27, 2007; 78 FR 25175, Apr. 29, 2013]

§ 90.242 Travelers' information stations.

(a) The frequencies 530 through 1700 kHz in 10 kHz increments may be assigned to the Public Safety Pool for the operation of Travelers' Information Stations subject to the following conditions and limitations.

(1) [Reserved]

(2) Each application for a station or system shall be accompanied by:

(i) A statement certifying that the transmitting site of the Travelers' Information Station will be located at least 15 km (9.3 miles) measured orthogonally outside the measured 0.5 mV/m daytime contour (0.1 mV/m for Class A stations) of any AM broadcast station operating on a first adjacent channel or at least 130 km (80.6 miles) outside the measured 0.5 mV/m daytime contour (0.1 mV/m for Class A stations) of any AM broadcast station operating on the same channel, or, if nighttime operation is proposed, outside the theoretical 0.5 mV/m-50% nighttime skywave contour of a U.S. Class A station. If the measured contour is not available, then the calculated 0.5 mV/m field strength contour shall be acceptable. These contours are available at the concerned AM broadcast station and FCC offices in Washington, DC.

(ii) In consideration of possible cross-modulation and inter-modulation interference effects which may result from the operation of a Travelers' Information Station in the vicinity of an AM broadcast station on the second or

third adjacent channel, the applicant shall certify that it has considered these possible effects and, to the best of its knowledge, does not foresee interference occurring to broadcast stations operating on second or third adjacent channels.

(iii) A map showing the geographical location of each transmitter site and an estimate of the signal strength at the contour of the desired coverage area. For a cable system, the contour to be shown is the estimated field strength at 60 meters (197 feet) from any point on the cable. For a conventional radiating antenna, the estimated field strength contour at 1.5 km (0.93 mile) shall be shown. A contour map comprised of actual on-the-air measurements shall be submitted to the Commission within 60 days after station authorization or completion of station construction, whichever occurs later. A sufficient number of points shall be chosen at the specified distances (extrapolated measurements are acceptable) to adequately show compliance with the field strength limits.

(iv) For each transmitter site, the transmitter's output power, the type of antenna utilized, its length (for a cable system), its height above ground, distance from transmitter to the antenna, and the elevation above sea level at the transmitting site.

(3) Travelers' Information Stations will be authorized on a primary basis on 530 kHz and on a secondary basis to stations authorized on a primary basis in the band 535–1705 kHz.

(4) A Travelers' Information Station authorization may be suspended, modified, or withdrawn by the Commission without prior notice or right to hearing if necessary to resolve interference conflicts, to implement agreements with foreign governments, or in other circumstances warranting such action.

(5) The transmitting site of each Travelers' Information Station shall be restricted to the immediate vicinity of the following specified areas: Air, train, and bus transportation terminals, public parks and historical sites, bridges, tunnels, and any intersection of a Federal Interstate Highway with any other Interstate, Federal, State, or local highway.

(6) A Travelers' Information Station shall normally be authorized to use a single transmitter. However, a system of stations, with each station in the system employing a separate transmitter, may be authorized for a specific area provided sufficient need is demonstrated by the applicant.

(7) Travelers' Information Stations shall transmit only noncommercial voice information pertaining to traffic and road conditions, traffic hazard and travel advisories, directions, availability of lodging, rest stops and service stations, and descriptions of local points of interest. It is not permissible to identify the commercial name of any business establishment whose service may be available within or outside the coverage area of a Travelers' Information Station. However, to facilitateannouncements concerning departures/arrivals and parking areas at air, train, and bus terminals, the trade name identification of carriers is permitted. Travelers' Information Stations may also transmit information in accordance with the provisions of §§ 90.405 and 90.407.

(b) *Technical standards.* (1) The use of 6K00A3E emission will be authorized, however N0N emission may be used for purposes of receiver quieting, but only for a system of stations employing ''leaky'' cable antennas.

(2) A frequency tolerance of 100 Hz shall be maintained.

(3) For a station employing a cable antenna, the following restrictions apply:

(i) The length of the cable antenna shall not exceed 3.0 km (1.9 miles).

(ii) Transmitter RF output power shall not exceed 50 watts and shall be adjustable downward to enable the user to comply with the specified field strength limit.

(iii) The field strength of the emission on the operating frequency shall not exceed 2 mV/m when measured with a standard field strength meter at a distance of 60 meters (197 feet) from any part of the station.

(4) For a station employing a conventional radiating antenna(s) (ex. vertical monopole, directional array) the following restrictions apply:

(i) The antenna height above ground level shall not exceed 15.0 meters (49.2 feet).

(ii) Only vertical polarization of antennas shall be permitted.

(iii) Transmitter RF output power shall not exceed 10 watts to enable the user to comply with the specified field strength limit.

(iv) The field strength of the emission on the operating frequency shall not exceed 2 mV/m when measured with a standard field strength meter at a distance of 1.50 km (0.93 miles) from the transmitting antenna system.

(5) For co-channel stations operating under different licenses, the following minimum separation distances shall apply:

(i) 0.50 km (0.31 miles) for the case when both stations are using cable antennas.

(ii) 7.50 km (4.66 miles) for the case when one station is using a conventional antenna and the other is using a cable antenna.

(iii) 15.0 km (9.3 miles) for the case when both stations are using conventional antennas.

(6) For a system of co-channel transmitters operating under a single authorization utilizing either cable or conventional antennas, or both, no minimum separation distance is required.

(7) An applicant desiring to locate a station that does not comply with the separation requirements of this section shall coordinate with the affected station.

(8) Each transmitter in a Travelers Information Station shall be equipped with an audio low-pass filter. Such filter shall be installed between the modulation limiter and the modulated stage. At audio frequencies between 3 kHz and 20 kHz this filter shall have an attenuation greater than the attenuation at 1 kHz by at least:

$$60 \log_{10} (f/3) \text{ decibels.}$$

where ''f'' is the audio frequency in kHz. At audio frequencies above 20 kHz, the attenuation shall be at least 50 decibels greater than the attenuation at 1 kHz.

[43 FR 54791, Nov. 22, 1978; 44 FR 67118, Nov. 23, 1979; 49 FR 48712, Dec. 14, 1984, as amended at 54 FR 39740, Sept. 28, 1989; 56 FR 64874, Dec. 12, 1991; 62 FR 18928, Apr. 17, 1997; 65 FR 60877, Oct. 13, 2000; 67 FR 63289, Oct. 11, 2002; 72 FR 35195, June 27, 2007; 73 FR 25497, May 6, 2008; 78 FR 50345, Aug. 19, 2013]

§ 90.243 Mobile relay stations.

(a) Mobile relay operations will be authorized on frequencies below 512 MHz, except in the Radiolocation Service.

(b) Special provisions for mobile relay operations:

(1) In the Public Safety Pool, systems operating on any of the public safety frequencies listed in § 90.20(c) are permitted to be cross-banded for mobile stations operations with mobile relay stations where such stations are authorized.

(2) [Reserved]

(3) In the Industrial/Business Pool, on frequencies designated with an ''LR'' in the coordinator column of the frequency table in § 90.35(b)(3), mobile relay operation shall be on a secondary basis to other co-channel operations.

(4) Except where specifically precluded, a mobile relay station may be authorized to operate on any frequency available for assignment to base stations.

(5) A mobile station associated with mobile relay station(s) may not be authorized to operate on a frequency below 25 MHz.

(c) Technical requirements for mobile relay stations.

(1) Each new mobile relay station with an output power of more than one watt, and authorized after January 1, 1972, that is activated by signals below 50 MHz shall deactivate the station upon cessation of reception of the activating continuous coded tone signal. Licensees may utilize a combination of digital selection and continuous coded tone control where required to insure selection of only the desired mobile relay station.

(2) Mobile relay stations controlled by signals above 50 MHz or authorized prior to January 1, 1972, to operate

below 50 MHz are not required to incorporate coded signal or tone control devices unless the transmitters are consistently activated by undesired signals and cause harmful interference to other licensees. If activation by undesired signals causes harmful interference, the Commission will require the installation of tone control equipment within 90 days of a notice to the licensee.

(3) Except in the Industrial/Business Pool, on frequencies designated with an ''LR'' in the coordinator column of the frequency table in § 90.35(b)(3), each new mobile-relay station authorized after January 1, 1972, shall be equipped for automatic deactivation of the transmitter within 5 seconds after the signals controlling the station cease.

(4) Except in the Industrial/Business Pool, on frequencies designated with an ''LR'' in the coordinator column of the frequency table in § 90.35(b)(3), each new mobile-relay station authorized after January 1, 1972, during periods that is not controlled from a manned fixed control point; shall have an automatic time delay or clock device that will deactivate the station not more than 3 minutes after its activation by a mobile unit.

(5) In the Industrial/Business Pool, on frequencies designated with an ''LR'' in the coordinator column of the frequency table in § 90.35(b)(3), each mobile relay station, regardless of the frequency or frequencies of the signal by which it is activated shall be so designated and installed that it will be deactivated automatically when its associated receiver or receivers are not receiving a signal on the frequency or frequencies which normally activate it.

(6) Multiple mobile relay station radio systems shall use wireline or radio stations on fixed frequencies for any necessary interconnect circuits between the mobile relay stations.

[43 FR 54791, Nov. 22, 1978, as amended at 49 FR 40177, Oct. 15, 1984; 50 FR 13606, Apr. 5, 1985; 50 FR 39680, Sept. 30, 1985; 50 FR 40976, Oct. 8, 1985; 54 FR 39740, Sept. 28, 1989; 56 FR 19603, Apr. 29, 1991; 56 FR 32517, July 17, 1991; 60 FR 37268, July 19, 1995; 61 FR 6576, Feb. 21, 1996; 62 FR 18928, Apr. 17, 1997; 74 FR 23803, May 21, 2009]

§ 90.245 Fixed relay stations.

Except where specifically provided for, fixed relay stations shall be authorized to operate only on frequencies available for use by operational fixed stations.

§ 90.247 Mobile repeater stations.

A mobile station authorized to operate on a mobile service frequency above 25 MHz may be used as a mobile repeater to extend the communications range of hand-carried units subject to the following:

(a) Mobile repeaters and/or associated hand-carried transmitters may be assigned separate base/mobile frequencies for this use in addition to the number of frequencies normally assignable to the licensee.

(b)–(c) [Reserved]

(d) In the Industrial/Business Pool, on frequencies designated with an ''LR'' in the coordinator column of the frequency table in § 90.35(b)(3), use of mobile repeaters is on a secondary basis to the stations of any other licensee. Hand carried units used in connection with mobile repeaters on frequencies designated with an ''LR'' in the coordinator column of the frequency table in § 90.35(b)(3) may operate only above 150 MHz and are limited to a maximum output power of six watts. The frequency and maximum power shall be specified in the station authorization.

(e) In the Industrial/Business Pool, on frequencies designated with an ''LR'' in the coordinator column of the frequency table in § 90.35(b)(3), the output power of a mobile repeater station, when transmitting as a repeater station on the frequency used for communication with its associated pack-carried or hand-carried units, shall not exceed 6 watts except when the same frequency is also used by the same station for direct communication with vehicular mobile units or with one or more base stations.

(f) When automatically retransmitting messages originated by or destined for hand-carried units, each mobile station shall activate the mobile transmitter only with a continuous access signal, the absence of which will de-activate the mobile transmitter. The continuous access signal is not required

when the mobile unit is equipped with a switch that activates the automatic mode of the mobile unit and an automatic time-delay device that de-activates the transmitter after any uninterrupted transmission period in excess of 3 minutes. For the purposes of this rule section the continuous access signal can be achieved by use of digital or analog methods.

[43 FR 54791, Nov. 22, 1978, as amended at 62 FR 18928, Apr. 17, 1997; 75 FR 19284, Apr. 14, 2019]

§ 90.248 Wildlife and ocean buoy tracking.

(a) The frequency bands 40.66–40.70 MHz and 216–220 MHz may be used for the tracking of, and the telemetry of scientific data from, ocean buoys and animal wildlife.

(b) Transmitters operating under the provisions of this section are not subject to the technical standards contained in §§ 90.205–90.217. In lieu thereof, the transmitters shall comply with the provisions in this section.

(c) Classes of emission are limited to N0N, A1A, A2A, A2B, F1B, J2B, F2A, F2B, and/or F8E.

(d) The authorized bandwidth shall not exceed 1 kHz.

(e) *Frequency stability.* (1) For transmitters operating in the 40.66–40.70 MHz frequency band, the frequency stability shall be sufficient to ensure that, at the carrier frequency employed, the sum of the authorized bandwidth plus the bandwidth required for frequency stability are confined within this band.

(2) In the 216–220 MHz frequency band, transmitters shall employ a minimum frequency stability of 0.005 percent (50 parts per million). The carrier frequency shall be selected to ensure that the sum of the authorized bandwidth plus the bandwidth required for frequency stability are confined within this band.

(3) The frequency stability standards shall be met over a temperature range of −30° to +50° centigrade at normal supply voltage and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of +20 °C. For battery operated equipment, the equipment tests shall be performed using a new battery.

(f) The maximum peak transmitter output (carrier) power shall not exceed 1 milliwatt for airborne wildlife applications, 10 milliwatts for terrestrial wildlife applications or 100 milliwatts for ocean buoys.

(g) Emissions appearing outside of the authorized bandwidth shall be attenuated below the carrier power by at least 26 dB, following the procedures specified in § 90.210(m).

[63 FR 64208, Nov. 19, 1998]

§ 90.249 Control stations.

Control stations associated with land mobile stations under this part shall be authorized to operate subject to the following:

(a) *Frequencies for control stations.* (1) Control stations may be authorized to operate on frequencies available for use by operational fixed stations.

(2) A control station associated with mobile relay station(s) may, at the option of the applicant, be assigned the frequency of the associated mobile station. In the Industrial/Business Pool, on frequencies designated with an ''LR'' in the coordinator column of the frequency table in § 90.35(b)(3), such a control station may be assigned any mobile service station frequency available for assignment to mobile stations. Such operation is on a secondary basis to use of the frequency for regular mobile service communications.

(3) Control and fixed stations in the Public Safety Pool may be authorized on a temporary basis to operate on frequencies available for base and mobile stations between 152 and 450 MHz, where there is an adequate showing that such operations cannot be conducted on frequencies allocated for assignment to operational fixed stations. Such operation will not be authorized initially or renewed for periods in excess of one year. Any such authorization shall be subject to immediate termination if harmful interference is caused to stations in the mobile service, or if the particular frequency is required for mobile service operations in the area concerned.

(b) [Reserved]

(c) A base station which is used intermittently as a control station for one or more associated mobile relay stations of the same licensee shall operate

only on the mobile service frequency assigned to the associated mobile relay station when operating as a base station and on the mobile service frequency assigned to the associated mobile station when operating as a control station. Authority for such dual classification and use must be shown on the station authorization. When operating as a control station, the licensee must meet all control station requirements. In the Industrial/Business Pool, on frequencies designated with an ''LR'' in the coordinator column of the frequency table in § 90.35(b)(3), base stations used intermittently as control stations shall operate only on a mobile service frequency which is available for assignment to base stations.

[43 FR 54791, Nov. 22, 1978, as amended at 49 FR 36376, Sept. 17, 1984; 62 FR 18928, Apr. 17, 1997]

§ 90.250 Meteor burst communications.

Meteor burst communications may be authorized for the use of private radio stations subject to the following provisions:

(a) Station operation is limited to the State of Alaska only.

(b) The frequency 44.20 MHz may be used for base station operation and 45.90 MHz for remote station operation on a primary basis. The frequencies 42.40 and 44.10 MHz may be used by base and remote stations, respectively, on a secondary basis to common carrier stations utilizing meteor burst communications. Users shall cooperate among themselves to the extent practicable to promote compatible operation.

(c) The maximum transmitter output power shall not exceed 2000 watts for base stations and 500 watts for remote stations.

(d) Co-channel base stations of different licensees shall be located at least 241 km (150 miles) apart. A remote station and a base station of different licensees shall be located at least 241 km (150 miles) apart if the remote units of the different licensees operate on the same frequency. Waiver of this requirement may be granted if affected users agree to a cooperative sharing arrangement.

(e) The authorized emission designator to be used in F1E, F7W, G1E or G7W to allow for Phase Shift Keying (PSK) or Frequency Shift Keying (FSK).

(f) The maximum authorized bandwidth is 20 kHz.

(g) Station identification in accordance with § 90.425(a) or (b) shall only be required for the base station.

(h) Stations may be required to comply with additional conditions of operation as necessary on a case-by-case basis as specified in the authorization.

(i) Stations employing meteor burst communications must not cause interference to other stations operating in accordance with the allocation table. New authorizations will be issued subject to the Commission's experimental licensing rules in part 5 of this chapter. Prior to expiration of the experimental authorization, application Form 601 should be filed for issuance of a permanent authorization.

[48 FR 34043, July 27, 1983, as amended at 49 FR 48712, Dec. 14, 1984; 58 FR 44957, Aug. 25, 1993; 72 FR 35196, June 27, 2007; 78 FR 25175, Apr. 29, 2013]

Subpart K—Standards for Special Frequencies or Frequency Bands

§ 90.251 Scope.

This subpart sets forth special requirements applicable to the use of certain frequencies or frequency bands.

[54 FR 39740, Sept. 28, 1989]

§ 90.253 Use of frequency 5167.5 kHz.

The frequency 5167.5 kHz may be used by any station authorized under this part to communicate with any other station in the State of Alaska for emergency communications. The maximum power permitted is 150 watts peak envelope power (PEP). All stations operating on this frequency must be located in or within 50 nautical miles (92.6 km) of the State of Alaska. This frequency may also be used by stations authorized in the Alaska-private fixed service for calling and listening, but only for establishing communication before switching to another frequency.

[49 FR 32201, Aug. 13, 1984]

§ 90.255 [Reserved]

§ 90.257 Assignment and use of frequencies in the band 72–76 MHz.

(a) The following criteria shall govern the authorization and use of frequencies within the band 72–76 MHz by fixed stations. (For call box operations see § 90.241).

(1) The following frequencies in the band 72–76 MHz may be used for fixed operations:

MHz	
72.02	72.80
72.04	72.82
72.06	72.84
72.08	72.86
72.10	72.88
72.12	72.90
72.14	72.92
72.16	72.94
72.18	72.96
72.20	72.98
72.22	75.42
72.24	75.46
72.26	75.50
72.28	75.54
72.30	75.58
72.32	75.62
72.34	75.64
72.36	75.66
72.38	75.68
72.40	75.70
72.42	75.72
72.46	75.74
72.50	75.76
72.54	75.78
72.58	75.80
72.62	75.82
72.64	75.84
72.66	75.86
72.68	75.88
72.70	75.90
72.72	75.92
72.74	75.94
72.76	75.96
72.78	75.98

(2) All authorizations are subject to the condition that no harmful interference will be caused to television reception on Channels 4 and 5.

(3) The applicant must agree to eliminate any harmful interference caused by his operation to TV reception on either Channel 4 or 5 that might develop by whatever means are necessary. Such action must be taken within 90 days of notification by the Commission. If such interference is not eliminated within the 90-day period, operation of the fixed station will be discontinued.

(4) Vertical polarization must be used.

(5) Whenever it is proposed to locate a 72–76 MHz fixed station less than 128 km (80 mi.) but more than 16 km (10 mi.) from the site of a TV transmitter operating on either channel 4 or 5, or from the post office of a community in which such channels are assigned but not in operation, the fixed station shall be authorized only if there are fewer than 100 family dwelling units (as defined by the U.S. Bureau of the Census), excluding units 112 or more km (70 mi.) distant from the TV antenna site, located within a circle centered at the location of the proposed fixed station. The radius shall be determined by use of the following chart entitled, ''Chart for Determining Radius From Fixed Station in 72–76 MHz Band to Interference Contour Along Which 10 Percent of Service From Adjacent Channel Television Station Would Be Destroyed.'' Two charts are available, one for Channel 4, and one for Channel 5. The Commission may, however, in a particular case, authorize the location of a fixed station within a circle containing 100 or more family dwelling units upon a showing that:

(i) The proposed site is the only suitable location.

(ii) It is not feasible, technically or otherwise, to use other available frequencies.

(iii) The applicant has a plan to control any interference that might develop to TV reception from his operations.

(iv) The applicant is financially able and agrees to make such adjustments in the TV receivers affected as may be necessary to eliminate any interference caused by his operations.

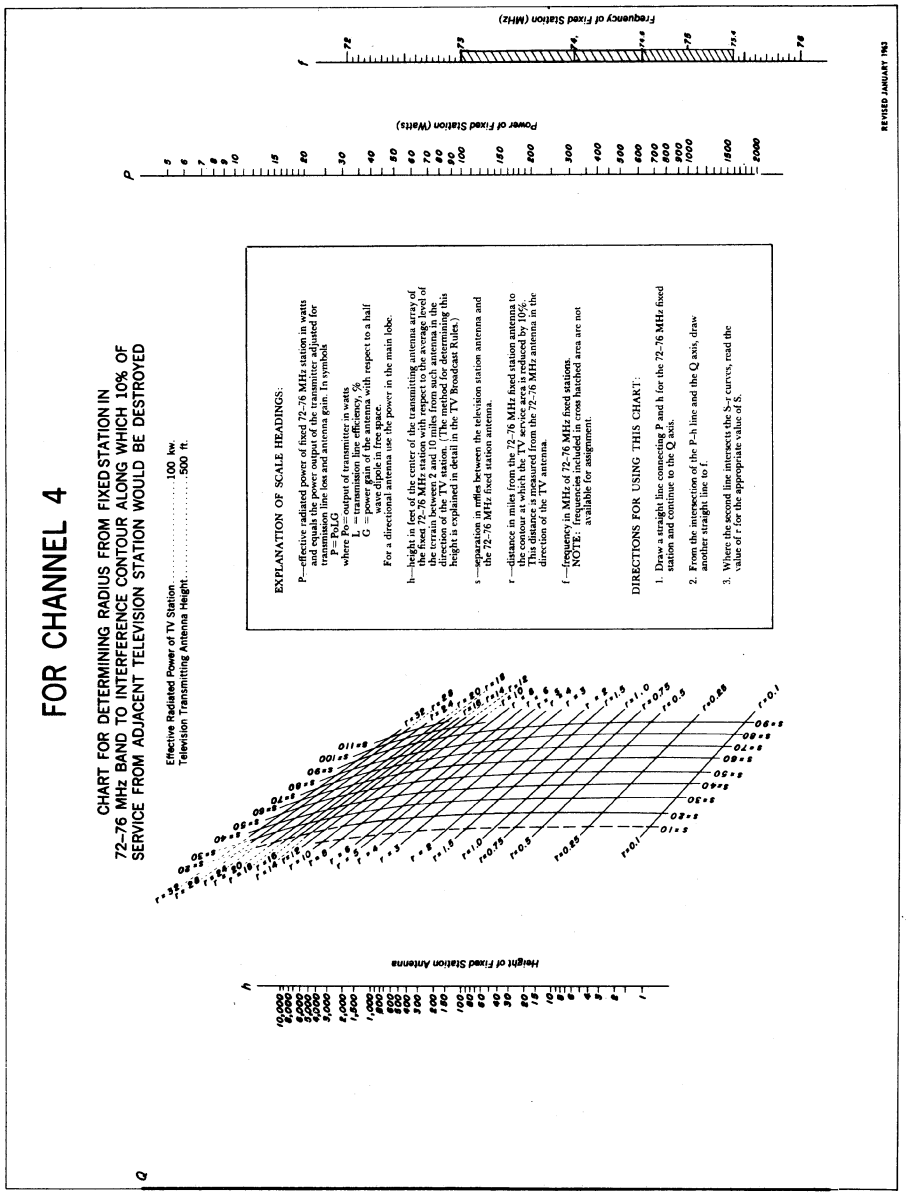
(v) All applications seeking authority to operate with a separation of less than 16 km (10 mi.) will be returned without action.

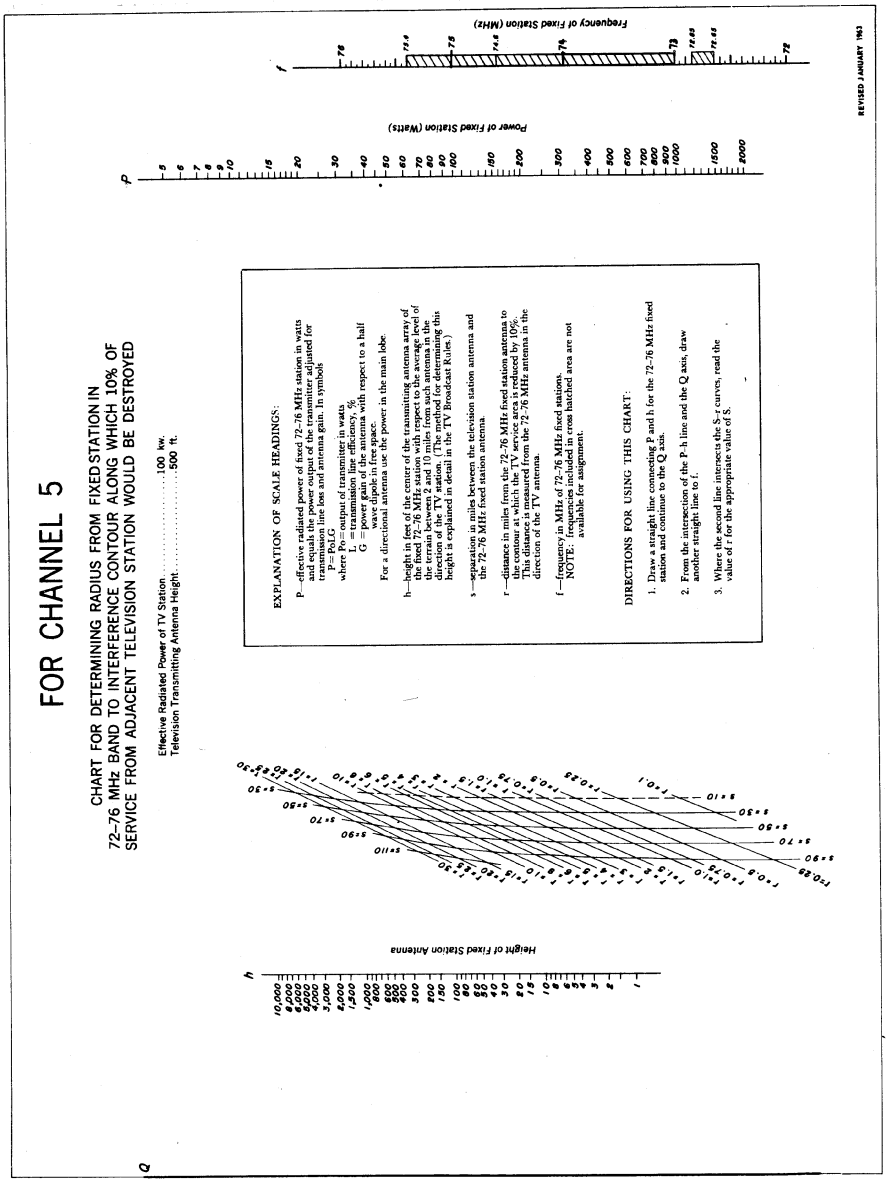
(b) The following criteria governs the authorization and use of frequencies in the 72–76 MHz band by mobile stations in the Industrial/Business Pool.

(1) Mobile operation on frequencies in the 72–76 MHz band is subject to the condition that no interference is caused to the reception of television stations operating on Channel 4 or 5. Interference will be considered to occur whenever reception of a regularly used television signal is impaired by signals radiated by stations operating under these rules in the 72 to 76 MHz band regardless of the quality of such reception or the strength of the signal used. In order to minimize the hazard of such interference, it shall be the duty of the licensee to determine whether interference is being caused to television reception, wherever television receivers other than those under the control of the licensee, are located within 31 m. (100 ft.) of any point where the stations licensed under these rules may be operated. In any case, it shall be the responsibility of the licensee to correct, at its own expense, any such interference and if the interference cannot be eliminated by the application of suitable techniques, the operation of the offending transmitter shall be suspended. If the complainant refuses to permit the licensee to apply remedial techniques which demonstrably will eliminate the interference without impairment of the original reception, the licensee is absolved of further responsibility.

(2) The maximum transmitter output power that will be authorized is 1 watt; and each station authorized will be classified and licensed as a mobile station. Any units of such a station, however, may be used to provide the operational functions of a base or fixed station. The antennas of transmitters operating on these frequencies must be directly mounted or installed upon the transmitting unit: Except that when permanently installed aboard a vehicle, antenna and transmitter may be separated as required for convenience in mounting. Horizontal polarization will not be allowed; and the gain of antennas employed shall not exceed that of a halfwave dipole. The maximum bandwidth that will be authorized is 20 kHz. Tone control transmissions are permitted.

(c) Radio remote control of models is permitted on frequencies 10 kHz removed from these frequencies authorized for fixed and mobile operations in the 72–76 MHz band. Remote control operations are secondary to operation of fixed and mobile stations as provided for in this section.


FOR CHANNEL 4
CHART FOR DETERMINING RADIUS FROM FIXED STATION IN 72–76 MHz BAND TO INTERFERENCE CONTOUR ALONG WHICH 10% OF SERVICE FROM ADJACENT TELEVISION STATION WOULD BE DESTROYED
Effective Radiated Power of TV Station.....100 kw.
Television Transmitting Antenna Height.....500 ft.
EXPLANATION OF SCALE HEADINGS:
P—effective radiated power of fixed 72–76 MHz station in watts and equals the power output of the transmitter adjusted for transmission line loss and antenna gain. In symbols
P = PoLG
where: Po = output of transmitter in watts
L = transmission line efficiency, %
G = power gain of the antenna with respect to a half wave dipole in free space.
For a directional antenna use the power in the main lobe.
h—height in feet of the center of the transmitting antenna array of the fixed 72–76 MHz station with respect to the average level of the terrain between 2 and 10 miles from such antenna in the direction of the TV station. (The method for determining this height is explained in detail in the TV Broadcast Rules.)
s—separation in miles between the television station antenna and the 72–76 MHz fixed station antenna.
r—distance in miles from the 72–76 MHz fixed station antenna to the contour at which the TV service area is reduced by 10%. This distance is measured from the 72–76 MHz antenna in the direction of the TV antenna.
f—frequency in MHz of 72–76 MHz fixed stations.
NOTE: frequencies included in cross hatched area are not available for assignment.
DIRECTIONS FOR USING THIS CHART:
1. Draw a straight line connecting P and h for the 72–76 MHz fixed station and continue to the Q axis.
2. From the intersection of the P–h line and the Q axis, draw another straight line to f.
3. Where the second line intersects the S-r curves, read the value of r for the appropriate value of S.
Q
h
Height of Fixed Station Antenna
P
Power of Fixed Station (Watts)
f
Frequency of Fixed Station (MHz)
REVISED JANUARY 1963



[43 FR 54791, Nov. 22, 1978; 44 FR 32219, June 5, 1979, as amended at 47 FR 51879, Nov. 18, 1982; 49 FR 41249, Oct. 22, 1984; 54 FR 38681, Sept. 20, 1989; 58 FR 30129, May 26, 1993; 60 FR 37268, July 19, 1995; 62 FR 18928, Apr. 17, 1997; 72 FR 35196, June 27, 2007]

§ 90.259 Assignment and use of frequencies in the bands 216–220 MHz and 1427–1432 MHz.

(a) *216–220 MHz band.* (1) Frequencies in the 216–220 MHz band may be assigned to applicants that establish eligibility in the Industrial/Business Pool.

(2) All operation is secondary to the fixed and mobile services, including the Low Power Radio Service.

(3) In the 216–217 MHz band, no new assignments will be made after January 1, 2002.

(4) In the 217–220 MHz band, the maximum transmitter output power is 2 watts. The maximum antenna height above average terrain (HAAT) is 152 m (500 feet).

(5) In the 217–220 MHz band, base, mobile, and operational fixed operations are permitted.

(6) Wide area operations will not be authorized. The area of normal day-to-day operations will be described in the application in terms of maximum distance from a geographical center (latitude and longitude).

(7) Frequencies will be assigned with a 6.25 kHz, 12.5 kHz, 25 kHz or 50 kHz channel bandwidth. Frequencies may be assigned with a channel bandwidth exceeding 50 kHz only upon a showing of adequate justification.

(8) Assignable 6.25 kHz channels will occur in increments of 6.25 kHz from 217.00625 MHz to 219.99375 MHz. Assignable 12.5 kHz channels will occur in increments of 12.5 kHz from 217.0125 MHz to 219.9875 MHz. Assignable 25 kHz channels will occur in increments of 25 kHz from 217.025 MHz to 219.975 MHz. Assignable 50 kHz channels will occur in increments of 50 kHz from 217.025 MHz to 219.975 MHz.

(b) *1427–1432 MHz band.* (1) Frequencies in the 1427–1432 MHz band may be assigned to applicants that establish eligibility in the Public Safety Pool or the Industrial/Business Pool.

(2) All operations in the 1427–1429.5 MHz band are secondary to the Wireless Medical Telemetry Service except in the locations specified in paragraph (b)(4) of this section. At the locations specified in paragraph (b)(4) of this section, all operations are secondary to the Wireless Medical Telemetry Service in the 1429–1431.5 MHz band.

(3) All operations in the 1429.5–1432 MHz band are primary in status except in the locations specified in paragraph (b)(4) of this section. At the locations specified in paragraph (b)(4) of this section, all operations are primary in status in the 1427–1429 MHz and 1431.5–1432 MHz bands.

(4) *Locations:* (i) Pittsburgh, Pennsylvania—Counties of Westmoreland, Washington, Beaver, Allegheny and Butler;

(ii) Washington, DC metropolitan area—Counties of Montgomery, Prince George's and Charles in Maryland; Counties of Arlington, Prince William, Fauquier, Loudon, and Fairfax, and Cities of Alexandria, Falls Church, Fairfax, Manassas and Manassas Park in Virginia; and District of Columbia;

(iii) Richmond/Norfolk, Virginia—Counties of Charles City, Chesterfield, Dinwiddie, Goochland, Hanover, Henrico, Isle of Wight, James City, New Kent, Powhatan, Prince George, Southhampton, Surrey, Sussex, and York; Cities of Chesapeake, Colonial Heights, Franklin, Hampton, Hopewell, Newport News, Norfolk, Petersburg, Poquoson, Portsmouth, Richmond, Suffolk, Virginia Beach, and Williamsburg;

(iv) Austin/Georgetown, Texas—Counties of Williamson and Travis;

(v) Battle Creek, Michigan—County of Calhoun;

(vi) Detroit, Michigan—Counties of Oakland, Wayne, Washtenaw, Macomb and Livingston;

(vii) Spokane, Washington—Counties of Spokane, WA and Kootenai, ID.

(5) All operations in the 1429.5–1432 MHz band authorized prior to April 12, 2002 are on a secondary basis.

(6) For secondary operations only fixed stations are permitted. At the locations specified in (b)(4) of this section, secondary operations are performed in the 1429–1431.5 MHz band. For all other locations, secondary operations are performed in the 1427–1429.5 MHz band. The maximum power is 1 watt EIRP.

(7) For primary operations base, mobile, operational fixed and temporary fixed operations are permitted.

(i) At the locations specified in paragraph (b)(4) of this section, primary operations are performed in the 1427–1429

MHz and 1431.5–1432 MHz bands. The maximum ERP limitations are as follows:

Operation	Frequency range (MHz)			
	1427–1428	1428–1428.5	1428.5–1429	1431.5–1432
Fixed (watts)	61.1	6.11	0.611	0.611
Mobile (watts)	0.611	0.611	0.015	0.015
Temporary fixed (watts)	0.611	0.611	0.611	0.611

(ii) For all other locations, primary operations are performed in the 1429.5–1432 MHz band. The maximum ERP limitations are as follows:

Operation	Frequency range (MHz)			
	1429.5–1430	1430–1430.5	1430.5–1431.5	1431.5–1432
Fixed (watts)	0.611	0.611	6.11	61.1
Mobile (watts)	0.015	0.611	0.611	0.611
Temporary fixed (watts)	0.611	0.611	0.611	0.611

(8) Wide area operations will not be authorized. The area of normal day-to-day operations will be described in the application in terms of maximum distance from a geographical center (latitude and longitude).

(9) Assignable frequencies occur in increments of 12.5 kHz from 1427.00625 MHz to 1431.99375 MHz.

(10) Licensees, however, may combine contiguous channels up to 50 kHz, and more than 50 kHz only upon a showing of adequate justification.

(11) For any operation in the 1427–1432 MHz band, the predicted or measured field strength—in the WMTS primary band—at the location of any registered WMTS healthcare facility shall not exceed 150 uV/m. For the locations specified in (b)(4) of this section, WMTS is primary in the 1429–1431.5 MHz band. For all other locations, WMTS is primary in the 1427–1429.5 MHz band.

(c) *Authorized uses*. (1) Use of these bands is limited to telemetering purposes.

(2) Base stations authorized in these bands shall be used to perform telecommand functions with associated mobile telemetering stations. Base stations may also command actions by the vehicle itself, but will not be authorized solely to perform this function.

(3) Except for the transmissions that are permitted under § 90.248(f) of this chapter, airborne use is prohibited.

[67 FR 41860, June 20, 2002, as amended at 69 FR 39867, July 1, 2004; 72 FR 35196, June 27, 2007; 75 FR 19284, Apr. 14, 2010]

§ 90.261 Assignment and use of the frequencies in the band 450–470 MHz for fixed operations.

(a) Frequencies in the 450–470 MHz band as listed in §§ 90.20(c)(3) and 90.35(b)(3) may be assigned to all eligibles for fixed use on a secondary basis to land mobile operations.

(b) Fixed stations located 140 km (87 mi) or more from the center of any urbanized area of 600,000 or more population are limited to a transmitter output power of 75 watts. Fixed stations less than 140 km (87 mi) from the centers of these areas are limited to a transmitter output power of 20 watts. Urbanized areas of 600,000 or more population are defined in the U.S. Census of Population 1970, Vol. 1, Table 20, pages 1–74. The centers of the urbanized areas are determined from the Appendix, page 226, of the U.S. Department of Commerce publication ''Airline Distance Between Cities in the United States.''

(c) All fixed systems are limited to one frequency pair with 5 MHz spacing and must employ directional antennas with a front-to-back ratio of 15dB, except that omnidirectional antennas

having unity gain may be employed by stations communicating with a minimum of three receiving locations encompassed in a sector of at least 160° in azimuth. Stations authorized for secondary fixed operations prior to July 13, 1992, may continue to operate under the conditions of their initial authorization.

(d)–(e) [Reserved]

(f) Secondary fixed operations pursuant to paragraph (a) of this section will not be authorized on the following frequencies or on frequencies subject to § 90.267:

Frequencies (MHz)

451.800/456.800	454.000/459.000
451.80625/456.80625	454.00625/459.00625
451.8125/456.8125	454.0125/459.0125
451.81875/456.81875	454.01875/459.01875
452.525	462.950/467.950
452.53125	462.95625/467.95625
452.5375	462.9625/467.9625
452.54375	462.96875/467.96875
452.550	462.975/467.975
452.55625	462.98125/467.98125
452.5625	462.9875/467.9875
452.56875	462.99375/467.99375
452.575	463.000/468.000
452.58125	463.00625/468.00625
452.5875	463.0125/468.0125
452.59375	463.01875/468.01875
452.600	463.025/468.025
452.60625	463.03125/468.03125
452.6125	463.0375/468.0375
452.61875	463.04375/468.04375
452.925/457.925	463.050/468.050
452.93125/457.93125	463.05625/468.05625
452.9375/457.9375	463.0625/468.0625
452.94375/457.94375	463.06875/468.06875
452.950/457.950	463.075/468.075
452.95625/457.95625	463.08125/468.08125
452.9625/457.9625	463.0875/468.0875
452.96875/457.96875	463.09375/468.09375
453.025/458.025	463.100/468.100
453.03125/458.03125	463.10625/468.10625
453.0375/458.0375	463.1125/468.1125
453.04375/458.04375	463.11875/468.11875
453.075/458.075	463.125/468.125
453.08125/458.08125	463.13125/468.13125
453.0875/458.0875	463.1375/468.1375
453.09375/458.09375	463.14375/468.14375
453.125/458.125	463.150/468.150
453.13125/458.13125	463.15625/468.15625
453.1375/458.1375	463.1625/468.1625
453.14375/458.14375	463.16875/468.16875
453.175/458.175	463.175/468.175
453.18125/458.18125	463.18125/468.18125
453.1875/458.1875	463.1875/468.1875
453.19375/458.19375	463.19375/468.19375

[57 FR 24992, June 12, 1992, as amended at 58 FR 33212, June 16, 1993; 60 FR 37268, July 19, 1995; 62 FR 18928, Apr. 17, 1997; 68 FR 19461, Apr. 21, 2003; 72 FR 35196, June 27, 2007]

§ 90.263 Substitution of frequencies below 25 MHz.

Frequencies below 25 MHz when shown in the radio pool frequency listings under this part will be assigned to base or mobile stations only upon a satisfactory showing that, from a safety of life standpoint, frequencies above 25 MHz will not meet the operational requirements of the applicant. These frequencies are available for assignment in many areas; however, in individual cases such assignment may be impracticable due to conflicting frequency use authorized to stations in other services by this and other countries. In such cases, a substitute frequency, if found available, may be assigned from the following bands: 1705–1750 kHz, 2107–2170 kHz, 2194–2495 kHz, 2506–2850 kHz, 3155–3400 kHz, or 4438–4650 kHz. Since such assignments are in certain instances subject to additional technical and operation limitations, it is necessary that each application also include precise information concerning transmitter output power, type and directional characteristics, if any, of the antenna, and the minimum necessary hours of operation. (This section is not applicable to the Radiolocation Service, subpart F of this part.)

[72 FR 35196, June 27, 2007]

§ 90.264 Disaster communications between 2 and 10 MHz.

(a) The use of any particular frequency between 2 and 10 MHz is limited to those frequencies falling within the bands allocated to the fixed and land mobile services as indicated in § 2.106 of the Commission's Rules and Regulations.

(b) Only in the following circumstances will authority be extended to stations to operate on the frequencies between 2 and 10 MHz:

(1) To provide communications circuits in emergency and/or disaster situations, where safety of life and property are concerned;

(2) To provide standby and/or backup communications circuits to regular domestic communications circuits which

have been disrupted by disasters and/or emergencies.

(c) The FCC will not accept responsibility for protection of the circuits from harmful interference caused by foreign operations.

(d) In the event that a complaint of harmful interference resulting from operation of these circuits is received from a foreign source, the offending circuit(s) must cease operation on the particular frequency concerned immediately upon notification by the Commission.

(e) In order to accomodate the situations described in paragraphs (c) and (d) of this section, the equipment shall be capable of transmitting and receiving on any frequency within the bands between 2 and 10 MHz and capable of immediate change among the frequencies.

(f) Only 2K80J3E, 100HA1A and those emission types listed in § 90.237(g) are permitted.

(g) Applicants must fulfill eligibility requirements set out in § 90.20(d)(6) and shall submit disaster communications plans pursuant to § 90.129(m).

(h) Training exercises which require use of these frequencies for more than seven hours a week, cumulative, are not authorized without prior written approval from the Commission.

[46 FR 52373, Oct. 27, 1981, as amended at 48 FR 32831, July 19, 1983; 49 FR 48712, Dec. 14, 1984; 62 FR 18929, Apr. 17, 1997; 72 FR 35196, June 27, 2007]

§ 90.265 Assignment and use of frequencies in the bands allocated for Federal use.

(a) The following center frequencies are available for assignment to fixed stations in the Public Safety Pool or the Industrial/Business Pool, subject to the provisions of this section:

HYDRO CHANNELS (MHz)

169.4250	170.2625	171.1000	406.1250
169.4375	170.2750	171.1125	406.1750
169.4500	170.2875	171.1250	412.6625
169.4625	170.3000	171.8250	412.6750
169.4750	170.3125	171.8375	412.6875
169.4875	170.3250	171.8500	412.7125
169.5000	171.0250	171.8625	412.7250
169.5125	171.0375	171.8750	412.7375
169.5250	171.0500	171.8875	412.7625
170.2250	171.0625	171.9000	412.7750
170.2375	171.0750	171.9125	415.1250
170.2500	171.0875	171.9250	415.1750

(1) The use of these frequencies is limited to transmitting hydrological or meteorological data.

(2) All use of these frequencies is on a secondary basis to Federal Government stations and the hydrological or meteorological data being handled must be made available on request to governmental agencies.

(3) Other provisions of this part notwithstanding, an operational fixed station operating on these frequencies shall not communicate with any station in the mobile service unless written authorization to do so has been obtained from the Commission.

(4) Persons who desire to operate stations on these frequencies should communicate with the Commission for instructions concerning the procedure to be followed in filing formal application.

(5) After May 27, 2005, for the 169–172 MHz band and January 1, 2008 for the 406–416 MHz band, channels for new operations are limited to an authorized bandwidth not to exceed 11.25 kHz. After those dates, existing systems with an authorized bandwidth of greater than 11.25 kHz (including those systems that expand existing operations) may continue to operate with a bandwidth greater than 11.25 kHz until January 1, 2013. Such operations are limited by paragraphs (a)(6) and (a)(7) of this section.

(6) After May 27, 2005, if a licensee of a channel in the band 169–172 MHz which uses equipment with an authorized bandwidth greater than 11.25 kHz

cannot resolve an interference complaint to the satisfaction of an impacted Federal agency or is advised to do so by the Hydro Committee as approved by the FCC, then the licensee must cease operation on the frequency upon notification by the Commission.

(7) After January 1, 2008, if a licensee of a channel in the band 406.1–420 MHz which uses equipment with an authorized bandwidth greater than 11.25 kHz cannot resolve an interference complaint to the satisfaction of an impacted Federal agency or is advised to do so by the Hydro Committee as approved by the FCC, then the licensee must cease operation on the frequency upon notification by the Commission.

(8) After May 27, 2005, new assignments on the frequencies 406.125 MHz and 406.175 MHz are to be primarily for paired operations with the frequencies 415.125 MHz and 415.175 MHz, respectively and limited to an authorized bandwidth not to exceed 11.25 kHz when paired.

(9) Existing stations may continue to use the center frequencies 169.575 MHz, 409.675 MHz, 409.725 MHz, and 412.625 MHz until January 1, 2013, subject to the requirements of paragraphs (a)(6) and (a)(7) of this section.

(b) The following frequencies are available for wireless microphone operations to eligibles in this part, subject to the provisions of this paragraph:

FREQUENCIES (MHz)

169.445	170.245
171.045	171.845
169.505	170.305
171.105	171.905

(1) The emission bandwidth shall not exceed 54 kHz.

(2) The output power shall not exceed 50 milliwatts.

(3) The frequency stability of wireless microphones shall limit the total emission to within ±32.5 kHz of the assigned frequency.

(4) Wireless microphone operations are unprotected from interference from other licensed operations in the band. If any interference from wireless microphone operation is received by any Government or non-Government operation, the wireless microphone must cease operation on the frequency involved. Applications are subject to Government coordination.

(c) The following center frequencies are available for assignment to licensees engaged in forest firefighting and conservation activities, subject to the provisions of this section:

FOREST FIREFIGHTING AND CONSERVATION CHANNELS (MHz)

170.425	171.425	172.225
170.475	171.475	172.275
170.575	171.575	172.375

(1) These frequencies will be assigned on a secondary basis to any U.S. Government station.

(2) The frequencies 170.425 MHz, 170.475 MHz, 170.575 MHz, 171.425 MHz, 171.575 MHz, 172.225 MHz, and 172.275 MHz will be assigned only to licensees directly responsible for the prevention, detection, and suppression of forest fires.

(3) The frequencies 171.475 MHz and 172.275 MHz will be assigned to licensees directly responsible for the prevention, detection, and suppression of forest fires; or to licensees engaged in forest conservation activities for mobile relay operation only.

(4) The frequencies 170.425 MHz, 170.575 MHz, 171.475 MHz, 172.225 MHz, and 172.375 MHz will be assigned for use only in areas west of the Mississippi River.

(5) The frequencies 170.475 MHz, 171.425 MHz, 171.575 MHz, and 172.275 MHz will be assigned for use only in areas east of the Mississippi River.

(6) All applications for use of these frequencies must be accompanied by a letter of concurrence by the United States Department of Agriculture.

(7) After May 27, 2005, channels for new operations are limited to an authorized bandwidth not to exceed 11.25 kHz. Between May 27, 2005, and January 1, 2013, existing systems with an authorized bandwidth of greater than 11.25 kHz (including those systems that expand existing operations) may continue to operate with a bandwidth greater than 11.25 kHz, subject to the limitations set forth in paragraph (c)(8), of this section.

(8) After May 27, 2005, if a licensee that uses equipment with an authorized bandwidth greater than 11.25 kHz

cannot resolve an interference complaint from an impacted Federal agency, then the licensee must cease operation on the frequency upon notification by the Commission.

(d) The frequencies 166.250 MHz and 170.150 MHz are available for assignment to licensees engaged in public safety activities, subject to the provisions of this section:

(1) These frequencies are available for assignment to stations in the Public Safety Pool, only at points within 241.4 km. (150 mi.) of New York, N.Y.;

(2) Operations on these channels is on a secondary basis to any Federal station; and

(3) After May 27, 2005, if a licensee that uses equipment with an authorized bandwidth greater than 11.25 kHz cannot resolve an interference complaint from an impacted Federal agency, then the licensee must cease operation on the frequency upon notification by the Commission.

(4) After May 27, 2005, channels for new operations are limited to an authorized bandwidth not to exceed 11.25 kHz. Between May 27, 2005, and January 1, 2013, existing systems with an authorized bandwidth of greater than 11.25 kHz (including those systems that expand existing operations) may continue to operate with a bandwidth greater than 11.25 kHz, subject to the limitations set forth in paragraph (d)(3), of this section.

(e) The following frequencies are available for use by Medical Radiocommunication Systems:

(1) The frequencies 150.775 MHz, 150.790 MHz, and 163.250 MHz, subject to following provisions:

(i) After May 27, 2005, new assignments for these frequencies shall be authorized only for the purpose of delivering or rendering medical services to individuals (medical radiocommunication systems).

(ii) After May 27, 2005, new operations on the frequency 163.250 MHz are limited to an authorized bandwidth not to exceed 11.25 kHz.

(iii) After January 1, 2008, new operations on the frequencies 150.775 MHz and 150.790 MHz are limited to an authorized bandwidth not to exceed 11.25 kHz.

(iv) Existing systems with an authorized bandwidth of greater than 11.25 kHz (including those systems that expand existing operations) may continue to operate on a primary basis with a bandwidth greater than 11.25 kHz until January 1, 2013. After January 1, 2013, stations that use the frequencies 150.775 MHz, 150.790 MHz, or 163.250 MHz shall be limited to an authorized bandwidth not to exceed 11.25 kHz.

(2) The frequency 152.0075 MHz and frequencies within the bands 462.9375–463.1875 MHz and 467.9375 MHz–468.1875 MHz, subject to the limitations specified in § 90.20.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§ 0.131 and 0.331 of the Commission's Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3))

[49 FR 20506, May 15, 1984, as amended at 62 FR 18929, Apr. 17, 1997; 70 FR 21661, Apr. 27, 2005]

§ 90.266 Long distance communications on frequencies below 25 MHz.

(a) The use of any particular frequency between 2 and 25 MHz is limited to those frequencies falling within the bands allocated to the fixed and land mobile services as indicated in § 2.106 of the Commission's Rules and Regulations.

(b) Only in the following circumstances will authority be extended to stations to operate on the frequencies below 25 MHz:

(1) To provide communications circuits to support operations which are highly important to the national interest and where other means of telecommunication are unavailable;

(2) To provide standby and/or backup communications circuits to regular domestic communications circuits which have been disrupted by disasters and/or emergencies.

(c) No protection is afforded to users of these frequencies from harmful interference caused by foreign operations.

(d) In the event that a complaint of harmful interference resulting from operation of these circuits is received from a foreign source, the offending circuit(s) must cease operation on the particular frequency concerned immediately upon notification by the Commission.

(e) In order to accommodate the situations described in paragraphs (c) and (d) of this section, the equipment shall be capable of transmitting and receiving on any frequency within the bands between 2 and 25 MHz and capable of immediate change among the frequencies, provided, however, that this requirement does not apply to equipment manufactured prior to August 15, 1983.

(f) Only 2K80J3E, 100HA1A, 100HA1B and those emission types listed in § 90.237(g) are permitted.

(g) Applicants must fulfill eligibility requirements set out in § 90.35(c)(1) and submit communications plans pursuant to § 90.129(o).

(h) Exercises or circuits tests which require use of these frequencies for more than seven hours per week cumulative are prohibited unless prior written approval is obtained from the Commission.

[48 FR 32996, July 20, 1983, as amended at 49 FR 48712, Dec. 14, 1984; 52 FR 29856, Aug. 12, 1987; 62 FR 18929, Apr. 17, 1997]

§ 90.267 Assignment and use of frequencies in the 450–470 MHz band for low power use.

(a) The following frequencies between 450–470 MHz are designated for low-power use subject to the provisions of this section. For purposes of this section these frequencies are referred to as ''low power frequencies.'' Pairs are shown but single frequencies are available for simplex operations.

(b) *Group A1 Frequencies.* The Industrial/Business Pool frequencies in Group A1 are available on a coordinated basis, pursuant to §§ 90.35(b)(2) and 90.175(b), as follows:

(1) Group A1 frequencies are available for voice and non-voice operations on a co-primary basis. Base, mobile and operational fixed stations will be authorized on Group A1 frequencies. Fixed stations may be licensed as mobile.

(2) Within 80 kilometers (50 miles) of the specified coordinates of the top 100 urban areas listed in § 90.741 of this chapter (''80 km circles'') only low power operation will be authorized. The coordinates of an operational fixed or base station and the geographic center (latitude and longitude) of a mobile area of operation determine whether a station is within an ''80 km circle.''

(i) The maximum ERP for low power operation on Group A1 frequencies is as follows:

Operation	Low side of frequency pair (watts)	High side of frequency pair (watts)
Operational Fixed or Base	20	6
Mobile	6	6
Portable	2	2

(ii) The maximum antenna height for low power fixed stations on Group A1 frequencies will be 23 meters (75 feet) above ground.

(3) Outside the ''80 km circles'' defined in paragraph (b)(2), full-power operational fixed, base, or mobile stations will be authorized as follows:

(i) Power and antenna height limits are governed by § 90.205 of this chapter;

(ii) For any operational fixed, base or mobile station exceeding the low power or antenna height limits listed in paragraph (b)(2), the 21 dBu F(50,10) contour may not overlap any portion of an ''80 km circle;'' and,

(iii) Wide area operations will not be permitted. The area of normal day-to-day operations will be described in the application in terms of maximum distance from a geographic center (latitude and longitude).

(4) The Industrial/Business Pool Group A1 Low Power Frequencies are as follows:

451/456.18125	451/456.58125	452/457.10625	452/457.70625
451/456.1875	451/456.5875	452/457.1125	452/457.7125
451/456.19375	451/456.59375	452/457.11875	452/457.71875
451/456.28125	451/456.60625	452/457.13125	452/457.78125
451/456.2875	451/456.6125	452/457.1375	452/457.7875
451/456.29375	451/456.61875	452/457.14375	452/457.79375
451/456.30625	451/456.65625	452/457.15625	452/457.80625
451/456.3125	451/456.6625	452/457.1625	452/457.8125
451/456.31875	451/456.66875	452/457.16875	452/457.81875
451/456.35625	451/456.68125	452/457.18125	452/457.83125

451/456.3625	451/456.6875	452/457.1875	452/457.8375
451/456.36875	451/456.69375	452/457.19375	452/457.84375
451/456.38125	451/456.70625	452/457.28125	452/457.88125
451/456.3875	451/456.7125	452/457.2875	452/457.8875
451/456.39375	451/456.71875	452/457.29375	452/457.89375
451/456.40625	451/456.73125	452/457.48125	452/457.98125
451/456.4125	451/456.7375	452/457.4875	452/457.9875
451/456.41875	451/456.74375	452/457.49375	452/457.99375
451/456.45625	451/456.75625	452.53125 (unpaired)	462/467.18125
451/456.4625	451/456.7625	452.5375 (unpaired)	462/467.1875
451/456.46875	451/456.76875	452.54375 (unpaired)	462/467.19375
451/456.48125	452/457.03125	452/457.63125	462/467.45625
451/456.4875	452/457.0375	452/457.6375	462/467.4625
451/456.49375	452/457.04375	452/457.64375	462/467.46875
451/456.50625	452/457.05625	452/457.65625	462/467.48125
451/456.5125	452/457.0625	452/457.6625	462/467.4875
451/456.51875	452/457.06875	452/457.66875	462/467.49375
451/456.55625	452/457.08125	452/457.68125	462/467.50625
451/456.5625	452/457.0875	452/457.6875	462/467.5125
451/456.56875	452/457.09375	452/457.69375	462/467.51875

(c) *Group A2 Frequencies*. The Industrial/Business Pool frequencies in Group A2 are available nationwide on a coordinated basis, pursuant §§ 90.35(b)(2) and 90.175(b) as follows:

(1) Group A2 frequencies are available for voice and non-voice operations on a co-primary basis. Base, mobile or operational fixed stations will be authorized on Group A2 frequencies. Fixed stations may be licensed as mobile.

(2) Low power operation will be authorized nationwide on Group A2 frequencies.

(i) The maximum ERP for low power operation on these frequencies is as follows:

Operation	Low side of frequency pair	High side of frequency pair (watts)
Operational Fixed or Base	20	6
Mobile	6	6
Portable	2	2

(ii) The maximum antenna height for low power fixed stations will be 23 meters (75 feet) above ground.

(3) The Industrial/Business Pool Group A2 Low Power Frequencies are as follows:

451/456.23125	451/456.53125	452/457.40625	452/457.85625
451/456.2375	451/456.5375	452/457.4125	452/457.8625
451/456.24375	451/456.54375	452/457.41875	452/457.86875
451/456.33125	451/456.63125	452/457.50625	
451/456.3375	451/456.6375	452/457.5125	
451/456.34375	451/456.64375	452/457.51875	
451/456.43125	452/457.30625	452/457.75625	
451/456.4375	452/457.3125	452/457.7625	
451/456.44375	452/457.31875	452/457.76875	

(d) *Group B Frequencies*. The Industrial/Business Pool frequencies in Group B are available nationwide on a coordinated basis, pursuant to §§ 90.35(b)(2) and 90.175(b) as follows:

(1) Group B frequencies are available for non-voice operations on a primary basis. Voice operations will be permitted on a secondary basis. Base, mobile or operational fixed stations will be authorized on Group B frequencies. Fixed stations may be licensed as mobile.

(2) Operation on these frequencies is limited to 6 watts ERP for base, mobile or operational fixed stations and 2 watts ERP for portable units. A maximum antenna height of 7 meters (20 ft)

above ground is authorized for fixed stations.

(3) The Industrial/Business Pool Group B Frequencies are as follows:

462/467.20625	462/467.28125	462/467.35625	462/467.43125
462/467.2125	462/467.2875	462/467.3625	462/467.4375
462/467.21875	462/467.29375	462/467.36875	462/467.44375
462/467.23125	462/467.30625	462/467.38125	
462/467.2375	462/467.3125	462/467.3875	
462/467.24375	462/467.31875	462/467.39375	
462/467.25625	462/467.33125	462/467.40625	
462/467.2625	462/467.3375	462/467.4125	
462/467.26875	462/467.34375	462/467.41875	

(e) *Group C Frequencies.* The Industrial/Business Pool frequencies in Group C are available nationwide for non-coordinated itinerant use as follows.

(1) Group C frequencies are available for voice and non-voice operations on a co-primary basis. Only mobile operations will be authorized on Group C frequencies. Stations may operate at fixed locations for a temporary period of time. No stations operating at a permanent fixed location will be authorized on Group C frequencies.

(2) Operation on these frequencies is limited to 6 watts effective radiated power for fixed or mobile units and 2 watts ERP for portable units. Stations operating at fixed locations for a temporary period of time will be limited to an antenna height of 7 meters (20 feet) above ground.

(3) The Industrial/Business Pool Group C Low Power Frequencies are as follows:

461/466.03125	461/466.15625	461/466.28125	462.8125
461/466.0375	461/466.1625	461/466.2875	462.8375 (unpaired)
461/466.04375	461/466.16875	461/466.29375	462/467.8625
461/466.05625	461/466.18125	461/466.30625	462/467.8875
461/466.0625	461/466.1875	461/466.3125	462/467.9125
461/466.06875	461/466.19375	461/466.31875	464/469.48125
461/466.08125	461/466.20625	461/466.33125	464/469.4875
461/466.0875	461/466.2125	461/466.3375	464/469.5125
461/466.09375	461/466.21875	461/466.34375	464/469.51875
461/466.10625	461/466.23125	461/466.35625	464/469.53125
461/466.1125	461/466.2375	461/466.3625	464/469.5375
461/466.11875	461/466.24375	461/466.36875	464/469.5625
461/466.13125	461/466.25625	462.7625 (unpaired)	464/469.56875
461/466.1375	461/466.2625	462.7875 (unpaired)	
461/466.14375	461/466.26875	462.8125 (unpaired)	

(f) *Group D Frequencies.* The Industrial/Business Pool frequencies in Group D are available for central station alarm operations on a coordinated basis, pursuant to §§ 90.35(b)(2) and 90.175(b).

(1) Base, mobile or operational fixed stations will be authorized on Group D frequencies. Fixed stations may be licensed as mobile.

(2) Group D frequencies subject to § 90.35(c)(63) are limited to central station alarm use within the urban areas described in § 90.35(c)(63). Outside the urban areas described in § 90.35(c)(63), Group D frequencies subject to § 90.35(c)(63) are available for general Industrial/Business use on a coordinated basis, pursuant to §§ 90.35(b)(2) and 90.175(b).

(3) Group D frequencies subject to § 90.35(c)(66) are limited to central station alarm use nationwide.

(4) Operation on Group D frequencies is limited to 2 watts output power for mobile, base or operational fixed stations. Fixed stations used for central station alarm operations may utilize

antennas mounted not more than 7 meters (20 feet) above a man-made supporting structure, including antenna structure.

(5) The Industrial/Business Pool Group D Low Power Frequencies are as follows:

460/465.90625	460/465.95625	461/466.00625
460/465.9125	460/465.9625	461/466.0125
460/466.91875	460/465.96875	461/466.01875
460/465.93125	460/465.98125	
460/465.9375	460/465.9875	
460/465.94375	460/465.99375	

(g) *Low Power Public Safety Frequencies.* The frequencies in the Public Safety Pool Low Power Group are available nationwide on a coordinated basis, pursuant to §§ 90.20(c)(2) and 90.175(b).

(1) Base, mobile or operational fixed stations will be authorized on Public Safety Low Power frequencies. Fixed stations may be licensed as mobile.

(2) Operation on these frequencies is limited to 6 watts effective radiated power for base, mobile or operational fixed stations and 2 watts ERP for portable units. A maximum antenna height of 7 meters (20 feet) above ground is authorized for fixed stations.

(3) The Public Safety Pool Low Power Frequencies are as follows:

453/458.03125	453/458.13125	453/458.95625	460/465.53125
453/458.0375	453/458.1375	453/458.9625	460/465.5375
453/458.04375	453/458.14375	453/458.96875	460/465.54375
453/458.05625	453/458.88125	453/458.98125	460/465.55625
453/458.0625	453/458.8875	453/458.9875	460/465.5625
453/458.06875	453/458.89375	453/458.99375	460/465.56875
453/458.08125	453/458.90625	460/465.48125	
453/458.0875	453/458.9125	460/465.4875	
453/458.09375	453/458.91875	460/465.49375	
453/458.10625	453/458.93125	460/465.50625	
453/458.1125	453/458.9375	460/465.5125	
453/458.11875	453/458.94375	460/465.51875	

(h) Unless otherwise noted, the following conditions apply to all low power frequencies:

(1) Except for itinerant operations on Group C, wide area operations will not be authorized. The area of normal day-to-day operations will be described in the application in terms of maximum distance from a geographic center (latitude and longitude).

(2) A hospital or health care institution holding a license to operate a radio station under this part may operate a medical radio telemetry device with an output power not to exceed 20 milliwatts without specific authorization from the Commission. All licensees operating under this authority must comply with the requirements and limitations set forth in this section.

(3) No limit shall be placed on the length or height above ground level of any commercially manufactured radiating transmission line when the transmission line is terminated in a non-radiating load and is routed at least 7 meters (20 feet) interior to the edge of any structure or is routed below ground level.

(4) Sea-based stations may utilize antennas mounted not more than 7 meters (20 feet) above a man-made supporting structure, including antenna structures.

(5) Continuous carrier operations are prohibited on these frequencies.

(6) Unless specified elsewhere in this part, licensees as of August 5, 1999, licensed for operations with an emission designator wider than 11.25 kHz on low power frequencies that are subject to

an authorized bandwidth of 11.25 kHz, may obtain primary status with respect to co-channel licensees by supplying their coordinates to the Commission. These licensees will continue to operate on a secondary basis with respect to adjacent channel licensees. Additionally, these licensees may continue to operate with an authorized bandwidth wider than 11.25 kHz on such low power frequencies, subject to the provisions of § 90.209(b) of this chapter.

(7) Unless specified elsewhere in this part, licensees as of August 5, 1999, licensed for operations with an emission designator wider than 11.25 kHz on frequencies that are subject to an authorized bandwidth of 11.25 kHz, which are not low power frequencies, may obtain primary status with respect to co-channel licensees by modifying their license to low power frequencies, supplying their coordinates to the Commission, and otherwise complying with the conditions of paragraphs (b) through (g) of this section. These licensees will continue to operate on a secondary basis with respect to adjacent channel licensees. Additionally, these licensees may continue to operate with an authorized bandwidth wider than 11.25 kHz on such low power frequencies, subject to the provisions of § 90.209(b) of this chapter.

(8) Applicants proposing to operate with an authorized bandwidth wider than 11.25 kHz, on low power frequencies that are subject to an authorized bandwidth of 11.25 kHz, may be licensed on a secondary, non-interference basis. Such applicants are subject to the conditions of paragraphs (b) through (g) of this section and the provisions of § 90.209(b) of this chapter.

[68 FR 19461, Apr. 21, 2003; 68 FR 55319, Sept. 25, 2003, as amended at 69 FR 4254, Jan. 29, 2004; 75 FR 19284, Apr. 14, 2010]

§ 90.269 Use of frequencies for self-powered vehicle detectors.

(a) Frequencies subject to § 90.20(d)(22) may be used for the operation of self-powered vehicle detectors by licensees of base/mobile stations in the Public Safety Pool in accordance with the following conditions:

(1) All stations are limited to 100 milliwatts carrier power and 20K00F7W, 20K00F7X, 20K00F8W, 20K00F8X, 20K00F9W or 20K00F9X emissions. The frequency deviation shall not exceed 5 kHz. No more than two 30 ms. pulses may be emitted for each vehicle sensed.

(2) The transmitters must be crystal controlled with a frequency tolerance of plus or minus .005% from −20° to plus 50 °C. They must be certificated.

(3) The total length of the transmission line plus antenna may not exceed one-half wavelength and must be integral with the unit.

(4) All operation shall be on a secondary, non-interference basis.

(b) [Reserved]

[48 FR 54982, Dec. 8, 1983, as amended at 54 FR 38681, Sept. 20, 1989; 62 FR 18929, Apr. 17, 1997; 63 FR 36610, July 7, 1998]

§ 90.273 Availability and use of frequencies in the 421–430 MHz band.

The frequency bands 422.1875–425.4875 MHz and 427.1875–429.9875 MHz are available for use in the Detroit, Michigan and Cleveland, Ohio areas. The bands 423.8125–425.4875 MHz and 428.8125–429.9875 MHz are available for use in the Buffalo, New York area. Sections 90.273 through 90.281 address the specific rules applicable to these bands. Use of these bands is also subject to the general technical standards and application procedures contained in other subparts of part 90. The technical standards applicable in this band are the same as those contained in subpart I of part 90 for the 450–470 MHz band. Private land mobile use of these frequencies is subject to accepting any interference from Federal Government radiolocation operations.

(a) The following tables list frequencies available for assignment in the Public Safety and Industrial/Business Pools as indicated. In the tables, the Public Safety Pool frequencies are denoted as ''PS'' and the Industrial/Business Pool frequencies are denoted as ''IB.'' The frequencies 422.19375 MHz through 424.99375 MHz are paired with frequencies 427.19375 MHz through 429.99375 MHz, respectively. Only the lower half of each frequency pair, available for base station operation, is listed in the tables. Corresponding mobile and control station frequencies are 5 MHz higher than the base station frequency. The frequencies 425.000 through

425.48125 are unpaired and are available for either single frequency dispatch or paging operations.

TABLE 1—CHANNELS AVAILABLE IN DETROIT AND CLEVELAND AREAS ONLY

Frequency (MHz)	Pool in which assigned
Paired channels:	
422.19375*	IB
422.200	IB
422.20625*	IB
422.21250	IB
422.21875*	IB
422.225	IB
422.23125*	IB
422.23750	IB
422.24375*	IB
422.250	IB
422.25625*	IB
422.26250	IB
422.26875*	IB
422.275	IB
422.28125*	IB
422.28750	IB
422.29375*	IB
422.300	IB
422.30625*	IB
422.31250	IB
422.31875*	IB
422.325	IB
422.33125*	IB
422.33750	IB
422.34375*	IB
422.350	IB
422.35625*	IB
422.36250	IB
422.36875*	IB
422.375	IB
422.38125*	IB
422.38750	IB
422.39375*	IB
422.400	IB
422.40625*	IB
422.41250	IB
422.41875*	IB
422.425	IB
422.43125*	IB
422.43750	IB
422.44375*	IB
422.450	IB
422.45625*	IB
422.46250	IB
422.46875*	IB
422.475	IB
422.48125*	IB
422.48750	IB
422.49375*	IB
422.500	IB
422.50625*	IB
422.51250	IB
422.51875*	IB
422.525	IB
422.53125*	IB
422.53750	IB
422.54375*	IB
422.550	IB
422.55625*	IB
422.56250	IB
422.56875*	IB
422.575	IB
422.58125*	IB
422.58750	IB

TABLE 1—CHANNELS AVAILABLE IN DETROIT AND CLEVELAND AREAS ONLY—Continued

Frequency (MHz)	Pool in which assigned
422.59375*	IB
422.600	IB
422.60625*	IB
422.61250	IB
422.61875*	IB
422.625	IB
422.63125*	IB
422.63750	IB
422.64375*	IB
422.650	IB
422.65625*	IB
422.66250	IB
422.66875*	IB
422.675	IB
422.68125*	IB
422.68750	IB
422.69375*	IB
422.700	IB
422.70625*	IB
422.71250	IB
422.71875*	IB
422.725	IB
422.73125*	IB
422.73750	IB
422.74375*	IB
422.750	IB
422.75625*	IB
422.76250	IB
422.76875*	IB
422.775	IB
422.78125*	IB
422.78750	IB
422.79375*	IB
422.800	IB
422.80625*	IB
422.81250	IB
422.81875*	IB
422.825	IB
422.83125*	IB
422.83750	IB
422.84375*	IB
422.850	IB
422.85625*	IB
422.86250	IB
422.86875*	IB
422.875	IB
422.88125*	IB
422.88750	IB
422.89375*	IB
422.900	IB
422.90625*	IB
422.91250	IB
422.91875*	IB
422.925	IB
422.93125*	IB
422.93750	IB
422.94375*	IB
422.950	IB
422.95625*	IB
422.96250	IB
422.96875*	IB
422.975	IB
422.98125*	IB
422.98750	IB
422.99375*	IB
423.000	PS
423.00625*	PS
423.01250	PS
423.01875*	PS
423.025	PS

TABLE 1—CHANNELS AVAILABLE IN DETROIT AND CLEVELAND AREAS ONLY—Continued

Frequency (MHz)	Pool in which assigned
423.03125*	PS
423.03750	PS
423.04375*	PS
423.050	PS
423.05625*	PS
423.06250	PS
423.06875*	PS
423.075	PS
423.08125*	PS
423.08750	PS
423.09375*	PS
423.100	PS
423.10625*	PS
423.11250	PS
423.11875*	PS
423.125	PS
423.13125*	PS
423.13750	PS
423.14375*	PS
423.150	PS
423.15625*	PS
423.16250	PS
423.16875*	PS
423.175	PS
423.18125*	PS
423.18750	PS
423.19375*	PS
423.200	PS
423.20625*	PS
423.21250	PS
423.21875*	PS
423.225	PS
423.23125*	PS
423.23750	PS
423.24375*	PS
423.250	PS
423.25625*	PS
423.26250	PS
423.26875*	PS
423.275	PS
423.28125*	PS
423.28750	PS
423.29375*	PS
423.300	PS
423.30625*	PS
423.31250	PS
423.31875*	PS
423.325	PS
423.33125*	PS
423.33750	PS
423.34375*	PS
423.350	PS
423.35625*	PS
423.36250	PS
423.36875*	PS
423.375	PS
423.38125*	PS
423.38750	PS
423.39375*	PS
423.400	PS
423.40625*	PS
423.41250	PS
423.41875*	PS
423.425	PS
423.43125*	PS
423.43750	PS
423.44375*	PS
423.450	PS
423.45625*	PS
423.46250	PS

TABLE 1—CHANNELS AVAILABLE IN DETROIT AND CLEVELAND AREAS ONLY—Continued

Frequency (MHz)	Pool in which assigned
423.46875*	PS
423.475	PS
423.48125*	PS
423.48750	PS
423.49375*	PS
423.500	PS
423.50625*	PS
423.51250	PS
423.51875*	PS
423.525	PS
423.53125*	PS
423.53750	PS
423.54375*	PS
423.550	PS
423.55625*	PS
423.56250	PS
423.56875*	PS
423.575	PS
423.58125*	PS
423.58750	PS
423.59375*	PS
423.600	PS
423.60625*	PS
423.61250	PS
423.61875*	PS
423.625	PS
423.63125*	PS
423.63750	PS
423.64375*	PS
423.650	PS
423.65625*	PS
423.66250	PS
423.66875*	PS
423.675	PS
423.68125*	PS
423.68750	PS
423.69375*	PS
423.700	PS
423.70625*	PS
423.71250	PS
423.71875*	PS
423.725	PS
423.73125*	PS
423.73750	PS
423.74375*	PS
423.750	PS
423.75625*	PS
423.76250	PS
423.76875*	PS
423.775	PS
423.78125*	PS
423.78750	PS
423.79375*	PS
423.800	PS
423.80625*	PS

*This frequency will be assigned with an authorized bandwidth not to exceed 6 kHz.

TABLE 2—CHANNELS AVAILABLE IN BUFFALO, DETROIT AND CLEVELAND AREAS

Frequency (MHz)	Pool in which assigned
Paired channels:	
423.81875*	PS
423.825	PS
423.83125*	PS
423.83750	PS

TABLE 2—CHANNELS AVAILABLE IN BUFFALO, DETROIT AND CLEVELAND AREAS—Continued

Frequency (MHz)	Pool in which assigned
423.84375*	PS
423.850	PS
423.85625*	PS
423.86250	PS
423.86875*	PS
423.875	PS
423.88125*	PS
423.88750	PS
423.89375*	PS
423.900	PS
423.90625*	PS
423.91250	PS
423.91875*	PS
423.925	PS
423.93125*	PS
423.93750	PS
423.94375*	PS
423.950	PS
423.95625*	PS
423.96250	PS
423.96875*	PS
423.975	PS
423.98125*	PS
423.98750	PS
423.99375*	PS
424.000	PS
424.00625*	PS
424.01250	PS
424.01875*	PS
424.025	PS
424.03125*	PS
424.03750	PS
424.04375*	PS
424.050	PS
424.05625*	PS
424.06250	PS
424.06875*	PS
424.075	PS
424.08125*	PS
424.08750	PS
424.09375*	PS
424.100	PS
424.10625*	PS
424.11250	PS
424.11875*	PS
424.125	PS
424.13125*	PS
424.13750	PS
424.14375*	PS
424.150	PS
424.15625*	PS
424.16250	PS
424.16875*	PS
424.175	PS
424.18125*	PS
424.18750	PS
424.19375*	PS
424.200	PS
424.20625*	PS
424.21250	PS
424.21875*	PS
424.225	PS
424.23125*	PS
424.23750	PS
424.24375*	PS
424.250	PS
424.25625*	PS
424.26250	PS
424.26875*	PS
424.275	PS

TABLE 2—CHANNELS AVAILABLE IN BUFFALO, DETROIT AND CLEVELAND AREAS—Continued

Frequency (MHz)	Pool in which assigned
424.28125*	PS
424.28750	PS
424.29375*	PS
424.300	PS
424.30625*	PS
424.31250	PS
424.31875*	PS
424.325	PS
424.33125*	PS
424.33750	PS
424.34375*	PS
424.350	PS
424.35625*	PS
424.36250	PS
424.36875*	PS
424.375	PS
424.38125*	PS
424.38750	PS
424.39375*	PS
424.400	IB
424.40625*	IB
424.41250	IB
424.41875*	IB
424.425	IB
424.43125*	IB
424.43750	IB
424.44375*	IB
424.450	IB
424.45625*	IB
424.46250	IB
424.46875*	IB
424.475	IB
424.48125*	IB
424.48750	IB
424.49375*	IB
424.500	IB
424.50625*	IB
424.51250	IB
424.51875*	IB
424.525	IB
424.53125*	IB
424.53750	IB
424.54375*	IB
424.550	IB
424.55625*	IB
424.56250	IB
424.56875*	IB
424.575	IB
424.58125*	IB
424.58750	IB
424.59375*	IB
424.600	IB
424.60625*	IB
424.61250	IB
424.61875*	IB
424.625	IB
424.63125*	IB
424.63750	IB
424.64375*	IB
424.650	IB
424.65625*	IB
424.66250	IB
424.66875*	IB
424.675	IB
424.68125*	IB
424.68750	IB
424.69375*	IB
424.700	IB
424.70625*	IB
424.71250	IB

TABLE 2—CHANNELS AVAILABLE IN BUFFALO, DETROIT AND CLEVELAND AREAS—Continued

Frequency (MHz)	Pool in which assigned
424.71875*	IB
424.725	IB
424.73125*	IB
424.73750	IB
424.74375*	IB
424.750	IB
424.75625*	IB
424.76250	IB
424.76875*	IB
424.775	IB
424.78125*	IB
424.78750	IB
424.79375*	IB
424.800	IB
424.80625*	IB
424.81250	IB
424.81875*	IB
424.825	IB
424.83125*	IB
424.83750	IB
424.84375*	IB
424.850	IB
424.85625*	IB
424.86250	IB
424.86875*	IB
424.875	IB
424.88125*	IB
424.88750	IB
424.89375*	IB
424.900	IB
424.90625*	IB
424.91250	IB
424.91875*	IB
424.925	IB
424.93125*	IB
424.93750	IB
424.94375*	IB
424.950	IB
424.95625*	IB
424.96250	IB
424.96875*	IB
424.975	IB
424.98125*	IB
424.98750	IB
424.99375*	IB
Single channels:	
425.000	IB
425.00625*	IB
425.01250	IB
425.01875*	IB
425.025	IB
425.03125*	IB
425.03750	IB
425.04375*	IB
425.050	IB
425.05625*	IB
425.06250	IB
425.06875*	IB
425.075	IB
425.08125*	IB
425.08750	IB
425.09375*	IB
425.100	IB
425.10625*	IB
425.11250	IB
425.11875*	IB
425.125	IB
425.13125*	IB
425.13750	IB
425.14375*	IB

TABLE 2—CHANNELS AVAILABLE IN BUFFALO, DETROIT AND CLEVELAND AREAS—Continued

Frequency (MHz)	Pool in which assigned
425.150	IB
425.15625*	IB
425.16250	IB
425.16875*	IB
425.175	IB
425.18125*	IB
425.18750	IB
425.19375*	IB
425.200	IB
425.20625*	IB
425.21250	IB
425.21875*	IB
425.225	IB
425.23125*	IB
425.23750	IB
425.24375*	IB
425.250	PS
425.25625*	PS
425.26250	PS
425.26875*	PS
425.275	PS
425.28125*	PS
425.28750	PS
425.29375*	PS
425.300	PS
425.30625*	PS
425.31250	PS
425.31875*	PS
425.325	PS
425.33125*	PS
425.33750	PS
425.34375*	PS
425.350	PS
425.35625*	PS
425.36250	PS
425.36875*	PS
425.375	PS
425.38125*	PS
425.38750	PS
425.39375*	PS
425.400	PS
425.40625*	PS
425.41250	PS
425.41875*	PS
425.425	PS
425.43125*	PS
425.43750	PS
425.44375*	PS
425.450	PS
425.45625*	PS
425.46250	PS
425.46875*	PS
425.475	PS
425.48125*	PS

*This frequency will be assigned with an authorized bandwidth not to exceed 6 kHz.

(b) [Reserved]

(c) Base or control stations shall be located within 48 km (30 miles) of the center of Buffalo or 80 km (50 miles) of the center of Detroit. In Cleveland, base or control stations will be allowed at locations north of line A that are within 48 km (30 miles) of the city center. In addition, low power (2 watts or less) base stations may locate within 80

km (50 miles) of the center of Buffalo. The following coordinates shall be used for the centers of these areas (coordinates are referenced to North American Datum 1983 (NAD83)):

Buffalo, NY.	42°52′52.2″ North latitude. 78°52′20.1″ West longitude.
Cleveland, OH.	41°29′51.2″ North latitude. 81°41′49.5″ West longitude.
Detroit, MI.	42°19′48.1″ North latitude. 83°02′56.7″ West longitude.

(d) Mobile operation shall be confined to within 80 km (50 miles) of the centers of Detroit, Cleveland, or Buffalo.

[52 FR 6156, Mar. 2, 1987, as amended at 54 FR 38681, Sept. 20, 1989; 58 FR 31476, June 3, 1993; 58 FR 44957, Aug. 25, 1993; 60 FR 37269, July 19, 1995; 61 FR 6576, Feb. 21, 1996; 62 FR 18929, Apr. 17, 1997; 63 FR 68965, Dec. 14, 1998]

§ 90.275 Selection and assignment of frequencies in the 421–430 MHz band.

Applicants must specify the frequencies in which the proposed system will operate pursuant to a recommendation by a frequency coordinator certified for the pool in which the requested frequency is assigned.

[62 FR 18932, Apr. 17, 1997]

§ 90.279 Power limitations applicable to the 421–430 MHz band.

(a) Base station authorizations in the 421–430 MHz band will be subject to Effective Radiated Power (ERP) and Effective Antenna Height (EAH) limitations as shown in the table below. ERP is defined as the product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction. EAH is calculated by subtracting the Assumed Average Terrain Elevation (AATE) as listed in table 7 of § 90.619 from the antenna height above mean sea level.

LIMITS OF EFFECTIVE RADIATED POWER (ERP) CORRESPONDING TO EFFECTIVE ANTENNA HEIGHTS (EAH) OF BASE STATIONS IN THE 421–430 MHZ BAND

Effective antenna height (EAH) in meters (feet)	Maximum effective radiated power (ERP) (watts)
0–152 (0–500)	250
Above 152–305 (above 500–1000)	150
Above 305–457 (above 1000–1500)	75
Above 457–610 (above 1500–2000)	40
Above 610–762 (above 2000–2500)	20
Above 762–914 (above 2500–3000)	15
Above 914–1219 (above 3000–4000)	10
Above 1219 (above 4000)	5

(b) The maximum transmitter power output that will be authorized for control stations is 20 watts.

[52 FR 6157, Mar. 2, 1987, as amended at 58 FR 44957, Aug. 25, 1993]

§ 90.281 Restrictions on operational fixed stations in the 421–430 MHz band.

(a) Except for control stations, operational fixed facilities will not be authorized in the 421–430 MHz band. This does not preclude secondary fixed tone signaling and alarm operations authorized in § 90.235.

(b) Control stations associated with one or more mobile relay stations will be authorized only on the assigned frequency of the associated mobile station. Use of a mobile service frequency by a control station of a mobile relay system is subject to the condition that harmful interference shall not be caused to stations of licensees authorized to use the frequency for mobile service communications.

[52 FR 6158, Mar. 2, 1987, as amended at 54 FR 38681, Sept. 20, 1989]

§ 90.283 [Reserved]

Subpart L—Authorization in the Band 470–512 MHz (UHF-TV Sharing)

§ 90.301 Scope.

This subpart governs the authorization and use of frequencies by land mobile stations in the band 470–512 MHz on a geographically shared basis with Television Broadcast stations. Under this special sharing plan, different frequencies are allocated depending on the geographic urban area involved as

fully detailed in the following rule sections.

[43 FR 54791, Nov. 22, 1978, as amended at 62 FR 18932, Apr. 17, 1997]

§ 90.303 Availability of frequencies.

(a) Frequencies in the band 470–512 MHz are available for assignment as described below. Note: coordinates are referenced to the North American Datum 1983 (NAD83).

(b) The following table lists frequency bands that are available for assignment in specific urban areas. The available frequencies are listed in § 90.311 of this part.

Urbanized area	Geographic center		Bands (MHz)	TV channels
	North latitude	West longitude		
Boston, MA	42°21′24.4″	71°03′23.2″	470–476, 482–488	14, 16
Chicago, IL [1]	41°52′28.1″	87°38′22.2″	470–476, 476–482	14, 15
Cleveland, OH [2]	41°29′51.2″	81°49′49.5″	470–476, 476–482	14, 15
Dallas/Fort Worth, TX	32°47′09.5″	96°47′38.0″	482–488	16
Detroit, MI [3]	42°19′48.1″	83°02′56.7″	476–482, 482–488	15, 16
Houston, TX	29°45′26.8″	95°21′37.8″	488–494	17
Los Angeles, CA [4]	34°03′15.0″	118°14′31.3″	470–476, 482–488, 506–512	14, 16, 20
Miami, FL	25°46′38.4″	80°11′31.2″	470–476	14
New York, NY/NE NJ	40°45′06.4″	73°59′37.5″	470–476, 476–482, 482–488	14, 15, 16
Philadelphia, PA	39°56′58.4″	75°09′19.6″	500–506, 506–512	19, 20
Pittsburgh, PA	40°26′19.2″	79°59′59.2″	470–476, 494–500	14, 18
San Francisco/Oakland, CA	37°46′38.7″	122°24′43.9″	482–488, 488–494	16, 17
Washington, DC/MD/VA	38°53′51.4″	77°00′31.9″	488–494, 494–500	17, 18

[1] In the Chicago, IL, urbanized area, channel 15 frequencies may be used for paging operations in addition to low power base/mobile usages, where applicable protection requirements for ultrahigh frequency television stations are met.
[2] Channels 14 and 15 are not available in Cleveland, OH, until further order from the Commission.
[3] Channels 15 and 16 are not available in Detroit, MI, until further order from the Commission.
[4] Channel 16 is available in Los Angeles, CA, for use by eligibles in the Public Safety Radio Pool.

(c) The band 482–488 MHz (TV Channel 16) is available for use by eligibles in the Public Safety Radio Pool in the following areas: New York City; Nassau, Suffolk, and Westchester counties in New York State; and Bergen County, New Jersey. All part 90 rules shall apply to said operations, except that:

(1) *Location of stations.* Base stations shall be located in the areas specified in this paragraph (c). Mobile stations may operate throughout the areas specified in this paragraph (c) and may additionally operate in areas not specified in this paragraph (c) provided that the distance from the Empire State Building (40° 44′ 54.4″ N, 73° 59′ 8.4″ W) does not exceed 48 kilometers (30 miles).

(2) *Protection criteria.* In order to provide co-channel television protection, the following height and power restrictions are required:

(i) Except as specified in paragraph (c)(2)(ii) of this section, base stations shall be limited to a maximum effective radiated power (ERP) of 225 watts at an antenna height of 152.5 meters (500 feet) above average terrain (AAT). Adjustment of the permitted power will be allowed provided it is in accordance with the ''169 kilometer Distance Separation'' entries specified in Table B in 47 CFR 90.309(a) or the ''LM/TV Separation 110 miles (177 km)'' curve in Figure B in 47 CFR 90.309(b).

(ii) For base stations located west of the Hudson River, Kill Van Kull, and Arthur Kill, the maximum ERP and antenna height shall be limited to the entries specified in Table B in 47 CFR 90.309(a) or in Figure B in 47 CFR 90.309(b) for the actual separation distance between the base station and the transmitter site of WNEP-TV in Scranton, PA (41° 10′ 58.0″ N, 75° 52′ 20.0″ W).

(iii) Mobile stations shall be limited to 100 watts ERP in areas of operation extending eastward from the Hudson River and to 10 watts ERP in areas of operation extending westward from the Hudson River.

[69 FR 31907, June 8, 2004, as amended 72 FR 35196, June 27, 2007]

§ 90.305 Location of stations.

(a) The transmitter site(s) for base station(s), including mobile relay stations, shall be located not more than 80 km. (50 mi.) from the geographic center of the urbanized area listed in § 90.303.

(b) Mobile units shall be operated within 48 km. (30 mi.) of their associated base station or stations. Such units may not be operated aboard aircraft in flight except as provided for in § 90.315(i).

(c) Control stations must be located within the area of operation of the mobile units.

(d) Base and control stations shall be located a minimum of 1.6 km. (1 mi.) from local television stations operating on UHF TV channels separated by 2, 3, 4, 5, 7, and 8 TV channels from the television channel in which the base station will operate.

§ 90.307 Protection criteria.

The tables and figures listed in § 90.309 shall be used to determine the effective radiated power (ERP) and antenna height of the proposed land mobile base station and the ERP for the associated control station (control station antenna height shall not exceed 31 meters (100 feet) above average terrain (AAT)).

(a) Base stations operating on the frequencies available for land mobile use in any urbanized area and having an antenna height (AAT) less than 152 meters (500 feet) shall afford protection to co-channel and adjacent channel television stations in accordance with the values set out in tables A and E of § 90.309, except for channel 15 in New York, NY, and Cleveland, OH, and channel 16 in Detroit, MI, where protection will be in accordance with the values set forth in tables B and E in 47 CFR 90.309.

(b) For base stations having antenna heights between 152 and 914 meters (500–3000 feet) above average terrain, the effective radiated power must be reduced below 1 kilowatt in accordance with the values shown in the power reduction graph in Figure A in § 90.309, except for channel 15 in New York, NY, and Cleveland, OH, and channel 16 in Detroit, MI, where the effective radiated power must be reduced in accordance with Figure B in § 90.309. For heights of more than 152 meters (500 feet) above average terrain, the distance to the radio path horizon will be calculated assuming smooth earth. If the distance so determined equals or exceeds the distance to the Grade B contour of a co-channel TV station (Grade B contour defined in § 73.683(a) of this chapter), an authorization will not be granted unless it can be shown that actual terrain considerations are such as to provide the desired protection at the Grade B contour, or that the effective radiated power will be further reduced so that, assuming free space attenuation, the desired protection at the Grade B contour will be achieved.

(c) Mobile units and control stations operating on the frequencies available for land mobile use in any given urbanized area shall afford protection to co-channel and adjacent channel television stations in accordance with the values set forth in table C in § 90.309 and paragraph (d) of this section except for channel 15 in New York, NY, and Cleveland, OH, and channel 16 in Detroit, MI, where protection will be in accordance with the values set forth in table D in § 90.309 and paragraph (d) of this section.

(d) The minimum distance between a land mobile base station which has associated mobile units and a protected adjacent channel television station is 145 km (90 miles).

(e) The television stations to be protected (co-channel, adjacent channel, IM, and IF) in any given urbanized area, in accordance with the provisions of paragraphs (a), (b), (c), and (d) of this section, are identified in the Commission's publication ''TV stations to be considered in the preparation of Applications for Land Mobile Facilities in the Band 470–512 MHz.'' The publication is available at the offices of the Federal Communications Commission in Washington, DC or upon the request of interested persons.

[72 FR 35197, June 27, 2007]

§ 90.309 Tables and figures.

(a) *Directions for using the tables.* (1) Using the method specified in § 1.958 of this chapter, determine the distances between the proposed land mobile base station and the protected co-channel

television station and between the proposed land mobile base station and the protected adjacent channel television station. If the exact mileage does not appear in table A for protected co-channel television stations (or table B for channel 15 in New York and Cleveland and channel 16 in Detroit) or table E for protected adjacent channel television stations, the next lower mileage separation figure is to be used.

(2) Entering the proper table at the mileage figure found in paragraph (a)(1) of this section, find opposite, a selection of powers that may be used for antenna heights ranging from 15 m (50 ft) to 152.5 m (500 ft) (AAT). If the exact antenna height proposed for the land mobile base station does not appear in the proper table, use the power figure beneath the next greater antenna height.

(3) The lowest power found using the tables mentioned in paragraphs (a)(1) and (a)(2) of this section is the maximum power that may be employed by the proposed land mobile base station.

(4) In determining the average elevation of the terrain, the elevations between 3.2 kilometers (2 miles) and 16 kilometers (10 miles) from the antenna site are employed. Profile graphs shall be drawn for a minimum of eight radials beginning at the antenna site and extending 16 kilometers (10 miles). The radials should be drawn starting with true north. At least one radial should be constructed in the direction of the nearest co-channel and adjacent channel UHF television stations. The profile graph for each radial shall be plotted by contour intervals of from 12.2 meters (40 feet) to 30.5 meters (100 feet) and, where the data permits, at least 50 points of elevation (generally uniformly spaced) should be used for each radial. For very rugged terrain, 61 meters (200 feet) to 122 meters (400 foot) contour intervals may be used. Where the terrain is uniform or gently sloping, the smallest contour interval indicated on the topographic chart may be used. The average elevation of the 12.8 kilometer (8 mile) distance between 3.2 kilometers (2 miles) and 16 kilometers (10 miles) from the antenna site should be determined from the profile graph for each radial. This may be obtained by averaging a large number of equally spaced points, by using a planimeter, or by obtaining the median elevation (that exceeded by 50 percent of the distance) in sectors and averaging those values. In the preparation of the profile graphs, the elevation or contour intervals may be taken from U.S. Geological Survey Topographic Maps, U.S. Army Corps of Engineers Maps, or Tennessee Valley Authority Maps. Maps with a scale of 1:250,000 or larger (such as 1:24,000) shall be used. Digital Terrain Data Tapes, provided by the National Cartographic Institute, U.S. Geologic Survey, may be utilized in lieu of maps, but the number of data points must be equal to or exceed that specified above. If such maps are not published for the area in question, the next best topographic information should be used.

(5) Applicants for base stations in the Miami, FL, urbanized area may, in lieu of calculating the height of average terrain, use 3 m (10 ft) as the average terrain height.

TABLE A—BASE STATION—COCHANNEL FREQUENCIES (50 dB PROTECTION) MAXIMUM EFFECTIVE RADIATED POWER (ERP) [1]

Distance in kilometers (miles): [2]	Antenna height in meters (feet) (AAT)									
	15 (50)	30.5 (100)	45 (150)	61 (200)	76 (250)	91.5 (300)	106 (350)	122 (400)	137 (450)	152.5 (500)
260 (162)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
257 (160)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	800
249 (155)	1,000	1,000	1,000	1,000	1,000	875	775	700	625	575
241 (150)	1,000	1,000	950	775	725	625	550	500	450	400
233 (145)	850	750	650	575	500	440	400	350	320	300
225 (140)	600	575	475	400	350	300	275	250	230	225
217 (135)	450	400	335	300	255	240	200	185	165	150
209 (130)	350	300	245	200	185	160	145	125	120	100
201 (125)	225	200	170	150	125	110	100	90	80	75
193 (120)	175	150	125	105	90	80	70	60	55	50

[1] The effective radiated power (ERP) and antenna height above average terrain (AAT) shall not exceed the values given in this table.

[2] At this distance from transmitter site of protected UHF television station.

TABLE B—BASE STATION—COCHANNEL FREQUENCIES (40 dB PROTECTION) MAXIMUM EFFECTIVE RADIATED POWER (ERP) [1]

Distance in kilometers (miles): [2]	Antenna height in meters (feet) (AAT)									
	15 (50)	30.5 (100)	45 (150)	61 (200)	76 (250)	91.5 (300)	106 (350)	122 (400)	137 (450)	152.5 (500)
209 (130)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
201 (125)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	850	750	725
193 (120)	1,000	1,000	1,000	1,000	900	750	675	600	550	500
185 (115)	1,100	1,000	800	725	600	525	475	425	375	350
177 (110)	850	700	600	500	425	375	325	300	275	225
169 (105)	600	475	400	325	275	250	225	200	175	150
161 (100)	400	325	275	225	175	150	140	125	110	100
153 (95)	275	225	175	125	110	95	80	70	60	50
145 (90)	175	125	100	75	50	.....	.....	.....	.....	

[1] The effective radiated power (ERP) and antenna height above average terrain shall not exceed the values given in this table.
[2] At this distance from the transmitter site of protected UHF television station.

TABLE C—MOBILE AND CONTROL STATION—DISTANCE BETWEEN ASSOCIATED BASE STATION AND PROTECTED COCHANNEL TV STATION

[50 dB protection]

Effective radiated power (watts) of mobile unit and control station	Distance	
	Kilometers	Miles
200	249	155
150	243	151
100	233	145
50	217	135
25	201	125
10	188	117
5	180	112

TABLE D—MOBILE AND CONTROL STATION—DISTANCE BETWEEN ASSOCIATED LAND MOBILE BASE STATION AND PROTECTED COCHANNEL TV STATION

[40 dB protection]

Effective radiated power (watts) of mobile unit and control station	Distance	
	Kilometers	Miles
200	209	130
150	201	125
100	193	120
50	185	115
25	177	110
10	169	105
5	161	100

TABLE E—BASE STATION ADJACENT CHANNEL FREQUENCIES MAXIMUM EFFECTIVE RADIATED POWER (ERP) [1]

Distance in kilometers (miles): [2 3]	Antenna height in meters (feet) (AAT)									
	15 (50)	30.5 (100)	45 (150)	61 (200)	76 (250)	91.5 (300)	106 (350)	122 (400)	137 (450)	152.5 (500)
108 (67)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
106 (66)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	750
104 (65)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	825	650	600
103 (64)	1,000	1,000	1,000	1,000	1,000	1,000	775	625	500	400
101 (63)	1,000	1,000	1,000	1,000	1,000	650	450	325	325	225
99 (62)	1,000	1,000	1,000	1,000	525	375	250	200	150	125
98 (61)	1,000	1,000	700	450	250	200	125	100	75	50
96 (60)	1,000	1,000	425	225	125	100	75	50		

[1] The effective radiated power (ERP) and antenna height above average terrain (AAT) shall not exceed the values given in this table.
[2] At this distance from transmitter site of protected UHF television station.
[3] The minimum distance is 145 km (90 miles) where there are mobile units associated with the base station. See sec. 90.307(d).

TABLE "F"—DECIBEL REDUCTION/POWER EQUIVALENTS

dB reduction below 1 kW	ERP permitted (figures rounded)
1	795
2	630
3	500
4	400

TABLE "F"—DECIBEL REDUCTION/POWER EQUIVALENTS—Continued

dB reduction below 1 kW	ERP permitted (figures rounded)
5	315
6	250
7	200
8	160

TABLE "F"—DECIBEL REDUCTION/POWER EQUIVALENTS—Continued

dB reduction below 1 kW	ERP permitted (figures rounded)
9	125
10	100
11	80
12	65
13	50
14	40
15	30
16	25
17	20
18	15
19	12
20	10
21	8
22	6
23	5
24	4
25	3
26	2.5
27	2
28	1.5
29	1.25
30	1

(b) *Directions for Using the Figures.* (1) Determine antenna height above average terrain. (According to § 90.309(a)(4).)

(2) Locate this value on the antenna height axis.

(3) Determine the separation between the LM antenna site and the nearest protected co-channel TV station. (According to § 73.611.)

(4) Draw a vertical line to intersect the LM/TV separation curve at the distance determined in step 3 above. For distances not shown in the graph use linear interpolation.

(5) From the intersection of the LM/TV separation curve draw a horizontal line to the power reduction scale.

(6) The power reduction in dB determines the reduction below 1 kW that must be achieved.

(7) See table F for dB/power equivalents.

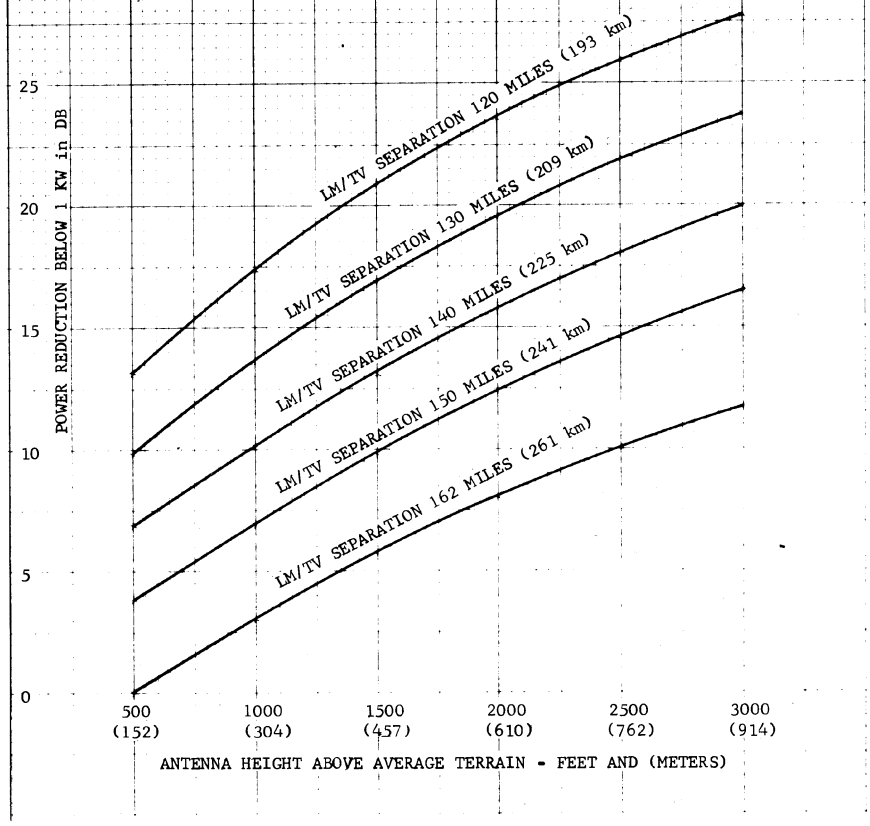
Directions for using this graph:

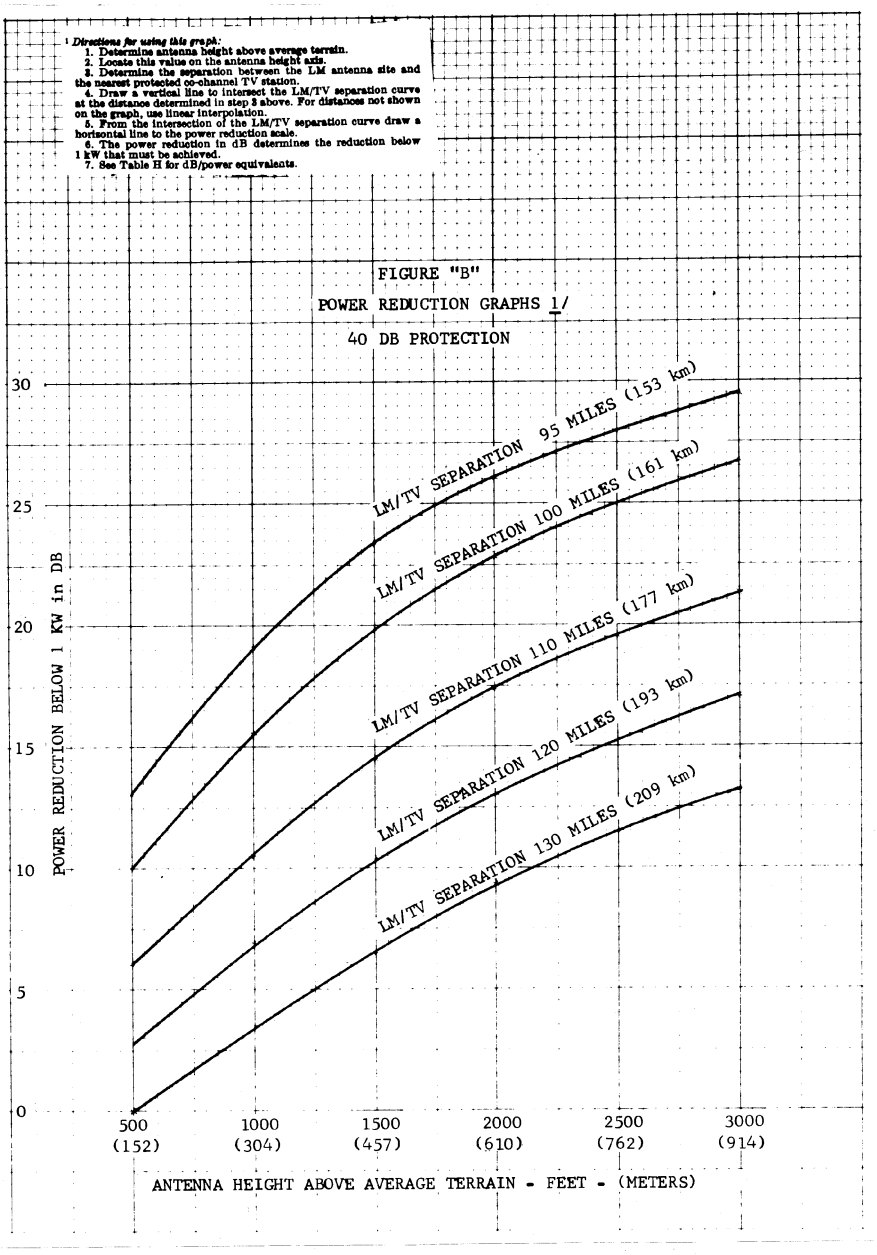
1. Determine antenna height above average terrain.
2. Locate this value on the antenna height axis.
3. Determine the separation between the LM antenna site and the nearest protected co-channel TV station.
4. Draw a vertical line to intersect the LM/TV separation curve at the distance determined in step 3 above. For distances not shown on the graph, use linear interpolation.
5. From the intersection of the LM/TV separation curve draw a horizontal line to the power reduction scale.
6. The power reduction in dB determines the reduction below 1 kW that must be achieved.
7. See Table H for dB/power equivalents.

FIGURE "A"

POWER REDUCTION GRAPHS 1/

50 DB PROTECTION





(Section 0.231(d) of the Commission's Rules and secs. 4(i) and 303 of the Communications Act, as amended)

[43 FR 54791, Nov. 22, 1978, as amended at 49 FR 36107, Sept. 14, 1984; 49 FR 49837, Dec. 17, 1984; 58 FR 44958, Aug. 25, 1993; 70 FR 19312, Apr. 13, 2005; 72 FR 35197, June 27, 2007]

§90.311 Frequencies.

(a) Except as provided for in §90.315 and except for those frequencies allocated to services in part 22 of this chapter (see §§22.591, 22.621, 22.651, and 22.1007 of this chapter) the following frequencies in the band 470–512 MHz may be assigned as indicated in the table below. The first and last assignable frequencies are shown. Assignable frequencies occur in increments of 6.25 kHz. The separation between base and mobile transmit frequencies is 3 MHz for two frequency operation.

Channel Assignment	Urbanized Area	General access pool	
		Base and mobile	Mobile
14	Boston, MA	470.30625 to 472.99375	473.30625 to 475.99375
	Chicago, IL		
	Cleveland, OH		
	Miami, FL		
	New York/N.E. NJ		
	Pittsburgh, PA		
	Los Angeles, CA	470.05625 to 472.99375	473.05625 to 475.99375
15	Chicago, IL	476.30625 to 478.99375	479.30625 to 481.99375
	Cleveland, OH		
	Detroit, MI		
	New York/N.E. NJ		
16	Boston, MA	482.30625 to 484.99375	485.30625 to 487.99375
	Dallas/Fort Worth, TX		
	Detroit, MI		
	San Francisco/Oakland, CA		
	Los Angeles, CA (Use is restricted to Public Safety Pool eligibles).	482.00625 to 484.99375	485.00625 to 487.99375
17	Houston, TX	488.30625 to 490.99375	491.30625 to 493.99375
	San Francisco/Oakland, CA		
	Washington, DC/MD/VA		
18	Pittsburgh, PA	494.30625 to 496.99375	497.30625 to 499.99375
	Washington, DC/MD/VA		
19	Philadelphia, PA	500.30625 to 502.99375	503.30625 to 505.99375
20	Los Angeles, CA	506.13125 to 508.99375	509.13125 to 511.99375
	Philadelphia, PA	506.30625 to 508.99375	509.30625 to 511.99375

(1) Channel availability in the General Access Pool in any of the urbanized areas referred to in the table depends on whether that channel is presently assigned to one of the following categories of users:

(i) Public safety (as defined in §90.20(a));

(ii) Power and telephone maintenance licensees (as defined in §90.7);

(iii) Special industrial licensees (as defined in §90.7);

(iv) Business licensees (as defined in §90.35(a));

(v) Petroleum, forest products, and manufacturers licensees (as defined in §90.7);

(vi) Railroad, motor carrier, and automobile emergency licensees (as defined in §90.7); and

(vii) Taxicab licensees (as defined in §90.7).

(2) If assigned, subsequent authorizations will only be granted to users from the same category. If unassigned, or should a channel subsequently become unassigned, it will be treated as available in the General Access Pool.

(3) Normally, each channel should be substantially loaded in accordance with the standards set out in §90.313.

(4) The following frequencies will be authorized a maximum bandwidth of 6 kHz.

Channel	Frequency
14	470.30625
	475.99375
15	476.30625
	481.99375
16	482.30625
	487.99375
17	488.30625
	493.99375
18	494.30625
	499.99375
19	500.30625
	505.99375
20	506.30625
	511.99375

(b) [Reserved]

[43 FR 54791, Nov. 22, 1978, as amended at 44 FR 49692, Aug. 24, 1979; 51 FR 4362, Feb. 4, 1986; 60 FR 37272, July 19, 1995; 62 FR 2041, Jan. 15, 1997; 62 FR 18932, Apr. 17, 1997; 64 FR 36270, July 6, 1999]

§ 90.313 Frequency loading criteria.

(a) Except as provided for in paragraph (b) of this section, the maximum channel loading on frequencies in the 470–512 MHz band is as follows:

(1) 50 units for systems eligible in the Public Safety Pool (see § 90.20(a)).

(2) 90 units for systems eligible in the Industrial/Business Pool (see § 90.35(a)).

(b) If a licensee has exclusive use of a frequency, then the loading standards in paragraph (a) of this section, may be exceeded. If it is a shared channel, the loading standards can be exceeded upon submission of a signed statement by all those sharing the channel agreeing to the increase.

(c) A unit is defined as a mobile transmitter-receiver. Loading standards will be applied in terms of the number of units actually in use or to be placed in use within 8 months following authorization. A licensee will be required to show that an assigned frequency pair is at full capacity before it may be assigned a second or additional frequency pair. Channel capacity may be reached either by the requirements of a single licensee or by several users sharing a channel. Until a channel is loaded to capacity it will be available for assignment to other users in the same area. A frequency pair may be reassigned at distances 64 km. (40 mi.), 32 km. (20 mi.) for Channel 15, Chicago; Channel 20, Philadelphia; and Channel 17, Washington, or more from the location of base stations authorized on that pair without reference to loading at the point of original installation. Following authorization, the licensee shall notify the Commission either during or at the close of the 8 month period of the number of units in operation. In the Industrial Radio Services, if the base station facility is to be used by more than a single licensee, the frequency assigned to it will not be reassigned for use by another facility within 64 km. (40 mi.) or 32 km. (20 mi.) where applicable for a period of 12 months, *Provided*, That the facility is constructed within 90 days from the date of the first grant, meets the loading standards to at least 50 percent within 9 months, and meets all loading standards within 12 months.

[43 FR 54791, Nov. 22, 1978, as amended at 47 FR 36649, Aug. 23, 1982; 62 FR 18933, Apr. 17, 1997]

§ 90.315 Special provisions governing use of frequencies in the 476–494 MHz band (TV Channels 15, 16, 17) in the Southern Louisiana-Texas Offshore Zone.

(a) The frequency bands from 490–491 and 493–494 MHz will be available for assignment to stations governed by this part within Zone A. The boundaries of Zone A are from longitude 87°45′ on the east to longitude 94°00′ on the west, and from the 3-mile limit along the Gulf of Mexico shoreline on the north to the limit of the Outer Continental Shelf on the south. The frequency bands from 484–485 and 476–488 MHz will be available for assignment to stations governed by this part within Zone B. The boundaries of Zone B are from longitude 87°45′ on the east to longitude 95°00′ on the west and from the 3-mile limit along the Gulf of Mexico shoreline on the north to the limit of the Outer Continental Shelf on the south. The frequency bands from 478–479 and 481–481 MHz will be available for assignment to stations governed by this part within Zone C. The boundaries of Zone C are from longitude 94°00′ on the east, the 3-mile limit on the north and west, a 281 km (175 mile) radius from the reference point at Linares, N.L., Mexico on the southwest, latitude 26°00′ on the south, and the limits of the Outer Continental Shelf on the southeast. These frequencies may also be assigned to fixed stations located on shore designed to provide communications service within the zone.

(b) Offshore base/mobile, and offshore and shore fixed stations may be authorized.

(c) F2, F3, F4, F9, and A2, A3, A4, and A9 emissions may be authorized.

(d) Offshore stations shall afford co-channel protection to TV stations on

Channels 15, 16 and 17. Station operating parameters shall be in accordance with the values given in table 1 of this section.

TABLE 1—PROTECTION OF COCHANNEL TELEVISION STATIONS BY OFFSHORE STATIONS OPERATING IN THE SOUTHERN LOUISIANA-TEXAS OFFSHORE ZONE (65 dB PROTECTION); MAXIMUM EFFECTIVE RADIATED POWER

[In Watts]

Distance from transmitter to cochannel TV station kilometers (miles)	Antenna Height above sea level meters (feet)		
	30.5 (100)	45 (150)	61 (200)
338 (210)	1,000	1,000	1,000
330 (205)	1,000	900	800
322 (200)	800	710	630
314 (195)	590	520	450
306 (190)	450	400	330
298 (185)	320	280	240
290 (180)	250	210	175
281 (175)	175	150	130
274 (170)	130	110	100
265 (165)	95	80	70
257 (160)	65	55	50
249 (155)	50	40	35
241 (150)	35	30	25

NOTE: To determine the maximum permissible effective radiated power:

(1) As specified in § 73.611 determine the distance between the proposed station and the cochannel television station. If the exact distance does not appear in table 1 of this section, the next lower distance separation is to be used.

(2) Opposite this distance figure ERPs are given that may be used for antenna heights of 30.5, 45 or 61 meters (100, 150 or 200 ft) ASL. If the exact antenna height is not shown, the ERP allowed will be that shown for the next higher antenna height.

(e) Shore stations communicating point-to-point with offshore stations will be permitted at least the same ERP as the offshore station, but only in the direction of the offshore station. A directional antenna shall be used and the rearward radiated power from the antenna in a sector ±22½° from the line joining the shore antenna to the cochannel television station shall not exceed those shown in table 2 of this section.

TABLE 2—MAXIMUM REARWARD EFFECTIVE RADIATED POWER ALLOWED FOR SHORE STATIONS; REARWARD EFFECTIVE RADIATED POWER (IN WATTS) FROM SHORE ANTENNA IN A SECTOR <±>22½° FROM THE LINE JOINING THE SHORE ANTENNA TO THE COCHANNEL TELEVISION STATION

Distance from transmitter to cochannel television station: kilometers (miles)	Antenna height above ground in meters (feet)					
	30.5 (100)	45 (150)	61 (200)	91.5 (300)	152.5 (500)	228 (750)
298 (185)	320	280	240	190	125	90
290 (180)	250	210	175	125	100	60
281 (175)	175	150	130	100	70	50
274 (170)	130	110	100	75	40	35
265 (165)	95	82	70	50	35	25
257 (160)	65	55	50	40	25	20
249 (155)	50	40	35	30	20	15
241 (150)	35	30	25	20	15	10
233 (145)	25	20	18	15	10	7
225 (140)	18	15	13	10	7	5
217 (135)	13	10	9	7	5	3
209 (130)	10	8	6	5	3	2
201 (125)	7	6	5	4	3	2
193 (120)	5	4	3	3	2	1

NOTE: As an example of the use of tables 1 and 2, assume an offshore station located 290 km (180 mi) from TV Channel 17 located in Bude, Miss. with an antenna height of 30.5 m (100 ft). Table 1 allows this station to operate with 250 W ERP. Now assume the shore station communicating with the offshore station is 48 km (30 mi) from the offshore station and 241 km (150 mi) from Bude, Miss. The shore station antenna height is 152.5 m (500 ft) above ground. The shore station will be allowed the same ERP as the offshore station (250 W) in the direction of the offshore station. Table 2 indicates that the effective radiated power in a sector <±>22½° from the line joining the shore antenna to Bude, Miss. can only be 15 W. Consequently, a directional antenna must be used whose minimum front-to-back ratio over this 45° sector must be at least 12.2 dB. (250 W forward power to 15 W rearward power is a power ratio of 16.6 or 12.2 dB).

(f) To provide cochannel protection to television stations, no shore station will be allowed closer than 193 km miles) from the cochannel television station.

(g) To provide adjacent channel protection to television stations, no shore or offshore station shall be allowed within 128 kilometers (80 miles) of the adjacent channel television station.

(h) Mobile stations shall not operate closer to shore than 6.4 km (4 miles) beyond the three mile limit and shall not operate with an ERP in excess of 100

watts with 9.1 m (30 ft) maximum antenna height.

(i) Mobile stations installed in aircraft shall operate 11 km (7 miles) beyond the three mile limit and shall not operate with an ERP in excess of 1 watt or at heights in excess of 305 m (1000 feet) AMSL.

(j)(1) The following frequency bands are available for assignment in all services for use in the Zones defined in paragraph (a) of this section.

PAIRED FREQUENCIES (MHz)

Zone	Transmit (or receive)	Receive (or transmit)
A	490.01875–490.98125	493.01875–493.98125
B	484.01875–484.98125	487.01875–487.98125
C	478.01875–478.98125	481.01875–481.98125

(2) Only the first and last assignable frequencies are shown. Frequencies shall be assigned in pairs with 3 MHz spacing between transmit and receive frequencies. Assignable frequency pairs will occur in increments of 6.25 kHz. The following frequencies will be assigned for a maximum authorized bandwidth of 6 kHz: 478.01875, 478.98125, 484.01875, 484.98125, 490.01875, 490.98125, 481.01875, 481.98125, 487.01875, 487.98125, 493.01875, and 493.98125 MHz.

(k) Fixed stations operating point-to-point shall be assigned frequencies beginning with 490.025/493.025 MHz (Zone A), 484.025/487.025 MHz (Zone B) and 478.025–481.025 MHz (Zone C) and progressing upwards utilizing available frequencies toward the end of the band. Offshore base/mobile stations shall be assigned frequencies beginning at 490.975/493.975 MHz (Zone A), 484.975/478.975 MHz (Zone B) and 478.975/481.975 MHz (Zone C) and progressing downwards utilizing available frequencies toward the beginning of the band. All frequency assignments are subject to the conditions specified in § 90.173.

[50 FR 12027, Mar. 27, 1985; 50 FR 14389, Apr. 12, 1985, as amended at 58 FR 44959, Aug. 25, 1993; 60 FR 37277, July 19, 1995; 72 FR 35198, June 27, 2007]

§ 90.317 Fixed ancillary signaling and data transmissions.

(a) Licensees of systems that have exclusive-use status in their respective geographic areas may engage in fixed ancillary signaling and data transmissions, subject to the following requirements:

(1) All such ancillary operations must be on a secondary, non-interference basis to the primary mobile operation of any other licensee.

(2) The output power at the remote site shall not exceed 30 watts.

(3) Any fixed transmitters will not count toward meeting the mobile loading requirements nor be considered in whole or in part as a justification for authorizing additional frequencies in the licensee's mobile system.

(4) Automatic means must be provided to deactivate the remote transmitter in the event the carrier remains on for a period in excess of three minutes.

(5) Operational fixed stations authorized pursuant to the provisions of this paragraph are exempt from the requirements of §§ 90.425 and 90.429.

(6) If the system is licensed on 470–512 MHz conventional frequencies, and exclusivity has been achieved through the aggregate loading of more than a single co-channel licensee, then a licensee must obtain the concurrence of other co-channel licensees prior to commencing such ancillary operations.

(b) Licensees of systems that do not have exclusive-use status in their respective geographic areas may conduct fixed ancillary signaling and data transmissions only in accordance with the provisions of § 90.235 of this part.

[57 FR 34693, Aug. 6, 1992]

Subpart M—Intelligent Transportation Systems Radio Service

SOURCE: 60 FR 15253, Mar. 23, 1995, unless otherwise noted.

§ 90.350 Scope.

The Intelligent Transportation Systems radio service is for the purpose of integrating radio-based technologies into the nation's transportation infrastructure and to develop and implement the nation's intelligent transportation systems. It includes the Location and Monitoring Service (LMS) and Dedicated Short Range Communications Service (DSRCS). Rules as to eligibility for licensing, frequencies available, and any special requirements for

services in the Intelligent Transportation Systems radio service are set forth in this subpart.

[64 FR 66410, Nov. 26, 1999]

§ 90.351 Location and Monitoring Service.

These provisions authorize the licensing of systems in the Location and Monitoring Service (LMS). LMS systems utilize non-voice radio techniques to determine the location and status of mobile radio units. LMS licensees authorized to operate a system in the 902–928 MHz band may serve individuals, federal government agencies, and entities eligible for licensing in this part 90.

(a) Each application to license an LMS system shall include the following supplemental information:

(1) A detailed description of the manner in which the system will operate, including a map or diagram.

(2) The necessary or occupied bandwidth of emission, whichever is greater.

(3) The data transmission characteristics as follows:

(i) The vehicle location update rates;

(ii) Specific transmitter modulation techniques used;

(iii) For codes and timing scheme: A table of bit sequences and their alphanumeric or indicator equivalents, and a statement of bit rise time, bit transmission rates, bit duration, and interval between bits;

(iv) A statement of amplitude-versus-time of the interrogation and reply formats, and an example of a typical message transmission and any synchronizing pulses utilized.

(4) A plan to show the implementation schedule during the initial license term.

(b) LMS stations are exempted from the identification requirements of § 90.425; however, the Commission may impose automatic station identification requirements when determined to be necessary for monitoring and enforcement purposes.

§ 90.353 LMS operations in the 902–928 MHz band.

LMS systems may be authorized within the 902–928 MHz band, subject to the conditions in this section. LMS licensees are required to maintain whatever records are necessary to demonstrate compliance with these provisions and must make these records available to the Commission upon request:

(a) LMS operations will not cause interference to and must tolerate interference from industrial, scientific, and medical (ISM) devices and radiolocation Government stations that operate in the 902–928 MHz band.

(b) LMS systems are authorized to transmit status and instructional messages, either voice or non-voice, so long as they are related to the location or monitoring functions of the system.

(c) LMS systems may utilize store and forward interconnection, where either transmissions from a vehicle or object being monitored are stored by the LMS provider for later transmission over the public switched network (PSN), or transmissions received by the LMS provider from the PSN are stored for later transmission to the vehicle or object being monitored. Real-time interconnection between vehicles or objects being monitored and the PSN will only be permitted to enable emergency communications related to a vehicle or a passenger in a vehicle. Such real-time, interconnected communications may only be sent to or received from a system dispatch point or entities eligible in the Public Safety or Special Emergency Radio Services. *See* subparts B and C of this part.

(d) Multilateration LMS systems will be authorized on a primary basis within the bands 904–909.75 MHz and 921.75–927.25 MHz. Additionally, multilateration and non-multilateration systems will share the 919.75–921.75 MHz band on a co-equal basis. Licensing will be on the basis of Economic Areas (EAs) for multilateration systems, with one exclusive EA license being issued for each of these three sub-bands. Except as provided in paragraph (f) of this section, multilateration EA licensees may be authorized to operate on only one of the three multilateration bands within a given EA. Additionally, EA multilateration LMS licenses will be conditioned upon the licensee's ability to demonstrate through actual field tests that their systems do not cause

unacceptable levels of interference to 47 CFR part 15 devices.

(e) Multilateration EA-licensed systems and grandfathered automatic vehicle monitoring service (AVM) systems (*see* § 90.363) are authorized on a shared basis and must cooperate in the selection and use of frequencies in accordance with § 90.173(b).

(f) Multilateration EA licensees may be authorized to operate on both the 919.75–921.75 MHz and 921.75–927.75 MHz bands within a given EA (*see* § 90.209(b)(5)).

(g) Multilateration LMS systems whose primary operations involve the provision of vehicle location services, may provide non-vehicular location services.

(h) Non-multilateration stations are authorized to operate on a shared, non-exclusive basis in the 902–904 MHz and 909.75–921.75 MHz sub-bands. Non-multilateration systems and multilateration systems will share the 919.75–921.75 MHz band on a co-equal basis. Non-multilateration LMS systems may not provide non-vehicular location services. The maximum antenna height above ground for non-multilateration LMS systems is 15 meters.

(i) Non-multilateration LMS licenses will be issued on a site-by-site basis, except that municipalities or other governmental operatives may file jointly for a non-multilateration license covering a given U.S. Department of Commerce Bureau of Economic Analysis Economic Area (EA). Such an application must identify all planned sites. After receiving the license, the non-multilateration EA licensee must notify the Commission if sites are deleted or if new sites are added, before those sites may be put into operation.

[60 FR 15253, Mar. 23, 1995, as amended at 62 FR 52044, Oct. 6, 1997; 72 FR 35198, June 27, 2007; 75 FR 19284, Apr. 14, 2010]

§ 90.355 LMS operations below 512 MHz.

Applications requiring not more than 25 kHz bandwidth per frequency in the 25–50 MHz, 150–170 MHz, and 450–512 MHz bands may use either base-mobile frequencies currently assigned the applicant, or be assigned base-mobile frequencies available in the service in which eligibility has been established, provided that:

(a) For transmission between vehicles and base stations, each frequency in a single-frequency mode of operation will provide location data for approximately 200 vehicles, or both frequencies in a two-frequency mode of operation will provide location data for approximately 400 vehicles, except that for frequencies in the 450–512 MHz band that are assigned in pairs in accordance with the allocation plan for the band, the requirement is that location data be provided for approximately 200 vehicles for each frequency pair; and a showing is made that 50 percent of the vehicles will be in operation within the system by the end of the second year of the initial license term, and 70 percent will be in operation within the system by the end of the initial license term; except that if these vehicle loading standards will not be met, frequencies will be assigned only on a secondary non-interference basis to any authorized radiotelephony operation.

(b) The minimum separation between a proposed LMS station and the nearest co-channel base station of another licensee operating a voice system is 75 miles (120 km) for a single frequency mode of operation or 35 miles (56 km) for a two-frequency mode of operation. Where the minimum mileage separation cannot be achieved, agreement to the use of F1D, F2D, G1D, G2D or P0N emission must be received from all existing co-channel licensees using voice emissions within the applicable mileage limits. If there is interference with voice operations and required agreement was not received, or operation was authorized on a secondary non-interference basis, the licensee of the LMS system is responsible for eliminating the interference.

(c) Frequencies additional to any assigned under paragraph (a) of this section will not be assigned to the same licensee at any stations located within 64 km (40 miles) of any station in which the licensee holds an interest until each of such licensee's frequencies for LMS operation is shown to accommodate not less than 90 percent of the frequency loading requirements specified in paragraph (a) of this section.

§ 90.357 Frequencies for LMS systems in the 902–928 MHz band.

(a) Multilateration LMS systems will be authorized on the following LMS sub-bands:

LMS sub-band	Forward link [1]
904.000–909.750 MHz	927.750–928.000 MHz.
919.750–921.750 MHz.[2]	927.500–927.750 MHz.
921.750–927.250 MHz	927.250–927.500 MHz.

[1] Forward links for LMS systems may also be contained within the LMS sub-band. However, the maximum allowable power in these sub-bands is 30 Watts ERP in accordance with § 90.205(l).

[2] The frequency band 919.750–921.750 MHz is shared co-equally between multilateration and non-multilateration LMS systems.

(b) Non-multilateriation LMS systems will be authorized in the following frequency bands:

LMS Sub-band [1]
902.000–904.000 MHz
909.750–921.750 MHz

[1] Applicants for non-multilateration LMS systems should request only the minimum amount of bandwidth necessary to meet their operational needs.

[72 FR 35198, June 27, 2007, as amended at 75 FR 19284, Apr. 14, 2010]

§ 90.359 Field strength limits for EA-licensed LMS systems.

EA-licensed multilateration systems shall limit the field strength of signals transmitted from their base stations to 47 dBuV/m at their EA boundary.

[62 FR 52044, Oct. 6, 1997]

§ 90.361 Interference from part 15 and Amateur operations.

Operations authorized under parts 15 and 97 of this chapter may not cause harmful interference to LMS systems in the 902–928 MHz band. These operations will not be considered to be causing harmful interference to a multilateration LMS system operating in one of the three EA sub-bands (see § 90.357(a)) if they are non-video links operating in accordance with the provisions of parts 15 or 97 of this chapter and at least one of the following conditions are met:

(a) It is a field disturbance sensor operating under § 15.245 of this chapter and it is not operating in the 904–909.750 or 919.750–928.000 MHz sub-bands; or

(b) It does not employ an outdoor antenna; or

(c) If it does employ an outdoor antenna, then if:

(1) The directional gain of the antenna does not exceed 6 dBi, or if the directional gain of the antenna exceeds 6 dBi, it reduces its transmitter output power below 1 watt by the proportional amount that the directional gain of the antenna exceeds 6 dBi; and

(2) Either:

(i) The antenna is 5 meters or less in height above ground; or

(ii) The antenna is more than 5 meters in height above ground but less than or equal to 15 meters in height above ground and either:

(A) Adjusts its transmitter output power below 1 watt by 20 log (h/5) dB, where h is the height above ground of the antenna in meters; or

(B) Is providing the final link for communications of entities eligible under subpart B or C of this part, or is providing the final link for communications of health care providers that serve rural areas, elementary schools, secondary schools or libraries.

[60 FR 15253, Mar. 23, 1995, as amended at 62 FR 52044, Oct. 6, 1997]

§ 90.363 Grandfathering provisions for existing AVM licensees.

(a) These provisions authorize grandfathered operation by automatic vehicle monitoring (AVM) systems licensed on or before February 3, 1995. To attain grandfathered status for their stations, existing multilateration AVM licensees must file, on or before May 22, 1995, applications to modify their station licenses to comply with the band plan shown in § 90.357(a). These applications to modify must identify the multilateration sub-band or sub-bands in which the applicants intend to operate their LMS system stations, once their applications to modify have been authorized. The application to modify a license to comply with the band plan shown in § 90.357(a) may also include a modification to specify an alternate site, so long as the alternate site is 2 kilometers or less from the site specified in the original license.

(b) When existing multilateration AVM licensees file applications to modify, as specified in paragraph (a) of this section, they *must* certify that either:

(1) The stations that compose their AVM system were constructed and placed in operation in accordance with § 90.155(e) on or before February 3, 1995; or

(2) The stations were not constructed and placed in operation in accordance with § 90.155(e) on or before February 3, 1995.

(c) Multilateration AVM systems that were constructed and placed in operation on or before February 3, 1995 will be given until April 1, 1998 to convert to the spectrum identified in their LMS system license. Such licensees may continue to operate their systems during this period. Licensees of multilateration AVM constructed and operational systems that do not file applications to modify on or before May 22, 1995, will be permitted to continue operations under the provisions of former § 90.239 until April 1, 1998 or the end of their original license term, whichever occurs first, at which time such licenses will cancel automatically and will not be renewed.

(d) Multilateration AVM licensees for stations that *were not* constructed and placed in operation on or before February 3, 1995 must construct their LMS systems and place them in operation on the spectrum identified in their LMS system license on or before September 1, 1996, or their licenses will cancel automatically (see Section 90.155 (e)). Also, these licenses will cancel automatically on July 1, 1996 unless timely modification applications are filed on or before this date (see paragraph (a) of this section).

(e) Non-multilateration systems licensed in spectrum other than the 902.00–904.00 and 909.75–921.75 MHz bands must modify their licenses by April 1, 1998 to specify operation solely in the bands provided in § 90.357(b) for non-multilateration systems and to operate their systems consistently with the provisions of § 90.353.

[60 FR 15253, Mar. 23, 1995, as amended at 61 FR 18986, Apr. 30, 1996]

§ 90.365 Partitioned licenses and disaggregated spectrum.

(a) *Eligibility*. (1) Party seeking approval for partitioning and disaggregation shall request an authorization pursuant to § 1.948 of this chapter.

(2) Multilateration LMS licensees may apply to partition their licensed geographic service area or disaggregate their licensed spectrum at any time following the grant of their licenses. Multilateration LMS licensees may partition or disaggregate to any party that is also eligible to be a multilateration LMS licensee. Partitioning is permitted along any service area defined by the parties, and spectrum may be disaggregated in any amount. The Commission will also consider requests for partial assignment of licenses that propose combinations of partitioning and disaggregation.

(b) *Partitioning*. In the case of partitioning, applicants and licensees must file FCC Form 603 pursuant to § 1.948 and list the partitioned service area on a schedule to the application. The geographic coordinates must be specified in degrees, minutes, and seconds to the nearest second of latitude and longitude and must be based upon the 1983 North American Datum (NAD83).

(c) *License term*. The license term for a partitioned license area, and for disaggregated spectrum shall be the remainder of the original licensee's license term.

(d) *Construction requirements*—(1) *Requirements for partitioning*. (i) Parties seeking authority to partition must meet one of the following construction requirements:

(A) The partitionee may certify that it will satisfy the applicable construction requirements for the partitioned license area; or

(B) The original licensee may certify that it has or will meet the construction requirement for the entire license area.

(ii) Failure by any partitionee to meet its respective construction requirements will result in the automatic cancellation of the partitioned or disaggregated license without further Commission action.

(2) *Requirements for disaggregation*. Parties seeking authority to disaggregate spectrum must certify in FCC Form 601 which of the parties will be responsible for meeting the five-

year and ten-year construction requirements for the particular market.

[63 FR 40663, July 30, 1998, as amended at 63 FR 68966, Dec. 14, 1998]

REGULATIONS GOVERNING THE LICENSING AND USE OF FREQUENCIES IN THE 5850–5925 MHZ BAND FOR DEDICATED SHORT-RANGE COMMUNICATIONS SERVICE (DSRCS)

§ 90.371 Dedicated short range communications service.

(a) These provisions pertain to systems in the 5850–5925 MHz band for Dedicated Short-Range Communications Service (DSRCS). DSRCS systems use radio techniques to transfer data over short distances between roadside and mobile units, between mobile units, and between portable and mobile units to perform operations related to the improvement of traffic flow, traffic safety, and other intelligent transportation service applications in a variety of environments. DSRCS systems may also transmit status and instructional messages related to the units involved. DSRCS Roadside Units are authorized under this part. DSRCS On-Board Units are authorized under part 95 of this chapter.

(b) DSRCS Roadside Units (RSUs) operating in the band 5850–5925 MHz shall not receive protection from Government Radiolocation services in operation prior to the establishment of the DSRCS station. Operation of DSRCS RSU stations within 75 kilometers of the locations listed in the table below must be coordinated through the National Telecommunications and Information Administration.

Location	Latitude	Longitude
Ft. Lewis, WA	470525N	1223510W
Yakima Firing Center, WA	464018N	1202135W
Ft. Carson, CO	383810N	1044750W
Ft. Riley, KS	385813N	0965139W
Ft. Shafter, HI	211800N	1574900W
Hunter Army Airfield, GA	320100N	0810800W
Ft. Gillem, GA	333600N	0841900W
Ft. Benning, GA	322130N	0845815W
Ft. Stewart, GA	315145N	0813655W
Ft. Rucker, AL	311947N	0854255W
Yuma Proving Grounds, AZ	330114N	1141855W
Ft. Hood, TX	310830N	0974550W
Ft. Knox, KY	375350N	0855655W
Ft. Bragg, NC	350805N	0790035W
Ft. Campbell, KY	363950N	0872820W
Ft. Polk, LA	310343N	0931226W
Ft. Leonard Wood, MO	374430N	0920737W
Ft. Irwin, CA	351536N	1164102W
Ft. Sill, OK	344024N	0982352W
Ft. Bliss, TX	314850N	1062533W
Ft. Leavenworth, KS	392115N	0945500W
Ft. Drum, NY	440115N	0754844W
Ft. Gordon, GA	332510N	0820910W
Ft. McCoy, WI	440636N	0904127W
Ft. Dix, NJ	400025N	0743713W
Parks Reserve Forces Training Area, CA.	374254N	1214218W
Ft. Hunter Ligget, CA	355756N	1211404W
Pacific Missile Test Center, CA.	340914N	1190524W
Naval Air Development Center, PA.	401200N	0750500W
Mid-Atlantic Area Frequency Coordinator, MD.	381710N	0762500W
Naval Research Laboratory, MD.	383927N	0763143W
Naval Ocean Systems Center, CA.	324500N	1171000W
Naval Research Laboratory, DC.	385500N	0770000W
Naval Surface Weapons Center, MD.	390205N	0765900W
Naval Electronic Systems Engineering Activity, MD.	381000N	0762300W
Midway Research Center, VA	382640N	0772650W
Aberdeen Proving Ground, MD.	392825N	0760655W
Ft. Huachuca, AZ	313500N	1102000W
Ft. Monmouth, NJ	401900N	0740215W
Picatinny Arsenal, NJ	405600N	0743400W
Redstone Arsenal, AL	343630N	0863610W
White Sands Missile Range, NM.	322246N	1062813W
Army Research Laboratory, MD.	390000N	0765800W
Space and Missile Systems Center, CA.	335500N	1182200W
Edwards AFB, CA	345400N	1175200W
Patrick AFB, FL	281331N	0803607W
Eglin AFB, FL	302900N	0863200W
Holloman AFB, NM	322510N	1060601W
Kirtland AFB, NM	350230N	1063624W
Griffiss AFB, NY	431315N	0752431W
Wright-Patterson AFB, OH	394656N	0840539W
Hanscom AFB, MA	422816N	0711725W
Nellis AFB, NV	361410N	1150245W
Vandenberg AFB, CA	344348N	1203436W
U.S. Air Force Academy, CO	385800N	1044900W
Brooks AFB, TX	292000N	0982600W
Arnold AFB, TN	352250N	0860202W
Tyndall AFB, FL	300412N	0853436W
Charles E. Kelly Support Facility—Oakdale, PA.	402357N	0800925W

(c) NTIA may authorize additional Government Radiolocation services. Once a new Federal assignment is made, the Commission's Universal Licensing System database will be updated, accordingly, to protect the new Federal assignment and the list in paragraph (b) of this section will be updated as soon as practicable.

[64 FR 66410, Nov. 26, 1999, as amended at 69 FR 46443, Aug. 3, 2004]

§ 90.373 Eligibility in the DSRCS.

The following entities are eligible to hold an authorization to operate Roadside units in the DSRCS:

(a) Any territory, possession, state, city, county, town or similar governmental entity.

(b) Any entity meeting the eligibility requirements of §§ 90.33 or 90.35.

[69 FR 46443, Aug. 3, 2004]

§ 90.375 RSU license areas, communication zones and registrations

(a) DSRCS Roadside Units (RSUs) in the 5850–5925 MHz band are licensed on the basis of non-exclusive geographic areas. Governmental applicants will be issued a geographic area license based on the geo-political area encompassing the legal jurisdiction of the entity. All other applicants will be issued a geographic area license for their proposed area of operation based on county(s), state(s) or nationwide.

(b) Applicants who are approved in accordance with FCC Form 601 will be granted non-exclusive licenses for all non-reserved DSRCS frequencies (*see* § 90.377). Such licenses serve as a prerequisite of registering individual RSUs located within the licensed geographic area described in paragraph (a) of this section. Licensees must register each RSU in the Universal Licensing System (ULS) before operating such RSU. RSU registrations are subject, *inter alia*, to the requirements of § 1.923 of this chapter as applicable (antenna structure registration, environmental concerns, international coordination, and quiet zones). Additionally, RSUs at locations subject to NTIA coordination (*see* § 90.371(b) may not begin operation until NTIA -approval is received. Registrations are not effective until the Commission posts them on the ULS.

(c) Licensees must operate each RSU in accordance with the Commission's Rules and the registration data posted on the ULS for such RSU. Licensees must register each RSU for the smallest communication zone needed (for the DSRC-based intelligent transportation systems application) using one of the following four communication zones:

RSU class	Max. output power (dBm) [1]	Communications zone (meters)
A	0	15
B	10	100
C	20	400
D	28.8	1000

[1] The ASTM-DSRC Standard is incorporated by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51 and approved by The Director of the Federal Register. Copies may be inspected at the Federal Communications Commission, 445 12th Street, SW., Washington, DC 20554 or National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal register/code of federal regulations/ibr locations.html.* Copies of the ASTM E2213–03 DSRC Standard can be obtained from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428–2959. Copies may also be obtained from ASTM via the Internet at *http://www.astm.org.* The ASTM-DSRC Standard limits output power to 28.8 dBm but allows more power to overcome cable losses to the antenna as long as the antenna input power does not exceed 28.8 dBm and the EIRP does not exceed 44.8 dBm. However, specific channels and categories of uses have additional limitations under the ASTM-DSRC Standard.

[69 FR 46444, Aug. 3, 2004]

§ 90.377 Frequencies available; maximum EIRP and antenna height, and priority communications.

(a) Licensees shall transmit only the power (EIRP) needed to communicate with an On-Board Unit (OBU) within the communications zone and must take steps to limit the Roadside Unit (RSU) signal within the zone to the maximum extent practicable.

(b) Frequencies available for assignment to eligible applicants within the 5850–5925 MHz band for RSUs and the maximum EIRP permitted for an RSU with an antenna height not exceeding 8 meters above the roadway bed surface are specified in the table below. Where two EIRP limits are given, the higher limit is permitted only for state or local governmental entities.

Channel No.	Frequency range (MHz)	Max. EIRP [1] (dBm)	Channel use
170	5850–5855		Reserved.
172	5855–5865	33	Service Channel. [2]
174	5865–5875	33	Service Channel.
175	5865–5885	23	Service Channel. [3]
176	5875–5885	33	Service Channel.
178	5885–5895	33/44.8	Control Channel.
180	5895–5905	23	Service Channel.

Channel No.	Frequency range (MHz)	Max. EIRP [1] (dBm)	Channel use
181	5895–5915	23	Service Channel. [3]
182	5905–5915	23	Service Channel.
184	5915–5925	33/40	Service Channel. [4]

[1] An RSU may employ an antenna with a height exceeding 8 meters but not exceeding 15 meters provided the EIRP specified in the table above is reduced by a factor of 20 log(Ht/8) in dB where Ht is the height of the radiation center of the antenna in meters above the roadway bed surface. The EIRP is measured as the maximum EIRP toward the horizon or horizontal, whichever is greater, of the gain associated with the main or center of the transmission beam. The RSU antenna height shall not exceed 15 meters above the roadway bed surface.

[2] Channel 172 is designated for public safety applications involving safety of life and property.

[3] Channel Nos. 174/176 may be combined to create a twenty megahertz channel, designated Channel No. 175. Channels 180/182 may be combined to create a twenty-megahertz channel, designated Channel No. 181.

[4] Channel 184 is designated for public safety applications involving safety of life and property. Only those entities meeting the requirements of § 90.373(a) are eligible to hold an authorization to operate on this channel.

(c) Except as provided in paragraphs (d) and (e) of this section, non-reserve DSRCS channels are available on a shared basis only for use in accordance with the Commission's rules. All licensees shall cooperate in the selection and use of channels in order to reduce interference. This includes monitoring for communications in progress and any other measures as may be necessary to minimize interference. Licensees of RSUs suffering or causing harmful interference within a communications zone are expected to cooperate and resolve this problem by mutually satisfactory arrangements. If the licensees are unable to do so, the Commission may impose restrictions including specifying the transmitter power, antenna height and direction, additional filtering, or area or hours of operation of the stations concerned. Further the use of any channel at a given geographical location may be denied when, in the judgment of the Commission, its use at that location is not in the public interest; use of any such channel may be restricted as to specified geographical areas, maximum power, or such other operating conditions, contained in this part or in the station authorization.

(d) *Safety/public safety priority*. The following access priority governs all DSRCS operations:

(1) Communications involving the safety of life have access priority over all other DSRCS communications;

(2) Subject to a control channel priority system management strategy (*see* ASTM E2213–03 DSRC Standard at § 4.1.1.2(4)), DSRCS communications involving public safety have access priority over all other DSRC communications not listed in paragraph (d)(1) of this section. Roadside Units (RSUs) operated by state or local governmental entities are presumptively engaged in public safety priority communications.

(e) *Non-priority communications*. DSRCS communications not listed in paragraph (d) of this section, are non-priority communications. If a dispute arises concerning non-priority communications, the licensee of the later-registered RSU must accommodate the operation of the early registered RSU, *i.e.*, interference protection rights are date-sensitive, based on the date that the RSU is first registered (*see* § 90.375) and the later-registered RSU must modify its operations to resolve the dispute in accordance with paragraph (f) of this section.

(f) Except as otherwise provided in the ASTM–DSRC Standard (*see* § 90.379) for the purposes of paragraph (e) of this section, objectionable interference will be considered to exist when the Commission receives a complaint and the difference in signal strength between the earlier-registered RSU and the later-registered RSU (anywhere within the earlier-registered RSU's communication zone) is 18 dB or less (co-channel). Later-registered RSUs causing objectionable interference must correct the interference immediately unless written consent is obtained from the licensee of the earlier-registered RSU.

[71 FR 52749, Sept. 7, 2006, as amended at 72 FR 35199, June 27, 2007]

§ 90.379 ASTM E2213–03 DSRC Standard (ASTM-DSRC Standard).

Roadside Units operating in the 5850–5925 MHz band shall comply with the following technical standard, which is incorporated by reference: American Society for Testing and Materials

(ASTM) E2213–03, ''Standard Specification for Telecommunications and Information Exchange Between Roadside and Vehicle Systems—5 GHz Band Dedicated Short Range Communications (DSRC) Medium Access Control (MAC) and Physical Layer (PHY) Specifications'' published September 2003 (ASTM E2213–03 DSRC Standard). The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected at the Federal Communications Commission, 445 12th Street, SW., Washington, DC 20554 or National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*. Copies of the ASTM E2213–03 DSRC Standard can be obtained from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428–2959. Copies may also be obtained from ASTM via the Internet at *http://www.astm.org*.

[69 FR 46445, Aug. 3, 2004]

§ 90.383 RSU sites near the U.S./Canada or U.S./Mexico border.

Until such time as agreements between the United States and Canada or the United States and Mexico, as applicable, become effective governing border area use of the 5850–5925 MHz band for DSRCS, authorizations to operate Roadside Units (RSUs) are granted subject to the following conditions:

(a) RSUs must not cause harmful interference to stations in Canada or Mexico that are licensed in accordance with the international table of frequency allocations for Region 2 (see § 2.106 of this chapter) and must accept any interference that may be caused by such stations.

(b) Authority to operate DSRCS Roadside Units is subject to modifications and future agreements between the United States and Canada or the United States and Mexico, as applicable.

[69 FR 46445, Aug. 3, 2004]

Subpart N—Operating Requirements

§ 90.401 Scope.

The subpart prescribes general operating requirements for stations licensed under this part. This includes station operating procedures, points of communication, permissible communications, methods of station identification, control requirements, and station record keeping requirements.

§ 90.403 General operating requirements.

(a) Licensees of radio stations in the private land mobile radio services shall be directly responsible for the proper operation and use of each transmitter for which they are licensed. In this connection, licensees shall exercise such direction and control as is necessary to assure that all authorized facilities are employed:

(1) Only for permissible purposes;

(2) Only in a permissible manner; and

(3) Only by persons with authority to use and operate such equipment.

(b) In carrying out their responsibilities under § 90.403(a), licensees shall be bound by the provisions of the Communications Act of 1934, as amended, and by the rules and regulations of the Commission governing the radio service in which their facilities are licensed; and licensees may not, through written or oral agreements or otherwise, relieve themselves of any duty or obligation imposed upon them, by law, as licensees.

(c) Except for stations that have been granted exclusive channels under this part and that are classified as commercial mobile radio service providers pursuant to part 20 of this chapter, each licensee must restrict all transmissions to the minimum practical transmission time and must employ an efficient operating procedure designed to maximize the utilization of the spectrum.

(d) Communications involving the imminent safety-of-life or property are to be afforded priority by all licensees.

(e) Licensees shall take reasonable precautions to avoid causing harmful interference. This includes monitoring the transmitting frequency for communications in progress and such other

measures as may be necessary to minimize the potential for causing interference.

(f) Stations licensed in this part shall not continuously radiate an unmodulated carrier except where required for tests as permitted in § 90.405, except where specifically permitted by this part, where specifically authorized in the station authorization, or on an as needed basis in the Radiolocation Radio Service.

(g) The radiations of the transmitter shall be suspended immediately upon detection or notification of a deviation from the technical requirements of the station authorization and until such deviation is corrected. For transmissions concerning the imminent safety-of-life or property, the transmissions shall be suspended as soon as the emergency is terminated.

[43 FR 54791, Nov. 22, 1978; 44 FR 32220, June 5, 1979, as amended at 59 FR 59965, Nov. 21, 1994]

§ 90.405 Permissible communications.

(a) Stations licensed under this part may transmit only the following types of communication:

(1) Any communication related directly to the imminent safety-of-life or property;

(2) Communications directly related and necessary to those activities which make the licensee eligible for the station license held under this part. In addition, when communication service is provided under the cooperative sharing provisions of § 90.179, the licensee providing such service may transmit communications related to the activities for which the parties receiving the service would be eligible to be licensed.

(3) Communications for testing purposes required for proper station and system maintenance. However, each licensee shall keep such tests to a minimum and shall employ every measure to avoid harmful interference.

(b) The provisions contained in paragraph (a) of this section do not apply where a single base station licensee has been authorized to use a channel above 470 MHz on an exclusive basis, or to stations licensed under this part that are classified as CMRS providers under part 20 of this chapter.

[50 FR 6182, Feb. 14, 1985, as amended at 59 FR 59965, Nov. 21, 1994]

§ 90.407 Emergency communications.

The licensee of any station authorized under this part may, during a period of emergency in which the normal communication facilities are disrupted as a result of hurricane, flood, earthquake or similar disaster, utilize such station for emergency communications in a manner other than that specified in the station authorization or in the rules and regulations governing the operation of such stations. The Commission may at any time order the discontinuance of such special use of the authorized facilities.

[49 FR 36376, Sept. 17, 1984]

§ 90.411 Civil defense communications.

The licensee of any station authorized under this part may, on a voluntary basis, transmit communications necessary for the implementation of civil defense activities assigned such station by local civil defense authorities during an actual or simulated emergency, including drills and tests. The Commission may at any time order the discontinuance of such special use of the authorized facilities.

[49 FR 36376, Sept. 17, 1984]

§ 90.415 Prohibited uses.

Stations licensed under this part shall not:

(a) Transmit program material of any kind for use in connection with broadcasting; or

(b) Render a communications common carrier service, except for stations in the Public Safety Pool providing communications standby facilities under § 90.20(a)(2)(xi) and stations licensed under this part in the SMR, private carrier paging, Industrial/Business Pool, or 220–222 MHz services.

[43 FR 54791, Nov. 22, 1978, as amended at 59 FR 59965, Nov. 21, 1994; 62 FR 18933, Apr. 17, 1997]

§ 90.417 Interstation communication.

(a) Any station licensed under this part may communicate with any other

station without restriction as to type, service, or licensee when the communications involved relate directly to the imminent safety-of-life or property.

(b) Any station licensed under this part may communicate with any other station licensed under this part, with U.S. Government stations, and with foreign stations, in connection with mutual activities, provided that where the communication involves foreign stations prior approval of the Commission must be obtained, and such communication must be permitted by the government that authorizes the foreign station. Communications by Public Safety Pool eligibles with foreign stations will be approved only to be conducted in accordance with Article 5 of the Inter-American Radio Agreement, Washington, DC, 1949, the provisions of which are set forth in § 90.20(b).

[43 FR 54791, Nov. 22, 1978, as amended at 62 FR 18933, Apr. 17, 1997]

§ 90.419 Points of communication.

Normally, operations licensed under this part are intended to provide intrastation mobile communications. For example, a base station is intended to communicate with its associated mobile stations and mobile stations are intended to communicate between associated mobile stations and associated base stations of the licensee. Accordingly, operations between base stations at fixed locations are permitted only in the following situations:

(a) Base stations licensed under subpart T of this part and those in the Public Safety Pool that operate on frequencies below 450 MHz, may communicate on a secondary basis with other base stations, operational fixed stations, or fixed receivers authorized in these services or pools.

(b) Base stations licensed on any frequency in the Industrial/Business Pool and on base stations frequencies above 450 MHz in the Public Safety Pool may communicate on a secondary basis with other base stations, operational fixed stations, or fixed receivers authorized in these pools only when:

(1) The messages to be transmitted are of immediate importance to mobile stations; or

(2) Wireline communications facilities between such points are inoperative, economically impracticable, or unavailable from communications common carrier sources. Temporary unavailability due to a busy wireline circuit is not considered to be within the provisions of this paragraph.

(c) Operational fixed stations may communicate with units of associated mobile stations only on a secondary basis.

(d) Operational fixed stations licensed in the Industrial/Business Pool may communicate on a secondary basis with associated base stations licensed in these services when:

(1) The messages to be transmitted are of immediate importance to mobile stations; or

(2) Wireline communications facilities between such points are inoperative, economically impracticable, or unavailable from communications common carrier sources. Temporary unavailability due to a busy wireline circuit is not considered to be within the provisions of this paragraph.

(e) Travelers' Information Stations are authorized to transmit certain information to members of the traveling public (see § 90.242).

(f) CMRS licensees in the SMR categories of part 90, subpart S, CMRS providers authorized in the 220 MHz service of part 90, subpart T, CMRS paging operations as defined by part 90, subpart P and for-profit interconnected business radio services with eligibility defined by § 90.35 are permitted to utilize their assigned spectrum for fixed services on a co-primary basis with their mobile operations.

[61 FR 45356, Aug. 29, 1996, as amended at 62 FR 18933, Apr. 17, 1997; 72 FR 35199, June 27, 2007]

§ 90.421 Operation of mobile station units not under the control of the licensee.

Mobile stations, as defined in § 90.7, include vehicular-mounted and handheld units. Such units may be operated by persons other than the licensee, as provided for below, when necessary for the licensee to meet its requirements in connection with the activities for which it is licensed. If the number of

such units, together with units operated by the licensee, exceeds the number of mobile units authorized to the licensee, license modification is required. The licensee is responsible for taking necessary precautions to prevent unauthorized operation of such units not under its control.

(a) *Public Safety Pool.* (1) Mobile units licensed in the Public Safety Pool may be installed in any vehicle which in an emergency would require cooperation and coordination with the licensee, and in any vehicle used in the performance, under contract, of official activities of the licensee. This provision does not permit the installation of radio units in non-emergency vehicles that are not performing governmental functions under contract but with which the licensee might wish to communicate.

(2) Mobile units licensed under § 90.20(a)(2)(iii) may be installed in a vehicle or be hand-carried for use by any person with whom cooperation or coordinations is required for medical services activities.

(3) On the Interoperability Channels in the 700 MHz Public Safety Band (*See* § 90.531(b)(1)), hand-held and vehicular transmitters may be operated by any licensee holding a license in the 700 MHz Public Safety Band or by any licensee holding a license for any other public safety frequency pursuant to part 90 of the Commission's rules. Therefore, individual licenses are not required for hand-held and vehicular transmitters in the 700 MHz Band.

(b) *Industrial/Business Pool.* Mobile units licensed in the Industrial/Business Pool may be installed in vehicles of persons furnishing under contract to the licensee and for the duration of the contract, a facility or service directly related to the activities of the licensee.

(c) In addition to the requirements in paragraphs (a) and (b) of this section, frequencies assigned to licensees in the Private Land Mobile Radio Services may be installed in the facilities of those who assist the licensee in emergencies and with whom the licensee must communicate in situations involving imminent safety to life or property.

[65 FR 60877, Oct. 13, 2000, as amended at 66 FR 10635, Feb. 16, 2001]

§ 90.423 Operation on board aircraft.

(a) Except as provided in paragraphs (b), (c), and (d) of this section, and except as may be provided in other sections of this part with respect to operation on specific frequencies, mobile stations first authorized after September 14, 1973, under this part may be operated aboard aircraft for air-to-mobile, air-to-base, air-to-air and air-to-ship communications subject to the following:

(1) Operations are limited to aircraft that are regularly flown at altitudes below 1.6 km (1 mi) above the earth's surface;

(2) Transmitters are to operate with an output power not to exceed ten watts;

(3) Operations are secondary to land-based systems;

(4) Such other conditions, including additonal reductions of altitude and power limitations, as may be required to minimize the interference potential to land-based systems.

(b) Exceptions to the altitude and power limitations set forth in paragraph (a) of this section may be authorized upon a showing of unusual operational requirements which justify departure from those standards, provided that the interference potential to regular land-based operations would not be increased.

(c) Mobile operations aboard aircraft in the services governed by this part, under licenses in effect September 14, 1973, may be continued without regard to provisions of paragraph (a) of this section, as follows:

(1) Operations may be continued only for the balance of the term of such licenses if aircraft involved are regularly flown at altitudes greater than 1.6 km (1 mi) above the earth's surface.

(2) Operations may be continued for one additional renewal license term if the aircraft involved are regularly flown at altitudes below 1.6 km (1 mi) above the earth's surface.

(d) Operation of radiolocation mobile stations may be authorized without regard to limitations and conditions set forth in paragraphs (a), (b), and (c) of this section.

[43 FR 54791, Nov. 22, 1978, as amended at 58 FR 44960, Aug. 25, 1993]

§ 90.425 Station identification.

Stations licensed under this part shall transmit identification in accordance with the following provisions:

(a) *Identification procedure.* Except as provided for in paragraphs (d) and (e) of this section, each station or system shall be identified by the transmission of the assigned call sign during each transmission or exchange of transmissions, or once each 15 minutes (30 minutes in the Public Safety Pool) during periods of continuous operation. The call sign shall be transmitted by voice in the English language or by International Morse Code in accordance with paragraph (b) of this section. If the station is employing either analog or digital voice scrambling, or non-voice emission, transmission of the required identification shall be in the unscrambled mode using A3E, F3E or G3E emission, or International Morse, with all encoding disabled. Permissible alternative identification procedures are as follows:

(1) A mobile relay stations call sign may be used to identify the associated control and mobile stations, except in the Public Safety Pool where the stations operate on frequencies below 450 MHz. Alternatively, a base station (including a mobile relay station) which is controlled by radio may be identified by the transmission of the call sign of the station at which communications originate.

(2) One or more fixed relay stations may be identified by the transmission of the call signs of the stations at which the communications originate.

(3) When a mobile station transmits on a different frequency than its associated base station, the assigned call sign of either the mobile station or the base station may be transmitted. Further, a single mobile unit in the licensee's authorized geographic area of operation may transmit station identification on behalf of any other operating mobile units in the fleet.

(4) *Use of an identifier other than the assigned call sign.* (i) In the Public Safety Pool, mobile units licensed to a governmental entity and which operate on frequencies above 30 MHz may use an identifier which contains, at a minimum, the name of the licensee if the licensee maintains at the station a list of the special identifiers to be used by the mobile units.

(ii) In the Industrial/Business Pool, licensees may request the Commission's local Engineer-in-Charge to approve the use of special mobile unit identifiers in lieu of the assigned call sign. Such requests, however, will not be granted where it appears that harmful interference to international operations may be caused by stations below 50 MHz, or by stations operating in areas within 80 km (50 miles) of an international boundary, or where it appears that the proposed method of identification will not adequately distinguish the mobile units of the applicant from the mobile units of other licensees in the area.

(iii) In the Industrial/Business Pool, railroad licensees (as defined in § 90.7) may identify stations by the name of the railroad and the train number, caboose number, engine number, or the name of the fixed wayside station. If none of these forms is practicable, any similar name or number may be designated by the railroad concerned for use by its employees in the identification of fixed points or mobile units, provided that a list of such identifiers is maintained by the railroad. An abbreviated name or the initials of the railroad may be used where such are in general usage. In those areas where it is shown that no difficulty would be encountered in identifying the transmission of a particular station (as, for example, where stations of one licensee are located in a yard isolated from other radio installations), approval may be given to a request from the licensee for permission to omit the station identification.

(5) *Use of identifiers in addition to assigned call signs.* Nothing in this section shall be construed as prohibiting the transmission of station or unit identifiers which may be necessary or desirable for system operation, provided that they are transmitted in addition to the assigned station call sign or other permissible form of identification.

(b) *Use of automatic Morse code identification equipment.* Automatically activated equipment may be used to transmit station identification in International Morse Code pursuant to the following conditions:

(1) The signal output of the automatic identification equipment shall be connected to the transmitter at the microphone input or any other manufacturer-provided signal input terminal and shall be adjusted to produce 40 percent ±10 percent of the maximum permissible modulation or deviation level. This adjustment shall be performed when all other modulating signals are absent.

(2) The Morse code transmission rate shall be maintained between 20 and 25 words per minute.

(3) The frequency of the keyed tone comprising the identification signal shall be 1200 ±800 Hz. A licensee may be required to change the frequency in order to prevent interference to the operations of another co-channel licensee.

(4) Should activation of automatic Morse code identification equipment interrupt the communications of another co-channel licensee, the Commission may require the use of equipment which will delay automatic station identification until such co-channel communications are completed.

(c) *Special provisions for identification in the Radiolocation Service.* (1) Stations in the Radiolocation Service are not required to identify except upon specific instruction from the Commission or as required by paragraph (c)(2) of this section.

(2) Stations in the Radiolocation Service operating on frequencies above 3400 kHz that employ spread spectrum techniques shall transmit a two letter manufacturer's designator, authorized by the Commission on the station authorization, at the beginning and ending of each transmission and once every 15 minutes during periods of continuing operation. The designator shall be transmitted in International Morse Code at a speed not exceeding 25 words per minute, and the spread spectrum mode of operation shall be maintained while the designator is being transmitted. The identifying signal shall be clearly receivable in the demodulated audio of a narrow-band FM receiver.

(d) *General exemptions.* A station need not transmit identification if:

(1) It is a mobile station operating on the transmitting frequency of the associated base station.

(2) It is a mobile station in the Public Safety Pool using F1E or G1E emission.

(3) It is transmitting for telemetering purposes or for the activation of devices which are employed solely as a means of attracting attention, or for remote control purposes, or which is retransmitting by self-actuating means, a radio signal received from another radio station or stations.

(4) It is any type of radiopositioning or radar station authorized in a service other than the Radiolocation Service.

(5) It is used solely for automatic vehicle monitoring or location.

(6) It is a paging station authorized in accordance with the provisions of § 90.20(a)(2)(v).

(7) It is a mobile station employing non-voice emissions and the associated base station identifies on behalf of the mobile unit(s).

(8) It is a base or mobile station in the 220–222 MHz band authorized to operate on a nationwide basis in accordance with subpart T of this part.

(9) It is a wireless microphone station operating in accordance with the provisions of § 90.265(b).

(10) It is a Roadside Unit in a DSRCS system.

(e) Special provisions for stations licensed under this part that are classified as CMRS providers under part 20 of this chapter.

(1) Station identification will not be required for 929–930 MHz nationwide paging licensees or MTA or EA-based SMR licensees. All other CMRS stations will be required to comply with the station identification requirements of this paragraph.

(2) CMRS stations subject to a station identification requirement will be permitted to use a single call sign for commonly owned facilities that are operated as part of a single system. The call sign must be transmitted each hour within five minutes of the hour, or upon completion of the first transmission after the hour.

(3) CMRS stations granted exclusive channels may transmit their call signs digitally. A licensee that identifies its call sign in this manner must provide the Commission, upon request, information sufficient to decode the digital transmission and ascertain the call sign transmitted.

(f) Special provisions for stations licensed under this part that are not classified as CMRS providers under part 20 of this chapter.

(1) Stations subject to a station identification requirement will be permitted to use a single call sign for commonly owned facilities that are operated as part of a single system.

(2) Stations licensed on an exclusive basis in the bands between 150 and 512 MHz that normally employ digital signals for the transmission of data, text, control codes, or digitized voice may be identified by digital transmission of the call sign. A licensee that identifies its call sign in this manner must provide the Commission, upon request, information sufficient to decode the digital transmission and ascertain the call sign transmitted.

[43 FR 54791, Nov. 22, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.425, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§ 90.427 Precautions against unauthorized operation.

(a) Each transmitter shall be so installed and protected that it is not accessible to or capable of operation by persons other than those duly authorized by and under the control of the licensee. Provisions of this part authorizing certain unlicensed persons to operate stations, or authorizing unattended operation of stations in certain circumstances, shall not be construed to change or diminish in any respect the responsibility of station licensees to maintain control over the stations licensed to them (including all transmitter units thereof), or for the proper functioning and operation of those stations and transmitter units in accordance with the terms of the licenses of those stations.

(b) Except for frequencies used in accordance with § 90.417, no person shall program into a transmitter frequencies for which the licensee using the transmitter is not authorized.

[43 FR 54791, Nov. 22, 1978, as amended at 52 FR 47570, Dec. 15, 1987]

§ 90.429 Control point and dispatch point requirements.

(a) *Control point required*. Unless permitted to be operated on an unattended basis, each station shall be provided with a control point;

(b) A control point is an operating position:

(1) Which must be under the control and supervision of the licensee;

(2) Where a person immediately responsible for the operation of the transmitter is stationed;

(3) Where the monitoring facilities required by this part are installed.

(c) *Control point location*. The location of the control point will be specified in the station license and will be assumed to be the same as that of the transmitting equipment unless an application for a different location has been approved by the Commission.

(d) *Control point facilities required*. At each control point, the following facilities shall be installed:

(1) A carrier-operated device which will provide continuous visual indication when the transmitter is radiating, or, a pilot lamp or meter which will provide continuous visual indication when the transmitter circuits have been placed in a condition to produce radiation. The provisions of this subparagraph shall not apply to hand-carried transmitters or transmitters installed on motorcycles. The control point for a transmitter utilized to activate another radio station may employ a single pilot lamp or meter as an indication of the activation of local and remote transmitters.

(2) Facilities which will permit the person responsible for the operation of the transmitter either to disconnect the dispatch point circuits from the transmitter or to render the transmitter inoperative from any dispatch point under his supervision; and

(3) Facilities which will permit the person responsible for the operation of the transmitter to turn the transmitter carrier on and off at will.

(e) *Dispatch point.* A dispatch point is any position from which messages may be transmitted under the supervision of the person at a control point who is responsible for the operation of the transmitter. Dispatch points may be installed without authorization from the Commission.

[43 FR 54791, Nov. 22, 1978; 44 FR 67118, Nov. 23, 1979, as amended at 48 FR 29517, June 27, 1983]

§ 90.431 Unattended operation.

No person is required to be in attendance at a station when transmitting during normal rendition of service and when either:

(a) Transmitting for telemetering purposes; or,

(b) Retransmitting by self-actuating means a radio signal received from another radio station or stations.

§ 90.433 Operator requirements.

(a) No operator license or permit is required for the operation, maintenance, or repair of stations licensed under this part.

(b) Any person, with the consent or authorization of the licensee, may employ stations in this service for the purpose of telecommunications.

(c) The station licensee shall be responsible for the proper operation of the station at all times and is expected to provide observations, servicing and maintenance as often as may be necessary to ensure proper operation. All adjustments or tests during or coincident with the installation, servicing, or maintenance of the station should be performed by or under the immediate supervision and responsibility of a person certified as technically qualified to perform transmitter installation, operation, maintenance, and repair duties in the private land mobile services and fixed services by an organization or committee representative of users in those services.

(d) The provisions of paragraph (b) of this section shall not be construed to change or diminish in any respect the responsibility of station licensees to have and to maintain control over the stations licensed to them (including all transmitter units thereof), or for the proper functioning and operation of those stations (including all transmitter units thereof), in accordance with the terms of the licenses of those stations.

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303(r), and sec. 553 of the Administrative Procedures Act, 5 U.S.C. 553)

[49 FR 20672, May 16, 1984]

§ 90.437 Posting station licenses.

(a) The current original authorization for each station shall be retained as a permanent part of the station records but need not be posted.

(b) Entities authorized under this part must make available either a clearly legible photocopy of the authorization for each base or fixed station at a fixed location at every control point of the station or an address or location where the current authorization may be found.

(c) An applicant operating under temporary authority in accordance with § 90.159 must post an executed copy of FCC Form 601 at every control point of the system or an address or location where the current executed copy may be found.

[43 FR 54791, Nov. 22, 1978, as amended at 45 FR 59884, Sept. 11, 1980; 47 FR 41045, Sept. 16, 1982; 47 FR 51883, Nov. 18, 1982; 54 FR 4030, Jan. 27, 1989; 59 FR 59965, Nov. 21, 1994; 63 FR 68966, Dec. 14, 1998]

§ 90.439 Inspection of stations.

All stations and records of stations in these services shall be made available for inspection at any reasonable time and any time while the station is in operation upon reasonable request of an authorized representative of the Commission.

§ 90.441 Inspection and maintenance of antenna structure marking and associated control equipment.

The owner of each antenna structure required to be painted and/or illuminated under the provisions of Section 303(q) of the Communications Act of 1934, as amended, shall operate and maintain the antenna structure painting and lighting in accordance with part 17 of this chapter. In the event of default by the owner, each licensee or

permittee shall be individually responsible for conforming to the requirements pertaining to antenna structure painting and lighting.

[61 FR 4369, Feb. 6, 1996]

§ 90.443 Content of station records.

Each licensee of a station in these services shall maintain records in accordance with the following:

(a) For all stations, the results and dates of the transmitting measurements required by § 90.215 of this part and the name of the person or persons making the measurements.

(b) For all stations, the dates and pertinent details of any maintenance performed on station equipment, and the name and address of the service technician who did the work. If all maintenance is performed by the same technician or service company, the name and address need be entered only once in the station records.

(c) For private land stations that are interconnected with the public switched telephone network, the licensee must maintain a detailed description of how interconnection is accomplished. When telephone service costs are shared, at least one licensee participating in the cost sharing arrangement must maintain cost sharing records. A report of the cost distribution must be placed in the licensee's station records and made available to participants in the sharing and the Commission upon request. See § 90.477.

(d) For shared land stations, the records required by § 90.179.

[43 FR 54791, Nov. 22, 1978, as amended at 48 FR 26621, June 9, 1983; 48 FR 29518, June 27, 1983; 50 FR 39681, Sept. 30, 1985; 50 FR 40976, Oct. 8, 1985; 61 FR 4369, Feb. 6, 1996]

§ 90.445 Form of station records.

(a) Station records shall be kept in an orderly manner, and in such detail that the data required are readily available. Key letters or abbreviations may be used if proper meaning or explanation is set forth in the record.

(b) Each entry in the records of each station shall be signed by a person qualified to do so, having actual knowledge of the facts to be recorded.

(c) No record or portion thereof shall be erased, obliterated, or wilfully destroyed within the required retention period. Any necessary correction may be made only by the person originating the entry, who shall strike out the erroneous portion, initial the correction made, and indicate the date of correction.

§ 90.447 Retention of station records.

Records required by this part shall be retained by the licensee for at least one year.

Subpart O—Transmitter Control

§ 90.460 Scope.

This subpart sets forth the provisions relating to permissible methods of transmitter control and interconnection (see the definition in § 90.7) of radio systems authorized under this part.

[44 FR 67124, Nov. 23, 1979, as amended at 62 FR 18934, Apr. 17, 1997]

§ 90.461 Direct and remote control of transmitters.

(a) *In general.* Radio transmitters may be operated and controlled directly (as when the operating position for the transmitter and the transmitter being operated are at the same location), or remotely (as when the transmitter being operated and the position from which it is being operated are at different locations).

(b) *Control of transmitters at remote locations.* Radio transmitters at remote locations may be operated and controlled through the use of wire line or radio links; or through dial-up circuits, as provided in paragraph (c) of this section. Such control links or circuits may be either those of the licensee or they may be provided by common carriers authorized by law to furnish such service.

(c) *Dial-up circuits.* Dial-up circuits may be provided by wire line telephone companies under appropriate tariffs, and they may be used by licensees for purposes of transmitter control, provided:

(1) The dial-up circuits serve only to link licensed transmitter control points and the transmitters being controlled.

(2) The dial-up circuits are so designed that the transmitters being controlled cannot be operated from any fixed position other than the licensed control points for those transmitters.

(3) Equipment used to provide the transmitter/dial-up-circuit interface is designed to preclude associated mobile units of the licensee from reaching any point(s) served by the wire line telephone facilities other than the control point(s) of the station(s) controlled.

(4) Any direct electrical connection to the telephone network shall comply with applicable tariffs and with part 68 of the Commission's Rules (See § 90.5(j)).

(5) Interconnection, within the meaning of §§ 90.7 and 90.477 through 90.483, may not take place at a control point which connects to its associated transmitter(s) through dial-up circuits; nor may such dial-up transmitter control circuits be used in conjunction with (or shared by) interconnection equipment.

[43 FR 54791, Nov. 22, 1978, as amended at 44 FR 67124, Nov. 23, 1979; 60 FR 50123, Sept. 28, 1995]

§ 90.463 Transmitter control points.

(a) A control operator is required to be stationed at the operating position of a transmitter control point. A control operator is any person designated by the licensee to exercise supervision and control over the operation and use of the licensee's facilities. The control operator may be the licensee; or an employee of the licensee; or the agent of the licensee, appointed by the licensee to act as the control operator; or a third-party contractor, engaged by the licensee to serve as the control operator: *Provided, however,* In no case, through appointment or designation of any person to serve as control operator, may the licensee delegate any of the duties and responsibilities the licensee may have in his capacity as licensee.

(b) Each station or licensed system of communication shall normally have a control point, or control points, at which the control operator or operators are stationed and at or from which the licensee may exercise supervision and control over the authorized facilities, as required by the provisions of § 90.461. *Provided, however,* Control point requirements may vary from one system to another, depending upon the nature of the radio operation; the way and by whom the facilities are employed; and other factors, as set out in other rule sections under this subpart.

(c) A transmitter control point may be located at a fixed position in a system of communication at or from which the control operator exercises supervision and control over the operation and use of the licensed facilities. Each fixed transmitter control point shall have equipment and facilities to permit the control operator:

(1) To determine when the transmitter or transmitters controlled are either radiating ''RF'' energy, or when the transmitter circuits have been placed in a condition to produce such radiation. This may be accomplished either through the use of a carrier operated device which provides a visual indication when the transmitter(s) are radiating or a pilot lamp or meter which provides a visual indication when the transmitter circuits have been placed in a condition to produce radiation. Further, where a local transmitter is used to activate a remote transmitter or transmitters in the licensee's system of communication, a single pilot lamp or meter may be employed to indicate the activation of both the local and the remote transmitter(s).

(2) To turn the carrier of the transmitter on and off at will, or to close the system down completely, when circumstances warrant such action.

(d) The licensee's transmitting facilities may be operated from dispatch points, the fixed control point shall have equipment to permit the control operator to either disconnect the dispatch point circuits from the transmitter(s) or to render the transmitter(s) inoperative from any dispatch point being supervised.

(e) Where the system is interconnected with public communication facilities, as provided at §§ 90.477 through 90.483, and where those rules so require, the fixed control point shall be equipped to permit the control operator:

(1) To monitor co-channel facilities of other licensees sharing an assigned

channel or channels with the licensee in the licensee's area of operation; and,

(2) To terminate any transmission(s) or communication(s) between points in the public communications system and the private communications system.

(f) In urban areas, the location of fixed transmitter control points will be specified, ''same as transmitter,'' unless the control point is at a street address which is different from that of the transmitter(s) controlled. In rural areas, the location of fixed control points will be specified, ''same as transmitter,'' unless the control point is more than 152.5 m (500 ft) from the transmitter(s) controlled. In the latter case, the approximate location of the control point will be specified in distance and direction from the transmitter(s) controlled in terms of distance and geographical quadrant, respectively. It would be assumed that the location of a fixed control point is the same as the location of the transmitter(s) controlled, unless the applicant includes a request for a different location described in appropriate terms as indicated herein.

(g) [Reserved]

(h) Mobile transmitters shall be assumed to be under the immediate control of the mobile operator; provided, however, overall supervision and control of the operation and use of a communication system may be the responsibility of a fixed control point operator. In general, mobile transmitters shall be equipped to permit the operator to determine when they are radiating ''RF'' energy or when the transmitter circuits have been placed in a condition to produce such radiation. This may be accomplished either through the use of a carrier operated device or of a pilot lamp or meter which will provide a visual indication when the transmitter is radiating or has been placed in a condition to produce radiation provided, however, that hand-carried or pack-carried transmitters and transmitters installed on motorcycles need not be so equipped.

[43 FR 54791, Nov. 22, 1978; 44 FR 32220, June 5, 1979; 44 FR 34134, June 14, 1979, as amended at 44 FR 67125, Nov. 23, 1979; 48 FR 29517, June 27, 1983; 54 FR 39740, Sept. 28, 1989; 58 FR 44960, Aug. 25, 1993]

§ 90.465 Control of systems of communication.

(a) Depending on design considerations, control of a system of communication may be exercised in varying ways. In single frequency simplex, base/mobile operations, control may be exercised by the control operator at the fixed control point. In mobile relay systems, where there is an associated control point or control station, control may be exercised by the operator at the control point or control station. In mobile-only systems, control may be exercised by the mobile operator. In communication systems involving multiple base stations or fixed relays control of the system may result from a combination of factors and considerations, including control by a fixed control point operator at some point within the system of communication or control by the mobile station operator of the licensee.

(b) In internal systems, as defined in § 90.7, control may be maintained by conforming the system to the requirements of §§ 90.471 through 90.475.

(c) In interconnected systems, as defined in § 90.7, control may be maintained by conforming operation and system design to that permitted in §§ 90.477 through 90.483.

[43 FR 54791, Nov. 22, 1978, as amended at 54 FR 39740, Sept. 28, 1989; 72 FR 35199, June 27, 2007]

§ 90.467 Dispatch points.

Dispatch points meeting the requirements of this section need not be specifically authorized; provided, however, that the licensee of any radio station operated from a dispatch point or points shall assume full responsibility for the use and operation of the authorized facilities in compliance with all applicable provisions of law or rule and shall comply with the policy:

(a) A dispatch point may be linked to the transmitter(s) being operated by private or leased wire line of fixed radio circuits, provided the requirements of § 90.463 are met.

(b) No telephone position in the public, switched, telephone network will be treated as a dispatch point within the meaning or intent of this section.

(c) Operation of transmitting facilities from dispatch points is permitted

only when the control operator at a fixed control point in the system is on duty and at no other time.

§ 90.469 Unattended operation.

(a) Subject to the provisions of §§ 90.243, 90.245, and 90.247, mobile relay, fixed relay, and mobile repeater stations are authorized for unattended operation; and the transmitter control point requirements set out at §§ 90.463 through 90.465 shall not apply.

(b) Self-activated transmitters may be authorized for unattended operation where they are activated by either electrical or mechanical devices, provided the licensee adopts reasonable means to guard against malfunctions and harmful interference to other users.

INTERNAL TRANSMITTER CONTROL SYSTEMS

§ 90.471 Points of operation in internal transmitter control systems.

The transmitting facilities of the licensee may be operated from fixed positions located on premises controlled by the licensee. The fixed position may be part of a private telephone exchange or it may be any position in a closed or limited access communications facility intended to be used by employees of the licensee for internal communications and transmitter control purposes. Operating positions in internal transmitter control systems are not synonymous with dispatch points (See § 90.467) nor with telephone positions which are part of the public, switched telephone network; and the scheme of regulation is to be considered and treated as being different. See §§ 90.485 through 90.489.

[44 FR 67125, Nov. 23, 1979]

§ 90.473 Operation of internal transmitter control systems through licensed fixed control points.

An internal transmitter control system may be operated under the control and supervision of a control operator stationed at a fixed control point in the system. In such a case, the control point must be equipped to permit the control operator to monitor all traffic to and from fixed positions and mobile stations or paging units of the licensee; and the system shall be so designed to permit the control operator to either disconnect any operating position in the internal system from the transmitter control circuit or to close the system down entirely at will.

[44 FR 67125, Nov. 23, 1979]

§ 90.475 Operation of internal transmitter control systems in specially equipped systems.

(a) An internal transmitter control system need not be designed to meet the requirements of § 90.473 if it meets the following requirements:

(1) All operating positions must be located on premises controlled by the licensee.

(2) An internal transmitter control system may be used in conjunction with other approved methods of transmitter control and interconnection so long as the internal transmitter control system, itself, is neither accessed from telephone positions in the public switched telephone network (PSTN), nor uses dial-up circuits in the PSTN. Licensees with complex communications systems involving fixed systems whose base stations are controlled by such systems may automatically access these base stations through the microwave or operational fixed systems from positions in the PSTN, so long as the base stations and mobile units meet the requirements of § 90.483 and if a separate circuit is provided for each mode of transmitter operation (*i.e.*, conventional, dial-up or Internet).

(3) The system must be designed so that upon completion of a transmission, the base station transmitter(s) will close down automatically within 3 seconds.

(4) To guard against malfunctions, the system must also be designed so that the base station(s) will be deactivated by an automatic timing device when a modulated signal is not transmitted for a period of three (3) consecutive minutes.

(5) The system must include automatic monitoring equipment, installed at the base station transmitter site(s), which will prevent the activation of the system when signals of other co-channel stations are present.

(b) [Reserved]

[43 FR 54791, Nov. 22, 1978, as amended at 44 FR 67125, Nov. 23, 1979; 47 FR 17521, Apr. 23, 1982; 72 FR 35199, June 27, 2007]

INTERCONNECTED SYSTEMS

§ 90.476 Interconnection of fixed stations and certain mobile stations.

(a) Fixed stations and mobile stations used to provide the functions of fixed stations pursuant to the provisions of §§ 90.35(c)(11), 90.35(c)(42), and 90.267 are not subject to the interconnection provisions of §§ 90.477 and 90.483 and may be interconnected with the facilities of common carriers.

(b) Mobile stations used to provide the functions of base and mobile relay stations pursuant to the provisions of §§ 90.35(c)(11), 90.35(c)(42), and 90.267 are not subject to the provisions of § 90.477(d)(3) and may be interconnected with the facilities of common carriers subject to the provisions of §§ 90.477(d)(1), 90.477(d)(2), 90.477(e), and 90.483.

(c) The provisions of this section do not apply to commercial mobile radio service providers, as defined in part 20 of this chapter.

[50 FR 15152, Apr. 17, 1985, as amended at 59 FR 59965, Nov. 21, 1994; 62 FR 18934, Apr. 17, 1997]

§ 90.477 Interconnected systems.

(a) Applicants for new land stations to be interconnected with the public switched telephone network must indicate on their applications (class of station code) that their stations will be interconnected. Licensees of land stations that are not interconnected may interconnect their stations with the public switched telephone network only after modifying their license. *See* § 1.929 of this chapter. In all cases a detailed description of how interconnection is accomplished must be maintained by licensees as part of their station records. See § 90.433 of this part.

(b) In the frequency ranges 806–824 MHz, 851–869 MHz, 896–901 MHz, and 935–940 MHz, interconnection with the public switched telephone network is authorized under the following conditions:

(1) Interconnected operation is on a secondary basis to dispatch operation. This restriction will not apply to trunked systems or on any channel assigned exclusively to one licensee.

(2) Interconnection may be accomplished at any location through a separate or shared interconnection device. When land stations subject to this part are multiple licensed or shared by authorized users, arrangements for telephone service must be made with a duly authorized carrier by users, licensees, or their authorized agents on a non-profit cost sharing basis. When telephone service costs are shared, at least one licensee participating in the cost sharing arrangement must maintain cost sharing records and the costs must be distributed at least once a year. Licensees, users, or their authorized agents may also make joint use arrangements with a duly authorized carrier and arrange that each licensee or user pay the carrier directly for the licensee's or user's share of the joint use of the shared telephone service. A report of the cost distribution must be placed in the licensee's station records and made available to participants in the sharing and the Commission upon request. In all cases, arrangements with the duly authorized carrier must disclose the number of licensees and users and the nature of the use.

(c) Interconnection of facilities in the Radiolocation Service (subpart F) will not be permitted.

(d) In the frequency ranges below 800 MHz, interconnection with the public switched telephone network is authorized under the following conditions:

(1) Interconnected operation is on a secondary basis to dispatch operation. This restriction will not apply to trunked systems or on any channel assigned exclusively to one licensee.

(2) Interconnection may be accomplished at any location through a separate or shared interconnection device. When land stations subject to this part are multiple licensed or shared by authorized users, arrangements for telephone service must be made with a duly authorized carrier by users, licensees, or their authorized agents on a non-profit cost sharing basis. When telephone service costs are shared, at least one licensee participating in the cost sharing arrangement must maintain cost sharing records and the costs

must be distributed at least once a year. Licensees, users, or their authorized agents may also make joint use arrangements with a duly authorized carrier and arrange that each licensee or user pay the carrier directly for the licensee's or user's share of the joint use of the shared telephone service. A report of the cost distribution must be placed in the licensee's station records and made available to participants in the sharing and the Commission upon request. In all cases, arrangements with the duly authorized carrier must disclose the number of licensees and users and the nature of the use.

(3) For licensees in the Industrial/Business Pool and those licensees who establish eligibility pursuant to § 90.20(a)(2) of this part, except for §§ 90.20(a)(2)(i) and 90.20(a)(2)(ii) of this part and medical emergency systems in the 450–470 MHz band, interconnection will be permitted only where the base station site or sites proposed stations are located 120 km (75 mi.) or more from the designated centers of the urbanized areas listed below. If these licensees seek to connect within 120 km (75 mi.) of the 25 cities, they must obtain the consent of all co-channel licensees located both within 120 km (75 mi.) of the center of the city; and within 120 km (75 mi.) of the interconnected base station transmitter. The consensual agreements among the co-channel licensees must specifically state the terms agreed upon and a statement must be submitted to the Commission indicating that all co-channel licensees have consented to the use of interconnection. If a licensee has agreed to the use of interconnection on the channel, but later decides against the use of interconnection, the licensee may request that the co-channel licensees reconsider the use of interconnection. If the licensee is unable to reach an agreement with co-channel licensees, the licensee may request that the Commission consider the matter and assign it to another channel. If a new licensee is assigned to a frequency where all the co-channel licensees have agreed to the use of interconnection and the new licensee does not agree, the new licensee may request that the co-channel licensees reconsider the use of interconnection. If the new licensee cannot reach an agreement with co-channel licensees it may request that the Commission reassign it to another channel.

NOTE: Coordinates are referenced to North American Datum 1983 (NAD83).

Urban area	North latitude	West longitude
New York, New York-Northeastern New Jersey.	40°45′06.4″	73°59′37.5″
Los Angeles-Long Beach, California.	34°03′15.0″	118°14′31.3″
Chicago, Illinois-Northwestern Indiana.	41°52′28.1″	87°38′22.2″
Philadelphia, Pennsylvania/New Jersey.	39°56′58.4″	75°09′19.6″
Detroit, Michigan	42°19′48.1″	83°02′56.7″
San Francisco-Oakland, California.	37°46′38.7″	122°24′43.9″
Boston, Massachusetts	42°21′24.4″	71°03′23.2″
Washington, DC/Maryland/Virginia.	38°53′51.4″	77°00′31.9″
Cleveland, Ohio	41°29′51.2″	81°41′49.5″
St Louis, Missouri/Illinois	38°37′45.2″	90°12′22.4″
Pittsburgh, Pennsylvania	40°26′19.2″	79°59′59.2″
Minneapolis-St. Paul, Minnesota	44°58′56.9″	93°15′43.8″
Houston, Texas	29°45′26.8″	95°21′37.8″
Baltimore, Maryland	39°17′26.4″	76°36′43.9″
Dallas-Fort Worth, Texas	32°47′09.5″	96°47′38.0″
Milwaukee, Wisconsin	43°02′19.0″	87°54′15.3″
Seattle-Everett, Washington	47°36′31.4″	122°20′16.5″
Miami, Florida	25°46′38.4″	80°11′31.2″
San Diego, California	32°42′53.2″	117°09′24.1″
Atlanta, Georgia	33°45′10.4″	84°23′36.7″
Cincinnati, Ohio/Kentucky	39°06′07.2″	84°30′34.8″
Kansas City, Missouri/Kansas	39°04′56.0″	94°35′20.8″
Buffalo, New York	42°52′52.2″	78°52′20.1″
Denver, Colorado	39°44′58.0″	104°59′23.9″
San Jose, California	37°20′15.8″	121°53′27.8″

(e) Additional frequencies shall not be assigned to enable any licensee to employ a preferred interconnection capability.

(f) Paging systems operating on frequencies in the bands below 800 MHz are not subject to the interconnection provisions of § 90.477(d)(3).

[47 FR 17520, Apr. 23, 1982, as amended at 48 FR 29518, June 27, 1983; 50 FR 15152, Apr. 17, 1985; 51 FR 14998, Apr. 22, 1986; 51 FR 37401, Oct. 22, 1986; 52 FR 15501, Apr. 29, 1987; 52 FR 29856, Aug. 12, 1987; 53 FR 1025, Jan. 15, 1988; 58 FR 44961, Aug. 25, 1993; 61 FR 6576, Feb. 21, 1996; 62 FR 18934, Apr. 17, 1997; 63 FR 68966, Dec. 14, 1998]

§ 90.483 Permissible methods and requirements of interconnecting private and public systems of communications.

Interconnection may be accomplished by commercial mobile service providers licensed under this part by any technically feasible means. Interconnection may be accomplished by private mobile service providers either

manually or automatically under the supervision and control of a transmitter control operator at a fixed position in the authorized system of communications or it may be accomplished under the supervision and control of mobile operators, and is subject to the following provisions:

(a) Where a system is interconnected manually at a fixed control point, the control point operator must maintain the capability to turn the carrier of the transmitter off or to de-activate the system completely when circumstances warrant such action.

(b) When the system is interconnected automatically it may be supervised at the control point or in mobile units.

(1) For control point supervision, the following is required:

(i) The control point operator must maintain the capability to turn the carrier of the transmitter off or to deactivate the system completely when circumstances warrant such action.

(ii) When a frequency is shared by more than one system, automatic monitoring equipment must be installed at the base station to prevent activation of the transmitter when signals of co-channel stations are present and activation would interfere with communications in progress. Licensees may operate without the monitoring equipment if they have obtained the consent of all co-channel licensees located within a 120 kilometer (75 mile) radius of the interconnected base station transmitter. A statement must be submitted to the Commission indicating that all co-channel licensees have consented to operate without the monitoring equipment. If a licensee has agreed that the use of monitoring equipment is not necessary, but later decides that the monitoring equipment is necessary, the licensee may request that the co-channel licensees reconsider the use of monitoring equipment. If the licensee cannot reach an agreement with co-channel licensees, the licensee may request that the Commission consider the matter and assign it to another channel. If a new licensee is assigned to a frequency where all the co-channel licensees have agreed that the use of monitoring equipment is not necessary, and the new licensee does not agree, the new licensee may request the co-channel licensees to reconsider the use of monitoring equipment. If the new licensee cannot reach an agreement with co-channel licensees, it should request a new channel from the Commission. Systems on frequencies above 800 MHz are exempt from this requirement.

(2) For mobile unit supervision, the following is required:

(i) When a frequency is shared by more than one system, automatic monitoring equipment must be installed at the base station to prevent activation of the transmitter when signals of co-channel stations are present and activation would interfere with communications in progress. Licensees may operate without this equipment if they have obtained the consent of all co-channel licensees located within a 120 kilometer (75 mile) radius of the interconnected base station transmitter. A statement must be submitted to the Commission indicating that all co-channel licensees have consented to operate without the monitoring equipment. If a licensee has agreed that the use of monitoring equipment is not necessary, but later decides that the monitoring equipment is necessary, the licensee may request that the co-channel licensees reconsider the use of monitoring equipment. If the licensee cannot reach an agreement with co-channel licensees, the licensee may request that the Commission consider the matter and assign it to another channel. If a new licensee is assigned to a frequency where all the co-channel licensees have agreed that the use of monitoring equipment is not necessary, and the new licensee does not agree, the new licensee may request the co-channel licensees to reconsider the use of monitoring equipment. If the new licensee cannot reach an agreement with co-channel licensees, it should request a new channel from the Commission. Systems on frequencies above 800 MHz are exempt from this requirement.

(ii) Initial access points within the public switched telephone network must be limited to transmission of a 3-second tone, after which time the transmitter shall close down. No additional signals may be transmitted until

acknowledgement from a mobile station of the licensee is received. Licensees are exempt from this requirement if they have obtained the consent of all co-channel licensees located within a 120 kilometer (75 mile) radius of the interconnected base station transmitter. However, licensees may choose to set their own time limitations. A statement must be submitted to the Commission indicating that all co-channel licensees have consented to operate without the monitoring equipment. If a licensee has agreed that the use of monitoring equipment is not necessary, but later decides that the monitoring equipment is necessary, the licensee may request that the co-channel licensees reconsider the use of monitoring equipment. If the licensee cannot reach an agreement with co-channel licensees, the licensee may request that the Commission consider the matter and assign it to another channel. If a new licensee is assigned to a frequency where all the co-channel licensees have agreed that the use of monitoring equipment is not necessary, and the new licensee does not agree, the new licensee may request the co-channel licensees to reconsider the use of monitoring equipment. If the new licensee cannot reach an agreement with co-channel licensees, it should request a new channel from the Commission. Systems on frequencies above 800 MHz are exempt from this requirement.

(c) In single frequency systems, equipment must be installed at the base station which will limit any single transmission from within the public switched telephone network to 30 seconds duration and which in turn will activate the base station receiver to monitor the frequency for a period of not less than three (3) seconds. The mobile station must be capable of terminating the communications during the three (3) seconds. Licensees are exempt from this requirement if they have obtained the consent of all co-channel licensees located within a 120 km (75 mile) radius of the interconnected base station transmitter. However, licensees may choose to set their own time limitations. A statement must be submitted to the Commission indicating that all co-channel licensees have consented to operate without the monitoring equipment. If a licensee has agreed that the use of monitoring equipment is not necessary, but later decides that the monitoring equipment is necessary, the licensee may request that the co-channel licensees reconsider the use of monitoring equipment. If the licensee cannot reach an agreement with co-channel licensees, the licensee may request that the Commission consider the matter and assign it to another channel. If a new licensee is assigned to a frequency where all the co-channel licensees have agreed that the use of monitoring equipment. If the new licensee cannot reach an agreement with co-channel licensees, it should request a new channel from the Commission.

(d) A timer must be installed at the base station transmitter which limits communications to three (3) minutes. After three (3) minutes, the system must close down, with all circuits between the base station and the public switch telephone network disconnected. This provision does not apply to systems which establish eligibility pursuant to §§ 90.20(a)(1)(i), 90.20(a)(1)(ii), and 90.20(a)(2), except §§ 90.20(a)(2)(i) and 90.20(a)(2)(ii), or who are Power, Petroleum, or Railroad licensees (as defined in § 90.7), or to systems above 800 MHz. All systems must be equipped with a timer that closes down the transmitter within three minutes of the last transmission. Licensees may operate without these requirements if they have obtained the consent of all co-channel licensees located within a 120 km (75 mile) radius of the interconnected base station transmitter. However, licensees may choose to set their own time limitations. A statement must be submitted to the Commission indicating that all co-channel licensees have consented to operate without the monitoring equipment. If a licensee has agreed that the use of monitoring equipment is not necessary, but later decides that the monitoring equipment is necessary, the licensee may request that the co-channel licensees reconsider the use of monitoring equipment. If the licensee cannot reach an agreement with co-channel licensees, the licensee may request that the Commission consider the matter and assign it to another channel. If

a new licensee is assigned to a frequency where all the co-channel licensees have agreed that the use of monitoring equipment is not necessary, and the new licensee does not agree, the new licensee may request the co-channel licensees to reconsider the use of monitoring equipment. If the new licensee cannot reach an agreement with co-channel licensees, it should request a new channel from the Commission.

[47 FR 17520, Apr. 23, 1982, as amended at 48 FR 29518, June 27, 1983; 50 FR 15153, Apr. 17, 1985; 58 FR 44961, Aug. 25, 1993; 59 FR 59966, Nov. 21, 1994; 61 FR 6576, Feb. 21, 1996; 62 FR 18934, Apr. 17, 1997; 72 FR 35199, June 27, 2007]

Subpart P—Paging Operations

§ 90.490 One-way paging operations in the private services.

(a) Subject to specific prohibition or restriction by rule provisions governing the radio service in which a licensee's radio system is authorized, paging operations are permitted:

(1) Where the signals and messages are transmitted by a control operator of the licensee stationed at a licensed control point in the licensee's system of communication.

(2) Where the signals and messages are transmitted from an operating position within an internal system of communication which meets the tests of §§ 90.471 through 90.475.

(3) Where the signals and messages are transmitted from a dispatch point within the licensee's system of communication, as defined as § 90.7.

(b) Systems employing dial-up circuits (§ 90.461(c)) may be used in one-way paging operations, but only where the paging signals are transmitted as provided at paragraph (a)(1) of this section.

(c) Paging may be initiated directly from telephone positions in the public switched telephone network. When land stations are multiple licensed or otherwise shared by authorized users, arrangements for the telephone service must be made with a duly authorized carrier by users, licensees, or their authorized agents on a non-profit, cost-shared basis. When telephone service costs are shared, at least one licensee participating in the cost sharing arrangements must maintain cost sharing records and the costs must be distributed at least once a year. Licensees, users, or their authorized agents may also make joint use arrangements with a duly authorized carrier and arrange that each licensee or user pay the carrier directly for the licensee's or user's share of the joint use of the shared telephone service. A report of the cost distribution must be placed in the licensee's station records and made available to participants in the sharing arrangement and the Commission upon request. In all cases, arrangements with the duly authorized carrier must disclose the number of licensees and users and the nature of the use.

[47 FR 39509, Sept. 8, 1982, as amended at 48 FR 56231, Dec. 20, 1983; 52 FR 15501, Apr. 29, 1987]

§ 90.492 One way paging operations in the 806–824/851–869 MHz and 896–901/935–940 MHz bands.

Paging operations are permitted in these bands only in accordance with §§ 90.645(e) and (f).

[54 FR 4030, Jan. 27, 1989]

§ 90.493 Paging operations on exclusive channels in the 929–930 MHz band.

Paging operations on the exclusive channels in the 929–930 MHz band are subject to the rules set forth in this section.

(a) *Exclusive channels*. The center frequencies of the channels in the 929–930 MHz band that may be assigned on an exclusive basis are as follows: 929.0125, 929.1125, 929.1375, 929.1875, 929.2125, 929.2375, 929.2875, 929.3125, 929.3375, 929.3625, 929.3875, 929.4125, 929.4375, 929.4625, 929.4875, 929.5125, 929.5375, 929.5625, 929.5875, 929.6125, 929.6375, 929.6625, 929.6875, 929.7125, 929.7375, 929.7625, 929.7875, 929.8125, 929.8375, 929.8625, 929.8875, 929.9125, 929.9375, 929.9625, and 929.9875 MHz.

(b) *Part 22 licensing, construction and operation rules apply*. Licensing, construction and operation of paging stations on the exclusive channels in the 929–930 MHz band are subject to the application filing, licensing procedure, auction procedure, construction, operation and notification rules and requirements that are set forth in part 22

of this chapter for paging stations operating in the 931–932 MHz band, instead of procedures elsewhere in this part.

(c) *Part 22 power limits apply; type acceptance required.* Paging operations on the exclusive channels in the 929–930 MHz band are subject to the transmitting power limits set forth in part 22 of this chapter for paging stations operating in the 931–932 MHz band, instead of power limits elsewhere in this part. Transmitters used on the exclusive channels in the 929–930 MHz band must be of a type accepted under either part 22 of this chapter or this part (or both).

[62 FR 11636, Mar. 12, 1997]

§ 90.494 Paging operations on shared channels in the 929–930 MHz band.

(a) This section applies to licensing of paging stations on the shared (nonexclusive) channels in the 929–930 MHz band. The center frequencies of these channels are listed in paragraph (b) of this section.

(b) The following frequencies are available to all eligible part 90 users for one-way paging systems on a shared basis only and will not be assigned for the exclusive use of any licensee.

929.0375	929.1625
929.0625	929.2625
929.0875	

(c) All frequencies listed in this section may be used to provide one-way paging communications to persons eligible for licensing under subpart B or C of this part, representatives of Federal Government agencies, individuals, and foreign governments and their representatives. The provisions of § 90.173(b) apply to all frequencies listed in this section.

(d) Licensees on these frequencies may utilize any type of paging operation desired (tone only, tone-voice, digital, tactile, optical readout, etc.).

(e) There shall be no minimum or maximum loading standards for these frequencies.

(f) The effective radiated power for base stations providing paging service on the shared channels must not exceed 3500 watts.

[58 FR 62291, Nov. 26, 1993, as amended at 59 FR 59966, Nov. 21, 1994; 61 FR 8483, Mar. 5, 1996; 62 FR 11637, Mar. 12, 1997; 62 FR 18934, Apr. 17, 1997; 66 FR 57885, Nov. 19, 2001]

Subpart Q [Reserved]

Subpart R—Regulations Governing the Licensing and Use of Frequencies in the 763–775 and 793–805 MHz Bands

SOURCE: 63 FR 58651, Nov. 2, 1998, unless otherwise noted.

§ 90.521 Scope.

This subpart sets forth the regulations governing the licensing and operations of all systems operating in the 758–775 MHz and 788–805 MHz frequency bands. It includes eligibility, operational, planning and licensing requirements and technical standards for stations licensed in these bands. The rules in this subpart are to be read in conjunction with the applicable requirements contained elsewhere in this part; however, in case of conflict, the provisions of this subpart shall govern with respect to licensing and operation in these frequency bands.

[63 FR 58651, Nov. 2, 1998, as amended at 72 FR 48860, Aug. 24, 2007; 77 FR 62463, Oct. 15, 2012]

§ 90.523 Eligibility.

This section implements the definition of public safety services contained in 47 U.S.C. 337(f)(1). The following are eligible to hold Commission authorizations for systems operating in the 769–775 MHz and 799–805 MHz frequency bands:

(a) *State or local government entities.* Any territory, possession, state, city, county, town, or similar State or local governmental entity is eligible to hold authorizations in the 764–776 MHz and 794–806 MHz frequency bands.

(b) *Nongovernmental organizations.* A nongovernmental organization (NGO) that provides services, the sole or principal purpose of which is to protect the safety of life, health, or property, is eligible to hold an authorization for a system operating in the 764–776 MHz

and 794–806 MHz frequency bands for transmission or reception of communications essential to providing such services if (and only for so long as) the NGO applicant/licensee:

(1) Has the ongoing support (to operate such system) of a state or local governmental entity whose mission is the oversight of or provision of services, the sole or principal purpose of which is to protect the safety of life, health, or property;

(2) Operates such authorized system solely for transmission of communication essential to providing services the sole or principal purpose of which is to protect the safety of life, health, or property; and

(3) All applications submitted by NGOs must be accompanied by a new, written certification of support (for the NGO applicant to operate the applied-for system) by the state or local governmental entity referenced in paragraph (b)(1) of this section.

(c) *All NGO authorizations are conditional.* NGOs assume all risks associated with operating under conditional authority. Authorizations issued to NGOs to operate systems in the 764–776 MHz and 794–806 MHz frequency bands include the following condition: If at any time the supporting governmental entity (see paragraph (b)(1)) notifies the Commission in writing of such governmental entity's termination of its authorization of a NGO's operation of a system in the 764–776 MHz and 794–806 MHz frequency bands, the NGO's application shall be dismissed automatically or, if authorized by the Commission, the NGO's authorization shall terminate automatically.

(d) Paragraphs (a) and (b) notwithstanding, no entity is eligible to hold an authorization for a system operating in the 764–776 MHz and 794–806 MHz frequency bands on the basis of services, the sole or principal purpose of which is to protect the safety of life, health or property, that such entity makes commercially available to the public.

(e) A nationwide license for the 758–769 MHz and 788–799 MHz bands shall be issued to the First Responder Network Authority.

[63 FR 58651, Nov. 2, 1998, as amended at 65 FR 53645, Sept. 5, 2000; 72 FR 48860, Aug. 24, 2007; 79 FR 600, Jan. 6, 2014]

§ 90.525 Administration of interoperability channels.

(a) States are responsible for administration of the Interoperability channels in the 769–775 MHz and 799–805 MHz frequency bands. Base and control stations must be licensed individually. A public safety entity meeting the requirements of § 90.523 may operate mobile or portable units on the Interoperability channels in the 769–775 MHz and 799–805 MHz frequency bands without a specific authorization from the Commission provided it holds a part 90 license. All persons operating mobile or portable units under this authority are responsible for compliance with part 90 of these rules and other applicable federal laws.

(b) License applications for Interoperability channels in the 769–775 MHz and 799–805 MHz frequency bands must be approved by a state-level agency or organization responsible for administering state emergency communications. States may hold the licenses for Interoperability channels or approve other qualified entities to hold such licenses. States may delegate the approval process for interoperability channels to another entity, such as regional planning committees.

[72 FR 48860, Aug. 24, 2007]

§ 90.527 Regional plan requirements.

Each regional planning committee must submit a regional plan for approval by the Commission.

(a) *Common elements.* Regional plans must incorporate the following common elements:

(1) Identification of the document as the regional plan for the defined region with the names, business addresses, business telephone numbers, and organizational affiliations of the chairpersons and all members of the planning committee.

(2) A summary of the major elements of the plan and an explanation of how all eligible entities within the region

were given an opportunity to participate in the planning process and to have their positions heard and considered fairly.

(3) A general description of how the spectrum would be allotted among the various eligible users within the region with an explanation of how the requirements of all eligible entities within the region were considered and, to the degree possible, met.

(4) An explanation as to how needs were assigned priorities in areas where not all eligible entities could receive licenses.

(5) An explanation of how the plan had been coordinated with adjacent regions.

(6) A detailed description of how the plan put the spectrum to the best possible use by requiring system design with minimum coverage areas, by assigning frequencies so that maximum frequency reuse and offset channel use may be made, by using trunking, and by requiring small entities with minimal requirements to join together in using a single system where possible.

(7) A detailed description of the future planning process, including, but not limited to, amendment process, meeting announcements, data base maintenance, and dispute resolution.

(8) A certification by the regional planning chairperson that all planning committee meetings, including subcommittee or executive committee meetings, were open to the public.

(b) *Modification of regional plans*. Regional plans may be modified by submitting a written request, signed by the regional planning committee, to the Chief, Public Safety and Homeland Security Bureau. The request must contain the full text of the modification. Modifications are considered either major or minor. Regional planning committees must certify that successful coordination with all adjacent regions has occurred for major modifications and that all such regions concur with the major modification. Unless requested otherwise by the regional planning committee, the Bureau will only place major modifications on public notice for comment.

(1) Except as noted below, modifications changing the way channels are allocated, allotted or coordinated are considered major modifications.

(2) Modifications changing how channels are allotted are considered minor modifications only if:

(i) The proposed channel change or channel addition involves a facility located more than seventy miles from the adjacent region border;

(ii) The co-channel or adjacent channel interference contour of the facility changing or adding the channel does not intersect the border of an adjacent region, or

(iii) The proposed channel change or channel addition has been coordinated in writing with any affected adjacent region.

(3) Changes in membership or leadership of regional planning committees are considered minor modifications.

[63 FR 58651, Nov. 2, 1998, as amended at 79 FR 39339, July 10, 2014]

§ 90.529 State License.

(a) Narrowband channels designated as state channels in § 90.531 are licensed to each state (as defined in § 90.7) as follows:

(1) Each state that chooses to take advantage of the spectrum designated as state channels must file an application for up to 2.4 megahertz of this spectrum no later than December 31, 2001. For purposes of this section, the elected chief executive (Governor) of each state, or his or her designee, shall be deemed the person authorized to apply for the State License.

(2) What ever part of this 2.4 megahertz that a state has not applied for by December 31, 2001, will revert to General Use and be administered by the relevant RPC (or RPCs in the instances of states that encompass multiple RPCs).

(b) Each state license will be granted subject to the condition that the state certifies on or before each applicable benchmark date that it is:

(1) Providing or prepared to provide ''substantial service'' to one-third of their population or territory by June 13, 2014, i.e., within five years of the date that incumbent broadcasters are required to relocate to other portions of the spectrum;

(2) Providing or prepared to provide ''substantial service'' to two-thirds of

their population or territory by June 13, 2019, i.e., within ten years of the date that incumbent broadcasters are required to relocate to other portions of the spectrum.

(2) providing or prepared to provide ''substantial service'' to two-thirds of their population or territory by January 1, 2017, *i.e.*, within ten years of the date that incumbent broadcasters are required to relocate to other portions of the spectrum.

(c) The Commission will deem a state ''prepared to provide substantial service'' if the licensee certifies that a radio system has been approved and funded for implementation by the deadline date. ''Substantial service'' refers to the construction and operation of 700 MHz facilities by public safety entities providing service which is sound, favorable , and substantially above a level of mediocre service which just might minimally warrant renewal.

(d) If a state licensee fails to meet any condition of the grant the state license is modified automatically to the frequencies and geographic areas where the state certifies that it is providing substantial service.

(e) Any recovered state license spectrum will revert to General Use. However, spectrum licensed to a state under a state license remains unavailable for reassignment to other applicants until the Commission's database reflects the parameters of the modified state license.

[65 FR 66654, Nov. 7, 2000, as amended at 79 FR 20106, Apr. 11, 2014]

§ 90.531 Band plan.

This section sets forth the band plan for the 758–775 MHz and 788–805 MHz public safety bands.

(a) *Base and mobile use*. The 763–775 MHz band may be used for base, mobile or fixed (repeater) transmissions. The 793–805 MHz band may be used only for mobile or fixed (control) transmissions.

(b) *Narrowband segments*. There are two band segments that are designated for use with narrowband emissions. Each of these narrowband segments is divided into 960 channels having a channel size of 6.25 kHz as follows:

Frequency range	Channel Nos.
769–775 MHz	1–960
799–805 MHz	961–1920

(1) *Narrowband interoperability channels*. The following narrowband channels are designated for nationwide interoperability licensing and use: 23, 24, 39, 40, 63, 64, 79, 80, 103, 104, 119, 120,143, 144, 159, 160, 183, 184, 199, 200, 223, 224, 239, 240, 263, 264, 279, 280, 303, 304, 319, 320, 641, 642, 657, 658, 681, 682, 697, 698, 721, 722, 737, 738, 761, 762, 777, 778, 801, 802, 817, 818, 841, 842, 857, 858, 881, 882, 897, 898, 921, 922, 937, 938, 983, 984, 999, 1000, 1023, 1024, 1039, 1040, 1063, 1064, 1079, 1080, 1103, 1104, 1119, 1120, 1143, 1144, 1159, 1160, 1183, 1184, 1199, 1200, 1223, 1224, 1239, 1240, 1263, 1264, 1279, 1280, 1601, 1602, 1617, 1618, 1641, 1642, 1657, 1658, 1681, 1682, 1697, 1698, 1721, 1722, 1737, 1738, 1761, 1762, 1777, 1778, 1801, 1802, 1817, 1818, 1841, 1842, 1857, 1858, 1881, 1882, 1897, 1898.

(i) *Narrowband data Interoperability channels*. The following channel pairs are reserved nationwide for the express purpose of data transmission only: 279/1239, 280/1240, 921/1881, and 922/1882.

(ii) *Narrowband calling Interoperability channels*. The following channel pairs are dedicated nationwide for the express purpose of *Interoperability* calling only: 39/999, 40/1000, 681/1641, and 682/1642. They may not be used primarily for routine, day-to-day communications. Encryption is prohibited on the designated calling channels.

(iii) *Narrowband trunking Interoperability channels*. The following Interoperability channel pairs may be combined with the appropriate adjacent secondary trunking channel pairs and used in trunked mode on a secondary basis to conventional Interoperability operations: 23/983, 24/984, 103/1063, 104/1064, 183/1143, 184/1144, 263/1223, 264/1224, 657/1617, 658/1618, 737/1697, 738/1698, 817/1777, 818/1778, 897/1857, 898/1858. For every ten general use channels trunked at a station, entities may obtain a license to operate in the trunked mode on two of the above contiguous Interoperability channel pairs. The maximum number of Interoperability channel pairs that can be trunked at any one location is eight.

(2) Narrowband reserve channels. The following narrowband channels are undesignated and reserved: 37, 38, 61, 62, 77, 78, 117, 118, 141, 142, 157, 158, 197, 198,

221, 222, 237, 238, 277, 278, 301, 302, 317, 318, 643, 644, 683, 684, 699, 700, 723, 724, 763, 764, 779, 780, 803, 804, 843, 844, 859, 860, 883, 884, 923, 924, 939, 940, 997, 998, 1021, 1022, 1037, 1038, 1077, 1078, 1101, 1102, 1117, 1118, 1157, 1158, 1181, 1182, 1197, 1198, 1237, 1238, 1261, 1262, 1277, 1278, 1603, 1604, 1643, 1644, 1659, 1660, 1683, 1684, 1723, 1724, 1739, 1740, 1763, 1764, 1803, 1804, 1819, 1820, 1843, 1844, 1883, 1884, 1899, 1900.

(3) *Narrowband low power channels subject to regional planning.* The following narrowband channels are designated for low power use for on-scene incident response purposes using mobiles and portables subject to Commission-approved regional planning committee regional plans. Transmitter power must not exceed 2 watts (ERP): Channels 1–8 paired with Channels 961–968, and Channels 949–958 paired with Channels 1909–1918.

(4) *Narrowband low power itinerant channels.* The following narrowband channels are designated for low power use for on-scene incident response purposes using mobiles and portables. These channels are licensed nationwide for itinerant operation. Transmitter power must not exceed 2 watts (ERP): Channels 9–12 paired with Channels 969–972 and Channels 959–960 paired with Channels 1919–1920.

(5) *Narrowband state channels.* The following narrowband channels are designated for direct licensing to each state (including U.S. territories, districts, and possessions): 25–36, 65–76, 105–116, 145–156, 185–196, 225–236, 265–276, 305–316, 645–656, 685–696, 725–736, 765–776, 805–816, 845–856, 885–896, 925–936, 985–996, 1025–1036, 1065–1076, 1105–1116, 1145–1156, 1185–1196, 1225–1236, 1265–1276, 1605–1616, 1645–1656, 1685–1696, 1725–1736, 1765–1776, 1805–1816, 1845–1856, 1885–1896. Voice operations on these channels are subject to compliance with the spectrum usage efficiency requirements set forth in § 90.535(d).

(6) *Narrowband general use channels.* All narrowband channels established in paragraph (b) of this section, other than those listed in paragraphs (b)(1), (b)(2), (b)(4) and (b)(5) of this section are designated to public safety eligibles subject to Commission approved regional planning committee regional plans. Voice operations on these channels are subject to compliance with the spectrum usage efficiency requirements set forth in § 90.535(d).

(7) *Secondary trunking channels.* The following channel pairs are reserved for secondary trunking operations: 21/981, 22/982, 101/1061, 102/1062, 181/1141, 182/1142, 261/1221, 262/1222, 659/1619, 660/1620, 739/1699, 740/1700, 819/1779, 820/1780, 899/1859, and 900/1860. They may be used only in combination with the appropriate adjacent Interoperability channel pairs specified in paragraph (b)(1)(iii) of this section in trunked systems.

(c) [Reserved]

(d) *Combining channels.* Except as noted in this section, at the discretion of the appropriate regional planning committee, contiguous channels may be used in combination in order to accommodate requirements for larger bandwidth emissions, in accordance with this paragraph. Interoperability channels may not be combined with channels in another group except for channels for secondary trunking channels.

(1) *Narrowband.* Subject to compliance with the spectrum usage efficiency requirements set forth in § 90.535, two or four contiguous narrowband (6.25 kHz) channels may be used in combination as 12.5 kHz or 25 kHz channels, respectively. The lower (in frequency) channel for two channel combinations must be an odd (*i.e.*, 1, 3, 5 * * *) numbered channel. The lowest (in frequency) channel for four channel combinations must be a channel whose number is equal to 1+(4xn), where n = any integer between 0 and 479, inclusive (*e.g.*, channel number 1, 5, * * * 1917). Channel combinations are designated by the lowest and highest channel numbers separated by a hyphen, *e.g.*, ''1–2'' for a two channel combination and ''1–4'' for a four channel combination.

(2) [Reserved]

(e) *Channel pairing.* In general, channels must be planned and assigned in base/mobile pairs that are separated by 30 MHz. However, until December 31, 2006, channels other than those listed in paragraphs (b)(1) and (c)(1), may be planned and assigned in base/mobile pairs having a different separation, where necessary because 30 MHz base/

mobile pairing is precluded by the presence of one or more co-channel or adjacent channel TV/DTV broadcast stations.

(f) *Internal guard band*. The internal guard band (768–769/798–799 MHz) is reserved.

(g) *Broadband*. The 758–768 MHz and 788–798 MHz bands are allocated for broadband communications.

[63 FR 58651, Nov. 2, 1998, as amended at 65 FR 66654, Nov. 7, 2000; 66 FR 10635, 10636, Feb. 16, 2001; 67 FR 61005, Sept. 27, 2002; 67 FR 76700, Dec. 13, 2002; 72 FR 48860, Aug. 24, 2007; 77 FR 62463, Oct. 15, 2012]

§ 90.532 Licensing of the 758–769 MHz and 788–799 MHz Bands.

Pursuant to Section 6201 of the Middle Class Tax Relief and Job Creation Act of 2012, Public Law 112–96, 126 Stat. 156 (2012), a nationwide license for use of the 758–769 MHz and 788–799 MHz bands shall be issued to the First Responder Network Authority for a initial license term of ten years from the date of the initial issuance of the license. Prior to expiration of the term of such initial license, the First Responder Network Authority shall submit to the Commission an application for the renewal of such license. Such renewal application shall demonstrate that, during the preceding license term, the First Responder Network Authority has met the duties and obligations set forth under the foregoing Act. A renewal license shall be for a term not to exceed ten years.

[77 FR 62463, Oct. 15, 2012]

§ 90.533 Transmitting sites near the U.S./Canada or U.S./Mexico border.

This section applies to each license to operate one or more public safety transmitters in the 758–775 MHz and 788–805 MHz bands, at a location or locations North of Line A (see § 90.7) or within 120 kilometers (75 miles) of the U.S.-Mexico border, until such time as agreements between the government of the United States and the government of Canada or the government of the United States and the government of Mexico, as applicable, become effective governing border area non-broadcast use of these bands. Public safety licenses are granted subject to the following conditions:

(a) Public safety transmitters operating in the 758–775 MHz and 788–805 MHz bands must conform to the limitations on interference to Canadian television stations contained in agreement(s) between the United States and Canada for use of television channels in the border area.

(b) Public safety facilities must accept any interference that may be caused by operations of UHF television broadcast transmitters in Canada and Mexico.

(c) Conditions may be added during the term of the license, if required by the terms of international agreements between the government of the United States and the government of Canada or the government of the United States and the government of Mexico, as applicable, regarding non-broadcast use of the 758–775 MHz and 788–805 MHz bands.

[43 FR 54791, Nov. 22, 1978, as amended at 67 FR 76700, Dec. 13, 2002; 72 FR 48861, Aug. 24, 2007; 79 FR 600, Jan. 6, 2014]

§ 90.535 Modulation and spectrum usage efficiency requirements.

Transmitters designed to operate in 769–775 MHz and 799–805 MHz frequency bands must meet the following modulation standards:

(a) All transmitters in the 769–775 MHz and 799–805 MHz frequency bands must use digital modulation. Mobile and portable transmitters may have analog modulation capability only as a secondary mode in addition to its primary digital mode. Mobile and portable transmitters that only operate on the low power channels designated in §§ 90.531(b)(3), 90.531(b)(4), are exempt from this digital modulation requirement.

(b) Transmitters designed to operate in the narrowband segment using digital modulation must be capable of maintaining a minimum data (non-voice) rate of 4.8 kbps per 6.25 kHz of bandwidth.

(c) Transmitters designed to operate in the wideband segment using digital modulation must be capable of maintaining a minimum data (non-voice) rate of 384 kbps per 150 kHz of bandwidth.

(d) The following provisions apply to licensees operating in the channels designated in § 90.531(b)(5) or § 90.531(b)(6).

(1) With the exception of licensees designated in paragraph (d)(2) of this section, after December 31, 2014, licensees may only operate in voice mode in these channels at a voice efficiency of at least one voice path per 6.25 kHz of spectrum bandwidth.

(2) Licensees authorized to operate systems in the voice mode on these channels from applications filed on or before December 31, 2014, may continue operating in voice mode on these channels (including modification applications of such licenses granted after December 31, 2014, for expansion or maintenance of such systems) at a voice efficiency of at least one voice path per 12.5 kHz of spectrum bandwidth until December 31, 2016.

(3) The licensees designated in paragraph (d)(2) of this section must, no later than January 31, 2017, file a declaration through the Universal Licensing System that they are operating these channels at a voice efficiency of at least one voice path per 6.25 kHz of spectrum bandwidth.

[63 FR 58651, Nov. 2, 1998, as amended at 65 FR 53645, Sept. 5, 2000; 65 FR 66655, Nov. 7, 2000; 67 FR 76701, Dec. 13, 2002; 70 FR 21673, Apr. 27, 2005; 72 FR 48861, Aug. 24, 2007]

§ 90.537 Trunking requirement.

(a) *General use and State License channels.* All systems using six or more narrowband channels in the 769–775 MHz and 799–805 MHz frequency bands must be trunked systems, except for those described in paragraph (b) of this section.

(b) *Interoperability and low power channels.* Trunking is permitted only on Interoperability channels specified in § 90.531(b)(1)(iii). Trunked use must be strictly on a secondary, non-interference basis to conventional operations. The licensee must monitor and immediately release these channels when they are needed for interoperability purposes. All systems using narrowband low power channels listed in § 90.531(b)(3) and (4) are exempt from the trunking requirements described in paragraph (a) of this section.

[79 FR 39340, July 10, 2014]

§ 90.539 Frequency stability.

Transmitters designed to operate in 769–775 MHz and 799–805 MHz frequency bands must meet the frequency stability requirements in this section.

(a) Mobile, portable and control transmitters must normally use automatic frequency control (AFC) to lock on to the base station signal.

(b) The frequency stability of base transmitters operating in the narrowband segment must be 100 parts per billion or better.

(c) The frequency stability of mobile, portable, and control transmitters operating in the narrowband segment must be 400 parts per billion or better when AFC is locked to the base station. When AFC is not locked to the base station, the frequency stability must be at least 1.0 ppm for 6.25 kHz, 1.5 ppm for 12.5 kHz (2 channel aggregate), and 2.5 ppm for 25 kHz (4 channel aggregate).

(d) The frequency stability of base transmitters operating in the wideband segment must be 1 part per million or better.

(e) The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 parts per million or better when AFC is locked to a base station, and 5 parts per million or better when AFC is not locked.

[63 FR 58651, Nov. 2, 1998, as amended at 65 FR 53646, Sept. 5, 2000; 72 FR 48861, Aug. 24, 2007]

§ 90.541 Transmitting power limits.

The transmitting power of base, mobile, portable and control stations operating in the 769–775 MHz and 799–805 MHz frequency bands must not exceed the maximum limits in this section, and must also comply with any applicable effective radiated power limits in § 90.545.

(a) The transmitting power of base transmitters must not exceed the limits given in paragraphs (a), (b) and (c) of § 90.635.

(b) The transmitter output power of mobile and control transmitters must not exceed 30 Watts.

(c) The transmitter output power of portable (hand-held) transmitters must not exceed 3 Watts.

(d) Transmitters operating on the narrowband low power channels listed in §§ 90.531(b)(3), 90.531(b)(4), must not exceed 2 watts (ERP).

[63 FR 58651, Nov. 2, 1998, as amended at 65 FR 66655, Nov. 7, 2000; 72 FR 48861, Aug. 24, 2007]

§ 90.542 Broadband transmitting power limits.

(a) The following power limits apply to the 758–768/788–798 MHz band:

(1) Fixed and base stations transmitting a signal in the 758–768 MHz band with an emission bandwidth of 1 MHz or less must not exceed an ERP of 1000 watts and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts ERP in accordance with Table 1 of this section.

(2) Fixed and base stations located in a county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, and transmitting a signal in the 758–768 MHz band with an emission bandwidth of 1 MHz or less must not exceed an ERP of 2000 watts and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 2000 watts ERP in accordance with Table 2 of this section.

(3) Fixed and base stations transmitting a signal in the 758–768 MHz band with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP accordance with Table 3 of this section.

(4) Fixed and base stations located in a county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, and transmitting a signal in the 758–768 MHz band with an emission bandwidth greater than 1 MHz must not exceed an ERP of 2000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 2000 watts/MHz ERP in accordance with Table 4 of this section.

(5) Licensees of fixed or base stations transmitting a signal in the 758–768 MHz band at an ERP greater than 1000 watts must comply with the provisions set forth in paragraph (b) of this section.

(6) Control stations and mobile stations transmitting in the 758–768 MHz band and the 788–798 MHz band are limited to 30 watts ERP.

(7) Portable stations (hand-held devices) transmitting in the 758–768 MHz band and the 788–798 MHz band are limited to 3 watts ERP.

(8) For transmissions in the 758–768 MHz and 788–798 MHz bands, licensees may employ equipment operating in compliance with either of the following measurement techniques:

(i) The maximum composite transmit power shall be measured over any interval of continuous transmission using instrumentation calibrated in terms of RMS-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, etc., so as to obtain a true maximum composite measurement for the emission in question over the full bandwidth of the channel.

(ii) A Commission-approved average power technique.

TABLE 1 TO § 90.542(a)—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE AND FIXED STATIONS IN THE 758–768 MHZ BAND TRANSMITTING A SIGNAL WITH AN EMISSION BANDWIDTH OF 1 MHZ OR LESS

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) (watts)
Above 1372 (4500)	65
Above 1220 (4000) To 1372 (4500)	70
Above 1067 (3500) To 1220 (4000)	75
Above 915 (3000) To 1067 (3500)	100
Above 763 (2500) To 915 (3000)	140
Above 610 (2000) To 763 (2500)	200
Above 458 (1500) To 610 (2000)	350
Above 305 (1000) To 458 (1500)	600
Up to 305 (1000)	1000

TABLE 2 TO § 90.542(a)—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE AND FIXED STATIONS IN THE 758–768 MHZ BAND TRANSMITTING A SIGNAL WITH AN EMISSION BANDWIDTH OF 1 MHZ OR LESS

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) (watts)
Above 1372 (4500)	130
Above 1220 (4000) To 1372 (4500)	140
Above 1067 (3500) To 1220 (4000)	150
Above 915 (3000) To 1067 (3500)	200
Above 763 (2500) To 915 (3000)	280
Above 610 (2000) To 763 (2500)	400
Above 458 (1500) To 610 (2000)	700
Above 305 (1000) To 458 (1500)	1200
Up to 305 (1000)	2000

TABLE 3 TO § 90.542(a)—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE AND FIXED STATIONS IN THE 758–768 MHZ BAND TRANSMITTING A SIGNAL WITH AN EMISSION BANDWIDTH GREATER THAN 1 MHZ

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) per MHz (watts/MHz)
Above 1372 (4500)	65
Above 1220 (4000) To 1372 (4500)	70
Above 1067 (3500) To 1220 (4000)	75
Above 915 (3000) To 1067 (3500)	100
Above 763 (2500) To 915 (3000)	140
Above 610 (2000) To 763 (2500)	200
Above 458 (1500) To 610 (2000)	350
Above 305 (1000) To 458 (1500)	600
Up to 305 (1000)	1000

TABLE 4 TO § 90.542(a)—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE AND FIXED STATIONS IN THE 758–768 MHZ BAND TRANSMITTING A SIGNAL WITH AN EMISSION BANDWIDTH GREATER THAN 1 MHZ

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) per MHz (watts/MHz)
Above 1372 (4500)	130
Above 1220 (4000) To 1372 (4500)	140
Above 1067 (3500) To 1220 (4000)	150
Above 915 (3000) To 1067 (3500)	200
Above 763 (2500) To 915 (3000)	280
Above 610 (2000) To 763 (2500)	400
Above 458 (1500) To 610 (2000)	700
Above 305 (1000) To 458 (1500)	1200
Up to 305 (1000)	2000

(b) For base and fixed stations operating in the 758–768 MHz band in accordance with the provisions of paragraph (a)(5) of this section, the power flux density that would be produced by such stations through a combination of antenna height and vertical gain pattern must not exceed 3000 microwatts per square meter on the ground over the area extending to 1 km from the base of the antenna mounting structure.

[72 FR 48861, Aug. 24, 2007, as amended at 79 FR 600, Jan. 6, 2014]

§ 90.543 Emission limitations.

Transmitters designed to operate in 769–775 MHz and 799–805 MHz frequency bands must meet the emission limitations in paragraphs (a) through (d) of this section. Transmitters operating in 758–768 MHz and 788–798 MHz bands must meet the emission limitations in (e) of this section.

(a) The adjacent channel power (ACP) requirements for transmitters designed for various channel sizes are shown in the following tables. Mobile station requirements apply to handheld, car mounted and control station units. The tables specify a value for the ACP as a function of the displacement from the channel center frequency and measurement bandwidth. In the following tables, ''(s)'' indicates a swept measurement may be used.

6.25 kHz MOBILE TRANSMITTER ACP REQUIREMENTS

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
6.25	6.25	−40
12.5	6.25	−60
18.75	6.25	−60
25.00	6.25	−65
37.50	25.00	−65
62.50	25.00	−65
87.50	25.00	−65
150.00	100.00	−65
250.00	100.00	−65
350.00	100.00	−65
>400 kHz to 12 MHz	30 (s)	−75
12 MHz to paired receive band	30 (s)	−75
In the paired receive band	30 (s)	−100

12.5 kHz MOBILE TRANSMITTER ACP REQUIREMENTS

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
9.375	6.25	−40
15.625	6.25	−60
21.875	6.25	−60
37.50	25.00	−60
62.50	25.00	−65
87.50	25.00	−65

12.5 kHz Mobile Transmitter ACP Requirements—Continued

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
150.00	100	−65
250.00	100	−65
350.00	100	−65
>400 to 12 MHz	30 (s)	−75
12 MHz to paired receive band	30 (s)	−75
In the paired receive band	30 (s)	−100

25 kHz Mobile Transmitter ACP Requirements

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
15.625	6.25	−40
21.875	6.25	−60
37.50	25	−60
62.50	25	−65
87.50	25	−65
150.00	100	−65
250.00	100	−65
350.00	100	−65
>400 kHz to 12 MHz	30 (s)	−75
12 MHz to paired receive band	30 (s)	−75
In the paired receive band	30 (s)	−100

6.25 kHz Base Transmitter ACP Requirements

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
6.25	6.25	−40
12.50	6.25	−60
18.75	6.25	−60
25.00	6.25	−65
37.50	25	−65
62.50	25	−65
87.50	25	−65
150.00	100	−65
250.00	100	−65
350.00	100	−65
>400 to 12 MHz	30 (s)	−80
12 MHz to paired receive band	30 (s)	−80
In the paired receive band	30 (s)	[1] −85

[1] Although we permit individual base transmitters to radiate a maximum ACP of –85 dBc in the paired receive band, licensees deploying these transmitters may not exceed an ACP of –100 dBc in the paired receive band when measured at either the transmitting antenna input port or the output of the transmitter combining network. Consequently, licensees deploying these transmitters may need to use external filters to comply with the more restrictive ACP limit.

12.5 kHz Base Transmitter ACP Requirements

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
9.375	6.25	−40
15.625	6.25	−60
21.875	6.25	−60

12.5 kHz Base Transmitter ACP Requirements—Continued

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
37.5	25	−60
62.5	25	−65
87.5	25	−65
150	100	−65
250	100	−65
350.00	100	−65
>400 kHz to 12 MHz	30 (s)	−80
12 MHz to paired receive band	30 (s)	−80
In the paired receive band	30 (s)	[1] −85

[1] Although we permit individual base transmitters to radiate a maximum ACP of –85 dBc in the paired receive band, licensees deploying these transmitters may not exceed an ACP of –100 dBc in the paired receive band when measured at either the transmitting antenna input port or the output of the transmitter combining network. Consequently, licensees deploying these transmitters may need to use external filters to comply with the more restrictive ACP limit.

25 kHz Base Transmitter ACP Requirements

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
15.625	6.25	−40
21.875	6.25	−60
37.5	25	−60
62.5	25	−65
87.5	25	−65
150	100	−65
250	100	−65
350	100.00	−65
>400 kHz to 12 MHz	30 (s)	−80
12 MHz to paired receive band	30 (s)	−80
In the paired receive band	30 (s)	[1] −85

[1] Although we permit individual base transmitters to radiate a maximum ACP of –85 dBc in the paired receive band, licensees deploying these transmitters may not exceed an ACP of –100 dBc in the paired receive band when measured at either the transmitting antenna input port or the output of the transmitter combining network. Consequently, licensees deploying these transmitters may need to use external filters to comply with the more restrictive ACP limit.

(b) *ACP measurement procedure*. The following are the procedures for making the transmitter ACP measurements. For all measurements modulate the transmitter as it would be modulated in normal operating conditions. For time division multiple access (TDMA) systems, the measurements are to be made under TDMA operation only during time slots when the transmitter is active. All measurements are made at the transmitter's output port. If a transmitter has an integral antenna, a suitable power coupling device shall be used to couple the RF signal to

the measurement instrument. The coupling device shall substantially maintain the proper transmitter load impedance. The ACP measurements may be made with a spectrum analyzer capable of making direct ACP measurements. ''Measurement bandwidth'', as used for non-swept measurements, implies an instrument that measures the power in many narrow bandwidths equal to the nominal resolution bandwidth and integrates these powers to determine the total power in the specified measurement bandwidth.

(1) *Setting reference level.* Set transmitter to maximum output power. Using a spectrum analyzer capable of ACP measurements, set the measurement bandwidth to the channel size. For example, for a 6.25 kHz transmitter set the measurement bandwidth to 6.25 kHz. Set the frequency offset of the measurement bandwidth to zero and adjust the center frequency of the instrument to the assigned center frequency to measure the average power level of the transmitter. Record this power level in dBm as the ''reference power level.''

(2) *Non-swept power measurement.* Using a spectrum analyzer capable of ACP measurements, set the mesurement bandwidth and frequency offset from the assigned center frequency as shown in the tables in § 90.543 (a) above. Any value of resolution bandwidth may be used as long as it does not exceed 2 percent of the specified measurement bandwidth. Measure the power level in dBm. These measurements should be made at maximum power. Calculate ACP by substracting the reference power level measured in (b)(1) from the measurements made in this step. The absolute value of the calculated ACP must be greater than or equal to the absolute value of the ACP given in the table for each condition above.

(3) *Swept power measurement.* Set a spectrum analyzer to 30 kHz resolution bandwidth, 1 MHz video bandwidth and average, sample, or RMS detection. Set the reference level of the spectrum analyzer to the RMS value of the transmitter power. Sweep above and below the carrier frequency to the limits defined in the tables. Calculate ACP by substracting the reference power level measured in (b)(1) from the measurements made in this step. The absolute value of the calculated ACP must be greater than or equal to the absolute value of the ACP given in the table for each condition above.

(c) *Out-of-band emission limit.* On any frequency outside of the frequency ranges covered by the ACP tables in this section, the power of any emission must be reduced below the mean output power (P) by at least 43 + 10log (P) dB measured in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

(d) *Authorized bandwidth.* Provided that the ACP requirements of this section are met, applicants may request any authorized bandwidth that does not exceed the channel size.

(e) For operations in the 758–768 MHz and the 788–798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.

(2) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

(3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

(4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.

(f) For operations in the 758–775 MHz and 788–805 MHz bands, all emissions including harmonics in the band 1559–1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

(g) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

[70 FR 21666, Apr. 27, 2005, as amended at 72 FR 48862, Aug. 24, 2007; 79 FR 600, Jan. 6, 2014; 79 FR 39340, July 10, 2014]

§ 90.545 TV/DTV interference protection criteria.

Public safety base, control, and mobile transmitters in the 769–775 MHz and 799–805 MHz frequency bands must be operated only in accordance with the rules in this section, to reduce the potential for interference to public reception of the signals of existing TV and DTV broadcast stations transmitting on TV Channels 62, 63, 64, 65, 67, 68 or 69.

(a) *D/U ratios*. Licensees of public safety stations must choose site locations that are a sufficient distance from co-channel and adjacent channel TV and DTV stations, and/or must use reduced transmitting power or transmitting antenna height such that the following minimum desired signal to undesired signal ratios (D/U ratios) are met:

(1) The minimum D/U ratio for co-channel stations is 40 dB at the hypothetical Grade B contour (64 dBμV/m) (88.5 kilometers or 55.0 miles) of the TV station or 17 dB at the equivalent Grade B contour (41 dBμV/m) (88.5 kilometers or 55.0 miles) of the DTV station.

(2) The minimum D/U ratio for adjacent channel stations is 0 dB at the hypothetical Grade B contour (64 dBμV/m) (88.5 kilometers or 55.0 miles) of the TV station or −23 dB at the equivalent Grade B contour (41 dBμV/m) (88.5 kilometers or 55.0 miles) of the DTV station.

(b) *Maximum ERP and HAAT*. The maximum effective radiated power (ERP) and the antenna height above average terrain (HAAT) of the proposed land mobile base station, the associated control station, and the mobile transmitters shall be determined using the methods described in this section.

(1) Each base station is limited to a maximum ERP of 1000 watts.

(2) Each control station is limited to a maximum ERP of 200 watts and a maximum HAAT of 61 m. (200 ft).

(3) Each mobile station is limited to a maximum ERP of 30 watts and a maximum antenna height of 6.1 m. (20 ft.).

(4) Each portable (handheld) transmitter is limited to a maximum ERP of 3 watts.

(5) All transmitters are subject to the power reductions given in Figure B of § 90.309 of this chapter, for antenna heights higher than 152 meters (500 ft).

(c) *Methods*. The methods used to calculate TV contours and antenna heights above average terrain are given in §§ 73.683 and 73.684 of this chapter. Tables to determine the necessary minimum distance from the public safety station to the TV/DTV station, assuming that the TV/DTV station has a hypothetical or equivalent Grade B contour of 88.5 kilometers (55.0 miles), are located in § 90.309 and labeled as Tables B, D, and E. Values between those given in the tables may be determined by linear interpolation. The locations of existing and proposed TV/DTV stations during the transition period are given in part 73 of this chapter and in the final proceedings of MM Docket No. 87–268. The DTV allotments are:

State	City	NTSC TV Ch.	DTV Ch.	ERP (kW)	HAAT (m)
California	Stockton	64	62	63.5	874
California	Los Angeles	11	65	688.7	896
California	Riverside	62	68	180.1	723
California	Concord	42	63	61.0	856
Pennsylvania	Allentown	39	62	50.0	302

State	City	NTSC TV Ch.	DTV Ch.	ERP (kW)	HAAT (m)
Pennsylvania	Philadelphia	6	64	1000.0	332
Pennsylvania	Philadelphia	10	67	791.8	354
Puerto Rico	Aguada	50	62	50.0	343
Puerto Rico	Mayaguez	16	63	50.0	347
Puerto Rico	Naranjito	64	65	50.0	142
Puerto Rico	Aguadilla	12	69	691.8	665

The transition period is scheduled to end on December 31, 2006. After that time, unless otherwise directed by the Commission, public safety stations will no longer be required to protect reception of co-channel or adjacent channel TV/DTV stations.

(1) Licensees of stations operating within the ERP and HAAT limits of paragraph (b) must select one of three methods to meet the TV/DTV protection requirements, subject to Commission approval:

(i) utilize the geographic separation specified in the tables referenced below;

(ii) Submit an engineering study justifying the proposed separations based on the parameters of the land mobile station and the parameters, including authorized and/or applied for facilities, of the TV/DTV station(s) it is trying to protect; or,

(iii) obtain written concurrence from the applicable TV/DTV station(s). If this method is chosen, a copy of the agreement must be submitted with the application.

(2) The following is the method for geographic separations.

(i) Base stations having an antenna height (HAAT) less than 152 m. (500 ft.) shall afford protection to co-channel and adjacent channel TV/DTV stations in accordance with the values specified in Table B (co-channel frequencies based on 40 dB protection) and Table E (adjacent channel frequencies based on 0 dB protection) in § 90.309 of this part. For base stations having an antenna height (HAAT) between 152–914 meters (500–3,000 ft.) the effective radiated power must be reduced below 1 kilowatt in accordance with the values shown in the power reduction graph in Figure B in § 90.309 of this part. For heights of more than 152 m. (500 ft.) above average terrain, the distance to the radio path horizon will be calculated assuming smooth earth. If the distance so determined equals or exceeds the distance to the hypothetical or equivalent Grade B contour of a co-channel TV/DTV station (*i.e.*, it exceeds the distance from the appropriate Table in § 90.309 to the relevant TV/DTV station) an authorization will not be granted unless it can be shown in an engineering study (method 2) that actual terrain considerations are such as to provide the desired protection at the actual Grade B contour (64 dBμV/m for TV and 41 dBμV/m for DTV stations), or that the effective radiated power will be further reduced so that, assuming free space attenuation, the desired protection at the actual Grade B contour (64 dBμV/m for TV and 41 dBμV/m coverage contour for DTV stations) will be achieved. Directions for calculating powers, heights, and reduction curves are listed in § 90.309 for land mobile stations. Directions for calculating coverage contours are listed in §§ 73.683–685 for TV stations and in § 73.625 for DTV stations.

(ii) Control and mobile stations (including portables) are limited in height and power and therefore shall afford protection to co-channel and adjacent channel TV/DTV stations in accordance with the values specified in Table D (co-channel frequencies based on 40 dB protection) in § 90.309 of this part and a minimum distance of 8 kilometers (5 miles) from all adjacent channel TV/DTV station hypothetical or equivalent Grade B contours (adjacent channel frequencies based on 0 dB protection for TV stations and—23 dB for DTV stations). Since control and mobile stations may affect different TV/DTV stations than the associated base station, particular care must be taken by applicants to ensure that all the appropriate TV/DTV stations are considered (*e.g.*, a base station may be operating on TV Channel 64 and the mobiles on TV Channel 69, in which case TV Channels 63, 64, 65, 68, and 69

must be protected). Since mobiles and portables are able to move and communicate with each other, licensees or coordinators must determine the areas where the mobiles can and cannot roam in order to protect the TV/DTV stations, and advise the mobile operators of these areas and their restrictions.

(iii) In order to protect certain TV/DTV stations and to ensure protection from these stations which may have extremely large contours due to unusual height situations, an additional distance factor must be used by all public safety base, control and mobile stations. For all co-channel and adjacent channel TV/DTV stations which have an HAAT between 350 and 600 meters, public safety stations must add the following DISTANCE FACTOR to the value obtained from the referenced Tables in § 90.309 and to the distance for control and mobile stations on adjacent TV/DTV channels (96.5 km).

DISTANCE FACTOR = (TV/DTV HAAT − 350) ÷ 14 in kilometers, where HAAT is the TV or DTV station antenna height above average terrain obtained from its authorized or proposed facilities, whichever is greater.

(iv) For all co-channel and adjacent channel TV/DTV stations which have an antenna height above average terrain greater than 600 meters, public safety stations must add 18 kilometers as the DISTANCE FACTOR to the value obtained from the referenced Tables in § 90.309 and to the distance for control and mobile stations on adjacent TV/DTV channels (96.5 km).

NOTE TO § 90.545: The 88.5 km (55.0 mi) Grade B service contour (64 dBμV/m) is based on a hypothetical TV station operating at an effective radiated power of one megawatt, a transmitting antenna height above average terrain of 610 meters (2000 feet) and the Commission's R–6602 F(50,50) curves. *See* § 73.699 of this chapter. Maximum facilities for TV stations operating in the UHF band are 5 megawatts effective radiated power at an antenna HAAT of 610 meters (2,000 feet). *See* § 73.614 of this chapter. The equivalent contour for DTV stations is based on a 41 dBμV/m signal strength and the distance to the F(50,90) curve. *See* § 73.625 of this chapter.

[63 FR 58651, Nov. 2, 1998, as amended at 65 FR 53646, Sept. 5, 2000; 69 FR 59536, Oct. 4, 2004; 72 FR 67577, Nov. 29, 2007]

§ 90.547 Narrowband Interoperability channel capability requirement.

(a) Except as noted in this section, mobile and portable transmitters operating on narrowband channels in the 769–775 MHz and 799–805 MHz frequency bands must be capable of operating on all of the designated nationwide narrowband Interoperability channels pursuant to the standards specified in this part.

(1) Mobile and portable transmitters that are designed to operate only on the Low Power Channels specified in § 90.531 (b)(3) and (4) are exempt from this Interoperability channel requirement.

(2) Mobile and portable transmitters that are designed to operate only in the data mode must be capable of operation on the data Interoperability channels specified in § 90.531(b)(1)(i); but need not be capable of voice operation on other Interoperability channels.

(3) Mobile and portable transmitters that are designed to operate only in the voice mode do not have to operate on the data Interoperability channels specified in § 90.531(b)(1)(i).

(b) Mobile and portable transmitters designed for data are not required to be voice capable, and vice versa.

[67 FR 61005, Sept. 27, 2002, as amended at 72 FR 48863, Aug. 24, 2007]

§ 90.548 Interoperability Technical Standards.

(a) Transmitters designed after August 11, 2014 to operate on the narrowband interoperability achannels in the 769–775 and 799–805 MHz band (*see* § 90.531) shall conform to the following technical standards (transmitters certified prior to this date are grandfathered):

(1) Transmitters designed for voice operation shall include a 12.5 kilohertz bandwidth mode of operation conforming to the following standards: ANSI/TIA–102.BAAA–A–2003 and ANSI/TIA–102.BABA–2003.

(2) Transmitters designed for data transmission shall include a 12.5 kilohertz bandwidth mode of operation conforming to the following standards: ANSI/TIA–102.BAEA–B–2012, ANSI/TIA–102.BAAA–A–2003, ANSI/TIA–102.BAEB–

A–2005, and ANSI/TIA–102.BAEE–B–2010.

(b) The Director of the Federal Register approves these incorporations by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Material incorporated by reference may be inspected at the Federal Communications Commission, 445 12th Street SW., Washington, DC (Reference Information Center) [202–418–0270] or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*.

(1) TIA/EIA, 2500 Wilson Boulevard, Arlington, VA 22201 703–907–7974. These standards are also available from Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112; or the American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036, *www.ansi.org*.

(i) ANSI/TIA–102.BAAA–A–2003, Project 25 FDMA–Common Air Interface, approved September 2003.

(ii) ANSI/TIA–102.BABA–2003, Project 25 Vocoder Description, approved December 2003.

(iii) ANSI/TIA–102.BAEA–B–2012, Project 25 Data Overview—New Technology Standards Project—Digital Radio Technical Standards, approved June 2012.

(iv) ANSI/TIA–102.BAEB–A–2005, Project 25 Packet Data Specification—New Technology Standards Project—Digital Radio Technical Standards, approved March 2005.

(v) ANSI/TIA–102.BAEE–B–2010, Project 25 Radio Management Protocols—New Technology Standards Project—Digital Radio Technical Standards, approved May 2010.

(2) [Reserved]

[79 FR 39340, July 10, 2014]

§ 90.549 Transmitter certification.

Transmitters operated in the 758–775 MHz and 788–805 MHz frequency bands must be of a type that have been authorized by the Commission under its certification procedure as required by § 90.203.

[79 FR 600, Jan. 6, 2014]

§ 90.551 Construction requirements.

Each station authorized under this subpart to operate in the 769–775 MHz and 799–805 MHz frequency bands must be constructed and placed into operation within 12 months from the date of grant of the authorization, except for State channels. However, licensees may request a longer construction period, up to but not exceeding 5 years, pursuant to § 90.155(b). State channels are subject to the build-out requirements in § 90.529.

[72 FR 48863, Aug. 24, 2007]

§ 90.553 Encryption.

(a) Encryption is permitted on all but the two nationwide Interoperability calling channels. Radios employing encryption must have a readily accessible switch or other readily accessible control that permits the radio user to disable encryption.

(b) If encryption is employed, then transmitters manufactured after August 11, 2014 must use the Advanced Encryption Standard (AES) specified in ANSI/TIA–102.AAAD–A: Project 25 Digital Land Mobile Radio-Block Encryption Protocol, approved August 20, 2009 Until 2030, manufacturers may also include the Digital Encryption Standard (DES) or Triple Data Encryption Algorithm (TDEA), in addition to but not in place of AES, for compatibility with legacy radios that lack AES capability. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. The standard can also be purchased from TIA/EIA, 2500 Wilson Boulevard, Arlington, VA 22201 703–907–7974; Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112; or the American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036, *www.ansi.org*. Material incorporated by reference may be inspected at the Federal Communications Commission, 445 12th Street SW., Washington, DC (Reference Information Center) 202–418–0270 or at the

National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*.

(c) The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the standard listed in this section that are incorporated by reference may be inspected at the Federal Communications Commission, 445 12th Street, SW., Washington, DC (Reference Information Center) or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*. The standard can also be purchased from TIA/EIA, 2500 Wilson Boulevard, Arlington, VA, 22201; Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112; or the American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036 (or via the Internet at *www.ansi.org*.)

[66 FR 10636, Feb. 16, 2001, as amended at 67 FR 61006, Sept. 26, 2002; 79 FR 39341, July 10, 2014]

§ 90.555 Information exchange.

(a) *Prior notification*. Public safety licensees authorized to operate in the 758–775 MHz and 788–805 MHz bands may notify any licensee authorized to operate in the 746–757 MHz or 776–787 MHz bands that they wish to receive prior notification of the activation or modification of the licensee's base or fixed stations in their area. Thereafter, the 746–757 MHz or 776–787 MHz band licensee must provide the following information to the public safety licensee at least 10 business days before a new base or fixed station is activated or an existing base or fixed station is modified:

(1) Location;

(2) Effective radiated power;

(3) Antenna height; and

(4) Channels available for use.

(b) *Purpose of prior notification*. The prior coordination of base or fixed stations is for informational purposes only. Public safety licensees are not afforded the right to accept or reject the activation of a proposed base or fixed station or to unilaterally require changes in its operating parameters. The principal purposes of notification are to:

(1) Allow a public safety licensee to advise the 746–757 or 776–787 MHz band licensee whether it believes a proposed base or fixed station will generate unacceptable interference;

(2) Permit 746–757 and 776–787 MHz band licensees to make voluntary changes in base or fixed station parameters when a public safety licensee alerts them to possible interference; and,

(3) Rapidly identify the source if interference is encountered when the base or fixed station is activated.

(c) *Public Safety Information Exchange*. (1) Upon request by a 746–757 or 776–787 MHz band licensee, public safety licensees authorized to operate radio systems in the 758–775 and 788–805 MHz bands shall provide the operating parameters of their radio system to the 746–757 or 776–787 MHz band licensee.

(2) Public safety licensees who perform the information exchange described in this section must notify the appropriate 746–757 or 776–787 MHz band licensees prior to any technical changes to their radio system.

[72 FR 27713, May 16, 2007, as amended at 72 FR 67578, Nov. 29, 2007; 79 FR 601, Jan. 6, 2014]

§ 90.557 Secondary fixed signaling operations.

Trunked and conventional 700 MHz narrowband systems may conduct fixed ancillary signaling and data transmissions subject to the following requirements:

(a) Operations are permitted only on:

(1) Narrowband State License channels specified in § 90.531(b)(5), subject to the discretion of the relevant State licensee; and

(2) Narrowband General Use channels specified in § 90.531(b)(6), subject to the discretion of the regional planning committee.

(b) All operations must be on a secondary, non-interference basis to the primary mobile operation of any other licensee.

(c) The output power at the remote site must not exceed 30 watts.

(d) Automatic means must be provided to deactivate the remote transmitter in the event the carrier remains on for a period in excess of three minutes.

(e) Operational fixed stations authorized pursuant to this section are exempt from the requirements of §§ 90.425, 90.429, and 90.559.

(f) Any operations undertaken in a shared use environment must be conducted pursuant to an agreement between the licensee and each participant, as set forth in § 90.179.

[79 FR 39341, July 10, 2014]

§ 90.559 Station Identification.

(a) Conventional systems of communication shall be identified in accordance with existing regulations governing such matters.

(b) Trunked systems of communication, except as noted in paragraph (c) of this section, shall be identified through the use of an automatic device which transmits the call sign of the base station facility at 30 minute intervals. Such station identification shall be made on the lowest frequency in the base station trunk group assigned the licensee. Should this frequency be in use at the time station identification is required, such identification may be made at the termination of the communication in progress on this frequency. Identification may be made by voice or International Morse Code. When the call sign is transmitted in International Morse Code, it must be at a rate of between 15 to 20 words per minute and by means of tone modulation of the transmitter, the tone frequency being between 800 and 1000 hertz.

(c) Stations operating in the 769–775/799–805 MHz band that are licensed on an exclusive basis, and normally employ digital signals for the transmission of data, text, control codes, or digitized voice may also be identified by digital transmission of the call sign. A licensee that identifies its station in this manner must provide the Commission, upon its request, information sufficient to decode the digital transmission and ascertain the call sign transmitted.

[79 FR 39341, July 10, 2014]

Subpart S—Regulations Governing Licensing and Use of Frequencies in the 806–824, 851–869, 896–901, and 935–940 MHz Bands

§ 90.601 Scope.

This subpart sets out the regulations governing the licensing and operations of all systems operating in the 806–824/851–869 MHz and 896–901/935–940 MHz bands. It includes eligibility requirements, and operational and technical standards for stations licensed in these bands. It also supplements the rules regarding application procedures contained in part 1, subpart F of this chapter. The rules in this subpart are to be read in conjunction with the applicable requirements contained elsewhere in this part; however, in case of conflict, the provisions of this subpart shall govern with respect to licensing and operation in these frequency bands.

[63 FR 68967, Dec. 14, 1998]

APPLICATION FOR AUTHORIZATIONS

§ 90.603 Eligibility.

The following persons are eligible for licensing in the 806–824 MHz, 851–869 MHz, 896–901 MHz, and 935–940 MHz Bands.

(a) Any person eligible for licensing under subparts B, C, D, or E of this part.

(b) Any person proposing to provide communications service to any person eligible for licensing under subparts B or C of this part on a not-for-profit, cost-shared basis.

(c) Any person eligible under this part and proposing to provide on a commercial basis base station an ancillary facilities as a Specialized Mobile Radio Service System operator, for the use of individuals, federal government agencies and persons eligible for licensing under subparts B or C of this part.

[47 FR 41032, Sept. 16, 1982, as amended at 53 FR 1025, Jan. 15, 1988; 60 FR 15495, Mar. 24, 1995; 62 FR 18934, Apr. 17, 1997]

§ 90.605 Forms to be used.

Applications for conventional and trunked radio facilities must be prepared on FCC Form 601 and must be submitted or filed in accordance with § 90.127 and part 1, subpart F of this chapter.

[63 FR 68967, Dec. 14, 1998]

§ 90.607 Supplemental information to be furnished by applicants for facilities under this subpart.

(a) Except for applicants for SMR licenses, all applicants for conventional radio systems must:

(1) List all radio systems licensed to them or proposed by them within 64 km (40 mi.) from the location of the base station transmitter site of the facility for which they have applied.

(2) Specify the number of mobile units to be placed in operation upon grant of the authorization and the number of such units that will be placed in operation within 8 months of the date of grant.

(b) Except for applicants for SMR licenses, all applicants for trunked systems must:

(1) List all radio systems licensed to them within 64 km (40 mi.) from the location of the base station transmitter site of the facility for which they have applied;

(2) Specify the number of vehicular and portable mobile units and control stations to be placed in operation within the term of the license.

(c) [Reserved]

(d) All applicants for frequencies governed by this subpart are subject to the frequency coordination requirements of § 90.175(b) except applicants requesting frequencies for EA-based SMR operations in the 806–824 MHz/851–869 MHz band or 896–901 MHz/935–940 MHz band.

[47 FR 41032, Sept. 16, 1982, as amended at 49 FR 36377, Sept. 17, 1984; 51 FR 14999, Apr. 22, 1986; 59 FR 59966, Nov. 21, 1994; 63 FR 68967, Dec. 14, 1998; 69 FR 67838, Nov. 22, 2004; 70 FR 61061, Oct. 20, 2005]

§ 90.609 Special limitations on amendment of applications for assignment or transfer of authorizations for radio systems above 800 MHz.

(a) [Reserved]

(b) A license to operate a conventional or trunked radio system may not be assigned or transferred prior to the completion of construction of the facility. However, the Commission may give its consent to the assignment or transfer of control of such a license prior to the completion of construction where:

(1) The assignment or transfer does not involve a substantial change in ownership or control of the authorized radio facilities; or,

(2) The assignment or transfer is involuntary due to the licensee's insolvency, bankruptcy, incapacity, or death.

(c) Licensees of constructed systems in any category are permitted to make partial assignments of an authorized grant to an applicant proposing to create a new system or to an existing licensee that has loaded its system to 70 mobiles per channel and is expanding that system. An applicant authorized to expand an existing system or to create a new system with frequencies from any category obtained through partial assignment will receive the assignor's existing license expiration date and loading deadline for the frequencies that are assigned. A licensee that makes a partial assignment of a station's frequencies will not be authorized to obtain additional frequencies for that station for a period of one year from the date of the partial assignment.

(d) A constructed system originally licensed in the General Category that is authorized to operate in the conventional mode may be combined with an existing SMR system above 800 MHz authorized to operate in the trunked mode by assignment of an authorized grant of the General Category station to the SMR station.

[47 FR 41032, Sept. 16, 1982, as amended at 55 FR 28029, July 9, 1990; 58 FR 44962, Aug. 25, 1993; 61 FR 6155, Feb. 16, 1996; 63 FR 68967, Dec. 14, 1998; 69 FR 67838, Nov. 22, 2004]

POLICIES GOVERNING THE PROCESSING OF APPLICATIONS AND THE SELECTION AND ASSIGNMENT OF FREQUENCIES FOR USE IN THE 806–824 MHZ, 851–869 MHZ, 896–901 MHZ, AND 935–940 MHZ BANDS

§ 90.613 Frequencies available.

The following table indicates the channel designations of frequencies

available for assignment to eligible applicants under this subpart. Frequencies shall be assigned in pairs, with mobile and control station transmitting frequencies taken from the 806–824 MHz band with corresponding base station frequencies being 45 MHz higher and taken from the 851–869 MHz band, or with mobile and control station frequencies taken from the 896–901 MHz band with corresponding base station frequencies being 39 MHz higher and taken from the 935–940 MHz band. Only the base station transmitting frequency of each pair is listed in the following tables.

TABLE OF 806–824/851–869 MHZ CHANNEL DESIGNATIONS

Channel No.	Base frequency (MHz)
1	851.0125
2	.0375
3	.0500
4	.0625
5	.0750
6	.0875
7	.1000
8	.1125
9	.1250
10	.1375
11	.1500
12	.1625
13	.1750
14	.1875
15	.2000
16	.2125
17	.2250
18	.2375
19	.2500
20	.2625
21	.2750
22	.2875
23	.3000
24	.3125
25	.3250
26	.3375
27	.3500
28	.3625
29	.3750
30	.3875
31	.4000
32	.4125
33	.4250
34	.4375
35	.4500
36	.4625
37	.4750
38	.4875
39	.5125
40	.5375
41	.5500
42	.5625
43	.5750
44	.5875
45	.6000
46	.6125
47	.6250
48	.6375

TABLE OF 806–824/851–869 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
49	.6500
50	.6625
51	.6750
52	.6875
53	.7000
54	.7125
55	.7250
56	.7375
57	.7500
58	.7625
59	.7750
60	.7875
61	.8000
62	.8125
63	.8250
64	.8375
65	.8500
66	.8625
67	.8750
68	.8875
69	.9000
70	.9125
71	.9250
72	.9375
73	.9500
74	.9625
75	.9750
76	.9875
77	852.0125
78	.0375
79	.0500
80	.0625
81	.0750
82	.0875
83	.1000
84	.1125
85	.1250
86	.1375
87	.1500
88	.1625
89	.1750
90	.1875
91	.2000
92	.2125
93	.2250
94	.2375
95	.2500
96	.2625
97	.2750
98	.2875
99	.3000
100	.3125
101	.3250
102	.3375
103	.3500
104	.3625
105	.3750
106	.3875
107	.4000
108	.4125
109	.4250
110	.4375
111	.4500
112	.4625
113	.4750
114	.4875
115	.5125
116	.5375
117	.5500

TABLE OF 806–824/851–869 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
118	.5625
119	.5750
120	.5875
121	.6000
122	.6125
123	.6250
124	.6375
125	.6500
126	.6625
127	.6750
128	.6875
129	.7000
130	.7125
131	.7250
132	.7375
133	.7500
134	.7625
135	.7750
136	.7875
137	.8000
138	.8125
139	.7375
140	.8375
141	.8500
142	.8625
143	.8750
144	.8875
145	.9000
146	.9125
147	.9250
148	.9375
149	.9500
150	.9625
151	.9750
152	.9875
153	853.0125
154	.0375
155	.0500
156	.0625
157	.0750
158	.0875
159	.1000
160	.1125
161	.1250
162	.1375
163	.1500
164	.1625
165	.1750
166	.1875
167	.2000
168	.2125
169	.2250
170	.2375
171	.2500
172	.2625
173	.2750
174	.2875
175	.3000
176	.3125
177	.3250
178	.3375
179	.3500
180	.3625
181	.3750
182	.3875
183	.4000
184	.4125
185	.4250
186	.4375

TABLE OF 806–824/851–869 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
187	.4500
188	.4625
189	.4750
190	.4875
191	.5000
192	.5125
193	.5250
194	.5375
195	.5500
196	.5625
197	.5750
198	.5875
199	.6000
200	.6125
201	.6250
202	.6375
203	.6500
204	.6625
205	.6750
206	.6875
207	.7000
208	.7125
209	.7250
210	.7375
211	.7500
212	.7625
213	.7750
214	.7875
215	.8000
216	.8125
217	.8250
218	.8375
219	.8500
220	.8625
221	.8750
222	.8875
223	.9000
224	.9125
225	.9250
226	.9375
227	.9500
228	.9625
229	.9750
230	.9875
231	854.0125
232	.0375
233	.0625
234	.0875
235	.1125
236	.1375
237	.1625
238	.1875
239	.2125
240	.2375
241	.2625
242	.2875
243	.3125
244	.3375
245	.3625
246	.3875
247	.4125
248	.4375
249	.4625
250	.4875
251	.5125
252	.5375
253	.5625
254	.5875
255	.6125

TABLE OF 806–824/851–869 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
256	.6375
257	.6625
258	.6875
259	.7125
260	.7375
261	.7625
262	.7875
263	.8125
264	.8375
265	.8625
266	.8875
267	.9125
268	.9375
269	.9625
270	.9875
271	855.0125
272	.0375
273	.0625
274	.0875
275	.1125
276	.1375
277	.1625
278	.1875
279	.2125
280	.2375
281	.2625
282	.2875
283	.3125
284	.3375
285	.3625
286	.3875
287	.4125
288	.4375
289	.4625
290	.4875
291	.5125
292	.5375
293	.5625
294	.5875
295	.6125
296	.6375
297	.6625
298	.6875
299	.7125
300	.7375
301	.7625
302	.7875
303	.8125
304	.8375
305	.8625
306	.8875
307	.9125
308	.9375
309	.9625
310	.9875
311	856.0125
312	.0375
313	.0625
314	.0875
315	.1125
316	.1375
317	.1625
318	.1875
319	.2125
320	.2375
321	.2625
322	.2875
323	.3125
324	.3375

TABLE OF 806–824/851–869 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
325	.3625
326	.3875
327	.4125
328	.4375
329	.4625
330	.4875
331	.5125
332	.5375
333	.5625
334	.5875
335	.6125
336	.6375
337	.6625
338	.6875
339	.7125
340	.7375
341	.7625
342	.7875
343	.8125
344	.8375
345	.8625
346	.8875
347	.9125
348	.9375
349	.9625
350	.9875
351	857.0125
352	.0375
353	.0625
354	.0875
355	.1125
356	.1375
357	.1625
358	.1875
359	.2125
360	.2375
361	.2625
362	.2875
363	.3125
364	.3375
365	.3625
366	.3875
367	.4125
368	.4375
369	.4625
370	.4875
371	.5125
372	.5375
373	.5625
374	.5875
375	.6125
376	.6375
377	.6625
378	.6875
379	.7125
380	.7375
381	.7625
382	.7875
383	.8125
384	.8375
385	.8625
386	.8875
387	.9125
388	.9375
389	.9625
390	.9875
391	858.0125
392	.0375
393	.0625

TABLE OF 806–824/851–869 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
394	.0875
395	.1125
396	.1375
397	.1625
398	.1875
399	.2125
400	.2375
401	.2625
402	.2875
403	.3125
404	.3375
405	.3625
406	.3875
407	.4125
408	.4375
409	.4625
410	.4875
411	.5125
412	.5375
413	.5625
414	.5875
415	.6125
416	.6375
417	.6625
418	.6875
419	.7125
420	.7375
421	.7625
422	.7875
423	.8125
424	.8375
425	.8625
426	.8875
427	.9125
428	.9375
429	.9625
430	.9875
431	859.0125
432	.0375
433	.0625
434	.0875
435	.1125
436	.1375
437	.1625
438	.1875
439	.2125
440	.2375
441	.2625
442	.2875
443	.3125
444	.3375
445	.3625
446	.3875
447	.4125
448	.4375
449	.4625
450	.4875
451	.5125
452	.5375
453	.5625
454	.5875
455	.6125
456	.6375
457	.6625
458	.6875
459	.7125
460	.7375
461	.7625
462	.7875

TABLE OF 806–824/851–869 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
463	.8125
464	.8375
465	.8625
466	.8875
467	.9125
468	.9375
469	.9625
470	.9875
471	860.0125
472	.0375
473	.0625
474	.0875
475	.1125
476	.1375
477	.1625
478	.1875
479	.2125
480	.2375
481	.2625
482	.2875
483	.3125
484	.3375
485	.3625
486	.3875
487	.4125
488	.4375
489	.4625
490	.4875
491	.5125
492	.5375
493	.5625
494	.5875
495	.6125
496	.6375
497	.6625
498	.6875
499	.7125
500	.7375
501	.7625
502	.7875
503	.8125
504	.8375
505	.8625
506	.8875
507	.9125
508	.9375
509	.9625
510	.9875
511	861.0125
512	.0375
513	.0625
514	.0875
515	.1125
516	.1375
517	.1625
518	.1875
519	.2125
520	.2375
521	.2625
522	.2875
523	.3125
524	.3375
525	.3625
526	.3875
527	.4125
528	.4375
529	.4625
530	.4875
531	.5125

TABLE OF 806–824/851–869 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
532	.5375
533	.5625
534	.5875
535	.6125
536	.6375
537	.6625
538	.6875
539	.7125
540	.7375
541	.7625
542	.7875
543	.8125
544	.8375
545	.8625
546	.8875
547	.9125
548	.9375
549	.9625
550	.9875
551	862.0125
552	.0375
553	.0625
554	.0875
555	.1125
556	.1375
557	.1625
558	.1875
559	.2125
560	.2375
561	.2625
562	.2875
563	.3125
564	.3375
565	.3625
566	.3875
567	.4125
568	.4375
569	.4625
570	.4875
571	.5125
572	.5375
573	.5625
574	.5875
575	.6125
576	.6375
577	.6625
578	.6875
579	.7125
580	.7375
581	.7625
582	.7875
583	.8125
584	.8375
585	.8625
586	.8875
587	.9125
588	.9375
589	.9625
590	.9875
591	863.0125
592	.0375
593	.0625
594	.0875
595	.1125
596	.1375
597	.1625
598	.1875
599	.2125
600	.2375

TABLE OF 806–824/851–869 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
601	.2625
602	.2875
603	.3125
604	.3375
605	.3625
606	.3875
607	.4125
608	.4375
609	.4625
610	.4875
611	.5125
612	.5375
613	.5625
614	.5875
615	.6125
616	.6375
617	.6625
618	.6875
619	.7125
620	.7375
621	.7625
622	.7875
623	.8125
624	.8375
625	.8625
626	.8875
627	.9125
628	.9375
629	.9625
630	.9875
631	864.0125
632	.0375
633	.0625
634	.0875
635	.1125
636	.1375
637	.1625
638	.1875
639	.2125
640	.2375
641	.2625
642	.2875
643	.3125
644	.3375
645	.3625
646	.3875
647	.4125
648	.4375
649	.4625
650	.4875
651	.5125
652	.5375
653	.5625
654	.5875
655	.6125
656	.6375
657	.6625
658	.6875
659	.7125
660	.7375
661	.7625
662	.7875
663	.8125
664	.8375
665	.8625
666	.8875
667	.9125
668	.9375
669	.9625

TABLE OF 806–824/851–869 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
670	.9875
671	865.0125
672	.0375
673	.0625
674	.0875
675	.1125
676	.1375
677	.1625
678	.1875
679	.2125
680	.2375
681	.2625
682	.2875
683	.3125
684	.3375
685	.3625
686	.3875
687	.4125
688	.4375
689	.4625
690	.4875
691	.5125
692	.5375
693	.5625
694	.5875
695	.6125
696	.6375
697	.6625
698	.6875
699	.7125
700	.7375
701	.7625
702	.7875
703	.8125
704	.8375
705	.8625
706	.8875
707	.9125
708	.9375
709	.9625
710	.9875
711	866.0125
712	.0375
713	.0625
714	.0875
715	.1125
716	.1375
717	.1625
718	.1875
719	.2125
720	.2375
721	.2625
722	.2875
723	.3125
724	.3375
725	.3625
726	.3875
727	.4125
728	.4375
729	.4625
730	.4875
731	.5125
732	.5375
733	.5625
734	.5875
735	.6125
736	.6375
737	.6625
738	.6875

TABLE OF 806–824/851–869 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
739	.7125
740	.7375
741	.7625
742	.7875
743	.8125
744	.8375
745	.8625
746	.8875
747	.9125
748	.9375
749	.9625
750	.9875
751	867.0125
752	.0375
753	.0625
754	.0875
755	.1125
756	.1375
757	.1625
758	.1875
759	.2125
760	.2375
761	.2625
762	.2875
763	.3125
764	.3375
765	.3625
766	.3875
767	.4125
768	.4375
769	.4625
770	.4875
771	.5125
772	.5375
773	.5625
774	.5875
775	.6125
776	.6375
777	.6625
778	.6875
779	.7125
780	.7375
781	.7625
782	.7875
783	.8125
784	.8375
785	.8625
786	.8875
787	.9125
788	.9375
789	.9625
790	.9875
791	868.0125
792	.0375
793	.0625
794	.0875
795	.1125
796	.1375
797	.1625
798	.1875
799	.2125
800	.2375
801	.2625
802	.2875
803	.3125
804	.3375
805	.3625
806	.3875
807	.4125

TABLE OF 806–824/851–869 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
808	.4375
809	.4625
810	.4875
811	.5125
812	.5375
813	.5625
814	.5875
815	.6125
816	.6375
817	.6625
818	.6875
819	.7125
820	.7375
821	.7625
822	.7875
823	.8125
824	.8375
825	.8625
826	.8875
827	.9125
828	.9375
829	.9625
830	.9875

TABLE OF 896–901/935–940 MHZ CHANNEL DESIGNATIONS

Channel No.	Base Frequency (MHz)
1	935.0125
2	.0250
3	.0375
4	.0500
5	.0625
6	.0750
7	.0875
8	.1000
9	.1125
10	.1250
11	.1375
12	.1500
13	.1625
14	.1750
15	.1875
16	.2000
17	.2125
18	.2250
19	.2375
20	.2500
21	.2625
22	.2750
23	.2875
24	.3000
25	.3125
26	.3250
27	.3375
28	.3500
29	.3625
30	.3750
31	.3875
32	.4000
33	.4125
34	.4250
35	.4375
36	.4500
37	.4625

TABLE OF 896–901/935–940 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base Frequency (MHz)
38	.4750
39	.4875
40	.5000
41	.5125
42	.5250
43	.5375
44	.5500
45	.5625
46	.5750
47	.5875
48	.6000
49	.6125
50	.6250
51	.6375
52	.6500
53	.6625
54	.6750
55	.6875
56	.7000
57	.7125
58	.7250
59	.7375
60	.7500
61	.7626
62	.7750
63	.7875
64	.8000
65	.8125
66	.8250
67	.8375
68	.8500
69	.8625
70	.8750
71	.8875
72	.9000
73	.9125
74	.9250
75	.9375
76	.9500
77	.9625
78	.9750
79	.9875
80	936.0000
81	.0125
82	.0250
83	.0375
84	.0500
85	.0625
86	.0750
87	.0875
88	.1000
89	.1125
90	.1250
91	.1375
92	.1500
93	.1625
94	.1750
95	.1875
96	.2000
97	.2125
98	.2250
99	.2375
100	.2500
101	.2625
102	.2750
103	.2875
104	.3000
105	.3125
106	.3250

TABLE OF 896–901/935–940 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base Frequency (MHz)
107	.3375
108	.3500
109	.3625
110	.3750
111	.3875
112	.4000
113	.4125
114	.4250
115	.4375
116	.4500
117	.4625
118	.4750
119	.4875
120	.5000
121	.5125
122	.5250
123	.5375
124	.5500
125	.5625
126	.5750
127	.5875
128	.6000
129	.6125
130	.6250
131	.6375
132	.6500
133	.6625
134	.6750
135	.6875
136	.7000
137	.7125
138	.7250
139	.6375
140	.7500
141	.7625
142	.7750
143	.7875
144	.8000
145	.8125
146	.8250
147	.8375
148	.8500
149	.8625
150	.8750
151	.8875
152	.9000
153	.9125
154	.9250
155	.9375
156	.9500
157	.9625
158	.9750
159	.9875
160	937.0000
161	.0125
162	.0250
163	.0375
164	.0500
165	.0625
166	.0750
167	.0875
168	.1000
169	.1125
170	.1250
171	.1375
172	.1500
173	.1625
174	.1750
175	.1875

TABLE OF 896–901/935–940 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base Frequency (MHz)
176	.2000
177	.2125
178	.2250
179	.2375
180	.2500
181	.2625
182	.2750
183	.2875
184	.3000
185	.3125
186	.3250
187	.3375
188	.3500
189	.3625
190	.3750
191	.3875
192	.4000
193	.4125
194	.4250
195	.4375
196	.4500
197	.4625
198	.4750
199	.4875
200	.5000
201	.5125
202	.5250
203	.5375
204	.5500
205	.5625
206	.5750
207	.5875
208	.6000
209	.6125
210	.6250
211	.6375
212	.6500
213	.6625
214	.6750
215	.6875
216	.7000
217	.7125
218	.7250
219	.7375
220	.7500
221	.7625
222	.7750
223	.7875
224	.8000
225	.8125
226	.8250
227	.8375
228	.8500
229	.8625
230	.8750
231	.8875
232	.9000
233	.9125
234	.9250
235	.9475
236	.9500
237	.9625
238	.9750
239	.9875
240	938.0000
241	.0125
242	.0250
243	.0375
244	.0500

TABLE OF 896–901/935–940 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base Frequency (MHz)
245	.0625
246	.0750
247	.0875
248	.1000
249	.1125
250	.1250
251	.1375
252	.1500
253	.1625
254	.1750
255	.1875
256	.2000
257	.2125
258	.2250
259	.2375
260	.2500
261	.2625
262	.2750
263	.2875
264	.3000
265	.3125
266	.3250
267	.3375
268	.3500
269	.3625
270	.3750
271	.3875
272	.4000
273	.4125
274	.4250
275	.4375
276	.4500
277	.4625
278	.4750
279	.4875
280	.5000
281	.5125
282	.5250
283	.5375
284	.5500
285	.5625
286	.5750
287	.5875
288	.6000
289	.6125
290	.6250
291	.6375
292	.6500
293	.6625
294	.6750
295	.6875
296	.7000
297	.7125
298	.7250
299	.7375
300	.7500
301	.7625
302	.7750
303	.7875
304	.8000
305	.8125
306	.8250
307	.8375
308	.8500
309	.8625
310	.8750
311	.8875
312	.9000
313	.9125

TABLE OF 896–901/935–940 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base Frequency (MHz)
314	.9250
315	.9375
316	.9500
317	.9625
318	.9750
319	.9875
320	939.0000
321	.0125
322	.0250
323	.0375
324	.0500
325	.0625
326	.0750
327	.0875
328	.1000
329	.1125
330	.1250
331	.1375
332	.1500
333	.1625
334	.1750
335	.1875
336	.2000
337	.2125
338	.2250
339	.2375
340	.2500
341	.2625
342	.2750
343	.2875
344	.3000
345	.3125
346	.3250
347	.3375
348	.3500
349	.3625
350	.3750
351	.3875
352	.4000
353	.4125
354	.4250
355	.4375
356	.4500
357	.4625
358	.4750
359	.4875
360	.5000
361	.5125
362	.5250
363	.5375
364	.5500
365	.5625
366	.5750
367	.5875
368	.6000
369	.6125
370	.6250
371	.6375
372	.6500
373	.6625
374	.6750
375	.6875
376	.7000
377	.7125
378	.7250
379	.7375
380	.7500
381	.7625
382	.7750

TABLE OF 896–901/935–940 MHz CHANNEL DESIGNATIONS—Continued

Channel No.	Base Frequency (MHz)
383	.7875
384	.8000
385	.8125
386	.8250
387	.8375
388	.8500
389	.8625
390	.8750
391	.8875
392	.9000
393	.9125
394	.9250
395	.9375
396	.9500
397	.9625
398	.9750
399	.9875

[70 FR 56583, Sept. 28, 2005, as amended at 72 FR 35200, June 27, 2007]

§ 90.614 Segments of the 806–824/851–869 MHz band for non-border areas.

The 806–824/851–869 MHz band (''800 MHz band'') will be divided as follows at locations farther then 110 km (68.4 miles) from the U.S./Mexico border and 140 km (87 miles) from the U.S./Canadian border (''non-border areas'')

(a) 800 MHz high density cellular systems—as defined in § 90.7—are prohibited from operating on channels 1–550 in non-border areas.

(b) 800 MHz high density cellular systems—as defined in § 90.7—are permitted to operate on channels 551–830 in non-border areas.

(c) In the following counties and parishes, 800 MHz high density cellular systems—as defined in § 90.7—are permitted to operate on channels 411–830:

Alabama: Autauga, Baldwin, Barbour, Bibb, Blount, Bullock, Butler, Calhoun, Chambers, Cherokee, Chilton, Choctaw, Clarke, Clay, Cleburne, Coffee, Colbert, Conecuh, Coosa, Covington, Crenshaw, Cullman, Dale, Dallas, DeKalb, Elmore, Escambia, Etowah, Fayette, Franklin, Geneva, Greene, Hale, Henry, Houston, Jackson, Jefferson, Lamar, Lauderdale, Lawrence, Lee, Limestone, Lowndes, Macon, Madison, Marengo, Marion, Marshall, Mobile, Monroe, Montgomery, Morgan, Perry, Pickens, Pike, Randolph, Russell, Shelby, St Clair, Sumter, Talladega, Tallapoosa, Tuscaloosa, Walker, Washington, Wilcox, Winston.

Florida: Bay, Calhoun, Escambia, Franklin, Gadsden, Gulf, Holmes, Jackson, Jefferson, Leon, Liberty, Madison, Nassau, Okaloosa, Santa Rosa, Taylor, Wakulla, Walton, Washington.

Georgia: Appling, Atkinson, Bacon, Baker, Baldwin, Banks, Barrow, Bartow, Ben Hill, Berrien, Bibb, Bleckley, Brantley, Brooks, Bryan, Bulloch, Burke, Butts, Calhoun, Camden, Candler, Carroll, Catoosa, Charlton, Chatham, Chattahoochee, Chattooga, Cherokee, Clarke, Clay, Clayton, Clinch, Cobb, Coffee, Colquitt, Columbia, Cook, Coweta, Crawford, Crisp, Dade, Dawson, Decatur, DeKalb, Dodge, Dooly, Dougherty, Douglas, Early, Echols, Effingham, Elbert, Emanuel, Evans, Fannin, Fayette, Floyd, Forsyth, Franklin, Fulton, Gilmer, Glascock, Glynn, Gordon, Grady, Greene, Gwinnett, Habersham, Hall, Hancock, Haralson, Harris, Hart, Heard, Henry, Houston, Irwin, Jackson, Jasper, Jeff Davis, Jefferson, Jenkins, Johnson, Jones, Lamar, Lanier, Laurens, Lee, Liberty, Lincoln, Long, Lowndes, Lumpkin, Macon, Madison, Marion, McDuffie, McIntosh, Meriwether, Miller, Mitchell, Monroe, Montgomery, Morgan, Murray, Muscogee, Newton, Oconee, Oglethorpe, Paulding, Peach, Pickens, Pierce, Pike, Polk, Pulaski, Putnam, Quitman, Rabun, Randolph, Richmond, Rockdale, Schley, Screven, Seminole, Spalding, Stephens, Stewart, Sumter, Talbot, Taliaferro, Tattnall, Taylor, Telfair, Terrell, Thomas, Tift, Toombs, Towns, Treutlen, Troup, Turner, Twiggs, Union, Upson, Walker, Walton, Ware, Warren, Washington, Wayne, Webster, Wheeler, White, Whitfield, Wilcox, Wilkes, Wilkinson, Worth.

Louisiana: Catahoula, Concordia, Madison, Tensas.

Mississippi: Adams, Alcorn, Amite, Attala, Calhoun, Carroll, Chickasaw, Choctaw, Claiborne, Clarke, Clay, Copiah, Covington, Forrest, Franklin, George, Greene, Grenada, Hancock, Harrison, Hinds, Holmes, Itawamba, Jackson, Jasper, Jefferson, Jefferson Davis, Jones, Kemper, Lamar, Lauderdale, Lawrence, Leake, Lee, Lincoln, Lowndes, Madison, Marion, Monroe, Montgomery, Neshoba, Newton,

Noxubee, Oktibbeha, Pearl River, Perry, Pike, Pontotoc, Prentiss, Rankin, Scott, Simpson, Smith, Stone, Tippah, Tishomingo, Union, Walthall, Warren, Wayne, Webster, Wilkinson, Winston, Yazoo.

North Carolina: Cherokee, Clay, Graham, Jackson, Macon.

South Carolina: Abbeville, Aiken, Allendale, Anderson, Bamberg, Barnwell, Beaufort, Edgefield, Greenwood, Hampton, Jasper, McCormick, Oconee.

Tennessee: Bledsoe, Bradley, Franklin, Giles, Hamilton, Hardin, Lawrence, Lincoln, Marion, McMinn, McNairy, Meigs, Monroe, Moore, Polk, Rhea, Sequatchie, Wayne.

[69 FR 67843, Nov. 22, 2004, as amended at 70 FR 76708, Dec. 28, 2005; 72 FR 39760, July 20, 2007]

§ 90.615 Individual channels available in the General Category in 806–824/851–869 MHz band.

The General Category will consist of channels 231–260 and 511–550 at locations farther then 110 km (68.4 miles) from the U.S./Mexico border and 140 km (87 miles) from the U.S./Canadian border. All entities will be eligible for licensing on these channels except as described in paragraphs (a) and (b) of this section.

(a) In a given 800 MHz NPSPAC region, any channel in the 231–260 range which is vacated by a licensee relocating to channels 551–830 and which remains vacant after band reconfiguration will be available as follows:

(1) Only to eligible applicants in the Public Safety Category until three years after the release of a public notice announcing the completion of band reconfiguration in that region;

(2) Only to eligible applicants in the Public Safety or Critical Infrastructure Industry Categories from three to five years after the release of a public notice announcing the completion of band reconfiguration in that region;

(3) To all entities five years after release of a public notice announcing the completion of band reconfiguration in that region.

(b) In a given 800 MHz NPSPAC region, any channel in the 231–260 range which is vacated by a licensee relocating to channels 511–550 and remains vacant after band reconfiguration will be available as follows:

(1) Only to eligible applicants in the Public Safety Category until three years after the release of a public notice announcing the completion of band reconfiguration in that region;

(2) Only to eligible applicants in the Public Safety or Critical Infrastructure Industry Categories from three to five years after the release of a public notice announcing the completion of band reconfiguration in that region;

(3) To all entities five years after release of a public notice announcing the completion of band reconfiguration in that region.

(c) Spectrum Block F1 consists of channels 236–260.

[70 FR 6759, Feb. 8, 2005, as amended at 70 FR 76708, Dec. 28, 2005]

§ 90.617 Frequencies in the 809.750–824/854.750–869 MHz, and 896–901/935–940 MHz bands available for trunked, conventional or cellular system use in non-border areas.

The following channels will be available at locations farther then 110 km (68.4 miles) from the U.S./Mexico border and 140 km (87 miles) from the U.S./Canadian border (''non-border areas'').

(a) Unless otherwise specified, the channels listed in Table 1 and paragraph (a)(1) of this section are available for to eligible applicants in the Public Safety Category which consists of licensees eligible in the Public Safety Pool of subpart B of this part. 800 MHz high density cellular systems as defined in § 90.7 are prohibited on these channels. These frequencies are available in non-border areas. Specialized Mobile Radio Systems will not be authorized in this category. These channels are available for intercategory sharing as indicated in § 90.621(e).

TABLE 1—PUBLIC SAFETY POOL 806–816/851–861 MHZ BAND CHANNELS

[70 Channels]

Group No.	Channel Nos.
269	269–289–311–399–439
270	270–290–312–400–440
279	279–299–319–339–359
280	280–300–320–340–360
309	309–329–349–369–389
310	310–330–350–370–390
313	313–353–393–441–461
314	314–354–394–448–468

TABLE 1—PUBLIC SAFETY POOL 806–816/851–861 MHZ BAND CHANNELS—Continued

[70 Channels]

Group No.	Channel Nos.
321	321–341–361–381–419
328	328–348–368–388–420
351	351–379–409–429–449
332	352–380–410–430–450
Single Channels	391, 392, 401, 408, 421, 428, 459, 460, 469, 470

(1) Channels numbers 1–230 are also available to eligible applicants in the Public Safety Category in non-border areas. The assignment of these channels will be done in accordance with the policies defined in the Report and Order of Gen. Docket No. 87–112 (See § 90.16). The following channels are available only for mutual aid purposes as defined in Gen. Docket No. 87–112: channels 1, 39, 77, 115, 153.

(2) Except as provided in paragraph (a)(3) of this section, the channels listed in Table 1A are available in the counties listed in § 90.614(c) to eligible applicants in the Public Safety Category. 800 MHz high density cellular systems as defined in § 90.7 are prohibited on these channels. These channels are available for intercategory sharing as indicated in § 90.621(e).

TABLE 1A—PUBLIC SAFETY POOL 806–816/851–861 MHZ BAND CHANNELS FOR COUNTIES IN SOUTHEASTERN U.S.

[70 Channels]

Group No.	Channel Nos.
261	261–313–324–335–353
262	262–314–325–336–354
265	265–285–315–333–351
266	266–286–316–334–352
269	269–289–311–322–357
270	270–290–312–323–355
271	271–328–348–358–368
279	279–299–317–339–359
280	280–300–318–340–360
309	309–319–329–349–369
310	310–320–330–350–370
321	321–331–341–361–372
Single Channels	326, 327, 332, 337, 338, 342, 343, 344, 345, 356

(3) The channels listed in Table 1B are available within 113 km (70 mi) of the center city coordinates of Atlanta, GA to eligible applicants in the Public Safety Category. The center city coordinates of Atlanta, GA—for the purposes of the rule—are defined as 33°44′55″ NL, 84°23′17″ WL. 800 MHz high density cellular systems as defined in § 90.7 are prohibited on these channels. These channels are available for intercategory sharing as indicated in § 90.621(e).

TABLE 1B—PUBLIC SAFETY POOL 806–816/851–861 MHZ BAND CHANNELS FOR ATLANTA, GA

[70 Channels]

Group No.	Channel Nos.
261	261–313–324–335–353
262	262–314–325–336–354
269	269–289–311–322–357
270	270–290–312–323–355
279	279–299–319–339–359
280	280–300–320–340–360
285	285–315–333–351–379
286	286–316–334–352–380
309	309–329–349–369–389
310	310–330–350–370–390
321	321–331–341–361–381
328	328–348–358–368–388
Single Channels	317, 318, 326, 327, 332, 337, 338, 356, 371, 372

(b) Unless otherwise specified, the channels listed in Table 2 are available to applicants eligible in the Industrial/Business Pool of subpart C of this part but exclude Special Mobilized Radio Systems as defined in § 90.603(c). 800 MHz high density cellular systems as defined in § 90.7 are prohibited on these channels. These frequencies are available in non-border areas. Specialized Mobile Radio (SMR) systems will not be authorized on these frequencies. These channels are available for intercategory sharing as indicated in § 90.621(e).

TABLE 2—BUSINESS/INDUSTRIAL/LAND TRANSPORTATION POOL 806–816/851–861 MHZ BAND CHANNELS

[100 Channels]

Group No.	Channel Nos.
322	322–362–402–442–482
323	323–363–403–443–483
324	324–364–404–444–484
325	325–365–405–445–485
326	326–366–406–446–486
327	327–367–407–447–487
342	342–382–422–462–502
343	343–383–423–463–503
344	344–384–424–464–504
345	345–385–425–465–505
346	346–386–426–466–506
347	347–387–427–467–507

TABLE 2—BUSINESS/INDUSTRIAL/LAND TRANSPORTATION POOL 806–816/851–861 MHz BAND CHANNELS—Continued

[100 Channels]

Group No.	Channel Nos.
Single Channels	261, 271, 281, 291, 301, 262, 272, 282, 292, 302, 263, 273, 283, 293, 303, 264, 274, 284, 294, 304, 265, 275, 285, 295, 305, 266, 276, 286, 296, 306, 267, 277, 287, 297, 307, 268, 278, 288, 298, 308

(1) Except as provided in paragraph (b)(2) of this section, the channels listed in Table 2A are available in the counties listed in § 90.614(c) to eligible applicants in the Industrial/Business Pool of subpart C of this part but exclude Special Mobilized Radio Systems as defined in § 90.603(c). 800 MHz high density cellular systems as defined in § 90.7 are prohibited on these channels. These channels are available for intercategory sharing as indicated in § 90.621(e).

TABLE 2A—BUSINESS/INDUSTRIAL/LAND TRANSPORTATION POOL 806–816/851–861 MHz BAND FOR CHANNELS IN SOUTHEASTERN U.S.

[69 Channels]

	Channel Nos.
Single Channels	263, 264, 267, 268, 272, 273, 274, 275, 276, 277, 278, 281, 282, 283, 284, 287, 288, 291, 292, 293, 294, 295, 296, 297, 298, 301, 302, 303, 304, 305, 306, 307, 308, 346, 347, 362, 363, 364, 365, 366, 367, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410

(2) The channels listed in Table 2B are available within 113 km (70 mi) of the center city coordinates of Atlanta, GA, to eligible applicants in the Industrial/Business Pool of subpart C of this part but exclude Special Mobilized Radio Systems as defined in § 90.603(c). The center city coordinates of Atlanta, GA—for the purposes of the rule—are defined as 33°44′55″ NL, 84°23′17″ WL. 800 MHz high density cellular systems as defined in § 90.7 are prohibited on these channels. These channels are available for intercategory sharing as indicated in § 90.621(e).

TABLE 2B—BUSINESS/INDUSTRIAL/LAND TRANSPORTATION POOL 806–816/851–861 MHz BAND FOR CHANNELS IN ATLANTA, GA

[69 Channels]

	Channel Nos.
Single Channels	263, 264, 265, 266, 267, 268, 271, 272, 273, 274, 275, 276, 277, 278, 281, 282, 283, 284, 287, 288, 291, 292, 293, 294, 295, 296, 297, 298, 301, 302, 303, 304, 305, 306, 307, 308, 342, 343, 344, 345, 346, 347, 362, 363, 364, 365, 366, 367, 382, 383, 384, 385, 386, 387, 391, 392, 393, 394, 399, 400, 401, 402, 403, 404, 405, 406, 407, 409, 410

(c) The channels listed in Table 3 are available to applicants eligible in the Industrial/Business Pool of subpart C of this part but exclude Special Mobilized Radio Systems as defined in § 90.603(c). These frequencies are available in nonborder areas. Specialized Mobile Radio (SMR) systems will not be authorized on these frequencies. These channels are available for intercategory sharing as indicated in § 90.621(e).

For multi-channel systems, channels may be grouped vertically or horizontally as they appear in the following table.

TABLE 3—BUSINESS/INDUSTRIAL/LAND TRANSPORTATION POOL 896–901/935–940 MHZ BAND CHANNELS

[199 channels]

Channel Nos.	
11–12–13–14–15	211–212–213–214–215
16–17–18–19–20	216–217–218–219–220
31–32–33–34–35	231–232–233–234–235
36–37–38–39–40	236–237–238–239–240
51–52–53–54–55	251–252–253–254–255
56–57–58–59–60	256–257–258–259–260
71–72–73–74–75	271–272–273–274–275

TABLE 3—BUSINESS/INDUSTRIAL/LAND TRANSPORTATION POOL 896–901/935–940 MHZ BAND CHANNELS—Continued

[199 channels]

76–77–78–79–80	276–277–278–279–280
91–92–93–94–95	291–292–293–294–295
96–97–98–99–100	296–297–298–299–300
111–112–113–114–115.	311–312–313–314–315
116–117–118–119–120.	316–317–318–319–320
131–132–133–134–135.	331–332–333–334–335
136–137–138–139–140.	336–337–338–339–340
151–152–153–154–155.	351–352–353–354–355
156–157–158–159–160.	356–357–358–359–360
171–172–173–174–175.	371–372–373–374–375
176–177–178–179–180.	376–377–378–379–380
191–192–193–194–195.	391–392–393–394–395
196–197–198–199–200.	396–397–398–399

(d) Unless otherwise specified, the channels listed in Tables 4A and 4B are available only to eligibles in the SMR category—which consists of Specialized Mobile Radio (SMR) stations and eligible end users. 800 MHz high density cellular systems, as defined in § 90.7, are prohibited on these channels. These frequencies are available in non-border areas. The spectrum blocks listed in Table 4A are available for EA-based services (as defined by § 90.681) prior to January 21, 2005. No new EA-based services will be authorized after January 21, 2005. EA-based licensees who operate non-high-density cellular systems prior to January 21, 2005, may choose to remain on these channels in the non-high-density cellular portion of the 800 MHz band (as defined in § 90.614). These licensees may continue to operate non-high-density cellular systems and will be grandfathered indefinitely. The channels listed in Table 4B will be available for site-based licensing after January 21, 2005, in any Economic Area where no EA-based licensee is authorized for these channels.

TABLE 4A—EA-BASED SMR CATEGORY 806–816/851–861 MHZ BAND CHANNELS, AVAILABLE PRIOR TO JANUARY 21, 2005

[80 Channels]

Spectrum block	Channel Nos.
G	311–351–391–431–471
H	312–352–392–432–472
I	313–353–393–433–473
J	314–354–394–434–474
K	315–355–395–435–475
L	316–356–396–436–476
M	317–357–397–437–477
N	318–358–398–438–478
O	331–371–411–451–491
P	332–372–412–452–492
Q	333–373–413–453–493
R	334–374–414–454–494
S	335–375–415–455–495
T	336–376–416–456–496
U	337–377–417–457–497
V	338–378–418–458–498

TABLE 4B—SMR CATEGORY 806–816/851–861 MHZ BAND CHANNELS, AVAILABLE AFTER JANUARY 21, 2005, FOR SITE-BASED LICENSING

[80 Channels]

Group No.	Channel Nos.
315	315–355–395–435–475
316	316–356–396–436–476
317	317–357–397–437–477
318	318–358–398–438–478
331	331–371–411–451–491
332	332–372–412–452–492
333	333–373–413–453–493
334	334–374–414–454–494
335	335–375–415–455–495
336	336–376–416–456–496
337	337–377–417–457–497
338	338–378–418–458–498
Single Channels	431, 432, 433, 434, 471, 472, 473, 474, 479, 480, 481, 488, 489, 490, 499, 500, 501, 508, 509, 510

(1) Except as provided in paragraph (d)(2) of this section, the channels listed in Table 4C are available in the counties listed in § 90.614(c) for non-high-density cellular operations only to eligibles in the SMR category—which consists of Specialized Mobile Radio (SMR) stations and eligible end users. 800 MHz high density cellular systems as defined in § 90.7 are prohibited on these channels. These channels are available for intercategory sharing as indicated in § 90.621(e).

TABLE 4C—SMR CATEGORY 806–816/851–861 MHZ BAND CHANNELS AVAILABLE FOR SITE-BASED LICENSING IN SOUTHEASTERN U.S. AFTER JANUARY 21, 2005

[11 Channels]

	Channel Nos.
Single Channels	371, 373, 374, 375, 376, 377, 378, 395, 396, 397, 398

(2) The channels listed in Table 4D are available within 113 km (70 mi) of the center city coordinates of Atlanta, GA, only to eligibles in the SMR category—which consists of Specialized Mobile Radio (SMR) stations and eligible end users. The center city coordinates of Atlanta, GA—for the purposes of this rule—are defined as 33°44′55″ NL, 84°23′17″ WL. 800 MHz high density cellular systems as defined in § 90.7 are prohibited on these channels. These channels are available for intercategory sharing as indicated in § 90.621(e). 800 MHz high density cellular systems as defined in § 90.7 are prohibited on these channels. These channels are available for intercategory sharing as indicated in § 90.621(e).

TABLE 4D—SMR CATEGORY 806–816/851–861 MHZ BAND CHANNELS AVAILABLE FOR SITE-BASED LICENSING IN ATLANTA, GA AFTER JANUARY 21, 2005

[11 Channels]

	Channel Nos.
Single Channels	373, 374, 375, 376, 377, 378, 395, 396, 397, 398, 408

(e) The Channels listed in § 90.614(b) and (c) are available to eligibles in the SMR category—which consists of Specialized Mobile Radio (SMR) stations and eligible end users. ESMR licensees which employ an 800 MHz high density cellular system, as defined in § 90.7, are permitted to operate on these channels in non-border areas. ESMR licensees authorized prior to January 21, 2005, may continue to operate, if they so choose, on the channels listed in Table 5. These licensees will be grandfathered indefinitely.

TABLE 5—ESMR CATEGORY 816–821 MHZ BAND CHANNELS FOR CELLULAR OPERATIONS IN NON-BORDER AREAS AVAILABLE PRIOR TO JANUARY 21, 2005

[200 Channels]

Spectrum block	Channel Nos.
A	511 through 530.
B	531 through 590.
C	591 through 710.

(f) The channels listed in Tables 6 are available for operations only to eligibles in the SMR category—which consists of Specialized Mobile Radio (SMR) stations and eligible end users. These frequencies are available in non-border areas. The spectrum blocks listed below are available for EA-based services according to § 90.681.

TABLE 6—SMR CATEGORY 896–901/935–940 MHZ BAND CHANNELS

[200 channels]

Block	Channel Nos.
A	1–2–3–4–5–6–7–8–9–10
B	21–22–23–24–25–26–27–28–29–30
C	41–42–43–44–45–46–47–48–49–50
D	61–62–63–64–65–66–67–68–69–70
E	81–82–83–84–85–86–87–88–89–90
F	101–102–103–104–105–106–107–108–109–110
G	121–122–123–124–125–126–127–128–129–130
H	141–142–143–144–145–146–147–148–149–150
I	161–162–163–164–165–166–167–168–169–170
J	181–182–183–184–185–186–187–188–189–190
K	201–202–203–204–205–206–207–208–209–210
L	221–222–223–224–225–226–227–228–229–230
M	241–242–243–244–245–246–247–248–249–250
N	261–262–263–264–265–266–267–268–269–270
O	281–282–283–284–285–286–287–288–289–290
P	301–302–303–304–305–306–307–308–309–310
Q	321–322–323–324–325–326–327–328–329–330
R	341–342–343–344–345–346–347–348–349–350
S	361–362–363–364–365–366–367–368–369–370
T	381–382–383–384–385–386–387–388–389–390

(g) In a given NPSPAC region, channels below 471 listed in Tables 2 and 4B

which are vacated by licensees relocating to channels 551–830 and which remain vacant after band reconfiguration will be available as indicated in § 90.617(g)(1 through 3). The only exception will be for the counties listed in § 90.614(c). At locations greater then 113 km (70 mi) from the center city coordinates of Atlanta, GA within the counties listed in § 90.614(c), the channels listed in Tables 2A and 4C which are vacated by licensees relocating to channels 411–830 and which remain vacant after band reconfiguration will be available as indicated in § 90.617(g)(1 through 3). At locations within 113 km (70 mi) of the center city coordinates of Atlanta, GA, the channels listed in Tables 2B and 4D which are vacated by licensees relocating to channels 411–830 and which remain vacant after band reconfiguration will be available as follows:

(1) Only to eligible applicants in the Public Safety Category until three years after the release of a public notice announcing the completion of band reconfiguration in that region;

(2) Only to eligible applicants in the Public Safety or Critical Infrastructure Industry Categories from three to five years after the release of a public notice announcing the completion of band reconfiguration in that region;

(3) Five years after the release of a public notice announcing the completion of band reconfiguration in that region, these channels revert back to their original pool categories.

(h) In a given 800 MHz NPSPAC region—except for the counties listed in § 90.614(c)—channels below 471 listed in Tables 2 and 4B which are vacated by a licensee relocating to channels 511–550 and remain vacant after band reconfiguration will be available as follows:

(1) Only to eligible applicants in the Public Safety Category until three years after the release of a public notice announcing the completion of band reconfiguration in that region;

(2) Only to eligible applicants in the Public Safety or Critical Infrastructure Industry Categories from three to five years after the release of a public notice announcing the completion of band reconfiguration in that region;

(3) Five years after the release of a public notice announcing the completion of band reconfiguration in that region, these channels revert back to their original pool categories.

(i) Special Mobilized Radio Systems licensees who operate systems, other than 800 MHz high density cellular systems, on any of the public safety channels listed in Table 1 prior to January 21, 2005, are grandfathered and may continue to operate on these channels indefinitely. These grandfathered licensees will be prohibited from operating 800 MHz high density cellular systems as defined in § 90.7. Site-based licensees who are grandfathered on any of the public safety channels listed in Table 1 may modify their license only if they obtain concurrence from a certified public safety coordinator in accordance with § 90.175(c). Grandfathered EA-based licensees, however, are exempt from any of the frequency coordination requirements of § 90.175 as long as their operations remain within the Economic Area defined by their license in accordance with the requirements of § 90.683(a).

(j) Licensees operating 800 MHz high density cellular systems on the channels listed in § 90.614(a), prior to January 21, 2005, may elect to continue operating on these channels and will be permitted to continue operating 800 MHz high density cellular systems (as defined in § 90.7) in this portion of the band. These licensees will be grandfathered indefinitely subject to the provisions of §§ 90.673, 90.674 and 90.675.

(k) Licensees may operate systems other than 800 MHz high density cellular systems (as defined in § 90.7) on Channels 511–550 at any location vacated by an EA-based SMR licensee. For operations on these channels, unacceptable interference (as defined in § 22.970 of this chapter and § 90.672) will be deemed to occur only at sites where the following median desired signals are received (rather than those specified in § 22.970(a)(1)(i) of this chapter and § 90.672(a)(1(i). The minimum required median desired signal, as measured at the R.F. input of the receiver, will be as follows:

(1) Mobile units (except in Puerto Rico and the U.S. Virgin Islands):

(i) For channels 511 to 524—the minimum median desired signal levels

specified in § 22.970(a)(1)(i) of this chapter and § 90.672(a)(1)(i) shall apply;

(ii) For channels 524 to 534—the minimum median desired signal level shall increase linearly from the values specified in § 22.970(a)(1)(i) of this chapter and § 90.672(a)(1)(i) to −70 dBm;

(iii) For channels 534 to 550—the minimum median desired signal level shall increase linearly from −70 dBm to −65 dBm.

(2) Portable units (except in Puerto Rico and the U.S. Virgin Islands):

(i) For channels 511 to 524—the minimum median desired signal levels specified in § 22.970(a)(1)(i) of this chapter and § 90.672(a)(1)(i) shall apply;

(ii) For channels 524 to 530—the minimum median desired signal level shall increase linearly from the values specified in § 22.970(a)(1)(i) of this chapter and § 90.672(a)(1)(i) to −80 dBm;

(iii) For channels 530 to 534—the minimum median desired signal level shall increase linearly from −80 dBm to −70 dBm;

(iv) For channels 534 to 550—the minimum median desired signal level shall increase linearly from −70 dBm to −65 dBm.

(3) Mobile units operating in Puerto Rico and the U.S. Virgin Islands:

(i) For channels 511 to 530—the minimum median desired signal levels specified in § 22.970(a)(1)(i) of this chapter and § 90.672(a)(1)(i) shall apply;

(ii) For channels 531 to 534—the minimum median desired signal level shall increase linearly from −80.2 dBm to −70 dBm;

(iii) For channels 534 to 550—the minimum median desired signal level shall increase linearly from −70 dBm to −65 dBm.

(4) Portable units operating in Puerto Rico and the U.S. Virgin Islands:

(i) For channels 511 to 530—the minimum median desired signal levels specified in § 22.970(a)(1)(i) of this chapter and § 90.672(a)(1)(i) shall apply;

(ii) For channels 531 to 534—the minimum median desired signal level shall increase linearly from −80 dBm to −70 dBm;

(iii) For channels 534 to 550—the minimum median desired signal level shall increase linearly from −70 dBm to −65 dBm.

[69 FR 67843, Nov. 22, 2004, as amended at 70 FR 6760, Feb. 8, 2005; 70 FR 76708, Dec. 28, 2005; 72 FR 39760, July 20, 2007; 75 FR 35317, June 22, 2010; 76 FR 11683, Mar. 3, 2011]

§ 90.619 Operations within the U.S./Mexico and U.S./Canada border areas.

(a) *Use of frequencies in 800 MHz band in Mexico border region.* All operations in the 806–824/851–869 MHz band within 110 km (68.35 miles) of the U.S./Mexico border (''Sharing Zone'') shall be in accordance with international agreements between the U.S. and Mexico.

(1) The U.S. and Mexico divide primary access to channels in the Sharing Zone as indicated in Table A1 below.

TABLE A1—U.S. AND MEXICO PRIMARY CHANNELS IN SHARING ZONE

Channels	Primary access
1–360	U.S.
361–610	Mexico.
611–830	U.S.-Mexico Co-Primary.

(2) Stations authorized on U.S. primary channels in the Sharing Zone are subject to the effective radiated power (ERP) and antenna height limits listed below in Table A2.

TABLE A2—LIMITS ON EFFECTIVE RADIATED POWER (ERP) AND ANTENNA HEIGHT

Average of the antenna height above average terrain on standard radials in the direction of the common border (meters) [1]	Maximum ERP in any direction toward the common border per 25 kHz (watts)
0 to 503	500
Above 503 to 609	350
Above 609 to 762	200
Above 762 to 914	140
Above 914 to 1066	100
Above 1066 to 1219	75
Above 1219 to 1371	70
Above 1371 to 1523	65
Above 1523	5

[1] Standard radials are 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° to True North. The height above average terrain on any standard radial is based upon the average terrain elevation above mean sea level.

(3) Stations may be authorized on channels primary to Mexico in the Sharing Zone provided the maximum power flux density (PFD) at any point at or beyond the border does not exceed −107 db(W/m^2) per 25 kHz of bandwidth. Licensees may exceed this value only if

all potentially affected counterpart operators in the other country agree to a higher PFD level.

(4) Stations authorized on U.S.-Mexico co-primary channels in the Sharing Zone are permitted to exceed a maximum power flux density (PFD) of −107 db(W/m^2) per 25 kHz of bandwidth at any point at or beyond the border only if all potentially affected counterpart operators of 800 MHz high density cellular systems, as defined in § 90.7, agree.

(5) Channels in the Sharing Zone are available for licensing as indicated in Table A3 below.

TABLE A3—ELIGIBILITY REQUIREMENTS FOR CHANNELS IN SHARING ZONE

Channels	Eligibility requirements
1–230	Report and Order of Gen. Docket No. 87–112.
231–315	Public Safety Pool.
316–550	General Category.
551–830	Special Mobilized Radio for 800 MHz High Density Cellular.

(i) Channels 1–230 are available to applicants eligible in the Public Safety Category. The assignment of these channels will be done in accordance with the policies defined in the Report and Order of Gen. Docket No. 87–112 (See § 90.16). The following channels are available only for mutual aid purposes as defined in Gen. Docket No. 87–112: channels 1, 39, 77, 115, 153. 800 MHz high density cellular systems as defined in § 90.7 are prohibited on these channels.

(ii) Channels 231–315 are available to applicants eligible in the Public Safety Category which consists of licensees eligible in the Public Safety Pool of subpart B of this part. 800 MHz high density cellular systems as defined in § 90.7 are prohibited on these channels.

(iii) Channels 316–550 are available in the General Category. All entities are eligible for licensing on these channels. 800 MHz high density cellular systems as defined in § 90.7 are prohibited on these channels.

(iv) Channels 551–830 are available to applicants eligible in the SMR category—which consists of Specialized Mobile Radio (SMR) stations and eligible end users. ESMR licensees who employ 800 MHz high density cellular systems, as defined in § 90.7, are permitted to operate on these channels.

(6) Stations located outside the Sharing Zone (*i.e.* greater than 110 km from the border) are subject to the channel eligibility requirements and provisions listed in §§ 90.615 and 90.617 except that stations in the following counties are exempt from the requirements of paragraph (k) of § 90.617:

California: San Luis Obispo, Kern, San Bernardino, Santa Barbara, Ventura, Los Angeles, Orange and Riverside.

(b) *Use of frequencies in 900 MHz Band in Mexico border region.* All operations in the 896–901/935–940 MHz band within the Mexico border region shall be in accordance with international agreements between the U.S. and Mexico.

(1) The channels listed in Table 1 below are available to applicants eligible in the Industrial/Business Pool of subpart C of this part but exclude Special Mobilized Radio Systems as defined in § 90.603(c). These frequencies are available within the Mexico border region. Specialized Mobile Radio (SMR) systems will not be authorized on these frequencies.

For multi-channel systems, channels may be grouped vertically or horizontally as they appear in the following table. Channels numbered above 200 may be used only subject to the power flux density limits stated in paragraph (a)(2) of this section:

TABLE 1—UNITED STATES/MEXICO BORDER AREA, BUSINESS/INDUSTRIAL/LAND TRANSPORTATION POOL 896–901/935–940 MHZ BAND

[199 Channels]

Channel Nos.	
11–12–13–14–15	131–132–133–134–135
16–17–18–19–20	136–137–138–139–140
31–32–33–34–35	231–232–233–234–235
36–37–38–39–40	236–237–238–239–240
51–52–53–54–55	171–172–173–174–175
56–57–58–59–60	176–177–178–179–180
71–72–74–75	271–272–273–274–275
76–77–78–79–80	276–277–278–279–280

TABLE 1—UNITED STATES/MEXICO BORDER AREA, BUSINESS/INDUSTRIAL/LAND TRANSPORTATION POOL 896–901/935–940 MHZ BAND—Continued

[199 Channels]

91–92–93–94–95	211–212–213–214–215
96–97–98–99–100	216–217–218–219–220
111–112–113–114–115	311–312–313–314–315
116–117–118–119–120	316–317–318–319–320
151–152–153–154–155	351–352–353–354–355
156–157–158–159–160	356–357–358–359–360
191–192–193–194–195	391–392–393–394–395
196–197–198–199–200	396–397–398–399
251–252–253–254–255	331–332–333–334–335
256–257–258–259–260	336–337–338–339–340
291–292–293–294–295	371–372–373–374–375
296–297–298–299–300	376–377–378–379–380

(2) The channels listed in Table 2 of this section are available for operations only to eligibles in the SMR category—which consists of Specialized Mobile Radio (SMR) stations and eligible end users. These frequencies are available in the Mexico border region. The spectrum blocks listed in the table below are available for EA-based services according to § 90.681.

TABLE 2—UNITED STATES-MEXICO BORDER AREA, SMR CATEGORY 896–901/935–940 MHZ BAND

[200 Channels]

Block	Channel Nos.
A	1–2–3–4–5–6–7–8–9–10
B	21–22–23–24–25–26–27–28–29–30
C	41–42–43–44–45–46–47–48–49–50
D	61–62–63–64–65–66–67–68–69–70
E	81–82–83–84–85–86–87–88–89–90
F	101–102–103–104–105–106–107–108–109–110
G	121–122–123–124–125–126–127–128–129–130
H	141–142–143–144–145–146–147–148–149–150
I	161–162–163–164–165–166–167–168–169–170
J	181–182–183–184–185–186–187–188–189–190
K	201–202–203–204–205–206–207–208–209–210
L	221–222–223–224–225–226–227–228–229–230
M	241–242–243–244–245–246–247–248–249–250
N	261–262–263–264–265–266–267–268–269–270

TABLE 2—UNITED STATES-MEXICO BORDER AREA, SMR CATEGORY 896–901/935–940 MHZ BAND—Continued

[200 Channels]

Block	Channel Nos.
O	281–282–283–284–285–286–287–288–289–290
P	301–302–303–304–305–306–307–308–309–310
Q	321–322–323–324–325–326–327–328–329–330
R	341–342–343–344–345–346–347–348–349–350
S	361–362–363–364–365–366–367–368–369–370
T	381–382–383–384–385–386–387–388–389–390

Channels numbered above 200 may only be used subject to the power flux density limits at or beyond the Mexico border as stated in paragraph (4) of this section.

(3) The specific channels that are available for licensing in the band 896–901/935–940 MHz within the Mexico border region are subject to Effective Radiated Power (ERP) and Antenna Height limitations as indicated in Table 3 below.

TABLE 3—LIMITS OF EFFECTIVE RADIATED POWER (ERP) CORRESPONDING TO ANTENNA HEIGHTS OF BASE STATIONS IN THE 896–901/935–940 MHZ BANDS WITHIN 110 KILOMETERS (68.4 MILES) OF THE MEXICAN BORDER

Antenna height above mean sea level		ERP in watts (maximum)
Meters	Feet	
0–503	0–1650	500
504–609	1651–2000	350
610–762	2001–2500	200
764–914	2501–3000	140
915–1066	3001–3500	100
1067–1219	3501–4000	75
1220–1371	4000–4500	70
1372–1523	4501–5000	65
Above 1523	Above 5000	5

(4) All channels in the 896–901/935–940 MHz band are available for assignment to U.S. stations within the Mexico border region if the maximum power flux density (pfd) of the station's transmitted signal at any point at or beyond the border does not exceed −107 dB (W/m^2). The spreading loss must be calculated using the free space formula taking into account any antenna discrimination in the direction of the border. Authorizations for stations using channels allotted to Mexico on a primary basis will be secondary to Mexican operations and conditioned to require that licensees take immediate action to eliminate any harmful interference resulting from the station's transmitted signal exceeding −107 dB (W/m^2).

(c) *Use of 800 MHz Band in Canada Border Region.* All operations in the 806–824/851–869 MHz band within 140 km (87 miles) of the U.S./Canada border (''U.S./Canada border area'') shall be in accordance with international agreements between the U.S. and Canada.

(1) The U.S./Canada border area is divided into the following geographical regions (''Canada Border Regions''). U.S. primary channels are shown in the table by region. The remaining channels are primary to Canada (''Canada Primary channels'').

TABLE C1—GEOGRAPHICAL REGIONS

Region	Location (longitude)	U.S. primary channels
1	66° W–71° W (0–100 km from border)	1–260, 561–710, 772–790 and 792–830.
2	71° W–80°30′ W (0–100 km from border)	1–170, 621–710 and 795–830.
3	80°30′ W–85° W (0–100 km from border)	1–320, 501–710, 729–730, 732–750, 752–770, 772–790 and 792–830.
4	85° W–121°30′ W (0–100 km from border)	1–260, 561–710, 772–790 and 792–830.
5	121°30′ W–127° W (0–140 km from border)	1–260, 561–710, 772–790 and 792–830.
6	127° W–143° W (0–100 km from border)	1–260, 561–710, 772–790 and 792–830.
7A	66° W–71° W (100–140 km from border)	1–830.
7A	80°30′ W–121°30′ W (100–140 km from border)	1–830.
7B	71° W–80°30′ W (100–140 km from border)	1–830.
8	127° W–143° W (100–140 km from border)	1–830.

(2) Stations authorized on U.S. primary channels in all Canada Border Regions, except Region 5, will be subject to the Effective Radiated Power (ERP) and Effective Antenna Height (EAH) limitations listed in Table C2. The Effective Antenna Height is calculated by subtracting the Assumed Average Terrain Elevation (AATE) listed in Table C3 from the antenna height above mean sea level.

TABLE C2—LIMITS OF EFFECTIVE RADIATED POWER (ERP) CORRESPONDING TO EFFECTIVE ANTENNA HEIGHTS (EAH) FOR REGIONS 1, 2, 3, 4, 6, 7 AND 8

Effective Antenna Height (EAH)		ERP watts (maximum)
Metres	Feet	
0–152	0–500	500
153–305	501–1000	125
306–457	1001–1500	40
458–609	1501–2000	20
610–914	2001–3000	10
915–1066	3001–3500	6
Above 1967	Above 3501	5

TABLE C3—ASSUMED AVERAGE TERRAIN ELEVATION (AATE) ALONG THE U.S.-CANADA BORDER

Longitude (Φ) (°West)	Latitude (Ω) (°North)	Assumed average terrain elevation			
		United States		Canada	
		Feet	Metres	Feet	Metres
65 ≤Φ <69	Ω <45	0	0	0	0
”	45 ≤Ω <46	300	91	300	91
”	Ω ≥46	1000	305	1000	305
69 ≤Φ <73	All	2000	609	1000	305
73 ≤Φ <74	”	500	152	500	152
74 ≤Φ <78	”	250	76	250	76
78 ≤Φ <80	Ω <43	250	76	250	76
”	Ω ≥43	500	152	500	152
80 ≤Φ <90	All	600	183	600	183
90 ≤Φ <98	”	1000	305	1000	305
98 ≤Φ <102	”	1500	457	1500	457
102 ≤Φ <108	”	2500	762	2500	762
108 ≤Φ <111	”	3500	1066	3500	1066
111 ≤Φ <113	”	4000	1219	3500	1066
113 ≤Φ <114	”	5000	1524	4000	1219
114 ≤Φ <121.5	”	3000	914	3000	914
121.5 ≤Φ <127	”	0	0	0	0
Φ ≥127	54 ≤Ω <56	0	0	0	0
”	56 ≤Ω <58	500	152	1500	457
”	58 ≤Ω <60	0	0	2000	609
”	60 ≤Ω <62	4000	1219	2500	762
”	62 ≤Ω <64	1600	488	1600	488

TABLE C3—ASSUMED AVERAGE TERRAIN ELEVATION (AATE) ALONG THE U.S.-CANADA BORDER—Continued

Longitude (Φ) (°West)	Latitude (Ω) (°North)	Assumed average terrain elevation			
		United States		Canada	
		Feet	Metres	Feet	Metres
”	64 ≤Ω <66	1000	305	2000	609
”	66 ≤Ω <68	750	228	750	228
”	68 ≤Ω <69.5	1500	457	500	152
”	Ω ≥69.5	0	0	0	0

(3) Stations authorized on U.S. primary channels in Canada Border Region 5 will be subject to the Effective Radiated Power (ERP) and Antenna Height Above Mean Sea Level limitations listed in Table C4.

TABLE C4—LIMITS OF EFFECTIVE RADIATED POWER (ERP) CORRESPONDING TO ANTENNA HEIGHT ABOVE MEAN SEA LEVEL FOR REGION 5

Antenna Height Above Mean Sea Level		ERP Watts (maximum)
Metres	Feet	
0–503	0–1650	500
504–609	1651–2000	350
610–762	2001–2500	200
763–914	2501–3000	140
915–1066	3001–3500	100
1067–1219	3501–4000	75
1220–1371	4001–4500	70
1372–1523	4501–5000	65
Above 1523	Above 5000	5

(4) Stations may be authorized on Canada Primary channels in the Canada Border Regions provided the maximum power flux density (PFD) per 25 kHz at or beyond the border does not exceed −107 dB(W/m2). Stations authorized on Canada Primary channels will be secondary to stations in Canada unless otherwise specified in an international agreement between the U.S. and Canada.

(5) Stations authorized to operate within 30 kilometers of the center city coordinates listed in Table C5 may operate according to the band plan for Canadian Border Regions 7A and 7B as indicated below.

TABLE C5—CITIES THAT ARE CONSIDERED TO FALL WITHIN CANDIAN BORDER REGION 7

Location	Coordinates		Canadian border region
	Latitude	Longitude	
Akron, Ohio	41°05′00.2″ N	81°30′39.4″ W	7A
Youngstown, Ohio	41°05′57.2″ N	80°39′01.3″ W	7A
Syracuse, New York	43°03′04.2″ N	76°09′12.7″ W	7B

(6) The channels listed in Table C6 and paragraph (c)(6)(i) of this section are available in the Canada Border Regions for non-cellular operations to eligible applicants in the Public Safety Category which consists of licensees eligible in the Public Safety Pool of subpart B of this part. 800 MHz high density cellular systems as defined in § 90.7 are prohibited on these channels.

TABLE C6—PUBLIC SAFETY POOL 806–816/851–861 MHZ BAND CHANNELS IN THE CANADA BORDER REGIONS

Canada Border Region	Channel Nos.	Total
Regions 1, 4, 5 and 6	231–260	30 Channels.
Region 2	See paragraph (c)(6)(i) of this section.	
Region 3	231–320, 501–508	90 Channels.

TABLE C6—PUBLIC SAFETY POOL 806–816/851–861 MHZ BAND CHANNELS IN THE CANADA BORDER REGIONS—Continued

Canada Border Region	Channel Nos.	Total
Regions 7A and 8	269, 289, 311, 399, 439, 270, 290, 312, 400, 440, 279, 299, 319, 339, 359, 280, 300, 320, 340, 360, 309, 329, 349, 369, 389, 310, 330, 350, 370, 390, 313, 353, 393, 441, 461, 314, 354, 394, 448, 468, 321, 341, 361, 381, 419, 328, 348, 368, 388, 420, 351, 379, 409, 429, 449, 352, 380, 410, 430, 450, 391, 392, 401, 408, 421, 428, 459, 460, 469, 470.	70 Channels.
Region 7B	231–260, 269, 289, 311, 399, 439, 270, 290, 312, 400, 440, 279, 299, 319, 339, 359, 280, 300, 320, 340, 360, 309, 329, 349, 369, 389, 310, 330, 350, 370, 390, 313, 353, 393, 441, 461, 314, 354, 394, 448, 468, 315, 355, 395, 435, 475, 316, 356, 396, 436, 476, 317, 357, 397, 437, 477, 318, 358, 398, 438, 478, 321, 341, 361, 381, 419, 328, 348, 368, 388, 420, 331, 371, 411, 451, 491, 332, 372, 412, 452, 492, 333, 373, 413, 453, 493, 334, 374, 414, 454, 494, 335, 375, 415, 455, 495, 336, 376, 416, 456, 496, 337, 377, 417, 457, 497, 338, 378, 418, 458, 498, 351, 379, 409, 429, 449, 352, 380, 410, 430, 450, 391, 392, 401, 408, 421, 428, 459, 460, 469, 470, 431, 432, 433, 434, 471, 472, 473, 474, 479, 480.	170 Channels.

(i) Channel numbers 1–230 are also available to eligible applicants in the Public Safety Category in the Canada Border Regions. The assignment of these channels will be done in accordance with the policies defined in the Report and Order of Gen. Docket No. 87–112 (See § 90.16). The following channels are available only for mutual aid purposes as defined in Gen. Docket No. 87–112: Channels 1, 39, 77, 115, 153.

(ii) [Reserved]

(7) The channels listed in Table C7 are available in the Canada Border Regions for the General Category. All entities will be eligible for licensing on these channels. 800 MHz high density cellular systems as defined in § 90.7 are permitted on these channels only as indicated in Table C7. The channels noted for Regions 1, 2, 3, 4, 5 and 6 where high density cellular systems are prohibited are all frequencies that are primary to Canada. Stations may be licensed on these Canada Primary channels according to paragraph (c)(4) of this section.

TABLE C7—GENERAL CATEGORY 806–821/851–866 MHZ BAND CHANNELS IN THE CANADA BORDER REGIONS

Canada border region	General category channels where 800 MHz high density cellular systems are prohibited	General category channels where 800 MHz high density cellular systems are permitted
Regions 1, 4, 5 and 6	261–560	561–710
Region 2	231–620	621–710
Region 3	321–500	509–710
Regions 7A and 8	231–260, 511–550	None
Region 7B	511–550	None

(8) The channels listed in Table C8 are available in the Canada Border Regions to applicants eligible in the Industrial/Business Pool of subpart C of this part but exclude Special Mobilized Radio Systems as defined in § 90.603(c). 800 MHz cellular high density systems as defined in § 90.7 are prohibited on these channels.

TABLE C8—BUSINESS/INDUSTRIAL/LAND TRANSPORTATION POOL 806–816/851–861 MHZ BAND CHANNELS IN THE CANADA BORDER REGIONS

Canada Border Region	Channel Nos.	Total
Regions 1, 2, 3, 4, 5 and 6	None	0 Channels.
Regions 7A, 7B and 8	261, 271, 281, 291, 301, 262, 272, 282, 292, 302, 263, 273, 283, 293, 303, 264, 274, 284, 294, 304, 265, 275, 285, 295, 305, 266, 276, 286, 296, 306, 267, 277, 287, 297, 307, 268, 278, 288, 298, 308, 322, 362, 402, 442, 482, 323, 363, 403, 443, 483, 324, 364, 404, 444, 484, 325, 365, 405, 445, 485, 326, 366, 406, 446, 486, 327, 367, 407, 447, 487, 342, 382, 422, 462, 502, 343, 383, 423, 463, 503, 344, 384, 424, 464, 504, 345, 385, 425, 465, 505, 346, 386, 426, 466, 506, 347, 387, 427, 467, 507.	100 Channels.

(9) The channels listed in Table C9 are available in the Canada Border Regions to applicants eligible in the SMR category—which consists of Specialized Mobile Radio (SMR) stations and eligible end users. 800 MHz high density cellular systems, as defined in § 90.7, are prohibited on these channels.

TABLE C9—SMR CATEGORY 806–816/851–861 MHZ CHANNELS AVAILABLE FOR SITE-BASED LICENSING IN THE CANADA BORDER REGIONS

Canada Border Region	Channel Nos.	Total
Regions 1, 2, 3, 4, 5 and 6	None	0 Channels.
Regions 7A and 8	315, 355, 395, 435, 475, 316, 356, 396, 436, 476, 317, 357, 397, 437, 477, 318, 358, 398, 438, 478, 331, 371, 411, 451, 491, 332, 372, 412, 452, 492, 333, 373, 413, 453, 493, 334, 374, 414, 454, 494, 335, 375, 415, 455, 495, 336, 376, 416, 456, 496, 337, 377, 417, 457, 497, 338, 378, 418, 458, 498, 431, 432, 433, 434, 471, 472, 473, 474, 479, 480, 481, 488, 489, 490, 499, 500, 501, 508, 509, 510.	80 Channels.
Region 7B	481, 488, 489, 490, 499, 500, 501, 508, 509, 510	10 Channels.

(10) The channels listed in Table C10 are available in the Canada Border Regions to applicants eligible in the SMR category—which consists of Specialized Mobile Radio (SMR) stations and eligible end users. ESMR licensees who employ 800 MHz high density cellular systems, as defined in § 90.7, are permitted to operate on these channels. Some of the channels listed in Table C10 are primary to Canada as indicated in paragraph (c)(1) of this section. ESMR systems may be authorized on these Canada Primary channels according to paragraph (c)(4) of this section.

TABLE C10—ESMR CATEGORY 817–824/862–869 MHZ CHANNELS AVAILABLE FOR 800 MHZ HIGH DENSITY SYSTEMS

Canada Border Region	Channel Nos.	Total
Regions 1, 2, 3, 4, 5 and 6	711–830	120 Channels.
Regions 7A, 7B and 8	551–830	280 Channels.

(11) In Canada Border Regions 1, 2, 3, 4, 5 and 6, the following General Category channels are available for licensing to all entities except as described below in paragraphs (c)(11)(i) and (c)(11)(ii): in Regions 1, 4, 5 and 6, channels 261–560; in Region 2, channels 231–620 and in Region 3, channels 321–500.

(i) In a given 800 MHz NPSPAC region, the General Category channels listed paragraph (c)(11) of this section which are vacated by licensees relocating to channels 711–830 and which remain vacant after band reconfiguration will be available for licensing as follows:

(A) Only to eligible applicants in the Public Safety Category until three years after the release of a public notice announcing the completion of band reconfiguration in that region;

(B) Only to eligible applicants in the Public Safety or Critical Infrastructure Industry Categories from three to five years after the release of a public notice announcing the completion of band reconfiguration in that region; and

(C) To all entities five years after release of a public notice announcing the completion of band reconfiguration in that region.

(ii) The General Category channels listed in paragraph (c)(11) of this section are primary to Canada. Stations may be authorized on these Canada Primary channels according to paragraph (c)(4).

(12) In Canada Border Regions 7A, 7B and 8, the following channels will be available as described in paragraphs (c)(12)(i) and (c)(12)(ii) of this section: for Canada Border Regions 7A and 8, channels 231–260 and channels below 471 in Tables C8 and C9; for Canada Border Region 7B all channels in Tables C8 and C9.

(i) In a given 800 MHz NPSPAC region, the channels listed paragraph (c)(12) of this section which are vacated by licensees relocating to channels 511–830 and which remain vacant after band reconfiguration will be available as follows:

(A) Only to eligible applicants in the Public Safety Category until three years after the release of a public notice announcing the completion of band reconfiguration in that region; and

(B) Only to eligible applicants in the Public Safety or Critical Infrastructure Industry Categories from three to five years after the release of a public notice announcing the completion of band reconfiguration in that region.

(ii) Five years after the release of a public notice announcing the completion of band reconfiguration in a given 800 MHz NPSPAC region, the channels listed in paragraph (c)(12) of this section will revert back to their original pool categories.

(d) *Use of 900 MHz Band in Canada Border Region*. All operations in the 896–901/935–940 MHz band within the Canada border region shall be in accordance with international agreements between the U.S. and Canada. The following criteria shall govern the assignment of frequency pairs (channels) in the 896–901/935–940 MHz band for stations located in the U.S./Canada border area. They are available for assignments for conventional or trunked systems in accordance with applicable sections of this subpart.

(1) Channels 1–399, as listed in § 90.613 table of 896–901/935–940 MHz Channel Designations, are available to eligible applicants for use in the U.S./Canada border area as shown in table 27. Additionally, Channels 71, 75, 79, 151, 155, and 159 are available in all regions only for implementation of an Advanced Train Control System as defined in 3 FCC Rcd 427 (1988) (Advanced Train Control Waiver).

TABLE 27—CHANNELS IN THE 896–901/935–940 MHZ FREQUENCY BANDS AVAILABLE IN THE U.S./CANADA BORDER AREA

Region	Location (longitude)	Channels
1	66° W–71° W. (0–100 km from border) ...	1–200, 398, 399
2	71° W–80°30′ W (0–100 km from border)	1–120
3	80°30′ W–85° W (0–100 km from border)	1–340
4	85° W–121°30′ W (0–100 km from border).	1–200, 398, 399
5	121°30′ W–127° W (0–140 km from border).	1–200, 398, 399
6	127° W–143° W (0–100 km from border)	1–200, 398, 399
7	66° W–121°30′ W (100–140 km from border).	1–399
8	127° W–143° W (100–140 km from border).	1–399

Note: For assignments in the 896–901/935–940 MHz bands, the cities of Akron, Ohio (41°05′00″ N, 81°30′40″ W) and Youngstown, Ohio (41°05′57″ N, 80°39′02″ W) are considered outside of Region 3, and Syracuse, New York (43°03′04″ N, 76°09′14″ W) is considered outside of Region 2. These cities are defined as an area with the given center coordinates and encompassing a circle of 30 km radius.

(2) All frequency assignments made pursuant to paragraph (d)(1) of this section shall comply with the requirements of § 90.619(b).

(3) In Region 5, Channels 201–397 may be authorized in the United States under the following conditions:

(i) An assignment may be made if the predicted power flux density (PFD) of a proposed station's signal does not exceed –107 dBW/m^2 at the border. The prediction of the PFD is calculated based upon a modified Longley-Rice point-to-point propagation model with time and location variabilities of 10 percent[3] and 3-second digitized terrain date[4].

(ii) Authorizations for Channels 201–397 in Region 5 are secondary to Canadian operations and conditioned to require that licensees take immediate action to eliminate any harmful interference resulting from the station's transmitted signal exceeding –107 dBW/m^2 at or beyond the U.S./Canada border.

(4) Channel assignments for stations to be located in the geographical area in Region 1 enclosed by the United States-Canada border, the meridian 71° W and the line beginning at the intersection of 44°25′ N, 71° W, then running by great circle arc to the intersection of 45° N, 70° W, then North along meridian 70° W to the intersection of 45°45′ N, then running West along 45°45′ N to the

[3] See note 1, paragraph (c) of this section.

[4] See note 2, paragraph (c) of this section.

intersection of the United States-Canada border, will be only for channels 121 through 160, inclusive, and will be limited to assignments with 11 kHz or less necessary bandwidth. Coordination with Canada will be required for these channels.

(5) Channel assignments for stations to be located in the geographical area in Region 3 enclosed by the meridian of 81° W longitude, the arc of a circle of 100 km radius centered at 42°39′30″ N latitude and 81° W longitude at the northern shore of Lake Erie and drawn clockwise from the southerly intersection with 80°30′ W longitude to intersect the United States-Canada border West of 81° W, and the United States-Canada border, will be only for channels 121 through 230, inclusive, and will be limited to assignments with 11 kHz or less necessary bandwidth. Coordination with Canada will be required for these channels. U.S. stations must protect Canadian stations operating on channels 121 through 230 within an area of 30 km radius from the center city coordinates (referenced to North American Datum 1983 (NAD83)) of London, Ontario (42°59′00.1″ N, 81°13′59.5″ W).

(6) *Additional channels available*—The channels listed in table 28 are available for assignment in Regions 1–6 if the maximum power flux density (PFD) of the station's transmitted signal does not exceed the limits specified in tables 29 and 30. The spreading loss shall be calculated using the free space formula taking into account any antenna discrimination in the direction of the border.

TABLE 28—ADDITIONAL CHANNELS AVAILABLE

[Regions 1–6]

Region	Channel No.'s	Effective radiated power
1	201–397	See Table 29
2	121–399	See Table 29
3	341–399	See Table 29
4	201–397	See Table 29
5	201–397	See Table 30
6	201–397	See Table 29

Authorizations for stations using these channels will be secondary to Canadian operations and conditioned to require that licensees take immediate action to eliminate any harmful interference resulting from the station's transmitted signal exceeding the values specified in tables 29 or 30 at or beyond the U.S./Canada border.

TABLE 29—MAXIMUM POWER FLUX DENSITY (PFD) AT THE U.S./CANADA BORDER CORRESPONDING TO EFFECTIVE ANTENNA HEIGHT

[Regions 1, 2, 3, 4, and 6]

Effective antenna height (EAH)		PFD (dBW/m^2)
Feet	Meters	
0–500	0–152	−84
501–1000	153–305	−90
1001–1500	306–457	−95
1501–2000	458–609	−98
2001–2500	610–762	−101
2501–3000	763–914	−101
3001–3500	915–1066	−103
3501–4000	1067–1219	−104
Above 4000	Above 1219	−104

TABLE 30—MAXIMUM POWER FLUX DENSITY (PFD) AT THE U.S./CANADA BORDER CORRESPONDING TO ANTENNA HEIGHT ABOVE MEAN SEA LEVEL

[Region 5]

Antenna height above mean sea level		PFD (dBW/m^2)
Feet	Meters	
0–1650	0–503	−87.0
1651–2000	504–609	−88.5
2001–2500	610–762	−91.0
2501–3000	763–914	−92.5
3001–3500	915–1066	−94.0
3501–4000	1067–1219	−95.0
4001–4500	1220–1371	−95.5
4501–5000	1372–1523	−96.0
Above 5000	Above 1523	−107.0

(Secs. 4(i) and 303, Communications Act, as amended, and 5 U.S.C. 553 (b)(3)(B) and (d)(1))

[47 FR 41032, Sept. 16, 1982; 47 FR 41045, Sept. 16, 1982]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.619, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§ 90.621 Selection and assignment of frequencies.

(a) Applicants for frequencies in the Public Safety and Business/Industrial/Land Transportation Categories must specify on the application the frequencies on which the proposed system will operate pursuant to a recommendation by the applicable frequency coordinator. Applicants for frequencies in the SMR Category must request specific frequencies by including in their applications the frequencies requested.

(1) For trunked systems, the assignment of frequencies will be made in accordance with applicable loading criteria and in accordance with the following:

(i) Channels will be chosen and assigned in accordance with §§ 90.615, 90.617, or 90.619.

(ii) A mobile station is authorized to transmit on any frequency assigned to its associated base station.

(iii) There are no limitations on the number of frequencies that may be trunked. Authorizations for non-SMR stations may be granted for up to 20 trunked frequency pairs at a time in accordance with the frequencies listed in §§ 90.615, 90.617, and 90.619.

(2) For conventional systems the assignment of frequencies will be made in accordance with applicable loading criteria. Accordingly, depending upon the number of mobile units to be served, an applicant may either be required to share a channel, or, if an applicant shows a sufficient number of mobile units to warrant the assignment of one or more channels for its exclusive use, it may be licensed to use such channel or channels on an unshared basis in the area of operation specified in its application.

(i) Channels will be chosen and assigned in accordance with §§ 90.615, 90.617, or 90.619.

(ii) A mobile station is authorized to transmit on any frequency assigned to its associated base station.

(b) Stations authorized on frequencies listed in this subpart, except for those stations authorized pursuant to paragraph (g) of this section and EA-based and MTA-based SMR systems, will be assigned frequencies solely on the basis of fixed distance separation criteria. The separation between co-channel systems will be a minimum of 113 km (70 mi) with one exception. For incumbent licensees in Channel Blocks F1 through V, that have received the consent of all affected parties or a certified frequency coordinator to utilize an 18 dBμV/m signal strength interference contour (*see* § 90.693), the separation between co-channel systems will be a minimum of 173 km (107 mi). The following exceptions to these separations shall apply:

(1) Except as indicated in paragraph (b)(4) of this section, no station in Channel Blocks A through V shall be less than 169 km (105 mi) distant from a co-channel station that has been granted channel exclusivity and authorized 1 kW ERP on any of the following mountaintop sites: Santiago Peak, Sierra Peak, Mount Lukens, Mount Wilson (California). Except as indicated in paragraph (b)(4) of this section, no incumbent licensee in Channel Blocks F1 through V that has received the consent of all affected parties or a certified frequency coordinator to utilize an 18 dBμV/m signal strength interference contour shall be less than 229 km (142 mi) distant from a co-channel station that has been granted channel exclusivity and authorized 1 kW ERP on any of the following mountaintop sites: Santiago Peak, Sierra Peak, Mount Lukens, Mount Wilson (California).

(2) The separation between co-channel stations that have been granted exclusivity and that are located at high sites in California north of 35° N Latitude and west of 118° W Longitude shall be determined as follows:

(i) Required co-channel separations between common antenna sites are given by table 1. A channel group assigned to a station on a site listed in the vertical column may not be re-assigned to a station on a site listed in the horizontal column if there is an ''X'' in the box created by the intersection of the vertical and horizontal lines. The geographic coordinates listed in the table represent an average for each particular site; all locations within 1.6 km (1 mi) of the coordinates will be considered to be at that site.

(ii) Required co-channel separations involving antenna sites not listed in table 1 shall be determined by Commission staff on a case by case basis. The interference potential of proposed assignments will be evaluated considering parameters such as antenna height, effective radiated power, terrain irregularities, and market conditions.

TABLE 1: CO-CHANNEL SEPARATIONS BETWEEN COMMON ANTENNA SITES IN THE STATE OF CALIFORNIA NORTH OF 35° NORTH LATITUDE AND WEST OF 118° WEST LONGITUDE

North Latitude	West Longitude	Site Name	Big Rock Ridge	Mt. Tamalpais	Wolfback Ridge	Mt. Diablo	Grizzley Peak	Vollmer Peak	Roundtop	Clay Jones Bldg	San Bruno Mtn	Skeggs Peak	Black Mountain	Mt Umunnum	Mt Chual	Loma Prieta	Toro Peak	Mission Ridge	Tuscan Buttes	Forest Ranch	Sutter Buttes	Wolf Mtn	Chantry Hill	Mt Vaca	Fowler Peak	Mt Oso	Mt Bullion	Meadow Lakes	Bear Mtn	Joaquin Ridge	Blue Ridge	Pheasant Hill	Granite Peak	Elk Hill	McKittrick Peak	McKittrick Peak
38-03-40	122-36-17	Big Rock Ridge	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x			x	x	x	x	x	x										
37-55-44	122-35-11	Mt. Tamalpais	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x			x	x	x	x	x	x										
37-50-57	122-29-56	Wolfback Ridge	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x						x												
37-52-54	121-55-05	Mt. Diablo	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x							
37-51-12	122-12-30	Grizzley Peak	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x			x	x	x	x	x	x										
37-52-58	122-13-11	Vollmer Peak	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x	x	x	x	x									
37-51-00	122-11-30	Roundtop	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x	x	x	x	x									
37-43-33	122-24-52	Clay Jones Bldg.	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x			x			x												
37-41-21	122-26-08	San Bruno Mtn.	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x						x												
37-24-39	122-18-20	Skegga Peak	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x						x		x										
37-19-13	122-08-33	Black Mountain	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x						x		x										
37-10-37	121-54-24	Mt. Umunnum	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x						x		x										
37-07-09	121-49-58	Mt. Chual	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x						x		x										
37-06-40	121-50-29	Loma Prieta	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x						x		x										
36-31-45	121-36-24	Toro Peak										x	x	x	x	x		x												x						
37-29-15	121-52-03	Mission Ridge	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x						x	x	x	x									
40-15-46	122-05-37	Tuscan Buttes																	x	x	x	x	x	x												
39-51-50	121-41-20	Forest Ranch				x		x	x										x	x	x	x	x	x												
39-12-17	121-49-02	Sutter Buttes	x	x		x	x	x	x	x									x	x	x	x	x	x	x	x										
39-08-01	121-05-58	Wolf Mtn	x	x		x	x	x	x										x	x	x	x	x	x	x	x										
38-52-15	121-07-39	Chantry Hill	x	x		x	x	x	x										x	x	x	x	x	x	x	x	x									
38-24-20	122-06-30	Mt. Vaca	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x									
38-01-15	120-35-06	Fowler Peak	x	x		x	x	x	x									x			x	x	x	x	x	x	x	x	x	x						
37-30-31	121-22-26	Mt. Oso	x	x		x	x	x	x			x	x	x	x	x		x			x	x	x	x	x	x	x	x	x	x	x					
37-32-32	120-03-45	Mt. Bullion				x		x	x									x					x	x	x	x	x	x	x	x	x					
37-04-10	119-25-39	Meadow Lakes				x																			x	x	x	x	x	x	x	x	x	x	x	x
36-44-38	119-16-59	Bear Mtn				x																			x	x	x	x	x	x	x	x	x	x	x	x
36-18-10	120-24-03	Joaquin Ridge															x								x	x	x	x	x	x	x	x	x	x	x	x
36-17-07	118-50-19	Blue Ridge																								x	x	x	x	x	x	x	x	x	x	x
35-38-29	118-47-08	Pheasant Hill																										x	x	x	x	x	x	x	x	x
35-33-09	118-49-20	Granite Peak																										x	x	x	x	x	x	x	x	x
35-17-17	119-30-55	Elk Hill																										x	x	x	x	x	x	x	x	x
35-17-27	119-45-48	Mc Kittrick Peak																										x	x	x	x	x	x	x	x	x
35-16-51	119-44-52	Mc Kittrick Peak																										x	x	x	x	x	x	x	x	x

(3) Except as indicated in paragraph (b)(4) of this section, stations in Channel Blocks A through V that have been granted channel exclusivity and are located in the State of Washington at the locations listed in the table below shall be separated from co-channel stations by a minimum of 169 km (105 mi). Except as indicated in paragraph (b)(4) of this section, incumbent licensees in Channel Blocks F1 through V that have received the consent of all affected parties or a certified frequency coordinator to utilize an 18 dBμV/m signal strength interference contour, have been granted channel exclusivity and are located in the State of Washington at the locations listed in the table below shall be separated from co-channel stations by a minimum of 229 km (142 mi). Locations within one mile of the geographical coordinates listed in the table below will be considered to be at that site.

NOTE: Coordinates are referenced to North American Datum 1983 (NAD83).

Site name	North latitude	West longitude
Mount Constitution	48° 40′ 47.4″	122° 50′ 28.7″
Lyman Mountain	48° 35′ 41.4″	122° 09′ 39.6″
Cultus Mountain	48° 25′ 30.4″	122° 08′ 58.5″
Gunsite Ridge	48° 03′ 22.4″	121° 51′ 41.5″
Gold Mountain	47° 32′ 51.3″	122° 46′ 56.5″
Buck Mountain	47° 47′ 05.3″	122° 59′ 34.6″
Cougar Mountain	47° 32′ 39.4″	122° 06′ 34.4″
Squak Mountain	47° 30′ 14.4″	122° 03′ 34.4″
Tiger Mountain	47° 30′ 13.4″	121° 58′ 32.4″
Devils Mountain	48° 21′ 52.4″	122° 16′ 06.6″
McDonald Mountain	47° 20′ 11.3″	122° 51′ 30.5″
Maynard Hill	48° 00′ 58.3″	122° 55′ 35.6″
North Mountain	47° 19′ 07.3″	123° 20′ 48.6″
Green Mountain	47° 33′ 40.3″	122° 48′ 31.5″
Capitol Peak	46° 58′ 21.3″	123° 08′ 21.5″
Rattlesnake Mountain	47° 28′ 09.4″	121° 49′ 17.4″
Three Sisters Mountain	47° 07′ 19.4″	121° 53′ 34.4″
Grass Mountain	47° 12′ 14.1″	121° 47′ 42.4″
Spar Pole Hill	47° 02′ 51.4″	122° 08′ 39.4″

(4) Upon an applicant's specific request to the Commission or a frequency coordinator, co-channel stations may be separated by less than 113 km (70 mi) by meeting certain transmitter ERP and antenna height criteria. The following table indicates separations assignable to such co-channel stations for various transmitter power and antenna height combinations. The minimum separation permitted is 88 km (55 mi). Applicants will provide the Commission with a statement that the application is submitted for consideration under the table, a list of all co-channel stations within 113 km (70 mi), and the DHAATs and ERPs for these stations and the applicant's proposed station. Applicants seeking to be licensed for stations located at distances less than those prescribed in the table are required to secure a waiver and must submit with the application, in addition to the above, an interference analysis, based upon any of the generally-accepted terrain-based propagation models, that shows that co-channel stations would receive the same or greater interference protection than provided in the table. Requests for separations less than 88 km (55 mi) must also include an analysis of interference potential from mobile transmitters to existing co-channel base station receivers. Applicants seeking a waiver must submit with their application a certificate of service indicating that concurrent with the submission of the application to the Commission or a coordinator, all co-channel licensees within the applicable area were served with a copy of the application and all attachments thereto. Licensees thus served may file an opposition to the application within 30 days from the date the application is filed with the Commission.

(i) The directional height of the antenna above average terrain (DHAAT) is calculated from the average of the antenna heights above average terrain from 3 to 16 km (2 to 10 mi) from the proposed site along a radial extending in the direction of the existing station and the radials 15 degrees to either side of that radial.

(ii) Except for the sites listed in paragraphs (b)(1), (b)(2), and (b)(3) of this section, additional co-channel distance separation must be afforded to an existing station from an applicant wishing to locate a station less than 113 km (70 mi) from a co-channel station, where either the applicant's or the existing station is located at sites with DHAATs of 458 m (1500 ft) and above. The separation between short-spaced co-channel stations shall be determined as follows:

(A) Calculate the DHAAT in each direction between every existing co-channel station with 113 km (70 mi) and the proposed station.

(B) In the table, locate the approximate ERP and DHAAT values for the proposed and existing stations.

(C) When DHAAT values are greater than 458 m (1500 ft), use the required separation for 305 m (1000 ft) and add 1.6 km (1 mi) for every 30.5 km (100 ft), or increment thereof, of DHAAT above 458 m (1500 ft) to the distance indicated in the table. If both the proposed existing stations have DHAATs of 458 m (1500 ft) or more, the additional distance is separately determined for each station and the combined distance is added to the distance obtained from the table. Protection to existing stations will be afforded only up to 113 km (70 mi).

SHORT-SPACING SEPARATION TABLE

Proposed station ERP (watts)/ DHAAT(m) [3]	Distance between stations (km) [1 2]						
	Existing station DHAAT (meters) [3]						
	305	215	150	108	75	54	37
1000/305	113	113	113	113	113	113	113
1000/215	113	113	113	113	113	113	110
1000/150	113	113	113	113	112	108	103

SHORT-SPACING SEPARATION TABLE—Continued

Proposed station ERP (watts)/ DHAAT(m) [3]	Distance between stations (km) [1 2]						
	Existing station DHAAT (meters) [3]						
	305	215	150	108	75	54	37
1000/108	113	113	113	110	107	103	98
1000/75	113	112	108	103	100	96	91
1000/54	113	109	105	100	97	93	88
1000/37	109	104	100	95	92	88	88
500/305	113	113	113	113	113	113	110
500/215	113	113	113	112	109	105	100
500/150	113	112	108	103	100	96	91
500/108	112	107	103	98	95	91	88
500/75	107	102	98	93	90	88	88
500/54	103	98	94	89	88	88	88
500/37	99	94	90	88	88	88	88
250/305	113	113	113	112	109	105	100
250/215	113	113	107	102	99	95	90
250/150	109	104	100	95	92	88	88
250/108	105	100	96	91	88	88	88
250/75	99	94	90	88	88	88	88
250/54	95	90	88	88	88	88	88
250/37	91	88	88	88	88	88	88
125/305	113	111	107	102	99	95	90
125/215	108	103	99	94	91	88	88
125/150	103	98	94	89	88	88	88
125/108	98	93	89	88	88	88	88
125/75	93	88	88	88	88	88	88
125/54	88	88	88	88	88	88	88
125/37	88	88	88	88	88	88	88
62/305	108	103	99	94	91	88	88
62/215	103	98	94	89	88	88	88
62/150	97	92	88	88	88	88	88
62/108	92	88	88	88	88	88	88
62/75	88	88	88	88	88	88	88
62/54	88	88	88	88	88	88	88
62/37	88	88	88	88	88	88	88

[1] Separations for stations on Santiago Peak, Sierra Peak, Mount Lukens, and Mount Wilson (CA) and the locations in the State of Washington listed in paragraph (b)(3) of this section are 56 km (35 mi) greater than those listed in the table above. In the event of conflict between this table and the table of additional California high elevation sites shown in paragraph (b)(2) of this section, the latter will apply.

[2] Distances shown are derived from the R–6602 curves and are based upon a non-overlap of the 22 dBu (F50,10) interference contour of the proposed station with the 40 dBu (F50,50) contour of the existing station(s). No consideration is given to the 40 dBu service contour of the proposed station and the 22 dBu contour of the existing station(s). The minimum separation of stations will be 88 km (55 mi).

[3] All existing stations are assumed to operate with 1000 watts ERP. When the ERP and/or DHAAT of a proposed station or the DHAAT of an existing station is not indicated in the table, the next higher value(s) must be used.

(5) The separation between co-channel systems may be less than the separations defined above if an applicant submits with its application letters of concurrence indicating that the applicant and each co-channel licensee within the specified separation agree to accept any interference resulting from the reduced separation between their systems. Each letter from a co-channel licensee must certify that the system of the concurring licensee is constructed and fully operational. The applicant must also submit with its application a certificate of service indicating that all concurring co-channel licensees have been served with an actual copy of the application.

(6) A station located closer than the distances provided in this section to a co-channel station that was authorized as short-spaced under paragraph (b)(4) of this section shall be permitted to modify its facilities as long as the station does not extend its 22 dBu contour beyond its maximum 22 dBu contour (i.e., the 22 dBu contour calculated using the station's maximum power and antenna height at its original location) in the direction of the short-spaced station.

(7) Offset frequencies in the 811–821/856–866 MHz band for use only within U.S./Mexico border area, as designated in § 90.619(a), shall be considered co-channel with non-offset frequencies in this band as designated in § 90.613. New applications for frequencies in this band for stations adjacent to the U.S./Mexico border area must comply with the co-channel separation provisions of this section.

(c) Conventional systems authorized on frequencies in the Public Safety (except for those systems that have participated in a formal regional planning process as described in § 90.16) and Business/Industrial/Land Transportation categories which have not met the loading levels necessary for channel exclusivity will not be afforded co-channel protection.

(d) [Reserved]

(e) Frequencies in the 809–817/854–862 MHz bands listed as available for eligibles in the Public Safety and Business/Industrial/Land Transportation Categories are available for inter-category sharing under the following conditions:

(1) Channels in the Public Safety and Business/Industrial/Land Transportation categories will be available to eligible applicants in those categories only if there are no frequencies in their own category and no public safety systems are authorized on those channels under consideration to be shared.

(2) Notwithstanding paragraph (e)(5) of this section, licensees of channels in the Business/Industrial/Land Transportation category may request a modification of the license, see § 1.947 of this

chapter, to authorize use of the channels for commercial operation. The licensee may also, at the same time or thereafter, seek authorization to transfer or assign the license, see § 1.948 of this chapter, to any person eligible for licensing in the General or SMR categories. Applications submitted pursuant to this paragraph must be filed in accordance with the rules governing other applications for commercial channels, and will be processed in accordance with those rules. Grant of requests submitted pursuant to this paragraph is subject to the following conditions:

(i) A licensee that modifies its license to authorize commercial operations will not be authorized to obtain additional 800 MHz Business/Industrial/Land Transportation category channels for sites located within 113 km (70 mi.) of the station for which the license was modified, for a period of one year from the date the license is modified. This provision applies to the licensee, its controlling interests and their affiliates, as defined in § 1.2110 of this chapter.

(ii) With respect to licenses the initial application for which was filed on or after November 9, 2000, requests submitted pursuant to paragraph (e)(2) of this section may not be filed until five years after the date of the initial license grant. In the case of a license that is modified on or after November 9, 2000 to add 800 MHz Business/Industrial/Land Transportation frequencies or to add or relocate base stations that expand the licensee's interference contour, requests submitted pursuant to paragraph (e)(2) of this section for these frequencies or base stations may not be filed until five years after such modification.

(iii) Requests submitted pursuant to paragraph (e)(2) of this section must include a certification that written notice of the modification application has been provided to all Public Safety licensees, see § 90.20(a), with base stations within 113 km (70 mi.) of the site of the channel(s) for which authorization for commercial use is sought that operate within 25 kHz of the center of those channel(s). If, pursuant to paragraph (e)(2) of this section, modification and assignment or transfer applications are filed at different times, the written notice required by this paragraph must be provided each time.

(iv) The applicant must certify that it will take reasonable precautions to avoid causing harmful interference to Public Safety licensees, *see* § 90.20(a), and to take such action as may be necessary to eliminate interference to such licensees caused by its operations. (When an assignment or transfer application is filed pursuant to paragraph (e)(2) of this section, this representation is required only of the assignee or transferee.) Licensees of stations suffering or causing harmful interference are expected to cooperate and resolve this problem by mutually satisfactory arrangements. If the licensees are unable to do so, the Commission may impose restrictions including specifying the transmitter power, antenna height, or area or hours of operation.

(3) Licensees granted authorizations pursuant to paragraph (e)(2) of this section may at any time request modification of the license to authorize use of the channels consistent with the rules governing the category to which they are allocated, provided that the licensee meets the applicable eligibility requirements.

(4) [Reserved]

(5) The frequency coordinator must certify that frequencies are not available in the applicant's own category, and coordination is required from the applicable out-of-category coordinator.

(6) The out-of-category licensee must operate by the rules applicable to the category to which the frequency is allocated.

(f) Licensees of channels in the Business/Industrial/Land Transportation Categories in the 896–901/935–940 MHz bands may request a modification of the license, *see* § 1.947 of this chapter, to authorize use of the channels for commercial operation. The licensee may also, at the same time, or thereafter, seek authorization to transfer or assign the license, *see* § 1.948 of this chapter, to any person eligible for licensing in the General or SMR categories. Applications submitted pursuant to this paragraph must be filed in accordance with the rules governing other applications for commercial channels, and will

be processed in accordance with those rules.

(g) Applications for Public Safety systems (both trunked and conventional) in the 806–809/851–854 MHz bands will be assigned and protected based on the criteria established in the appropriate regional plan. See § 90.16 and the Report and Order in General Docket 87–112.

(h) [Reserved]

[47 FR 41032, Sept. 16, 1982]

EDITORIAL NOTES 1. For FEDERAL REGISTER citations affecting § 90.621, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

2. At 63 FR 68968, Dec. 14, 1998, § 90.621 was amended by adding a note before Table 1 and revising the first two columns of Table 1. However, Table 1 of § 90.621 as it appears in the October 1, 1998 revision of title 47 parts 80–end is an illustration and cannot be amended. For the convenience of the user, the revised text is set forth as follows:

§ 90.621 Selection and assignment of frequencies.

* * * * *

(b) * * *

TABLE 1—CO-CHANNEL SEPARATIONS BETWEEN COMMON ANTENNA SITES IN THE STATE OF CALIFORNIA NORTH OF 35° NORTH LATITUDE AND WEST OF 118° WEST LONGITUDE

[NOTE: Coordinates are referenced to North American Datum 1983 (NAD83)]

North latitude	West longitude	* * *
38°03′39.7″	122°36′20.9″	* * *
37°55′43.7″	122°35′14.9″	* * *
37°50′56.7″	122°29′59.9″	* * *
37°52′53.7″	121°55′08.9″	* * *
37°51′11.7″	122°12′33.9″	* * *
37°52′57.7″	122°13′14.9″	* * *
37°50′59.7″	122°11′33.9″	* * *
37°43′32.8″	122°24′55.9″	* * *
37°41′20.8″	122°26′11.9″	* * *
37°24′38.8″	122°18′23.9″	* * *
37°19′12.8″	122°08′36.9″	* * *
37°10′36.8″	121°54′27.8″	* * *
37°07′08.8″	121°50′01.8″	* * *
37°06′39.8″	121°50′32.8″	* * *
36°31′44.9″	121°36′27.8″	* * *
37°29′14.8″	121°52′06.8″	* * *
40°15′45.6″	122°05′41.0″	* * *
39°51′49.6″	121°41′23.9″	* * *
39°12′16.6″	121°49′05.9″	* * *
39°08′00.6″	121°06′01.8″	* * *
38°52′14.6″	121°07′42.8″	* * *
38°24′19.7″	122°06′33.9″	* * *
38°01′14.7″	120°35′09.7″	* * *
37°30′30.8″	121°22′29.8″	* * *
37°32′31.8″	120°03′48.6″	* * *
37°04′09.8″	119°25′42.5″	* * *

TABLE 1—CO-CHANNEL SEPARATIONS BETWEEN COMMON ANTENNA SITES IN THE STATE OF CALIFORNIA NORTH OF 35° NORTH LATITUDE AND WEST OF 118° WEST LONGITUDE—Continued

[NOTE: Coordinates are referenced to North American Datum 1983 (NAD83)]

North latitude	West longitude	* * *
36°44′37.8″	119°17′02.4″	* * *
36°18′09.8″	120°24′06.6″	* * *
36°17′06.8″	118°50′22.3″	* * *
35°38′28.8″	118°47′11.3″	* * *
35°33′08.8″	118°49′23.3″	* * *
35°17′16.9″	119°30′58.4″	* * *
35°17′26.9″	119°45′51.5″	* * *
35°16′50.9″	119°44′55.5″	* * *

* * * * *

§ 90.623 Limitations on the number of frequencies assignable for conventional systems.

(a) The maximum number of frequency pairs that may be assigned to a licensee for operation in the conventional mode in a given area is five (5).

(b) Where an applicant proposes to operate a conventional radio system to provide facilities for the use of a single person or entity eligible under subparts B or C of this part, the applicant may be assigned only the number of frequency pairs justified on the basis of the requirement of the proposed single user of the system.

(c) No non-SMR licensee will be authorized an additional frequency pair for a conventional system within 64 kilometers (40 miles) of an existing conventional system, except where:

(1) The additional frequency pair will be used to provide radio facilities to a single entity and the additional frequency pair is justified on the basis of the requirements of the proposed single user; or,

(2) The licensee's existing frequency pair(s) is loaded to prescribed levels.

(d) No licensee will be authorized frequencies for a conventional system if that licensee is operating an unloaded trunked system or has an application pending for a trunked system to serve multiple subscribers within 64 km (40

miles) of the requested conventional system.

[47 FR 41032, Sept. 16, 1982, as amended at 48 FR 44559, Sept. 29, 1983; 48 FR 51929, Nov. 15, 1983; 58 FR 44963, Aug. 25, 1993; 59 FR 59966, Nov. 21, 1994; 62 FR 18935, Apr. 17, 1997]

§ 90.625 Other criteria to be applied in assigning channels for use in conventional systems of communication.

(a) Where an applicant certifies on its application that a channel will be loaded to 70 mobile stations, that channel will be made available to that applicant for its exclusive use in the area in which it proposes to operate. If the showing made justifies the assignment of more than one channel to the applicant, additional frequencies will be authorized.

(b) Where an applicant proposes to furnish service to eligibles under subparts B or C of this part on a commercial basis using a conventional system of communication, the applicant will be considered on the same basis as that of an applicant for private or shared communication facilities.

(c) No person authorized to operate any radio facility under the provisions of this subpart shall have a right to protest proposals on grounds other than violation of or inconsistency with the provisions of this subpart. All grants are made subject to this condition and to the other conditions and standards set out in this subpart.

[47 FR 41032, Sept. 16, 1982, as amended at 62 FR 18935, Apr. 17, 1997; 63 FR 68969, Dec. 14, 1998]

§ 90.627 Limitation on the number of frequency pairs that may be assignable for trunked systems and on the number of trunked systems.

(a) The maximum number of frequency pairs that may be assigned at any one time for the operation of a trunked radio system is twenty, except as specified in § 90.621(a)(1)(iv).

(b) No non-SMR licensee will be authorized an additional trunked system within 64 kilometers (40 miles) of an existing trunked system, except where:

(1) The additional trunked system will be used to provide radio facilities for a single entity, where the additional system is justified on the basis of the requirements of the proposed single user; or,

(2) The licensee's existing trunked system is loaded to at least 70 mobile and control stations per channel.

[47 FR 41032, Sept. 16, 1982, as amended at 48 FR 44559, Sept. 29, 1983; 48 FR 51929, Nov. 15, 1983; 49 FR 36377, Sept. 17, 1984; 51 FR 37404, Oct. 22, 1986; 53 FR 12157, Apr. 13, 1988; 58 FR 44963, Aug. 25, 1993; 59 FR 59966, Nov. 21, 1994]

§ 90.629 Extended implementation period.

Applicants requesting frequencies for either trunked or conventional operations may be authorized a period of up to five (5) years for constructing and placing a system in operation in accordance with the following:

(a) The applicant must justify an extended implementation period. The justification must describe the proposed system, state the amount of time necessary to construct and place the system in operation, identify the number of base stations to be constructed and placed in operation during each year of the extended construction period, and show that:

(1) The proposed system will require longer than twelve (12) months to construct and place in operation because of its purpose, size, or complexity; or

(2) The proposed system is to be part of a coordinated or integrated wide-area system which will require more than twelve (12) months to plan, approve, fund, purchase, construct, and place in operation; or

(3) The applicant is required by law to follow a multi-year cycle for planning, approval, funding, and purchasing the proposed system.

(b) Where an applicant is required by law to follow a multi-year cycle for planning, approval, funding and purchasing a proposed system, the applicant must indicate whether funding approval has been obtained and if not, when such funding approval is expected.

(c) Authorizations under this section are conditioned upon the licensee constructing and placing its system in operation within the authorized implementation period and in accordance with an approved implementation plan of up to five years. Licensees must notify the Commission annually, using

FCC Form 601, that they are in compliance with their yearly station construction commitments, but may request amendment to these commitments at the time they file their annual certification. If the Commission approves the requested amendments to a licensee's implementation commitments, the licensee's extended implementation authority will remain in effect. If, however, the Commission concludes, at this or any other time, that a licensee has failed to meet its commitments, the Commission will terminate authority for the extended implementation period. When the Commission terminates an extended implementation authority, the affected licensee will be given six months from the date of termination to complete system construction. At the end of any licensee's extended implementation period, authorizations for all stations not constructed and placed in operation will be cancelled. Trunked systems granted an extended implementation period must comply with the channel loading requirements of section 90.631(b). Conventional channels not loaded to 70 mobile units may be subject to shared use by the addition of other licensees.

(d) [Reserved]

(e) As of March 18, 1996, Specialized Mobile Radio systems are not eligible for extended implementation periods under this section. Additionally, all 800 MHz SMR licensees that are operating under extended implementation authority as of March 18, 1996 must, by May 16, 1996, demonstrate that continuing to allow them to have an extended period of time to construct their facilities is warranted and furthers the public interest. If a licensee's extended implementation authority showing is approved by the Bureau, such licensee will be afforded an extended implementation of two years or the remainder of its current extended implementation period, whichever is shorter. Upon the termination of this period, the authorizations for those facilities that remain unconstructed will terminate automatically. If a licensee with a current extended implementation period fails to submit the showing mentioned above within the designated timeframe or submits an insufficient or incomplete showing, such licensee will have six months from the last day on which it could timely file such a showing or from the disapproval of its request to construct the remaining facilities covered under its implementation plan to construct any unconstructed facilities for which it is authorized. The authorizations for those facilities remaining unconstructed after this six-month period will terminate automatically.

(f) Pursuant to § 90.155(b), the provisions of this section shall apply to local government entities applying for any frequency in the Public Safety Pool.

[58 FR 34379, June 25, 1993, as amended at 61 FR 6157, Feb. 16, 1996; 63 FR 68969, Dec. 14, 1998; 65 FR 60877, Oct. 13, 2000; 69 FR 67489, Nov. 22, 2004]

§ 90.631 Trunked systems loading, construction and authorization requirements.

(a) Non-SMR trunked systems will be authorized on the basis of a loading criteria of one hundred (100) mobile stations per channel. For purposes of determining compliance with trunked system loading requirements under this subpart, the term ''mobile station'' includes vehicular and portable mobile units and control stations.

(b) Each applicant for a non-SMR trunked system must certify that a minimum of seventy (70) mobiles for each channel authorized will be placed into operation within five (5) years of the initial license grant.

(c) Except for SMR applicants and as provided in paragraph (d) of this section, an applicant seeking to expand a trunked system by requesting additional channels from the Commission, or through intercategory sharing, or through an assignment, must have a loading level of seventy (70) mobiles per channel on the existing system that is the subject of the expansion request.

(d) In rural areas, a licensee of a trunked system may request to increase its system capacity by five more channels than it has constructed without meeting the loading requirements specified in paragraphs (b) and (c) of this section. A rural area is defined for purposes of this section as being beyond a 100-mile radius of the following

designated centers of the following urban areas: New York, NY; Los Angeles, CA; Chicago, IL; Philadelphia, PA; San Francisco, CA; Detroit, MI; Boston, MA; Houston, TX; Washington, DC; Dallas-Fort Worth, TX; Miami, FL; Cleveland, OH; St. Louis, MO; Atlanta, GA; Pittsburgh, PA; Baltimore, MD; Minneapolis-St. Paul, MN; Seattle, WA; San Diego, CA; and Tampa-St.Petersburg, FL. The coordinates for the centers of these areas are those referenced in § 90.741, except that the coordinates (referenced to North American Datum 1983 (NAD83)) for Tampa-St. Petersburg are latitude 28°00′1.1″ N, longitude 82°26′59.3″ W.

(e) Except as provided in § 90.629, licensees of trunked facilities must complete construction within one year.

(f) If a station is not placed in permanent operation, in accordance with the technical parameters of the station authorization, within one year, except as provided in § 90.629, its license cancels automatically. For purposes of this section, a base station is not considered to be placed in operation unless at least two associated mobile stations, or one control station and one mobile station, are also placed in operation. An SMR licensee with facilities that have discontinued operations for 90 continuous days is presumed to have permanently discontinued operations, unless the licensee notifies the Commission otherwise, using FCC Form 601, prior to the end of the 90 day period and provides a date on which operation will resume, which date must not be in excess of 30 additional days.

(g) Wide area systems may be authorized to persons eligible for licensing under subparts B or C of this part upon an appropriate showing of need. Remote or satellite stations of wide area systems in the Public Safety, Special Emergency, Telephone Maintenance, and Power Radio Services may be authorized on a primary basis if such stations are the first to be authorized in their area of operation on the frequency or group of frequencies. Remote or satellite stations of wide area systems in all other services will be authorized only on a secondary, non-interference basis to cochannel licensees. To determine system loading, the total number of mobile units and control stations operating in the wide-area system shall be counted with respect to the total number of base station frequencies assigned to the system.

(h) Regional, statewide, or ribbon configuration systems may be authorized to persons eligible for licensing under subparts B or C of this part upon an appropriate showing of need. In a ribbon, regional or statewide system, a mobile station will be counted for channel loading purposes only for the base station facility in the geographic area in which it primarily operates. If this cannot be determined, it will be counted fractionally over the number of base station facilities with which it communicates regularly.

[47 FR 41032, Sept. 16, 1982]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 90.631, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§ 90.633 Conventional systems loading requirements.

(a) Non-SMR conventional systems of communication will be authorized on the basis of a minimum loading criteria of seventy (70) mobile stations for each channel authorized.

(b) A channel will not be assigned to additional licensees when it is loaded to 70 mobile stations. Where a licensee does not load a channel to 70 mobiles the channel will be available for assignment to other licensees. All authorizations for conventional systems are issued subject to this potential channel sharing condition.

(c) Except as provided in § 90.629 of this part, licensees of conventional systems must place their authorized stations in operation not later than one year after the date of grant of the system license.

(d) If a station is not placed in operation within one year, except as provided in Section 90.629 of this part, the license cancels automatically. For purposes of this section, a base station is not considered to be in operation unless at least one associated mobile station is also in operation.

(e) A non-SMR licensee may apply for additional frequency pairs if its authorized conventional channel(s) is

loaded to seventy (70) mobiles. Applications may be considered for additional channels in areas where spectrum is still available and not applied for, even if the already authorized channel(s) is not loaded to 70 mobile units, upon an appropriate demonstration of need.

(f) Wide area systems may be authorized to persons eligible for licensing under subparts B or C of this part upon an appropriate showing of need. For loading purposes, if the total number of mobile stations justifies the total number of authorized based frequencies in a given area, the system will be construed to be loaded.

(g) Regional, statewide, or ribbon configuration systems may be authorized to persons eligible for licensing under subparts B or C of this part upon an appropriate showing of need. In a ribbon, regional or statewide system, a mobile station will be counted for channel loading purposes only for the base station facility in the geographic area in which it primarily operates. If this cannot be determined, it will be counted fractionally over the number of base station facilities with which it communicates regularly.

[47 FR 41032, Sept. 16, 1982, as amended at 48 FR 51929, Nov. 15, 1983; 56 FR 65860, Dec. 19, 1991; 59 FR 59966, Nov. 21, 1994; 62 FR 18935, Apr. 17, 1997; 64 FR 10397, Mar. 4, 1999]

TECHNICAL REGULATIONS REGARDING THE USE OF FREQUENCIES IN THE 806–824 MHZ, 851–869 MHZ, 896–901 MHZ, AND 935–940 MHZ BANDS

§ 90.635 Limitations on power and antenna height.

(a) The effective radiated power and antenna height for base stations may not exceed 1 kilowatt (30 dBw) and 304 m. (1,000 ft.) above average terrain (AAT), respectively, or the equivalent thereof as determined from the Table. These are maximum values, and applicants will be required to justify power levels and antenna heights requested.

(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

TABLE—EQUIVALENT POWER AND ANTENNA HEIGHTS FOR BASE STATIONS IN THE 851–869 MHZ AND 935–940 MHZ BANDS WHICH HAVE A REQUIREMENT FOR A 32 KM (20 MI) SERVICE AREA RADIUS

Antenna height (ATT) meters (feet)	Effective radiated power (watts) [1 2 4]
Above 1,372 (4,500)	65
Above 1,220 (4,000) to 1,372 (4,500)	70
Above 1,067 (3,500) to 1,220 (4,000)	75
Above 915 (3,000) to 1,067 (3,500)	100
Above 763 (2,500) to 915 (3,000)	140
Above 610 (2,000) to 763 (2,500)	200
Above 458 (1,500) to 610 (2,000)	350
Above 305 (1,000) to 458 (1,500)	600
Up to 305 (1,000)	[3] 1,000

[1] Power is given in terms of effective radiated power (ERP).

[2] Applicants in the Los Angeles, CA, area who demonstrate a need to serve both the downtown and fringe areas will be permitted to utilize an ERP of 1 kw at the following mountaintop sites: Santiago Park, Sierra Peak, Mount Lukens, and Mount Wilson.

[3] Stations with antennas below 305 m (1,000 ft) (AAT) will be restricted to a maximum power of 1 kw (ERP).

[4] Licensees in San Diego, CA, will be permitted to utilize an ERP of 500 watts at the following mountaintop sites: Palomar, Otay, Woodson and Miguel.

[70 FR 61062, Oct. 20, 2005]

§ 90.637 Restrictions on operational fixed stations.

(a) Except for control stations, operational fixed operations will not be authorized in the 806–824 MHz, 851–869 MHz, 896–901 MHz, or 935–940 MHz bands. This does not preclude secondary fixed tone signaling and alarm operations authorized in § 90.235 or in paragraph (c) of this section.

(b) Control stations associated with one or more mobile relay stations will be authorized only on the assigned frequency of the associated mobile station. Use of a mobile service frequency by a control station of a mobile relay system is subject to the condition that harmful interference shall not be caused to stations of licensees authorized to use the frequency for mobile service communications.

(c) Trunked and conventional systems that have exclusive-use status in their respective geographic areas may conduct fixed ancillary signaling and data transmissions subject to the following requirements:

(1) All operations must be on a secondary, non-interference basis to the primary mobile operation of any other licensee.

(2) The output power at the remote site must not exceed 30 watts.

(3) Any fixed transmitters will not count toward meeting the mobile loading requirements nor be considered in whole or in part as a justification for authorizing additional frequencies in the licensee's mobile system.

(4) Automatic means must be provided to deactivate the remote transmitter in the event the carrier remains on for a period in excess of three minutes.

(5) Operational fixed stations authorized pursuant to the provisions of paragraphs (c) and (d) of this section are exempt from the requirements of §§ 90.425 and 90.429.

(d) Conventional systems that do not have exclusive-use status in their respective geographic areas may conduct fixed ancillary signaling and data transmissions only in accordance with all the provisions of § 90.235.

[47 FR 41032, Sept. 16, 1982, as amended at 48 FR 51929, Nov. 15, 1983; 49 FR 36377, Sept. 17, 1984; 51 FR 37405, Oct. 22, 1986; 52 FR 1332, Jan. 13, 1987; 53 FR 12157, Apr. 13, 1988; 57 FR 34693, Aug. 6, 1992]

§ 90.645 Permissible operations.

Conventional and trunked radio systems may be used:

(a) Only for purposes expressly allowed under this part.

(b) Only persons who are eligible for facilities, either under this subpart or in the radio service included under subparts B or C of this part.

(c) Except for licensees classified as CMRS providers under part 20 of this chapter, only for the transmission of messages or signals permitted in the services is which the participants are eligible.

(d) For digital or analog transmissions.

(e) An SMRS licensee or a licensee who has been authorized a channel(s) on an exclusive basis, may use the system for the transmission of any base/mobile message, page or signal permitted in the service in which the participants are eligible.

(f) Where the channel(s) is assigned to an SMRS licensee or exclusively to a single licensee, or where all users of a system agree, more than a single emission may be utilized within the authorized bandwidth. In such cases, the frequency stability requirements of § 90.213 shall not apply, but out-of-band emission limits of § 90.209 shall be met.

(g) Up to five (5) contiguous 809–816/854–861 band channels as listed in §§ 90.615, 90.617, and 90.619 may be authorized after justification for systems requiring more than the normal single channel bandwidth. If necessary, licensees may trade channels amongst themselves in order to obtain contiguous frequencies. Notification of such proposed exchanges shall be made to the appropriate frequency coordinator(s) and to the Commission by filing an application for license modification.

(h) Up to 10 contiguous 896–901/935–940 MHz band channels as listed in § 90.617 may be combined for systems requiring more than the normal single channel bandwidth. If necessary, licensees may trade channels amongst themselves in order to obtain contiguous frequencies. Notification of such proposed exchanges shall be made to the appropriate frequency coordinator(s) and to the Commission by filing an application for license modification.

(i) Paging operations may be utilized on multiple licensed facilities (community repeaters) only when all licensees of the facility agree to such use.

[47 FR 41032, Sept. 16, 1982, as amended at 48 FR 51929, Nov. 15, 1983; 51 FR 37405, Oct. 22, 1986; 59 FR 59966, Nov. 21, 1994; 62 FR 18935, Apr. 17, 1997; 63 FR 68970, Dec. 14, 1998; 69 FR 67849, Nov. 22, 2004]

§ 90.647 Station identification.

(a) Conventional systems of communication shall be identified in accordance with existing regulations governing such matters.

(b) Trunked systems of communication, except as noted in paragraph (c) of this section, shall be identified through the use of an automatic device which transmits the call sign of the base station facility at 30 minute intervals. Such station identification shall be made on the lowest frequency in the base station trunk group assigned the licensee. Should this frequency be in use at the time station identification is required, such identification may be made at the termination of the communication in progress on this frequency. Identification may be made by voice or International Morse Code.

When the call sign is transmitted in International Morse Code, it must be at a rate of between 15 to 20 words per minute and by means of tone modulation of the transmitter, the tone frequency being between 800 and 1000 hertz.

(c) Stations operating in either the 806–824/851–869 MHz or 896–901/935–940 MHz bands that are licensed on an exclusive basis, and normally employ digital signals for the transmission of data, text, control codes, or digitized voice may also be identified by digital transmission of the call sign. A licensee that identifies its station in this manner must provide the Commission, upon its request, information sufficient to decode the digital transmission and ascertain the call sign transmitted.

(d) Notwithstanding the requirements set forth in this paragraph, systems operated by geographic area CMRS licensees are subject only to the station identification requirements of § 90.425(e).

[47 FR 41032, Sept. 16, 1982, as amended at 58 FR 12177, Mar. 3, 1993; 65 FR 24420, Apr. 26, 2000]

§ 90.651 Supplemental reports required of licensees authorized under this subpart.

Licensees of conventional systems must notify the Commission in accordance with § 1.946 of this chapter of the number of mobile units placed in operation within their construction period.

[63 FR 68970, Dec. 14, 1998]

EDITORIAL NOTE: At 63 FR 10397, Mar. 4, 1999, § 90.651 was amended by revising paragraph (c), effective Apr. 5, 1999. However, § 90.651, as revised at 63 FR 68970, Dec. 14, 1998, effective Feb. 12, 1999, does not contain paragraph (c), and the revision could not be made. For the convenience of the user, the revised text is set forth as follows:

§ 90.651 Supplemental reports required of licensees authorized under this subpart.

* * * * *

(c) Licensees of conventional systems must report the number of mobile units placed in operation within twelve months of the date of the grant of their license. Such reports shall be filed within 30 days from that date.

* * * * *

§ 90.655 Special licensing requirements for Specialized Mobile Radio systems.

End users of conventional or trunked Specialized Mobile Radio systems that have control stations that require FAA clearance, as specified in §§ 17.7 through 17.17 of this chapter, or that may have a significant environmental effect, as defined by § 1.1307, or that are located in a ''quiet zone'', as defined by § 1.924 of this chapter must be individually licensed for such control stations prior to construction or operation. All other end users' operations will be within the scope of the base station licensee. All end users, however, continue to be responsible to comply with 47 CFR part 90 and other federal laws.

[57 FR 40850, Sept. 8, 1992, as amended at 63 FR 68970, Dec. 14, 1998]

§ 90.656 Responsibilities of base station licensees of Specialized Mobile Radio systems.

(a) The licensees of base stations that provide Specialized Mobile Radio service on a commercial basis of the use of individuals, Federal government agencies, or persons eligible for licensing under either subparts B or C of this part will be responsible for exercising effective operational control over all mobile and control stations that communicate with the base station. The base station licensee will be responsible for assuring that its system is operated in compliance with all applicable rules and regulations.

(b) Customers that operate mobile units on a particular Specialized Mobile Radio system will be licensed to that system. A customer that operates temporarily on more than one system will be deemed, when communicating with the other system, to be temporarily licensed to the other system and for that temporary period, the licensee of the other system will assume the same licensee responsibility for the customer's mobile station(s) as if the customer's stations were licensed to that other system.

[57 FR 40851, Sept. 8, 1992, as amended at 62 FR 18935, Apr. 17, 1997]

POLICIES GOVERNING THE LICENSING AND USE OF MTA-BASED SMR SYSTEMS IN THE 896–901/935–940 MHZ BAND

§ 90.661 MTA-based SMR service areas.

MTA licenses for SMR spectrum blocks in the 896–901/935–940 MHz band listed in table 4B of § 90.617(d) are available in 51 Major Trading Areas (MTAs) as defined in § 90.7. Within these MTAs, licenses will be authorized in ten channel blocks as specified in table 4B of § 90.617(d) through the competitive bidding procedures described in subpart U of this part.

[60 FR 21991, May 4, 1995]

§ 90.663 MTA-based SMR system operations.

(a) MTA-based licensees authorized in the 896–901/935–940 MHz band pursuant to § 90.661 may construct and operate base stations using any frequency identified in their spectrum block anywhere within their authorized MTA, provided that:

(1) The MTA licensee affords protection, in accordance with § 90.621(b), to all sites for which applications were filed on or prior to August 9, 1994.

(2) The MTA licensee complies with any rules and international agreements that restrict use of frequencies identified in their spectrum block, including the provisions of § 90.619 relating to U.S./Canadian and U.S./Mexican border areas.

(3) The MTA licensee limits its field strength at any location on the border of the MTA service area in accordance with § 90.671 and masks its emissions in accordance with § 90.669.

(b) In the event that the authorization for a previously authorized co-channel station within the MTA licensee's authorized spectrum block is terminated or revoked, the MTA licensee's co-channel obligations to such station will cease upon deletion of the facility from the Commission's licensing record. The MTA licensee then will be able to construct and operate base stations using such frequency.

[60 FR 21991, May 4, 1995]

§ 90.665 Authorization, construction and implementation of MTA licenses.

(a) MTA licenses in the 896–901/935–940 MHz band will be issued for a term not to exceed ten years.

(b) MTA licensees in the 896–901/935–940 MHz band will be permitted five years to construct their stations. This five-year period will commence with the issuance of the MTA-wide authorization and will apply to all of the licensee's stations within the MTA spectrum block, including any stations that may have been subject to an earlier construction deadline arising from a pre-existing authorization.

(c) Each MTA licensee in the 896–901/935–940 MHz band must, three years from the date of license grant, construct and place into operation a sufficient number of base stations to provide coverage to at least one-third of the population of the MTA; further, each MTA licensee must provide coverage to at least two-thirds of the population of the MTA five years from the date of license grant. Alternatively, an MTA licensee must demonstrate, through a showing to the Commission five years from the date of license grant, that it is providing substantial service. An MTA licensee must, three years from license grant, either show that the ⅓ population coverage standard has been satisfied, or provide written notification that it has elected to show substantial service to the MTA five years from license grant. In addition, as part of the election to provide a substantial service showing, each MTA licensee must, three years from license grant, indicate how it expects to demonstrate substantial service at five years. The MTA licensee must meet the population coverage benchmarks regardless of the extent to which incumbent licensees are present within the MTA block.

(d) MTA licensees who fail to meet the coverage requirements imposed at either the third or fifth years of their license term, or to make a convincing showing of substantial service, will forfeit the portion of the MTA license

that exceeds licensed facilities constructed and operating on the date of the MTA license grant.

[60 FR 21991, May 4, 1995, as amended at 60 FR 48918, Sept. 21, 1995; 60 FR 61487, Nov. 30, 1995; 64 FR 39942, July 23, 1999]

§ 90.667 Grandfathering provisions for incumbent licensees.

(a) These provisions apply to all 900 MHz SMR licensees who obtained licenses or filed applications for secondary sites on or before August 9, 1994 (''incumbent licensees''), as well as to all 900 MHz SMR licensees who obtained authorizations pursuant to § 90.173(k). An incumbent licensee's service area shall be defined by its originally-licensed 40 dBu field strength contour. Incumbent licensees are permitted to add new or modify transmit sites in this existing service area without prior notification to the Commission so long as their original 40 dBu field strength contour is not expanded.

(b) Incumbent licensees operating at multiple sites may, after grant of MTA licenses has been completed, exchange multiple site licenses for a single license, authorizing operations throughout the contiguous and overlapping 40 dBu field strength contours of the multiple sites. Incumbents exercising this license exchange option must submit specific information for each of their external base sites after the close of the 900 MHz SMR auction.

(c) Applications in the 900 MHz SMR service for secondary sites filed after August 9, 1994 shall be authorized on a secondary, non-interference basis to MTA licensee operations. No secondary sites shall be granted on this basis in an MTA once the MTA licensee has been selected.

[60 FR 48918, Sept. 21, 1995]

§ 90.669 Emission limits.

(a) On any frequency in an MTA licensee's spectrum block that is adjacent to a non-MTA frequency, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 plus 10 $\log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation.

NOTE: The measurements of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

[60 FR 21992, May 4, 1995]

§ 90.671 Field strength limits.

The predicted or measured field strength at any location on the border of the MTA service area for MTA licensees shall not exceed 40 dBuV/m unless all bordering MTA licensees agree to a higher field strength. MTA licensees are also required to coordinate their frequency usage with so-channel adjacent MTA licensees and all other affected parties. To the extent that a single entity obtains licenses for adjacent MTAs on the same channel block, it will not be required to coordinate its operations in this manner. In the event that this standard conflicts with the MTA licensee's obligation to provide co-channel protection to incumbent licensees under § 90.621(b), the requirements of § 90.621(b) shall prevail.

[60 FR 21992, May 4, 1995]

PROCEDURES AND PROCESS—UNACCEPTABLE INTERFERENCE

§ 90.672 Unacceptable interference to non-cellular 800 MHz licensees from 800 MHz cellular systems or part 22 Cellular Radiotelephone systems, and within the 900 MHz Business/Industrial Land Transportation Pool.

(a) *Definition*. Except as provided in 47 CFR 90.617(k), unacceptable interference to non-cellular licensees in the 800 MHz band from 800 MHz cellular systems or part 22 of this chapter, Cellular Radiotelephone systems and within the 900 MHz Business/Industrial Land Transportation (B/ILT) Pool will be deemed to occur when the below conditions are met:

(1) A transceiver at a site at which interference is encountered:

(i) Is in good repair and operating condition, and is receiving:

(A) A median desired signal strength of −104 dBm or higher if operating in

the 800 MHz band, or a median desired signal strength of –88 dBm if operating in the 900 MHz B/ILT Pool, as measured at the R.F. input of the receiver of a mobile unit; or

(B) A median desired signal strength of −101 dBm or higher if operating in the 800 MHz band, or a median desired signal strength of –85 dBm if operating in the 900 MHz B/ILT Pool, as measured at the R.F. input of the receiver of a portable *i.e.*, hand-held unit; and either

(ii) Is a voice transceiver:

(A) With manufacturer published performance specifications for the receiver section of the transceiver equal to, or exceeding, the minimum standards set out in paragraph (b) of this section, and;

(B) Receiving an undesired signal or signals which cause the measured Carrier to Noise plus Interference (C/(I+N)) ratio of the receiver section of said transceiver to be less than 20 dB if operating in the 800 MHz band, or less than 17 dB if operating in the 900 MHz B/ILT Pool, or;

(iii) Is a non-voice transceiver receiving an undesired signal or signals which cause the measured bit error rate (BER) (or some comparable specification) of the receiver section of said transceiver to be more than the value reasonably designated by the manufacturer.

(2) Provided, however, that if the receiver section of the mobile or portable voice transceiver does not conform to the standards set out in paragraph (b) of this section, then that transceiver shall be deemed subject to unacceptable interference only at sites where the median desired signal satisfies the applicable threshold measured signal power in paragraphs (a)(1)(i) of this section after an upward adjustment to account for the difference in receiver section performance. The upward adjustment shall be equal to the increase in the desired signal required to restore the receiver section of the subject transceiver to the 20 dB C/(I+N) ratio of paragraph (a)(1)(ii)(B) of this section. The adjusted threshold levels shall then define the minimum measured signal power(s) in lieu of paragraphs (a)(1)(i) of this section at which the licensee using such non-compliant transceiver is entitled to interference protection.

(b) *Minimum Receiver Requirements*. Voice transceivers capable of operating in the 806–824 MHz portion of the 800 MHz band, or in the 900 MHz Business/Industrial Land Transportation Pool, shall have the following minimum performance specifications in order for the system in which such transceivers are used to claim entitlement to full protection against unacceptable interference. (See paragraph (a)(2) of this section.)

(1) Voice units intended for mobile use: 75 dB intermodulation rejection ratio; 75 dB adjacent channel rejection ratio; –116 dBm reference sensitivity.

(2) Voice units intended for portable use: 70 dB intermodulation rejection ratio; 70 dB adjacent channel rejection ratio; –116 dBm reference sensitivity.

(3) Voice units intended for mobile or portable use in the 900 MHz Business/Industrial Land Transportation Pool: 60 dB intermodulation rejection ratio; 60 dB adjacent channel rejection ratio; –116 dBm reference sensitivity.

[73 FR 67800, Nov. 17, 2008]

§ 90.673 Obligation to abate unacceptable interference.

(a) *Strict Responsibility*. Any licensee who, knowingly or unknowingly, directly or indirectly, causes or contributes to causing unacceptable interference to a non-cellular licensee in the 800 MHz band, as defined in this chapter, shall be strictly accountable to abate the interference, with full cooperation and utmost diligence, in the shortest time practicable. Interfering licensees shall consider all feasible interference abatement measures, including, but not limited to, the remedies specified in the interference resolution procedures set forth in this chapter. This strict responsibility obligation applies to all forms of interference, including out-of-band emissions and intermodulation.

(b) *Joint and Several Responsibility*. If two or more licensees knowingly or unknowingly, directly or indirectly, cause or contribute to causing unacceptable interference to a non-cellular licensee in the 800 MHz band, as defined in this chapter, such licensees shall be jointly and severally responsible for

abating interference, with full cooperation and utmost diligence, in the shortest practicable time. This joint and several responsibility rule requires interfering licensees to consider all feasible interference abatement measures, including, but not limited to, the remedies specified in the interference resolution procedures set forth in this chapter. This joint and several responsibility rule applies to all forms of interference, including out-of-band emissions and intermodulation.

(1) This joint and several responsibility rule requires interfering licensees to consider all feasible interference abatement measures, including, but not limited to, the remedies specified in the interference resolution procedures set forth in § 90.674(c). This joint and several responsibility rule applies to all forms of interference, including out-of-band emissions and intermodulation.

(2) Any licensee that can show that its signal does not directly or indirectly, cause or contribute to causing unacceptable interference to a non-cellular licensee in the 800 MHz band, as defined in this chapter, shall not be held responsible for resolving unacceptable interference. Notwithstanding, any licensee that receives an interference complaint from a public safety/CII licensee shall respond to such complaint consistent with the interference resolution procedures set forth in this chapter.

[69 FR 67849, Nov. 22, 2004]

§ 90.674 Interference resolution procedures before, during and after band reconfiguration.

(a) *Initial Notification.* Any non-cellular licensee operating in the 806–824/851–869 MHz band who reasonably believes it is receiving unacceptable interference, as described in § 90.672, shall provide an initial notification of the interference incident. This initial notification of an interference incident shall be sent to all part 22 of this chapter Cellular Radiotelephone licensees and ESMR licensees who operate cellular base stations (''cell sites'') within 1,524 meters (5,000 feet) of the interference incident.

(1) The initial notification of interference shall include the following information on interference:

(i) The specific geographical location where the interference occurs, and the time or times at which the interference occurred or is occurring;

(ii) A description of its scope and severity, including its source, if known;

(iii) The relevant Commission licensing information of the party suffering the interference; and

(iv) A single point of contact for the party suffering the interference.

(2) ESMR licensees, in conjunction with part 22 Cellular Radiotelephone licensees, shall establish an electronic means of receiving the initial notification described in paragraph (a)(1) of this section. The electronic system must be designed so that all appropriate 800 MHz ESMR and part 22 Cellular Radiotelephone licensees can be contacted about the interference incident with a single notification. The electronic system for receipt of initial notification of interference complaints must be operating no later than February 22, 2005.

(3) ESMR licensees must respond to the initial notification described in paragraph (a)(1) of this section, as soon as possible and no later than 24 hours of receipt of notification from a public safety/CII licensee. This response time may be extended to 48 hours after receipt from other non-cellular licensees provided affected communications on these systems are not safety related.

(b) *Interference analysis.* ESMR licensees—who receive an initial notification described in paragraph (a) of this section—shall perform a timely analysis of the interference to identify the possible source. Immediate on-site visits may be conducted when necessary to complete timely analysis. Interference analysis must be completed and corrective action initiated within 48 hours of the initial complaint from a public safety/CII licensee. This response time may be extended to 96 hours after the initial complaint from other non-cellular licensees provided affected communications on these systems are not safety related. Corrective action may be delayed if the affected licensee agrees in writing (which may be, but is not required to be, recorded via e-mail

or other electronic means) to a longer period.

(c) *Mitigation Steps.* (1) All 800 MHz cellular system licensees and part 22 of this chapter Cellular Radiotelephone licensees who are responsible for causing unacceptable interference shall take all affirmative measures to resolve such interference. 800 MHz cellular system licensees found to contribute to harmful interference, as defined in § 90.672, shall resolve such interference in the shortest time practicable. 800 MHz cellular system licensees and part 22 of this chapter Cellular Radiotelephone licensees must provide all necessary test apparatus and technical personnel skilled in the operation of such equipment as may be necessary to determine the most appropriate means of timely eliminating the interference. However, the means whereby interference is abated or the cell parameters that may need to be adjusted is left to the discretion of involved 800 MHz cellular system licensees and/or part 22 of this chapter Cellular Radiotelephone licensees, whose affirmative measures may include, but not be limited to, the following techniques:

(i) Increasing the desired power of the public safety signal;

(ii) Decreasing the power of the ESMR and/or part 22 Cellular Radiotelephone signal;

(iii) Modifying the ESMR and/or part 22 Cellular Radiotelephone systems antenna height;

(iv) Modifying the ESMR and/or part 22 Cellular Radiotelephone system antenna characteristics;

(v) Incorporating filters into ESMR and/or part 22 Cellular Radiotelephone system transmission equipment;

(vi) Permanently changing ESMR and/or part 22 Cellular Radiotelephone system frequencies; and

(vii) Supplying interference-resistant receivers to the affected public safety licensee(s). If this technique is used, in all circumstances, the ESMR and/or part 22 Cellular Radiotelephone licensees shall be responsible for all costs thereof.

(2) Whenever short-term interference abatement measures prove inadequate, the affected licensee shall, consistent with but not compromising safety, make all necessary concessions to accepting interference until a longer-term remedy can be implemented.

(3) *Discontinuing operations when clear and imminent danger exists.* When a public safety licensee determines that a continuing presence of interference constitutes a clear and imminent danger to life or property, the licensee causing the interference must discontinue the associated operation immediately, until a remedy can be identified and applied. The determination that a continuing presence exists that constitutes a clear and imminent danger to life or property, must be made by written statement that:

(i) Is in the form of a declaration, notarized affidavit, or statement under penalty or perjury, from an officer or executive of the affected public safety licensee;

(ii) Thoroughly describes the basis of the claim of clear and imminent danger;

(iii) Was formulated on the basis of either personal knowledge or belief after due diligence;

(iv) Is not proffered by a contractor or other third party; and

(v) Has been approved by the Chief of the Public Safety and Homeland Security Bureau or other designated Commission official. Prior to the authorized official making a determination that a clear and imminent danger exists, the associated written statement must be served by hand-delivery or receipted fax on the applicable offending licensee, with a copy transmitted by the fastest available means to the Washington, DC office of the Commission's Public Safety and Homeland Security Bureau.

[69 FR 67849, Nov. 22, 2004, as amended at 70 FR 76711, Dec. 28, 2005; 71 FR 69038, Nov. 29, 2006]

§ 90.675 Information exchange.

(a) *Prior coordination.* Public safety/CII licensees may notify an ESMR or part 22 Cellular Radiotelephone licensee that they wish to receive prior notification of the activation or modification of ESMR or part 22 Cellular Radiotelephone cell sites in their area. Thereafter, the ESMR or part 22 Cellular Radiotelephone licensee must provide the following information to the public safety/CII licensee at least 10

business days before a new cell site is activated or an existing cell site is modified:

(1) Location;

(2) Effective radiated power;

(3) Antenna height;

(4) Channels available for use.

(b) *Purpose of prior coordination.* The coordination of cell sites is for informational purposes only: public safety/CII licensees are not afforded the right to accept or reject the activation of a proposed cell or to unilaterally require changes in its operating parameters. The principal purposes of notification are to:

(1) Allow a public safety/CII licensee to advise the ESMR or part 22 Cellular Radiotelephone licensee whether it believes a proposed cell will generate unacceptable interference;

(2) Permit ESMR or part 22 Cellular Radiotelephone licensees to make voluntary changes in cell parameters when a public safety licensee alerts them to possible interference; and

(3) Rapidly identify the source if interference is encountered when the cell is activated.

(c) *Public safety information exchange.* (1) Upon request by an ESMR or part 22 Cellular Radiotelephone licensee, public safety/CII licensees who operate radio systems in the 806–824/851–869 MHz shall provide the operating parameters of their radio system to the ESMR or part 22 Cellular Radiotelephone licensee.

(2) Public safety licensees who perform the information exchange as described in this section must notify the appropriate ESMR and part 22 Cellular Radiotelephone licensees prior to any technical changes to their radio system.

EFFECTIVE DATE NOTE: At 69 FR 67849, Nov. 22, 2004, § 90.675 was added. This section contains information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

§ 90.676 Transition administrator for reconfiguration of the 806–824/851–869 MHz band in order to separate cellular systems from non-cellular systems.

The Transition Administrator will be an independent party with no financial interest in any 800 MHz licensee; and will be selected by a committee representative of 800 MHz licensees. The Transition Administrator will serve both a ministerial role and a function similar to a special master in a judicial proceeding.

(a) The duties of the Transition Administrator will include, but not be limited to:

(1) Obtaining estimates from licensees regarding the cost of reconfiguring their systems and ensuring that estimates contain a firm work schedule. The Transition Administrator will retain copies of all estimates and make them available to the Commission on request.

(2) Mediating disputes regarding cost estimates for reconfiguring a system.

(3) Issuing the Draw Certificate to authorize and instruct the Letter of Credit Trustee to draw down on the Letter of Credit to pay relocation costs in connection with reconfiguring a licensee's system.

(4) Establishing a relocation schedule on a NPSPAC region-by-region basis, prioritizing the regions on the basis of population. However, should a given region be encountering unusually severe amounts of unacceptable interference, that region may be moved up in priority. Any party disputing such a change in priority may refer the matter to the Chief, Public Safety and Homeland Security Bureau, who hereby is delegated the authority to resolve such disputes. The Transition Administrator may direct that adjoining regions be reconfigured simultaneously when conditions so require.

(5) The Transition Administrator will coordinate relocation of a NPSPAC Region's NPSPAC channels with the relevant Regional Planning Committee(s) prior to commencing band reconfiguration in a NPSPAC Region.

(b) Once band reconfiguration commences in a given NPSPAC Region, the Transition Administrator will;

(1) Monitor the retuning schedule and resolve any schedule delays or refer same to the Chief, Public Safety and Homeland Security Bureau, for resolution;

(2) Coordinate with adjoining NPSPAC Regions to ensure that interference is not being caused to their existing facilities from relocated stations;

(3) Provide quarterly progress reports to the Commission in such detail as the Commission may require and include, with such reports, certifications by Nextel and the relevant licensees that relocation has been completed and that both parties agree on the amount received from the letter of credit proceeds in connection with relocation of the licensees' facilities. The report shall include description of any disputes that have arisen and the manner in which they were resolved. These quarterly reports need not be audited. The Transition Administrator may select the dates for filing the quarterly progress reports;

(4) Provide the Chief, Public Safety and Homeland Security Bureau, with an annual audited statement of relocation funds expended to date, including salaries and expenses of Transition Administrator. The Transition Administrator may select the date for filing the annual audited statement;

(5) Facilitate resolution of disputes by mediation; or referral of the parties to alternative dispute resolution services as described in § 90.677(d).

(6) Notify the Commission when band reconfiguration is complete in each 800 MHz NPSPAC Region and identify which vacant channels are exclusively available to eligible applicants in the Public Safety or Critical Infrastructure Industry Categories as set forth in §§ 90.615(a), (b) and 90.617(g), (h).

(c) The Transition Administrator may not serve as the repository of funds used in band reconfiguration, excepting such sums as Nextel may pay for the Transition Administrator's services. Moreover, the Transition Administrator will not be certified by the Commission as a frequency coordinator.

[69 FR 67849, Nov. 22, 2004, as amended at 70 FR 6760, Feb. 8, 2005; 70 FR 76711, Dec. 28, 2005; 71 FR 69038, Nov. 29, 2006]

§ 90.677 Reconfiguration of the 806–824/851–869 MHz band in order to separate cellular systems from non-cellular systems.

In order to facilitate reconfiguration of the 806–824/851–869 MHz band (''800 MHz band'') to separate high-density cellular systems from non-cellular systems, Nextel Communications, Inc. (Nextel) may relocate incumbents within the 800 MHz band by providing ''comparable facilities.'' For the limited purpose of band reconfiguration, the provisions of § 90.157 shall not apply and inter-category sharing will be permitted under all circumstances. Such relocation is subject to the following provisions:

(a) Within thirty days of Commission approval of the Transition Administrator, the Transition Administrator described in § 90.676 will provide the Commission with a schedule detailing when band reconfiguration shall commence for each NPSPAC Region. The plan should also detail—by NPSPAC Region—which relocation option each non-Nextel ESMR licensees has chosen. The Chief, Public Safety and Homeland Security Bureau will finalize and approve such a plan. The schedule shall provide for completion of band reconfiguration in no more than thirty-six months following release of a public notice announcing the start date of reconfiguration in the first NPSPAC region. Relocation will commence according to the schedule set by the Transition Administrator but all systems must have commenced reconfiguration within thirty months of release of a public notice announcing the start date of reconfiguration in the first NPSPAC region.

(b) *Voluntary negotiations.* Thirty days before the start date for each NPSPAC region other than Region 47 and Region 48, the Chief, Public Safety and Homeland Security Bureau will issue a public notice initiating a three-month voluntary negotiation period. During this voluntary negotiation period, Nextel and all incumbents may negotiate any mutually agreeable relocation agreement. Sprint Nextel and relocating incumbents may agree to conduct face-to-face negotiations or either party may elect to communicate

with the other party through the Transition Administrator.

(c) *Mandatory negotiations.* If no agreement is reached by the end of the voluntary period, a three-month mandatory negotiation period will begin during which both Sprint Nextel and the incumbents must negotiate in ''good faith.'' In Region 47, a 90-day mandatory negotiation period will begin 60 days after the effective date of the Third Report and Order and Third Further Notice of Proposed Rulemaking in WT Docket 02–55. In Region 48, a 90-day mandatory negotiation period will begin on March 21, 2011. Sprint Nextel and relocating incumbents may agree to conduct face-to-face negotiations or either party may elect to communicate with the other party through the Transition Administrator. All parties are charged with the obligation of utmost ''good faith'' in the negotiation process. Among the factors relevant to a ''good-faith'' determination are:

(1) Whether the party responsible for paying the cost of band reconfiguration has made a bona fide offer to relocate the incumbent to comparable facilities;

(2) The steps the parties have taken to determine the actual cost of relocation to comparable facilities; and

(3) Whether either party has unreasonably withheld information, essential to the accurate estimation of relocation costs and procedures, requested by the other party. The Transition Administrator may schedule mandatory settlement negotiations and mediation sessions and the parties must conform to such schedules.

(d) *Transition Administrator.* (1) The Transition Administrator, or other mediator, shall attempt to resolve disputes referred to it before the conclusion of the mandatory negotiation period as described in § 90.677(c) within thirty working days after the Transition Administrator has received a submission by one party and a response from the other party. Any party thereafter may seek expedited non-binding arbitration which must be completed within thirty days of the Transition Administrator's, or other mediator's recommended decision or advice. Should issues still remain unresolved after mediation or arbitration they shall be referred to the Chief, Public Safety and Homeland Security Bureau within ten days of the Transition Administrator's or other mediator's advice, or if arbitration has occurred, within ten days of the completion of arbitration. When referring an unresolved matter to the Chief, Public Safety and Homeland Security Bureau, the Transition Administrator shall forward the entire record on any disputed issues, including such dispositions thereof that the Transition Administrator has considered. Upon receipt of such record and advice, the Commission will decide the disputed issues based on the record submitted. The authority to make such decisions is delegated to the Chief, Public Safety and Homeland Security Bureau who may decide the disputed issue or designate it for an evidentiary hearing before an Administrative Law Judge. If the Chief, Public Safety and Homeland Security Bureau decides an issue, any party to the dispute wishing to appeal the decision may do so by filing with the Commission, within ten days of the effective date of the initial decision, a Petition for de novo review; whereupon the matter will be set for an evidentiary hearing before an Administrative Law Judge. Any disputes submitted to the Transition Administrator after the conclusion of the mandatory negotiation period as described in § 90.677(c) shall be resolved as described in § 90.677(d)(2).

(2) If no agreement is reached during either the voluntary or mandatory negotiating periods, all disputed issues shall be referred to the Transition Administrator, or other mediator, who shall attempt to resolve them. If disputed issues remain thirty working days after the end of the mandatory negotiation period, the Transition Administrator shall forward the record to the Chief, Public Safety and Homeland Security Bureau, together with advice on how the matter(s) may be resolved. The Chief, Public Safety and Homeland Security Bureau is hereby delegated the authority to rule on disputed issues, de novo. If the Chief, Public Safety and Homeland Security Bureau decides an issue, any party to the dispute wishing to appeal the decision

may do so by filing with the Commission, within ten days of the effective date of the initial decision, a Petition for de novo review; whereupon the matter will be set for an evidentiary hearing before an Administrative Law Judge.

(e) *Waiver Requests*. Incumbents who wish not to relocate according to the schedule may petition the Commission for a waiver of the relocation obligation. Such a waiver would only be granted on a strict non-interference basis.

(f) *Comparable Facilities*. The replacement system provided to an incumbent must be at least equivalent to the existing 800 MHz system with respect to the four factors described in § 90.699(d) part.

(g) *Information Exchange*. Absent agreement between parties, the Transition Administrator will be responsible for determining the information that relocating incumbents must supply in support of a relocation agreement.

(h) The relevant Regional Planning Committee shall be informed of any proposed changes to any NPSPAC channel.

[69 FR 67849, Nov. 22, 2004, as amended at 70 FR 76711, Dec. 28, 2005; 71 FR 52751, Sept. 7, 2006; 71 FR 69038, Nov. 29, 2006; 75 FR 35318, June 22, 2010; 76 FR 11683, Mar. 3, 2011]

POLICIES GOVERNING THE LICENSING AND USE OF EA-BASED SMR SYSTEMS IN THE 809–824/851–869 MHZ BAND

§ 90.681 EA-based SMR service areas.

EA licenses in for channels 711 through 830 and Spectrum Blocks A through V listed in Tables 4 and 5 of § 90.617 are available in 175 Economic Areas (EAs) as defined in § 90.7.

[69 FR 67852, Nov. 22, 2004]

§ 90.683 EA-based SMR system operations.

(a) EA-based licensees authorized in the 809–824/854–869 MHz band pursuant to § 90.681 of this part may construct and operate base stations using any of the base station frequencies identified in their spectrum block anywhere within their authorized EA, provided that:

(1) The EA licensee affords protection, in accordance with § 90.621(b), to all previously authorized co-channel stations that are not associated with another EA license;

(2) The EA licensee complies with any rules and international agreements that restrict use of frequencies identified in their spectrum block, including the provisions of § 90.619 relating to U.S./Canadian and U.S./Mexican border areas;

(3) The EA licensee limits the field strength of its base stations at any location on the border of the EA service area in accordance with § 90.689;

(4) Upon request by an incumbent licensee or the Commission, the EA licensees shall furnish the technical parameters, location and coordinates of the completion of the addition, removal, relocation or modification of any of its facilities within the EA. The EA licensee must provide such information within ten (10) days of receiving a written request.

(5) For any construction or alteration that would exceed the requirements of § 17.7 of this chapter, licensees must notify the appropriate Regional Office of the Federal Aviation Administration (FAA Form 7460–1) and file a request for antenna height clearance and obstruction marking and lighting specifications (FCC Forn 854) with the FCC, WTB, Support Services Branch, Gettysburg, PA 17325.

(6) Any additional transmitters placed in operation must not have a significant environmental effect as defined by §§ 1.1301 through 1.1319 of this chapter.

(b) In the event that the authorization for a previously authorized co-channel station within the EA licensee's spectrum block is terminated or revoked, the EA licensee's co-channel obligations to such station will cease upon deletion of the facility from the Commission's official licensing records, and the EA licensee then will be able to construct and operate without regard to that previous authorization.

[61 FR 6158, 6159, Feb. 16, 1996, as amended at 62 FR 41216, July 31, 1997; 63 FR 68970, Dec. 14, 1998; 69 FR 67852, Nov. 22, 2004]

§ 90.685 Authorization, construction and implementation of EA licenses.

(a) EA licenses in the 809–824/854–869 MHz band will be issued for a term not

to exceed ten years. Additionally, EA licensees generally will be afforded a renewal expectancy only for those stations put into service after August 10, 1996.

(b) EA licensees in the 809–824/854–869 MHz band must, within three years of the grant of their initial license, construct and place into operation a sufficient number of base stations to provide coverage to at least one-third of the population of its EA-based service area. Further, each EA licensee must provide coverage to at least two-thirds of the population of the EA-based service area within five years of the grant of their initial license. EA-based licensees may, in the alternative, provide substantial service to their markets within five years of the grant of their initial license. Substantial service shall be defined as: ''Service which is sound, favorable, and substantially above a level of mediocre service.''

(c) *Channel use requirement*. In addition to the population coverage requirements described in this section, we will require EA licensees in Channel blocks A, B and C in the 816–821/861–866 MHz band to construct 50 percent of the total channels included in their spectrum block in at least one location in their respective EA-based service area within three years of initial license grant and to retain such channel usage for the remainder of the construction period.

(d) An EA licensee's failure to meet the population coverage requirements of paragraphs (b) and (c) of this section, will result in forfeiture of the entire EA license. Forfeiture of the EA license, however, would not result in the loss of any constructed facilities authorized to the licensee prior to the date of the commencement of the auction for the EA licenses.

(e) EA licensees operating on channels listed in § 90.614(b) and (c) must implement an Enhanced Specialized Mobile Radio (ESMR) system—as defined in § 90.7—on their EA license and any associated site-based licenses prior to the expiration date of the EA license. EA licensees operating on these channels shall follow the construction notification procedures set forth in § 1.946(d) of this chapter. Failure to implement an ESMR system on their EA and site-based licenses before the expiration date of the EA license will result in termination of the EA license and any associated site-based licenses pursuant to § 1.946(c) of this chapter.

[62 FR 41216, July 31, 1997, as amended at 69 FR 67852, Nov. 22, 2004; 70 FR 6760, Feb. 8, 2005; 70 FR 76712, Dec. 28, 2005]

§ 90.687 Special provisions regarding assignments and transfers of authorizations for incumbent SMR licensees in the 809–824/854–869 MHz band.

An SMR license initially authorized on any of the channels listed in Tables 4 and 5 of § 90.617 may transfer or assign its channel(s) to another entity subject to the provisions of § 1.948 of this chapter and § 90.609(b). If the proposed transferee or assignee is the EA licensee for the spectrum block to which the channel is allocated, such transfer or assignment presumptively will be deemed to be in the public interest. However, such presumption will be rebuttable.

[69 FR 67852, Nov. 22, 2004]

§ 90.689 Field strength limits.

(a) For purposes of implementing §§ 90.689 through 90.699, predicted 36 and 40 dBμV/m contours shall be calculated using Figure 10 of § 73.699 of this chapter with a correction factor of −9 dB, and predicted 18 and 22 dBμV/m contours shall be calculated using Figure 10a of § 73.699 of this chapter with a correction factor of −9 dB.

(b) The predicted or measured field strength at any location on the border of the EA-based service area for EA licensees must not exceed 40 dBuV/m unless all bordering EA licensees agree to a higher field strength. In the event that this standard conflicts with the EA licensee's obligation to provide co-channel protection to incumbent licensees pursuant to § 90.621(b), the requirements of § 90.621(b) shall prevail.

[61 FR 6158, 6159, Feb. 16, 1996, as amended at 62 FR 41216, July 31, 1997]

§ 90.691 Emission mask requirements for EA-based systems.

(a) Out-of-band emission requirement shall apply only to the ''outer'' channels included in an EA license and to

spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 $Log_{10}(f/6.1)$ decibels or 50 + 10 $Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10$Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

§ 90.693 Grandfathering provisions for incumbent licensees.

(a) *General provisions*. These provisions apply to ''incumbent licensees,'' all 800 MHz licensees authorized in the 809–821/854–866 MHz band who obtained licenses or filed applications on or before December 15, 1995.

(b) *Spectrum blocks A through V*. An incumbent licensee's service area shall be defined by its originally licensed 40 dBμV/m field strength contour and its interference contour shall be defined as its originally-licensed 22 dBμV/m field strength contour. The ''originally-licensed'' contour shall be calculated using the maximum ERP and the actual height of the antenna above average terrain (HAAT) along each radial. Incumbent licensees are permitted to add, remove or modify transmitter sites within their original 22 dBμV/m field strength contour without prior notification to the Commission so long as their original 22 dBμV/m field strength contour is not expanded. Incumbent licensee protection extends only to its 40 dBμV/m signal strength contour. Pursuant to the minor modification notification procedures set forth in 1.947(b), the incumbent licensee must notify the Commission within 30 days of any change in technical parameters for stations that are authorized under a waiver of 90.621(b)(4), or that are authorized under 90.621(b)(5).

(c) Special provisions for spectrum blocks F1 through V. Incumbent licensees that have received the consent of all affected parties or a certified frequency coordinator to utilize an 18 dBμV/m signal strength interference contour shall have their service area defined by their originally-licensed 36 dBμV/m field strength contour and their interference contour shall be defined as their originally-licensed 18 dBμV/m field strength contour. The ''originally-licensed'' contour shall be calculated using the maximum ERP and the actual HAAT along each radial. Incumbent licensees seeking to utilize an 18 dBμV/m signal strength interference contour shall first seek to obtain the consent of affected co-channel incumbents. When the consent of a co-channel licensee is withheld, an incumbent licensee may submit to any certified frequency coordinator an engineering study showing that interference will not occur, together with proof that the incumbent licensee has sought consent. Incumbent licensees are permitted to add, remove or modify transmitter sites within their original 18 dBμV/m field strength contour without prior notification to the Commission so long as their original 18 dBμV/m field strength contour is not expanded. Incumbent licensee protection extends only to its 36 dBμV/m signal strength contour. Pursuant to the minor modification notification procedures set forth in 1.947(b), the incumbent licensee must notify the Commission within 30 days of any change in technical parameters for stations that are authorized under a waiver of 90.621(b)(4), or that are authorized under 90.621(b)(5).

(d) *Consolidated license*—(1) *Spectrum blocks A through V*. Incumbent licensees operating at multiple sites may, after grant of EA licenses has been completed, exchange multiple site licenses

for a single license, authorizing operations throughout the contiguous and overlapping 40 dBμV/m field strength contours of the multiple sites. Incumbents exercising this license exchange option must submit specific information on Form 601 for each of their external base sites after the close of the 800 MHz SMR auction. The incumbent's geographic license area is defined by the contiguous and overlapping 22 dBμV/m contours of its constructed and operational external base stations and interior sites that are constructed within the construction period applicable to the incumbent. Once the geographic license is issued, facilities that are added within an incumbent's existing footprint and that are not subject to prior approval by the Commission will not be subject to construction requirements.

(2) *Special Provisions for Spectrum Blocks F1 through V.* Incumbent licensees that have received the consent of all affected parties or a certified frequency coordinator to utilize an 18 dBμV/m signal strength interference contour operating at multiple sites may, after grant of EA licenses has been completed, exchange multiple site licenses for a single license. This single site license will authorize operations throughout the contiguous and overlapping 36 dBμV/m field strength contours of the multiple sites. Incumbents exercising this license exchange option must submit specific information on Form 601 for each of their external base sites after the close of the 800 SMR auction. The incumbent's geographic license area is defined by the contiguous and overlapping 18 dBμV/m contours of its constructed and operational external base stations and interior sites that are constructed within the construction period applicable to the incumbent. Once the geographic license is issued, facilities that are added within an incumbent's existing footprint and that are not subject to prior approval by the Commission will not be subject to construction requirements.

[64 FR 71055, Dec. 20, 1999, as amended at 69 FR 67852, Nov. 22, 2004; 70 FR 6761, Feb. 8, 2005; 70 FR 61062, Oct. 20, 2005]

§ 90.699 Transition of the upper 200 channels in the 800 MHz band to EA licensing.

In order to facilitate provision of service throughout an EA, an EA licensee may relocate incumbent licensees in its EA by providing ''comparable facilities'' on other frequencies in the 800 MHz band. Such relocation is subject to the following provisions:

(a)–(c) [Reserved]

(d) *Comparable facilities.* The replacement system provided to an incumbent during an involuntary relocation must be at least equivalent to the existing 800 MHz system with respect to the following four factors:

(1) *System.* System is defined functionally from the end user's point of view (*i.e.*, a system is comprised of base station facilities that operate on an integrated basis to provide service to a common end user, and all mobile units associated with those base stations). A system may include multiple-licensed facilities that share a common switch or are otherwise operated as a unitary system, provided that the end user has the ability to access all such facilities. A system may cover more than one EA if its existing geographic coverage extends beyond the EA borders.

(2) *Capacity.* To meet the comparable facilities requirement, an EA licensee must relocate the incumbent to facilities that provide equivalent channel capacity. We define channel capacity as the same number of channels with the same bandwidth that is currently available to the end user. For example, if an incumbent's system consists of five 50 kHz (two 25 kHz paired frequencies) channels, the replacement system must also have five 50 kHz channels. If a different channel configuration is used, it must have the same overall capacity as the original configuration. Comparable channel capacity requires equivalent signaling capability, baud rate, and access time. In addition, the geographic coverage of the channels must be coextensive with that of the original system.

(3) *Quality of service.* Comparable facilities must provide the same quality of service as the facilities being replaced. Quality of service is defined to mean that the end user enjoys the same level of interference protection

on the new system as on the old system. In addition, where voice service is provided, the voice quality on the new system must be equal to the current system. Finally, reliability of service is considered to be integral to defining quality of service. Reliability is the degree to which information is transferred accurately within the system. Reliability is a function of equipment failures (*e.g.*, transmitters, feed lines, antennas, receivers, battery back-up power, etc.) and the availability of the frequency channel due to propagation characteristics (*e.g.*, frequency, terrain, atmospheric conditions, radio-frequency noise, etc.) For digital data systems, this will be measured by the percent of time the bit error rate exceeds the desired value. For analog or digital voice transmissions, this will be measured by the percent of time that audio signal quality meets an established threshold. If analog voice system is replaced with a digital voice system the resulting frequency response, harmonic distortion, signal-to-noise ratio, and reliability will be considered.

(4) *Operating costs.* Operating costs are those costs that affect the delivery of services to the end user. If the EA licensee provides facilities that entail higher operating cost than the incumbent's previous system, and the cost increase is a direct result of the relocation, the EA licensee must compensate the incumbent for the difference. Costs associated with the relocation process can fall into several categories. First, the incumbent must be compensated for any increased recurring costs associated with the replacement facilitates (*e.g.*, additional rental payments, increased utility fees). Second, increased maintenance costs must be taken into consideration when determining whether operating costs are comparable. For example, maintenance costs associated with analog systems may be higher than the costs of digital equipment because manufacturers are producing mostly digital equipment and analog replacement parts can be difficult to find. An EA licensee's obligation to pay increased operating costs will end five years after relocation has occurred.

(e)–(f) [Reserved]

[62 FR 41217, July 31, 1997, as amended at 77 FR 28798, May 16, 2012]

Subpart T—Regulations Governing Licensing and Use of Frequencies in the 220–222 MHz Band

SOURCE: 56 FR 19603, Apr. 29, 1991, unless otherwise noted.

§ 90.701 Scope.

(a) Frequencies in the 220–222 MHz band are available for land mobile and fixed use for both Government and non-Government operations. This subpart supplements part 1, subpart F of this chapter which establishes the requirements and conditions under which commercial and private radio stations may be licensed in the Wireless Telecommunications Services. The provisions of this subpart contain additional pertinent information for current and prospective licensees specific to the 220–222 MHz band.

(b)(1) Licensees granted initial authorizations for operations in the 220–222 MHz band from among applications filed on or before May 24, 1991 are referred to in this subpart as ''Phase I'' licensees;

(2) Applicants that filed initial applications for operations in the 220–222 MHz band on or before May 24, 1991 are referred to in this subpart as ''Phase I'' applicants; and

(3) All assignments, operations, stations, and systems of licensees granted authorizations from among applications filed for operations in the 220–222 MHz band on or before May 24, 1991 are referred to in this subpart as ''Phase I'' assignments, operations, stations, and systems, respectively.

(c)(1) Licensees granted initial authorizations for operations in the 220–222 MHz band from among applications filed after May 24, 1991 are referred to in this subpart as ''Phase II'' licensees;

(2) Applicants that filed initial applications for operations in the 220–222 MHz band after May 24, 1991 are referred to in this subpart as ''Phase II'' applicants; and

(3) All assignments, operations, stations, and systems of licensees granted

authorizations from among applications filed for operations in the 220–222 MHz band after May 24, 1991 are referred to in this subpart as ''Phase II'' assignments, operations, stations, and systems, respectively.

(d) The rules in this subpart apply to both Phase I and Phase II licensees, applicants, assignments, operations, stations, and systems, unless otherwise specified.

[62 FR 15993, Apr. 3, 1997, as amended at 63 FR 68971, Dec. 14, 1998]

§ 90.703 Eligibility.

The following persons are eligible for licensing in the 220–222 MHz band.

(a) Any person eligible for licensing under subparts B or C of this part.

(b) Any person proposing to provide communications service to any person eligible for licensing under subparts B or C of this part, on a not-for-profit, cost-shared basis.

(c) Any person eligible under this part proposing to provide on a commercial basis, station and ancillary facilities for the use of individuals, federal government agencies and persons eligible for licensing under subparts B or C of this part.

[56 FR 19603, Apr. 29, 1991, as amended at 60 FR 15495, Mar. 24, 1995; 62 FR 18935, Apr. 17, 1997]

§ 90.705 Forms to be used.

Phase II applications for EA, Regional, or Nationwide radio facilities under this subpart must be prepared in accordance with §§ 1.2105 and 1.2107 of this chapter. Phase II applications for radio facilities operating on public safety/mutual aid channels (Channels 161 through 170) or emergency medical channels (Channels 181 through 185) under this subpart must be prepared on FCC Form 601 and submitted or filed in accordance with § 1.913 of this chapter.

[63 FR 68971, Dec. 14, 1998, as amended at 67 FR 45375, July 9, 2002]

§ 90.709 Special limitations on amendment of applications and on assignment or transfer of authorizations licensed under this subpart.

(a) Except as indicated in paragraph (b) of this section, the Commission will not consent to the following:

(1) Any request to amend an application so as to substitute a new entity as the applicant;

(2) Any application to assign or transfer a license for a Phase I, non-nationwide system prior to the completion of construction of facilities; or

(3) Any application to transfer or assign a license for a Phase I nationwide system before the licensee has constructed at least 40 percent of the proposed system pursuant to the provisions of § 90.725(a) or § 90.725(h), as applicable.

(b) The Commission will grant the applications described in paragrpah (a) of this section if:

(1) the request to amend an application or to transfer or assign a license does not involve a substantial change in the ownership or control or the applicant; or

(2) The changes in the ownership or control of the applciant are involuntary due to the original applicant's insolvency, bankruptcy, incapacity, or death.

(c) The assignee or transferee of a Phase I nationwide system is subject to the construction benchmarks and reporting requirements of § 90.725. The assignee or transferee of a Phase I nationwide system is not subject to the entry criteria described in § 90.713.

(d) A licensee may partially assign any authorization in accordance with § 90.1019.

(e) The assignee or transferee of a Phase II system is subject to the provisions of §§ 90.1017 and 1.2111(a) of this chapter.

[56 FR 19603, Apr. 29, 1991, as amended at 57 FR 32449, July 22, 1992; 62 FR 15993, Apr. 3, 1997; 63 FR 49295, Sept. 15, 1998]

§ 90.711 Processing of Phase II applications.

(a) Phase II applications for authorizations on Channels 166 through 170 and Channels 181 through 185 will be processed on a first-come, first-served basis. When multiple applications are filed on the same day for these frequencies in the same geographic area, and insufficient frequencies are available to grant all applications (i.e., if all applications were granted, violation of the station separation provisions of § 90.723(k) of this part would result),

these applications will be considered mutually exclusive.

(1) All applications will first be considered to determine whether they are substantially complete and acceptable for filing. If so, they will be assigned a file number and put in pending status. If not, they will be dismissed.

(2) Except as otherwise provided in this section, all applications in pending status will be processed in the order in which they are received, determined by the date on which the application was received by the Commission in its Gettysburg, Pennsylvania office (or the address set forth at § 1.1102 of this chapter for applications requiring the fees established by part 1, subpart G of this chapter).

(3) Each application that is accepted for filing will then be reviewed to determine whether it can be granted. Frequencies will be assigned by the Commission pursuant to the provisions of § 90.723.

(4) An application which is dismissed will lose its place in the processing line.

(b) All applications for Channels 161 through 165 that comply with the applicable rules of this part shall be granted. Licensees operating on such channels shall cooperate in the selection and use of frequencies and resolve any instances of interference in accordance with the provisions of § 90.173.

(c) Phase II applications for authorization on all non-Government channels other than Channels 161 through 170 and 181 through 185 shall be processed in accordance with the provisions of subpart W of this part.

[62 FR 15993, Apr. 3, 1997, as amended at 63 FR 32590, June 12, 1998; 63 FR 68971, Dec. 14, 1998]

§ 90.713 Entry criteria.

(a) As set forth in § 90.717, four 5-channel blocks are available for nationwide, commercial use to non-Government, Phase I applicants. Applicants for these nationwide channel blocks must comply with paragraphs (b), (c), and (d) of this section.

(b)(1) An applicant must include certification that, within ten years of receiving a license, it will construct a minimum of one base station in at least 70 different geographic areas designated in the application; that base stations will be located in a minimum of 28 of the 100 urban areas listed in § 90.741; and that each base station will have all five assigned nationwide channels constructed and placed in operation (regularly interacting with mobile and/or portable units).

(2) An applicant must include certification that it will meet the construction requirements set forth in § 90.725.

(3) An applicant must include a ten-year schedule detailing plans for construction of the proposed system.

(4) An applicant must include an itemized estimate of the cost of constructing 40 percent of the system and operating the system during the first four years of the license term.

(5) An applicant must include proof that the applicant has sufficient financial resources to construct 40 percent of the system and operate the proposed land mobile system for the first four years of the license term; *i.e.*, that the applicant has net current assets sufficient to cover estimated costs or a firm financial commitment sufficient to cover estimated costs.

(c) An applicant relying on personal or internal resources for the showing required in paragraph (b) of this section must submit independently audited financial statements certified within one year of the date of the application showing net current assets sufficient to meet estimated construction and operating costs. An applicant must also submit an unaudited balance sheet, current within 60 days of the date of submission, that clearly shows the continued availability of sufficient net current assets to construct and operate the proposed system, and a certification by the applicant or an officer of the applicant organization attesting to the validity of the balance sheet.

(d) An applicant submitting evidence of a firm financial commitment for the showing required in paragraph (b) of this section must obtain the commitment from a bona fide commercially acceptable source, *e.g.*, a state or federally chartered bank or savings and loan institution, other recognized financial institution, the financial arm of a capital equipment supplier, or an investment banking house. If the lender is not a state or federally chartered bank

or savings and loan institution, other recognized financial institution, the financial arm of a capital equipment supplier, or an investment banking house, the lender must also demonstrate that it has funds available to cover the total commitments it has made. The lender's commitment shall contain a statement that the lender:

(1) Has examined the financial condition of the applicant including an audited financial statement, and has determined that the applicant is creditworthy;

(2) Has examined the financial viability of the proposed system for which the applicant intends to use the commitment; and

(3) Is willing, if the applicant is seeking a Phase I, commercial nationwide license, to provide a sum to the applicant sufficient to cover the realistic and prudent estimated costs of construction of 40 percent of the system and operation of the system for the first four years of the license term.

(e) A Phase II applicant for authorization in a geographic area for Channels 166 through 170 in the public safety/mutual aid category may not have any interest in another pending application in the same geographic area for Channels 166 through 170 in the public safety/mutual aid category, and a Phase II applicant for authorization in a geographic area for channels in the emergency medical category may not have any interest in another pending application in the same geographic area for channels in the emergency medical category.

[62 FR 15994, Apr. 3, 1997, as amended at 62 FR 18935, Apr. 17, 1997]

§ 90.715 Frequencies available.

(a) The following table indicates the channel designations of frequencies available for assignment to eligible applicants under this subpart. Frequencies shall be assigned in pairs, with base station frequencies taken from the 220–221 MHz band with corresponding mobile and control station frequencies being 1 MHz higher and taken from the 221–222 MHz band. Only the lower half of the frequency pair(s) is listed in the table. Use of these frequencies in the Mexican and Canadian border areas is subject to coordination with those countries. See paragraph (c) of this section for special provisions concerning use in the Mexico border area.

TABLE OF 220–222 MHZ CHANNEL DESIGNATIONS

Channel No.	Base frequency (MHz)
1	220.0025
2	.0075
3	.0125
4	.0175
5	.0225
6	.0275
7	.0325
8	.0375
9	.0425
10	.0475
11	.0525
12	.0575
13	.0625
14	.0675
15	.0725
16	.0775
17	.0825
18	.0875
19	.0925
20	.0975
21	220.1025
22	.1075
23	.1125
24	.1175
25	.1225
26	.1275
27	.1325
28	.1375
29	.1425
30	.1475
31	.1525
32	.1575
33	.1625
34	.1675
35	.1725
36	.1775
37	.1825
38	.1875
39	.1925
40	.1975
41	220.2025
42	.2075
43	.2125
44	.2175
45	.2225
46	.2275
47	.2325
48	.2375
49	.2425
50	.2475
51	.2525
52	.2575
53	.2625
54	.2675
55	.2725
56	.2775
57	.2825
58	.2875
59	.2925
60	.2975
61	220.3025
62	.3075
63	.3125
64	.3175

TABLE OF 220–222 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
65	.3225
66	.3275
67	.3325
68	.3375
69	.3425
70	.3475
71	.3525
72	.3575
73	.3625
74	.3675
75	.3725
76	.3775
77	.3825
78	.3875
79	.3925
80	.3975
81	220.4025
82	.4075
83	.4125
84	.4175
85	.4225
86	.4275
87	.4325
88	.4375
89	.4425
90	.4475
91	.4525
92	.4575
93	.4625
94	.4675
95	.4725
96	.4775
97	.4825
98	.4875
99	.4925
100	.4975
101	220.5025
102	.5075
103	.5125
104	.5175
105	.5225
106	.5275
107	.5325
108	.5375
109	.5425
110	.5475
111	.5525
112	.5575
113	.5625
114	.5675
115	.5725
116	.5775
117	.5825
118	.5875
119	.5925
120	.5975
121	220.6025
122	.6075
123	.6125
124	.6175
125	.6225
126	.6275
127	.6325
128	.6375
129	.6425
130	.6475
131	.6525
132	.6575
133	.6625
134	.6675

TABLE OF 220–222 MHZ CHANNEL DESIGNATIONS—Continued

Channel No.	Base frequency (MHz)
135	.6725
136	.6775
137	.6825
138	.6875
139	.6925
140	.6975
141	220.7025
142	.7075
143	.7125
144	.7175
145	.7225
146	.7275
147	.7325
148	.7375
149	.7425
150	.7475
151	.7525
152	.7575
153	.7625
154	.7675
155	.7725
156	.7775
157	.7825
158	.7875
159	.7925
160	.7975
161	220.8025
162	.8075
163	.8125
164	.8175
165	.8225
166	.8275
167	.8325
168	.8375
169	.8425
170	.8475
171	.8525
172	.8575
173	.8625
174	.8675
175	.8725
176	.8775
177	.8825
178	.8875
179	.8925
180	.8975
181	220.9025
182	.9075
183	.9125
184	.9175
185	.9225
186	.9275
187	.9325
188	.9375
189	.9425
190	.9475
191	.9525
192	.9575
193	.9625
194	.9675
195	.9725
196	.9775
197	.9825
198	.9875
199	.9925
200	220.9975

(b) The 200 channels are divided into three sub-bands as follows:

Channel No.	Sub-band	Frequencies (MHz)
1–40	A	220.0025–220.1975/221.0025–221.1975
41–160	C	220.2025–220.7975/221.2025–221.7975
161–200	B	220.8025–220.9975/221.8025–221.9975

(c) *U.S./Mexico border area.* (1) Channels 16–30, 45–60, 76–90, 106–120, 136–145, 156–165, 178–194 are available for primary use within the United States within 120 km (74.6 mi) of the Mexican border, subject to the power and antenna height conditions specified in § 90.729 and the use restrictions specified in §§ 90.717–90.721.

(2) Channels 195–200 are available to both the United States and Mexico in the border area on an unprotected basis. Use is limited to a maximum effective radiated power (ERP) of 2 watts and a maximum antenna height of 6.1 meters (20 ft) above ground.

(3) Channels allotted for primary Mexican use (1–15, 31–45, 61–75, 91–105, 121–135, 146–155, and 166–177) may be used in the border area subject to the condition that the power flux density not exceed − 86 dB(W/m^2) at or beyond any point on the border. Stations operating under this provision will be considered secondary and will not be granted protection from harmful interference from stations that have primary use of the frequencies.

[56 FR 19603, Apr. 29, 1991, as amended at 57 FR 55148, Nov. 24, 1992]

§ 90.717 Channels available for nationwide systems in the 220–222 MHz band.

(a) Channels 51–60, 81–90, and 141–150 are 10-channel blocks available to non-Government applicants only for nationwide Phase II systems.

(b) Channels 21–25, 26–30, 151–155, and 156–160 are 5-channel blocks available to non-Government applicants only for nationwide, commercial Phase I systems.

(c) Channels 111–115 and 116–120 are 5-channel blocks available for Government nationwide use only.

[62 FR 15994, Apr. 3, 1997]

§ 90.719 Individual channels available for assignment in the 220–222 MHz band.

(a) Channels 171 through 200 are available to both Government and non-Government Phase I applicants, and may be assigned singly or in contiguous channel groups.

(b) Channels 171 through 180 are available for any use by Phase I applicants consistent with this subpart.

(c) Channels 181 through 185 are set aside in Phase II for emergency medical use for applicants that meet the eligibility criteria of § 90.20(a)(1)(iii) or § 90.20(a)(2)(xiii).

(d) Channels 161 through 170 and 181 through 185 are the only 220–222 MHz channels available to Phase II non-nationwide, Government users.

[62 FR 15994, Apr. 3, 1997, as amended at 62 FR 18936, Apr. 17, 1997]

§ 90.720 Channels available for public safety/mutual aid.

(a) Part 90 licensees who meet the eligibility criteria of §§ 90.20(a)(1), 90.20(a)(2)(i), 90.20(a)(2)(ii), 90.20(a)(2)(iii), 90.20(a)(2)(iv), 90.20(a)(2)(vii), 90.20(a)(2)(ix), or 90.20(a)(2)(xiii) are authorized by this rule to use mobile and/or portable units on Channels 161–170 throughout the United States, its territories, and possessions to transmit:

(1) Communications relating to the immediate safety of life;

(2) Communications to facilitate interoperability among entities eligible under §§ 90.20(a)(1), 90.20(a)(2)(i), 90.20(a)(2)(ii), 90.20(a)(2)(iii), 90.20(a)(2)(iv), 90.20(a)(2)(vii), 90.20(a)(2)(ix), and 90.20(a)(2)(xiii); or

(3) Communications on behalf of and by members of organizations established for disaster relief purposes having an emergency radio communications plan (*i.e.*, licensees eligible under § 90.20(a)(2)(vii)) for the transmission of communications relating to the safety of life or property, the establishment and maintenance of temporary relief

facilities, and the alleviation of emergency conditions during periods of actual or impending emergency, or disaster, until substantially normal conditions are restored; for limited training exercises incidental to an emergency radio communications plan, and for necessary operational communications of the disaster relief organization or its chapter affiliates.

(b) Any Government entity and any non-Government entity eligible to obtain a license under §§ 90.20(a)(1), 90.20(a)(2)(i), 90.20(a)(2)(ii), 90.20(a)(2)(iii), 90.20(a)(2)(iv), 90.20(a)(2)(vii), 90.20(a)(2)(ix), or 90.20(a)(2)(xiii) is also eligible to obtain a license for base/mobile operations on Channels 161 through 170. Base/mobile or base/portable communications on these channels that do not relate to the immediate safety of life or to communications interoperability among the above-specified entities, may only be conducted on a secondary non-interference basis to such communications.

[62 FR 18936, Apr. 17, 1997]

§ 90.721 Other channels available for non-nationwide systems in the 220–222 MHz band.

(a) The channel groups listed in the following Table are available to both Government and non-Government Phase I applicants for trunked operations or operations of equivalent or greater efficiency for non-commercial or commercial operations.

TABLE 1—PHASE I TRUNKED CHANNEL GROUPS

Group No.	Channel Nos.
1	1–31–61–91–121
2	2–32–62–92–122
3	3–33–63–93–123
4	4–34–64–94–124
5	5–35–65–95–125
6	6–36–66–96–126
7	7–37–67–97–127
8	8–38–68–98–128
9	9–39–69–99–129
10	10–40–70–100–130
11	11–41–71–101–131
12	12–42–72–102–132
13	13–43–73–103–133
14	14–44–74–104–134
15	15–45–75–105–135
16	16–46–76–106–136
17	17–47–77–107–137
18	18–48–78–108–138
19	19–49–79–109–139
20	20–50–80–110–140

(b) The channels listed in the following Table are available to non-Government applicants for Phase II assignments in Economic Areas (EAs) and Regional Economic Area Groupings (REAGs) (*see* §§ 90.761 and 90.763).

TABLE 2—PHASE II EA AND REGIONAL CHANNEL ASSIGNMENTS

Assignment	Assignment area	Group Nos. (from table 1)	Channel Nos.
A	EA	2 and 13.	
B	EA	3 and 16.	
C	EA	5 and 18.	
D	EA	8 and 19.	
E	EA		171–180
F	REAG	1, 6, and 11.	
G	REAG	4, 9, and 14.	
H	REAG	7, 12, and 17.	
I	REAG	10, 15, and 20.	
J	REAG		186–200

[62 FR 15995, Apr. 3, 1997]

§ 90.723 Selection and assignment of frequencies.

(a) Phase II applications for frequencies in the 220–222 MHz band shall specify whether their intended use is for 10-channel nationwide systems, 10-channel EA systems, 15-channel Regional systems, public safety/mutual aid use, or emergency medical use. Phase II applicants for frequencies for public safety/mutual aid use or emergency medical use shall specify the number of frequencies requested. All frequencies in this band will be assigned by the Commission.

(b) Phase II channels will be assigned pursuant to §§ 90.717, 90.719, 90.720, 90.721, 90.761 and 90.763.

(c) Phase II applicants for public safety/mutual aid and emergency medical channels will be assigned only the number of channels justified to meet their requirements.

(d) Phase I base or fixed station receivers utilizing 221–222 MHz frequencies assigned from Sub-band A as designated in § 90.715(b) will be geographically separated from those Phase I base or fixed station transmitters utilizing 220–221 MHz frequencies removed 200 kHz or less and assigned from Sub-band B as follows:

GEOGRAPHIC SEPARATION OF SUB-BAND A; BASE OR FIXED STATION RECEIVERS AND SUB-BAND B; BASE OR FIXED STATION TRANSMITTERS EFFECTIVE

Separation distance (kilometers)	Radiated power (watts) [1]
0.0–0.3	([2])
0.3–0.5	5
0.5–0.6	10
0.6–0.8	20
0.8–2.0	25
2.0–4.0	50
4.0–5.0	100
5.0–6.0	200
Over 6.0	500

[1] Transmitter peak envelope power shall be used to determine effective radiated power.

[2] Stations separated by 0.3 km or less shall not be authorized. This table does not apply to the low-power channels 196–200. See § 90.729(c).

(e) Phase II licensees authorized on 220–221 MHz frequencies assigned from Sub-band B will be required to geographically separate their base station or fixed station transmitters from the base station or fixed station receivers of Phase I licensees authorized on 221–222 MHz frequencies 200 kHz removed or less in Sub-band A in accordance with the Table in paragraph (d) of this section. Such Phase II licensees will not be required to geographically separate their base station or fixed station transmitters from receivers associated with additional transmitter sites that are added by such Phase I licensees in accordance with the provisions of § 90.745(a).

(f) Phase II licensees with base or fixed stations transmitting on 220–221 MHz frequencies assigned from Sub-band B and Phase II licensees with base or fixed stations receiving on Sub-band A 221–222 MHz frequencies, if such transmitting and receiving frequencies are 200 kHz or less removed from one another, will be required to coordinate the location of their base stations or fixed stations to avoid interference and to cooperate to resolve any instances of interference in accordance with the provisions of § 90.173(b).

(g) Phase I licensees with base or fixed stations transmitting on 220–221 MHz frequencies assigned from Sub-band B and Phase I licensees with base or fixed stations receiving on Sub-band A 221–222 MHz frequencies (if such transmitting and receiving frequencies are 200 kHz or less removed from one another) that add, remove, or modify station sites in accordance with the provisions of § 90.745(a) will be required to coordinate such actions with one another to avoid interference and to cooperate to resolve any instances of interference in accordance with the provisions of § 90.173(b).

(h) Phase I licensees with base or fixed stations transmitting on 220–221 MHz frequencies assigned from Sub-band B that add, remove, or modify station sites in accordance with the provisions of § 90.745(a) will be required to coordinate such actions with Phase II licensees with base or fixed stations receiving on Sub-band A 221–222 MHz frequencies 200 kHz or less removed.

(i) A mobile station is authorized to transmit on any frequency assigned to its associated base station. Mobile units not associated with base stations (*see* § 90.720(a)) must operate on ''mobile'' channels.

(j) A licensee's fixed station is authorized to transmit on any of the licensee's assigned base station frequencies or mobile station frequencies.

(k) Except for nationwide assignments, the separation of co-channel Phase I base stations, or fixed stations transmitting on base station frequencies, shall be 120 kilometers. Except for Phase I licensees seeking license modification in accordance with the provisions of §§ 90.751 and 90.753, shorter separations between such stations will be considered by the Commission on a case-by-case basis upon submission of a technical analysis indicating that at least 10 dB protection will be provided to an existing Phase I station's predicted 38 dBu signal level contour. The existing Phase I station's predicted 38 dBu signal level contour shall be calculated using the F(50,50) field strength chart for Channels 7–13 in § 73.699 (Fig. 10) of this chapter, with a 9 dB correction factor for antenna height differential. The 10 dB protection to the existing Phase I station's predicted 38 dBu signal level contour shall be calculated using the F(50,10) field strength chart for Channels 7–13 in § 73.699 (Fig. 10a) of this chapter,

with a 9 dB correction factor for antenna height differential.

[62 FR 15995, Apr. 3, 1997, as amended at 62 FR 18936, Apr. 17, 1997; 63 FR 32590, June 12, 1998]

§ 90.725 Construction requirements for Phase I licensees.

(a) Licensees granted commercial nationwide authorizations will be required to construct base stations and placed those base stations in operation as follows:

(1) In at least 10 percent of the geographic areas designated in the application within two years of initial license grant, including base stations in at least seven urban areas listed in § 90.741 of this part;

(2) In at least 40 percent of the geographic areas designated in the application within four years of initial license grant, including base stations in at least 28 urban areas listed in § 90.741 of this part;

(3) In at least 70 percent of the geographic areas designated in the application within six years of initial license grant, including base stations in at least 28 urban areas listed in § 90.741 of this part;

(4) In all geographic areas designated in the application within ten years of initial license grant, including base stations in at least 28 urban areas listed in § 90.741 of this part.

(b) Licensees not meeting the two and four year criteria shall lose the entire authorization, but will be permitted a six month period to convert the system to non-nationwide channels, if such channels are available.

(c) Licensees not meeting the six and ten year criteria shall lose the authorizations for the facilities not constructed, but will retain exclusivity for constructed facilities.

(d) Each commercial nationwide licensee must file a system progress report on or before the anniversary date of the grant of its license after 2, 4, 6 and 10 years, demonstrating compliance with the relevant construction benchmark criteria.

(1) An overall status report of the system, that must include, but need not be limited to:

(i) A list of all sites at which base stations have been constructed, with antenna heights and effective radiated power specified for each site;

(ii) A list of all other known base station sites at which construction has not been completed; and

(iii) A construction and operational schedule for the next five-year period, including any known changes to the plan for construction and operation submitted with the licensee's original application for the system.

(2) An analysis of the system's compliance with the requirements of paragraph (a) of this section, with documentation to support representations of completed construction, including, but not limited to:

(i) Equipment purchase orders and contracts;

(ii) Lease or purchase contracts relating to antenna site arrangements;

(iii) Equipment and antenna identification (serial) numbers; and

(iv) Service agreements and visits.

(e) Beginning with its second license term, each nationwide licensee must file a progress report once every five years on the anniversary date of the grant of the first renewal of its authorization, including the information required by paragraph (d)(1) of this section.

(f) Licensees authorized Phase I non-nationwide systems, or authorized on Channels 161 through 170 or Channels 181 through 185, must construct their systems (*i.e.*, have all specified base stations constructed with all channels) and place their systems in operation, or commence service in accordance with the provisions of § 90.167, within twelve months of the initial license grant date. Authorizations for systems not constructed and placed in operation, or having commenced service, within twelve months from the date of initial license grant cancel automatically.

(g) A licensee that loses authorization for some or all of its channels due to failure to meet construction deadlines or benchmarks may not reapply for nationwide channels in the same category or for non-nationwide channels in the same category in the same geographic area for one year from the date the Commission takes final action affirming that those channels have been cancelled.

(h) The requirements and conditions of paragraphs (a) through (e) and paragraph (g) of this section apply to nationwide licensees that construct and operate stations for fixed or paging operations on a primary basis instead of, or in addition to, stations for land mobile operations on a primary basis except that, in satisfying the base station construction and placed in operation requirements of paragraph (a) of this section and the system progress report requirements of paragraphs (d) and (e) of this section, licensees operating stations for fixed operation on a primary basis instead of, or in addition to, stations for land mobile or paging operations on a primary basis in a given geographic area may demonstrate how such fixed stations are providing substantial service to the public in those geographic areas.

[56 FR 19603, Apr. 29, 1991, as amended at 56 FR 32517, July 17, 1991; 57 FR 32450, July 22, 1992; 58 FR 36363, July 7, 1993; 62 FR 15996, Apr. 3, 1997; 63 FR 49295, Sept. 15, 1998]

§ 90.727 Extended implementation schedules for Phase I licensees.

Except for nationwide and commercial systems, a period of up to three (3) years may be authorized for constructing and placing a system in operation if:

(a) The applicant submits justification for an extended implementation period. The justification must include reasons for requiring an extended construction period, the proposed construction schedule (with milestones), and must show either that:

(1) The proposed system will serve a large fleet of mobile units and will involve a multi-year cycle for its planning, approval, funding, purchase, and construction; or

(2) The proposed system will require longer than 8 months to place in operation because of its purpose, size, or complexity; or

(3) The proposed system is to be part of a coordinated or integrated area-wide system which will require more than 8 months to construct; or

(4) The applicant is a local governmental agency and demonstrates that the government involved is required by law to follow a multi-year cycle for planning, approval, funding, and purchasing the proposed system.

(b) Authorizations under this section are conditioned upon the licensee's compliance with the submitted extended implementation schedule. Failure to meet the schedule will result in loss of authorizations for facilities not constructed.

[56 FR 19603, Apr. 29, 1991, as amended at 56 FR 32517, July 17, 1991]

§ 90.729 Limitations on power and antenna height.

(a) The permissible effective radiated power (ERP) with respect to antenna heights for land mobile, paging, or fixed stations transmitting on frequencies in the 220–221 MHz band shall be determined from the following Table. These are maximum values and applicants are required to justify power levels requested.

ERP VS. ANTENNA HEIGHT TABLE [2]

Antenna height above average terrain (HAAT), meters	Effective radiated power, watts [1]
Up to 150	500
150 to 225	250
225 to 300	125
300 to 450	60
450 to 600	30
600 to 750	20
750 to 900	15
900 to 1050	10
Above 1050	5

[1] Transmitter PEP shall be used to determine ERP.
[2] These power levels apply to stations used for land mobile, paging, and fixed operations.

(b) The maximum permissible ERP for mobile units is 50 watts. Portable units are considered as mobile units. Licensees operating fixed stations or paging base stations transmitting on frequencies in the 221–222 MHz band may not operate such fixed stations or paging base stations at power levels greater than 50 watts ERP, and may not transmit from antennas that are higher than 7 meters above average terrain, except that transmissions from antennas that are higher than 7 meters above average terrain will be permitted if the effective radiated power of such transmissions is reduced below 50 watts ERP by 20 $\log_{10}(h/7)$ dB, where h is the height above average terrain (HAAT), in meters.

(c) Base station and fixed station transmissions on base station transmit Channels 196–200 are limited to 2 watts ERP and a maximum antenna HAAT of 6.1 meters (20 ft). Licensees authorized on these channels may operate at power levels above 2 watts ERP or with a maximum antenna HAAT greater than 6.1 meters (20 ft) if:

(1) They obtain the concurrence of all Phase I and Phase II licensees with base stations or fixed stations receiving on base station receive Channels 1–40 and located within 6 km of their base station or fixed station; and

(2) Their base station or fixed station is not located in the United States/Mexico or United States/Canada border areas.

[62 FR 15996, Apr. 3, 1997, as amended at 63 FR 32590, June 12, 1998]

§ 90.733 Permissible operations.

(a) Systems authorized in the 220–222 MHz band may be used:

(1)(i) For government and non-government land mobile operations, *i.e.*, for base/mobile and mobile relay transmissions, on a primary basis; or

(ii) For the following operations instead of or in addition to a licensee's land mobile operations: One-way or two-way paging operations on a primary basis by all non-Government Phase II licensees, fixed operations on a primary basis by all non-Government Phase II licensees and all Government licensees, one-way or two-way paging or fixed operations on a primary basis by all non-Government Phase I licensees, except that before a non-Government Phase I licensee may operate one-way or two-way paging or fixed systems on a primary basis instead of or in addition to its land mobile operations, it must meet the following requirements:

(A) A nationwide Phase I licensee must;

(*1*) Meet its two-year benchmark for the construction of its land mobile system base stations as prescribed in § 90.725(a); and

(*2*) Provide a new 10-year schedule, as required in § 90.713(b)(3), for the construction of the fixed and/or paging system it intends to construct instead of, or in addition to, its nationwide land mobile system; and

(*3*) Certify that the financial showings and all other certifications provided in demonstrating its ability to construct and operate its nationwide land mobile system, as required in §§ 90.713 (b), (c) and (d), remain applicable to the nationwide system it intends to construct consisting of fixed and/or paging operations on a primary basis instead of, or in addition to, its land mobile operations; or

(*4*) In lieu of providing the requirements of paragraph (a)(1)(ii)(A)(*3*) of this section, provide the financial showings and all other certifications required in §§ 90.713 (b), (c) and (d) to demonstrate its ability to construct and operate a nationwide system consisting of fixed and/or paging operations on a primary basis instead of, or in addition to, its land mobile operations.

(B) A non-nationwide Phase I licensee must first meet the requirement to construct its land mobile base station and place it in operation, or commence service (in accordance with § 90.167) as prescribed in § 90.725(f) or § 90.727, as applicable.

(2) Only by persons who are eligible for facilities under either this subpart or in the pools included in subpart B or C of this part.

(3) Except for licensees classified as CMRS providers under part 20 of this chapter, only for the transmission of messages or signals permitted in the services in which the participants are eligible.

(b) See § 90.720 of this part for permissible operations on mutual aid channels.

(c) For operations requiring less than a 4 kHz bandwidth, more than a single emission may be utilized within the authorized bandwidth. In such cases, the frequency stability requirements of § 90.213 do not apply, but the out-of-band emission limits of § 90.210(f) must be met.

(d) Licensees, except for licensees authorized on Channels 161 through 170 and 181 through 185, may combine any number of their authorized, contiguous channels (including channels derived from multiple authorizations) to form channels wider than 5 kHz.

(e) In combining authorized, contiguous channels (including channels derived from multiple authorizations) to form channels wider than 5 kHz, the emission limits in § 90.210(f) must be met only at the outermost edges of the contiguous channels. Transmitters shall be tested to confirm compliance with this requirement with the transmission located as close to the band edges as permitted by the design of the transmitter. The frequency stability requirements in § 90.213 shall apply only to the outermost of the contiguous channels authorized to the licensee. However, the frequency stability employed for transmissions operating inside the outermost contiguous channels must be such that the emission limits in § 90.210(f) are met over the temperature and voltage variations prescribed in § 2.995 of this chapter.

(f) A Phase I non-nationwide licensee operating a paging base station, or a fixed station transmitting on frequencies in the 220–221 MHz band, may only operate such stations at the coordinates of the licensee's authorized land mobile base station.

(g) The transmissions of a Phase I non-nationwide licensee's paging base station, or fixed station transmitting on frequencies in the 220–221 MHz band, must meet the requirements of §§ 90.723(d), (g), (h), and (k), and 90.729, and such a station must operate at the effective radiated power and antenna height-above-average-terrain prescribed in the licensee's land mobile base station authorization.

(h) Licensees using 220–222 MHz spectrum for geophysical telemetry operations are authorized to operate fixed stations on a secondary, non-interference basis to licensees operating in the 220–222 MHz band on a primary basis under the conditions that such licensees:

(1) Provide notification of their operations to co-channel non-nationwide Phase I licensees with an authorized base station, or fixed station transmitting on frequencies in the 220–221 MHz band, located within 45 km of the secondary licensee's station, to co-channel, Phase II EA or Regional licensee authorized to operate in the EA or REAG in which the secondary licensee's station is located, and to co-channel Phase I or Phase II nationwide licensees;

(2) Operate only at temporary locations in accordance with the provisions of § 1.931 of this chapter;

(3) Not transmit at a power level greater than one watt ERP;

(4) Not transmit from an antenna higher than 2 meters (6.6 feet) above ground; and

(5) Not operate on Channels 111 through 120, 161 through 170, or 181 through 185.

(i) All licensees constructing and operating base stations or fixed stations on frequencies in the 220–222 MHz band must:

(1) Comply with any rules and international agreements that restrict use of their authorized frequencies, including the provisions of § 90.715 relating to U.S./Mexican border areas;

(2) Comply with the provisions of § 17.6 of this chapter with regard to antenna structures; and

(3) Comply with the provisions of §§ 1.1301 through 1.1319 of this chapter with regard to actions that may or will have a significant impact on the quality of the human environment.

[56 FR 19603, Apr. 29, 1991, as amended at 56 FR 32517, July 17, 1991; 57 FR 32450, July 22, 1992; 59 FR 59967, Nov. 21, 1994; 62 FR 15997, Apr. 3, 1996; 62 FR 18936, Apr. 17, 1997; 63 FR 32591, June 12, 1998; 63 FR 68971, Dec. 14, 1998]

§ 90.735 Station identification.

(a) Except for nationwide systems authorized in the 220–222 MHz band, station identification is required pursuant to § 90.425 of this part.

(b) Trunked systems shall employ an automatic device to transmit the call sign of the base station at 30 minute intervals. The identification shall be made on the lowest frequency in the base station trunked group assigned to the licensee. If this frequency is in use at the time identification is required, the identification may be made at the termination of the communication in progress on this frequency.

(c) Station identification may be by voice or International Morse Code. If the call sign is transmitted in International Morse Code, it must be at a rate of between 15 to 20 words per minute, and by means of tone modulation of the transmitter, with the tone

frequency being between 800 and 1000 hertz.

(d) Digital transmissions may also be identified by digital transmission of the station call sign. A licensee that identifies its station in this manner must provide the Commission, upon its request, information (such as digital codes and algorithms) sufficient to decipher the data transmission to ascertain the call sign transmitted.

[56 FR 19603, Apr. 29, 1991, as amended at 62 FR 15997, Apr. 3, 1997]

§ 90.739 Number of systems authorized in a geographical area.

There is no limit on the number of licenses that may be authorized to a single licensee.

[62 FR 46214, Sept. 2, 1997]

§ 90.741 Urban areas for Phase I nationwide systems.

Licensees of Phase I nationwide systems must construct base stations, or fixed stations transmitting on frequencies in the 220–221 MHz band, in a minimum of 28 of the urban areas listed in the following Table within ten years of initial license grant. A base station, or fixed station, is considered to be within one of the listed urban areas if it is within 60 kilometers (37.3 miles) of the specified coordinates (coordinates are referenced to North American Datum 1983 (NAD83)).

TABLE

Urban area	North latitude	West longitude
New York, New York-Northeastern New Jersey	40°45′06.4″	73°59′37.5″
Los Angeles-Long Beach, California	34°03′15.0″	118°14′31.3″
Chicago, Illinois-Northwestern Indiana	41°52′28.1″	87°38′22.2″
Philadelphia, Pennsylvania/New Jersey	39°56′58.4″	75°09′19.6″
Detroit, Michigan	42°19′48.1″	83°02′56.7″
Boston, Massachusetts	42°21′24.4″	71°03′23.2″
San Francisco-Oakland, California	37°46′38.7″	122°24′43.9″
Washington, DC/Maryland/Virginia	38°53′51.4″	77°00′31.9″
Dallas-Fort Worth, Texas	32°47′09.5″	96°47′38.0″
Houston, Texas	29°45′26.8″	95°21′37.8″
St Louis, Missouri/Illinois	38°37′45.2″	90°12′22.4″
Miami, Florida	25°46′38.4″	80°11′31.2″
Pittsburgh, Pennsylvania	40°26′19.2″	79°59′59.2″
Baltimore, Maryland	39°17′26.4″	76°36′43.9″
Minneapolis-St Paul, Minnesota	44°58′56.9″	93°15′43.8″
Cleveland, Ohio	41°29′51.2″	81°41′49.5″
Atlanta, Georgia	33°45′10.4″	84°23′36.7″
San Diego, California	32°42′53.2″	117°09′24.1″
Denver, Colorado	39°44′58.0″	104°59′23.9″
Seattle-Everett, Washington	47°36′31.4″	122°20′16.5″
Milwaukee, Wisconsin	43°02′19.0″	87°54′15.3″
Tampa, Florida	27°56′59.1″	82°27′24.3″
Cincinnati, Ohio/Kentucky	39°06′07.2″	84°30′34.8″
Kansas City, Missouri/Kansas	39°04′56.0″	94°35′20.8″
Buffalo, New York	42°52′52.2″	78°52′20.1″
Phoenix, Arizona	33°27′12.2″	112°04′30.5″
San Jose, California	37°20′15.8″	121°53′27.8″
Indianapolis, Indiana	39°46′07.2″	86°09′46.0″
New Orleans, Louisiana	29°56′53.7″	90°04′10.3″
Portland, Oregon/Washington	45°31′05.4″	122°40′39.3″
Columbus, Ohio	39°57′47.2″	83°00′16.7″
Hartford, Connecticut	41°46′12.4″	72°40′47.3″
San Antonio, Texas	29°25′37.8″	98°29′07.1″
Rochester, New York	43°09′41.2″	77°36′20.0″
Sacramento, California	38°34′56.7″	121°29′44.8″
Memphis, Tennessee/Arkansas/Mississippi	35°08′46.3″	90°03′13.3″
Louisville, Kentucky/Indiana	38°14′47.3″	85°45′48.9″
Providence-Pawtucket-Warwick, RI/MA	41°49′32.4″	71°24′39.2″
Salt Lake City, Utah	40°45′22.8″	111°53′28.8″
Dayton, Ohio	39°45′32.2″	84°11′42.8″
Birmingham, Alabama	33°31′01.4″	86°48′36.0″
Bridgeport, Connecticut	41°10′49.3″	73°11′20.4″
Norfolk-Portsmouth, Virginia	36°51′10.5″	76°17′19.8″
Albany-Schenectady-Troy, New York	42°39′01.3″	73°44′59.4″
Oklahoma City, Oklahoma	35°28′26.2″	97°31′05.1″

TABLE—Continued

Urban area	North latitude	West longitude
Nashville-Davidson, Tennessee	36°09′33.2″	86°46′55.0″
Toledo, Ohio/Michigan	41°39′14.2″	83°32′38.8″
New Haven, Connecticut	41°18′25.3″	72°55′28.4″
Honolulu, Hawaii	21°18′48.6″	157°51′50.1″
Jacksonville, Florida	30°19′44.9″	81°39′41.3″
Akron, Ohio	41°05′00.2″	81°30′43.4″
Syracuse, New York	43°03′04.2″	76°09′12.7″
Worcester, Massachusetts	42°15′37.3″	71°48′15.3″
Tulsa, Oklahoma	36°09′12.3″	95°59′35.0″
Allentown-Bethlehem-Easton, PA/NJ	40°36′11.4″	75°28′04.7″
Richmond, Virginia	37°32′15.5″	77°26′07.9″
Orlando, Florida	28°32′43.0″	81°22′37.3″
Charlotte, North Carolina	35°13′44.5″	80°50′44.3″
Springfield-Chicopee-Holyoke, MA/CT	42°06′21.3″	72°35′30.3″
Grand Rapids, Michigan	42°58′03.1″	85°40′13.1″
Omaha, Nebraska/Iowa	41°15′42.0″	95°56′15.1″
Youngstown-Warren, Ohio	41°05′57.2″	80°39′01.3″
Greenville, South Carolina	34°50′50.4″	82°24′00.4″
Flint, Michigan	43°00′50.1″	83°41′32.8″
Wilmington, Delaware/New Jersey/Maryland	39°44′46.4″	75°32′49.7″
Raleigh-Durham/North Carolina	35°46′38.5″	78°38′20.0″
West Palm Beach, Florida	26°42′37.2″	80°03′06.1″
Oxnard-Simi Valley-Ventura, California	34°12′00.0″	119°11′03.4″
Fresno, California	36°44′11.8″	119°47′14.5″
Austin, Texas	30°16′09.8″	97°44′38.0″
Tucson, Arizona	32°13′15.3″	110°58′10.3″
Lansing, Michigan	42°44′01.1″	84°33′14.9″
Knoxville, Tennessee	35°57′39.3″	83°55′06.7″
Baton Rouge, Louisiana	30°26′58.7″	91°11′00.4″
El Paso, Texas	31°45′36.4″	106°29′13.0″
Tacoma, Washington	47°14′58.4″	122°26′19.4″
Mobile, Alabama	30°41′36.7″	88°02′33.0″
Harrisburg, Pennsylvania	40°15′43.3″	76°52′57.9″
Albuquerque, New Mexico	35°05′01.2″	106°39′07.1″
Canton, Ohio	40°47′50.2″	81°22′36.4″
Chattanooga, Tennessee/Georgia	35°02′41.3″	85°18′31.8″
Wichita, Kansas	37°41′30.1″	97°20′17.2″
Charleston, South Carolina	32°46′35.6″	79°55′52.3″
San Juan, Puerto Rico	18°27′52.8″	66°06′58.6″
Little Rock-North Little Rock, Arkansas	34°44′42.3″	92°16′37.5″
Las Vegas, Nevada	36°10′19.9″	115°08′40.0″
Columbia, South Carolina	34°00′02.6″	81°01′59.3″
Fort Wayne, Indiana	41°04′21.2″	85°08′25.9″
Bakersfield, California	35°22′30.9″	119°01′19.4″
Davenport-Rock Island-Moline, IA/IL	41°31′00.1″	90°35′00.5″
Shreveport, Louisiana	32°30′46.5″	93°44′58.6″
Des Moines, Iowa	41°35′14.0″	93°37′00.8″
Peoria, Illinois	40°41′42.1″	89°35′33.4″
Newport News-Hampton, Virginia	36°59′30.5″	76°25′58.8″
Jackson, Mississippi	32°17′56.5″	90°11′06.3″
Augusta, Georgia/South Carolina	33°28′20.5″	81°57′59.4″
Spokane, Washington	47°39′31.6″	117°25′36.8″
Corpus Christi, Texas	27°47′52.1″	97°23′46.0″
Madison, Wisconsin	43°04′23.0″	89°22′55.4″
Colorado Springs, Colorado	38°50′07.0″	104°49′17.9″

NOTE: The geographic coordinates are originally from the Department of Commerce publication of 1947: ''Air-line Distances Between Cities in the United States'' and from data supplied by the National Geodetic Survey and converted to the reference system of North American Datum 1983 using the National Geodetic Survey's NADCON program. The coordinates are determined by using the first city mentioned as the center of the urban area.

[63 FR 68971, Dec. 14, 1998]

§ 90.743 Renewal expectancy.

(a) All licensees seeking renewal of their authorizations at the end of their

license term must file a renewal application in accordance with the provisions of § 1.949 of this chapter. Licensees must demonstrate, in their application, that:

(1) They have provided ''substantial'' service during their past license term. ''Substantial'' service is defined in this rule as service that is sound, favorable, and substantially above a level of mediocre service that just might minimally warrant renewal; and

(2) They have substantially complied with applicable FCC rules, policies, and the Communications Act of 1934, as amended.

(b) In order to establish its right to a renewal expectancy, a renewal applicant must submit a showing explaining why it should receive a renewal expectancy. At a minimum, this showing must include:

(1) A description of its current service in terms of geographic coverage and population served;

(2) For an EA, Regional, or nationwide licensee, an explanation of its record of expansion, including a timetable of the construction of new stations to meet changes in demand for service;

(3) A description of its investments in its system;

(4) Copies of all FCC orders finding the licensee to have violated the Communications Act or any FCC rule or policy; and

(5) A list of any pending proceedings that relate to any matter described in this paragraph.

(c) Phase I non-nationwide licensees have license terms of 10 years, and therefore must meet these requirements 10 years from the date of initial authorization in order to receive a renewal expectancy. Phase I nationwide licensees and all Phase II licensees have license terms of 10 years, and therefore must meet these requirements 10 years from the date of initial authorization in order to receive a renewal expectancy.

[62 FR 15997, Apr. 3, 1997, as amended at 70 FR 61062, Oct. 20, 2005]

§ 90.745 Phase I licensee service areas.

(a) A Phase I licensee's service area shall be defined by the predicted 38 dBu service contour of its authorized base station or fixed station transmitting on frequencies in the 220–221 MHz band at its initially authorized location or at the location authorized in accordance with §§ 90.751, 90.753, 90.755 and 90.757 if the licensee has sought modification of its license to relocate its initially authorized base station. The Phase I licensee's predicted 38 dBu service contour is calculated using the F(50,50) field strength chart for Channels 7–13 in § 73.699 (Fig. 10) of this chapter, with a 9 dB correction factor for antenna height differential, and is based on the authorized effective radiated power (ERP) and antenna height-above-average-terrain of the licensee's base station or fixed station. Phase I licensees are permitted to add, remove, or modify transmitter sites within their existing service area without prior notification to the Commission so long as their predicted 38 dBu service contour is not expanded. The incumbent licensee must, however, notify the Commission within 30 days of the completion of any changes in technical parameters or additional stations constructed through a minor modification of its license. Such notification must be made by submitting the appropriate FCC form and must include the appropriate filing fee, if any. These minor modification applications are not subject to public notice and petition to deny requirements or mutually exclusive applications.

(b) Phase I licensees holding authorizations for service areas that are contiguous and overlapping may exchange these authorizations for a single license, authorizing operations throughout the contiguous and overlapping service areas. Phase I licensees exercising this license exchange option must submit specific information for each of their external base station sites.

[63 FR 32591, June 12, 1998]

§ 90.751 Minor modifications of Phase I, non-nationwide licenses.

Phase I non-nationwide licensees will be given an opportunity to seek modification of their license to relocate their initially authorized base station, i.e., locate their base station at a site

other than its initially authorized location. The conditions under which modifications will be granted and the procedures for applying for license modifications are described in §§ 90.753, 90.757 and 1.929 of this chapter. For CMRS licensees, these modifications will be treated as minor modifications in accordance with § 1.929 of this chapter.

[63 FR 68973, Dec. 14, 1998]

§ 90.753 Conditions of license modification.

(a) Except as provided in paragraphs (b), and (c) of this section, a Phase I non nationwide licensee may modify its authorization to relocate its authorized base station up to one-half the distance over 120 km toward any co-channel licensee's initially authorized base station, to a maximum distance of 8 km.

(b) A Phase I non-nationwide licensee with an authorized base station located outside a Designated Filing Area (DFA) (see Public Notice, DA 86–173, 52 FR 1302 (January 12, 1987)) may modify its authorization to relocate its authorized base station up to one-half the distance over 120 km toward any co-channel licensee's initially authorized base station, to a maximum distance of 25 km, so long as the base station is relocated no more than 8 km inside of any DFA (i.e., no more than 8 km from the nearest DFA boundary line).

(c) A Phase I non-nationwide licensee that has been granted Special Temporary Authority (STA) to operate at an alternative base station location may modify its authorization to seek permanent authorization at that location, regardless of whether locating the station at the STA site is in strict conformance with the provisions of paragraphs (a) and (b) of this section, if the licensee certifies that such a modification is in conformance with §§ 90.723 and 90.729 and:

(1) It has constructed its base station and has placed it in operation, or commenced service, at the STA site on or before January 26, 1996; or

(2) It has taken delivery of its base station transceiver on or before January 26, 1996.

(d) The application for a Phase I non-nationwide licensee proposing a base station modification resulting in less than 120 km separation from a co-channel licensee's initially authorized base station will be accepted by the Commission only with the consent of that co-channel licensee, as evidenced in a statement submitted concurrently with the licensee's application submission on FCC Form 601.

(e) The application of a Phase I non-nationwide licensee proposing a base station modification resulting in at least a 120 km separation from each co-channel licensee's initially authorized base station but more than one-half the distance over 120 km toward any co-channel licensee's initially authorized base station will be accepted by the Commission only with the consent of that co-channel licensee, as evidenced in a statement submitted concurrently with the licensee's submission on FCC Form 601.

[61 FR 3845, Feb. 2, 1996, as amended at 63 FR 68973, Dec. 14, 1998]

§ 90.757 Construction requirements.

(a) Except as provided in paragraph (b) of this section, a Phase I non-nationwide licensee that is granted modification of its authorization to relocate its base station must construct its base station and place it in operation, or commence service, on all authorized channels on or before August 15, 1996, or within 12 months of initial grant date, whichever is later. The authorization of a licensee that does not construct its base station and place it in operation, or commence service, by this date, cancels automatically and must be returned to the Commission.

(b) A Phase I non-nationwide licensee with a base station authorized at a location north of Line A must construct its base station and place it in operation, or commence service, on all authorized channels within 12 months of initial grant date, or within 12 months of the date of the release of the terms of an agreement between the United States and Canadian governments on the sharing of 220–222 MHz spectrum between the two countries, whichever is later. The authorization of a licensee that does not construct its base station and place it in operation, or commence

service, by this date, cancels automatically and must be returned to the Commission.

[61 FR 3845, Feb. 2, 1996]

POLICIES GOVERNING THE LICENSING AND USE OF PHASE II EA, REGIONAL AND NATIONWIDE SYSTEMS

SOURCE: 62 FR 15998, 15999, Apr. 3, 1997, unless otherwise noted.

§ 90.761 EA and Regional licenses.

(a) EA licenses for spectrum blocks listed in Table 2 of § 90.721(b) are available in 175 Economic Areas (EAs) as defined in § 90.7.

(b) Regional licenses for spectrum blocks listed in Table 2 of § 90.721(b) are available in six Regional Economic Area Groupings (REAGs) as defined in § 90.7.

§ 90.763 EA, Regional and nationwide system operations.

(a) A nationwide licensee authorized pursuant to § 90.717(a) may construct and operate any number of land mobile or paging base stations, or fixed stations, anywhere in the Nation, and transmit on any of its authorized channels, provided that the licensee complies with the requirements of § 90.733(i).

(b) An EA or Regional licensee authorized pursuant to § 90.761 may construct and operate any number of land mobile or paging base stations, or fixed stations, anywhere within its authorized EA or REAG, and transmit on any of its authorized channels, provided that:

(1) The licensee affords protection to all authorized co-channel Phase I nonnationwide base stations as follows:

(i) The EA or Regional licensee must locate its land mobile or paging base stations, or fixed stations transmitting on base station transmit frequencies, at least 120 km from the land mobile or paging base stations, or fixed stations transmitting on base station transmit frequencies, of co-channel Phase I licensees, except that separations of less than 120 km shall be considered on a case-by-case basis upon submission by the EA or Regional licensee of:

(A) A technical analysis demonstrating at least 10 dB protection to the predicted 38 dBu service contour of the co-channel Phase I licensee, *i.e.*, demonstrating that the predicted 28 dBu interfering contour of the EA or Regional licensee's base station or fixed station does not overlap the predicted 38 dBu service contour of the co-channel Phase I licensee's base station or fixed station; or

(B) A written letter from the co-channel Phase I licensee consenting to a separation of less than 120 km, or to less than 10 dB protection to the predicted 38 dBu service contour of the licensee's base station or fixed station.

(ii) The Phase I licensee's predicted 38 dBu service contour referred to in paragraph (a)(1)(i) of this section is calculated using the F(50,50) field strength chart for Channels 7–13 in § 73.699 (Fig. 10) of this chapter, with a 9 dB correction factor for antenna height differential, and is based on the licensee's authorized effective radiated power and antenna height-above-average-terrain. The EA or Regional licensee's predicted 28 dBu interfering contour referred to in paragraph (a)(1)(i) of this section is calculated using the F(50,10) field strength chart for Channels 7–13 in § 73.699 (Fig. 10a) of this chapter, with a 9 dB correction factor for antenna height differential.

(2) The licensee complies with the requirements of § 90.733(i).

(3) The licensee limits the field strength of its base stations, or fixed stations operating on base station transmit frequencies, in accordance with the provisions of § 90.771.

(4) Upon request by a licensee or the Commission, an EA or regional licensee shall furnish the technical parameters, location and coordinates of the completion of the addition, removal, relocation or modification of any of its facilities within the EA or region. The EA or regional licensee must provide such information within ten (10) days of receiving written notification.

(c) In the event that the authorization for a co-channel Phase I base station, or fixed station transmitting on base station transmit frequencies, within an EA or Regional licensee's border is terminated or revoked, the EA or Regional licensee's channel obligations to such stations will cease

upon deletion of the facility from the Commission's official licensing records, and the EA or Regional licensee then will be able to construct and operate without regard to the previous authorization.

[62 FR 15998, 15999, Apr. 3, 1997, as amended at 63 FR 68973, Dec. 14, 1998]

§ 90.765 Licenses term for Phase II licenses.

Nationwide licenses authorized pursuant to § 90.717(a), EA and Regional licenses authorized pursuant to § 90.761, and non-nationwide licenses authorized pursuant to §§ 90.720 and 90.719(c) will be issued for a term not to exceed ten years.

§ 90.767 Construction and implementation of EA and Regional licenses.

(a) An EA or Regional licensee must construct a sufficient number of base stations (*i.e.*, base stations for land mobile and/or paging operations) to provide coverage to at least one-third of the population of its EA or REAG within five years of the issuance of its initial license and at least two-thirds of the population of its EA or REAG within ten years of the issuance of its initial license. Licensees may, in the alternative, provide substantial service to their licensed areas at the appropriate five- and ten-year benchmarks.

(b) Licensees must notify the Commission in accordance with § 1.946 of this chapter of compliance with the Construction requirements of paragraph (a) of this section.

(c) Failure by an EA or Regional licensee to meet the construction requirements of paragraph (a) of this section, as applicable, will result in automatic cancellation of its entire EA or Regional license. In such instances, EA or Regional licenses will not be converted to individual, site-by-site authorizations for already constructed stations.

(d) EA and Regional licensees will not be permitted to count the resale of the services of other providers in their EA or REAG, *e.g.*, incumbent, Phase I licensees, to meet the construction requirement of paragraph (a) of this section, as applicable.

(e) EA and Regional licensees will not be required to construct and place in operation, or commence service on, all of their authorized channels at all of their base stations or fixed stations.

[69 FR 75172, Dec. 15, 2004]

§ 90.769 Construction and implementation of Phase II nationwide licenses.

(a) A nationwide licensee must construct a sufficient number of base stations (*i.e.*, base stations for land mobile and/or paging operations) to provide coverage to a composite area of at least 750,000 square kilometers or 37.5 percent of the United States population within five years of the issuance of its initial license and a composite area of at least 1,500,000 square kilometers or 75 percent of the United States population within ten years of the issuance of its initial license. Licensees may, in the alternative, provide substantial service to their licensed areas at the appropriate five- and ten-year benchmarks.

(b) Licensees must notify the Commission in accordance with § 1.946 of this chapter of compliance with the Construction requirements of paragraph (a) of this section.

(c) Failure by a nationwide licensee to meet the construction requirements of paragraph (a) of this section, as applicable, will result in automatic cancellation of its entire nationwide license. In such instances, nationwide licenses will not be converted to individual, site-by-site authorizations for already constructed stations.

(d) Nationwide licensees will not be required to construct and place in operation, or commence service on, all of their authorized channels at all of their base stations or fixed stations.

[69 FR 75173, Dec. 15, 2004]

§ 90.771 Field strength limits.

(a) The transmissions from base stations, or fixed stations transmitting on base station transmit frequencies, of EA and Regional licensees may not exceed a predicted 38 dBu field strength at their EA or REAG border. The predicted 38 dBu field strength is calculated using the F(50,50) field strength chart for Channels 7–13 in § 73.699 (Fig.

10) of this chapter, with a 9 dB correction factor for antenna height differential.

(b) Licensees will be permitted to exceed the predicted 38 dBu field strength required in paragraph (a) of this section if all affected, co-channel EA and Regional licensees agree to the higher field strength.

(c) EA and Regional licensees must coordinate to minimize interference at or near their EA and REAG borders, and must cooperate to resolve any instances of interference in accordance with the provisions of § 90.173(b).

Subpart U—Competitive Bidding Procedures for 900 MHz Specialized Mobile Radio Service

SOURCE: 60 FR 48919, Sept. 21, 1995, unless otherwise noted.

§ 90.801 900 MHz SMR spectrum subject to competitive bidding.

Mutually exclusive initial applications for 900 MHz SMR service licenses are subject to competitive bidding. The general competitive bidding procedures set forth in part 1, subpart Q of this chapter will apply unless otherwise provided in this subpart.

[67 FR 43575, July 9, 2002]

§§ 90.802–90.803 [Reserved]

§ 90.804 Aggregation of 900 MHz SMR licenses.

The Commission will license each 10-channel block in the 900 MHz SMR spectrum separately. Applicants may aggregate across spectrum blocks within the limitation specified in § 20.6(b) of this chapter.

§§ 90.805–90.806 [Reserved]

§ 90.807 Submission of upfront payments.

Each bidder in the 900 MHz SMR auction will be required to submit an upfront payment of $0.02 per MHz per pop, for the maximum number of licenses (in terms of MHz-pops) on which it intends to bid.

[67 FR 45376, July 9, 2002]

§ 90.808 [Reserved]

§ 90.809 License grants.

MTA licenses pursued through competitive bidding will be granted pursuant to the requirements specified in § 1.945 of this chapter.

[67 FR 45376, July 9, 2002]

§ 90.810 Bidding credits for small businesses.

A winning bidder that qualifies as a small business, as defined in § 90.814(b)(1), or a consortium of small businesses may use a bidding credit of 15 percent to lower the cost of its winning bid on any of the blocks identified in § 90.617(d), Table 4B. A winning bidder that qualifies as a small business, as defined in § 90.814(b)(2), or a consortium of small businesses may use a bidding credit of 10 percent to lower the cost of its winning bid on any of the blocks identified in § 90.617(d), Table 4B.

[68 FR 43000, July 21, 2003]

§ 90.811 Reduced down payment for licenses won by small businesses.

Each winning bidder that qualifies as a small business shall make a down payment equal to ten percent of its winning bid (less applicable bidding credits); a winning bidder shall bring its total amount on deposit with the Commission (including upfront payment) to five percent of its net winning bid within five (5) business days after the auction closes, and the remainder of the down payment (five percent) shall be paid within five (5) business days following Public Notice that the Commission is prepared to award the license. The Commission generally will grant the license within ten (10) business days after receipt of the remainder of the down payment.

§ 90.812 [Reserved]

§ 90.813 Partitioned licenses and disaggregated spectrum.

(a) *Eligibility*. Parties seeking approval for partitioning and disaggregation shall request an authorization for partial assignment of a license pursuant to § 1.948 of this chapter.

(b) *Technical standards*—(1) *Partitioning*. In the case of partitioning, requests for authorization for partial assignment of a license must include, as attachments, a description of the partitioned service area and a calculation of the population of the partitioned service area and the licensed geographic service area. The partitioned service area shall be defined by coordinate points at every 3 degrees along the partitioned service area unless an FCC recognized service area is utilized (*i.e.*, Major Trading Area, Basic Trading Area, Metropolitan Service Area, Rural Service Area or Economic Area) or county lines are followed. The geographic coordinates must be specified in degrees, minutes, and seconds to the nearest second of latitude and longitude and must be based upon the 1927 North American Datum (NAD27). Applicants may supply geographical coordinates based on 1983 North American Datum (NAD83) in addition to those required (NAD27). In the case where an FCC recognized service area or county lines are utilized, applicants need only list the specific area(s) (through use of FCC designations or county names) that constitute the partitioned area.

(2) *Disaggregation*. Spectrum may be disaggregated in any amount.

(3) *Combined partitioning and disaggregation*. The Commission will consider requests for partial assignment of licenses that propose combinations of partitioning and disaggregation.

(c) *Installment payments*—(1) *Apportioning the balance on installment payment plans*. When a winning bidder elects to pay for its license through an installment payment plan pursuant to § 90.812, and partitions its licensed area or disaggregates spectrum to another party, the outstanding balance owed by the licensee on its installment payment plan (including accrued and unpaid interest) shall be apportioned between the licensee and partitionee or disaggregatee. Both parties will be responsible for paying their proportionate share of the outstanding balance to the U.S. Treasury. In the case of partitioning, the balance shall be apportioned based upon the ratio of the population of the partitioned area to the population of the entire original license area calculated based upon the most recent census data. In the case of disaggregation, the balance shall be apportioned based upon the ratio of the amount of spectrum disaggregated to the amount of spectrum allocated to the licensed area.

(2) *Parties not qualified for installment payment plans*. (i) The partitionee or disaggregatee shall, as a condition of the approval of the partial assignment application, pay its entire pro rata amount within 30 days of Public Notice conditionally granting the partial assignment application. Failure to meet this condition will result in a rescission of the grant of the partial assignment application.

(ii) The licensee shall be permitted to continue to pay its pro rata share of the outstanding balance and shall receive new financing documents (promissory note, security agreement) with a revised payment obligation, based on the remaining amount of time on the original installment payment schedule. These financing documents will replace the licensee's existing financing documents which shall be marked ''superseded'' and returned to the licensee upon receipt of the new financing documents. The original interest rate, established pursuant to § 1.2110(g)(3)(i) of this chapter at the time of the grant of the initial license in the market, shall continue to be applied to the licensee's portion of the remaining government obligation. The Commission will require, as a further condition to approval of the partial assignment application, that the licensee execute and return to the U.S. Treasury the new financing documents within 30 days of the Public Notice conditionally granting the partial assignment application. Failure to meet this condition will result in the automatic cancellation of the grant of the partial assignment application.

(iii) A default on the licensee's payment obligation will only affect the licensee's portion of the market.

(3) *Parties qualified for installment payment plans*. (i) Where both parties to a partitioning or disaggregation agreement qualify for installment payments, the partitionee or disaggregatee will be

permitted to make installment payments on its portion of the remaining government obligation, as calculated according to paragraph (d)(1) of this section.

(ii) Each party will be required, as a condition to approval of the partial assignment application, to execute separate financing documents (promissory note, security agreement) agreeing to pay their pro rata portion of the balance due (including accrued and unpaid interest) based upon the installment payment terms for which they qualify under the rules. The financing documents must be returned to the U.S. Treasury within thirty (30) days of the Public Notice conditionally granting the partial assignment application. Failure by either party to meet this condition will result in the automatic cancellation of the grant of the partial assignment application. The interest rate, established pursuant to § 1.2110(g)(3)(i) of this chapter at the time of the grant of the initial license in the market, shall continue to be applied to both parties' portion of the balance due. Each party will receive a license for their portion of the partitioned market or disaggregated spectrum.

(iii) A default on an obligation will only affect that portion of the market area held by the defaulting party.

(iv) Partitionees and disaggregatees that qualify for installment payment plans may elect to pay some of their pro rata portion of the balance due in a lump sum payment to the U.S. Treasury and to pay the remaining portion of the balance due pursuant to an installment payment plan.

(d) *License term.* The license term for a partitioned license area and for disaggregated spectrum shall be the remainder of the original licensee's license term as provided for in § 90.665(a).

(e) *Construction requirements*—(1) *Requirements for partitioning.* Parties seeking authority to partition must meet one of the following construction requirements:

(i) The partitionee may certify that it will satisfy the applicable construction requirements set forth in § 90.665 for the partitioned license area; or

(ii) The original licensee may certify that it has or will meet the construction requirements set forth in § 90.665 for the entire market. In that case, the partitionee must only meet the requirements for renewal of its license for the partitioned license area.

(iii) Applications requesting partial assignments of license for partitioning must include a certification by each geographic area 800 MHz SMR licenses in the lower 230 channels will be awarded to small entities, as that term is defined by the SBA.

(iv) Partitionees must submit supporting documents showing compliance with the respective construction requirements within the appropriate time frames set forth in § 90.665.

(v) Failure by any partitionee to meet its respective performance requirements will result in the automatic cancellation of the partitioned or disaggregated license without further Commission action.

(2) *Requirements for disaggregation.* Parties seeking authority to disaggregate must submit with their partial assignment application a certification signed by both parties stating which of the parties will be responsible for meeting the construction requirements for the market as set forth in § 90.665. Parties may agree to share responsibility for meeting the construction requirements. Parties that accept responsibility for meeting the construction requirements and later fail to do so will be subject to license forfeiture without further Commission action.

[62 FR 41219, July 31, 1997, as amended at 67 FR 45376, July 9, 2002; 68 FR 43001, July 21, 2003]

§ 90.814 Definitions.

(a) *Scope.* The definitions in this section apply to §§ 90.810 through 90.813, unless otherwise specified in those sections.

(b) A small business is an entity that either:

(1) Together with its affiliates, persons or entities that hold attributable interests in such entity, and their affiliates, has average gross revenues that are not more than $3 million for the preceding three years; or

(2) Together with its affiliates, persons or entities that hold attributable

interests in such entity, and their affiliates, has average gross revenues that are not more than $15 million for the preceding three years.

[60 FR 48919, Sept. 21, 1995, as amended at 67 FR 45376, July 9, 2002; 68 FR 43001, July 21, 2003]

§ 90.815 Records maintenance and definitions.

(a) *Records maintenance.* All winning bidders qualifying as small businesses, shall maintain at their principal place of business an updated file of ownership, revenue and asset information, including any documents necessary to establish eligibility as a small business, pursuant to § 90.814, and/or a consortium of small businesses. Licensees (and their successors in interest) shall maintain such files for the term of the license.

(b) *Definitions.* The term *small business* used in this section is defined in § 90.814.

[68 FR 43001, July 21, 2003]

§ 90.816 Criteria for comparative 900 MHz SMR renewal proceedings.

(a) *Ultimate issue.* The ultimate issue in comparative renewal proceedings will be to determine, in light of the evidence adduced in the proceeding, what disposition of the applications would best serve the public interest, convenience and necessity.

(b) *Renewal expectancies.* The most important comparative factor to be considered in a comparative 900 MHz SMR renewal proceeding is a major preference, commonly referred to as a ''renewal expectancy''.

(1) The 900 MHz SMR renewal applicant involved in a comparative renewal proceeding will receive a renewal expectancy, if its past record for the relevant license period demonstrates that:

(i) The renewal applicant has provided ''substantial'' service during its past license term. ''Substantial'' service is defined as service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal; and

(ii) The renewal applicant has substantially complied with applicable FCC rules, policies and the Communications Act of 1934, as amended.

(2) In order to establish its right to a renewal expectancy, a 900 MHz renewal applicant involved in a comparative renewal proceeding must submit a showing explaining why it should receive a renewal expectancy. At a minimum, this showing must include:

(i) A description of its current service in terms of geographic coverage and population served;

(ii) An explanation of its record of expansion, including a timetable of the construction of new base sites to meet changes in demand for SMR service;

(iii) A description of its investments in its 900 MHz SMR system; and

(iv) Copies of all FCC orders finding the licensee to have violated the Communications Act or any FCC rule or policy; and a list of any pending proceedings that relate to any matter described in paragraph (b)(2) of this section.

(3) In making its showing of entitlement to a renewal expectancy, a renewal applicant may claim credit for any system modification applications that were pending on the date it filed its renewal application. Such credit will not be allowed if the modification application is dismissed or denied.

[60 FR 55485, Nov. 1, 1995]

Subpart V—Competitive Bidding Procedures for 800 MHz Specialized Mobile Radio Service

SOURCE: 61 FR 6159, Feb. 16, 1996, unless otherwise noted.

§ 90.901 800 MHz SMR spectrum subject to competitive bidding.

Mutually exclusive initial applications for 800 MHz band licenses in Spectrum Blocks A through V are subject to competitive bidding. The general competitive bidding procedures set forth in part 1, subpart Q of this chapter will apply unless otherwise provided in this subpart.

[67 FR 45377, July 9, 2002]

§ 90.902 [Reserved]

§ 90.903 Competitive bidding mechanisms.

(a) *Sequencing*. The Wireless Telecommunications Bureau will establish and may vary the sequence in which 800 MHz SMR licenses for Spectrum Blocks A through V will be auctioned.

(b) *Grouping*. (1) All EA licenses for Spectrum Blocks A through V will be auctioned simultaneously, unless the Wireless Telecommunications Bureau announces, by Public Notice prior to the auction, an alternative method of grouping these licenses for auction.

(2) *Spectrum blocks D through V*. All EA licenses for Spectrum Blocks D through V will be auctioned by the following Regions:

(i) Region 1 (Northeast): The Northeast Region consists of the following MTAs: Boston-Providence, Buffalo-Rochester, New York, Philadelphia, and Pittsburgh.

(ii) Region 2 (South): The South Region consists of the following MTAs: Atlanta, Charlotte-Greensboro-Greenville-Raleigh, Jacksonville, Knoxville, Louisville-Lexington-Evansville, Nashville, Miami-Fort Lauderdale, Richmond-Norfolk, Tampa-St. Petersburg-Orlando, and Washington-Baltimore; and, Puerto Rico and United States Virgin Islands.

(iii) Region 3 (Midwest): The Midwest Region consists of the following MTAs: Chicago, Cincinnati-Dayton, Cleveland, Columbus, Des Moines-Quad Cities, Detroit, Indianapolis, Milwaukee, Minneapolis-St. Paul, and Omaha.

(iv) Region 4 (Central): The Central Region consists of the following MTAs: Birmingham, Dallas-Fort Worth, Denver, El Paso-Albuquerque, Houston, Kansas City, Little Rock, Memphis-Jackson, New Orleans-Baton Rouge, Oklahoma City, San Antonio, St. Louis, Tulsa, and Wichita.

(v) Region 5 (West): The West Region consists of the following MTAs: Honolulu, Los Angeles-San Diego, Phoenix, Portland, Salt Lake City, San Francisco-Oakland-San Jose, Seattle (including Alaska), and Spokane-Billings; and, American Samoa, Guam, and the Northern Mariana Islands.

[67 FR 45377, July 9, 2002]

§ 90.904 Aggregation of EA licenses.

The Commission will license each Spectrum Block A through V in the 800 MHz band separately. Applicants may aggregate across spectrum blocks within the limitations specified in § 20.6 of this chapter.

[62 FR 41221, July 31, 1997]

§ 90.905 [Reserved]

§ 90.909 License grants.

EA licenses pursued through competitive bidding procedures will be granted pursuant to the requirements specified in § 1.945 of this chapter.

[67 FR 45377, July 9, 2002]

§ 90.910 Bidding credits.

A winning bidder that qualifies as a very small business, as defined in § 90.912(b)(2), or a consortium of very small businesses may use a bidding credit of 35 percent to lower the cost of its winning bid on Spectrum Blocks A through V. A winning bidder that qualifies as a small business, as defined in § 90.912(b)(1), or a consortium of small businesses may use a bidding credit of 25 percent to lower the cost of its winning bid on Spectrum Blocks A through V.

[68 FR 43001, July 21, 2003]

§ 90.911 Partitioned licenses and disaggregated spectrum.

(a) *Eligibility*. Parties seeking approval for partitioning and disaggregation shall request an authorization for partial assignment of a license pursuant to § 90.153(c).

(b) *Technical standards*—(1) *Partitioning*. In the case of partitioning, requests for authorization for partial assignment of a license must include, as attachments, a description of the partitioned service area and a calculation of the population of the partitioned service area and the licensed geographic service area. The partitioned service area shall be defined by coordinate points at every 3 degrees along the partitioned service area unless an FCC recognized service area is utilized (*i.e.*, Major Trading Area, Basic Trading Area, Metropolitan Service Area, Rural Service Area or Economic Area) or

county lines are followed. The geographic coordinates must be specified in degrees, minutes, and seconds to the nearest second of latitude and longitude and must be based upon the 1983 North American Datum (NAD83). In the case where an FCC recognized service area or county lines are utilized, applicants need only list the specific area(s) (through use of FCC designations or county names) that constitute the partitioned area.

(2) *Disaggregation*. Spectrum may be disaggregated in any amount.

(3) *Combined partitioning and disaggregation*. The Commission will consider requests for partial assignment of licenses that propose combinations of partitioning and disaggregation.

(c) *License term*. The license term for a partitioned license area and for disaggregated spectrum shall be the remainder of the original licensee's license term as provided for in §§ 90.629(a), 90.665(a) or 90.685(a).

(d) *Construction and channel usage requirements—incumbent licensees*. Parties seeking to acquire a partitioned license or disaggregated spectrum from an incumbent licensee will be required to construct and commence ''service to subscribers'' all facilities acquired through such transactions within the original construction deadline for each facility as set forth in §§ 90.629 and 90.683. Failure to meet the individual construction deadline will result in the automatic termination of the facility's authorization.

(e) *Construction and channel usage requirements—EA licensees*—(1) *Licensees in channel blocks A, B and C*—(i) *Requirements for partitioning*. (A) The partitionee may certify that it will satisfy the applicable construction requirements set forth in § 90.685(c) for the partitioned license area; or

(B) The original licensee may certify that it has or will meet the three and five year construction requirements set forth in § 90.685(c) for the entire market.

(C) Applications requesting partial assignments of license for partitioning must include a certification by each party as to which of the above options they select.

(D) Partitionees must submit supporting documents showing compliance with the respective construction requirements within the appropriate time frames set forth in § 90.685(c).

(E) Failure by any partitionee to meet its respective construction requirements will result in the automatic cancellation of the partitioned license without further Commission action.

(ii) *Requirements for disaggregation*. Parties seeking authority to disaggregate spectrum from an EA licensee in Spectrum Blocks A, B and C must meet one of the following channel use requirements:

(A) The partitionee may certify that it will satisfy the channel usage requirements set forth in § 90.685(d) for the disaggregated spectrum; or

(B) The original licensee may certify that it has or will meet the channel usage requirements as set forth in § 90.685(d) for the entire spectrum block. In that case, the disaggregatee must only satisfy the requirements for ''substantial service,'' as set forth in § 90.685(c), for the disaggregated spectrum within five years of the license grant.

(C) Applications requesting partial assignments of license for disaggregation must include a certification by each party as to which of the above options they select.

(D) Disaggregatees must submit supporting documents showing compliance with the respective channel usage requirements within the appropriate time frames set forth in § 90.685(c).

(E) Failure by any disaggregatee to meet its respective channel usage requirements will result in the automatic cancellation of the disaggregated license without further Commission action.

(2) *Licensees in channel blocks D through V*—(i) *Requirements for partitioning*. Parties seeking authority to partition an EA license must meet one of the following construction requirements:

(A) The partitionee may certify that it will satisfy the applicable construction requirements set forth in § 90.685(c) for the partitioned license area; or

(B) The original licensee may certify that it has or will meet the construction requirements set forth in § 90.685(c) for the entire market.

(C) Applications requesting partial assignments of license for partitioning must include a certification by each party as to which of the above options they select.

(D) Partitionees must submit supporting documents showing compliance with the respective construction requirements within the appropriate time frames set forth in § 90.685(c).

(E) Failure by any partitionee to meet its respective construction requirements will result in the automatic cancellation of the partitioned license without further Commission action.

(ii) *Requirements for disaggregation.* Parties seeking authority to disaggregate must submit with their partial assignment application a certification signed by both parties stating which of the parties will be responsible for meeting the construction requirements for the market as set forth in § 90.685. Parties may agree to share responsibility for meeting the construction requirements. Parties that accept responsibility for meeting the construction requirements and later fail to do so will be subject to license forfeiture without further Commission action.

(f) *Certification concerning relocation of incumbent licensees.* Parties seeking approval of a partitioning or disaggregation agreement pursuant to this section must include a certification with their partial assignment of license application as to which party will be responsible for meeting the incumbent relocation requirements set forth at § 90.699.

[62 FR 41221, July 31, 1997, as amended at 63 FR 68973, Dec. 14, 1998; 67 FR 45377, July 9, 2002]

§ 90.912 Definitions.

(a) *Scope.* The definitions in this section apply to §§ 90.910 and 90.911, unless otherwise specified in those sections.

(b) *Small and very small businesses.* (1) A *small business* is an entity that together with its affiliates and controlling interests, has average gross revenues that do not exceed $15 million for the three preceding years; or

(2) A *very small business* is an entity that together with its affiliates and controlling interests, has average gross revenues that do not exceed $3 million for the three preceding years.

[62 FR 41222, July 31, 1997, as amended at 67 FR 45377, July 9, 2002; 68 FR 43001, July 21, 2003]

§ 90.913 Record maintenance and definitions.

(a) *Records maintenance.* All winning bidders qualifying as small or very small businesses, shall maintain at their principal place of business an updated file of ownership, revenue and asset information, including any document necessary to establish eligibility as a small or very small business, as defined in § 90.912, and/or consortium of small businesses (or consortium of very small businesses). Licensees (and their successors in interest) shall maintain such files for the term of the license.

(b) *Definitions.* The terms *small and very small business* used in this section are defined in § 90.912.

[68 FR 43001, July 21, 2003]

Subpart W—Competitive Bidding Procedures for the 220 MHz Service

SOURCE: 62 FR 15999, Apr. 3, 1997, unless otherwise noted.

§ 90.1001 220 MHz service subject to competitive bidding.

Mutually exclusive initial applications for 200 MHz geographic area licenses are subject to competitive bidding. The general competitive bidding procedures set forth in part 1, subpart Q of this chapter will apply unless otherwise provided in this subpart.

[67 FR 45377, July 9, 2002]

§§ 90.1003–90.1015 [Reserved]

§ 90.1017 Bidding credits for small businesses and very small businesses.

A winning bidder that qualifies as a small business, as defined in § 90.1021(b)(1), or a consortium of small businesses may use a bidding credit of

25 percent to lower the cost of its winning bid. A winning bidder that qualifies as a very small business, as defined in §90.1021(b)(2), or a consortium of very small businesses may use a bidding credit of 35 percent to lower the cost of its winning bid.

[68 FR 43001, July 21, 2003]

§90.1019 Eligibility for partitioned licenses.

(a) *Eligibility*. Parties seeking approval for partitioning and disaggregation shall request authorization for partial assignment of a license pursuant to §1.948 of this chapter. The Commission will consider applications that propose combinations of partitioning and disaggregation.

(1) Phase I non-nationwide licensees may apply to partition their licensed geographic service area or disaggregate their licensed spectrum after constructing their systems and placing their in operation or commencing service in accordance with the provisions in §90.725(f) of this part.

(2) Phase I nationwide licensees may apply to partition their licensed geographic service area or disaggregate their licensed spectrum after constructing at least 40 percent of the geographic areas designated in their applications in accordance with the provisions in §90.725(a) of this part.

(3) Phase II licensees may apply to partition their licensed geographic service area or disaggregate their licensed spectrum at any time following the grant of their licenses.

(4) Phase I and Phase II licensees authorized to operate on Channels 161 through 170 or Channels 181 through 185 are not eligible to partition their geographic service area or disaggregate their licensed spectrum.

(b) *Partitioning*. In the case of partitioning, applicants and licensees must file FCC Form 603 pursuant to §1.948 and list the partitioned service area on a schedule to the application. The geographic coordinates must be specified in degrees, minutes, and seconds to the nearest second of latitude and longitude and must be based upon the 1983 North American Datum (NAD83). In the case where an FCC-recognized service area or county lines are utilized, applicants need only list the specific area(s) through use of FCC designations or county names that constitute the partitioned area.

(c) *License term*. The license term for a partitioned license area and for disaggregated spectrum shall be the remainder of the original licensee's license term.

(d) *Construction requirements*. (1) Requirements for partitioning. Parties seeking authority to partition must meet one of the following construction requirements:

(i) The partitionee may certify that it will satisfy the applicable construction requirements set forth in §§90.767 or 90.769 of this part, as applicable, for the partitioned license area; or

(ii) The original licensee may certify that it has or will meet its five-year construction requirement and will meet the ten-year construction requirement, as set forth in §§90.767 or 90.769 of this part, as applicable, for the entire license area. In that case, the partitionee must only satisfy the requirements for ''substantial service,'' as set forth in §90.743(a)(1) of this part, for the partitioned license area by the end of the original ten-year license term of the licensee.

(iii) Failure by any partitionee to meet its respective construction requirements will result in the automatic cancellation of the partitioned license without further Commission action (*see* §1.946).

(2) *Requirements for disaggregation*. Parties seeking authority to disaggregate spectrum must certify in FCC Form 601 which of the parties will be responsible for meeting the five-year and ten-year construction requirements for the particular market as set forth in §90.767 or §90.769, as applicable. Parties may agree to share responsibility for meeting the construction requirements. If one party accepts responsibility for meeting the construction requirements and later fails to do so, then its license will cancel automatically without further Commission action. If both parties accept responsibility for meeting the construction requirements and later fail to do so, then

both their licenses will cancel automatically without further Commission action.

[63 FR 49295, Sept. 15, 1998, as amended at 63 FR 68973, Dec. 14, 1998; 65 FR 39560, June 27, 2000]

§ 90.1021 Definitions concerning competitive bidding process.

(a) *Scope*. The definitions in this section apply to §§ 90.1001 through 90.1025, unless otherwise specified in those sections.

(b) *Small and very small business*. (1) A *small business* is an entity that, together with its affiliates and controlling interests, has average gross revenues that are not more than $15 million for the preceding three years.

(2) A *very small business* is an entity that, together with its affiliates and controlling interests, has average gross revenues that are not more than $3 million for the preceding three years.

[62 FR 15999, Apr. 3, 1997, as amended at 67 FR 46376, July 9, 2002; 68 FR 43001, July 21, 2003]

§ 90.1023 Records maintenance and definitions.

(a) *Records maintenance*. All winning bidders qualifying as small or very small businesses shall maintain at their principal place of business an updated file of ownership, revenue, and asset information, including any documents necessary to establish eligibility as a small business or very small business, as defined in § 90.1021, and/or consortium of small businesses (or consortium of very small businesses). Licensees (and their successors-in-interest) shall maintain such files for the term of the license. Applicants that do not obtain the license(s) for which they applied shall maintain such files until the grant of such license(s) is final, or one year from the date of the filing of their short-form application (FCC Form 175), whichever is earlier.

(b) *Definitions*. The terms small and very small business used in this section are defined in § 90.1021.

[68 FR 43001, July 21, 2003]

§ 90.1025 Limitations on settlements.

The consideration that an individual or an entity will be permitted to receive for agreeing to withdraw an application or a petition to deny will be limited by the provisions set forth in § 1.2105(c) of this chapter.

[67 FR 46378, July 9, 2002]

Subpart X—Competitive Bidding Procedures for Location and Monitoring Service

SOURCE: 63 FR 40664, July 30, 1998, unless otherwise noted.

§ 90.1101 Location and Monitoring Service subject to competitive bidding.

Mutually exclusive initial applications for multilateration Location and Monitoring Service licenses are subject to competitive bidding. The general competitive bidding procedures set forth in part 1, subpart Q of this chapter will apply unless otherwise provided in this subpart.

[67 FR 45378, July 9, 2002]

§ 90.1103 Designated entities.

(a) This section addresses certain issues concerning designated entities in the Location and Monitoring Service (LMS) subject to competitive bidding.

(b) *Eligibility for small business provisions*. (1) A small business is an entity that, together with its affiliates and controlling interests, has average gross revenues not to exceed $15 million for the preceding three years.

(2) A very small business is an entity that, together with its affiliates and controlling interests, has average gross revenues not to exceed $3 million for the preceding three years.

(c) A winning bidder that qualifies as a small business, as defined in paragraph (b)(1) of this section, or a consortium of small businesses may use the bidding credit specified in § 1.2110(f)(2)(ii) of this chapter. A winning bidder that qualifies as a very small businesses, as defined in paragraph (b)(2) of this section, or a consortium of very small businesses may use the bidding credit specified in § 1.2110(f)(2)(i) of this chapter.

[63 FR 40664, July 30, 1998, as amended at 67 FR 45379, July 9, 2002; 68 FR 43001, July 21, 2003]

Subpart Y—Regulations Governing Licensing and Use of Frequencies in the 4940–4990 MHz Band

SOURCE: 68 FR 38639, June 30, 2003, unless otherwise noted.

§90.1201 Scope.

This subpart sets out the regulations governing use of the 4940–4990 MHz (4.9 GHz) band. It includes eligibility requirements, and specific operational and technical standards for stations licensed in this band. The rules in this subpart are to be read in conjunction with the applicable requirements contained elsewhere in this part; however, in case of conflict, the provisions of this subpart shall govern with respect to licensing and operation in this band.

§90.1203 Eligibility.

(a) Entities providing public safety services as defined under section 90.523 are eligible to hold a Commission license for systems operating in the 4940–4990 MHz band. All of the requirements and conditions set forth in that section also govern authorizations in the 4940–4990 MHz band.

(b) 4.9 GHz band licensees may enter into sharing agreements or other arrangements for use of the spectrum with entities that do not meet these eligibility requirements. However, all applications in the band are limited to operations in support of public safety.

§90.1205 Permissible operations.

(a) Unattended and continuous operation is permitted.

(b) Voice, data and video operations are permitted.

(c) Aeronautical mobile operations are prohibited.

§90.1207 Licensing.

(a) A 4940–4990 MHz band license gives the licensee authority to operate on any authorized channel in this band within its licensed area of operation. *See* §90.1213. A 4940–4990 MHz band license will be issued for the geographic area encompassing the legal jurisdiction of the licensee or, in case of a nongovernmental organization, the legal jurisdiction of the state or local governmental entity supporting the nongovernmental organization.

(b) Subject to §90.1209, a 4940–4990 MHz band license gives the licensee authority to construct and operate any number of base stations anywhere within the area authorized by the license, except as follows:

(1) A station is required to be individually licensed if:

(i) International agreements require coordination;

(ii) Submission of an environmental assessment is required under §1.1307 of this chapter; or

(iii) The station would affect areas identified in §1.924 of this chapter.

(2) Any antenna structure that requires notification to the Federal Aviation Administration (FAA) must be registered with the Commission prior to construction under §17.4 of this chapter.

(c) A 4940–4990 MHz band license gives the licensee authority to operate base and mobile units (including portable and handheld units) and operate temporary (1 year or less) fixed stations anywhere within the area authorized by the license. Such licensees may operate base and mobile units and/or temporary fixed stations outside their authorized area to assist public safety operations with the permission of the jurisdiction in which the radio station is to be operated. Base and temporary fixed stations are subject to the requirements of paragraph (b) of this section.

(d) Permanent fixed point-to-point and point-to-multipoint stations in the 4940–4990 MHz band must be licensed individually on a site-by-site basis. Such fixed stations that connect 4940–4990 MHz band base and mobile stations that are used to deliver broadband service, as well as other public safety networks using spectrum designated for broadband use, are accorded primary status. Primary status is also accorded to stand-alone permanent fixed 4940–4990 MHz band links that are used to deliver broadband service. Primary permanent fixed point-to-point and point-to-multipoint stations must use directional antennas with gains greater than 9 dBi up to 26 dBi. Permanent fixed point-to-point stations that do

not meet the criteria for primary status will be authorized only on a secondary, non-interference basis to base, mobile, temporary fixed, and primary permanent fixed operations.

[68 FR 38639, June 30, 2003, as amended at 69 FR 17959, Apr. 6, 2004; 74 FR 23803, May 21, 2009]

§ 90.1209 Policies governing the use of the 4940–4990 MHz band.

(a) Channels in this band are available on a shared basis only and will not be assigned for the exclusive use of any licensee.

(b) All licensees shall cooperate in the selection and use of channels in order to reduce interference and make the most effective use of the authorized facilities. Licensees of stations suffering or causing harmful interference are expected to cooperate and resolve this problem by mutually satisfactory arrangements. If licensees are unable to do so, the Commission may impose restrictions including specifying the transmitter power, antenna height, or area or hours of operation of the stations concerned. Further, the Commission may prohibit the use of any 4.9 GHz channel under a system license at a given geographical location when, in the judgment of the Commission, its use in that location is not in the public interest.

(c) Licensees will make every practical effort to protect radio astronomy operations as specified in § 2.106, footnote US311 of this chapter.

(d) There is no time limit for which base and temporary fixed stations authorized under a 4940–4990 MHz band license must be placed in operation. Fixed point-to-point stations which are licensed on a site-by-site basis must be placed in operation within 18 months of the grant date or the authorization for that station cancels automatically.

§ 90.1211 Regional plan.

(a) To facilitate the shared use of the 4.9 GHz band, each region may submit a plan on guidelines to be used for sharing the spectrum within the region. Any such plan must be submitted to the Commission within 12 months of the effective date of the rules.

(b) Such plans must incorporate the following common elements:

(1) Identification of the document as a plan for sharing the 4.9 GHz band with the region specified along with the names, business addresses, business telephone numbers and organizational affiliations of the chairperson(s) and all members of the planning committee.

(2) A summary of the major elements of the plan and an explanation of how all eligible entities within the region were given an opportunity to participate in the planning process and to have their positions heard and considered fairly.

(3) An explanation of how the plan was coordinated with adjacent regions.

(4) A description of the coordination procedures for both temporary fixed and mobile operations, including but not limited to, mechanisms for incident management protocols, interference avoidance and interoperability.

(c) Regional plans may be modified by submitting a written request, signed by the regional planning committee, to the Chief, Wireless Telecommunications Bureau. The request must contain the full text of the modification, and a certification that all eligible entities had a chance to participate in discussions concerning the modification and that any changes have been coordinated with adjacent regions.

EFFECTIVE DATE NOTE: At 69 FR 51959, Sept. 23, 2004, paragraph (a) of § 90.1211 was stayed indefinitely.

§ 90.1213 Band plan.

(a) The following channel center frequencies are permitted to be aggregated for channel bandwidths of 5, 10, 15 or 20 MHz as described in paragraph (b) of this section. Channel numbers 1 through 5 and 14 through 18 are 1 MHz bandwidth channels, and channel numbers 6 through 13 are 5 MHz bandwidth channels.

Center frequency (MHz)	Bandwidth (MHz)	Channel numbers
4940.5	1	1
4941.5	1	2
4942.5	1	3
4943.5	1	4
4944.5	1	5
4947.5	5	6
4952.5	5	7
4957.5	5	8
4962.5	5	9
4967.5	5	10

Center frequency (MHz)	Bandwidth (MHz)	Channel numbers
4972.5	5	11
4977.5	5	12
4982.5	5	13
4985.5	1	14
4986.5	1	15
4987.5	1	16
4988.5	1	17
4989.5	1	18

(b) The following tables list center frequencies to be licensed for aggregated channels only. A license may contain any combination of bandwidths from aggregated channels provided that the bandwidths do not overlap. The bandwidth edges (lower and upper frequencies) are provided to aid in planning.

(1) 5 MHz bandwidth aggregation:

Center frequency (MHz)	Channel Nos. employed	Lower frequency (MHz)	Upper frequency (MHz)
4942.5	1 to 5*	4940	4945
4947.5	6	4945	4950
4952.5	7	4950	4955
4957.5	8	4955	4960
4962.5	9	4960	4965
4967.5	10	4965	4970
4972.5	11	4970	4975
4977.5	12	4975	4980
4982.5	13	4980	4985
4987.5	14 to 18*	4985	4990

*Licensees should avoid using these channels in aggregations unless all other channels are blocked.

(2) 10 MHz bandwidth aggregation:

Center frequency (MHz)	Channel Nos. employed	Lower frequency (MHz)	Upper frequency (MHz)
4945	1 to 6*	4940	4950
4950	6 & 7	4945	4955
4955	7 & 8	4950	4960
4960	8 & 9	4955	4965
4965	9 & 10	4960	4970
4970	10 & 11	4965	4975
4975	11 & 12	4970	4980
4980	12 & 13	4975	4985
4985	13 to 18*	4980	4990

*Licensees should avoid using these channels in aggregations unless all other channels are blocked.

(3) 15 MHz bandwidth aggregation:

Center frequency (MHz)	Channel Nos. employed	Lower frequency (MHz)	Upper frequency (MHz)
4947.5	1 to 7*	4940	4955
4952.5	6 to 8	4945	4960
4957.5	7 to 9	4950	4965
4962.5	8 to 10	4955	4970
4967.5	9 to 11	4960	4975
4972.5	10 to 12	4965	4980
4977.5	11 to 13	4970	4985
4982.5	12 to 18*	4975	4990

*Licensees should avoid using these channels in aggregations unless all other channels are blocked.

(4) 20 MHz bandwidth aggregation:

Center frequency (MHz)	Channel Nos. employed	Lower frequency (MHz)	Upper frequency (MHz)
4950	1 to 8*	4940	4960

Center frequency (MHz)	Channel Nos. employed	Lower frequency (MHz)	Upper frequency (MHz)
4955	6 to 9	4945	4965
4960	7 to 10	4950	4970
4965	8 to 11	4955	4975
4970	9 to 12	4960	4980
4975	10 to 13	4965	4985
4980	11 to 18*	4970	4990

*Licensees should avoid using these channels in aggregations unless all other channels are blocked.

[77 FR 45506, Aug. 1, 2012, as amended at 78 FR 36684, June 19, 2013]

§ 90.1215 Power limits.

The transmitting power of stations operating in the 4940–4990 MHz band must not exceed the maximum limits in this section.

(a)(1) The maximum conducted output power should not exceed:

Channel bandwidth (MHz)	Low power maximum conducted output power (dBm)	High power maximum conducted output power (dBm)
1	7	20
5	14	27
10	17	30
15	18.8	31.8
20	20	33

(2) High power devices are also limited to a peak power spectral density of 21 dBm per one MHz. High power devices using channel bandwidths other than those listed above are permitted; however, they are limited to peak power spectral density of 21 dBm/MHz. If transmitting antennas of directional gain greater than 9 dBi are used, both the maximum conducted output power and the peak power spectral density should be reduced by the amount in decibels that the directional gain of the antenna exceeds 9 dBi. However, high power point-to-point and point-to-multipoint operations (both fixed and temporary-fixed rapid deployment) may employ transmitting antennas with directional gain up to 26 dBi without any corresponding reduction in the maximum conducted output power or spectral density. Corresponding reduction in the maximum conducted output power and peak power spectral density should be the amount in decibels that the directional gain of the antenna exceeds 26 dBi.

(b) Low power devices are also limited to a peak power spectral density of 8 dBm per one MHz. Low power devices using channel bandwidths other than those listed above are permitted; however, they are limited to a peak power spectral density of 8 dBm/MHz. If transmitting antennas of directional gain greater than 9 dBi are used, both the maximum conducted output power and the peak power spectral density should be reduced by the amount in decibels that the directional gain of the antenna exceeds 9 dBi.

(c) The maximum conducted output power is measured as a conducted emission over any interval of continuous transmission using instrumentation calibrated in terms of an RMS-equivalent voltage. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true maximum conducted output power measurement conforming to the definitions in this paragraph for the emission in question.

(d) The peak power spectral density is measured as conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements are made over a bandwidth of one MHz or the 26 dB emission bandwidth of the device, whichever is less. A resolution bandwidth less than the measurement bandwidth can be used, provided that the measured power is integrated to show total power over the measurement bandwidth. If the resolution bandwidth is

approximately equal to the measurement bandwidth, and much less than the emission bandwidth of the equipment under test, the measured results shall be corrected to account for any difference between the resolution bandwidth of the test instrument and its actual noise bandwidth.

(e) The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

[70 CFR 28467, May 18, 2005, as amended at 74 FR 23803, May 21, 2009; 74 FR 27455, June 10, 2009]

§90.1217 RF Hazards.

Licensees and manufacturers are subject to the radiofrequency radiation exposure requirements specified in §§1.1307(b), 2.1091 and 2.1093 of this chapter, as appropriate. Applications for equipment authorization of mobile or portable devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

Subpart Z—Wireless Broadband Services in the 3650–3700 MHz Band

SOURCE: 70 FR 24726, May 11, 2005, unless otherwise noted.

§90.1301 Scope.

This subpart sets out the regulations governing wireless operations in the 3650–3700 MHz band. It includes licensing requirements, and specific operational and technical standards for wireless operations in this band. The rules in this subpart are to be read in conjunction with the applicable requirements contained elsewhere in the Commission's rules; however, in case of conflict, the provisions of this subpart shall govern with respect to licensing and operation in this band.

§90.1303 Eligibility.

Any entity, other than those precluded by section 310 of the Communications Act of 1934, as amended, 47 U.S.C. 310, is eligible to hold a license under this part.

§90.1305 Permissible operations.

Use of the 3650–3700 MHz band must be consistent with the allocations for this band as set forth in part 2 of the Commission's Rules. All stations operating in this band must employ a contention-based protocol (as defined in §90.7).

§90.1307 Licensing.

The 3650–3700 MHz band is licensed on the basis of non-exclusive nationwide licenses. Non-exclusive nationwide licenses will serve as a prerequisite for registering individual fixed and base stations. A licensee cannot operate a fixed or base station before registering it under its license and licensees must delete registrations for unused fixed and base stations.

§90.1309 Regulatory status.

Licensees are permitted to provide services on a non-common carrier and/or on a common carrier basis. A licensee may render any kind of communications service consistent with the regulatory status in its license and with the Commission's rules applicable to that service.

§90.1311 License term.

The license term is ten years, beginning on the date of the initial authorization (non-exclusive nationwide license) grant. Registering fixed and base stations will not change the overall renewal period of the license.

§90.1312 Assignment and transfer.

Licensees may assign or transfer their non-exclusive nationwide licenses, and any fixed or base stations registered under those licenses will remain associated with those licenses.

§90.1319 Policies governing the use of the 3650–3700 MHz band.

(a) Channels in this band are available on a shared basis only and will not

be assigned for the exclusive use of any licensee.

(b) Any base, fixed, or mobile station operating in the band must employ a contention-based protocol.

(c) Equipment incorporating an unrestricted contention-based protocol (i.e. one capable of avoiding co-frequency interference with devices using all other types of contention-based protocols) may operate throughout the 50 megahertz of this frequency band. Equipment incorporating a restricted contention-based protocol (i.e. one that does not qualify as unrestricted) may operate in, and shall only tune over, the lower 25 megahertz of this frequency band.

(d) All applicants and licensees shall cooperate in the selection and use of frequencies in the 3650–3700 MHz band in order to minimize the potential for interference and make the most effective use of the authorized facilities. A database identifying the locations of registered stations will be available at *http://wireless.fcc.gov/uls*. Licensees should examine this database before seeking station authorization, and make every effort to ensure that their fixed and base stations operate at a location, and with technical parameters, that will minimize the potential to cause and receive interference. Licensees of stations suffering or causing harmful interference are expected to cooperate and resolve this problem by mutually satisfactory arrangements.

[72 FR 40722, July 25, 2007]

§ 90.1321 Power and antenna limits.

(a) Base and fixed stations are limited to 25 watts/25 MHz equivalent isotropically radiated power (EIRP). In any event, the peak EIRP power density shall not exceed 1 Watt in any one-megahertz slice of spectrum.

(b) In addition to the provisions in paragraph (a) of this section, transmitters operating in the 3650–3700 MHz band that emit multiple directional beams, simultaneously or sequentially, for the purpose of directing signals to individual receivers or to groups of receivers provided the emissions comply with the following:

(1) Different information must be transmitted to each receiver.

(2) If the transmitter employs an antenna system that emits multiple directional beams but does not emit multiple directional beams simultaneously, the total output power conducted to the array or arrays that comprise the device, *i.e.*, the sum of the power supplied to all antennas, antenna elements, staves, etc. and summed across all carriers or frequency channels, shall not exceed the limit specified in paragraph (a) of this section, as applicable. The directional antenna gain shall be computed as follows:

(i) The directional gain, in dBi, shall be calculated as the sum of 10 log (number of array elements or staves) plus the directional gain, in dBi, of the individual element or stave having the highest gain.

(ii) A lower value for the directional gain than that calculated in paragraph (b)(2)(i) of this section will be accepted if sufficient evidence is presented, *e.g.*, due to shading of the array or coherence loss in the beam-forming.

(3) If a transmitter employs an antenna that operates simultaneously on multiple directional beams using the same or different frequency channels and if transmitted beams overlap, the power shall be reduced to ensure that the aggregate power from the overlapping beams does not exceed the limit specified in paragraph (b)(2) of this section. In addition, the aggregate power transmitted simultaneously on all beams shall not exceed the limit specified in paragraph (b)(2) of this section by more than 8 dB.

(4) Transmitters that emit a single directional beam shall operate under the provisions of paragraph (b)(2) of this section.

(c) Mobile and portable stations are limited to 1 watt/25 MHz EIRP. In any event, the peak EIRP density shall not exceed 40 milliwatts in any one-megahertz slice of spectrum.

§ 90.1323 Emission limits.

(a) The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based

on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or less, but at least one percent of the emission bandwidth of the fundamental emission of the transmitter, provided the measured energy is integrated over a 1 MHz bandwidth.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

§ 90.1331 Restrictions on the operation of base and fixed stations.

(a)(1) Except as provided in paragraph (a)(2) of this section, base and fixed stations may not be located within 150 km of any grandfathered satellite earth station operating in the 3650–3700 MHz band. The coordinates of these stations are available at *http://www.fcc.gov/ib/sd/3650/*.

(2) Base and fixed stations may be located within 150 km of a grandfathered satellite earth station provided that the licensee of the satellite earth station and the 3650–3700 MHz licensee mutually agree on such operation.

(3) Any negotiations to enable base or fixed station operations closer than 150 km to grandfathered satellite earth stations must be conducted in good faith by all parties.

(b)(1) Except as specified in paragraph (b)(2) of this section, base and fixed stations may not be located within 80 km of the following Federal Government radiolocation facilities:

St. Inigoes, MD—38°10′ N., 76°23′ W.
Pensacola, FL—30°21′28″ N., 87°16′26″ W.

NOTE TO PARAGRAPH (b)(1): Licensees installing equipment in the 3650–3700 MHz band should determine if there are any nearby Federal Government radar systems that could affect their operations. Information regarding the location and operational characteristics of the radar systems operating adjacent to this band are provided in NTIA TR–99–361.

(2) Requests for base or fixed station locations closer than 80 km to the Federal Government radiolocation facilities listed in paragraph (b)(1) of this section will only be approved upon successful coordination by the Commission with NTIA through the Frequency Assignment Subcommittee of the Interdepartmental Radio Advisory Committee.

[70 FR 24726, May 11, 2005, as amended at 77 FR 76248, Dec. 27, 2012]

§ 90.1333 Restrictions on the operation of mobile and portable stations.

(a) Mobile and portable stations may operate only if they can positively receive and decode an enabling signal transmitted by a base station.

(b) Any mobile/portable stations may communicate with any other mobile/portable stations so long as each mobile/portable can positively receive and decode an enabling signal transmitted by a base station.

(c) Airborne operations by mobile/portable stations is prohibited.

§ 90.1335 RF safety.

Licensees in the 3650–3700 MHz band are subject to the exposure requirements found in § 1.1307(b), 2.1091 and 2.1093 of our Rules.

§ 90.1337 Operation near Canadian and Mexican borders.

(a) Fixed devices generally must be located at least 8 kilometers from the U.S./Canada or U.S./Mexico border if the antenna of that device looks within the 160° sector away from the border. Fixed devices must be located at least 56 kilometers from each border if the antenna looks within the 200° sector towards the border.

(b) Fixed devices may be located nearer to the U.S./Canada or U.S./Mexico border than specified in paragraph (a) of this section only if the Commission is able to coordinate such use with Canada or Mexico, as appropriate.

(c) Licensees must comply with the requirements of current and future agreements with Canada and Mexico regarding operation in U.S./Canada and U.S./Mexico border areas.

PART 94 [RESERVED]