

**§21.961**

**47 CFR Ch. I (10–1–00 Edition)**

(g) *Audits.* BTA authorization holders claiming eligibility under designated entity provisions shall be subject to audits by the Commission, using in-house or contract resources. Selection for an audit may be random, on information, or on the basis of other factors. Consent to such audits is part of the certification included in the short-form application. Such consent shall include consent to the audit of the holders' books, documents and other material (including accounting procedures and practices), regardless of form or type, sufficient to confirm that such holders' representations are, and remain, accurate. Such consent shall also include inspection at all reasonable times of the facilities, or parts thereof, engaged in providing and transacting business or keeping records regarding licensed MDS offerings, and shall also include consent to the interviewing of principals, employees, customers, and suppliers of the BTA authorization holders.

pendent business firms, each of which individually satisfies the definition of a small business.

(c) Gross revenues shall mean all income received by an entity, whether earned or passive, before any deductions are made for costs of doing business (e.g., cost of goods sold), as evidenced by audited financial statements for the preceding relevant number of calendar years, or, if audited financial statements were not prepared on a calendar-year basis, for the preceding relevant number of fiscal years. If an entity was not in existence for all or part of the relevant period, gross revenues shall be evidenced by the audited financial statements of the entity's predecessor-in-interest or, if there is no identifiable predecessor-in-interest, unaudited financial statements certified by the applicant as accurate.

(d) The definition of an affiliate of an applicant is set forth in 47 CFR 1.2110(b)(4).

[60 FR 36560, July 17, 1995, as amended at 60 FR 57367, Nov. 15, 1995; 63 FR 2348, Jan. 15, 1998]

[60 FR 36562, July 17, 1995, as amended at 60 FR 57368, Nov. 15, 1995]

**§21.961 Definitions applicable to designated entity provisions.**

(a) *Scope.* The definitions in this section apply to §21.960, unless otherwise specified in that section.

(b) *Small business; consortium of small businesses.*

(1) A small business is an entity that together with its affiliates has average annual gross revenues that are not more than \$40 million for the preceding three calendar years.

(2) *Aggregation of gross revenues.*

(i) Except as specified in paragraph (b)(2)(ii) of this section, the gross revenues of the applicant (or BTA authorization holder) and its affiliates shall be considered on a cumulative basis and aggregated for purposes of determining whether the applicant (or holder) is a small business.

(ii) Where an applicant (or BTA authorization holder) is a consortium of small businesses, the gross revenues of each small business shall not be aggregated.

(3) A small business consortium is a conglomerate organization formed as a joint venture between mutually-inde-

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AUTHORITY: 47 U.S.C. 154, 222, 303, 309, and 332.

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### Subpart A—Scope and Authority

#### § 22.1 Basis and purpose.

This section contains a concise general statement of the basis and purpose of the rules in this part, pursuant to 5 U.S.C. 553(c).

(a) *Basis.* These rules are issued pursuant to the Communications Act of 1934, as amended, 47 U.S.C. 151 *et. seq.*

(b) *Purpose.* The purpose of these rules is to establish the requirements and conditions under which domestic common carrier radio stations may be licensed and used in the Public Mobile Services.

#### § 22.3 Authorization required.

Stations in the Public Mobile Services must be used and operated only in accordance with the rules in this part and with a valid authorization granted by the FCC under the provisions of this part.

(a) The holding of an authorization does not create any rights beyond the terms, conditions and period specified in the authorization. Authorizations may be granted upon proper application, provided that the FCC finds that the applicant is qualified in regard to citizenship, character, financial, technical and other criteria, and that the public interest, convenience and necessity will be served. See 47 U.S.C. 301, 308, and 309.

(b) Authority for subscribers to operate mobile or fixed stations in the Public Mobile Services, except for certain stations in the Rural Radiotelephone Service and the Air-Ground Radiotelephone Service, is included in the authorization held by the common carrier providing service to them. Subscribers are not required to apply for, and the FCC does not accept applications from subscribers for, individual mobile or fixed station authorizations in the Public Mobile Services, except as follows:

(1) Individual authorizations are required to operate general aviation airborne mobile stations in the Air-Ground Radiotelephone Service. See § 22.821.

(2) Individual authorizations are required to operate rural subscriber stations in the Rural Radiotelephone Service, except as provided in § 22.703.

#### § 22.5 Citizenship.

The rules in this section implement section 310 of the Communications Act of 1934, as amended (47 U.S.C. § 310), in regard to the citizenship of licensees in the Public Mobile Services.

(a) *Foreign governments.* The FCC will not grant an authorization in the Public Mobile Services to any foreign government or any representative thereof.

(b) *Alien ownership or control.* The FCC will not grant an authorization in the Public Mobile Services to:

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

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

(3) Any 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) Any 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 FCC finds that the public interest will be served by the refusal or revocation of such license.

[59 FR 59507, Nov. 17, 1994, as amended at 61 FR 55580, Oct. 28, 1996]

#### § 22.7 General eligibility.

Except as otherwise provided in this part, existing and proposed common carriers are eligible to hold authorizations in the Public Mobile Services. Applications are granted only if the applicant is legally, financially, technically and otherwise qualified to render the proposed service.

#### § 22.99 Definitions.

Terms used in this part have the following meanings:

*Air-Ground Radiotelephone Service.* A radio service in which common carriers are authorized to offer and provide radio telecommunications service for hire to subscribers in aircraft.

*Airborne station.* A mobile station in the Air-Ground Radiotelephone Service authorized for use on aircraft while in flight or on the ground.

*Antenna structure.* A structure comprising an antenna, the tower or other structure that exists solely to support antennas, and any surmounting appur-

tenances (attachments such as beacons or lightning rods).

*Antenna.* A device that converts radio frequency electrical energy to radiated electromagnetic energy and vice versa; in a transmitting station, the device from which radio waves are emitted.

*Authorized bandwidth.* The necessary or occupied bandwidth of an emission, whichever is more.

*Authorized spectrum.* The spectral width of that portion of the electromagnetic spectrum within which the emission power of the authorized transmitter(s) must be contained, in accordance with the rules in this part. The authorized spectrum comprises one channel bandwidth or the bandwidths of two or more contiguous channels.

*Auxiliary test transmitter.* A fixed transmitter used to test Public Mobile systems.

*Base transmitter.* A stationary transmitter that provides radio telecommunications service to mobile and/or fixed receivers, including those associated with mobile stations.

*Blanketing interference.* Disturbance in consumer receivers located in the immediate vicinity of a transmitter, caused by currents directly induced into the consumer receiver's circuitry by the relatively high field strength of the transmitter.

*Build-out transmitters.* In the Cellular Radiotelephone Service, transmitters added to the first cellular system authorized on a channel block in a cellular market during the five year build-out period in order to expand the coverage of the system within the market.

*Cardinal radials.* Eight imaginary straight lines extending radially on the ground from an antenna location in the following azimuths with respect to true North: 0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°.

*Carrier frequency.* The frequency of the unmodulated electrical wave at the output of an amplitude modulated (AM), frequency modulated (FM) or phase modulated (PM) transmitter.

*Cell.* The service area of an individual transmitter location in a cellular system.

*Cellular Geographic Service Area.* The geographic area served by a cellular system, within which that system is

entitled to protection and adverse effects are recognized, for the purpose of determining whether a petitioner has standing. See § 22.911.

*Cellular markets.* Standard geographic areas used by the FCC for administrative convenience in the licensing of cellular systems. See § 22.909.

*Cellular Radiotelephone Service.* A radio service in which common carriers are authorized to offer and provide cellular service for hire to the general public. This service was formerly titled Domestic Public Cellular Radio Telecommunications Service.

*Cellular repeater.* In the Cellular Radiotelephone Service, a stationary transmitter or device that automatically re-radiates the transmissions of base transmitters at a particular cell site and mobile stations communicating with those base transmitters, with or without channel translation.

*Cellular service.* Radio telecommunication services provided using a cellular system.

*Cellular system.* An automated high-capacity system of one or more multi-channel base stations designed to provide radio telecommunication services to mobile stations over a wide area in a spectrally efficient manner. Cellular systems employ techniques such as low transmitting power and automatic hand-off between base stations of communications in progress to enable channels to be reused at relatively short distances. Cellular systems may also employ digital techniques such as voice encoding and decoding, data compression, error correction, and time or code division multiple access in order to increase system capacity.

*Center frequency.* The frequency of the middle of the bandwidth of a channel.

*Central office transmitter.* A fixed transmitter in the Rural Radiotelephone Service that provides service to rural subscriber stations.

*CGSA.* See *Cellular Geographic Service Area*.

*Channel.* The portion of the electromagnetic spectrum assigned by the FCC for one emission. In certain circumstances, however, more than one emission may be transmitted on a channel. See, for example, § 22.161.

*Channel bandwidth.* The spectral width of a channel, as specified in this part, within which 99% of the emission power must be contained.

*Channel block.* A group of channels that are assigned together, not individually.

*Channel pair.* Two channels that are assigned together, not individually. In this part, channel pairs are indicated by an ellipsis between the center frequencies.

*Communications channel.* In the Cellular Radiotelephone and Air-ground Radiotelephone Services, a channel used to carry subscriber communications.

*Construction period.* The period between the date of grant of an authorization and the date of required commencement of service.

*Control channel.* In the Cellular Radiotelephone Service and the Air-ground Radiotelephone Service, a channel used to transmit information necessary to establish or maintain communications. In the other Public Mobile Services, a channel that may be assigned to a control transmitter.

*Control point.* A location where the operation of a public mobile station is supervised and controlled by the licensee of that station.

*Control transmitter.* A fixed transmitter in the Public Mobile Services that transmits control signals to one or more base or fixed stations for the purpose of controlling the operation of the base or fixed stations, and/or transmits subscriber communications to one or more base or fixed stations that re-transmit them to subscribers.

*Dead spots.* Small areas within a service area where the field strength is lower than the minimum level for reliable service. Service within dead spots is presumed.

*Dispatch service.* A radiotelephone service comprising communications between a dispatcher and one or more mobile units. These communications normally do not exceed one minute in duration and are transmitted directly through a base station, without passing through mobile telephone switching facilities.

*Effective radiated power (ERP).* The effective radiated power of a transmitter (with antenna, transmission line,

duplexers etc.) is the power that would be necessary at the input terminals of a reference half-wave dipole antenna in order to produce the same maximum field intensity. ERP is usually calculated by multiplying the measured transmitter output power by the specified antenna system gain, relative to a half-wave dipole, in the direction of interest.

*Emission.* The electromagnetic energy radiated from an antenna.

*Emission designator.* An internationally accepted symbol for describing an emission in terms of its bandwidth and the characteristics of its modulation, if any. See § 2.201 of this chapter for details.

*Emission mask.* The design limits imposed, as a condition or certification, on the mean power of emissions as a function of frequency both within the authorized bandwidth and in the adjacent spectrum.

*Equivalent isotropically radiated power (EIRP).* The equivalent isotropically radiated power of a transmitter (with antenna, transmission line, duplexers etc.) is the power that would be necessary at the input terminals of a reference isotropic radiator in order to produce the same maximum field intensity. An isotropic radiator is a theoretical lossless point source of radiation with unity gain in all directions. EIRP is usually calculated by multiplying the measured transmitter output power by the specified antenna system gain, relative to an isotropic radiator, in the direction of interest.

*Extension.* In the Cellular Radiotelephone Service, an area within the service area boundary of a cellular system, but outside of the market boundary. See §§ 22.911(c) and 22.912.

*Facsimile service.* Transmission of still images from one place to another by means of radio.

*Fill-in transmitters.* Transmitters added to a station, in the same area and transmitting on the same channel or channel block as previously authorized transmitters, that do not expand the existing service area, but are established for the purpose of improving reception in dead spots.

*Five year build-out period.* A five year period during which the licensee of the first cellular system authorized on

each channel block in each cellular market may expand the system within that market. See § 22.947.

*Fixed transmitter.* A stationary transmitter that communicates with other stationary transmitters.

*Frequency.* The number of cycles occurring per second of an electrical or electromagnetic wave; a number representing a specific point in the electromagnetic spectrum.

*Ground station.* In the Air-ground Radiotelephone Service, a stationary transmitter that provides service to airborne mobile stations.

*Height above average terrain (HAAT).* The height of an antenna above the average elevation of the surrounding area.

*In-building radiation systems.* Supplementary systems comprising low power transmitters, receivers, indoor antennas and/or leaky coaxial cable radiators, designed to improve service reliability inside buildings or structures located within the service areas of stations in the Public Mobile Services.

*Initial cellular applications.* Applications for authority to construct and operate a new cellular system, excluding applications for interim operating authority.

*Interfering contour.* The locus of points surrounding a transmitter where the predicted median field strength of the signal from that transmitter is the maximum field strength that is not considered to cause interference at the service contour of another transmitter.

*Interoffice transmitter.* A fixed transmitter in the Rural Radiotelephone Service that communicates with other interoffice transmitters for the purpose of interconnecting rural central offices.

*Meteor burst propagation mode.* A long distance VHF radio communication path occurring as a result of the refraction of electromagnetic waves by ionized meteor trails.

*Mobile station.* One or more transmitters that are capable of operation while in motion.

*Necessary bandwidth.* The calculated spectral width of an emission. Calculations are made using procedures set forth in part 2 of this chapter. The bandwidth so calculated is considered

to be the minimum necessary to convey information at the desired rate with the desired accuracy.

*Occupied bandwidth.* The measured spectral width of an emission. The measurement determines occupied bandwidth as the difference between upper and lower frequencies where 0.5% of the emission power is above the upper frequency and 0.5% of the emission power is below the lower frequency.

*Offshore central transmitter.* A fixed transmitter in the Offshore Radiotelephone Service that provides service to offshore subscriber stations.

*Offshore Radiotelephone Service.* A radio service in which common carriers are authorized to offer and provide radio telecommunication services for hire to subscribers on structures in the offshore coastal waters of the Gulf of Mexico.

*Offshore subscriber station.* One or more fixed and/or mobile transmitters in the Offshore Radiotelephone Service that receive service from offshore central transmitters.

*Pager.* A small radio receiver designed to be carried by a person and to give an aural, visual or tactile indication when activated by the reception of a radio signal containing its specific code. It may also reproduce sounds and/or display messages that were also transmitted. Some pagers also transmit a radio signal acknowledging that a message has been received.

*Paging geographic area authorization.* An authorization conveying the exclusive right to establish and expand one or more stations throughout a paging geographic area or, in the case of a partitioned geographic area, throughout a specified portion of a paging geographic area, on a specified channel allocated for assignment in the Paging and Radiotelephone Service. These are subject to the conditions that no interference may be caused to existing co-channel stations operated by other licensees within the paging geographic area and that no interference may be caused to existing or proposed co-channel stations of other licensees in adjoining paging geographic areas.

*Paging geographic areas.* Standard geographic areas used by the FCC for administrative convenience in the licens-

ing of stations to operate on channels allocated for assignment in the Paging and Radiotelephone Service. See §22.503(b).

*Paging and Radiotelephone Service.* A radio service in which common carriers are authorized to offer and provide paging and radiotelephone service for hire to the general public. This service was formerly titled Public Land Mobile Service.

*Paging service.* Transmission of coded radio signals for the purpose of activating specific pagers; such transmissions may include messages and/or sounds.

*Partitioned cellular market.* A cellular market with two or more authorized cellular systems on the same channel block during the five year build-out period, as a result of settlements during initial licensing or contract(s) between the licensee of the first cellular system and the licensee(s) of the subsequent systems. See §22.947(b).

*Public Mobile Services.* Radio services in which common carriers are authorized to offer and provide mobile and related fixed radio telecommunication services for hire to the public.

*Radio common carrier.* A telecommunication common carrier that provides radio communications services but is not engaged in the business of providing landline local exchange telephone service.

*Radio telecommunication services.* Communication services provided by the use of radio, including radiotelephone, radiotelegraph, paging and facsimile service.

*Radiotelegraph service.* Transmission of messages from one place to another by means of radio.

*Radiotelephone service.* Transmission of sound from one place to another by means of radio.

*Repeater.* A fixed transmitter that retransmits the signals of other stations.

*Roamer.* A mobile station receiving service from a station or system in the Public Mobile Services other than one to which it is a subscriber.

*Rural Radiotelephone Service.* A radio service in which common carriers are authorized to offer and provide radio telecommunication services for hire to

subscribers in areas where it is not feasible to provide communication services by wire or other means.

*Rural subscriber station.* One or more fixed transmitters in the Rural Radiotelephone Service that receive service from central office transmitters.

*Service area.* The geographic area considered by the FCC to be reliably served by a station in the Public Mobile Services.

*Service contour.* The locus of points surrounding a transmitter where the predicted median field strength of the signal from that transmitter is the minimum field strength that is considered sufficient to provide reliable service to mobile stations.

*Service to subscribers.* Service to at least one subscriber that is not affiliated with, controlled by or related to the providing carrier.

*Signal booster.* A stationary device that automatically reradiates signals from base transmitters without channel translation, for the purpose of improving the reliability of existing service by increasing the signal strength in dead spots.

*Station.* A station equipped to engage in radio communication or radio transmission of energy (47 U.S.C. 153(k)).

*Telecommunications common carrier.* An individual, partnership, association, joint-stock company, trust or corporation engaged in rendering radio telecommunications services to the general public for hire.

*Temporary fixed station.* One or more fixed transmitters that normally do not remain at any particular location for longer than 6 months.

*Universal licensing system.* The Universal Licensing System (ULS) is the consolidated database, application filing system, and processing system for all Wireless Radio Services. ULS supports electronic filing of all applications and related documents by applicants and licensees in the Wireless Radio Services, and provides public access to licensing information.

*Unserved areas.* With regard to a channel block allocated for assignment in the Cellular Radiotelephone Service: Geographic area in the District of Columbia, or any State, Territory or possession of the United States of America that is not within the CGSA of any cel-

lular system authorized to transmit on that channel block. With regard to a channel allocated for assignment in the Paging and Radiotelephone Service: Geographic area within the District of Columbia, or any State, Territory or possession of the United States of America that is not within the service contour of any base transmitter in any station authorized to transmit on that channel.

*Wireline common carrier.* A telecommunications common carrier that is also engaged in the business of providing landline local exchange telephone service.

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### Subpart B—Licensing Requirements and Procedures

#### APPLICATIONS AND NOTIFICATIONS

#### § 22.107 General application requirements.

In general, applications for authorizations, assignments of authorizations, or consent to transfer of control of licensees in the Public Mobile Services must:

- (a) Demonstrate the applicant's qualifications to hold an authorization in the Public Mobile services;
- (b) State how a grant would serve the public interest, convenience, and necessity;
- (c) Contain all information required by FCC rules or application forms;
- (d) Propose operation of a facility in compliance with all rules governing the Public Mobile service;
- (e) Be amended as necessary to remain substantially accurate and complete in all significant respects, in accordance with the provisions of § 1.65 of this chapter; and,
- (f) Be signed in accordance with § 1.743 of this chapter.

#### § 22.131 Procedures for mutually exclusive applications.

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

Public Mobile Services involved. The Commission uses the general procedures in this section for processing mutually exclusive applications in the Public Mobile Services. Additional specific procedures are prescribed in the subparts of this part governing the individual Public Mobile Services (see §§ 22.509, 22.717, and 22.949) and in part 1 of this chapter.

(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 § 1.945 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 § 1.935 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 application(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 exclu-

sive 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 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 that are excluded by that grant, pursuant to § 1.945 of this chapter.

(1) *Selection methods.* In selecting the application to grant, the Commission will use competitive bidding.

(2) *Dismissal of applications.* The Commission may dismiss any application in a filing group that is defective or otherwise subject to dismissal under § 1.945 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 the processing of two or more mutually exclusive applications depends upon 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, except that, for Phase I unserved area applications in the Cellular Radiotelephone Service, a one-day window filing group is used (see § 22.949).

(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 FCC administers competitive bidding procedures in accordance with § 22.201 through § 22.227 and subpart Q of part 1 of this chapter, as applicable. 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, 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 FCC 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 of 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;

(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; or

(iv) Any application to expand the CGSA of a cellular system (as defined in § 22.911), except during the five-year build-out period.

(v) Any “short-form” application (filed on FCC Form 175) requesting a new paging geographic area authorization.

[59 FR 59954, Nov. 21, 1994, as amended at 62 FR 11629, Mar. 12, 1997; 63 FR 68943, Dec. 14, 1998]

**§ 22.143 Construction prior to grant of application.**

Applicants may construct facilities in the Public Mobile services prior to grant of their applications, subject to

the provisions of this section, but must not operate such facilities until the FCC grants an authorization. If the conditions stated in this section are not met, applicants must not begin to construct facilities in the Public Mobile Services.

(a) *When applicants may begin construction.* An applicant may begin construction of a facility 35 days after the date of the Public Notice listing the application for that facility as acceptable for filing, except that an applicant whose application to operate a new cellular system was selected in a random selection process may begin construction of that new cellular system 35 days after the date of the Public Notice listing it as the tentative selectee.

(b) *Notification to stop.* If the FCC 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 FCC 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, except for successful bidders and tentative selectees in the Cellular Radiotelephone Service;
- (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 FCC rules;
- (4) For any construction or alteration that would exceed the require-

ments 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 FCC, PRB, Support Services Branch, Gettysburg, PA 17325;

(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.

#### **§22.150 Standard pre-filing technical coordination procedure.**

For operations on certain channels in the Public Mobile Services, carriers must attempt to coordinate the proposed use of spectrum with other spectrum users prior to filing an application for authority to operate a station. Rules requiring this procedure for specific channels and types of stations are contained in the subparts governing the individual Public Mobile Services.

(a) Coordination comprises two steps—notification and response. Each step may be accomplished orally or in writing.

(b) Notification must include relevant technical details of the proposal. At minimum, this should include the following:

- (1) Geographical coordinates of the antenna site(s).
- (2) Transmitting and receiving channels to be added or changed.
- (3) Transmitting power, emission type and polarization.
- (4) Transmitting antenna pattern and maximum gain.
- (5) Transmitting antenna height above ground level.

(c) Applicants and licensees receiving notification must respond promptly, even if no channel usage conflicts are anticipated. If any notified party fails to respond within 30 days, the applicant may file the application without a response from that party.

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(d) The 30-day period begins on the date the notification is submitted to the Commission via the ULS. If the notification is by mail, this date may be ascertained by:

(1) The return receipt on certified mail,

(2) The enclosure of a card to be dated and returned by the party being notified, or

(3) A reasonable estimate of the time required for the mail to reach its destination. In this case, the date when the 30-day period will expire must be stated in the notification.

(e) All channel usage conflicts discovered during the coordination process should be resolved prior to filing of the application. If the applicant is unable or unwilling to resolve a particular conflict, the application may be accepted for filing if it contains a statement describing the unresolved conflict and a brief explanation of the reasons why a resolution was not achieved.

(f) If a number of changes in the technical parameters of a proposed facility become necessary during the course of the coordination process, an attempt should be made to minimize the number of separate notifications. If the changes are incorporated into a completely revised notice, the items that were changed from the previous notice should be identified.

(g) In situations where subsequent changes are not numerous or complex, the party receiving the changed notification should make an effort to respond in less than 30 days. If the applicant believes a shorter response time is reasonable and appropriate, it should so indicate in the notice and suggest a response date.

(h) If a subsequent change in the technical parameters of a proposed facility could not affect the facilities of one or more of the parties that received an initial notification, the applicant is not required to coordinate that change with these parties. However, these parties must be advised of the change and of the opinion that coordination is not required.

[59 FR 59507, Nov. 17, 1994, as amended at 63 FR 68944, Dec. 14, 1998]

§ 22.157 Distance computation.

The method given in this section must be used to compute the distance between any two locations, except that, for computation of distance involving stations in Canada and Mexico, methods for distance computation specified in the applicable international agreement, if any, must be used instead. The method set forth in this paragraph is considered to be sufficiently accurate for distances not exceeding 475 km (295 miles).

(a) Convert the latitudes and longitudes of each reference point from degree-minute-second format to degree-decimal format by dividing minutes by 60 and seconds by 3600, then adding the results to degrees.

$$\text{LATX}_{dd} = \text{DD} + \frac{\text{MM}}{60} + \frac{\text{SS}}{3600}$$

$$\text{LONX}_{dd} = \text{DDD} + \frac{\text{MM}}{60} + \frac{\text{SS}}{3600}$$

(b) Calculate the mean geodetic latitude between the two reference points by averaging the two latitudes:

$$\text{ML} = \frac{\text{LAT1}_{dd} + \text{LAT2}_{dd}}{2}$$

(c) Calculate the number of kilometers per degree latitude difference for the mean geodetic latitude calculated in paragraph (b) of this section as follows:

$$\text{KPD}_{\text{lat}} = 111.13209 - 0.56605 \cos 2\text{ML} + 0.00120 \cos 4\text{ML}$$

(d) Calculate the number of kilometers per degree of longitude difference for the mean geodetic latitude calculated in paragraph (b) of this section as follows:

$$\text{KPD}_{\text{lon}} = 111.41513 \cos \text{ML} - 0.09455 \cos 3\text{ML} + 0.00012 \cos 5\text{ML}$$

(e) Calculate the North-South distance in kilometers as follows:

$$\text{NS} = \text{KPD}_{\text{lat}} \times (\text{LAT1}_{dd} - \text{LAT2}_{dd})$$

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(f) Calculate the East-West distance in kilometers as follows:

$$EW = KPD_{lon} \times (LON1_{dd} - LON2_{dd})$$

(g) Calculate the distance between the locations by taking the square root of the sum of the squares of the East-West and North-South distances:

$$DIST = \sqrt{NS^2 + EW^2}$$

(h) Terms used in this section are defined as follows:

(1) LAT<sub>1dd</sub> and LON<sub>1dd</sub> are the coordinates of the first location in degree-decimal format.

(2) LAT<sub>2dd</sub> and LON<sub>2dd</sub> are the coordinates of the second location in degree-decimal format.

(3) ML is the mean geodetic latitude in degree-decimal format.

(4) KPD<sub>lat</sub> is the number of kilometers per degree of latitude at a given mean geodetic latitude.

(5) KPD<sub>lon</sub> is the number of kilometers per degree of longitude at a given mean geodetic latitude.

(6) NS is the North-South distance in kilometers.

(7) DIST is the distance between the two locations, in kilometers.

**§ 22.159 Computation of average terrain elevation.**

Average terrain elevation must be calculated by computer using elevations from a 30 second point or better topographic data file. The file must be identified. If a 30 second point data file is used, the elevation data must be processed for intermediate points using interpolation techniques; otherwise, the nearest point may be used. In cases of dispute, average terrain elevation determinations can also be done manually, if the results differ significantly from the computer derived averages.

(a) Radial average terrain elevation is calculated as the average of the elevation along a straight line path from 3 to 16 kilometers (2 and 10 miles) extending radially from the antenna site. If a portion of the radial path extends over foreign territory or water, such portion must not be included in the computation of average elevation unless the radial path again passes over United States land between 16 and 134 kilometers (10 and 83 miles) away from

the station. At least 50 evenly spaced data points for each radial should be used in the computation.

(b) Average terrain elevation is the average of the eight radial average terrain elevations (for the eight cardinal radials).

(c) For locations in Dade and Broward Counties, Florida, the method prescribed above may be used or average terrain elevation may be assumed to be 3 meters (10 feet).

**§ 22.161 Application requirements for ASSB.**

Applications for base stations employing amplitude compandored single sideband modulation (ASSB) must contain the following information:

(a) The application must describe fully the modulation characteristics, emission and occupied bandwidth, and specify the center frequency of the emission for each channel, carrier frequency, and pilot channels, if any. The emission must fall completely within a channel assignable for two-way operation in the Paging and Radiotelephone Service, Rural Radiotelephone Service or Offshore Radiotelephone Service.

(b) The application must contain interference studies between stations within an authorized bandwidth, whether FM-to-ASSB, ASSB-to-FM, or ASSB-to-ASSB in accordance with the following: For ASSB stations, the transmitter nearest to the protected station must be used. The effective radiated power in the direction of the protected station must be the sum of the peak effective radiated power of all transmitters in the group, in the direction of the protected station. The antenna center of radiation height above average terrain must be the highest antenna center of radiation height of any transmitter in the group in the direction of the protected station. The channel of the group is assumed to be the same as that of the protected station (co-channel), and studies must be made in accordance with § 22.567.

**§ 22.165 Additional transmitters for existing systems.**

A licensee may operate additional transmitters at additional locations on the same channel or channel block as

its existing system without obtaining prior Commission approval provided:

(a) *International coordination.* The locations and/or technical parameters of the additional transmitters are such that individual coordination of the channel assignment(s) with a foreign administration, under applicable international agreements and rules in this part, is not required.

(b) *Antenna structure registration.* Certain antenna structures must be registered with the Commission prior to construction or alteration. Registration requirements are contained in part 17 of this chapter.

(c) *Environmental.* The additional transmitters must not have a significant environmental effect as defined by §§ 1.1301 through 1.1319 of this chapter.

(d) *Paging and Radiotelephone Service.* The provisions in this paragraph apply for stations in the Paging and Radiotelephone Service.

(1) The interfering contours of the additional transmitter(s) must be totally encompassed by the composite interfering contour of the existing station (or stations under common control of the applicant) on the same channel, except that this limitation does not apply to nationwide network paging stations or in-building radiation systems.

(2) Additional transmitters in the 43 MHz frequency range operate under developmental authority, subject to the conditions set forth in § 22.411.

(3) The additional transmitters must not operate on control channels in the 72–76 MHz, 470–512 MHz, 928 MHz, 932 MHz, 941 MHz or 959 MHz frequency ranges.

(e) *Cellular radiotelephone service.* During the five-year build-out period, the service area boundaries of the additional transmitters, as calculated by the method set forth in § 22.911(a), must remain within the market, except that the service area boundaries may extend beyond the market boundary into the area that is part of the CGSA or is already encompassed by the service area boundaries of previously authorized facilities. After the five-year build-out period, the service area boundaries of the additional transmitters, as calculated by the method set forth in § 22.911(a), must remain within the

CGSA. Licensees must notify the Commission (FCC Form 601) of any transmitters added under this section that cause a change in the CGSA boundary. The notification must include full size and reduced maps, and supporting engineering, as described in § 22.953(a)(5)(i) through (iii). If the addition of transmitters involves a contract service area boundary (SAB) extension (see § 22.912), the notification must include a statement as to whether the five-year build-out period for the system on the relevant channel block in the market into which the SAB extends has elapsed and whether the SAB extends into any unserved area in the market. The notification must be made electronically via the ULS, or delivered to the filing place (see § 1.913 of this chapter) no later than 15 days after the addition is made.

(f) *Air-ground Radiotelephone Service.* Ground stations may be added to Commercial Aviation air-ground systems at previously established ground station locations, pursuant to § 22.859, subject to compliance with the applicable technical rules. This section does not apply to General Aviation air-ground stations.

(g) *Rural Radiotelephone Service.* A “service area” and “interfering contours” must be determined using the same method as for stations in the Paging and Radiotelephone Service. The service area and interfering contours so determined for the additional transmitter(s) must be totally encompassed by the similarly determined composite service area contour and predicted interfering contour, respectively, of the existing station on the same channel. This section does not apply to Basic Exchange Telecommunications Radio Systems.

(h) *Offshore Radiotelephone Service.* This section does not apply to stations in the Offshore Radiotelephone Service.

(i) *Provision of information upon request.* Upon request by the FCC, licensees must supply administrative or technical information concerning the additional transmitters. At the time transmitters are added pursuant to this section, licensees must make a record of the pertinent technical and administrative information so that

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such information is readily available. See § 22.303.

[59 FR 59507, Nov. 17, 1994; 59 FR 64856, Dec. 16, 1994; as amended at 62 FR 11629, Mar. 12, 1997; 63 FR 68944, Dec. 14, 1998; 64 FR 53240, Oct. 1, 1999]

### § 22.169 International coordination of channel assignments.

Channel assignments under this part are subject to the applicable provisions and requirements of treaties and other international agreements between the United States government and the governments of Canada and Mexico.

#### COMPETITIVE BIDDING PROCEDURES

SOURCE: 62 FR 11629, Mar. 12, 1997, unless otherwise noted.

### § 22.201 Scope of competitive bidding rules.

Sections 22.201 through 22.227, inclusive (and, unless otherwise specified in this part, the procedures set forth in part 1, subpart Q, of this chapter), apply only to competitive bidding ("auction") procedures for authorizations as follows:

(a) Paging geographic area authorizations issued pursuant to this part or to part 90 of this chapter.

(b) [Reserved].

### § 22.203 Competitive bidding design for paging licensing.

A simultaneous multiple round auction will be used to choose from among mutually exclusive initial applications for paging geographic area authorizations, unless the FCC specifies otherwise by Public Notice prior to the competitive bidding procedure.

### § 22.205 Competitive bidding mechanisms.

(a) *Sequencing*. The FCC will establish and may vary the sequence in which paging geographic area authorizations are auctioned.

(b) *Grouping*. The FCC will determine which licenses will be auctioned simultaneously or in combination based on interdependency and administrative circumstances.

(c) *Minimum Bid Increments*. The FCC may, by public announcement before or during an auction, require minimum

bid increments in dollar or percentage terms.

(d) *Stopping Rules*. The FCC may establish stopping rules before or during an auction in order to terminate the auction within a reasonable time.

(e) *Activity Rules*. The FCC may establish activity rules which require a minimum amount of bidding activity. In the event that the FCC establishes an activity rule in connection with a simultaneous multiple round auction, each bidder may request waivers of such rule during the auction. The FCC may, by public announcement either before or during an auction, specify or vary the number of waivers available to each bidder.

### § 22.207 Withdrawal, default, and disqualification payments.

The FCC will impose payments on bidders who withdraw high bids during the course of an auction, who default on payments due after an auction terminates, or who are disqualified. When the FCC conducts a simultaneous multiple round auction, payments will be calculated as set forth in §§ 1.2104(g) and 1.2109 of this chapter. When the amount of such a payment cannot be determined, a deposit of up to 20 percent of the amount bid on the license will be required.

### § 22.209 Bidding applications (FCC Form 175 and 175-S Short-form).

Each applicant to participate in competitive bidding for paging geographic area authorizations must submit an application (FCC Forms 175 and 175-S) pursuant to the provisions of § 1.2105 of this chapter.

### § 22.211 Submission of upfront payments and down payments.

(a) The FCC will require applicants to submit an upfront payment prior to the start of a paging auction. The amount of the upfront payment for each geographic area license auctioned and the procedures for submitting it will be set forth by the Wireless Telecommunications Bureau in a Public Notice in accordance with § 1.2106 of this chapter.

(b) Each winning bidder in a paging auction must submit a down payment to the FCC in an amount sufficient to

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bring its total deposits up to 20 percent of its winning bid. All winning bidders except small businesses will be required to make such payment within ten business days following the release of a Public Notice announcing the close of bidding. Small businesses must bring their deposits up to 10 percent of their winning bids within ten business days following the release of a Public Notice announcing the close of bidding, and must pay an additional 10 percent prior to licensing, by a date and time to be specified by Public Notice.

### § 22.213 Long-form application (FCC Form 601).

Each successful bidder for a paging geographic area authorization must submit a "long-form" application (Form 601) within ten (10) business days after being notified by Public Notice that it is the winning bidder. Applications for paging geographic area authorizations on FCC Form 601 must be submitted in accordance with § 1.2107 and § 1.2112 of this chapter, all applicable procedures set forth in the rules in this part, and any applicable Public Notices that the FCC may issue in connection with an auction. After an auction, the FCC will not accept long-form applications for paging geographic area authorizations from anyone other than the auction winners and parties seeking partitioned authorizations pursuant to agreements with auction winners under § 22.221 of this part.

[64 FR 33781, June 24, 1999]

### § 22.215 Authorization grant, denial, default, and disqualification.

(a) Each winning bidder will be required to pay the full balance of its winning bid no later than ten (10) business days following the release date of a Public Notice establishing the payment deadline. If a winning bidder fails to pay the balance of its winning bids in a lump sum by the applicable deadline as specified by the Commission, it will be allowed to make payment no later than ten (10) business days after the payment deadline, provided that it also pays a late fee equal to five (5) percent of the amount due. When a winning bidder fails to pay the balance of its winning bid by the late payment deadline, it is considered to be in de-

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fault on its authorization(s) and subject to the applicable default payments. Authorizations will be awarded upon the full and timely payment of winning bids and any applicable late fees.

(b) A bidder that withdraws its bid subsequent to the close of bidding, defaults on a payment due, or is disqualified, is subject to the payments specified in § 22.207, § 1.2104(g), or § 1.2109 of this chapter, as applicable.

[59 FR 59507, Nov. 17, 1994, as amended at 64 FR 33781, June 24, 1999]

### § 22.217 Bidding credits for small businesses.

(a) A winning bidder that qualifies as a small business or a consortium of small businesses as defined in § 22.223(b)(1)(i) of this part may use a bidding credit of thirty-five (35) percent to lower the cost of its winning bid. A winning bidder that qualifies as a small business or a consortium of small businesses as defined in § 22.223(b)(1)(ii) of this part may use a bidding credit of twenty-five (25) percent to lower the cost of its winning bid.

(b) Unjust Enrichment:

(1) If a small business that utilizes a bidding credit under this section seeks to transfer control or assign an authorization to an entity that is not a small business under § 22.223(b)(1), or seeks to make any other change in ownership that would result in the licensee losing eligibility as a small business, the small business must seek FCC approval and reimburse the U.S. government for the amount of the bidding credit (plus interest at the rate imposed for installment financing at the time the license was awarded), as a condition of approval of such assignment, transfer, or other ownership change.

(2) If a small business that utilizes a bidding credit under this section seeks to transfer control or assign an authorization to a small business meeting the eligibility standards for a lower bidding credit, or seeks to make any other change in ownership that would result in the licensee qualifying for a lower bidding credit under this section, the licensee must seek FCC approval and reimburse the U.S. government for the difference between the amount of the

bidding credit obtained by the licensee and the bidding credit for which the assignee, transferee, or licensee is eligible under this section (plus interest at the rate imposed for installment financing at the time the license was awarded), as a condition of the approval of such assignment, transfer, or other ownership change.

(3) The amount of payments made pursuant to paragraphs (b)(1) and (b)(2) of this section will be reduced over time as follows: A transfer in the first two years of the license term will result in a forfeiture of 100 percent of the value of the bidding credit (or the difference between the bidding credit obtained by the original licensee and the bidding credit for which the post-transfer licensee is eligible); in year 3 of the license term the payment will be 75 percent; in year 4 the payment will be 50 percent; and in year 5 the payment will be 25 percent, after which there will be no assessment.

(4) If a small business that utilizes a bidding credit under this section partitions its authorization or disaggregates its spectrum to an entity not meeting the eligibility standards for the same bidding credit, the partitioning or disaggregating licensee will be subject to the provisions concerning unjust enrichment as set forth in §1.2111(e) (2) and (3) of this chapter.

[59 FR 59507, Nov. 17, 1994, as amended at 64 FR 33781, June 24, 1999]

**§22.221 Eligibility for partitioned licenses.**

If partitioned licenses are being applied for in conjunction with a license(s) to be awarded through competitive bidding procedures—

(a) The applicable procedures for filing short-form applications and for submitting upfront payments and down payments contained in this chapter shall be followed by the applicant, who must disclose as part of its short-form application all parties to agreement(s) with or among other entities to partition the license pursuant to this section, if won at auction (see 47 CFR 1.2105(a)(2)(viii));

(b) Each party to an agreement to partition the authorization must file a long-form application (FCC Form 601) for its respective, mutually agreed-

upon geographic area together with the application for the remainder of the MEA or EA filed by the auction winner.

(c) If the partitioned authorization is being applied for as a partial assignment of the MEA or EA authorization following grant of the initial authorization, request for authorization for partial assignment of an authorization shall be made pursuant to §1.948 of this part.

[59 FR 59507, Nov. 17, 1994, as amended at 64 FR 33781, June 24, 1999]

**§22.223 Definitions concerning competitive bidding process.**

(a) *Scope.* The definitions in this section apply to §§22.201 through 22.227, unless otherwise specified in those sections.

(b) *Small business; consortium of small businesses.* (1) A small business is an entity that either:

(i) Together with its affiliates and controlling interests has average gross revenues that are not more than \$3 million for the preceding three years; or

(ii) Together with its affiliates and controlling interests has average gross revenues that are not more than \$15 million for the preceding three years.

(2) For purposes of determining whether an entity meets either the \$3 million or \$15 million average annual gross revenues size standard set forth in paragraph (b)(1) of this section, the gross revenues of the entity, its affiliates, and controlling interests shall be considered on a cumulative basis and aggregated.

(3) A consortium of small businesses is a conglomerate organization formed as a joint venture between or among mutually independent business firms, each of which individually satisfies the definition of a small business in paragraph (b)(1) of this section. Each individual member must establish its eligibility as a small business, as defined in this section. Where an applicant (or licensee) is a consortium of small businesses, the gross revenues of each small business shall not be aggregated.

(4) Applicants without identifiable controlling interests. Where an applicant (or licensee) cannot identify controlling interests under the standards

set forth in this section, the gross revenues of all interest holders in the applicant, and their affiliates, will be attributable.

(c) *Gross Revenues.* Gross revenues shall mean all income received by an entity, whether earned or passive, before any deductions are made for costs of doing business (e.g., cost of goods sold). Gross revenues are evidenced by audited financial statements for the relevant number of calendar or fiscal years preceding the filing of the applicant's short-form application. If an entity was not in existence for all or part of the relevant period, gross revenues shall be evidenced by the audited financial statements of the entity's predecessor-in-interest or, if there is no identifiable predecessor-in-interest, unaudited financial statements certified by the applicant as accurate. When an applicant does not otherwise use audited financial statements, its gross revenues may be certified by its chief financial officer or its equivalent.

(d) *Affiliate.*—(1) *Basis for Affiliation.* An individual or entity is an affiliate of an applicant if such individual or entity:

- (i) Directly or indirectly controls or has the power to control the applicant, or
- (ii) Is directly or indirectly controlled by the applicant, or
- (iii) Is directly or indirectly controlled by a third party or parties who also control or have the power to control the applicant, or
- (iv) Has an "identity of interest" with the applicant.

(2) *Nature of control in determining affiliation.* (i) Every business concern is considered to have one or more parties who directly or indirectly control or have the power to control it. Control may be affirmative or negative and it is immaterial whether it is exercised so long as the power to control exists.

*Example for paragraph (d)(2)(i).* An applicant owning 50 percent of the voting stock of another concern would have negative power to control such concern since such party can block any action of the other stockholders. Also, the bylaws of a corporation may permit a stockholder with less than 50 percent of the voting stock to block any actions taken by the other stockholders in the other entity. Affiliation exists when the applicant has the power to control a concern while at

the same time another person, or persons, are in control of the concern at the will of the party or parties with the power of control.

(ii) Control can arise through stock ownership; occupancy of director, officer or key employee positions; contractual or other business relations; or combinations of these and other factors. A key employee is an employee who, because of his/her position in the concern, has a critical influence in or substantive control over the operations or management of the concern.

(iii) Control can arise through management positions if the voting stock is so widely distributed that no effective control can be established.

*Example for paragraph (d)(2)(iii).* In a corporation where the officers and directors own various size blocks of stock totaling 40 percent of the corporation's voting stock, but no officer or director has a block sufficient to give him/her control or the power to control and the remaining 60 percent is widely distributed with no individual stockholder having a stock interest greater than 10 percent, management has the power to control. If persons with such management control of the other entity are controlling principals of the applicant, the other entity will be deemed an affiliate of the applicant.

(3) *Identity of interest between and among persons.* Affiliation can arise between or among two or more persons with an identity of interest, such as members of the same family or persons with common investments. In determining if the applicant controls or is controlled by a concern, persons with an identity of interest will be treated as though they were one person.

(i) *Spousal affiliation.* Both spouses are deemed to own or control or have the power to control interests owned or controlled by either of them, unless they are subject to a legal separation recognized by a court of competent jurisdiction in the United States.

(ii) *Kinship affiliation.* Immediate family members will be presumed to own or control or have the power to control interests owned or controlled by other immediate family members. In this context "immediate family member" means father, mother, husband, wife, son, daughter, brother, sister, father- or mother-in-law, son- or daughter-in-law, brother- or sister-in-law, step-father, or -mother, step-

brother, or -sister, step-son, or -daughter, half-brother or -sister. This presumption may be rebutted by showing that:

(A) The family members are estranged,

(B) The family ties are remote, or

(C) The family members are not closely involved with each other in business matters.

*Example for paragraph (d)(3)(ii).* A owns a controlling interest in Corporation X. A's sister-in-law, B, has a controlling interest in a paging geographic area authorization application. Because A and B have a presumptive kinship affiliation, A's interest in Corporation X is attributable to B, and thus to the applicant, unless B rebuts the presumption with the necessary showing.

(4) *Affiliation through stock ownership.*

(i) An applicant is presumed to control or have the power to control a concern if he/she owns or controls or has the power to control 50 percent or more of its voting stock.

(ii) An applicant is presumed to control or have the power to control a concern even though he/she owns, controls, or has the power to control less than 50 percent of the concern's voting stock, if the block of stock he/she owns, controls, or has the power to control is large as compared with any other outstanding block of stock.

(iii) If two or more persons each owns, controls or has the power to control less than 50 percent of the voting stock of a concern, such minority holdings are equal or approximately equal in size, and the aggregate of these minority holdings is large as compared with any other stock holding, the presumption arises that each one of these persons individually controls or has the power to control the concern; however, such presumption may be rebutted by a showing that such control or power to control, in fact, does not exist.

(5) *Affiliation arising under stock options, convertible debentures, and agreements to merge.* Stock options, convertible debentures, and agreements to merge (including agreements in principle) are generally considered to have a present effect on the power to control the concern. Therefore, in making a size determination, such options, debentures, and agreements will gen-

erally be treated as though the rights held thereunder had been exercised. However, neither an affiliate nor an applicant can use such options and debentures to appear to terminate its control over another concern before it actually does so.

*Example 1 for paragraph (d)(5).* If company B holds an option to purchase a controlling interest in company A, who holds a controlling interest in a paging geographic area authorization application, the situation is treated as though company B had exercised its rights and had become owner of a controlling interest in company A. The gross revenues of company B must be taken into account in determining the size of the applicant.

*Example 2 for paragraph (d)(5).* If a large company, BigCo, holds 70% (70 of 100 outstanding shares) of the voting stock of company A, who holds a controlling interest in a paging geographic area authorization application, and gives a third party, SmallCo, an option to purchase 50 of the 70 shares owned by BigCo, BigCo will be deemed to be an affiliate of company A, and thus the applicant, until SmallCo actually exercises its options to purchase such shares. In order to prevent BigCo from circumventing the intent of the rule which requires such options to be considered on a fully diluted basis, the option is not considered to have present effect in this case.

*Example 3 for paragraph (d)(5).* If company A has entered into an agreement to merge with company B in the future, the situation is treated as though the merger has taken place.

(6) *Affiliation under voting trusts.* (i) Stock interests held in trust shall be deemed controlled by any person who holds or shares the power to vote such stock, to any person who has the sole power to sell such stock, and to any person who has the right to revoke the trust at will or to replace the trustee at will.

(ii) If a trustee has a familial, personal or extra-trust business relationship to the grantor or the beneficiary, the stock interests held in trust will be deemed controlled by the grantor or beneficiary, as appropriate.

(iii) If the primary purpose of a voting trust, or similar agreement, is to separate voting power from beneficial ownership of voting stock for the purpose of shifting control of or the power to control a concern in order that such concern or another concern may meet the Commission's size standards, such voting trust shall not be considered

valid for this purpose regardless of whether it is or is not recognized within the appropriate jurisdiction.

(7) *Affiliation through common management.* Affiliation generally arises where officers, directors, or key employees serve as the majority or otherwise as the controlling element of the board of directors and/or the management of another entity.

(8) *Affiliation through common facilities.* Affiliation generally arises where one concern shares office space and/or employees and/or other facilities with another concern, particularly where such concerns are in the same or related industry or field of operations, or where such concerns were formerly affiliated, and through these sharing arrangements one concern has control, or potential control, of the other concern.

(9) *Affiliation through contractual relationships.* Affiliation generally arises where one concern is dependent upon another concern for contracts and business to such a degree that one concern has control, or potential control, of the other concern.

(10) *Affiliation under joint venture arrangements.* (i) A joint venture for size determination purposes is an association of concerns and/or individuals, with interests in any degree or proportion, formed by contract, express or implied, to engage in and carry out a single, specific business venture for joint profit for which purpose they combine their efforts, property, money, skill and knowledge, but not on a continuing or permanent basis for conducting business generally. The determination whether an entity is a joint venture is based upon the facts of the business operation, regardless of how the business operation may be designated by the parties involved. An agreement to share profits/losses proportionate to each party's contribution to the business operation is a significant factor in determining whether the business operation is a joint venture.

(ii) The parties to a joint venture are considered to be affiliated with each other.

(e) *Controlling interest.* (1) For purposes of this section, controlling interest includes individuals or entities with *de jure* and *de facto* control of the applicant. *De jure* control is greater

than 50 percent of the voting stock of a corporation, or in the case of a partnership, the general partner. *De facto* control is determined on a case-by-case basis. An entity must disclose its equity interest and demonstrate at least the following indicia of control to establish that it retains *de facto* control of the applicant:

(i) The entity constitutes or appoints more than 50 percent of the board of directors or management committee;

(ii) The entity has authority to appoint, promote, demote, and fire senior executives that control the day-to-day activities of the licensee; and

(iii) The entity plays an integral role in management decisions.

(2) *Calculation of certain interests.* (i) Ownership interests shall be calculated on a fully diluted basis; all agreements such as warrants, stock options and convertible debentures will generally be treated as if the rights thereunder already have been fully exercised.

(ii) Partnership and other ownership interests and any stock interest equity, or outstanding stock, or outstanding voting stock shall be attributed as specified below.

(iii) Stock interests held in trust shall be attributed to any person who holds or shares the power to vote such stock, to any person who has the sole power to sell such stock, and, to any person who has the right to revoke the trust at will or to replace the trustee at will. If the trustee has a familial, personal, or extra-trust business relationship to the grantor or the beneficiary, the grantor or beneficiary, as appropriate, will be attributed with the stock interests held in trust.

(iv) Non-voting stock shall be attributed as an interest in the issuing entity.

(v) Limited partnership interests shall be attributed to limited partners and shall be calculated according to both the percentage of equity paid in and the percentage of distribution of profits and losses.

(vi) Officers and directors of an entity shall be considered to have an attributable interest in the entity. The officers and directors of an entity that controls a licensee or applicant shall be considered to have an attributable interest in the licensee or applicant.

(vii) Ownership interests that are held indirectly by any party through one or more intervening corporations will be determined by successive multiplication of the ownership percentages for each link in the vertical ownership chain and application of the relevant attribution benchmark to the resulting product, except that if the ownership percentage for an interest in any link in the chain exceeds 50 percent or represents actual control, it shall be treated as if it were a 100 percent interest.

(viii) Any person who manages the operations of an applicant or licensee pursuant to a management agreement shall be considered to have an attributable interest in such applicant or licensee if such person or its affiliate pursuant to paragraph (d) of this section has authority to make decisions or otherwise engage in practices or activities that determine, or significantly influence,

(A) The nature or types of services offered by such an applicant or licensee;

(B) The terms upon which such services are offered; or

(C) The prices charged for such services.

(ix) Any licensee or its affiliate who enters into a joint marketing arrangement with an applicant or licensee, or its affiliate, shall be considered to have an attributable interest, if such applicant or licensee, or its affiliate, has authority to make decisions or otherwise engage in practices or activities that determine, or significantly influence,

(A) The nature or types of services offered by such an applicant or licensee;

(B) The terms upon which such services are offered; or

(C) The prices charged for such services.

[59 FR 59507, Nov. 17, 1994, as amended at 64 FR 33781, June 24, 1999]

**§ 22.225 Certifications, disclosures, records maintenance and audits.**

(a) *Short-form applications: certifications and disclosure.* In addition to certifications and disclosures required by part 1, subpart Q, of this chapter, each applicant for a paging license which qualifies as a small business or

consortium of small businesses shall append the following information as an exhibit to its FCC Form 175:

(1) The identity of the applicant's controlling interests and affiliates, and, if a consortium of small businesses, the members of the joint venture; and

(2) The applicant's gross revenues, computed in accordance with § 22.223.

(b) *Long form applications: certifications and disclosure.* Each applicant submitting a long-form application for a paging geographic area authorization and qualifying as a small business shall, in an exhibit to its long-form application:

(1) Disclose separately and in the aggregate the gross revenues, computed in accordance with § 22.223, for each of the following: the applicant, the applicant's affiliates, the applicant's controlling interests, and, if a consortium of small businesses, the members of the joint venture;

(2) List and summarize all agreements or other instruments (with appropriate references to specific provisions in the text of such agreements and instruments) that support the applicant's eligibility as a small business under §§ 22.217 through 22.223, including the establishment of *de facto* and *de jure* control; such agreements and instruments include, but are not limited to, articles of incorporation and bylaws, shareholder agreements, voting or other trust agreements, franchise agreements, and any other relevant agreements, including letters of intent, oral or written; and

(3) List and summarize any investor protection agreements, including rights of first refusal, supermajority clauses, options, veto rights, and rights to hire and fire employees and to appoint members to boards of directors or management committees.

(c) *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 and/or consortium of small businesses under § 22.223. Licensees (and their successors-in-interest) shall maintain such

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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.

(d) *Audits.* (1) Applicants and licensees claiming eligibility as a small business or consortium of small businesses under §§22.217 through 22.223 shall be subject to audits by the Commission. Selection for audit may be random, on information, or on the basis of other factors.

(2) Consent to such audits is part of the certification included in the short-form application (FCC Form 175). Such consent shall include consent to the audit of the applicant's or licensee's books, documents and other material (including accounting procedures and practices) regardless of form or type, sufficient to confirm that such applicant's or licensee's representations are, and remain, accurate. Such consent shall include inspection at all reasonable times of the facilities, or parts thereof, engaged in providing and transacting business, or keeping records regarding licensed paging service and shall also include consent to the interview of principals, employees, customers and suppliers of the applicant or licensee.

(e) *Definitions.* The terms affiliate, small business, consortium of small businesses, gross revenues, and controlling interest used in this section are defined in §22.223.

[59 FR 59507, Nov. 17, 1994, as amended at 64 FR 33782, June 24, 1999]

## § 22.227 Petitions to deny and limitations on settlements.

(a) Procedures regarding petitions to deny long-form applications in the paging service will be governed by §§1.2108(b) through 1.2108(d) of this chapter, §22.130, and §90.163.

(b) 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 §22.129, §90.162, and §1.2105(c) of this chapter.

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### Subpart C—Operational and Technical Requirements

#### OPERATIONAL REQUIREMENTS

#### § 22.301 Station inspection.

Upon reasonable request, the licensee of any station authorized in the Public Mobile Services must make the station and station records available for inspection by authorized representatives of the Commission at any reasonable hour.

[59 FR 59955, Nov. 21, 1994]

#### § 22.303 Retention of station authorizations; identifying transmitters.

The current authorization for each station, together with current administrative and technical information concerning modifications to facilities pursuant to §22.163 and added facilities pursuant to §22.165 must be retained as a permanent part of the station records. A clearly legible photocopy of the authorization must be available at each regularly attended control point of the station, or in lieu of this photocopy, licensees may instead make available at each regularly attended control point the address or location where the licensee's current authorization and other records may be found. The station call sign must be clearly and legibly marked on or near every transmitting facility, other than mobile transmitters, of the station.

#### § 22.305 Operator and maintenance requirements.

FCC operator permits and licenses are not required to operate, repair or maintain equipment authorized in the Public Mobile Services. Station licensees are responsible for the proper operation and maintenance of their stations, and for compliance with FCC rules.

#### § 22.307 Operation during emergency.

Licensees of stations in the Public Mobile services may, during a period of emergency in which normal communications facilities are disrupted as a result of hurricane, flood, earthquake or other natural disaster, civil unrest,

widespread vandalism, national emergencies or emergencies declared by Executive Order of the President, use their stations to temporarily provide emergency communications services in a manner or configuration not normally allowed by this part, provided that such operations comply with the provisions of this section.

(a) *Technical limitations.* Public Mobile stations providing temporary emergency communications service must not transmit:

(1) On channels other than those authorized for normal operations.

(2) With power in excess of that authorized for normal operations;

(3) Emission types other than those authorized for normal operations.

(b) *Discontinuance.* Temporary emergency use of Public Mobile stations must be discontinued as soon as normal communication facilities are restored. The FCC may, at any time, order the discontinuance of any such emergency communication services.

#### § 22.313 Station identification.

The licensee of each station in the Public Mobile Services must ensure that the transmissions of that station are identified in accordance with the requirements of this section.

(a) Station identification is not required for transmission by:

(1) Stations in the Cellular Radiotelephone Service;

(2) General aviation ground stations in the Air-ground Radiotelephone Service;

(3) Rural subscriber stations using meteor burst propagation mode communications in the Rural Radiotelephone Service;

(4) Stations using Basic Exchange Telephone Radio Systems in the Rural Radiotelephone Service;

(5) Nationwide network paging stations operating on 931 MHz channels; or,

(6) Stations operating pursuant to paging geographic area authorizations.

(b) For all other stations in the Public Mobile Services, station identification must be transmitted each hour within five minutes of the hour, or upon completion of the first transmission after the hour. Transmission of station identification may be tempo-

rarily delayed to avoid interrupting the continuity of any public communication in progress, provided that station identification is transmitted at the conclusion of that public communication.

(c) Station identification must be transmitted by telephony using the English language or by telegraphy using the international Morse code, and in a form that can be received using equipment appropriate for the modulation type employed, and understood without the use of unscrambling devices, except that, alternatively, station identification may be transmitted digitally, provided that the licensee provides the Commission with information sufficient to decode the digital transmission to ascertain the call sign. Station identification comprises transmission of the call sign assigned by the Commission to the station, however, the following may be used in lieu of the call sign.

(1) For transmission from subscriber operated transmitters, the telephone number or other designation assigned by the carrier, provided that a written record of such designations is maintained by the carrier;

(2) For general aviation airborne mobile stations in the Air-Ground Radiotelephone Service, the official FAA registration number of the aircraft;

(3) For stations in the Paging and Radiotelephone Service, a call sign assigned to another station within the same system.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59955, Nov. 21, 1994; 62 FR 11633, Mar. 12, 1997]

#### § 22.317 Discontinuance of station operation.

If the operation of a Public Mobile Services station is permanently discontinued, the licensee shall send authorization for cancellation by electronic filing via the ULS on FCC Form 601. For purposes of this section, any station that has not provided service to subscribers for 90 continuous days is considered to have been permanently discontinued, unless the applicant notified the FCC otherwise prior to the end of the 90 day period and provided a date on which operation will resume, which

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date must not be in excess of 30 additional days.

[59 FR 59507, Nov. 17, 1994, as amended at 61 FR 54099, Oct. 17, 1996; 63 FR 68944, Dec. 14, 1998]

**§ 22.321 Equal employment opportunities.**

Public Mobile 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 ensure 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 para-

graph, 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 (FCC), 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 FCC 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 non-discriminatory 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 16 or more full-time employees shall file with the FCC, no later than May 31st following the grant of that licensee's first Public Mobile 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 16 or more full-time employees that changes its existing equal employment opportunity program shall file with the FCC, no later than May 31st thereafter, a revised statement reflecting the change(s).

NOTE TO PARAGRAPH (B) OF § 22.321: Licensees having 16 or more full-time employees that were granted their first Public Mobile Services authorization prior to January 1, 1995, and do not have a current EEO statement on file with the FCC, must file such statement, required by paragraph (b) of this section, 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 FCC 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 FCC 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 FCC 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 FCC maintains a liaison with that agency that keeps the FCC 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 FCC to the respective State agency.

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(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 FCC.

(4) The FCC 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 FCC under § 1.815(a) of this chapter are investigated by the FCC.

(e) *FCC 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 FCC 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 FCC.

(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 FCC 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 2 years.

**§ 22.323 Incidental communication services.**

Carriers authorized to operate stations in the Public Mobile radio services may use these stations to provide

other communications services incidental to the primary public mobile service for which the authorizations were issued, provided that:

(a) The costs and charges of subscribers who do not wish to use incidental services are not increased as a result of provision of incidental services to other subscribers;

(b) The quality of the primary public mobile service does not materially deteriorate as a result of provision of incidental services, and neither growth nor availability of the primary public mobile service is significantly diminished as a result of provision of incidental services; and

(c) The provision of the incidental services is not inconsistent with the Communications Act of 1934, as amended, or with FCC rules and policies.

[59 FR 59507, Nov. 17, 1994, as amended at 63 FR 68944, Dec. 14, 1998; 65 FR 49202, Aug. 11, 2000]

**§ 22.325 Control points.**

Each station in the Public Mobile Services must have at least one control point and a person on duty who is responsible for station operation. This section does not require that the person on duty be at the control point or continuously monitor all transmissions of the station. However, the control point must have facilities that enable the person on duty to turn off the transmitters in the event of a malfunction.

**TECHNICAL REQUIREMENTS**

**§ 22.351 Channel assignment policy.**

The channels allocated for use in the Public Mobile Services are listed in the applicable subparts of this part. Channels and channel blocks are assigned in such a manner as to facilitate the rendition of service on an interference-free basis in each service area. Except as otherwise provided in this part, each channel or channel block is assigned exclusively to one common carrier in each service area. All applicants for, and licensees of, stations in the Public Mobile Services shall cooperate in the selection and use of channels in order to minimize interference and obtain the most efficient use of the allocated spectrum.

**§ 22.352 Protection from interference.**

Public Mobile Service stations operating in accordance with FCC rules that provide technical channel assignment criteria for the radio service and channels involved, all other applicable FCC rules, and the terms and conditions of their authorizations are normally considered to be non-interfering. If the FCC determines, however, that interference that significantly interrupts or degrades a radio service is being caused, it may, in accordance with the provisions of sections 303(f) and 316 of the Communications Act of 1934, as amended, (47 U.S.C. 303(f), 316), require modifications to any Public Mobile station as necessary to eliminate such interference.

(a) *Failure to operate as authorized.* Any licensee causing interference to the service of other stations by failing to operate its station in full accordance with its authorization and applicable FCC rules shall discontinue all transmissions, except those necessary for the immediate safety of life or property, until it can bring its station into full compliance with the authorization and rules.

(b) *Intermodulation interference.* Licensees should attempt to resolve such interference by technical means.

(c) *Situations in which no protection is afforded.* Except as provided elsewhere in this part, no protection from interference is afforded in the following situations:

(1) *Interference to base receivers from base or fixed transmitters.* Licensees should attempt to resolve such interference by technical means or operating arrangements.

(2) *Interference to mobile receivers from mobile transmitters.* No protection is provided against mobile-to-mobile interference.

(3) *Interference to base receivers from mobile transmitters.* No protection is provided against mobile-to-base interference.

(4) *Interference to fixed stations.* Licensees should attempt to resolve such interference by technical means or operating arrangements.

(5) *Anomalous or infrequent propagation modes.* No protection is provided against interference caused by tropo-

spheric and ionospheric propagation of signals.

(6) *Facilities for which the Commission is not notified.* No protection is provided against interference to the service of any additional or modified transmitter operating pursuant to §§1.929 or 22.165, unless and until the licensee modifies its authorization using FCC Form 601.

(7) *In-building radiation systems.* No protection is provided against interference to the service of in-building radiation systems (see §22.383).

[59 FR 59507, Nov. 17, 1994, as amended at 62 FR 11633, Mar. 12, 1997; 63 FR 68944, Dec. 14, 1998]

**§ 22.353 Blanketing interference.**

Licensees of Public Mobile Services stations are responsible for resolving cases of blanketing interference in accordance with the provisions of this section.

(a) Except as provided in paragraph (c) of this section, licensees must resolve any cases of blanketing interference in their area of responsibility caused by operation of their transmitter(s) during a one-year period following commencement of service from new or modified transmitter(s). Interference must be resolved promptly at no cost to the complainant.

(b) The area of responsibility is that area in the immediate vicinity of the transmitting antenna of stations where the field strength of the electromagnetic radiation from such stations equals or exceeds 115 dBµV/m. To determine the radial distance to the boundary of this area, the following formula must be used:

$$d = 0.394 \times \sqrt{p}$$

where d is the radial distance to the boundary, in kilometers

p is the radial effective radiated power, in kilowatts

The maximum effective radiated power in the pertinent direction, without consideration of the antenna's vertical radiation pattern or height, must be used in the formula.

(c) Licensees are not required to resolve blanketing interference to mobile

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receivers or non-RF devices or blanketing interference occurring as a result of malfunctioning or mistuned receivers, improperly installed consumer antenna systems, or the use of high gain antennas or antenna booster amplifiers by consumers.

(d) Licensees that install transmitting antennas at a location where there are already one or more transmitting antennas are responsible for resolving any new cases of blanketing interference in accordance with this section.

(e) Two or more licensees that concurrently install transmitting antennas at the same location are jointly responsible for resolving blanketing interference cases, unless the FCC can readily determine which station is causing the interference, in which case the licensee of that station is held fully responsible.

(f) After the one year period of responsibility to resolve blanketing interference, licensees must provide upon request technical information to complainants on remedies for blanketing interference.

**§ 22.355 Frequency tolerance.**

Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C-1 of this section.

TABLE C-1.—FREQUENCY TOLERANCE FOR TRANSMITTERS IN THE PUBLIC MOBILE SERVICES

Frequency range (MHz)	Base, fixed (ppm)	Mobile ≤3 watts (ppm)	Mobile <=3 watts (ppm)
25 to 50 .....	20.0	20.0	50.0
50 to 450 .....	5.0	5.0	50.0
450 to 512 .....	2.5	5.0	5.0
821 to 896 .....	1.5	2.5	2.5
928 to 929 .....	5.0	n/a	n/a
929 to 960 .....	1.5	n/a	n/a
2110 to 2220 .....	10.0	n/a	n/a

[61 FR 54099, Oct. 17, 1996]

**§ 22.357 Emission types.**

Any authorized station in the Public Mobile Services may transmit any emission type provided that the resulting emission complies with the appropriate emission mask. See §§ 22.359, 22.861 and 22.917.

[61 FR 54099, Oct. 17, 1996]

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**§ 22.359 Emission masks.**

Unless otherwise indicated in the rules governing a specific radio service, all transmitters intended for use in the Public Mobile Services must be designed to comply with the emission masks outlined in this section. If an emission outside of the authorized bandwidth causes harmful interference, the FCC may, at its discretion, require greater attenuation than specified in this section.

(a) *Analog modulation.* For transmitters other than those employing digital modulation techniques, the mean or peak envelope power of adjacent channel emissions must be attenuated below the output mean or peak envelope power of the total emission (P, in Watts) in accordance with the following schedule:

(1) On any frequency removed from the center frequency of the assigned channel by more than 50 percent up to and including 100 percent of the authorized bandwidth:

at least 25 dB;

(2) On any frequency removed from the center frequency of the assigned channel by more than 100 percent up to and including 250 percent of the authorized bandwidth:

at least 35 dB;

(3) On any frequency removed from the center frequency of the assigned channel by more than 250 percent of the authorized bandwidth:

at least 43 + 10 log P dB, or 80 dB, whichever is the lesser attenuation.

(b) *Digital modulation.* For transmitters not equipped with an audio low pass filter and for transmitters employing digital modulation techniques, the mean or peak envelope power of sideband emissions must be attenuated below the mean or peak envelope power of the total emission (P, in Watts) in accordance with the following schedule:

(1) For transmitters that operate in the frequency ranges 35 to 44 MHz, 72 to 73 MHz, 75.4 to 76.0 MHz and 152 to 159 MHz,

(i) On any frequency removed from the center frequency of the assigned channel 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;

(ii) On any frequency removed from the center frequency of the assigned channel 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  $29 \log f_d+11$  dB or 50 dB, whichever is the lesser attenuation;

(iii) On any frequency removed from the center frequency of the assigned channel by more than 250 percent of the authorized bandwidth:

at least  $43 + 10 \log P$  dB, or 80 dB, whichever is the lesser attenuation.

(2) For transmitters that operate in the frequency ranges 450 to 512 MHz and 929 to 932 MHz,

(i) On any frequency removed from the center frequency of the assigned channel 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;

(ii) On any frequency removed from the center frequency of the assigned channel 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  $116 \log (f_d+6.1)$  dB, or  $50 + 10 \log P$  dB, or 70 dB, whichever is the lesser attenuation;

(iii) On any frequency removed from the center frequency of the assigned channel by more than 250 percent of the authorized bandwidth:

at least  $43 + 10 \log P$  dB, or 80 dB, whichever is the lesser attenuation.

(c) *Measurement procedure.* Either peak or average power may be used, provided that the same technique is used for both the adjacent channel or sideband emissions and the total emission. The resolution bandwidth of the measuring instrument must be set to 300 Hz for measurements on any frequency removed from the center frequency of the assigned channel by no more than 250 percent of the authorized bandwidth and 30 kHz for measurements on any frequency removed from the center frequency of the assigned

channel by more than 250 percent of the authorized bandwidth.

**§ 22.361 Standby facilities.**

Licensees of stations in the Public Mobile Services may install standby transmitters for the purpose of continuing service in the event of failure or during required maintenance of regular transmitters without obtaining separate authorization, provided that operation of the standby transmitters would not increase the service areas or interference potential of the stations, and that such standby transmitters use the same antenna as the regular transmitters they temporarily replace.

TABLE C-2.—TECHNICAL REQUIREMENTS FOR DIRECTIONAL ANTENNAS

Frequency range	Maximum beamwidth	Suppression
35 to 512 MHz	80°	10 dB
512 to 1500 MHz	20°	13 dB
1500 to 2500 MHz	12°	13 dB

[59 FR 59507, Nov. 17, 1994; 60 FR 9889, Feb. 22, 1995]

**§ 22.363 Directional antennas.**

Fixed transmitters for point-to-point operation must use a directional transmitting antenna with the major lobe of radiation in the horizontal plane directed toward the receiving antenna or passive reflector of the station for which the transmissions are intended. Directional antennas used in the Public Mobile Services must meet the technical requirements given in Table C-2 to § 22.361.

(a) Maximum beamwidth is for the major lobe at the half power points.

(b) Suppression is the minimum attenuation for any secondary lobe referenced to the main lobe.

(c) An omnidirectional antenna may be used for fixed transmitters where there are two or more receive locations at different azimuths.

**§ 22.365 Antenna structures; air navigation safety.**

Licensees that own their antenna structures must not allow these antenna structures to become a hazard to air navigation. In general, antenna

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structure owners are responsible for registering antenna structures with the FCC if required by part 17 of this chapter, and for installing and maintaining any required marking and lighting. However, in the event of default of this responsibility by an antenna structure owner, each FCC permittee or licensee authorized to use an affected antenna structure will be held responsible by the FCC for ensuring that the antenna structure continues to meet the requirements of part 17 of this chapter. See § 17.6 of this chapter.

(a) *Marking and lighting.* Antenna structures must be marked, lighted and maintained in accordance with Part 17 of this chapter and all applicable rules and requirements of the Federal Aviation Administration.

(b) *Maintenance contracts.* Antenna structure owners (or licensees and permittees, in the event of default by an antenna structure owner) may enter into contracts with other entities to monitor and carry out necessary maintenance of antenna structures. Antenna structure owners (or licensees and permittees, in the event of default by an antenna structure owner) that make such contractual arrangements continue to be responsible for the maintenance of antenna structures in regard to air navigation safety.

[61 FR 4365, Feb. 6, 1996]

### § 22.367 Wave polarization.

Public mobile station antennas must be of the correct type and properly installed such that the electromagnetic emissions have the polarization required by this section.

(a) *Vertical.* Waves radiated by the following must be vertically polarized:

(1) Base, mobile, dispatch, and auxiliary test transmitters in the Paging and Radiotelephone Service;

(2) Transmitters in the Offshore Radiotelephone Service;

(3) Transmitters on channels in the 72-76 MHz frequency range;

(4) Base, mobile and auxiliary test transmitters in the Cellular Radiotelephone Service;

(5) Control and repeater transmitters on channels in the 900-960 MHz frequency range;

(6) Rural subscriber stations communicating with base transmitters in the

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Paging and Radiotelephone Service pursuant to § 22.563.

(7) Ground and airborne mobile transmitters in the Air-ground Radiotelephone Service.

(b) *Horizontal.* Waves radiated by transmitters in the Public Mobile Services, other than transmitters required by paragraph (a) of this section to radiate a vertically polarized wave must be horizontally polarized, except as otherwise provided in paragraphs (c) and (d) of this section.

(c) *Circular.* If communications efficiency would be improved and/or interference reduced, the FCC may authorize transmitters other than those listed in paragraphs (a)(1) through (a)(7) of this section to radiate a circularly polarized wave.

(d) *Any polarization.* Public Land Mobile stations transmitting on channels higher than 960 MHz are not limited as to wave polarization.

### § 22.371 Disturbance of AM broadcast station antenna patterns.

Public Mobile Service licensees that construct or modify towers in the immediate vicinity of AM broadcast stations are responsible for measures necessary to correct disturbance of the AM station antenna pattern which causes operation outside of the radiation parameters specified by the FCC for the AM station, if the disturbance occurred as a result of such construction or modification.

(a) *Non-directional AM stations.* If tower construction or modification is planned within 1 kilometer (0.6 mile) of a non-directional AM broadcast station tower, the Public Mobile Service licensee must notify the licensee of the AM broadcast station in advance of the planned construction or modification. Measurements must be made to determine whether the construction or modification affected the AM station antenna pattern. The Public Mobile Service licensee is responsible for the installation and continued maintenance of any detuning apparatus necessary to restore proper non-directional performance of the AM station tower.

(b) *Directional AM stations.* If tower construction or modification is planned within 3 kilometers (1.9 miles)

of a directional AM broadcast station array, the Public Mobile Service licensee must notify the licensee of the AM broadcast station in advance of the planned construction or modification. Measurements must be made to determine whether the construction or modification affected the AM station antenna pattern. The Public Mobile Service licensee is responsible for the installation and continued maintenance of any detuning apparatus necessary to restore proper performance of the AM station array.

**§ 22.373 Access to transmitters.**

Unless otherwise provided in this part, the design and installation of transmitters in the Public Mobile Services must meet the requirements of this section.

(a) Transmitters and control points, other than those used with in-building radiation systems, must be installed such that they are readily accessible only to persons authorized by the licensee to operate or service them.

(b) Transmitters must be designed and installed such that any adjustments or controls that could cause the transmitter to deviate from its authorized operating parameters are readily accessible only to persons authorized by the licensee to make such adjustments.

(c) Transmitters (other than hand-carried or pack-carried mobile transmitters) and control points must be equipped with a means of indicating when the control circuitry has been put in a condition that should cause the transmitter to radiate.

(d) Transmitters must be designed such that they can be turned off independently of any remote control circuits.

(e) Transmitters used with in-building radiation systems must be installed such that, to the extent possible, they are readily accessible only to persons authorized by the licensee to access them.

(f) Transmitters used with in-building radiation systems must be designed such that, in the event an unauthorized person does gain access, that person can not cause the transmitter to deviate from its authorized operating pa-

rameters in such a way as to cause interference to other stations.

**§ 22.377 Certification of transmitters.**

Except as provided in paragraph (b) of this section, transmitters used in the Public Mobile Services, including those used with signal boosters, in-building radiation systems and cellular repeaters, must be certificated for use in the radio services regulated under this part. Transmitters must be certificated when the station is ready for service, not necessarily at the time of filing an application.

(a) The FCC may list as certificated only transmitters that are capable of meeting all technical requirements of the rules governing the service in which they will operate. The procedure for obtaining certification is set forth in part 2 of this chapter.

(b) Transmitters operating under a developmental authorization (see subpart D of this part) do not have to be certificated.

(c) In addition to the technical standards contained in this part, transmitters intended for operation in the Cellular Radiotelephone Service must be designed to comply with the technical requirements contained in the cellular system compatibility specification (see § 22.933) and the electronic serial number rule (see § 22.919).

[59 FR 59507, Nov. 17, 1994, as amended at 61 FR 31051, June 19, 1996; 63 FR 36603, July 7, 1998]

**§ 22.379 Replacement of equipment.**

Licensees may replace any equipment in Public Mobile Service stations without applying for authorization or notifying the FCC, provided that:

(a) If a transmitter is replaced, the replacement transmitter must be certificated for use in the Public Mobile Services;

(b) The antenna structure must not become a hazard to air navigation and its height must not be increased;

(c) The interference potential of the station must not be increased;

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(d) The Effective radiated power, emission type, antenna radiation pattern and center of radiation height above average terrain are not changed.

[59 FR 59507, Nov. 17, 1994, as amended at 63 FR 36603, July 7, 1998]

**§ 22.381 Auxiliary test transmitters.**

Auxiliary test transmitters may be used only for testing the performance of fixed receiving equipment located remotely from the control point. Auxiliary test transmitters may transmit only on channels designated for mobile transmitters.

**§ 22.383 In-building radiation systems.**

Licensees may install and operate in-building radiation systems without applying for authorization or notifying the FCC, provided that the locations of the in-building radiation systems are within the protected service area of the licensee's authorized transmitter(s) on the same channel or channel block.

**Subpart D—Developmental Authorizations**

**§ 22.401 Description and purposes of developmental authorizations.**

Communications common carriers may apply for, and the FCC may grant, authority to construct and operate one or more transmitters subject to the rules in this subpart and other limitations, waivers and/or conditions that may be prescribed. Authorizations granted on this basis are developmental authorizations. In general, the FCC grants developmental authorizations in situations and circumstances where it cannot reasonably be determined in advance whether a particular transmitter can be operated or a particular service can be provided without causing interference to the service of existing stations. For example, the FCC may grant developmental authorizations for:

(a) Field strength surveys to evaluate the technical suitability of antenna locations for stations in the Public Mobile Services;

(b) Experimentation leading to the potential development of a new Public Mobile Service or technology; or,

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(c) Stations transmitting on channels in certain frequency ranges, to provide a trial period during which it can be individually determined whether such stations can operate without causing excessive interference to existing services.

**§ 22.403 General limitations.**

The provisions and requirements of this section are applicable to all developmental authorizations.

(a) Developmental authorizations are granted subject to the condition that they may be cancelled by the FCC at any time, upon notice to the licensee, and without the opportunity for a hearing.

(b) Except as otherwise indicated in this subpart, developmental authorizations normally terminate one year from the date of grant. The FCC may, however, specify a different term.

(c) Stations operating under developmental authorizations must not interfere with the services of regularly authorized stations.

(d) A grant of a developmental authorization does not provide any assurance that the FCC will grant an application for regular authorization to operate the same transmitter(s), even if operation during the developmental period has not caused interference and/or the developmental program is successful.

**§ 22.409 Developmental authorization for a new Public Mobile Service or technology.**

The FCC may grant applications for developmental authority to construct and operate transmitters for the purpose of developing a new Public Mobile Service or a new technology not regularly authorized under this part, subject to the requirements of this section. Such applications may request the use of any portion of the spectrum allocated for Public Mobile Services in the Table of Frequency Allocations contained in part 2 of this chapter, regardless of whether that spectrum is regularly available under this part. Requests to use any portion of the spectrum for a service or purpose other than that indicated in the Table of Frequency Allocations in part 2 of this

chapter may be made only in accordance with the provisions of part 5 of this chapter.

(a) *Preliminary determination.* The FCC will make a preliminary determination with respect to the factors in paragraphs (a)(1) through (a)(3) of this section before acting on an application for developmental authority pursuant to this section. These factors are:

(1) That the public interest, convenience or necessity warrants consideration of the establishment of the proposed service or technology;

(2) That the proposal appears to have potential value to the public that could warrant the establishment of the new service or technology;

(3) That some operational data should be developed for consideration in any rule making proceeding which may be initiated to establish such service or technology.

(b) *Petition required.* Applications for developmental authorizations pursuant to this section must be accompanied by a petition for rule making requesting the FCC to amend its rules as may be necessary to provide for the establishment of the proposed service or technology.

(c) *Application requirements.* Authorizations for developmental authority pursuant to this section will be issued only upon a showing that the applicant has a definite program of research and development which has reasonable promise of substantial contribution to the services authorized by this part. The application must contain an exhibit demonstrating the applicant's technical qualifications to conduct the research and development program, including a description of the nature and extent of engineering facilities that the applicant has available for such purpose. Additionally, the FCC may, in its discretion, require a showing of financial qualification.

(d) *Communication service for hire prohibited.* Stations authorized under developmental authorizations granted pursuant to this section must not be used to provide communication service for hire, unless otherwise specifically authorized by the FCC.

(e) *Adherence to program.* Carriers granted developmental authorization pursuant to this section must substan-

tially adhere to the program of research and development described in their application for developmental authorization, unless the FCC directs otherwise.

(f) *Report requirements.* Upon completion of the program of research and development, or upon the expiration of the developmental authorization under which such program was permitted, or at such times during the term of the station authorization as the FCC may deem necessary to evaluate the progress of the developmental program, the licensee shall submit a comprehensive report, containing:

(1) A description of the progress of the program and a detailed analysis of any result obtained;

(2) Copies of any publications produced by the program;

(3) A listing of any patents applied for, including copies of any patents issued;

(4) Copies of any marketing surveys or other measures of potential public demand for the new service;

(5) A description of the carrier's experiences with operational aspects of the program including—

(i) The duration of transmissions on each channel or frequency range and the technical parameters of such transmissions; and,

(ii) Any interference complaints received as a result of operation and how these complaints were investigated and resolved.

(g) *Confidentiality.* Normally, applications and developmental reports are a part of the FCC's public records. However, an applicant or licensee may request that the FCC withhold from public records specific exhibits, reports and other material associated with a developmental authorization.

(h) *Renewal.* Expiring developmental authorizations issued pursuant to this section may be renewed if the carrier—

(1) Shows that further progress in the program of research and development requires additional time to operate under developmental authorization;

(2) Complied with the reporting requirements of paragraph (f) of this section; and,

(3) Immediately resolved to the FCC's satisfaction all complaints of interference caused by the station operating under developmental authority.

[59 FR 59507, Nov. 17, 1994, as amended at 61 FR 54099, Oct. 17, 1996]

**§ 22.411 Developmental authorization of 43 MHz paging transmitters.**

Because of the potential for interference to the intermediate frequency stages of receivers in broadcast television sets and video recorders, 43 MHz paging channels are assigned only under developmental authorizations subject to the requirements of this section, except as provided in paragraph (d) of this section.

(a) *Carrier responsibility.* Carriers so authorized shall operate the 43 MHz paging service under developmental authority for a period of two years. During the two year developmental period, carriers must resolve any broadcast television receiver intermediate frequency interference problems that may occur as a result of operation of the 43 MHz paging transmitter(s). Carriers shall inform subscribers receiving service on the channels assigned under developmental authority during the developmental period that this service could be terminated by the FCC on short notice if such action were to become necessary to eliminate interference. Carriers shall notify the appropriate FCC Field Office, in advance, of the date on which service to subscribers is to begin.

(b) *Periodic surveys.* To determine the extent of any interference to broadcast television receivers resulting from operation of 43 MHz paging stations authorized pursuant to this section, carriers shall conduct semi-annual surveys during the first two years of operation. The first such survey is to begin on the date when service to subscribers commences. For each survey, the carrier shall contact at least 25 television viewers to determine whether they have experienced interference.

(1) The carrier shall contact viewers located throughout the geographic area encompassed by a 3 kilometer (2 mile) radius of the 43 MHz paging transmitter antenna site. The carrier must not attempt to obtain a misleading survey by contacting only viewers less

likely to be experiencing interference. For example, the carrier must not contact only the viewers located most distant from the paging transmitter antenna site. Instead, the carrier shall contact viewers located near the paging transmitter antenna site.

(2) The carrier shall not, in subsequent surveys, contact viewers who were contacted in a previous survey; provided that, in the event that all of the viewers within 3 kilometers (2 miles) have been contacted, viewers located near the paging transmitter antenna site shall be contacted again.

(c) *Periodic reports.* Following each survey, the carrier shall submit to the FCC a written report disclosing and evaluating the extent of any interference. These reports must include:

- (1) The number of the report (1 to 4);
- (2) The station call sign;
- (3) The file number of the application that resulted in the developmental authorization;
- (4) An exact description of the transmitter location(s);
- (5) The date(s) and time of day when the survey was conducted;
- (6) The survey method used (e.g. telephone, on-site, etc.);
- (7) The names, addresses and telephone numbers of the viewers contacted;

(8) If interference resulted from operation of the 43 MHz paging station, a summary of how the interference problem was resolved;

(9) The names and telephone numbers of any technical personnel consulted and/or employed to resolve interference problems.

(d) *Exceptions.* The FCC may grant a regular authorization in the Paging and Radiotelephone Service for a 43 MHz paging station in the following circumstances:

- (1) After the two-year developmental period, provided that broadcast TV interference complaints have been resolved by the carrier in a satisfactory manner. Licensees that hold a developmental authorization for a 43 MHz paging station and wish to request a regular authorization must file an application using FCC Form 601 via the ULS prior to the expiration of the developmental period.

(2) In the case of the assignment of or a transfer of control of a regular authorization of a 43 MHz paging station in the Paging and Radiotelephone Service, provided that the station has been in continuous operation providing service with no substantial interruptions.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994; 63 FR 68944, Dec. 14, 1998]

**§ 22.413 Developmental authorization of 72-76 MHz fixed transmitters.**

Because of the potential for interference with the reception by broadcast television sets and video recorders of full service TV stations transmitting on TV Channels 4 and 5, 72-76 MHz channels are assigned for use within 16 kilometers (10 miles) of the antenna of any full service TV station transmitting on TV Channel 4 or 5 only under developmental authorizations subject to the requirements of this section, except as provided in paragraph (b) of this section.

(a) *Carrier responsibility.* Carriers so authorized shall operate the 72-76 MHz fixed station under developmental authority for a period of at least six months. During the developmental period, carriers must resolve any broadcast television receiver interference problems that may occur as a result of operation of the 72-76 MHz transmitter(s).

(b) *Exceptions.* The FCC may grant a regular authorization in the Paging and Radiotelephone Service for a 72-76 MHz fixed station under the following circumstances:

(1) After six months of operation under developmental authorization, and provided that broadcast TV interference complaints have been resolved by the carrier in a satisfactory manner. Licensees that hold a developmental authorization for a 72-76 MHz fixed station and wish to request a regular authorization must file an application using FCC Form 601 via the ULS prior to the expiration of the developmental authorization.

(2) In the case of the assignment of or a transfer of control of a regular authorization of a 72-76 MHz fixed station in the Paging and Radiotelephone Service, the FCC may grant such as-

ignment or consent to such transfer of control provided that the station has been in continuous operation providing service with no substantial interruptions.

(3) If a proposed 72-76 MHz fixed transmitter antenna is to be located within 50 meters (164 feet) of the antenna of the full service TV station transmitting on TV Channel 4 or 5, the FCC may grant a regular authorization instead of a developmental authorization.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994; 63 FR 68944, Dec. 14, 1998]

**§ 22.415 Developmental authorization of 928-960 MHz fixed transmitters.**

Channels in the 928-929 MHz and 952-960 MHz ranges may be assigned under developmental authorizations to fixed transmitters in point-to-multipoint systems at locations that are short-spaced (i.e. do not meet the 113 kilometer (70 mile) separation requirement of § 22.625), subject to the requirements of this section.

(a) *Carrier responsibility.* Applications for developmental authorizations pursuant to this section must contain an engineering analysis that shows that no interference will be caused or received. Carriers so authorized shall operate the short-spaced transmitter for a period of one year.

(b) *Exceptions.* The FCC may grant a regular authorization in the Paging and Radiotelephone Service for a short-spaced fixed station under the following circumstances:

(1) After one year of operation under developmental authorization, and provided that no interference has been caused. Licensees that hold a developmental authorization and wish to request a regular authorization must file an application using FCC Form 601 prior to the expiration of the developmental authorization.

(2) In the case of the assignment of or a transfer of control of a regular authorization of a short-spaced fixed station in the Paging and Radiotelephone Service, the FCC may grant such assignment or consent to such transfer of control provided that the station has been in continuous operation providing

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service and no interference has been caused.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994; 63 FR 68944, Dec. 14, 1998]

**§ 22.417 Developmental authorization of meteor burst systems.**

Because of the potential for interference to other 42-46 MHz operations, central office and rural subscriber stations in Alaska are authorized to use meteor burst propagation modes to provide rural radiotelephone service only under developmental authorizations subject to the requirements of this section, except as provided in paragraph (b) of this section. See also §§ 22.725(c) and 22.729.

(a) *Carrier responsibility.* Carriers and subscribers so authorized shall operate the station under developmental authority for a period of at least one year.

(b) *Exceptions.* The FCC may grant a regular authorization in the Rural Radiotelephone Service for a central office or rural subscriber to use meteor burst propagation modes to provide rural radiotelephone service under the following circumstances:

(1) After six months of operation under developmental authorization, and provided that no interference has been caused to other operations. Licensees that hold a developmental authorization to use meteor burst propagation modes to provide rural radiotelephone service and wish to request a regular authorization must file an application using FCC Form 601 prior to the expiration of the developmental authorization.

(2) In the case of the assignment of or a transfer of control of a regular authorization of a central office or rural subscriber station authorizing the use of meteor burst propagation modes in the Rural Radiotelephone Service, the FCC may grant such assignment or consent to such transfer of control provided that the station has been in operation providing service with no substantial interruptions.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994; 63 FR 68944, Dec. 14, 1998]

**Subpart E—Paging and Radiotelephone Service**

**§ 22.501 Scope.**

The rules in this subpart govern the licensing and operation of public mobile paging and radiotelephone stations. The licensing and operation of these stations are also subject to rules elsewhere in this part that apply generally to the Public Mobile Services. However, in case of conflict, the rules in this subpart govern.

**§ 22.503 Paging geographic area authorizations.**

The FCC considers applications for and issues paging geographic area authorizations in the Paging and Radiotelephone Service in accordance with the rules in this section. Each paging geographic area authorization contains conditions requiring compliance with paragraphs (h) and (i) of this section.

(a) *Channels.* The FCC may issue a paging geographic area authorization for any channel listed in § 22.531 of this part or for any channel pair listed in § 22.561 of this part.

(b) *Paging geographic areas.* The paging geographic areas are as follows:

(1) The Nationwide paging geographic area comprises the District of Columbia and all States, Territories and possessions of the United States of America.

(2) Major Economic Areas (MEAs) and Economic Areas (EAs) are defined below. EAs are defined by the Department of Commerce, Bureau of Economic Analysis. See Final Redefinition of the MEA Economic Areas, 60 FR 13114 (March 10, 1995). MEAs are based on EAs. In addition to the Department of Commerce's 172 EAs, the FCC shall separately license Guam and the Northern Mariana Islands, Puerto Rico and the United States Virgin Islands, and American Samoa, which have been assigned FCC-created EA numbers 173-175, respectively, and MEA numbers 49-51, respectively.

(3) The 51 MEAs are composed of one or more EAs as defined in the following table:

MEAs	EAs
1 (Boston) .....	1-3.
2 (New York City) .....	4-7, 10.

MEAs	EAs
3 (Buffalo) .....	8.
4 (Philadelphia) .....	11–12.
5 (Washington) .....	13–14.
6 (Richmond) .....	15–17, 20.
7 (Charlotte-Greensboro-Greenville-Raleigh) .....	18–19, 21–26, 41–42, 46.
8 (Atlanta) .....	27–28, 37–40, 43.
9 (Jacksonville) .....	29, 35.
10 (Tampa-St. Petersburg-Orlando) .....	30, 33–34.
11 (Miami) .....	31–32.
12 (Pittsburgh) .....	9, 52–53.
13 (Cincinnati-Dayton) .....	48–50.
14 (Columbus) .....	51.
15 (Cleveland) .....	54–55.
16 (Detroit) .....	56–58, 61–62.
17 (Milwaukee) .....	59–60, 63, 104–105, 108.
18 (Chicago) .....	64–66, 68, 97, 101.
19 (Indianapolis) .....	67.
20 (Minneapolis-St. Paul) .....	106–107, 109–114, 116.
21 (Des Moines-Quad Cities) .....	100, 102–103, 117.
22 (Knoxville) .....	44–45.
23 (Louisville-Lexington-Evansville) .....	47, 69–70, 72.
24 (Birmingham) .....	36, 74, 78–79.
25 (Nashville) .....	71.
26 (Memphis-Jackson) .....	73, 75–77.
27 (New Orleans-Baton Rouge) .....	80–85.
28 (Little Rock) .....	90–92, 95.
29 (Kansas City) .....	93, 99, 123.
30 (St. Louis) .....	94, 96, 98.
31 (Houston) .....	86–87, 131.
32 (Dallas-Fort Worth) .....	88–89, 127–130, 135, 137–138.
33 (Denver) .....	115, 140–143.
34 (Omaha) .....	118–121.
35 (Wichita) .....	122.
36 (Tulsa) .....	124.
37 (Oklahoma City) .....	125–126.
38 (San Antonio) .....	132–134.
39 (El Paso-Albuquerque) .....	136, 139, 155–157.
40 (Phoenix) .....	154, 158–159.
41 (Spokane-Billings) .....	144–147, 168.
42 (Salt Lake City) .....	148–150, 152.
43 (San Francisco-Oakland-San Jose) .....	151, 162–165.
44 (Los Angeles-San Diego) .....	153, 160–161.
45 (Portland) .....	166–167.
46 (Seattle) .....	169–170.
47 (Alaska) .....	171.
48 (Hawaii) .....	172.
49 (Guam and the Northern Mariana Islands) .....	173.
50 (Puerto Rico and U.S. Virgin Islands) .....	174.
51 (American Samoa) .....	175.

(c) *Availability.* The FCC may determine whether to issue a paging geographic area authorization for any specific channel or channel pair in any specific paging geographic area. The FCC may replace existing site specific authorizations for facilities on a channel or channel pair located in a paging geographic area with a paging geographic area authorization for that channel or channel pair, if in its sole discretion, the FCC determines that

the public interest would be served by such replacement.

(d) *Filing windows.* The FCC accepts applications for paging geographic area authorizations only during filing windows. The FCC issues Public Notices announcing in advance the dates of the filing windows, and the specific paging geographic areas and channels for which applications may be accepted.

(e) *One grant per geographic area.* The FCC may grant one and only one application for a paging geographic area authorization for any specific channel or channel pair in any specific paging geographic area defined in paragraph (b) of this section. Selection from among mutually exclusive applications for a paging geographic area authorization will be made in accordance with the procedures in §§22.131 and 22.200 through 22.299. If after the selection process but prior to filing a “long form” application, a successful bidder decides to partition the paging geographic area, the FCC may require and accept multiple “long form” applications from the consortium members.

(f) *Exclusive right to expand.* During the term of a paging geographic area authorization, the FCC does not accept, from anyone other than the paging geographic area licensee, any major application for authorization to operate a facility that would serve unserved area within the paging geographic area specified in that paging geographic area authorization, on the channel specified in that paging geographic area authorization, unless any extension of the interfering contour of the proposed facility falls:

(1) Within the composite interfering contour of another licensee; or,

(2) Into unserved area and the paging geographic area licensee consents to such extension.

(g) *Subsequent applications not accepted.* During the term of a paging geographic area authorization, the FCC does not accept any application for authorization relating to a facility that is or would be located within the paging geographic area specified in that paging geographic area authorization, on the channel specified in that paging geographic area authorization, except in the following situations:

(1) FCC grant of an application authorizing the construction of the facility could have a significant environmental effect as defined by §1.1307 of this chapter. *See* §22.115(a)(5).

(2) Specific international coordination procedures are required, prior to assignment of a channel to the facility, pursuant to a treaty or other agreement between the United States government and the government of Canada or Mexico. *See* §22.169.

(3) The paging geographic area licensee or another licensee of a system within the paging geographic area applies to assign its authorization or for FCC consent to a transfer of control.

(h) *Adjacent geographic area coordination required.* Before constructing a facility for which the interfering contour (as defined in §22.537 or §22.567 of this part, as appropriate for the channel involved) would extend into another paging geographic area, a paging geographic area licensee must obtain the consent of the relevant co-channel paging geographic area licensee, if any, into whose area the interfering contour would extend. Licensees are expected to cooperate fully and in good faith attempt to resolve potential interference problems before bringing matters to the FCC. In the event that there is no co-channel paging geographic area licensee from whom to obtain consent in the area into which the interfering contour would extend, the facility may be constructed and operated subject to the condition that, at such time as the FCC issues a paging geographic area authorization for that adjacent geographic area, either consent must be obtained or the facility modified or eliminated such that the interfering contour no longer extends into the adjacent geographic area.

(i) *Protection of existing service.* All facilities constructed and operated pursuant to a paging geographic area authorization must provide co-channel interference protection in accordance with §22.537 or §22.567, as appropriate for the channel involved, to all authorized co-channel facilities of exclusive licensees within the paging geographic area. Non-exclusive licensees on the thirty-five exclusive 929 MHz channels are not entitled to exclusive status, and will continue to operate under the

sharing arrangements established with the exclusive licensees and other non-exclusive licensees that were in effect prior to February 19, 1997. MEA, EA, and nationwide geographic area licensees have the right to share with non-exclusive licensees on the thirty-five exclusive 929 MHz channels on a non-interfering basis.

(j) *Site location restriction.* The transmitting antenna of each facility constructed and operated pursuant to a paging geographic area authorization must be located within the paging geographic area specified in the authorization.

(k) *Coverage requirements.* Failure by an MEA or EA licensee to meet either the coverage requirements in paragraphs (k)(1) and (k)(2) of this section, or alternatively, the substantial service requirement in paragraph (k)(3) of this section, will result in automatic termination of authorizations for those facilities that were not authorized, constructed, and operating at the time the geographic area authorization was granted. MEA and EA licensees have the burden of showing when their facilities were authorized, constructed, and operating, and should retain necessary records of these sites until coverage requirements are fulfilled. For the purpose of this paragraph, to “cover” area means to include geographic area within the composite of the service contour(s) determined by the methods of §§22.537 or 22.567 as appropriate for the particular channel involved. Licensees may determine the population of geographic areas included within their service contours using either the 1990 census or the 2000 census, but not both.

(1) No later than three years after the initial grant of an MEA or EA geographic area authorization, the licensee must construct or otherwise acquire and operate sufficient facilities to cover one third of the population in the paging geographic area. The licensee must notify the FCC at the end of the three-year period pursuant to §1.946 of this chapter, either that it has satisfied this requirement or that it plans to satisfy the alternative requirement to provide substantial service in accordance with paragraph (k)(3) of this section.

(2) No later than five years after the initial grant of an MEA or EA geographic area authorization, the licensee must construct or otherwise acquire and operate sufficient facilities to cover two thirds of the population in the paging geographic area. The licensee must notify the FCC at the end of the five year period pursuant to §1.946 of this chapter, either that it has satisfied this requirement or that it has satisfied the alternative requirement to provide substantial service in accordance with paragraph (k)(3) of this section.

(3) As an alternative to the coverage requirements of paragraphs (k)(1) and (k)(2) of this section, the paging geographic area licensee may demonstrate that, no later than five years after the initial grant of its paging geographic area authorization, it provides substantial service to the paging geographic area. "Substantial service" means service that is sound, favorable, and substantially above a level of mediocre service that would barely warrant renewal.

[62 FR 11633, Mar. 12, 1997, as amended at 63 FR 68945, Dec. 14, 1998; 64 FR 33782, June 24, 1999]

**§22.507 Number of transmitters per station.**

This section concerns the number of transmitters licensed under each station authorization in the Paging and Radiotelephone Service, other than paging geographic area authorizations.

(a) *Operationally related transmitters.* Each station must have at least one transmitter. There is no limit to the number of transmitters that a station may comprise. However, transmitters within a station should be operationally related and/or should serve the same general geographical area. Operationally related transmitters are those that operate together as a system (e.g., trunked systems, simulcast systems), rather than independently.

(b) *Split of large systems.* The FCC may split wide-area systems into two or more stations for administrative convenience. Except for nationwide paging and other operationally related transmitters, transmitters that are widely separated geographically are not licensed under a single authorization.

(c) *Consolidation of separate stations.* The FCC may consolidate site-specific contiguous authorizations upon request (FCC Form 601) of the licensee, if appropriate under paragraph (a) of this section. Paging licensees may include remote, stand-alone transmitters under the single system-wide authorization, if the remote, stand-alone transmitter is linked to the system via a control/repeater facility or by satellite. Including a remote, stand-alone transmitter in a system-wide authorization does not alter the limitations provided under §22.503(f) on entities other than the paging geographic area licensee. In the alternative, paging licensees may maintain separate site-specific authorizations for stand-alone or remote transmitters. The earliest expiration date of the authorizations that make up the single system-wide authorization will determine the expiration date for the system-wide authorization. Licensees must file timely renewal applications for site-specific authorizations included in a single system-wide authorization request until the request is approved. Renewal of the system-wide authorization will be subject to §1.949 of this chapter.

(d) *Replacement of site-by-site authorizations with single authorization.* After a paging geographic area authorization for a channel has been issued, the FCC may, on its own motion, replace the authorization(s) of any other licensee (for facilities located within that paging geographic area on that channel) with a single replacement authorization.

[62 FR 11634, Mar. 12, 1997, as amended at 63 FR 68945, Dec. 14, 1998; 64 FR 33784, June 24, 1999]

**§22.509 Procedures for mutually exclusive applications in the Paging and Radiotelephone Service.**

Mutually exclusive applications in the Paging and Radiotelephone Service, including those that are mutually exclusive with applications in the Rural Radiotelephone Service, are processed in accordance with §22.131 and with this section.

(a) Applications in the Paging and Radiotelephone Service may be mutually exclusive with applications in the Rural Radiotelephone Service if they

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seek authorization to operate facilities on the same channel in the same area, or the technical proposals are otherwise in conflict. See § 22.567.

(b) A modification application in either service filed on the earliest filing date may cause all later-filed mutually exclusive applications of any type in either service to be “cut off” (excluded from a same-day filing group) and dismissed, pursuant to § 22.131(c)(3)(ii) and § 22.131(c)(4).

[59 FR 59956, Nov. 21, 1994; as amended at 61 FR 54099, Oct. 17, 1996; 64 FR 33784, June 24, 1999]

### § 22.511 Construction period for the Paging and Radiotelephone Service.

The construction period for stations in the Paging and Radiotelephone Service is one year.

### § 22.513 Partitioning and disaggregation.

MEA and EA licensees may apply to partition their authorized geographic service area or disaggregate their authorized spectrum at any time following grant of their geographic area authorizations. Nationwide geographic area licensees may apply to partition their authorized geographic service area or disaggregate their authorized spectrum at any time as of August 23, 1999.

(a) *Application required.* Parties seeking approval for partitioning and/or disaggregation shall apply for partial assignment of a license pursuant to § 1.948 of this chapter.

(b) *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 authorized geographic service area. The partitioned service area shall be defined by 120 sets of geographic coordinates at points at every 3 degrees azimuth from a point within the partitioned service area along the partitioned service area boundary unless either an FCC-recognized service area is used (e.g., MEA or EA) or county lines are followed. The geographical coordinates must be specified in degrees, minutes, and seconds to the nearest

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second latitude and longitude, and must be based upon the 1983 North American Datum (NAD83). In the case where FCC-recognized service areas or county lines are used, applicants need only list the specific area(s) through use of FCC designations or county names that constitute the partitioned area.

(c) *Disaggregation.* Spectrum may be disaggregated in any amount.

(d) *Combined partitioning and disaggregation.* Licensees may apply for partial assignment of authorizations that propose combinations of partitioning and disaggregation.

(e) *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 § 1.955 of this chapter.

(f) *Coverage requirements for partitioning.* (1) Parties to a partitioning agreement must satisfy at least one of the following requirements:

(i) The partitionee must satisfy the applicable coverage requirements set forth in § 22.503(k)(1), (2) and (3) for the partitioned license area; or

(ii) The original licensee must meet the coverage requirements set forth in § 22.503(k)(1), (2) and (3) for the entire geographic area. In this case, the partitionee must meet only the requirements for renewal of its authorization for the partitioned license area.

(2) Parties seeking authority to partition must submit with their partial assignment application a certification signed by both parties stating which of the above options they select.

(3) Partitionees must submit supporting documents showing compliance with their coverage requirements as set forth in § 22.503(k)(1), (2) and (3).

(4) Failure by any partitionee to meet its coverage requirements will result in automatic cancellation of the partitioned authorization without further Commission action.

(g) *Coverage requirements for disaggregation.* (1) Parties to a disaggregation agreement must satisfy at least one of the following requirements:

(i) Either the disaggregator or disaggregatee must satisfy the coverage requirements set forth in § 22.503

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(k)(1), (2) and (3) for the entire license area; or

(ii) Parties must agree to share responsibility for meeting the coverage requirements set forth in §22.503 (k)(1), (2) and (3) for the entire license area.

(2) Parties seeking authority to disaggregate must submit with their partial assignment application a certification signed by both parties stating which of the above requirements they meet.

(3) Disaggregates must submit supporting documents showing compliance with their coverage requirements as set forth in §22.503 (k)(1), (2) and (3).

(4) Parties that accept responsibility for meeting the coverage requirements and later fail to do so will be subject to automatic license cancellation without further Commission action.

[64 FR 33784, June 24, 1999]

### § 22.515 Permissible communications paths.

Mobile stations may communicate only with and through base stations. Base stations may communicate only with mobile stations and receivers on land or surface vessels.

### § 22.527 Signal boosters.

Licensees may install and operate signal boosters on channels listed in §22.531 only in accordance with the provisions of §22.165 governing additional transmitters for existing systems. Licensees must not allow any signal booster that they operate to cause interference to the service or operation of any other authorized stations or systems.

[61 FR 31051, June 19, 1996]

### § 22.529 Application requirements for the Paging and Radiotelephone Service.

In addition to information required by subparts B and D of this part, applications for authorization in the Paging and Radiotelephone Service contain required information as described in the instructions to the form. Site coordinates must be referenced to NAD83 and be correct to  $\pm 1$  second.

(a) *Administrative information.* The following information, associated with Form 601, is required as indicated.

Each application of any type, including applications for paging geographic area authorizations, must contain one and only one Schedule A.

(1) The purpose of the filing is required for each application of any type.

(2) The geographic area designator, channel and geographic area name are required only for each application for a paging geographic area authorization.

(3) The FCC control point number, if any, the location (street address, city or town, state), the telephone number and an indication of the desired database action are required only for each application proposing to add or delete a control point.

(4) The FCC location number, file number and location (street address, city or town, state) of authorized facilities that have not been constructed are required only for each application requesting an extension of time to construct those facilities.

(b) *Technical data.* The following data, associated with FCC Form 601, are required as indicated for each application. Applications for a paging geographic area authorization must not contain Schedule B. Other type of applications may contain as many Schedule Bs as are necessary for the intended purpose.

(1) For each transmitting antenna site to be added, deleted or modified, the following are required: an indication of the desired database action, the Commission location number, if any, the street address or other description of the transmitting antenna site, the city, county and state, the geographic coordinates (latitude and longitude), correct to  $\pm 1$  second, of the transmitting antenna site (NAD83), and in the case of a proposed relocation of a transmitting antenna, the Commission location number and geographic coordinates, correct to  $\pm 1$  second, of the transmitting antenna site (NAD83) to which the geographic coordinates of the current location are referenced.

(2) For each transmitting antenna site to be added, deleted or modified, the following supplementary information is required: An indication as to whether or not the transmitting antenna site is within 200 kilometers (124 miles) of the U.S.-Mexico border, and an indication as to whether or not the

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transmitting antenna site is North of Line A or East of Line C. Line A and Line C are defined in §2.1 of this chapter. For each adjacent geographic area within 200 kilometers (124 miles) of each transmitting antenna site to be added, deleted or modified, the geographic area designator and name, and the shortest distance (in kilometers) to the boundary of that geographic area.

(3) The height (in meters) above average terrain of the center of radiation of the antenna, the beamwidth of the main lobe of the horizontal radiation pattern of the electric field of the antenna, the height (in meters) to the tip of the antenna above ground level, a polar plot of the horizontal gain pattern of the antenna, the antenna gain in the maximum lobe and the electric field polarization of the wave emitted by the antenna when installed as proposed.

(i) The center frequency of the requested channel, the transmitter classification (e.g. base, fixed mobile), the designator for any non-standard emission type to be used, including bandwidth and modulation type, and the maximum effective radiated power.

(ii) For each of the eight cardinal radials, the antenna height above the average elevation along the radial, and the effective radiated power of each transmitter in the direction of the radial.

(iii) For each transmitter proposed to transmit on a channel reserved for point-to-multipoint operation involving transmission to four or more points of communications (i.e. base transmitters), the following is required for each point of communication: an indication of the desired database action, the location (city or town, state), and the geographical coordinates (latitude and longitude, NAD 83).

(c) Upon request by an applicant, licensee, or the Commission, a part 22 applicant or licensee of whom the request is made shall furnish the antenna type, model, and the name of the antenna manufacturer to the requesting party within ten (10) days of receiving written notification.

[62 FR 11635, Mar. 12, 1997, as amended at 63 FR 68945, Dec. 14, 1998; 64 FR 53240, Oct. 1, 1999]

EFFECTIVE DATE NOTE: At 64 FR 53240, Oct. 1, 1999, §22.529 was amended by adding paragraph (c). This paragraph contains information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

PAGING OPERATION

**§ 22.531 Channels for paging operation.**

The following channels are allocated for assignment to base transmitters that provide paging service, either individually or collectively under a paging geographic area authorization. Unless otherwise indicated, all channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz.

	Low VHF Channels			
35.20	35.46	43.20	43.46	
35.22	35.50	43.22	43.50	
35.24	35.54	43.24	43.54	
35.26	35.56	43.26	43.56	
35.30	35.58	43.30	43.58	
35.34	35.60	43.34	43.60	
35.38	35.62	43.38	43.62	
35.42	35.66	43.42	43.66	
	High VHF Channels			
152.24	152.84	158.10	158.70	
	UHF Channels			
931.0125	931.2625	931.5125	931.7625	
931.0375	931.2875	931.5375	931.7875	
931.0625	931.3125	931.5625	931.8125	
931.0875	931.3375	931.5875	931.8375	
931.1125	931.3625	931.6125	931.8625	
931.1375	931.3875	931.6375	931.8875	
931.1625	931.4125	931.6625	931.9125	
931.1875	931.4375	931.6875	931.9375	
931.2125	931.4625	931.7125	931.9625	
931.2375	931.4875	931.7375	931.9875	

(a) The 43 MHz channels may be assigned under developmental authorizations, pursuant to the requirements of §22.411.

(b) Channels 931.8875, 931.9125, and 931.9375 MHz may be assigned only to transmitters providing nationwide network paging service.

(c) Upon application using FCC Form 601, common carriers may be authorized to provide one-way paging service using the leased subcarrier facilities of broadcast stations licensed under part 73 of this chapter.

(d) Occasionally in case law and other formal and informal documents,

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the low VHF channels have been referred to as "lowband" channels, and the high VHF channels have been referred to as "guardband" channels.

(e) Pursuant to the U.S.-Canada Interim Coordination Considerations for 929-932 MHz, as amended, only the following UHF channels may be assigned in the continental United States North of Line A or in the State of Alaska East of Line C, within the indicated longitudes:

(1) From longitude W.73° to longitude W.75° and from longitude W.78° to longitude W.81°:

931.0125	931.1125	931.1875	931.2625
931.0375	931.1375	931.2125	931.8625
931.0625	931.1625	931.2375	

(2) From longitude W.81° to longitude W.85°:

931.0125	931.2125	931.3875	931.5875
931.0375	931.2375	931.4125	931.6125
931.0625	931.2625	931.4625	931.6375
931.1125	931.2875	931.4875	931.8625
931.1375	931.3125	931.5125	
931.1625	931.3375	931.5375	
931.1875	931.3625	931.5625	

(3) Longitudes other than specified in paragraphs (e)(1) and (e)(2) of this section:

931.0125	931.1625	931.2875	931.4125
931.0375	931.1875	931.3125	931.4625
931.0625	931.2125	931.3375	931.8625
931.1125	931.2375	931.3625	
931.1375	931.2625	931.3875	

(4) At any longitude, with authorization condition requiring coordinated, shared use and equal access by licensees in both countries:

931.4375	931.8875	931.9125	931.9375
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(f) For the purpose of issuing paging geographic authorizations, the paging geographic areas used for UHF channels are the MEAs, and the paging geographic areas used for the low and high VHF channels are the EAs (see §22.503(b)).

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994; 62 FR 11635, Mar. 12, 1997; 63 FR 68945, Dec. 14, 1998; 64 FR 33784, June 24, 1999]

**§ 22.535 Effective radiated power limits.**

The effective radiated power (ERP) of transmitters operating on the channels listed in §22.531 must not exceed the limits in this section.

(a) *Maximum ERP.* The ERP must not exceed the applicable limits in this paragraph under any circumstances.

Frequency range (MHz)	Maximum ERP (Watts)
35-36 .....	600
43-44 .....	500
152-159 .....	1400
931-932 .....	3500

(b) *Basic power limit.* Except as provided in paragraph (d) of this section, the ERP of transmitters on the VHF channels must not exceed 500 Watts.

(c) *Height-power limit.* Except as provided in paragraph (d) of this section, the ERP of transmitters on the VHF channels must not exceed the amount that would result in an average distance to the service contour of 32.2 kilometers (20 miles). The average distance to the service contour is calculated by taking the arithmetic mean of the distances determined using the procedures specified in §22.537 for the eight cardinal radial directions, excluding cardinal radial directions for which 90% or more of the distance so calculated is over water.

(d) *Encompassed interfering contour areas.* Transmitters are exempt from the basic power and height-power limits of this section if the area within their interfering contours is totally encompassed by the interfering contours of operating co-channel base transmitters controlled by the same licensee. For the purpose of this paragraph, operating transmitters are authorized transmitters that are providing service to subscribers.

(e) *Adjacent channel protection.* The ERP of transmitters must not exceed 500 Watts if they:

(1) Transmit on a channel in the 152-159 MHz frequency range and are located less than 5 kilometers (3.1 miles) from any station licensed in the Private Radio Services that receives on an adjacent channel; or,

(2) Transmit on channel 158.10 or 158.70 MHz and are located less than 5 kilometers (3.1 miles) from any station licensed in the Public Mobile Services that receives on either of the following adjacent channels: 158.07 MHz or 158.67 MHz.

(f) *Signal boosters.* The effective radiated power of signal boosters must not

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exceed 5 watts ERP under any normal operating condition.

[59 FR 59507, Nov. 17, 1994, as amended at 61 FR 31051, June 19, 1996]

§ 22.537 Technical channel assignment criteria.

The rules in this section establish technical assignment criteria for the channels listed in § 22.531. These criteria permit channel assignments to be made in a manner such that reception by public paging receivers of signals from base transmitters, within the service area of such base transmitters, is protected from interference caused by the operation of independent co-channel base transmitters.

(a) Contour overlap. The FCC may grant an application requesting assignment of a channel to a proposed base transmitter only if:

(1) The interfering contour of the proposed transmitter does not overlap the service contour of any protected co-channel transmitter controlled by a carrier other than the applicant, unless that carrier has agreed in writing to accept any interference that may result from operation of the proposed transmitter; and,

(2) The service contour of the proposed transmitter does not overlap the interfering contour of any protected co-channel transmitter controlled by a carrier other than the applicant, unless the applicant agrees to accept any interference that may result from operation of the protected co-channel transmitter; and,

(3) The area and/or population to which service would be provided by the proposed transmitter is substantial, and service gained would exceed that lost as a result of agreements to accept interference.

(b) Protected transmitter. For the purposes of this section, protected transmitters are authorized transmitters for which there is a current FCC public record and transmitters proposed in prior-filed pending applications.

(c) VHF service contour. For paging stations transmitting on the VHF channels, the distance from the transmitting antenna to the service contour along each cardinal radial is calculated as follows:

d=1.243×h<sup>0.40</sup>×p<sup>0.20</sup>

where d is the radial distance in kilometers

h is the radial antenna HAAT in meters

p is the radial ERP in Watts

(1) Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula.

(2) The value used for p in the above formula must not be less than 27 dB less than the maximum ERP in any direction or 0.1 Watt, whichever is more.

(3) The distance from the transmitting antenna to the service contour along any radial other than the eight cardinal radials is routinely calculated by linear interpolation of distance as a function of angle. However, in resolving petitions to deny, the FCC may calculate the distance to the service contour using the formula in paragraph (c) of this section with actual HAAT and ERP data for the inter-station radial and additional radials above and below the inter-station radial at 2.5° intervals.

(d) VHF interfering contour. For paging stations transmitting on the VHF channels, the distance from the transmitting antenna to the interfering contour along each cardinal radial is calculated as follows:

d=6.509×h<sup>0.28</sup>×p<sup>0.17</sup>

where d is the radial distance in kilometers

h is the radial antenna HAAT in meters

p is the radial ERP in Watts

(1) Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula.

(2) The value used for p in the above formula must not be less than 27 dB less than the maximum ERP in any direction or 0.1 Watt, whichever is more.

(3) The distance from the transmitting antenna to the interfering contour along any radial other than the eight cardinal radials is routinely calculated by linear interpolation of distance as a function of angle. In resolving petitions to deny, however, the FCC may calculate the distance to the interfering contour using the formula in paragraph (d) of this section with actual HAAT and ERP data for the inter-station radial and additional radials

above and below the inter-station radial at 2.5° intervals.

(e) *931 MHz service contour.* For paging stations transmitting on the 931

MHz channels, the service contour is a circle, centered on the transmitting antenna, with a radius determined from Table E-1 of this section.

TABLE E-1.—931 MHz PAGING SERVICE RADII

Service radius km (miles) Antenna HAAT meters (feet)	Effective radiated power (Watts)					
	0-125	126-250	251-500	501-1000	1001-1860	1861-3500
0-177 ..... (0-581)	32.2 (20)	32.2 (20)	32.2 (20)	32.2 (20)	32.2 (20)	32.2 (20)
178-305 ..... (582-1001)	32.2 (20)	32.2 (20)	32.2 (20)	32.2 (20)	37.0 (23)	41.8 (26)
306-427 ..... (1002-1401)	32.2 (20)	32.2 (20)	37.0 (23)	41.8 (26)	56.3 (35)	56.3 (35)
428-610 ..... (1402-2001)	32.2 (20)	37.0 (23)	41.8 (26)	56.3 (35)	56.3 (35)	56.3 (35)
611-861 ..... (2002-2825)	37.0 (23)	41.8 (26)	41.8 (26)	56.3 (35)	83.7 (52)	83.7 (52)
862-1219 ..... (2826-3999)	41.8 (26)	56.3 (35)	56.3 (35)	83.7 (52)	83.7 (52)	83.7 (52)
1220+ ..... (4000+)	56.3 (35)	56.3 (35)	83.7 (52)	83.7 (52)	83.7 (52)	83.7 (52)

(f) *931 MHz interfering contour.* For paging stations transmitting on the 931 MHz channels, the interfering contour

is a circle, centered on the transmitting antenna, with a radius determined from Table E-2 of this section.

TABLE E-2.—931 MHz PAGING INTERFERING RADII

Interfering radius km (miles) Antenna HAAT meters (feet)	Effective radiated power (Watts)					
	0-125	126-250	251-500	501-1000	1001-1860	1861-3500
0-177 ..... (0-581)	80.5 (50)	80.5 (50)	80.5 (50)	80.5 (50)	80.5 (50)	80.5 (50)
178-305 ..... (582-1001)	80.5 (50)	80.5 (50)	80.5 (50)	80.5 (50)	88.5 (55)	96.6 (60)
306-427 ..... (1002-1401)	80.5 (50)	80.5 (50)	88.5 (55)	96.6 (60)	130.4 (81)	130.4 (81)
428-610 ..... (1402-2001)	80.5 (50)	88.5 (55)	96.6 (60)	130.4 (81)	130.4 (81)	130.4 (81)
611-861 ..... (2002-2825)	88.5 (55)	96.6 (60)	96.6 (60)	130.4 (81)	191.5 (119)	191.5 (119)
862-1219 ..... (2826-3999)	96.6 (60)	130.4 (81)	130.4 (81)	191.5 (119)	191.5 (119)	191.5 (119)
1220+ ..... (4000+)	130.4 (81)	130.4 (81)	191.5 (119)	191.5 (119)	191.5 (119)	191.5 (119)

(g) *In-building radiation systems.* The locations of in-building radiation systems must be within the service contour(s) of the licensee's authorized transmitter(s) on the same channel. In-building radiation systems are not protected facilities, and therefore do not have service or interfering contours.

(h) *Signal boosters on 931 MHz channels.* For the purpose of compliance with §22.165 and notwithstanding paragraphs (e) and (f) of this section, signal boosters operating on the 931 MHz channels with an antenna HAAT not exceeding 30 meters (98 feet) are

deemed to have as a service contour a circle with a radius of 1.0 kilometer (0.6 mile) and as an interfering contour a circle with a radius of 10 kilometers (6.2 miles).

[59 FR 59507, Nov. 17, 1994, as amended at 61 FR 31051, June 19, 1996]

**§ 22.539 Additional channel policies.**

The rules in this subsection govern the processing of applications for a paging channel when the applicant has applied for or been granted an authorization for other paging channels in the

same geographic area. This section applies to applications proposing to use the channels listed in § 22.531, excluding the nationwide network paging channels and broadcast station subcarriers, or the channels listed in § 22.561, where the application proposes to use those channels to provide paging service only. The general policy of the Commission is to assign one paging channel in an area to a carrier per application cycle. That is, a carrier must apply for one paging channel, receive the authorization, construct the station, provide service to the subscribers, and notify the Commission of commencement of service to subscribers by using FCC Form 601 before applying for an additional paging channel in that area. This notification must be sent by electronic filing via the ULS.

(a) *VHF transmitters in same area.* Any transmitter on any VHF channel listed in § 22.531 is considered to be in the same geographic area as another transmitter on any other VHF channel listed in § 22.531 if:

(1) One transmitter location is within the service area of the other transmitter; or,

(2) The area within the overlap of the service contours of the two transmitters constitutes 50 percent or more of the service area of either of the transmitters.

(b) *931 MHz transmitters in same area.* Any transmitter on any 931 MHz channel is considered to be in the same geographic area as another transmitter on any channel listed in § 22.531 if it is located less than 64.4 kilometers (40 miles) from the transmitter. Likewise, any transmitter on any channel listed in § 22.531 is considered to be in the same geographic area as another transmitter on any 931 MHz channel if it is located less than 64.4 kilometers (40 miles) from that transmitter.

(c) *Initial channel.* The FCC will not assign more than one channel for new paging stations. Paging stations are considered to be new if there are no authorized transmitters on any channel listed in § 22.531 controlled by the applicant in the same geographic area.

(d) *Additional channel.* Applications for transmitters to be located in the same geographic area as an authorized station controlled by the applicant, but

to operate on a different channel, are considered as requesting an additional channel for the authorized station, unless paragraph (e) of this section applies.

(e) *Additional transmitters on same channel.* Notwithstanding other provisions of this section, the following applications are not considered to be requests for an additional paging channel:

(1) Applications for transmitters to be located in the same geographic area as an authorized station controlled by the applicant, and to operate on the same paging channel;

(2) Applications for transmitters to be located within a paging geographic area for which the applicant holds the paging geographic area authorization for the requested channel; and,

(3) Applications for paging geographic area authorizations.

(f) *Amendment of pending application.* If the FCC receives and accepts for filing an application for a transmitter to be located in the same geographic area as a transmitter proposed in a pending application previously filed by the applicant, but on a different channel, the subsequent application is considered as a major amendment to change the technical proposal of the prior application, unless paragraph (e) applies. The filing date of any application so amended is the date the FCC received the subsequent application.

(g) *Dismissal of premature applications for additional channel.* If the FCC receives an application requesting an additional channel for an authorized station prior to receiving notification that the station is providing service to subscribers on the authorized channel(s), the FCC may dismiss that application without prejudice in accordance with § 22.128.

[59 FR 59507, Nov. 17, 1994, as amended at 62 FR 11635, Mar. 12, 1997; 63 FR 68945, Dec. 14, 1998]

**§ 22.551 Nationwide network paging service.**

The rules in this section govern the application for and provision of nationwide network paging service on the channels reserved specifically for such service in § 22.531(b).

(a) *Nationwide network providers; organizers.* If and when a nationwide network paging channel becomes available for assignment, the FCC will issue a Public Notice inviting applications from eligibles seeking to provide or organize a nationwide network paging service. The Public Notice will provide complete details regarding application requirements and procedures.

(b) *Licensing.* The FCC may issue a paging geographic area authorization to the nationwide network provider or organizer. All transmissions of nationwide network messages on the channels reserved for such service in §22.531(b) are authorized solely under the authorization(s) of the nationwide network provider or organizer, notwithstanding whether or not the messages pass through facilities owned, operated or licensed to affiliated local carriers.

[62 FR 11636, Mar. 12, 1997]

**§ 22.559 Paging application requirements.**

In addition to information required by subparts B and D and §22.529, applications for authorization to operate a paging transmitter on the channels listed in §22.531, other than applications for a paging geographic area authorization, must contain the applicable supplementary information described in this section.

(a) *Interference exhibit.* Except as provided in paragraph (b) of this section, an exhibit demonstrating compliance with §22.537 with regard to protected transmitters is required for applications to operate a transmitter on the VHF channels. This exhibit must:

(1) Identify each protected transmitter located within 109 kilometers (68 miles) of the proposed transmitter in directions in which the distance to the interfering contour is 76.5 kilometers (47.5 miles) or less, and within 178 kilometers (111 miles) of the proposed transmitter in directions in which the distance to the interfering contour exceeds 76.5 kilometers (47.5 miles).

(2) For each protected transmitter identified, show the results of distance calculations indicating that there would be no overlap of service and interfering contours, or alternatively, indicate that the licensee of or appli-

cant for the protected transmitter and/or the applicant, as required, have agreed in writing to accept any interference resulting from operation of the proposed transmitter.

(b) *Encompassment exhibit.* An exhibit showing that the area within the interfering contour of the proposed transmitter would be totally encompassed by interfering contours of operating co-channel base transmitters controlled by the applicant is required for applications to operate a transmitter with ERP exceeding the basic power and height-power limits of §22.535. For VHF transmitters, this encompassment exhibit may substitute for the interference exhibit required in paragraph (a) of this section.

[59 FR 59507, Nov. 17, 1994, as amended at 62 FR 11636, Mar. 12, 1997]

ONE-WAY OR TWO-WAY MOBILE OPERATION

**§ 22.561 Channels for one-way or two-way mobile operation.**

The following channels are allocated for paired assignment to transmitters that provide (or support other transmitters that provide) one-way or two-way public land mobile service, either individually or collectively under a paging geographic area authorization. The paging geographic areas used for these channels are the EAs (see §22.503(b)(3)). These channels may be assigned for use by mobile or base transmitters as indicated, and or by fixed transmitters (including control, repeater or other fixed transmitters). The mobile channels may also be assigned for use by base or fixed transmitters under certain circumstances (see §22.567(h)). Unless otherwise indicated, all channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz.

Base	Mobile	Base	Mobile
<b>VHF Channels</b>			
152.03 .....	158.49	152.57 .....	157.83
152.06 .....	158.52	152.60 .....	157.86
152.09 .....	158.55	152.63 .....	157.89
152.12 .....	158.58	152.66 .....	157.92
152.15 .....	158.61	152.69 .....	157.95
152.18 .....	158.64	152.72 .....	157.98
152.21 .....	158.67	152.75 .....	158.01

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Base	Mobile	Base	Mobile
152.51 .....	157.77	152.78 .....	158.04
152.54 .....	157.80	152.81 .....	158.07
UHF Channels			
454.025 .....	459.025	454.350 .....	459.350
454.050 .....	459.050	454.375 .....	459.375
454.075 .....	459.075	454.400 .....	459.400
454.100 .....	459.100	454.425 .....	459.425
454.125 .....	459.125	454.450 .....	459.450
454.150 .....	459.150	454.475 .....	459.475
454.175 .....	459.175	454.500 .....	459.500
454.200 .....	459.200	454.525 .....	459.525
454.225 .....	459.225	454.550 .....	459.550
454.250 .....	459.250	454.575 .....	459.575
454.275 .....	459.275	454.600 .....	459.600
454.300 .....	459.300	454.625 .....	459.625
454.325 .....	459.325	454.650 .....	459.650

[59 FR 59507, Nov. 17, 1994; 60 FR 9889, Feb. 22, 1995, as amended at 62 FR 11636, Mar. 12, 1997]

§ 22.563 Provision of rural radiotelephone service upon request.

Channels in the frequency ranges 152.03–152.81, 157.77–158.67, 454.025–454.650 and 459.025–459.650 MHz, inclusive, are also allocated for assignment in the Rural Radiotelephone Service. Stations in the Paging and Radiotelephone Service that provide two-way public mobile service on these channels must also provide rural radiotelephone service upon request from a subscriber.

§ 22.565 Transmitting power limits.

The transmitting power of base, mobile and fixed transmitters operating on the channels listed in §22.561 must not exceed the limits in this section.

(a) *Maximum ERP.* The effective radiated power (ERP) of base and fixed transmitters must not exceed the applicable limits in this paragraph under any circumstances.

Frequency range (MHz)	Maximum ERP (watts)
152–153 .....	1400
157–159 .....	150
454–455 .....	3500
459–460 .....	150

(b) *Basic power limit.* Except as provided in paragraph (d) of this section, the ERP of base transmitters must not exceed 500 Watts.

(c) *Height-power limits.* Except as provided in paragraph (d) of this section,

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the ERP of base transmitters must not exceed the amount that would result in an average distance to the service contour of 41.6 kilometers (26 miles) for VHF channels or 30.7 kilometers (19 miles) for UHF channels. The average distance to the service contour is calculated by taking the arithmetic mean of the distances determined using the procedures specified in §22.567 for the eight cardinal radial directions, excluding cardinal radial directions for which 90% or more of the distance so calculated is over water.

(d) *Encompassed interfering contour areas.* Base transmitters are exempt from the basic power and height-power limits of this section if the area within their interfering contours is totally encompassed by the interfering contours of operating co-channel based transmitters controlled by the same licensee. For the purpose of this paragraph, operating transmitters are authorized transmitters that are providing service to subscribers.

(e) *Adjacent channel protection.* The ERP of base and fixed transmitters must not exceed 500 Watts if they transmit on channel 454.025 MHz and are located less than 7 kilometers (4.3 miles) from any Private Radio Services station receiving on adjacent channel 454.0000 MHz.

(f) *Mobile transmitters.* The transmitter output power of mobile transmitters must not exceed 60 watts.

(g) *Other transmitters.* The ERP of dispatch and auxiliary test transmitters must not exceed 100 watts.

§ 22.567 Technical channel assignment criteria.

The rules in this section establish technical assignment criteria for the channels listed in §22.561. The criteria in paragraphs (a) through (f) of this section permit channel assignments to be made in a manner such that reception by public mobile receivers of signals from base transmitters, within the service area of such base transmitters, is protected from interference caused by the operation of independent co-channel base and fixed transmitters in the Paging and Radiotelephone Service and central office stations, including

Basic Exchange Telephone Radio Systems (BETRS), in the Rural Radiotelephone Service. Additional criteria in paragraph (g) of this section permit channel assignments to be made in a manner such that BETRS communications are protected from interference caused by the operation of independent co-channel base and fixed transmitters in the Paging and Radiotelephone Service and other central office stations in the Rural Radiotelephone Service. Separate criteria in paragraph (h) of this section apply only to assignment of the channels designated in §22.561 as mobile channels to base and fixed transmitters, and permit these channel assignments to be made in a manner such that reception by public base and fixed receivers of signals from associated mobile and fixed transmitters is protected from interference caused by the operation of independent co-channel base and fixed transmitters.

(a) *Contour overlap.* The FCC may grant an application requesting assignment of a channel to a proposed base, fixed or central office station transmitter only if:

(1) The interfering contour of the proposed transmitter does not overlap the service contour of any protected co-channel transmitter controlled by a carrier other than the applicant, unless that carrier has agreed in writing to accept any interference that may result from operation of the proposed transmitter; and

(2) The service contour of the proposed transmitter does not overlap the interfering contour of any protected co-channel transmitter controlled by a carrier other than the applicant, unless the application contains a statement that the applicant agrees to accept any interference that may result from operation of the protected co-channel transmitter; and

(3) The area and/or population to which service would be provided by the proposed transmitter is substantial, and service gained would exceed that lost as a result of agreements to accept interference.

(b) *Protected transmitter.* For the purposes of this section, protected transmitters are authorized transmitters for which there is a current FCC public record and transmitters proposed in

prior-filed pending applications, in the Paging and Radiotelephone Service and the Rural Radiotelephone Service.

(c) *VHF service contour.* For base stations transmitting on the VHF channels, the radial distance from the transmitting antenna to the service contour along each cardinal radial is calculated as follows:

$$d=1.609 \times h^{0.40} \times p^{0.20}$$

where:

d is the radial distance in kilometers

h is the radial antenna HAAT in meters

p is the radial ERP in Watts

(1) Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula.

(2) The value used for p in the above formula must not be less than 27 dB less than the maximum ERP in any direction, or 0.1 Watt, whichever is more.

(3) The distance from the transmitting antenna to the service contour along any radial other than the eight cardinal radials is routinely calculated by linear interpolation of distance as a function of angle. However, in resolving petitions to deny, the FCC may calculate the distance to the service contour using the formula in paragraph (c) of this section with actual HAAT and ERP data for the inter-station radial and additional radials above and below the inter-station radial at 2.5° intervals.

(d) *VHF interfering contour.* For base and fixed stations transmitting on the VHF channels, the radial distance from the transmitting antenna to the interfering contour along each cardinal radial is calculated as follows:

(1) If the radial antenna HAAT is less than 150 meters:

$$d=8.577 \times h^{0.24} \times p^{0.19}$$

where:

d is the radial distance in kilometers

h is the radial antenna HAAT in meters

p is the radial ERP in Watts

Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula.

(2) If the radial antenna HAAT is 150 meters or more:

$$d=12.306 \times h^{0.23} \times p^{0.14}$$

where:

d is the radial distance in kilometers  
 h is the radial antenna HAAT in meters  
 p is the radial ERP in Watts

(3) The value used for p in the above formulas must not be less than 27 dB less than the maximum ERP in any direction, or 0.1 Watt, whichever is more.

(4) The distance from the transmitting antenna to the interfering contour along any radial other than the eight cardinal radials is routinely calculated by linear interpolation of distance as a function of angle. However, in resolving petitions to deny, the FCC may calculate the distance to the interfering contour using the appropriate formula in paragraph (d) of this section with actual HAAT and ERP data for the inter-station radial and additional radials above and below the inter-station radial at 2.5° intervals.

(e) *UHF service contour.* For base stations transmitting on the UHF channels, the radial distance from the transmitting antenna to the service contour along each cardinal radial is calculated as follows:

$$d=1.726 \times h^{0.35} \times p^{0.18}$$

where:

d is the radial distance in kilometers  
 h is the radial antenna HAAT in meters  
 p is the radial ERP in Watts

(1) Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula.

(2) The value used for p in the above formula must not be less than 27 dB less than the maximum ERP in any direction, or 0.1 Watt, whichever is more.

(3) The distance from the transmitting antenna to the service contour along any radial other than the eight cardinal radials is routinely calculated by linear interpolation of distance as a function of angle. However, in resolving petitions to deny, the FCC may calculate the distance to the service contour using the formula in paragraph (e) of this section with actual HAAT and ERP data for the inter-station radial and addition radials above and below the below the inter-station radial at 2.5° intervals.

(f) *UHF interfering contour.* For base and fixed stations transmitting on the UHF channels, the radial distance from the transmitting antenna to the interfering contour along each cardinal radial is calculated as follows:

(1) If the radial antenna HAAT is less than 150 meters:

$$d=9.471 \times h^{0.23} \times p^{0.15}$$

where:

d is the radial distance in kilometers  
 h is the radial antenna HAAT in meters  
 p is the radial ERP in Watts

Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula.

(2) If the radial antenna HAAT is 150 meters or more:

$$d=6.336 \times h^{0.31} \times p^{0.15}$$

where:

d is the radial distance in kilometers  
 h is the radial antenna HAAT in meters  
 p is the radial ERP in Watts

(3) The value used for p in the above formula must not be less than 27 dB less than the maximum ERP in any direction, or 0.1 Watt, whichever is more.

(4) The distance from the transmitting antenna to the interfering contour along any radial other than the eight cardinal radials is routinely calculated by linear interpolation of distance as a function of angle. However, in resolving petitions to deny, the FCC may calculate the distance to the interfering contour using the appropriate formula in paragraph (f) of this section with actual HAAT and ERP data for the inter-station radial and additional radials above and below the inter-station radial at 2.5° intervals.

(g) *Protection for BETRS.* In applying the provisions of paragraph (a) of this section, if either or both of the transmitters involved is a BETRS central office station, the following contour substitutions must be used:

(1) The service contour of the BETRS central office station(s) is a circle, centered on the central office station antenna, with a radius of 40 kilometers (25 miles).

(2) The interfering contour of any station of any type, when determining whether it would overlap the service

contour of a BETRS central office station, is calculated as follows:

$$d=36.364 \times h^{0.2} \times p^{0.1}$$

where:

d is the radial distance in kilometers

h is the radial antenna HAAT in meters

p is the radial ERP in Watts

Whenever the actual HAAT is less than 30 meters (98 feet), 30 must be used as the value for h in the above formula. The value used for p in the above formula must not be less than 27 dB less than the maximum ERP in any direction, or 0.1 Watt, whichever is more.

(h) *Assignment of mobile channels to base or fixed transmitters.* Mobile channels may be assigned to base or fixed transmitters if the following criteria are met:

(1) The paired base channel, as designated in §22.561, is assigned to base transmitters in the same geographical area operated by the same licensee.

(2) The authorization is granted subject to the condition that no interference be caused to fixed receivers in use on or prior to the date of the grant.

#### § 22.569 Additional channel policies.

The rules in this section govern the processing of applications for a mobile channel when the applicant has applied or been granted an authorization for other mobile channels in the same geographic area. This section applies to applications proposing to use the channels listed in §22.561, except applications that propose to use these channels to provide paging service only, which are subject to §22.539, instead of this section. The general policy of the FCC is to assign no more than two channels in an area to a carrier per application cycle. That is, a carrier must apply for no more than two channels, receive the authorization, construct the station, provide service to subscribers, and notify the FCC of commencement of service to subscribers (FCC Form 489) before applying for additional mobile channels in that area.

(a) *Transmitters in same area.* Any transmitter on any channel listed in §22.561 is considered to be in the same geographic area as another transmitter or any other channel listed in §22.561 if:

(1) One transmitter location is within the service area of the other transmitter; or,

(2) The area within the overlap of the service contours of the two transmitters constitutes 50 percent or more of the service area of either of the transmitters.

(b) *Initial channel.* The FCC will not assign more than two channels for new stations. Stations are considered to be new if there are no authorized transmitters on any channel listed in §22.561 controlled by the applicant in the same geographic area.

(c) *Additional channel.* Applications for transmitters to be located in the same geographic area as an authorized station controlled by the applicant, but to operate on a different channel, are considered as requests for an additional channel for the authorized station, unless paragraph (d) of this section applies.

(d) *Additional transmitters on same channel.* Notwithstanding other provisions of this section, the following applications are not considered to be requests for an additional channel:

(1) Applications for transmitters to be located in the same geographic area as an authorized station controlled by the applicant, and to operate on the same paging channel;

(2) Applications for transmitters to be located within a paging geographic area for which the applicant holds the paging geographic area authorization for the requested channel; and,

(3) Applications for paging geographic area authorizations.

(e) [Reserved]

(f) *Dismissal of application constituting cumulative request for more than two channels.* If the FCC receives an application for a transmitter to be located in the same geographic area as a transmitter proposed in a pending application previously filed by the applicant, but on different channels such that, considered together, the applications would constitute a request for more than two channels, the FCC may dismiss the subsequent application without prejudice.

(g) *Dismissal of premature applications for additional channel.* If the FCC receives an application requesting two additional channels (or one additional

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channel) for an authorized station prior to receiving notification that the station is providing service to subscribers on all (or all except one) of the authorized channels, the FCC may dismiss that application without prejudice.

[59 FR 59507, Nov. 17, 1994, as amended at 62 FR 11636, Mar. 12, 1997]

### § 22.571 Responsibility for mobile stations.

Mobile stations that are subscribers in good standing to a two-way service in the Paging and Radiotelephone Service, when receiving service from that station, are considered to be operating under the authorization of that station. Licensees are responsible for exercising effective operational control over mobile stations receiving service through their stations. Mobile stations that are subscribers in good standing to a two-way service in the Paging and Radiotelephone Service, while receiving service from a different station, are considered to be operating under the authorization of such different station. The licensee of such different station is responsible, during such temporary period, for exercising effective operational control over such mobile stations as if they were subscribers to it.

### § 22.573 Use of base transmitters as repeaters.

As an additional function, base transmitters may be used as repeaters. Licensees must be able to turn the base transmitter on or off from the control point regardless of whether a subscriber-operated transmitter is transmitting.

### § 22.575 Use of mobile channel for remote control of station functions.

Carriers may remotely control station functions (e.g. shut down or reactivate base transmitters, turn aviation obstruction warning lights on or off, etc.) using a control transmitter operating on a mobile channel, subject to the conditions in this section and in § 22.567(h).

(a) The control transmitter must be capable of overriding transmissions from subscriber-operated transmitters if necessary. Subscriber-operated transmitters must not be capable of

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being used to deliberately or accidentally prevent the licensee from controlling the station.

(b) The licensee must implement measures designed to prevent station functions from being controlled by persons not authorized by the licensee to control the station.

(c) The control transmitter location must be within the composite service contour of the licensee's authorized station on the paired base channel.

### § 22.577 Dispatch service.

Carriers licensed under this subpart may provide dispatch service in accordance with the rules in this section.

(a) *Installation without prior FCC approval.* A station licensee may install or remove dispatch points for subscribers without obtaining prior FCC approval. A station licensee may install or remove dispatch transmitters for subscribers without applying for specific authorization, provided that the following conditions are met.

(1) Each dispatch transmitter must be able to transmit only on the mobile channel that is paired with the channel used by the base station.

(2) The antenna of the dispatch transmitter must not exceed the criteria in § 17.7 of this chapter that determine whether the FAA must be notified of the proposed construction.

(3) The output power of the dispatch transmitter must not exceed 10 Watts.

(4) The dispatch transmitter must be incapable of overriding the functioning of any control transmitter that may be using the same channel.

(5) The dispatch transmitter must be under the continuous supervision of the licensee.

(b) *Notification.* Licensees must notify the Commission by filing FCC Form 601 whenever a dispatch transmitter is installed pursuant to paragraph (a) of this section. The notification must include the name and address of the subscriber(s) for which the dispatch transmitter was installed, the location of the dispatch transmitter, the height of antenna structure above ground and above mean sea level, the channel(s) used, and the call sign and location of the base station.

(c) *Termination without hearing.* Operation of a dispatch transmitter pursuant to paragraphs (a) and (b) of this section may be terminated by the FCC without a hearing upon notice to the licensee.

(d) Dispatch transmitters requiring authorization. A dispatch transmitter that does not meet all of the requirements of paragraph (a) of this section may be installed only upon the grant of an application for authorization by electronically filing FCC Form 601.

(e) *Permissible communications.* A dispatch transmitter operated by a subscriber may communicate only with mobile transmitters operated by that subscriber through the associated base transmitter.

[59 FR 59507, Nov. 17, 1994, as amended at 60 FR 15495, Mar. 24, 1995; 63 FR 68945, Dec. 14, 1998]

**§ 22.579 Operation of mobile transmitters across U.S.-Canada border.**

Mobile stations licensed by Canada may receive two-way service while in the United States from stations licensed under this part, after authorization has been granted by the FCC. Mobile stations that normally operate under the authority of base stations licensed under this part may receive two-way service while in Canada from stations licensed under this part or by Canada, upon authorization by Canada.

**§ 22.589 One-way or two-way application requirements.**

In addition to information required by subparts B and D and § 22.529, applications for authorization to operate a paging transmitter on the channels listed in § 22.531, other than applications for a paging geographic area authorization, must contain the applicable supplementary information described in this section.

(a) *Interference exhibit.* Except as provided in paragraph (b) of this section, an exhibit demonstrating compliance with § 22.567 with regard to protected transmitters is required. This exhibit must:

(1) For UHF channels, identify each protected transmitter located within 108 kilometers (67 miles) of the proposed transmitter in directions in which the distance to the interfering

contour is 76.4 kilometers (47.5 miles) or less, and within 178 kilometers (111 miles) of the proposed transmitter in directions in which the distance to the interfering contour exceeds 76.4 kilometers (47.5 miles); and identify each protected Basic Exchange Telephone Radio System central office transmitter in the Rural Radiotelephone Service within 231 kilometers (144 miles),

(2) For VHF channels, identify each protected transmitter located within 135 kilometers (84 miles) of the proposed transmitter in directions in which the distance to the interfering contour is 93.3 kilometers (58 miles) or less, and within 178 kilometers (111 miles) of the proposed transmitter in directions in which the distance to the interfering contour exceeds 93.3 kilometers (58 miles).

(3) For each protected transmitter identified, show the results of distance calculations indicating that there would be no overlap of service and interfering contours, or alternatively, indicate that the licensee of or applicant for the protected transmitter and/or the applicant, as required, have agreed in writing to accept any interference resulting from operation of the proposed transmitter.

(b) *Encompassment exhibit.* An exhibit showing that the area within the interfering contour of the proposed transmitter would be totally encompassed by interfering contours of operating co-channel base transmitters controlled by the applicant is required for applications to operate a transmitter with ERP exceeding the basic power and height-power limits of § 22.565. This encompassment exhibit may substitute for the interference exhibit required in paragraph (a) of this section.

[59 FR 59507, Nov. 17, 1994, as amended at 62 FR 11636, Mar. 12, 1997]

POINT-TO-POINT OPERATION

**§ 22.591 Channels for point-to-point operation.**

The following channels are allocated for assignment to fixed transmitters that support other transmitters that provide public mobile service. Unless otherwise indicated, all channels have

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a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz.

VHF Channels			
72.02	72.36	72.80	75.66
72.04	72.38	72.82	75.68
72.06	72.40	72.84	75.70
72.08	72.42	72.86	75.72
72.10	72.46	72.88	75.74
72.12	72.50	72.90	75.76
72.14	72.54	72.92	75.78
72.16	72.58	72.94	75.80
72.18	72.62	72.96	75.82
72.20	72.64	72.98	75.84
VHF Channels—Continued			
72.22	72.66	75.42	75.86
72.24	72.68	75.46	75.88
72.26	72.70	75.50	75.90
72.28	72.72	75.54	75.92
72.30	72.74	75.58	75.94
72.32	72.76	75.62	75.96
72.34	72.78	75.64	75.98
72.10	72.46	72.88	75.74
72.12	72.50	72.90	75.76
72.14	72.54	72.92	75.78
72.16	72.58	72.94	75.80
72.18	72.62	72.96	75.82
72.20	72.64	72.98	75.84
72.22	72.66	75.42	75.86
72.24	72.68	75.46	75.88
72.26	72.70	75.50	75.90
72.28	72.72	75.54	75.92
72.30	72.74	75.58	75.94
72.32	72.76	75.62	75.96
72.34	72.78	75.64	75.98
UHF Channels—State of Hawaii			
488.250 ....	491.250	489.750 ....	492.750
488.750 ....	491.750	490.250 ....	493.250
489.250 ....	492.250	490.750 ....	493.750

MICROWAVE CHANNELS	
[Bandwidth individually assigned]	
2110.1	2160.1
2110.2	2160.2
2110.3	2160.3
2129.9	2179.9

(a) The 72-76 MHz channels may be assigned under developmental authority pursuant to the requirements of § 22.413. The 72-76 MHz channels may also be used in point-to-multipoint configurations. The 72-76 MHz channels are also allocated for assignment in the Private Radio Services (see part 90 of this chapter).

(b) Channels in the frequency ranges 2110-2130 and 2160-2180 MHz are also allocated for assignment in the broadband Personal Communications Service (see part 24 of this chapter),

the Multipoint Distribution Service and the Point-to-Point Microwave Radio Service (see part 21 of this chapter). Assignment of channels in these ranges is subject to the transition rules in § 22.602.

(c) Channels in the frequency ranges 488.250-490.750 and 491.250-493.750 MHz may be assigned only to inter-island fixed stations located in the State of Hawaii.

[59 FR 59507, Nov. 17, 1994; 60 FR 9889, Feb. 22, 1995]

**§ 22.593 Effective radiated power limits.**

The effective radiated power of fixed stations operating on the channels listed in § 22.591 must not exceed 150 Watts. The equivalent isotropic radiated power of fixed stations operating in the frequency ranges 2110-2130 and 2160-2180 MHz must not exceed the limits set forth in part 21 of this chapter for stations operating in these frequency ranges.

**§ 22.599 Assignment of 72-76 MHz channels.**

Because of the potential for interference to the reception of TV Channels 4 and 5 by broadcast television sets and video recorders, assignments of the 72-76 MHz channels are subject to the following conditions:

(a) Assignments of 72-76 MHz channels for use within 129 kilometers (80 miles) of a full service TV station transmitting on TV Channel 4 or 5 are subject to the condition that the licensee must eliminate any interference caused to television reception on TV Channels 4 and 5. If the FCC notifies the licensee of an interference problem and the licensee does not resolve the problem within 90 days of such notification, operation of the interfering 72-76 MHz fixed station must be immediately discontinued.

(b) 72-76 MHz channels may be assigned for use within 16 kilometers (10 miles) of a full service TV station transmitting on TV Channel 4 or 5 under a developmental authorization, pursuant to § 22.413. However, for use within 50 meters (164 feet) of a TV station transmitting on TV Channel 4 or 5, 72-76 MHz channels may be assigned

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under a regular authorization, rather than a developmental authorization.

### § 22.601 Assignment of microwave channels.

Assignment of the microwave channels listed in § 22.591 is subject to the transition rules in § 22.602. No new systems will be authorized under this part.

(a) *Coordination required.* Before filing applications for authority to modify existing stations on these channels or major amendments to such applications, carriers must coordinate the planned channel usage, using the procedure outlined in § 22.150, with affected parties in this radio service and the Point-to-Point Microwave Service and the Multipoint Distribution Service. Affected parties are licensees and other applicants with previously filed pending applications whose stations could affect or be affected by the proposed modification of the existing station in terms of interference.

(b) *System parameters.* In designing a system modification, the applicant must select sites, equipment and channels that will avoid harmful interference to other users. All parties must cooperate fully and make reasonable efforts to resolve technical problems and conflicts that may inhibit the most effective and efficient use of the radio spectrum; however, a party receiving notification is not obligated to suggest changes or re-design a proposal in cases involving conflicts. The applicant must identify in the application all parties with which the technical proposal was coordinated. In the event that technical problems are not resolved or if an affected party does not respond to coordination efforts within 30 days after notification, an explanation must be contained in the application. Where technical conflicts are resolved by an agreement between the parties that requires special procedures to reduce the likelihood of harmful interference (such as the use of artificial site shielding), or would result in a reduction of quality or capacity of either system, the details thereof must be contained in the application.

(c) *Bandwidth.* Applicants must request the minimum emission bandwidth necessary. The FCC does not au-

thorize bandwidths larger than 800 kHz under this part.

### § 22.602 Transition of the 2110–2130 and 2160–2180 MHz channels to emerging technologies.

The microwave channels listed in § 22.591 have been allocated for use by emerging technologies (ET) services. No new systems will be authorized under this part. The rules in this section provide for a transition period during which existing Paging and Radiotelephone Service (PARS) licensees using these channels may relocate operations to other media or to other fixed channels, including those in other microwave bands. For PARS licensees relocating operations to other microwave bands, authorization must be obtained under part 101 of this chapter.

(a) Licensees proposing to implement ET services may negotiate with PARS licensees authorized to use these channels, for the purpose of agreeing to terms under which the PARS licensees would—

(1) Relocate their operations to other fixed microwave bands or other media, or alternatively,

(2) Accept a sharing arrangement with the ET licensee that may result in an otherwise impermissible level of interference to the PARS operations.

(b) PARS operations on these channels will continue to be co-primary with other users of this spectrum until two years after the FCC commences acceptance of applications for ET services, and until one year after an ET licensee initiates negotiations for relocation of the fixed microwave licensee's operations.

(c) *Voluntary Negotiations.* During the two year voluntary negotiation period, negotiations are strictly voluntary and are not defined by any parameters. However, if the parties have not reached an agreement within one year after the commencement of the voluntary period, the PARS licensee must allow the ET licensee (if it so chooses) to gain access to the existing facilities to be relocated so that an independent third party can examine the PARS licensee's 2 GHz system and prepare an estimate of the cost and the time needed to relocate the PARS licensee to

comparable facilities. The ET licensee must pay for any such estimate.

(d) *Mandatory Negotiations.* If a relocation agreement is not reached during the two year voluntary period, the ET licensee may initiate a mandatory negotiation period. This mandatory period is triggered at the option of the ET licensee, but ET licensees may not invoke their right to mandatory negotiation until the voluntary negotiation period has expired. Once mandatory negotiations have begun, a PARS licensee may not refuse to negotiate and all parties are required to negotiate in good faith. Good faith requires each party to provide information to the other that is reasonably necessary to facilitate the relocation process. In evaluating claims that a party has not negotiated in good faith, the FCC will consider, *inter alia*, the following factors:

(1) Whether the ET licensee has made a *bona fide* offer to relocate the PARS licensee to comparable facilities in accordance with Section 101.75(b) of this chapter;

(2) If the PARS licensee has demanded a premium, the type of premium requested (*e.g.*, whether the premium is directly related to relocation, such as system-wide relocations and analog-to-digital conversions, versus other types of premiums), and whether the value of the premium as compared to the cost of providing comparable facilities is disproportionate (*i.e.*, whether there is a lack of proportion or relation between the two);

(3) What steps the parties have taken to determine the actual cost of relocation to comparable facilities;

(4) Whether either party has withheld information requested by the other party that is necessary to estimate relocation costs or to facilitate the relocation process. Any party alleging a violation of our good faith requirement must attach an independent estimate of the relocation costs in question to any documentation filed with the Commission in support of its claim. An independent cost estimate must include a specification for the comparable facility and a statement of the costs associated with providing that facility to the incumbent licensee.

(e) *Involuntary period.* After the periods specified in paragraph (b) of this section have expired, ET licensees may initiate involuntary relocation procedures under the Commission's rules. ET licensees are obligated to pay to relocate only the specific microwave links to which their systems pose an interference problem. Under involuntary relocation, a PARS licensee is required to relocate, provided that:

(1) The ET applicant, provider, licensee or representative guarantees payment of relocation costs, including all engineering, equipment, site and FCC fees, as well as any legitimate and prudent transaction expenses incurred by the PARS licensee that are directly attributable to an involuntary relocation, subject to a cap of two percent of the hard costs involved. Hard costs are defined as the actual costs associated with providing a replacement system, such as equipment and engineering expenses. ET licensees are not required to pay PARS licensees for internal resources devoted to the relocation process. ET licensees are not required to pay for transaction costs incurred by PARS licensees during the voluntary or mandatory periods once the involuntary period is initiated or for fees that cannot be legitimately tied to the provision of comparable facilities;

(2) The ET applicant, provider, licensee or representative completes all activities necessary for implementing the replacement facilities, including engineering and cost analysis of the relocation procedure and, if radio facilities are involved, identifying and obtaining, on the incumbents behalf, new channels and frequency coordination; and,

(3) The ET applicant, provider, licensee or representative builds the replacement system and tests it for comparability with the existing 2 GHz system.

(f) *Comparable Facilities.* The replacement system provided to an incumbent during an involuntary relocation must be at least equivalent to the existing PARS system with respect to the following three factors:

(1) *Throughput.* Communications throughput is the amount of information transferred within a system in a

given amount of time. If analog facilities are being replaced with analog, the ET licensee is required to provide the PARS licensee with an equivalent number of 4 kHz voice channels. If digital facilities are being replaced with digital, the ET licensee must provide the PARS licensee with equivalent data loading bits per second (bps). ET licensees must provide PARS licensees with enough throughput to satisfy the PARS licensee's system use at the time of relocation, not match the total capacity of the PARS system.

(2) *Reliability.* System reliability is the degree to which information is transferred accurately within a system. ET licensees must provide PARS licensees with reliability equal to the overall reliability of their system. For digital data systems, reliability is measured by the percent of time the bit error rate (BER) exceeds a desired value, and for analog or digital voice transmissions, it is measured by the percent of time that audio signal quality meets an established threshold. If an analog voice system is replaced with a digital voice system, only the resulting frequency response, harmonic distortion, signal-to-noise ratio and its reliability will be considered in determining comparable reliability.

(3) *Operating Costs.* Operating costs are the cost to operate and maintain the PARS system. ET licensees must compensate PARS licensees for any increased recurring costs associated with the replacement facilities (e.g. additional rental payments, increased utility fees) for five years after relocation. ET licensees may satisfy this obligation by making a lump-sum payment based on present value using current interest rates. Additionally, the maintenance costs to the PARS licensee must be equivalent to the 2 GHz system in order for the replacement system to be considered comparable.

(g) The PARS licensee is not required to relocate until the alternative facilities are available to it for a reasonable time to make adjustments, determine comparability, and ensure a seamless handoff.

(h) *The Commission's Twelve-Month Trial Period.* If, within one year after the relocation to new facilities, the PARS licensee demonstrates that the

new facilities are not comparable to the former facilities, the ET applicant, provider, licensee or representative must remedy the defects or pay to relocate the PARS licensee to one of the following: its former or equivalent 2 GHz channels, another comparable frequency band, a land-line system, or any other facility that satisfies the requirements specified in paragraph (f) of this section. This trial period commences on the date that the PARS licensee begins full operation of the replacement link. If the PARS licensee has retained its 2 GHz authorization during the trial period, it must return the license to the Commission at the end of the twelve months.

(i) After April 25, 1996, all major modifications and extensions to existing PARS systems operating on channels in the 2110-2130 and 2160-2180 MHz bands will be authorized on a secondary basis to future ET operations. All other modifications will render the modified PARS license secondary to future ET operations unless the incumbent affirmatively justifies primary status and the incumbent PARS licensee establishes that the modification would not add to the relocation costs of ET licensees. Incumbent PARS licensees will maintain primary status for the following technical changes:

- (1) Decreases in power;
- (2) Minor changes (increases or decreases) in antenna height;
- (3) Minor location changes (up to two seconds);
- (4) Any data correction which does not involve a change in the location of an existing facility;
- (5) Reductions in authorized bandwidth;
- (6) Minor changes (increases or decreases) in structure height;
- (7) Changes (increases or decreases) in ground elevation that do not affect centerline height;
- (8) Minor equipment changes.

(j) *Sunset.* PARS licensees will maintain primary status in the 2110-2130 and 2160-2180 MHz bands unless and until an ET licensee requires use of the spectrum. ET licensees are not required to pay relocation costs after the relocation rules sunset (*i.e.* ten years after the voluntary period begins for the first ET licensees in the service). Once

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the relocation rules sunset, an ET licensee may require the incumbent to cease operations, provided that the ET licensee intends to turn on a system within interference range of the incumbent, as determined by TIA Bulletin 10-F or any standard successor. ET licensee notification to the affected PARS licensee must be in writing and must provide the incumbent with no less than six months to vacate the spectrum. After the six-month notice period has expired, the PARS licensee must turn its license back into the Commission, unless the parties have entered into an agreement which allows the PARS licensee to continue to operate on a mutually agreed upon basis. If the parties cannot agree on a schedule or an alternative arrangement, requests for extension will be accepted and reviewed on a case-by-case basis. The Commission will grant such extensions only if the incumbent can demonstrate that:

(1) It cannot relocate within the six-month period (*e.g.*, because no alternative spectrum or other reasonable option is available), and;

(2) The public interest would be harmed if the incumbent is forced to terminate operations (*e.g.*, if public safety communications services would be disrupted).

[61 FR 29689, June 12, 1996]

§ 22.603 488-494 MHz fixed service in Hawaii.

Before filing applications for authorization of inter-island control and/or repeater stations, applicants must coordinate the planned channel usage with existing licensees and other applicants with previously filed applications, using the procedure outlined in §22.150. Applicants and licensees shall cooperate fully and make reasonable efforts to resolve any channel usage conflicts. In situations where technical solutions to such conflicts cannot be devised, the FCC may select a channel or channels to assign or may designate the application(s) for hearing. To be acceptable for filing, applications and major technical amendments must contain a certification that coordination has been completed and an exhibit listing the name(s) of the licensees and

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applicants with which the planned channel usage has been coordinated.

POINT-TO-MULTIPOINT OPERATION

§ 22.621 Channels for point-to-multipoint operation.

The following channels are allocated for assignment to transmitters utilized within point-to-multipoint systems that support transmitters that provide public mobile service. Unless otherwise indicated, all channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz. No new licenses will be issued for any 900 MHz frequencies in this section. See part 101, subpart O of this chapter for treatment of incumbents and for new licensing procedures. Incumbents under part 22 are subject to the restrictions of part 101, subpart O of this chapter but may make permissible modifications, transfers, assignments, or renew their licenses using procedures, forms, fees, and filing requirements of part 22.

Public Mobile Pool  
(25 kHz bandwidth)

928.8625 .....	959.8625	928.9375 .....	959.9375
928.8875 .....	959.8875	928.9625 .....	959.9625
928.9125 .....	959.9125	928.9875 .....	959.9875

(12.5 kHz bandwidth)

928.85625 ....	959.85625	928.93125 ....	959.93125
928.86875 ....	959.86875	928.94375 ....	959.94375
928.88125 ....	959.88125	928.95625 ....	959.95625
928.89375 ....	959.89375	928.96875 ....	959.96875
928.90625 ....	959.90625	928.98125 ....	959.98125
928.91875 ....	959.91875	928.99375 ....	959.99375

Private Radio General Access Pool  
(25 kHz bandwidth)

956.2625 .....	956.3125	956.3625 .....	956.4125
956.2875 .....	956.3375	956.3875 .....	956.4375
928.0125 .....	952.0125	928.1875 .....	952.1875
928.0375 .....	952.0375	928.2125 .....	952.2125
928.0625 .....	952.0625	928.2375 .....	952.2375
928.0875 .....	952.0875	928.2625 .....	952.2625
928.1125 .....	952.1125	928.2875 .....	952.2875
928.1375 .....	952.1375	928.3125 .....	952.3125
928.1625 .....	952.1625	928.3375 .....	952.3375

(12.5 kHz bandwidth)

956.25625 ....	956.30625	956.35625 ....	956.40625
956.26875 ....	956.31875	956.36875 ....	956.41875
956.28125 ....	956.33125	956.38125 ....	956.43125
956.29375 ....	956.34375	956.39375 ....	956.44375
928.00625 ....	952.00625	928.18125 ....	952.18125
928.01875 ....	952.01875	928.19375 ....	952.19375
928.03125 ....	952.03125	928.20625 ....	952.20625
928.04375 ....	952.04375	928.21875 ....	952.21875
928.05625 ....	952.05625	928.23125 ....	952.23125
928.06875 ....	952.06875	928.24375 ....	952.24375
928.08125 ....	952.08125	928.25625 ....	952.25625
928.09375 ....	952.09375	928.26875 ....	952.26875
928.10625 ....	952.10625	928.28125 ....	952.28125
928.11875 ....	952.11875	928.29375 ....	952.29375

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928.13125	952.13125	928.30625	952.30625	470.2875	473.2875	482.2875	485.2875
928.14375	952.14375	928.31875	952.31875	Chicago, Cleveland			
928.15625	952.15625	928.33125	952.33125	470.0125	473.0125	476.0125	479.0125
928.16875	952.16875	928.34375	952.34375	470.0375	473.0375	476.0375	479.0375
Private Radio Power Pool				470.0625	473.0625	476.0625	479.0625
(25 kHz bandwidth)				470.0875	473.0875	476.0875	479.0875
928.3625	952.3625	928.6125	952.6125	470.1125	473.1125	476.1125	479.1125
928.3875	952.3875	928.6375	952.6375	470.1375	473.1375	476.1375	479.1375
928.4125	952.4125	928.6625	952.6625	470.1625	473.1625	476.1625	479.1625
928.4375	952.4375	928.6875	952.6875	470.1875	473.1875	476.1875	479.1875
928.4625	952.4625	928.7125	952.7125	470.2125	473.2125	476.2125	479.2125
928.4875	952.4875	928.7375	952.7375	470.2375	473.2375	476.2375	479.2375
928.5125	952.5125	928.7625	952.7625	470.2625	473.2625	476.2625	479.2625
928.5375	952.5375	928.7875	952.7875	470.2875	473.2875	476.2875	479.2875
928.5625	952.5625	928.8125	952.8125	New York-Northeastern New Jersey			
928.5875	952.5875	928.8375	952.8375	470.0125	470.1625	476.0125	476.1625
(12.5 kHz bandwidth)				470.0375	470.1875	476.0375	476.1875
928.35625	952.35625	928.60625	952.60625	470.0625	470.2125	476.0625	476.2125
928.36875	952.36875	928.61875	952.61875	470.0875	470.2375	476.0875	476.2375
928.38125	952.38125	928.63125	952.63125	470.1125	470.2625	476.1125	476.2625
928.39375	952.39375	928.64375	952.64375	470.1375	470.2875	476.1375	476.2875
928.40625	952.40625	928.65625	952.65625	Dallas-Forth Worth			
928.41875	952.41875	928.66875	952.66875	482.0125	482.1625	485.0125	485.1625
928.43125	952.43125	928.68125	952.68125	482.0375	482.1875	485.0375	485.1875
928.44375	952.44375	928.69375	952.69375	482.0625	482.2125	485.0625	485.2125
928.45625	952.45625	928.70625	952.70625	482.0875	482.2375	485.0875	485.2375
928.46875	952.46875	928.71875	952.71875	482.1125	482.2625	485.1125	485.2625
928.48125	952.48125	928.73125	952.73125	482.1375	482.2875	485.1375	485.2875
928.49375	952.49375	928.74375	952.74375	Detroit			
928.50625	952.50625	928.75625	952.75625	476.0125	479.0125	482.0125	485.0125
928.51875	952.51875	928.76875	952.76875	476.0375	479.0375	482.0375	485.0375
928.53125	952.53125	928.78125	952.78125	476.0625	479.0625	482.0625	485.0625
928.54375	952.54375	928.79375	952.79375	476.0875	479.0875	482.0875	485.0875
928.55625	952.55625	928.80625	952.80625	476.1125	479.1125	482.1125	485.1125
928.56875	952.56875	928.81875	952.81875	476.1375	479.1375	482.1375	485.1375
928.58125	952.58125	928.83125	952.83125	476.1625	479.1625	482.1625	485.1625
928.59375	952.59375	928.84375	952.84375	476.1875	479.1875	482.1875	485.1875
Public, Private, Government Shared Pool				476.2125	479.2125	482.2125	485.2125
(12.5 kHz bandwidth)				476.2375	479.2375	482.2375	485.2375
932.00625	941.00625	932.25625	941.25625	476.2625	479.2625	482.2625	485.2625
932.01875	941.01875	932.26875	941.26875	476.2875	479.2875	482.2875	485.2875
932.03125	941.03125	932.28125	941.28125	Houston			
932.04375	941.04375	932.29375	941.29375	488.1625	491.1625	488.2375	491.2375
932.05625	941.05625	932.30625	941.30625	488.1875	491.1875	488.2625	491.2625
932.06875	941.06875	932.31875	941.31875	488.2125	491.2125	488.2875	491.2875
932.08125	941.08125	932.33125	941.33125	Los Angeles			
932.09375	941.09375	932.34375	941.34375	470.0125	473.0125	506.0625	509.0625
932.10625	941.10625	932.35625	941.35625	470.0375	473.0375	506.0875	509.0875
932.11875	941.11875	932.36875	941.36875	506.0125	509.0125	506.1125	509.1125
932.13125	941.13125	932.38125	941.38125	506.0375	509.0375	-	-
932.14375	941.14375	932.39375	941.39375	Miami			
932.15625	941.15625	932.40625	941.40625	470.0125	470.1625	473.0125	473.1625
932.16875	941.16875	932.41875	941.41875	470.0375	470.1875	473.0375	473.1875
932.18125	941.18125	932.43125	941.43125	470.0625	470.2125	473.0625	473.2125
932.19375	941.19375	932.44375	941.44375	470.0875	470.2375	473.0875	473.2375
932.20625	941.20625	932.45625	941.45625	470.1125	470.2625	473.1125	473.2625
932.21875	941.21875	932.46875	941.46875	470.1375	470.2875	473.1375	473.2875
932.23125	941.23125	932.48125	941.48125	Philadelphia			
932.24375	941.24375	932.49375	941.49375	500.0125	503.0125	506.0125	509.0125
UHF Channels in Specified Urban Areas				500.0375	503.0375	506.0375	509.0375
Boston				500.0625	503.0625	506.0625	509.0625
470.0125	473.0125	482.0125	485.0125	500.0875	503.0875	506.0875	509.0875
470.0375	473.0375	482.0375	485.0375	500.1125	503.1125	506.1125	509.1125
470.0625	473.0625	482.0625	485.0625	500.1375	503.1375	506.1375	509.1375
470.0875	473.0875	482.0875	485.0875	500.1625	503.1625	506.1625	509.1625
470.1125	473.1125	482.1125	485.1125	500.1875	503.1875	506.1875	509.1875
470.1375	473.1375	482.1375	485.1375	500.2125	503.2125	506.2125	509.2125
470.1625	473.1625	482.1625	485.1625	500.2375	503.2375	506.2375	509.2375
470.1875	473.1875	482.1875	485.1875	500.2625	503.2625	506.2625	509.2625
470.2125	473.2125	482.2125	485.2125				
470.2375	473.2375	482.2375	485.2375				
470.2625	473.2625	482.2625	485.2625				

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500.2875 .....	503.2875	506.2875 .....	509.2875
Pittsburgh			
470.0125 .....	470.1625	473.0125 .....	473.1625
470.0375 .....	470.1875	473.0375 .....	473.1875
470.0625 .....	470.2125	473.0625 .....	473.2125
470.0875 .....	470.2375	473.0875 .....	473.2375
470.1125 .....	470.2625	473.1125 .....	473.2625
470.1375 .....	470.2875	473.1375 .....	473.2875
San Francisco			
482.0125 .....	485.0125	488.0125 .....	491.0125
482.0375 .....	485.0375	488.0375 .....	491.0375
482.0625 .....	485.0625	488.0625 .....	491.0625
482.0875 .....	485.0875	488.0875 .....	491.0875
482.1125 .....	485.1125	488.1125 .....	491.1125
482.1375 .....	485.1375	488.1375 .....	491.1375
482.1625 .....	485.1625	488.1625 .....	491.1625
482.1875 .....	485.1875	488.1875 .....	491.1875
482.2125 .....	485.2125	488.2125 .....	491.2125
482.2375 .....	485.2375	488.2375 .....	491.2375
482.2625 .....	485.2625	488.2625 .....	491.2625
482.2875 .....	485.2875	488.2875 .....	491.2875
Washington, DC			
488.0125 .....	491.0125	494.0125 .....	497.0125
488.0375 .....	491.0375	494.0375 .....	497.0375
488.0625 .....	491.0625	494.0625 .....	497.0625
488.0875 .....	491.0875	494.0875 .....	497.0875
488.1125 .....	491.1125	494.1125 .....	497.1125
488.1375 .....	491.1375	494.1375 .....	497.1375
488.1625 .....	491.1625	494.1625 .....	497.1625
488.1875 .....	491.1875	494.1875 .....	497.1875
488.2125 .....	491.2125	494.2125 .....	497.2125
488.2375 .....	491.2375	494.2375 .....	497.2375
488.2625 .....	491.2625	494.2625 .....	497.2625
488.2875 .....	491.2875	494.2875 .....	497.2875

[59 FR 59507, Nov. 17, 1994; 60 FR 9890, Feb. 22, 1995, as amended at 61 FR 54099, Oct. 17, 1996; 65 FR 17448, Apr. 3, 2000]

§ 22.623 System configuration.

This section requires a minimum configuration for point-to-multipoint systems using the channels listed in § 22.621.

(a) *928-960 MHz.* The channels may be assigned, individually or paired, only to fixed transmitters in a system that controls at least four public mobile base transmitters that transmit on the same channel. If a 932-933 MHz channel and a 941-942 MHz channel are assigned as a pair, the 941-942 MHz channel must be assigned only to control transmitters; the 932-933 MHz channel may be assigned to control or fixed relay transmitters.

(b) *470-512 MHz.* These channels may be assigned only individually (unpaired), to control transmitters that directly control at least four public mobile base transmitters that transmit on the same channel. Fixed relay transmitters are not authorized.

(c) *Selection and assignment.* The FCC selects and assigns a channel when

granting applications for authorization to operate a new station to transmit in the 470-512, 932-933 and 941-942 MHz frequency ranges. Applicants having a preference may request the assignment of a specific channel or channel pair, but the FCC may in some cases be unable to satisfy such requests.

§ 22.625 Transmitter locations.

This section governs where point-to-multipoint transmitters on the channels listed in § 22.621 may be located.

(a) *928-960 MHz.* In this frequency range, the required minimum distance separation between co-channel fixed transmitters is 113 kilometers (70 miles). However, this requirement may be waived if the applicant submits an engineering analysis that shows that no interference would be caused to either system. In such a case, a developmental authorization may be issued (see § 22.415). If no interference is experienced during the term of the developmental authorization, the licensee may apply for a regular authorization.

(b) *470-512 MHz.* The purpose of the rule in paragraph (b)(1) of this section is to define the areas in which the 470-512 MHz channels are allocated for public mobile use. The purpose of the rules in paragraphs (b)(2) and (b)(3) of this section is to reduce the likelihood that interference to television reception from public mobile operations on these channels will occur.

(1) *Control transmitter locations.* Control transmitter locations must be within 80 kilometers (50 miles) of the designated locations in this paragraph.

Urban area	N. latitude	W. longitude
Boston, MA .....	42°21'24.4"	71°03'22.2"
Chicago, IL .....	41°52'28.1"	87°38'22.2"
Cleveland, OH .....	41°29'51.2"	81°41'49.5"
Dallas, TX .....	32°47'09.5"	96°47'38.0"
Detroit, MI .....	42°19'48.1"	83°02'56.7"
Houston, TX .....	29°45'26.8"	95°21'37.8"
Los Angeles, CA .....	34°03'15.0"	118°14'31.3"
Miami, FL .....	25°46'38.6"	80°11'31.2"
New York, NY .....	40°45'6.4"	73°59'37.5"
Philadelphia, PA .....	39°56'58.4"	75°09'19.6"
Pittsburgh, PA .....	40°26'19.2"	79°59'59.2"
San Francisco-Oakland, CA ..	37°46'38.7"	122°24'43.9"
Washington, DC .....	38°53'51.4"	77°00'31.9"

**Note:** Coordinates are referenced to North American Datum 1983 (NAD 83).

(2) *Protection from intermodulation interference.* Control transmitter locations must be at least 1.6 kilometers (1

mile) from the main transmitter locations of all TV stations transmitting on TV channels separated by 2, 3, 4, 5, 7, or 8 TV channels from the TV channel containing the frequencies on which the control station will transmit. This requirement is intended to reduce the likelihood of intermodulation interference.

(3) *Co-channel protection from control transmitters with high antennas.* This paragraph applies only to control transmitters that utilize an antenna height of more than 152 meters (500 feet) above average terrain. The distance between the location of such a control transmitter and the applicable protected TV station location specified in this paragraph must equal or exceed the sum of the distance from the control transmitter location to the radio horizon in the direction of the specified location and 89 kilometers (55 miles—representing the distance from the main transmitter location of the TV station to its Grade B contour in the direction of the control transmitter). The protected TV station locations in this paragraph are the locations of record as of September 1974, and these do not change even though the TV stations may have been subsequently relocated.

(i) The protected TV station locations are as follows:

Control transmitter frequency range	Protected TV station location
470–476 MHz.	Washington, DC 38°57'17" 77°00'17"
476–482 MHz.	Lancaster, PA 40°15'45" 76°27'49"

(ii) The distance to the radio horizon is calculated using the following formula:

$$d = \sqrt{17 \times h}$$

where

d is the distance to the radio horizon in kilometers

h is the height of the antenna center of radiation above ground level in meters

[59 FR 59507, Nov. 17, 1994, as amended at 63 FR 68946, Dec. 14, 1998]

§ 22.627 Effective radiated power limits.

The effective radiated power (ERP) of transmitters operating on the channels listed in § 22.621 must not exceed the limits in this section.

(a) *Maximum ERP.* The ERP must not exceed the applicable limits in this paragraph under any circumstances.

Frequency range (MHz)	Maximum ERP (watts)
470–512 .....	1000
928–929 .....	50
932–933 .....	30
941–942 .....	600
952–960 .....	150

(b) *470–512 MHz limits.* The purpose of the rules in paragraphs (b)(1) through (b)(3) of this section is to reduce the likelihood that interference to television reception from public mobile operations on these channels will occur. The protected TV station locations specified in this section are the locations of record as of September 1974, and these do not change even though the TV stations may have been subsequently relocated.

(1) *Co-channel protection.* The ERP of control transmitters must not exceed the limits in the tables in paragraphs (b)(1)(ii) and (b)(1)(iii) of this section. The limits depend upon the height above average terrain of the control transmitter antenna and the distance between the control transmitter and the nearest protected TV station location in paragraph (b)(1)(i) of this section.

(i) The protected TV station locations are as follows (all coordinates are referenced to North American Datum 1983 (NAD83)):

Control transmitter frequency range	Protected TV station location
470–476 MHz .....	Jacksonville, IL, 39°45'52.2" N. Lat. 90°30'29.5" W. Long. Mt. Pleasant, MI, 43°34'24.1" N. Lat. 84°46'21.1" W. Long.

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Control transmitter frequency range	Protected TV station location
476-482 MHz	Oxford, OH, 39°30'26.2" N. Lat. 84°44' 8.8" W. Long.
482-488 MHz	Washington, DC, 38°57' 17.4" N. Lat. 77°00' 15.9" W. Long.
488-494 MHz	Champaign, IL, 40°04'11.1" N. Lat. 87° 54'45.1" W. Long.
494-500 MHz	Madison, WI, 43°03'01.0" N. Lat. 89°29' 15.4" W. Long.
500-506 MHz	Parkersburg, WV, 39°20'50.3" N. Lat. 81°33' 55.5" W. Long.
506-512 MHz	Fort Wayne, IN, 41°05'35.2" N. Lat. 85°10' 41.9" W. Long.
	Lancaster, PA, 40°15'45.3" N. Lat. 76°27' 47.9" W. Long.
	South Bend, IN, 41°36'26.2" N. Lat. 86°27' 48.1" W. Long.
	Philadelphia, PA, 40°02'30.4" N. Lat. 75°14' 22.6" W. Long.
	None.
	Johnstown, PA, 40°19'47.3" N. Lat. 78°53' 44.1" W. Long.
	Washington, DC, 38°57'49.4" N. Lat. 77°06' 16.9" W. Long.
	Waterbury, CT, 41°31'2.3" N. Lat. 73°00' 58.4" W. Long.

(ii) Table E-3 and E-4 apply to control transmitters in the New York-Northeastern New Jersey and Cleveland urban areas that transmit on channels in the 476-482 MHz range and to control transmitters in the Detroit urban area that transmit on channels in the 482-488 MHz range.

(iii) Tables E-5 and E-6 apply to all control transmitters except those to which Tables E-3 and E-4 apply.

(2) *Adjacent channel protection.* The ERP of control transmitters must not exceed the limits in Table E-7. The limits depend upon the height above average terrain of the control transmitter antenna and the distance between the control transmitter and the nearest protected TV station location listed in this paragraph. The protected TV station locations are as follows (all coordinates are referenced to North American Datum 1983 (NAD83)):

Control transmitter frequency range	Protected TV station location	TV channel
470-476 MHz.	Hanover, NH, 43°42'30.3" N. Lat. 72°09'14.3" W. Long..	(15)
	Madison, WI, 43°03'01.0" N. Lat. 89°29'15.4" W. Long..	(15)
	Champaign, IL, 40°04'11.1" N. Lat. 87°54'45.1" W. Long..	(15)
	San Diego, CA, 32°41'48.2" N. Lat. 116°56'13.1" W. Long..	(15)
	Lancaster, PA, 40°15'45.3" N. Lat. 76°27'47.9" W. Long..	(15)
	Parkersburg, WV, 39°20'50.3" N. Lat. 81°33'55.5" W. Long..	(15)
	South Bend, IN, 41°36'26.2" N. Lat. 86°27'48.1" W. Long..	(16)
	Pittsburgh, PA, 40°26'46.2" N. Lat. 79°57'50.2" W. Long..	(16)
	Mt. Pleasant, MI, 43°34'24.1" N. Lat. 84°46'21.1" W. Long..	(14)
	Scranton, PA, 41°10'58.3" N. Lat. 75°52'19.7" W. Long..	(16)
476-482 MHz.	Hanover, NH, 43°42'30.3" N. Lat. 72°09'14.3" W. Long..	(15)
	Fort Wayne, IN, 41°05'35.2" N. Lat. 85°10'41.9" W. Long..	(15)
482-488 MHz.	Salisbury, MD, 38°24'15.4" N. Lat. 75°34'43.7" W. Long..	(16)
	Philadelphia, PA, 40°02'30.4" N. Lat. 75°14'22.6" W. Long..	(17)
488-494 MHz.	Washington, DC, 38°57'17.4" N. Lat. 77°00'15.9" W. Long..	(20)
494-500 MHz.	Harrisburg, PA, 40°20'44.3" N. Lat. 76°52'07.9" W. Long..	(21)
500-506 MHz.		
506-512 MHz.		

(c) *Los Angeles area.* This paragraph applies only to control transmitters in the Los Angeles urban area that utilize an antenna height of 457 or more meters (1500 or more feet) above mean sea level. The ERP of such transmitters must not exceed the following limits:

Antenna height	ERP
AMSL in meters (feet)	(Watts)
457 (1500) to 610 (2000)	155
611 (2001) to 762 (2500)	100
763 (2501) to 914 (3000)	70
915 (3001) to 1067 (3500)	50

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Antenna height AMSL in meters (feet)	ERP (Watts)	Antenna height AMSL in meters (feet)	ERP (Watts)
1068 (3501) to 1219 (4000)	40	1373 (4501) and above	25
1220 (4001) to 1372 (4500)	30		

TABLE E-3.—MAXIMUM ERP (WATTS) FOR CONTROL TRANSMITTERS (HAAT 152 METERS OR LESS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)									
	15 (50)	30 (100)	46 (150)	61 (200)	76 (250)	91 (300)	107 (350)	122 (400)	137 (450)	152 (500)
209 (130)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
201 (125)	1000	1000	1000	1000	1000	1000	1000	850	750	725
193 (120)	1000	1000	1000	1000	900	750	675	600	550	500
185 (115)	1000	1000	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					

See §22.627(b)(1)(ii). This table is for antenna heights of 152 meters (500 feet) or less above average terrain. For antenna heights between those in the table, use the next higher antenna height. For distances between those in the table, use the next lower distance.

TABLE E-4.—MAXIMUM ERP (WATTS) FOR CONTROL TRANSMITTERS (HAAT MORE THAN 152 METERS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)					
	152 (500)	305 (1000)	457 (1500)	610 (2000)	762 (2500)	914 (3000)
209 (130)	1000	447	219	117	71	46
193 (120)	500	209	95	50	30	19
177 (110)	225	91	35	19	11	8
161 (100)	100	30	10	5	3	2
153 (95)	50	13	5	3	2	1

See §22.627(b)(1)(ii). This table is for antenna heights of more than 152 meters (500 feet) above average terrain. For intermediate values of height and/or distance, use linear interpolation to obtain the maximum permitted ERP.

TABLE E-5.—MAXIMUM ERP (WATTS) FOR CONTROL TRANSMITTERS (HAAT 152 METERS OR LESS)

Distance to protected TV station in kilometers (miles)	Antenna Height Above Average Terrain in meters (feet)									
	15 (50)	30 (100)	46 (150)	61 (200)	76 (250)	91 (300)	107 (350)	122 (400)	137 (450)	152 (500)
261 (162)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
257 (160)	1000	1000	1000	1000	1000	1000	1000	1000	1000	800
249 (155)	1000	1000	1000	1000	1000	875	775	700	625	575
241 (150)	1000	1000	950	775	725	625	550	500	450	400
233 (145)	850	750	650	575	500	440	400	350	320	300
225 (140)	600	575	465	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

AAAAASee §22.627(b)(1)(iii). This table applies for antenna heights of 152 meters (500 feet) or less above average terrain. For antenna heights between those in the table, use the next higher antenna height. For distances between those in the table, use the next lower distance.

TABLE E-6.—MAXIMUM ERP (WATTS) FOR CONTROL TRANSMITTERS (HAAT MORE THAN 152 METERS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)					
	152 (500)	305 (1000)	457 (1500)	610 (2000)	762 (2500)	914 (3000)
261 (162)	1000	501	282	170	110	71
241 (150)	400	209	110	60	36	23
225 (140)	225	102	50	28	16	10
209 (130)	100	48	21	11	7	5

TABLE E-6.—MAXIMUM ERP (WATTS) FOR CONTROL TRANSMITTERS (HAAT MORE THAN 152 METERS)—Continued

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)					
	152 (500)	305 (1000)	457 (1500)	610 (2000)	762 (2500)	914 (3000)
193 (120) .....	50	19	9	5	3	2

AAAAASee § 22.627(b)(1)(iii). This table is for antenna heights of more than 152 meters (500 feet) above average terrain. For intermediate values of height and/or distance, use linear interpolation to obtain the maximum permitted ERP.

TABLE E-7.—MAXIMUM ERP (WATTS) FOR CONTROL TRANSMITTERS

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)								
	30 (100)	46 (150)	61 (200)	76 (250)	91 (300)	107 (350)	122 (400)	137 (450)	152 (500)
108 (67) .....	1000	1000	1000	1000	1000	1000	1000	1000	1000
106 (66) .....	1000	1000	1000	1000	1000	1000	1000	1000	750
105 (65) .....	1000	1000	1000	1000	1000	1000	825	650	600
103 (64) .....	1000	1000	1000	1000	1000	775	625	500	400
101 (63) .....	1000	1000	1000	1000	440	400	350	320	300
100 (62) .....	1000	1000	1000	525	375	250	200	150	125
98 (61) .....	1000	700	450	250	200	125	100	75	50
97 (60) .....	1000	425	225	125	100	75	50	.....	.....

See § 22.627(b)(2). This table applies to control transmitters in the Boston, Chicago, Cleveland, Detroit, Los Angeles, New York-Northeastern New Jersey, Philadelphia, Pittsburgh and Washington, DC urban areas. This table is for antenna heights of 152 meters (500 feet) or less above average terrain. For antenna heights between those in the table, use the next higher antenna height. For distances between those in the table, use the next lower distance.

[59 FR 59507, Nov. 17, 1994; 60 FR 9890, Feb. 22, 1995; 63 FR 68946, Dec. 14, 1998]

470-512 MHz TRUNKED MOBILE OPERATION

§ 22.651 470-512 MHz channels for trunked mobile operation.

The following channels are allocated for assignment to transmitters providing trunked public mobile service within the specified urban areas. All channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz.

Houston			
488.0125 .....	491.0125	488.0875 .....	491.0875
488.0375 .....	491.0375	488.1125 .....	491.1125
488.0625 .....	491.0625	488.1375 .....	491.1375
New York-Northern New Jersey			
473.0125 .....	479.0125	473.1625 .....	479.1625
473.0375 .....	479.0375	473.1875 .....	479.1875
473.0625 .....	479.0625	473.2125 .....	479.2125
473.0875 .....	479.0875	473.2375 .....	479.2375
473.1125 .....	479.1125	473.2625 .....	479.2625
473.1375 .....	479.1375	473.2875 .....	479.2875

[59 FR 59507, Nov. 17, 1994; 60 FR 9891, Feb. 22, 1995]

§ 22.653 Eligibility.

Only licensees already authorized to provide trunked mobile service or their successors in interest are eligible to

apply for additional use of these channels for trunked mobile service, and then only in the urban areas already authorized.

§ 22.655 Channel usage.

The FCC is redesignating the public mobile channels in the 470-512 MHz range from trunked mobile operation to point-to-multipoint operation as the demand for trunked mobile service decreases.

(a) The licensees in each market shall measure channel usage at least once every 3 months. These measurements shall be reported to the FCC within 30 days. Measurements shall be taken during the busiest 12-hour periods on 3 days (within a 7-day period) having normal usage. The information must be reported separately for each of the 3 days selected, must be reported by dates, and must disclose the following:

- (1) The number of mobile units in service during each of the days specified;
- (2) The number of calls completed each hour;
- (3) The total number of minutes during each hour that the channels were

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utilized for communications by the mobile units;

(4) The average channel usage for the busiest hour for the 3 days measured; and

(5) Any additional information that more accurately reflects channel usage.

(b) If the measured probability of blocking decreases below 25%, the FCC will redesignate channels not needed to maintain blocking at 25% or less. The number of channels needed to maintain blocking below 25% will be determined from the channel usage reports and the Erlang C tables.

(c) Although two or more channels are necessary to provide trunked service, the FCC may, pursuant to this section, reduce to one the number of channels assigned. In such cases, the licensee may provide non-trunked two-way public mobile service on the one remaining channel.

**§ 22.657 Transmitter locations.**

The purpose of the rules in paragraphs (a) and (b) of this section is to define the areas in which the 470-512 MHz channels are allocated for public mobile use. The purpose of the rules in paragraphs (c) through (f) of this section is to reduce the likelihood that interference to television reception from public mobile operations on these channels will occur. The protected TV station locations specified in paragraphs (d), (e)(1) and (f) of this section are the locations of record as of September 1974, and these do not change even though the TV stations may have been subsequently relocated.

(a) *Base transmitter locations.* Base transmitter locations must be within 80 kilometers (50 miles) of the designated locations in this paragraph. Mobile transmitters must not be operated at locations more than 129 kilometers (80 miles) from the designated locations in this paragraph. Note: All coordinates are referenced to North American Datum 1983 (NAD83).

Urban area	N. latitude	W. longitude
Houston, TX .....	29°45'26.8"	95°21'37.8"
New York, NY-NE NJ .....	40°45'06.4"	73°59'37.5"

(b) *Mobile area of operation.* Mobile transmitters must not be operated at

locations more than 48 kilometers (30 miles) from all associated base stations.

(c) *Protection from intermodulation interference.* Base transmitter locations must be at least 1.6 kilometers (1 mile) from the current main transmitter locations of all TV stations transmitting on TV channels separated by 2, 3, 4, 5, 7, or 8 TV channels from the TV channel containing the frequencies on which the base station will transmit. This requirement is intended to reduce the likelihood of intermodulation interference.

(d) Adjacent channel protection from mobile transmitters. Base transmitter locations must be at least 145 kilometers (90 miles) from the applicable protected TV station locations specified in this paragraph. This requirement is intended to provide a 0 dB minimum desired to undesired signal strength ratio at the Grade B contour of an adjacent channel TV station. Note: All coordinates are referenced to North American Datum 1983 (NAD83).

Control transmitter frequency range	Protected TV station location	TV channel
470-476 MHz.	Lancaster, PA, 40°15'45.3" N. Lat. 76°27'47.9" W. Long..	(15)
476-482 MHz.	Scranton, PA, 41°10'58.3" N. Lat. 75°52'19.7" W. Long..	(16)

(e) *Co-channel protection from mobile transmitters.* Base transmitter locations must be at least the distance specified in paragraph (e)(2) of this section from the applicable protected TV station locations specified in paragraph (e)(1) of this section. This requirement is intended to provide a 40 dB minimum desired to undesired signal strength ratio at the Grade B contour of a co-channel TV station.

(1) The protected TV station locations are as follows (all coordinates are referenced to North American Datum 1983 (NAD83)):

Control transmitter frequency range	Protected TV station location
470-476 MHz.	Washington, DC, 38°57'17.4" N. Lat. 77°00'15.9" W. Long.
476-482 MHz.	Lancaster, PA, 40°15'45.3" N. Lat. 76°27'47.9" W. Long.

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(2) The required minimum distance depends upon the effective radiated power (ERP) of the most powerful mobile transmitter(s) in the system:

Mobile unit ERP (watts)	Minimum distance	
	Kilo-meters	Miles
60 .....	193	(120)
50 .....	185	(115)
25 .....	177	(110)
10 .....	169	(105)
5 .....	161	(100)

(f) *Co-channel protection from base transmitters with high antennas.* This paragraph applies only to base transmitter locations in the New York-Northeastern New Jersey urban area that utilize an antenna height of more than 152 meters (500 feet) above average terrain. The distance between the location of such a base transmitter and the

applicable protected TV station location specified in this paragraph must equal or exceed the sum of the distance from the base transmitter location to the radio horizon in the direction of the specified location and 89 kilometers (55 miles—representing the distance from the main transmitter location of the TV station to its Grade B contour in the direction of the base transmitter). The distance to the radio horizon is calculated as follows:

$$d = \sqrt{17 \times h}$$

Where d is the distance to the radio horizon in kilometers h is the height of the antenna center of radiation above ground level in meters

NOTE: All coordinates are referenced to North American Datum 1983 (NAD83):

Control transmitter frequency range	Protected TV station location
470-476 MHz .....	Washington, DC, 38°57'17.4" N. Lat. 77°00'15.9" W. Long.
476-482 MHz .....	Lancaster, PA, 40°15'45.3" N. Lat. 76°27'47.9" W. Long.

(g) The FCC may waive specific distance separation requirements of paragraphs (d) through (f) of this section if the applicant submits an engineering analysis which demonstrates that terrain effects and/or operation with less effective radiated power would satisfy the applicable minimum desired to undesired signal strength ratios at the Grade B contours of the protected TV stations. For this purpose, the Grade B contour of a TV station is deemed to be a circle with a 89 kilometer (55 mile) radius, centered on the protected TV station location, and along which the median TV signal field strength is 64 dBµV/m. In any showing intended to demonstrate compliance with the minimum desired to undesired signal ratio requirements of this section, all predicted field strengths must have been determined using the UHF TV propagation curves contained in part 73 of this chapter.

[59 FR 59507, Nov. 17, 1994, as amended at 63 FR 68947, Dec. 14, 1998]

**§ 22.659 Effective radiated power limits.**

The purpose of the rules in this section, which limit effective radiated power (ERP), is to reduce the likelihood that interference to television reception from public mobile operations on these channels will occur. The protected TV station locations specified in this section are the locations of record as of September 1974, and these do not change even though the TV stations may have been subsequently relocated.

(a) *Maximum ERP.* The ERP of base transmitters must not exceed 100 Watts under any circumstances. The ERP of mobile transmitters must not exceed 60 Watts under any circumstances.

(b) *Co-channel protection from base transmitters.* The ERP of base transmitters in the New York-Northeastern New Jersey urban area must not exceed the limits in the tables referenced in paragraphs (b)(2) and (b)(3) of this section. The limits depend upon the height above average terrain of the base transmitter antenna and the distance between the base transmitter and the nearest protected TV station

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location in paragraph (b)(1) of this section.

(1) The protected TV station locations are as follows (all coordinates are referenced to North American Datum 1983 (NAD83)):

Control transmitter frequency range	Protected TV station location
470–476 MHz.	Washington, DC, 38°57'17.4" N. Lat. 77°00'15.9" W. Long.
476–482 MHz.	Lancaster, PA, 40°15'45.3" N. Lat. 76°27'47.9" W. Long.

(2) Tables E-8 and E-9 of this section apply to base transmitters in the New York-Northeastern New Jersey urban area that transmit on channels in the 476–482 MHz range.

Control transmitter frequency range	Protected TV station location	TV channel
470–476 MHz	Hanover, NH, 43°42'30.3" N. Lat. 72°09'14.3" W. Long	(15)
476–482 MHz	Lancaster, PA, 40°15'45.3" N. Lat. 76°27'47.9" W. Long	(15)
482–488 MHz	Scranton, PA, 41°10'58.3" N. Lat. 75°52'19.7" W. Long	(16)
	Hanover, NH, 43°42'30.3" N. Lat. 72°09'14.3" W. Long	(15)

Note: Coordinates are referenced to North American Datum 1983 (NAD83).

(2) Table E-12 of this section applies to base transmitters in the New York-Northeastern New Jersey urban area.

TABLE E-8.—MAXIMUM ERP (WATTS) FOR BASE TRANSMITTERS (HAAT 152 METERS OR LESS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)									
	15 (50)	30 (100)	46 (150)	61 (200)	76 (250)	91 (300)	107 (350)	122 (400)	137 (450)	152 (500)
209 (130)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
201 (125)	1000	1000	1000	1000	1000	1000	1000	850	750	725
193 (120)	1000	1000	1000	1000	900	750	675	600	550	500
185 (115)	1000	1000	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					

See §22.659(b)(2). This table is for antenna heights of 152 meters (500 feet) or less above average terrain. For antenna heights between those in the table, use the next higher antenna height. For distances between those in the table, use the next lower distance.

TABLE E-9.—MAXIMUM ERP (WATTS) FOR BASE TRANSMITTERS (HAAT MORE THAN 152 METERS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)					
	152 (500)	305 (1000)	457 (1500)	610 (2000)	762 (2500)	914 (3000)
209 (130)	1000	447	219	117	71	46
193 (120)	500	209	95	50	30	19
177 (110)	225	91	35	19	11	8
161 (100)	100	30	10	5	3	2

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TABLE E–9.—MAXIMUM ERP (WATTS) FOR BASE TRANSMITTERS (HAAT MORE THAN 152 METERS)—Continued

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)					
	152 (500)	305 (1000)	457 (1500)	610 (2000)	762 (2500)	914 (3000)
153 (95) .....	50	13	5	3	2	1

See § 22.659(b)(2). This table is for antenna heights of more than 152 meters (500 feet) above average terrain. For intermediate values of height and/or distance, use linear interpolation to obtain the maximum permitted ERP.

TABLE E–10.—MAXIMUM ERP (WATTS) FOR BASE TRANSMITTERS (HAAT 152 METERS OR LESS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)									
	15 (50)	30 (100)	46 (150)	61 (200)	76 (250)	91 (300)	107 (350)	122 (400)	137 (450)	152 (500)
261 (162) .....	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
257 (160) .....	1000	1000	1000	1000	1000	1000	1000	1000	1000	800
249 (155) .....	1000	1000	1000	1000	1000	875	775	700	625	575
241 (150) .....	1000	1000	950	775	725	625	550	500	450	400
233 (145) .....	850	750	650	575	500	440	400	350	320	300
225 (140) .....	600	575	465	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

See § 22.659(b)(3). This table applies for antenna heights of 152 meters (500 feet) or less above average terrain. For antenna heights between those in the table, use the next higher antenna height. For distances between those in the table, use the next lower distance.

TABLE E–11.—MAXIMUM ERP (WATTS) FOR BASE TRANSMITTERS (HAAT MORE THAN 152 METERS)

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)					
	152 (500)	305 (1000)	457 (1500)	610 (2000)	762 (2500)	914 (3000)
261 (162) .....	1000	501	282	170	110	71
241 (150) .....	400	209	110	60	36	23
225 (140) .....	225	102	50	28	16	10
209 (130) .....	100	48	21	11	7	5
193 (120) .....	50	19	9	5	3	2

See § 22.659(b)(3). This table is for antenna heights of more than 152 meters (500 feet) above average terrain. For intermediate values of height and/or distance, use linear interpolation to obtain the maximum permitted ERP.

TABLE E–12.—MAXIMUM ERP (WATTS) FOR BASE TRANSMITTERS

Distance to protected TV station in kilometers (miles)	Antenna height above average terrain in meters (feet)									
	30 (100)	46 (150)	61 (200)	76 (250)	91 (300)	107 (350)	122 (400)	137 (450)	152 (500)	
108 (67) .....	1000	1000	1000	1000	1000	1000	1000	1000	1000	
106 (66) .....	1000	1000	1000	1000	1000	1000	1000	1000	750	
105 (65) .....	1000	1000	1000	1000	1000	1000	825	650	600	
103 (64) .....	1000	1000	1000	1000	1000	775	625	500	400	
101 (63) .....	1000	1000	1000	1000	440	400	350	320	300	
100 (62) .....	1000	1000	1000	525	375	250	200	150	125	
98 (61) .....	1000	700	450	250	200	125	100	75	50	
97 (60) .....	1000	425	225	125	100	75	50	.....	.....	

See § 22.659(c)(2). This table applies to base transmitters in the New York-Northeastern New Jersey urban areas. This table is for antenna heights of 152 meters (500 feet) or less above average terrain. For antenna heights between those in the table, use the next higher antenna height. For distances between those in the table, use the next lower distance.

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[59 FR 59507, Nov. 17, 1994, as amended at 63 FR 68947, Dec. 14, 1998]

### Subpart F—Rural Radiotelephone Service

#### § 22.701 Scope.

The rules in this subpart govern the licensing and operation of stations and systems in the Rural Radiotelephone Service. The licensing and operation of these stations and systems is also subject to rules elsewhere in this part that apply generally to the Public Mobile Services. In case of conflict, however, the rules in this subpart govern.

#### § 22.702 Eligibility.

Existing and proposed communications common carriers are eligible to hold authorizations to operate conventional central office, interoffice and rural stations in the Rural Radiotelephone Service. Only local exchange carriers that have been state certified to provide basic exchange telephone service (or others having state approval to provide such service) in the pertinent area are eligible to hold authorizations for Basic Exchange Telephone Radio Systems (BETRS). Subscribers are also eligible to hold authorizations to operate rural subscriber stations in the Rural Radiotelephone Service.

#### § 22.703 Separate rural subscriber station authorization not required.

A separate authorization is not required for rural subscriber stations for which the effective radiated power does not exceed 60 Watts and for which FAA notification of construction or alteration of the antenna structure is not required (see criteria in §17.7 of this chapter). Authority to operate such rural subscriber stations is conferred by the authorization of the central office or base station from which they receive service.

#### § 22.705 Rural radiotelephone system configuration.

Stations in the Rural Radiotelephone Service are authorized to communicate as follows:

(a) Rural subscriber stations are authorized to communicate with and through the central office station(s)

with which they are associated. However, where the establishment of a central office station in this service is not feasible, rural subscriber stations may be authorized to communicate with and through a base station in the Paging and Radiotelephone Service.

(b) Central office stations may communicate only with rural subscriber stations.

(c) Interoffice stations may communicate only with other interoffice stations.

#### § 22.709 Rural radiotelephone service application requirements.

In addition to information required by Subparts B and D of this part, FCC Form 601 applications for authorization to operate a station in the Rural Radiotelephone Service must contain the applicable supplementary information described in this section.

(a) *Interoffice stations.* Applications for authority to operate a new interoffice station or to add transmitters or points of communications to an existing interoffice station must contain an exhibit demonstrating that the requested facilities would be used only for interconnecting central office stations and explaining why the use of alternative existing radio or wire facilities is not feasible.

(b) *Technical information required.* For each transmitter in the Rural Radiotelephone Service, the following information is required by FCC Form 601:

(1) Location description: city; county; state; geographic coordinates correct to  $\pm 1$  second, the datum used (NAD83), site elevation above mean sea level, proximity to adjacent market boundaries and international borders;

(2) Antenna height to tip above ground level, the height of the center of radiation of the antenna above the average terrain, the height of the antenna center of radiation above the average elevation of the terrain along each of the 8 cardinal radials, antenna gain in the maximum lobe, the beamwidth of the maximum lobe of the antenna, a polar plot of the horizontal gain pattern of the antenna, the electric field polarization of the wave emitted by the antenna when installed as proposed;

(c) *No landline facilities.* Each application for a central office station must contain an exhibit showing that it is impracticable to provide the required communication service by means of landline facilities.

(d) *Interference exhibit.* Applications for central office, interoffice and relay stations must include an exhibit identifying co-channel facilities and demonstrating, in accordance with § 22.715 that the proposed station, if authorized, would not cause interference to the service of those co-channel facilities. This exhibit must:

(1) For UHF channels, identify each protected transmitter located within 108 kilometers (67 miles) of the proposed transmitter in directions in which the distance to the interfering contour is 76.4 kilometers (47.5 miles) or less, and within 178 kilometers (111 miles) of the proposed transmitter in directions in which the distance to the interfering contour exceeds 76.4 kilometers (47.5 miles); and identify each protected Basic Exchange Telephone Radio System central office transmitter in the rural Radiotelephone Service within 231 kilometers (144 miles).

(2) For VHF channels, identify each protected transmitter located within 135 kilometers (84 miles) of the proposed transmitter in directions in which the distance to the interfering contour is 93.3 kilometers (58 miles) or less, and within 178 kilometers (111 miles) of the proposed transmitter in directions in which the distance to the interfering contour exceeds 93.3 kilometers (58 miles).

(3) For each protected transmitter identified, show the results of distance calculations indicating that there would be no overlap of service and interfering contours, or alternatively, indicate that the licensee or applicant for the protected transmitter and/or the applicant, as required, have agreed in writing to accept any interference resulting from operation of the proposed transmitter.

(e) *Blocking probability.* Applications for authority to operate basic exchange telephone radio systems (BETRS) that request more than two channel pairs must include an exhibit containing calculations showing that the number of

channels requested is the minimum necessary to achieve the required grade of service (in terms of blocking probability), and that there will be adequate spectrum available in the area to meet realistic estimates of current and future demand for paging, two-way mobile and rural radiotelephone services (see § 22.719(c)). Applications for authority to operate new conventional rural radiotelephone systems that request more than two channel pairs must include a statement explaining why BETRS technology is not being proposed.

(f) *Antenna Information.* Upon request by an applicant, licensee, or the Commission, a part 22 applicant or licensee of whom the request is made shall furnish the antenna type, model, and the name of the antenna manufacturer to the requesting party within ten (10) days of receiving written notification.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994; 63 FR 68948, Dec. 14, 1998; 64 FR 53240, Oct. 1, 1999]

EFFECTIVE DATE NOTES: 1. At 63 FR 68948, Dec. 14, 1998, § 22.709 was amended in part by revising paragraph (b)(2). This section contains information collection and record-keeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

2. At 64 FR 53240, Oct. 1, 1999, § 22.709 was amended by adding paragraph (f). This paragraph contains information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

**§ 22.711 Provision of information to applicants.**

Licensees in the Rural Radio Service must, upon request by a *bona-fide* prospective applicant, provide to such applicant the information required by § 22.709 regarding the portion of the licensee's operations that potentially could affect, or be affected by, the prospective applicant's proposed station, if such information is not already on file with the FCC. This information must be provided to the *bona-fide* prospective applicant no later than 30 days after receipt of the information request.

[59 FR 59954, Nov. 21, 1994]

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**§ 22.713 Construction period for rural radiotelephone stations.**

The construction period for stations in the Rural Radiotelephone Service is 12 months.

**§ 22.715 Technical channel assignment criteria for rural radiotelephone stations.**

Channels are assigned in the Rural Radiotelephone Service using the procedures in § 22.567.

**§ 22.717 Procedure for mutually exclusive applications in the Rural Radiotelephone Service.**

Mutually exclusive applications in the Rural Radiotelephone Service, including those that are mutually exclusive with applications in the Paging and Radiotelephone Service, are processed in accordance with § 22.131 and with this section.

(a) Applications in the Rural Radiotelephone Service may be mutually exclusive with applications in the Paging and Radiotelephone Service if they seek authorization to operate facilities on the same channel in the same area, or the technical proposals are otherwise in conflict. See § 22.567.

(b) A modification application in either service filed on the earliest filing date may cause all later-filed mutually exclusive applications of any type in either service to be "cut off" (excluded from a same-day filing group) and dismissed, pursuant to § 22.131(c)(3)(ii) and § 22.131(c)(4).

[59 FR 59956, Nov. 21, 1994, as amended at 62 FR 11636, Mar. 12, 1997]

**§ 22.719 Additional channel policy for rural radiotelephone stations.**

The rules in this section govern the processing of applications for central office stations that request a rural radiotelephone channel pair when the applicant has applied for or been granted an authorization for other rural radiotelephone channel pairs in the same area. The general policy of the FCC is to promote effective use of the spectrum by encouraging the use of spectrum-efficient technologies (i.e. BETRS) and by assigning the minimum number of channels necessary to provide service.

(a) *Transmitters in same area.* Any central office station transmitter on any channel pair listed in § 22.725 is considered to be in the same area as another central office station transmitter on any other channel pair listed in § 22.725 if the transmitting antennas are located within 10 kilometers (6.2 miles) of each other.

(b) *Initial channel pairs.* The FCC does not assign more than two channel pairs for new central office stations, unless there are more than eight rural subscriber stations to be served. Stations are considered to be new if there are no authorized transmitters on any channel listed in § 22.725 controlled by the applicant in the same geographic area.

(c) *Additional channel pairs.* Applications for central office station transmitters to be located in the same area as an authorized central office station controlled by the applicant, but to operate on a different channel pair(s) are considered as requests for additional channel pair(s) for the authorized central office station. The FCC may grant applications for additional channel pairs provided that the need for each additional channel pair (after the first two) is established and fully justified in terms of achieving the required grade of service (blocking probability), and the applicant demonstrates that there will still be adequate spectrum available in the area to meet realistic estimates of current and future demand for paging, two-way mobile and rural radiotelephone services. In the case of conventional rural radiotelephone central office stations, an explanation must be provided as to why BETRS technology is not being used instead of additional channel pairs.

CONVENTIONAL RURAL RADIOTELEPHONE STATIONS

**§ 22.721 Geographic area authorizations.**

Eligible persons may apply for a paging geographic area authorization in the Rural Radiotelephone Service, on the channel pairs listed in § 22.725, by following the procedures and requirements set forth in § 22.503 for paging geographic area authorizations.

[62 FR 11636, Mar. 12, 1997]

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§ 22.723 Secondary site-by-site authorizations.

Authorizations for new facilities (including new sites and additional channel pairs for existing sites) in the Rural Radiotelephone Service (including BETRS facilities) may be granted after May 12, 1997 only on the condition that such authorizations shall be secondary to any existing or future co-channel paging geographic area authorization in the Paging and Radiotelephone Service or the Rural Radiotelephone Service. If the paging geographic area licensee notifies the Rural Radiotelephone Service licensee that operation of a co-channel secondary facility must be discontinued because it may cause interference to existing or planned facilities, the Rural Radiotelephone Service licensee must discontinue operation of that facility on the particular channel pair involved no later than six months after such notice.

[62 FR 11636, Mar. 12, 1997]

§ 22.725 Channels for conventional rural radiotelephone stations.

The following channels are allocated for paired assignment to transmitters that provide conventional rural radiotelephone service. These channels may be assigned for use by central office or rural subscriber stations as indicated, and interoffice stations. These channels may be assigned also for use by relay stations in systems where it would be impractical to provide rural radiotelephone service without the use of relay stations. All channels have a bandwidth of 20 kHz and are designated by their center frequencies in Mega-Hertz.

Central office	Rural subscriber	Central office	Rural subscriber
<b>VHF Channels</b>			
152.03 .....	158.49	152.57 .....	157.83
152.06 .....	158.52	152.60 .....	157.86
152.09 .....	158.55	152.63 .....	157.89
152.12 .....	158.58	152.66 .....	157.92
152.15 .....	158.61	152.69 .....	157.95
152.18 .....	158.64	152.72 .....	157.98
152.21 .....	158.67	152.75 .....	158.01
152.51 .....	157.77	152.78 .....	158.04
152.54 .....	157.80	152.81 .....	158.07

Central office	Rural subscriber	Central office	Rural subscriber
<b>UHF Channels</b>			
454.025 .....	459.025	454.350 .....	459.350
454.050 .....	459.050	454.375 .....	459.375
454.075 .....	459.075	454.400 .....	459.400
454.100 .....	459.100	454.425 .....	459.425
454.125 .....	459.125	454.450 .....	459.450
454.150 .....	459.150	454.475 .....	459.475
454.175 .....	459.175	454.500 .....	459.500
454.200 .....	459.200	454.525 .....	459.525
454.225 .....	459.225	454.550 .....	459.550
454.250 .....	459.250	454.575 .....	459.575
454.275 .....	459.275	454.600 .....	459.600
454.300 .....	459.300	454.625 .....	459.625
454.325 .....	459.325	454.650 .....	459.650

(a) The channels listed in this section are also allocated for assignment in the Paging and Radiotelephone Service.

(b) In Puerto Rico and the Virgin Islands, channels in the 154.04-154.46 MHz and 161.40-161.85 MHz frequency ranges may be assigned to transmitters providing rural radiotelephone service; channels in these ranges are also allocated for assignment in the International Fixed Public and Aeronautical Fixed radio services.

(c) In Alaska, channels 42.40, 44.10, 44.20 and 45.90 MHz are allocated for assignment to transmitters providing rural radiotelephone service using meteor burst propagation modes, subject to the provisions of § 22.729.

[59 FR 59507, Nov. 17, 1994; 60 FR 9891, Feb. 22, 1995]

§ 22.727 Power limits for conventional rural radiotelephone transmitters.

The transmitting power of transmitters operating on the channels listed in § 22.725 must not exceed the limits in this section.

(a) *Maximum ERP.* The effective radiated power (ERP) of central office and rural subscriber station transmitters must not exceed the applicable limits in this paragraph under any circumstances.

Frequency range (MHz)	Maximum ERP (watts)
152-153 .....	1400
157-159 .....	150
454-455 .....	3500
459-460 .....	150

(b) *Basic power limit.* Except as provided in paragraph (d) of this section,

the ERP of central office station transmitters must not exceed 500 Watts.

(c) *Height-power limits.* Except as provided in paragraph (d) of this section, the ERP of central office station transmitters must not exceed the amount that would result in an average distance to the "service contour" of 41.6 kilometers (26 miles) for VHF channels or 30.7 kilometers (19 miles) for UHF channels. The average distance to the "service contour" is calculated by taking the arithmetic mean of the distances determined using the procedures specified in §22.567 for the eight cardinal radial directions, excluding cardinal radial directions for which 90% or more of the distance so calculated is over water.

(d) *Encompassed interfering contour areas.* Central office station transmitters are exempt from the basic power and height-power limits of this section if the area within their interfering contours is totally encompassed by the interfering contours of operating co-channel central office station transmitters controlled by the same licensee. For the purpose of this paragraph, operating transmitters are authorized transmitters that are providing service to subscribers.

(e) *Adjacent channel protection.* The ERP of central office station transmitters must not exceed 500 Watts if they transmit on channel 454.025 MHz and are located less than 7 kilometers (4.3 miles) from any Private Radio Services station receiving on adjacent channel 454.000 MHz.

(f) *Meteor burst stations.* The transmitter output power for stations using meteor burst propagation modes must not exceed 2000 Watts for central office stations and 500 Watts for rural subscriber stations.

#### § 22.729 Meteor burst propagation modes.

The rules in this section govern stations in this service that use meteor burst propagation modes to provide rural radiotelephone service in Alaska.

(a) *Channel assignments.* The channels 42.40 and 44.10 MHz may be assigned to central office stations and rural subscriber stations, respectively, on a primary basis. The channels 44.20 and 45.90 MHz may be assigned to central office

and rural subscriber stations, respectively, on a secondary basis to Private Radio services stations using meteor burst propagation modes.

(b) *Transmitting power.* The transmitter output power must not exceed 2000 Watts for central office stations and 500 Watts for rural subscriber stations.

(c) *Station locations.* Co-channel central office stations of different licensees must be at least 241 kilometers (150 miles) apart. A rural subscriber station and a central office station of different licensees must be at least 241 kilometers (150 miles) apart if the rural subscriber stations of the different licensees operate on the same channel. The FCC may waive the requirements of this paragraph if the affected users agree to a cooperative sharing arrangement.

(d) *Emission type.* Only type F1D emission is authorized.

(e) *Bandwidth.* The authorized bandwidth is 20 kHz.

(f) *Station identification.* Station identification is required only for the central office station.

(g) *Interference.* Stations authorized under the provisions of this section must not cause harmful interference to the service of stations in other radio services.

(h) *Developmental authorization.* Meteor burst communications systems may be authorized under developmental authorizations pursuant to §22.419.

#### § 22.731 Emission limitations.

Upon application for multichannel operation, the FCC may authorize emission bandwidths wider than those specified in §22.357, provided that spectrum utilization is equal to or better than that achieved by single channel operation.

#### § 22.733 Priority of service.

Within the Rural Radiotelephone Service, the channels listed in §22.725 are intended primarily for use in rendition of public message service between rural subscriber and central office stations and to provide radio trunking facilities between central offices. The channels may also be used, however, for the rendition of private

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leased-line communication service provided that such usage would not reduce or impair the extent or quality of communication service that would be available, in the absence of private leased-line service, to the general public receiving or subsequently requesting public message service from a central office.

§ 22.737 Temporary fixed stations.

The FCC may, upon proper application therefor, authorize the construction and operation of temporary fixed stations. Temporary fixed stations are to be used as rural subscriber, inter-office, or central office stations when those stations are unavailable or when service from those stations is disrupted by storms or emergencies.

(a) *Six month limitation.* If it is necessary for a temporary fixed station to remain at the same location for more than six months, the licensee of that station must apply for authorization to operate the station at the specific location at least 30 days before the end of the six month period.

(b) *International communications.* Communications between the United States and Canada or Mexico must not be carried using a temporary fixed station without prior authorization from the FCC. Licensees desiring to carry such communications should apply sufficiently in advance to allow for the time necessary to coordinate with Canada or Mexico.

BASIC EXCHANGE TELEPHONE RADIO SYSTEMS

§ 22.757 Channels for basic exchange telephone radio systems.

The channels listed in § 22.725 are also allocated for paired assignment to transmitters in basic exchange telephone radio systems. In addition, the following channels are allocated for paired assignment to transmitters in basic exchange telephone radio systems. All channels have a bandwidth of 20 kHz and are designed by their center frequencies in MegaHertz.

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UHF CHANNELS—SHARED WITH PRIVATE RADIO SERVICES

Rural subscriber	Central office	Rural subscriber	Central office
816.2375	861.2375	816.1125	861.1125
817.2375	862.2375	817.1125	862.1125
818.2375	863.2375	818.1125	863.1125
819.2375	864.2375	819.1125	864.1125
820.2375	865.2375	820.1125	865.1125
816.2125	861.2125	816.0875	861.0875
817.2125	862.2125	817.0875	862.0875
818.2125	863.2125	818.0875	863.0875
819.2125	864.2125	819.0875	864.0875
820.2125	865.2125	820.0875	865.0875
816.1875	861.1875	816.0625	861.0625
817.1875	862.1875	817.0625	862.0625
818.1875	863.1875	818.0625	863.0625
819.1875	864.1875	819.0625	864.0625
820.1875	865.1875	820.0625	865.0625
816.1625	861.1625	816.0375	861.0375
817.1625	862.1625	817.0375	862.0375
818.1625	863.1625	818.0375	863.0375
819.1625	864.1625	819.0375	864.0375
820.1625	865.1625	820.0375	865.0375
816.1375	861.1375	816.0125	861.0125
817.1375	862.1375	817.0125	862.0125
818.1375	863.1375	818.0125	863.0125
819.1375	864.1375	819.0125	864.0125
820.1375	865.1375	820.0125	865.0125

(a) Channels are assigned in groups, as listed in this section.

(b) Channel groups in the 816–865 Mhz frequency range are not assigned to Rural Radio Service stations located:

(1) Within 161 kilometers (100 miles) of the borders of the largest 54 MSAs (see § 22.909).

(2) North of Line A or East of Line C; or,

(3) Within 110 kilometers (68 miles) of the Mexican border.

(c) Channel groups in the 816–865 MHz frequency range are not assigned to central office stations located within 113 kilometers (70 miles) of another station authorized to operate on the same channels or on channels with center frequencies offset by 12.5 kHz.

(d) Technical parameters governing the use of these channels are contained in subpart S of part 90 of this chapter.

(e) The Common Carrier Bureau coordinates the availability of channels in the 816–865 MHz frequency range with the Private Radio Bureau.

[59 FR 59507, Nov. 17, 1994; 60 FR 9891, Feb. 22, 1995]

§ 22.759 Power limit for BETRS.

The effective radiated power of central office and rural subscriber station transmitters used in basic exchange telephone radio systems must not exceed the limits in this section.

(a) *Maximum ERP.* The effective radiated power (ERP) of central office and rural subscriber station transmitters in BETRS must not exceed the applicable limits in this paragraph under any circumstances.

Frequency range (MHz)	Maximum ERP (watts)
152-153 .....	1400
157-159 .....	150
454-455 .....	3500
459-460 .....	150

(b) *Height-power limit.* The ERP of central office stations in BETRS must not exceed the amount calculated as follows:

$$ERP_w = 557,418 \cdot h_m^2$$

where  $ERP_w$  is the effective radiated power in Watts

$h_m$  is the average (eight cardinal radial) antenna height above average terrain in meters

**Subpart G—Air-Ground Radiotelephone Service**

§ 22.801 Scope.

The rules in this subpart govern the licensing and operation of public air-ground radiotelephone stations and systems. The licensing and operation of these stations and systems is also subject to rules elsewhere in this part that apply generally to the Public Mobile services. In case of conflict, however, the rules in this subpart govern.

§ 22.803 Air-ground application requirements.

In addition to information required by Subparts B and D of this part, FCC Form 601 applications for authorization to operate an air-ground station or system in the Air-ground Radiotelephone Service must contain the applicable supplementary information described in this section.

(a) *Administrative information.* The following information is required by FCC Form 601.

(1) The number of transmitter sites for which authorization is requested.

(2) The call sign(s) of other facilities in the same area that are ultimately controlled by the real party in interest to the application.

(b) *Technical information required.* For each transmitter in the Rural Radiotelephone Service, the following information is required by FCC Form 601:

(1) Location description: city; county; state; geographic coordinates correct to  $\pm 1$  second, the datum used (NAD83), site elevation above mean sea level, proximity to adjacent market boundaries and international borders;

(2) Antenna height to tip above ground level, the height of the center of radiation of the antenna above the average terrain, the height of the antenna center of radiation above the average elevation of the terrain along each of the 8 cardinal radials, antenna gain in the maximum lobe, the beamwidth of the maximum lobe of the antenna, a polar plot of the horizontal gain pattern of the antenna, the electric field polarization of the wave emitted by the antenna when installed as proposed;

(3) The center frequency of each channel requested, the maximum effective radiated power, any non-standard emission types to be used, including bandwidth and modulation type and the transmitter classification (e.g. ground or signaling).

(c) Upon request by an applicant, licensee, or the Commission, a part 22 applicant or licensee of whom the request is made shall furnish the antenna type, model, and the name of the antenna manufacturer to the requesting party within ten (10) days of receiving written notification.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994; 63 FR 68948, Dec. 14, 1998; 64 FR 53240, Oct. 1, 1999]

EFFECTIVE DATE NOTES: 1. At 63 FR 68948, Dec. 14, 1998, § 22.803 was amended in part by revising paragraph (b)(2). This paragraph contain information collection requirements and will not become effective until approval has been given by the Office of Management and Budget.

2. At FR 53240, Oct. 1, 1999, § 22.803 was amended by adding paragraph (c). This paragraph contain information collection requirements and will not become effective

**§ 22.805**

until approval has been given by the Office of Management and Budget.

GENERAL AVIATION AIR-GROUND STATIONS

**§ 22.805 Channels for general aviation air-ground service.**

The following channels are allocated for the provision of radiotelephone service to airborne mobile subscribers in general aviation aircraft. These channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz.

SIGNALLING CHANNEL PAIR	
Ground	Airborne mobile
454.675	459.675

COMMUNICATION CHANNEL PAIRS	
Ground	Airborne mobile
454.700	459.700
454.725	459.725
454.750	459.750
454.775	459.775
454.800	459.800
454.825	459.825
454.850	459.850
454.875	459.875
454.900	459.900
454.925	459.925
454.950	459.950
454.975	459.975

(a) Channel 454.675 MHz is assigned to each and every ground station, to be used only for automatically alerting airborne mobile stations of incoming calls.

(b) All airborne mobile channels are assigned for use by each and every airborne mobile station.

**§ 22.809 Transmitting power limits.**

The transmitting power of ground and airborne mobile transmitters operating on the channels listed in § 22.805 must not exceed the limits in this section.

(a) *Ground station transmitters.* The effective radiated power of ground stations must not exceed 100 Watts and must not be less than 50 Watts, except as provided in § 22.811.

(b) *Airborne mobile transmitters.* The transmitter power output of airborne mobile transmitters must not exceed 25 Watts and must not be less than 4 Watts.

**§ 22.811 Idle tone.**

Whenever a ground station transmitter authorized to transmit on any of the communications channels listed in § 22.805 is available for service but is not providing service, a modulated signal must be continuously transmitted on the communication channel assigned to that transmitter. While this modulated signal is transmitted, the transmitter power must be between 10 and 20 dB lower than the normal transmitting power.

**§ 22.813 Technical channel pair assignment criteria.**

The rules in this section establish technical assignment criteria for the channel pairs listed in § 22.805. These criteria are intended to provide substantial service volumes over areas that have significant local and regional general aviation activity, while maintaining the continuous nationwide in-route coverage of the original geographical layout.

(a) *Distance separation for co-channel ground stations.* The FCC may grant an application requesting assignment of a communication channel pair to a proposed ground transmitter only if the proposed antenna location is at least 800 kilometers (497 miles) from the antenna location of the nearest co-channel ground transmitter in the United States, its territories and possessions; and 1000 kilometers (621 miles) from the antenna location of the nearest co-channel ground transmitter in Canada.

(b) *Dispersion.* The FCC may grant an application requesting assignment of a communication channel pair to a proposed ground transmitter only if there are no more than five different communication channel pairs already assigned to ground transmitters with antenna locations within a 320 kilometer (199 mile) radius of the proposed antenna location.

**§ 22.815 Construction period for general aviation ground stations.**

The construction period (see § 22.142) for general aviation ground stations is 12 months.

**§ 22.817 Additional channel policies.**

The rules in this section govern the processing of applications for authority

to operate a ground station transmitter on any ground station communication channel listed in §22.805 when the applicant has applied or been granted an authorization for other ground station communication channels in the same area. The general policy of the FCC is to assign one ground station communication channel in an area to a carrier per application cycle, up to a maximum of six ground station communication channels per area. That is, a carrier must apply for one ground station communication channel, receive the authorization, construct the station, and notify the FCC of commencement of service before applying for an additional ground station communication channel in that area.

(a) *Air-ground transmitters in same area.* Any transmitter on any of the ground station channels listed in §22.805 is considered to be in the same area as another transmitter on any ground station channel listed in §22.805 if it is located less than 350 kilometers (217 miles) from that transmitter.

(b) *Initial channel.* The FCC will not assign more than one ground station communication channel for new ground stations. Ground stations are considered to be new if there are no authorized ground station transmitters on any channel listed in §22.805 controlled by the applicant in the same area.

(c) *Additional channel.* Applications for ground transmitters to be located in the same area as an authorized ground station controlled by the applicant, but to operate on a different ground station communication channel, are considered as requesting an additional channel for the authorized station.

(d) *Amendment of pending application.* If the FCC receives and accepts for filing an application for a ground station transmitter to be located in the same area as a ground station transmitter proposed in a pending application previously filed by the applicant, but on a different ground station communication channel, the subsequent application is treated as a major amendment to change the technical proposal of the prior application. The filing date of any application so amended is the date the FCC received the subsequent application.

(e) *Dismissal of premature applications for additional channel.* If the FCC receives an application requesting an additional ground station communication channel for an authorized ground station prior to receiving notification that the station is providing service to subscribers on the authorized channel(s), the FCC may dismiss that application without prejudice.

(f) *Dismissal of applications for seventh channel.* If the FCC receives an application requesting an additional ground station communication channel for an authorized ground station which would, if granted, result in that station being assigned more than six ground station communication channels in the same area, the FCC may dismiss that application without prejudice.

#### § 22.819 AGRAS compatibility requirement.

Except as provided in paragraph (a) of this section, stations transmitting on the channels listed in §22.805 must operate in compliance with the technical and operational requirements contained in the document, "Technical Reference, Air-ground Radiotelephone Automated Service (AGRAS), System Operation and Equipment Characteristics", dated April 12, 1985.

(a) Until January 1, 1996, stations may continue to operate in compliance with the previous standard adopted in Docket 16073.

(b) Copies of the document referenced in this section may be obtained from the FCC's copying contractor.

#### COMMERCIAL AVIATION AIR-GROUND SYSTEMS

#### § 22.857 Channel plan for commercial aviation air-ground systems.

The 849-851 and 894-896 MHz frequency ranges are allocated for block assignment to nationwide air-ground systems providing radiotelephone service to passengers aboard commercial aircraft. These frequency ranges may also be used to provide service to persons in general aviation or other aircraft. Ground stations transmit on channels in the 849-851 MHz range. Airborne mobile stations transmit on

channels in the 894–896 MHz range. Systems using these channels must conform to the channel plan described in this section.

(a) *Channel blocks.* The spectrum allocated for commercial aviation air-ground systems is divided into ten channel blocks, numbered 1 through 10. All ground stations in each geographical area must use the same channel block for communication with airborne mobile stations in flight, in accordance with § 22.859.

(1) Each channel block is subdivided into 6 control channels labeled P-1 through P-6, and 29 communications channels labeled C-1 through C-29.

(2) The authorized channel bandwidths are as follows:

(i) Each control channel has a bandwidth of 3.2 kHz.

(ii) Each communications channel has a bandwidth of 6 kHz.

(b) The center frequencies (in Mega-Hertz) of the communications and control channels are listed in Tables G-1 and G-2 of this section.

TABLE G-1.—GROUND STATION CHANNELS

	Channel block									
	10	9	8	7	6	5	4	3	2	1
C-1	849.0055	849.2055	849.4055	849.6055	849.8055	850.0055	850.2055	850.4055	850.6055	850.8055
C-2	849.0115	849.2115	849.4115	849.6115	849.8115	850.0115	850.2115	850.4115	850.6115	850.8115
C-3	849.0175	849.2175	849.4175	849.6175	849.8175	850.0175	850.2175	850.4175	850.6175	850.8175
C-4	849.0235	849.2235	849.4235	849.6235	849.8235	850.0235	850.2235	850.4235	850.6235	850.8235
C-5	849.0295	849.2295	849.4295	849.6295	849.8295	850.0295	850.2295	850.4295	850.6295	850.8295
C-6	849.0355	849.2355	849.4355	849.6355	849.8355	850.0355	850.2355	850.4355	850.6355	850.8355
C-7	849.0415	849.2415	849.4415	849.6415	849.8415	850.0415	850.2415	850.4415	850.6415	850.8415
C-8	849.0475	849.2475	849.4475	849.6475	849.8475	850.0475	850.2475	850.4475	850.6475	850.8475
C-9	849.0535	849.2535	849.4535	849.6535	849.8535	850.0535	850.2535	850.4535	850.6535	850.8535
C-10	849.0595	849.2595	849.4595	849.6595	849.8595	850.0595	850.2595	850.4595	850.6595	850.8595
C-11	849.0655	849.2655	849.4655	849.6655	849.8655	850.0655	850.2655	850.4655	850.6655	850.8655
C-12	849.0715	849.2715	849.4715	849.6715	849.8715	850.0715	850.2715	850.4715	850.6715	850.8715
C-13	849.0775	849.2775	849.4775	849.6775	849.8775	850.0775	850.2775	850.4775	850.6775	850.8775
C-14	849.0835	849.2835	849.4835	849.6835	849.8835	850.0835	850.2835	850.4835	850.6835	850.8835
C-15	849.0895	849.2895	849.4895	849.6895	849.8895	850.0895	850.2895	850.4895	850.6895	850.8895
C-16	849.0955	849.2955	849.4955	849.6955	849.8955	850.0955	850.2955	850.4955	850.6955	850.8955
C-17	849.1015	849.3015	849.5015	849.7015	849.9015	850.1015	850.3015	850.5015	850.7015	850.9015
C-18	849.1075	849.3075	849.5075	849.7075	849.9075	850.1075	850.3075	850.5075	850.7075	850.9075
C-19	849.1135	849.3135	849.5135	849.7135	849.9135	850.1135	850.3135	850.5135	850.7135	850.9135
C-20	849.1195	849.3195	849.5195	849.7195	849.9195	850.1195	850.3195	850.5195	850.7195	850.9195
C-21	849.1255	849.3255	849.5255	849.7255	849.9255	850.1255	850.3255	850.5255	850.7255	850.9255
C-22	849.1315	849.3315	849.5315	849.7315	849.9315	850.1315	850.3315	850.5315	850.7315	850.9315
C-23	849.1375	849.3375	849.5375	849.7375	849.9375	850.1375	850.3375	850.5375	850.7375	850.9375
C-24	849.1435	849.3435	849.5435	849.7435	849.9435	850.1435	850.3435	850.5435	850.7435	850.9435
C-25	849.1495	849.3495	849.5495	849.7495	849.9495	850.1495	850.3495	850.5495	850.7495	850.9495
C-26	849.1555	849.3555	849.5555	849.7555	849.9555	850.1555	850.3555	850.5555	850.7555	850.9555
C-27	849.1615	849.3615	849.5615	849.7615	849.9615	850.1615	850.3615	850.5615	850.7615	850.9615
C-28	849.1675	849.3675	849.5675	849.7675	849.9675	850.1675	850.3675	850.5675	850.7675	850.9675
C-29	849.1735	849.3735	849.5735	849.7735	849.9735	850.1735	850.3735	850.5735	850.7735	850.9735
P-6	849.1813	849.3813	849.5813	849.7813	849.9813	850.1813	850.3813	850.5813	850.7813	850.9813
P-5	849.1845	849.3845	849.5845	849.7845	849.9845	850.1845	850.3845	850.5845	850.7845	850.9845
P-4	849.1877	849.3877	849.5877	849.7877	849.9877	850.1877	850.3877	850.5877	850.7877	850.9877

TABLE G-1.—GROUND STATION CHANNELS—Continued

Channel block										
	10	9	8	7	6	5	4	3	2	1
P-3	849.1909	849.3909	849.5909	849.7909	849.9909	850.1909	850.3909	850.5909	850.7909	850.9909
P-2	849.1941	849.3941	849.5941	849.7941	849.9941	850.1941	850.3941	850.5941	850.7941	850.9941
P-1	849.1973	849.3973	849.5973	849.7973	849.9973	850.1973	850.3973	850.5973	850.7973	850.9973

TABLE G-2.—AIRBORNE MOBILE STATION CHANNELS

Channel block										
	10	9	8	7	6	5	4	3	2	1
C-1	894.0055	894.2055	894.4055	894.6055	894.8055	895.0055	895.2055	895.4055	895.6055	895.8055
C-2	894.0115	894.2115	894.4115	894.6115	894.8115	895.0115	895.2115	895.4115	895.6115	895.8115
C-3	894.0175	894.2175	894.4175	894.6175	894.8175	895.0175	895.2175	895.4175	895.6175	895.8175
C-4	894.0235	894.2235	894.4235	894.6235	894.8235	895.0235	895.2235	895.4235	895.6235	895.8235
C-5	894.0295	894.2295	894.4295	894.6295	894.8295	895.0295	895.2295	895.4295	895.6295	895.8295
C-6	894.0355	894.2355	894.4355	894.6355	894.8355	895.0355	895.2355	895.4355	895.6355	895.8355
C-7	894.0415	894.2415	894.4415	894.6415	894.8415	895.0415	895.2415	895.4415	895.6415	895.8415
C-8	894.0475	894.2475	894.4475	894.6475	894.8475	895.0475	895.2475	895.4475	895.6475	895.8475
C-9	894.0535	894.2535	894.4535	894.6535	894.8535	895.0535	895.2535	895.4535	895.6535	895.8535
C-10	894.0595	894.2595	894.4595	894.6595	894.8595	895.0595	895.2595	895.4595	895.6595	895.8595
C-11	894.0655	894.2655	894.4655	894.6655	894.8655	895.0655	895.2655	895.4655	895.6655	895.8655
C-12	894.0715	894.2715	894.4715	894.6715	894.8715	895.0715	895.2715	895.4715	895.6715	895.8715
C-13	894.0775	894.2775	894.4775	894.6775	894.8775	895.0775	895.2775	895.4775	895.6775	895.8775
C-14	894.0835	894.2835	894.4835	894.6835	894.8835	895.0835	895.2835	895.4835	895.6835	895.8835
C-15	894.0895	894.2895	894.4895	894.6895	894.8895	895.0895	895.2895	895.4895	895.6895	895.8895
C-16	894.0955	894.2955	894.4955	894.6955	894.8955	895.0955	895.2955	895.4955	895.6955	895.8955
C-17	894.1015	894.3015	894.5015	894.7015	894.9015	895.1015	895.3015	895.5015	895.7015	895.9015
C-18	894.1075	894.3075	894.5075	894.7075	894.9075	895.1075	895.3075	895.5075	895.7075	895.9075
C-19	894.1135	894.3135	894.5135	894.7135	894.9135	895.1135	895.3135	895.5135	895.7135	895.9135
C-20	894.1195	894.3195	894.5195	894.7195	894.9195	895.1195	895.3195	895.5195	895.7195	895.9195
C-21	894.1255	894.3255	894.5255	894.7255	894.9255	895.1255	895.3255	895.5255	895.7255	895.9255
C-22	894.1315	894.3315	894.5315	894.7315	894.9315	895.1315	895.3315	895.5315	895.7315	895.9315
C-23	894.1375	894.3375	894.5375	894.7375	894.9375	895.1375	895.3375	895.5375	895.7375	895.9375
C-24	894.1435	894.3435	894.5435	894.7435	894.9435	895.1435	895.3435	895.5435	895.7435	895.9435
C-25	894.1495	894.3495	894.5495	894.7495	894.9495	895.1495	895.3495	895.5495	895.7495	895.9495
C-26	894.1555	894.3555	894.5555	894.7555	894.9555	895.1555	895.3555	895.5555	895.7555	895.9555
C-27	894.1615	894.3615	894.5615	894.7615	894.9615	895.1615	895.3615	895.5615	895.7615	895.9615
C-28	894.1675	894.3675	894.5675	894.7675	894.9675	895.1675	895.3675	895.5675	895.7675	895.9675
C-29	894.1735	894.3735	894.5735	894.7735	894.9735	895.1735	895.3735	895.5735	895.7735	895.9735
P-6	894.1813	894.3813	894.5813	894.7813	894.9813	895.1813	895.3813	895.5813	895.7813	895.9813
P-5	894.1845	894.3845	894.5845	894.7845	894.9845	895.1845	895.3845	895.5845	895.7845	895.9845
P-4	894.1877	894.3877	894.5877	894.7877	894.9877	895.1877	895.3877	895.5877	895.7877	895.9877
P-3	894.1909	894.3909	894.5909	894.7909	894.9909	895.1909	895.3909	895.5909	895.7909	895.9909
P-2	894.1941	894.3941	894.5941	894.7941	894.9941	895.1941	895.3941	895.5941	895.7941	895.9941
P-1	894.1973	894.3973	894.5973	894.7973	894.9973	895.1973	895.3973	895.5973	895.7973	895.9973

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§ 22.859 Geographical channel block layout.

Except as provided in paragraphs (a) and (b) of this section, each ground station location must be within 1.6 kilometers (one mile) of one of the locations listed in this paragraph. The channel block allotted for each location must be used to provide service to airborne mobile stations in flight and may be used to provide service to airborne mobile stations on the ground.

NOTE: All geographic coordinates are referenced to North American Datum 1983 (NAD83).

Location	N. latitude	W. longitude	Channel block
<b>ALASKA:</b>			
Anchorage .....	61°11'04"	149°54'50"	8
Cordova .....	60°29'38"	145°28'17"	5
Ketchikan .....	55°21'10"	131°42'20"	5
Juneau .....	58°21'17"	134°34'36"	4
Sitka .....	57°03'03"	135°20'23"	7
Yakutat .....	59°32'22"	139°44'10"	2
<b>ALABAMA:</b>			
Birmingham .....	33°23'24"	86°39'59"	2
<b>ARIZONA:</b>			
Phoenix .....	33°35'39"	112°05'15"	4
Winslow .....	35°01'17"	110°43'04"	6
<b>ARKANSAS:</b>			
Pine Bluff .....	34°10'56"	91°56'18"	8
<b>CALIFORNIA:</b>			
Burbank .....	34°11'44"	118°21'31"	4
Blythe .....	33°36'39"	114°42'27"	10
Los Angeles .....	33°56'45"	118°23'06"	3
Oakland .....	37°51'54"	122°13'15"	1
Red Bluff .....	40°04'34"	122°10'38"	8
San Francisco .....	37°41'15"	122°26'05"	6
San Jose .....	37°20'56"	121°54'01"	5
Visalia .....	36°19'36"	119°23'25"	7
<b>COLORADO:</b>			
Colorado Springs .....	38°44'39"	104°51'48"	8
Bennet .....	39°51'24"	104°35'53"	1
Hayden .....	40°29'04"	107°13'10"	6
<b>FLORIDA:</b>			
Miami .....	25°48'28"	80°16'29"	4
Orlando .....	28°26'54"	81°21'59"	2
Tallahassee .....	30°24'03"	84°21'18"	7
<b>GEORGIA:</b>			
Atlanta .....	33°39'05"	84°25'54"	5
St Simons Island .....	31°09'23"	81°23'13"	6
<b>HAWAII:</b>			
Mauna Kapu .....	21°24'13"	158°05'52"	5
<b>IDAHO:</b>			
Blackfoot .....	43°11'34"	112°21'00"	8
Caldwell .....	43°38'45"	116°38'47"	10
<b>ILLINOIS:</b>			
Chicago .....	41°46'49"	87°45'20"	3
Kewanee .....	41°12'05"	89°57'33"	5
Schiller Park .....	41°57'18"	87°52'57"	2
<b>INDIANA:</b>			
Fort Wayne .....	40°59'16"	85°11'31"	7
<b>IOWA:</b>			
Des Moines .....	41°31'58"	93°38'55"	1
<b>KANSAS:</b>			

Location	N. latitude	W. longitude	Channel block
Garden City .....	37°59'35"	100°54'06"	3
Wichita .....	37°37'24"	97°27'16"	7
<b>KENTUCKY:</b>			
Fairdale .....	38°04'48"	85°47'33"	6
<b>LOUISIANA:</b>			
Kenner .....	30°00'28"	90°13'49"	3
Shreveport .....	32°27'10"	93°49'39"	5
<b>MASSACHUSETTS:</b>			
Boston .....	42°23'15"	71°01'01"	7
<b>MICHIGAN:</b>			
Bellville .....	42°12'17"	83°29'09"	8
Flint .....	42°58'21"	83°44'22"	9
Sault Saint Marie .....	46°28'45"	84°21'31"	6
<b>MINNESOTA:</b>			
Bloomington .....	44°51'30"	93°13'20"	9
<b>MISSISSIPPI:</b>			
Meridian .....	32°19'11"	88°41'33"	9
<b>MISSOURI:</b>			
Kansas City .....	39°18'13"	94°41'05"	6
St. Louis .....	38°42'45"	90°19'19"	4
Springfield .....	37°14'28"	93°22'55"	9
<b>MONTANA:</b>			
Lewistown .....	47°02'56"	109°27'30"	5
Miles City .....	46°25'30"	105°52'32"	8
Missoula .....	47°01'05"	114°00'44"	3
<b>NEBRASKA:</b>			
Grand Island .....	40°58'00"	98°19'12"	2
Ogallala .....	41°07'11"	101°45'39"	4
<b>NEVADA:</b>			
Las Vegas .....	36°05'35"	115°10'28"	1
Reno .....	39°35'13"	119°55'56"	4
Tonopah .....	38°03'43"	117°13'27"	9
Winnemucca .....	41°00'39"	117°46'01"	3
<b>NEW MEXICO:</b>			
Alamogordo .....	32°54'46"	105°56'43"	8
Albuquerque .....	35°03'05"	106°37'15"	10
Aztec .....	36°48'42"	107°53'50"	9
Clayton .....	36°27'29"	103°11'18"	5
<b>NEW JERSEY:</b>			
Woodbury .....	39°50'01"	75°09'20"	3
<b>NEW YORK:</b>			
E. Elmhurst .....	40°46'21"	73°52'40"	1
Schuyler .....	43°09'09"	75°07'49"	2
Staten Island .....	40°36'05"	74°06'34"	9
<b>NORTH CAROLINA:</b>			
Greensboro .....	36°05'54"	79°56'41"	9
Wilmington .....	34°16'11"	77°54'23"	3
<b>NORTH DAKOTA:</b>			
Dickinson .....	46°51'05"	102°47'37"	7
<b>OHIO:</b>			
Pataskala .....	40°04'05"	82°42'00"	1
<b>OKLAHOMA:</b>			
Warner .....	35°29'31"	95°18'26"	4
Woodward .....	36°24'42"	99°28'51"	9
<b>OREGON:</b>			
Albany .....	44°38'23"	123°03'40"	5
Klamath Falls .....	42°06'30"	121°38'04"	2
Pendleton .....	45°35'44"	118°31'06"	7
<b>PENNSYLVANIA:</b>			
Coraopolis .....	40°30'33"	80°13'26"	4
New Cumberland .....	40°11'30"	76°52'01"	8
<b>SOUTH CAROLINA:</b>			
Charleston .....	32°54'11"	80°01'19"	4
<b>SOUTH DAKOTA:</b>			
Aberdeen .....	45°27'21"	98°25'27"	6
Rapid City .....	44°02'36"	103°03'38"	5
<b>TENNESSEE:</b>			
Elizabethton .....	36°26'04"	82°08'05"	7

Location	N. latitude	W. longitude	Chan- nel block
Memphis .....	35°01'44"	89°56'15"	10
Nashville .....	36°08'07"	86°41'39"	3
TEXAS:			
Bedford .....	32°45"	97°07'20"	1
Houston .....	29°54'38"	95°24'40"	2
Lubbock .....	33°37'06"	101°52'16"	7
Monahans .....	31°34'58"	102°54'20"	6
UTAH:			
Abajo Peak .....	37°50'21"	109°27'44"	7
Delta .....	39°23'15"	112°30'47"	2
Escalante .....	37°45'19"	111°52'30"	5
Green River .....	38°57'54"	110°13'43"	3
Salt Lake City ...	40°39'11"	112°12'09"	1
VIRGINIA:			
Arlington .....	38°52'55"	77°06'17"	6
WASHINGTON:			
Seattle .....	47°26'07"	122°17'39"	4
Cheney .....	47°33'14"	117°43'39"	1
WEST VIRGINIA:			
Charleston .....	38°19'47"	81°39'35"	2
WISCONSIN:			
Stevens Point ...	44°33'06"	89°25'27"	8
WYOMING:			
Riverton .....	43°03'37"	108°27'25"	9

(a) Carriers authorized to construct and operate air-ground radiotelephone systems on the channels listed in §22.857 may also construct and operate low power ground stations designed to provide service to airborne mobile stations on the ground, provided that no interference is caused to service provided by ground stations located in accordance with the geographical channel block layout or with paragraph (b) of this section. The antenna location of each such low power ground station may be anywhere that is at least 483 kilometers (300 miles) from all antenna locations of ground stations using the same channel block(s) in accordance with the geographical channel block layout or with paragraph (b) of this section.

(b) Ground station locations may be more than 1.61 kilometers (one mile) from all of the locations listed in this section, provided that they are at least 885 kilometers (550 miles) from all antenna locations of ground stations using the same channel block(s) in accordance with the geographical channel block layout or with this paragraph.

[59 FR 59507, Nov. 17, 1994, as amended at 63 FR 68948, Dec. 14, 1998; 65 FR 49203, Aug. 11, 2000]

§ 22.861 Emission limitations.

Any appropriate emission type may be used to provide air-ground radiotelephone service on the channels listed in §22.857, provided that the emission limitations of this section are met.

(a) *Emission mask.* The emission mask described in this paragraph applies instead of those in §22.359. The power of any emission in each of the adjacent channels must be at least 30 dB below the power of the total emission. The power of any emission in any of the channels other than the one being used and the adjacent channels must be at least 50 dB below the power of the total emission.

(b) *Airborne mobile transmitters.* The power of any emission in each of the adjacent channels must not exceed -130 dBm at any ground station receiver, assuming a 0 dBi receive antenna. The power of any emission in any of the channels other than the one being used and the adjacent channels must not exceed -148 dBm at any ground station receiver, assuming a 0 dBi receive antenna.

(c) *Ground station transmitters.* The effective radiated power (ERP) of any emission outside of the frequency ranges set forth in §22.857 must not exceed -10 dBm. The ERP of any emission in each of the adjacent channels must not exceed +10 dBm. The ERP of any emission in any of the channels other than the one being used and the adjacent channels must not exceed -5 dBm.

(d) If an emission on any frequency outside of the authorized bandwidth causes harmful interference, the FCC may require greater attenuation of that emission than required in paragraph (a) of this section.

§ 22.863 Transmitter frequency tolerance.

Ground station transmitter frequencies must be maintained within 0.1 parts per million (ppm) of the channel reference or center frequencies. Doppler shift correction must be used to ensure that the frequencies of the signals of airborne mobile stations received at ground stations remain within 0.2 ppm of the channel reference or center frequencies.

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### § 22.865 Automatic channel selection procedures.

Operation of stations using the channels listed in § 22.857 must be in accordance with the procedures in this section.

(a) A communications channel is not available for use by a ground station if it is already in use by another ground station at the same location. Ground station equipment must automatically determine whether channels are in use by other ground stations at the same location, and may employ radio frequency signal monitoring to do so. For example, a communications channel may be determined to be in use if the received signal power on that channel at the ground station exceeds -115 dBm, which, assuming a 0 dB gain 895 MHz receive antenna, corresponds to a field strength of approximately 19 dBuV/m. Ground stations may employ an alternative method of determining whether a communications channel is in use provided that such procedure is at least as reliable as radio frequency signal monitoring.

(b) Data indicating which communications channels are available for use are transmitted by ground stations on the assigned control channels.

(c) A call is originated when an airborne mobile station selects a communications channel based on the received data from ground stations and other factors, and transmits an identification code (which identifies the specific ground station from which service is requested) on the selected communications channel. The ground station from which service has been requested may then obtain any necessary billing information and complete the call.

(d) A ground station may not transmit on a communications channel unless it has received the proper identification code. After a ground station has begun to transmit on a communications channel, that channel is not available to ground stations other than the one from which service has been requested until the call is terminated.

(e) A call is terminated by the ground station when either a hang-up signal is transmitted by the airborne mobile station, or the signal from the airborne mobile station on the communications channel is lost for a period of 15 contin-

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uous seconds. The hang-up signal is the on-off keying (50% duty cycle) of an unmodulated carrier over a period of one second with pulse duration of 5 milliseconds. However, if all carriers authorized to operate air-ground systems using the channels listed in § 22.857 agree that an alternative hang-up signal and/or procedure would be more efficient or beneficial, such alternative hang-up signal and/or procedure may be used. The carriers must jointly give prior notification to the FCC if an alternative hang-up signal and/or procedure is used.

### § 22.867 Effective radiated power limits.

The effective radiated power (ERP) of ground and airborne stations operating on the channels listed in § 22.857 must not exceed the limits in this section.

(a) The ERP of airborne mobile station transmitters must not exceed 30 Watts.

(b) The ERP of ground station transmitters must not exceed 100 Watts.

(c) The ERP of low power ground station transmitters operating pursuant to paragraph (a) of § 22.859 must not exceed 1 Watt.

### § 22.869 Assignment of control channels.

The FCC selects and assigns exclusively one control channel to each commercial aviation air-ground licensee.

### § 22.871 Control channel transition period.

The rules in this section provide for a period of transition during which the experimental air-ground system operating on the channels listed in § 22.857 will be discontinued and replaced by a system operating in full compliance with the rules in this subpart. The experimental system may continue to exclusively use a 3.2 kHz control channel contained within the bandwidth of communications channel C-2 of each channel block until September 9, 1996. After that date communications channel C-2 will be available for use by all carriers authorized to operate an air-ground system on the channels listed in § 22.857.

**§ 22.873 Construction period for commercial aviation air-ground systems.**

Construction of a new commercial aviation air-ground system is considered to be completed for the purpose of this section and § 22.142 when the number of ground stations specified in this section are constructed and operational.

(a) *Stage I.* At least 25 ground stations must be constructed and operational within 3 years. Licensees must notify the Commission by using FCC Form 601 as soon as this requirement is met.

(b) *Stage II.* At least 50 ground stations must be constructed and operational within 5 years. Nationwide service to subscribers must commence within 5 years. Licensees must notify the Commission by using FCC Form 601 as soon as this requirement is met.

[59 FR 59507, Nov. 17, 1994, as amended at 63 FR 68950, Dec. 14, 1998]

**§ 22.875 Commercial aviation air-ground system application requirements.**

Existing and prospective common carriers may file applications for authority to construct and operate a new nationwide air-ground system on the channels listed in § 22.857 only during window filing periods that may be announced by the FCC in Public Notices. In addition to the requirements elsewhere in this part, such applications must contain the following exhibits:

(a) *Written agreement.* A signed agreement between the applicant and at least one airline or airline organization, authorizing the applicant to provide air-ground service on its aircraft.

(b) *Financial qualifications.* At the time of filing its application an applicant must demonstrate that it has either a firm financial commitment or available financial resources necessary to construct 50 ground stations and operate for one year after initiation of nationwide air-ground service its proposed air-ground system.

(1) The demonstration of commitment must include and be sufficient to cover the realistic and prudent estimated costs of construction of 50 ground stations, operation and other initial expenses for one year after initi-

ation of nationwide air-ground service. The estimated costs, operation costs and other initial expenses must be itemized. The estimated costs must include the anticipated costs of construction of each ground station.

(2) The firm financial commitment required above must be obtained from a state or federally chartered bank or savings and loan association, or the financial affiliate or subsidiary of an equipment supplier, and must contain a statement that the lender:

(i) Has examined the financial condition of the applicant including audited financial statements, and has determined that the applicant is credit worthy;

(ii) That the lender is committed to providing a sum certain to the particular applicant;

(iii) That the lender's willingness to enter into the commitment is based solely on its relationship with the applicant; and

(iv) That the commitment is not in any way guaranteed by any entity other than the applicant.

(3) Applicants intending to rely on personal or internal resources must submit:

(i) Audited financial statements certified within one year of the date of the application, indicating the availability of sufficient net liquid assets to construct and operate the proposed air-ground system for one year.

(A) The auditors must be certified public accountants.

(B) Net liquid assets is considered to be the excess of current assets (readily converted to cash) over current liabilities. In order to demonstrate ready convertibility into cash, the identity, liquidity and value of listed assets must be demonstrated. Non-liquid assets can be relied on if the marketability of those assets is documented.

(ii) An audited balance sheet, current within 60 days of filing, which clearly shows the continued availability of sufficient net liquid assets to construct and operate the proposed air-ground system for one year after nationwide service begins.

(c) *Service Plan.* A service plan containing:

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(1) A map or other description of the planned geographic coverage area, including air space over the continental United States, Alaska, Hawaii and other United States territories.

(2) A schedule for construction of 50 ground stations and provision of nationwide service to subscribers within 5 years from the grant of the initial authorization.

(3) A description of how the system will interconnect with the landline telephone network and be integrated with other air-ground systems, including a statement as to whether the system will be interconnected with international air-ground systems.

(d) *Technical Exhibit.* A technical description of the proposed system demonstrating compliance with all applicable technical requirements and describing how the proposed system would operate, if authorized. This exhibit must provide the following information:

(1) The number of ground stations to be used, their locations, and the type and quantity of equipment proposed for the system;

(2) A complete description of the procedures and data protocols to be used on the control channel;

(3) The modulation types to be used and their spectral characteristics;

(4) The effective radiated power and transmitter peak envelope power for all transmitters at each ground station location, and the effective radiated power of the airborne mobile stations;

(5) Antenna information as follows:

(i) For airborne mobile stations, the antenna type(s) to be used;

(ii) For ground stations, vertical and horizontal radiation patterns, antenna heights above ground level, antenna support structure heights above ground level, ground elevation above mean sea level and any relevant information (e.g. FAA approval) that may be helpful in determining whether ground station antennas require marking and lighting;

(6) Analytical data, including calculations, of potential interference within and without the spectrum for the air-ground system;

[59 FR 59507, Nov. 17, 1994, as amended at 63 FR 68951, Dec. 14, 1998]

EFFECTIVE DATE NOTE: At 63 FR 68904, Dec. 14, 1998, § 22.875 was amended by removing

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paragraph (d)(5). This paragraph contains modified information collection requirements and will not become effective until approved by the Office of Management and Budget.

### Subpart H—Cellular Radiotelephone Service

#### § 22.900 Scope.

The rules in this subpart govern the licensing and operation of cellular radiotelephone systems. Licensing and operation of these systems are also subject to rules elsewhere in this part that apply generally to the Public Mobile Services. In case of conflict, however, the rules in this subpart govern.

#### § 22.901 Cellular service requirements and limitations.

Cellular system licensees must provide cellular mobile radiotelephone service upon request to subscribers in good standing, including roamers, as provided in § 20.12 of this chapter. A cellular system licensee may refuse or terminate service, however, subject to any applicable state or local requirements for timely notification, to any subscriber who operates a cellular telephone in an airborne aircraft in violation of § 22.925 or otherwise fails to cooperate with the licensee in exercising operational control over mobile stations pursuant to § 22.927.

(a) *Service area information.* Licensees must inform prospective subscribers of the area in which reliable service can be expected.

(b) *Lack of capacity.* If a licensee refuses a request for cellular service because of a lack of system capacity, it must report that fact to the FCC in writing, explaining how it plans to increase capacity.

(c) *Dispatch service.* Cellular systems may provide dispatch service.

(d) *Alternative technologies and co-primary services.* Licensees of cellular systems may use alternative cellular technologies and/or provide fixed services on a co-primary basis with their mobile offerings, including personal communications services (as defined in part 24 of this chapter) on the spectrum within their assigned channel block. Cellular carriers that provide mobile services must make such service available to



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“Common Carrier Public Mobile Services Information, Cellular MSA/RSA Markets and Counties”, dated January 24, 1992, DA 92-109, 7 FCC Rcd 742 (1992).

(a) MSAs. Metropolitan Statistical Areas are 306 areas, including New England County Metropolitan Areas and the Gulf of Mexico Service Area (water area of the Gulf of Mexico, border is the coastline), defined by the Office of Management and Budget, as modified by the FCC.

(b) RSAs. Rural Service Areas are 428 areas, other than MSAs, established by the FCC.

§ 22.911 Cellular geographic service area.

The Cellular Geographic Service Area (CGSA) of a cellular system is the geographic area considered by the FCC to be served by the cellular system. The CGSA is the area within which cellular systems are entitled to protection and within which adverse effects for the purpose of determining whether a petitioner has standing are recognized.

(a) CGSA determination. The CGSA is the composite of the service areas of all of the cells in the system, excluding any area outside the cellular market boundary, except as provided in paragraph (c) of this section, and excluding any area within the CGSA of another cellular system. The service area of a cell is the area within its service area boundary (SAB). The distance to the SAB is calculated as a function of effective radiated power (ERP) and antenna center of radiation height above average terrain (HAAT), height above sea level (HASL) or height above mean sea level (HAMSL).

(1) Except as provided in paragraphs (a)(2) and (b) of this section, the distance from a cell transmitting antenna to its SAB along each cardinal radial is calculated as follows:

d=2.531xh<sup>0.34</sup> xp<sup>0.17</sup>

where:

d is the radial distance in kilometers  
h is the radial antenna HAAT in meters  
p is the radial ERP in Watts

(2) For the cellular systems authorized to serve the Gulf of Mexico MSA, the distance from a cell transmitting

antenna to its SAB along each cardinal radial is calculated as follows:

d=6.895xh<sup>0.30</sup> xp<sup>0.15</sup>

where:

d is the radial distance in kilometers  
h is the radial antenna HAAT in meters  
p is the radial ERP in Watts

(3) The value used for h in the formula in paragraph (a)(2) of this section must not be less than 8 meters (26 feet) HASL (or HAMSL, as appropriate for the support structure). The value used for h in the formula in paragraph (a)(1) of this section must not be less than 30 meters (98 feet) HAAT, except that for unserved area applications proposing a cell with an ERP not exceeding 10 Watts, the value for h used in the formula in paragraph (a)(1) of this section to determine the service area boundary for that cell may be less than 30 meters (98 feet) HAAT, but not less than 3 meters (10 feet) HAAT.

(4) The value used for p in the formulas in paragraphs (a)(1) and (a)(2) of this section must not be less than 0.1 Watt or 27 dB less than (1/500 of) the maximum ERP in any direction, whichever is more.

(5) Whenever use of the formula in paragraph (a)(1) of this section pursuant to the exception contained in paragraph (a)(3) of this section results in a calculated distance that is less than 5.4 kilometers (3.4 miles), the radial distance to the service area boundary is deemed to be 5.4 kilometers (3.4 miles).

(6) The distance from a cell transmitting antenna to the SAB along any radial other than the eight cardinal radials is calculated by linear interpolation of distance as a function of angle.

NOTE TO PARAGRAPH (A) OF § 22.911: On May 13, 1994, the United States Court of Appeals for the District of Columbia Circuit instructed the FCC to vacate the provisions of old § 22.903(a), now § 22.911(a), insofar as they apply to cellular systems licensed to serve the Gulf of Mexico MSA (GMSA), pending reconsideration of an issue remanded to the FCC in that decision. See *Petroleum Communications, Inc. v. Federal Communications Commission*, No. 92-1670 and *RVC Services, Inc., D/B/A Coastel Communications Company v. Federal Communications Commission*, No. 93-1016, \_\_\_ F.2d \_\_\_, \_\_\_ (D.C. Cir. 1994). Accordingly, notwithstanding the provisions of

§ 22.911(a), until further notice, the authorized CGSAs of the cellular systems licensed to serve the GMSA are those which were authorized prior to January 11, 1993.

(b) *Alternative CGSA determination.* If a carrier believes that the method described in paragraph (a) of this section produces a CGSA that departs significantly ( $\pm 20\%$  in the service area of any cell) from the geographic area where reliable cellular service is actually provided, the carrier may submit, as an exhibit to an application for modification of the CGSA using FCC Form 601, a depiction of what the carrier believes the CGSA should be. Such submissions must be accompanied by one or more supporting propagation studies using methods appropriate for the 800–900 MHz frequency range, including all supporting data and calculations, and/or by extensive field strength measurement data. For the purpose of such submissions, cellular service is considered to be provided in all areas, including “dead spots”, between the transmitter location and the locus of points where the predicted or measured median field strength finally drops to 32 dB $\mu$ V/m (i.e. does not exceed 32 dB $\mu$ V/m further out). If, after consideration of such submissions, the FCC finds that adjustment to a CGSA is warranted, the FCC may grant the application.

(1) The alternative CGSA determination must define the CGSA in terms of distances from cell sites to cell SABs along the eight cardinal radials, with other points along the SAB determined in accordance with paragraph (a)(6) of this section. The distances used for the cardinal radials must be representative of the coverage within the 45° sectors, as depicted by the alternative CGSA determination.

(2) If an uncalibrated predictive model is used to depict the CGSA, the alternative CGSA determination must identify factors (e.g. terrain roughness or features) that could plausibly account for the difference between actual coverage and that defined by the formula in paragraph (a)(1) of this section. If actual measurements or a measurement-calibrated predictive model are used to depict the CGSA, and this fact is disclosed in the alternative CGSA determination, it is not necessary to offer an explanation of the difference

between actual coverage and that defined by the formula in paragraph (a)(1) of this section. If the formula in paragraph (a)(1) of this section is clearly inapplicable for the cell(s) in question (e.g. for microcells), this should be disclosed in the alternative CGSA determination.

(3) The provision for alternative CGSA determinations was made in recognition that the formula in paragraph (a)(1) of this section is a general model that provides a reasonable approximation of coverage in most land areas, but may substantially under-predict or over-predict coverage in specific areas with unusual terrain roughness or features, and may be inapplicable for certain purposes, e.g. cells with a radial distance to the SAB less than 8 kilometers (5 miles). In such cases, alternative methods that utilize more specific models are appropriate. Accordingly, the FCC does not consider use of the formula in paragraph (a)(1) of this section with parameters outside of the limits in paragraphs (a)(3), (a)(4) and (a)(5) of this section or with data for radials other than the cardinal radials to be a valid alternative method for determining the CGSA of a cellular system.

(c) *CGSA extension areas.* SAB extensions (areas outside of the cellular market boundary, but within the service area as calculated using the methods of paragraph (a) of this section) are part of the CGSA only under the following circumstances:

(1) During the five year build-out period of the system in the cellular market containing the extension, the licensees of systems on the same channel block in adjacent cellular markets may agree that the portion of the service area of one system that extends into unserved areas in the other system's cellular market is part of the CGSA of the former system.

(2) At the end of the five year build-out period of the system in the cellular market containing the extension, the portion of the service area that extends into unserved areas in another cellular market becomes part of the CGSA, provided that the licensee of the system so extended files a system information update in accordance with § 22.947(c).

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(3) For original systems in MSAs, extensions of the CGSA authorized by the FCC are part of the CGSA to the extent authorized.

(d) *Protection afforded.* Within the CGSA determined in accordance with this section, cellular systems are entitled to protection from co-channel and first-adjacent channel interference and from capture of subscriber traffic by adjacent systems on the same channel block.

(1) Licensees must cooperate in resolving co-channel and first-adjacent channel interference by changing channels used at specific cells or by other technical means.

(2) Protection from capture of subscriber traffic is applied and limited in accordance with the following:

(i) Subscriber traffic is captured if an SAB of one cellular system overlaps the CGSA of another operating cellular system. Therefore, cellular licensees must not begin to operate any facility that would cause an SAB to overlap the existing CGSA of another cellular system on the same channel block, without first obtaining the written consent of the licensee of that system. However, cellular licensees may continue to operate existing facilities that produce an SAB overlapping a subsequently-authorized portion of the CGSA of another cellular system on the same channel block until the licensee of that system requests that the SAB be removed from its CGSA. Such request may be made directly to the licensee of the overlapping system or to the FCC. In the event such request is made, the licensee of the overlapping system must reduce the transmitting power or antenna height (or both) at the pertinent cell site as necessary to remove the SAB from the CGSA of the other system, unless a written consent from the licensee of the other system allowing the SAB to remain is obtained. Cellular licensees may enter into contracts with the licensees of other cellular systems on the same channel block to allow SABs to overlap CGSAs.

(ii) Cellular licensees are at most entitled to have a CGSA free of SABs from other cellular systems on the same channel block.

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(e) *Unserved areas.* Unserved areas are areas outside of all existing CGSAs (on either of the channel blocks), to which the Communications Act of 1934, as amended, is applicable.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994; 63 FR 68951, Dec. 14, 1998]

### § 22.912 Service area boundary extensions.

This section contains rules governing service area boundary (SAB) extensions. SAB extensions are areas outside of the cellular market boundary, but within the service area as calculated using the methods of § 22.911(a). Cellular systems must be designed to comply with the rules in this section. Applications proposing systems that would not comply with the rules in this section are defective. Service within SAB extensions is not protected from interference or capture under § 22.911(d) unless and until the area within the SAB extension becomes a part of the cellular geographic service area (CGSA) in accordance with § 22.911(c).

(a) *De minimis extensions.* Except as restricted in paragraph (d) of this section, SABs may extend into adjacent cellular markets if such extensions are *de minimis*, are demonstrably unavoidable for technical reasons of sound engineering design, and do not extend into the CGSA of any other licensee's cellular system on the same channel block (unless the licensee of such other system consents to the extension) or into any adjacent cellular market on a channel block for which the five year build-out period has expired.

(b) *Contract extensions.* Except as restricted in paragraph (d) of this section, licensees of cellular systems on the same channel block in adjacent cellular markets may, at any time, enter into contracts with applicants or other licensees to allow SAB extensions into their CGSA only (not into unserved areas). Except as restricted in paragraph (d) of this section, licensees of the first authorized cellular systems on the same channel block in adjacent cellular markets may agree to allow SAB extensions into their CGSA and/or

unserved areas in their cellular markets during the five year build-out period of the market into which the SAB extends.

(c) *Same applicant/licensee.* Except as restricted in paragraph (d) of this section, licensees of cellular systems that are also an applicant or licensee on the same channel block in adjacent cellular markets may, at any time, allow or propose SAB extensions from their adjacent market system into their CGSH only (not into unserved areas). Except as restricted in paragraph (d) of this section, licensees of the first authorized cellular systems that are also an applicant or licensee on the same channel block in adjacent cellular markets may allow or propose SAB extensions from their adjacent market system into their CGSA and/or unserved areas in their cellular markets during the five year build-out period of the market into which the SAB extends.

(d) *Unserved area systems.* Phase I initial cellular applications must not propose SAB extensions. Phase I sole major modification applications and Phase II applications may propose SAB extensions, subject to the conditions in this section.

#### § 22.913 Effective radiated power limits.

The effective radiated power (ERP) of transmitters in the Cellular Radiotelephone Service must not exceed the limits in this section.

(a) *Maximum ERP.* The effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

(b) *Height-power limit.* The ERP of base transmitters must not exceed the amount that would result in an average distance to the service area boundary of 79.1 kilometers (49 miles) for cellular systems authorized to serve the Gulf of Mexico MSA and 40.2 kilometers (25 miles) for all other cellular systems. The average distance to the service area boundary is calculated by taking the arithmetic mean of the distances determined using the procedures specified in § 22.911 for the eight cardinal radial directions.

(c) *Coordination exemption.* Licensees need not comply with the height-power limit in paragraph (b) of this section if the proposed operation is coordinated with the licensees of all affected cellular systems on the same channel block within 121 kilometers (75 miles) and concurrence is obtained.

#### § 22.915 Modulation requirements.

Cellular systems must be capable of providing service using the types of modulation described in the cellular system compatibility specification.

(a) *Non-voice modulating signals.* Modulating signals other than voice signals, such as data signals, may be transmitted, provided the resulting modulated emission exhibits spectral characteristics not exceeding those resulting from voice modulation.

(b) *Modulation levels.* The levels of the modulating signals must be set to the values specified in this paragraph, and must be maintained within  $\pm 10\%$  of those values.

(1) The instantaneous frequency deviation resulting from the main modulating signal must be  $\pm 12$  kHz.

(2) The instantaneous frequency deviation resulting from the supervisory audio tones must be  $\pm 2$  kHz.

(3) The instantaneous frequency deviation resulting from the signaling tone must be  $\pm 8$  kHz.

(4) The instantaneous frequency deviation resulting from wideband data signals must be  $\pm 8$  kHz.

(c) *Deviation limitation circuitry.* Cellular transmitters must be equipped with circuitry that automatically prevents modulation levels for voice transmissions from exceeding the limits specified in this section.

(d) *Audio filter characteristics.* Except as provided in § 22.917, radiotelephony signals applied to the modulator from the modulation limiter must be attenuated as a function of frequency as specified in this paragraph.

(1) For mobile stations, these signals must be attenuated, relative to the level at 1 kHz, as follows:

(i) In the frequency ranges of 3.0 to 5.9 kHz and 6.1 to 15.0 kHz, signals must be attenuated by at least  $40 \log(f+3)$  dB, where  $f$  is the frequency of the signal in kHz.

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(ii) In the frequency range of 5.9 to 6.1 kHz, signals must be attenuated at least 35 dB.

(iii) In the frequency range above 15 kHz, signals must be attenuated at least 28 dB.

(2) For base stations, these signals shall be attenuated, relative to the level at 1 kHz, as follows:

(i) In the frequency range of 3 to 15 kHz, signals must be attenuated by at least  $40 \log (f+3)$  dB, where  $f$  is the frequency of the signal in kHz.

(ii) In the frequency range above 15 kHz, signals must be attenuated by at least 28 dB.

(3) Filtering is not required for the supervisory audio tones, signaling tones or wideband data signals.

§22.917 Emission limitations for cellular.

The rules in this section govern the spectral characteristics of emissions in the Cellular Radiotelephone Service.

(a) *Analog radiotelephony emissions.* F3E emissions must be used only on the communication channels.

(b) *F3E/F3D emission mask for use with audio filter.* For F3E and F3D emissions, except as provided in paragraph (c) of this section, the mean power of emissions must be attenuated below the mean power of the unmodulated carrier wave (P) as follows:

(1) On any frequency removed from the carrier frequency by more than 20 kHz but not more than 45 kHz: at least 26 dB;

(2) On any frequency removed from the carrier frequency by more than 45 kHz, up to the first multiple of the carrier frequency: at least 60 dB or  $43 + 10 \log P$  dB, whichever is the lesser attenuation.

(c) *Alternative F3E/F3D emission mask.* For F3E and F3D emissions, transmitters may comply with the emission limitations in this paragraph in lieu of compliance with paragraph (b) of this section and the audio filter requirement of §22.915.

(1) The mean power of any emission removed from the carrier frequency by a displacement frequency ( $f_d$  in kHz) must be attenuated below the mean power of the unmodulated carrier (P) as follows:

(i) On any frequency removed from the carrier frequency by more than 12 kHz but not more than 20 kHz:

at least  $117 \log (f_d+12)$  dB;

(ii) On any frequency removed from the carrier frequency by more than 20 kHz, up to the first multiple of the carrier frequency:

at least  $100 \log (f_d+11)$  dB or 60 dB or  $43 + 10 \log P$  dB, whichever is the lesser attenuation;

(2) For mobile stations, modulating signals other than the supervisory audio tone in the frequency range of 5.9 to 6.1 kHz must be attenuated, relative to the level at 1 kHz, at least 35 dB.

(d) *F1D emission mask.* For F1D emissions, the mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) as follows:

(1) On any frequency removed from the carrier frequency by more than 20 kHz but not more than 45 kHz:

at least 26 dB;

(2) On any frequency removed from the carrier frequency by more than 45 kHz but not more than 90 kHz:

at least 45 dB;

(3) On any frequency removed from the carrier frequency by more than 90 kHz, up to the first multiple of the carrier frequency:

at least 60 dB or  $43+10 \log P$  dB, whichever is the lesser attenuation.

(e) *Out of band emissions.* The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency twice or more than twice the fundamental frequency by:

at least  $43+10 \log P$  dB.

(f) *Mobile emissions in base frequency range.* The mean power of any emissions appearing in the base station frequency range from cellular mobile transmitters operated must be attenuated to a level not to exceed -80 dBm at the transmit antenna connector.

(g) *Interference from spurious emissions.* If any emission from a transmitter operating in this service results in interference to users of another radio service, the FCC may require a greater attenuation of that emission than specified in this section.

(h) *Measurement procedure.* The following spectrum analyzer bandwidth settings should be used for measurement of spurious emissions:

(1) When operating in the radiotelephony mode or the supervisory audio tone mode:

(i) For any emission not more than 45 kHz removed from the carrier frequency: 300 Hz;

(ii) For any emission more than 45 kHz removed from the carrier frequency: 30 kHz.

(2) When operating in the wideband data mode or the signaling tone mode:

(i) For any emission not more than 60 kHz removed from the carrier frequency: 300 Hz;

(ii) For any emission more than 60 kHz removed from the carrier frequency: 30 kHz.

#### § 22.919 Electronic serial numbers.

The Electronic Serial Number (ESN) is a 32 bit binary number that uniquely identifies a cellular mobile transmitter to any cellular system.

(a) Each mobile transmitter in service must have a unique ESN.

(b) The ESN host component must be permanently attached to a main circuit board of the mobile transmitter and the integrity of the unit's operating software must not be alterable. The ESN must be isolated from fraudulent contact and tampering. If the ESN host component does not contain other information, that component must not be removable, and its electrical connections must not be accessible. If the ESN host component contains other information, the ESN must be encoded using one or more of the following techniques:

(1) Multiplication or division by a polynomial;

(2) Cyclic coding;

(3) The spreading of ESN bits over various non-sequential memory locations.

(c) The ESN must be factory set and must not be alterable, transferable, removable or otherwise able to be manipulated. Cellular mobile equipment must be designed such that any attempt to remove, tamper with, or change the ESN chip, its logic system, or firmware originally programmed by

the manufacturer will render the mobile transmitter inoperative.

#### § 22.921 911 Call Processing Procedures; 911-Only Calling Mode.

All mobile phones manufactured after February 13, 2000, and capable of operating in an analog mode, i.e., in compliance with "Cellular System Mobile Station—Land Station Compatibility Specification" (April 1981 Ed.) Office of Engineering and Technology Bulletin No. 53, referenced in § 22.933 must incorporate a special procedure for processing "9-1-1" calls. Such procedure must recognize when a "9-1-1" call is made and, at such time, must override any programming in the mobile unit that determines the handling of a non-911 call and permit the call to be handled by other analog carriers. This special procedure must incorporate any one or more of the 9-1-1 call system selection processes endorsed or approved by the Commission.

[64 FR 34568, June 28, 1999]

EFFECTIVE DATE NOTE: At 64 FR 34568, June 28, 1999, § 22.921 was added. This section contains information collection and record-keeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

#### § 22.923 Cellular system configuration.

Mobile stations communicate with and through base transmitters only. Base transmitters communicate with mobile stations directly or through cellular repeaters. Auxiliary test stations may communicate with base or mobile stations for the purpose of testing equipment.

#### § 22.925 Prohibition on airborne operation of cellular telephones.

Cellular telephones installed in or carried aboard airplanes, balloons or any other type of aircraft must not be operated while such aircraft are airborne (not touching the ground). When any aircraft leaves the ground, all cellular telephones on board that aircraft must be turned off. The following notice must be posted on or near each cellular telephone installed in any aircraft:

"The use of cellular telephones while this aircraft is airborne is prohibited by FCC rules, and the violation of this

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rule could result in suspension of service and/or a fine. The use of cellular telephones while this aircraft is on the ground is subject to FAA regulations.”

### § 22.927 Responsibility for mobile stations.

Mobile stations that are subscribers in good standing to a cellular system, when receiving service from that cellular system, are considered to be operating under the authorization of that cellular system. Cellular system licensees are responsible for exercising effective operational control over mobile stations receiving service through their cellular systems. Mobile stations that are subscribers in good standing to a cellular system, while receiving service from a different cellular system, are considered to be operating under the authorization of such different system. The licensee of such different system is responsible, during such temporary period, for exercising effective operational control over such mobile stations as if they were subscribers to it.

### § 22.929 Application requirements for the Cellular Radiotelephone Service.

In addition to information required by subparts B and D of this part, applications for authorization in the Cellular Radiotelephone Service contain required information as described in the instructions to the form. Site coordinates must be referenced to NAD83 and be correct to  $\pm 1$  second.

(a) *Administrative information.* The following information is required either by FCC Form 601, or as an exhibit:

(1) Location description; city; county; state; geographical coordinates correct to  $\pm 1$  second, the datum used (NAD 83), site elevation above mean sea level, proximity to adjacent market boundaries and international borders;

(2) Antenna height to tip above ground level, the height of the center of radiation of the antenna above the average terrain, the height of the antenna center of radiation above the average elevation of the terrain along each of the 8 cardinal radials, antenna gain in the maximum lobe, the beamwidth of the maximum lobe of the an-

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tenna, a polar plot of the horizontal gain pattern of the antenna, the electric field polarization of the wave emitted by the antenna when installed as proposed:

(3) The channel block requested, the maximum effective radiated power, the effective radiated power in each of the cardinal radial directions.

(b) If the application involves a service area boundary (SAB) extension (§22.912 of this chapter), the licensee must provide a statement as described in §22.953.

(c) *Maps.* If the application proposes a change in the CGSA, it must include full size and reduced maps, and supporting engineering, as described in §22.953 (a)(1) through (a)(3).

(d) *Antenna Information.* Upon request by an applicant, licensee, or the Commission, a cellular applicant or licensee of whom the request is made shall furnish the antenna type, model, and the name of the antenna manufacturer to the requesting party within ten (10) days of receiving written notification.

[63 FR 68951, Dec. 14, 1998, as amended at 64 FR 53241, Oct. 1, 1999]

EFFECTIVE DATE NOTES: 1. At 64 FR 68951, Dec. 14, 1998, §22.929 was revised. This section contains information collection requirements and will not become effective until approval has been given by the Office of Management and Budget.

2. At 64 FR 53241, Oct. 1, 1999, §22.929 was amended by adding paragraph (d). This paragraph contains information collection requirements and will not become effective until approval has been given by the Office of Management and Budget.

### § 22.933 Cellular system compatibility specification.

Except as provided in §22.901(d), equipment used in the Cellular Radiotelephone Service must be designed in compliance with the technical specifications for compatibility of mobile and base stations in the Cellular Radiotelephone Service contained in “Cellular System Mobile Station-Land Station Compatibility Specification” (April 1981 Ed.), Office of Engineering and Technology Bulletin No. 53. This bulletin is contained in Appendix D to the *Report and Order* in CC Docket No. 79–318, and was published in the FEDERAL REGISTER of May 21, 1981. Copies

may be obtained from the FCC's copying contractor. Special operational features that have been developed by joint industry consensus through the Telecommunications Industry Association (TIA) and established as a TIA standard may be activated at the option of the cellular licensee, provided that the compatibility of equipment within the Cellular Radiotelephone Service as specified in OET Bulletin No. 53 is not adversely affected.

**§ 22.935 Procedures for comparative renewal proceedings.**

The procedures in this section apply to comparative renewal proceedings in the Cellular Radiotelephone Service.

(a) If one or more of the applications competing with an application for renewal of a cellular authorization are filed, the renewal applicant must file with the Commission its original renewal expectancy showing electronically via the ULS. This filing must be submitted no later than 60 days after the date of the Public Notice listing as acceptable for filing the renewal application and the competing applications.

(b) Interested parties may file petitions to deny any of the mutually exclusive applications. Any such petitions to deny must be filed no later than 30 days after the date that the renewal applicant submitted its renewal expectancy showing. Applicants may file replies to any petitions to deny applications that are filed. Any such replies must be filed no later than 15 days after the date that the petition(s) to deny was filed. No further pleadings will be accepted.

(c) In most instances, the renewal application and any competing applications will be designated for a two-step procedure. An Administrative Law Judge (Presiding Judge) will conduct a threshold hearing (step one), in which both the licensee and the competing applicants will be parties, to determine whether the renewal applicant deserves a renewal expectancy. If the order designating the applications for hearing specifies any basic qualifying issues against the licensee, those issues will be tried in this threshold hearing. If the Presiding Judge determines that the renewal applicant is basically qualified and due a renewal expect-

ancy, the competing applicants will be found ineligible for further consideration and their applications will be denied. If the Presiding Judge determines that the renewal applicant does not merit a renewal expectancy but is otherwise qualified, then all of the applications will be considered in a comparative hearing (step two).

(d) Any competing applicant may request a waiver of the threshold hearing (step one), if such applicant demonstrates that its proposal so far exceeds the service already being provided that there would be no purpose in making a threshold determination as to whether the renewal applicant deserved a renewal expectancy vis-a-vis such a competing applicant. Any such waiver request must be filed at the time the requestor's application is filed. Petitions opposing such waiver requests may be filed. Any such petitions must be filed no later than 30 days after the date that the renewal applicant submitted its renewal expectancy showing. Replies to any petitions opposing such waiver requests may be filed. Any such replies must be filed no later than 15 days after the date that the petition(s) were filed. No further pleadings will be accepted. Any waiver request submitted pursuant to this paragraph will be acted upon prior to designating the applications for hearing. If a request to waive the threshold hearing (step one) is granted, the renewal expectancy issue will be designated as part of the comparative hearing (step two), and will remain the most important comparative factor in deciding the case, as provided in § 22.940(a).

(e) If the Presiding Judge issues a ruling in the threshold (step one) that denies the licensee a renewal expectancy, all of the applicants involved in the proceeding will be allowed to file direct cases no later than 90 days after the release date of the Presiding Judge's ruling. Rebuttal cases must be filed no later than 30 days after the date that the direct cases were filed.

(f) The Presiding Judge shall use the expedited hearing procedures delineated in this paragraph in both threshold (step one) and comparative (step two) hearings conducted in comparative cellular renewal proceedings.

(1) The Presiding Judge will schedule a first hearing session as soon as practicable after the date for filing rebuttal evidence. This first session will be an evidentiary admission session at which each applicant will identify and offer its previously circulated direct and rebuttal exhibits, and each party will have an opportunity to lodge objections.

(2) After accepting the exhibits into evidence, the Presiding Judge will entertain motions to cross-examine and rule whether any sponsoring witness needs to be produced for cross-examination.

Determination of what, if any, cross-examination is necessary is within the sound judicial discretion of the Presiding Judge, the prevailing standard being whether the person requesting cross-examination has persuasively demonstrated that written evidence is ineffectual to develop proof. If cross-examination is necessary, the Presiding Judge will specify a date for the appearance of all witnesses. In addition, if the designation order points out an area where additional underlying data is needed, the Presiding Judge will have the authority to permit the limited use of discovery procedures. Finally, the Presiding Judge may find that certain additional testimony or cross-examination is needed to provide a complete record for the FCC. If so, the Presiding Judge may schedule a further session.

(3) After the hearing record is closed, the Presiding Judge may request Proposed Findings of Fact and Conclusions of Law to be filed no later than 30 days after the final hearing session. Replies are not permitted except in unusual cases and then only with respect to the specific issues named by the Presiding Judge.

(4) The Presiding Judge will then issue an Initial Decision, preferably within 60 days of receipt of the last pleadings. If mutually exclusive applications are before the Presiding Judge, the Presiding Judge will determine which applicant is best qualified. The Presiding Judge may also rank the applicants in order of merit if there are more than two.

(5) Parties will have 30 days in which to file exceptions to the Initial Decision.

[59 FR 59507, Nov. 17, 1994, as amended at 62 FR 4172, Jan. 29, 1997; 63 FR 68951, Dec. 14, 1998]

**§ 22.936 Dismissal of applications in cellular renewal proceedings.**

Any applicant that has filed an application in the Cellular Radiotelephone Service that is mutually exclusive with an application for renewal of a cellular authorization (competing application), and seeks to resolve the mutual exclusivity by requesting dismissal of its application, must obtain the approval of the FCC.

(a) If a competing applicant seeks to dismiss its application prior to the Initial Decision stage of the hearing on its application, it must submit to the Commission a request for approval of the dismissal of its application. This request for approval of the dismissal of its application must be submitted and must also include a copy of any agreement related to the withdrawal or dismissal, and an affidavit setting forth:

(1) A certification that neither the petitioner nor its principals has received or will receive any money or other consideration in excess of legitimate and prudent expenses in exchange for the withdrawal or dismissal of the application, except that this provision does not apply to dismissal or withdrawal of applications pursuant to *bona fide* merger agreements;

(2) The exact nature and amount of any consideration received or promised;

(3) An itemized accounting of the expenses for which it seeks reimbursement; and

(4) The terms of any oral agreement related to the withdrawal or dismissal of the application.

(b) In addition, within 5 days of the filing date of the applicant or petitioner's request for approval, each remaining party to any written or oral agreement must submit an affidavit setting forth:

(1) A certification that neither the applicant nor its principals has paid or will pay money or other consideration in excess of the legitimate and prudent expenses of the petitioner in exchange

for withdrawing or dismissing the application; and

(2) The terms of any oral agreement relating to the withdrawal or dismissal of the application.

(c) For the purposes of this section:

(1) Affidavits filed pursuant to this section must be executed by the filing party, if an individual, a partner having personal knowledge of the facts, if a partnership, or an officer having personal knowledge of the facts, if a corporation or association.

(2) Applications are deemed to be pending before the FCC from the time the application is filed with the FCC until such time as an order of the FCC granting, denying or dismissing the application is no longer subject to reconsideration by the FCC or to review by any court.

(3) "Legitimate and prudent expenses" are those expenses reasonably incurred by a party in preparing to file, filing, prosecuting and/or settling its application for which reimbursement is sought.

(4) "Other consideration" consists of financial concessions, including, but not limited to, the transfer of assets or the provision of tangible pecuniary benefit, as well as non-financial concessions that confer any type of benefit on the recipient.

[59 FR 59507, Nov. 17, 1994, as amended at 63 FR 68951, Dec. 14, 1998]

**§ 22.937 Demonstration of financial qualifications.**

Except as provided in paragraphs (g) and (h) of this section, each applicant for a new cellular system must demonstrate that it has, at the time the application is filed, either a separate market-specific firm financial commitment or available financial resources sufficient to construct and operate for one year the proposed cellular system. Each application of reassignment of license or consent to transfer of control must demonstrate the financial ability of the proposed assignee or transferee to acquire and operate the facilities.

(a) *Estimated costs.* The demonstration required by this section must include a realistic and prudent estimate of the costs of construction, operating and other initial expenses for one year.

(b) *Source of financing.* The firm financial commitment must be obtained from a state or federally chartered bank or savings and loan association, another recognized financial institution, or the financial arm of a capital equipment supplier. The firm financial commitment may be contingent upon the applicant's obtaining an authorization.

(c) *Lender's statement.* The firm financial commitment must contain a statement that:

(1) The lender has examined the financial condition of the applicant, including audited financial statements if applicable, and has determined that the applicant is creditworthy;

(2) The lender has examined the financial viability of each proposal for which the applicant intends to use the commitment;

(3) The lender is committed to providing a sum certain to the particular applicant;

(4) The lender's willingness to enter into the commitment is based solely on its relationship with the applicant; and,

(5) The commitment is not in any way guaranteed by any entity other than the applicant.

(d) *Showings of financial resources.* Applicants relying upon personal or internal financial resources must submit the following:

(1) Audited financial statements, certified within one year of the date of the cellular application, that show the availability of sufficient net current assets to construct and operate for one year the proposed cellular system;

(2) A balance sheet current within 60 days of the date of filing that shows the continued availability of sufficient net current assets to construct and operate for one year the proposed cellular system; and,

(3) A certification by the applicant or an officer of the applicant organization attesting to the validity of the unaudited balance sheet.

(e) *Parent corporation financing.* Applicants relying upon financing obtained from parent corporations must submit the showings listed in paragraph (d) of this section as the information pertains to the parent corporation.

(f) *Notice upon default.* In addition to the disclosures required by paragraph (c) of this section, any loan or other credit arrangement providing for a chattel mortgage or secured interest in any proposed cellular system must include a provision for a minimum of ten (10) days prior written notification to the licensee, and to the FCC, before any such equipment may be repossessed under default provision of the agreement.

(g) *Competing applications in cellular renewal proceedings.* Initial cellular applications that are competing against a cellular renewal application are subject to the rules in this paragraph instead of the rules in paragraphs (a) through (f) of this section.

(1) Any applicant filing a competing application against a cellular renewal application must demonstrate, at the time it files its application, that it has either:

(i) A firm financial commitment, an irrevocable letter of credit or performance bond in the amount of its realistic and prudent estimated costs of construction and any other expenses to be incurred during the first year of operating its proposed system (the irrevocable letter of credit or performance bond must be from the type of financial institution described in paragraph (g)(3) of this section); or,

(ii) Available resources, as defined in paragraph (g)(4) of this section, necessary to construct and operate its proposed cellular system for one year.

(2) The firm financial commitment may be contingent on the applicant obtaining an authorization. The applicant must also list all of its realistic and prudent estimated costs of construction and any other expenses to be incurred during the first year of operating its proposed system.

(3) The firm financial commitment required above shall be obtained from a state or federally chartered bank or savings and loan association, another recognized financial institution, or the financial arm of a capital equipment supplier; shall specify the terms of the loan or other form of credit arrangement, including the amount to be borrowed, the interest to be paid, the amount of the commitment fee and the fact that it has been paid, the terms of

repayment and any collateral required; and shall contain a statement:

(i) That the lender has examined the financial conditions of the applicant, including audited financial statements where applicable, and has determined that the applicant is creditworthy;

(ii) That the lender has examined the financial viability of the proposal for which the applicant intends to use the commitment;

(iii) That the lender is committed to providing a sum certain to the particular applicant;

(iv) That the lender's willingness to enter into the commitment is based solely on its relationship with the applicant; and,

(v) That the commitment is not in any way guaranteed by an entity other than the applicant.

(4) Applicants intended to rely on personal or internal resources must submit:

(i) Audited financial statements certified within one year of the date of the cellular application, indicating the availability of sufficient net current assets to construct and operate the proposed cellular system for one year;

(ii) A balance sheet current within 60 days of the date of filing its application that clearly shows the continued availability of sufficient net current assets to construct and operate the proposed cellular system for one year; and,

(iii) A certification by the applicant or an officer of the applicant organization attesting to the validity of the unaudited balance sheet.

(5) Applicant intending to rely upon financing obtained through a parent corporation must submit the information required by paragraph (g)(4) of this section, as the information pertains to the parent corporation.

(6) As an alternative to relying upon a firm financial commitment, an irrevocable letter of credit, or a performance bond from a financial institution as described in paragraph (g)(3) of this section, an applicant may state that it has placed in an escrow account sufficient cash to meet its construction and first-year operating expenses. Such a statement must specify the amount of cash, the escrow account number and the financial institution where the escrow account is located.

(7) Any competing application filed against the renewal application of an incumbent cellular licensee that does not demonstrate, at the time it is initially filed, that the competing applicant has sufficient funds to construct and operate for one year its proposed cellular system will be dismissed.

(h) *Exemptions.* Any licensee applying for an unserved area adjacent to its existing cellular system, to integrate such area into the existing system, is exempt from the financial demonstration requirements of this section. In addition, modification applications and *pro forma* assignment and transfer of control applications are exempt from the financial demonstration requirements of this section.

**§ 22.939 Site availability requirements for applications competing with cellular renewal applications.**

In addition to the other requirements set forth in this part for initial cellular applications, any application competing against a cellular renewal application must contain, when initially filed, appropriate documentation demonstrating that its proposed antenna site(s) will be available. Competing applications that do not include such documentation will be dismissed. If the competing applicant does not own a particular site, it must, at a minimum demonstrate that the site is available to it by providing a letter from the owner of the proposed antenna site expressing the owner's intent to sell or lease the proposed site to the applicant. If any proposed antenna site is under U.S. Government control, the applicant must submit written confirmation of the site's availability from the appropriate Government agency. Applicants which file competing applications against incumbent cellular licensees may not rely on the assumption that an incumbent licensee's antenna sites are available for their use.

**§ 22.940 Criteria for comparative cellular renewal proceedings.**

This section sets forth criteria to be used in comparative cellular renewal proceedings. 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.

(a) *Renewal expectancies.* The most important comparative factor to be considered in a comparative cellular renewal proceeding is a major preference, commonly referred to as a "renewal expectancy."

(1) The cellular 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 cellular 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, as well as the system's ability to accommodate the needs of roamers;

(ii) An explanation of its record of expansion, including a timetable of the construction of new cell sites to meet changes in demand for cellular service;

(iii) A description of its investments in its cellular 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 this paragraph.

(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.

(b) *Additional comparative issues.* The following additional comparative

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issues will be included in comparative cellular renewal proceedings, if a full comparative hearing is conducted pursuant to § 22.935(c).

(1) To determine on a comparative basis the geographic areas and population that each applicant proposes to serve; to determine and compare the relative demand for the services proposed in said areas; and to determine and compare the ability of each applicant's cellular system to accommodate the anticipated demand for both local and roamer service;

(2) To determine on a comparative basis each applicant's proposal for expanding its system capacity in a coordinated manner in order to meet anticipated increasing demand for *both* local and roamer service;

(3) To determine on a comparative basis the nature and extent of the service proposed by each applicant, including each applicant's proposed rates, charges, maintenance, personnel, practices, classifications, regulations and facilities (including switching capabilities); and

(4) To determine on a comparative basis each applicant's past performance in the cellular industry or another business of comparable type and size.

(c) *Additional showings for competing applications.* With respect to evidence introduced pursuant to paragraph (b)(3) of this section, any applicant filing a competing application against a cellular renewal application (competing applicant) who claims a preference for offering any service not currently offered by the incumbent licensee must demonstrate that there is demand for that new service and also present a business plan showing that the competing applicant can operate the system economically. Any competing applicant who proposes to replace analog technology with digital technology will receive no credit for its proposal unless it submits a business plan showing how it will operate its system economically and how it will provide more comprehensive service than does the incumbent licensee with existing and implemented cellular technology.

**§ 22.941 System identification numbers.**

System identification numbers (SIDs) are 15 bit binary numbers assigned to cellular systems. SIDs are transmitted by the cellular systems so that cellular mobile stations can determine whether the system through which they are communicating is a system to which they subscribe, or whether they are considered by the system to be roamers.

(a) The FCC assigns one SID to each cellular system on its initial authorization. Cellular systems may transmit only their assigned SID(s) and/or the SIDs assigned to other cellular systems. A cellular system may transmit the SID assigned to another cellular system only if the licensee of that system concurs with such use of its assigned SID.

(b) Licensees must notify the Commission using FCC Form 601, if their cellular systems transmit SIDs assigned to other cellular systems. The notification must indicate the concurrence of the licensee(s) of such other systems with this use of their assigned SID(s). The notification must be mailed or delivered to the filing place (see § 22.106) no later than 15 days after the system begins transmitting the SID(s).

(c) Licensees may request that an additional (previously unassigned) SID be assigned to their system by filing an application for minor modification of station on FCC Form 601.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994; 63 FR 68951, Dec. 14, 1998]

**§ 22.942 Limitations on interests in licensees for both channel blocks in an area.**

(a) *Controlling interests.* A licensee, an individual or entity that owns a controlling or otherwise attributable interest in a licensee, or an individual or entity that actually controls a licensee for one channel block in a CGSA may have an direct or indirect ownership interest of 5 percent or less in the licensee, an individual or entity that owns a controlling or otherwise attributable interest in a licensee, or an individual or entity that actually controls

a licensee for the other channel block in an overlapping CGSA.

(b) *Non-controlling interests.* A direct or indirect non-attributable interest in both systems is excluded from the general rule prohibiting multiple ownership interests.

(c) *Divestiture.* Divestiture of interests as a result of a transfer of control or assignment of authorization must occur prior to consummating the transfer or assignment.

(d) *Ownership attribution.* For purposes of paragraphs (a) and (b) of this section, ownership and other interests cellular licensees will be attributed to their holders pursuant to the following criteria:

(1) Controlling interest shall be attributable. Controlling interest means majority voting equity ownership, any general partnership interest, or any means of actual working control (including negative control) over the operation of the licensee, in whatever manner exercised.

(2) Partnership and other ownership interests and any stock interest amounting to 20 percent or more of the equity, or outstanding stock, or outstanding voting stock of a cellular licensee shall be attributed.

(3) Non-voting stock shall be attributed as an interest in the issuing entity if in excess of the amounts set forth in paragraph (d)(2) of this section.

(4) Debt and instruments such as warrants, convertible debentures, options, or other interests (except non-voting stock) with rights of conversion to voting interests shall not be attributed unless and until converted.

(5) Limited partnership interests shall be attributed to limited partners and shall be calculated according to both the percentage of equity paid in and the percentage of distribution of profits and losses.

(6) Officers and directors of a cellular licensee shall be considered to have an attributable interest in the entity with which they are so associated. The officers and directors of an entity that controls a cellular licensee shall be considered to have an attributable interest in the cellular licensee.

(7) Ownership interests that are held indirectly by any party through one or more intervening corporations will be

determined by successive multiplication of the ownership percentages for each link in the vertical ownership chain and application of the relevant attribution benchmark to the resulting product, except that if the ownership percentage for an interest in any link in the chain exceeds 50 percent or represents actual control, it shall be treated as if it were a 100 percent interest. (For example, if A owns 20% of B, and B owns 40% of licensee C, then A's interest in licensee C would be 8%. If A owns 20% of B, and B owns 51% of licensee C, then A's interest in licensee C would be 20% because B's ownership of C exceeds 50%.)

(8) Any person who manages the operations of a cellular licensee pursuant to a management agreement shall be considered to have an attributable interest in such licensee if such person, or its affiliate, has authority to make decisions or otherwise engage in practices or activities that determine, or significantly influence,

(i) The nature or types of services offered by such licensee;

(ii) The terms upon which such services are offered; or

(iii) The prices charged for such services.

(9) Any licensee or its affiliate who enters into a joint marketing arrangements with a cellular licensee, or its affiliate shall be considered to have an attributable interest, if such licensee, or its affiliate, has authority to make decisions or otherwise engage in practices or activities that determine, or significantly influence,

(i) The nature or types of services offered by such licensee;

(ii) The terms upon which such services are offered; or

(iii) The prices charged for such services.

[64 FR 54576, Oct. 7, 1999]

**§ 22.943 Limitations on assignments and transfers of cellular authorizations.**

The following limitations apply to applications for consent to transfer of control or assignment of authorizations in the Cellular Radiotelephone Service.

(a) *Trafficking.* Applications for consent to transfer of control or assignment of authorization in the Cellular Radiotelephone Service are subject to the provisions of § 22.139, except for:

(1) Applications reflecting the trading of an ownership interest in an authorized but unconstructed cellular system in one market for a commensurate interest in a cellular system in another market; and,

(2) Applications for consent to transfer of control or assignment of a cellular authorization obtained by random selection, after commencement of service.

(b) *Unserviced area systems.* Except as otherwise provided in paragraph (b)(2) of this section, the FCC does not accept applications for consent to transfer of control or assignment of the authorization of a cellular system licensed to serve an unserved area until the system has provided service to subscribers for at least one year.

(1) Licensees must not enter into any agreement (e.g. option agreement or management contract) to transfer control of the licensee of the system until the system has provided service to subscribers for one year.

(2) The FCC may accept that grant applications for consent to transfer of control or for assignment of authorization if the transfer or assignment is *pro forma* and does not involve a change in ownership.

(3) An applicant seeking approval for a transfer of control or assignment (otherwise permitted under the Commission's Rules, 47 CFR chapter I) of a license within three years of receiving a new license through a competitive bidding procedure must, together with its application for transfer of control or assignment, file with the Commission a statement indicating that its license was obtained through competitive bidding. Such applicant must also file with the Commission the other documents and information set forth in § 1.2111 of this chapter.

(c) *Systems authorized as result of comparative renewal proceeding.* Except as otherwise provided in paragraphs (c)(1), (c)(2) and (c)(3) of this section, the FCC does not accept applications for consent to transfer of control or for assignment of the authorization of a cel-

lular system that has been acquired by the current licensee for the first time as a result of a comparative renewal proceeding until the system has provided service to subscribers for at least three years.

(1) The FCC may accept and grant applications for consent to transfer of control or for assignment of the authorization of a cellular system that is to be transferred as a part of a *bona fide* sale of an on-going business to which the cellular operation is incidental.

(2) The FCC may accept and grant applications for consent to transfer of control or for assignment of the authorization of a cellular system that is to be transferred as a result of the death of the licensee.

(3) The FCC may accept and grant applications for consent to transfer of control or for assignment of authorization if the transfer or assignment is *pro forma* and does not involve a change in ownership.

[59 FR 59507, Nov. 17, 1994, as amended at 61 FR 58339, Nov. 14, 1996]

**§ 22.945 Interests in multiple applications.**

This section governs interests in applicants with mutually exclusive applications for a new cellular system. For the purposes of this section, "interest in an application" means interest in the applicant.

(a) *General.* Except as otherwise provided in this section, parties must not have any interest, direct or indirect, in more than one application for authority to operate a new cellular system in the same cellular market.

(b) *Abutting CGSAs.* Licensees of existing systems whose cellular geographic service area (CGSA) abuts a proposed CGSA may each file one application that is mutually exclusive with the applications of other such licensees, even though they share common owners, provided that such licensees do not thereby acquire a simultaneous interest in applications for both channel blocks in any geographical area.

(c) *Publicly traded corporate applicants.* Parties must not have any interest, direct or indirect, in more than

one mutually exclusive initial application for which the applicant is a publicly traded corporation, except that ownership interests of less than 5% are not considered. Ownership and other interests in applicants are attributed to their holder and deemed cognizable as set forth below.

(1) *Passive investors.* Investment companies, as defined in 15 U.S.C. 80a-3, insurance companies and banks holding stock through their trust departments in trust accounts are deemed to have a cognizable interest in a publicly traded cellular applicant only if they hold 10% or more of the stock of the applicant. This provision applies only if an applicant in which such parties hold an interest certifies in its application that no such party has exerted or attempted to exert any influence or control over the officers of the applicant.

(2) *Multiplier.* Attribution of ownership interests in a publicly traded cellular applicant that are held indirectly by any party through one or more intervening corporations will be determined by successive multiplication of the ownership percentages for each link in the vertical ownership chain and application of the relevant attribution benchmark to the resulting product, except that wherever the ownership percentage for any link in the chain exceeds 50 percent, it is not included in the multiplication.

**§ 22.946 Service commencement and construction periods for cellular systems.**

(a) *Commencement of service.* New cellular systems must be at least partially constructed and begin providing cellular service to subscribers within the service commencement periods specified in Table H-1 of this section. Service commencement periods begin on the date of grant of the initial authorization, and are not extended by the grant of subsequent authorizations for the cellular system (such as for major modifications). The licensee must notify the FCC (FCC Form 601) after the requirements of this section are met (see § 1.946 of this chapter).

(b) To satisfy the requirement of paragraph (a) of this section, a cellular system must be interconnected with the public switched telephone network

(PSTN) and must be providing service to mobile stations operated by its subscribers and roamers. A cellular system is not considered to be providing service to subscribers if mobile stations can not make telephone calls to landline telephones and receive telephone calls from landline telephones through the PSTN, or if the system intentionally serves only roamer stations.

(1) [Reserved]

(2) The licensee must notify the FCC (FCC Form 489) no later than 15 days after the requirements of paragraph (a) of this section are met.

(b) *Construction period for specific facilities.* The construction period applicable to specific new or modified cellular facilities for which an authorization has been granted is one year from the date the authorization is granted. Failure to comply with this requirement results in termination of the authorization for the specific new or modified facility, pursuant to § 22.144(b).

[59 FR 59507, Nov. 17, 1994, as amended at 63 FR 68951, Dec. 14, 1998; 64 FR 53241, Oct. 1, 1999]

**§ 22.947 Five year build-out period.**

The licensee of the first cellular system authorized on each channel block in each cellular market is afforded a five year period, beginning on the date the initial authorization for the system is granted, during which it may expand the system within that market.

(a) *Exclusive right to expand within market.* Except as provided in paragraph (b) of this section, the FCC does not accept applications for authority to operate a new cellular system in any unserved area in a market on a channel block during the five year build-out period.

(b) *Partitioned markets.* During the five-year build-out period, the licensee of the first cellular system on each channel block in each market may enter into contracts with eligible parties, allowing such parties to apply by using FCC Form 601 for a new cellular system in that channel block within the market. The FCC may grant such applications if they are in compliance with the rules in this part. Markets with two or more authorized cellular

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systems on the same channel block during the five year build-out period are referred to (with respect to the affected channel block) as “partitioned markets”.

(1) Partitioning contracts must define the CGSA of the subsequent cellular system in accordance with § 22.911, including any expansion rights ceded. If not exercised, any such expansion rights terminate at the end of the five year build-out period.

(2) The five year build-out period begins on the date the initial authorization for the first cellular system is granted, and is not extended or affected in any way by the initial authorization of any subsequent cellular systems pursuant to paragraph (b) of this section.

(c) *System information update.* Sixty days before the end of the five year build-out period, the licensee of each cellular system authorized on each channel block in each cellular market must file, in triplicate, a system information update (SIU), comprising a full size map, a reduced map, and an exhibit showing technical data relevant to determination of the system’s CGSA. Separate maps must be submitted for each market into which the CGSA extends, showing the extension area in the adjacent market. Maps showing extension areas must be labeled (i.e. marked with the market number and channel block) for the market into which the CGSA extends. SIUs must accurately depict the relevant cell locations and coverage of the system at the end of the five year build-out period. SIUs must be filed at the Mobile Services Division, Common Carrier Bureau, Federal Communications Commission, Washington, DC 20554. If any changes to the system occur after the filing of the SIU, but before the end of the five year build-out period, the licensee must file, in triplicate, additional maps and/or data as necessary to insure that the cell locations and coverage of the system as of the end of the five year build-out period are accurately depicted.

(1) The scale of the full-size map must be 1:500,000, regardless of whether any different scale is used for the reduced map. The map must have a legend, a distance scale and correctly labeled latitude and longitude lines. The

map must be clear and legible. The map must accurately show the cell sites (transmitting antenna locations) which determine the CGSA, the entire CGSA, any extension of the composite service area boundary beyond the CGSA (see § 22.911) and the relevant portions of the cellular market boundary. The date on which the map depictions are accurate must appear on the map.

(2) The reduced map must be a proportional reduction, to 8½×11 inches, of the full-size map required in paragraph (c)(1) of this section, unless it proves to be impractical to depict the entire market by reducing the full-size map. In such instance, an 8½×11 inch map of a different scale may be substituted, provided that the required features of the full-size map are clearly depicted and labeled.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994; 63 FR 68951, Dec. 14, 1998]

### § 22.948 Partitioning and Disaggregation.

(a) *Eligibility.* (1) *Generally.* Parties seeking approval for partitioning and disaggregation shall request an authorization for partial assignment of a license pursuant to § 1.948 of this chapter. Cellular licensees may partition or disaggregate their spectrum to other qualified entities.

(2) *Partitioning.* During the five year build-out period, as defined in § 22.947, cellular licensees may partition any portion of their cellular market to other qualified entities. After the five year build-out period, cellular licensees and unserved area licensees may partition any portion of their Cellular Geographic Service Area (CGSA), as defined by § 22.911, to other qualified entities but may not partition unserved portions of their cellular market.

(3) *Disaggregation.* After the five year build-out period, as defined in § 22.947, parties obtaining disaggregated spectrum may only use such spectrum in that portion of the cellular market encompassed by the original licensee’s CGSA and may not use such spectrum to provide service to unserved portions of the cellular market.

(b) *Disaggregation.* Cellular licensees and unserved area licensees may disaggregate spectrum in any amount.

(c) *Combined partitioning and disaggregation.* The Commission will consider requests for partial assignment of cellular licenses that propose combinations of partitioning and disaggregation.

(d) *License Term.* The license term for the partitioned license area and for disaggregated spectrum shall be the remainder of the original cellular licensee's or the unserved area licensee's license term provided for in § 22.144(a).

[65 FR 37057, June 13, 2000]

**§ 22.949 Unserved area licensing process.**

This section sets forth the process for licensing unserved areas in cellular markets on channel blocks for which the five year build-out period has expired. This process has two phases: Phase I and Phase II.

(a) *Phase I.* Phase I is a one-time process that provides an opportunity for eligible parties to file competing applications for authority to operate a new cellular system in or to expand an existing cellular system into unserved areas (Phase I initial applications) as soon as these areas become available. In addition, each licensee whose Phase I initial application is granted is afforded one opportunity during the Phase I process to file an application proposing major modifications to the cellular system authorized by that grant (a Phase I major modification application), without being subject to competing applications.

(1) Phase I initial applications must be filed on the 31st day after the expiration of the five year build-out period of the authorized system(s) on the channel block requested in the market containing the unserved area.

(i) Each Phase I application must request authorization for one and only one cellular geographic service area (CGSA) in one and only one cellular market.

(ii) Applicants must not file more than one Phase I initial application for any cellular market.

(iii) Phase I initial applications must not propose any *de minimis* or contract service area boundary (SAB) extensions.

(2) Only one Phase I initial application is granted on each channel block

in each market. Consequently, whenever two or more acceptable Phase I initial applications are timely filed in the same market on the same channel block, such Phase I initial applications are mutually exclusive, regardless of any other considerations such as the technical proposals. In order to determine which of such mutually exclusive Phase I initial applications to grant, the Commission administers competitive bidding procedures in accordance with subpart Q of part 1 of this chapter. After such procedures, the application of the winning bidder may be granted and the applications excluded by that grant may be dismissed without prejudice.

NOTE: Notwithstanding the provisions of § 22.949(a)(2), mutually exclusive Phase I initial applications that were filed between March 10, 1993 and July 25, 1993, inclusive, are to be included in a random selection process, following which the selected application may be granted and the applications excluded by that grant may be dismissed without prejudice.

(3) Phase I major modification applications (applications filed during Phase I that propose major modifications to cellular systems authorized by the grant of Phase I initial applications) must be filed no later than 90 days after the grant of the Phase I initial application. Each Phase I licensee may file only one Phase I major modification application. The FCC will not accept any competing applications in response to a Phase I major modification application. Phase I licensees may not sell to a third party any rights to apply for unserved area.

(i) Phase I major modification applications may propose *de minimis* or contract SAB extensions; provided that a contract SAB extension into an adjacent market may be proposed only if, at the time the Phase I major modification application is filed, the licensee in the adjacent market (on the requested channel block) has the right to enter into such a contract (see § 22.912(c)).

(ii) Phase I major modification application may propose a CGSA that is not contiguous with the authorized or proposed CGSA, provided that the non-contiguous CGSA meets the minimum coverage requirement of § 22.951.

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(4) Phase I licensees may also file applications for or notifications of minor modifications to its system. However, such minor modifications may not reduce the size of the CGSA below the minimum coverage requirement of § 22.951.

(b) *Phase II.* Phase II is an on-going filing process that allows eligible parties to apply for any unserved areas that may remain in a market after the Phase I process is complete.

(1) If a Phase I initial application is granted for a market and channel block, Phase II applications (applications for authority to operate a cellular system in any remaining unserved area) for that market and channel block may be filed on or after the 121st day after the Phase I application was granted. If no Phase I initial applications are granted for a market and channel block, Phase II applications for that market and channel block may be filed on or after the 31st day after the FCC dismissed the last pending Phase I application. If no Phase I initial applications are received for a market and channel block, Phase II applications for that market and channel block may be filed on or after the 32nd day after the expiration of the relevant five-year build-out period.

(2) There is no limit to the number of Phase II applications that may be granted on each channel block in each market. Consequently, Phase II applications are mutually exclusive only if the proposed CGSAs would overlap. Mutually exclusive applications are processed using the general procedures in § 22.131.

(3) Phase II applications may propose a CGSA covering more than one cellular market. Each Phase II application must request authorization for one and only one CGSA. Phase II applications may propose *de minimis* and contract SAB extensions.

(c) Settlements among some, but not all, applicants with mutually exclusive applications for unserved areas (partial settlements) are prohibited. Settlements among all applicants with mutually exclusive applications (full settlements) are allowed and must be filed no later than the date that the FCC Form 175 (short-form) is filed.

(d) *Limitations on amendments.* Notwithstanding the provisions of § 22.122, Phase I applications are subject to the following additional limitations in regard to the filing of amendments.

(1) The Commission will not accept amendments (of any type) to mutually exclusive Phase I applications prior to the conclusion of the competitive bidding process.

(2) The FCC will not accept major amendments to Phase I applications.

(3) Minor amendments required by § 1.65 of this chapter must be filed no later than thirty (30) days after public notice announcing the results of the competitive bidding process.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59956, Nov. 21, 1994; 61 FR 58339, Nov. 14, 1996]

### § 22.951 Minimum coverage requirement.

Applications for authority to operate a new cellular system in an unserved area, other than those filed by the licensee of an existing system that abuts the unserved area, must propose a contiguous cellular geographical service area (CGSA) of at least 130 square kilometers (50 square miles). Area within contract SAB extensions counts toward the minimum coverage requirement. However, area within *de minimis* SAB extensions does not count toward the minimum coverage requirement. Applications for authority to operate a new cellular system in an unserved area, other than those filed by the licensee of an existing system that abuts the unserved area, must not propose coverage of water areas only (or water areas and uninhabited islands or reefs only), except for unserved areas in the Gulf of Mexico MSA.

### § 22.953 Content and form of applications.

Applications for authority to operate a cellular system in an unserved area must comply with the specifications in this section.

(a) Applications for authority to operate a cellular system in an unserved area must include the following information in addition to the requirements specified in §§ 1.919, 1.923 and 1.924. The following exhibits must be set off by tabs and numbered as follows:

(1) *Exhibit I—full-size map.* The scale of the full-size map must be 1:500,000, regardless of whether any different scale is used for the reduced map required in Exhibit II. The map must have a legend, a distance scale and correctly labeled latitude and longitude lines. The map must be clear and legible. The map must accurately show the cell sites (transmitting antenna locations), the entire CGSA, any extension of the composite service area boundary beyond the CGSA (see § 22.911) and the relevant portions of the cellular market boundary.

(2) *Exhibit II—reduced map.* This map must be a proportional reduction, to 8½ × 11 inches, of the full-size map required for Exhibit I, unless it proves to be impractical to depict the entire cellular market by reducing the full-size map. In such instance, an 8½ × 11 inch map of a different scale may be substituted, provided that the required features of the full-size map are clearly depicted and labeled.

(3) *Exhibit III—engineering.* This exhibit must contain the data and methodology used to calculate the CGSA and service area boundary.

(4) *Exhibit IV—channel plan.* This exhibit must show which specific channels (or groups) are to be used at each cell site. Any necessary table for converting channel numbers to center frequencies must be provided.

(5) [Reserved]

(6) *Exhibit VI—service proposal.* This exhibit must describe the services proposed for subscribers and roamers, including the proposed method for handling complaints.

(7) *Exhibit VII—cellular design.* This exhibit must show that the proposed system design complies with cellular system design concepts, and must describe the method proposed to expand the system in a coordinated fashion as necessary to address changing demand for cellular service.

(8) *Exhibit VIII—blocking level.* This exhibit must disclose the blocking probability or other criteria to be used to determine whether it is necessary to take measures to increase system capacity to maintain service quality.

(9) *Exhibit IX—start-up expenses.* This exhibit must disclose in detail the projected cost of construction and other

initial expenses of the proposed system, and how the applicant intends to meet these expenses and the costs of operation for the first year.

(10) *Exhibit X—interconnection arrangements.* This exhibit is required for applicants that provide public landline message telephone service in any portion of the proposed CGSA. This exhibit must describe exactly how the proposed system would interconnect with the landline network. The description must be of sufficient detail to enable a competitor to connect with the landline system in exactly the same manner, if the competitor so chooses.

(b) *Existing systems—major modifications.* Licensees making major modifications pursuant to § 1.929(h) must file FCC Form 601 and need only contain the exhibits required by paragraphs (a)(1) through (a)(3) of this section.

(c) *Existing systems—minor modifications.* Licensees making minor modifications pursuant to § 1.929(h)—in which the modification causes a change in the CGSA boundary (including the removal of a transmitter or transmitters)—must notify the FCC (using FCC Form 601) and include full-sized maps, reduced maps, and supporting engineering exhibits as described in paragraphs (a)(1)–(3) of this section. If the modification involves a contract SAB extension, it must include a statement as to whether the five-year build-out for the system on the relevant channel block in the market into which the SAB extends has elapsed, and as to whether the SAB extends into any unserved area in that market.

[59 FR 59507, Nov. 17, 1994, as amended at 59 FR 59954, Nov. 21, 1994; 63 FR 68951, Dec. 14, 1998; 64 FR 53241, Oct. 1, 1999]

#### § 22.955 Canadian condition.

Pursuant to an agreement between the FCC and the Department of Communications in Canada, authorizations for cellular systems within 72 kilometers (45 miles) of the U.S.-Canadian border must have the following condition attached:

This authorization is subject to the condition that, in the event that cellular systems using the same channel block as granted herein are authorized in adjacent territory

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in Canada, coordination of any of your transmitter installations which are within 72 kilometers (45 miles) of the U.S.-Canadian border shall be required to eliminate any harmful interference that might otherwise exist and to insure continuance of equal access to the channel block by both countries.

### § 22.957 Mexican condition.

Pursuant to an agreement between the United States and Mexico, FCC authorizations for cellular systems within 72 kilometers (45 miles) of the United States-Mexico border must have the following condition attached:

This authorization is subject to the condition that, in the event cellular systems using the same frequencies granted herein are authorized in adjacent territory in Mexico, coordination of your transmitter installations which are within 72 kilometers (45 miles) of the United States-Mexico border shall be required to eliminate any harmful interference that might otherwise exist and to ensure continuance of equal access to the frequencies by both countries. The operator of this system shall not contract with customers in Mexico, and further, users of the system must be advised that operation of a mobile unit in Mexico is not permitted at this time without the express permission of the Mexican government. The above conditions are subject to modification pending further notice from the FCC.

### § 22.959 Rules governing processing of applications for initial systems.

Pending applications for authority to operate the first cellular system on a channel block in an MSA or RSA market continue to be processed under the rules governing the processing of such applications that were in effect when those applications were filed, unless the Commission determines otherwise in a particular case.

### § 22.960 Cellular unserved area radio-telephone licenses subject to competitive bidding.

Mutually exclusive initial applications for cellular unserved area Phase I and Phase II licenses filed after July 26, 1993, are subject to competitive bidding procedures. The general competitive bidding procedures found in part 1, subpart Q, of this chapter will apply unless otherwise provided in this part.

[61 FR 58339, Nov. 14, 1996]

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### § 22.961 Competitive bidding design for cellular unserved area radio-telephone licensing.

The Commission will employ a simultaneous multiple round auction design when choosing from among mutually exclusive initial applications to provide cellular unserved area radio-telephone service, unless otherwise specified by the Wireless Telecommunications Bureau before the auction.

[61 FR 58339, Nov. 14, 1996]

### § 22.962 Competitive bidding mechanisms.

(a) *Grouping.* All cellular unserved area Phase I and Phase II licenses will be auctioned simultaneously, unless the Wireless Telecommunications Bureau announces, by Public Notice prior to the auction, an alternative auction scheme.

(b) *Minimum bid increments.* The Wireless Telecommunications Bureau will, by announcement before or during an auction, require minimum bid increments in dollar or percentage terms.

(c) *Stopping rules.* The Wireless Telecommunications Bureau will establish stopping rules before or during multiple round auctions in order to terminate an auction within a reasonable time.

(d) *Activity rules.* The Wireless Telecommunications Bureau will establish activity rules which require a minimum amount of bidding activity. In the event that the Wireless Telecommunications Bureau establishes an activity rule in connection with a simultaneous multiple round auction, each bidder will be entitled to request and will be automatically granted a certain number of waivers of such rule during the auction.

[61 FR 58339, Nov. 14, 1996]

### § 22.963 Withdrawal, default and disqualification payments.

(a) During the course of an auction conducted pursuant to § 22.961, the Commission will impose payments on bidders who withdraw high bids during the course of an auction, who default on payments due after an auction closes, or who are disqualified.

(b) *Bid withdrawal prior to close of auction.* A bidder who withdraws a high bid

during the course of an auction will be subject to a payment equal to the difference between the amount bid and the amount of the winning bid the next time the license is offered by the Commission. No withdrawal payment would be assessed if the subsequent winning bid exceeds the withdrawn bid. This payment amount will be deducted from any upfront payments or down payments that the withdrawing bidder has deposited with the Commission.

(c) *Default or disqualification after close of auction.* If a high bidder defaults or is disqualified after the close of such an auction, the defaulting bidder will be subject to the payment in paragraph (a) of this section plus an additional penalty equal to three (3) percent of the subsequent winning bid. If the subsequent winning bid exceeds the defaulting bidder's bid amount, the 3 percent payment will be calculated based on the defaulting bidder's bid amount. These amounts will be deducted from any upfront payments or down payments that the defaulting or disqualified bidder has deposited with the Commission.

[61 FR 58339, Nov. 14, 1996]

**§ 22.964 Bidding application (FCC Form 175).**

All applicants who wish to participate in competitive bidding for cellular unserved area radiotelephone licenses must submit applications on FCC Form 175 pursuant to § 1.2105 of this chapter. The Wireless Telecommunications Bureau will issue a Public Notice announcing the availability of cellular unserved area Phase I and Phase II licenses and, in the event that mutually exclusive applications are filed, the date of the auction for those licenses. This Public Notice will specify the date on or before which applicants intending to participate in a cellular unserved area radiotelephone service auction must file their applications in order to be eligible for that auction, and it will contain information necessary for completion of the application as well as other important information such as the materials which must accompany the short form, any upfront payment that will need to be submitted, and the

location where the application must be filed.

[61 FR 58339, Nov. 14, 1996]

**§ 22.965 Submission of upfront payments and down payments.**

(a) Each bidder in the cellular unserved radiotelephone service auction(s) will be required to pay the Commission, immediately prior to the auction, by cashier's check or by wire, at least \$5,000 in order to get a bidder identification number. The upfront money will later be counted toward the full payment of the license.

(b) Each winning bidder in the cellular unserved radiotelephone service auction(s) will be required to make a down payment to the Commission's lock-box bank in an amount sufficient to bring its total deposits up to 20 percent of its winning bid within five business days after the close of the auction, or by a date specified by Public Notice. The remainder of the full payment for the license shall be paid within 5 days following the release of a Public Notice that will indicate that the Commission is prepared to award the license(s). The Commission will grant the license generally within ten (10) business days after receiving full payment.

[61 FR 58339, Nov. 14, 1996]

**§ 22.967 License grant, denial, default, and disqualification.**

(a) Each winning bidder will be required to pay the balance of its winning bid in a lump sum payment within five (5) business days following Public Notice that the Commission is prepared to award the license. The Commission will grant the license generally within ten (10) business days after receipt of full and timely payment of the winning bid amount.

(b) A bidder who withdraws its bid subsequent to the close of bidding, defaults on a payment due, or is disqualified, will be subject to the payments specified in § 22.963 or §§ 1.2104(g) and 1.2109 of this chapter, as applicable.

[61 FR 58340, Nov. 14, 1996]

**Subpart I—Offshore Radiotelephone Service**

**§ 22.1001 Scope.**

The rules in this subpart govern the licensing and operation of offshore radiotelephone stations. The licensing and operation of these stations and systems is also subject to rules elsewhere in this part that apply generally to the public mobile services. However, in case of conflict, the rules in this subpart govern.

**§ 22.1003 Eligibility.**

Offshore central station licenses may be licensed to communications common carriers. Offshore subscriber stations may be licensed to common carriers or users of the service.

**§ 22.1005 Priority of service.**

Facilities in the Offshore Radiotelephone Service are intended primarily for rendition of public message service between offshore subscriber and central stations. However, they may also be used to render private leased line communication service, provided that such usage does not reduce or impair the extent or quality of communication service which would be available, in the absence of private leased line service, to the general public receiving or subsequently requesting public message service from an offshore central station.

**§ 22.1007 Channels for offshore radiotelephone systems.**

The channels listed in this section are allocated for paired assignment to transmitters located in the specified geographical zones that provide offshore radiotelephone service. All channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz.

(a) *Zone A—Southern Louisiana.* The geographical area in Zone A is bounded as follows:

From longitude W.87°45' on the East to longitude W.94°00' on the West and from the 4.8 kilometer (3 mile) limit along the Gulf of Mexico shoreline on the North to the limit of the Outer Continental Shelf on the South.

(1) These channels may be assigned for use by offshore central (base/fixed)

or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for voice-grade general communications:

Central	Subscriber	Central	Subscriber
488.025 .....	491.025	488.225 .....	491.225
488.050 .....	491.050	488.250 .....	491.250
488.075 .....	491.075	488.275 .....	491.275
488.100 .....	491.100	488.300 .....	491.300
488.125 .....	491.125	488.325 .....	491.325
488.150 .....	491.150	488.350 .....	491.350
488.175 .....	491.175	488.375 .....	491.375
488.200 .....	491.200	488.400 .....	491.400

(2) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for voice-grade general communications and private line service:

Central	Subscriber	Central	Subscriber
488.425 .....	491.425	488.575 .....	491.575
488.450 .....	491.450	488.600 .....	491.600
488.475 .....	491.475	488.625 .....	491.625
488.500 .....	491.500	488.650 .....	491.650
488.525 .....	491.525	488.675 .....	491.675
488.550 .....	491.550	488.700 .....	491.700

(3) These channels may be assigned for use by relay stations in systems where it would be impractical to provide offshore radiotelephone service without the use of relay stations.

Central	Subscriber	Central	Subscriber
488.725 .....	491.725	488.775 .....	491.775
488.750 .....	491.750	488.800 .....	491.800

(4) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for emergency communications involving protection of life and property.

Central	Subscriber	Central	Subscriber
488.825 .....	491.825	488.875 .....	491.875
488.850 .....	491.850	488.900 .....	491.900

(5) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for emergency auto alarm and voice transmission pertaining to emergency conditions only.

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Central	Subscriber
488.950 .....	491.950

(6) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for emergency shut-off remote control telemetry, environmental data acquisition and disseminations, or facsimile transmissions.

Central	Subscriber	Central	Subscriber
489.000 .....	492.000	489.200 .....	492.200
489.025 .....	492.025	489.225 .....	492.225
489.050 .....	492.050	489.250 .....	492.250
489.075 .....	492.075	489.275 .....	492.275
489.100 .....	492.100	489.300 .....	492.300
489.125 .....	492.125	489.325 .....	492.325
489.150 .....	492.150	489.350 .....	492.350
489.175 .....	492.175	489.375 .....	492.375

(7) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for private line service:

Central	Subscriber	Central	Subscriber
489.400 .....	492.400	489.725 .....	492.725
489.425 .....	492.425	489.750 .....	492.750
489.450 .....	492.450	489.775 .....	492.775
489.475 .....	492.475	489.800 .....	492.800
489.500 .....	492.500	489.825 .....	492.825
489.525 .....	492.525	489.850 .....	492.850
489.550 .....	492.550	489.875 .....	492.875
489.575 .....	492.575	489.900 .....	492.900
489.600 .....	492.600	489.925 .....	492.925
489.625 .....	492.625	489.950 .....	492.950
489.650 .....	492.650	489.975 .....	492.975
489.675 .....	492.675	490.000 .....	493.000
489.700 .....	492.700		

(8) *Interstitial channels.* Interstitial channels are those with center frequencies offset by ±12.5 kHz from the listed center frequencies. The FCC may assign interstitial channels to offshore stations in Zone A subject to the following conditions:

(i) Offshore stations transmitting on interstitial channels must be located east of W.92° longitude.

(ii) Operations on interstitial channels are considered to be secondary to operations on channels with the listed center frequencies.

(iii) Offshore stations operating on interstitial channels must be used only for voice grade general communica-

tions or to provide for private line service.

NOTE to paragraph (a) of §22.1007: These channels are contained in UHF TV Channel 17.

(b) *Zone B—Southern Louisiana—Texas.* (1) The geographical area in Zone B is bounded as follows:

From longitude W.87°45' on the East to longitude W.95°00' on the West and from the 4.8 kilometer (3 mile) limit along the Gulf of Mexico shoreline on the North to the limit of the Outer Continental Shelf on the South.

(2) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for voice-grade general communications and private line service:

Central	Subscriber	Central	Subscriber
485.025 .....	482.025	486.025 .....	483.025
485.050 .....	482.050	486.050 .....	483.050
485.075 .....	482.075	486.075 .....	483.075
485.100 .....	482.100	486.100 .....	483.100
485.125 .....	482.125	486.125 .....	483.125
485.150 .....	482.150	486.150 .....	483.150
485.175 .....	482.175	486.175 .....	483.175
485.200 .....	482.200	486.200 .....	483.200
485.225 .....	482.225	486.225 .....	483.225
485.250 .....	482.250	486.250 .....	483.250
485.275 .....	482.275	486.275 .....	483.275
485.300 .....	482.300	486.300 .....	483.300
485.325 .....	482.325	486.325 .....	483.325
485.350 .....	482.350	486.350 .....	483.350
485.375 .....	482.375	486.375 .....	483.375
485.400 .....	482.400	486.400 .....	483.400
485.425 .....	482.425	486.425 .....	483.425
485.450 .....	482.450	486.450 .....	483.450
485.475 .....	482.475	486.475 .....	483.475
485.500 .....	482.500	486.500 .....	483.500
485.525 .....	482.525	486.525 .....	483.525
485.550 .....	482.550	486.550 .....	483.550
485.575 .....	482.575	486.575 .....	483.575
485.600 .....	482.600	486.600 .....	483.600
485.625 .....	482.625	486.625 .....	483.625
485.650 .....	482.650	486.650 .....	483.650
485.675 .....	482.675	486.675 .....	483.675
485.700 .....	482.700	486.700 .....	483.700
485.725 .....	482.725	486.725 .....	483.725
485.750 .....	482.750	486.750 .....	483.750
485.775 .....	482.775	486.775 .....	483.775
485.800 .....	482.800	486.800 .....	483.800
485.825 .....	482.825	486.825 .....	483.825
485.850 .....	482.850	486.850 .....	483.850
485.875 .....	482.875	486.875 .....	483.875
485.900 .....	482.900	486.900 .....	483.900
485.925 .....	482.925	486.925 .....	483.925
485.950 .....	482.950	486.950 .....	483.950
485.975 .....	482.975	486.975 .....	483.975
486.000 .....	483.000	487.050 .....	480.050

NOTE to paragraph (b) of §22.1007: These channels are contained in UHF TV Channel 16.

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(c) *Zone C—Southern Texas.* The geographical area in Zone C is bounded as follows:

Longitude W.94°00' on the East, the 4.8 kilometer (3 mile) limit on the North and West, a 282 kilometer (175 mile) radius from the reference point at Linares, N.L., Mexico on the Southwest, latitude N.26°00' on the South, and the limits of the outer continental shelf on the Southeast.

(1) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for emergency auto alarm and voice transmission pertaining to emergency conditions only.

Central	Subscriber
476.950 .....	479.950

(2) These channels may be assigned for use by offshore central (base/fixed) or subscriber stations (fixed, temporary fixed, surface and/or airborne mobile) as indicated, for voice-grade general communications and private line service:

476.025	479.025
476.050	479.050
476.075	479.075
476.100	479.100
476.125	479.125
476.150	479.150
476.175	479.175
476.200	479.200
476.225	479.225
476.250	479.250
476.275	479.275
476.300	479.300
476.325	479.325
476.350	479.350
476.375	479.375
476.400	479.400
476.425	479.425
476.450	479.450
476.475	479.475
476.500	479.500
476.525	479.525
476.550	479.550
476.575	479.575
476.600	479.600
476.625	479.625
476.650	479.650
476.675	479.675
476.700	479.700
476.725	479.725
476.750	479.750
476.775	479.775

476.800	479.800
476.825	479.825
476.850	479.850
476.875	479.875
476.900	479.900
477.000	480.000
477.025	480.025
477.075	480.075
477.100	480.100
477.125	480.125
477.150	480.150
477.175	480.175
477.200	480.200
477.225	480.225
477.250	480.250
477.275	480.275
477.300	480.300
477.325	480.325
477.350	480.350
477.375	480.375
477.400	480.400
477.425	480.425
477.450	480.450
477.475	480.475
477.500	480.500
477.525	480.525
477.550	480.550
477.575	480.575
477.600	480.600
477.625	480.625
477.650	480.650
477.675	480.675
477.700	480.700
477.725	480.725
477.750	480.750
477.775	480.775
477.800	480.800
477.825	480.825
477.850	480.850
477.875	480.875
477.900	480.900
477.925	480.925
477.950	480.950
477.975	480.975

[59 FR 59507, Nov. 17, 1994; 60 FR 9891, Feb. 22, 1995]

§ 22.1009 **Transmitter locations.**

The rules in this section establish limitations on the locations from which stations in the Offshore Radiotelephone Service may transmit.

(a) *All stations.* Offshore stations must not transmit from locations outside the boundaries of the appropriate zones specified in § 22.1007. Offshore stations must not transmit from locations within 241 kilometers (150 miles) of any full-service television station that

transmits on the TV channel containing the channel on which the offshore station transmits.

(b) *Airborne subscriber stations.* Airborne subscriber stations must not transmit from altitudes exceeding 305 meters (1000 feet) above mean sea level. Airborne mobile stations in Zone A must not transmit from locations within 129 kilometers (80 miles) of Lake Charles, Louisiana. Airborne mobile stations in Zone B must not transmit from locations within 129 kilometers (80 miles) of Lafayette, Louisiana. Airborne mobile stations in Zone C must not transmit from locations within 129 kilometers (80 miles) of Corpus Christi or locations within 129 kilometers (80 miles) of Houston, Texas.

**§ 22.1011 Antenna height limitations.**

The antenna height of offshore stations must not exceed 61 meters (200 feet) above mean sea level. The antenna height of offshore surface mobile stations must not exceed 10 meters (30 feet) above the waterline.

**§ 22.1013 Effective radiated power limitations.**

The effective radiated power (ERP) of transmitters in the Offshore Radiotelephone Service must not exceed the limits in this section.

(a) *Maximum power.* The ERP of transmitters in this service must not exceed 1000 Watts under any circumstances.

(b) *Mobile transmitters.* The ERP of mobile transmitters must not exceed 100 Watts. The ERP of mobile transmitters, when located within 32 kilometers (20 miles) of the 4.8 kilometer (3 mile) limit, must not exceed 25 Watts. The ERP of airborne mobile stations must not exceed 1 Watt.

(c) *Protection for TV Reception.* The ERP limitations in this paragraph are intended to reduce the likelihood that interference to television reception from offshore radiotelephone operations will occur.

(1) *Co-channel protection.* The ERP of offshore stations must not exceed the limits in Table I-1 of this section. The limits depend upon the height above mean sea level of the offshore transmitting antenna and the distance between the antenna location of the off-

shore transmitter and the antenna location of the main transmitter of the nearest full-service television station that transmits on the TV channel containing the channel on which the offshore station transmits.

(2) *Adjacent channel protection.* The ERP of offshore stations located within 128.8 kilometers (80 miles) of the main transmitter antenna of a full service TV station that transmits on a TV channel adjacent to the TV channel which contains the channel on which the offshore station transmits must not exceed the limits in the Table I-2 of § 22.1015. The limits depend upon the height above mean sea level of the offshore transmitting antenna and the distance between the location of the offshore transmitter and the 4.8 kilometer (3 mile) limit.

TABLE I-1.—MAXIMUM ERP (WATTS)

Distance	30 meters (100 feet)	45 meters (150 feet)	61 meters (200 feet)
338 km (210 mi) .....	1000	1000	1000
330 km (205 mi) .....	1000	900	800
2 km (200 mi) .....	800	710	630
314 km (195 mi) .....	590	520	450
306 km (190 mi) .....	450	400	330
298 km (185 mi) .....	320	280	240
290 km (180 mi) .....	250	210	175
282 km (175 mi) .....	180	150	130
274 km (170 mi) .....	175	110	100
266 km (165 mi) .....	95	80	70
258 km (160 mi) .....	65	55	50
249 km (155 mi) .....	50	40	35
241 km (150 mi) .....	35	30	25

**§ 22.1015 Repeater operation.**

Offshore central stations may be used as repeater stations provided that the licensee is able to maintain control of the station, and in particular, to turn the transmitter off, regardless of whether associated subscriber stations are transmitting at the time.

TABLE I-2.—MAXIMUM ERP (WATTS)

Distance from the 4.8 km (3 mi) limit	30 meters (100 feet)	61 meters (200 feet)
6.4 km (4 mi) .....	25	6
8.0 km (5 mi) .....	40	10
9.7 km (6 mi) .....	65	15
11.3 km (7 mi) .....	100	25
12.9 km (8 mi) .....	150	35
14.5 km (9 mi) .....	215	50
16.1 km (10 mi) .....	295	70
17.7 km (11 mi) .....	400	100

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TABLE I-2.—MAXIMUM ERP (WATTS)—  
Continued

Distance from the 4.8 km (3 mi) limit	30 me- ters (100 feet)	61 me- ters (200 feet)
19.3 km (12 mi) .....	530	130
20.9 km (13 mi) .....	685	170
22.5 km (14 mi) .....	870	215
24.1 km (15 mi) .....	1000	270
25.7 km (16 mi) .....	1000	415
27.4 km (17 mi) .....	1000	505
29.0 km (18 mi) .....	1000	610
30.6 km (19 mi) .....	1000	730
32.2 km (20 mi) .....	1000	865
33.8 km (21 mi) .....	1000	1000

§ 22.1025 Permissible communications.

Offshore central stations must communicate only with subscriber stations (fixed, temporary-fixed, mobile and airborne). Offshore subscriber stations must normally communicate only with and through offshore central stations. Stations in the Offshore Radiotelephone Service may communicate through relay stations authorized in this service.

§ 22.1031 Temporary fixed stations.

The FCC may, upon proper application therefor, authorize the construction and operation of temporary fixed stations in the Offshore Radiotelephone service to be used only when the service of permanent fixed stations is disrupted by storms or emergencies or is otherwise unavailable.

(a) *Six month limitation.* If it is necessary for a temporary fixed station to remain at the same location for more than six months, the licensee of that station must apply for authorization to operate the station at the specific location at least 30 days before the end of the six month period.

(b) *International communications.* Communications between the United States and Mexico must not be carried using a temporary fixed station without prior authorization from the FCC. Licensees desiring to carry such communications should apply sufficiently in advance to allow for the time necessary to coordinate with Canada or Mexico.

§ 22.1035 Construction period.

The construction period (see § 22.142) for offshore stations is 18 months.

§ 22.1037 Application requirements for offshore stations.

Applications for new Offshore Radiotelephone Service stations must contain an exhibit showing that:

(a) The applicant has notified all licensees of offshore stations located within 321.8 kilometers (200 miles) of the proposed offshore station, by providing the following data, at least 30 days before filing the application:

- (1) The name, business address, channel coordinator, and telephone number of the applicant;
- (2) The location and geographical coordinates of the proposed station;
- (3) The channel and type of emission;
- (4) The height and type of antenna;
- (5) The bearing of the main lobe of the antenna; and,
- (6) The effective radiated power.

(b) The proposed station will not interfere with the primary ORS channels by compliance with the following separations:

- (1) Co-channel to a distance of 241.4 kilometers (150 miles).
- (2) If interstitial channels are used, adjacent channels ( $\pm 12.5$  kHz) to a distance of 80.5 kilometers (50 miles).
- (3) Third order intermodulation channels ( $\pm 12.5$  kHz) to a distance of 32.2 kilometers (20 miles).
- (4) If the proposed transmitting antenna site is located west of longitude W.93°40', and within 32.2 kilometers (20 miles) of the shoreline, and proposed use of the channels listed in § 22.1007(b), no third-order intermodulation interference would be caused to any base or mobile station using the channels between 488 and 494 MHz.

**Subpart J—Required New Capabilities Pursuant to the Communications Assistance for Law Enforcement Act (CALEA)**

SOURCE: 64 FR 51717, Sept. 24, 1999, unless otherwise noted.

§ 22.1100 Purpose.

Pursuant to the Communications Assistance for Law Enforcement Act (CALEA), Public Law 103-414, 108 Stat. 4279 (1994) (codified as amended in sections of 18 U.S.C. and 47 U.S.C.), this subpart contains rules that require a

cellular telecommunications carrier to implement certain capabilities to ensure law enforcement access to authorized communications or call-identifying information.

**§ 22.1101 Scope.**

The definitions included in this subpart shall be used solely for the purpose of implementing CALEA requirements.

**§ 22.1102 Definitions.**

*Call identifying information.* Call identifying information means dialing or signaling information that identifies the origin, direction, destination, or termination of each communication generated or received by a subscriber by means of any equipment, facility, or service of a telecommunications carrier. Call identifying information is "reasonably available" to a carrier if it is present at an intercept access point and can be made available without the carrier being unduly burdened with network modifications.

*Collection function.* The location where lawfully authorized intercepted communications and call-identifying information is collected by a law enforcement agency (LEA).

*Content of subject-initiated conference calls.* Capability that permits a LEA to monitor the content of conversations by all parties connected via a conference call when the facilities under surveillance maintain a circuit connection to the call.

*Dialed digit extraction.* Capability that permits a LEA to receive on the call data channel digits dialed by a subject when a call is connected to another carrier's service for processing and routing.

*In-band and out-of-band signaling.* Capability that permits a LEA to be informed when a network message that provides call identifying information (e.g., ringing, busy, call waiting signal, message light) is generated or sent by the IAP switch to a subject using the facilities under surveillance. Excludes signals generated by customer premises equipment when no network signal is generated.

*Intercept Access Point (IAP).* Intercept access point is a point within a carrier's system where some of the com-

munications or call-identifying information of an intercept subject's equipment, facilities, and services are accessed.

*J-STD-025.* The interim standard developed by the Telecommunications Industry Association and the Alliance for Telecommunications Industry Solutions for wireline, cellular, and broadband PCS carriers. This standard defines services and features to support lawfully authorized electronic surveillance, and specifies interfaces necessary to deliver intercepted communications and call-identifying information to a LEA.

*LEA.* Law enforcement agency; e.g., the Federal Bureau of Investigation or a local police department.

*Party hold, join, drop on conference calls.* Capability that permits a LEA to identify the parties to a conference call conversation at all times.

*Subject-initiated dialing and signaling information.* Capability that permits a LEA to be informed when a subject using the facilities under surveillance uses services that provide call identifying information, such as call forwarding, call waiting, call hold, and three-way calling. Excludes signals generated by customer premises equipment when no network signal is generated.

*Timing information.* Capability that permits a LEA to associate call-identifying information with the content of a call. A call-identifying message must be sent from the carrier's IAP to the LEA's Collection Function within eight seconds of receipt of that message by the IAP at least 95% of the time, and with the call event time-stamped to an accuracy of at least 200 milliseconds.

**§ 22.1103 Capabilities that must be provided by a cellular telecommunications carrier.**

(a) Except as provided under paragraph (b) of this section, as of June 30, 2000, a cellular telecommunications carrier shall provide to a LEA the assistance capability requirements of CALEA, see 47 U.S.C. 1002. A carrier may satisfy these requirements by complying with publicly available technical requirements or standards adopted by an industry association or

standard-setting organization, such as J-STD-025.

(b) As of September 30, 2001, a cellular telecommunications carrier shall provide to a LEA communications and call-identifying information transported by packet-mode communications and the following capabilities:

- (1) Content of subject-initiated conference calls;
- (2) Party hold, join, drop on conference calls;
- (3) Subject-initiated dialing and signaling information ;
- (4) In-band and out-of-band signaling;
- (5) Timing information;
- (6) Dialed digit extraction.

## PART 23—INTERNATIONAL FIXED PUBLIC RADIOCOMMUNICATION SERVICES

### FIXED PUBLIC SERVICES

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AUTHORITY: Secs. 4, 303, 48 Stat. 1066, 1082 as amended; 47 U.S.C. 154, 303. Interpret or apply sec. 301, 48 Stat. 1081; 47 U.S.C. 301.

SOURCE: 28 FR 13032, Dec. 5, 1963, as amended at 36 FR 2562, Feb. 6, 1971, unless otherwise noted.

### FIXED PUBLIC SERVICES

#### § 23.1 Definitions.

*Assigned frequency.* The frequency coinciding with the center of an authorized bandwidth of emission.

*Authorized bandwidth.* The maximum bandwidth authorized to be used by a station as specified in the station license. This shall be occupied bandwidth or necessary bandwidth, whichever is greater.

*Authorized reference frequency.* A frequency having a fixed and specific position with respect to the assigned frequency.

*Authorized service.* The term “authorized service” of a point-to-point radiotelegraph or radiotelephone station means the transmission of public correspondence to a point of communication as defined herein subject to such special provisions as may be contained in the license of the station or in accordance with §23.53.

*Fixed public service.* The term “fixed public service” means a radiocommunication service carried on between fixed stations open to public correspondence.

*Fixed public press service.* The term “fixed public press service” means a limited radio communication service carried on between point-to-point telegraph stations, consisting of transmissions by fixed stations open to limited public correspondence, of news items, or other material related to or