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Part II

Federal Communications Commission

47 CFR Part 2
Non-Substantive Revisions to the Table of Frequency Allocations; Final Rule

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 2

[DA 99–2743]

Non-Substantive Revisions to the Table of Frequency Allocations

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This document revises the Table of Frequency Allocations (''Table''). This action is necessary in order to more clearly display the Table and to assist the **Federal Register** staff by making easier for them to maintain the Table in the Code of Federal Regulations. The intended effect of this action is to present the Table in a clearer manner, thereby assisting the public in making decisions about the radio spectrum.

DATES: Effective January 31, 2000.

FOR FURTHER INFORMATION CONTACT: Tom Mooring, Office of Engineering and Technology, (202) 418–2450.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's *Memorandum Opinion and Order*, DA 99–2743, adopted December 16, 1999, and released December 20, 1999. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Reference Center (Room TW–A257), 445 12th Street, S.W., Washington, D.C., and is available on the FCC's Internet site at www.fcc.gov/Bureaus/Engineering__Technology__Orders/1999. The document also may be purchased from the Commission's duplication contractor, International Transcription Service, (202) 857–3800, 1231 20th Street, N.W. Washington, D.C. 20036.

Summary of the Order

1. By this action, the Commission's Office of Engineering and Technology and Office of Managing Director amends the Table and supporting sections of the Commission's rules in order to more clearly display the Table and to assist the **Federal Register** staff by making it easier for them to maintain the Table in the Code of Federal Regulations. We take this action with the concurrence of the National Telecommunications and Information Administration. We also take this opportunity to make the following types of non-substantive amendments:

- The International Table in the Commission's rules is updated to reflect the [International] Table of Frequency Allocations as it is found in the 1998 International Telecommunication Union *Radio Regulations*;
- International footnotes in the United States Table that have not been substantively revised are re-numbered;
- Expired footnotes or portions of footnotes are removed from the United States Table;
- The special-use frequencies column of the Table is removed; and
- Various typographical errors and omissions are corrected.

As a by-product of this action, we will now be able to place the Table on the Commission's web site and to update the on-line Table shortly after any amendments to the Table have been released.[1] This ministerial action does not make any substantive change to any licensee's legal rights and responsibilities.

2. Part 2 of the Commission's rules, IS AMENDED as set forth, effective upon publication in the **Federal Register**. This action is taken pursuant to authority found in sections 4(i) and 303 of the Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303, and in §§ 0.31, 0.231(b) and 0.241 of the Commission's rules, 47 CFR 0.31, 0.231(b) and 0.241.

List of Subjects in 47 CFR Part 2

Radio, Reporting and recordkeeping requirements.

Federal Communications Commission.

Magalie Roman Salas,

Secretary.

Rule Changes

Part 2 of title 47 of the Code of Federal Regulations is amended as follows:

PART 2—FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

1. The authority citation for part 2 continues to read as follows:

Authority: 47 U.S.C. 154, 302, 303, 307, 336 and 337, unless otherwise noted.

2. Paragraph 2.100 is revised to read as follows:

§ 2.100 International regulations in force.

The provisions of the *Radio Regulations* (Geneva, 1998) apply provisionally as from January 1, 1999, unless an earlier date is specified in Article S59.

[1] The on-line Table may be found at http://www.fcc.gov/oet/spectrum/. We caution users of the on-line Table that the Table as published by **Federal Register** remains the legal source document.

3. Section 2.104 is revised to read as follows:

§ 2.104 International Table of Frequency Allocations.

(a) The International Table of Frequency Allocations is subdivided into the Region 1 Table (column 1 of § 2.106), the Region 2 Table (column 2 of § 2.106), and the Region 3 Table (column 3 of § 2.106). The International Table is included for informational purposes only.

(b) *Regions.* For the allocation of frequencies the International Telecommunication Union (ITU) has divided the world into three Regions [1] as shown in Figure 1 of this section and described as follows:

(1) *Region 1.* Region 1 includes the area limited on the east by line A (lines A, B and C are defined below) and on the west by line B, excluding any of the territory of the Islamic Republic of Iran which lies between these limits. It also includes the whole of the territory of Armenia, Azerbaijan, Russian Federation, Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Turkey and Ukraine and the area to the north of Russian Federation which lies between lines A and C.

(2) *Region 2.* Region 2 includes the area limited on the east by line B and on the west by line C.

(3) *Region 3.* Region 3 includes the area limited on the east by line C and on the west by line A, except any of the territory of Armenia, Azerbaijan, Russian Federation, Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Turkey and Ukraine and the area to the north of Russian Federation. It also includes that part of the territory of the Islamic Republic of Iran lying outside of those limits.

(4) The lines A, B and C are defined as follows:

(i) *Line A.* Line A extends from the North Pole along meridian 40° East of Greenwich to parallel 40° North; thence by great circle arc to the intersection of meridian 60° East and the Tropic of Cancer; thence along the meridian 60° East to the South Pole.

(ii) *Line B.* Line B extends from the North Pole along meridian 10° West of Greenwich to its intersection with parallel 72° North; thence by great circle arc to the intersection of meridian 50° West and parallel 40° North; thence by great circle arc to the intersection of meridian 20° West and parallel 10°

[1] It should be noted that where the words ''regions'' or ''regional'' are without a capital ''R,'' they do not relate to the three Regions here defined for purposes of frequency allocation.

South; thence along meridian 20° West to the South Pole.

(iii) *Line C.* Line C extends from the North Pole by great circle arc to the intersection of parallel 65° 30′ North with the international boundary in Bering Strait; thence by great circle arc to the intersection of meridian 165° East of Greenwich and parallel 50° North; thence by great circle arc to the intersection of meridian 170° West and parallel 10° North; thence along parallel 10° North to its intersection with meridian 120° West; thence along meridian 120° West to the South Pole.

(c) *Areas.* To further assist in the international allocation of the radio spectrum, the ITU has established five special geographical areas and they are defined as follows:

(1) The ''African Broadcasting Area'' means:

(i) African countries, parts of countries, territories and groups of territories situated between the parallels 40° South and 30° North;

(ii) Islands in the Indian Ocean west of meridian 60° East of Greenwich, situated between the parallel 40° South and the great circle arc joining the points 45° East, 11° 30′ North and 60° East, 15° North; and

(iii) Islands in the Atlantic Ocean east of line B, situated between the parallels 40° South and 30° North.

(2) The ''European Broadcasting Area'' is bounded on the west by the western boundary of Region 1, on the east by the meridian 40° East of Greenwich and on the south by the parallel 30° North so as to include the northern part of Saudi Arabia and that part of those countries bordering the Mediterranean within these limits. In addition, Iraq, Jordan and that part of the territory of Syria, Turkey and Ukraine lying outside the above limits are included in the European Broadcasting Area.

(3) The ''European Maritime Area'' is bounded to the north by a line extending along parallel 72° North from its intersection with meridian 55° East of Greenwich to its intersection with meridian 5° West, then along meridian 5° West to its intersection with parallel 67° North, thence along parallel 67° North to its intersection with meridian 32° West; to the west by a line extending along meridian 32° West to its intersection with parallel 30° North; to the south by a line extending along parallel 30° North to its intersection with meridian 43° East; to the east by a line extending along meridian 43° East to its intersection with parallel 60° North, thence along parallel 60° North to its intersection with meridian 55° East and thence along meridian 55° East to its intersection with parallel 72° North.

(4) The ''Tropical Zone'' (see Figure 1 of this section) is defined as:

(i) The whole of that area in Region 2 between the Tropics of Cancer and Capricorn.

(ii) The whole of that area in Regions 1 and 3 contained between the parallels 30° North and 35° South with the addition of:

(A) The area contained between the meridians 40° East and 80° East of Greenwich and the parallels 30° North and 40° North; and

(B) That part of Libya north of parallel 30° North.

(iii) In Region 2, the Tropical Zone may be extended to parallel 33° North, subject to special agreements between the countries concerned in that Region.

(5) A sub-Region is an area consisting of two or more countries in the same Region.

(d) *Categories of services and allocations.* (1) Primary and secondary services. Where, in a box of the International Table in § 2.106, a band is indicated as allocated to more than one service, either on a worldwide or Regional basis, such services are listed in the following order:

(i) Services the names of which are printed in ''capitals'' (example: FIXED); these are called ''primary'' services; and

(ii) Services the names of which are printed in ''normal characters'' (example: Mobile); these are called ''secondary'' services (see paragraph (d)(3) of this section).

(2) Additional remarks shall be printed in normal characters (example: MOBILE except aeronautical mobile).

(3) Stations of a secondary service:

(i) Shall not cause harmful interference to stations of primary services to which frequencies are already assigned or to which frequencies may be assigned at a later date;

(ii) Cannot claim protection from harmful interference from stations of a primary service to which frequencies are already assigned or may be assigned at a later date; and

(iii) Can claim protection, however, from harmful interference from stations of the same or other secondary service(s) to which frequencies may be assigned at a later date.

(4) Where a band is indicated in a footnote of the International Table as allocated to a service ''on a secondary basis'' in an area smaller than a Region, or in a particular country, this is a secondary service (see paragraph (d)(3) of this section).

(5) Where a band is indicated in a footnote of the International Table as allocated to a service ''on a primary basis'', in an area smaller than a Region, or in a particular country, this is a primary service only in that area or country.

(e) *Additional allocations.* (1) Where a band is indicated in a footnote of the International Table as ''also allocated'' to a service in an area smaller than a Region, or in a particular country, this is an ''additional'' allocation, *i.e.* an allocation which is added in this area or in this country to the service or services which are indicated in the International Table.

(2) If the footnote does not include any restriction on the service or services concerned apart from the restriction to operate only in a particular area or country, stations of this service or these services shall have equality of right to operate with stations of the other primary service or services indicated in the International Table.

(3) If restrictions are imposed on an additional allocation in addition to the restriction to operate only in a particular area or country, this is indicated in the footnote of the International Table.

(f) *Alternative allocations.* (1) Where a band is indicated in a footnote of the International Table as ''allocated'' to one or more services in an area smaller than a Region, or in a particular country, this is an ''alternative'' allocation, *i.e.* an allocation which replaces, in this area or in this country, the allocation indicated in the Table.

(2) If the footnote does not include any restriction on stations of the service or services concerned, apart from the restriction to operate only in a particular area or country, these stations of such a service or services shall have an equality of right to operate with stations of the primary service or services, indicated in the International Table, to which the band is allocated in other areas or countries.

(3) If restrictions are imposed on stations of a service to which an alternative allocation is made, in addition to the restriction to operate only in a particular country or area, this is indicated in the footnote.

(g) *Miscellaneous provisions.* (1) Where it is indicated that a service may operate in a specific frequency band subject to not causing harmful interference, this means also that this service cannot claim protection from harmful interference caused by other services to which the band is allocated under Chapter SII of the international *Radio Regulations.*

(2) Except if otherwise specified in a footnote, the term ''fixed service'', where appearing in the International

Table, does not include systems using ionospheric scatter propagation.

(h) *Description of the International Table of Frequency Allocations.* (1) The heading of the International Table includes three columns, each of which corresponds to one of the Regions (see paragraph (b) of this section). Where an allocation occupies the whole of the width of the Table or only one or two of the three columns, this is a worldwide allocation or a Regional allocation, respectively.

(2) The frequency band referred to in each allocation is indicated in the left-hand top corner of the part of the Table concerned.

(3) Within each of the categories specified in paragraph (d)(1) of this section, services are listed in alphabetical order according to the French language. The order of listing does not indicate relative priority within each category.

(4) In the case where there is a parenthetical addition to an allocation in the International Table, that service allocation is restricted to the type of operation so indicated.

(5) The footnote references which appear in the International Table below the allocated service or services apply to the whole of the allocation concerned.

(6) The footnote references which appear to the right of the name of a service are applicable only to that particular service.

(7) In certain cases, the names of countries appearing in the footnotes have been simplified in order to shorten the text.

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Figure 1 to § 2.104—Map

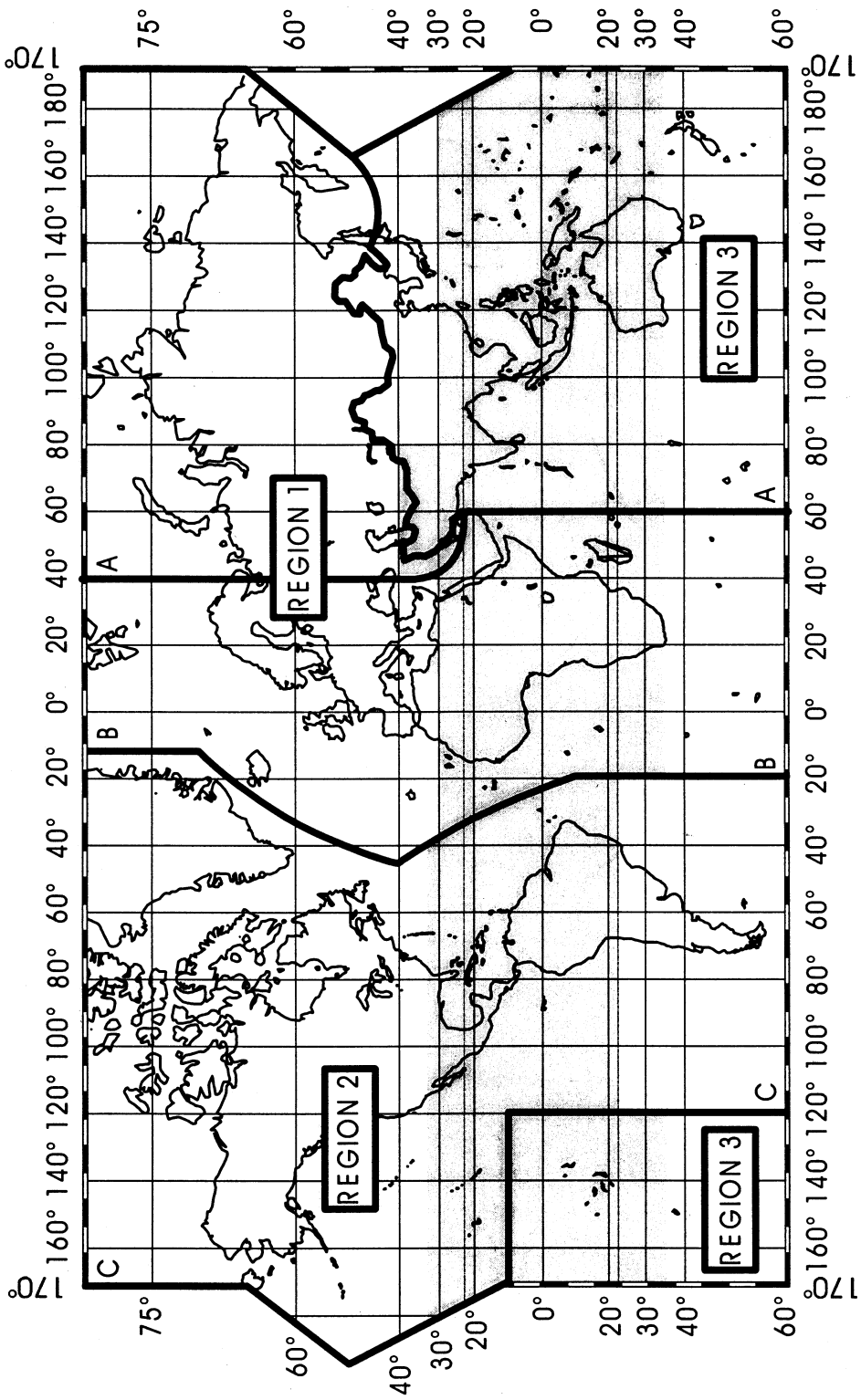

Figure 1: Map identifying Region 1, Region 2, and Region 3, as defined in paragraph 2.104(b), and the Tropical Zone (shaded area), as defined in paragraph 2.104(c)(4).

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4. Section 2.105 is revised to read as follows.

§ 2.105 United States Table of Frequency Allocations.

(a) The United States Table of Frequency Allocations (United States Table) is subdivided into the Federal Government Table of Frequency Allocations (Federal Government Table, column 4 of § 2.106) and the Non-Federal Government Table of Frequency Allocations (Non-Federal Government Table, column 5 of § 2.106). The United States Table is based on the Region 2 Table because the relevant area of jurisdiction is located primarily in Region 2 [1] (*i.e.,* the 50 States, the District of Columbia, the Caribbean insular areas [2] and some of the Pacific insular areas).[3] [4] The Federal Government Table is administered by the National Telecommunications and Information Administration (NTIA) [5], whereas the Non-Federal Government Table is administered by the Federal Communications Commission (FCC).[6]

(b) In the United States, radio spectrum may be allocated to either Federal government or non-Federal government use exclusively, or for shared use. In the case of shared use, the type of service(s) permitted need not be the same [*e.g.,* Federal government FIXED, non-Federal government MOBILE]. The terms used to designate categories of services and allocations [7] in columns 4 and 5 of § 2.106 correspond to the terms employed by the International Telecommunication Union (ITU) in the international *Radio Regulations.*

(c) *Category of services.* (1) Any segment of the radio spectrum may be allocated to the Federal government and/or non-Federal government sectors either on an exclusive or shared basis for use by one or more radio services. In the case where an allocation has been made to more than one service, such services are listed in the following order:

(i) Services, the names of which are printed in ''capitals'' [example: FIXED]; these are called ''primary'' services;

(ii) Services, the names of which are printed in ''normal characters'' [example: Mobile]; these are called ''secondary'' services.

(2) Stations of a secondary service:

(i) Shall not cause harmful interference to stations of primary services to which frequencies are already assigned or to which frequencies may be assigned at a later date;

(ii) Cannot claim protection from harmful interference from stations of a primary service to which frequencies are already assigned or may be assigned at a later date; and

(iii) Can claim protection, however, from harmful interference from stations of the same or other secondary service(s) to which frequencies may be assigned at a later date.

(d) *Format of the United States Table and the Rule Part Cross Reference Column.* (1) The frequency band referred to in each allocation, column 4 for Federal government and column 5 for non-Federal government, is indicated in the left-hand top corner of the column. If there is no service or footnote indicated for a band of frequencies in either column 4 or 5, then the Federal government or the non-Federal government sector, respectively, has no access to that band except as provided for by § 2.102.

(2) When the Federal Government and Non-Federal Government Tables are exactly the same for a shared band, the line between columns 4 and 5 is deleted and the allocations are shown once.

(3) The Federal Government Table, given in column 4, is included for informational purposes only.

(4) In the case where there is a parenthetical addition to an allocation in the United States Table [example: FIXED-SATELLITE (space-to-earth)], that service allocation is restricted to the type of operation so indicated.

(5) The following symbols are used to designate footnotes in the United States Table:

(i) Any footnote consisting of ''S5.'' followed by one or more digits, *e.g.*, S5.53, or any footnote not prefixed by a letter, *e.g.*, 459, denotes an international footnote. Where an international footnote is applicable, without modification, to the United States Table, the footnote appears in the United States Table (columns 4 and 5) and denotes a stipulation affecting both the Federal Government Table and the Non-Federal Government Table. If, however, an international footnote pertains to a service allocated only for Federal government or non-Federal government use, the international footnote will be placed only in the affected Table. For example, ''AMATEUR S5.142'' shall be shown only in the Non-Federal Government Table.

(ii) Any footnote consisting of the letters US followed by one or more digits, *e.g.*, US7, denotes a stipulation affecting both the Federal Government Table and the Non-Federal Government Table.

(iii) Any footnote consisting of the letters NG followed by one or more digits, *e.g.*, NG2, denotes a stipulation applicable only to the Non-Federal Government Table (column 5).

(iv) Any footnote consisting of the letter G following by one or more digits, *e.g.*, G2, denotes a stipulation applicable only to the Federal Government Table (column 4).

(6) If a frequency or frequency band has been allocated to a radiocommunication service in the Non-Federal Government Table, then a cross reference may be added for the pertinent FCC Rule part (column 6 of § 2.106). For example, the 849–851 MHz band is allocated to the non-Federal government aeronautical mobile service, rules for the use of the 849–851 MHz band have been added to Part 22—Public Mobile Services (47 CFR part 22), and a cross reference, Public Mobile (22), has been added in Column 6 of the Table. The exact use that can be made of any given frequency or frequency band (*e.g.,* channelling plans, allowable emissions, *etc.*) is given in the FCC Rule part(s) so indicated. The FCC Rule parts in this column are not allocations and are provided for informational purposes only. This column also may contain explanatory notes for informational purposes only.

5. Section 2.106 is amended as follows:

a. The Table proceeding the international footnotes is revised and shall begin on a left-hand page.

b. The international footnotes section is revised.

c. United States footnotes US7, US78, US221, US256, US257, US296, US303, US311, US319, and US322 are revised.

d. United States footnotes US272, US284, US326, and US341 are removed.

e. The heading to the list of ''Non-Government (NG) Footnotes'' is revised and in the parenthetical following the

[1] See § 2.104(a)(1) for definition of Region 2.

[2] The Caribbean insular areas are: The Commonwealth of Puerto Rico; the unincorporated territory of the United States Virgin Islands; and Navassa Island.

[3] The Pacific insular areas located in Region 2 are: Johnston Atoll and Midway Atoll.

[4] The operation of stations in the Pacific insular areas located in Region 3 are generally governed by the International plan for Region 3 (i.e., column 3 of § 2.106). The Pacific insular areas located in Region 3 are: the Commonwealth of the Northern Mariana Islands; the unincorporated territory of American Samoa; the unincorporated territory of Guam; and Baker Island, Howland Island, Jarvis Island, Kingman Reef, Palmyra Island and Wake Island.

[5] Section 305(a) of the Communications Act of 1934, as amended. *See* Pub. Law 102–538, 106 Stat. 3533 (1992).

[6] The Communications Act of 1934, as amended.

[7] Definitions of the various radio services used are contained in § 2.1.

heading revise ''non-Government'' to read ''non-Federal Government''.

f. Non-Federal government footnotes NG47, NG102, NG120, NG124, NG128, and NG147 are revised.

g. Non-Federal government footnotes NG133, NG139, NG140, and NG154 are removed.

h. The heading to the list of ''Government (G) Footnotes'' is revised and in the parenthetical following the heading revise ''Government'' to read ''Federal Government''.

i. Federal government footnotes G101 and G119 are removed.

j. Federal government footnote G106 is revised.

The revisions and additions read as follows:

§ 2.106 Table of Frequency Allocations.

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0-130 kHz (VLF/LF)

Page 1

International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
Below 9 (Not Allocated) S5.53 S5.54			Below 9 (Not Allocated) S5.53 S5.54		
9-14 RADIONAVIGATION			9-14 RADIONAVIGATION US18 US294		
14-19.95 FIXED MARITIME MOBILE S5.57 S5.55 S5.56			14-19.95 FIXED MARITIME MOBILE S5.57 US294	14-19.95 Fixed US294	International Fixed (23)
19.95-20.05 STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)			19.95-20.05 STANDARD FREQUENCY AND TIME SIGNAL (20 kHz) US294		
20.05-70 FIXED MARITIME MOBILE S5.57			20.05-59 FIXED MARITIME MOBILE S5.57 US294	20.05-59 FIXED US294	International Fixed (23)
			59-61 STANDARD FREQUENCY AND TIME SIGNAL (60 kHz) US294		
S5.56 S5.58			61-70 FIXED MARITIME MOBILE S5.57 US294	61-70 FIXED US294	International Fixed (23)
70-72 RADIONAVIGATION S5.60 S5.56	70-90 FIXED MARITIME MOBILE S5.57 MARITIME RADIO-NAVIGATION S5.60 Radiolocation	70-72 RADIONAVIGATION S5.60 Fixed Maritime mobile S5.57 S5.59	70-90 FIXED MARITIME MOBILE S5.57 Radiolocation	70-90 FIXED Radiolocation	International Fixed (23) Private Land Mobile (90)
72-84 FIXED MARITIME MOBILE S5.57 RADIONAVIGATION S5.60 S5.56		72-84 FIXED MARITIME MOBILE S5.57 RADIONAVIGATION S5.60			

84-86 RADIONAVIGATION S5.60		84-86 RADIONAVIGATION S5.60 Fixed Maritime mobile S5.57 S5.59			
86-90 FIXED MARITIME MOBILE S5.57 RADIONAVIGATION S5.56	S5.61	86-90 FIXED MARITIME MOBILE S5.57 RADIONAVIGATION S5.60	S5.60 US294	S5.60 US294	
90-110 RADIONAVIGATION S5.62 Fixed S5.64			90-110 RADIONAVIGATION S5.62 US18 US104 US294		Private Land Mobile (90)
110-112 FIXED MARITIME MOBILE RADIONAVIGATION S5.64	110-130 FIXED MARITIME MOBILE MARITIME RADIO- NAVIGATION S5.60 Radiolocation	110-112 FIXED MARITIME MOBILE RADIONAVIGATION S5.60 S5.64	110-130 FIXED MARITIME MOBILE Radiolocation		International Fixed (23) Maritime (80) Private Land Mobile (90)
112-115 RADIONAVIGATION S5.60		112-117.6 RADIONAVIGATION S5.60 Fixed Maritime mobile			
115-117.6 RADIONAVIGATION S5.60 Fixed Maritime mobile S5.64 S5.66		S5.64 S5.65			
117.6-126 FIXED MARITIME MOBILE RADIONAVIGATION S5.60 S5.64		117.6-126 FIXED MARITIME MOBILE RADIONAVIGATION S5.60 S5.64			
126-129 RADIONAVIGATION S5.60		126-129 RADIONAVIGATION S5.60 Fixed Maritime mobile S5.64 S5.65			
See next page for 129-130	S5.61 S5.64	See next page for 129-130	S5.60 S5.64 US294		

130-505 kHz (LF/MF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
129-130 FIXED MARITIME MOBILE RADIONAVIGATION S5.60 S5.64	See previous page for 110-130 kHz	129-130 FIXED MARITIME MOBILE RADIONAVIGATION S5.60 S5.64	See previous page for 110-130 kHz		See previous page for 110-130 kHz
130-148.5 FIXED MARITIME MOBILE S5.64 S5.67	130-160 FIXED MARITIME MOBILE	130-160 FIXED MARITIME MOBILE RADIONAVIGATION	130-160 FIXED MARITIME MOBILE		International Fixed (23) Maritime (80)
148.5-255 BROADCASTING S5.68 S5.69 S5.70	S5.64	S5.64	S5.64 US294		
	160-190 FIXED	160-190 FIXED Aeronautical radionavigation	160-190 FIXED MARITIME MOBILE 459 US294	160-190 FIXED 459 US294	International Fixed (23)
	190-200 AERONAUTICAL RADIONAVIGATION		190-200 AERONAUTICAL RADIONAVIGATION US18 US226 US294		Aviation (87)
255-283.5 BROADCASTING AERONAUTICAL RADIONAVIGATION S5.70 S5.71	200-275 AERONAUTICAL RADIONAVIGATION Aeronautical mobile	200-285 AERONAUTICAL RADIONAVIGATION Aeronautical mobile	200-275 AERONAUTICAL RADIONAVIGATION Aeronautical mobile US18 US294		
283.5-315 AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) S5.73 S5.72 S5.74	275-285 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radiobeacons)		275-285 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radiobeacons) US18 US294		
	285-315 AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) S5.73		285-325 MARITIME RADIONAVIGATION (radiobeacons) S5.73 Aeronautical radionavigation (radiobeacons)		

315-325 AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radiobeacons) S5.73 S5.72 S5.75	315-325 MARITIME RADIONAVIGATION (radiobeacons) S5.73 Aeronautical radionavigation	315-325 AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) S5.73	US18 US294		
325-405 AERONAUTICAL RADIONAVIGATION S5.72	325-335 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radiobeacons)	325-405 AERONAUTICAL RADIONAVIGATION Aeronautical mobile	325-335 AERONAUTICAL RADIONAVIGATION (radiobeacons) Aeronautical mobile Maritime radionavigation (radiobeacons) US18 US294		
	335-405 AERONAUTICAL RADIONAVIGATION Aeronautical mobile		335-405 AERONAUTICAL RADIONAVIGATION (radiobeacons) Aeronautical mobile US18 US294		
405-415 RADIONAVIGATION S5.76 S5.72	405-415 RADIONAVIGATION S5.76 Aeronautical mobile		405-415 RADIONAVIGATION S5.76 Aeronautical mobile US18 US294		Maritime (80) Aviation (87)
415-435 MARITIME MOBILE S5.79 AERONAUTICAL RADIONAVIGATION S5.72	415-495 MARITIME MOBILE S5.79 S5.79A Aeronautical radionavigation S5.80		415-435 MARITIME MOBILE S5.79 AERONAUTICAL RADIONAVIGATION S5.80 US294		
435-495 MARITIME MOBILE S5.79 S5.79A Aeronautical radionavigation S5.72 S5.81 S5.82			435-495 MARITIME MOBILE S5.79 Aeronautical radionavigation 471 472A US231 US294	435-495 MARITIME MOBILE S5.79 471 472A US231 US294	Maritime (80)
495-505 MOBILE (distress and calling) S5.83			495-505 MOBILE (distress and calling) 472		

505-2107 kHz (MF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
505-526.5 MARITIME MOBILE S5.79 S5.79A S5.84 AERONAUTICAL RADIONAVIGATION S5.72 S5.81	505-510 MARITIME MOBILE S5.79 S5.81	505-526.5 MARITIME MOBILE S5.79 S5.79A S5.84 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Land mobile S5.81	505-510 MARITIME MOBILE S5.79 471		Maritime (80)
	510-525 MOBILE S5.79A S5.84 AERONAUTICAL RADIONAVIGATION		510-525 MARITIME MOBILE (ships only) 474 AERONAUTICAL RADIONAVIGATION (radiobeacons) US14 US18 US225		Maritime (80) Aviation (87)
526.5-1606.5 BROADCASTING S5.87 S5.87A	525-535 BROADCASTING S5.86 AERONAUTICAL RADIONAVIGATION	526.5-535 BROADCASTING Mobile S5.88	525-535 MOBILE US221 AERONAUTICAL RADIONAVIGATION (radiobeacons) US18 US239		Aviation (87) Private Land Mobile (90)
	535-1605 BROADCASTING	535-1606.5 BROADCASTING	535-1605	535-1605 BROADCASTING US321	Radio Broadcasting (AM) (73) Auxiliary Broadcasting (74) Alaska Fixed (80) Private Land Mobile (90)
1606.5-1625 FIXED MARITIME MOBILE S5.90 LAND MOBILE S5.92	1605-1625 BROADCASTING S5.89 S5.90	1606.5-1800 FIXED MOBILE RADIOLOCATION RADIONAVIGATION	1605-1615 MOBILE US221 US238 1615-1625 US238 US299	1605-1705 BROADCASTING 480	
1625-1635 RADIOLOCATION S5.93	1625-1705 FIXED MOBILE BROADCASTING S5.89 Radiolocation		1625-1705 Radiolocation US238 US299	US238 US299 US321 NG128	
1635-1800 FIXED MARITIME MOBILE S5.90 LAND MOBILE	S5.90				

S5.92 S5.96	1705-1800 FIXED MOBILE RADIOLOCATION AERONAUTICAL RADIONAVIGATION	S5.91	1705-1800 FIXED MOBILE RADIOLOCATION US240		International Fixed (23) Maritime (80) Private Land Mobile (90)
1800-1810 RADIOLOCATION S5.93	1800-1850 AMATEUR	1800-2000 AMATEUR FIXED MOBILE except aeronautical mobile RADIONAVIGATION Radiolocation	1800-1900	1800-1900 AMATEUR	Amateur (97)
1810-1850 AMATEUR S5.98 S5.99 S5.100 S5.101					
1850-2000 FIXED MOBILE except aeronautical mobile S5.92 S5.96 S5.103	1850-2000 AMATEUR FIXED MOBILE except aeronautical mobile RADIOLOCATION RADIONAVIGATION S5.102	S5.97	1900-2000 RADIOLOCATION US290		Private Land Mobile (90) Amateur (97)
2000-2025 FIXED MOBILE except aeronautical mobile (R) S5.92 S5.103	2000-2065 FIXED MOBILE		2000-2065 FIXED MOBILE US340	2000-2065 MARITIME MOBILE NG19 US340	Maritime (80)
2025-2045 FIXED MOBILE except aeronautical mobile (R) Meteorological aids S5.104 S5.92 S5.103					
2045-2160 FIXED MARITIME MOBILE LAND MOBILE S5.92	2065-2107 MARITIME MOBILE S5.105 S5.106		2065-2107 MARITIME MOBILE S5.105 US296 US340		
	See next page for 2107-2170 kHz		See next page for 2107-2170 kHz		See next page for 2107-2170 kHz

2107-3230 kHz (MF/HF) Page 7

International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
See previous page for 2045-2160 kHz	2107-2170 FIXED MOBILE		2107-2170 FIXED MOBILE	2107-2170 FIXED LAND MOBILE MARITIME MOBILE NG19	International Fixed (23) Maritime (80) Aviation (87) Private Land Mobile (90)
2160-2170 RADIOLOCATION S5.93 S5.107			US340	US340	
2170-2173.5 MARITIME MOBILE			2170-2173.5 MARITIME MOBILE (telephony) US340	2170-2173.5 MARITIME MOBILE US340	Maritime (80)
2173.5-2190.5 MOBILE (distress and calling) S5.108 S5.109 S5.110 S5.111			2173.5-2190.5 MOBILE (distress and calling) S5.108 S5.109 S5.110 S5.111 US279 US340		Maritime (80) Aviation (87)
2190.5-2194 MARITIME MOBILE			2190.5-2194 MARITIME MOBILE (telephony) US340	2190.5-2194 MARITIME MOBILE US340	Maritime (80)
2194-2300 FIXED MOBILE except aeronautical mobile (R) S5.92 S5.103 S5.112	2194-2300 FIXED MOBILE S5.112		2194-2495 FIXED MOBILE	2194-2495 FIXED LAND MOBILE MARITIME MOBILE NG19	International Fixed (23) Maritime (80) Aviation (87) Private Land Mobile (90)
2300-2498 FIXED MOBILE except aeronautical mobile (R) BROADCASTING S5.113 S5.103	2300-2495 FIXED MOBILE BROADCASTING S5.113		US340	US340	
2498-2501 STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)	2495-2501 STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)		2495-2501 STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz) US340		

2501-2502 STANDARD FREQUENCY AND TIME SIGNAL Space research		2501-2502 STANDARD FREQUENCY AND TIME SIGNAL US340 G106	2501-2502 STANDARD FREQUENCY AND TIME SIGNAL US340	
2502-2625 FIXED MOBILE except aeronautical mobile (R) S5.92 S5.103 S5.114	2502-2505 STANDARD FREQUENCY AND TIME SIGNAL	2502-2505 STANDARD FREQUENCY AND TIME SIGNAL US340		
2625-2650 MARITIME MOBILE MARITIME RADIONAVIGATION S5.92	2505-2850 FIXED MOBILE	2505-2850 FIXED MOBILE	2505-2850 FIXED LAND MOBILE MARITIME MOBILE	International Fixed (23) Maritime (80) Aviation (87) Private Land Mobile (90)
2650-2850 FIXED MOBILE except aeronautical mobile (R) S5.92 S5.103		US285 US340	US285 US340	
2850-3025 AERONAUTICAL MOBILE (R) S5.111 S5.115		2850-3025 AERONAUTICAL MOBILE (R) S5.111 S5.115 US283 US340		Aviation (87)
3025-3155 AERONAUTICAL MOBILE (OR)		3025-3155 AERONAUTICAL MOBILE (OR) US340		
3155-3200 FIXED MOBILE except aeronautical mobile (R) S5.116 S5.117		3155-3230 FIXED MOBILE except aeronautical mobile (R)		International Fixed (23) Maritime (80) Aviation (87) Private Land Mobile (90)
3200-3230 FIXED MOBILE except aeronautical mobile (R) BROADCASTING S5.113 S5.116		US340		

3230-5060 kHz (HF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
3230-3400 FIXED MOBILE except aeronautical mobile BROADCASTING S5.113 S5.116 S5.118			3230-3400 FIXED MOBILE except aeronautical mobile Radiolocation US340		International Fixed (23) Maritime (80) Aviation (87) Private Land Mobile (90)
3400-3500 AERONAUTICAL MOBILE (R)			3400-3500 AERONAUTICAL MOBILE (R) US283 US340		Aviation (87)
3500-3800 AMATEUR S5.120 FIXED MOBILE except aeronautical mobile S5.92	3500-3750 AMATEUR S5.120 S5.119	3500-3900 AMATEUR S5.120 FIXED MOBILE	3500-4000	3500-4000 AMATEUR S5.120	Amateur (97)
3800-3900 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	3750-4000 AMATEUR S5.120 FIXED MOBILE except aeronautical mobile (R)				
3900-3950 AERONAUTICAL MOBILE (OR) S5.123		3900-3950 AERONAUTICAL MOBILE BROADCASTING			
3950-4000 FIXED BROADCASTING		3950-4000 FIXED BROADCASTING			
	S5.122 S5.124 S5.125	S5.126	US340	US340	
4000-4063 FIXED MARITIME MOBILE S5.127 S5.126			4000-4063 MARITIME MOBILE US236 US340		International Fixed (23) Maritime (80)
4063-4438 MARITIME MOBILE S5.79A S5.109 S5.110 S5.130 S5.131 S5.132 S5.128 S5.129			4063-4438 MARITIME MOBILE S5.109 S5.110 S5.130 S5.132 US82 US296 US340		

4438-4650 FIXED MOBILE except aeronautical mobile (R)		4438-4650 FIXED MOBILE except aeronautical mobile	4438-4650 FIXED MOBILE except aeronautical mobile (R) US340		International Fixed (23) Maritime (80) Aviation (87) Private Land Mobile (90)
4650-4700 AERONAUTICAL MOBILE (R)			4650-4700 AERONAUTICAL MOBILE (R) US282 US283 US340		Aviation (87)
4700-4750 AERONAUTICAL MOBILE (OR)			4700-4750 AERONAUTICAL MOBILE (OR) US340		
4750-4850 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING S5.113	4750-4850 FIXED MOBILE except aeronautical mobile (R) BROADCASTING S5.113	4750-4850 FIXED BROADCASTING S5.113 Land mobile	4750-4850 FIXED MOBILE except aeronautical mobile (R) US340		International Fixed (23) Maritime (80) Aviation (87)
4850-4995 FIXED LAND MOBILE BROADCASTING S5.113			4850-4995 FIXED MOBILE US340	4850-4995 FIXED US340	
4995-5003 STANDARD FREQUENCY AND TIME SIGNAL (5000 kHz)			4995-5003 STANDARD FREQUENCY AND TIME SIGNAL (5000 kHz) US340		
5003-5005 STANDARD FREQUENCY AND TIME SIGNAL Space research			5003-5005 STANDARD FREQUENCY AND TIME SIGNAL US340 G106	5003-5005 STANDARD FREQUENCY AND TIME SIGNAL US340	
5005-5060 FIXED BROADCASTING S5.113			5005-5060 FIXED US340		International Fixed (23) Maritime (80) Aviation (87) Private Land Mobile (90)

5060-9040 kHz (HF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
5060-5250 FIXED Mobile except aeronautical mobile S5.133			5060-5450 FIXED Mobile except aeronautical mobile US212 US340		International Fixed (23) Maritime (80) Aviation (87) Private Land Mobile (90)
5250-5450 FIXED MOBILE except aeronautical mobile					
5450-5480 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	5450-5480 AERONAUTICAL MOBILE (R)	5450-5480 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	5450-5480 AERONAUTICAL MOBILE (R) US283 US340		Aviation (87)
5480-5680 AERONAUTICAL MOBILE (R) S5.111 S5.115			5480-5680 AERONAUTICAL MOBILE (R) S5.111 S5.115 US283 US340		
5680-5730 AERONAUTICAL MOBILE (OR) S5.111 S5.115			5680-5730 AERONAUTICAL MOBILE (OR) S5.111 S5.115 US340		
5730-5900 FIXED LAND MOBILE	5730-5900 FIXED MOBILE except aeronautical mobile (R)	5730-5900 FIXED Mobile except aeronautical mobile (R)	5730-5950 FIXED MOBILE except aeronautical mobile (R) US340		International Fixed (23) Maritime (80) Aviation (87)
5900-5950 BROADCASTING S5.134 S5.136					
5950-6200 BROADCASTING			5950-6200 BROADCASTING US340		Radio Broadcast (HF) (73)
6200-6525 MARITIME MOBILE S5.109 S5.110 S5.130 S5.132 S5.137			6200-6525 MARITIME MOBILE S5.109 S5.110 S5.130 S5.132 US82 US296 US340		Maritime (80)
6525-6685 AERONAUTICAL MOBILE (R)			6525-6685 AERONAUTICAL MOBILE (R) US283 US340		Aviation (87)

6685-6765 AERONAUTICAL MOBILE (OR)			6685-6765 AERONAUTICAL MOBILE (OR) US340		
6765-7000 FIXED Land mobile S5.139 S5.138			6765-7000 FIXED Mobile S5.138 US340		ISM Equipment (18) International Fixed (23) Aviation (87)
7000-7100 AMATEUR S5.120 AMATEUR-SATELLITE S5.140 S5.141			7000-7100 US340	7000-7100 AMATEUR S5.120 AMATEUR-SATELLITE US340	Amateur (97)
7100-7300 BROADCASTING	7100-7300 AMATEUR S5.120 S5.142	7100-7300 BROADCASTING	7100-7300 US340	7100-7300 AMATEUR S5.120 S5.142 US340	
7300-7350 BROADCASTING S5.134 S5.143			7300-8100 FIXED Mobile US340		International Fixed (23) Maritime (80) Aviation (87) Private Land Mobile (90)
7350-8100 FIXED Land mobile S5.144					
8100-8195 FIXED MARITIME MOBILE			8100-8195 MARITIME MOBILE US236 US340		Maritime (80)
8195-8815 MARITIME MOBILE S5.109 S5.110 S5.132 S5.145 S5.111			8195-8815 MARITIME MOBILE S5.109 S5.110 S5.132 S5.145 S5.111 US82 US296 US340		
8815-8965 AERONAUTICAL MOBILE (R)			8815-8965 AERONAUTICAL MOBILE (R) US340		Aviation (87)
8965-9040 AERONAUTICAL MOBILE (OR)			8965-9040 AERONAUTICAL MOBILE (OR) US340		

9040-13410 kHz (HF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
9040-9400 FIXED			9040-9500 FIXED		International Fixed (23) Maritime (80) Aviation (87)
9400-9500 BROADCASTING S5.134 S5.146			 US340		
9500-9900 BROADCASTING S5.147			9500-9900 BROADCASTING S5.147 S5.148 US235 US340		International Fixed (23) Radio Broadcast (HF) (73)
9900-9995 FIXED			9900-9995 FIXED US340		International Fixed (23) Aviation (87)
9995-10003 STANDARD FREQUENCY AND TIME SIGNAL (10000 kHz) S5.111			9995-10003 STANDARD FREQUENCY AND TIME SIGNAL (10000 kHz) S5.111 US340		
10003-10005 STANDARD FREQUENCY AND TIME SIGNAL Space research S5.111			10003-10005 STANDARD FREQUENCY AND TIME SIGNAL S5.111 US340 G106	10003-10005 STANDARD FREQUENCY AND TIME SIGNAL S5.111 US340	
10005-10100 AERONAUTICAL MOBILE (R) S5.111			10005-10100 AERONAUTICAL MOBILE (R) S5.111 US283 US340		Aviation (87)
10100-10150 FIXED Amateur S5.120			10100-10150 US247 US340	10100-10150 AMATEUR S5.120 US247 US340	Amateur (97)
10150-11175 FIXED Mobile except aeronautical mobile (R)			10150-11175 FIXED Mobile except aeronautical mobile (R) US340		International Fixed (23) Aviation (87)
11175-11275 AERONAUTICAL MOBILE (OR)			11175-11275 AERONAUTICAL MOBILE (OR) US340		

11275-11400 AERONAUTICAL MOBILE (R)	11275-11400 AERONAUTICAL MOBILE (R) US283 US340		Aviation (87)
11400-11600 FIXED	11400-11650 FIXED		International Fixed (23) Aviation (87)
11600-11650 BROADCASTING S5.134 S5.146	US340		
11650-12050 BROADCASTING S5.147	11650-12050 BROADCASTING US235 US340		International Fixed (23) Radio Broadcast (HF) (73)
12050-12100 BROADCASTING S5.134 S5.146	12050-12230 FIXED		International Fixed (23) Aviation (87)
12100-12230 FIXED	US340		
12230-13200 MARITIME MOBILE S5.109 S5.110 S5.132 S5.145	12230-13200 MARITIME MOBILE S5.109 S5.110 S5.132 S5.145 US82 US296 US340		International Fixed (23) Maritime (80)
13200-13260 AERONAUTICAL MOBILE (OR)	13200-13260 AERONAUTICAL MOBILE (OR) US340		
13260-13360 AERONAUTICAL MOBILE (R)	13260-13360 AERONAUTICAL MOBILE (R) US283 US340		Aviation (87)
13360-13410 FIXED RADIO ASTRONOMY S5.149	13360-13410 RADIO ASTRONOMY S5.149 G115	13360-13410 RADIO ASTRONOMY S5.149	

13410-17900 kHz (HF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
13410-13570 FIXED Mobile except aeronautical mobile (R) S5.150			13410-13570 FIXED Mobile except aeronautical mobile (R) S5.150 US340	13410-13570 FIXED S5.150 US340	ISM Equipment (18) International Fixed (23) Aviation (87)
13570-13600 BROADCASTING S5.134 S5.151			13570-13600 FIXED Mobile except aeronautical mobile (R) US340	13570-13600 FIXED US340	International Fixed (23) Aviation (87)
13600-13800 BROADCASTING			13600-13800 BROADCASTING S5.148 US340		International Fixed (23) Radio Broadcast (HF) (73)
13800-13870 BROADCASTING S5.134 S5.151			13800-14000 FIXED Mobile except aeronautical mobile (R) US340	13800-14000 FIXED US340	International Fixed (23) Aviation (87)
13870-14000 FIXED Mobile except aeronautical mobile (R)					
14000-14250 AMATEUR S5.120 AMATEUR-SATELLITE			14000-14350	14000-14250 AMATEUR S5.120 AMATEUR-SATELLITE US340	Amateur (97)
14250-14350 AMATEUR S5.120 S5.152			US340	14250-14350 AMATEUR S5.120 US340	
14350-14990 FIXED Mobile except aeronautical mobile (R)			14350-14990 FIXED Mobile except aeronautical mobile (R) US340	14350-14990 FIXED US340	International Fixed (23) Aviation (87)

14990-15005 STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz) S5.111	14990-15005 STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz) S5.111 US340		
15005-15010 STANDARD FREQUENCY AND TIME SIGNAL Space research	15005-15010 STANDARD FREQUENCY AND TIME SIGNAL US340 G106	15005-15010 STANDARD FREQUENCY AND TIME SIGNAL US340	
15010-15100 AERONAUTICAL MOBILE (OR)	15010-15100 AERONAUTICAL MOBILE (OR) US340		
15100-15600 BROADCASTING	15100-15600 BROADCASTING S5.148 US340		International Fixed (23) Radio Broadcast (HF) (73)
15600-15800 BROADCASTING S5.134 S5.146	15600-16360 FIXED		International Fixed (23) Aviation (87)
15800-16360 FIXED S5.153	US340		
16360-17410 MARITIME MOBILE S5.109 S5.110 S5.132 S5.145	16360-17410 MARITIME MOBILE S5.109 S5.110 S5.132 S5.145 US82 US296 US340		Maritime (80)
17410-17480 FIXED	17410-17550 FIXED		International Fixed (23) Aviation (87)
17480-17550 BROADCASTING S5.134 S5.146	US340		
17550-17900 BROADCASTING	17550-17900 BROADCASTING S5.148 US340		International Fixed (23) Radio Broadcast (HF) (73)

17900-22855 kHz (HF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
17900-17970 AERONAUTICAL MOBILE (R)			17900-17970 AERONAUTICAL MOBILE (R) US283 US340		Aviation (87)
17970-18030 AERONAUTICAL MOBILE (OR)			17970-18030 AERONAUTICAL MOBILE (OR) US340		
18030-18052 FIXED			18030-18068 FIXED		International Fixed (23) Maritime (80)
18052-18068 FIXED Space research			US340		
18068-18168 AMATEUR S5.120 AMATEUR-SATELLITE S5.154			18068-18168 US340	18068-18168 AMATEUR S5.120 AMATEUR-SATELLITE US340	International Fixed (23) Amateur (97)
18168-18780 FIXED Mobile except aeronautical mobile			18168-18780 FIXED Mobile US340		International Fixed (23) Maritime (80) Aviation (87)
18780-18900 MARITIME MOBILE			18780-18900 MARITIME MOBILE US82 US296 US340		International Fixed (23) Maritime (80)
18900-19020 BROADCASTING S5.134 S5.146			18900-19680 FIXED		International Fixed (23) Aviation (87)
19020-19680 FIXED			US340		
19680-19800 MARITIME MOBILE S5.132			19680-19800 MARITIME MOBILE S5.132 US340		Maritime (80)
19800-19990 FIXED			19800-19990 FIXED US340		International Fixed (23) Aviation (87)

19990-19995 STANDARD FREQUENCY AND TIME SIGNAL Space research S5.111	19990-19995 STANDARD FREQUENCY AND TIME SIGNAL Space research G106 S5.111 US340	19990-19995 STANDARD FREQUENCY AND TIME SIGNAL Space research S5.111 US340	
19995-20010 STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz) S5.111	19995-20010 STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz) S5.111 US340 G106	19995-20010 STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz) S5.111 US340	
20010-21000 FIXED Mobile	20010-21000 FIXED Mobile US340	20010-21000 FIXED US340	
21000-21450 AMATEUR S5.120 AMATEUR-SATELLITE	21000-21450 US340	21000-21450 AMATEUR S5.120 AMATEUR-SATELLITE US340	Amateur (97)
21450-21850 BROADCASTING	21450-21850 BROADCASTING S5.148 US340		International Fixed (23) Radio Broadcast (HF) (73)
21850-21870 FIXED S5.155A S5.155	21850-21924 FIXED		International Fixed (23) Aviation (87)
21870-21924 FIXED S5.155B	US340		
21924-22000 AERONAUTICAL MOBILE (R)	21924-22000 AERONAUTICAL MOBILE (R) US340		Aviation (87)
22000-22855 MARITIME MOBILE S5.132 S5.156	22000-22855 MARITIME MOBILE S5.132 US82 US296 US340		International Fixed (23) Maritime (80)

22855-26175 kHz (HF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
22855-23000 FIXED S5.156			22855-23000 FIXED US340		International Fixed (23) Aviation (87)
23000-23200 FIXED Mobile except aeronautical mobile (R) S5.156			23000-23200 FIXED Mobile except aeronautical mobile (R) US340	23000-23200 FIXED US340	
23200-23350 FIXED S5.156A AERONAUTICAL MOBILE (OR)			23200-23350 AERONAUTICAL MOBILE (OR) US340		
23350-24000 FIXED MOBILE except aeronautical mobile S5.157			23350-24890 FIXED MOBILE except aeronautical mobile	23350-24890 FIXED	International Fixed (23) Aviation (87)
24000-24890 FIXED LAND MOBILE			US340	US340	
24890-24990 AMATEUR S5.120 AMATEUR-SATELLITE			24890-24990 US340	24890-24990 AMATEUR S5.120 AMATEUR-SATELLITE US340	Amateur (97)
24990-25005 STANDARD FREQUENCY AND TIME SIGNAL (25000 kHz)			24990-25005 STANDARD FREQUENCY AND TIME SIGNAL (25000 kHz) US340		
25005-25010 STANDARD FREQUENCY AND TIME SIGNAL Space research			25005-25010 STANDARD FREQUENCY AND TIME SIGNAL US340 G106	25005-25010 STANDARD FREQUENCY AND TIME SIGNAL US340	
25010-25070 FIXED MOBILE except aeronautical mobile			25010-25070 US340	25010-25070 LAND MOBILE US340 NG112	Private Land Mobile (90)

25070-25210 MARITIME MOBILE	25070-25210 MARITIME MOBILE US82 US281 US296 US340	25070-25210 MARITIME MOBILE US82 US281 US296 US340 NG112	Maritime (80) Private Land Mobile (90)
25210-25550 FIXED MOBILE except aeronautical mobile	25210-25330 US340	25210-25330 LAND MOBILE US340	Private Land Mobile (90)
	25330-25550 FIXED MOBILE except aeronautical mobile US340	25330-25550 US340	
25550-25670 RADIO ASTRONOMY S5.149	25550-25670 RADIO ASTRONOMY US74 S5.149		
25670-26100 BROADCASTING	25670-26100 BROADCASTING US25 US340		Radio Broadcast (HF) (73) Remote Pickup (74D)
26100-26175 MARITIME MOBILE S5.132	26100-26175 MARITIME MOBILE S5.132 US340		Auxiliary Broadcasting (74) Maritime (80)

25175-28000 kHz (HF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
26175-27500 FIXED MOBILE except aeronautical mobile			26175-26480 US340	26175-26480 LAND MOBILE US340	Auxiliary Broadcasting (74)
			26480-26950 FIXED MOBILE except aeronautical mobile US10 US340	26480-26950 US10 US340	
			26950-27410 S5.150 US340	26950-26960 FIXED S5.150 US340	ISM Equipment (18) International Fixed (23)
				26960-27230 MOBILE except aeronautical mobile S5.150 US340	ISM Equipment (18) Personal Radio (95)
				27230-27410 FIXED MOBILE except aeronautical mobile S5.150 US340	ISM Equipment (18) Private Land Mobile (90) Personal Radio (95)
S5.150			27410-27540 US340	27410-27540 FIXED LAND MOBILE US340	Private Land Mobile (90)
27500-28000 METEOROLOGICAL AIDS FIXED MOBILE			27540-28000 FIXED MOBILE US298 US340	27540-28000 US298 US340	

28-33 MHz (HF/VHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
28-29.7 AMATEUR AMATEUR-SATELLITE			28-29.89	28-29.7 AMATEUR AMATEUR-SATELLITE US340	Amateur (97)
29.7-30.005 FIXED MOBILE				29.7-29.8 LAND MOBILE US340	Private Land Mobile (90)
			US340	29.8-29.89 FIXED US340	International Fixed (23) Aviation (87)
			29.89-29.91 FIXED MOBILE US340	29.89-29.91 US340	
			29.91-30 US340	29.91-30 FIXED US340	International Fixed (23) Aviation (87)
30.005-30.01 SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH			30-30.56 FIXED MOBILE	30-30.56	
30.01-37.5 FIXED MOBILE			30.56-32	30.56-32 FIXED LAND MOBILE NG124	Private Land Mobile (90)
			32-33 FIXED MOBILE	32-33	
			See next page for 33-37.5 MHz		See next page for 33-37.5 MHz

33-50 MHz (VHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
See previous page for 30.01-37.5 MHz			33-34	33-34 FIXED LAND MOBILE NG124	Private Land Mobile (90)
			34-35 FIXED MOBILE	34-35	
			35-36	35-36 FIXED LAND MOBILE	Public Mobile (22) Private Land Mobile (90)
			36-37 FIXED MOBILE US220	36-37 US220	
			37-37.5	37-37.5 LAND MOBILE NG124	Private Land Mobile (90)
37.5-38.25 FIXED MOBILE Radio astronomy S5.149			37.5-38 Radio astronomy S5.149	37.5-38 LAND MOBILE Radio astronomy S5.149 NG59 NG124	
			38-38.25 FIXED MOBILE RADIO ASTRONOMY S5.149 US81	38-38.25 RADIO ASTRONOMY S5.149 US81	
38.25-39.986 FIXED MOBILE			38.25-39 FIXED MOBILE	38.25-39	
			39-40	39-40 LAND MOBILE NG124	Private Land Mobile (90)
39.986-40.02 FIXED MOBILE Space research			40-42 FIXED MOBILE	40-40.98	ISM Equipment (18)

40.02-40.98 FIXED MOBILE S5.150				S5.150 US210	
40.98-41.015 FIXED MOBILE Space research S5.160 S5.161				40.98-42	
41.015-44 FIXED MOBILE S5.160 S5.161			S5.150 US210 US220	US220	
			42-46.6	42-43.69 FIXED LAND MOBILE NG124 NG141	Public Mobile (22) Private Land Mobile (90)
				43.69-46.6 LAND MOBILE NG124 NG141	Private Land Mobile (90)
44-47 FIXED MOBILE S5.162 S5.162A			46.6-47 FIXED MOBILE	46.6-47	
47-68 BROADCASTING S5.162A S5.163 S5.164 S5.165 S5.169 S5.171	47-50 FIXED MOBILE See next page for 50-68 MHz	47-50 FIXED MOBILE BROADCASTING	47-49.6	47-49.6 LAND MOBILE NG124	Private Land Mobile (90)
			49.6-50 FIXED MOBILE	49.6-50	
			See next page for 50-73 MHz	See next page for 50-72 MHz	See next page for 50-72 MHz

50-123.5875 (VHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
See previous page for 47-68 MHz	50-54 AMATEUR S5.166 S5.167 S5.168 S5.170		50-73	50-54 AMATEUR	Amateur (97)
See previous page for 47-68 MHz	54-68 BROADCASTING Fixed Mobile S5.172	54-68 FIXED MOBILE BROADCASTING		54-72 BROADCASTING NG128 NG149	Broadcast Radio (TV) (73) Auxiliary Broadcasting (74)
68-74.8 FIXED MOBILE except aeronautical mobile	68-72 BROADCASTING Fixed Mobile S5.173	68-74.8 FIXED MOBILE			
	72-73 FIXED MOBILE			72-73 FIXED MOBILE NG3 NG49 NG56	Public Mobile (22) Private Land Mobile (90) Personal Radio (95)
	73-74.6 RADIO ASTRONOMY S5.178		73-74.6 RADIO ASTRONOMY US74		
S5.149 S5.174 S5.175 S5.177 S5.179	74.6-74.8 FIXED MOBILE	S5.149 S5.176 S5.179	74.6-74.8 FIXED MOBILE US273		Private Land Mobile (90)
74.8-75.2 AERONAUTICAL RADIONAVIGATION S5.180 S5.181			74.8-75.2 AERONAUTICAL RADIONAVIGATION S5.180		Aviation (87)
75.2-87.5 FIXED MOBILE except aeronautical mobile	75.2-75.4 FIXED MOBILE S5.179		75.2-75.4 FIXED MOBILE US273		Private Land Mobile (90)

S5.175 S5.179 S5.184 S5.187	75.4-76 FIXED MOBILE	75.4-87 FIXED MOBILE	75.4-88	75.4-76 FIXED MOBILE NG3 NG49 NG56	Public Mobile (22) Private Land Mobile (90) Personal Radio (95)
87.5-100 BROADCASTING S5.190	76-88 BROADCASTING Fixed Mobile S5.185	S5.149 S5.182 S5.183 S5.188		76-88 BROADCASTING NG128 NG129 NG149	Broadcast Radio (TV) (73) Auxiliary Broadcasting (74)
	88-100 BROADCASTING	87-100 FIXED MOBILE BROADCASTING	88-108 US93	88-108 BROADCASTING US93 NG2 NG128 NG129	Broadcast Radio (FM) (73) Auxiliary Broadcasting (74)
100-108 BROADCASTING S5.192 S5.194					
108-117.975 AERONAUTICAL RADIONAVIGATION S5.197			108-117.975 AERONAUTICAL RADIONAVIGATION US93		Note: The *NTIA Manual* (footnote G126) states that differential GPS stations may be authorized in the 108-117.975 MHz band, but the FCC has not yet addressed this footnote.
117.975-137 AERONAUTICAL MOBILE (R) S5.111 S5.198 S5.199 S5.200 S5.201 S5.202 S5.203 S5.203A S5.203B			117.975-121.9375 AERONAUTICAL MOBILE (R) S5.111 S5.199 S5.200 591 US26 US28		Aviation (87)
			121.9375-123.0875 591 US30 US31 US33 US80 US102 US213	121.9375-123.0875 AERONAUTICAL MOBILE 591 US30 US31 US33 US80 US102 US213	
			123.0875-123.5875 AERONAUTICAL MOBILE S5.200 591 US32 US33 US112		
			See next page for 123.5875-137 MHz		See next page for 123.5875-137 MHz

123.5875-148 MHz (VHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
See previous page for 117.975-137 MHz			123.5875-128.8125 AERONAUTICAL MOBILE (R) 591 US26		Aviation (87)
			128.8125-132.0125 591	128.8125-132.0125 AERONAUTICAL MOBILE (R) 591	
			132.0125-136.00 AERONAUTICAL MOBILE (R) 591 US26		
			136-137 591 US244	136-137 AERONAUTICAL MOBILE (R) 591 US244	Satellite Communications (25) Aviation (87)
137-137.025 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.208A S5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) S5.204 S5.205 S5.206 S5.207 S5.208			137-137.025 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 599B US318 US319 US320 SPACE RESEARCH (space-to-Earth) 599A		Satellite Communications (25)
137.025-137.175 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) S5.208A S5.209 Mobile except aeronautical mobile (R) S5.204 S5.205 S5.206 S5.207 S5.208			137.025-137.175 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-earth) Mobile-satellite (space-to-Earth) 599B US318 US319 US320 599A		
137.175-137.825 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.208A S5.209 SPACE RESEARCH (space-to-Earth) Fixed			137.175-137.825 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 599B US318 US319 US320 SPACE RESEARCH (space-to-Earth)		

Mobile except aeronautical mobile (R) S5.204 S5.205 S5.206 S5.207 S5.208			599A		
137.825-138 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) S5.208A S5.209 Mobile except aeronautical mobile (R) S5.204 S5.205 S5.206 S5.207 S5.208			137.825-138 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Mobile-satellite (space-to-Earth) 599B US318 US319 US320 599A		
138-143.6 AERONAUTICAL MOBILE (OR) S5.210 S5.211 S5.212 S5.214	138-143.6 FIXED MOBILE RADIOLOCATION Space research (space-to-Earth)	138-143.6 FIXED MOBILE Space research (space-to-Earth) S5.207 S5.213	138-144 FIXED MOBILE	138-144	
143.6-143.65 AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space-to-Earth) S5.211 S5.212 S5.214	143.6-143.65 FIXED MOBILE RADIOLOCATION SPACE RESEARCH (space-to-Earth)	143.6-143.65 FIXED MOBILE SPACE RESEARCH (space-to-Earth) S5.207 S5.213			
143.65-144 AERONAUTICAL MOBILE (OR) S5.210 S5.211 S5.212 S5.214	143.65-144 FIXED MOBILE RADIOLOCATION Space research (space-to-Earth)	143.65-144 FIXED MOBILE Space research (space-to-Earth) S5.207 S5.213	US10 G30	US10	
144-146 AMATEUR S5.120 AMATEUR-SATELLITE S5.216			144-148	144-146 AMATEUR 510 AMATEUR-SATELLITE	Amateur (97)
146-148 FIXED MOBILE except aeronautical mobile (R)	146-148 AMATEUR S5.217	146-148 AMATEUR FIXED MOBILE S5.217		146-148 AMATEUR	

148-162.0125 MHz (VHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
148-149.9 FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) S5.209 S5.218 S5.219 S5.221	148-149.9 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) S5.209 S5.218 S5.219 S5.221		148-149.9 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 599B US319 US320 US323 US325 S5.218 608A US10 G30	148-149.9 MOBILE-SATELLITE (Earth-to-space) 599B US319 US320 US323 US325 S5.218 608A US10	Satellite Communications (25)
149.9-150.05 MOBILE-SATELLITE (Earth-to-space) S5.209 S5.224A RADIONAVIGATION-SATELLITE S5.224B S5.220 S5.222 S5.223			149.9-150.05 MOBILE-SATELLITE (Earth-to-space) 599B US319 US322 RADIONAVIGATION-SATELLITE S5.223 608B		
150.05-153 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY S5.149	150.05-156.7625 FIXED MOBILE		150.05-150.8 FIXED MOBILE US216 G30	150.05-150.8 US216	
			150.8-152.855 US216	150.8-152.855 FIXED LAND MOBILE US216 NG4 NG51 NG112 NG124	Public Mobile (22) Private Land Mobile (90)
153-154 FIXED MOBILE except aeronautical mobile (R) Meteorological aids			152.855-154	152.855-154 LAND MOBILE NG4 NG124	Auxiliary Broadcasting (74) Private Land Mobile (90)
154-156.7625 FIXED MOBILE except aeronautical mobile (R) S5.226 S5.227	S5.225 S5.226 S5.227		154-156.2475 S5.226	154-156.2475 FIXED LAND MOBILE S5.226 NG112 NG117 NG124 NG148	Maritime (80) Private Land Mobile (90)
			156.2475-157.0375	156.2475-157.0375 MARITIME MOBILE	

156.7625-156.8375 MARITIME MOBILE (distress and calling) S5.111 S5.226				
156.8375-174 FIXED MOBILE except aeronautical mobile	156.8375-174 FIXED MOBILE	S5.226 S5.227 US77 US106 US107 US266	S5.226 S5.227 US77 US106 US107 US266 NG117	
		157.0375-157.1875 MARITIME MOBILE S5.226 US214 US266 G109	157.0375-157.1875 S5.226 US214 US266	Private Land Mobile (90)
		157.1875-157.45 S5.226 US223 US266	157.1875-157.45 LAND MOBILE MARITIME MOBILE S5.226 US223 US266 NG111	Maritime (80) Private Land Mobile (90)
		157.45-161.575 S5.226 US266	157.45-161.575 FIXED LAND MOBILE S5.226 US266 NG6 NG28 NG70 NG111 NG112 NG124 NG148 NG155	Public Mobile (22) Maritime (80) Private Land Mobile (90)
		161.575-161.625 S5.226 US77	161.575-161.625 MARITIME MOBILE S5.226 US77 NG6 NG17	Public Mobile (22) Maritime (80)
		161.625-161.775 S5.226	161.625-161.775 LAND MOBILE S5.226 NG6	Public Mobile (22) Auxiliary Broadcasting (74)
		161.775-162.0125 S5.226 US266	161.775-162.0125 LAND MOBILE MARITIME MOBILE S5.226 US266 NG6	Public Mobile (22) Maritime (80) Private Land Mobile (90)
S5.226 S5.229	S5.226 S5.230 S5.231 S5.232	See next page for 162.0125-174 MHz		See next page for 162.0125-174 MHz

162.0125-322 MHz (VHF/UHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
See previous page for 156.8375-174 MHz			162.0125-173.2 FIXED MOBILE S5.226 US8 US11 US13 US216 US223 US300 US312 G5	162.0125-173.2 S5.226 US8 US11 US13 US216 US223 US300 US312	Auxiliary Broadcasting (74) Private Land Mobile (90)
			173.2-173.4	173.2-173.4 FIXED Land mobile	Private Land Mobile (90)
			173.4-174 FIXED MOBILE G5	173.4-174	
174-223 BROADCASTING	174-216 BROADCASTING Fixed Mobile S5.234	174-223 FIXED MOBILE BROADCASTING	174-216	174-216 BROADCASTING NG115 NG128 NG149	Broadcast Radio (TV) (73) Auxiliary Broadcasting (74)
	216-220 FIXED MARITIME MOBILE Radiolocation S5.241 S5.242		216-220 MARITIME MOBILE Fixed Radiolocation S5.241 G2 Aeronautical mobile Land mobile US210 US229 US274 US317	216-220 MARITIME MOBILE Fixed Aeronautical mobile Land mobile US210 US229 US274 US317 NG152	Maritime (80) Private Land Mobile (90) Personal Radio (95) Amateur (97) Note: 216-220 MHz will become a mixed-use band in January 2002
	220-225 AMATEUR FIXED MOBILE Radiolocation S5.241		220-222 FIXED LAND MOBILE Radiolocation S5.241 G2 US335	220-222 FIXED LAND MOBILE US335	Private Land Mobile (90)
S5.235 S5.237 S5.243		S5.233 S5.238 S5.240 S5.245	222-225 Radiolocation S5.241 G2	222-225 AMATEUR	Amateur (97)

223-230 BROADCASTING Fixed Mobile S5.243 S5.246 S5.247	225-235 FIXED MOBILE	223-230 FIXED MOBILE BROADCASTING AERONAUTICAL RADIONAVIGATION Radiolocation S5.250	225-235 FIXED MOBILE	225-235	
230-235 FIXED MOBILE S5.247 S5.251 S5.252		230-235 FIXED MOBILE AERONAUTICAL RADIONAVIGATION S5.250	G27		
235-267 FIXED MOBILE S5.111 S5.199 S5.252 S5.254 S5.256			235-267 FIXED MOBILE S5.111 S5.199 S5.256 G27 G100	235-267 S5.111 S5.199 S5.256	
267-272 FIXED MOBILE Space operation (space-to-Earth) S5.254 S5.257			267-322 FIXED MOBILE	267-322	
272-273 SPACE OPERATION (space-to-Earth) FIXED MOBILE S5.254					
273-312 FIXED MOBILE S5.254					
312-315 FIXED MOBILE Mobile-satellite (Earth-to-space) S5.254 S5.255					
See next page for 315-322 MHz			G27 G100		

322-410 MHz (UHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
315-322 FIXED MOBILE S5.254			See previous page for 267-322 MHz		See previous page for 267-322 MHz
322-328.6 FIXED MOBILE RADIO ASTRONOMY S5.149			322-328.6 FIXED MOBILE S5.149 G27	322-328.6 S5.149	
328.6-335.4 AERONAUTICAL RADIONAVIGATION S5.258 S5.259			328.6-335.4 AERONAUTICAL RADIONAVIGATION S5.258		
335.4-387 FIXED MOBILE S5.254			335.4-399.9 FIXED MOBILE G27 G100	335.4-399.9	
387-390 FIXED MOBILE Mobile-satellite (space-to-Earth) S5.208A S5.254 S5.255					
390-399.9 FIXED MOBILE S5.254					
399.9-400.05 MOBILE-SATELLITE (Earth-to-space) S5.209 A5.224A RADIONAVIGATION-SATELLITE S5.222 S5.224B S5.260 S5.220			399.9-400.05 MOBILE-SATELLITE (Earth-to-space) US319 US322 RADIONAVIGATION-SATELLITE S5.260		
400.05-400.15 STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) S5.261 S5.262			400.05-400.15 STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) S5.261		

400.15-401 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.208A S5.209 SPACE RESEARCH (space-to-Earth) S5.263 Space operation (space-to-Earth) S5.262 S5.264	400.15-401 METEOROLOGICAL AIDS (radiosonde) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 599B US319 US320 US324 SPACE RESEARCH (space-to-Earth) S5.263 Space operation (space-to-Earth) 647B US70	400.15-401 METEOROLOGICAL AIDS (radiosonde) MOBILE-SATELLITE (space-to-Earth) 599B US319 US320 US324 SPACE RESEARCH (space-to-Earth) S5.263 Space operation (space-to-Earth) 647B US70	Satellite Communications (25)
401-402 METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	401-402 METEOROLOGICAL AIDS (radiosonde) SPACE OPERATION (space-to-Earth) Earth exploration-satellite (Earth-to-space) Meteorological-satellite (Earth-to-space) US70		
402-403 METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	402-403 METEOROLOGICAL AIDS (radiosonde) US70 Earth exploration-satellite (Earth-to-space) Meteorological-satellite (Earth-to-space) US345		Personal Radio (95)
403-406 METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile	403-406 METEOROLOGICAL AIDS (radiosonde) US70 US345 G6	403-406 METEOROLOGICAL AIDS (radiosonde) US70 US345	
406-406.1 MOBILE-SATELLITE (Earth-to-space) S5.266 S5.267	406-406.1 MOBILE-SATELLITE (Earth-to-space) S5.266 S5.267		
406.1-410 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY S5.149	406.1-410 FIXED MOBILE RADIO ASTRONOMY US74 US13 US117 G5 G6	406.1-410 RADIO ASTRONOMY US74 US13 US117	

410-470 MHz (UHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
410-420 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) S5.268			410-420 FIXED MOBILE US13 G5	410-420 US13	
420-430 FIXED MOBILE except aeronautical mobile Radiolocation S5.269 S5.270 S5.271			420-450 RADIOLOCATION G2 S5.286 US7 US87 US217 US228 US230 G8	420-450 Amateur S5.282 S5.286 US7 US87 US217 US228 US230 NG135	Private Land Mobile (90) Amateur (97)
430-440 AMATEUR RADIOLOCATION S5.138 S5.271 S5.272 S5.273 S5.274 S5.275 S5.276 S5.277 S5.280 S5.281 S5.282 S5.283	430-440 RADIOLOCATION Amateur S5.271 S5.276 S5.277 S5.278 S5.279 S5.281 S5.282				
440-450 FIXED MOBILE except aeronautical mobile Radiolocation S5.269 S5.270 S5.271 S5.284 S5.285 S5.286					
450-455 FIXED MOBILE S5.209 S5.271 S5.286 S5.286A S5.286B S5.286C S5.286D S5.286E			450-454 S5.286 US87 454-456	450-454 LAND MOBILE S5.286 US87 NG112 NG124 454-455 FIXED LAND MOBILE NG12 NG112 NG148	Auxiliary Broadcasting (74) Private Land Mobile (90) Public Mobile (22) Maritime (80)
455-456 FIXED MOBILE S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E	455-456 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) S5.286A S5.286B S5.286C S5.209 S5.271	455-456 FIXED MOBILE S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E		455-456 LAND MOBILE	Auxiliary Broadcasting (74)

456-459 FIXED MOBILE S5.271 S5.287 S5.288			456-460	456-460 FIXED LAND MOBILE S5.288 669 NG112 NG124 NG148	Public Mobile (22) Maritime (80) Private Land Mobile (90)
459-460 FIXED MOBILE S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E	459-460 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) S5.286A S5.286B S5.286C S5.209 S5.271	459-460 FIXED MOBILE S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E	S5.288 669		
460-470 FIXED MOBILE Meteorological-satellite (space-to-Earth) S5.287 S5.288 S5.289 S5.290			460-470 Meteorological-satellite (space-to-Earth) S5.288 S5.289 669 US201 US209 US216	460-462.5375 FIXED LAND MOBILE S5.289 US201 US209 NG124	Private Land Mobile (90)
				462.5375-462.7375 LAND MOBILE S5.289 US201	Personal Radio (95)
				462.7375-467.5375 FIXED LAND MOBILE S5.289 669 US201 US209 US216 NG124	Private Land Mobile (90)
				467.5375-467.7375 LAND MOBILE S5.289 669 US201	Personal Radio (95)
				467.7375-470 FIXED LAND MOBILE S5.288 S5.289 US201 US216 NG124	Private Land Mobile (90)

470-849 MHz (UHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
470-790 BROADCASTING	470-512 BROADCASTING Fixed Mobile S5.292 S5.293	470-585 FIXED MOBILE BROADCASTING S5.291 S5.298	470-608	470-512 FIXED BROADCASTING LAND MOBILE NG66 NG114 NG127 NG128 NG149	Public Mobile (22) Broadcast Radio (TV) (73) Auxiliary Broadcasting (74) Private Land Mobile (90)
	512-608 BROADCASTING S5.297	585-610 FIXED MOBILE BROADCASTING RADIONAVIGATION S5.149 S5.305 S5.306 S5.307		512-608 BROADCASTING NG128 NG149	Broadcast Radio (TV) (73) Auxiliary Broadcasting (74)
	608-614 RADIO ASTRONOMY Mobile-satellite except aeronautical mobile-satellite (Earth-to-space)	610-890 FIXED MOBILE BROADCASTING	608-614 RADIO ASTRONOMY US74 US246		
	614-806 BROADCASTING Fixed Mobile		614-890	614-698 BROADCASTING NG128 NG149	Broadcast Radio (TV) (73) Auxiliary Broadcast. (74)
				698-746 BROADCASTING NG128 NG149	Broadcast Radio (TV) (73) Auxiliary Broadcast. (74) Note: Band to be reallocated and auction-ed by Sept. 30, 2002.

S5.149 S5.291A S5.294 S5.296 S5.300 S5.302 S5.304 S5.306 S5.311 S5.312				746-764 FIXED MOBILE BROADCASTING NG128 NG159	Wireless Communications (27) Broadcast Radio (TV) (73) Auxiliary Broadcasting (74) Private Land Mobile (90)
				764-776 FIXED MOBILE NG128 NG158 NG159	Auxiliary Broadcasting (74) Private Land Mobile (90)
790-862 FIXED BROADCASTING				776-794 FIXED MOBILE BROADCASTING NG128 NG159	Wireless Communications (27) Broadcast Radio (TV) (73) Auxiliary Broadcast. (74) Private Land Mobile (90)
	S5.293 S5.309 S5.311			794-806 FIXED MOBILE NG128 NG158 NG159	Auxiliary Broadcasting (74) Private Land Mobile (90)
	806-890 FIXED MOBILE BROADCASTING			806-821 FIXED LAND MOBILE NG30 NG31 NG43 NG63	Public Mobile (22) Private Land Mobile (90)
				821-824 LAND MOBILE NG30 NG43 NG63	Private Land Mobile (90)
S5.312 S5.314 S5.315 S5.316 S5.319 S5.321				824-849 FIXED LAND MOBILE NG30 NG43 NG63 NG151	Public Mobile (22)
See next page for 862-890 MHz	S5.317 S5.318	S5.149 S5.305 S5.306 S5.307 S5.311 S5.320		See next page for 849-894 MHz	See next page for 866-896 MHz

849-941 MHz (UHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
See previous pages for 470-862 MHz	See previous pages for 614-890 MHz	See previous pages for 585-890 MHz	See previous pages for 614-890 MHz	See previous pages for 614-849 MHz	See previous pages for 614-849 MHz
				849-851 AERONAUTICAL MOBILE NG30 NG63	Public Mobile (22)
				851-866 FIXED LAND MOBILE NG30 NG31 NG63	Public Mobile (22) Private Land Mobile (90)
862-890 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322 S5.319 S5.323				866-869 LAND MOBILE NG30 NG63	Private Land Mobile (90)
				869-894 FIXED LAND MOBILE US116 US268 NG30 NG63 NG151	Public Mobile (22)
890-942 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322 Radiolocation	890-902 FIXED MOBILE except aeronautical mobile Radiolocation S5.318 S5.325	890-942 FIXED MOBILE BROADCASTING Radiolocation	890-902 US116 US268 G2	894-896 AERONAUTICAL MOBILE US116 US268	
				896-901 FIXED LAND MOBILE US116 US268	Private Land Mobile (90)
				901-902 FIXED MOBILE US116 US268	Personal Communications (24)

S5.323	902-928 FIXED Amateur Mobile except aeronautical mobile Radiolocation S5.150 S5.325 S5.326	S5.327	902-928 RADIOLOCATION G59 S5.150 US215 US218 US267 US275 G11	902-928 S5.150 US215 US218 US267 US275	ISM Equipment (18) Private Land Mobile (90) Amateur (97)
	928-942 FIXED MOBILE except aeronautical mobile Radiolocation		928-932 US116 US215 US268 G2	928-929 FIXED US116 US215 US268 NG120	Public Mobile (22) Private Land Mobile (90) Fixed Microwave (101)
				929-930 FIXED LAND MOBILE US116 US215 US268	Private Land Mobile (90)
				930-931 FIXED MOBILE US116 US215 US268	Personal Communications (24)
				931-932 FIXED LAND MOBILE US116 US215 US268	Public Mobile (22)
			932-935 FIXED US215 US268 G2	932-935 FIXED US215 US268 NG120	Public Mobile (22) Fixed Microwave (101)
			935-940 US116 US215 US268 G2	935-940 FIXED LAND MOBILE US116 US215 US268	Private Land Mobile (90)
			940-941 US116 US268 G2	940-941 FIXED MOBILE US116 US268	Personal Communications (24)
			See next page for 941-944 MHz		See next page for 941-944 MHz

941-1429 MHz (UHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
See previous page for 890-942 MHz	See previous page for 928-942 MHz	See previous page for 890-942 MHz	941-944 FIXED US268 US301 US302 G2	941-944 FIXED US268 US301 US302 NG120	Public Mobile (22) Fixed Microwave (101)
942-960 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322 S5.323	942-960 FIXED MOBILE	942-960 FIXED MOBILE BROADCASTING S5.320	944-960	944-960 FIXED NG120	Public Mobile (22) International Fixed (23) Auxiliary Broadcast. (74) Fixed Microwave (101)
960-1215 AERONAUTICAL RADIONAVIGATION S5.328			960-1215 AERONAUTICAL RADIONAVIGATION S5.328 US224		Aviation (87)
1215-1240 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) S5.329 SPACE RESEARCH (active) S5.330 S5.331 S5.332			1215-1240 RADIOLOCATION S5.333 G56 RADIONAVIGATION-SATELLITE (space-to-Earth)	1215-1240 S5.333	
1240-1260 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) S5.329 SPACE RESEARCH (active) Amateur S5.330 S5.331 S5.332 S5.334 S5.335			1240-1300 RADIOLOCATION S5.333 G56	1240-1300 Amateur	Amateur (97)
1260-1300 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Amateur S5.282 S5.330 S5.331 S5.332 S5.334 S5.335			S5.334	S5.282 S5.333 S5.334	

1300-1350 AERONAUTICAL RADIONAVIGATION S5.337 Radiolocation S5.149		1300-1350 AERONAUTICAL RADIO-NAVIGATION S5.337 Radiolocation G2 S5.149	1300-1350 AERONAUTICAL RADIO-NAVIGATION S5.337 S5.149	Aviation (87)
1350-1400 FIXED MOBILE RADIOLOCATION S5.149 S5.338 S5.339	1350-1400 RADIOLOCATION S5.149 S5.334 S5.339	1350-1390 RADIOLOCATION G2 Fixed Mobile S5.149 S5.334 S5.339 US311 G27 G114	1350-1390 S5.149 S5.334 S5.339	
		1390-1400 RADIOLOCATION G2 Fixed Mobile S5.149 US311 S5.339 G27 G114	1390-1400 S5.149 S5.339	Note: 1390-1400 MHz became non-Federal government exclusive spectrum in January 1999
1400-1427 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.341		1400-1427 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) S5.341 US246		
1427-1429 SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile S5.341		1427-1429 SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile S5.341 G30	1427-1429 SPACE OPERATION (Earth-to-space) Fixed (telemetry) Land mobile (telemetry and telecommand) S5.341	Satellite Communications (25) Private Land Mobile (90) Note: 1427-1429 MHz became non-Federal government exclusive spectrum in January 1999

1429-1610 MHz (UHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
1429-1452 FIXED MOBILE except aeronautical mobile S5.341 S5.342	1429-1452 FIXED MOBILE S5.343 S5.341		1429-1435 FIXED MOBILE S5.341 G30	1429-1435 Fixed (telemetry) Land mobile (telemetry and telecommand) S5.341	Private Land Mobile (90) Note: In January 1999, 1429-1432 MHz became non-Federal government exclusive spectrum and 1432-1435 MHz became mixed-use spectrum
1452-1492 FIXED MOBILE except aeronautical mobile BROADCASTING S5.345 S5.347 BROADCASTING-SATELLITE S5.345 S5.347 S5.341 S5.342	1452-1492 FIXED MOBILE S5.343 BROADCASTING S5.345 S5.347 BROADCASTING-SATELLITE S5.345 S5.347 S5.341 S5.344		1435-1525 MOBILE (aeronautical telemetry)		Aviation (87)
1492-1525 FIXED MOBILE except aeronautical mobile S5.341 S5.342	1492-1525 FIXED MOBILE S5.343 MOBILE-SATELLITE (space-to-Earth) S5.348A S5.341 S5.344 S5.348	1492-1525 FIXED MOBILE S5.341 S5.348A	S5.341 US78		
1525-1530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Mobile except aeronautical mobile S5.349 S5.341 S5.342 S5.350 S5.351 S5.352A S5.354	1525-1530 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Fixed Mobile S5.343 S5.341 S5.351 S5.354	1525-1530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Mobile S5.349 S5.341 S5.351 S5.352A S5.354	1525-1530 MOBILE-SATELLITE (space-to-Earth) Mobile (aeronautical telemetry) S5.341 S5.351 US78		Satellite Communications (25) Aviation (87)
1530-1535 SPACE OPERATION (space-to-Earth)	1530-1535 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.353A		1530-1535 MOBILE-SATELLITE (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth)		

MOBILE-SATELLITE (space-to-Earth) S5.353A Earth exploration-satellite Fixed Mobile except aeronautical mobile S5.341 S5.342 S5.351 S5.354	Earth exploration-satellite Fixed Mobile S5.343 S5.341 S5.351 S5.354	Mobile (aeronautical telemetry) S5.341 S5.351 US78 US315	
1535-1559 MOBILE-SATELLITE (space-to-Earth) S5.341 S5.351 S5.353A S5.354 S5.355 S5.356 S5.357 S5.357A S5.359 S5.362A		1535-1544 MOBILE-SATELLITE (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) S5.341 S5.351 US315	Satellite Communications (25) Maritime (80)
		1544-1545 MOBILE-SATELLITE (space-to-Earth) S5.341 S5.356	
		1545-1549.5 AERONAUTICAL MOBILE-SATELLITE (R) (space-to-Earth) Mobile-satellite (space-to-Earth) S5.341 S5.351 US308 US309	Aviation (87)
		1549.5-1558.5 AERONAUTICAL MOBILE-SATELLITE (R) (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.341 S5.351 US308 US309	
		1558.5-1559 AERONAUTICAL MOBILE-SATELLITE (R) (space-to-Earth) S5.341 S5.351 US308 US309	
1559-1610 AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) S5.341 S5.355 S5.359 S5.363		1559-1610 AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) S5.341 US208 US260	Note: The *NTIA Manual* (footnote G126) states that differential GPS stations may be authorized in the 1559-1610 MHz band, but the FCC has not yet addressed this footnote.

1610-1670 MHz (UHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
1610-1610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION S5.341 S5.355 S5.359 S5.363 S5.364 S5.366 S5.367 S5.368 S5.369 S5.371 S5.372	1610-1610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION RADIODETERMINATION-SATELLITE (Earth-to-space) S5.341 S5.364 S5.366 S5.367 S5.368 S5.370 S5.372	1610-1610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION Radiodetermination-Satellite (Earth-to-space) S5.341 S5.355 S5.359 S5.364 S5.366 S5.367 S5.368 S5.369 S5.372	1610-1610.6 MOBILE-SATELLITE (Earth-to-space) US319 AERONAUTICAL RADIONAVIGATION US260 RADIODETERMINATION-SATELLITE(Earth-to-space) S5.341 S5.364 S5.366 S5.367 S5.368 S5.372 US208		Satellite Communications (25) Aviation (87)
1610.6-1613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION S5.149 S5.341 S5.355 S5.359 S5.363 S5.364 S5.366 S5.367 S5.368 S5.369 S5.371 S5.372	1610.6-1613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION RADIODETERMINATION-SATELLITE (Earth-to-space) S5.149 S5.341 S5.364 S5.366 S5.367 S5.368 S5.370 S5.372	1610.6-1613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-space) S5.149 S5.341 S5.355 S5.359 S5.364 S5.366 S5.367 S5.368 S5.369 S5.372	1610.6-1613.8 MOBILE-SATELLITE (Earth-to-space) US319 RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION US260 RADIODETERMINATION-SATELLITE (Earth-to-space) S5.341 S5.364 S5.366 S5.367 S5.368 S5.372 US208		
1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) S5.341 S5.355 S5.359 S5.363 S5.364 S5.365 S5.366 S5.367 S5.368 S5.369 S5.371 S5.372	1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION RADIODETERMINATION-SATELLITE (Earth-to-space) Mobile-satellite (space-to-Earth) S5.341 S5.364 S5.365 S5.366 S5.367 S5.368 S5.370 S5.372	1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) Radiodetermination-satellite (Earth-to-space) S5.341 S5.355 S5.359 S5.364 S5.365 S5.366 S5.367 S5.368 S5.369 S5.372	1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) US319 AERONAUTICAL RADIONAVIGATION US260 RADIODETERMINATION-SATELLITE (Earth-to-space) Mobile-satellite (space-to-Earth) S5.341 S5.364 S5.365 S5.366 S5.367 S5.368 S5.372 US208		

1626.5-1660 MOBILE-SATELLITE (Earth-to-space) S5.341 S5.351 S5.353A S5.354 S5.355 S5.357A S5.359 S5.362A S5.374 S5.375 S5.376	1626.5-1645.5 MOBILE-SATELLITE (Earth-to-space) MARITIME MOBILE-SATELLITE (Earth-to-space) S5.341 S5.351 US315	Satellite Communications (25) Maritime (80)
	1645.5-1646.5 MOBILE-SATELLITE (Earth-to-space) S5.341 S5.375	
	1646.5-1651 AERONAUTICAL MOBILE-SATELLITE (R) (Earth-to-space) Mobile-satellite (Earth-to-space) S5.341 S5.351 US308 US309	Aviation (87)
	1651-1660 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL MOBILE-SATELLITE (R) (Earth-to-space) S5.341 S5.351 US308 US309	
1660-1660.5 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY S5.149 S5.341 S5.351 S5.354 S5.362A S5.376A	1660-1660.5 AERONAUTICAL MOBILE-SATELLITE (R) (Earth-to-space) RADIO ASTRONOMY S5.149 S5.341 S5.351 US308 US309	
1660.5-1668.4 RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile S5.149 S5.341 S5.379 S5.379A	1660.5-1668.4 RADIO ASTRONOMY US74 SPACE RESEARCH (passive) S5.341 US246	
1668.4-1670 METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY S5.149 S5.341	1668.4-1670 METEOROLOGICAL AIDS (radiosonde) RADIO ASTRONOMY US74 S5.149 S5.341 US99	

1670-2110 MHz (UHF)

International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
1670-1675 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE S5.380 S5.341			1670-1675 METEOROLOGICAL AIDS (radiosonde) METEOROLOGICAL-SATELLITE (space-to-Earth) S5.341 US211		Note: 1670-1675 MHz became mixed-use spectrum in January 1999
1675-1690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE except aeronautical mobile S5.341	1675-1690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) S5.341 S5.377	1675-1690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE except aeronautical mobile S5.341	1675-1700 METEOROLOGICAL AIDS (radiosonde) METEOROLOGICAL-SATELLITE (space-to-Earth) S5.289 S5.341 US211		
1690-1700 METEOROLOGICAL AIDS METEOROLOGICAL-SAT-ELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile S5.289 S5.341 S5.382	1690-1700 METEOROLOGICAL AIDS METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE-SATELLITE (Earth-to-space) S5.289 S5.341 S5.377 S5.381	1690-1700 METEOROLOGICAL AIDS METEOROLOGICAL-SAT-ELLITE (space-to-Earth) S5.289 S5.341 S5.381			
1700-1710 FIXED METEOROLOGICAL-SAT-ELLITE (space- to-Earth) MOBILE except aeronautical mobile S5.289 S5.341	1700-1710 FIXED METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) S5.289 S5.341 S5.377	1700-1710 FIXED METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE except aeronautical mobile S5.289 S5.341 S5.384	1700-1710 FIXED G118 METEOROLOGICAL-SAT-ELLITE (space-to-Earth) S5.289 S5.341	1700-1710 METEOROLOGICAL-SAT-ELLITE (space-to-Earth) Fixed S5.289 S5.341	
1710-1930 FIXED MOBILE S5.380			1710-1755 FIXED MOBILE S5.341 US256	1710-1755 S5.341 US256	Note: Proceeds from the auction of the 1710-1755 MHz mixed-use band are to be deposited not later than September 30, 2002.

S5.149 S5.341 S5.385 S5.386 S5.387 S5.388			1755-1850 FIXED MOBILE G42	1755-1850	
1930-1970 FIXED MOBILE S5.388	1930-1970 FIXED MOBILE Mobile-satellite (Earth-to-space) S5.388	1930-1970 FIXED MOBILE S5.388	1850-1990	1850-1990 FIXED MOBILE	RF Devices (15) Personal Communications (24) Fixed Microwave (101)
1970-1980 FIXED MOBILE S5.388					
1980-2010 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) S5.388 S5.389A S5.389B S5.389F			1990-2025	1990-2025 MOBILE-SATELLITE (Earth-to-space)	Satellite Communications (25) Auxiliary Broadcasting (74) Cable TV Relay (78)
2010-2025 FIXED MOBILE S5.388	2010-2025 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) S5.388 S5.389C S5.389D S5.389E S5.390	2010-2025 FIXED MOBILE S5.388	US111	US111	
2025–2110 SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE S5.391 SPACE RESEARCH (Earth-to-space) (space-to-space) S5.392			2025-2110 US90 US111 US219 US222	2025-2110 FIXED MOBILE US90 US111 US219 US222 NG23 NG118	Auxiliary Broadcasting (74) Cable TV Relay (78)

2110-2345 MHz (UHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
2110-2120 FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) S5.388			2110-2130 US111 US252	2110-2130 FIXED MOBILE US111 US252 NG23 NG118	Public Mobile (22) Auxiliary Broadcasting (74) Cable TV Relay (78) Fixed Microwave (101) Note: 2110-2150 MHz must be auctioned by September 30, 2002.
2120-2160 FIXED MOBILE S5.388	2120-2160 FIXED MOBILE Mobile-satellite (space-to-Earth) S5.388	2120-2160 FIXED MOBILE S5.388	2130-2200	2130-2150 FIXED MOBILE NG23 NG153	Public Mobile (22) Fixed Microwave (101)
				2150-2160 FIXED NG23	Domestic Public Fixed (21) Fixed Microwave (101)
2160-2170 FIXED MOBILE S5.388 S5.392A	2160-2170 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) S5.388 S5.389C S5.389D S5.389E S5.390	2160-2170 FIXED MOBILE S5.388		2160-2165 FIXED MOBILE NG23 NG153	Domestic Public Fixed (21) Public Mobile (22) Fixed Microwave (101)
2170-2200 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) S5.388 S5.389A S5.389F S5.392A				2165-2200 MOBILE-SATELLITE (space-to-Earth) NG23	Public Mobile (22) Satellite Communications (25) Fixed Microwave (101)
2200-2290 SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED MOBILE S5.391 SPACE RESEARCH (space-to-Earth) (space-to-space)			2200-2290 SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED (line-of-sight only)	2200-2290	

S5.392		MOBILE (line-of-sight only including aeronautical telemetry, but excluding flight testing of manned aircraft) SPACE RESEARCH (space-to-Earth) (space-to-space) S5.392 US303	US303	
2290-2300 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)		2290-2300 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	2290-2300 SPACE RESEARCH (deep space) (space-to-Earth)	
2300-2450 FIXED MOBILE Amateur Radiolocation	2300-2450 FIXED MOBILE RADIOLOCATION Amateur	2300-2305 G123	2300-2305 Amateur	Amateur (97) Note: 2300-2305 MHz became non-Federal government exclusive spectrum in August 1995
		2305-2310 US338 G123	2305-2310 FIXED MOBILE except aeronautical mobile RADIOLOCATION Amateur US338	Wireless Communications (27) Amateur (97)
		2310-2360 Fixed Mobile US339 Radiolocation G2	2310-2320 FIXED MOBILE US339 RADIOLOCATION BROADCASTING-SATELLITE US327 S5.396 US338	Wireless Communications (27)
			2320-2345 BROADCASTING-SATELLITE US327 Mobile US276 US328 S5.396	
S5.150 S5.282 S5.395	S5.150 S5.282 S5.393 S5.394 S5.396	S5.396 US327 US328 G120 See next page	See next page	See next page

2345-2655 MHz (UHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
See previous page for 2300-2450 MHz			See previous page for 2310-2360 MHz	2345-2360 FIXED MOBILE US339 RADIOLOCATION BROADCASTING-SATELLITE US327 S5.396	Wireless Communications (27)
			2360-2385 MOBILE US276 RADIOLOCATION G2 Fixed G120	2360-2385 MOBILE US276	
			2385-2390 MOBILE US276 RADIOLOCATION G2 Fixed G120	2385-2390 MOBILE US276	Note: 2385-2390 MHz will become non-Federal government exclusive spectrum in January 2005
			2390-2400 G122	2390-2400 AMATEUR	RF Devices (15) Amateur (97)
			2400-2402 S5.150 G123	2400-2402 Amateur S5.150 S5.282	ISM Equipment (18) Amateur (97)
			2402-2417 S5.150 G122	2402-2417 AMATEUR S5.150 S5.282	RF Devices (15) ISM Equipment (18) Amateur (97)
			2417-2450 Radiolocation G2 S5.150 G124	2417-2450 Amateur S5.150 S5.282	ISM Equipment (18) Amateur (97)
2450-2483.5 FIXED MOBILE Radiolocation S5.150 S5.397	2450-2483.5 FIXED MOBILE RADIOLOCATION S5.150 S5.394		2450-2483.5 S5.150 US41	2450-2483.5 FIXED MOBILE Radiolocation S5.150 US41	ISM Equipment (18) Private Land Mobile (90) Fixed Microwave (101)

2483.5-2500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) Radiolocation S5.150 S5.371 S5.397 S5.398 S5.399 S5.400 S5.402	2483.5-2500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) RADIOLOCATION RADIODETERMINATION-SATELLITE (space-to-Earth) S5.398 S5.150 S5.402	2483.5-2500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) RADIOLOCATION Radiodetermination-satellite (space-to-Earth) S5.398 S5.150 S5.400 S5.402	2483.5-2500 MOBILE-SATELLITE (space-to-Earth) US319 RADIODETERMINATION-SATELLITE (space-to-Earth) S5.398 S5.150 753F US41	2483.5-2500 MOBILE-SATELLITE (space-to-Earth) US319 RADIODETERMINATION-SATELLITE (space-to-Earth) S5.398 S5.150 753F US41 NG147	ISM Equipment (18) Satellite Communications (25) Private Land Mobile (90) Fixed Microwave (101)
2500-2520 FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) S5.403 S5.405 S5.407 S5.408 S5.412 S5.414	2500-2520 FIXED S5.409 S5.411 FIXED-SATELLITE (space-to-Earth) S5.415 MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) S5.403 S5.404 S5.407 S5.414 S5.415A		2500-2655	2500-2655 FIXED S5.409 S5.411 US205 FIXED-SATELLITE (space-to-Earth) NG102 BROADCASTING-SATELLITE NG101	Domestic Public Fixed (21) Auxiliary Broadcasting (74)
2520-2655 FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.339 S5.403 S5.405 S5.408 S5.412 S5.417 S5.418	2520-2655 FIXED S5.409 S5.411 FIXED-SATELLITE (space-to-Earth) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.339 S5.403	2520-2535 FIXED S5.409 S5.411 FIXED-SATELLITE (space-to-Earth) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.403 S5.415A 2535-2655 FIXED S5.409 S5.411 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.339 S5.418			

2655-3700 MHz (UHF/SHF) Page 53

International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
2655-2670 FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.412 S5.417 S5.420	2655-2670 FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.420	2655-2670 FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.420	2655-2690 Earth exploration-satellite (passive) Radio astronomy Space research (passive) US205 US269	2655-2690 FIXED US205 NG47 FIXED-SATELLITE (Earth-to-space) NG102 BROADCASTING-SATELLITE NG101 Earth exploration-satellite (passive) Radio astronomy Space research (passive) US269	
2670-2690 FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.419 S5.420	2670-2690 FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) S5.415 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.419 S5.420	2670-2690 FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) S5.415 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.419 S5.420 S5.420A			
2690-2700 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.421 S5.422			2690-2700 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US246		
2700-2900 AERONAUTICAL RADIONAVIGATION S5.337 Radiolocation S5.423 S5.424			2700-2900 AERONAUTICAL RADIO-NAVIGATION S5.337 METEOROLOGICAL AIDS Radiolocation G2 S5.423 US18 G15	2700-2900 S5.423 US18	

2900-3100 RADIONAVIGATION S5.426 Radiolocation S5.425 S5.427			2900-3100 MARITIME RADIONAVIGATION Radiolocation G56 S5.427 US44 US316	2900-3100 MARITIME RADIONAVIGATION Radiolocation S5.5427 US44 US316	Maritime (80)
3100-3300 RADIOLOCATION Earth exploration-satellite (active) Space research (active) S5.149 S5.428			3100-3300 RADIOLOCATION S5.333 US110 G59 S5.149	3100-3300 Radiolocation S5.333 US110 S5.149	
3300-3400 RADIOLOCATION S5.149 S5.429 S5.430	3300-3400 RADIOLOCATION Amateur Fixed Mobile S5.149 S5.430	3300-3400 RADIOLOCATION Amateur S5.149 S5.429	3300-3500 RADIOLOCATION US108 G31 S5.149	3300-3500 Amateur Radiolocation US108 S5.149 S5.282	Amateur (97)
3400-3600 FIXED FIXED-SATELLITE (space-to-Earth) Mobile Radiolocation S5.431	3400-3500 FIXED FIXED-SATELLITE (space-to-Earth) Amateur Mobile Radiolocation S5.433 S5.282 S5.432				
	3500-3700 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile Radiolocation S5.433 S5.435		3500-3650 RADIOLOCATION US110 G59 AERONAUTICAL RADIONAVIGATION (ground-based) G110 US245	3500-3600 Radiolocation US110	
3600-4200 FIXED FIXED-SATELLITE (space-to-Earth) Mobile				3600-3650 FIXED-SATELLITE (space-to-Earth) US245 Radiolocation US110	
			3650-3700 RADIOLOCATION US110 G59 AERONAUTICAL RADIONAVIGATION (ground-based) G110 US245	3650-3700 FIXED-SATELLITE (space-to-Earth) US245 Radiolocation US110	Note: 3650-3700 MHz became mixed-use spectrum in January 1999
	See next page for 3700-4200 MHz		See next page for 3700-4200 MHz		

3700-5650 MHz (SHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
See previous page for 3600-4200 MHz	3700-4200 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile		3700-4200	3700-4200 FIXED NG41 FIXED-SATELLITE (space-to-Earth)	International Fixed (23) Satellite Communications (25) Fixed Microwave (101)
4200-4400 AERONAUTICAL RADIONAVIGATION S5.438 S5.437 S5.439 S5.440			4200-4400 AERONAUTICAL RADIONAVIGATION S5.440 US261		Aviation (87)
4400-4500 FIXED MOBILE			4400-4500 FIXED MOBILE	4400-4500	
4500-4800 FIXED FIXED-SATELLITE (space-to-Earth) S5.441 MOBILE			4500-4800 FIXED MOBILE US245	4500-4800 FIXED-SATELLITE (space-to-Earth) 792A US245	
4800-4990 FIXED MOBILE S5.442 Radio astronomy S5.149 S5.339 S5.443			4800-4940 FIXED MOBILE S5.149 US203	4800-4940 S5.149 US203	
			4940-4990 FIXED MOBILE S5.149 S5.339 US257	4940-4990 S5.149 S5.339 US257	Note: 4940-4990 MHz became non-Federal government exclusive spectrum in March 1999
4990-5000 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) S5.149			4990-5000 RADIO ASTRONOMY US74 Space research (passive) US246		
5000-5150 AERONAUTICAL RADIONAVIGATION S5.367 S5.444 S5.444A			5000-5250 AERONAUTICAL RADIONAVIGATION US260		Satellite Communications (25) Aviation (87)

5150-5250 AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (Earth-to-space) S5.447A S5.446 S5.447 S5.447B S5.447C	S5.446 733 796 797 US211 US307		Note: The *NTIA Manual* (footnote G126) states that differential GPS stations may be authorized in the 5000-5150 MHz segment, but the FCC has not yet addressed this footnote.
5250-5255 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH S5.447D S5.448 S5.448A	5250-5350 RADIOLOCATION S5.333 US110 G59	5250-5350 Radiolocation S5.333 US110	
5255-5350 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) S5.448 S5.448A			
5350-5460 EARTH EXPLORATION-SATELLITE (active) S5.448B AERONAUTICAL RADIONAVIGATION S5.449 Radiolocation	5350-5460 AERONAUTICAL RADIO-NAVIGATION S5.449 RADIOLOCATION G56 US48	5350-5460 AERONAUTICAL RADIO-NAVIGATION S5.449 Radiolocation US48	Aviation (87)
5460-5470 RADIONAVIGATION S5.449 Radiolocation	5460-5470 RADIONAVIGATION S5.449 Radiolocation G56 US49 US65	5460-5470 RADIONAVIGATION S5.449 Radiolocation US49 US65	
5470-5650 MARITIME RADIONAVIGATION Radiolocation	5470-5600 MARITIME RADIONAVIGATION Radiolocation G56 US50 US65	5470-5600 MARITIME RADIONAVIGATION Radiolocation US50 US65	Maritime (80)
	5600-5650 MARITIME RADIONAVIGATION METEOROLOGICAL AIDS Radiolocation US51 G56	5600-5650 MARITIME RADIONAVIGATION METEOROLOGICAL AIDS Radiolocation US51	
S5.450 S5.451 S5.452	S5.452 US65	S5.452 US65	

5650-7250 MHz (SHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
5650-5725 RADIOLOCATION Amateur Space research (deep space) S5.282 S5.451 S5.453 S5.454 S5.455			5650-5925 RADIOLOCATION G2	5650-5830 Amateur	ISM Equipment (18) Amateur (97)
5725-5830 FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur S5.150 S5.451 S5.453 S5.455 S5.456	5725-5830 RADIOLOCATION Amateur S5.150 S5.453 S5.455			S5.150 S5.282	
5830-5850 FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) S5.150 S5.451 S5.453 S5.455 S5.456	5830-5850 RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) S5.150 S5.453 S5.455			5830-5850 Amateur Amateur-satellite (space-to-Earth) S5.150	
5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE S5.150	5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Amateur Radiolocation S5.150	5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Radiolocation S5.150	S5.150 US245	5850-5925 FIXED-SATELLITE (Earth-to-space) US245 MOBILE NG160 Amateur S5.150	ISM Equipment (18) Private Land Mobile (90) Amateur (97)
5925-6700 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE			5925-6425	5925-6425 FIXED NG41 FIXED-SATELLITE (Earth-to-space)	International Fixed (23) Satellite Communications (25) Fixed Microwave (101)

S5.149 S5.440 S5.458	6425-6525 S5.440 S5.458	6425-6525 FIXED-SATELLITE (Earth-to-space) MOBILE S5.440 S5.458	Auxiliary Broadcasting (74) Cable TV Relay (78) Fixed Microwave (101)
6700-7075 FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) S5.441 MOBILE S5.458 S5.458A S5.458B S5.458C	6525-6875 S5.458	6525-6875 FIXED FIXED-SATELLITE (Earth-to-space) 792A S5.458	Satellite Communications (25) Fixed Microwave (101)
7075-7250 FIXED MOBILE	6875-7125 S5.458	6875-7075 FIXED FIXED-SATELLITE (Earth-to-space) 792A MOBILE S5.458 NG118 7075-7125 FIXED MOBILE S5.458 NG118	Auxiliary Broadcasting (74) Cable TV Relay (78)
	7125-7190 FIXED S5.458 US252 G116	7125-7190 S5.458 US252	
S5.458 S5.459 S5.460	7190-7235 FIXED SPACE RESEARCH (Earth-to-space) S5.458 7235-7250 FIXED S5.458	7190-7250 S5.458	

7250-8215 MHz (SHF)

International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
7250-7300 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE S5.461			7250-7300 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Fixed G117	7250-8025	
7300-7450 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile S5.461			7300-7450 FIXED FIXED-SATELLITE (space-to-Earth) Mobile-satellite (space-to-Earth) G117		
7450-7550 FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile S5.461A			7450-7550 FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) Mobile-satellite (space-to-Earth) G104 G117		
7550-7750 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile			7550-7750 FIXED FIXED-SATELLITE (space-to-Earth) Mobile-satellite (space-to-Earth) G117		
7750-7850 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) S5.461B MOBILE except aeronautical mobile			7750-7900 FIXED		
7850-7900 FIXED MOBILE except aeronautical mobile					

7900-8025 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE S5.461	7900-8025 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) Fixed G117		
8025-8175 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE S5.463 S5.462A	8025-8175 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) Mobile-satellite (Earth-to-space) (no airborne transmissions) US258 G117	8025-8175 US258	
8175-8215 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE S5.463 S5.462A	8175-8215 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Mobile-satellite (Earth-to-space) (no airborne transmissions) US258 G104 G117	8175-8215	

8215-10000 MHz (SHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
8215-8400 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE S5.463 S5.462A			8215-8400 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) Mobile-satellite (Earth-to-space) (no airborne transmissions) US258 G117	8215-8400 US258	
8400-8500 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) S5.465 S5.466 S5.467			8400-8450 FIXED SPACE RESEARCH (space-to-Earth) (deep space only)	8400-88450	
			8450-8500 FIXED SPACE RESEARCH (space-to-Earth)	8450-8500 SPACE RESEARCH (space-to-Earth)	
8500-8550 RADIOLOCATION S5.468 S5.469			8500-9000 RADIOLOCATION S5.333 US110 G59	8500-9000 Radiolocation S5.333 US110	
8550-8650 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) S5.468 S5.469 S5.469A					
8650-8750 RADIOLOCATION S5.468 S5.469					
8750-8850 RADIOLOCATION AERONAUTICAL RADIONAVIGATION S5.470 S5.471					

8850-9000 RADIOLOCATION MARITIME RADIONAVIGATION S5.472 S5.473	US53	US53	
9000-9200 AERONAUTICAL RADIONAVIGATION S5.337 Radiolocation S5.471	9000-9200 AERONAUTICAL RADIO-NAVIGATION S5.337 Radiolocation G2 US48 US54 G19	9000-9200 AERONAUTICAL RADIO-NAVIGATION S5.337 Radiolocation US48 US54	Aviation (87)
9200-9300 RADIOLOCATION MARITIME RADIONAVIGATION S5.472 S5.473 S5.474	9200-9300 MARITIME RADIO-NAVIGATION S5.472 Radiolocation US110 G59 S5.474	9200-9300 MARITIME RADIO-NAVIGATION S5.472 Radiolocation US110 S5.474	
9300-9500 RADIONAVIGATION S5.476 Radiolocation S5.427 S5.474 S5.475	9300-9500 RADIONAVIGATION S5.476 US66 Radiolocation US51 G56 Meteorological aids S5.427 S5.474 US67 US71	9300-9500 RADIONAVIGATION S5.476 US66 Radiolocation US51 Meteorological aids S5.427 S5.474 US67 US71	
9500-9800 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) S5.476A	9500-10000 RADIOLOCATION S5.333 US110	9500-10000 Radiolocation S5.333 US110	
9800-10000 RADIOLOCATION Fixed S5.477 S5.478 S5.479	S5.479	S5.479	

10-12.7 GHz (SHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
10-10.45 FIXED MOBILE RADIOLOCATION Amateur S5.479	10-10.45 RADIOLOCATION Amateur S5.479 S5.480	10-10.45 FIXED MOBILE RADIOLOCATION Amateur S5.479	10-10.45 RADIOLOCATION S5.479 US58 US108 G32	10-10.45 Radiolocation Amateur S5.479 US58 US108 NG42	Private Land Mobile (90) Amateur (97)
10.45-10.5 RADIOLOCATION Amateur Amateur-satellite S5.481			10.45-10.5 RADIOLOCATION US58 US108 G32	10.45-10.5 Radiolocation Amateur Amateur-satellite US58 US108 NG42 NG134	
10.5-10.55 FIXED MOBILE Radiolocation	10.5-10.55 FIXED MOBILE RADIOLOCATION		10.5-10.55 RADIOLOCATION US59		Private Land Mobile (90)
10.55-10.6 FIXED MOBILE except aeronautical mobile Radiolocation			10.55-10.6	10.55-10.6 FIXED	Fixed Microwave (101)
10.6-10.68 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation S5.149 S5.482			10.6-10.68 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) US265 US277	10.6-10.68 EARTH EXPLORATION-SATELLITE (passive) FIXED SPACE RESEARCH (passive) US265 US277	
10.68-10.7 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.483			10.68-10.7 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US246		

10.7-11.7 FIXED FIXED-SATELLITE (space-to-Earth) S5.441 S5.484A (Earth-to-space) S5.484 MOBILE except aeronautical mobile	10.7-11.7 FIXED FIXED-SATELLITE (space-to-Earth) S5.441 S5.484A MOBILE except aeronautical mobile		10.7-11.7 US211	10.7-11.7 FIXED NG41 FIXED-SATELLITE (space-to-Earth) S5.441 US211 NG104	International Fixed (23) Satellite Communications (25) Fixed Microwave (101)
11.7-12.5 FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE	11.7-12.1 FIXED S5.486 FIXED-SATELLITE (space-to-Earth) S5.484A Mobile except aeronautical mobile S5.485 S5.488	11.7-12.2 FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE	11.7-12.1 S5.486	11.7-12.2 FIXED-SATELLITE (space-to-Earth) NG143 NG145 Mobile except aeronautical mobile	Satellite Communications (25) Fixed Microwave (101)
	12.1-12.2 FIXED-SATELLITE (space-to-Earth) S5.484A S5.485 S5.488 S5.489	S5.487 S5.487A S5.492	12.1-12.2	S5.486 S5.488	
S5.487 S5.487A S5.492	12.2-12.7 FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE	12.2-12.5 FIXED MOBILE except aeronautical mobile BROADCASTING S5.484A S5.487 S5.491	12.2-12.7	12.2-12.7 FIXED BROADCASTING-SATELLITE	International Fixed (23) Direct Broadcast Satellite (100) Fixed Microwave (101)
12.5-12.75 FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space)	S5.487A S5.488 S5.490 S5.492	12.5-12.75 FIXED FIXED-SATELLITE (space-to-Earth) S5.484A MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.493	S5.490	S5.488 S5.490	
S5.494 S5.495 S5.496	See next page for 12.7-12.75 GHz		See next page for 12.7-12.75 GHz		See next page for 12.7-12.75 GHz

12.7-14.5 GHz (SHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
See previous page for 12.5-12.75 GHz	12.7-12.75 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE except aeronautical mobile	See previous page for 12.5-12.75 GHz	12.7-12.75	12.7-12.75 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE NG53 NG118	Auxiliary Broadcasting (74) Cable TV Relay (78) Fixed Microwave (101)
12.75-13.25 FIXED FIXED-SATELLITE (Earth-to-space) S5.441 MOBILE Space research (deep space) (space-to-Earth)			12.75-13.25 US251	12.75-13.25 FIXED FIXED-SATELLITE (Earth-to-space) S5.441 NG104 MOBILE US251 NG53 NG118	
13.25-13.4 EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION S5.497 SPACE RESEARCH (active) S5.498A S5.499			13.25-13.4 AERONAUTICAL RADIONAVIGATION S5.497 Space research (Earth-to-space)		Aviation (87)
13.4-13.75 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH S5.501A Standard frequency and time signal-satellite (Earth-to-space) S5.499 S5.500 S5.501 S5.501B			13.4-13.75 RADIOLOCATION S5.333 US110 G59 Space research Standard frequency and time signal-satellite (Earth-to-space)	13.4-13.75 Radiolocation S5.333 US110 Space research Standard frequency and time signal-satellite (Earth-to-space)	Private Land Mobile (90)
13.75-14 FIXED-SATELLITE (Earth-to-space) S5.484A RADIOLOCATION Standard frequency and time signal-satellite (Earth-to-space) Space research S5.499 S5.500 S5.501 S5.502 S5.503 S5.503A			13.75-14 RADIOLOCATION US110 G59 Standard frequency and time signal-satellite (Earth-to-space) Space research US337 S5.502 S5.503 S5.503A	13.75-14 FIXED-SATELLITE (Earth-to-space) US337 Radiolocation US110 Standard frequency and time signal-satellite (Earth-to-space) Space research S5.502 S5.503 S5.503A	Satellite Communications (25) Private Land Mobile (90)

14-14.25 FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 RADIONAVIGATION S5.504 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space research S5.505			14-14.2 RADIONAVIGATION US292 Space research	14-14.2 FIXED-SATELLITE (Earth-to-space) RADIONAVIGATION US292 Land mobile-satellite (Earth-to-space) Space research	Satellite Communications (25) Maritime (80) Aviation (87)
14.25-14.3 FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 RADIONAVIGATION S5.504 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space research S5.505 S5.508 S5.509			14.2-14.4	14.2-14.4 FIXED-SATELLITE (Earth-to-space) Land mobile-satellite (Earth-to-space) Mobile except aeronautical mobile	Satellite Communications (25) Fixed Microwave (101)
14.3-14.4 FIXED FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite	14.3-14.4 FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite	14.3-14.4 FIXED FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite			
14.4-14.47 FIXED FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space research (space-to-Earth)			14.4-14.47 Fixed Mobile	14.4-14.47 FIXED-SATELLITE (Earth-to-space) Land mobile-satellite (Earth-to-space)	Satellite Communications (25)
14.47-14.5 FIXED FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radio astronomy S5.149			14.47-14.5 Fixed Mobile S5.149 US203	14.47-14.5 FIXED-SATELLITE (Earth-to-space) Land mobile-satellite (Earth-to-space) S5.149 US203	

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14.5-14.8 FIXED FIXED-SATELLITE (Earth-to-space) S5.510 MOBILE Space research			14.5-14.7145 FIXED Mobile Space research	14.5-15.1365	
			14.7145-15.1365 MOBILE Fixed Space research	14.7145-15.1365	
14.8-15.35 FIXED MOBILE Space research			US310	US310	
			15.1365-15.35 FIXED Mobile Space research	15.1365-15.35	
S5.339			S5.339 US211	S5.339 US211	
15.35-15.4 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)			15.35-15.4 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive)		
S5.340 S5.511			US246		
15.4-15.43 AERONAUTICAL RADIONAVIGATION			15.4-15.7 AERONAUTICAL RADIONAVIGATION US260		Aviation (87)
S5.511D					
15.43-15.63 FIXED SATELLITE (space-to-Earth) (Earth-to-space) S5.511A AERONAUTICAL RADIONAVIGATION					
S5.511C					
15.63-15.7 AERONAUTICAL RADIONAVIGATION					
S5.511D			733 797 US211		
15.7-16.6 RADIOLOCATION			15.7-16.6 RADIOLOCATION US110 G59	15.7-17.2 Radiolocation US110	Private Land Mobile (90)
S5.512 S5.513					

16.6-17.1 RADIOLOCATION Space research (deep space) (Earth-to-space) S5.512 S5.513			16.6-17.1 RADIOLOCATION US110 G59 Space research (deep Space) (Earth-to-space)		
17.1-17.2 RADIOLOCATION S5.512 S5.513			17.1-17.2 RADIOLOCATION US110 G59		
17.2-17.3 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) S5.512 S5.513 S5.513A			17.2-17.3 RADIOLOCATION US110 G59 Earth exploration-satellite (active) Space research (active)	17.2-17.3 Radiolocation US110 Earth exploration-satellite (active) Space research (active)	
17.3-17.7 FIXED-SATELLITE (Earth-to-space) S5.516 Radiolocation S5.514	17.3-17.7 FIXED-SATELLITE (Earth-to-space) S5.516 BROADCASTING-SATELLITE Radiolocation S5.514 S5.515 S5.517	17.3-17.7 FIXED-SATELLITE (Earth-to-space) S5.516 Radiolocation S5.514	17.3-17.7 Radiolocation US259 G59 US271	17.3-17.7 FIXED-SATELLITE (Earth-to-space) US271 US259	
17.7-18.1 FIXED FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.516 MOBILE	17.7-17.8 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) S5.516 BROADCASTING-SATELLITE Mobile S5.518 S5.515 S5.517	17.7-18.1 FIXED FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.516 MOBILE	17.7-17.8 US271	17.7-17.8 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) US271 MOBILE NG144	Auxiliary Broadcasting (74) Cable TV Relay (78) Fixed Microwave (101)
	17.8-18.1 FIXED FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.516 MOBILE		17.8-18.6 S5.519 US334 G117	17.8-18.6 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE S5.519 US334 NG144	Domestic Public Fixed (21) Satellite Communications (25) Auxiliary Broadcasting (74) Cable TV Relay (78) Fixed Microwave (101)
See next page for 18.1-18.6 GHz					

18.6-22.5 GHz (SHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
18.1-18.4 FIXED FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.520 MOBILE S5.519 S5.521			See previous page for 17.8-18.6 GHz		See previous page for 17.8-19.7 GHz
18.4-18.6 FIXED FIXED-SATELLITE (space-to-Earth) S5.484A MOBILE					
18.6-18.8 FIXED FIXED-SATELLITE (space-to-Earth) S5.523 MOBILE except aeronautical mobile Earth exploration-satellite (passive) Space research (passive) S5.522	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) S5.523 MOBILE except aeronautical mobile SPACE RESEARCH (passive) S5.522	18.6-18.8 FIXED FIXED-SATELLITE (space-to-Earth) S5.523 MOBILE except aeronautical mobile Earth exploration-satellite (passive) Space research (passive) S5.522	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) US254 US255 US334 G117	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile SPACE RESEARCH (passive) US254 US255 US334 NG144	
18.8-19.3 FIXED FIXED-SATELLITE (space-to-Earth) S5.523A MOBILE			18.8-20.2	18.8-19.7 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE US334 NG144	
19.3-19.7 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-space) S5.523B S5.523C S5.523D S5.523E MOBILE					
19.7-20.1 FIXED-SATELLITE (space-to-Earth) S5.484A Mobile-satellite (space-to-Earth) S5.524	19.7-20.1 FIXED-SATELLITE (space-to-Earth) S5.484A MOBILE-SATELLITE (space-to-Earth) S5.524 S5.525 S5.526 S5.527 S5.528 S5.529	19.7-20.1 FIXED-SATELLITE (space-to-Earth) S5.484A Mobile-satellite (space-to-Earth) S5.524		19.7-20.1 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.525 S5.526 S5.527 S5.528 S5.529 US334	

20.1-20.2 FIXED-SATELLITE (space-to-Earth) S5.484A MOBILE-SATELLITE (space-to-Earth) S5.524 S5.525 S5.526 S5.527 S5.528			US334 G117	20.1-20.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.525 S5.526 S5.527 S5.528 US334	
20.2-21.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) S5.524			20.2-21.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) G117	20.2-21.2 Standard frequency and time signal-satellite (space-to-Earth)	
21.2-21.4 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)			21.2-21.4 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) US263		Fixed Microwave (101)
21.4-22 FIXED MOBILE BROADCASTING-SATELLITE S5.530	21.4-22 FIXED MOBILE	21.4-22 FIXED MOBILE BROADCASTING-SATELLITE S5.530 S5.531	21.4-22 FIXED MOBILE		
22-22.21 FIXED MOBILE except aeronautical mobile S5.149			22-22.21 FIXED MOBILE except aeronautical mobile S5.149		
22.21-22.5 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) S5.149 S5.532			22.21-22.5 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) S5.149 US263		

22.5-27.5 GHz (SHF)

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Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
22.5-22.55 FIXED MOBILE			22.5-22.55 FIXED MOBILE US211		See previous page for 22.21-22.55 GHz
22.55-23.55 FIXED INTER-SATELLITE MOBILE S5.149			22.55-23.55 FIXED INTER-SATELLITE MOBILE S5.149 US278		Satellite Communications (25) Fixed Microwave (101)
23.55-23.6 FIXED MOBILE			23.55-23.6 FIXED MOBILE		Fixed Microwave (101)
23.6-24 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340			23.6-24 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US246		
24-24.05 AMATEUR AMATEUR-SATELLITE S5.150			24-24.05 S5.150 US211	24-24.05 AMATEUR AMATEUR-SATELLITE S5.150 US211	ISM Equipment (18) Amateur (97)
24.05-24.25 RADIOLOCATION Amateur Earth exploration-satellite (active) S5.150			24.05-24.25 RADIOLOCATION US110 G59 Earth exploration-satellite (active) S5.150	24.05-24.25 Radiolocation US110 Amateur Earth exploration-satellite (active) S5.150	ISM Equipment (18) Private Land Mobile (90) Amateur (97)
24.25-24.45 FIXED	24.25-24.45 RADIONAVIGATION	24.25-24.45 RADIONAVIGATION FIXED MOBILE	24.25-24.45	24.25-24.45 RADIONAVIGATION FIXED	Aviation (87) Fixed Microwave (101)

24.45-24.75 FIXED INTER-SATELLITE	24.45-24.65 INTER-SATELLITE RADIONAVIGATION S5.533	24.45-24.65 FIXED INTER-SATELLITE MOBILE RADIONAVIGATION S5.533	24.45-24.65 INTER-SATELLITE RADIONAVIGATION S5.533		Satellite Communications (25)
	24.65-24.75 INTER-SATELLITE RADIOLOCATION-SAT-ELLITE (Earth-to-space)	24.65-24.75 FIXED INTER-SATELLITE MOBILE S5.533 S5.534	24.65-24.75 INTER-SATELLITE RADIOLOCATION-SATELLITE (Earth-to-space)		
24.75-25.25 FIXED	24.75-25.25 FIXED-SATELLITE (Earth-to-space) S5.535	24.75-25.25 FIXED FIXED-SATELLITE (Earth-to-space) S5.535 MOBILE S5.534	24.75-25.05 RADIONAVIGATION		Aviation (87)
			25.05-25.25	25.05-25.25 RADIONAVIGATION FIXED	Aviation (87) Fixed Microwave (101)
25.25-25.5 FIXED INTER-SATELLITE S5.536 MOBILE Standard frequency and time signal-satellite (Earth-to-space)			25.25-25.5 FIXED MOBILE Standard frequency and time signal-satellite (Earth-to-space)	25.25-27 Standard frequency and time signal-satellite (Earth-to-space) Earth exploration-satellite (space-to-space)	Note: In its *Manual*, NTIA has added primary inter-satellite service allocations to the bands comprising 25.25-27.5 GHz, limited the use of these allocations by adopting footnote S5.536, and has changed the directional indicator for the earth exploration-satellite service allocation in the 25.5-27 GHz band from space-to-space to space-to-Earth.
25.5-27 EARTH EXPLORATION-SATELLITE (space-to-Earth) S5.536A S5.536B FIXED INTER-SATELLITE S5.536 MOBILE Standard frequency and time signal-satellite (Earth-to-space)			25.5-27 FIXED MOBILE Standard frequency and time signal-satellite (Earth-to-space) Earth exploration-satellite (space-to-space)		
27-27.5 FIXED INTER-SATELLITE S5.536 MOBILE	27-27.5 FIXED FIXED-SATELLITE (Earth-to-space) INTER-SATELLITE S5.536 S5.537 MOBILE		27-27.5 FIXED MOBILE	27-27.5 Earth exploration-satellite (space-to-space)	

27.5-32 GHz (SHF/EHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
27.5-28.5 FIXED FIXED-SATELLITE (Earth-to-space) S5.484A S5.539 MOBILE S5.538 S5.540			27.5-30	27.5-29.5 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE	Satellite Communications (25) Fixed Microwave (101)
28.5-29.1 FIXED FIXED-SATELLITE (Earth-to-space) S5.484A S5.523A S5.539 MOBILE Earth exploration-satellite (Earth-to-space) S5.541 S5.540					
29.1-29.5 FIXED FIXED-SATELLITE (Earth-to-space) S5.523C S5.523E S5.535A S5.539 S5.541A MOBILE Earth exploration-satellite (Earth-to-space) S5.541 S5.540					
29.5-29.9 FIXED-SATELLITE (Earth-to-space) S5.484A S5.539 Earth exploration-satellite (Earth-to-space) S5.541 Mobile-satellite (Earth-to-space) S5.540 S5.542	29.5-29.9 FIXED-SATELLITE (Earth-to-space) S5.484A S5.539 MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (Earth-to-space) S5.541 S5.525 S5.526 S5.527 S5.529 S5.540 S5.542	29.5-29.9 FIXED-SATELLITE (Earth-to-space) S5.484A S5.539 Earth exploration-satellite (Earth-to-space) S5.541 Mobile-satellite (Earth-to-space) S5.540 S5.542		29.5-29.9 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) S5.525 S5.526 S5.527 S5.529	Satellite Communications (25)
29.9-30 FIXED-SATELLITE (Earth-to-space) S5.484A S5.539 MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (Earth-to-space) S5.541 S5.543 S5.525 S5.526 S5.527 S5.538 S5.540 S5.542				29.9-30 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) S5.525 S5.526 S5.527 S5.543	

30-31 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) Standard frequency and time signal-satellite (space-to-Earth) S5.542			30-31 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) Standard frequency and time signal-satellite (space-to-Earth) G117	30-31 Standard frequency and time signal-satellite (space-to-Earth)	
31-31.3 FIXED MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research S5.544 S5.545 S5.149			31-31.3 Standard frequency and time signal-satellite (space-to-Earth) S5.149 US211	31-31.3 FIXED MOBILE Standard frequency and time signal-satellite (space-to-Earth) S5.149 US211	Fixed Microwave (101)
31.3-31.5 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340			31.3-31.8 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US246		
31.5-31.8 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile S5.149 S5.546	31.5-31.8 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	31.5-31.8 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile S5.149			
31.8-32 FIXED S5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) S5.547 S5.547B S5.548			31.8-32 RADIONAVIGATION US69 US211 US262		

32-40 GHz (EHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
32-32.3 FIXED S5.547A INTER-SATELLITE RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) S5.547 S5.547C S5.548			32-33 INTER-SATELLITE US278 RADIONAVIGATION US69 S5.548 US262		
32.3-33 FIXED S5.547A INTER-SATELLITE RADIONAVIGATION S5.547 S5.547D S5.548					
33-33.4 FIXED S5.547A RADIONAVIGATION S5.547 S5.547E			33-33.4 RADIONAVIGATION US69		
33.4-34.2 RADIOLOCATION S5.549			33.4-36 RADIOLOCATION US110 G34	33.4-36 Radiolocation US110	Private Land Mobile (90)
34.2-34.7 RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) S5.549					
34.7-35.2 RADIOLOCATION Space research S5.550 S5.549					
35.2-35.5 METEOROLOGICAL AIDS RADIOLOCATION S5.549					

35.5-36 METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) S5.549 S5.551A	S5.551 US252	S5.551 US252	
36-37 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) S5.149	36-37 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) US263 US342		
37-37.5 FIXED MOBILE SPACE RESEARCH (space-to-Earth)	37-38 FIXED MOBILE SPACE RESEARCH (space-to-Earth)	37-37.6 FIXED MOBILE	
37.5-38 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth)		37.6-38.6 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	Satellite Communications (25)
38-39.5 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Earth exploration-satellite (space-to-Earth)	38-38.6 FIXED MOBILE		
	38.6-39.5 US291	38.6-39.5 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE US291	Auxiliary Broadcasting (74) Fixed Microwave (101)
39.5-40 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth)	39.5-40 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) US291 G117	39.5-40 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth) US291	

40-50.2 GHz (EHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
40-40.5 EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth)			40-40.5 EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth) G117	40-40.5 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth)	Satellite Communications (25)
40.5-42.5 FIXED BROADCASTING BROADCASTING-SATELLITE Mobile S5.551B S5.551D	40.5-42.5 FIXED FIXED-SATELLITE (space-to-Earth) S5.551B S5.551E BROADCASTING BROADCASTING-SATELLITE Mobile S5.551C S5.551F		40.5-42.5 US211	40.5-41 FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE Mobile Fixed US211	
				41-42.5 FIXED BROADCASTING BROADCASTING-SATELLITE MOBILE US211	
42.5-43.5 FIXED FIXED-SATELLITE (Earth-to-space) S5.552 MOBILE except aeronautical mobile RADIO ASTRONOMY S5.149			42.5-43.5 FIXED FIXED-SATELLITE (Earth- to-space) MOBILE except aeronautical mobile RADIO ASTRONOMY US342	42.5-43.5 RADIO ASTRONOMY US342	

43.5-47 MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE	43.5-45.5 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) G117	43.5-45.5	
	45.5-46.9 MOBILE MOBILE-SATELLITE (Earth-to-space) RADIONAVIGATION-SATELLITE S5.554		RF Devices (15)
S5.554	46.9-47 MOBILE MOBILE-SATELLITE (Earth-to-space) RADIONAVIGATION-SATELLITE S5.554	46.9-47 MOBILE MOBILE-SATELLITE (Earth-to-space) RADIONAVIGATION-SATELLITE FIXED S5.554	
47-47.2 AMATEUR AMATEUR-SATELLITE	47-48.2	47-47.2 AMATEUR AMATEUR-SATELLITE	Amateur (97)
47.2-50.2 FIXED FIXED-SATELLITE (Earth-to-space) S5.552 MOBILE		47.2-48.2 FIXED FIXED-SATELLITE (Earth-to-space) US297 MOBILE US264 S5.555	
S5.149 S5.340 S5.552A S5.555	48.2-50.2 FIXED FIXED-SATELLITE (Earth-to-space) US297 MOBILE US264 S5.555 US342		Satellite Communications (25)

50.2-65 GHz (EHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
50.2-50.4 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) S5.340 S5.555A			50.2-50.4 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) US263		
50.4-51.4 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Mobile-satellite (Earth-to-space)			50.4-51.4 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) G117	50.4-51.4 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space)	
51.4-52.6 FIXED MOBILE S5.547 S5.556			51.4-54.25 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) RADIO ASTRONOMY US246		
52.6-54.25 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) S5.340 S5.556					
54.25-55.78 EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE S5.556A SPACE RESEARCH (passive) S5.556B			54.25-58.2 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE 909 SPACE RESEARCH (passive)		
55.78-56.9 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE S5.556A MOBILE S5.558 SPACE RESEARCH (passive) S5.547 S5.557					

56.9-57 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE S5.558A MOBILE S5.558 SPACE RESEARCH (passive) S5.547 S5.557		
57-58.2 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE S5.556A MOBILE S5.558 SPACE RESEARCH (passive) S5.547 S5.557	US263	
58.2-59 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) S5.547 S5.556	58.2-59 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) RADIO ASTRONOMY US246	
59-59.3 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE S5.556A MOBILE S5.558 RADIOLOCATION S5.559 SPACE RESEARCH (passive)	59-64 FIXED INTER-SATELLITE MOBILE 909 RADIOLOCATION	RF Devices (15) ISM Equipment (18)
59.3-64 FIXED INTER-SATELLITE MOBILE S5.558 RADIOLOCATION S5.559 S5.138	S5.138	
64-65 FIXED INTER-SATELLITE MOBILE except aeronautical mobile S5.547 S5.556	64-65 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) US246	

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
65-66 EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH S5.547			65-66 EARTH EXPLORATION-SATELLITE SPACE RESEARCH Fixed Mobile		
66-71 INTER-SATELLITE MOBILE S5.553 S5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE S5.554			66-71 MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE S5.554		
71-74 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) S5.149 S5.556			71-74 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) US270		
74-75.5 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Space research (space-to-Earth)			74-75.5 FIXED FIXED-SATELLITE (Earth-to-space) US297 MOBILE		
75.5-76 AMATEUR AMATEUR-SATELLITE Space research (space-to-Earth)			75.5-76	75.5-76 AMATEUR AMATEUR-SATELLITE	Amateur (97)
76-81 RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth)			76-81 RADIOLOCATION	76-77 RADIOLOCATION Amateur	RF Devices (15)
				77-77.5 RADIOLOCATION Amateur Amateur-satellite	Amateur (97)

S5.560	S5.560	77.5-78 RADIOLOCATION AMATEUR AMATEUR-SATELLITE 78-81 RADIOLOCATION Amateur Amateur-satellite S5.560	
81-84 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth) Space research (space-to-Earth)	81-84 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)		
84-86 FIXED MOBILE BROADCASTING BROADCASTING-SATELLITE S5.561	84-86 FIXED MOBILE S5.561 US211	84-86 FIXED MOBILE BROADCASTING BROADCASTING-SATELLITE S5.561 US211	
86-92 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	86-92 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US246		
92-94 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIOLOCATION S5.149 S5.556	92-95 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIOLOCATION		
94-94.1 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) S5.562			
See next page for 94.1-95 GHz	S5.149		

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
94.1-95 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIOLOCATION			See previous page for 92-95 GHz		See previous page for 92-95 GHz
95-100 MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE Radiolocation S5.149 S5.554 S5.555			95-100 MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE Radiolocation S5.149 S5.554		
100-102 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) S5.341			100-102 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) S5.341 US246		
102-105 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE S5.341			102-105 FIXED FIXED-SATELLITE (space-to-Earth) S5.341 US211		
105-116 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.341			105-116 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) S5.341 US246		
116-119.98 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) S5.341			116-119.98 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) S5.341 US211 US263		

119.98-120.02 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) Amateur S5.341	119.98-120.02 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) Amateur S5.341 US211 US263		
120.02-126 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) S5.138	120.02-126 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) S5.138 US211 US263		ISM Equipment (18)
126-134 FIXED INTER-SATELLITE MOBILE S5.558 RADIOLOCATION S5.559	126-134 FIXED INTER-SATELLITE MOBILE 909 RADIOLOCATION S5.559		
134-142 MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE Radiolocation S5.149 S5.340 S5.554 S5.555	134-142 MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE Radiolocation S5.149 S5.554 S5.555 917		
142-144 AMATEUR AMATEUR-SATELLITE	142-144	142-144 AMATEUR AMATEUR-SATELLITE	Amateur (97)
144-149 RADIOLOCATION Amateur Amateur-satellite S5.149 S5.555	144-149 RADIOLOCATION S5.149 S5.555	144-149 RADIOLOCATION Amateur Amateur-satellite S5.149 S5.555	
149-150 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	149-150 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE		

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
150-151 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (passive) S5.149 S5.385			150-151 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (passive) S5.149 S5.385 US263		
151-156 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE			151-164 FIXED FIXED-SATELLITE (space-to-Earth)		
156-158 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE					
158-164 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE			US211		
164-168 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)			164-168 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) US246		
168-170 FIXED MOBILE			168-170 FIXED MOBILE		
170-174.5 FIXED INTER-SATELLITE MOBILE S5.558 S5.149 S5.385			170-174.5 FIXED INTER-SATELLITE MOBILE 909 S5.149 S5.385		

174.5-176.5 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) S5.149 S5.385	174.5-176.5 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE 909 SPACE RESEARCH (passive) S5.149 S5.385 US263	
176.5-182 FIXED INTER-SATELLITE MOBILE S5.558 S5.149 S5.385	176.5-182 FIXED INTER-SATELLITE MOBILE 909 S5.149 S5.385 US211	
182-185 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.563	182-185 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) US246	
185-190 FIXED INTER-SATELLITE MOBILE S5.558 S5.149 S5.385	185-190 FIXED INTER-SATELLITE MOBILE 909 S5.149 S5.385 US211	
190-200 MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE S5.341 S5.554	190-200 MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE S5.341 S5.554	
200-202 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) S5.341	200-202 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) S5.341 US263	

202-400 GHz (EHF)					Page 87
International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
202-217 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE S5.341			202-217 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE S5.341		
217-231 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.341			217-231 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) S5.341 US246		
231-235 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation			231-235 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation US211		
235-238 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (passive)			235-238 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (passive) US263		
238-241 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation			238-241 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation		
241-248 RADIOLOCATION Amateur Amateur-satellite S5.138			241-248 RADIOLOCATION S5.138	241-248 RADIOLOCATION Amateur Amateur-satellite S5.138	ISM Equipment (18) Amateur (97)
248-250 AMATEUR AMATEUR-SATELLITE			248-250	248-250 AMATEUR AMATEUR-SATELLITE	Amateur (97)

250-252 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) S5.149 S5.555	250-252 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) S5.149 S5.555	
252-265 MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE S5.149 S5.385 S5.554 S5.555 S5.564	252-265 MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE S5.149 S5.385 S5.554 S5.555 US211	
265-275 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY S5.149	265-275 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY S5.149	
275-400 (Not Allocated) S5.565	275-300 FIXED MOBILE S5.565	
	300-400 (Not allocated) S5.565	Amateur (97)

BILLING CODE 6712–01–C

International Footnotes

Note: The International Telecommunication Union has recently renumbered international footnotes using the "S" numbering scheme and has substantively revised the text of certain of these international footnotes. These international footnotes shall be listed immediately below this note in I. Until such time as the Commission has considered the substantively revised international footnotes that have previously been adopted domestically, the old international footnotes shall apply in the United States. These footnotes appear immediately after footnote S5.565 in II.

I. New ''S'' Numbering Scheme

S5.53 Administrations authorizing the use of frequencies below 9 kHz shall ensure that no harmful interference is caused thereby to the services to which the bands above 9 kHz are allocated.

S5.54 Administrations conducting scientific research using frequencies below 9 kHz are urged to advise other administrations that may be concerned in order that such research may be afforded all practicable protection from harmful interference.

S5.55 *Additional allocation:* in Armenia, Azerbaijan, Bulgaria, Russian Federation, Georgia, Kazakstan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the band 14–17 kHz is also allocated to the radionavigation service on a primary basis.

S5.56 The stations of services to which the bands 14–19.95 kHz and 20.05–70 kHz and in Region 1 also the bands 72–84 kHz and 86–90 kHz are allocated may transmit standard frequency and time signals. Such stations shall be afforded protection from harmful interference. In Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the frequencies 25 kHz and 50 kHz will be used for this purpose under the same conditions.

S5.57 The use of the bands 14–19.95 kHz, 20.05–70 kHz and 70–90 kHz (72–84 kHz and 86–90 kHz in Region 1) by the maritime mobile service is limited to coast radiotelegraph stations (A1A and F1B only). Exceptionally, the use of class J2B or J7B emissions is authorized subject to the necessary bandwidth not exceeding that normally used for class A1A or F1B emissions in the band concerned.

S5.58 *Additional allocation:* in Armenia, Azerbaijan, Bulgaria, Georgia, Kazakstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 67–70 kHz is also allocated to the radionavigation service on a primary basis.

S5.59 *Different category of service:* in Bangladesh, the Islamic Republic of Iran and Pakistan, the allocation of the bands 70–72 kHz and 84–86 kHz to the fixed and maritime mobile service is on a primary basis (see No. S5.33).

S5.60 In the bands 70–90 kHz (70–86 kHz in Region 1) and 110–130 kHz (112–130 kHz in Region 1), pulsed radionavigation systems may be used on condition that they do not cause harmful interference to other services to which these bands are allocated.

S5.61 In Region 2, the establishment and operation of stations in the maritime radionavigation service in the bands 70–90 kHz and 110–130 kHz shall be subject to agreement obtained under No. S9.21 with administrations whose services, operating in accordance with the Table, may be affected. However, stations of the fixed, maritime mobile and radiolocation services shall not cause harmful interference to stations in the maritime radionavigation service established under such agreements.

S5.62 Administrations which operate stations in the radionavigation service in the band 90–110 kHz are urged to coordinate technical and operating characteristics in such a way as to avoid harmful interference to the services provided by these stations.

S5.64 Only classes A1A or F1B, A2C, A3C, F1C or F3C emissions are authorized for stations of the fixed service in the bands allocated to this service between 90 kHz and 160 kHz (148.5 kHz in Region 1) and for stations of the maritime mobile service in the bands allocated to this service between 110 kHz and 160 kHz (148.5 kHz in Region 1). Exceptionally, class J2B or J7B emissions are also authorized in the bands between 110 kHz and 160 kHz (148.5 kHz in Region 1) for stations of the maritime mobile service.

S5.65 *Different category of service:* in Bangladesh, the Islamic Republic of Iran and Pakistan, the allocation of the bands 112–117.6 kHz and 126–129 kHz to the fixed and maritime mobile services is on a primary basis (see No. S5.33).

S5.66 *Different category of service:* in Germany, the allocation of the band 115–117.6 kHz to the fixed and maritime mobile services is on a primary basis (see No. S5.33) and to the radionavigation service on a secondary basis (see No. S5.32).

S5.67 *Additional allocation:* in Azerbaijan, Bulgaria, Mongolia, Kyrgyzstan, Romania, Turkmenistan and Ukraine, the band 130–148.5 kHz is also allocated to the radionavigation service on a secondary basis. Within and between these countries this service shall have an equal right to operate.

S5.68 *Alternative allocation:* in Angola, Botswana, Burundi, the Congo, Malawi, Dem. Rep. of the Congo, Rwanda and South Africa, the band 160–200 kHz is allocated to the fixed service on a primary basis.

S5.69 *Additional allocation:* in Somalia, the band 200–255 kHz is also allocated to the aeronautical radionavigation service on a primary basis.

S5.70 *Alternative allocation:* in Angola, Botswana, Burundi, Cameroon, the Central African Republic, the Congo, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Nigeria, Oman, Dem. Rep. of the Congo, Rwanda, South Africa, Swaziland, Tanzania, Chad, Zambia and Zimbabwe, the band 200–283.5 kHz is allocated to the aeronautical radionavigation service on a primary basis.

S5.71 *Alternative allocation:* in Tunisia, the band 255–283.5 kHz is allocated to the broadcasting service on a primary basis.

S5.72 Norwegian stations of the fixed service situated in northern areas (north of 60° N) subject to auroral disturbances are allowed to continue operation on four frequencies in the bands 283.5–490 kHz and 510–526.5 kHz.

S5.73 The band 285–325 kHz (283.5–325 kHz in Region 1) in the maritime radionavigation service may be used to transmit supplementary navigational information using narrow-band techniques, on condition that no harmful interference is caused to radiobeacon stations operating in the radionavigation service.

S5.74 *Additional allocation:* in Region 1, the frequency band 285.3–285.7 kHz is also allocated to the maritime radionavigation service (other than radiobeacons) on a primary basis.

S5.75 *Different category of service:* in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Moldova, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan, Ukraine and the Black Sea areas of Bulgaria and Romania, the allocation of the band 315–325 kHz to the maritime radionavigation service is on a primary basis under the condition that in the Baltic Sea area, the assignment of frequencies in this band to new stations in the maritime or aeronautical radionavigation services shall be subject to prior consultation between the administrations concerned.

S5.76 The frequency 410 kHz is designated for radio direction-finding in the maritime radionavigation service. The other radionavigation services to which the band 405–415 kHz is allocated shall not cause harmful interference to radio direction-finding in the band 406.5–413.5 kHz.

S5.77 *Different category of service:* in Australia, China, the French Overseas Territories of Region 3, India, Indonesia, the Islamic Republic of Iran, Japan, Pakistan, Papua New Guinea and Sri Lanka, the allocation of the band 415–495 kHz to the aeronautical radionavigation service is on a primary basis. Administrations in these countries shall take all practical steps necessary to ensure that aeronautical radionavigation stations in the band 435–495 kHz do not cause interference to reception by coast stations of ship stations transmitting on frequencies designated for ship stations on a worldwide basis (see No. S52.39).

S5.78 *Different category of service:* in Cuba, the United States of America and Mexico, the allocation of the band 415–435 kHz to the aeronautical radionavigation service is on a primary basis.

S5.79 The use of the bands 415–495 kHz and 505–526.5 kHz (505–510 kHz in Region 2) by the maritime mobile service is limited to radiotelegraphy.

S5.79A When establishing coast stations in the NAVTEX service on the frequencies 490 kHz, 518 kHz and 4209.5 kHz, administrations are strongly recommended to coordinate the operating characteristics in accordance with the procedures of the International Maritime Organization (IMO) (see Resolution 339 (Rev. WRC–97)).

S5.80 In Region 2, the use of the band 435–495 kHz by the aeronautical radionavigation service is limited to non-directional beacons not employing voice transmission.

S5.81 The bands 490–495 kHz and 505–510 kHz shall be subject to the provisions of Appendix S13, § 15 1), Part A2.

S5.82 In the maritime mobile service, the frequency 490 kHz is, from the date of full implementation of the GMDSS (see Resolution 331 (Rev. WRC–97)), to be used exclusively for the transmission by coast stations of navigational and meteorological warnings and urgent information to ships, by means of narrow-band direct-printing telegraphy. The conditions for use of the frequency 490 kHz are prescribed in Articles S31 and S52. In using the band 415–495 kHz for the aeronautical radionavigation service, administrations are requested to ensure that no harmful interference is caused to the frequency 490 kHz.

S5.83 The frequency 500 kHz is an international distress and calling frequency for Morse radiotelegraphy. The conditions for its use are prescribed in Articles S31 and S52, and in Appendix S13.

S5.84 The conditions for the use of the frequency 518 kHz by the maritime mobile service are prescribed in Articles S31 and S52 and in Appendix S13.

S5.86 In Region 2, in the band 525–535 kHz the carrier power of broadcasting stations shall not exceed 1 kW during the day and 250 W at night.

S5.87 *Additional allocation:* in Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the band 526.5–535 kHz is also allocated to the mobile service on a secondary basis.

S5.87A *Additional allocation:* in Uzbekistan, the band 526.5–1606.5 kHz is also allocated to the radionavigation service on a primary basis. Such use is subject to agreement obtained under No. S9.21 with administrations concerned and limited to ground-based radiobeacons in operation on 27 October 1997 until the end of their lifetime.

S5.88 *Additional allocation:* in China, the band 526.5–535 kHz is also allocated to the aeronautical radionavigation service on a secondary basis.

S5.89 In Region 2, the use of the band 1605–1705 kHz by stations of the broadcasting service is subject to the Plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988).

The examination of frequency assignments to stations of the fixed and mobile services in the band 1625–1705 kHz shall take account of the allotments appearing in the Plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988).

S5.90 In the band 1605–1705 kHz, in cases where a broadcasting station of Region 2 is concerned, the service area of the maritime mobile stations in Region 1 shall be limited to that provided by ground-wave propagation.

S5.91 *Additional allocation:* in the Philippines and Sri Lanka, the band 1606.5–1705 kHz is also allocated to the broadcasting service on a secondary basis.

S5.92 Some countries of Region 1 use radiodetermination systems in the bands 1606.5–1625 kHz, 1635–1800 kHz, 1850–2160 kHz, 2194–2300 kHz, 2502–2850 kHz and 3500–3800 kHz, subject to agreement obtained under No. S9.21. The radiated mean power of these stations shall not exceed 50 W.

S5.93 *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Nigeria, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Chad, Turkmenistan and Ukraine, the bands 1625–1635 kHz, 1800–1810 kHz and 2160–2170 kHz are also allocated to the fixed and land mobile services on a primary basis, subject to agreement obtained under No. S9.21.

S5.96 In Germany, Armenia, Azerbaijan, Belarus, Denmark, Estonia, Finland, Georgia, Hungary, Ireland, Israel, Jordan, Kazakstan, Latvia, Lithuania, Malta, Moldova, Norway, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, the United Kingdom, Russian Federation, Sweden, Tajikistan, Turkmenistan and Ukraine, administrations may allocate up to 200 kHz to their amateur service in the bands 1715–1800 kHz and 1850–2000 kHz. However, when allocating the bands within this range to their amateur service, administrations shall, after prior consultation with administrations of neighbouring countries, take such steps as may be necessary to prevent harmful interference from their amateur service to the fixed and mobile services of other countries. The mean power of any amateur station shall not exceed 10 W.

S5.97 In Region 3, the Loran system operates either on 1850 kHz or 1950 kHz, the bands occupied being 1825–1875 kHz and 1925–1975 kHz respectively. Other services to which the band 1800–2000 kHz is allocated may use any frequency therein on condition that no harmful interference is caused to the Loran system operating on 1850 kHz or 1950 kHz.

S5.98 *Alternative allocation:* in Angola, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bulgaria, Cameroon, the Congo, Denmark, Egypt, Eritrea, Spain, Ethiopia, Georgia, Greece, Italy, Kazakstan, Lebanon, Lithuania, Moldova, the Netherlands, Syria, Kyrgyzstan, Russian Federation, Somalia, Tajikistan, Tunisia, Turkmenistan, Turkey and Ukraine, the band 1810–1830 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.99 *Additional allocation:* in Saudi Arabia, Bosnia and Herzegovina, Iraq, Libya, Uzbekistan, Slovakia, the Czech Republic, Romania, Slovenia, Chad, Togo and Yugoslavia, the band 1810–1830 kHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.100 In Region 1, the authorization to use the band 1810–1830 kHz by the amateur service in countries situated totally or partially north of 40° N shall be given only after consultation with the countries mentioned in Nos. S5.98 and S5.99 to define the necessary steps to be taken to prevent harmful interference between amateur stations and stations of other services operating in accordance with Nos. S5.98 and S5.99.

S5.101 *Alternative allocation:* in Burundi and Lesotho, the band 1810–1850 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.102 *Alternative allocation:* in Argentina, Bolivia, Chile, Mexico, Paraguay, Peru, Uruguay and Venezuela, the band 1850–2000 kHz is allocated to the fixed, mobile except aeronautical mobile, radiolocation and radionavigation services on a primary basis.

S5.103 In Region 1, in making assignments to stations in the fixed and mobile services in the bands 1850–2045 kHz, 2194–2498 kHz, 2502–2625 kHz and 2650–2850 kHz, administrations should bear in mind the special requirements of the maritime mobile service.

S5.104 In Region 1, the use of the band 2025–2045 kHz by the meteorological aids service is limited to oceanographic buoy stations.

S5.105 In Region 2, except in Greenland, coast stations and ship stations using radiotelephony in the band 2065–2107 kHz shall be limited to class J3E emissions and to a peak envelope power not exceeding 1 kW. Preferably, the following carrier frequencies should be used: 2065.0 kHz, 2079.0 kHz, 2082.5 kHz, 2086.0 kHz, 2093.0 kHz, 2096.5 kHz, 2100.0 kHz and 2103.5 kHz. In Argentina and Uruguay, the carrier frequencies 2068.5 kHz and 2075.5 kHz are also used for this purpose, while the frequencies within the band 2072–2075.5 kHz are used as provided in No. S52.165.

S5.106 In Regions 2 and 3, provided no harmful interference is caused to the maritime mobile service, the frequencies between 2065 kHz and 2107 kHz may be used by stations of the fixed service communicating only within national borders and whose mean power does not exceed 50 W. In notifying the frequencies, the attention of the Bureau should be drawn to these provisions.

S5.107 Additional allocation: in Saudi Arabia, Botswana, Eritrea, Ethiopia, Iraq, Lesotho, Libya, Somalia, Swaziland and Zambia, the band 2160–2170 kHz is also allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis. The mean power of stations in these services shall not exceed 50 W.

S5.108 The carrier frequency 2182 kHz is an international distress and calling frequency for radiotelephony. The conditions for the use of the band 2173.5–2190.5 kHz are prescribed in Articles S31 and S52 and in Appendix S13.

S5.109 The frequencies 2187.5 kHz, 4207.5 kHz, 6312 kHz, 8414.5 kHz, 12,577 kHz and 16,804.5 kHz are international distress frequencies for digital selective calling. The conditions for the use of these frequencies are prescribed in Article S31.

S5.110 The frequencies 2174.5 kHz, 4177.5 kHz, 6268 kHz, 8376.5 kHz, 12,520 kHz and 16,695 kHz are international distress frequencies for narrow-band direct-printing telegraphy. The conditions for the use of these frequencies are prescribed in Article S31.

S5.111 The carrier frequencies 2182 kHz, 3023 kHz, 5680 kHz, 8364 kHz and the frequencies 121.5 MHz, 156.8 MHz and 243 MHz may also be used, in accordance with the procedures in force for terrestrial radiocommunication services, for search and rescue operations concerning manned space vehicles. The conditions for the use of the frequencies are prescribed in Article S31 and in Appendix S13.

The same applies to the frequencies 10,003 kHz, 14,993 kHz and 19,993 kHz, but in each of these cases emissions must be confined in a band of ± 3 kHz about the frequency.

S5.112 *Alternative allocation:* in Bosnia and Herzegovina, Cyprus, Denmark, France, Greece, Iceland, Italy, Malta, Norway, Sri Lanka, Turkey and Yugoslavia, the band 2,194–2,300 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.113 For the conditions for the use of the bands 2300–2495 kHz (2498 kHz in Region 1), 3200–3400 kHz, 4750–4995 kHz and 5005–5060 kHz by the broadcasting

service, see Nos. S5.16 to S5.20, S5.21 and S23.3 to S23.10.

S5.114 *Alternative allocation:* in Bosnia and Herzegovina, Cyprus, Denmark, France, Greece, Iraq, Italy, Malta, Norway, Turkey and Yugoslavia, the band 2502–2625 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.115 The carrier (reference) frequencies 3023 kHz and 5680 kHz may also be used, in accordance with Article S31 and Appendix S13 by stations of the maritime mobile service engaged in coordinated search and rescue operations.

S5.116 Administrations are urged to authorize the use of the band 3155–3195 kHz to provide a common worldwide channel for low power wireless hearing aids. Additional channels for these devices may be assigned by administrations in the bands between 3155 kHz and 3400 kHz to suit local needs.

It should be noted that frequencies in the range 3000 kHz to 4000 kHz are suitable for hearing aid devices which are designed to operate over short distances within the induction field.

S5.117 *Alternative allocation:* in Bosnia and Herzegovina, Cyprus, Côte d'Ivoire, Denmark, Egypt, France, Greece, Iceland, Italy, Liberia, Malta, Norway, Sri Lanka, Togo, Turkey and Yugoslavia, the band 3155–3200 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.118 *Additional allocation:* in the United States, Japan, Mexico, Peru and Uruguay, the band 3230–3400 kHz is also allocated to the radiolocation service on a secondary basis.

S5.119 *Additional allocation:* in Honduras, Mexico, Peru and Venezuela, the band 3500–3750 kHz is also allocated to the fixed and mobile services on a primary basis.

S5.120 For the use of the bands allocated to the amateur service at 3.5 MHz, 7.0 MHz, 10.1 MHz, 14.0 MHz, 18.068 MHz, 21.0 MHz, 24.89 MHz and 144 MHz in the event of natural disasters, see Resolution 640. *

* This Resolution was abrogated by WRC–97.

S5.122 *Alternative allocation:* in Argentina, Bolivia, Chile, Ecuador, Paraguay, Peru and Uruguay, the band 3750–4000 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.123 *Additional allocation:* in Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the band 3900–3950 kHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. S9.21.

S5.124 *Additional allocation:* in Canada, the band 3950–4000 kHz is also allocated to the broadcasting service on a primary basis. The power of broadcasting stations operating in this band shall not exceed that necessary for a national service within the frontier of this country and shall not cause harmful interference to other services operating in accordance with the Table.

S5.125 *Additional allocation:* in Greenland, the band 3950–4000 kHz is also allocated to the broadcasting service on a primary basis. The power of the broadcasting stations operating in this band shall not exceed that necessary for a national service and shall in no case exceed 5 kW.

S5.126 In Region 3, the stations of those services to which the band 3995–4005 kHz is allocated may transmit standard frequency and time signals.

S5.127 The use of the band 4000–4063 kHz by the maritime mobile service is limited to ship stations using radiotelephony (see No. S52.220 and Appendix S17).

S5.128 In Afghanistan, Argentina, Armenia, Azerbaijan, Belarus, Botswana, Burkina Faso, Central African Republic, China, Georgia, India, Kazakstan, Mali, Niger, Kyrgyzstan, Russian Federation, Tajikistan, Chad, Turkmenistan and Ukraine, in the bands 4063–4123 kHz, 4130–4133 kHz and 4408–4438 kHz, stations of limited power in the fixed service which are situated at least 600 km from the coast may operate on condition that harmful interference is not caused to the maritime mobile service.

S5.129 On condition that harmful interference is not caused to the maritime mobile service, the frequencies in the bands 4063–4123 kHz and 4130–4438 kHz may be used exceptionally by stations in the fixed service communicating only within the boundary of the country in which they are located with a mean power not exceeding 50 W.

S5.130 The conditions for the use of the carrier frequencies 4125 kHz and 6215 kHz are prescribed in Articles S31 and S52 and in Appendix S13.

S5.131 The frequency 4209.5 kHz is used exclusively for the transmission by coast stations of meteorological and navigational warnings and urgent information to ships by means of narrow-band direct-printing techniques.

S5.132 The frequencies 4210 kHz, 6314 kHz, 8416.5 kHz, 12,579 kHz, 16,806.5 kHz, 19,680.5 kHz, 22,376 kHz and 26,100.5 kHz are the international frequencies for the transmission of maritime safety information (MSI) (see Appendix S17).

S5.133 *Different category of service:* in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 5130–5250 kHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. S5.33).

S5.134 The use of the bands 5900–5950 kHz, 7300–7350 kHz, 9400–9500 kHz, 11,600–11,650 kHz, 12,050–12,100 kHz, 13,570–13,600 kHz, 13,800–13,870 kHz, 15,600–15,800 kHz, 17,480–17,550 kHz and 18,900–19,020 kHz by the broadcasting service is limited to single-sideband emissions with the characteristics specified in Appendix S11 or to any other spectrum-efficient modulation techniques recommended by ITU–R. Access to these bands shall be subject to the decisions of a competent conference.

S5.136 The band 5900–5950 kHz is allocated, until 1 April 2007, to the fixed service on a primary basis, as well as to the following services: in Region 1 to the land mobile service on a primary basis, in Region 2 to the mobile except aeronautical mobile (R) service on a primary basis, and in Region 3 to the mobile except aeronautical mobile (R) service on a secondary basis, subject to application of the procedure referred to in Resolution 21 (Rev. WRC–95). After 1 April 2007, frequencies in this band may be used by stations in the above-mentioned services, communicating only within the boundary of the country in which they are located, on the condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

S5.137 On condition that harmful interference is not caused to the maritime mobile service, the bands 6200–6213.5 kHz and 6220.5–6525 kHz may be used exceptionally by stations in the fixed service, communicating only within the boundary of the country in which they are located, with a mean power not exceeding 50 W. At the time of notification of these frequencies, the attention of the Bureau will be drawn to the above conditions.

S5.138 The following bands:

6765–6795 kHz (centre frequency 6780 kHz), 433.05–434.79 MHz (centre frequency 433.92 MHz) in Region 1 except in the countries mentioned in No. S5.280, 61–61.5 GHz (centre frequency 61.25 GHz), 122–123 GHz (centre frequency 122.5 GHz), and 244–246 GHz (centre frequency 245 GHz)

are designated for industrial, scientific and medical (ISM) applications. The use of these frequency bands for ISM applications shall be subject to special authorization by the administration concerned, in agreement with other administrations whose radiocommunication services might be affected. In applying this provision, administrations shall have due regard to the latest relevant ITU–R Recommendations.

S5.139 *Different category of service:* in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 6765–7000 kHz to the land mobile service is on a primary basis (see No. S5.33).

S5.140 *Additional allocation:* in Angola, Iraq, Rwanda, Somalia and Togo, the band 7000–7050 kHz is also allocated to the fixed service on a primary basis.

S5.141 *Alternative allocation:* in Egypt, Eritrea, Ethiopia, Guinea, Libya and Madagascar, the band 7000–7050 kHz is allocated to the fixed service on a primary basis.

S5.142 The use of the band 7100–7300 kHz in Region 2 by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3.

S5.143 The band 7300–7350 kHz is allocated, until 1 April 2007, to the fixed service on a primary basis and to the land mobile service on a secondary basis, subject to application of the procedure referred to in Resolution 21 (Rev. WRC–95). After 1 April 2007, frequencies in this band may be used

by stations in the above-mentioned services, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

S5.144 In Region 3, the stations of those services to which the band 7995–8005 kHz is allocated may transmit standard frequency and time signals.

S5.145 The conditions for the use of the carrier frequencies 8291 kHz, 12,290 kHz and 16,420 kHz are prescribed in Articles S31 and S52 and in Appendix S13.

S5.146 The bands 9400–9500 kHz, 11,600–11,650 kHz, 12,050–12,100 kHz, 15,600–15,800 kHz, 17,480–17,550 kHz and 18,900–19,020 kHz are allocated to the fixed service on a primary basis until 1 April 2007, subject to application of the procedure referred to in Resolution 21 (Rev.WRC–95). After 1 April 2007, frequencies in these bands may be used by stations in the fixed service, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies in the fixed service, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

S5.147 On condition that harmful interference is not caused to the broadcasting service, frequencies in the bands 9775–9900 kHz, 11,650–11,700 kHz and 11,975–12,050 kHz may be used by stations in the fixed service communicating only within the boundary of the country in which they are located, each station using a total radiated power not exceeding 24 dBW.

S5.149 In making assignments to stations of other services to which the bands:

13,360–13,410 kHz, 25,550–25,670 kHz, 37.5–38.25 MHz, 73–74.6 MHz in Regions 1 and 3, 150.05–153 MHz in Region 1, 322–328.6 MHz*, 406.1–410 MHz, 608–614 MHz in Regions 1 and 3, 1330–1400 MHz*, 1610.6–1613.8 MHz*, 1660–1670 MHz, 1718.8–1722.2 MHz*, 2655–2690 MHz, 3260–3267 MHz*, 3332–3339 MHz*, 3345.8–3352.5 MHz*, 4825–4835 MHz*, 4950–4990 MHz, 4990–5000 MHz,6650–6675.2 MHz*, 10.6–10.68 GHz, 14.47–14.5 GHz*, 22.01–22.21 GHz*, 22.21–22.5 GHz, 22.81–22.86 GHz*, 23.07–23.12 GHz*, 31.2–31.3 GHz, 31.5–31.8 GHz in Regions 1 and 3, 36.43–36.5 GHz*, 42.5–43.5 GHz, 42.77–42.87 GHz*, 43.07–43.17 GHz*, 43.37–43.47 GHz*, 48.94–49.04 GHz*, 72.77–72.91 GHz*, 93.07–93.27 GHz*, 97.88–98.08 GHz*, 140.69–140.98 GHz*,144.68–144.98 GHz*, 145.45–145.75 GHz*, 146.82–147.12 GHz*, 150–151 GHz*, 174.42–175.02 GHz*, 177–177.4 GHz*, 178.2–178.6 GHz*, 181–181.46 GHz*, 186.2–186.6 GHz*, 250–251 GHz*, 257.5–258 GHz*, 261–265 GHz, 262.24–262.76 GHz*, 265–275 GHz, 265.64–266.16 GHz*, 267.34–267.86 GHz*, 271.74–272.26 GHz*

are allocated (* indicates radio astronomy use for spectral line observations), administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. S4.5 and S4.6 and Article S29).

S5.150 The following bands:

13,553–13,567 kHz (centre frequency 13,560 kHz), 26,957–27,283 kHz (centre frequency 27,120 kHz), 40.66–40.70 MHz (centre frequency 40.68 MHz), 902–928 MHz in Region 2 (centre frequency 915 MHz), 2400–2500 MHz (centre frequency 2450 MHz), 5725–5875 MHz (centre frequency 5800 MHz), and 24–24.25 GHz (centre frequency 24.125 GHz)

are also designated for industrial, scientific and medical (ISM) applications. Radiocommunication services operating within these bands must accept harmful interference which may be caused by these applications. ISM equipment operating in these bands is subject to the provisions of No. S15.13.

S5.151 The bands 13,570–13,600 kHz and 13,800–13,870 kHz are allocated, until 1 April 2007, to the fixed service on a primary basis and to the mobile except aeronautical mobile (R) service on a secondary basis, subject to application of the procedure referred to in Resolution 21 (Rev. WRC–95). After 1 April 2007, frequencies in these bands may be used by stations in the above-mentioned services, communicating only within the boundary of the country in which they are located, on the condition that harmful interference is not caused to the broadcasting service. When using frequencies in these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

S5.152 *Additional allocation:* in Armenia, Azerbaijan, China, Côte d'Ivoire, Georgia, the Islamic Republic of Iran, Kazakstan, Moldova, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 14,250–14,350 kHz is also allocated to the fixed service on a primary basis. Stations of the fixed service shall not use a radiated power exceeding 24 dBW.

S5.153 In Region 3, the stations of those services to which the band 15,995–16,005 kHz is allocated may transmit standard frequency and time signals.

S5.154 *Additional allocation:* in Armenia, Azerbaijan, Georgia, Kazakstan, Moldova, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 18,068–18,168 kHz is also allocated to the fixed service on a primary basis for use within their boundaries, with a peak envelope power not exceeding 1 kW.

S5.155 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, Kazakstan, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 21,850–21,870 kHz is also allocated to the aeronautical mobile (R) services on a primary basis.

S5.155A In Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, Kazakstan, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the use of the band 21,850–21,870 kHz by the fixed service is limited to provision of services related to aircraft flight safety.

S5.155B The band 21,870–21,924 kHz is used by the fixed service for provision of services related to aircraft flight safety.

S5.156 *Additional allocation:* in Nigeria, the band 22,720–23,200 kHz is also allocated to the meteorological aids service (radiosondes) on a primary basis.

S5.156A The use of the band 23,200–23,350 kHz by the fixed service is limited to provision of services related to aircraft flight safety.

S5.157 The use of the band 23,350–24,000 kHz by the maritime mobile service is limited to inter-ship radiotelegraphy.

S5.160 *Additional allocation:* in Botswana, Burundi, Lesotho, Malawi, Namibia, Dem. Rep. of the Congo, Rwanda and Swaziland, the band 41–44 MHz is also allocated to the aeronautical radionavigation service on a primary basis.

S5.161 *Additional allocation:* in the Islamic Republic of Iran and Japan, the band 41–44 MHz is also allocated to the radiolocation service on a secondary basis.

S5.162 *Additional allocation:* in Australia and New Zealand, the band 44–47 MHz is also allocated to the broadcasting service on a primary basis.

S5.162A *Additional allocation:* in Germany, Austria, Belgium, Bosnia and Herzegovina, China, Vatican, Denmark, Spain, Estonia, Finland, France, Ireland, Iceland, Italy, Latvia, The Former Yugoslav Republic of Macedonia, Liechtenstein, Lithuania, Luxembourg, Moldova, Monaco, Norway, the Netherlands, Poland, Portugal, Slovakia, the Czech Republic, the United Kingdom, Russian Federation, Sweden, Switzerland and Turkey, the band 46–68 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with Resolution 217 (WRC–97).

S5.163 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Estonia, Georgia, Hungary, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 47–48.5 MHz and 56.5–58 MHz are also allocated to the fixed and land mobile services on a secondary basis.

S5.164 *Additional allocation:* in Albania, Germany, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Côte d'Ivoire, Denmark, Spain, Finland, France, Gabon, Greece, Ireland, Israel, Italy, Jordan, Lebanon, Libya, Liechtenstein, Luxembourg, Madagascar, Mali, Malta, Morocco, Mauritania, Monaco, Nigeria, Norway, the Netherlands, Poland, Syria, the United Kingdom, Senegal, Slovenia, Sweden, Switzerland, Swaziland, Togo, Tunisia,

Turkey and Yugoslavia the band 47–68 MHz, in Romania the band 47–58 MHz and in the Czech Republic the band 66–68 MHz, are also allocated to the land mobile service on a primary basis. However, stations of the land mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations of countries other than those mentioned in connection with the band.

S5.165 *Additional allocation:* in Angola, Cameroon, the Congo, Madagascar, Mozambique, Somalia, Sudan, Tanzania and Chad, the band 47–68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.166 *Alternative allocation:* in New Zealand, the band 50–51 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis; the band 53–54 MHz is allocated to the fixed and mobile services on a primary basis.

S5.167 *Alternative allocation:* in Bangladesh, Brunei Darussalam, India, Indonesia, the Islamic Republic of Iran, Malaysia, Pakistan, Singapore and Thailand, the band 50–54 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis.

S5.168 *Additional allocation:* in Australia, China and the Democratic People's Republic of Korea, the band 50–54 MHz is also allocated to the broadcasting service on a primary basis.

S5.169 *Alternative allocation:* in Botswana, Burundi, Lesotho, Malawi, Namibia, Dem. Rep. of the Congo, Rwanda, South Africa, Swaziland, Zambia and Zimbabwe, the band 50–54 MHz is allocated to the amateur service on a primary basis.

S5.170 *Additional allocation:* in New Zealand, the band 51–53 MHz is also allocated to the fixed and mobile services on a primary basis.

S5.171 *Additional allocation:* in Botswana, Burundi, Lesotho, Malawi, Mali, Namibia, Dem. Rep. of the Congo, Rwanda, South Africa, Swaziland and Zimbabwe, the band 54–68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.172 *Different category of service:* in the French Overseas Departments in Region 2, Guyana, Jamaica and Mexico, the allocation of the band 54–68 MHz to the fixed and mobile services is on a primary basis (see No. S5.33).

S5.173 *Different category of service:* in the French Overseas Departments in Region 2, Guyana, Jamaica and Mexico, the allocation of the band 68–72 MHz to the fixed and mobile services is on a primary basis (see No. S5.33).

S5.174 *Alternative allocation:* in Bulgaria, Hungary, Poland and Romania, the band 68–73 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions in the Final Acts of the Special Regional Conference (Geneva, 1960).

S5.175 *Alternative allocation:* in Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 68–73 MHz and 76–87.5 MHz are allocated to the broadcasting service on a primary basis. The services to which these bands are allocated in other countries and the broadcasting service in the countries listed above are subject to agreements with the neighbouring countries concerned.

S5.176 *Additional allocation:* in Australia, China, the Republic of Korea, the Philippines, the Democratic People's Republic of Korea and Western Samoa, the band 68–74 MHz is also allocated to the broadcasting service on a primary basis.

S5.177 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 73–74 MHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. S9.21.

S5.178 *Additional allocation:* in Colombia, Costa Rica, Cuba, El Salvador, Guatemala, Guyana, Honduras and Nicaragua, the band 73–74.6 MHz is also allocated to the fixed and mobile services on a secondary basis.

S5.179 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, China, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 74.6–74.8 MHz and 75.2–75.4 MHz are also allocated to the aeronautical radionavigation service, on a primary basis, for ground-based transmitters only.

S5.180 The frequency 75 MHz is assigned to marker beacons. Administrations shall refrain from assigning frequencies close to the limits of the guardband to stations of other services which, because of their power or geographical position, might cause harmful interference or otherwise place a constraint on marker beacons.

Every effort should be made to improve further the characteristics of airborne receivers and to limit the power of transmitting stations close to the limits 74.8 MHz and 75.2 MHz.

S5.181 *Additional allocation:* in Germany, Austria, Cyprus, Denmark, Egypt, France, Greece, Israel, Italy, Japan, Jordan, Lebanon, Malta, Morocco, Monaco, Norway, Syria, Sweden and Switzerland, the band 74.8–75.2 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. S9.21. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedure invoked under No. S9.21.

S5.182 *Additional allocation:* in Western Samoa, the band 75.4–87 MHz is also allocated to the broadcasting service on a primary basis.

S5.183 *Additional allocation:* in China, the Republic of Korea, Japan, the Philippines and the Democratic People's Republic of Korea, the band 76–87 MHz is also allocated to the broadcasting service on a primary basis.

S5.184 *Additional allocation:* in Bulgaria and Romania, the band 76–87.5 MHz is also allocated to the broadcasting service on a primary basis and used in accordance with the decisions contained in the Final Acts of the Special Regional Conference (Geneva, 1960).

S5.185 *Different category of service:* in the United States, the French Overseas Departments in Region 2, Guyana, Jamaica, Mexico and Paraguay, the allocation of the band 76–88 MHz to the fixed and mobile services is on a primary basis (see No. S5.33).

S5.187 *Alternative allocation:* in Albania, the band 81–87.5 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions contained in the Final Acts of the Special Regional Conference (Geneva, 1960).

S5.188 *Additional allocation:* in Australia, the band 85–87 MHz is also allocated to the broadcasting service on a primary basis. The introduction of the broadcasting service in Australia is subject to special agreements between the administrations concerned.

S5.190 *Additional allocation:* in Monaco, the band 87.5–88 MHz is also allocated to the land mobile service on a primary basis, subject to agreement obtained under No. S9.21.

S5.192 *Additional allocation:* in China and the Republic of Korea, the band 100–108 MHz is also allocated to the fixed and mobile services on a primary basis.

S5.194 *Additional allocation:* in Azerbaijan, Lebanon, Syria, Kyrgyzstan, Somalia and Turkmenistan, the band 104–108 MHz is also allocated to the mobile, except aeronautical mobile (R), service on a secondary basis.

S5.197 *Additional allocation:* in Germany, Austria, Cyprus, Denmark, Egypt, France, Italy, Japan, Jordan, Lebanon, Malta, Morocco, Monaco, Norway, Pakistan, Syria, and Sweden, the band 108–111.975 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. S9.21. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedures invoked under No. S9.21.

S5.198 *Additional allocation:* the band 117.975–136 MHz is also allocated to the aeronautical mobile-satellite (R) service on a secondary basis, subject to agreement obtained under No. S9.21.

S5.199 The bands 121.45–121.55 MHz and 242.95–243.05 MHz are also allocated to the mobile-satellite service for the reception on board satellites of emissions from emergency position-indicating radiobeacons transmitting at 121.5 MHz and 243 MHz (see Appendix S13).

S5.200 In the band 117.975–136 MHz, the frequency 121.5 MHz is the aeronautical

emergency frequency and, where required, the frequency 123.1 MHz is the aeronautical frequency auxiliary to 121.5 MHz. Mobile stations of the maritime mobile service may communicate on these frequencies under the conditions laid down in Article S31 and Appendix S13 for distress and safety purposes with stations of the aeronautical mobile service.

S5.201 *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Hungary, the Islamic Republic of Iran, Iraq, Japan, Kazakstan, Latvia, Moldova, Mongolia, Mozambique, Uzbekistan, Papua New Guinea, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 132–136 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service.

S5.202 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Belarus, Bulgaria, United Arab Emirates, Georgia, the Islamic Republic of Iran, Jordan, Kazakstan, Latvia, Moldova, Oman, Uzbekistan, Poland, Syria, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan, Turkey and Ukraine, the band 136–137 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service.

S5.203 In the band 136–137 MHz, existing operational meteorological satellites may continue to operate, under the conditions defined in No. S4.4 with respect to the aeronautical mobile service, until 1 January 2002. Administrations shall not authorize new frequency assignments in this band to stations in the meteorological-satellite service.

S5.203A *Additional allocation:* in Israel, Mauritania, Qatar and Zimbabwe, the band 136–137 MHz is also allocated to the fixed and mobile, except aeronautical mobile (R), services on a secondary basis until 1 January 2005.

S5.203B *Additional allocation:* in Saudi Arabia, United Arab Emirates, Jordan, Oman and Syria, the band 136–137 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis until 1 January 2005.

S5.204 *Different category of service:* in Afghanistan, Saudi Arabia, Bahrain, Bangladesh, Bosnia and Herzegovina, Brunei Darussalam, China, Cuba, the United Arab Emirates, India, Indonesia, the Islamic Republic of Iran, Iraq, Malaysia, Oman, Pakistan, Philippines, Qatar, Singapore, Sri Lanka, Thailand, Yemen and Yugoslavia, the band 137–138 MHz is allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis (see No. S5.33).

S5.205 *Different category of service:* in Israel and Jordan, the allocation of the band 137–138 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. S5.33).

S5.206 *Different category of service:* in Armenia, Austria, Azerbaijan, Belarus, Bulgaria, Egypt, Finland, France, Georgia, Greece, Hungary, Kazakstan, Lebanon, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Syria, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 137–138 MHz to the aeronautical mobile (OR) service is on a primary basis (see No. S5.33).

S5.207 *Additional allocation:* in Australia, the band 137–144 MHz is also allocated to the broadcasting service on a primary basis until that service can be accommodated within regional broadcasting allocations.

S5.208 The use of the band 137–138 MHz by the mobile-satellite service is subject to coordination under No. S9.11A.

S5.208A In making assignments to space stations in the mobile-satellite service in the bands 137–138 MHz, 387–390 MHz and 400.15–401 MHz, administrations shall take all practicable steps to protect the radio astronomy service in the bands 150.05–153 MHz, 322–328.6 MHz, 406.1–410 MHz and 608–614 MHz from harmful interference from unwanted emissions. The threshold levels of interference detrimental to the radio astronomy service are shown in Table 1 of Recommendation ITU–R RA.769–1.

S5.209 The use of the bands 137–138 MHz, 148–150.05 MHz, 399.9–400.05 MHz, 400.15–401 MHz, 454–456 MHz and 459–460 MHz by the mobile-satellite service is limited to non-geostationary-satellite systems.

S5.210 *Additional allocation:* in Austria, France, Italy, Liechtenstein, Slovakia, the Czech Republic, the United Kingdom and Switzerland, the bands 138–143.6 MHz and 143.65–144 MHz are also allocated to the space research service (space-to-Earth) on a secondary basis.

S5.211 *Additional allocation:* in Germany, Saudi Arabia, Austria, Bahrain, Belgium, Bosnia and Herzegovina, Denmark, the United Arab Emirates, Spain, Finland, Greece, Ireland, Israel, Kenya, Kuwait, The Former Yugoslav Republic of Macedonia, Liechtenstein, Luxembourg, Mali, Malta, Norway, the Netherlands, Qatar, the United Kingdom, Slovenia, Somalia, Sweden, Switzerland, Tanzania, Tunisia, Turkey and Yugoslavia, the band 138–144 MHz is also allocated to the maritime mobile and land mobile services on a primary basis.

S5.212 *Alternative allocation:* in Angola, Botswana, Burundi, Cameroon, the Central African Republic, the Congo, Gabon, Gambia, Ghana, Guinea, Iraq, Jordan, Lesotho, Liberia, Libya, Malawi, Mozambique, Namibia, Nigeria, Oman, Dem. Rep. of the Congo, Rwanda, Sierra Leone, South Africa, Swaziland, Chad, Togo, Zaire, Zambia and Zimbabwe, the band 138–144 MHz is allocated to the fixed and mobile services on a primary basis.

S5.213 *Additional allocation:* in China, the band 138–144 MHz is also allocated to the radiolocation service on a primary basis.

S5.214 *Additional allocation:* in Bosnia and Herzegovina, Croatia, Eritrea, Ethiopia, Kenya, The Former Yugoslav Republic of Macedonia, Malta, Slovenia, Somalia, Sudan, Tanzania and Yugoslavia, the band 138–144 MHz is also allocated to the fixed service on a primary basis

S5.216 *Additional allocation:* in China, the band 144–146 MHz is also allocated to the aeronautical mobile (OR) service on a secondary basis.

S5.217 *Alternative allocation:* in Afghanistan, Bangladesh, Cuba, Guyana and India, the band 146–148 MHz is allocated to the fixed and mobile services on a primary basis.

S5.218 *Additional allocation:* the band 148–149.9 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. S9.21. The bandwidth of any individual transmission shall not exceed ±25 kHz.

S5.219 The use of the band 148–149.9 MHz by the mobile-satellite service is subject to coordination under No. S9.11A. The mobile-satellite service shall not constrain the development and use of the fixed, mobile and space operation services in the band 148–149.9 MHz.

S5.220 The use of the bands 149.9–150.05 MHz and 399.9–400.05 MHz by the mobile-satellite service is subject to coordination under No. S9.11A. The mobile-satellite service shall not constrain the development and use of the radionavigation-satellite service in the bands 149.9–150.05 MHz and 399.9–400.05 MHz.

S5.221 Stations of the mobile-satellite service in the band 148–149.9 MHz shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations in the following countries: Albania, Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Benin, Bosnia and Herzegovina, Brunei Darussalam, Bulgaria, Cameroon, China, Cyprus, Congo, the Republic of Korea, Croatia, Cuba, Denmark, Egypt, the United Arab Emirates, Eritrea, Spain, Estonia, Ethiopia, Finland, France, Gabon, Ghana, Greece, Guinea, Guinea Bissau, Hungary, India, the Islamic Republic of Iran, Ireland, Iceland, Israel, Italy, Jamaica, Japan, Jordan, Kazakstan, Kenya, Kuwait, Latvia, The Former Yugoslav Republic of Macedonia, Lebanon, Libya, Liechtenstein, Luxembourg, Malaysia, Mali, Malta, Mauritania, Moldova, Mongolia, Mozambique, Namibia, Norway, New Zealand, Oman, Uganda, Uzbekistan, Pakistan, Panama, Papua New Guinea, Paraguay, the Netherlands, Philippines, Poland, Portugal, Qatar, Syria, Kyrgyzstan, Slovakia, Romania, the United Kingdom, Russian Federation, Senegal, Sierra Leone, Singapore, Slovenia, Sri Lanka, South Africa, Sweden, Switzerland, Swaziland, Tanzania, Chad, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Ukraine, Viet Nam, Yemen, Yugoslavia, Zambia, and Zimbabwe.

S5.222 Emissions of the radionavigation-satellite service in the bands 149.9–150.05 MHz and 399.9–400.05 MHz may also be used by receiving earth stations of the space research service.

S5.223 Recognizing that the use of the band 149.9–150.05 MHz by the fixed and

mobile services may cause harmful interference to the radionavigation-satellite service, administrations are urged not to authorize such use in application of No. S4.4.

S5.224A The use of the bands 149.9–150.05 MHz and 399.9–400.05 MHz by the mobile-satellite service (Earth-to-space) is limited to the land mobile-satellite service (Earth-to-space) until 1 January 2015.

S5.224B The allocation of the bands 149.9–150.05 MHz and 399.9–400.05 MHz to the radionavigation-satellite service shall be effective until 1 January 2015.

S5.225 *Additional allocation:* in Australia and India, the band 150.05–153 MHz is also allocated to the radio astronomy service on a primary basis.

S5.226 The frequency 156.8 MHz is the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service. The conditions for the use of this frequency are contained in Article S31 and Appendix S13.

In the bands 156–156.7625 MHz, 156.8375–157.45 MHz, 160.6–160.975 MHz and 161.475–162.05 MHz, each administration shall give priority to the maritime mobile service on only such frequencies as are assigned to stations of the maritime mobile service by the administration (see Articles S31 and S52, and Appendix S13).

Any use of frequencies in these bands by stations of other services to which they are allocated should be avoided in areas where such use might cause harmful interference to the maritime mobile VHF radiocommunication service.

However, the frequency 156.8 MHz and the frequency bands in which priority is given to the maritime mobile service may be used for radiocommunications on inland waterways subject to agreement between interested and affected administrations and taking into account current frequency usage and existing agreements.

S5.227 In the maritime mobile VHF service the frequency 156.525 MHz is to be used exclusively for digital selective calling for distress, safety and calling. The conditions for the use of this frequency are prescribed in Articles S31 and S52, and Appendices S13 and S18.

S5.229 *Alternative allocation:* in Morocco, the band 162–174 MHz is allocated to the broadcasting service on a primary basis. The use of this band shall be subject to agreement with administrations having services, operating or planned, in accordance with the Table which are likely to be affected. Stations in existence on 1 January 1981, with their technical characteristics as of that date, are not affected by such agreement.

S5.230 *Additional allocation:* in China, the band 163–167 MHz is also allocated to the space operation service (space-to-Earth) on a primary basis, subject to agreement obtained under No. S9.21.

S5.231 *Additional allocation:* in Afghanistan, China and Pakistan, the band 167–174 MHz is also allocated to the broadcasting service on a primary basis. The introduction of the broadcasting service into this band shall be subject to agreement with the neighbouring countries in Region 3 whose services are likely to be affected.

S5.232 *Additional allocation:* in Japan, the band 170–174 MHz is also allocated to the broadcasting service on a primary basis.

S5.233 *Additional allocation:* in China, the band 174–184 MHz is also allocated to the space research (space-to-Earth) and the space operation (space-to-Earth) services on a primary basis, subject to agreement obtained under No. S9.21. These services shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations.

S5.234 *Different category of service:* in Mexico, the allocation of the band 174–216 MHz to the fixed and mobile services is on a primary basis (see No. S5.33).

S5.235 *Additional allocation:* in Germany, Austria, Belgium, Denmark, Spain, Finland, France, Israel, Italy, Liechtenstein, Malta, Monaco, Norway, the Netherlands, the United Kingdom, Sweden and Switzerland, the band 174–223 MHz is also allocated to the land mobile service on a primary basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, broadcasting stations, existing or planned, in countries other than those listed in this footnote.

S5.237 *Additional allocation:* in the Congo, Eritrea, Ethiopia, Gambia, Guinea, Libya, Malawi, Mali, Senegal, Sierra Leone, Somalia, Tanzania and Zimbabwe, the band 174–223 MHz is also allocated to the fixed and mobile services on a secondary basis.

S5.238 *Additional allocation:* in Bangladesh, India, Pakistan and the Philippines, the band 200–216 MHz is also allocated to the aeronautical radionavigation service on a primary basis.

S5.240 *Additional allocation:* in China and India, the band 216–223 MHz is also allocated to the aeronautical radionavigation service on a primary basis and to the radiolocation service on a secondary basis.

S5.241 In Region 2, no new stations in the radiolocation service may be authorized in the band 216–225 MHz. Stations authorized prior to 1 January 1990 may continue to operate on a secondary basis.

S5.242 *Additional allocation:* in Canada, the band 216–220 MHz is also allocated to the land mobile service on a primary basis.

S5.243 *Additional allocation:* in Somalia, the band 216–225 MHz is also allocated to the aeronautical radionavigation service on a primary basis, subject to not causing harmful interference to existing or planned broadcasting services in other countries.

S5.245 *Additional allocation:* in Japan, the band 222–223 MHz is also allocated to the aeronautical radionavigation service on a primary basis and to the radiolocation service on a secondary basis.

S5.246 *Alternative allocation:* in Spain, France, Israel and Monaco, the band 223–230 MHz is allocated to the broadcasting and land mobile services on a primary basis (see No. S5.33) on the basis that, in the preparation of frequency plans, the broadcasting service shall have prior choice of frequencies; and allocated to the fixed and mobile, except land mobile, services on a secondary basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations in Morocco and Algeria.

S5.247 *Additional allocation:* in Saudi Arabia, Bahrain, the United Arab Emirates, Jordan, Oman, Qatar and Syria, the band 223–235 MHz is also allocated to the aeronautical radionavigation service on a primary basis.

S5.250 *Additional allocation:* in China, the band 225–235 MHz is also allocated to the radio astronomy service on a secondary basis.

S5.251 *Additional allocation:* in Nigeria, the band 230–235 MHz is also allocated to the aeronautical radionavigation service on a primary basis, subject to agreement obtained under No. S9.21.

S5.252 *Alternative allocation:* in Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the bands 230–238 MHz and 246–254 MHz are allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. S9.21.

S5.254 The bands 235–322 MHz and 335.4–399.9 MHz may be used by the mobile-satellite service, subject to agreement obtained under No. S9.21, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table of Frequency Allocations.

S5.255 The bands 312–315 MHz (Earth-to-space) and 387–390 MHz (space-to-Earth) in the mobile-satellite service may also be used by non-geostationary-satellite systems. Such use is subject to coordination under No. S9.11A.

S5.256 The frequency 243 MHz is the frequency in this band for use by survival craft stations and equipment used for survival purposes (see Appendix S13).

S5.257 The band 267–272 MHz may be used by administrations for space telemetry in their countries on a primary basis, subject to agreement obtained under No. S9.21.

S5.258 The use of the band 328.6–335.4 MHz by the aeronautical radionavigation service is limited to Instrument Landing Systems (glide path).

S5.259 *Additional allocation:* in Germany, Austria, Cyprus, the Republic of Korea, Denmark, Egypt, Spain, France, Greece, Israel, Italy, Japan, Jordan, Malta, Morocco, Monaco, Norway, the Netherlands, Syria and Sweden, the band 328.6–335.4 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. S9.21. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedure invoked under No. S9.21.

S5.260 Recognizing that the use of the band 399.9–400.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation satellite service, administrations are urged not to authorize such use in application of No. S4.4.

S5.261 Emissions shall be confined in a band of ± 25 kHz about the standard frequency 400.1 MHz.

S5.262 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Bulgaria, Colombia, Costa Rica, Cuba, Egypt, the United Arab Emirates, Ecuador, Estonia, Georgia, Hungary, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kazakstan, Kuwait, Liberia, Malaysia, Moldova, Nigeria, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, Slovakia, Romania, Russian Federation, Singapore, Somalia, Sri Lanka, Tajikistan, Turkmenistan, Ukraine and Yugoslavia, the band 400.05–401 MHz is also allocated to the fixed and mobile services on a primary basis.

S5.263 The band 400.15–401 MHz is also allocated to the space research service in the space-to-space direction for communications with manned space vehicles. In this application, the space research service will not be regarded as a safety service.

S5.264 The use of the band 400.15–401 MHz by the mobile-satellite service is subject to coordination under No. S9.11A. The power flux-density limit indicated in Annex 1 of Appendix S5 shall apply until such time as a competent world radiocommunication conference revises it.

S5.266 The use of the band 406–406.1 MHz by the mobile-satellite service is limited to low power satellite emergency position-indicating radiobeacons (see also Article S31 and Appendix S13).

S5.267 Any emission capable of causing harmful interference to the authorized uses of the band 406–406.1 MHz is prohibited.

S5.268 Use of the band 410–420 MHz by the space research service is limited to communications within 5 km of an orbiting, manned space vehicle. The power flux-density at the surface of the Earth produced by emissions from extra-vehicular activities shall not exceed -153 dB(W/m^2) for $0° \leq \delta \leq 5°$, $-153 + 0.077\ (\delta - 5)$ dB(W/m^2) for $5° \leq \delta \leq 70°$ and -148 dB(W/m^2) for $70° \leq \delta \leq 90°$, where δ is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. No. S4.10 does not apply to extra-vehicular activities. In this frequency band the space research (space-to-space) service shall not claim protection from, nor constrain the use and development of, stations of the fixed and mobile services.

S5.269 *Different category of service:* in Australia, the United States, India, Japan and the United Kingdom, the allocation of the bands 420–430 MHz and 440–450 MHz to the radiolocation service is on a primary basis (see No. S5.33).

S5.270 *Additional allocation:* in Australia, the United States, Jamaica and the Philippines, the bands 420–430 MHz and 440–450 MHz are also allocated to the amateur service on a secondary basis.

S5.271 *Additional allocation:* in Azerbaijan, Belarus, China, Estonia, India, Latvia, Lithuania, Kyrgyzstan, Turkmenistan and Ukraine, the band 420–460 MHz is also allocated to the aeronautical radionavigation service (radio altimeters) on a secondary basis.

S5.272 *Different category of service:* in France, the allocation of the band 430–434 MHz to the amateur service is on a secondary basis (see No. S5.32).

S5.273 *Different category of service:* in Denmark, Libya and Norway, the allocation of the bands 430–432 MHz and 438–440 MHz to the radiolocation service is on a secondary basis (see No. S5.32).

S5.274 *Alternative allocation:* in Denmark, Norway and Sweden, the bands 430–432 MHz and 438–440 MHz are allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.275 *Additional allocation:* in Bosnia and Herzegovina, Croatia, Estonia, Finland, Latvia, The Former Yugoslav Republic of Macedonia, Libya, Slovenia and Yugoslavia, the bands 430–432 MHz and 438–440 MHz are also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.276 *Additional allocation:* in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burkina Faso, Burundi, Egypt, the United Arab Emirates, Ecuador, Eritrea, Ethiopia, Greece, Guinea, India, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Liechtenstein, Malaysia, Malta, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Democratic People's Republic of Korea, Singapore, Somalia, Switzerland, Tanzania, Thailand, Togo, Turkey and Yemen, the band 430–440 MHz is also allocated to the fixed service on a primary basis and the bands 430–435 MHz and 438–440 MHz are also allocated to the mobile, except aeronautical mobile, service on a primary basis.

S5.277 *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, Cameroon, the Congo, Djibouti, Gabon, Georgia, Hungary, Kazakstan, Latvia, Mali, Moldova, Mongolia, Uzbekistan, Pakistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Rwanda, Tajikistan, Chad, Turkmenistan and Ukraine, the band 430–440 MHz is also allocated to the fixed service on a primary basis.

S5.278 *Different category of service:* in Argentina, Colombia, Costa Rica, Cuba, Guyana, Honduras, Panama and Venezuela, the allocation of the band 430–440 MHz to the amateur service is on a primary basis (see No. S5.33).

S5.279 *Additional allocation:* in Mexico, the bands 430–435 MHz and 438–440 MHz are also allocated on a primary basis to the land mobile service, subject to agreement obtained under No. S9.21.

S5.280 In Germany, Austria, Bosnia and Herzegovina, Croatia, The Former Yugoslav Republic of Macedonia, Liechtenstein, Portugal, Slovenia, Switzerland and Yugoslavia, the band 433.05–434.79 MHz (centre frequency 433.92 MHz) is designated for industrial, scientific and medical (ISM) applications. Radiocommunication services of these countries operating within this band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. S15.13.

S5.281 *Additional allocation:* in the French Overseas Departments in Region 2 and India, the band 433.75–434.25 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis. In France and in Brazil, the band is allocated to the same service on a secondary basis.

S5.282 In the bands 435–438 MHz, 1260–1270 MHz, 2400–2450 MHz, 3400–3410 MHz (in Regions 2 and 3 only) and 5650–5670 MHz, the amateur-satellite service may operate subject to not causing harmful interference to other services operating in accordance with the Table (see No. S5.43). Administrations authorizing such use shall ensure that any harmful interference caused by emissions from a station in the amateur-satellite service is immediately eliminated in accordance with the provisions of No. S25.11. The use of the bands 1260–1270 MHz and 5650–5670 MHz by the amateur-satellite service is limited to the Earth-to-space direction.

S5.283 *Additional allocation:* in Austria, the band 438–440 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.284 *Additional allocation:* in Canada, the band 440–450 MHz is also allocated to the amateur service on a secondary basis.

S5.285 *Different category of service:* in Canada, the allocation of the band 440–450 MHz to the radiolocation service is on a primary basis (see No. S5.33).

S5.286 The band 449.75–450.25 MHz may be used for the space operation service (Earth-to-space) and the space research service (Earth-to-space), subject to agreement obtained under No. S9.21.

S5.286A The use of the bands 454–456 MHz and 459–460 MHz by the mobile-satellite service is subject to coordination under No. S9.11A.

S5.286B The use of the band 454–455 MHz in the countries listed in No. S5.286D, 455–456 MHz and 459–460 MHz in Region 2, and 454–456 MHz and 459–460 MHz in the countries listed in No. S5.286E, by stations in the mobile-satellite service, shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations.

S5.286C The use of the band 454–455 MHz in the countries listed in No. S5.286D, 455–456 MHz and 459–460 MHz in Region 2, and 454–456 MHz and 459–460 MHz in the countries listed in No. S5.286E, by stations in the mobile-satellite service, shall not constrain the development and use of the fixed and mobile services operating in accordance with the Table of Frequency Allocations.

S5.286D *Additional allocation:* in Canada, the United States, Mexico and Panama, the band 454–455 MHz is also allocated to the mobile-satellite service (Earth-to-space) on a primary basis.

S5.286E *Additional allocation:* in Cape Verde, Indonesia, Nepal, Nigeria and Papua New Guinea, the bands 454–456 MHz and 459–460 MHz are also allocated to the mobile-satellite (Earth-to-space) service on a primary basis.

S5.287 In the maritime mobile service, the frequencies 457.525 MHz, 457.550 MHz, 457.575 MHz, 467.525 MHz, 467.550 MHz and 467.575 MHz may be used by on-board communication stations. Where needed, equipment designed for 12.5 kHz channel spacing using also the additional frequencies 457.5375 MHz, 457.5625 MHz, 467.5375 MHz and 467.5625 MHz may be introduced

for on-board communications. The use of these frequencies in territorial waters may be subject to the national regulations of the administration concerned. The characteristics of the equipment used shall conform to those specified in Recommendation ITU–R M.1174 (see Resolution 341 (WRC–97)).

S5.288 In the territorial waters of the United States and the Philippines, the preferred frequencies for use by on-board communication stations shall be 457.525 MHz, 457.550 MHz, 457.575 MHz and 457.600 MHz paired, respectively, with 467.750 MHz, 467.775 MHz, 467.800 MHz and 467.825 MHz. The characteristics of the equipment used shall conform to those specified in Recommendation ITU–R M.1174.

S5.289 Earth exploration-satellite service applications, other than the meteorological-satellite service, may also be used in the bands 460–470 MHz and 1690–1710 MHz for space-to-Earth transmissions subject to not causing harmful interference to stations operating in accordance with the Table.

S5.290 *Different category of service:* in Afghanistan, Armenia, Azerbaijan, Belarus, China, Japan, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 460–470 MHz to the meteorological-satellite service (space-to-Earth) is on a primary basis (see No. S5.33), subject to agreement obtained under No. S9.21.

S5.291 *Additional allocation:* in China, the band 470–485 MHz is also allocated to the space research (space-to-Earth) and the space operation (space-to-Earth) services on a primary basis subject to agreement obtained under No. S9.21 and subject to not causing harmful interference to existing and planned broadcasting stations.

S5.291A *Additional allocation:* in Germany, Austria, Denmark, Estonia, Finland, Liechtenstein, Norway, Netherlands, the Czech Republic and Switzerland, the band 470–494 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with Resolution 217 (WRC–97).

S5.292 *Different category of service:* in Mexico and Venezuela, the allocation of the band 470–512 MHz to the fixed and mobile services, and in Argentina and Uruguay to the mobile service, is on a primary basis (see No. S5.33), subject to agreement obtained under No. S9.21.

S5.293 *Different category of service:* in Chile, Colombia, Cuba, the United States, Guyana, Honduras, Jamaica, Mexico and Panama, the allocation of the bands 470–512 MHz and 614–806 MHz to the fixed and mobile services is on a primary basis (see No. S5.33), subject to agreement obtained under No. S9.21.

S5.294 *Additional allocation:* in Burundi, Cameroon, the Congo, Ethiopia, Israel, Kenya, Lebanon, Libya, Malawi, Senegal, Sudan, Syria, and Yemen, the band 470–582 MHz is also allocated to the fixed service on a secondary basis.

S5.296 *Additional allocation:* in Germany, Austria, Belgium, Cyprus, Denmark, Spain, Finland, France, Ireland, Israel, Italy, Libya, Malta, Morocco, Monaco, Norway, the Netherlands, Portugal, Syria, the United Kingdom, Sweden, Switzerland, Swaziland and Tunisia, the band 470–790 MHz is also allocated on a secondary basis to the land mobile service, intended for applications ancillary to broadcasting. Stations of the land mobile service in the countries listed in this footnote shall not cause harmful interference to existing or planned stations operating in accordance with the Table of Frequency Allocations in countries other than those listed in this footnote.

S5.297 *Additional allocation:* in Costa Rica, Cuba, El Salvador, the United States, Guatemala, Guyana, Honduras, Jamaica, Mexico and Venezuela, the band 512–608 MHz is also allocated to the fixed and mobile services on a primary basis, subject to agreement obtained under No. S9.21.

S5.298 *Additional allocation:* in India, the band 549.75–550.25 MHz is also allocated to the space operation service (space-to-Earth) on a secondary basis.

S5.300 *Additional allocation:* in Israel, Libya, Syria and Sudan, the band 582–790 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis.

S5.302 *Additional allocation:* in the United Kingdom, the band 590–598 MHz is also allocated to the aeronautical radionavigation service on a primary basis. All new assignments to stations in the aeronautical radionavigation service, including those transferred from the adjacent bands, shall be subject to coordination with the Administrations of the following countries: Germany, Belgium, Denmark, Spain, France, Ireland, Luxembourg, Morocco, Norway and the Netherlands.

S5.304 *Additional allocation:* in the African Broadcasting Area (see Nos. S5.10 to S5.13), the band 606–614 MHz is also allocated to the radio astronomy service on a primary basis.

S5.305 *Additional allocation:* in China, the band 606–614 MHz is also allocated to the radio astronomy service on a primary basis.

S5.306 *Additional allocation*: in Region 1, except in the African Broadcasting Area (see Nos. S5.10 to S5.13), and in Region 3, the band 608–614 MHz is also allocated to the radio astronomy service on a secondary basis.

S5.307 *Additional allocation*: in India, the band 608–614 MHz is also allocated to the radio astronomy service on a primary basis.

S5.309 *Different category of service*: in Costa Rica, El Salvador and Honduras, the allocation of the band 614–806 MHz to the fixed service is on a primary basis (see No. S5.33), subject to agreement obtained under No. S9.21.

S5.311 Within the frequency band 620–790 MHz, assignments may be made to television stations using frequency modulation in the broadcasting-satellite service subject to agreement between the administrations concerned and those having services, operating in accordance with the Table, which may be affected (see Resolutions 33 (Rev. WRC–97) and 507). Such stations shall not produce a power flux-density in excess of the value—129 dB(W/m2) for angles of arrival less than 20° (see Recommendation 705) within the territories of other countries without the consent of the administrations of those countries.

S5.312 *Additional allocation*: in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, Kazakstan, Latvia, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 645–862 MHz is also allocated to the aeronautical radionavigation service on a primary basis.

S5.314 *Additional allocation*: in Austria, Italy, Uzbekistan, the United Kingdom and Swaziland, the band 790–862 MHz is also allocated to the land mobile service on a secondary basis.

S5.315 *Alternative allocation*: in Greece, Italy, Morocco and Tunisia, the band 790–838 MHz is allocated to the broadcasting service on a primary basis

S5.316 *Additional allocation*: in Germany, Bosnia and Herzegovina, Burkina Faso, Cameroon, Côte d'Ivoire, Croatia, Denmark, Egypt, Finland, Israel, Kenya, the Former Yugoslav Republic of Macedonia, Libya, Liechtenstein, Monaco, Norway, the Netherlands, Portugal, Syria, Sweden, Switzerland and Yugoslavia, the band 790–830 MHz, and in these same countries and in Spain, France, Gabon and Malta, the band 830–862 MHz, are also allocated to the mobile, except aeronautical mobile, service on a primary basis. However, stations of the mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, stations of services operating in accordance with the Table in countries other than those mentioned in connection with the band.

S5.317 *Additional allocation*: in Region 2 (except Brazil and the United States), the band 806–890 MHz is also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. S9.21. The use of this service is intended for operation within national boundaries.

S5.318 *Additional allocation*: in Canada, the United States and Mexico, the bands 849–851 MHz and 894–896 MHz are also allocated to the aeronautical mobile service on a primary basis, for public correspondence with aircraft. The use of the band 849–851 MHz is limited to transmissions from aeronautical stations and the use of the band 894–896 MHz is limited to transmissions from aircraft stations.

S5.319 *Additional allocation*: in Belarus, Russian Federation and Ukraine, the bands 806–840 MHz (Earth-to-space) and 856–890 MHz (space-to-Earth) are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service. The use of these bands by this service shall not cause harmful interference to, or claim protection from, services in other countries operating in accordance with the Table of Frequency Allocations and is subject to special agreements between the administrations concerned.

S5.320 *Additional allocation:* in Region 3, the bands 806–890 MHz and 942–960 MHz

are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service on a primary basis, subject to agreement obtained under No. S9.21. The use of this service is limited to operation within national boundaries. In seeking such agreement, appropriate protection shall be afforded to services operating in accordance with the Table, to ensure that no harmful interference is caused to such services.

S5.321 *Alternative allocation:* in Italy, the band 838–854 MHz is allocated to the broadcasting service on a primary basis as from 1 January 1995.

S5.322 In Region 1, in the band 862–960 MHz, stations of the broadcasting service shall be operated only in the African Broadcasting Area (see Nos. S5.10 to S5.13) excluding Algeria, Egypt, Spain, Libya, Morocco, Nigeria, South Africa, Tanzania and Zimbabwe, subject to agreement obtained under No. S9.21.

S5.323 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Hungary, Kazakstan, Latvia, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 862–960 MHz is also allocated to the aeronautical radionavigation service on a primary basis. Such use is subject to agreement obtained under No. S9.21 with administrations concerned and limited to ground-based radiobeacons in operation on 27 October 1997 until the end of their lifetime.

S5.325 *Different category of service:* in the United States, the allocation of the band 890–942 MHz to the radiolocation service is on a primary basis (see No. S5.33), subject to agreement obtained under No. S9.21.

S5.326 *Different category of service:* in Chile, the band 903–905 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis, subject to agreement obtained under No. S9.21.

S5.327 *Different category of service:* in Australia, the allocation of the band 915–928 MHz to the radiolocation service is on a primary basis (see No. S5.33).

S5.328 The band 960–1215 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based facilities.

S5.329 Use of the radionavigation-satellite service in the band 1215–1260 MHz shall be subject to the condition that no harmful interference is caused to the radionavigation service authorized under No. S5.331.

S5.330 *Additional allocation:* in Angola, Saudi Arabia, Bahrain, Bangladesh, Cameroon, China, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Libya, Morocco, Mozambique, Nepal, Nigeria, Pakistan, the Philippines, Qatar, Syria, Somalia, Sudan, Sri Lanka, Chad, Togo and Yemen, the band 1215–1300 MHz is also allocated to the fixed and mobile services on a primary basis.

S5.331 *Additional allocation:* in Algeria, Germany, Austria, Bahrain, Belgium, Benin, Bosnia and Herzegovina, Burundi, Cameroon, China, Croatia, Denmark, the United Arab Emirates, France, Greece, India, the Islamic Republic of Iran, Iraq, Kenya, The Former Yugoslav Republic of Macedonia, Liechtenstein, Luxembourg, Mali, Mauritania, Norway, Oman, Pakistan, the Netherlands, Portugal, Qatar, Senegal, Slovenia, Somalia, Sudan, Sri Lanka, Sweden, Switzerland, Turkey and Yugoslavia, the band 1215–1300 MHz is also allocated to the radionavigation service on a primary basis.

S5.332 In the band 1215–1300 MHz, active spaceborne sensors in the earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service, the radionavigation-satellite service and other services allocated on a primary basis.

S5.333 In the bands 1215–1300 MHz, 3100–3300 MHz, 5250–5350 MHz, 8550–8650 MHz, 9500–9800 MHz and 13.4–14.0 GHz, radiolocation stations installed on spacecraft may also be employed for the earth exploration-satellite and space research services on a secondary basis. (SUP—WRC–97)

S5.334 *Additional allocation:* in Canada and the United States, the bands 1240–1300 MHz and 1350–1370 MHz are also allocated to the aeronautical radionavigation service on a primary basis.

S5.335 In Canada and the United States in the band 1240–1300 MHz, active spaceborne sensors in the earth exploration-satellite and space research services shall not cause interference to, claim protection from, or otherwise impose constraints on operation or development of the aeronautical radionavigation service.

S5.337 The use of the bands 1300–1350 MHz, 2700–2900 MHz and 9000–9200 MHz by the aeronautical radionavigation service is restricted to ground-based radars and to associated airborne transponders which transmit only on frequencies in these bands and only when actuated by radars operating in the same band.

S5.338 In Azerbaijan, Bulgaria, Mongolia, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Turkmenistan and Ukraine, existing installations of the radionavigation service may continue to operate in the band 1350–1400 MHz.

S5.339 The bands 1370–1400 MHz, 2640–2655 MHz, 4950–4990 MHz and 15.20–15.35 GHz are also allocated to the space research (passive) and earth exploration-satellite (passive) services on a secondary basis.

S5.340 All emissions are prohibited in the following bands:

1400–1427 MHz, 2690–2700 MHz, except those provided for by Nos. S5.421 and S5.422, 10.68–10.7 GHz, except those provided for by No. S5.483, 15.35–15.4 GHz, except those provided for by No. S5.511, 23.6–24 GHz, 31.3–31.5 GHz, 31.5–31.8 GHz, in Region 2, 48.94–49.04 GHz, from airborne stations, 50.2–50.4 GHz [2], except those provided for by No. S5.555A, 52.6–54.25 GHz, 86–92 GHz, 105–116 GHz, 140.69–140.98 GHz, from airborne stations and from space stations in the space-to-Earth direction, 182–185 GHz, except those provided for by No. S5.563, 217–231 GHz.

S5.341 In the bands 1400–1727 MHz, 101–120 GHz and 197–220 GHz, passive research is being conducted by some countries in a programme for the search for intentional emissions of extraterrestrial origin.

S5.342 *Additional allocation*: in Belarus, Russian Federation and Ukraine, the band 1429–1535 MHz is also allocated to the aeronautical mobile service on a primary basis exclusively for the purposes of aeronautical telemetry within the national territory. As of 1 April 2007, the use of the band 1452–1492 MHz is subject to agreement between the administrations concerned.

S5.343 In Region 2, the use of the band 1435–1535 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service.

S5.344 *Alternative allocation*: in the United States, the band 1452–1525 MHz is allocated to the fixed and mobile services on a primary basis (see also No. S5.343).

S5.345 Use of the band 1452–1492 MHz by the broadcasting-satellite service, and by the broadcasting service, is limited to digital audio broadcasting and is subject to the provisions of Resolution 528 (WARC–92).

S5.347 *Different category of service*: in Bangladesh, Bosnia and Herzegovina, Botswana, Bulgaria, Burkina Faso, Cuba, Denmark, Egypt, Greece, Ireland, Italy, Jordan, Kenya, Mozambique, Portugal, Sri Lanka, Swaziland, Yemen, Yugoslavia and Zimbabwe, the allocation of the band 1452–1492 MHz to the broadcasting-satellite service and the broadcasting service is on a secondary basis until 1 April 2007.

S5.348 The use of the band 1 492–1 525 MHz by the mobile-satellite service is subject to coordination under No. S9.11A. However, no coordination threshold in Article S21 for space stations of the mobile-satellite service with respect to terrestrial services shall apply to the situation referred to in No. S5.343. With respect to the situation referred to in No. S5.343, the requirement for coordination in the band 1492–1525 MHz will be determined by band overlap.

S5.348A In the band 1 492–1 525 MHz, the coordination threshold in terms of the power flux-density levels at the surface of the Earth in application of No. S.9.11A for space stations in the mobile-satellite (space-to-Earth) service, with respect to the land mobile service use for specialized mobile radios or used in conjunction with public switched telecommunication networks (PSTN) operating within the territory of Japan, shall be—150 dB(W/m^2) in any 4 kHz band for all angles of arrival, instead of those given in Table S5–2 of Appendix S5. The above threshold level of the power flux-density shall apply until it is changed by a competent world radiocommunication conference.

S5.349 *Different category of service*: in Saudi Arabia, Azerbaijan, Bahrain, Bosnia

[2] The allocation to the earth exploration-satellite service (passive) and the space research service (passive) in the band 50.2–50.4 GHz should not impose undue constraints on the use of the adjacent bands by the primary allocated services in those bands.

and Herzegovina, Cameroon, Egypt, the United Arab Emirates, France, the Islamic Republic of Iran, Iraq, Israel, Kazakstan, Kuwait, The Former Yugoslav Republic of Macedonia, Lebanon, Morocco, Mongolia, Oman, Qatar, Syria, Kyrgyzstan, Romania, Turkmenistan, Ukraine, Yemen and Yugoslavia, the allocation of the band 1525–1530 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. S5.33).

S5.350 *Additional allocation:* in Azerbaijan, Kyrgyzstan, Turkmenistan and Ukraine, the band 1525–1530 MHz is also allocated to the aeronautical mobile service on a primary basis.

S5.351 The bands 1525–1544 MHz, 1545–1559 MHz, 1626.5–1645.5 MHz and 1646.5–1660.5 MHz shall not be used for feeder links of any service. In exceptional circumstances, however, an earth station at a specified fixed point in any of the mobile-satellite services may be authorized by an administration to communicate via space stations using these bands.

S5.352A In the band 1525–1530 MHz, stations in the mobile-satellite service, except stations in the maritime mobile-satellite service, shall not cause harmful interference to, or claim protection from, stations of the fixed service in France and French overseas territories in Region 3, Algeria, Saudi Arabia, Egypt, Guinea, India, Israel, Italy, Jordan, Kuwait, Mali, Malta, Morocco, Mauritania, Nigeria, Oman, Pakistan, Philippines, Qatar, Syria, Tanzania, Viet Nam and Yemen notified prior to 1 April 1998.

S5.353A In applying the procedures of No. S9.11A to the mobile-satellite service in the bands 1530–1544 MHz and 1626.5–1645.5 MHz, priority shall be given to accommodating the spectrum requirements for distress, urgency and safety communications of the Global Maritime Distress and Safety System (GMDSS). Maritime mobile-satellite distress, urgency and safety communications shall have priority access and immediate availability over all other mobile satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, distress, urgency and safety communications of the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (See Resolution 218 (WRC–97).)

S5.354 The use of the bands 1525–1559 MHz and 1626.5–1660.5 MHz by the mobile-satellite services is subject to coordination under No. S9.11A.

S5.355 *Additional allocation:* in Bahrain, Bangladesh, the Congo, Egypt, the United Arab Emirates, Eritrea, Ethiopia, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Malta, Morocco, Oman, Qatar, Syria, Somalia, Sudan, Sri Lanka, Chad, Togo, Yemen and Zambia, the bands 1540–1645.5 MHz and 1646.5–1660 MHz are also allocated to the fixed service on a secondary basis.

S5.356 The use of the band 1544–1545 MHz by the mobile-satellite service (space-to-Earth) is limited to distress and safety communications (see Article S31).

S5.357 Transmissions in the band 1545–1555 MHz from terrestrial aeronautical stations directly to aircraft stations, or between aircraft stations, in the aeronautical mobile (R) service are also authorized when such transmissions are used to extend or supplement the satellite-to-aircraft links.

S5.357A In applying the procedures of No. S9.11A to the mobile-satellite service in the bands 1545–1555 MHz and 1646.5–1656.5 MHz, priority shall be given to accommodating the spectrum requirements of the aeronautical mobile-satellite (R) service providing transmission of messages with priority 1 to 6 in Article S44. Aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article S44 shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article S44. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (See Resolution 218 (WRC–97).)

S5.359 *Additional allocation:* in Germany, Saudi Arabia, Armenia, Austria, Azerbaijan, Belarus, Benin, Bulgaria, Cameroon, Spain, France, Gabon, Georgia, Greece, Guinea, Guinea-Bissau, Hungary, Jordan, Kazakstan, Kuwait, Latvia, Libya, Mali, Mauritania, Moldova, Mongolia, Nigeria, Uganda, Uzbekistan, Pakistan, Poland, Syria, Kyrgyzstan, the Democratic People's Republic of Korea, Romania, Russian Federation, Senegal, Swaziland, Tajikistan, Tanzania, Turkmenistan, Ukraine, Zambia and Zimbabwe the bands 1550–1645.5 MHz and 1646.5–1660 MHz are also allocated to the fixed service on a primary basis. Administrations are urged to make all practicable efforts to avoid the implementation of new fixed-service stations in the bands 1550–1555 MHz, 1610–1645.5 MHz and 1646.5–1660 MHz.

S5.362A In the United States, in the bands 1555–1559 MHz and 1656.5–1660.5 MHz, the aeronautical mobile-satellite (R) service shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article S44. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

S5.363 *Alternative allocation:* in Sweden, the band 1590–1626.5 MHz is allocated to the aeronautical radionavigation service on a primary basis.

S5.364 The use of the band 1610–1626.5 MHz by the mobile-satellite service (Earth-to-space) and by the radiodetermination-satellite service (Earth-to-space) is subject to coordination under No. S9.11A. A mobile earth station operating in either of the services in this band shall not produce a peak e.i.r.p. density in excess of −15 dB(W/4 kHz) in the part of the band used by systems operating in accordance with the provisions of No. S5.366 (to which No. S4.10 applies), unless otherwise agreed by the affected administrations. In the part of the band where such systems are not operating, the mean e.i.r.p. density of a mobile earth station shall not exceed —3 dB(W/4 kHz). Stations of the mobile-satellite service shall not claim protection from stations in the aeronautical radionavigation service, stations operating in accordance with the provisions of No. S5.366 and stations in the fixed service operating in accordance with the provisions of No. S5.359. Administrations responsible for the coordination of mobile-satellite networks shall make all practicable efforts to ensure protection of stations operating in accordance with the provisions of No. S5.366.

S5.365 The use of the band 1613.8–1626.5 MHz by the mobile-satellite service (space-to-Earth) is subject to coordination under No. S9.11A.

S5.366 The band 1610–1626.5 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities. Such satellite use is subject to agreement obtained under No. S9.21.

S5.367 *Additional allocation:* The bands 1610–1626.5 MHz and 5000–5150 MHz are also allocated to the aeronautical mobile-satellite (R) service on a primary basis, subject to agreement obtained under No. S9.21.

S5.368 With respect to the radiodetermination-satellite and mobile-satellite services the provisions of No. S4.10 do not apply in the band 1610–1626.5 MHz, with the exception of the aeronautical radionavigation-satellite service.

S5.369 *Different category of service:* in Angola, Australia, Burundi, China, Côte d'Ivoire, Eritrea, Ethiopia, India, the Islamic Republic of Iran, Israel, Jordan, Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Dem. Rep. of the Congo, Syria, Senegal, Sudan, Swaziland, Togo and Zambia, the allocation of the band 1610–1626.5 MHz to the radiodetermination-satellite service (Earth-to-space) is on a primary basis (see No. S5.33), subject to agreement obtained under No. S9.21 from countries not listed in this provision.

S5.370 *Different category of service:* in Venezuela, the allocation to the radiodetermination-satellite service in the band 1610–1626.5 MHz (Earth-to-space) is on a secondary basis.

S5.371 *Additional allocation:* in Region 1, the bands 1610–1626.5 MHz (Earth-to-space) and 2483.5–2500 MHz (space-to-Earth) are also allocated to the radiodetermination-satellite service on a secondary basis, subject to agreement obtained under No. S9.21.

S5.372 Harmful interference shall not be caused to stations of the radio astronomy service using the band 1610.6–1613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services (No. S29.13 applies).

S5.374 Mobile earth stations in the mobile-satellite service operating in the bands 1631.5–1634.5 MHz and 1656.5–1660 MHz shall not cause harmful interference to stations in the fixed service operating in the countries listed in No. S5.359.

S5.375 The use of the band 1645.5–1646.5 MHz by the mobile-satellite service

(Earth-to-space) and for inter-satellite links is limited to distress and safety communications (see Article S31).

S5.376 Transmissions in the band 1646.5–1656.5 MHz from aircraft stations in the aeronautical mobile (R) service directly to terrestrial aeronautical stations, or between aircraft stations, are also authorized when such transmissions are used to extend or supplement the aircraft-to-satellite links.

S5.376A Mobile earth stations operating in the band 1660–1660.5 MHz shall not cause harmful interference to stations in the radio astronomy service.

S5.377 In the band 1675–1710 MHz, stations in the mobile-satellite service shall not cause harmful interference to, nor constrain the development of, the meteorological-satellite and meteorological aids services (see Resolution 213 (Rev. WRC–95)) and the use of this band shall be subject to coordination under No. S9.11A.

S5.379 *Additional allocation:* in Bangladesh, India, Indonesia, Nigeria and Pakistan, the band 1660.5–1668.4 MHz is also allocated to the meteorological aids service on a secondary basis.

S5.379A Administrations are urged to give all practicable protection in the band 1660.5–1668.4 MHz for future research in radio astronomy, particularly by eliminating air-to-ground transmissions in the meteorological aids service in the band 1664.4–1668.4 MHz as soon as practicable.

S5.380 The bands 1670–1675 MHz and 1800–1805 MHz are intended for use, on a worldwide basis, by administrations wishing to implement aeronautical public correspondence. The use of the band 1670–1675 MHz by stations in the systems for public correspondence with aircraft is limited to transmissions from aeronautical stations and the use of the band 1800–1805 MHz is limited to transmissions from aircraft stations.

S5.381 *Additional allocation:* in Afghanistan, Costa Rica, Cuba, India, the Islamic Republic of Iran, Malaysia, Pakistan and Sri Lanka, the band 1690–1700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.382 *Different category of service:* in Saudi Arabia, Armenia, Austria, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Bulgaria, the Congo, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guinea, Hungary, Iraq, Israel, Jordan, Kazakstan, Kuwait, the Former Yugoslav Republic of Macedonia, Lebanon, Mauritania, Moldova, Mongolia, Oman, Uzbekistan, Poland, Qatar, Syria, Kyrgyzstan, Romania, Russian Federation, Somalia, Tajikistan, Tanzania, Turkmenistan, Ukraine, Yemen and Yugoslavia, the allocation of the band 1690–1700 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. S5.33), and in the Democratic People's Republic of Korea, the allocation of the band 1690–1700 MHz to the fixed service is on a primary basis (see No. S5.33) and to the mobile, except aeronautical mobile, service on a secondary basis.

S5.384 *Additional allocation:* in India, Indonesia and Japan, the band 1700–1710 MHz is also allocated to the space research service (space-to-Earth) on a primary basis.

S5.385 *Additional allocation:* the bands 1718.8–1722.2 MHz, 150–151 GHz, 174.42–175.02 GHz, 177–177.4 GHz, 178.2–178.6 GHz, 181–181.46 GHz, 186.2–186.6 GHz and 257.5–258 GHz are also allocated to the radio astronomy service on a secondary basis for spectral line observations.

S5.386 *Additional allocation:* the band 1750–1850 MHz is also allocated to the space operation (Earth-to-space) and space research (Earth-to-space) services in Region 2, in Australia, India, Indonesia and Japan on a primary basis, subject to agreement obtained under No. S9.21, having particular regard to troposcatter systems.

S5.387 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Mali, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 1770–1790 MHz is also allocated to the meteorological-satellite service on a primary basis, subject to agreement obtained under No. S9.21.

S5.388 The bands 1885–2025 MHz and 2110–2200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement International Mobile Telecommunications-2000 (IMT–2000). Such use does not preclude the use of these bands by other services to which they are allocated. The bands should be made available for IMT–2000 in accordance with Resolution 212 (Rev. WRC–97).

S5.389A The use of the bands 1980–2010 MHz and 2170–2200 MHz by the mobile-satellite service is subject to coordination under No. S9.11A and to the provisions of Resolution 716 (WRC–95). The use of these bands shall not commence before 1 January 2000; however the use of the band 1980–1990 MHz in Region 2 shall not commence before 1 January 2005.

S5.389B The use of the band 1980–1990 MHz by the mobile-satellite service shall not cause harmful interference to or constrain the development of the fixed and mobile services in Argentina, Brazil, Canada, Chile, Ecuador, the United States, Honduras, Jamaica, Mexico, Peru, Suriname, Trinidad and Tobago, Uruguay and Venezuela.

S5.389C The use of the bands 2010–2025 MHz and 2160–2170 MHz in Region 2 by the mobile-satellite service shall not commence before 1 January 2002 and is subject to coordination under No. S9.11A and to the provisions of Resolution 716 (WRC–95).

S5.389D In Canada and the United States the use of the bands 2010–2025 MHz and 2160–2170 MHz by the mobile-satellite service shall not commence before 1 January 2000.

S5.389E The use of the bands 2010–2025 MHz and 2160–2170 MHz by the mobile-satellite service in Region 2 shall not cause harmful interference to or constrain the development of the fixed and mobile services in Regions 1 and 3.

S5.389F In Algeria, Benin, Cape Verde, Egypt, Mali, Syria and Tunisia, the use of the bands 1980–2010 MHz and 2170–2200 MHz by the mobile-satellite service shall neither cause harmful interference to the fixed and mobile services, nor hamper the development of those services prior to 1 January 2005, nor shall the former service request protection from the latter services.

S5.390 In Argentina, Brazil, Chile, Colombia, Cuba, Ecuador and Suriname, the use of the bands 2010–2025 MHz and 2160–2170 MHz by the mobile-satellite services shall not cause harmful interference to stations in the fixed and mobile services before 1 January 2005. After this date, the use of these bands is subject to coordination under No. S9.11A and to the provisions of Resolution 716 (WRC–95).

S5.391 In making assignments to the mobile service in the bands 2025–2110 MHz and 2200–2290 MHz, administrations shall not introduce high-density mobile systems, as described in Recommendation ITU–R SA.1154, and shall take that Recommendation into account for the introduction of any other type of mobile system.

S5.392 Administrations are urged to take all practicable measures to ensure that space-to-space transmissions between two or more non-geostationary satellites, in the space research, space operations and Earth exploration-satellite services in the bands 2025–2110 MHz and 2200–2290 MHz, shall not impose any constraints on Earth-to-space, space-to-Earth and other space-to-space transmissions of those services and in those bands between geostationary and non-geostationary satellites.

S5.392A *Additional allocation:* in Russian Federation, the band 2160–2200 MHz is also allocated to the space research service (space-to-Earth) on a primary basis until 1 January 2005. Stations in the space research service shall not cause harmful interference to, or claim protection from, stations in the fixed and mobile services operating in this frequency band.

S5.393 *Additional allocation:* in the United States, India and Mexico, the band 2310–2360 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial sound broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to the provisions of Resolution 528 (WARC–92).

S5.394 In the United States, the use of the band 2300–2390 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile services. In Canada, the use of the band 2300–2483.5 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile services.

S5.395 In France, the use of the band 2310–2360 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service.

S5.396 Space stations of the broadcasting-satellite service in the band 2310–2360 MHz operating in accordance with No. S5.393 that may affect the services to which this band is allocated in other countries shall be coordinated and notified in accordance with Resolution 33 (Rev. WRC–97). Complementary terrestrial broadcasting stations shall be subject to bilateral coordination with neighbouring countries prior to their bringing into use.

S5.397 *Different category of service:* in France, the band 2450–2500 MHz is allocated

on a primary basis to the radiolocation service (see No. S5.33). Such use is subject to agreement with administrations having services operating or planned to operate in accordance with the Table of Frequency Allocations which may be affected.

S5.398 In respect of the radiodetermination-satellite service in the band 2483.5–2500 MHz, the provisions of No. S4.10 do not apply.

S5.399 In Region 1, in countries other than those listed in No. S5.400, harmful interference shall not be caused to, or protection shall not be claimed from, stations of the radiolocation service by stations of the radiodetermination satellite service.

S5.400 *Different category of service:* in Angola, Australia, Bangladesh, Burundi, China, Eritrea, Ethiopia, India, the Islamic Republic of Iran, Jordan, Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Dem. Rep. of the Congo, Syria, Sudan, Swaziland, Togo and Zambia, the allocation of the band 2483.5–2500 MHz to the radiodetermination-satellite service (space-to-Earth) is on a primary basis (see No. S5.33), subject to agreement obtained under No. S9.21 from countries not listed in this provision.

S5.402 The use of the band 2483.5–2500 MHz by the mobile-satellite and the radiodetermination-satellite services is subject to the coordination under No. S9.11A. Administrations are urged to take all practicable steps to prevent harmful interference to the radio astronomy service from emissions in the 2483.5–2500 MHz band, especially those caused by second-harmonic radiation that would fall into the 4990–5000 MHz band allocated to the radio astronomy service worldwide.

S5.403 Subject to agreement obtained under No. S9.21, the band 2520–2535 MHz (until 1 January 2005 the band 2500–2535 MHz) may also be used for the mobile-satellite (space-to-Earth), except aeronautical mobile-satellite, service for operation limited to within national boundaries. The provisions of No. S9.11A apply.

S5.404 *Additional allocation:* in India and the Islamic Republic of Iran, the band 2500–2516.5 MHz may also be used for the radiodetermination-satellite service (space-to-Earth) for operation limited to within national boundaries, subject to agreement obtained under No. S9.21.

S5.405 *Additional allocation:* in France, the band 2500–2550 MHz is also allocated to the radiolocation service on a primary basis. Such use is subject to agreement with the administrations having services operating or planned to operate in accordance with the Table which may be affected.

S5.407 In the band 2500–2520 MHz, the power flux-density at the surface of the Earth from space stations operating in the mobile-satellite (space-to-Earth) service shall not exceed -152 dB(W/m^2/4 kHz) in Argentina, unless otherwise agreed by the administrations concerned.

S5.408 *Additional allocation:* in the United Kingdom, the band 2500–2600 MHz is also allocated to the radiolocation service on a secondary basis.

S5.409 Administrations shall make all practicable efforts to avoid developing new tropospheric scatter systems in the band 2500–2690 MHz.

S5.410 The band 2500–2690 MHz may be used for tropospheric scatter systems in Region 1, subject to agreement obtained under No. S9.21.

S5.411 When planning new tropospheric scatter radio-relay links in the band 2500–2690 MHz, all possible measures shall be taken to avoid directing the antennae of these links towards the geostationary-satellite orbit.

S5.412 *Alternative allocation:* in Azerbaijan, Bulgaria, Kyrgyzstan, Turkmenistan and Ukraine, the band 2500–2690 MHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.413 In the design of systems in the broadcasting-satellite service in the bands between 2500 MHz and 2690 MHz, administrations are urged to take all necessary steps to protect the radio astronomy service in the band 2690–2700 MHz.

S5.414 The allocation of the frequency band 2500–2520 MHz to the mobile-satellite service (space-to-Earth) shall be effective on 1 January 2005 and is subject to coordination under No. S9.11A.

S5.415 The use of the bands 2500–2690 MHz in Region 2 and 2500–2535 MHz and 2655–2690 MHz in Region 3 by the fixed-satellite service is limited to national and regional systems, subject to agreement obtained under No. S9.21, giving particular attention to the broadcasting-satellite service in Region 1. In the direction space-to-Earth, the power flux-density at the Earth's surface shall not exceed the values given in Article S21, Table S21–4.

S5.415A *Additional allocation:* in Japan, subject to agreement obtained under No. S9.21, the band 2515–2535 MHz may also be used for the aeronautical mobile-satellite service (space-to-Earth) for operation limited to within its national boundary from 1 January 2000.

S5.416 The use of the band 2520–2670 MHz by the broadcasting-satellite service is limited to national and regional systems for community reception, subject to agreement obtained under No. S9.21. The power flux-density at the Earth's surface shall not exceed the values given in Article S21, Table S21–4.

S5.417 *Alternative allocation:* in Germany and Greece, the band 2520–2670 MHz is allocated to the fixed service on a primary basis.

S5.418 *Additional allocation:* in Bangladesh, Belarus, China, Rep. of Korea, India, Japan, Pakistan, Russian Federation, Singapore, Sri Lanka, Thailand and Ukraine the band 2535–2655 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to provisions of Resolution 528 (WARC–92). The provisions of No. S5.416 and Article S21, Table S21–4, do not apply to this additional allocation.

S5.419 The allocation of the frequency band 2670–2690 MHz to the mobile-satellite service shall be effective from 1 January 2005. When introducing systems of the mobile-satellite service in this band, administrations shall take all necessary steps to protect the satellite systems operating in this band prior to 3 March 1992. The coordination of mobile-satellite systems in the band shall be in accordance with No. S9.11A.

S5.420 The band 2655–2670 MHz (until 1 January 2005 the band 2655–2690 MHz) may also be used for the mobile-satellite (Earth-to-space), except aeronautical mobile-satellite, service for operation limited to within national boundaries, subject to agreement obtained under No. S9.21. The coordination under No. S9.11A applies.

S5.420A *Additional allocation:* in Japan, subject to agreement obtained under No. S9.21, the band 2670–2690 MHz may also be used for the aeronautical mobile-satellite service (Earth-to-space) for operation limited to within its national boundary from 1 January 2000.

S5.421 *Additional allocation:* in Germany and Austria, the band 2690–2695 MHz is also allocated to the fixed service on a primary basis. Such use is limited to equipment in operation by 1 January 1985.

S5.422 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Brunei Darussalam, the Central African Republic, the Congo, Côte d'Ivoire, Cuba, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Gabon, Georgia, Guinea, Guinea-Bissau, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kazakstan, Lebanon, Malaysia, Mali, Morocco, Mauritania, Moldova, Mongolia, Nigeria, Oman, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, Dem Rep. of the Congo, Romania, Russian Federation, Somalia, Tajikistan, Tunisia, Turkmenistan, Ukraine, Yemen, Yugoslavia and Zambia, the band 2690–2700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985.

S5.423 In the band 2700–2900 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the aeronautical radionavigation service.

S5.424 *Additional allocation:* in Canada, the band 2850–2900 MHz is also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars.

S5.425 In the band 2900–3100 MHz, the use of the shipborne interrogator-transponder system (SIT) shall be confined to the sub-band 2930–2950 MHz.

S5.426 The use of the band 2900–3100 MHz by the aeronautical radionavigation service is limited to ground-based radars.

S5.427 In the bands 2900–3100 MHz and 9300–9500 MHz, the response from radar transponders shall not be capable of being confused with the response from radar beacons (racons) and shall not cause interference to ship or aeronautical radars in the radionavigation service, having regard, however, to No. S4.9.

S5.428 *Additional allocation:* in Azerbaijan, Bulgaria, Cuba, Kazakstan, Mongolia, Poland, Kyrgyzstan, Romania, Turkmenistan and Ukraine, the band 3100–3300 MHz is also allocated to the radionavigation service on a primary basis.

S5.429 *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, China, the Congo, the Republic of Korea, the United Arab Emirates, India, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Libya, Malaysia, Oman, Pakistan, Qatar, Syria, Democratic People's Republic of Korea and Yemen, the band 3300–3400 MHz is also allocated to the fixed and mobile services on a primary basis. The countries bordering the Mediterranean shall not claim protection for their fixed and mobile services from the radiolocation service.

S5.430 *Additional allocation:* in Azerbaijan, Bulgaria, Cuba, Mongolia, Poland, Kyrgyzstan, Romania, Turkmenistan and Ukraine, the band 3300–3400 MHz is also allocated to the radionavigation service on a primary basis.

S5.431 *Additional allocation:* in Germany, Israel, Nigeria and the United Kingdom, the band 3400–3475 MHz is also allocated to the amateur service on a secondary basis.

S5.432 *Different category of service:* in the Republic of Korea, Indonesia, Japan and Pakistan, the allocation of the band 3400–3500 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. S5.33).

S5.433 In Regions 2 and 3, in the band 3400–3600 MHz the radiolocation service is allocated on a primary basis. However, all administrations operating radiolocation systems in this band are urged to cease operations by 1985. Thereafter, administrations shall take all practicable steps to protect the fixed-satellite service and coordination requirements shall not be imposed on the fixed-satellite service.

S5.435 In Japan, in the band 3620–3700 MHz, the radiolocation service is excluded.

S5.437 *Additional allocation:* in Germany and Norway, the band 4200–4210 MHz is also allocated to the fixed service on a secondary basis.

S5.438 Use of the band 4200–4400 MHz by the aeronautical radionavigation service is reserved exclusively for radio altimeters installed on board aircraft and for the associated transponders on the ground. However, passive sensing in the earth exploration-satellite and space research services may be authorized in this band on a secondary basis (no protection is provided by the radio altimeters).

S5.439 *Additional allocation:* in China, the Islamic Republic of Iran and Libya, the band 4200–4400 MHz is also allocated to the fixed service on a secondary basis.

S5.440 The standard frequency and time signal-satellite service may be authorized to use the frequency 4202 MHz for space-to-Earth transmissions and the frequency 6427 MHz for Earth-to-space transmissions. Such transmissions shall be confined within the limits of ± 2 MHz of these frequencies, subject to agreement obtained under No. S9.21.

S5.441 The use of the bands 4500–4800 MHz (space-to-Earth), 6725–7025 MHz (Earth-to-space) by the fixed-satellite service shall be in accordance with the provisions of Appendix S30B. The use of the bands 10.7–10.95 GHz (space-to-Earth), 11.2–11.45 GHz (space-to-Earth) and 12.75–13.25 GHz (Earth-to-space) by geostationary-satellite systems in the fixed-satellite service shall be in accordance with the provisions of Appendix S30B. The use of the bands 10.7–10.95 GHz (space-to-Earth), 11.2–11.45 GHz (space-to-Earth) and 12.75–13.25 GHz (Earth-to-space) by non-geostationary-satellite systems in the fixed-satellite service shall be in accordance with the provisions of Resolution 130 (WRC–97).

S5.442 In the bands 4825–4835 MHz and 4950–4990 MHz, the allocation to the mobile service is restricted to the mobile, except aeronautical mobile, service.

S5.443 *Different category of service:* in Argentina, Australia and Canada, the allocation of the bands 4825–4835 MHz and 4950–4990 MHz to the radio astronomy service is on a primary basis (see No. S5.33).

S5.444 The band 5000–5150 MHz is to be used for the operation of the international standard system (microwave landing system) for precision approach and landing. The requirements of this system shall take precedence over other uses of this band. For the use of this band, No. S5.444A and Resolution 114 (WRC–95) apply.

S5.444A *Additional allocation:* the band 5091–5150 MHz is also allocated to the fixed-satellite service (Earth-to-space) on a primary basis. This allocation is limited to feeder links of non-geostationary mobile-satellite systems and is subject to coordination under No. S9.11A.

In the band 5091–5150 MHz, the following conditions also apply:

—prior to 1 January 2010, the use of the band 5091–5150 MHz by feeder links of non-geostationary-satellite systems in the mobile-satellite service shall be made in accordance with Resolution 114 (WRC–95);

—prior to 1 January 2010, the requirements of existing and planned international standard systems for the aeronautical radionavigation service which cannot be met in the 5000–5091 MHz band, shall take precedence over other uses of this band;

—after 1 January 2008, no new assignments shall be made to stations providing feeder links of non-geostationary mobile-satellite systems;

—after 1 January 2010, the fixed-satellite service will become secondary to the aeronautical radionavigation service.

S5.446 *Additional allocation:* in the countries listed in Nos. S5.369 and S5.400, the band 5150–5216 MHz is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis, subject to agreement obtained under No. S9.21. In Region 2, the band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis. In Regions 1 and 3, except those countries listed in Nos. S5.369 and S5.400, the band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a secondary basis. The use by the radiodetermination-satellite service is limited to feeder links in conjunction with the radiodetermination-satellite service operating in the bands 1610–1626.5 MHz and/or 2483.5–2500 MHz. The total power flux-density at the Earth's surface shall in no case exceed -159 dBW/m^2 in any 4 kHz band for all angles of arrival.

S5.447 *Additional allocation:* in Germany, Austria, Belgium, Denmark, Spain, Finland, France, Greece, Israel, Italy, Japan, Jordan, Lebanon, Liechtenstein, Luxembourg, Malta, Morocco, Norway, Pakistan, the Netherlands, Portugal, Syria, the United Kingdom, Sweden, Switzerland and Tunisia, the band 5150–5250 MHz is also allocated to the mobile service, on a primary basis, subject to agreement obtained under No. S9.21.

S5.447A The allocation to the fixed-satellite service (Earth-to-space) is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to coordination under No. S9.11A.

S5.447B *Additional allocation:* the band 5150–5216 MHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. This allocation is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to provisions of No. S9.11A. The power flux-density at the Earth's surface produced by space stations of the fixed-satellite service operating in the space-to-Earth direction in the band 5150–5216 MHz shall in no case exceed -164 dB(W/m^2) in any 4 kHz band for all angles of arrival.

S5.447C Administrations responsible for fixed-satellite service networks in the band 5150–5250 MHz operated under Nos. S5.447A and S5.447B shall coordinate on an equal basis in accordance with No. S9.11A with administrations responsible for non-geostationary-satellite networks operated under No. S5.446 and brought into use prior to 17 November 1995. Satellite networks operated under No. S5.446 brought into use after 17 November 1995 shall not claim protection from, and shall not cause harmful interference to, stations of the fixed-satellite service operated under Nos. S5.447A and S5.447B.

S5.447D The allocation of the band 5250–5255 MHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis.

S5.448 *Additional allocation:* in Austria, Azerbaijan, Bulgaria, Libya, Mongolia, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Turkmenistan and Ukraine, the band 5250–5350 MHz is also allocated to the radionavigation service on a primary basis.

S5.448A The use of the frequency band 5250–5350 MHz by the earth exploration-satellite (active) and space research (active) services shall not constrain the future development and deployment of the radiolocation service.

S5.448B The earth exploration-satellite (active) service operating in the band 5350–5460 MHz shall not cause harmful interference to, or constrain the use and development of, the aeronautical radionavigation service.

S5.449 The use of the band 5350–5470 MHz by the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons.

S5.450 *Additional allocation:* in Austria, Azerbaijan, Bulgaria, the Islamic Republic of Iran, Mongolia, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Turkmenistan and

Ukraine, the band 5470–5650 MHz is also allocated to the aeronautical radionavigation service on a primary basis.

S5.451 *Additional allocation:* in the United Kingdom, the band 5470–5850 MHz is also allocated to the land mobile service on a secondary basis. The power limits specified in Nos. S21.2, S21.3, S21.4 and S21.5 shall apply in the band 5725–5850 MHz.

S5.452 Between 5600 MHz and 5650 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the maritime radionavigation service.

S5.453 *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, the Central African Republic, China, the Congo, the Republic of Korea, Egypt, the United Arab Emirates, Gabon, Guinea, India, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Libya, Madagascar, Malaysia, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Democratic People's Republic of Korea, Singapore, Swaziland, Tanzania, Chad, and Yemen, the band 5650–5850 MHz is also allocated to the fixed and mobile services on a primary basis.

S5.454 *Different category of service:* in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 5670–5725 MHz to the space research service is on a primary basis (see No. S5.33).

S5.455 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Cuba, Georgia, Hungary, Kazakstan, Latvia, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 5670–5850 MHz is also allocated to the fixed service on a primary basis.

S5.456 *Additional allocation:* in Germany and in Cameroon, the band 5755–5850 MHz is also allocated to the fixed service on a primary basis.

S5.458 In the band 6425–7075 MHz, passive microwave sensor measurements are carried out over the oceans. In the band 7075–7250 MHz, passive microwave sensor measurements are carried out. Administrations should bear in mind the needs of the Earth exploration-satellite (passive) and space research (passive) services in their future planning of the bands 6425–7025 MHz and 7075–7250 MHz.

S5.458A In making assignments in the band 6700–7075 MHz to space stations of the fixed-satellite service, administrations are urged to take all practicable steps to protect spectral line observations of the radio astronomy service in the band 6650–6675.2 MHz from harmful interference from unwanted emissions.

S5.458B The space-to-Earth allocation to the fixed-satellite service in the band 6700–7075 MHz is limited to feeder links for non-geostationary satellite systems of the mobile-satellite service and is subject to coordination under No. S9.11A. The use of the band 6700–7075 MHz (space-to-Earth) by feeder links for non-geostationary satellite systems in the mobile-satellite service is not subject to No. S22.2.

S5.458C Administrations making submissions in the band 7025–7075 MHz (Earth-to-space) for geostationary-satellite systems in the fixed-satellite service after 17 November 1995 shall consult on the basis of relevant ITU-R Recommendations with the administrations that have notified and brought into use non-geostationary-satellite systems in this frequency band before 18 November 1995 upon request of the latter administrations. This consultation shall be with a view to facilitating shared operation of both geostationary-satellite systems in the fixed-satellite service and non-geostationary-satellite systems in this band.

S5.459 *Additional allocation:* in Russian Federation, the frequency bands 7100–7155 MHz and 7190–7235 MHz are also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. S9.21.

S5.460 *Additional allocation:* the band 7145–7235 MHz is also allocated to the space research (Earth-to-space) service on a primary basis, subject to agreement obtained under No. S9.21. The use of the band 7145–7190 MHz is restricted to deep space; no emissions to deep space shall be effected in the band 7190–7235 MHz.

S5.461 *Additional allocation:* the bands 7250–7375 MHz (space-to-Earth) and 7900–8025 MHz (Earth-to-space) are also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. S9.21.

S5.461A The use of the band 7450–7550 MHz by the meteorological-satellite service (space-to-Earth) is limited to geostationary-satellite systems. Non-geostationary meteorological-satellite systems in this band notified before 30 November 1997 may continue to operate on a primary basis until the end of their lifetime.

S5.461B The use of the band 7750–7850 MHz by the meteorological-satellite service (space-to-Earth) is limited to non-geostationary satellite systems.

S5.462A In Regions 1 and 3 (except for Japan), in the band 8025–8400 MHz, the earth exploration-satellite service using geostationary satellites shall not produce a power flux-density in excess of the following provisional values for angles of arrival (θ), without the consent of the affected administration:

—174 dB(W/m^2) in a 4 kHz band for $0° \leq \theta < 5°$

—$174 + 0.5\ (\theta - 5)$ dB(W/m^2) in a 4 kHz band for $5° \leq \theta < 25°$

—164 dB(W/m^2) in a 4 kHz band for $25° \leq \theta \leq 90°$

These values are subject to study under Resolution 124 (WRC–97).

S5.463 Aircraft stations are not permitted to transmit in the band 8025–8400 MHz.

S5.465 In the space research service, the use of the band 8400–8450 MHz is limited to deep space.

S5.466 *Different category of service:* in Israel, Malaysia, Singapore and Sri Lanka, the allocation of the band 8400–8500 MHz to the space research service is on a secondary basis (see No. S5.32).

S5.467 *Alternative allocation:* in the United Kingdom, the band 8400–8500 MHz is allocated to the radiolocation and space research services on a primary basis.

S5.468 *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burundi, Cameroon, China, the Congo, Costa Rica, Egypt, the United Arab Emirates, Gabon, Guyana, Indonesia, the Islamic Republic of Iran, Iraq, Jamaica, Jordan, Kuwait, Lebanon, Libya, Malaysia, Mali, Morocco, Mauritania, Nepal, Nigeria, Oman, Pakistan, Qatar, Syria, Democratic People's Republic of Korea, Senegal, Singapore, Somalia, Swaziland, Tanzania, Chad, Togo, Tunisia and Yemen, the band 8500–8750 MHz is also allocated to the fixed and mobile services on a primary basis.

S5.469 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, Kazakstan, Lithuania, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 8500–8750 MHz is also allocated to the land mobile and radionavigation services on a primary basis.

S5.469A In the band 8550–8650 MHz, stations in the earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radiolocation service.

S5.470 The use of the band 8750–8850 MHz by the aeronautical radionavigation service is limited to airborne Doppler navigation aids on a centre frequency of 8800 MHz.

S5.471 *Additional allocation:* in Algeria, Germany, Bahrain, Belgium, China, the United Arab Emirates, France, Greece, Indonesia, the Islamic Republic of Iran, Libya, the Netherlands, Qatar and Sudan, the bands 8825–8850 MHz and 9000–9200 MHz are also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars only.

S5.472 In the bands 8850–9000 MHz and 9200–9225 MHz, the maritime radionavigation service is limited to shore-based radars.

S5.473 *Additional allocation:* in Armenia, Austria, Azerbaijan, Belarus, Bulgaria, Cuba, Georgia, Hungary, Kazakstan, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan. Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 8850–9000 MHz and 9200–9300 MHz are also allocated to the radionavigation service on a primary basis.

S5.474 In the band 9200–9500 MHz, search and rescue transponders (SART) may be used, having due regard to the appropriate ITU–R Recommendation (see also Article S31).

S5.475 The use of the band 9300–9500 MHz by the aeronautical radionavigation service is limited to airborne weather radars and ground-based radars. In addition, ground-based radar beacons in the aeronautical radionavigation service are permitted in the band 9300–9320 MHz on condition that harmful interference is not caused to the maritime radionavigation service. In the band 9300–9500 MHz, ground-based radars used for meteorological purposes have priority over other radiolocation devices.

S5.476 In the band 9300–9320 MHz in the radionavigation service, the use of shipborne radars, other than those existing on 1 January 1976, is not permitted until 1 January 2001.

S5.476A In the band 9500–9800 MHz, stations in the earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radionavigation and radiolocation services.

S5.477 *Different category of service:* in Algeria, Saudi Arabia, Austria, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, the Republic of Korea, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, the Islamic Republic of Iran, Iraq, Jamaica, Japan, Jordan, Kuwait, Lebanon, Liberia, Malaysia, Nigeria, Oman, Pakistan, Qatar, Democratic People's Republic of Korea, Singapore, Somalia, Sudan, Sweden, Trinidad and Tobago, and Yemen, the allocation of the band 9800–10,000 MHz to the fixed service is on a primary basis (see No. S5.33).

S5.478 *Additional allocation:* in Azerbaijan, Bulgaria, Kazakstan, Mongolia, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Turkmenistan and Ukraine, the band 9800–10,000 MHz is also allocated to the radionavigation service on a primary basis.

S5.479 The band 9975–10,025 MHz is also allocated to the meteorological-satellite service on a secondary basis for use by weather radars.

S5.480 *Additional allocation:* in Brazil, Costa Rica, Ecuador, Guatemala, Honduras and Mexico, the band 10–10.45 GHz is also allocated to the fixed and mobile services on a primary basis.

S5.481 *Additional allocation:* in Germany, Angola, China, Ecuador, Spain, Japan, Morocco, Nigeria, Oman, Democratic People's Republic of Korea, Sweden, Tanzania and Thailand, the band 10.45–10.5 GHz is also allocated to the fixed and mobile services on a primary basis.

S5.482 In the band 10.6–10.68 GHz, stations of the fixed and mobile, except aeronautical mobile, services shall be limited to a maximum equivalent isotropically radiated power of 40 dBW and the power delivered to the antenna shall not exceed −3 dBW. These limits may be exceeded subject to agreement obtained under No. S9.21. However, in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Bangladesh, Belarus, China, the United Arab Emirates, Georgia, India, Indonesia, the Islamic Republic of Iran, Iraq, Japan, Kazakstan, Kuwait, Latvia, Lebanon, Moldova, Nigeria, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the restrictions on the fixed and mobile, except aeronautical mobile, services are not applicable.

S5.483 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, China, Colombia, the Republic of Korea, Costa Rica, Egypt, the United Arab Emirates, Georgia, the Islamic Republic of Iran, Iraq, Israel, Japan, Jordan, Kazakstan, Kuwait, Latvia, Lebanon, Moldova, Mongolia, Uzbekistan, Pakistan, Qatar, Kyrgyzstan, Democratic People's Republic of Korea, Romania, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Yemen and Yugoslavia, the band 10.68–10.7 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985.

S5.484 In Region 1, the use of the band 10.7–11.7 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.

S5.484A The use of the bands 10.95–11.2 GHz (space-to-Earth), 11.45–11.7 GHz (space-to-Earth), 11.7–12.2 GHz (space-to-Earth) in Region 2, 12.2–12.75 GHz (space-to-Earth) in Region 3, 12.5–12.75 GHz (space-to-Earth) in Region 1, 13.75–14.5 GHz (Earth-to-space), 17.8–18.6 GHz (space-to-Earth), 19.7–20.2 GHz (space-to-Earth), 27.5–28.6 GHz (Earth-to-space), 29.5–30 GHz (Earth-to-space) by non-geostationary- and geostationary-satellite systems in the fixed-satellite service is subject to the provisions of Resolution 130 (WRC–97). The use of the band 17.8–18.1 GHz (space-to-Earth) by non-geostationary fixed-satellite service systems is also subject to the provisions of Resolution 538 (WRC–97).

S5.485 In Region 2, in the band 11.7–12.2 GHz, transponders on space stations in the fixed-satellite service may be used additionally for transmissions in the broadcasting-satellite service, provided that such transmissions do not have a maximum e.i.r.p. greater than 53 dBW per television channel and do not cause greater interference or require more protection from interference than the coordinated fixed-satellite service frequency assignments. With respect to the space services, this band shall be used principally for the fixed-satellite service.

S5.486 *Different category of service:* in Mexico and the United States, the allocation of the band 11.7–12.1 GHz to the fixed service is on a secondary basis (see No. S5.32).

S5.487 In the band 11.7–12.5 GHz in Regions 1 and 3, the fixed, fixed-satellite, mobile, except aeronautical mobile, and broadcasting services, in accordance with their respective allocations, shall not cause harmful interference to broadcasting-satellite stations operating in accordance with the provisions of Appendix S30.

S5.487A *Additional allocation:* in Region 1, the band 11.7–12.5 GHz, in Region 2, the band 12.2–12.7 GHz and, in Region 3, the band 11.7–12.2 GHz, are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis, limited to non-geostationary systems and subject to the provisions of Resolution 538 (WRC–97).

S5.488 The use of the bands 11.7–12.2 GHz by the fixed-satellite service in Region 2 and 12.2–12.7 GHz by the broadcasting-satellite service in Region 2 is limited to national and subregional systems. The use of the band 11.7–12.2 GHz by the fixed-satellite service in Region 2 is subject to previous agreement between the administrations concerned and those having services, operating or planned to operate in accordance with the Table, which may be affected (see Articles S9 and S11). For the use of the band 12.2–12.7 GHz by the broadcasting-satellite service in Region 2, see Appendix S30.

S5.489 *Additional allocation:* in Peru, the band 12.1–12.2 GHz is also allocated to the fixed service on a primary basis.

S5.490 In Region 2, in the band 12.2–12.7 GHz, existing and future terrestrial radiocommunication services shall not cause harmful interference to the space services operating in conformity with the broadcasting-satellite Plan for Region 2 contained in Appendix S30.

S5.491 *Additional allocation:* in Region 3, the band 12.2–12.5 GHz is also allocated to the fixed-satellite (space-to-Earth) service on a primary basis, limited to national and sub-regional systems. The power flux-density limits in Article S21, Table S21–4 shall apply to this frequency band. The introduction of the service in relation to the broadcasting-satellite service in Region 1 shall follow the procedures specified in Article 7 of Appendix S30, with the applicable frequency band extended to cover 12.2–12.5 GHz.

S5.492 Assignments to stations of the broadcasting-satellite service in conformity with the appropriate regional Plan in Appendix S30 may also be used for transmissions in the fixed-satellite service (space-to-Earth), provided that such transmissions do not cause more interference or require more protection from interference than the broadcasting-satellite service transmissions operating in conformity with this Plan. With respect to the space services, this band shall be used principally for the broadcasting-satellite service.

S5.493 The broadcasting-satellite service in the band 12.5–12.75 GHz in Region 3 is limited to a power flux-density not exceeding −111 dB(W/m^2)/27 MHz for all conditions and for all methods of modulation at the edge of the service area.

S5.494 *Additional allocation:* in Algeria, Angola, Saudi Arabia, Bahrain, Cameroon, the Central African Republic, the Congo, Côte d'Ivoire, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Gabon, Ghana, Guinea, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Madagascar, Mali, Morocco, Mongolia, Nigeria, Qatar, Dem. Rep. of the Congo, Syria, Senegal, Somalia, Sudan, Chad, Togo and Yemen, the band 12.5–12.75 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.495 *Additional allocation:* in Bosnia and Herzegovina, Croatia, Denmark, France, Greece, Liechtenstein, Monaco, Norway, Uganda, Portugal, Romania, Slovenia, Switzerland, Tanzania, Tunisia and Yugoslavia, the band 12.5–12.75 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis.

S5.496 *Additional allocation:* in Austria, Azerbaijan, Kyrgyzstan, Turkmenistan and Ukraine, the band 12.5–12.75 GHz is also allocated to the fixed service and the mobile, except aeronautical mobile, service on a primary basis. However, stations in these services shall not cause harmful interference to fixed-satellite service earth stations of countries in Region 1 other than those listed in this footnote. Coordination of these earth

stations is not required with stations of the fixed and mobile services of the countries listed in this footnote. The power flux-density limit at the Earth's surface given in Article S21, Table S21–4, for the fixed-satellite service shall apply on the territory of the countries listed in this footnote.

S5.497 The use of the band 13.25–13.4 GHz by the aeronautical radionavigation service is limited to Doppler navigation aids.

S5.498A The Earth exploration-satellite (active) and space research (active) services operating in the band 13.25–13.4 GHz shall not cause harmful interference to, or constrain the use and development of, the aeronautical radionavigation service.

S5.499 *Additional allocation:* in Bangladesh, India and Pakistan, the band 13.25–14 GHz is also allocated to the fixed service on a primary basis.

S5.500 *Additional allocation:* in Algeria, Angola, Saudi Arabia, Bahrain, Brunei Darussalam, Cameroon, the Republic of Korea, Egypt, the United Arab Emirates, Gabon, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Madagascar, Malaysia, Mali, Malta, Morocco, Mauritania, Nigeria, Pakistan, Qatar, Syria, Senegal, Singapore, Sudan, Chad and Tunisia, the band 13.4–14 GHz is also allocated to the fixed and mobile services on a primary basis.

S5.501 *Additional allocation:* in Austria, Azerbaijan, Bulgaria, Hungary, Japan, Mongolia, Kyrgyzstan, Romania, the United Kingdom, Turkmenistan and Ukraine, the band 13.4–14 GHz is also allocated to the radionavigation service on a primary basis.

S5.501A The allocation of the band 13.4–13.75 GHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis.

S5.501B In the band 13.4–13.75 GHz, the Earth exploration-satellite (active) and space research (active) services shall not cause harmful interference to, or constrain the use and development of, the radiolocation service.

S5.502 In the band 13.75–14 GHz, the e.i.r.p. of any emission from an earth station in the fixed-satellite service shall be at least 68 dBW, and should not exceed 85 dBW, with a minimum antenna diameter of 4.5 m. In addition the e.i.r.p., averaged over one second, radiated by a station in the radiolocation or radionavigation services towards the geostationary-satellite orbit shall not exceed 59 dBW.

S5.503 In the band 13.75–14 GHz, geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 shall operate on an equal basis with stations in the fixed-satellite service; after that date, new geostationary space stations in the space research service will operate on a secondary basis. The e.i.r.p. density of emissions from any earth station in the fixed-satellite service shall not exceed 71 dBW in any 6 MHz band in the frequency range 13.772–13.778 GHz until those geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 cease to operate in this band. Automatic power control may be used to increase the e.i.r.p. density above 71 dBW in any 6 MHz band in this frequency range to compensate for rain attenuation, to the extent that the power-flux density at the fixed-satellite service space station does not exceed the value resulting from use of an e.i.r.p. of 71 dBW in any 6 MHz band in clear sky conditions.

S5.503A Until 1 January 2000, stations in the fixed-satellite service shall not cause harmful interference to non-geostationary space stations in the space research and Earth exploration-satellite services. After that date, these non-geostationary space stations will operate on a secondary basis in relation to the fixed-satellite service. Additionally, when planning earth stations in the fixed-satellite service to be brought into service between 1 January 2000 and 1 January 2001, in order to accommodate the needs of spaceborne precipitation radars operating in the band 13.793–13.805 GHz, advantage should be taken of the consultation process and the information given in Recommendation ITU–R SA.1071.

S5.504 The use of the band 14–14.3 GHz by the radionavigation service shall be such as to provide sufficient protection to space stations of the fixed-satellite service.

S5.505 *Additional allocation:* in Algeria, Angola, Saudi Arabia, Australia, Bahrain, Bangladesh, Botswana, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Japan, Jordan, Kuwait, Lesotho, Lebanon, Malaysia, Mali, Morocco, Mauritania, Oman, Pakistan, the Philippines, Qatar, Syria, the Democratic People's Republic of Korea, Senegal, Singapore, Somalia, Sudan, Swaziland, Tanzania, Chad and Yemen, the band 14–14.3 GHz is also allocated to the fixed service on a primary basis.

S5.506 The band 14–14.5 GHz may be used, within the fixed-satellite service (Earth-to-space), for feeder links for the broadcasting-satellite service, subject to coordination with other networks in the fixed-satellite service. Such use of feeder links is reserved for countries outside Europe.

S5.508 *Additional allocation:* in Germany, Austria, Bosnia and Herzegovina, France, Greece, Ireland, Iceland, Italy, The Former Yugoslav Republic of Macedonia, Libya, Liechtenstein, Portugal, the United Kingdom, Slovenia, Switzerland, Turkey and Yugoslavia, the band 14.25–14.3 GHz is also allocated to the fixed service on a primary basis.

S5.509 *Additional allocation:* in Japan and Pakistan the band 14.25–14.3 GHz is also allocated to the mobile, except aeronautical mobile, service on a primary basis.

S5.510 The use of the band 14.5–14.8 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. This use is reserved for countries outside Europe.

S5.511 *Additional allocation:* in Saudi Arabia, Bahrain, Bosnia and Herzegovina, Cameroon, Egypt, the United Arab Emirates, Guinea, the Islamic Republic of Iran, Iraq, Israel, Kuwait, Lebanon, Libya, Pakistan, Qatar, Syria, Slovenia, Somalia and Yugoslavia, the band 15.35–15.4 GHz is also allocated to the fixed and mobile services on a secondary basis.

S5.511A Use of the band 15.43–15.63 GHz by the fixed-satellite service (space-to-Earth (see Resolution 123 (WRC–97)) and Earth-to-space) is limited to feeder links of non-geostationary systems in the mobile-satellite service, subject to coordination under No. S9.11A. In the space-to-Earth direction, the minimum earth station elevation angle above and gain towards the local horizontal plane and the minimum coordination distances to protect an earth station from harmful interference shall be in accordance with Recommendation ITU–R S.1341. Also in the space-to-Earth direction, harmful interference shall not be caused to stations of the radio astronomy service using the band 15.35–15.4 GHz. The threshold levels of interference and associated power flux-density limits which are detrimental to the radio astronomy service are given in Recommendation ITU–R RA.769–1. Special measures will need to be employed to protect the radio astronomy service in the band 15.35–15.4 GHz.

S5.511C Stations operating in the aeronautical radionavigation service shall limit the effective e.i.r.p. in accordance with Recommendation ITU–R S.1340. The minimum coordination distance required to protect the aeronautical radionavigation stations (No. S4.10 applies) from harmful interference from feeder-link earth stations and the maximum e.i.r.p. transmitted towards the local horizontal plane by a feeder-link earth station shall be in accordance with Recommendation ITU–R S.1340.

S5.511D Fixed-satellite service systems for which complete information for advance publication has been received by the Bureau by 21 November 1997 may operate in the bands 15.4–15.43 GHz and 15.63–15.7 GHz in the space-to-Earth direction and 15.63–15.65 GHz in the Earth-to-space direction. In the bands 15.4–15.43 GHz and 15.65–15.7 GHz, emissions from a non-geostationary space station shall not exceed the power flux-density limits at the Earth's surface of -146 dB(W/m^2/MHz) for any angle of arrival. In the band 15.63–15.65 GHz, where an administration plans emissions from a non-geostationary space station that exceed -146 dB(W/m^2/MHz) for any angle of arrival, it shall coordinate under No. S9.11A with the affected administrations. Stations in the fixed-satellite service operating in the band 15.63–15.65 GHz in the Earth-to-space direction shall not cause harmful interference to stations in the aeronautical radionavigation service (No. S4.10 applies).

S5.512 *Additional allocation:* in Algeria, Angola, Saudi Arabia, Austria, Bahrain, Bangladesh, Bosnia and Herzegovina, Brunei Darussalam, Cameroon, the Congo, Costa Rica, Egypt, El Salvador, the United Arab Emirates, Finland, Guatemala, India, Indonesia, the Islamic Republic of Iran, Jordan, Kuwait, Libya, Malaysia, Morocco, Mozambique, Nepal, Nicaragua, Oman, Pakistan, Qatar, Singapore, Slovenia, Somalia, Sudan, Swaziland, Tanzania, Chad,

Yemen and Yugoslavia, the band 15.7–17.3 GHz is also allocated to the fixed and mobile services on a primary basis.

S5.513 *Additional allocation:* in Israel, the band 15.7–17.3 GHz is also allocated to the fixed and mobile services on a primary basis. These services shall not claim protection from or cause harmful interference to services operating in accordance with the Table in countries other than those included in No. S5.512.

S5.513A Spaceborne active sensors operating in the band 17.2–17.3 GHz shall not cause harmful interference to, or constrain the development of, the radiolocation and other services allocated on a primary basis.

S5.514 *Additional allocation:* in Algeria, Germany, Angola, Saudi Arabia, Austria, Bahrain, Bangladesh, Bosnia and Herzegovina, Cameroon, Costa Rica, El Salvador, the United Arab Emirates, Finland, Guatemala, Honduras, India, the Islamic Republic of Iran, Iraq, Israel, Japan, Jordan, Kuwait, Libya, Nepal, Nicaragua, Oman, Pakistan, Qatar, Slovenia, Sudan, Sweden and Yugoslavia, the band 17.3–17.7 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits given in Nos. S21.3 and S21.5 shall apply.

S5.515 In the band 17.3–17.8 GHz, sharing between the fixed-satellite service (Earth-to-space) and the broadcasting-satellite service shall also be in accordance with the provisions of § 1 of Annex 4 of Appendix S30A/30A.

S5.516 The use of the band 17.3–18.1 GHz by geostationary-satellite systems in the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. For the use of the band 17.3–17.8 GHz in Region 2 by feeder links for the broadcasting-satellite service in the band 12.2–12.7 GHz, see Article S11. The use of the bands 17.3–18.1 GHz (Earth-to-space) in Regions 1 and 3 and 17.8–18.1 GHz (Earth-to-space) in Region 2 by non-geostationary-satellite systems in the fixed-satellite service is subject to the provisions of Resolution 538 (WRC–97).

S5.517 In Region 2, the allocation to the broadcasting-satellite service in the band 17.3–17.8 GHz shall come into effect on 1 April 2007. After that date, use of the fixed-satellite (space-to-Earth) service in the band 17.7–17.8 GHz shall not claim protection from and shall not cause harmful interference to operating systems in the broadcasting-satellite service.

S5.518 *Different category of service:* in Region 2, the allocation of the band 17.7–17.8 GHz to the mobile service is on a primary basis until 31 March 2007.

S5.519 *Additional allocation:* the band 18.1–18.3 GHz is also allocated to the meteorological-satellite service (space-to-Earth) on a primary basis. Its use is limited to geostationary satellites and shall be in accordance with the provisions of Article S21, Table S21–4.

S5.520 The use of the band 18.1–18.4 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.

S5.521 *Alternative allocation:* in Germany, Denmark, the United Arab Emirates, Greece, Slovakia and the Czech Republic, the band 18.1–18.4 GHz is allocated to the fixed, fixed-satellite (space-to-Earth) and mobile services on a primary basis (see No. S5.33). The provisions of No. S5.519 also apply.

S5.522 In making assignments to stations in the fixed and mobile services, administrations are invited to take account of passive sensors in the Earth-exploration satellite and space research services operating in the band 18.6–18.8 GHz. In this band, administrations should endeavour to limit as far as possible both the power delivered by the transmitter to the antenna and the e.i.r.p. in order to reduce the risk of interference to passive sensors to the minimum.

S5.523 In assigning frequencies to stations in the fixed-satellite service in the direction space-to-Earth, administrations are requested to limit as far as practicable the power flux-density at the Earth's surface in the band 18.6–18.8 GHz, in order to reduce the risk of interference to passive sensors in the earth exploration-satellite and space research services.

S5.523A The use of the bands 18.8–19.3 GHz (space-to-Earth) and 28.6–29.1 GHz (Earth-to-space) by geostationary and non-geostationary fixed-satellite service networks is subject to the application of the provisions of No. S9.11A and No. S22.2 does not apply. Administrations having geostationary-satellite networks under coordination prior to 18 November 1995 shall cooperate to the maximum extent possible to coordinate pursuant to No. S9.11A with non-geostationary-satellite networks for which notification information has been received by the Bureau prior to that date, with a view to reaching results acceptable to all the parties concerned. Non-geostationary-satellite networks shall not cause unacceptable interference to geostationary fixed-satellite service networks for which complete Appendix S4 notification information is considered as having been received by the Bureau prior to 18 November 1995.

S5.523B The use of the band 19.3–19.6 GHz (Earth-to-space) by the fixed-satellite service is limited to feeder links for non-geostationary-satellite systems in the mobile-satellite service. Such use is subject to the application of the provisions of No. S9.11A, and No. S22.2 does not apply.

S5.523C No. S22.2 of the Radio Regulations shall continue to apply in the bands 19.3–19.6 GHz and 29.1–29.4 GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix S4 coordination information, or notification information, is considered as having been received by the Bureau prior to 18 November 1995.

S5.523D The use of the band 19.3–19.7 GHz (space-to-Earth) by geostationary fixed-satellite service systems and by feeder links for non-geostationary-satellite systems in the mobile-satellite service is subject to the application of the provisions of No. S9.11A, but not subject to the provisions of No. S22.2. The use of this band for other non-geostationary fixed-satellite service systems, or for the cases indicated in Nos. S5.523C and S5.523E, is not subject to the provisions of No. S9.11A and shall continue to be subject to Articles S9 (except No. S9.11A) and S11 procedures, and to the provisions of No. S22.2.

S5.523E No. S22.2 of the Radio Regulations shall continue to apply in the bands 19.6–19.7 GHz and 29.4–29.5 GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix S4 coordination information, or notification information, is considered as having been received by the Bureau by 21 November 1997.

S5.524 *Additional allocation:* in Afghanistan, Algeria, Angola, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, Costa Rica, Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Islamic Republic of Iran, Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Nigeria, Oman, Pakistan, the Philippines, Qatar, Dem. Rep. of the Congo, Syria, Democratic People's Republic of Korea, Singapore, Somalia, Sudan, Tanzania, Chad, Togo and Tunisia, the band 19.7–21.2 GHz is also allocated to the fixed and mobile services on a primary basis. This additional use shall not impose any limitation on the power flux-density of space stations in the fixed-satellite service in the band 19.7–21.2 GHz and of space stations in the mobile-satellite service in the band 19.7–20.2 GHz where the allocation to the mobile-satellite service is on a primary basis in the latter band.

S5.525 In order to facilitate interregional coordination between networks in the mobile-satellite and fixed-satellite services, carriers in the mobile-satellite service that are most susceptible to interference shall, to the extent practicable, be located in the higher parts of the bands 19.7–20.2 GHz and 29.5–30 GHz.

S5.526 In the bands 19.7–20.2 GHz and 29.5–30 GHz in Region 2, and in the bands 20.1–20.2 GHz and 29.9–30 GHz in Regions 1 and 3, networks which are both in the fixed-satellite service and in the mobile-satellite service may include links between earth stations at specified or unspecified points or while in motion, through one or more satellites for point-to-point and point-to-multipoint communications.

S5.527 In the bands 19.7–20.2 GHz and 29.5–30 GHz, the provisions of No. S4.10 do not apply with respect to the mobile-satellite service.

S5.528 The allocation to the mobile-satellite service is intended for use by networks which use narrow spot-beam antennas and other advanced technology at the space stations. Administrations operating systems in the mobile-satellite service in the band 19.7–20.1 GHz in Region 2 and in the band 20.1–20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of No. S5.524.

S5.529 The use of the bands 19.7–20.1 GHz and 29.5–29.9 GHz by the mobile-satellite service in Region 2 is limited to satellite networks which are both in the

fixed-satellite service and in the mobile-satellite service as described in No. S5.526.

S5.530 In Regions 1 and 3, the allocation to the broadcasting-satellite service in the band 21.4–22 GHz shall come into effect on 1 April 2007. The use of this band by the broadcasting-satellite service after that date and on an interim basis prior to that date is subject to the provisions of Resolution 525 (WARC–92).

S5.531 *Additional allocation:* in Japan, the band 21.4–22 GHz is also allocated to the broadcasting service on a primary basis.

S5.532 The use of the band 22.21–22.5 GHz by the Earth exploration-satellite (passive) and space research (passive) services shall not impose constraints upon the fixed and mobile, except aeronautical mobile, services.

S5.533 The inter-satellite service shall not claim protection from harmful interference from airport surface detection equipment stations of the radionavigation service.

S5.534 *Additional allocation:* in Japan, the band 24.65–25.25 GHz is also allocated to the radionavigation service on a primary basis until 2008.

S5.535 In the band 24.75–25.25 GHz, feeder links to stations of the broadcasting-satellite service shall have priority over other uses in the fixed-satellite service (Earth-to-space). Such other uses shall protect and shall not claim protection from existing and future operating feeder-link networks to such broadcasting satellite stations.

S5.535A The use of the band 29.1–29.5 GHz (Earth-to-space) by the fixed-satellite service is limited to geostationary-satellite systems and feeder links to non-geostationary-satellite systems in the mobile-satellite service. Such use is subject to the application of the provisions of No. S9.11A, but not subject to the provisions of No. S22.2, except as indicated in Nos. S5.523C and S5.523E where such use is not subject to the provisions of No. S9.11A and shall continue to be subject to Articles S9 (except No. S9.11A) and S11 procedures, and to the provisions of No. S22.2.

S5.536 Use of the 25.25–27.5 GHz band by the inter-satellite service is limited to space research and Earth exploration-satellite applications, and also transmissions of data originating from industrial and medical activities in space.

S5.536A Administrations installing earth exploration-satellite earth stations cannot claim protection from fixed and mobile stations operated by neighbouring administrations. In addition, earth stations operating in the earth exploration-satellite service should take into account Recommendation ITU-R SA.1278.

S5.536B In Germany, Saudi Arabia, Austria, Belgium, Brazil, Bulgaria, China, the Republic of Korea, Denmark, Egypt, United Arab Emirates, Spain, Estonia, Finland, France, Hungary, India, Islamic Republic of Iran, Ireland, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Liechtenstein, Lithuania, Moldova, Norway, Oman, Uganda, Pakistan, the Philippines, Poland, Portugal, Syria, Slovakia, Czech Republic, Romania, the United Kingdom, Singapore, Sweden, Switzerland, Tanzania, Turkey, Viet Nam and Zimbabwe, earth stations operating in the Earth exploration-satellite service in the band 25.5–GHz shall not claim protection from, or constrain the use and deployment of, stations of the fixed and mobile services.

S5.537 Space services using non-geostationary satellites operating in the inter-satellite service in the band 27–27.5 GHz are exempt from the provisions of No. S22.2.

S5.538 *Additional allocation:* the bands 27.500–27.501 GHz and 29.999–30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for the beacon transmissions intended for up-link power control. Such space-to-Earth transmissions shall not exceed an equivalent isotropically radiated power (e.i.r.p.) of +10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit. In the band 27.500–27.501 GHz, such space to-Earth transmissions shall not produce a power flux-density in excess of the values specified in Article S21, Table S21–4 on the Earth's surface.

S5.539 The band 27.5–30 GHz may be used by the fixed-satellite service (Earth-to-space) for the provision of feeder links for the broadcasting-satellite service.

S5.540 *Additional allocation:* the band 27.501–29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for up-link power control.

S5.541 In the band 28.5–30 GHz, the earth exploration-satellite service is limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.

S5.541A Feeder links of non-geostationary networks in the mobile-satellite service and geostationary networks in the fixed-satellite service operating in the band 29.1–29.5 GHz (Earth-to-space) shall employ uplink adaptive power control or other methods of fade compensation, such that the earth station transmissions shall be conducted at the power level required to meet the desired link performance while reducing the level of mutual interference between both networks. These methods shall apply to networks for which Appendix S4 coordination information is considered as having been received by the Bureau after 17 May 1996 and until they are changed by a future competent world radiocommunication conference. Administrations submitting Appendix S4 information for coordination before this date are encouraged to utilize these techniques to the extent practicable. These methods are also subject to review by ITU-R (see Resolution 121 (Rev.WRC–97)).

S5.542 *Additional allocation:* in Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guinea, India, the Islamic Republic of Iran, Iraq, Japan, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Pakistan, the Philippines, Qatar, Syria, Democratic People's Republic of Korea, Somalia, Sudan, Sri Lanka and Chad, the band 29.5–31 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits specified in Nos. S21.3 and S21.5 shall apply.

S5.543 The band 29.95–30 GHz may be used for space-to-space links in the Earth exploration-satellite service for telemetry, tracking, and control purposes, on a secondary basis.

S5.544 In the band 31–31.3 GHz the power flux-density limits specified in Article S21, Table S21–4 shall apply to the space research service.

S5.545 *Different category of service:* in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakstan, Mongolia, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 31–31.3 GHz to the space research service is on a primary basis (see No. S5.33).

S5.546 *Different category of service:* in Saudi Arabia, Armenia, Azerbaijan, Belarus, Bulgaria, Egypt, United Arab Emirates, Spain, Estonia, Finland, Georgia, Hungary, the Islamic Republic of Iran, Israel, Jordan, Kazakstan, Latvia, Lebanon, Moldova, Mongolia, Uzbekistan, Poland, Syria, Kyrgyzstan, Romania, the United Kingdom, Russian Federation, Tajikistan, Turkmenistan, Turkey and Ukraine, the allocation of the band 31.5–31.8 GHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. S5.33).

S5.547 The bands 31.8–33.4 GHz, 51.4–52.6 GHz, 55.78–59 GHz and 64–66 GHz are available for high-density applications in the fixed service (see Resolution 726 (WRC–97)).

S5.547A Use of the band 31.8–33.4 GHz by the fixed service shall be in accordance with Resolution 126 (WRC–97).

S5.547B Alternative allocation: in the United States, the band 31.8–32 GHz is allocated to the radionavigation and space research (deep space) (space-to-Earth) services on a primary basis.

S5.547C *Alternative allocation:* in the United States, the band 32–32.3 GHz is allocated to the inter-satellite, radionavigation and space research (deep space) (space-to-Earth) services on a primary basis.

S5.547D *Alternative allocation:* in the United States, the band 32.3–33 GHz is allocated to the inter-satellite and radionavigation services on a primary basis.

S5.547E *Alternative allocation:* in the United States, the band 33–33.4 GHz is allocated to the radionavigation service on a primary basis.

S5.548 In designing systems for the inter-satellite and radionavigation services in the band 32–33 GHz, and for the space research service (deep space) in the band 31.8–32.3 GHz, administrations shall take all necessary measures to prevent harmful interference between these services, bearing in mind the safety aspects of the radionavigation service (see Recommendation 707).

S5.549 *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Egypt, the United Arab Emirates, Gabon, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Malaysia, Mali, Malta, Morocco, Mauritania, Nepal, Nigeria, Oman, Pakistan, the Philippines, Qatar, Dem. Rep. of the Congo, Syria, Senegal, Singapore, Somalia, Sudan, Sri Lanka, Togo, Tunisia and Yemen, the band 33.4–36 GHz is also allocated to the fixed and mobile services on a primary basis.

S5.550 *Different category of service:* in Armenia, Azerbaijan, Belarus, Bulgaria,

Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 34.7–35.2 GHz to the space research service is on a primary basis (see No. S5.33).

S5.551 Radars located on spacecraft may be operated on a primary basis in the band 35.5–35.6 GHz. (SUP—WRC–97).

S5.551A In the band 35.5–36.0 GHz, active spaceborne sensors in the earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service, the meteorological aids service and other services allocated on a primary basis.

S5.551B The use of the band 41.5–42.5 GHz by the fixed-satellite service (space-to-Earth) is subject to Resolution 128 (WRC–97).

S5.551C *Alternative allocation:* in the French overseas territories in Regions 2 and 3, the Republic of Korea and India, the band 40.5–42.5 GHz is allocated to the broadcasting, broadcasting-satellite and fixed services on a primary basis.

S5.551D *Additional allocation:* in Algeria, Saudi Arabia, Bahrain, Benin, Cameroon, Egypt, United Arab Emirates, Israel, Jordan, Kuwait, Lebanon, Libya, Mali, Morocco, Mauritania, Nigeria, Oman, Qatar, Syria, Tunisia and Yemen, the band 40.5–42.5 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. The use of this band by the fixed-satellite service shall be in accordance with Resolution 134 (WRC–97).

S5.551E Use of the band 40.5–42.5 GHz by the fixed-satellite service shall be in accordance with Resolution 134 (WRC–97).

S5.551F *Different category of service:* in Japan, the allocation of the band 41.5–42.5 GHz to the mobile service is on a primary basis (see No. S5.33).

S5.552 The allocation of the spectrum for the fixed-satellite service in the bands 42.5–43.5 GHz and 47.2–50.2 GHz for Earth-to-space transmission is greater than that in the band 37.5–39.5 GHz for space-to-Earth transmission in order to accommodate feeder links to broadcasting satellites. Administrations are urged to take all practicable steps to reserve the band 47.2–49.2 GHz for feeder links for the broadcasting-satellite service operating in the band 40.5–42.5 GHz.

S5.552A The allocation to the fixed service in the bands 47.2–47.5 GHz and 47.9–48.2 GHz is designated for use by high altitude platform stations. The use of the bands 47.2–47.5 GHz and 47.9–48.2 GHz is subject to the provisions of Resolution 122 (WRC–97).

S5.553 In the bands 43.5–47 GHz, 66–71 GHz, 95–100 GHz, 134–142 GHz, 190–200 GHz and 252–265 GHz, stations in the land mobile service may be operated subject to not causing harmful interference to the space radiocommunication services to which these bands are allocated (see No. S5.43).

S5.554 In the bands 43.5–47 GHz, 66–71 GHz, 95–100 GHz, 134–142 GHz, 190–200 GHz and 252–265 GHz, satellite links connecting land stations at specified fixed points are also authorized when used in conjunction with the mobile-satellite service or the radionavigation-satellite service.

S5.555 *Additional allocation:* the bands 48.94–49.04 GHz, 97.88–98.08 GHz, 140.69–140.98 GHz, 144.68–144.98 GHz, 145.45–145.75 GHz, 146.82–147.12 GHz, 250–251 GHz and 262.24–262.76 GHz are also allocated to the radio astronomy service on a primary basis.

S5.555A The band 50.2–50.4 GHz is also allocated, on a primary basis, to the fixed and mobile services until 1 July 2000.

S5.556 In the bands 51.4–54.25 GHz, 58.2–59 GHz, 64–65 GHz, 72.77–72.91 GHz and 93.07–93.27 GHz, radio astronomy observations may be carried out under national arrangements.

S5.556A Use of the bands 54.25–56.9 GHz, 57–58.2 GHz and 59–59.3 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density at all altitudes from 0 km to 1000 km above the Earth's surface produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, shall not exceed -147 dB(W/m^2/100 MHz) for all angles of arrival.

S5.556B *Additional allocation:* in Japan, the band 54.25–55.78 GHz is also allocated to the mobile service on a primary basis for low-density use.

S5.557 *Additional allocation:* in Japan, the band 55.78–58.2 GHz is also allocated to the radiolocation service on a primary basis.

S5.558 In the bands 55.78–58.2 GHz, 59–64 GHz, 66–71 GHz, 116–134 GHz, 170–182 GHz and 185–190 GHz, stations in the aeronautical mobile service may be operated subject to not causing harmful interference to the inter-satellite service (see No. S5.43).

S5.558A Use of the band 56.9–57 GHz by inter-satellite systems is limited to links between satellites in geostationary-satellite orbit and to transmissions from non-geostationary satellites in high-Earth orbit to those in low-Earth orbit. For links between satellites in the geostationary-satellite orbit, the single entry power flux-density at all altitudes from 0 km to 1000 km above the Earth's surface, for all conditions and for all methods of modulation, shall not exceed -147 dB(W/m^2/100 MHz) for all angles of arrival.

S5.559 In the bands 59–64 GHz and 126–134 GHz, airborne radars in the radiolocation service may be operated subject to not causing harmful interference to the inter-satellite service (see No. S5.43).

S5.560 In the band 78–79 GHz radars located on space stations may be operated on a primary basis in the Earth exploration-satellite service and in the space research service.

S5.561 In the band 84–86 GHz, stations in the fixed, mobile and broadcasting services shall not cause harmful interference to broadcasting-satellite stations operating in accordance with the decisions of the appropriate frequency assignment planning conference for the broadcasting-satellite service.

S5.562 The use of the band 94–94.1 GHz by the Earth exploration-satellite (active) and space research (active) services is limited to spaceborne cloud radars.

S5.564 *Additional allocation:* in Germany, Argentina, Spain, Finland, France, India, Italy and the Netherlands, the band 261–265 GHz is also allocated to the radio astronomy service on a primary basis.

S5.565 The frequency band 275–400 GHz may be used by administrations for experimentation with, and development of, various active and passive services. In this band a need has been identified for the following spectral line measurements for passive services:

–radio astronomy service: 278–280 GHz and 343–348 GHz;
–Earth exploration-satellite service (passive) and space research service (passive): 275–277 GHz, 300–302 GHz, 324–326 GHz, 345–347 GHz, 363–365 GHz and 379–381 GHz.

Future research in this largely unexplored spectral region may yield additional spectral lines and continuum bands of interest to the passive services. Administrations are urged to take all practicable steps to protect these passive services from harmful interference until the next competent world radiocommunication conference.

II. Old Numbering Scheme

459 In the Region 2 polar areas (north of 60°N and south of 60°S), which are subject to auroral disturbances, the aeronautical fixed service is the primary service in the band 160–190 kHz.

471 The bands 490–495 kHz and 505–510 kHz shall be subject to the provisions of No. 3018 until the entry into force of the reduced guardband in accordance with Resolution 210 (Mob–87).

472 The frequency 500 kHz is the international distress and calling frequency for Morse radiotelegraphy. The conditions for its use are prescribed in Articles 37, 38, N 38 and 60.

472A In the maritime mobile service, the frequency 490 kHz is, from the date of full implementation of the GMDSS (see Resolution 331 (Mob–87)), to be used exclusively for the transmission by coast stations of navigational and meteorological warnings and urgent information to ships, by means of narrowband direct-printing telegraphy. The conditions for use of the frequency 490 kHz are prescribed in Articles N 38 and 60, and Resolution 329 (Mob–87). In using the band 415–495 kHz for the aeronautical radionavigation service, administrations are requested to ensure that no harmful interference is caused to the frequency 490 kHz.

474 The conditions for the use of frequency 518 kHz by the maritime mobile service are prescribed in Articles 38, N38 and 60 (see Resolution 324 (Mob–87) and Article 14A).

480 In Region 2, the use of the band 1605–1705 kHz by stations of the broadcasting service is subject to the plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988.)

In Region 2, in the band 1625–1705 kHz, the relationship between the broadcasting, fixed and mobile services is shown in No. 419. However, the examination of frequency assignments to stations of the fixed and mobile services in the band 1625–1705 kHz under No. 1241 shall take account of the allotments appearing in the Plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988).

591 Subject to agreement obtained under the procedure set forth in Article 14, the band 117.975–137 MHz is also allocated to the aeronautical mobile-satellite (R) service on a secondary basis and on the condition that harmful interference is not caused to the aeronautical mobile (R) service.

599A The use of the band 137–138 MHz by the mobile-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution 46. However, coordination of a space station of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds—125 dB(W/m^{2}2/4 kHz) at the Earth's surface. The above power flux-density limit shall apply until such time as a competent world administrative radio conference revises it. In making assignments to the space stations in the mobile-satellite service in the above band, administrations shall take all practicable steps to protect the radio astronomy service in the 150.05–153 MHz band from harmful interference from unwanted emissions.

599B The use of the bands 137–138 MHz, 148–149.9 MHz and 400.15–401 MHz by the mobile-satellite service and the band 149.9–150.05 MHz by the land mobile-satellite service is limited to non-geostationary-satellite systems.

608A The use of the band 148–149.9 MHz by the mobile-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC–92). The mobile-satellite service shall not constrain the development and use of fixed, mobile and space operation services in the band 148–149.9 MHz. Mobile earth stations in the mobile-satellite service shall not produce a power flux-density in excess of −150 dB(W/m^2/4 kHz) outside national boundaries.

608B The use of the band 149.9–150.05 MHz by the land mobile-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC–92). The land mobile-satellite service shall not constrain the development and use of the radionavigation-satellite service in the band 149.9–150.05 MHz. Land mobile earth stations of the land mobile-satellite service shall not produce power flux-density in excess of −150 dB(W/m^2/4 kHz) outside national boundaries.

647B The use of the band 400.15–401 MHz by the mobile-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution 46. However, coordination of a space station of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds −125 dB(W/m^2/4 kHz) at the Earth's surface. The above power flux-density limit shall apply until such time as a competent world administrative radio conference revises it. In making assignments to the space stations in the mobile-satellite service in the above band, administrations shall take all practicable steps to protect the radio astronomy service in the band 406.1–410 MHz from harmful interference from unwanted emissions.

669 In the maritime mobile service, the frequencies 457.525 MHz, 457.550 MHz, 457.575 MHz, 467.525 MHz, 467.550 MHz and 467.575 MHz may be used by onboard communication stations. The use of these frequencies in territorial waters may be subject to the national regulations of the administration concerned. The characteristics of the equipment used shall conform to those specified in Appendix 20.

733 The bands 1610–1626.5 MHz, 5000–5250 MHz and 15.4–15.7 GHz are also allocated to the aeronautical mobile-satellite (R) service on a primary basis. Such use is subject to agreement obtained under the procedure set forth in Article 14.

753F The use of the band 2483.5–2500 MHz by the mobile-satellite and the radiodetermination-satellite services is subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC–92). Coordination of space stations of the mobile-satellite and radiodetermination-satellite services with respect to terrestrial services is required only if the power flux-density produced at the Earth's surface exceeds the limits in No. 2566. In respect of assignments operating in this band, the provisions of Section II, paragraph 2.2 of Resolution 46 (WARC–92) shall also be applied to geostationary transmitting space stations with respect to terrestrial stations.

792A The use of the bands 4500–4800 MHz, 6725–7025 MHz, 10.7–10.95 GHz, 11.2–11.45 GHz and 12.75–13.25 GHz by the fixed-satellite service shall be in accordance with the provisions of Appendix 30B.

796 The band 5000–5250 MHz is to be used for the operation of the international standard system (microwave landing system) for precision approach and landing. The requirements of this system shall take precedence over other uses of this band.

797 The bands 5000–5250 MHz and 15.4–15.7 GHz are also allocated to the fixed-satellite service and the inter-satellite service, for connection between one or more earth stations at specified fixed points on the Earth and space stations, when these services are used in conjunction with the aeronautical radionavigation and/or aeronautical mobile (R) service. Such use shall be subject to agreement obtained under the procedure set forth in Article 14.

909 In the bands 54.25–58.2 GHz, 59–64 GHz, 116–134 GHz, 170–182 GHz and 185–190 GHz, stations in the aeronautical mobile service may be operated subject to not causing harmful interference to the inter-satellite service (see No. 435).

917 In the bands 140.69–140.98 GHz all emissions from airborne stations, and from space stations in the space-to-Earth direction, are prohibited.

United States (US) Footnotes

US7 In the band 420–450 MHz and within the following areas, the peak envelope power output of a transmitter employed in the amateur service shall not exceed 50 watts, unless expressly authorized by the Commission after mutual agreement, on a case-by-case basis, between the Federal Communications Commission Engineer in Charge at the applicable district office and the military area frequency coordinator at the applicable military base. For areas (e) through (j), the appropriate military coordinator is located at Peterson AFB, CO.

(a) Those portions of Texas and New Mexico bounded on the south by latitude 31° 45′ North, on the east by longitude 104° 00′ West, on the north by latitude 34°30′ North, and on the west by longitude 107° 30′ West;

(b) The entire State of Florida including the Key West area and the areas enclosed within a 322-kilometer (200-mile) radius of Patrick Air Force Base, Florida (latitude 28°21′ North, longitude 80° 43′ West), and within a 322-kilometer (200-mile) radius of Eglin Air Force Base, Florida (latitude 30° 30′ North, longitude 86° 30′ West);

(c) The entire State of Arizona;

(d) Those portions of California and Nevada south of latitude 37° 10′ North, and the areas enclosed within a 322-kilometer (200-mile) radius of the Pacific Missile Test Center, Point Mugu, California (latitude 34° 09′ North, longitude 119° 11′ West).

(e) In the State of Massachusetts within a 160-kilometer (100-mile) radius around locations at Otis Air Force Base, Massachusetts (latitude 41° 45′ North, longitude 70° 32′ West).

(f) In the State of California within a 240-kilometer (150-mile) radius around locations at Beale Air Force Base, California (latitude 39° 08′ North, longitude 121° 26′ West).

(g) In the State of Alaska within a 160-kilometer (100-mile) radius of Clear, Alaska (latitude 64° 17′ North, longitude 149° 10′ West).

(h) In the State of North Dakota within a 160-kilometer (100-mile) radius of Concrete, North Dakota (latitude 48° 43′ North, longitude 97° 54′ West).

(i) In the States of Alabama, Georgia and South Carolina within a 200-kilometer (124-mile) radius of Warner Robins Air Force Base, Georgia (latitude 32° 38′ North, longitude 83° 35′ West).

(j) In the State of Texas within a 200-kilometer (124-mile) radius of Goodfellow Air Force Base, Texas (latitude 31° 25′ North, longitude 100° 24′ West).

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US78 In the mobile service, the frequencies between 1435 and 1535 MHz will be assigned for aeronautical telemetry and associated telecommand operations for flight testing of manned or unmanned aircraft and missiles, or their major components. Permissible usage includes telemetry associated with launching and reentry into the earth's atmosphere as well as any incidental orbiting prior to reentry of manned objects undergoing flight tests. The following frequencies are shared with flight telemetry mobile stations: 1444.5, 1453.5, 1501.5, 1515.5, 1524.5 and 1525.5 MHz.

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US221 Use of the mobile service in the bands 525–535 kHz and 1605–1615 kHz is limited to distribution of public service information from Travelers Information stations operating on 530 kHz and 1610 kHz.

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US256 Radio astronomy observations may be made in the band 1718.8–1722.2 MHz on an unprotected basis. Agencies providing other services in this band in the geographic areas listed below should bear in mind that

their operations may affect those observations, and those agencies are encouraged to minimize potential interference to the observations insofar as it is practicable.

Hat Creek Observatory, Hat Creek, California	Rectangle between latitudes 40° 00′ N and 42° 00′ N and between latitudes 120° 15′ W and 122° 15′ W.
Owens Valley Radio Observatory, Big Pine, California	Two contiguous rectangles, one between 36° 00′ N and 37°00′ N and between longitudes 117° 40′ W and 118° 30′ W and the second between latitudes 37° 00′ N and 30° 00′ N and between longitudes 118° 00′ W and 118° 50′ W.
Haystack Radio Observatory, Tyngsboro, Massachusetts.	Rectangle between latitudes 41° 00′ N and 43° 00′ N and between longitudes 71° 00′ W and 73° 00′ W.
National Astronomy and Ionosphere Center, Arecibo, Puerto Rico.	Rectangle between latitudes 17° 30′ N and 19° 00′ N and between longitudes 65° 10′ W and 68° 00′ W.
National Radio Astronomy Observatory, Green Bank, West Virginia.	Rectangle between latitudes 37° 30′ N and 39° 15′ N and between longitudes 78° 30′ W and 80° 30′ W.

US257 Radio astronomy observations may be made in the band 4950–4990 MHz at certain Radio Astronomy Observatories indicated below:

National Astronomy and Ionosphere Center, Arecibo, Puerto Rico.	Rectangle between latitudes 17° 30′ N and 19° 00′ N and between latitudes 65° 10′ W and 68° 00′ W.
Haystack Radio Observatory, Tyngsboro, Massachusetts.	Rectangle between latitudes 41° 00′ N and 43° 00′ N and between longitudes 71° 00′ W and 73° 00′ W.
National Radio Astronomy Observatory, Green Bank, West Virginia.	Rectangle between latitudes 37° 00′ N and 39° 15′ N and between longitudes 78° 30′ N and 80° 30′ W.
National Radio Astronomy Observatory, Socorro, New Mexico.	Rectangle between latitudes 32° 30′ N and 35° 30′ N and between longitudes 106° 00′ W and 109° 00′ W.
Owens Valley Radio Observatory, Big Pine, California	Two contiguous rectangles, one between latitudes 36° 00′ N and 37° 00′ N and between longitudes 117° 40′ W and 118° 30′ W and the second between latitudes 37° 00′ N and 38° 00′ N and between longitudes 118° 00′ W and 118° 50′ W.
Hat Creek Observatory, Hat Creek, California	Rectangle between latitudes 40° 00′ N and 42° 00′ N and between longitudes 120° 15′ W and 122° 15′ W.

Every practicable effort will be made to avoid the assignment of frequencies in the band 4950–4990 MHz to stations in the fixed and mobile services within the geographic areas given above. In addition, every practicable effort will be made to avoid the assignment of frequencies in this band to stations in the aeronautical mobile service which operate outside of those geographic areas, but which may cause harmful interference to the listed observatories. Should such assignments result in harmful interference to these observatories, the situation will be remedied to the extent practicable.

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US296 In the bands designated for ship wide-band telegraphy, facsimile and special transmission systems, the following assignable frequencies are available to non-Federal government stations on a shared basis with Federal government stations: 2070.5, 2072.5, 2074.5, 2076.5, 4154.5, 4169.5, 6235.5, 6259.5, 8302.5, 8338.5, 12370.5, 12418.5, 16551.5, 16614.5, 18847.5, 18868.5, 22181.5, 22238.5, 25123.5, and 25159.5 kHz.

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US303 In the band 2285–2290 MHz, non-Federal government space stations in the space research, space operations and earth exploration-satellite services may be authorized to transmit to the Tracking and Data Relay Satellite System subject to such conditions as may be applied on a case-by-case basis. Such transmissions shall not cause harmful interference to authorized Federal government stations. The power flux density at the Earth's surface from such non-Federal government stations shall not exceed −144 to −154 dBW/m²/4 kHz, depending on angle of arrival, in accordance with ITU Radio Regulation S21.16.

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US311 Radio astronomy observations may be made in the band 1350–1400 MHz on an unprotected basis at certain Radio Astronomy Observatories indicated below:

National Astronomy and Ionosphere Center, Arecibo, Puerto Rico.	Rectangle between latitudes 17° 30′ N and 19° 00′ N and between longitudes 65° 10′ W and 68° 00′ W.
National Radio Astronomy Observatory, Socorro, New Mexico.	Rectangle between latitudes 32° 30′ N and 35° 30′ N and between longitudes 106° 00′ W and 109° 00′ W.
National Radio Astronomy Observatory, Green Bank, West Virginia.	Rectangle between latitudes 37° 30′ N and 39° 15′ N and between longitudes 78° 30′ W and 80° 30′ W.

National Radio Astronomy Observatory, Very Long Baseline Array Stations	80 kilometers (50 mile) radius centered on:	
	Latitude (North)	Longitude (West)
Pie Town, NM	34° 18′	108° 07′
Kitt Peak, AZ	31° 57′	111° 37′
Los Alamos, NM	35° 47′	106° 15′
Fort Davis, TX	30° 38′	103° 57′
North Liberty, IA	41° 46′	91° 34′
Brewster, WA	48° 08′	119° 41′
Owens Valley, CA	37° 14′	118° 17′
Saint Croix, VI	17° 46′	64° 35′
Mauna Kea, HI	19° 48′	155° 27′
Hancock, NH	42° 56′	71° 59′

Every practicable effort will be made to avoid the assignment of frequencies in the band 1350–1400 MHz to stations in the fixed and mobile services which could interfere with radio astronomy observations within the geographic areas given above. In addition, every practicable effort will be made to avoid assignment of frequencies in this band to stations in the aeronautical mobile service which operate outside of those geographic areas, but which may cause harmful interference to the listed observatories. Should such assignments result in harmful interference to these observatories, the situation will be remedied to the extent practicable.

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US319 In the bands 137–138 MHz, 148–149.9 MHz, 149.9–150.05 MHz, 399.9–400.05 MHz, 400.15–401 MHz, 1610–1626.5 MHz, and 2483.5–2500 MHz, Federal government stations in the mobile-satellite service shall be limited to earth stations operating with non-Federal government space stations.

* * * * *

US322 Use of the bands 149.9–150.5 MHz and 399.9–400.05 MHz by the mobile-satellite service (Earth-to-space) is limited to non-voice, non-geostationary satellite systems, including satellite links between land earth stations.

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Non-Federal Government (NG) Footnotes

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NG47 In Alaska, frequencies within the band 2655–2690 MHz are not available for assignment to terrestrial stations.

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NG102 Use of the fixed-satellite service in the bands 2500–2655 MHz (space-to-Earth) and 2655–2690 MHz (Earth-to-space) is limited as follows:

(a) For common carrier use in Alaska, for intra-Alaska service only, and in the mid- and western-Pacific areas, including American Samoa, Guam, the Northern Mariana Islands, and Hawaii, and under the Compacts of Free Association with the Federated States of Micronesia and the Republic of the Marshall Islands.

(b) For educational use in the contiguous United States, Alaska, and the mid- and western-Pacific areas, including American Samoa, Guam, the Northern Mariana Islands, and Hawaii.

Such use is subject to agreement with administrations having services operating in accordance with the Table, which may be affected. In the band 2500–2655 MHz, unless such agreement includes the use of higher values, the power flux density at the Earth's surface produced by emissions from a space station in this service shall not exceed the values set forth in Part 25 of the Rules for this frequency band.

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NG120 Frequencies in the band 928–960 MHz may be assigned for multiple address systems and mobile operations on a primary basis as specified in 47 CFR part 101.

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NG124 Within designated segments of the bands that comprise 30.85–47.41 MHz, 150.8–159.465 MHz, and 453.0125–467.9875 MHz, police licensees are authorized to operate low power radio transmitters on a secondary, non-interference basis in accordance with the provisions of 47 CFR 2.803 and 90.20(e)(5).

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NG128 In the band 535–1705 kHz, AM broadcast licensees or permittees may use their AM carrier on a secondary basis to transmit signals intended for both broadcast and non-broadcast purposes. In the band 88–108 MHz, FM broadcast licensees or permittees are permitted to use subcarriers on a secondary basis to transmit signals intended for both broadcast and non-broadcast purposes. In the bands 54–72, 76–88, 174–216, 470–608 and 614–806 MHz, TV broadcast licensees or permittees are permitted to use subcarriers on a secondary basis for both broadcast and non-broadcast purposes.

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NG147 Stations in the broadcast auxiliary service and private radio services licensed as of July 25, 1985, or on a subsequent date following as a result of submitting an application for license on or before July 25, 1985, may continue to operate on a primary basis with the mobile-satellite service and the radiodetermination satellite service.

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Federal Government (G) Footnotes

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G106 The bands 2501–2502 kHz, 5003–5005 kHz, 10003–10005 kHz, 15005–15010 kHz, 19990–19995 kHz, 20005–20010 kHz and 25005–25010 kHz are also allocated, on a secondary basis, to the space research service. The space research transmissions are subject to immediate temporary or permanent shutdown in the event of interference to the reception of the standard frequency and time broadcasts.

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