

(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 dig-

its, *e.g.*, NG2, denotes a stipulation applicable only to the Non-Federal Government Table (column 5).

(iv) Any footnote consisting of the letter G followed 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.

[65 FR 4640, Jan. 31, 2000]

§ 2.106 Table of Frequency Allocations.

EDITORIAL NOTE: The text of § 2.106 begins on the following page.

0-130 kHz (V/L/F/L)			Page 1	
International Table		United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Non-Federal Government	
Below 9 (Not Allocated)			Below 9 (Not Allocated)	
S5.53 S5.54			S5.53 S5.54	
9-14 RADIONAVIGATION			9-14 RADIONAVIGATION US18 US294	
14-19.95 FIXED MARITIME MOBILE S5.57			14-19.95 FIXED MARITIME MOBILE S5.57 US294	International Fixed (23)
S5.55 S5.56				
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	International Fixed (23)
S5.58 S5.59				
70-72 RADIONAVIGATION S5.60			61-70 FIXED MARITIME MOBILE S5.57 US294	International Fixed (23)
S5.56				
70-90 FIXED MARITIME MOBILE S5.57 MARITIME RADIO- NAVIGATION S5.60 Radiolocation			70-90 FIXED MARITIME MOBILE S5.57 Radiolocation	International Fixed (23) Private Land Mobile (90)
S5.56				
72-84 FIXED MARITIME MOBILE S5.57 RADIONAVIGATION S5.60			70-90 FIXED MARITIME MOBILE S5.57 Radiolocation	International Fixed (23) Private Land Mobile (90)
S5.56				

84-86 RADIO NAVIGATION \$5.60	84-86 RADIO NAVIGATION \$5.60 Fixed Maritime mobile \$5.57			
86-90 FIXED MARITIME MOBILE \$5.57 RADIO NAVIGATION	86-90 FIXED MARITIME MOBILE \$5.57 RADIO NAVIGATION \$5.60			
\$5.56	\$5.61	\$5.60 US294	\$5.60 US294	
90-110 RADIO NAVIGATION \$5.62 Fixed		90-110 RADIO NAVIGATION \$5.62		Private Land Mobile (90)
\$5.64		US18 US104 US294		
110-112 FIXED MARITIME MOBILE RADIO NAVIGATION	110-112 FIXED MARITIME MOBILE RADIO NAVIGATION \$5.60			International Fixed (23) Maritime (80) Private Land Mobile (90)
\$5.64	\$5.64			
112-115 RADIO NAVIGATION \$5.60	112-117.6 RADIO NAVIGATION \$5.60			
115-117.6 FIXED Maritime mobile \$5.64 \$5.66	112-117.6 Fixed Maritime mobile \$5.64 \$5.65			
117.6-126 FIXED MARITIME MOBILE RADIO NAVIGATION \$5.60	117.6-126 FIXED MARITIME MOBILE RADIO NAVIGATION \$5.60			
\$5.64	\$5.64			
126-129 RADIO NAVIGATION \$5.60	126-129 RADIO NAVIGATION \$5.60 Fixed Maritime mobile \$5.64 \$5.65			
See next page for 129-130	See next page for 129-130	\$5.61 \$5.64	\$5.60 \$5.64 US294	

130-505 kHz (LF/MF)		Page 3	
International Table		United States Table	
Region 1	Region 2	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 RADIONAVIGATION S5.64 S5.67 148.5-255 BROADCASTING	130-160 FIXED MARITIME MOBILE RADIONAVIGATION S5.64	130-160 FIXED MARITIME MOBILE S5.64 US294	International Fixed (23) Maritime (80)
190-200 AERONAUTICAL RADIONAVIGATION	160-190 FIXED Aeronautical radionavigation S5.64	160-190 FIXED MARITIME MOBILE 459 US294	International Fixed (23)
200-275 AERONAUTICAL RADIONAVIGATION Aeronautical mobile 255-283.5 BROADCASTING AERONAUTICAL RADIONAVIGATION	190-200 AERONAUTICAL RADIONAVIGATION 200-275 AERONAUTICAL RADIONAVIGATION Aeronautical mobile	190-200 AERONAUTICAL RADIONAVIGATION US18 US226 US294	Aviation (87)
275-285 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radiobeacons) S5.70 S5.71 283.5-315 AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) S5.73 S5.72 S5.74	275-285 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radiobeacons) 285-315 AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) S5.73	US18 US294 275-285 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radiobeacons) US18 US294 285-325 MARITIME RADIONAVIGATION (radiobeacons) S5.73 Aeronautical radionavigation (radiobeacons)	

Federal Communications Commission

§2.106

315-325 AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radiobeacons) S5.73	315-325 MARITIME RADIONAVIGATION (radiobeacons) S5.73 Aeronautical radionavigation	315-325 AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) S5.73	US18 US294	
S5.72 S5.75	325-335 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radiobeacons)	325-335 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radiobeacons)	325-335 AERONAUTICAL RADIONAVIGATION (radiobeacons) Aeronautical mobile Maritime radionavigation (radiobeacons)	
325-405 AERONAUTICAL RADIONAVIGATION	325-405 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radiobeacons)	325-405 AERONAUTICAL RADIONAVIGATION Aeronautical mobile	US18 US294	
S5.72	335-405 AERONAUTICAL RADIONAVIGATION Aeronautical mobile	335-405 AERONAUTICAL RADIONAVIGATION (radiobeacons) Aeronautical mobile	US18 US294	
405-415 RADIONAVIGATION S5.76	405-415 RADIONAVIGATION S5.76 Aeronautical mobile	405-415 RADIONAVIGATION S5.76 Aeronautical mobile	405-415 RADIONAVIGATION S5.76 Aeronautical mobile	Maritime (80) Aviation (87)
S5.72	415-465 MARITIME MOBILE S5.79 AERONAUTICAL RADIONAVIGATION	415-465 MARITIME MOBILE S5.79 S5.79A Aeronautical radionavigation S5.80	US18 US294	
S5.72	435-495 MARITIME MOBILE S5.79 S5.79A Aeronautical radionavigation	435-495 MARITIME MOBILE S5.79 Aeronautical radionavigation	435-495 MARITIME MOBILE S5.79 471 472A US231 US294 495-505 MOBILE (distress and calling)	Maritime (80)
S5.72 S5.81 S5.82	S5.77 S5.78 S5.81 S5.82	471 472A US231 US294	471 472A US231 US294	
495-505 MOBILE (distress and calling) S5.83	MOBILE (distress and calling)	MOBILE (distress and calling)	472	

505-2.107 kHz (MF)		Page 5	
International Table		United States Table	
Region 1	Region 2	Federal Government	Non-Federal Government
505-526.5 MARITIME MOBILE S5.79 S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	505-510 MARITIME MOBILE S5.79 S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	505-510 MARITIME MOBILE S5.79	Maritime (80)
505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	505-526.5 MARITIME MOBILE S5.79 S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	471 510-525 MARITIME MOBILE (ships only) 474 AERONAUTICAL RADIO NAVIGATION (radiobeacons)	Maritime (80) Aviation (87)
505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	US14 US18 US225	
505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	525-535 MOBILE US221 AERONAUTICAL RADIO NAVIGATION (radiobeacons)	Aviation (87) Private Land Mobile (90)
505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	US18 US239	
505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	535-1605	Radio Broadcasting (AM) (73) Auxiliary Broadcasting (74) Alaska Fixed (80) Private Land Mobile (90)
505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	1605-1615 MOBILE US221	1605-1705 BROADCASTING 480
505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	US238	
505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	1615-1625	
505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	US238 US299	
505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	1625-1705 Radiolocation	
505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	505-525 MOBILE S5.79A, S5.84 AERONAUTICAL RADIO NAVIGATION	US238 US299	US238 US299 US321 NG128

Federal Communications Commission

§2.106

S5.92 S5.96	1705-1800 FIXED MOBILE RADIOLOCATION AERONAUTICAL RADIIONAVIGATION	S5.91	1705-1800 FIXED MOBILE RADIOLOCATION	International Fixed (23) Maritime (80) Private Land Mobile (60)
1800-1810 RADIOLOCATION	1800-1850 AMATEUR	1800-2000 AMATEUR FIXED MOBILE except aeronautical mobile RADIIONAVIGATION Radiolocation	1800-1900 AMATEUR	Amateur (97)
S5.93	1810-1850 AMATEUR			
S5.98 S5.99 S5.100 S5.101	1850-2000 FIXED MOBILE except aeronautical mobile			
S5.92 S5.96 S5.103	2000-2025 FIXED MOBILE except aeronautical mobile (R)	S5.102	1900-2000 RADIOLOCATION	Private Land Mobile (90) Amateur (97)
S5.92 S5.103	2025-2045 FIXED MOBILE except aeronautical mobile (R) Meteorological aids S5.104	S5.97	US290 2000-2065 FIXED MOBILE	Maritime (80)
S5.92 S5.103	2045-2160 FIXED MARITIME MOBILE LAND MOBILE		US340 2065-2107 MARITIME MOBILE S5.105 US296 US340	See next page for 2107-2170 kHz
S5.92	See next page for 2107-2170 kHz		See next page for 2107-2170 kHz	

International Table		United States Table		FCC Rule Part(s)
Region 1	Region 2	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 MARTIME MOBILE NG19	International Fixed (23) Maritime (80) Aviation (87) Private Land Mobile (90)
2160-2170 RADIOLOCATION		US340	US340	
SS.93 SS.107		2170-2173.5 MARITIME MOBILE (telephony)	2170-2173.5 MARITIME MOBILE	Maritime (80)
2173.5-2180.5 MOBILE (distress and calling)		US340	US340	
SS.108 SS.109 SS.110 SS.111		2173.5-2180.5 MOBILE (distress and calling)	2173.5-2180.5 MOBILE (distress and calling)	Maritime (80) Aviation (87)
2190.5-2194 MARITIME MOBILE		SS.108 SS.109 SS.110 SS.111	SS.108 SS.109 SS.110 SS.111 US279 US340	
		2190.5-2194 MARITIME MOBILE (telephony)	2190.5-2194 MARITIME MOBILE	Maritime (80)
2194-2300 FIXED MOBILE except aeronautical mobile (R)	2194-2300 FIXED MOBILE	US340	US340	
SS.92 SS.103 SS.112	SS.112	2194-2495 FIXED MOBILE	2194-2495 FIXED LAND MOBILE MARTIME MOBILE NG19	International Fixed (23) Maritime (80) Aviation (87) Private Land Mobile (90)
2300-2498 FIXED MOBILE except aeronautical mobile (R)	2300-2498 FIXED MOBILE	US340	US340	
BROADCASTING SS.113	BROADCASTING SS.113	2495-2501 STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)	2495-2501 STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)	
SS.103				
2498-2501 STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)				

Page 7

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

3230-5060 kHz (HF)		Page 9	
International Table		United States Table	
Region 1	Region 2	Federal Government	Non-Federal Government
3230-3400 FIXED MOBILE except aeronautical mobile BROADCASTING S5.113		3230-3400 FIXED MOBILE except aeronautical mobile Radiolocation	International Fixed (23) Maritime (80) Aviation (87) Private Land Mobile (90)
S5.116 S5.118		US340	
3400-3500 AERONAUTICAL MOBILE (R)		3400-3500 AERONAUTICAL MOBILE (R)	Aviation (87)
3500-3800 AMATEUR S5.120 FIXED MOBILE except aeronautical mobile	3500-3750 AMATEUR S5.120 S5.119	3500-3900 AMATEUR S5.120 FIXED MOBILE	Amateur (97)
S5.92	3750-4000 AMATEUR S5.120 FIXED MOBILE except aeronautical mobile (R)	3500-4000 AMATEUR S5.120	
3800-3900 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE			
3900-3950 AERONAUTICAL MOBILE (OR)		3900-3950 AERONAUTICAL MOBILE BROADCASTING	
S5.123			
3950-4000 FIXED BROADCASTING	S5.122 S5.124 S5.125	3950-4000 FIXED BROADCASTING	
4000-4063 FIXED MARITIME MOBILE S5.127		US340	Aviation (87)
S5.126		4000-4063 MARITIME MOBILE	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		US236 US340 4063-4438 MARITIME MOBILE S5.109 S5.110 S5.130 S5.132 US82 US296 US340	

Federal Communications Commission

§2.106

4438-4650 FIXED MOBILE except aeronautical mobile (R)	4438-4650 FIXED MOBILE except aeronautical mobile	4438-4650 FIXED MOBILE except aeronautical mobile (R)	International Fixed (23) Maritime (60) Aviation (67) Private Land Mobile (90)
4650-4700 AERONAUTICAL MOBILE (R)		4650-4700 AERONAUTICAL MOBILE (R)	Aviation (87)
4700-4750 AERONAUTICAL MOBILE (OR)		4700-4750 AERONAUTICAL MOBILE (OR)	
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 MOBILE except aeronautical mobile (R)	International Fixed (23) Maritime (60) Aviation (87)
4850-4995 FIXED LAND MOBILE BROADCASTING S5.113		4850-4995 FIXED MOBILE	
4995-5003 STANDARD FREQUENCY AND TIME SIGNAL (5000 KHZ)		4995-5003 STANDARD FREQUENCY AND TIME SIGNAL (5000 KHZ)	
5003-5005 STANDARD FREQUENCY AND TIME SIGNAL Space research		5003-5005 STANDARD FREQUENCY AND TIME SIGNAL	
5005-5060 FIXED BROADCASTING S5.113		5005-5060 FIXED	International Fixed (23) Maritime (60) Aviation (87) Private Land Mobile (90)

5060-9040 KHz (HF)		Page 11	
International Table		United States Table	
Region 1	Region 2	Federal Government	Non-Federal Government
6060-5250 FIXED Mobile except aeronautical mobile SS.133		6060-5460 FIXED Mobile except aeronautical mobile	International Fixed (23) Maritime (60) Aviation (67) Private Land Mobile (60)
5250-5450 FIXED MOBILE except aeronautical mobile		US212 US340	
5450-5480 FIXED AERONAUTICAL MOBILE (R) (OR) LAND MOBILE	5450-5480 FIXED AERONAUTICAL MOBILE (R) (OR) LAND MOBILE	5450-5480 AERONAUTICAL MOBILE (R)	Aviation (67)
5480-5680 AERONAUTICAL MOBILE (R)		US283 US340	
5680-5730 AERONAUTICAL MOBILE (OR)		5480-5680 AERONAUTICAL MOBILE (R)	
5730-5900 FIXED LAND MOBILE	5730-5900 FIXED MOBILE except aeronautical mobile (R)	55.111 SS.115 US283 US340	
5900-5950 BROADCASTING SS.134		5680-5730 AERONAUTICAL MOBILE (OR)	
55.136 BROADCASTING		55.111 SS.115 US340	
6200-6525 MARITIME MOBILE SS.109 SS.110 SS.130 SS.132		5770-5950 FIXED MOBILE except aeronautical mobile (R)	International Fixed (23) Maritime (60) Aviation (67)
6525-6685 AERONAUTICAL MOBILE (R)		5950-6200 BROADCASTING US340	Radio Broadcast (HF) (73)
		6200-6525 MARITIME MOBILE SS.109 SS.110 SS.130 SS.132	Maritime (60)
		US82 US296 US340	
		6525-6685 AERONAUTICAL MOBILE (R)	Aviation (67)
		US283 US340	

Federal Communications Commission

§2.106

6685-6765 AERONAUTICAL MOBILE (OR)	6685-6765 AERONAUTICAL MOBILE (OR)		
6765-7000 FIXED Land mobile S5.139 S5.138	US340 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 AMATEUR S5.120 AMATEUR-SATELLITE US340		Amateur (97)
7100-7300 BROADCASTING	7100-7300 AMATEUR S5.120 S5.142 US340	7100-7300 BROADCASTING	
7300-7350 BROADCASTING S5.134	7300-8100 FIXED Mobile		International Fixed (23) Maritime (80) Aviation (87) Private Land Mobile (90)
S5.143 7350-8100 FIXED Land mobile S5.144	US340		
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		
8815-8865 AERONAUTICAL MOBILE (R)	8815-8865 AERONAUTICAL MOBILE (R)		Aviation (87)
8965-9040 AERONAUTICAL MOBILE (OR)	US340 8965-9040 AERONAUTICAL MOBILE (OR) US340		

9040-13410 kHz (HF)		Page 15	
International Table		United States Table	
Region 1	Region 2	Federal Government	Non-Federal Government
9040-9400 FIXED	Region 3	9040-9500 FIXED	
9400-9500 BROADCASTING S5.134			International Fixed (23) Maritime (80) Aviation (87)
S5.146		US340	
9500-9900 BROADCASTING		9500-9900 BROADCASTING	International Fixed (23) Radio Broadcast (HF) (73)
S5.147		S5.147 S5.148 US235 US340	
9900-9995 FIXED		9900-9995 FIXED	International Fixed (23) Aviation (87)
		US340	
9995-10003 STANDARD FREQUENCY AND TIME SIGNAL (10000 kHz)		9995-10003 STANDARD FREQUENCY AND TIME SIGNAL (10000 kHz)	
S5.111		S5.111 US340	
10003-10005 STANDARD FREQUENCY AND TIME SIGNAL Space research		10003-10005 STANDARD FREQUENCY AND TIME SIGNAL	
S5.111		S5.111 US340 G106	
10005-10100 AERONAUTICAL MOBILE (R)		10005-10100 AERONAUTICAL MOBILE (R)	Aviation (87)
S5.111		S5.111 US283 US340	
10100-10150 FIXED Amateur S5.120		10100-10150 AMATEUR S5.120	Amateur (87)
10150-11175 FIXED Mobile except aeronautical mobile (R)		US247 US340	
S5.111		10150-11175 FIXED Mobile except aeronautical mobile (R)	International Fixed (23) Aviation (87)
11175-11275 AERONAUTICAL MOBILE (OR)		11175-11275 AERONAUTICAL MOBILE (OR)	
S5.111		US340	

Federal Communications Commission

§ 2.106

11275-11400 AERONAUTICAL MOBILE (R)	11275-11400 AERONAUTICAL MOBILE (R)	Aviation (87)
11400-11600 FIXED	US283 US340 11400-11600 FIXED	International Fixed (23) Aviation (87)
11600-11650 BROADCASTING S5.134	US340	
S5.146	11650-12050 BROADCASTING	International Fixed (23) Radio Broadcast (HF) (73)
12050-12100 BROADCASTING S5.134	US235 US340	
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)	
13260-13360 AERONAUTICAL MOBILE (R)	US340 13260-13360 AERONAUTICAL MOBILE (R)	Aviation (87)
13360-13410 FIXED RADIO ASTRONOMY	US283 US340 13360-13410 RADIO ASTRONOMY	
S5.149	S5.149 G115	13360-13410 RADIO ASTRONOMY S5.149

13410-17900 kHz (HF)		Page 15	
International Table		United States Table	
Region 1	Region 2	Region 3	FCC Rule Part(s)
13410-13570 FIXED Mobile except aeronautical mobile (R)		13410-13570 FIXED Mobile except aeronautical mobile (R)	ISM Equipment (18) International Fixed (23) Aviation (87)
S5.150		S5.150 US340	
13570-13600 BROADCASTING S5.134		13570-13600 FIXED Mobile except aeronautical mobile (R)	International Fixed (23) Aviation (87)
S5.151		US340	
13600-13800 BROADCASTING		13600-13800 BROADCASTING	International Fixed (23) Radio Broadcast (HF) (73)
S5.148		S5.148 US340	
13800-14000 BROADCASTING S5.134		13800-14000 FIXED Mobile except aeronautical mobile (R)	International Fixed (23) Aviation (87)
S5.151		US340	
13870-14000 FIXED Mobile except aeronautical mobile (R)		US340	
14000-14250 AMATEUR S5.120 AMATEUR-SATELLITE		14000-14250 AMATEUR S5.120 AMATEUR-SATELLITE	Amateur (97)
14250-14350 AMATEUR S5.120		14250-14350 AMATEUR S5.120	
S5.152		US340	
14350-14990 FIXED Mobile except aeronautical mobile (R)		14350-14990 FIXED Mobile except aeronautical mobile (R)	International Fixed (23) Aviation (87)
S5.152		US340	

Federal Communications Commission

§2.106

14990-15005 STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz)	14990-15005 STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz)	
S5.111	S5.111 US340	
15005-15010 STANDARD FREQUENCY AND TIME SIGNAL Space research	15005-15010 STANDARD FREQUENCY AND TIME SIGNAL AND TIME SIGNAL US340 G1.06	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	15600-16360 FIXED	International Fixed (23) Aviation (67)
S5.146		
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 (67)
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)			Page 17	
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)	Aviation (87)
17970-18030 AERONAUTICAL MOBILE (OR)			US283 US340 17970-18030 AERONAUTICAL MOBILE (OR)	
18030-18052 FIXED			18030-18068 FIXED	International Fixed (23) Maritime (80)
18052-18068 FIXED			US340	
Space research				
18068-18168 AMATEUR S5.120 AMATEUR-SATELLITE			18068-18168 AMATEUR S5.120 AMATEUR-SATELLITE	International Fixed (23) Amateur (97)
S5.154			US340	
18168-18780 FIXED			18168-18780 FIXED	International Fixed (23) Maritime (80) Aviation (87)
Mobile except aeronautical mobile			Mobile	
18780-19800 MARTIME MOBILE			US340 18780-19800 MARTIME MOBILE	International Fixed (23) Maritime (80)
18900-19020 BROADCASTING S5.134			US982 US296 US340	International Fixed (23) Aviation (87)
S5.146			FIXED	
19020-19680 FIXED			US340	
19680-19800 MARTIME MOBILE S5.132			19680-19800 MARTIME MOBILE S5.132	Maritime (80)
19800-19990 FIXED			US340 19800-19990 FIXED	International Fixed (23) Aviation (87)
			US340	

Federal Communications Commission

§ 2.106

19990-19995 STANDARD FREQUENCY AND TIME SIGNAL Space research	19990-19995 STANDARD FREQUENCY AND TIME SIGNAL Space research G106	19990-19995 STANDARD FREQUENCY AND TIME SIGNAL Space research	
S5.111	S5.111 US340	S5.111 US340	
19995-20010 STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz)	19995-20010 STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz)	19995-20010 STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz)	
S5.111	S5.111 US340 G106	S5.111 US340	
20010-21000 FIXED Mobile	20010-21000 FIXED Mobile	20010-21000 FIXED	
S5.155	US340	US340	
21000-21450 AMATEUR S5.120 AMATEUR-SATELLITE	21000-21450	21000-21450 AMATEUR S5.120 AMATEUR-SATELLITE	Amateur (97)
21450-21850 BROADCASTING	21450-21850 BROADCASTING	US340	
21850-21970 FIXED S5.155A	S5.148 US340		International Fixed (23) Radio Broadcast (11F) (73)
S5.155	21850-21924 FIXED		International Fixed (23) Aviation (87)
21870-21924 FIXED S5.155B			
21924-22000 AERONAUTICAL MOBILE (R)	US340		
	21924-22000 AERONAUTICAL MOBILE (R)	21924-22000 AERONAUTICAL MOBILE (R)	Aviation (87)
22000-22855 MARITIME MOBILE S5.132	US340		
S5.156	22000-22855 MARITIME MOBILE S5.132	22000-22855 MARITIME MOBILE S5.132	International Fixed (23) Maritime (80)
	US82 US296 US340	US82 US296 US340	

International Table		United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Non-Federal Government	
22855-23000 FIXED			22855-23000 FIXED	International Fixed (23) Aviation (87)
SS.156			US340	
23000-23200 FIXED Mobile except aeronautical mobile (R)			23000-23200 FIXED Mobile except aeronautical mobile (R)	
SS.156			US340	
23200-23350 FIXED SS.156A AERONAUTICAL MOBILE (OR)			23200-23350 AERONAUTICAL MOBILE (OR)	
23350-24000 FIXED MOBILE except aeronautical mobile SS.157			23350-24890 FIXED MOBILE except aeronautical mobile	International Fixed (23) Aviation (87)
24000-24890 FIXED LAND MOBILE			US340	
24890-24890 AMATEUR S5.120 AMATEUR-SATELLITE			24890-24890 AMATEUR S5.120 AMATEUR-SATELLITE	Amateur (97)
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	
25010-25070 FIXED MOBILE except aeronautical mobile			US340 G.105 25010-25070 LAND MOBILE	Private Land Mobile (90)
			US340 NG112	

Page 19

Federal Communications Commission

§2.106

25070-25210 MARTIME MOBILE	25070-25210 MARTIME MOBILE	25070-25210 MARTIME MOBILE	25070-25210 MARTIME MOBILE	Maritime (60) Private Land Mobile (90)
25210-25550 FIXED MOBILE except aeronautical mobile	US82 US281 US296 US340 25210-25330 US340 25330-25550 FIXED MOBILE except aeronautical mobile US340	US82 US281 US296 US340 25210-25330 US340 25330-25550 FIXED MOBILE except aeronautical mobile US340	US82 US281 US296 US340 25210-25330 LAND MOBILE US340 25330-25550 US340	Private Land Mobile (90)
25550-25670 RADIO ASTRONOMY	25550-25670 RADIO ASTRONOMY US74 SS.149	25550-25670 RADIO ASTRONOMY US74 SS.149	25550-25670 RADIO ASTRONOMY US74 SS.149	
25670-26100 BROADCASTING	25670-26100 BROADCASTING US25 US340	25670-26100 BROADCASTING US25 US340	25670-26100 BROADCASTING US25 US340	Radio Broadcast (HF) (73) Remote Pickup (74D)
26100-26175 MARTIME MOBILE SS.132	26100-26175 MARTIME MOBILE SS.132 US340	26100-26175 MARTIME MOBILE SS.132 US340	26100-26175 MARTIME MOBILE SS.132 US340	Auxiliary Broadcasting (74) Maritime (60)

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

28-33 MHz (HF/VHF)		Page 22	
International Table		United States Table	
Region 1	Region 2	Federal Government	Non-Federal Government
28-29.7 AMATEUR AMATEUR-SATELLITE	Region 3	28-29.89	28-29.7 AMATEUR AMATEUR-SATELLITE US340
29.7-30.005 FIXED MOBILE		US340 29.89-29.91 FIXED MOBILE	29.7-29.8 LAND MOBILE US340
		US340 29.91-30	29.8-29.89 FIXED US340
		US340 30-30.56 FIXED MOBILE	29.89-29.91 FIXED US340
30.005-30.01 SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH		US340 30-30.56 FIXED MOBILE	29.91-30 FIXED US340
30.01-37.5 FIXED MOBILE		30.56-32	30-30.56 FIXED MOBILE
		32-33 FIXED MOBILE	30.56-32 FIXED LAND MOBILE NG-124 32-33
		See next page for 33-37.5 MHz	Private Land Mobile (90) See next page for 33-37.5 MHz

International Table		United States Table		FCC Rule Part(s)
Region 1	Region 2	Federal Government	Non-Federal Government	
See previous page for 30.01-37.5 MHz		33-34	33-34 FIXED LAND MOBILE	Private Land Mobile (90)
		34-35 FIXED MOBILE	NG124 34-35	
		35-36	35-36 FIXED LAND MOBILE	Public Mobile (22) Private Land Mobile (90)
		36-37 FIXED MOBILE	36-37	
		US220	US220	
		37-37.5	37-37.5 LAND MOBILE	Private Land Mobile (90)
37.5-38.25 FIXED MOBILE Radio astronomy		37.5-38 Radio astronomy	NG124 37.5-38 LAND MOBILE Radio astronomy	
		S5.149	S5.149 NG589 NG124	
		38-38.25 FIXED MOBILE RADIO ASTRONOMY	38-38.25 RADIO ASTRONOMY	
S5.149		S5.149 US81	S5.149 US81	
38.25-39.986 FIXED MOBILE		38.25-39 FIXED MOBILE	38.25-39	
39.986-40.02 FIXED MOBILE Space research		39-40	39-40 LAND MOBILE	Private Land Mobile (90)
		40-42 FIXED MOBILE	NG124	
		40-40.98 FIXED MOBILE	40-40.98	ISM Equipment (18)

Page 23

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

50-123.5675 (VHF)

Page 25

75.4-76 FIXED MOBILE	75.4-87 FIXED MOBILE	75.4-88	75.4-76 FIXED MOBILE	Public Mobile (22) Private Land Mobile (60) Personal Radio (85)
76-88 BROADCASTING Fixed Mobile	S5.149 S5.182 S5.183 S5.188 87-100 FIXED MOBILE BROADCASTING	76-88 BROADCASTING	76-88 BROADCASTING	Broadcast Radio (TV) (73) Auxiliary Broadcasting (74)
S5.175 S5.179 S5.184 S5.187 BROADCASTING	S5.185 BROADCASTING	88-108 BROADCASTING	88-108 BROADCASTING	Broadcast Radio (FM) (73) Auxiliary Broadcasting (74)
S5.190 100-108 BROADCASTING		US93	US93 NG2 NG128 NG129	
S5.192 S5.194 108-117.975 AERONAUTICAL RADIONAVIGATION		108-117.975 AERONAUTICAL RADIONAVIGATION		Note: The NTIA Manual (footnote G126) states that differential GPS stations may be author- ized in the 108-117.975 MHz band, but the FCC has not yet addressed this footnote.
S5.197 117.975-137 AERONAUTICAL MOBILE (R)		US93 117.975-121.9375 AERONAUTICAL MOBILE (R)		Aviation (87)
		S5.111 S5.199 S5.200 S91 US28 US28 121.9375-123.0875 AERONAUTICAL MOBILE	121.9375-123.0875 AERONAUTICAL MOBILE	
		591 US30 US31 US33 US60 US102 US213 123.0875-123.5875 AERONAUTICAL MOBILE	591 US30 US31 US33 US60 US102 US213	
S5.111 S5.198 S5.199 S5.200 S5.201 S5.202 S5.203 S5.203A S5.203B		S5.200 S91 US32 US33 US112 See next page for 123.5875-137 MHz	S5.200 S91 US32 US33 US112 See next page for 123.5875-137 MHz	See next page for 123.5875-137 MHz

123.5875-148 MHz (VHF)		Page 27	
International Table		United States Table	
Region 1	Region 2	Federal Government	Non-Federal Government
Region 3	Region 3	123.5875-128.8125 AERONAUTICAL MOBILE (R)	Aviation (87)
See previous page for 117.975-137 MHz		591 US26 128.8125-132.0125 AERONAUTICAL MOBILE (R)	
		591 132.0125-136.00 AERONAUTICAL MOBILE (R)	
		591 US26 136-137 AERONAUTICAL MOBILE (R)	Satellite Communications (25) Aviation (87)
		591 US244 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)	Satellite Communications (25)
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)		599A 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	
S5.204 S5.205 S5.206 S5.207 S5.208		599A 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		599A 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)	

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	148-149.9 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) S5.209		148-149.9 FIXED MOBILE-SATELLITE (Earth-to-space) 599B US319 US320 US323 US325	148-149.9 MOBILE-SATELLITE (Earth-to-space) 599B US319 US320 US323 US325
S5.218 S5.219 S5.221	S5.218 S5.219 S5.221		S5.218 608A US10 G30	S5.218 608A US10
149.9-150.05 MOBILE-SATELLITE (Earth-to-space) S5.209 S5.224A RADIO NAVIGATION-SATELLITE S5.224B			149.9-150.05 MOBILE-SATELLITE (Earth-to-space) 599B US319 US322 RADIO NAVIGATION-SATELLITE	
S5.220 S5.222 S5.223			S5.223 608B	
150.05-153 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY	150.05-156.7625 FIXED MOBILE		150.05-150.8 FIXED MOBILE	150.05-150.8
S5.149			US216 G30	US216
153-154 FIXED MOBILE except aeronautical mobile (R) Meteorological aids			150.8-152.855	150.8-152.855 FIXED LAND MOBILE
154-156.7625 FIXED MOBILE except aeronautical mobile (R)			US216	US216 NG4 NG51 NG112 NG124
S5.226 S5.227	S5.225 S5.226 S5.227		152.855-154	152.855-154 LAND MOBILE
			154-156.2475	NG4 NG124
			S5.226	154-156.2475 FIXED LAND MOBILE
			156.2475-157.0375	S5.225 NG112 NG117 NG124 NG148
				156.2475-157.0375 MARITIME MOBILE

148-162.0125 MHz (VHF)

Page 29

Federal Communications Commission

§ 2.106

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

223-230 BROADCASTING Fixed Mobile	225-235 BROADCASTING FIXED MOBILE	223-230 FIXED MOBILE BROADCASTING AERONAUTICAL RADIO NAVIGATION Radiolocation	225-235
S5.243 S5.246 S5.247		S5.250	
230-235 FIXED MOBILE		230-235 FIXED MOBILE AERONAUTICAL RADIO NAVIGATION	
S5.247 S5.251 S5.252		S5.250	
235-267 FIXED MOBILE			G27 235-267
S5.111 S5.199 S5.252 S5.254 S5.256			S5.111 S5.199 S5.256 G27 G100
267-272 FIXED MOBILE Space operation (space-to-Earth)			267-322 FIXED MOBILE
S5.254 S5.257			
272-273 SPACE OPERATION (space-to-Earth)			
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)			Page 33	
International Table		United States Table		FCC Rule Part(s)
Region 1	Region 2	Federal Government	Non-Federal Government	
315-322 FIXED MOBILE	Region 3	See previous page for 267-322 MHz		See previous page for 267-322 MHz
S5.254				
322-328.6 FIXED MOBILE RADIO ASTRONOMY		322-328.6 FIXED MOBILE	322-328.6	
S5.149		S5.149 G327	S5.149	
328.6-335.4 AERONAUTICAL RADIONAVIGATION S5.258		328.6-335.4 AERONAUTICAL RADIONAVIGATION S5.258		
S5.259				
335.4-387 FIXED MOBILE		335.4-399.9 FIXED MOBILE	335.4-399.9	
S5.254				
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		G327 G100 399.9-400.05 MOBILE-SATELLITE (Earth-to-space) US319 US322 RADIONAVIGATION-SATELLITE		
S5.220				
400.05-400.15 STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz)		400.05-400.15 STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz)		
S5.261 S5.262		S5.261		

Federal Communications Commission

\$2.106

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)	400.15-401 METEOROLOGICAL AIDS (radiosonde) MOBILE-SATELLITE (space-to-Earth) S598B US319 US320 US324 SPACE RESEARCH (space-to-Earth) S5.263 Space operation (space-to-Earth)	400.15-401 METEOROLOGICAL AIDS (radiosonde) MOBILE-SATELLITE (space-to-Earth) S598B US319 US320 US324 SPACE RESEARCH (space-to-Earth) S5.263 Space operation (space-to-Earth)	Satellite Communications (25)
S5.262 S5.264	647B US70	647B US70	
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	401-402 METEOROLOGICAL AIDS (radiosonde) SPACE OPERATION (space-to-Earth) Earth exploration-satellite (Earth-to-space) Meteorological-satellite (Earth-to-space) US70	Personal Radio (95)
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	402-403 METEOROLOGICAL AIDS (radiosonde) US70 Earth exploration-satellite (Earth-to-space) Meteorological-satellite (Earth-to-space) US345	
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	406-406.1 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 FIXED MOBILE RADIO ASTRONOMY US74 US13 US117	

410-470 MHz (UHF)		Page 35	
International Table		United States Table	
Region 1	Region 2	Federal Government	Non-Federal Government
Region 3			
410-420 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) S5.268		410-420 FIXED MOBILE US13 G5	410-420
420-430 FIXED MOBILE except aeronautical mobile Radiolocation		420-450 RADIOLOCATION G2	420-450 Amateur
S5.269 S5.270 S5.271			Private Land Mobile (80) Amateur (97)
430-440 AMATEUR RADIOLOCATION Amateur	430-440 RADIOLOCATION Amateur		
S5.138 S5.271 S5.272 S5.273 S5.274 S5.275 S5.276 S5.277 S5.280 S5.281 S5.282 S5.283	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		S5.286 US7 US87 US217 US228 US230 G8	S5.282 S5.286 US7 US87 US217 US228 US230 NG139
450-455 FIXED MOBILE		450-454	450-454 LAND MOBILE
		S5.286 US87	Auxiliary Broadcasting (74) Private Land Mobile (80)
		454-456	454-455 FIXED LAND MOBILE
			Public Mobile (22) Maritime (80)
S5.209 S5.271 S5.286 S5.286A S5.286B S5.286C S5.286D S5.286E	S5.209 S5.271 S5.286A S5.286B S5.286C S5.286D S5.286E		NG12 NG112 NG148
455-456 FIXED MOBILE	455-456 FIXED MOBILE		455-456 LAND MOBILE
			Auxiliary Broadcasting (74)
S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E	S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E		

Federal Communications Commission

§2.106

456-469 FIXED MOBILE		456-460 FIXED LAND MOBILE	Public Mobile (22) Maritime (8D) Private Land Mobile (90)
S5.271 S5.287 S5.288			
459-460 FIXED MOBILE	459-460 FIXED MOBILE		
S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E	MOBILE-SATELLITE (Earth-to-space) S5.286A S5.286B S5.286C		
460-470 FIXED MOBILE	S5.209 S5.271 S5.286B S5.286C S5.286E	460-470 Meteorological-satellite (space-to-Earth)	
Meteorological-satellite (space-to-Earth)			
		462.5375-462.7375 LAND MOBILE	Private Land Mobile (90)
		S5.289 US201 US209 US216 NG124	
		462.5375-462.7375 LAND MOBILE	Personal Radio (95)
		S5.289 US201	
		462.7375-467.5375 FIXED LAND MOBILE	Private Land Mobile (90)
		S5.289 669 US201 US209 US216 NG124	
		467.5375-467.7375 LAND MOBILE	Personal Radio (95)
		S5.289 669 US201 467.7375-470 FIXED LAND MOBILE	Private Land Mobile (90)
S5.287 S5.288 S5.289 S5.290		S5.288 S5.289 669 US201 US209 US216	

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	470-585 FIXED MOBILE BROADCASTING	470-608	470-512 FIXED BROADCASTING LAND MOBILE
	S5.292 S5.293	S5.291 S5.298		NG66 NG114 NG127 NG128 NG149
	512-608 BROADCASTING	585-610 FIXED MOBILE BROADCASTING RADIO/NAVIGATION		512-608 BROADCASTING
	S5.297			
	608-614 RADIO ASTRONOMY Mobile-satellite except aeronautical mobile-satellite (Earth-to-space)	S5.149 S5.305 S5.306 S5.307	608-614 LAND MOBILE US350 RADIO ASTRONOMY US74	
	614-806 BROADCASTING Fixed Mobile	610-890 FIXED MOBILE BROADCASTING	US246 614-830	614-898 BROADCASTING
				NG128 NG149
				698-746 BROADCASTING
				NG128 NG149

Public Mobile (22)
Broadcast Radio (TV)
(73)
Auxiliary Broadcasting
(74)
Private Land Mobile (90)

Broadcast Radio (TV)
(73)
Auxiliary Broadcasting
(74)

Personal (95)

Broadcast Radio (TV)
(73)
Auxiliary Broadcast. (74)

Broadcast Radio (TV)
(73)
Auxiliary Broadcast. (74)

Note: Band to be
reallocated and auction-
ed by Sept. 30, 2002.

Federal Communications Commission

§2.106

<p>746-764 FIXED MOBILE BROADCASTING</p>	<p>Wireless Communications (27) Broadcast Radio (TV) (73) Auxiliary Broadcasting (74) Private Land Mobile (90)</p>
<p>764-776 FIXED MOBILE</p>	<p>Auxiliary Broadcasting (74) Private Land Mobile (90)</p>
<p>776-794 FIXED MOBILE BROADCASTING</p>	<p>Wireless Communications (27) Broadcast Radio (TV) (73) Auxiliary Broadcast (74) Private Land Mobile (90)</p>
<p>794-806 FIXED MOBILE</p>	<p>Auxiliary Broadcasting (74) Private Land Mobile (90)</p>
<p>806-821 FIXED LAND MOBILE</p>	<p>Public Mobile (22) Private Land Mobile (90)</p>
<p>821-824 LAND MOBILE</p>	<p>Private Land Mobile (90)</p>
<p>824-849 FIXED LAND MOBILE</p>	<p>Public Mobile (22)</p>
<p>See next page for 866-896 MHz</p>	<p>See next page for 866-896 MHz</p>

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
862-890 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322			849-851 AERONAUTICAL MOBILE	Public Mobile (22)
S5.319 S5.323			NG30 NG63	
890-942 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322 Radiolocation			851-866 FIXED LAND MOBILE	Public Mobile (22) Private Land Mobile (90)
			NG30 NG31 NG63	
			866-869 LAND MOBILE	Private Land Mobile (90)
			NG30 NG63	
			869-894 FIXED LAND MOBILE	Public Mobile (22)
		890-902		
			US116 US268 NG30 NG63 NG151	
			894-896 AERONAUTICAL MOBILE	
			US116 US288	
			896-901 FIXED LAND MOBILE	Private Land Mobile (90)
			US116 US268	
			901-902 FIXED MOBILE	Personal Communications (24)
S5.318 S5.325			US116 US268 G2	

<p>902-928 FIXED Amateur Mobile except aeronautical mobile Radiolocation S5.150 S5.325 S5.326 928-942 FIXED MOBILE except aeronautical mobile Radiolocation</p>	<p>902-928 RADIOLOCATION G59 S5.150 US215 US218 US267 US275 G11 928-932</p>	<p>902-928 S5.150 US215 US218 US267 US275 FIXED 928-929 US116 US215 US268 NG120 928-930 FIXED LAND MOBILE US116 US215 US268 930-931 FIXED MOBILE US116 US215 US268 931-932 FIXED LAND MOBILE US116 US215 US268 932-935 FIXED US215 US268 NG120 935-940 FIXED LAND MOBILE US116 US215 US268 940-941 FIXED MOBILE US116 US268 G2 See next page for 941-944 MHz</p>	<p>(SM Equipment) (18) Private Land Mobile (80) Amateur (97) Public Mobile (22) Private Land Mobile (80) Fixed Microwave (101) Private Land Mobile (80) Personal Communications (24) Public Mobile (22) Public Mobile (22) Fixed Microwave (101) Private Land Mobile (80) Personal Communications (24) See next page for 941-944 MHz</p>
<p>S5.323</p>	<p>S5.327</p>		

941-1429 MHz (UHF)			Page 41	
International Table		United States Table		
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government
See previous page for 890-942 MHz	See previous page for 890-942 MHz	See previous page for 890-942 MHz	941-944 FIXED	941-944 FIXED
942-960 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322	942-960 FIXED MOBILE BROADCASTING	942-960 FIXED MOBILE BROADCASTING	US288 US301 US302 G2 944-960	US288 US301 US302 NG120 944-960 FIXED NG120
S5.323		S5.320		
960-1215 AERONAUTICAL RADIONAVIGATION			960-1215 AERONAUTICAL RADIONAVIGATION	
S5.328			S5.328 US224	
1215-1240 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) S5.329 SPACE RESEARCH (active)			1215-1240 RADIOLOCATION S5.333 G56 RADIONAVIGATION-SATELLITE (space-to-Earth)	1215-1240
S5.330 S5.331 S5.332				
1240-1300 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) S5.329 SPACE RESEARCH (active) Amateur			1240-1300 RADIOLOCATION S5.333 G56	1240-1300 Amateur
S5.330 S5.331 S5.332 S5.334 S5.335				
1260-1300 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Amateur				Amateur (87)
S5.282 S5.330 S5.331 S5.332 S5.334 S5.335			S5.334	S5.282 S5.333 S5.334

Federal Communications Commission

§ 2.106

1300-1350 AERONAUTICAL RADIONAVIGATION SS.337 Radiolocation	1300-1350 AERONAUTICAL RADIO- NAVIGATION SS.337 Radiolocation G2	1300-1350 AERONAUTICAL RADIO- NAVIGATION SS.337	Aviation (87)
SS.149	SS.149	SS.149	
1350-1400 FIXED MOBILE RADIOLOCATION	1350-1390 FIXED MOBILE RADIOLOCATION G2	1350-1390	
	SS.149 SS.334 SS.339 US311 G27 G114	SS.149 SS.334 SS.339	
	1390-1395 RADIOLOCATION G2 Fixed Mobile	1390-1395	Note: 1390-1395 MHz became non-Federal Government exclusive spectrum in January 1999
SS.149 SS.338 SS.339	SS.149 SS.339 US311 US351 G27 G114	SS.149 SS.339 US351	
	1395-1400 LAND MOBILE US350	1395-1400 LAND MOBILE US350	
SS.149 SS.334 SS.339	SS.149 US5.339 US311 US351	SS.149 US5.339 US311 US351	Personal (95)
1400-1427 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)	1400-1427 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive)		
SS.340 SS.341	SS.341 US246		
1427-1429 SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile	1427-1429 SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile	1427-1429 SPACE OPERATION (Earth-to-space) Fixed (telemetry) Land mobile (telemetry and telecommand)	Satellite Communications (25) Private Land Mobile (90) Note: 1427-1429 MHz became non-Federal government exclusive spectrum in January 1999
SS.341	SS.341 G30	SS.341	

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	1429-1452 FIXED MOBILE S5.343		1429-1432 LAND MOBILE US350	1429-1432 LAND MOBILE US350 Fixed (telemetry) Land mobile (telemetry and telecommand)	Private Land Mobile (90) Personal (95)
S5.341 S5.342 1452-1492 FIXED MOBILE except aeronautical mobile BROADCASTING S5.345 S5.347 BROADCASTING- SATELLITE S5.345 S5.347	S5.341 1452-1492 FIXED MOBILE S5.343 BROADCASTING S5.345 S5.347 BROADCASTING- SATELLITE S5.345 S5.347		S5.341 US352 1432-1435 FIXED MOBILE	S5.341 US352 1432-1435 Fixed (telemetry) Land mobile (telemetry and telecommand)	Private Land Mobile (90) Notes: 1432-1435 MHz became mixed-use spectrum in January 1999.
S5.341 S5.342 1492-1525 FIXED MOBILE except aeronautical mobile	S5.341 S5.344 1492-1525 FIXED MOBILE S5.343 MOBILE-SATELLITE (space-to-Earth) S5.348A	1492-1525 FIXED MOBILE	S5.341 US78 1525-1530 MOBILE (aeronautical telemetry)		Aviation (87)
S5.341 S5.342 1525-1530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Fixed MOBILE except aeronautical mobile S5.349	S5.341 S5.351 S5.354 1525-1530 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Fixed MOBILE S5.343	S5.341 S5.348A 1525-1530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Mobile S5.349		MOBILE-SATELLITE (space-to-Earth) Mobile (aeronautical telemetry)	Satellite Communications (25) Aviation (87)
S5.341 S5.342 S5.350 S5.351 S5.352A S5.354	S5.341 S5.351 S5.354 S5.354	S5.341 S5.351 S5.352A S5.354	S5.341 S5.351 US78		

1530-1535 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.353A Earth exploration-satellite Fixed Mobile S5.343 Mobile except aeronautical mobile S5.341 S5.342 S5.351 S5.354	1530-1535 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.353A Earth exploration-satellite Fixed Mobile S5.343	1530-1535 MOBILE-SATELLITE (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) Mobile (aeronautical telemetry)	
S5.341 S5.342 S5.351 S5.354	S5.341 S5.351 S5.354	S5.341 S5.351 US78 US315	
1535-1559 MOBILE-SATELLITE (space-to-Earth)		1535-1544 MOBILE-SATELLITE (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) S5.341 S5.351 US315 1544-1545 MOBILE-SATELLITE (space-to-Earth) S5.341 S5.356	Satellite Communications (25) Maritime (86)
		1545-1549.5 AERONAUTICAL MOBILE-SATELLITE (R) (space-to-Earth) Mobile-satellite (space-to-Earth) S5.341 S5.351 US308 US309	
		1549.5-1558.5 AERONAUTICAL MOBILE-SATELLITE (R) (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.341 S5.351 US308 US309	Aviation (87)
S5.341 S5.351 S5.353A S5.354 S5.355 S5.356 S5.357 S5.357A S5.359 S5.362A 1559-1610 AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth)		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)	Note: The N7A Manual (footnote G12b) states that differential GPS stations may be author- ized in the 1559-1610 MHz band, but the FCC has not yet addressed this footnote.
S5.341 S5.355 S5.359 S5.363		S5.341 US208 US260	

1610-1670 MHz (UHF)			Page 45	
International Table			United States Table	
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government
1610-1610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION	1610-1610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION RADIO DETERMINATION- SATELLITE (Earth-to- space) SS 341 SS 355 SS 359 SS 363 SS 364 SS 366 SS 367 SS 368 SS 370 SS 371 SS 372	1610-1610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION Radio termination-Satellite (Earth-to-space) SS 341 SS 355 SS 359 SS 364 SS 366 SS 367 SS 368 SS 369 SS 372	1610-1610.6 MOBILE-SATELLITE (Earth-to-space) US219 AERONAUTICAL RADIONAVIGATION US260 RADIO DETERMINATION-SATELLITE (Earth-to-space)	Satellite Communications (25) Aviation (87)
SS 341 SS 355 SS 359 SS 363 SS 364 SS 366 SS 367 SS 368 SS 369 SS 371 SS 372	1610.6-1613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION RADIO DETERMINATION- SATELLITE (Earth-to- space) SS 149 SS 341 SS 355 SS 359 SS 363 SS 364 SS 366 SS 367 SS 368 SS 369 SS 371 SS 372	1610.6-1613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION Radio termination-satellite (Earth-to-space) SS 149 SS 341 SS 355 SS 359 SS 364 SS 366 SS 367 SS 368 SS 369 SS 372	1610.6-1613.8 MOBILE-SATELLITE (Earth-to-space) US319 RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION US260 RADIO DETERMINATION-SATELLITE (Earth-to-space)	
1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth)	1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION RADIO DETERMINATION- SATELLITE (Earth-to- space) Mobile-satellite (space-to- Earth) SS 341 SS 364 SS 365 SS 366 SS 367 SS 368 SS 370 SS 372	1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to- Earth) Radio termination- satellite (Earth-to-space) SS 341 SS 355 SS 359 SS 364 SS 365 SS 366 SS 367 SS 368 SS 369 SS 372	1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) US319 AERONAUTICAL RADIONAVIGATION US260 RADIO DETERMINATION-SATELLITE (Earth-to-space) Mobile-satellite (space-to-Earth)	
SS 341 SS 355 SS 359 SS 363 SS 364 SS 366 SS 367 SS 368 SS 369 SS 371 SS 372	SS 341 SS 364 SS 365 SS 366 SS 367 SS 368 SS 369 SS 370 SS 372	SS 341 SS 364 SS 365 SS 366 SS 367 SS 368 SS 369 SS 372	SS 341 SS 364 SS 365 SS 367 SS 368 SS 372 US208	
SS 341 SS 355 SS 359 SS 363 SS 364 SS 366 SS 367 SS 368 SS 369 SS 371 SS 372	SS 341 SS 364 SS 365 SS 366 SS 367 SS 368 SS 370 SS 372	SS 341 SS 355 SS 359 SS 364 SS 365 SS 366 SS 367 SS 368 SS 369 SS 372	SS 341 SS 364 SS 365 SS 366 SS 367 SS 368 SS 372 US208	

Federal Communications Commission

§2.106

1626.5-1650 MOBILE-SATELLITE (Earth-to-space)	1626.5-1645.5 MOBILE-SATELLITE (Earth-to-space) MARITIME MOBILE-SATELLITE (Earth-to-space)	Satellite Communications (25) Maritime (60)
	SS.341 SS.351 US315	
	1645.5-1646.5 MOBILE-SATELLITE (Earth-to-space)	
	SS.341 SS.375	
	1646.5-1651 AERONAUTICAL MOBILE-SATELLITE (R) (Earth-to-space)	Aviation (67)
	Mobile-satellite (Earth-to-space)	
	SS.341 SS.351 US308 US309	
	1651-1660 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL MOBILE-SATELLITE (R) (Earth-to-space)	
	SS.341 SS.351 US308 US309	
SS.341 SS.351 SS.353A SS.354 SS.355 SS.357A SS.359 SS.362A SS.374 SS.375 SS.376	1660-1660.5 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY	
	SS.149 SS.341 SS.351 SS.354 SS.362A SS.376A	
1660.5-1668.4 RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile	1660.5-1668.4 RADIO ASTRONOMY US74 SPACE RESEARCH (passive)	
SS.149 SS.341 SS.379 SS.379A	SS.341 US246	
1668.4-1670 METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY	1668.4-1670 METEOROLOGICAL AIDS (radiosonde) RADIO ASTRONOMY US74	
SS.149 SS.341	SS.149 SS.341 US99	

1670-210 MHz (UHF)		International Table		United States Table		FCC Rule Part(s)
		Region 1	Region 2	Region 3	Federal Government	
1670-1675 METEOROLOGICAL AIDS FIXED MOBILE S5.380					1670-1675 METEOROLOGICAL AIDS (radiosonde) METEOROLOGICAL-SATELLITE (space-to-Earth)	Note: 1670-1675 MHz became mixed-use spectrum in January 1989
S5.341					S5.341 US211	
1675-1690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE except aeronautical mobile	1675-1690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space)	1675-1690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE except aeronautical mobile	1675-1690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE except aeronautical mobile		1675-1700 METEOROLOGICAL AIDS (radiosonde) METEOROLOGICAL-SATELLITE (space-to-Earth)	
S5.341	S5.341 S5.377	S5.341	S5.341			
1690-1700 METEOROLOGICAL AIDS METEOROLOGICAL-SAT-ELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile	1690-1700 METEOROLOGICAL AIDS METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE-SATELLITE (Earth-to-space)	1690-1700 METEOROLOGICAL AIDS METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE-SATELLITE (Earth-to-space)	1690-1700 METEOROLOGICAL AIDS METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE-SATELLITE (Earth-to-space)			
S5.289 S5.341 S5.382	S5.289 S5.341 S5.377 S5.381	S5.289 S5.341 S5.377 S5.381	S5.289 S5.341 S5.381		S5.289 S5.341 US211	
1700-1710 FIXED METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE except aeronautical mobile	1700-1710 FIXED METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space)	1700-1710 FIXED METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE except aeronautical mobile	1700-1710 FIXED METEOROLOGICAL-SAT-ELLITE (space-to-Earth) MOBILE except aeronautical mobile		1700-1710 METEOROLOGICAL-SAT-ELLITE (space-to-Earth) Fixed	
S5.289 S5.341	S5.289 S5.341 S5.377	S5.289 S5.341 S5.377	S5.289 S5.341 S5.384		S5.289 S5.341 1710-1755	Note: Proceeds from the auction of the 1710-1755 MHz mixed-use band are to be deposited not later than September 30, 2002.
1710-1930 FIXED MOBILE S5.380					1710-1755 FIXED MOBILE S5.341 US256	

S5.149 S5.341 S5.385 S5.386 S5.387 S5.388	1930-1970 FIXED MOBILE	1930-1970 FIXED MOBILE Mobile-satellite (Earth-to-space)	1930-1970 FIXED MOBILE	1755-1850 FIXED MOBILE G42	1755-1850	
	S5.388	S5.388	S5.388	1850-1990 FIXED MOBILE	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						
2010-2025 FIXED MOBILE	2010-2025 FIXED MOBILE-SATELLITE (Earth-to-space)	2010-2025 FIXED MOBILE		1990-2025	1990-2025 MOBILE-SATELLITE (Earth-to-space)	Satellite Communications (25)
S5.388	S5.388 S5.389C S5.389D S5.389E S5.390	S5.388		2025-2110	NG156	
2025-2110 SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED SPACE RESEARCH (Earth-to-space) (space-to-space)	2025-2110 SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED SPACE RESEARCH (Earth-to-space) (space-to-space)			2025-2110 SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION- SATELLITE (Earth-to- space) (space-to-space) SPACE RESEARCH (Earth- to-space) (space-to-space)	2025-2110 FIXED NG23 NG118 MOBILE S5.391	TV Auxiliary Broadcasting (74F) Cable TV Relay (78) Local TV Transmission (101J)
S5.392				S5.391 S5.392 US90 US222 US346 US347	S5.392 US90 US222 US346 US347	

2110-2345 MHz (UHF)			United States Table		FCC Rule Part(s)
International Table			Federal Government	Non-Federal Government	
Region 1	Region 2	Region 3			
2110-2120 FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space)			2110-2120	2110-2150 FIXED NG23 MOBILE	Public Mobile (22) Fixed Microwave (101)
S5.388			US252		Note: 2110-2150 MHz must be auctioned by September 30, 2002.
2120-2160 FIXED MOBILE	2120-2160 FIXED MOBILE Mobile-satellite (space-to-Earth)	2120-2160 FIXED MOBILE	2120-2200		
S5.388	S5.388	S5.388		US252 NG153	
2160-2170 FIXED MOBILE	2160-2170 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth)	2160-2170 FIXED MOBILE		2150-2160 FIXED NG23	Domestic Public Fixed (21) Fixed Microwave (101)
S5.388 S5.392A	S5.388 S5.389C S5.389D S5.389E S5.390	S5.388		2160-2165 FIXED NG23 MOBILE	Domestic Public Fixed (21) Public Mobile (22) Fixed Microwave (101)
2170-2200 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth)				NG153	
S5.388 S5.389A S5.389F S5.392A		S5.388		2165-2200 MOBILE-SATELLITE (space-to-Earth)	Satellite Communications (25)
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)	NG23 NG168 2200-2290	

Federal Communications Commission

§2.106

<p>MOBILE (line-of-sight only including aeronautical telephony, but excluding flight testing of manned aircraft) SPACE RESEARCH (space-to-Earth) (space-to-space)</p>	<p>US303</p>		
<p>55.392 2290-2300 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)</p>	<p>2290-2300 MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)</p>	<p>2290-2300 SPACE RESEARCH (deep space) (space-to-Earth)</p>	
<p>2300-2460 FIXED MOBILE Amateur Radiolocation</p>	<p>2300-2460 FIXED MOBILE RADIOLOCATION Amateur</p>	<p>2300-2460 Amateur</p>	<p>Amateur (97) Note: 2300-2305 MHz became non-Federal government exclusive spectrum in August 1995</p>
<p>55.150 55.282 55.395</p>	<p>55.150 55.282 55.393 55.394 55.396</p>	<p>G123 2305-2310 US338 G123</p>	<p>Wireless Communications (27) Amateur (97)</p>
<p>2310-2360 Fixed Mobile US339 Radiolocation G2</p>	<p>2310-2360 FIXED MOBILE except aeronautical mobile RADIOLOCATION Amateur US338</p>	<p>2305-2310 FIXED MOBILE except aeronautical mobile RADIOLOCATION Amateur US338</p>	<p>Wireless Communications (27) Amateur (97)</p>
<p>55.150 55.282 55.395</p>	<p>55.150 55.282 55.393 55.394 55.396</p>	<p>2310-2320 FIXED MOBILE US339 RADIOLOCATION BROADCASTING- SATELLITE US327 S5.396 US338</p>	<p>Wireless Communications (27)</p>
<p>55.150 55.282 55.395</p>	<p>55.150 55.282 55.393 55.394 55.396</p>	<p>2320-2345 BROADCASTING- SATELLITE US327 Mobile US276 US328 S5.396</p>	<p>Wireless Communications (27)</p>
<p>55.150 55.282 55.395</p>	<p>55.150 55.282 55.393 55.394 55.396</p>	<p>S5.396 US327 US328 G120 See next page</p>	<p>See next page</p>

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

Federal Communications Commission

§2.106

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 MOBILE MOBILE-SATELLITE (space-to-Earth) RADIOLOCATION Radiotermination-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	2500-2520 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 FIXED S5.409 S5.411 US205 FIXED-SATELLITE (space-to-Earth) NG102 BROADCASTING- SATELLITE NG101	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	2520-2655 FIXED S5.409 S5.411 FIXED-SATELLITE (space-to-Earth) S5.415 MOBILE except aeronautical mobile BROADCASTING- SATELLITE S5.413 S5.416 S5.403 S5.415A	2520-2655 FIXED S5.409 S5.411 FIXED-SATELLITE (space-to-Earth) S5.415 MOBILE except aeronautical mobile BROADCASTING- SATELLITE S5.413 S5.416 S5.403 S5.415A	2520-2655 FIXED S5.409 S5.411 US205 FIXED-SATELLITE (space-to-Earth) NG102 BROADCASTING- SATELLITE NG101	2520-2655 FIXED S5.409 S5.411 US205 FIXED-SATELLITE (space-to-Earth) NG102 BROADCASTING- SATELLITE NG101	
S5.339 S5.403 S5.405 S5.408 S5.412 S5.417 S5.418	S5.339 S5.403	S5.339 S5.418	S5.339 US205 US269	S5.339 US269	

2655-3700 MHz (UHF/SHF)				Page 55
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) 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)	2655-2690 FIXED US205 NG47 (Earth-to-space) NG102 BROADCASTING- SATELLITE NG101 Earth exploration-satellite (passive) Radio astronomy Space research (passive)
2670-2690 FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) (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	US205 US269 US246	US269
2690-2700 EARTH EXPLORATION-SATELLITE RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.421 S5.422	2690-2700 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)	2690-2700 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive)	2690-2700 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US246	2690-2700 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive)
2700-2900 AERONAUTICAL RADIONAVIGATION Radiolocation S5.423 S5.424	2700-2900 AERONAUTICAL RADIONAVIGATION S5.337	2700-2900 AERONAUTICAL RADIO- NAVIGATION S5.337 METEOROLOGICAL AIDS Radiolocation G2 S5.423 US18 G15	2700-2900 AERONAUTICAL RADIO- NAVIGATION S5.337 METEOROLOGICAL AIDS Radiolocation G2 S5.423 US18 G15	2700-2900 S5.423 US18

3700-5650 MHz (SHF)		Page 55	
International Table		United States Table	
Region 1	Region 2	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)
4200-4400 AERONAUTICAL RADIONAVIGATION S5.438		4200-4400 AERONAUTICAL RADIONAVIGATION S5.440 US261	Aviation (87)
4400-4500 FIXED MOBILE		4400-4500 FIXED MOBILE	
4500-4800 FIXED FIXED-SATELLITE (space-to-Earth) S5.441 MOBILE		4500-4800 FIXED MOBILE US245	
4800-4960 FIXED MOBILE S5.442 Radio astronomy		4800-4940 FIXED MOBILE S5.149 US203	
S5.149 S5.339 S5.443		4940-4990 FIXED MOBILE S5.149 S5.339 US257	Notic. 4940-4990 MHz became non-Federal government exclusive spectrum in March 1999
4990-5000 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive)		4990-5000 RADIO ASTRONOMY US74 Space research (passive)	
S5.149		US246	
5000-5150 AERONAUTICAL RADIONAVIGATION S5.367 S5.444 S5.444A		5000-5250 AERONAUTICAL RADIONAVIGATION US260	Satellite Communications (25) Aviation (87)

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)			5650-5925 RADIOLOCATION G2	5650-5830 Amateur	ISM Equipment (18) Amateur (97)
S5.282 S5.451 S5.453 S5.454 S5.455				S5.150 S5.282	
5725-5830 FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur	5725-5830 RADIOLOCATION Amateur			5830-5850 Amateur Amateur-satellite (space-to-Earth)	
S5.150 S5.451 S5.453 S5.455 S5.456	S5.150 S5.453 S5.455			S5.150	
5830-5850 FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-satellite (space-to-Earth)	5830-5850 RADIOLOCATION Amateur Amateur-satellite (space-to-Earth)			5850-5925 FIXED-SATELLITE (Earth-to-space) MOBILE Amateur Radiolocation	ISM Equipment (18) Private Land Mobile (60) Amateur (97)
S5.150 S5.451 S5.453 S5.455 S5.456	S5.150 S5.453 S5.455			S5.150	
5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Amateur Radiolocation	5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Amateur Radiolocation	5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Radiolocation		5850-5925 FIXED-SATELLITE (Earth-to-space) MOBILE NG160 Amateur	
S5.150	S5.150	S5.150	S5.150 US245	S5.150	
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)

Page 57

Federal Communications Commission

§ 2.106

6425-6525	6425-6525 FIXED-SATELLITE (Earth-to-space) MOBILE	Auxiliary Broadcasting (74) Cable TV Relay (78) Fixed Microwave (101)
S5.440 S5.458 6525-6875	S5.440 S5.458 FIXED FIXED-SATELLITE (Earth-to-space)/792A	Satellite Communications (25) Fixed Microwave (101)
S5.458 6875-7125	S5.458 6875-7075 FIXED-SATELLITE (Earth-to-space)/792A MOBILE	Auxiliary Broadcasting (74) Cable TV Relay (78)
S5.458 7125-7190 FIXED	S5.458 NG118 7075-7125 FIXED MOBILE	
S5.458 US252 G116 7190-7235 FIXED SPACE RESEARCH (Earth-to-space)	S5.458 US252 7190-7250	
S5.458 7235-7260 FIXED	S5.458	
S5.458 S5.459 S5.460	S5.458	
S5.149 S5.440 S5.458 6700-7075 FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) S5.441 MOBILE		
S5.458 S5.458A S5.458B S5.458C 7075-7260 FIXED MOBILE		

7250-8215 MHz (SHF)		Page 59	
International Table		United States Table	
Region 1	Region 2	Region 3	FCC Rule Part(s)
7250-7300 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE			Federal Government 7250-7300 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Fixed G117
SS.461 7300-7450 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile			Non-Federal Government 7250-8025 7300-7450 FIXED FIXED-SATELLITE (space-to-Earth) Mobile-satellite (space-to-Earth) G117
SS.461 7450-7550 FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile			7450-7550 FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) Mobile-satellite (space-to-Earth) G117
SS.461A 7550-7750 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile			G104 G117 7550-7750 FIXED FIXED-SATELLITE (space-to-Earth) Mobile-satellite (space-to-Earth) G117
7750-7850 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) SS.461B MOBILE except aeronautical mobile 7850-7900 FIXED MOBILE except aeronautical mobile			7750-7900 FIXED G117

Federal Communications Commission

§2.106

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

82.15-10000 MHz (SHF)		United States Table		FCC Rule Part(s)
International Table		Federal Government	Non-Federal Government	
Region 1	Region 2	Region 3		
8215-8400 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE S5.463			8215-8400 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) Mobile-satellite (Earth-to-space) (no airborne transmissions)	
S5.462A			US258 G.117	US258
8400-8500 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) S5.465 S5.466			8400-8450 FIXED SPACE RESEARCH (space-to-Earth) (deep space only)	8400-88450
S5.467			8450-8500 FIXED SPACE RESEARCH (space-to-Earth)	8450-8500 SPACE RESEARCH (space-to-Earth)
8500-8550 RADIOLOCATION			8500-9000 RADIOLOCATION S5.333 US110 G59	8500-9000 RADIOLOCATION S5.333 US110
S5.468 S5.469				
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				

Federal Communications Commission

§2.106

8860-9000 RADIOLOCATION MARITIME RADIONAVIGATION S5.472 S5.473	US53 9000-9200 AERONAUTICAL RADIO- NAVIGATION S5.337 Radiolocation G2 US48 US54 G19	US53 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 RADIOLOCATION S5.427 S5.474 S5.475	9300-9500 RADIOLOCATION S5.476 US66 Radiolocation US51 G56 Meteorological aids S5.427 S5.474 US67 US71	9300-9500 RADIOLOCATION 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	

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	10-10.45 RADIOLOCATION Amateur	10-10.45 FIXED MOBILE RADIOLOCATION Amateur	10-10.45 RADIOLOCATION	10-10.45 Radiolocation Amateur	Private Land Mobile (90) Amateur (97)
S5.479 10.45-10.5 RADIOLOCATION Amateur Amateur-satellite	S5.479 S5.480	S5.479	S5.479 US58 US108 G32 10.45-10.5 RADIOLOCATION	S5.479 US58 US108 NG42 10.45-10.5 Radiolocation Amateur Amateur-satellite	
S5.481 10.5-10.55 FIXED MOBILE Radiolocation	10.5-10.55 FIXED MOBILE RADIOLOCATION		US58 US108 G32 10.5-10.55 RADIOLOCATION	US58 US108 NG42 NG134	Private Land Mobile (90)
10.55-10.6 FIXED MOBILE except aeronautical mobile Radiolocation			US59 10.55-10.6 FIXED	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			10.6-10.68 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive)	10.6-10.68 EARTH EXPLORATION-SATELLITE (passive) FIXED SPACE RESEARCH (passive)	
S5.149 S5.482 10.68-10.7 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)			US265 US277 10.68-10.7 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive)	US265 US277	
S5.340 S5.483			US246		

Page 65

10-12.7 GHz (SHF)

Federal Communications Commission

§ 2.106

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-SATELLITE (space-to-Earth) S5.441 S5.484A MOBILE except aeronautical mobile	10.7-11.7 FIXED NC41 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- SATELLITE	11.7-12.1 FIXED S5.486 FIXED-SATELLITE (space-to-Earth) S5.484A MOBILE except aeronautical mobile S5.485 S5.488	US211 11.7-12.1 11.7-12.2 FIXED-SATELLITE (space- to-Earth) NG143 NG145 MOBILE except aeronautical mobile S5.486 S5.488 12.1-12.2	Satellite Communications (25) Fixed Microwave (101)
12.1-12.2 FIXED-SATELLITE (space-to-Earth) S5.484A S5.485 S5.488 S5.489	12.1-12.2 FIXED-SATELLITE (space-to-Earth) S5.484A S5.485 S5.488 S5.489		
12.2-12.7 FIXED MOBILE except aeronautical mobile BROADCASTING- SATELLITE	12.2-12.5 FIXED MOBILE except aeronautical mobile BROADCASTING- SATELLITE S5.487 S5.487A S5.492	12.2-12.7 FIXED BROADCASTING- SATELLITE	International Fixed (23) Direct Broadcast Satellite (100) Fixed Microwave (101)
S5.487 S5.487A S5.492 12.5-12.75 FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space)	12.5-12.75 FIXED FIXED-SATELLITE (space-to-Earth) S5.484A MOBILE except aeronautical mobile BROADCASTING- SATELLITE S5.483	S5.487A S5.488 S5.490 S5.492 See next page for 12.7-12.75 GHz	See next page for 12.7-12.75 GHz

12.7-14.5 GHz (SHF)		Page 65	
International Table		United States Table	
Region 1	Region 2	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	12.7-12.75	12.7-12.75 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE
12.75-13.25 FIXED FIXED-SATELLITE (Earth-to-space) S5.441 MOBILE Space research (deep space) (space-to-Earth)		12.75-13.25	NG53 NG118 12.75-13.25 FIXED FIXED-SATELLITE (Earth-to-space) S5.441 NG104 MOBILE
13.25-13.4 EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION S5.497 SPACE RESEARCH (active) S5.498A S5.499		US251 13.25-13.4 AERONAUTICAL RADIONAVIGATION S5.497 Space research (Earth-to-space)	US251 NG53 NG118 Aviation (87)
13.4-13.75 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH S5.501A Standard frequency and time signal-satellite (Earth-to-space)		13.4-13.75 RADIOLOCATION S5.333 US110 GS9 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)
S5.499 S5.500 S5.501 S5.501B			
13.75-14 FIXED-SATELLITE (Earth-to-space) S5.484A RADIOLOCATION Standard frequency and time signal-satellite (Earth-to-space) Space research		13.75-14 RADIOLOCATION US110 GS9 Standard frequency and time signal-satellite (Earth-to-space) Space research US337	13.75-14 FIXED-SATELLITE (Earth-to-space) US337 Radiolocation US110 Standard frequency and time signal-satellite (Earth-to-space) Space research
S5.499 S5.500 S5.501 S5.502 S5.503 S5.503A		S5.502 S5.503 S5.503A	S5.502 S5.503 S5.503A Satellite Communications (25) Private Land Mobile (90)

Federal Communications Commission

§ 2.106

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	14.14.2 RADIONAVIGATION US292 Space research	14.14.7 FIXED-SATELLITE (Earth-to-space) RADIONAVIGATION US292 Land mobile-satellite (Earth-to-space) Space research	Satellite Communications (25) Maritime (60) Aviation (67)
S5.505	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)
14.25-14.3 FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 RADIONAVIGATION S5.504 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space research	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-SATELLITE (Earth-to-space) S5.484A S5.506 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite	
S5.505 S5.508 S5.509	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-SATELLITE (Earth-to-space) S5.484A S5.506 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 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-SATELLITE (Earth-to-space) S5.484A S5.506 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite	
14.4-14.47 FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 MOBILE except aeronautical mobile 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-SATELLITE (Earth-to-space) S5.484A S5.506 MOBILE except aeronautical mobile Radio astronomy	14.47-14.5 Fixed Mobile	14.47-14.5 FIXED-SATELLITE (Earth-to-space) Land mobile-satellite (Earth-to-space)	
S5.149	S5.149 US203	S5.149 US203	

International Table		United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Non-Federal Government	
14.5-14.8 FIXED FIXED-SATELLITE (Earth-to-space) S5.510 MOBILE Space research			14.5-14.7145 FIXED Mobile Space research 14.7145-15.1365 MOBILE Fixed Space research US310 15.1365-15.35 FIXED Mobile Space research S5.339 US211	14.5-15.1365 14.7145-15.1365 US310 15.1365-15.35 S5.339 US211
14.8-15.35 FIXED MOBILE Space research			15.35-15.4 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.511	
15.4-15.43 AERONAUTICAL RADIONAVIGATION S5.511D			15.4-15.7 AERONAUTICAL RADIONAVIGATION US260	Aviation (87)
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 S5.512 S5.513			15.7-16.6 RADIOLOCATION US110 G59	15.7-17.2 Radiolocation US110 Private Land Mobile (90)

14.5-18.3 GHz (SHF)

Page 67

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				
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) 17.3-17.7	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 Radiolocation S5.514	17.3-17.7 Radiolocation US259 G59	17.3-17.7 FIXED-SATELLITE (Earth-to-space) US271 BROADCASTING-SATELLITE NG163	17.3-17.7 FIXED-SATELLITE (Earth-to-space) US271 BROADCASTING-SATELLITE NG163	Satellite Communications (25) Direct Broadcast Satellite (100)
17.7-18.1 FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.516 MOBILE	17.7-18.1 FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.516 MOBILE	17.7-17.8	17.7-17.8 FIXED-SATELLITE (Earth-to-space) US271	17.7-17.8 FIXED-SATELLITE (Earth-to-space) US271	Satellite Communications (25) Auxiliary Broadcasting (74) Cable TV Relay (78) Fixed Microwave (101)
17.7-17.8 FIXED-SATELLITE (space-to-Earth) S5.516 BROADCASTING-SATELLITE S5.518 S5.515 S5.517	17.7-17.8 FIXED-SATELLITE (space-to-Earth) S5.516 BROADCASTING-SATELLITE S5.518 S5.515 S5.517				
17.8-18.1 FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.516 MOBILE	17.8-18.1 FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.516 MOBILE	17.8-18.3 FIXED-SATELLITE (space-to-Earth) G117	17.8-18.3 FIXED	17.8-18.3 FIXED	Auxiliary Broadcasting (74) Cable TV Relay (78) Fixed Microwave (101)
18.1-18.4 FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.520 MOBILE S5.519 S5.521	18.1-18.4 FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.520 MOBILE S5.519 S5.521	S5.519 US334 See next page for 18.3-18.6 GHz	S5.519 US334 NG144 See next page for 18.3-18.58 GHz	S5.519 US334 NG144 See next page for 18.3-18.58 GHz	See next page for 18.3-18.58 GHz

International Table		United States Table		FCC Rule Part(s)
Region 1	Region 2	Federal Government	Non-Federal Government	
See previous page for 18.1-18.4 GHz		Region 3		
18.4-18.6 FIXED FIXED-SATELLITE (space-to-Earth) S5.484A MOBILE		18.3-18.6 FIXED-SATELLITE (space-to-Earth) G117	18.3-18.58 FIXED FIXED-SATELLITE (space-to-Earth) NG164 US334 NG144	Satellite Communications (25) Auxiliary Broadcast (74) Cable TV Relay (78) Fixed Microwave (101)
18.6-18.8 FIXED FIXED-SATELLITE (space-to-Earth) S5.523 MOBILE except aeronautical mobile Earth exploration-satellite (passive) Space research (passive)	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) S5.523 MOBILE except aeronautical mobile Space research (passive)	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) S5.523 MOBILE except aeronautical mobile Space research (passive)	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) US255 G117 SPACE RESEARCH (passive) US254 US334	Satellite Communications (25)
18.8-19.3 FIXED FIXED-SATELLITE (space-to-Earth) S5.523A MOBILE		18.8-20.2 FIXED-SATELLITE (space-to-Earth) G117	18.8-19.3 FIXED-SATELLITE (space-to-Earth) NG165 US334 NG144	Satellite Communications (25) Auxiliary Broadcast (74) Cable TV Relay (78) Fixed Microwave (101)
19.3-19.7 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-space) S5.523B S5.523C S5.523D S5.523E MOBILE			19.3-19.7 FIXED FIXED-SATELLITE (space-to-Earth) NG166 US334 NG144	Satellite Communications (25) Auxiliary Broadcast (74) Cable TV Relay (78) Fixed Microwave (101)
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 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 S5.525 S5.526 S5.527 S5.528 S5.529	19.7-20.1 FIXED-SATELLITE (space-to-Earth) S5.525 S5.526 S5.527 S5.528 S5.529 US334	Satellite Communications (25)

20.1-20.2 FIXED-SATELLITE (space-to-Earth) S5.484A MOBILE-SATELLITE (space-to-Earth)	20.1-20.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.525 S5.526 S5.527 S5.528 US334		
S5.524 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)	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	G117		
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 BROADCASTING-SATELLITE S5.530 S5.531		
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		

24.45-24.75 FIXED INTER-SATELLITE	24.45-24.65 INTER-SATELLITE RADIO NAVIGATION	24.45-24.65 FIXED INTER-SATELLITE MOBILE RADIO NAVIGATION	24.45-24.65 INTER-SATELLITE RADIO NAVIGATION	Satellite Communications (25)
	S5.533	S5.533		
	24.65-24.75 INTER-SATELLITE RADIOLOCATION-SAT- ELLITE (Earth-to-space)	24.65-24.75 FIXED INTER-SATELLITE MOBILE	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	24.75-25.05 RADIO NAVIGATION	Satellite Communications (25) Aviation (87)
		S5.533 S5.534		
			25.05-25.25 FIXED-SATELLITE (Earth-to-space) NG167 FIXED RADIO NAVIGATION	Satellite Communications (25) Aviation (87) Fixed Microwave (101)
25.25-25.5 FIXED INTER-SATELLITE S5.536 MOBILE Standard frequency and time signal-satellite (Earth-to-space)		S5.534	25.25-25.5 FIXED MOBILE Standard frequency and time signal-satellite (Earth-to- space)	Note: In its <i>Manual</i> , NTIA has added a primary inter-satellite service allocation to the band 25.25-27.5 GHz. Limited the use of this allocation by adopting footnote S5.536, and has changed the directional indicator for the Earth exploration-satellite service allocation in the band 25.5-27 GHz 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 INTER-SATELLITE (Earth-to-space) INTER-SATELLITE S5.536 S5.537 MOBILE		27-27.5 FIXED MOBILE Earth exploration-satellite (space-to-space)	

27.5-32 GHz (SHF/EHF)			Page 73	
International Table		United States Table		
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	S5.484A S5.539		27.5-30	27.5-29.5 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE
S5.538 S5.540				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	S5.484A S5.523A S5.539			
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	S5.523C S5.523E S5.535A S5.539 S5.541A			
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)	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)	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)		29.5-29.9 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space)
S5.540 S5.542	S5.525 S5.526 S5.527 S5.529 S5.540 S5.542	S5.525 S5.526 S5.527 S5.529 S5.540 S5.542		S5.525 S5.526 S5.527 S5.529
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	S5.484A S5.539			29.9-30 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space)
S5.525 S5.526 S5.527 S5.538 S5.540 S5.542	S5.541 S5.543			S5.525 S5.526 S5.527 S5.543

Federal Communications Commission

§2.106

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

32-40 GHz (EHF)			Page 75	
International Table		United States Table		FCC Rule Part(s)
Region 1	Region 2	Federal Government	Non-Federal Government	
32-32.3 FIXED S5.547A INTER-SATELLITE RADIATIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth)		32-33 INTER-SATELLITE US278 RADIATIONAVIGATION US69		
S5.547 S5.547C S5.548				
32.3-33 FIXED S5.547A INTER-SATELLITE RADIATIONAVIGATION				
S5.547 S5.547D S5.548		S5.548 US262		
33-33.4 FIXED S5.547A RADIATIONAVIGATION		33-33.4 RADIATIONAVIGATION US69		
S5.547 S5.547E				
33.4-34.2 RADIOLOCATION		33.4-36 RADIOLOCATION US110 G34	33.4-36 Radiolocation US110	Private Land Mobile (90)
S5.549				
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				

40-50.2 GHz (EHF)		United States Table		FCC Rule Part(s)
International Table		Federal Government	Non-Federal Government	
Region 1	Region 2	Region 3		
40-40.5 EARTH EXPLORATION-SATELLITE (Earth-to-space) 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	Satellite Communications (25)
40.5-42.5 FIXED BROADCASTING BROADCASTING-SATELLITE Mobile	40.5-42.5 FIXED FIXED-SATELLITE (space-to-Earth) S5.551B S5.551E BROADCASTING BROADCASTING-SATELLITE Mobile		40.5-42.5 G117	
S5.551B S5.551D	S5.551C S5.551F		40.5-41 FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE Mobile Fixed US211	
42.5-43.5 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE except aeronautical mobile RADIO ASTRONOMY			41-42.5 FIXED BROADCASTING BROADCASTING-SATELLITE MOBILE US211	
S5.149			42.5-43.5 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE except aeronautical mobile RADIO ASTRONOMY US342	

Federal Communications Commission

\$2.106

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)	43.5-45.5	
	G117		
	45.5-46.9 MOBILE MOBILE-SATELLITE (Earth-to-space) RADIONAVIGATION-SATELLITE		RF Devices (15)
	S5.554		
	46.9-47 MOBILE MOBILE-SATELLITE (Earth-to-space) RADIONAVIGATION-SATELLITE	46.9-47 MOBILE MOBILE-SATELLITE (Earth-to-space) RADIONAVIGATION-SATELLITE FIXED	
S5.554	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		Satellite Communications (25)
	S5.555 US342		

Page 78

50.2-65 GHz (EHF)			Page 79	
International Table		United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Non-Federal Government	
50.2-50.4 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive)			50.2-50.4 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	
S5.340 S5.555A 50.4-51.4 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Mobile-satellite (Earth-to-space)			US263 50.4-51.4 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space)	
51.4-52.6 FIXED MOBILE			G117 51.4-54.25 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) RADIO ASTRONOMY	
S5.547 S5.556 52.6-54.25 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive)			US246 54.25-58.2 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE 909 SPACE RESEARCH (passive)	
S5.340 S5.556 54.25-55.78 EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE S5.556A SPACE RESEARCH (passive)				
S5.556B 55.78-56.9 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE S5.556A MOBILE S5.558 SPACE RESEARCH (passive)				
S5.547 S5.557				

Federal Communications Commission

§ 2.106

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			
58-2-59 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) S5.547 S5.556	US263		
59-59.3 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE S5.556A MOBILE S5.558 RADIOLOCATION S5.559 SPACE RESEARCH (passive) S5.3-64 FIXED INTER-SATELLITE MOBILE S5.558 RADIOLOCATION S5.559	58-2-59 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) RADIO ASTRONOMY US246 59-64 FIXED INTER-SATELLITE MOBILE 909 RADIOLOCATION		RF Devices (15) ISM Equipment (18)
55.138 64-65 FIXED INTER-SATELLITE MOBILE except aeronautical mobile S5.547 S5.556	S5.138 64-65 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) US246		

65-95 GHz (EHF)			Page 81	
International Table			United States Table	
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			65-66 EARTH EXPLORATION-SATELLITE SPACE RESEARCH Fixed Mobile	
66-71 INTER-SATELLITE MOBILE S5.553 S5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE			66-71 MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE	
S5.554			S5.554	
71-74 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space)			71-74 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space)	
S5.149 S5.556			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 AMATEUR AMATEUR-SATELLITE	Amateur (87)
76-81 RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth)			76-81 RADIOLOCATION	RF Devices (15) Amateur (87)

		77.5-78 RADIOLOCATION AMATEUR AMATEUR-SATELLITE
		78-81 RADIOLOCATION Amateur Amateur-satellite
	\$5.560	\$5.560
	81-84	81-84
	FIXED	FIXED-SATELLITE (space-to-Earth)
	MOBILE	MOBILE
	MOBILE-SATELLITE (space-to-Earth)	MOBILE-SATELLITE (space-to-Earth)
	Space research (space-to-Earth)	
	84-86	84-86
	FIXED	FIXED
	MOBILE	MOBILE
	BROADCASTING	BROADCASTING
	BROADCASTING-SATELLITE	BROADCASTING-SATELLITE
	\$5.561	\$5.561 US211
	86-92	86-92
	EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)
	RADIO ASTRONOMY	RADIO ASTRONOMY US74
	SPACE RESEARCH (passive)	SPACE RESEARCH (passive)
	\$5.340	US246
	92-94	92-95
	FIXED	FIXED
	FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)
	MOBILE	MOBILE
	RADIOLOCATION	RADIOLOCATION
	\$5.149 \$5.556	
	94-94.1	
	EARTH EXPLORATION-SATELLITE (active)	
	RADIOLOCATION	
	SPACE RESEARCH (active)	
	\$5.562	
	See next page for 94.1-95 GHz	
	\$5.149	

95-150 GHz (EHF)			Page 53	
International Table			United States Table	
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 RADIO NAVIGATION RADIO NAVIGATION-SATELLITE Radiolocation			95-100 MOBILE S5 553 MOBILE-SATELLITE RADIO NAVIGATION RADIO NAVIGATION-SATELLITE Radiolocation	
S5.149 S5.554 S5.555			S5.149 S5.554	
100-102 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)			100-102 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive)	
S5.341			S5.341 US246	
102-105 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE			102-105 FIXED FIXED-SATELLITE (space-to-Earth)	
S5.341			S5.341 US211	
105-116 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)			105-116 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive)	
S5.340 S5.341			S5.341 US246	
116-119 98 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5 558 SPACE RESEARCH (passive)			116-119 98 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5 558 SPACE RESEARCH (passive)	
S5.341			S5.341 US211 US263	

119.98-120.02 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) Amateur	119.98-120.02 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) Amateur	
S5.341	S5.341 US211 US263	
120.02-126 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive)	120.02-126 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive)	ISM Equipment (18)
S5.138	S5.138 US211 US263	
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 RADIO NAVIGATION RADIO NAVIGATION-SATELLITE Radiolocation	134-142 MOBILE S5.553 MOBILE-SATELLITE RADIO NAVIGATION RADIO NAVIGATION-SATELLITE Radiolocation	
S5.149 S5.340 S5.554 S5.555	S5.149 S5.554 S5.555 917	
142-144 AMATEUR AMATEUR-SATELLITE	142-144 AMATEUR AMATEUR-SATELLITE	Amateur (67)
144-149 RADIOLOCATION Amateur Amateur-satellite	144-149 RADIOLOCATION Amateur Amateur-satellite	
S5.149 S5.555	S5.149 S5.555	
149-150 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	149-150 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	

150-202 GHz (EHF)			Page 65	
International Table		United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Non-Federal Government	
150-151 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (passive) \$5,149 \$5,385			150-151 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (passive) \$5,149 \$5,385 JUS263	
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)	
168-170 FIXED MOBILE			US246 168-170 FIXED MOBILE	
170-174.5 FIXED INTER-SATELLITE MOBILE \$5,558 \$5,149 \$5,385			170-174.5 FIXED INTER-SATELLITE MOBILE 909 \$5,149 \$5,385	

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	176.5-182 FIXED INTER-SATELLITE MOBILE 909
S5.149 S5.385	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	185-190 FIXED INTER-SATELLITE MOBILE 909
S5.149 S5.385	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	
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government
202-217 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE SS 341			202-217 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE SS 341	
217-231 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) SS 340 SS 341			217-231 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) SS 341 US246	
231-235 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation			231-235 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation	
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) US211	
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 SS 138 248-250 AMATEUR AMATEUR-SATELLITE			241-248 RADIOLOCATION Amateur Amateur-satellite SS 138 248-250 AMATEUR AMATEUR-SATELLITE	ISM Equipment (18) Amateur (87) Amateur (87)

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)

Page 88

INTERNATIONAL FOOTNOTES

NOTE: The International Telecommunication Union has recently re-numbered 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 tech-

nical 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 radio-beacon stations operating in the radio-navigation 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 radio-determination 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, Kazakhstan, 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, Kazakhstan, 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, Kazakhstan, 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 allo-

cated 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 radio-navigation 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, Cote 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, Kazakhstan, 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 broad-

casting 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, Cote d'Ivoire, Georgia, the Islamic Republic of Iran, Kazakhstan, 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, Kazakhstan, 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, Cote 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 pri-

mary 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 radio-navigation-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, Kazakhstan, 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/m²) for $0^\circ \leq \delta \leq 5^\circ$, $-153 + 0.077(\delta - 5)$ dB(W/m²) for $5^\circ \leq \delta \leq 70^\circ$ and -148 dB(W/m²) for $70^\circ \leq \delta \leq 90^\circ$, 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, Kazakhstan, 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, Kazakhstan, Latvia, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 645–862 MHz is also allo-

cated 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, Cote 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, Kazakhstan, 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 GHz², 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.

²The 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.

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. S9.11A 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/m²) 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 and Herzegovina, Cameroon, Egypt, the United Arab Emirates, France, the Islamic Republic of Iran, Iraq, Israel, Kazakhstan, 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, Kazakhstan, 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, Cote 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, Kazakhstan, 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, Kazakhstan, 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/m²/4 kHz) in Ar-

gentina, 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, Cote 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/m² 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/m²) 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/m²) in a 4 kHz band for $0^\circ \leq \theta < 5^\circ$
- 174 + 0.5 ($\theta - 5$) dB(W/m²) in a 4 kHz band for $5^\circ \leq \theta < 25^\circ$
- 164 dB(W/m²) in a 4 kHz band for $25^\circ \leq \theta \leq 90^\circ$

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, Kazakhstan, 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, Kazakhstan, 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 subregional 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 $-111 \text{ dB(W/m}^2\text{)}/27 \text{ MHz}$ 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, Cote d'Ivoire, Egypt, the United Arab Emir-

ates, 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

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/m²/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/m²/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, Kazakhstan, 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, Kazakhstan, 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, Kazakhstan, 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 radio-navigation-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/m²/100 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/m²/100 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 radio-navigation 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 notifica-

tion 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/m²/4 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/m²/4 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/m²/4 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/m²/4 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 radio-determination-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

(These footnotes, each consisting of the letters US followed by one or more digits, de-

note stipulations applicable to both Government and non-Government stations.)

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).

US8 The use of the frequencies 170.475, 171.425, 171.575, and 172.275 MHz east of the Mississippi River, and 170.425, 170.575, 171.475, 172.225 and 172.375 MHz west of the Mississippi River may be authorized to fixed, land and mobile stations operated by non-

Federal Communications Commission

§2.106

Federal forest firefighting agencies. In addition, land stations and mobile stations operated by non-Federal conservation agencies, for mobile relay operation only, may be authorized to use the frequency 172.275 MHz east of the Mississippi River and the frequency 171.475 MHz west of the Mississippi River. The use of any of the foregoing nine frequencies shall be on the condition that no harmful interference will be caused to Government stations.

US10 The use of the frequencies 26.62, 143.75, 143.90 and 148.15 MHz may be authorized to Civil Air Patrol land stations and Civil Air Patrol mobile stations.

US11 The use of the frequencies 166.250 and 170.150 MHz may be authorized to non-Government remote pickup broadcast base and land mobile stations and to non-Government base, fixed and land mobile stations in the public safety radio services (the sum of the bandwidth of emission and tolerance is not to exceed 25 kHz, except that authorizations in existence as of December 20, 1974, using a larger bandwidth are permitted to continue in operation until December 20, 1979) in the continental United States (excluding Alaska) only, except within the area bounded on the west by the Mississippi River, on the north by the parallel of latitude 37°30' N., and on the east and south by that arc of the circle with center at Springfield, Illinois, and radius equal to the airline distance between Springfield, Illinois, and Montgomery, Alabama, subtended between the foregoing west and north boundaries, on the condition that harmful interference will not be caused to Government stations present or future in the Government band 162-174 MHz. The use of these frequencies by remote pickup broadcast stations will not be authorized for locations within 150 miles of New York City; and use of these frequencies by the public safety radio services will not be authorized except for locations within 150 miles of New York City.

US13 For the specific purpose of transmitting hydrological and meteorological data in co-operation with agencies of the Federal Government, the following frequencies may be authorized to non-Government fixed stations on the condition that harmful interference will not be caused to Government stations.

MHZ	
169.425	171.025
169.450	171.050
169.475	171.075
169.500	171.100
169.525	171.125
170.225	171.825
170.250	171.850
170.275	171.875
170.300	171.900
170.325	171.925

406.125	412.625
406.175	412.675
409.675	412.725
409.725	412.775

Licenses holding a valid authorization on June 11, 1962, to operate on the frequencies 169.575, 170.375 or 171.975 MHz may continue to be authorized for such operations on the condition that harmful interference will not be caused to Government stations.

US14 When 500 kHz is being used for distress purposes, ship and coast stations using morse telegraph may use 512 kHz for calling.

US18 Navigation aids in the US and possessions in the bands 9-14 kHz, 90-110 kHz, 190-415 kHz, 510-535 kHz, 2700-2900 MHz are normally operated by the U.S. Government. However, authorizations may be made by the FCC for non-Government operation in these bands subject to the conclusion of appropriate arrangements between the FCC and the Government agencies concerned and upon special showing of need for service which the Government is not yet prepared to render.

US25 The use of frequencies in the band 25.85-26.1 MHz may be authorized in any area to non-Government remote pickup broadcast base and mobile stations on the condition that harmful interference is not caused to stations in the broadcasting service.

US26 The bands 117.975-121.4125 MHz, 123.5875-128.8125 MHz and 132.0125-136.0 MHz are for air traffic control communications.

US28 The band 121.5875-121.9375 MHz is for use by aeronautical utility land and mobile stations, and for air traffic control communications.

US30 The band 121.9375-123.0875 MHz is available to FAA aircraft for communications pursuant to flight inspection functions in accordance with the Federal Aviation Act of 1958.

US31 Except as provided below the band 121.9375-123.0875 MHz is for use by private aircraft stations.

The frequencies 122.700, 122.725, 122.750, 122.800, 122.950, 122.975, 123.000, 123.050 and 123.075 MHz may be assigned to aeronautical advisory stations. In addition, at landing areas having a part-time or no airdrome control tower or FAA flight service station, these frequencies may be assigned on a secondary non-interference basis to aeronautical utility mobile stations, and may be used by FAA ground vehicles for safety related communications during inspections conducted at such landing areas.

The frequencies 122.850, 122.900 and 122.925 MHz may be assigned to aeronautical multicom stations. In addition, 122.850 MHz may be assigned on a secondary noninterference basis to aeronautical utility mobile stations. In case of 122.925 MHz, US213 applies.

Air carrier aircraft stations may use 122.000 and 122.050 MHz for communication

with aeronautical stations of the Federal Aviation Administration and 122.700, 122.800, 122.900 and 123.000 MHz for communications with aeronautical stations pertaining to safety of flight with and in the vicinity of landing areas not served by a control tower.

Frequencies in the band 121.9375–122.6875 MHz may be used by aeronautical stations of the Federal Aviation Administration for communication with private aircraft stations only, except that 122.000 and 122.050 MHz may also be used for communication with air carrier aircraft stations concerning weather information.

US32 Except for the frequencies 123.3 and 123.5 MHz, which are not authorized for Government use, the band 123.1125–123.5875 MHz is available for FAA communications incident to flight test and inspection activities pertinent to aircraft and facility certification on a secondary noninterference basis.

US33 The band 123.1125–123.5875 MHz is for use by flight test and aviation instructional stations. The frequency 121.950 MHz is available for aviation instructional stations.

US41 The Government radiolocation service is permitted in the band 2450–2500 MHz on condition that harmful interference is not caused to non-Government services.

US44 The non-Government radiolocation service may be authorized in the band 2900–3100 MHz on the condition that no harmful interference is caused to Government services.

US48 The non-Government radiolocation service may be authorized in the bands 5350–5460 MHz and 9000–9200 MHz on the condition that it does not cause harmful interference to the aeronautical radionavigation service or to the Government radiolocation service.

US49 The non-Government radiolocation service may be authorized in the band 5460–5470 MHz on the condition that it does not cause harmful interference to the aeronautical or maritime radionavigation services or to the Government radiolocation service.

US50 The non-Government radiolocation service may be authorized in the band 5470–5600 MHz on the condition that it does not cause harmful interference to the maritime radionavigation service or to the Government radiolocation service.

US51 In the band 5600–5650 MHz and 9300–9500 MHz, the non-Government radiolocation service shall not cause harmful interference to the Government radiolocation service.

US53 In view of the fact that the band 13.25–13.4 GHz is allocated to doppler navigation aids, Government, and non-Government airborne doppler radars in the aeronautical radionavigation service are permitted in the band 8750–8850 MHz only on the condition that they must accept any interference that may be experienced from stations in the radiolocation service in the band 8500–10000 MHz.

US54 Temporarily, and until certain operations of the radiolocation service in the band 9000–9200 MHz can be transferred to other appropriate frequency bands, the aeronautical radionavigation service may, in certain geographical areas, be subject to receiving some degree of interference from the radiolocation service.

US58 In the band 10000–10500 MHz, pulsed emissions are prohibited, except for weather radars on board meteorological satellites in the band 10000–10025 MHz. The amateur service and the non-Government radiolocation service, which shall not cause harmful interference to the Government radiolocation service, are the only non-Government services permitted in this band. The non-Government radiolocation service is limited to survey operations as specified in footnote US108.

US59 The band 10.5–10.55 GHz is restricted to systems using type NON (AO) emission with a power not to exceed 40 watts into the antenna.

US65 The use of the band 5460–5650 MHz by the maritime radionavigation service is limited to shipborne radars.

US66 The use of the band 9300–9500 MHz by the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons. In addition, ground-based radar beacons in the aeronautical radionavigation service are permitted in the band 9300–9320 MHz on the condition that harmful interference is not caused to the maritime radionavigation service.

US67 The use of the band 9300–9500 MHz by the meteorological aids service is limited to ground-based radars. Radiolocation installations will be coordinated with the meteorological aids service and, insofar as practicable, will be adjusted to meet the requirements of the meteorological aids service.

US69 In the band 31.8–33.4 GHz, ground-based radionavigation aids are not permitted except where they operate in cooperation with airborne or shipborne radionavigation devices.

US70 The meteorological aids service allocation in the band 400.15–406.0 MHz does not preclude the operation therein of associated ground transmitters.

US71 In the band 9300–9320 MHz, low-powered maritime radionavigation stations shall be protected from harmful interference caused by the operation of land-based equipment.

US74 In the bands 25.55–25.67, 73.0–74.6, 406.1–410.0, 608–614, 1400–1427, 1660.5–1670.0, 2690–2700 and 4990–5000 MHz and in the bands 10.68–10.7, 15.35–15.4, 23.6–24.0, 31.3–31.5, 86–92, 105–116 and 217–231 GHz, the radio astronomy service shall be protected from extraband radiation only to the extent that such radiation exceeds the level which would be present if the offending station were operating in compliance with the technical

standards or criteria applicable to the service in which it operates.

US77 Government stations may also be authorized:

(a) Port operations use on a simplex basis by coast and ship stations of the frequencies 156.6 and 156.7 MHz;

(b) Duplex port operations use of the frequency 157.0 MHz for ship stations and 161.6 MHz for coast stations;

(c) Inter-ship use of 156.3 MHz on a simplex basis; and

(d) Vessel traffic services under the control of the U.S. Coast Guard on a simplex basis by coast and ship stations on the frequencies 156.25, 156.55, 156.6 and 156.7 MHz.

(e) Navigational bridge-to-bridge and navigational communications on a simplex basis by coast and ship stations on the frequencies 156.375 and 156.65 MHz.

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.

US80 Government stations may use the frequency 122.9 MHz subject to the following conditions:

(a) All operations by Government stations shall be restricted to the purpose for which the frequency is authorized to non-Government stations, and shall be in accordance with the appropriate provisions of the Commission's Rules and Regulations, Part 87, Aviation Services;

(b) Use of the frequency is required for coordination of activities with Commission licensees operating on this frequency; and

(c) Government stations will not be authorized for operation at fixed locations.

US81 The band 38.0-38.25 MHz is used by both Government and non-Government radio astronomy observatories. No new fixed or mobile assignments are to be made and Government stations in the band 38.0-38.25 MHz will be moved to other bands on a case-by-case basis, as required, to protect radio astronomy observations from harmful interference. As an exception, however, low powered military transportable and mobile stations used for tactical and training purposes will continue to use the band. To the extent practicable, the latter operations will be adjusted to relieve such interference as may be caused to radio astronomy observations. In the event of harmful interference from such local operations, radio astronomy observatories may contact local military com-

mands directly, with a view to effecting relief. A list of military commands, areas of coordination, and points of contact for purposes of relieving interference may be obtained upon request from the Office of the Chief Engineer, Federal Communications Commission, Washington, D.C. 20554.

US82 Until July 1, 1991, the assignable frequencies in the bands 4143.6-4146.6 kHz, 6218.6-6224.6 kHz, 8291.1-8297.3 kHz, 12429.2-12439.5 kHz, 16587.1-16596.4 kHz and 22124-22139.5 kHz may be authorized on a shared nonpriority basis to Government and non-Government ship and coast stations (SSB telephony, with peak envelope power not to exceed 1 kW). Effective July 1, 1991, the assignable frequencies in the bands 4146-4152 kHz, 6224-6233 kHz, 8294-8300 kHz, 12353-12368 kHz, 16528-16549 kHz, 18825-18846 kHz, 22159-22180 kHz, and 25100-25121 kHz may be authorized on a shared non-priority basis to Government and non-Government ship and coast stations (SSB telephony, with peak envelope power not to exceed 1 kW).

US87 The frequency 450 MHz, with maximum emission bandwidth of 500 kHz, may be used by Government and non-Government stations for space telecommand at specific locations, subject to such conditions as may be applied on a case-by-case basis.

US90 In the band 2025-2110 MHz, the power flux-density at the Earth's surface produced by emissions from a space station in the space operation, Earth exploration-satellite, or space research services that is transmitting in the space-to-space direction, for all conditions and all methods of modulation, shall not exceed the following values in any 4 kHz sub-band:

(a) -154 dBW/m² for angles of arrival above the horizontal plane (δ) of 0° to 5°,

(b) -154 + 0.5(δ -5) dBW/m² for δ of 5° to 25°, and

(c) -144 dBW/m² for δ of 25° to 90°.

US93 In the conterminous United States, the frequency 108.0 MHz may be authorized for use by VOR test facilities, the operation of which is not essential for the safety of life or property, subject to the condition that no interference is caused to the reception of FM broadcasting stations operating in the band 88-108 MHz. In the event that such interference does occur, the licensee or other agency authorized to operate the facility shall discontinue operation on 108 MHz and shall not resume operation until the interference has been eliminated or the complaint otherwise satisfied. VOR test facilities operating on 108 MHz will not be protected against interference caused by FM broadcasting stations operating in the band 88-108 MHz not shall the authorization of a VOR test facility on 108 MHz preclude the Commission from authorizing additional FM broadcasting stations.

US99 In the band 1668.4-1670.0 MHz, the meteorological aids service (radiosonde) will

avoid operations to the maximum extent practicable. Whenever it is necessary to operate radiosondes in the band 1668.4–1670 MHz within the United States, notification of the operations shall be sent as far in advance as possible to the Electromagnetic Management Unit, National Science Foundation, Washington, D.C. 20550.

US102 In Alaska only, the frequency 122.1 MHz may also be used for air carrier air traffic control purposes at locations where other frequencies are not available to air carrier aircraft stations for air traffic control.

US104 The LORAN Radionavigation System has priority in band 90–110 kHz in the United States and possessions. Radiolocation land stations making use of LORAN type equipment may be authorized to both Government and non-Government on a secondary service basis for offshore radiolocation activities only at specific locations and subject to such technical and operational conditions (e.g., power, emission, pulse rate and phase code, hours of operation), including on-the-air testing, as may be required on a case-by-case basis to ensure protection of the LORAN radionavigation system from harmful interference and to ensure mutual compatibility among radiolocation operators. Such authorizations to stations in the radiolocation service are further subject to showing of need for service which is not currently provided and which the Government is not yet prepared to render by way of the radionavigation service.

US106 The frequency 156.75 MHz is available for assignment to non-Government and Government stations for environmental communications in accordance with an agreed plan.

US107 The frequency 156.8 MHz is the national distress, safety and calling frequency for the maritime mobile VHF radiotelephone service for use by Government and non-Government ship and coast stations. Guard bands of 156.7625–156.7875 and 156.8125–156.8375 MHz are maintained.

US108 Within the bands 3300–3500 MHz and 10000–10500 MHz, survey operations, using transmitters with a peak power not to exceed five watts into the antenna, may be authorized for Government and non-Government use on a secondary basis to other Government radiolocation operations.

US110 In the frequency bands 3100–3300 MHz, 3500–3700 MHz, 5250–5350 MHz, 8500–9000 MHz, 9200–9300 MHz, 9500–10000 MHz, 13.4–14.0 GHz, 15.7–17.3 GHz, 24.05–24.25 GHz and 33.4–36.0 GHz, the non-Government radiolocation service shall be secondary to the Government radiolocation service and to airborne doppler radars at 8800 MHz, and shall provide protection to airport surface detection equipment (ASDE) operating between 15.7–16.2 GHz.

US112 The frequency 123.1 MHz is for search and rescue communications. This fre-

quency may be assigned for air traffic control communications at special aeronautical events on the condition that no harmful interference is caused to search and rescue communications during any period of search and rescue operations in the locale involved.

US116 In the bands 890–902 MHz and 935–941 MHz, no new assignments are to be made to Government radio stations after July 10, 1970 except on case-by-case basis, to experimental stations and to additional stations of existing networks in Alaska. Government assignments existing prior to July 10 1970 to stations in Alaska may be continued. All other existing Government assignments shall be on a secondary basis to stations in the non-Government land mobile service and shall be subject to adjustment or removal from the bands 890–902 MHz, 928–932 MHz and 935–941 MHz at the request of the FCC.

US117 In the band 406.1–410 MHz, all new authorizations will be limited to a maximum 7 watts per kHz of necessary bandwidth; existing authorizations as of November 30, 1970 exceeding this power are permitted to continue in use.

New authorizations in this band stations, other than mobile stations, within the following areas are subject to prior coordination by the applicant through the Electromagnetic Spectrum Management Unit, National Science Foundation, Washington, D.C. 20550, (202-357-9696):

Arecibo Observatory:

Rectangle between latitudes 17°30'N. and 19°00'N. and between longitudes 65°10' W. and 68°00'W.

Owens Valley Radio Observatory:

Two contiguous rectangles, one between latitudes 36°N. and 37°N. and longitudes 117°40'W. and 118°30'W. and the second between latitudes 37°N. and 38°N. and longitudes 118°W. and 118°50'W.

Sagamore Hill Radio Observatory:

Rectangle between latitudes 42°10'N. and 43°00'N. and longitudes 70°31'W. and 71°31'W.

Table Mountain Solar Observatory (NOAA), Boulder, Colorado (407–409 MHz only):

Rectangle between latitudes 39°30'N. and 40°30'N. and longitudes 104°30'W. and 106°00'W. or the Continental Divide whichever is farther east.

The non-Government use of this band is limited to the radio astronomy service and as provided by footnote US13.

US201 In the band 460–470 MHz, space stations in the earth exploration-satellite service may be authorized for space-to-earth transmissions on a secondary basis with respect to the fixed and mobile services. When operating in the meteorological-satellite service, such stations shall be protected from harmful interference from other applications of the earth exploration-satellite service.

Federal Communications Commission

§2.106

The power flux produced at the earth's surface by any space station in this band shall not exceed -152 dBW/m²/kHz.

US203 Radio astronomy observations of the formaldehyde line frequencies 4825-4835 MHz and 14.470-14.500 GHz may be made at certain radio astronomy observatories as indicated below:

BANDS TO BE OBSERVED

4 GHz	14 GHz	Observatory
X	National Astronomy and Ionosphere Center, Arecibo, Puerto Rico.
X	X	National Radio Astronomy Observatory, Green Bank, W. Va.
X	X	National Radio Astronomy Observatory, Socorro, New Mexico.
X	X	Hat Creek Observatory (U of Calif.), Hat Creek, Cal.
X	X	Haystack Radio Observatory (MIT-Lincoln Lab), Tyngsboro, Mass.
X	X	Owens Vally Radio Observatory (Cal. Tech.), Big Pine, Cal.
.....	X	Five College Radio Astronomy Observatory Quabbin Reservoir (near Amherst), Massachusetts.

Every practicable effort will be made to avoid the assignment of frequencies to stations in the fixed or mobile services in these bands. Should such assignments result in harmful interference to these observations, the situation will be remedied to the extent practicable.

US205 Tropospheric scatter systems are prohibited in the band 2500-2690 MHz.

US208 Planning and use of the band 1559-1626.5 MHz necessitate the development of technical and/or operational sharing criteria to ensure the maximum degree of electromagnetic compatibility with existing and planned systems within the band.

US209 The use of frequencies 460.6625, 460.6875, 460.7125, 460.7375, 460.7625, 460.7875, 460.8125, 460.8375, 460.8625, 465.6625, 465.6875, 465.7125, 465.7375, 465.7625, 465.7875, 465.8125, 465.8375, and 465.8625 MHz may be authorized, with 100 mW or less output power, to Government and non-Government radio stations for one-way, non-voice bio-medical telemetry operations in hospitals, or medical or convalescent centers.

US210 Use of frequencies in the bands 40.66-40.70 and 216-220 MHz may be authorized to Government and non-Government stations on a secondary basis for the tracking of, and telemetering of scientific data from, ocean buoys and wildlife. Airborne wildlife telemetry in the 216-220 MHz band will be limited to the 216.0-216.1 MHz portion of the band. Operation in these two bands is subject to the technical standards specified in: (a) Section 8.2.42 of the NTIA Manual for Government use, or (b) Section 5.108 of the Commission's Rules for non-Government use.

US211 In the bands 1670-1690, 5000-5250 MHz and 10.7-11.7, 15.1365-15.35, 15.4-15.7, 22.5-22.55, 24-24.05, 31.0-31.3, 31.8-32.0, 40.5-42.5, 84-86, 102-105, 116-126, 151-164, 176.5-182, 185-190, 231-235, 252-265 GHz, applicants for airborne or space station assignments are urged to take all practicable steps to protect radio astronomy observations in the adjacent lands from harmful interference; however, US74 applies.

US212 In the State of Alaska, the carrier frequency 5167.5 kHz (assigned frequency 5168.9 kHz) is designated for emergency communications. This frequency may also be used in the Alaska-Private Fixed Service for calling and listening, but only for establishing communications before switching to another frequency. The maximum power is limited to 150 watts peak envelope power (PEP).

US213 The frequency 122.925 MHz is for use only for communications with or between aircraft when coordinating natural resources programs of Federal or State natural resources, agencies, including forestry management and fire suppression, fish and game management and protection and environmental monitoring and protection.

US214 The frequency 157.1 MHz is the primary frequency for liaison communications between ship stations and stations of the United States Coast Guard.

US215 Emissions from microwave ovens manufactured on and after January 1, 1980, for operation on the frequency 915 MHz must be confined within the band 902-928 MHz. Emissions from microwave ovens manufactured prior to January 1, 1980, for operation on the frequency 915 MHz must be confined within the band 902-940 MHz. Radiocommunications services operating in the band 928-940 MHz must accept any harmful interference from the operation of microwave ovens manufactured before January 1, 1980.

US216 The frequencies 150.775 and 150,790, and the bands 152-152.0150, 163.2375-163.2625, 462.9375-463.1875 and 467.9375-468.1875 MHz are authorized for Government/non-Government operations in medical radio communications systems.

US217 Pulse-ranging radimlocation systems may be authorized for Government and non-Government use in the 420-450 MHz band along the shorelines of Alaska and the contiguous 48 states. Spread spectrum radimlocation systems may be authorized in the 420-435 MHz portion of the band for operation within the contiguous 48 States and Alaska. Authorizations will be eranted on a case-by-case basis; howeter, operations proposed to be located within the zones set forth in US228 should not expect tm be accommodated. All stations operating in accordance with this provision will be secondary to stations operating in accordance with the Table of Frequency Allocations.

US218 The band 902–928 MHz is available for Location and Monitoring Service (LMS) systems subject to not causing harmful interference to the operation of all Government stations authorized in these bands. These systems must tolerate interference from the operation of industrial, scientific, and medical (ISM) devices and the operation of Government stations authorized in these bands.

US220 The frequencies 36.25 and 41.71 MHz may be authorized to Government stations and non-Government stations in the petroleum radio service, for oil spill containment and cleanup operations. The use of these frequencies for oil spill containment or cleanup operations is limited to the inland and coastal waterway regions.

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.

US222 In the band 2025–2035 MHz geostationary operational environmental satellite Earth stations in the space research and Earth exploration-satellite services may be authorized on a coequal basis for Earth-to-space transmissions for tracking, telemetry, and telecommand at the sites listed below:

Wallops Is., Va. 37°50'48" N., 75°27'33" W.

Seattle, Wash. 47°34'15" N., 122°33'10" W.

Honolulu, Hawaii 21°21'12"N., 157°52'36"W.

US223 Within 75 miles of the United States/Canada border on the Great Lakes, the St. Lawrence Seaway, and the Puget Sound and the Strait of Juan de Fuca and its approaches, use of coast transmit frequency 162.025 MHz and ship station transmit frequency 157.425 MHz (VHF maritime mobile service Channel 88) may be authorized for use by the maritime service for public correspondence.

US224 Government systems utilizing spread spectrum techniques for terrestrial communication, navigation and identification may be authorized to operate in the band 960–1215 MHz on the condition that harmful interference will not be caused to the aeronautical radionavigation service. These systems will be handled on a case-by-case basis. Such systems shall be subject to a review at the national level for operational requirements and electromagnetic compatibility prior to development, procurement or modification.

US225 In addition to its present Government use, the frequency band 510–525 kHz is available to Government and non-Government aeronautical radionavigation stations inland of the Territorial Base Line as coordinated with the military services. In addition, the frequency 510 kHz is available for non-Government ship-helicopter operations when

beyond 100 nautical miles from shore and required for aeronautical radionavigation.

US226 In the State of Hawaii, stations in the aeronautical radionavigation service shall not cause harmful interference to U.S. Navy reception from its station at Honolulu on 198 kHz.

US228 Applicants for operation in the band 420 to 450 MHz under the provisions of US217 should not expect to be accommodated if their area of service is within the following geographic areas:

(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) In the State of Massachusetts within a 160 kilometers (100 miles) radius around the locations of Otis Air Force Base, Massachusetts (latitude 41°45' North, longitude 70°32' West).

(c) In the State of California within a 240 kilometer (150 mile) radius of Beale Air Force Base, California (latitude 39°08' North, longitude 121°26' West).

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

(e) 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).

(f) Those portions of Texas and New Mexico bounded on the south by latitude 31°45' North, on the east by longitude 104°100' West, on the north by latitude 34°30' North, and on the West by longitude 107°30' West.

(g) In the state of Alaska within a 160 kilometer (100 mile) radius of Clear, Alaska (latitude 64 degrees 17 north, longitude 149 degrees 10 west).

(h) In the state of North Dakota within a 160 kilometer (100 mile) radius of Concrete, North Dakota (latitude 48 degrees 43 north, longitude 97 degrees 54 west).

(i) In the States of Alabama, Florida, 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).

US229 Assignments to stations in the fixed and mobile services may be made on the condition that no harmful interference is caused to the Navy SPASUR system currently operating in the southern United States in the frequency band 216.88–217.08 MHz.

US230 Non-government land mobile service is allocated on a primary basis in the bands 422.1875–425.4875 and 427.1875–429.9875 MHz within 50 statute miles of Detroit, MI, and Cleveland, OH, and in the bands 423.8125–

425.4875 and 428.8125–429.9875 MHz within 50 statute miles of Buffalo, NY.

US231 When an assignment cannot be obtained in the bands between 200 and 525 kHz, which are allocated to aeronautical radionavigation, assignments may be made to aeronautical radiobeacons in the maritime mobile band 435–490 kHz, on a secondary basis, subject to the coordination and agreement of those agencies having assignments within the maritime mobile band which may be affected. Assignments to aeronautical radionavigation radiobeacons in the band 435–490 kHz shall not be a bar to any required changes to the maritime mobile radio service and shall be limited to Government not employing voice emissions.

US235 Until implementation procedures and schedules are determined by future conferences of the International Telecommunications Union, the bands 9775–9900 kHz, 11650–11700 kHz, 11975–12050 kHz, 13600–13800 kHz, 15450–15600 kHz, 17550–17700 kHz, and 21750–21850 kHz to be implemented by the broadcasting service are allocated as an alternative allocation to the fixed service. The bands 12230–12330 kHz, 16360–16460 kHz, 17360–17410 kHz, 18780–18900 kHz, 19680–19800 kHz, 22720–22855 kHz, 25110–25210 kHz, and 26100–26175 kHz to be implemented by the maritime mobile service are also allocated as an alternative allocation to the fixed service until July 1, 1991, when these bands are to be allocated exclusively to the maritime mobile service.

US236 Until implementation procedures and schedules are determined by future conferences of the International Telecommunications Union (See Resolution 319), the bands 4000–4063 and 8100–8195 kHz are also allocated on a primary basis to the fixed service.

US238 The 1605–1705 kHz band is allocated to the radiolocation service on a secondary basis.

US239 Aeronautical radionavigation stations (radiobeacons) may be authorized, primarily for off-shore use, in the band 525–535 kHz on a non-interference basis to travelers information stations.

US240 The bands 1715–1725 and 1740–1750 kHz are allocated on a primary basis and the bands 1705–1715 kHz and 1725–1740 kHz on a secondary basis to the aeronautical radionavigation service, (radiobeacons).

US244 The band 136.000–137.000 MHz is allocated to the non-Government aeronautical mobile (R) service on a primary basis, and is subject to pertinent international treaties and agreements. The frequencies 136.000 MHz, 136.025 MHz, 136.050 MHz, 136.075 MHz, 136.125 MHz, 136.150 MHz, 136.175 MHz, 136.225 MHz, 136.250 MHz, 136.300 MHz, 136.325 MHz, 136.350 MHz, 136.400 MHz, 136.425 MHz and 136.450 MHz are available on a shared basis to the Federal Aviation Administration for air traffic control purposes, such as automatic weather observation services (AWOS), auto-

matic terminal information services (ATIS) and airport control tower communications. Stations licensed prior to January 2, 1990, using the 136–137 MHz band for space operation (space-to-earth), meteorological-satellite service (space-to-earth) and the space research service (space-to-earth) may continue to use this band on a secondary basis to aeronautical mobile (R) service stations. No new assignments will be made to stations in the above space services.

US245 The fixed-satellite service is limited to international inter-continental systems and subject to case-by-case electromagnetic compatibility analysis.

US246 Except for medical telemetry equipment operating in the band 608–614 MHz, no stations shall be authorized to transmit in the following bands: 608–614 MHz, 1400–1427 MHz, 1660.5–1668.4 MHz, 2690–2700 MHz, 4990–5000 MHz, 10.68–10.70 GHz, 15.35–15.40 GHz, 23.6–24.0 GHz, 31.3–31.8 GHz, 51.4–54.25 GHz, 58.2–59.0 GHz, 64–65 GHz, 86–92 GHz, 100–102 GHz, 105–116 GHz, 164–168 GHz, 182–185 GHz and 217–231 GHz. Medical telemetry equipment shall not cause harmful interference to radio astronomy operations in the band 608–614 MHz and shall be coordinated under the requirements found in 47 CFR 95.1119.

US247 The band 10100–10150 kHz is allocated to the fixed service on a primary basis outside the United States and possessions. Transmissions of stations in the amateur service shall not cause harmful interference to this fixed service use and stations in the amateur service shall make all necessary adjustments (including termination of transmission) if harmful interference is caused.

US251 The band 12.75–13.25 GHz is also allocated to the space research, (deep space) (space-to-earth) service for reception only at Goldstone, California. 35°18 N. 116°54 – W.

US252 The bands 2110–2120, 7145–7190 MHz, and 34.2–34.7 GHz are also allocated for earth-to-space transmissions in the space research service, limited to deep space communications at Goldstone, California.

US254 In the band 18.6–18.8 GHz the fixed and mobile services shall be limited to a maximum equivalent isotropically radiated power of +35 dBW and the power delivered to the antenna shall not exceed –3 dBW.

US255 In addition to any other applicable limits, the power flux-density across the 200 MHz band 18.6–18.8 GHz produced at the surface of the Earth by emissions from a space station under assumed free-space propagation conditions shall not exceed –95 dB(W/m²) for all angles of arrival. This limit may be exceeded by up to 3 dB for no more than 5% of the time.

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

§ 2.106

47 CFR Ch. I (10–1–00 Edition)

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 longitudes 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 longitudes 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' W 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.

US258 In the band 8025–8400 MHz, the non-Government earth exploration-satellite service (space-to-earth) is allocated on a primary basis. Authorizations are subject to a case-by-case electromagnetic compatibility analysis.

US259 Stations in the radiolocation service in the band 17.3–17.7 GHz, shall be restricted to operating powers of less than 51 dBW eirp after feeder link stations for the broadcasting-satellite service are authorized and brought into use.

US260 Aeronautical mobile communications which are an integral part of aeronautical radionavigation systems may be satisfied in the bands 1559–1626.5 MHz, 5000–5250 MHz and 15.4–15.7 GHz.

US261 The use of the band 4200–4400 MHz by the aeronautical radionavigation service is reserved exclusively for airborne radio altimeters. Experimental stations will not be authorized to develop equipment for operational use in this band other than equipment related to altimeter stations. 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 from the radio altimeters).

US262 The band 31.8–32.3 GHz is also allocated for space-to-earth transmissions in the space research service, limited to deep space communications at Goldstone, California.

US263 In the frequency bands 21.2–21.4, 22.21–22.5, 36–37, 50.2–50.4, 54.25–58.2, 116–126, 150–151, 174.5–176.5, 200–202 and 235–238 GHz, the space research and earth exploration-satellite services shall not receive protection from the fixed and mobile services operating in accordance with the Table of Frequency Allocations.

US264 In the band 48.94–49.04 GHz, airborne stations shall not be authorized.

US265 In the band 10.6–10.68 GHz, the fixed service shall be limited to a maximum equivalent isotropically radiated power of 40 dBW and the power delivered to the antenna shall not exceed –3dBW per 250 kHz.

US266 Licensees in the public safety radio services holding a valid authorization on June 30, 1958, to operate in the frequency band 156.27–157.47 MHz or on the frequencies 161.85, 161.91 or 161.97 MHz may, upon proper application, continue to be authorized for

such operation, including expansion of existing systems, until such time as harmful interference is caused to the operation of any authorized station other than those licensed in the public safety radio service.

US267 In the band 902-928 MHz, amateur radio stations shall not operate within the States of Colorado and Wyoming, bounded by the area of: latitude 39°N. to 42°N. and longitude 103°W. to 108°W.

US268 The bands 890-902 MHz and 928-942 MHz are also allocated to the radiolocation service for Government ship stations (off-shore ocean areas) on the condition that harmful interference is not caused to non-Government land mobile stations. The provisions of footnote US116 apply.

US269 In the band 2500-2690 MHz, applicants for space station assignments are urged to take all practicable steps to protect radio astronomy observations in the adjacent band, 2690-2700 MHz, from harmful interference. Further, all applicants are urged to coordinate their proposed system through the Electromagnetic Management Unit, National Science Foundation, Washington, D.C. 20550, prior to system development.

US270 The band 72.77-72.91 GHz is also allocated to the radio astronomy service. Applicants for frequency assignments in this band are urged to take all practicable steps to protect radio astronomy observations from harmful interference.

US271 The use of the band 17.3-17.8 GHz by the fixed-satellite service (earth-to-space) is limited to feeder links for broadcasting-satellite service.

US273 In the 74.6-74.8 MHz and 75.2-75.4 MHz bands stations in the fixed and mobile services are limited to a maximum power of 1 watt from the transmitter into the antenna transmission line.

US274 In the 216-220 MHz band fixed, aeronautical mobile and land mobile stations are limited to telemetering and associated telecommand operations.

US275 The band 902-928 MHz is allocated on a secondary basis to the amateur service subject to not causing harmful interference to the operations of Government stations authorized in this band or to Location and Monitoring Service (LMS) systems. Stations in the Amateur service must tolerate any interference from the operations of industrial, scientific, and medical (ISM) devices, LMS systems, and the operations of Government stations authorized in this band. Further, the Amateur Service is prohibited in those portions of Texas and New Mexico bounded on the south by latitude 31°41' North, on the east by longitude 104°11' West, and on the north by latitude 34°30' North, and on the west by longitude 107°30' West; in addition, outside this area but within 150 miles of these boundaries of White Sands Missile Range the service is restricted to a maximum transmitter peak envelope power output of 50 watts.

imum transmitter peak envelope power output of 50 watts.

US276 Except as otherwise provided for herein, use of the bands 2320-2345 and 2360-2390 MHz by the mobile service is limited to aeronautical telemetering and associated telecommand operations for flight testing of manned or unmanned aircraft, missiles or major components thereof. The following four frequencies are shared on a co-equal basis by Government and non-Government stations for telemetering and associated telecommand operations of expendable and reusable launch vehicles whether or not such operations involve flight testing: 2332.5, 2364.5, 2370.5, and 2382.5 MHz. All other mobile telemetering uses shall be secondary to the above uses.

US277 The band 10.6-10.68 GHz is also allocated on a primary basis to the radio astronomy service. However, the radio astronomy service shall not receive protection from stations in the fixed service which are licensed to operate in the one hundred most populous urbanized areas as defined by the U.S. Census Bureau. The following radio astronomy sites have been coordinated for observations in this band: National Radio Astronomy Observatory, Green Bank, West Virginia; (38°26'08"N.; 79°49'42"W.) National Radio Astronomy Observatory, Socorro, New Mexico; (34°04'43"N.; 107°37'04"W.), Harvard Radio Astronomy Station, Fort Davis, Texas; (30°38'08"N.; 103°56'42"W.), Hat Creek Observatory, Hat Creek, California; (40°49'03"N.; 121°28'24"W.), Owens Valley Radio Observatory, Big Pine, California; (37°13'54"N.; 118°17'36"W.), Naval Research Laboratory, Maryland Point, Maryland (38°22'26"N.; 77°14'00"W.).

US278 In the 22.55-23.55 and 32-33 GHz bands non-geostationary intersatellite links may operate on a secondary basis to geostationary intersatellite links.

US279 The frequency 2182 kHz may be authorized to fixed stations associated with the maritime mobile service for the sole purpose of transmitting distress calls and distress traffic, and urgency and safety signals and messages.

US281 In the band 25.07-25.11 MHz non-Government stations in the industrial radio services shall not cause harmful interference to, and must accept interference from, stations in the maritime mobile service operating in accordance with the International Table of Frequency Allocations.

US282 In the band 4650-4700 kHz frequencies may be authorized for non-Government communication with helicopters in support of off-shore drilling operations on the condition that harmful interference will not be caused to services operating in accordance with the Table of Frequency Allocations.

US283 In the bands 2850-3025 kHz, 3400-3500 kHz, 4650-4700 kHz, 5450-5680 kHz, 6525-6685

kHz, 10005–10100 kHz, 11275–11400 kHz, 13260–13360 kHz and 17900–17970 kHz frequencies in these bands may be authorized for non-Government flight test purposes on the condition that harmful interference will not be caused to services operating in accordance with the Table of Frequency Allocations.

US285 Under exceptional circumstances, the carrier frequency 2635, 2638, and 2738 kHz may be authorized to coast stations.

US290 In the band 1900–2000 kHz amateur stations may continue to operate on a secondary basis to the radiolocation service, pending a decision as to their disposition through a future rule making proceeding in conjunction with the implementation of the standard broadcasting service in the 1625–1705 kHz band.

US291 Television pickup stations in the mobile service may be authorized to use frequencies in the band 38.6–40 GHz on a secondary basis to stations operating in accordance with the Table of Frequency Allocations.

US292 In the band 14.0–14.2 GHz stations in the radionavigation service shall operate on a secondary basis to the fixed-satellite service.

US294 In the spectrum below 490 kHz electric utilities operate Power Line Carrier (PLC) systems on power transmission lines for communications important to the reliability and security of electric service to the public. These PLC systems operate under the provisions of Part 15 of the Federal Communications Commission's Rules and Regulations or Chapter 7 of the National Telecommunications and Information Administration's Manual of Regulations and Procedures for Federal Radio Frequency Management, on an unprotected and noninterference basis with respect to authorized radio users. Notification of intent to place new or revised radio frequency assignments or PLC frequency uses in the bands below 490 kHz is to be made in accordance with the Rules and Regulations of the FCC and NTIA, and users are urged to minimize potential interference to the degree practicable. This footnote does not provide any allocation status to PLC radio frequency uses.

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.

US297 The bands 47.2–49.2 GHz and 74.0–75.5 GHz are also available for feeder links for the broadcasting-satellite service.

US298 Channels 27555, 27615, 27635, 27655, 27765, and 27860 kHz are available to eligibles in the Forest Products Radio Service on a

secondary basis to Government operations including experimental stations. Operations in the Forest Products Radio Service on these channels will not exceed 150 watts and are limited to the states of Washington, Oregon, Maine, North Carolina, South Carolina, Tennessee, Georgia, Florida, Alabama, Mississippi, Louisiana, and Texas (eastern portion).

US299 The 1615–1705 kHz band in Alaska is also allocated to the maritime mobile services and the Alaska fixed service on a secondary basis to Region 2 broadcast operations.

US300 The frequencies 169.445, 169.505, 170.245, 170.305, 171.045, 171.105, 171.845 and 171.905 MHz are available for wireless microphone operations on a secondary basis to Government and non-Government operations.

US301 Except as provided in US302, broadcast auxiliary stations licensed as of November 21, 1984, to operate in the band 942–944 MHz may continue to operate on a co-equal primary basis to other stations and services operating in the band in accordance with the Table of Frequency Allocations.

US302 The band 942–944 MHz in Puerto Rico is allocated as an alternative allocation to the fixed service for broadcast auxiliary stations only.

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.

US306 The band 1610–1626.5 MHz is also allocated for use by the radiodetermination satellite service in the Earth-to-space direction.

US307 The sub-band 5150–5216 MHz is also allocated for space-to-Earth transmissions in the fixed satellite service for feeder links in conjunction with the radiodetermination satellite service operating in the bands 1610–1626.5 MHz and 2483.5–2500 MHz. The total power flux density at the earth's surface shall in no case exceed -159 dBW/m per 4 kHz for all angles of arrival.

US308 In the frequency bands 1549.5–1558.5 MHz and 1651–1660 MHz, the Aeronautical-Mobile-Satellite (R) requirements that cannot be accommodated in the 1545–1549.5 MHz, 1558.5–1559 MHz, 1646.5–1651 MHz and 1660–1660.5 MHz bands shall have priority access with real-time preemptive capability for

communications in the mobile satellite service. Systems not interoperable with the aeronautical mobile-satellite (R) service shall operate on a secondary basis. Account shall be taken of the priority of safety-related communications in the mobile-satellite service.

US309 Transmissions in the bands 1545-1559 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. Transmissions in the band 1646.5-1660.5 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.

US310 In the band 14.896-15.121 GHz, non-Government space stations in the space research service may be authorized on a secondary basis to transmit to Tracking and Data Relay Satellites subject to such conditions as may be applied on a case-by-case basis. Such transmissions shall not cause harmful interference to authorized Government stations. The power flux density at the earth's surface from such non-Government stations shall not exceed -138 to -148 dBW/m²/kHz, depending on the angle of arrival, in accordance with CCIR Recommendation 510-1.

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'

National Radio Astronomy Observatory, Very Long Baseline Array Stations	80 kilometers (50 mile) radius centered on:	
	Latitude (North)	Longitude (West)
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.

US312 The frequency 173.075 MHz may also be authorized on a primary basis to non-Government stations in the Police Radio Service (with a maximum authorized bandwidth of 20 kHz) for stolen vehicle recovery systems.

US315 In the frequency bands 1530-1544 MHz and 1626.5-1645.5 MHz maritime mobile-satellite distress and safety communications, e.g., GMDSS, shall have priority access with real-time preemptive capability in the mobile-satellite service. Communications of mobile-satellite system stations not participating in the GMDSS shall operate on a secondary basis to distress and safety communications of stations operating in the GMDSS. Account shall be taken of the priority of safety-related communications in the mobile-satellite service.

US316 The band 2900-3100 MHz is also allocated on a primary basis to the Meteorological Aids Service. Operations in this service are limited to Government Next Generation Weather Radar (NEXRAD) systems where accommodation in the 2700-2900 MHz band is not technically practical and are subject to coordination with existing authorized stations."

US317 The band 218.0-219.0 MHz is allocated on a primary basis to the Interactive Video and Data operations.

US318 Until January 1, 2000, the use of the 137-138 MHz band by the mobile-satellite service will be secondary to Government satellite operations in the subbands: 137.333-137.367, 137.485-137.515, 137.605-137.635 and 137.753-137.787 MHz.

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.

US320 Use of the 137–138, 148–149.9, and 400.15–401 MHz bands by the mobile-satellite service is limited to non-voice, non-geostationary satellite systems and may include satellite links between land earth stations at fixed locations.

US321 The 535–1705 kHz band is also allocated to the mobile service on a secondary basis for the distribution of public service information from non-government Travelers Information Stations operating in the Local Government Radio Service on 10 kHz spaced channels from 540 to 1700 kHz.

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.

US323 In the 148–149.9 MHz band, no individual mobile earth station shall transmit, on the same frequency being actively used by fixed and mobile stations and shall transmit no more than 1% of the time during any 15 minute period; except, individual mobile earth stations in this band that do not avoid frequencies actively being used by the fixed and mobile services shall not exceed a power density of -16 dBW/4kHz and shall transmit no more than 0.25% of the time during any 15 minute period. Any single transmission from any individual mobile earth station operating in this band shall not exceed 450 ms in duration and consecutive transmissions from a single mobile earth station on the same frequency shall be separated by at least 15 seconds. Land earth stations in this band shall be subject to electromagnetic compatibility analysis and coordination with terrestrial fixed and mobile stations.

US324 Government and non-Government satellite systems in the 400.15–401 MHz band shall be subject to electromagnetic compatibility analysis and coordination.

US325 In the band 148–149.9 MHz fixed and mobile stations shall not claim protection from land earth stations in the mobile-satellite service that have been previously coordinated; Government fixed and mobile stations exceeding 27 dBW EIRP, or an emission bandwidth greater than 38 kHz, will be coordinated with existing mobile-satellite service space stations.

US327 The band 2310–2360 MHz is 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 the provisions of Resolution 528.

US328 In the band 2320–2345 MHz, the mobile and radiolocation services are allocated on a primary basis until a broadcasting-sat-

ellite (sound) service has been brought into use in such a manner as to affect or be affected by the mobile and radiolocation services in those service areas. The broadcasting-satellite (sound) service during implementation should also take cognizance of the expendable and reusable launch vehicle frequency 2332.5 MHz, to minimize the impact on this mobile service use to the extent possible.

US334 In the band 17.8–20.2 GHz, Government space stations in both geostationary (GSO) and non-geostationary satellite orbits (NGSO) and associated earth stations in the fixed-satellite service (space-to-Earth) may be authorized on a primary basis. For a Government geostationary satellite network to operate on a primary basis, the space station shall be located outside the arc, measured from east to west, 70 West Longitude to 120 West Longitude. Coordination between Government fixed-satellite systems and non-Government space and terrestrial systems operating in accordance with the United States Table of Frequency Allocations is required.

(a) In the sub-band 17.8–19.7 GHz, the power flux-density at the surface of the Earth produced by emissions from a Government GSO space station or from a Government space station in a NGSO constellation of 50 or fewer satellites, for all conditions and for all methods of modulation, shall not exceed the following values in any 1 MHz band:

(1) -115 dB(W/m²) for angles of arrival above the horizontal plane (δ) between 0° and 5°.

(2) $-115 + 0.5(\delta - 5)$ dB(W/m²) for δ between 5° and 25°, and

(3) -105 dB(W/m²) for δ between 25° and 90°.

(b) In the sub-band 17.8–19.3 GHz, the power flux-density at the surface of the Earth produced by emissions from a Government space station in a NGSO constellation of 51 or more satellites, for all conditions and for all methods of modulation, shall not exceed the following values in any 1 MHz band:

(1) $-115 - X$ dB(W/m²) for δ between 0° and 5°.

(2) $-115 - X + ((10 + X)/20)(\delta - 5)$ dB(W/m²) for δ between 5° and 25°, and

(3) -105 dB(W/m²) for δ between 25° and 90°;

where X is defined as a function of the number of satellites, n, in a NGSO constellation as follows:

For $n \leq 288$, $X = (5/119)(n - 50)$ dB; and

For $n > 288$, $X = (1/69)(n + 402)$ dB.

US335 The primary Government and non-Government allocations for the various segments of the 220–222 MHz band are divided as follows: (1) the 220.0–220.55/221.0–221.55, 220.6–220.8/221.6–221.8, 220.85–220.90/221.85–221.90 and 220.925–221.0/221.925–222.0 MHz bands (Channels 1–110, 121–160, 171–180 and 186–200, respectively) are available for exclusive non-Government use; (2) the 220.55–220.60/221.55–221.60 MHz bands (Channels 111–120) are available

for exclusive Government use; and (3) the 220.80–220.85/221.80–221.85 and 220.900–220.925/221.900–221.925 MHz bands (Channels 161–170 and 181–185, respectively) are available for shared Government and non-Government use. The exclusive non-Government band segments are also available for temporary fixed geophysical telemetry operations on a secondary basis to the fixed and mobile services.

US337 In the band 13.75–13.80 GHz, earth stations in the fixed-satellite service shall be coordinated on a case-by-case basis through the frequency assignment subcommittee in order to minimize harmful interference to the Tracking and Data Relay Satellite System's forward space-to-space link (TDRSS forward link-to-LEO).

US338 In the 2305–2310 MHz band, space-to-Earth operations are prohibited. Additionally, in the 2305–2320 MHz band, all Wireless Communications Service (WCS) operations within 50 kilometers of 35° 20' North Latitude and 116° 53' West Longitude shall be coordinated through the Frequency Assignment Subcommittee of the Interdepartment Radio Advisory Committee in order to minimize harmful interference to NASA's Goldstone Deep Space facility.

US339 The bands 2310–2320 and 2345–2360 MHz are also available for aeronautical telemetering and associated telecommand operations for flight testing of manned or unmanned aircraft, missiles or major components thereof on a secondary basis to the Wireless Communications Service. The following two frequencies are shared on a co-equal basis by Government and non-Government stations for telemetering and associated telecommand operations of expendable and re-usable launch vehicles whether or not such operations involve flight testing: 2312.5 and 2352.5 MHz. Other mobile telemetering uses may be provided on a non-interference basis to the above uses. The broadcasting-satellite (sound) service during implementation should also take cognizance of the expendable and reusable launch vehicle frequencies 2312.5 and 2352.5 MHz, to minimize the impact on this mobile service use to the extent possible.

US340 The 2–30 MHz band is available on a secondary noninterference basis to Government and non-Government maritime and aeronautical stations for the purposes of measuring the quality of reception on radio channels. See 47 C.F.R. §87.149 for the list of protected frequencies and bands within this frequency range. Actual communications shall be limited to those frequencies specifically allocated to the maritime mobile and aeronautical mobile services.

US342 In making assignments to stations of other services to which the bands:

13360–13410 kHz
37.5–38.25 MHz
322–328.6 MHz*

1330–1400 MHz*
1610.6–1613.8 MHz*
1660–1670 MHz
3260–3267 MHz*
3332–3339 MHz*
3345.8–3352.5 MHz*
4825–4835 MHz*
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
36.43–36.5 GHz*
42.5–43.5 GHz
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*
262.24–262.76 GHz*
265–275 GHz

are allocated (* indicates radio astronomy use for spectral line observations), all practicable steps shall be taken 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. 343/S4.5 and 344/S4.6 and Article 36/S29 of the ITU Radio Regulations).

US345 In the band 402–405 MHz, the mobile, except mobile aeronautical, service is allocated on a secondary basis and is limited to, with the exception of military tactical mobile stations, Medical Implant Communications Service (MICS) operations. MICS stations are authorized by rule on the condition that harmful interference is not caused to stations in the meteorological aids, meteorological-satellite, and earth exploration-satellite services, and that MICS stations accept interference from stations in the meteorological aids, meteorological-satellite, and earth exploration-satellite services.

US346 Except as provided by footnote US222, the use of the band 2025–2110 MHz by the Government space operation service (Earth-to-space), Earth exploration-satellite service (Earth-to-space), and space research service (Earth-to-space) shall not constrain the deployment of the Television Broadcast Auxiliary Service, the Cable Television Relay Service, or the Local Television Transmission Service. To facilitate compatible operations between non-Government terrestrial receiving stations at fixed sites and Government earth station transmitters, coordination is required. To facilitate compatible operations between non-government terrestrial transmitting stations and Government spacecraft receivers, the terrestrial transmitters shall not be high-density systems (see Recommendations ITU-R SA.1154 and ITU-R F.1247).

§2.106

47 CFR Ch. I (10–1–00 Edition)

US347 In the band 2025–2110 MHz, non-Government Earth-to-space and space-to-space transmissions may be authorized in the space research and Earth exploration-satellite services subject to such conditions as may be applied on a case-by-case basis. Such transmissions shall not cause harmful interference to Government and non-Government stations operating in accordance with the Table of Frequency Allocations.

US350 In the bands 608–614 MHz, 1395–1400 MHz, and 1429–1432, the land mobile service is limited to medical telemetry and telecommand operations. Additionally, the band

1429–1432 MHz may be used on secondary basis for non-Government land mobile telemetry and telecommand and fixed telemetry.

US351 In the band 1390–1400 MHz, Government operations, except for medical telemetry operations in the sub-band 1395–1400 MHz, are on a non-interference basis to authorized non-Government operations and shall not hinder implementation of any non-Government operations. However, Government operations authorized as of March 22, 1995 at 17 sites identified below will be continued on a fully protected basis until January 1, 2009.

Sites	Lat/Long	Radius (km)	Sites	Lat/Long	Radius (km)
Eglin AFB, FL	30°28'N/086°31'W	80	Ft. Greely, AK	63°47'N/145°52'W	80
Dugway PG, UT	40°11'N/112°53'W	80	Ft. Rucker, AL	31°13'N/085°49'W	80
China Lake, CA	35°41'N/117°41'W	80	Redstone, AL	34°35'N/086°35'W	80
Ft. Huachuca, AZ	31°33'N/110°18'W	80	Utah Test Range, UT	40°57'N/113°05'W	80
Cherry Point, NC	34°57'N/076°56'W	80	WSM Range, NM	32°10'N/106°21'W	80
Patuxent River, MD	38°17'N/076°25'W	80	Holloman AFB, NM	33°29'N/106°50'W	80
Aberdeen PG, MD	39°29'N/076°08'W	80	Yuma, AZ	32°29'N/114°20'W	80
Wright-Patterson AFB, OH	39°50'N/084°03'W	80	Pacific Missile Range, CA	34°07'N/119°30'W	80
Edwards AFB, CA	34°54'N/117°53'W	80			

US352 In the band 1429–1432 MHz, Government operations, except for medical telemetry operations, are on a non-interference basis to authorized non-Government operations and shall not hinder the implementa-

tion of any non-Government operations. However, Government operations authorized as of March 22, 1995 at 14 sites identified below will be continued on a fully protected basis until January 1, 2004.

Sites	Lat/Long	Radius (km)	Sites	Lat/Long	Radius (km)
Patuxent River, MD	38°17'N/076°25'W	70	Mountain Home AFB, ID	43°01'N/115°50'W	160
NAS Oceana, VA	36°49'N/076°02'W	100	NAS Fallon, NV	39°24'N/118°43'W	100
MCAS Cherry Point, NC	34°54'N/076°52'W	100	Nellis AFB, NV	36°14'N/115°02'W	100
Beaufort MCAS, SC	32°26'N/080°40'W	160	NAS Lemore, CA	36°18'N/119°47'W	120
NAS Cecil Field, FL	30°13'N/081°52'W	160	Yuma MCAS, AZ	32°39'N/114°35'W	160
NAS Whidbey IS., WA	48°19'N/122°24'W	70	China Lake, CA	35°29'N/117°16'W	80
Yakima Firing Ctr AAF, WA	46°40'N/120°15'W	70	MCAS Twenty Nine Palms, CA	34°15'N/116°03'W	80

NON-FEDERAL GOVERNMENT (NG) FOOTNOTES

(These footnotes, each consisting of the letters “NG” followed by one or more digits, denote stipulations applicable only to the non-Federal Government.)

NG2 Facsimile broadcasting stations may be authorized in the band 88–108 MHz.

NG3 Control stations in the domestic public mobile radio service may be authorized frequencies in the band 72–73 and 75.4–76 MHz on the condition that harmful interference will not be caused to operational fixed stations.

NG4 The use of the frequencies in the band 152.84–153.38 MHz may be authorized, in any area, to remote pickup broadcast base and mobile stations on the condition that

harmful interference will not be caused to stations operating in accordance with the Table of Frequency Allocations.

NG6 Stations in the public safety radio services authorized as of June 30, 1958, to use frequencies in the band 159.51–161.79 MHz in areas other than Puerto Rico and the Virgin Islands may continue such operation, including expansion of existing systems, on the condition that harmful interference will not be caused to stations in the services to which these bands are allocated. In Puerto Rico and the Virgin Islands this authority is limited to frequencies in the band 160.05–161.37 MHz. No new public radio service system will be authorized to operate on these frequencies.

Federal Communications Commission

§2.106

NG12 Frequencies in the bands 454.40-455 MHz and 459.40-460 MHz may be assigned to domestic public land and mobile stations to provide a two-way air-ground public radio-telephone service.

NG17 Stations in the land transportation radio services authorized as of May 15, 1958 to operate on the frequency 161.61 MHz may, upon proper application, continue to be authorized for such operation, including expansion of existing systems, on the condition that harmful interference will not be caused to the operation of any authorized station in the maritime mobile service. No new land transportation radio service system will be authorized to operate on 161.61 MHz.

NG19 Fixed stations associated with the maritime mobile service may be authorized, for purposes of communication with coast stations, to use frequencies assignable to ship stations in this band on the condition that harmful interference will not be caused to services operating in accordance with the Table of Frequency Allocations.

NG23 Frequencies in the band 2100-2200 MHz may also be assigned to stations in the International Fixed Public Radiocommunication Services located south of 25° 30' North Latitude in the State of Florida and in U.S. insular areas in the Caribbean, except that no new assignments in the band 2150-2162 MHz will be made to such stations after February 25, 1974 and no new assignments in the band 2165-2200 MHz will be made to such stations after June 27, 2000.

NG28 The frequency band 160.86-161.40 MHz is available for assignment to remote pickup base and remote pickup mobile stations in Puerto Rico and the Virgin Islands only on a shared basis with the land transportation radio service.

NG31 Stations in the Rural Radio Service licensed for Basic Exchange Telecommunications Radio Service may be authorized to use some frequencies in the bands 816-820 MHz (fixed subscriber) and 861-865 MHz (central office or base), on a co-primary basis with private land mobile radio licensees, pursuant to part 22 subpart H.

NG41 Frequencies in the bands 3700-4200 MHz, 5925-6425 MHz, and 10.7-11.7 GHz may also be assigned to stations in the international fixed public and international control services located in U.S. Possessions in the Caribbean area.

NG42 Non-Government stations in the radiolocation service shall not cause harmful interference to the amateur service.

NG47 In Alaska, frequencies within the band 2655-2690 MHz are not available for assignment to terrestrial stations.

NG49 The following frequencies may be authorized for mobile operations in the Manufacturers Radio Service subject to the condition that no interference is caused to the reception of television stations operating on

channels 4 and 5 and that their use is limited to a manufacturing facility:

MHz	
72.02	72.22
72.04	72.24
72.06	72.26
72.08	72.28
72.10	72.30
72.12	72.32
72.14	72.34
72.16	72.36
72.18	72.38
72.20	72.40

Further, the following frequencies may be authorized for mobile operations in the Special Industrial Radio Service, Manufacturers Radio Service, Railroad Radio Service and Forest Products Radio Service subject to the condition that no interference is caused to the reception of television stations operating on channels 4 and 5; and that their use is limited to a railroad yard, manufacturing plant, logging site, mill, or similar industrial facility.

MHz	
72.44	75.44
72.48	75.48
72.52	75.52
72.56	75.56
72.60	75.60

NG51 In Puerto Rico and the Virgin Islands only, the bands 150.8-150.98 MHz and 150.98-151.49 MHz are allocated exclusively to the business radio service.

NG53 In the band 12.7-13.15 GHz, television pickup stations and CARS pickup stations shall be assigned channels on a co-equal basis and shall operate on a secondary basis to fixed stations operating in accordance with the Table of Frequency Allocations. In the 13.15-13.20 GHz band television pickup stations and CARS pickup stations shall be assigned on an exclusive basis in the top one hundred markets, as set out in Section 76.51.

NG56 In the bands 72.0-73.0 and 75.4-76.0 MHz, the use of mobile radio remote control of models is on a secondary basis to all other fixed and mobile operations. Such operations are subject to the condition that interference will not be caused to common carrier domestic public stations, to remote control of industrial equipment operating in the 72-76 MHz band, or to the reception of television signal on channels 4 (66-72 MHz) or 5 (76-82 MHz). Television interference shall be considered to occur whenever reception of regularly used television signals is impaired or destroyed, regardless of the strength of the television signal or the distance to the television station.

NG59 The frequencies 37.60 and 37.85 MHz may be authorized only for use by base, mobile, and operational fixed stations participating in an interconnected or coordinated power service utility system.

NG63 Television Broadcast translator stations holding valid licenses on November 15, 1971, to operate in the frequency band 806–890 MHz (channels 70–83), may continue to operate in this band, pursuant to periodic license renewals, on a secondary basis to the land mobile radio service.

NG66 The frequency band 470–512 MHz is allocated for use in the broadcasting and land mobile radio services. In the land mobile services, it is available for assignment in the domestic public, public safety, industrial, and land transportation radio services at, or in the vicinity of 11 urbanized areas of the United States, as set forth in the following table. Additionally, in the land mobile services, TV channel 16 is available for assignment in the public safety radio services at, or in the vicinity of, Los Angeles. Such use in the land mobile services is subject to the conditions set forth in parts 22 and 90 of this chapter.

Urbanized area	TV channel
New York, NY-Northeastern New Jersey	14, 15
Los Angeles, CA	14, 20
Chicago, IL-Northwestern Indiana	14, 15
Philadelphia, PA-New Jersey	19, 20
San Francisco-Oakland, CA	16, 17
Boston, MA	14, 16
Washington, D.C.-Maryland-Virginia	17, 18
Pittsburgh, PA	14, 18
Miami, FL	14
Houston, TX	17
Dallas, TX	16

NG70 In Puerto Rico and the Virgin Islands only, the bands 159.240–159.435 and 160.410–160.620 MHz are also available for assignment to base stations and mobile stations in the special industrial radio service.

NG101 The use of the band 2500–2690 MHz by the broadcasting-satellite service is limited to domestic and regional systems for community reception of educational television programming and public service information. Such use is subject to agreement among administrations concerned and those having services operating in accordance with the table, which may be affected. 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 those values set forth in Part 73 of the rules for this frequency band.

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.

NG104 The use of the bands 10.7–11.7 and 12.75–13.25 GHz in the fixed-satellite service is limited to international systems, i.e., other than domestic systems.

NG111 The band 157.4375–157.4625 MHz may be used for one way paging operations in the special emergency radio service.

NG112 The frequencies 25.04, 25.08, 150.980, 154.585, 158.445, 159.480, 454.000 and 459.000 MHz may be authorized to stations in the petroleum radio service for use primarily in oil spill containment and cleanup operations and secondarily in regular land mobile communication.

NG114 In the Gulf of Mexico offshore from the Louisiana-Texas coast, the frequency band 476–494 MHz (TV channels 15, 16 and 17) is allocated to the Domestic Public and Private Land Mobile Radio Services in accordance with the regulations set forth in parts 22 and 90 respectively.

NG115 In the 174 to 216 MHz band wireless microphones may be authorized to operate on a secondary, non-interfering basis, subject to terms and conditions set forth in part 74 of these Rules and Regulations.

NG117 The frequency 156.050 and 156.175 MHz may be assigned to stations in the maritime mobile service for commercial and port operations in the New Orleans Vessel Traffic Service (VTS) area and the frequency 156.250 MHz may be assigned to stations in the maritime mobile service for port operating in the New Orleans and Houston VTS areas.

NG118 In the band 2025–2110 MHz, television translator relay stations may be authorized to use frequencies on a secondary basis to other stations in the Television Broadcast Auxiliary Service that are operating in accordance with the Table of Frequency Allocations.

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.

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 AM radio transmitters on a secondary, non-interference basis in accordance with the provisions of 47 CFR 2.803 and 90.20(e)(5).

NG127 In Hawaii, the frequency band 488–494 MHz is allocated exclusively to the fixed service for use by common carrier control and repeater stations for point-to-point inter-island communications only.

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.

NG129 In Alaska, the bands 76–88 MHz and 88–100 MHz are also allocated to the Fixed service on a secondary basis. Broadcast stations operating in these bands shall not cause interference to non-Government fixed operations authorized prior to January 1, 1982.

NG134 In the band 10.45–10.5 GHz non-Government stations in the radiolocation service shall not cause harmful interference to the amateur and amateur-satellite services.

NG135 In the 420–430 MHz band the amateur service is not allocated north of line A (def. §2.1).

NG141 The frequencies 42.40 MHz and 44.10 MHz are authorized on a primary basis in the State of Alaska for meteor burst communications by fixed stations in the Rural Radio Service operating under the provisions of part 22 of this chapter. The frequencies 44.20 MHz and 45.90 MHz are authorized on a primary basis in Alaska for meteor burst communications by fixed private radio stations operating under the provisions of part 90 of the chapter. The private radio station frequencies may be used by Common Carrier stations on a secondary, noninterference basis and the Common Carrier frequencies may be used by private radio stations for meteor burst communications on a secondary, noninterference basis. Users shall cooperate to the extent practical to minimize potential interference. Stations utilizing meteor burst communications shall not cause harmful interference to stations of other radio services operating in accordance with the Table of Frequency Allocations.

NG142 TV broadcast stations authorized to operate in the bands 54–72, 76–88, 174–216, 470–512, and 512–806 MHz may use a portion of the television vertical blanking interval for the

transmission of telecommunications signals, on the condition that harmful interference will not be caused to the reception of primary services, and that such telecommunications services must accept any interference caused by primary services operating in these bands.

NG143 In the band 11.7–12.2 GHz protection from harmful interference shall be afforded to transmissions from space stations not in conformance with international footnote 839 only if the operations of such space stations impose no unacceptable constraints on operations or orbit locations of space stations in conformance with 839.

NG144 Stations authorized as of September 9, 1983 to use frequencies in the bands 17.7–18.58 GHz and 19.3–19.7 GHz may, upon proper application, continue operations. Fixed stations authorized in the band 18.58–19.3 GHz that remain co-primary under the provisions of §§21.901(e), 74.502(c), 74.602(g), 78.18(a)(4), and 101.174(r) of this chapter may continue operations consistent with the provisions of those sections.

NG145 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.

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.

NG148 The frequencies 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz may be authorized to maritime mobile stations for offshore radiolocation and associated telecommand operations.

NG149 The frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz, 470–512 MHz, 512–608 MHz, and 614–746 MHz are also allocated to the fixed service to permit subscription television operations in accordance with Part 73 of the rules.

NG151 In the frequency bands 824–849 MHz and 869–894 MHz, cellular land mobile licensees are permitted to offer auxiliary services on a secondary basis subject to the provisions of part 22.

NG152 The band 219–220 MHz is also allocated to the amateur service on a secondary

basis for stations participating, as forwarding stations, in point-to-point fixed digital message forwarding systems, including intercity packet backbone networks.

NG153 The bands 2110–2150 MHz and 2160–2165 MHz are reserved for future emerging technologies on a co-primary basis with the fixed and mobile services. Allocations to specific services will be made in future proceedings.

NG155 The bands 159.500–159.675 MHz and 161.375–161.550 MHz are allocated to the maritime service as described in Part 80 of this chapter. Additionally, the frequencies 159.550, 159.575 and 159.600 MHz are available for low-power intership communications.

NG156 The band 1990–2025 MHz is also allocated to the fixed and mobile services on a primary basis for facilities where the receipt date of the initial application was prior to June 27, 2000, and on a secondary basis for all other initial applications. Not later than September 6, 2010, the band 1990–2025 MHz is allocated to the fixed and mobile services on a secondary basis.

NG158 The frequency bands 764–776 MHz and 794–806 MHz are available for assignment exclusively to the public safety services, to be defined in Docket No. WT 96–86.

NG159 Full power analog television stations licensed pursuant to applications filed before January 2, 2001, and new digital television (DTV) broadcasting operations in the 746–806 MHz band will be entitled to protection from harmful interference until the end of the DTV transition period. After the end of the DTV transition period, the Commission may assign licenses in the 746–806 MHz band without regard to existing television and DTV operations.

Low power television and television transmitters in the 746–806 MHz band must cease operations in the band at the end of the DTV transition period.

NG160 In the 5850–5925 MHz band, the use of the non-Federal government mobile service is limited to Dedicated Short Range Communications operating in the Intelligent Transportation System radio service.

NG163 The allocation to the broadcasting-satellite service in the band 17.3–17.7 GHz shall come into effect on 1 April 2007.

NG164 The use of the band 18.3–18.8 GHz by the fixed-satellite service (space-to-Earth) is limited to systems in the geostationary-satellite orbit.

NG165 The use of the band 18.8–19.3 GHz by the fixed-satellite service (space-to-Earth) is limited to systems in non-geostationary-satellite orbits.

NG166 The use of the band 19.3–19.7 GHz by the fixed-satellite service (space-to-Earth) is limited to feeder links for the mobile-satellite service.

NG167 The use of the fixed-satellite service (Earth-to-space) in the band 24.75–25.25 GHz is limited to feeder links for the broad-

casting-satellite service operating in the band 17.3–17.7 GHz. The allocation to the fixed-satellite service (Earth-to-space) in the band 24.75–25.25 shall come into effect on 1 April 2007.

NG168 The band 2165–2200 MHz is also allocated to the fixed and mobile services on a primary basis for facilities where the receipt date of the initial application was prior to January 16, 1992, and on a secondary basis for all other initial applications. Not later than September 6, 2010, the band 2165–2200 MHz is allocated to the fixed and mobile services on a secondary basis.

FEDERAL GOVERNMENT (G) FOOTNOTES

(These footnotes, each consisting of the letter “G” followed by one or more digits, denote stipulations applicable only to the Federal Government.)

G2 In the bands 216–225, 420–450 (except as provided by US217), 890–902, 928–942, 1300–1400, 2310–2390, 2417–2450, 2700–2900, 5650–5925, and 9000–9200 MHz, the Government radiolocation is limited to the military services.

G5 In the bands 162.0125–173.2, 173.4–174, 406.1–410 and 410–420 MHz, the fixed and mobile services are all allocated on a primary basis to the Government non-military agencies.

G6 Military tactical fixed and mobile operations may be conducted nationally on a secondary basis: (1) To the meteorological aids service in the band 403–406 MHz; and (2) to the radio astronomy service in the band 406.1–410 MHz. Such fixed and mobile operations are subject to local coordination to ensure that harmful interference will not be caused to the services to which the bands are allocated.

G8 Low power Government radio control operations are permitted in the band 420–450 MHz.

G11 Government fixed and mobile radio services, including low power radio control operations, are permitted in the band 902–928 MHz on a secondary basis.

G15 Use of the band 2700–2900 MHz by the military fixed and shipborne air defense radiolocation installations will be fully coordinated with the meteorological aids and aeronautical radionavigation services. The military air defense installations will be moved from the band 2700–2900 MHz at the earliest practicable date. Until such time as military air defense installations can be accommodated satisfactorily elsewhere in the spectrum, such operations will, insofar as practicable, be adjusted to meet the requirements of the aeronautical radionavigation service.

G19 Use of the band 9000–9200 MHz by military fixed and shipborne air defense radiolocation installations will be fully coordinated with the aeronautical radionavigation service, recognizing fully the safety aspects

of the latter. Military air defense installations will be accommodated ultimately outside this band. Until such time as military defense installations can be accommodated satisfactorily elsewhere in the spectrum such operations will, insofar as practicable, be adjusted to meet the requirements of the aeronautical radionavigation services.

G27 In the bands 225-328.6, 335.4-399.9, and 1350-1395 MHz, the fixed and mobile services are limited to the military services.

G30 In the bands 138-144, 148-149.9, 150.05-150.8, 1427-1429, and 1432-1435 MHz, the fixed and mobile services are limited primarily to operations by the military services.

G31 In the 3300-3500 MHz, the Government radiolocation is limited to the military services, except as provided by footnote.

G32 Except for weather radars on meteorological satellites in the band 9975-10025 MHz and for Government survey operations (see footnote US108), Government radiolocation in the band 10000-10500 MHz is limited to the military services.

G34 In the band 34.4-34.5 GHz, weather radars on board meteorological satellites for cloud detection are authorized to operate on the basis of equality with military radiolocation devices. All other non-military radiolocation in the band 33.4-36.0 GHz shall be secondary to the military services.

G42 Space command, control, range and range rate systems for earth station transmission only (including installations on certain Navy ships) may be accommodated on a co-equal basis with the fixed and mobile services in the band 1761-1842 MHz. Specific frequencies required to be used at any location will be satisfied on a coordinated case-by-case basis.

G56 Government radiolocation in the bands 1215-1300, 2900-3100, 5350-5650 and 9300-9500 MHz is primarily for the military services; however, limited secondary use is permitted by other Government agencies in support of experimentation and research programs. In addition, limited secondary use is permitted for survey operations in the band 2900-3100 MHz.

G59 In the bands 902-928 MHz, 3100-3300 MHz, 3500-3700 MHz, 5250-5350 MHz, 8500-9000 MHz, 9200-9300 MHz, 13.4-14.0 GHz, 15.7-17.7 GHz and 24.05-24.25 GHz, all Government non-military radiolocation shall be secondary to military radiolocation, except in the subband 15.7-16.2 GHz airport surface detection equipment (ASDE) is permitted on a co-equal basis subject to coordination with the military departments.

G100 The bands 235-322 MHz and 335.4-399.9 MHz are also allocated on a primary basis to the mobile-satellite service, limited to military operations.

G104 In the bands 7450-7550 and 8175-8215 MHz, it is agreed that although the military space radio communication systems, which include earth stations near the proposed me-

teorological-satellite installations will precede the meteorological-satellite installations, engineering adjustments to either the military or the meteorological-satellite systems or both will be made as mutually required to assure compatible operations of the systems concerned.

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.

G109 All assignments in the band 157.0375-157.1875 MHz are subject to adjustment to other frequencies in this band as long term U.S. maritime VHF planning develops, particularly that planning incident to support of the National VHF-FM Radiotelephone Safety and Distress System (See Doc. 15624/1-1.9.111/1.9.125).

G110 Government ground-based stations in the aeronautical radionavigation service may be authorized between 3500-3700 MHz where accommodation in the 2700-2900 MHz band is not technically and/or economically feasible.

G114 In the band 1350-1395 MHz, the frequency 1381.05 MHz with emissions limited to ± 12 MHz is also allocated to fixed and mobile satellite services (space-to-earth) for the relay of nuclear burst data.

G115 In the band 13360-13410 kHz, the fixed service is allocated on a primary basis outside the conterminous United States. Within the conterminous United States, assignments in the fixed service are permitted, and will be protected for national defense purposes or, if they are to be used only in an emergency jeopardizing life, public safety, or important property under conditions calling for immediate communication where other means of communication do not exist.

G116 The band 7125-7155 MHz is also allocated for earth-to-space transmissions in the Space Operations Service at a limited number of sites (not to exceed two), subject to established coordination procedures.

G117 In the bands 7.25-7.75 GHz, 7.9-8.4 GHz, 17.8-21.2 GHz, 30-31 GHz, 39.5-40.5 GHz, 43.5-45.5 GHz and 50.4-51.4 GHz the Government fixed-satellite and mobile-satellite services are limited to military systems.

G118 Government fixed stations may be authorized in the band 1700-1710 MHz only if spectrum is not available in the band 1710-1850 MHz.

G120 Development of airborne primary radars in the band 2310-2390 MHz with peak transmitter power in excess of 250 watts for use in the United States is not permitted.

G122 The bands 2390-2400, 2402-2417 and 4660-4685 MHz were identified for immediate

§ 2.106

reallocation, effective August 10, 1994, for exclusive non-Government use under Title VI of the Omnibus Budget Reconciliation Act of 1993. Effective August 10, 1994, any Government operations in these bands are on a non-interference basis to authorized non-Government operations and shall not hinder the implementation of any non-Government operations.

G123 The bands 2300-2310 and 2400-2402 MHz were identified for reallocation, effective August 10, 1995, for exclusive non-Government use under Title VI of the Omnibus Budget Reconciliation Act of 1993. Effective August 10, 1995, any Government operations in these bands are on a non-interference basis to authorized non-Government operations and shall not hinder the implementation of any non-Government operations.

G124 The band 2417-2450 MHz was identified for reallocation, effective August 10, 1995, for mixed Government and non-Government use under Title VI of the Omnibus Budget Reconciliation Act of 1993.

[49 FR 2373, Jan. 19, 1984]

EDITORIAL NOTE 1: For FEDERAL REGISTER citations affecting § 2.106, see the List of CFR Sections Affected in the Finding Aids section of this volume.

EDITORIAL NOTE 2: At 58 FR 27949, May 12, 1993, the following footnote US321 to the table in § 2.106 was published. Footnote US321 was not codified due to ambiguities in the amendatory instructions. For the convenience of the user footnote US321 as published at 58 FR 27949, May 12, 1993, is set forth as follows:

§ 2.106 Table of Frequency Allocations.

UNITED STATES (US) FOOTNOTES

* * * * *

US321 The 535-1705 kHz band is also allocated to the mobile service on a secondary basis for the distribution of public service in-

47 CFR Ch. I (10-1-00 Edition)

formation from non-government Travelers Information stations operation in the Local Government Radio Service on 10 kHz spaced channels from 540 to 1700 kHz.

* * * * *

EDITORIAL NOTE 3: At 59 FR 9417, Feb. 28, 1994, the following footnote NG147 to the table in § 2.106 was published. Footnote NG147 was not codified due to ambiguities in the amendatory instructions. For the convenience of the user footnote NG147 as published at 59 FR 9417, Feb. 28, 1994, is set forth as follows:

§ 2.106 Table of Frequency Allocations.

NON-GOVERNMENT (NG) FOOTNOTES

* * * * *

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 radiodetermination satellite service.

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EFFECTIVE DATE NOTE 1: At 65 FR 44002, July 17, 2000, § 2.106 was amended by revising entries for the MHz bands of the Table of Frequency Allocations; by revising footnote US246 and adding footnotes US350, US351, and US352 in the United States (US) footnotes; and by revising footnotes G27, G30, and G114 in the Government (G) footnotes, effective Oct. 16, 2000. For the convenience of the user, the superseded text is set forth as follows:

§ 2.106 Table of frequency allocations.

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Federal Communications Commission

§2.106

470-849 MHz (UHF)		Page 37	
International Table		United States Table	
Region 1	Region 2	Federal Government	Non-Federal Government
470-790 BROADCASTING	470-512 BROADCASTING Fixed Mobile	470-608	470-512 FIXED BROADCASTING LAND MOBILE
	S5.292 S5.293 512.608 BROADCASTING		NG86 NG114 NG127 NG128 NG149
	S5.297		512.608 BROADCASTING
	S5.291 S5.298 585-610 FIXED MOBILE BROADCASTING RADIONAVIGATION		Broadcast Radio (TV) (73) Auxiliary Broadcasting (74)
	S5.305 S5.306 S5.307		
	608-614 RADIO ASTRONOMY Mobile satellite except aeronautical mobile-satellite (Earth-to-space)	608-614 RADIO ASTRONOMY US74	NG128 NG149
	610-890 FIXED MOBILE BROADCASTING	US246 614-890	
	614-806 BROADCASTING Fixed Mobile		614-698 BROADCASTING
			NG128 NG149
			608.746 BROADCASTING
			Broadcast Radio (TV) (73) Auxiliary Broadcast. (74)
			Broadcast Radio (TV) (73) Auxiliary Broadcast. (74)
			Note: Band to be reallocated and auction- ed by Sept. 30, 2002.

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

1429-1610 MHz (UHF)			Page 43	
International Table		United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Non-Federal Government	
1429-1452 FIXED MOBILE except aeronautical mobile	1429-1452 FIXED MOBILE S5.343		1429-1435 FIXED MOBILE	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
S5.341 S5.342 1452-1492 FIXED MOBILE except aeronautical mobile BROADCASTING S5.345 S5.347 BROADCASTING- SATELLITE S5.345 S5.347	S5.341 1452-1492 FIXED MOBILE S5.343 BROADCASTING S5.345 S5.347 BROADCASTING-SATELLITE S5.345 S5.347		S5.341 G30 1435-1525 MOBILE (aeronautical telemetry)	Aviation (87)
S5.341 S5.342 1492-1525 FIXED MOBILE except aeronautical mobile	S5.341 S5.344 1492-1525 FIXED MOBILE S5.343 MOBILE-SATELLITE (space-to-Earth) S5.348A	1492-1525 FIXED MOBILE		
S5.341 S5.342 1525-1530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Mobile except aeronautical mobile S5.349	S5.341 S5.344 S5.348 1525-1530 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Fixed Mobile S5.343	S5.341 S5.348A 1525-1530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Mobile S5.349	S5.341 US78 1525-1530 MOBILE-SATELLITE (space-to-Earth) Mobile (aeronautical telemetry)	Satellite Communications (25) Aviation (87)
S5.341 S5.342 S5.350 S5.351 S5.352A S5.354 1530-1535 SPACE OPERATION (space-to-Earth)	S5.341 S5.351 S5.354 1530-1535 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.353A	S5.341 S5.351 S5.352A S5.354	S5.341 S5.351 US78 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 S5.343 Earth exploration-satellite Mobile except aeronautical mobile S5.341 S5.342 S5.351 S5.354 1535-1559 MOBILE-SATELLITE (space-to-Earth)	Mobile (aeronautical telemetry) S5.341 S5.351 US78 US315 1535-1544 MOBILE-SATELLITE (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) S5.341 S5.351 US315 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 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	Satellite Communications (25) Maritime (80)	Aviation (87)
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Note: The *NTA 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.

UNITED STATES (US) FOOTNOTES

* 23.6-24.0 GHz, 31.3-31.8 GHz, 51.4-54.25 GHz, 58.2-59.0 GHz, 64-65 GHz, 86-92 GHz, 100-102 GHz, 105-116 GHz, 164-168 GHz, 182-185 GHz and 217-231 GHz.

* US246 No stations will be authorized to transmit in the bands 608-614 MHz, 1400-1427 MHz, 1660.5-1668.4 MHz, 2690-2700 MHz, 4990-5000 MHz, 10.68-10.70 GHz, 15.35-15.40 GHz.

Federal Communications Commission

§2.106

FEDERAL GOVERNMENT (G) FOOTNOTES

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G27 In the bands 225-328.6, 335.4-399.9, and 1350-1400 MHz, the fixed and mobile services are limited to the military services.

G30 In the bands 138-144, 148-149.9, 150.05-150.8, 1427-1429, and 1429-1435 MHz, the fixed and mobile services are limited primarily to operations by the military services.

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G114 In the band 1350-1400 MHz, the frequency 1381.05 MHz with emissions limited to ±12 MHz is also allocated to fixed and mobile

satellite services (space-to-earth) for the relay of nuclear burst data.

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EFFECTIVE DATE NOTE 2: At 65 FR 54163, Sept. 7, 2000, §2.106 was amended by revising pages 67, 68, 69, 70, 71, and 72 of the Table of Frequency Allocations; by revising footnotes US255 and US334 in the United States footnotes; and by revising footnote NG144 and adding footnotes NG163, NG164, NG165, NG166, and NG167 in the non-Federal government footnotes, effective Oct. 10, 2000. For the convenience of the user, the superseded text is set forth as follows:

§ 2.106 Table of frequency allocations.

* * * * *

14.5-18.6 GHz (SHF)		Page 67	
International Table		United States Table	
Region 1	Region 2	Federal Government	Non-Federal Government
Region 3			
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
14.8-15.35 FIXED MOBILE Space research		14.7145-15.1365 MOBILE Fixed Space research	14.7145-15.1365
S5.339		US310	US310
15.35-15.4 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)		15.1365-15.35 FIXED Mobile Space research	15.1365-15.35
S5.340 S5.511		S5.339 US211	S5.339 US211
15.4-15.43 AERONAUTICAL RADIONAVIGATION		15.35-15.4 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive)	
S5.511D		US246	
15.43-15.63 FIXED SATELLITE (space-to-Earth) (Earth-to-space) S5.511A AERONAUTICAL RADIONAVIGATION		15.4-15.7 AERONAUTICAL RADIONAVIGATION US260	
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
S5.512 S5.513			Private Land Mobile (90)

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	17.3-17.7 FIXED-SATELLITE (Earth-to-space) S5.516 Radiolocation	17.3-17.7 FIXED-SATELLITE (Earth-to-space) US271		
S5.514	S5.514 S5.515 S5.517	US259		
17.7-18.1 FIXED FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.516 MOBILE	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) US271 MOBILE		Auxiliary Broadcasting (74) Cable TV Relay (78) Fixed Microwave (101)
S5.515 S5.517	S5.515 S5.517	US271		
17.8-18.1 FIXED FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.516 MOBILE	17.8-18.1 FIXED FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.516 MOBILE	17.8-18.6 FIXED-SATELLITE (space-to-Earth) MOBILE		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		S5.519 US334 G117	S5.519 US334 NG144	

18.6-22.5 GHz (SHF)		United States Table		FCC Rule Part(s)
International Table		Federal Government	Non-Federal Government	
Region 1	Region 2	Region 3		
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 17.8-19.7 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)	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) S5.523 MOBILE except aeronautical mobile Earth exploration-satellite (passive) SPACE RESEARCH (passive)	18.6-18.8 FIXED-SATELLITE (space-to-Earth) S5.523 MOBILE except aeronautical mobile Earth exploration-satellite (passive) Space research (passive)	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile SPACE RESEARCH (passive)	
S5.522	S5.522	S5.522	US254 US255 US334 G117 US254 US255 US334 NG144	
18.8-19.3 FIXED FIXED-SATELLITE (space-to-Earth) S5.523A MOBILE			18.8-19.7 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	
19.3-19.7 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-space) S5.523B S5.523C S5.523D S5.523E MOBILE			US334 NG144	
19.7-20.1 FIXED-SATELLITE (space-to-Earth) S5.484A Mobile-satellite (space-to-Earth)	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 S5.524	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	

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

Page 71

24.45-24.75 FIXED INTER-SATELLITE	24.45-24.65 INTER-SATELLITE RADIO NAVIGATION	24.45-24.65 FIXED INTER-SATELLITE MOBILE RADIO NAVIGATION	24.45-24.65 INTER-SATELLITE RADIO NAVIGATION	Satellite Communications (25)
	\$5.533	\$5.533	\$5.533	
	24.65-24.75 INTER-SATELLITE RADIOLOCATION-SAT- ELLITE (Earth-to-space)	24.65-24.75 FIXED INTER-SATELLITE MOBILE	24.65-24.75 INTER-SATELLITE RADIOLOCATION-SATELLITE (Earth-to-space)	
		\$5.533 \$5.534		
24.75-25.25 FIXED	24.75-25.25 FIXED-SATELLITE (Earth-to-space) \$5.535	24.75-25.25 FIXED FIXED-SATELLITE (Earth-to-space) \$5.535 MOBILE \$5.534	24.75-25.05 RADIO NAVIGATION	Aviation (87)
25.25-25.5 FIXED INTER-SATELLITE \$5.536 MOBILE Standard frequency and time signal-satellite (Earth-to-space)			25.05-25.25 RADIO NAVIGATION	Aviation (87) Fixed Microwave (101)
25.5-27 EARTH EXPLORATION-SATELLITE (space-to-Earth) \$5.536A \$5.536B FIXED INTER-SATELLITE \$5.536 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)	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.
27-27.5 FIXED INTER-SATELLITE \$5.536 MOBILE	27-27.5 FIXED INTER-SATELLITE (Earth-to-space) MOBILE		27-27.5 FIXED MOBILE Earth exploration-satellite (space-to-space)	

Page 72

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UNITED STATES (US) FOOTNOTES

US255 In the band 18.6–18.8 GHz the fixed satellite service shall be limited to a power flux density at the Earth's surface of -101

dbW/M² in a 200 MHz band for all angles of arrival.

US334 In the band 17.8–20.2 GHz, Government space stations and associated earth stations in the fixed satellite (space-to-Earth) service may be authorized on a primary basis. For a Government geostationary

§2.107

satellite network to operate on a primary basis, the space station shall be located outside the arc measured from East to West, 70°W to 120°W. Coordination between Government fixed-satellite systems and non-Government systems operating in accordance with the United States Table of Frequency Allocations is required.

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NON-FEDERAL GOVERNMENT (NG) FOOTNOTES

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NG144 Stations authorized as of September 9, 1983 to use frequencies in the band 17.7-19.7 GHz may, upon proper application, continue to be authorized for such operation.

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§2.107 Radio astronomy station notification.

(a) Pursuant to No. 1492 of Article 13 and Section F of Appendix 3 to the international *Radio Regulations* (Geneva, 1982), operators of radio astronomy stations desiring international recognition of their use of specific radio astronomy frequencies or bands of frequencies for reception, should file the following information with the Commission for inclusion in the Master International Frequency Register:

- (1) The center of the frequency band observed, in kilohertz up to 28,000 kHz inclusive, in megahertz above 28,000 kHz to 10,500 MHz inclusive and in gigahertz above 10,500 MHz.
- (2) The date (actual or foreseen, as appropriate) when reception of the frequency band begins.
- (3) The name and location of the station, including geographical coordinates in degrees and minutes.
- (4) The width of the frequency band (in kHz) observed by the station.
- (5) The antenna type and dimensions, effective area and angular coverage in azimuth and elevation.
- (6) The regular hours of reception (in UTC) of the observed frequency.
- (7) The overall receiving system noise temperature (in kelvins) referred to the output of the receiving antenna.
- (8) The class of observations to be taken. Class A observations are those in which the sensitivity of the equipment is not a primary factor. Class B observations are those of such a nature

47 CFR Ch. I (10-1-00 Edition)

that they can be made only with advanced low-noise receivers using the best techniques.

(9) The name and mailing address of the operator.

(b) The permanent discontinuance of observations, or any change to the information above, should also be filed with the Commission.

(c) Observations being conducted on frequencies or frequency bands not allocated to the radio astronomy service should be reported as in paragraph (a) of this section for information purposes. Information in this category will not be submitted for entry in the Master International Frequency Register and protection from interference will not be afforded such operations by stations in other services.

§2.108 Policy regarding the use of the fixed-satellite allocations in the 3.6-3.7, 4.5-4.8, and 5.85-5.925 GHz bands.

The use of the fixed-satellite allocations in the United States in the above bands will be governed by footnote US245. Use of the fixed-satellite service allocations in these bands is for the international fixed-satellite service, that is, for international inter-continental communications. Case-by-case electromagnetic compatibility analysis is required with all users of the bands. It is anticipated that one earth station on each coast can be successfully coordinated. Specific locations of these earth stations depend upon service requirements and case-by-case EMC analyses that demonstrate compatible operations.

Subpart C—Emissions

§2.201 Emission, modulation, and transmission characteristics.

The following system of designating emission, modulation, and transmission characteristics shall be employed.

- (a) Emissions are designated according to their classification and their necessary bandwidth.
- (b) A minimum of three symbols are used to describe the basic characteristics of radio waves. Emissions are classified and symbolized according to the following characteristics: