

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

13360-13410 kHz	22.01-22.21 GHz*	111.8-114.25 GHz
25550-25670 kHz	22.21-22.5 GHz	128.33-128.59 GHz*
37.5-38.25 MHz	22.81-22.86 GHz*	129.23-129.49 GHz*
322-328.6 MHz*	23.07-23.12 GHz*	130-134 GHz
1330-1400 MHz*	31.2-31.3 GHz	136-148.5 GHz
1610.6-1613.8 MHz*	36.43-36.5 GHz*	151.5-158.5 GHz
1660-1660.5 MHz*	42.5-43.5 GHz	168.59-168.93 GHz*
1668.4-1670 MHz*	42.77-43.17 GHz*	171.11-171.45 GHz*
3260-3267 MHz*	43.07-43.17 GHz*	172.31-172.65 GHz*
3332-3339 MHz*	43.37-43.47 GHz*	173.52-173.85 GHz*
3345.8-3352.5 MHz*	48.94-49.04 GHz*	195.75-196.15 GHz*
4825-4835 MHz*	76-86 GHz	209-226 GHz
4950-4990 MHz	92-94 GHz	241-250 GHz
6650-6675.2 MHz*	94.1-100 GHz	252-275 GHz
14.47-14.5 GHz*	102-109.5 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. 4.5 and 4.6 and Article 29 of the ITU Radio Regulations).

\* \* \* \* \*

US344 In the band 5091-5250 MHz, non-Federal earth stations in the fixed-satellite service (Earth-to-space) shall be coordinated through the Frequency Assignment Subcommittee (see Recommendation ITU-R S.1342). In order to better protect the operation of the international standard system (microwave landing system) in the band 5000-5091 MHz, non-Federal tracking and telecommand operations should be conducted in the band 5150-5250 MHz.

\* \* \* \* \*

US347 In the band 2025-2110 MHz, non-Federal 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 Federal and non-Federal stations operating in accordance with the Table of Frequency Allocations.

US348 The band 3650-3700 MHz is also allocated to the Federal radiolocation service on a primary basis at the following sites: St. Inigoes, MD (38° 10' N, 76° 23' W); Pascagoula, MS (30° 22' N, 88° 29' W); and Pensacola, FL (30° 21' 28" N, 87° 16' 26" W). All fixed and fixed satellite operations within 80 kilometers of these sites shall be coordinated through the Frequency Assignment Subcommittee of the Interdepartmental Radio Advisory Committee on a case-by-case basis.

US349 The band 3650-3700 MHz is also allocated to the Federal radiolocation service on a non-interference basis for use by ship stations located at least 44 nautical miles in off-shore ocean areas on the condition that harmful interference is not caused to non-Federal operations.

US350 In the band 1427-1432 MHz, Federal use of the land mobile service and non-Federal use of the fixed and land mobile services is limited to telemetry and telecommand operations as described below:

(a) Medical operations. The use of the band 1427-1432 MHz for medical telemetry and telecommand operations (medical operations) shall be authorized for both Federal and non-Federal stations.

(1) Medical operations shall be authorized on a primary basis in the band 1427-1429.5 MHz and on a secondary basis in the band 1429.5-1432 MHz in the United States and its insular areas, except in the following locations: Austin/Georgetown, TX; Detroit and Battle Creek, MI; Pittsburgh, PA; Richmond/Norfolk, VA; Spokane, WA; and Washington, DC metropolitan area (collectively, the

“carved-out” locations). See 47 C.F.R. §§ 90.259(b)(4) and 95.630(b) for a detailed description of these locations.

(2) In the carved-out locations, medical operations shall be authorized on a primary basis in the band 1429-1431.5 MHz and on a secondary basis in the bands 1427-1429 MHz and 1431.5-1432 MHz.

(b) Non-medical operations. The use of the band 1427-1432 MHz for non-medical telemetry and telecommand operations (non-medical operations) shall be limited to non-Federal stations.

(1) Non-medical operations shall be authorized on a secondary basis to the Wireless Medical Telemetry Service (WMTS) in the band 1427-1429.5 MHz and on a primary basis in the band 1429.5-1432 MHz in the United States and its insular areas, except in the carved-out locations.

(2) In the carved-out locations, non-medical operations shall be authorized on a secondary basis in the band 1429-1431.5 MHz and on a primary basis in the bands 1427-1429 MHz and 1431.5-1432 MHz.

US351 In the band 1390-1400 MHz, Federal operations, except for medical telemetry operations in the sub-band 1395-1400 MHz, are on a non-interference basis to authorized non-Federal operations and shall not hinder implementation of any non-Federal operations. However, Federal 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	Sites	Lat/Long	Radius
Eglin AFB, FL	30°28'N/086°31'W	80 km	Ft. Greely, AK	63°47'N/145°52'W	80 km
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 1427-1432 MHz, Federal operations, except for medical telemetry and medical telecommand operations, are on a non-interference basis to authorized non-Federal operations and shall not hinder the implementation of any non-Federal operations.

\* \* \* \* \*

US359 In the band 15.43-15.63 GHz, use of the fixed-satellite service (Earth-to-space) is limited to non-Federal feeder links of non-geostationary systems in the mobile-satellite service. These non-Federal earth stations shall be coordinated through the Frequency Assignment Subcommittee (see Annex 3 of Recommendation ITU-R S.1340).

US360 In the band 33-36 GHz, the Federal fixed-satellite service (space-to-Earth) is also allocated on a primary basis. Coordination between Federal fixed-satellite service systems and non-Federal systems operating in accordance with the United States Table of Frequency Allocations is required.

US361 In the band 1432-1435 MHz, Federal stations in the fixed and mobile services may operate indefinitely on a primary basis at the 23 sites listed below. All other Federal stations in the fixed and mobile services shall operate in the band 1432-1435 MHz on a primary basis until reaccommodated in accordance with the National Defense Authorization Act of 1999.

Location	North Latitude/ West Longitude	Operating Radius	Location	North Latitude/ West Longitude	Operating Radius
China Lake/ Edwards AFB, CA	35° 29' / 117° 16'	100 km	AUTEC	24° 30' / 078° 00'	80 km
White Sands Missile Range/Holloman AFB, NM	32° 11' / 106° 20'	160 km	Beaufort MCAS, SC	32° 26' / 080° 40'	160 km
Utah Test and Training Range/ Dugway Proving Ground, Hill AFB, UT	40° 57' / 113° 05'	160 km	MCAS Cherry Point, NC	34° 54' / 076° 53'	100 km
Patuxent River, MD	38° 17' / 076° 24'	70 km	NAS Cecil Field, FL	30° 13' / 081° 52'	160 km
Nellis AFB, NV	37° 29' / 114° 14'	130 km	NAS Fallon, NV	39° 30' / 118° 46'	100 km
Fort Huachuca, AZ	31° 33' / 110° 18'	80 km	NAS Oceana, VA	36° 49' / 076° 01'	100 km
Eglin AFB/Gulfport ANG Range, MS/Fort Rucker, AL	30° 28' / 086° 31'	140 km	NAS Whidbey Island, WA	48° 21' / 122° 39'	70 km
Yuma Proving Ground, AZ	32° 29' / 114° 20'	160 km	NCTAMS, GUM	13° 35' / 144° 51' (East)	80 km
Fort Greely, AK	63° 47' / 145° 52'	80 km	Lemoore, CA	36° 20' / 119° 57'	120 km
Redstone Arsenal, AL	34° 35' / 086° 35'	80 km	Savannah River, SC	33° 15' / 081° 39'	3 km
Alpene Range, MI	44° 23' / 083° 20'	80 km	Naval Space Operations Center, ME	44° 24' / 068° 01'	80 km
Camp Shelby, MS	31° 20' / 089° 18'	80 km			

US362 The band 1670-1675 MHz is allocated to the meteorological-satellite service (space-to-Earth) on a primary basis for Federal use. Earth station use of this allocation is limited to Wallops Island, VA (37° 56' 47" N, 75° 27' 37" W), Fairbanks, AK (64° 58' 36" N, 147° 31' 03" W), and Greenbelt, MD (39° 00' 02" N, 76° 50' 31" W). Applicants for non-Federal stations within 100 kilometers of the Wallops Island or Fairbanks coordinates and within 65 kilometers of the Greenbelt coordinates shall notify NOAA in accordance with the procedures specified in 47 CFR § 1.924.

\* \* \* \* \*

US366 On March 25, 2007, the bands 5900-5950 kHz, 9400-9500 kHz, 11600-11650 kHz, 12050-12100 kHz, 13570-13600 kHz, 13800-13870 kHz, 15600-15800 kHz, 17480-17550 kHz, and 18900-19020 are allocated exclusively to the broadcasting service.

(a) As of March 25, 2007, authority to operate new Federal stations in the fixed service may be extended in all of the above listed frequency bands and authority to operate new Federal stations in the mobile except aeronautical mobile service may be extended in the bands 5900-5950 kHz, 13570-13600 kHz, and 13800-13870 kHz. As of March 25, 2007, all Federal stations shall: (1) be limited to communications only within the United States and its insular areas; (2) not cause harmful interference to the broadcasting service; (3) be limited to the minimum power needed to achieve communications; and (4) take account of the seasonal use of frequencies by the broadcasting service published in accordance with Article 12 of the ITU Radio Regulations.

(b) As of March 25, 2007, authority to operate new non-Federal stations in the fixed and mobile except aeronautical mobile services shall not be extended in any of the above listed frequency bands. As of March 25, 2007, non-Federal stations in the: (1) fixed service may continue to use the bands 5900-5950 kHz, 9400-9500 kHz, 11600-11650 kHz, 12050-12100 kHz, 13800-13870 kHz, and 15600-15800 kHz; and (2) mobile except aeronautical mobile service may continue to use the band

5900-5950 kHz. As of March 25, 2007, non-Federal stations shall: (1) be limited to communications only within the United States and its insular areas; (2) not cause harmful interference to the broadcasting service; (3) be limited to the minimum power needed to achieve communications; and (4) take account of the seasonal use of frequencies by the broadcasting service published in accordance with Article 12 of the ITU Radio Regulations.

US367 On the condition that harmful interference is not caused to the broadcasting service, frequencies in the bands 9775-9900 kHz, 11650-11700 kHz, and 11975-12050 kHz may be used by Federal stations in the fixed service communicating within the United States and its insular areas that are authorized as of June 12, 2003. Each such station shall be limited to a total radiated power of 24 dBW.

US368 The use of the bands 1390-1392 MHz and 1430-1432 MHz by the fixed-satellite service is limited to feeder links for the Non-Voice Non-Geostationary Mobile-Satellite Service and is contingent on: (1) the completion of ITU-R studies on all identified compatibility issues as shown in Annex 1 of Resolution 745 (WRC-2003); (2) measurement of emissions from equipment that would be employed in operational systems and demonstrations to validate the studies as called for in Resolution 745 (WRC-2003); and (3) compliance with any technical and operational requirements that may be imposed at WRC-07 to protect other services in these bands and passive services in the band 1400-1427 MHz from unwanted emissions. The FCC shall coordinate individual assignments with NTIA (see, for example, Recommendations ITU-R RA.769-2 and ITU-R SA.1029-2) to ensure the protection of passive services in the band 1400-1427 MHz. As part of the coordination requirements, the feeder uplink and downlink systems shall be tested and certified to be in conformance with the technical and operational out-of-band requirements for the protection of passive services in the band 1400-1427 MHz. Certification and all supporting documentation shall be submitted to the FCC at least three months prior to launch.

\* \* \* \* \*

US378 In the band 1710-1755 MHz, Federal stations in the fixed and mobile services shall operate on a primary basis until reaccommodated in accordance with the Commercial Spectrum Enhancement Act. Further, Federal stations may continue to operate in the band 1710-1755 MHz as provided below:

(a) Federal fixed microwave and tactical radio relay stations may operate indefinitely on a primary basis at the sites listed below:

Location	Coordinates	Radius of Operation (km)
Cherry Point, NC.....	34° 58' N 076° 56' W	80
Yuma, AZ.....	32° 32' N 113° 58' W	80

(b) Federal fixed microwave and tactical radio relay stations may operate on a secondary basis, and shall not cause harmful inference to, and must accept harmful interference from, primary non-Federal operations at the sites listed below:

Location	Coordinates	Radius of Operation (km)
China Lake, CA.....	35° 41' N 117° 41' W	80
Eglin AFB, FL.....	30° 29' N 086° 31' W	80
Pacific Missile Test Range/Point Mugu, CA..	34° 07' N 119° 30' W	80
Nellis AFB, NV.....	36° 14' N 115° 02' W	80
Hill AFB, UT.....	41° 07' N 111° 58' W	80
Patuxent River, MD.....	38° 17' N 076° 25' W	80
White Sands Missile Range, NM.....	33° 00' N 106° 30' W	80
Fort Irwin, CA.....	35° 16' N 116° 41' W	50
Fort Rucker, AL.....	31° 13' N 085° 49' W	50
Fort Bragg, NC.....	35° 09' N 079° 01' W	50
Fort Campbell, KY.....	36° 41' N 087° 28' W	50
Fort Lewis, WA.....	47° 05' N 122° 36' W	50
Fort Benning, GA.....	32° 22' N 084° 56' W	50
Fort Stewart, GA.....	31° 52' N 081° 37' W	50

(c) In the sub-band 1710-1720 MHz, precision guided munitions shall operate on a primary basis until inventory is exhausted or until December 31, 2008, whichever is earlier.

\* \* \* \* \*

US380 In the bands 1525-1544 MHz, 1545-1559 MHz, 1610-1645.5 MHz, 1646.5-1660.5 MHz, 2000-2020 MHz, 2180-2200 MHz, and 2483.5-2500 MHz, a non-Federal licensee in the mobile-satellite service (MSS) may also operate an ancillary terrestrial component in conjunction with its MSS network, subject to the Commission's rules for ancillary terrestrial components and subject to all applicable conditions and provisions of its MSS authorization.

\* \* \* \* \*

US382 In the band 39.5-40 GHz, Federal earth stations in the mobile-satellite service (space-to-Earth) shall not claim protection from non-Federal stations in the fixed and mobile services. ITU Radio Regulation No. 5.43A does not apply.

US384 In the band 401-403 MHz, the non-Federal Earth exploration-satellite (Earth-to-space) and meteorological-satellite (Earth-to-space) services are limited to earth stations transmitting to Federal space stations.

\* \* \* \* \*

US389 In the bands 71-76 GHz and 81-86 GHz, stations in the fixed, mobile, and broadcasting services shall not cause harmful interference to, nor claim protection from, Federal stations in the fixed-satellite service at any of the following 28 military installations:

Military Installation	State	Nearby city
Redstone Arsenal.....	AL	Huntsville
Fort Huachuca.....	AZ	Sierra Vista
Yuma Proving Ground.....	AZ	Yuma
Beale AFB.....	CA	Marysville
Camp Parks Reserve Forces Training Area.....	CA	Dublin
China Lake Naval Air Weapons Station.....	CA	Ridgecrest
Edwards AFB.....	CA	Rosamond
Fort Irwin.....	CA	Barstow
Marine Corps Air Ground Combat Center.....	CA	Twentynine Palms
Buckley AFB.....	CO	Aurora (Denver)
Schriever AFB.....	CO	Colorado Springs
Fort Gordon.....	GA	Augusta
Naval Satellite Operations Center.....	GU	Finegayan (Territory of Guam)
Naval Computer and Telecommunications Area Master Station, Pacific.....	HI	Wahiawa (Oahu Is.)
Fort Detrick.....	MD	Frederick
Nellis AFB.....	NV	Las Vegas
Nevada Test Site.....	NV	Amargosa Valley
Tonapah Test Range Airfield.....	NV	Tonapah
Cannon AFB.....	NM	Clovis
White Sands Missile Range.....	NM	White Sands
Dyess AFB.....	TX	Abilene
Fort Bliss.....	TX	El Paso
Fort Sam Houston.....	TX	San Antonio
Goodfellow AFB.....	TX	San Angelo
Kelly AFB.....	TX	San Antonio
Utah Test and Training Range.....	UT	.....
Fort Belvoir.....	VA	Alexandria
Naval Satellite Operations Center.....	VA	Chesapeake

US390 Federal stations in the space research service (active) operating in the band 5350-5460 MHz shall not cause harmful interference to, nor claim protection from, Federal and non-Federal stations in the aeronautical radionavigation service nor Federal stations in the radiolocation service.

US391 In the band 2495-2500 MHz, the mobile-satellite service (space-to-Earth) shall not receive protection from non-Federal stations in the fixed and mobile except aeronautical mobile services operating in that band.

\* \* \* \* \*

US394 Until 29 March 2009, the band 6765-7000 kHz is allocated to the fixed service on a primary basis and to the mobile service on a secondary basis. After this date, this band is allocated to the fixed and the mobile except aeronautical mobile (R) services on a primary basis.

US395 Until 29 March 2009, the use of the band 7100-7200 kHz in Region 1 and Region 3 by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3.

US396 The band 7300-7400 kHz is allocated exclusively to the broadcasting service in accordance with the schedule specified below, except that the sub-band 7368.5-7371.3 kHz is allocated to the fixed service on an exclusive basis for non-Federal use within the State of Alaska in accordance with 47 C.F.R. § 80.387.

(a) Until March 25, 2007, the band 7300-7350 kHz is allocated to the fixed service on a primary basis and to the mobile except aeronautical mobile service on a secondary basis for Federal and non-Federal use. After March 25, 2007, authority to operate in the band 7300-7350 kHz shall not be extended to new non-Federal stations in the fixed and mobile except aeronautical mobile services. After March 25, 2007, kHz), Federal and non-Federal stations in the fixed and mobile except aeronautical mobile services shall: (1) be limited to communications wholly within the United States and its insular areas; (2) not cause harmful interference to the broadcasting service; (3) be limited to the minimum power needed to achieve communications; and (4) take account of the seasonal use of frequencies by the broadcasting service published in accordance with Article 12 of the ITU Radio Regulations.

(b) Until March 29, 2009, the band 7350-7400 kHz is allocated to the fixed service on a primary basis and to the mobile except aeronautical mobile service on a secondary basis for Federal and non-Federal use. After March 29, 2009, authority to operate in the band 7350-7400 kHz shall not be extended to new non-Federal stations in the fixed and mobile except aeronautical mobile services. After March 29, 2009, Federal and non-Federal stations in the fixed and mobile except aeronautical mobile services shall: (1) be limited to communications wholly within the United States and its insular areas; (2) not cause harmful interference to the broadcasting service; (3) be limited to the minimum power needed to achieve communications; and (4) take account of the seasonal use of frequencies by the broadcasting service published in accordance with Article 12 of the ITU Radio Regulations.

US397 In the band 432-438 MHz, the Earth exploration-satellite service (active) is allocated on a secondary basis for Federal use. Stations in the Earth exploration-satellite service (active) shall not be operated *within line-of-sight of United States* except for the purpose of short duration pre-operational testing. Operations under this allocation shall not cause harmful interference to, nor claim protection from, any other services allocated in the band 432-438 MHz in the United States, including secondary services and the amateur-satellite service.

US398 In the bands 1390-1400 MHz and 1427-1432 MHz, airborne and space-to-Earth operations, except for feeder downlinks for the Non-Voice Non-Geostationary Mobile-Satellite Service in the band 1430-1432 MHz (see US368), are prohibited.

## NON-FEDERAL GOVERNMENT (NG) FOOTNOTES

(These footnotes, each consisting of the letters "NG" followed by one or more digits, denote stipulations applicable only to non-Federal operations and thus appear solely in the non-Federal Table.)

\* \* \* \* \*

NG42 In the band 10-10.5 GHz, non-Federal stations in the radiolocation service shall not cause harmful interference to the amateur service.

\* \* \* \* \*

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

\* \* \* \* \*

NG142 TV broadcast stations authorized to operate in the bands 54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz, and 614-806 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.

\* \* \* \* \*

NG152 The use of the band 219-220 MHz by the amateur service is limited to stations participating, as forwarding stations, in point-to-point fixed digital message forwarding systems, including intercity packet backbone networks.

\* \* \* \* \*

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

\* \* \* \* \*

NG169 After December 1, 2000, operations on a primary basis by the fixed-satellite service (space-to-Earth) in the band 3650-3700 MHz shall be limited to grandfathered earth stations. All other fixed-satellite service earth station operations in the band 3650-3700 MHz shall be on a secondary basis. Grandfathered earth stations are those authorized prior to December 1, 2000, or granted as a result of an application filed prior to December 1, 2000, and constructed within 12 months of initial authorization. License applications for primary operations for new earth stations, major amendments to pending earth station applications, or applications for major modifications to earth station facilities filed on or after December 18, 1998, and prior to December 1, 2000, shall not be accepted unless the proposed facilities are within 16.1 kilometers (10 miles) of an authorized primary earth station operating in the band 3650-3700 MHz. License applications for primary operations by new earth stations, major amendments to pending earth station applications, and applications for major modifications to earth station facilities, filed after December 1, 2000, shall not be accepted, except for changes in polarization, antenna orientation or ownership of a grandfathered earth station.

\* \* \* \* \*

## FEDERAL GOVERNMENT (G) FOOTNOTES

(These footnotes, each consisting of the letter "G" followed by one or more digits, denote stipulations applicable only to Federal operations and thus appear solely in the Federal Table.)

G2 In the bands 216-217 MHz, 220-225 MHz, 420-450 MHz (except as provided by US217 and G129), 890-902 MHz, 928-942 MHz, 1300-1390 MHz, 2310-2390 MHz, 2417-2450 MHz, 2700-2900 MHz, 5650-5925 MHz, and 9000-9200 MHz, the Federal radiolocation service is limited to the military services.

\* \* \* \* \*

G8 Low power Federal radio control operations are permitted in the band 420-450 MHz.

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

\* \* \* \* \*

G31 In the band 3300-3500 MHz, the use of the Federal radiolocation service is limited to the military services, except as provided by footnote US108.

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

\* \* \* \* \*

G42 The space operation service (Earth-to-space) is limited to the band 1761-1842 MHz, and is limited to space command, control, range and range rate systems.

G56 Federal 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 Federal 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, 3500-3650 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 Federal non-military radiolocation shall be secondary to military radiolocation, except in the sub-band 15.7-16.2 GHz airport surface detection equipment (ASDE) is permitted on a co-equal basis subject to coordination with the military departments.

\* \* \* \* \*

G110 Federal ground-based stations in the aeronautical radionavigation service may be authorized between 3500-3650 MHz when accommodation in the band 2700-2900 MHz is not technically and/or economically feasible.

\* \* \* \* \*

G117 In the bands 7.25-7.75 GHz, 7.9-8.4 GHz, 17.8-21.2 GHz, 30-31 GHz, 33-36 GHz, 39.5-41 GHz, 43.5-45.5 GHz and 50.4-51.4 GHz, the Federal fixed-satellite and mobile-satellite services are limited to military systems.

G118 Federal fixed stations may be authorized in the band 1700-1710 MHz only if spectrum is not available in the band 1755-1850 MHz.

\* \* \* \* \*

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

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

\* \* \* \* \*

G129 Federal wind profilers are authorized to operate on a primary basis in the radiolocation service in the frequency band 448-450 MHz with an authorized bandwidth of no more than 2 MHz centered on 449 MHz, subject to the following conditions: 1) wind profiler locations must be pre-coordinated with the military services to protect fixed military radars; and 2) wind profiler operations shall not cause harmful interference to, nor claim protection from, military mobile radiolocation stations that are engaged in critical national defense operations.

G130 Federal stations in the radiolocation service operating in the band 5350-5470 MHz, shall not cause harmful interference to, nor claim protection from, Federal stations in the aeronautical radionavigation service operating in accordance with ITU Radio Regulation No. 5.449.

G131 Federal stations in the radiolocation service operating in the band 5470-5650 MHz, with the exception of ground-based radars used for meteorological purposes operating in the band 5600-5650 MHz, shall not cause harmful interference to, nor claim protection from, Federal stations in the maritime radionavigation service.

G132 Use of the radionavigation-satellite service in the band 1215-1240 MHz shall be subject to the condition that no harmful interference is caused to, and no protection is claimed from, the radionavigation service authorized under ITU Radio Regulation No. 5.331. Furthermore, the use of the radionavigation-satellite service in the band 1215-1240 MHz shall be subject to the condition that no harmful interference is caused to the radiolocation service. ITU Radio Regulation No. 5.43 shall not apply in respect of the radiolocation service. ITU Resolution 608 (WRC-03) shall apply.

G133 No emissions to deep space shall be effected in the band 7190-7235 MHz. Geostationary satellites in the space research service operating in the band 7190-7235 MHz shall not claim protection from existing and future stations of the fixed and mobile services and No. 5.43A does not apply.

## PART 25 – SATELLITE COMMUNICATIONS

10. The authority citation for Part 25 continues to read as follows:

**AUTHORITY:** 47 U.S.C. 701-744. Interprets or applies Sections 4, 301, 302, 303, 307, 309 and 332 of the Communications Act, as amended, 47 U.S.C. Sections 154, 301, 302, 303, 307, 309 and 332, unless otherwise noted.

11. Section 25.208 is amended by adding new paragraph (p) to read as follows:

**§ 25.208 Power flux-density limits.**

\* \* \* \* \*

(p) The power flux-density at the Earth's surface produced by emissions from a space station in either the Earth exploration-satellite service in the band 25.5-27 GHz or the inter-satellite service in the band 25.25-27.5 GHz for all conditions and for all methods of modulation shall not exceed the following values:

- 115 dB(W/m<sup>2</sup>) in any 1 MHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;
- 115 + 0.5(δ - 5) dB(W/m<sup>2</sup>) in any 1 MHz band for angles of arrival between 5 and 25 degrees above the horizontal plane;
- 105 dB(W/m<sup>2</sup>) in any 1 MHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

These limits relate to the power flux-density which would be obtained under assumed free-space propagation conditions.

## PART 73 – RADIO BROADCAST SERVICES

12. The authority citation for Part 73 continues to read as follows:

**AUTHORITY:** 47 U.S.C. 154, 303, 334 and 336.

13. Section 73.701 is amended by revising paragraph (e) to read as follows:

**§ 73.701 Definitions.**

\* \* \* \* \*

(e) Coordinated Universal Time (UTC). Time scale, based on the second (SI), as defined in Recommendation ITU-R TF.460-6.

For most practical purposes associated with the ITU Radio Regulations, UTC is equivalent to mean solar time at the prime meridian (0° longitude), formerly expressed in GMT. (RR)

\* \* \* \* \*

14. Section 73.220 is amended by removing and reserving paragraph (b).

**§ 73.220 Restrictions on the use of channels.**

\* \* \* \* \*

(b) [Reserved.]

15. Section 73.603 is amended by removing and reserving paragraph (b).

**§ 73.603 Numerical designation of television channels.**

\* \* \* \* \*

(b) [Reserved.]

16. Sections 73.702 is amended by revising paragraph (f), by adding new paragraphs (g) and (h), and redesignating paragraphs (g)-(k) as (i)-(m) to read as follows:

**§ 73.702 Assignment and use of frequencies.**

\* \* \* \* \*

(f) Exclusive allocations. Where practical, assigned frequencies shall be within the following bands, which are allocated to the broadcasting service on a primary and exclusive basis:

(1) Worldwide allocations. The following bands are allocated to the broadcasting service on a primary and exclusive basis throughout the world: 5950-6200 kHz, 9500-9900 kHz, 11650-12050 kHz, 13600-13800 kHz, 15100-15600 kHz, 17550-17900 kHz, 21450-21850 kHz, and 25670-26100 kHz.

(2) Regional allocation. The band 7200-7300 kHz is allocated to the broadcasting service on a primary and exclusive basis in Region 1 and Region 3.

NOTE: For the allocation of frequencies, the International Telecommunication Union (ITU) has divided the world into three Regions, which are defined in 47 C.F.R. § 2.104(b). The bands 7100-7300 kHz and 7400-7450 kHz are not allocated to the broadcasting service in Region 2.

(g) Co-primary allocations. Frequencies may also be assigned from within the following bands, which are allocated on a primary, but not exclusive, basis to the broadcasting service:

(1) Worldwide allocations. (i) Until April 1, 2007, the following frequency bands are allocated to the broadcasting and fixed services on a co-primary basis throughout the world: 5900-5950 kHz, 7300-7350 kHz, 9400-9500 kHz, 11600-11650 kHz, 12050-12100 kHz, 13570-13600 kHz, 13800-13870 kHz, 15600-15800 kHz, 17480-17550 kHz, and 18900-19020 kHz (WARC-92 HFBC bands). In addition, the band 5900-5950 kHz is allocated to the land mobile service on a primary basis in Region 1 and to the mobile except aeronautical mobile (R) service on a primary basis in Region 2 until April 1, 2007. After April 1, 2007, the WARC-92 HFBC bands are allocated to the broadcasting service on an exclusive basis throughout the world.

(ii) Until March 29, 2009, the band 7350-7400 kHz is allocated to the broadcasting and fixed services on a co-primary basis throughout the world. After March 29, 2009, the band 7350-7400 kHz is allocated to the broadcasting service on an exclusive basis throughout the world, except in the countries listed in 47 C.F.R. § 2.106, footnote 5.143C where the band 7350-7400 kHz continues to be allocated to the broadcasting and fixed services on a co-primary basis.

(2) Regional allocations. (i) Until March 29, 2009, the band 7100-7200 kHz is allocated to the amateur and broadcasting services on a co-primary basis in Region 1 and Region 3; however, during this transition period, the use of the band 7100-7200 kHz by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3. After March 27, 2005, where practical, requests for frequency assignments in the band 7100-7200 kHz shall be satisfied within the band 7200-7350 kHz. After March 29, 2009, the band 7100-7200 kHz is no longer allocated to the broadcasting service.

(ii) Until March 29, 2009, the band 7400-7450 kHz is allocated to the broadcasting service on a co-primary basis with the fixed service in Region 1 and Region 3. After March 29, 2009, the band 7400-7450 kHz is allocated on an exclusive basis to the broadcasting service in Region 1 and Region 3, except in the countries listed in 47 C.F.R. § 2.106, footnote 5.143C where the band 7400-7450 kHz continues to be allocated to the broadcasting and fixed services on a co-primary basis.

(h) Requirements for Regional operation. (1) Frequency assignments in the bands 7100-7300 kHz (7200-7300 kHz after March 29, 2009) and 7400-7450 kHz shall be limited to international broadcast stations that are located in the Pacific insular areas located in Region 3 (as defined in 47 C.F.R. § 2.105(a), note 4) that transmit to geographical zones and areas of reception in Region 1 or Region 3.

(2) During the hours of 0800-1600 UTC (Coordinated Universal Time) antenna gain with reference to an isotropic radiator in any easterly direction that would intersect any area in Region 2 shall not exceed 2.15 dBi, except in the case where a transmitter power of less than 100 kW is used. In this case, antenna gain on restricted azimuths shall not exceed that which is determined in accordance with equation below. Stations desiring to operate in this band must submit sufficient antenna performance information to ensure compliance with these restrictions. Permitted gain for transmitter powers less than 100 kW:

$$G_i = 2.15 + 10 \log \left( \frac{100}{P_a} \right) \text{dBi}$$

Where:

$G_i$  = maximum gain permitted with reference to an isotropic radiator.

$P_a$  = Transmitter power employed in kW.

\* \* \* \* \*

17. Section 73.751 is revised to read as follows:

**§ 73.751 Operating power.**

No international broadcast station shall be authorized to install, or be licensed for operation of, transmitter equipment with: (a) a rated carrier power of less than 50 kilowatts (kW) if double-sideband (DSB) modulation is used, (b) a peak envelope power of less than 50 kW if single-sideband (SSB) modulation is used, or (c) a mean power of less than 10 kW if digital modulation is used.

18. Section 73.756 is revised to read as follows:

**§ 73.756 System specifications for double-sideband (DSB) modulated emissions in the HF broadcasting service.**

(a) Channel Spacing. The nominal spacing for DSB shall be 10 kHz. However, the interleaved channels with a separation of 5 kHz may be used in accordance with the relative protection criteria, provided that the interleaved emission is not to the same geographical area as either of the emissions between which it is interleaved.

(b) Emission Characteristics. (1) Nominal carrier frequencies. Nominal carrier frequencies shall be integral multiples of 5 kHz.

(2) Audio-frequency band. The upper limit of the audio-frequency band (at - 3 dB) of the transmitter shall not exceed 4.5 kHz and the lower limit shall be 150 Hz, with lower frequencies attenuated at a slope of 6 dB per octave.

(3) Modulation processing. If audio-frequency signal processing is used, the dynamic range of the modulating signal shall be not less than 20 dB.

(4) Necessary bandwidth. The necessary bandwidth shall not exceed 9 kHz.

19. Existing Sections 73.757, 73.758, 73.759, and 73.761 are redesignated as Sections 73.759, 73.760, 73.761, and 73.762.

20. New Section 73.757 is added to read as follows:

**§ 73.757 System specifications for single-sideband (SSB) modulated emissions in the HF broadcasting service.**

(a) System parameters. (1) Channel spacing. In a mixed DSB, SSB and digital environment (see Resolution 517 (Rev.WRC-03)), the channel spacing shall be 10 kHz. In the interest of spectrum conservation, it is also permissible to interleave SSB emissions midway between two adjacent DSB channels, i.e., with 5 kHz separation between carrier frequencies, provided that the interleaved emission is

not to the same geographical area as either of the emissions between which it is interleaved. In an all inclusive SSB environment, the channel spacing and carrier frequency separation shall be 5 kHz.

(2) Equivalent sideband power. When the carrier reduction relative to peak envelope power is 6 dB, an equivalent SSB emission is one giving the same audio-frequency signal-to-noise ratio at the receiver output as the corresponding DSB emission, when it is received by a DSB receiver with envelope detection. This is achieved when the sideband power of the SSB emission is 3 dB larger than the total sideband power of the DSB emission. (The peak envelope power of the equivalent SSB emission and the carrier power are the same as that of the DSB emission.)

(b) Emission Characteristics. (1) Nominal carrier frequencies. Nominal carrier frequencies shall be integral multiples of 5 kHz.

(2) Frequency tolerance. The frequency tolerance shall be 10 Hz.

NOTE 1: The ITU suggests that administrations avoid carrier frequency differences of a few hertz, which cause degradations similar to periodic fading. This could be avoided if the frequency tolerance were 0.1 Hz, a tolerance which would be suitable for SSB emissions.

NOTE 2: The SSB system adopted for the bands allocated exclusively to HF broadcasting does not require a frequency tolerance less than 10 Hz. The degradation mentioned in Note 1 occurs when the ratio of wanted-to-interfering signal is well below the required protection ratio. This remark is equally valid for both DSB and SSB emissions.

(3) Audio-frequency band. The upper limit of the audio-frequency band (at - 3 dB) of the transmitter shall not exceed 4.5 kHz with a further slope of attenuation of 35 dB/kHz and the lower limit shall be 150 Hz with lower frequencies attenuated at a slope of 6 dB per octave.

(4) Modulation processing. If audio-frequency signal processing is used, the dynamic range of the modulating signal shall be not less than 20 dB.

(5) Necessary bandwidth. The necessary bandwidth shall not exceed 4.5 kHz.

(6) Carrier reduction (relative to peak envelope power). In a mixed DSB, SSB and digital environment, the carrier reduction shall be 6 dB to allow SSB emissions to be received by conventional DSB receivers with envelope detection without significant deterioration of the reception quality.

(7) Sideband to be emitted. Only the upper sideband shall be used.

(8) Attenuation of the unwanted sideband. The attenuation of the unwanted sideband (lower sideband) and of intermodulation products in that part of the emission spectrum shall be at least 35 dB relative to the wanted sideband signal level. However, since there is in practice a large difference between signal amplitudes in adjacent channels, a greater attenuation is recommended.

21. New Section 73.758 is added to read as follows:

**§ 73.758 System specifications for digitally modulated emissions in the HF broadcasting service.**

(a) For digitally modulated emissions, the Digital Radio Mondiale (DRM) standard shall be employed. Both digital audio broadcasting and datacasting are authorized. The RF requirements for the DRM system are specified in paragraphs (b) and (c), below.

(b) System parameters. (1) Channel spacing. The initial spacing for digitally modulated emissions shall be 10 kHz. However, interleaved channels with a separation of 5 kHz may be used in accordance with the appropriate protection criteria appearing in Resolution 543 (WRC-03), provided that the interleaved emission is not to the same geographical area as either of the emissions between which it is interleaved.

(2) Channel utilization. Channels using digitally modulated emissions may share the same spectrum or be interleaved with analogue emissions in the same high frequency broadcasting (HFBC) band, provided the protection afforded to the analogue emissions is at least as great as that which is currently in

force for analogue-to-analogue protection. Accomplishing this may require that the digital spectral power density (and total power) be lower by several dB than is currently used for either DSB or SSB emissions.

(c) Emission characteristics. (1) Bandwidth and centre frequency. A full digitally modulated emission will have a 10 kHz bandwidth with its centre frequency at any of the 5 kHz centre frequency locations in the channel raster currently in use within the HFBC bands. Among several possible "simulcast" modes are those having a combination of analog and digital emissions of the same program in the same channel, that may use a digital emission of 5 kHz or 10 kHz bandwidth, next to either a 5 kHz or 10 kHz analogue emission. In all cases of this type, the 5 kHz interleaved raster used in HFBC shall be adhered to in placing the emission within these bands.

(2) Frequency tolerance. The frequency tolerance shall be 10 Hz. See Section 73.757(b)(2), notes 1 and 2.

(3) Audio-frequency band. The quality of service, using digital source coding within a 10 kHz bandwidth, taking into account the need to adapt the emission coding for various levels of error avoidance, detection and correction, can range from the equivalent of monophonic FM (approximately 15 kHz) to the low-level performance of a speech codec (of the order of 3 kHz). The choice of audio quality is connected to the needs of the broadcaster and listener, and includes the consideration of such characteristics as the propagation conditions expected. There is no single specification, only the upper and lower bounds noted in this paragraph.

(4) Modulation. Quadrature amplitude modulation (QAM) with orthogonal frequency division multiplexing (OFDM) shall be used. 64-QAM is feasible under many propagation conditions; others such as 32-, 16- and 8-QAM are specified for use when needed.

(5) RF protection ratio values. The protection ratio values for analogue and digital emissions for co-channel and adjacent channel conditions shall be in accordance with Resolution 543 (WRC-03) as provisional RF protection ratio values subject to revision or confirmation by a future competent conference.

22. Section 73.766 is removed and reserved:

**§ 73.766 Modulation and bandwidth.**

[Reserved]

**PART 90 – PRIVATE LAND MOBILE RADIO SERVICES**

23. The authority citation for Part 90 continues to read as follows:

**AUTHORITY:** Sections 4(I), 11, 303(g), 303(r), and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. 154(I), 161, 303(g), 303(r), 332(c)(7).

24. Section 90.20 is amended by revising paragraph (c)(3) and by adding paragraph (d)(88) to read as follows:

**§ 90.20 Public Safety Pool.**

\* \* \* \* \*

(c) \* \* \*

(3) Frequencies.

PUBLIC SAFETY POOL FREQUENCY TABLE

Frequency or band	Class of station(s)	Limitations	Coordinator
Kilohertz			
*	*	*	*
2000 to 10,000.....	Fixed, base, or mobile...	6, 88.....	PX
Megahertz			
*	*	*	*
159.4725.....	.....do.....	80.....	PO
*	*	*	*

(d) \* \* \*

\* \* \* \* \*

(88) As of March 25, 2007, the FCC will cease to issue licenses for new stations in the fixed and mobile services in the following bands: 5900-5950 kHz, 7300-7350 kHz and 9400-9500 kHz. As of March 29, 2009, the FCC will cease to issue licenses for new stations in the fixed and mobile services in the band 7350-7400 kHz and, in the U.S. Pacific insular areas in Region 3, the band 7400-7450 kHz. Stations licensed as of March 25, 2007 in the bands 5900-5950 kHz, 7300-7350 kHz and 9400-9500 kHz and as of March 29, 2009 for the band 7350-7400 kHz in Region 2 and the band 7350-7450 kHz in Region 3 shall: (1) be limited to communications only within the United States and its insular areas; (2) not cause harmful interference to the broadcasting service; (3) be limited to the minimum power needed to achieve communications; and (4) take account of the seasonal use of frequencies by the broadcasting service published in accordance with Article 12 of the ITU Radio Regulations.

25. Section 90.35 is amended by revising paragraphs (b)(3) and (c)(90) to read as follows:

**§ 90.35 Industrial/Business Pool.**

\* \* \* \* \*

(b) \* \* \*

(3) Frequencies.

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE

Frequency or band	Class of station(s)	Limitations	Coordinator
Kilohertz			
*	*	*	*
2000 to 25,000.....	Fixed, base or mobile...	1, 90.....	
Megahertz			
*	*	*	*

\* \* \* \* \*

(c) \* \* \*

\* \* \* \* \*

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

Region 2 and the band 7350-7450 kHz in Region 3 shall: (1) be limited to communications only within the United States and its insular areas; (2) not cause harmful interference to the broadcasting service; (3) be limited to the minimum power needed to achieve communications; and (4) take account of the seasonal use of frequencies by the broadcasting service published in accordance with Article 12 of the ITU Radio Regulations.

**PART 97 – AMATEUR RADIO SERVICE**

26. The authority citation for part 97 continues to read as follows:

**AUTHORITY:** 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. 151-155, 301-609, unless otherwise noted.

27. Section 97.301 is amended by revising the tables following paragraph (a), (b), (c), (d), and (e) to read as follows:

**§ 97.301 Authorized frequency bands.**

\*\*\*

(a) \*\*\*

Wavelength band	ITU – Region 1	ITU – Region 2	ITU – Region 3	Sharing requirements see § 97.303 (Paragraph)
*	*	*	*	*
UHF	MHz	MHz	MHz	
*	*	*	*	*
23 cm .....	1240-1300 .....	1240-1300 .....	1240-1300 .....	(b), (h), (i).
*	*	*	*	*
SHF	GHz	GHz	GHz	
9 cm .....	3.4-3.475 .....	3.3-3.5 .....	3.3-3.5 .....	(a), (b), (k), (l).
*	*	*	*	*
EHF	GHz	GHz	GHz	
6 mm .....	47.0-47.2 .....	47.0-47.2 .....	47.0-47.2 .....	
4 mm .....	75.5-81.0 .....	75.5-81.0 .....	75.5-81.0 .....	(b), (c), (h), (k), (r).
2.5 mm .....	122.25-123 .....	122.25-123 .....	122.25-123 .....	(p).
2 mm .....	134-141 .....	134-141 .....	134-141 .....	(b), (c), (h), (k).
1 mm .....	241-250 .....	241-250 .....	241-250 .....	(b), (c), (h), (k), (q).
.....	above 275 .....	above 275 .....	above 275 .....	(k).

(b) \*\*\*

Wavelength band	ITU – Region 1	ITU – Region 2	ITU – Region 3	Sharing requirements see § 97.303 (Paragraph)
*	*	*	*	*
HF	MHz	MHz	MHz	
*	*	*	*	*
40 m .....	7.0-7.2 .....	7.0-7.2 .....	7.0-7.2 .....	(t).
Do .....		7.2-7.3 .....		(a), (t).
*	*	*	*	*

(c) \*\*\*

Wavelength band	ITU – Region 1	ITU – Region 2	ITU – Region 3	Sharing requirements see § 97.303 (Paragraph)
*	*	*	*	*
HF	MHz	MHz	MHz	
*	*	*	*	*
40 m .....	7.025-7.200 .....	7.025-7.200 .....	7.025-7.200 .....	(t).
Do .....		7.200-7.300 .....		(a), (t).
*	*	*	*	*

(d) \*\*\*

Wavelength band	ITU – Region 1	ITU – Region 2	ITU – Region 3	Sharing requirements see § 97.303 (Paragraph)
*	*	*	*	*
HF	MHz	MHz	MHz	
*	*	*	*	*
40 m .....	7.025-7.150 .....	7.025-7.150 .....	7.025-7.150 .....	(t).
Do .....		7.225-7.300 .....		(a), (t).
*	*	*	*	*

(e) \*\*\*

Wavelength band	ITU – Region 1	ITU – Region 2	ITU – Region 3	Sharing requirements see § 97.303 (Paragraph)
*	*	*	*	*
HF	MHz	MHz	MHz	
*	*	*	*	*
40 m .....	7.050-7.075 .....	.....	7.050-7.075 .....	
Do .....	7.100-7.150 ...	7.100-7.150 .....	7.100-7.150 .....	(t).
*	*	*	*	*

28. Section 97.303 is amended by revising paragraphs (b), (c), (h), (i), (k), and (r); and by adding new paragraph (t) to read as follows:

**§ 97.303 Frequency sharing requirements.**

\*\*\*\*\*

(a) Where, in adjacent ITU Regions or sub-Regions, a band of frequencies is allocated to different services of the same category (*i.e.*, primary or secondary allocations), the basic principle is the equality of right to operate. Accordingly, stations of each service in one Region or sub-Region must operate so as not to cause harmful interference to any service of the same or higher category in the other Regions or sub-Regions. (See ITU Radio Regulations, edition of 2004, No. 4.8.)

(b) No amateur station transmitting in the 1900-2000 kHz segment, the 70 cm band, the 33 cm band, the 23 cm band, the 13 cm band, the 9 cm band, the 5 cm band, the 3 cm band, the 24.05-24.25 GHz segment, the 76-77.5 GHz segment, the 78-81 GHz segment, the 136-141 GHz segment, and the 241-248 GHz segment shall not cause harmful interference to, nor is protected from interference due to the operation of, the Federal radiolocation service.

(c) No amateur station transmitting in the 1900-2000 kHz segment, the 3 cm band, the 76-77.5 GHz segment, the 78-81 GHz segment, the 136-141 GHz segment, and the 241-248 GHz segment shall cause harmful interference to, nor is protected from interference due to the operation of, stations in the non-Federal radiolocation service.

\*\*\*\*\*

(f) \*\*\*

\*\*\*\*\*

(4) No amateur station transmitting in the 449.75-450.25 MHz segment shall cause interference to, nor is protected from interference due to the operation of stations in, the space operation and space research services.

\*\*\*\*\*

(h) No amateur station transmitting in the 23 cm band, the 3.3-3.4 GHz segment, the 3 cm band, the 24.05-24.25 GHz segment, the 76-77.5 GHz segment, the 78-81 GHz segment, the 136-141 GHz segment, and the 241-248 GHz segment shall cause harmful interference to, nor is protected from interference due to the operation of, stations authorized by other nations in the radiolocation service.

(i) In the 23 cm band, no amateur station shall cause harmful interference to, nor is protected from interference due to the operation of, stations in the radionavigation-satellite service, the aeronautical radionavigation service, the Earth exploration-satellite service (active), or the space research service (active).

\*\*\*\*\*

(k) No amateur station transmitting in the following segments shall cause harmful interference to stations in the radio astronomy service: 3.332-3.339 GHz, 3.3458-3.525 GHz, 76-77.5 GHz, 78-81 GHz, 136-141 GHz, 241-248 GHz, 275-323 GHz, 327-371 GHz, 388-424 GHz, 426-442 GHz, 453-510 GHz, 623-711 GHz, 795-909 GHz, and 926-945 GHz. No amateur station transmitting in following segments shall cause harmful interference to stations in the Earth exploration-satellite service (passive) and space research service (passive): 275-277 GHz, 294-306 GHz, 316-334 GHz, 342-349 GHz, 363-365 GHz, 371-389 GHz, 416-434 GHz, 442-444 GHz, 496-506 GHz, 546-568 GHz, 624-629 GHz, 634-654 GHz, 659-661 GHz, 684-692 GHz, 730-732 GHz, 851-853 GHz, and 951-956 GHz.

(l) In the 9 cm band:

(1) In ITU Regions 2 and 3, the 9 cm band is allocated to the amateur service on a secondary basis. In ITU Region 1, the segment 3.4-3.475 GHz is allocated to the amateur service on a secondary basis for use only in Germany, Israel, and the United Kingdom.

(2) In the United States, the 9 cm band is allocated to the amateur and non-Federal radiolocation services on a secondary basis.

(3) In the 3.4-3.5 GHz segment, no amateur station shall cause harmful interference to, nor is protected from interference due to the operation of, stations in the fixed and fixed-satellite services.

\* \* \* \* \*

(r) In the 4 mm band:

\* \* \* \* \*

(2) No amateur or amateur-satellite station transmitting in the 75.5-76 GHz segment shall cause interference to, nor is protected from, interference due to the operation of stations in the fixed service. After January 1, 2006, the 75.5-76 GHz segment is no longer allocated to the amateur service or to the amateur-satellite service.

\* \* \* \* \*

(t) In the 40 m band:

(1) The 7-7.1 MHz segment is allocated to the amateur and amateur-satellite services on a primary and exclusive basis throughout the world, except that the 7-7.05 MHz segment is: (i) additionally allocated to the fixed service on a primary basis in the countries listed in 47 C.F.R. § 2.106, footnote 5.140; and (ii) alternatively allocated to the fixed service on a primary and exclusive basis (*i.e.*, the segment 7-7.05 MHz is not allocated to the amateur service) in the countries listed in 47 C.F.R. § 2.106, footnote 5.141.

(2) The 7.1-7.2 MHz segment is allocated to the amateur service on an exclusive basis in Region 2. Until March 29, 2009, the 7.1-7.2 MHz segment is allocated to the amateur and broadcasting services on a co-primary basis in Region 1 and Region 3 and the use of the 7.1-7.2 MHz segment by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3. After March 29, 2009, the 7.1-7.2 MHz segment is allocated to the amateur service on a primary and exclusive basis throughout the world, except that the 7.1-7.2 MHz segment is additionally allocated to the fixed and mobile except aeronautical mobile (R) services on a primary basis in the countries listed in 47 C.F.R. § 2.106, footnote 5.141B.

(3) The 7.2-7.3 MHz segment is allocated to the amateur service on an exclusive basis in Region 2 and to the broadcasting service on an exclusive basis in Region 1 and Region 3. The use of the 7.2-7.3 MHz segment in Region 2 by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3.

## Appendix B: Final Regulatory Flexibility Analysis

As required by the Regulatory Flexibility Act of 1980, as amended (RFA),<sup>327</sup> an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the *Notice of Proposed Rule Making (Omnibus NPRM)* in ET Docket No. 04-139.<sup>328</sup> The Commission sought written public comment on the proposals in the *Omnibus NPRM*, including comment on the IRFA. No written public comments were received concerning the IRFA. This present Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.<sup>329</sup>

### A. Need for, and Objectives of, the Report and Order.

In the *Omnibus Report and Order*, the Commission amends Parts 2, 25, 73, 90, and 97 of its Rules in order to complete its implementation of various allocation decisions from the World Radiocommunication Conference (Geneva, 2003) (WRC-03) concerning the frequency bands between 5900 kHz and 27.5 GHz and to otherwise update its Rules in this frequency range. In general, these changes provide additional licensing opportunities and flexibility for Commission licensees, e.g., international broadcast stations are authorized the use of single sideband and digital transmissions – in addition to double sideband transmissions – in the HF bands between 5900 kHz and 26100 kHz that are allocated to the broadcasting service. The decisions adopted in the *Omnibus Report and Order* conform the Commission's Rules, to the extent practical, to the decisions that the international community made at WRC-03 and will collectively promote the advancement of new and expanded services and provide significant benefits to the American public.

### B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA.

There were no comments filed directly in response to the IRFA.

### C. Description and Estimate of the number of Small Entities to Which the Final Rule Will Apply.

The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the rules adopted herein.<sup>330</sup> The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction." In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act, unless the Commission has developed one or more definitions that are appropriate for its activities.<sup>331</sup> Under the Small Business Act, a "small business concern" is one that: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).<sup>332</sup>

<sup>327</sup> See 5 U.S.C. § 603. The RFA, see 5 U.S.C. §§ 601 – 612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

<sup>328</sup> 19 FCC Rcd 6592, 6715 (2004).

<sup>329</sup> 5 U.S.C. § 604.

<sup>330</sup> *Id.* at § 604(a)(3).

<sup>331</sup> 5 U.S.C. § 601(3) (incorporating by reference the definition of "small-business concern" in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register."

<sup>332</sup> 15 U.S.C. § 632.

A small organization is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field."<sup>333</sup> Nationwide, there are approximately 1.6 million small organizations.<sup>334</sup> "Small governmental jurisdiction" generally means "governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than 50,000."<sup>335</sup> As of 1997, there were approximately 87,453 governmental entities in the United States.<sup>336</sup> This number includes 39,044 county governments, municipalities, and townships, of which 37,546 (approximately 96.2%) have populations of fewer than 50,000 and 1,498 have populations of 500,000 or more. Thus, we estimate the number of small governmental jurisdictions overall to be approximately 84,098 or fewer.

**Satellite Telecommunications.** The SBA has developed a small business size standard for Satellite Telecommunications, which consists of all such firms having \$12.5 million or less in annual receipts.<sup>337</sup> According to Census Bureau data for 1997, there were 324 firms in this category that operated for the entire year.<sup>338</sup> Of this total, 273 firms had annual receipts of under \$10 million, and an additional twenty-four firms had receipts of \$10 million to \$24,999,999.<sup>339</sup> Thus, under this size standard, the majority of firms can be considered small.

*Little LEO licensees* operate non-geostationary mobile-satellite systems that provide non-voice services. There are two Little LEO licensees (ORBCOMM and Volunteers in Technical Assistance (VITA)) currently in operation. Another Little LEO licensee (Final Analysis Communication Services, Inc.) has expressed interest in the Little LEO feeder link bands, but it does not yet provide service. The last-listed licensee here is a small business, and the other two might also be small.

*Licensees in the Earth Exploration-Satellite Service (EESS)* provide remote sensing services. While there are currently no EESS licensees in the band 25.5-27 GHz, two companies (DigitalGlobe, Inc. and Space Imaging LLC) have expressed interest in using this band in the future. Neither of these EESS licensees (which currently operate in the band 8025-8400 MHz) are small businesses.

**Wireless Service Providers.** The SBA has developed a small business size standard for wireless small businesses in the category of Cellular and Other Wireless Telecommunications.<sup>340</sup> Under this SBA category, a wireless business is small if it has 1,500 or fewer employees. According to Commission data,<sup>341</sup> 975 companies reported that they were engaged in the provision of wireless service. Of these 975 companies, an estimated 767 have 1,500 or fewer employees and 208 have more than 1,500

---

<sup>333</sup> 5 U.S.C. § 601(4).

<sup>334</sup> Independent Sector, *The New Nonprofit Almanac and Desk Reference* (2002).

<sup>335</sup> 5 U.S.C. § 601(5).

<sup>336</sup> U.S. Census Bureau, *Statistical Abstract of the United States: 2000*, Section 9, pages 299-300, Tables 490 and 492.

<sup>337</sup> 13 C.F.R. § 121.201, NAICS code 517410 (changed from 513340 in October 2002).

<sup>338</sup> U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 513340 (issued October 2000).

<sup>339</sup> *Id.*

<sup>340</sup> 13 CFR § 121.201, NAICS code 517212.

<sup>341</sup> FCC, Wireline Competition Bureau, Industry Analysis and Technology Division, *Trends in Telephone Service at Table 5.3, page 5-5* (May 2004). This source uses data that are current as of October 22, 2003. These estimates include paging.

employees.<sup>342</sup> Consequently, the Commission estimates that most wireless service providers are small entities.

*Licensees in the Fixed and Mobile Services* in the band 7350-7400 kHz provide conventional Industrial/Business Pool services (41 licensees with 102 licenses), operate Alaska private-fixed stations (11 licensees with 18 licenses), and operate coast stations (3 licensees, each with a single license). We believe that some of the licensees providing conventional Industrial/Business Pool services are small businesses; that almost all of the licensees providing Alaska group services are small businesses; and that all of the licensees providing coast station services are small businesses.

#### **D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements.**

The final rules require that:<sup>343</sup>

- After March 29, 2009, authority to operate in the band 7350-7400 kHz shall not be extended to new non-Federal stations in the fixed and mobile except aeronautical mobile services. After March 29, 2009, non-Federal stations in the fixed and mobile except aeronautical mobile services shall: (1) be limited to communications wholly within the United States and its insular areas; (2) not cause harmful interference to the broadcasting service; (3) be limited to the minimum power needed to achieve communications; and (4) take account of the seasonal use of frequencies by the broadcasting service published in accordance with Article 12 of the *ITU Radio Regulations*.
- Licensees in the Non-Voice Non-Geostationary Mobile-Satellite Service that use the bands 1390-1392 MHz and 1430-1432 MHz for feeder links (Little LEO feeder links) operate on a secondary basis. The completion of ITU-R studies on all identified compatibility issues as shown in Annex 1 of Resolution 745 (WRC-2003) are required prior to the use of the Little LEO feeder links. Any use of these feeder link allocations are subject to further compatibility decisions by 2007 World Radiocommunication Conference. Engineering skills would be needed in order to perform the required studies.
- EESS applicants in the band 25.5-27 GHz are required to do a technical analysis of the interference potential between their proposed operations and Federal operations, *i.e.*, an electromagnetic compatibility analysis.<sup>344</sup> Engineering skills would be needed in order to perform the analysis. The power flux-density at the Earth's surface produced by emissions from an EESS space station must be in accordance with the *ITU Radio Regulations*.

#### **E. Steps Taken to Minimize the Significant Economic Impact on Small Entities, and Significant Alternatives Considered.**

The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.<sup>345</sup>

---

<sup>342</sup> *Id.*

<sup>343</sup> See also *Omnibus Report and Order* at para. 2 (Executive Summary).

<sup>344</sup> See *id.* at paras. 87-88.

<sup>345</sup> 5 U.S.C. § 603(c).

The Commission reallocated the band 7350-7400 kHz from the fixed and mobile services to the broadcasting service, effective March 29, 2009, and will cease issuing licenses for new stations in the fixed and mobile services as of that date. The phase-in of these rules provide affected entities, including small entities, with a reasonable amount of time in which to relocate to other spectrum allocated to the fixed and mobile services, thus minimizing the impact of our actions. In addition, the new broadcasting service allocation will provide new opportunities for international broadcasters that are small businesses.

The Commission had conditionally allocated the Little LEO feeder links on a primary basis, subject to the outcome of WRC-03. At WRC-03, the United States was unable to secure a primary allocation, but was able to garner conditional support for a worldwide secondary allocation for Little LEO feeder links. Based on the international allocation, the Commission has changed the allocation status of the Little LEO feeder links from primary to secondary. Because the Commission has not yet licensed the Little LEO feeder links, no licensee is directly impacted by this decision. Continued allocation for Little LEO feeder links in this band will provide opportunities for small businesses within the context of international agreements.

**Report to Congress:** The Commission will send a copy of the Report and Order, including this FRFA, in a report to Congress and the Government Accountability Office, pursuant to the Congressional Review Act.<sup>346</sup> In addition, the Commission will send a copy of the Report and Order, including the FRFA, to the Chief Counsel for Advocacy of the SBA. A copy of the Report and Order and FRFA (or summaries thereof) will also be published in the Federal Register.<sup>347</sup>

---

<sup>346</sup> See 5 U.S.C. § 801(a)(1)(A).

<sup>347</sup> See 5 U.S.C. § 604(b).

**Appendix C: Filings in ET Docket No. 04-139**Comments:

1. ARRL, the National Association for Amateur Radio (ARRL)
2. Final Analysis Communication Services, Inc. (Final Analysis)
3. KROHNE, Inc. (Krohne)
4. Leggett, Nikolaus E. (Leggett)
5. National Association of Shortwave Broadcasters (NASB)
6. Brown, James F (Brown; listed in the ULS as "james f Rbown")
7. Space Imaging LLC (Space Imaging)
8. Whedbee, James

Late-Filed Comments:

1. American Samoa Amateur Radio Association (ASARA); filed on July 21, 2004

Reply Comments:

1. ARRL
2. ASARA
3. Gandy, Larry G.