Service are determined in the manner specified in § 25.203(j).

Radiodetermination-Satellite Service. A radiocommunication service for the purpose of radiodetermination involving the use of one of more space stations. This service may also include feeder links necessary for its own operation. (RR)

Routine processing or licensing. A licensing process whereby applications are processed in an expedited manner. To be eligible for routine processing, an application must be complete in all regards, must be consistent with all Commission Rules, and must not raise any policy issues. With respect to fixed earth station licensing (including temporary fixed stations), an application is ''routine'' only if it is for an individual earth station that conforms to all applicable provisions of the Commission's rules pertaining to antenna performance, power, frequency coordination, radiation hazard, and FAA notification, and accesses only ''Permitted Space Station List'' satellites in the conventional C-band or Ku-band frequency bands.

Satellite Digital Audio Radio Service (''DARS''). A radiocommunication service in which audio programming is digitally transmitted by one or more space stations directly to fixed, mobile, and/or portable stations, and which may involve complementary repeating terrestrial transmitters, telemetry, tracking and control facilities.

Satellite system. A space system using one or more artificial earth satellites.

Selected assignment. The term ''selected assignment'' means a spectrum assignment voluntarily identified by a 2 GHz MSS licensee at the time that the licensee's first 2 GHz mobile-satellite service satellite reaches its intended orbit, or other mobile-satellite service spectrum in which the Commission permits a 2 GHz mobile-satellite service licensee to conduct mobile-satellite service operations with authority superior to that of other in-band, mobile-satellite service licensees.

Spacecraft. A man-made vehicle which is intended to go beyond the major portion of the Earth's atmosphere.

Space operation service. A radiocommunication service concerned exclusively with the operation of spacecraft, in particular space tracking, space telemetry and space telecommand. These functions will normally be provided within the service in which the space station is operating.

Space radiocommunication. Any radiocommunication involving the use of one or more space stations or the use of one or more reflecting satellites or other objects in space.

Space station. A station located on an object which is beyond, is intended to go beyond, or has been beyond, the major portion of the Earth's atmosphere.

Space system. Any group of cooperating earth stations and/or space stations employing space radiocommunication for specific purposes.

Terrestrial radiocommunication. Any radiocommunication other than space radiocommunication or radio astronomy.

Terrestrial station. A station effecting terrestrial radiocommunication.

Vehicle-mounted earth station (VMES). A VMES is an earth station, operating from a motorized vehicle that travels primarily on land, that receives from and transmits to geostationary satellite orbit Fixed-Satellite Service space stations and operates within the United States pursuant to the requirements set out in § 25.226.

[30 FR 7176, May 28, 1965]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 25.201, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov.*

§ 25.202 Frequencies, frequency tolerance and emission limitations.

(a)(1) *Frequency band.* The following frequencies are available for use by the Fixed-Satellite Service. Precise frequencies and bandwidths of emission shall be assigned on a case-by-case basis. Refer to the U.S. Table of Frequency Allocations, 47 CFR 2.106, including relevant footnotes, for band-specific use restrictions and coordination requirements. Restrictions and coordination conditions not mentioned in the Table of Frequency Allocations are set forth in the annotations to the following list:

Space-to-earth (GHz)	Earth-to-space (GHz)
3.6–3.65	5.091–5.25
3.65–3.7	5.85–5.925
3.7–4.2	5.925–6.425
4.5–4.8	6.425–6.525
6.7–7.025	6.525–6.7
7.025–7.075	6.7–7.025
10.7–11.7	7.025–7.075
11.7–12.2	12.7–12.75
12.2–12.7	12.75–13.25
18.3–18.58 [1] [2]	13.75–14
18.58–18.8	14–14.2
18.8–19.3	14.2–14.5
19.3–19.7	15.43–15.63
19.7–20.2	17.3–17.8
37.5–40 [3]	24.75–25.05
40–42	25.05–25.25
	[2] 27.5–28.35
	[4] 28.35–28.6
	[5] 28.6–29.1
	[6] 29.1–29.25
	[7] 29.25–29.5
	[4] 29.5–30.0
	47.2–50.2

[1] The 18.3–18.58 GHz band is shared co-equally with existing terrestrial radiocommunication systems until November 19, 2012.

[2] FSS is secondary to LMDS in this band.

[3] Use of this band by the Fixed-Satellite Service is limited to gateway earth station operations, provided the licensee under this Part obtains a license under part 101 of this chapter or an agreement from a part 101 licensee for the area in which an earth station is to be located. Satellite earth station facilities in this band may not be ubiquitously deployed and may not be used to serve individual consumers.

[4] This band is primary for GSO FSS and secondary for NGSO FSS.

[5] This band is primary for NGSO FSS and secondary for GSO FSS.

[6] This band is primary for MSS feeder links and LMDS hub-to-subscriber transmission.

[7] This band is primary for MSS feeder links and GSO FSS.

(2) [Reserved]

(3) The following frequencies are available for use by the non-voice, non-geostationary mobile-satellite service:

137–138 MHz: Space-to-Earth
148–150.05 MHz: Earth-to-space
399.9–400.05 MHz: Earth-to-space
400.15–401 MHz: Space-to-Earth

(4)(i) The following frequencies are available for use by the 1.6/2.4 GHz Mobile-Satellite Service:

1610–1626.5 MHz: User-to-Satellite Link
1613.8–1626.5 MHz: Satellite-to-User Link (secondary)
2483.5–2500 MHz: Satellite-to-User Link

(ii) The following frequencies are available for use by the 2 GHz Mobile-Satellite Service: 2000–2020 MHz: User-to-Satellite Link; 2180–2200 MHz: Satellite-to-User Link.

(iii)(A) The following frequencies are available for use by the 1.5/1.6 GHz Mobile-Satellite Service:

1525–1559 MHz: space-to-Earth
1626.5–1660.5 MHz: Earth-to-space

(B) The use of the frequencies 1544–1545 MHz and 1645.5–1646.5 MHz is limited to distress and safety communications.

(5) The following frequencies are available for use by the inter-satellite service:

22.55–23.00 GHz
23.00–23.55 GHz
24.45–24.65 GHz
24.65–24.75 GHz
54.25–56.90 GHz
57.00–58.20 GHz
65.00–71.00 GHz

(6) The following frequencies are available for use by the Satellite Digital Audio Radio Service (SDARS), and for any associated terrestrial repeaters: 2320–2345 MHz (space-to-Earth)

(7) The following frequencies are available for use by the Direct Broadcast Satellite service:

12.2–12.7 GHz: Space-to-Earth.

12.2–12.7 GHz: Space-to-Earth.

(8) The following frequencies are available for use by ESVs:

3700–4200 MHz (space-to-Earth)
5925–6425 MHz (Earth-to-space)
10.95–11.2 GHz (space-to-Earth)
11.45–11.7 GHz (space-to-Earth)
11.7–12.2 GHz (space-to-Earth)
14.0–14.5 GHz (Earth-to-space)

ESVs shall be authorized and coordinated as set forth in §§ 25.221 and 25.222. ESV operators, collectively, may coordinate up to 180 megahertz of spectrum in the 5925–6425 MHz (Earth-to-space) band for all ESV operations at any given location subject to coordination.

(9) The following frequencies are available for use by the Broadcasting-Satellite Service after 1 April 2007:

17.3–17.7 GHz (space-to-Earth)
17.7–17.8 GHz (space-to-Earth)

NOTE 1 TO PARAGRAPH (a)(9): Use of the 17.3–17.7 GHz band by the broadcasting-satellite service is limited to geostationary satellite orbit systems.

NOTE 2 TO PARAGRAPH (a)(9): Use of the 17.7–17.8 GHz band (space-to-Earth) by the broadcasting-satellite service is limited to transmissions from geostationary satellite orbit systems to receiving earth stations located outside of the United States and its Possessions. In the United States and its Possessions, the 17.7–17.8 GHz band is allocated on a primary basis to the Fixed Service.

(10)(i) The following frequencies are available for use by Vehicle-Mounted Earth Stations (VMESs):

10.95–11.2GHz (space-to-Earth)
11.45–11.7GHz (space-to-Earth)
11.7–12.2GHz (space-to-Earth)
14.0–14.5GHz (Earth-to-space)

(ii) VMESs shall be authorized as set forth in § 25.226.

(11)(i) The following frequencies are available for use by Earth Stations Aboard Aircraft (ESAA):

10.95–11.2 GHz (space-to-Earth)
11.45–11.7 GHz (space-to-Earth)
11.7–12.2 GHz (space-to-Earth)
14.0–14.5 GHz (Earth-to-space)

(ii) ESAAs shall be authorized as set forth in § 25.227.

(b) Other frequencies and associated bandwidths of emission may be assigned on a case-by-case basis to space systems under this part in conformance with § 2.106 of this chapter and the Commission's rules and policies.

(c) Orbital locations assigned to space stations licensed under this part by the commission are subject to change by summary order of the Commission on 30 days notice. An authorization to construct and/or to launch a space station becomes null and void if the construction is not begun or is not completed, or if the space station is not launched and positioned at its assigned orbital location and operations commenced in accordance with the station authorization, by the respective date(s) specified in the authorization. Frequencies and orbital location assignments are subject to the policies set forth in the Report and Order, FCC 83–184, adopted April 27, 1983 in CC Docket No. 81–704 and the Report and Order, adopted July 25, 1985 in CC Docket No. 84–1299 as modified by the Report and Order, adopted January 19, 1996 in IB Docket No. 95–41.

(d) *Frequency tolerance, Earth stations.* The carrier frequency of each earth station transmitter authorized in these services shall be maintained within 0.001 percent of the reference frequency.

(e) *Frequency tolerance, space stations.* The carrier frequency of each space station transmitter authorized in these services shall be maintained within 0.002 percent of the reference frequency.

(f) *Emission limitations.* Except for SDARS terrestrial repeaters, the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the schedule set forth in paragraphs (f)(1) through (f)(4) of this section. The out-of-band emissions of SDARS terrestrial repeaters shall be attenuated in accordance with the schedule set forth in paragraph (h) of this section.

(1) In any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: 25 dB;

(2) In any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: 35 dB;

(3) In any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 250 percent of the authorized bandwidth: An amount equal to 43 dB plus 10 times the logarithm (to the base 10) of the transmitter power in watts;

(4) In any event, when an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in paragraphs (f) (1), (2) and (3) of this section.

(g) Telemetry, tracking and telecommand functions for U.S. domestic satellites shall be conducted at either or both edges of the allocated band(s). Frequencies, polarization and coding shall be selected to minimize interference into other satellite networks and within their own satellite system.

(h) *Out-of-band emission limitations for SDARS terrestrial repeaters.* (1) Any SDARS terrestrial repeater operating at a power level greater than 2-watt average EIRP is required to attenuate its out-of-band emissions below the transmitter power P by a factor of not less than 90 + 10 log (P) dB in a 1-megahertz bandwidth outside the 2320–2345 MHz band, where P is average transmitter output power in watts.

(2) Any SDARS terrestrial repeater operating at a power level equal to or less than 2-watt average EIRP is required to attenuate its out-of-band emissions below the transmitter power

P by a factor of not less than 75 + 10 log (P) dB in a 1-megahertz bandwidth outside the 2320–2345 MHz band, where P is average transmitter output power in watts.

(3) SDARS repeaters are permitted to attenuate out-of-band emissions less than the levels specified in paragraphs (h)(1) and (h)(2), of this section unless a potentially affected WCS licensee provides written notice that it intends to commence commercial service within the following 365 days. Starting 180 days after receipt of such written notice, SDARS repeaters within the area notified by the potentially affected WCS licensee must attenuate out-of-band emissions to the levels specified in paragraphs (h)(1) and (h)(2) of this section.

(4) For the purpose of this section, a WCS licensee is potentially affected if it is authorized to operate a base station in the 2305–2315 MHz or 2350–2360 MHz bands within 25 kilometers of a repeater seeking to operate with an out of band emission attenuation factor less than those prescribed in paragraphs (h)(1) or (2) of this section.

(i) The WCS licensee is authorized to operate a base station in the 2305–2315 MHz or 2350–2360 MHz bands in the same Major Economic Area (MEA) as that in which a SDARS terrestrial repeater is located.

(ii) The WCS licensee is authorized to operate a base station in the 2315–2320 MHz or 2345–2350 MHz bands in the same Regional Economic Area Grouping (REAG) as that in which a SDARS terrestrial repeater is located.

(iii) A SDARS terrestrial repeater is located within 5 kilometers of the boundary of an MEA or REAG in which the WCS licensee is authorized to operate a WCS base station.

[30 FR 7176, May 28, 1965]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 25.202, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§ 25.203 Choice of sites and frequencies.

(a) Sites and frequencies for earth stations, other than ESVs, operating in frequency bands shared with equal rights between terrestrial and space services, shall be selected, to the extent practicable, in areas where the surrounding terrain and existing frequency usage are such as to minimize the possibility of harmful interference between the sharing services.

(b) An applicant for an earth station authorization, other than an ESV, in a frequency band shared with equal rights with terrestrial microwave services shall compute the great circle coordination distance contour(s) for the proposed station in accordance with the procedures set forth in § 25.251. The applicant shall submit with the application a map or maps drawn to appropriate scale and in a form suitable for reproduction indicating the location of the proposed station and these contours. These maps, together with the pertinent data on which the computation of these contours is based, including all relevant transmitting and/or receiving parameters of the proposed station that is necessary in assessing the likelihood of interference, an appropriately scaled plot of the elevation of the local horizon as a function of azimuth, and the electrical characteristics of the earth station antenna(s), shall be submitted by the applicant in a single exhibit to the application. The coordination distance contour plot(s), horizon elevation plot, and antenna horizon gain plot(s) required by this section may also be submitted in tabular numerical format at 5° azimuthal increments instead of graphical format. At a minimum, this exhibit shall include the information listed in paragraph (c)(2) of this section. An earth station applicant shall also include in the application relevant technical details (both theoretical calculations and/or actual measurements) of any special techniques, such as the use of artificial site shielding, or operating procedures or restrictions at the proposed earth station which are to be employed to reduce the likelihood of interference, or of any particular characteristics of the earth station site which could have an effect on the calculation of the coordination distance.

(c) Prior to the filing of its application, an applicant for operation of an earth station, other than an ESV, VMES or ESAA, shall coordinate the proposed frequency usage with existing