

## § 25.264

(3) An SDARS licensee operating terrestrial repeaters must maintain an accurate and up-to-date inventory of its terrestrial repeaters operating above 2 watts average EIRP, including the information set forth in § 25.263(c)(2), which shall be available upon request by the Commission.

(d) *Calculation of Notice Period.* Notice periods are calculated from the date of receipt by the licensee being notified. If notification is by mail, the date of receipt is evidenced by the return receipt on certified mail. If notification is by fax, the date of receipt is evidenced by the notifying party's fax transmission confirmation log. If notification is by e-mail, the date of receipt is evidenced by a return e-mail receipt. If the SDARS licensee and all potentially affected WCS licensees reach a mutual agreement to provide notification by some other means, that agreement must specify the method for determining the beginning of the notice period.

(e) *Duty to cooperate.* SDARS licensees must cooperate in good faith in the selection and use of new repeater sites to reduce interference and make the most effective use of the authorized facilities. SDARS licensees should provide WCS licensees as much lead time as practicable to provide ample time to conduct analyses and opportunity for prudent repeater site selection prior to SDARS licensees entering into real estate and tower leasing or purchasing agreements. Licensees of stations suffering or causing harmful interference must cooperate in good faith and resolve such problems by mutually satisfactory arrangements. If the licensees are unable to do so, the International Bureau, in consultation with the Office of Engineering and Technology and the Wireless Telecommunications Bureau, will consider the actions taken by the parties to mitigate the risk of and remedy any alleged interference. In determining the appropriate action, the Bureau will take into account the nature and extent of the interference and act promptly to remedy the interference. The Bureau may impose restrictions on SDARS licensees, including specifying the transmitter power, antenna height, or other technical or operational measures to remedy the interference, and

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will take into account previous measures by the licensees to mitigate the risk of interference.

[75 FR 45069, Aug. 2, 2010, as amended at 78 FR 9619, Feb. 11, 2013]

### § 25.264 Requirements to facilitate reverse-band operation in the 17.3–17.8 GHz band of 17/24 GHz Broadcasting-satellite Service and Direct Broadcast Satellite Service space stations.

(a) Each applicant for a space station license in the 17/24 GHz broadcasting-satellite service (BSS) must provide a series of tables or graphs with its application, that contain the predicted transmitting antenna off-axis gain information for each transmitting antenna in the 17.3–17.8 GHz frequency band. Using a Cartesian coordinate system wherein the X axis is tangent to the geostationary orbital arc with the positive direction pointing east, *i.e.*, in the direction of travel of the satellite; the Y axis is parallel to a line passing through the geographic north and south poles of the Earth, with the positive direction pointing south; and the Z axis passes through the satellite and the center of the Earth, with the positive direction pointing toward the Earth, the applicant must provide the predicted transmitting antenna off-axis antenna gain information:

(1) In the X–Z plane, *i.e.*, the plane of the geostationary orbit, over a range of  $\pm 30$  degrees from the positive and negative X axes in increments of 5 degrees or less.

(2) In planes rotated from the X–Z plane about the Z axis, over a range of  $\pm 60$  degrees relative to the equatorial plane, in increments of 10 degrees or less.

(3) In both polarizations.

(4) At a minimum of three measurement frequencies determined with respect to the entire portion of the 17.3–17.8 GHz frequency band over which the space station is designed to transmit: 5 MHz above the lower edge of the band; at the band center frequency; and 5 MHz below the upper edge of the band.

(5) Over a greater angular measurement range, if necessary, to account for any planned spacecraft orientation bias or change in operating orientation relative to the reference coordinate

system. The applicant must also explain its reasons for doing so.

(b) Each applicant for a space station license in the 17/24 GHz BSS must provide power flux density (pfd) calculations with its application that are based upon the predicted off-axis transmitting antenna gain information submitted in accordance with paragraph (a) of this section, as follows:

(1) The pfd calculations must be provided at the location of all prior-filed U.S. DBS space stations where the applicant's pfd level exceeds the coordination trigger of  $-117 \text{ dBW/m}^2/100 \text{ kHz}$  in the 17.3-17.8 GHz band. In this rule, the term prior-filed U.S. DBS space station refers to any Direct Broadcast Satellite service space station application that was filed with the Commission (or authorization granted by the Commission) prior to the filing of the 17/24 GHz BSS application containing the predicted off-axis transmitting antenna gain information. The term prior-filed U.S. DBS space station does not include any applications (or authorizations) that have been denied, dismissed, or are otherwise no longer valid. Prior-filed U.S. DBS space stations may include foreign-licensed DBS space stations seeking authority to serve the United States market, but do not include foreign-licensed DBS space stations that have not filed applications with the Commission for market access in the United States.

(2) The pfd calculations must take into account the maximum permitted longitudinal station-keeping tolerance, orbital inclination and orbital eccentricity of both the 17/24 GHz BSS and DBS space stations, and must:

(i) Identify each prior-filed U.S. DBS space station at whose location the coordination threshold pfd level of  $-117 \text{ dBW/m}^2/100 \text{ kHz}$  is exceeded; and

(ii) Demonstrate the extent to which the applicant's transmissions in the 17.3-17.8 GHz band exceed the threshold pfd level of  $-117 \text{ dBW/m}^2/100 \text{ kHz}$  at those prior-filed U.S. DBS space station locations.

(3) If the calculated pfd level is in excess of the threshold level of  $-117 \text{ dBW/m}^2/100 \text{ kHz}$  at the location of any prior-filed U.S. DBS space station, the applicant must also provide with its application certification that all affected

DBS operators acknowledge and do not object to the applicants higher off-axis pfd levels. No such certification is required in cases where the DBS and 17/24 GHz BSS assigned operating frequencies do not overlap.

(c) No later than 9 months prior to launch, each 17/24 GHz BSS space station applicant or authorization holder must confirm the predicted transmitting antenna off-axis gain information provided in accordance with §25.114(d)(15)(iv) by submitting measured transmitting antenna off-axis gain information over the angular ranges, measurement frequencies and polarizations described in paragraphs (a)(1) through (5) of this section. The transmitting antenna off-axis gain information should be measured under conditions as close to flight configuration as possible.

(d) No later than 9 months prior to launch, each 17/24 GHz BSS space station applicant or authorization holder must provide pfd calculations based upon the measured transmitting antenna off-axis gain information that is submitted in accordance with paragraph (c) of this section as follows:

(1) The pfd calculations must be provided:

(i) At the location of all prior-filed U.S. DBS space stations as defined in paragraph (b)(1) of this section, where the applicant's pfd level in the 17.3-17.8 GHz band exceeds the coordination trigger of  $-117 \text{ dBW/m}^2/100 \text{ kHz}$ ; and

(ii) At the location of any subsequently-filed U.S. DBS space station where the applicant's pfd level in the 17.3-17.8 GHz band exceeds the coordination trigger of  $-117 \text{ dBW/m}^2/100 \text{ kHz}$ . In this rule, the term subsequently-filed U.S. DBS space station refers to any Direct Broadcast Satellite service space station application that was filed with the Commission (or authorization granted by the Commission) after the 17/24 GHz BSS operator submitted the predicted data required by paragraphs (a) through (b) of this section, but prior to the time the 17/24 GHz BSS operator submitted the measured data required in this paragraph. Subsequently-filed U.S. DBS space stations may include foreign-licensed DBS space stations seeking authority to serve the United

States market. The term does not include any applications (or authorizations) that have been denied, dismissed, or are otherwise no longer valid, nor does it include foreign-licensed DBS space stations that have not filed applications with the Commission for market access in the United States.

(2) The pfd calculations must take into account the maximum permitted longitudinal station-keeping tolerance, orbital inclination and orbital eccentricity of both the 17/24 GHz BSS and DBS space stations, and must:

(i) Identify each prior-filed U.S. DBS space station at whose location the coordination threshold pfd level of  $-117$  dBW/m<sup>2</sup>/100 kHz is exceeded; and

(ii) Demonstrate the extent to which the applicant's or licensee's transmissions in the 17.3–17.8 GHz band exceed the threshold pfd level of  $-117$  dBW/m<sup>2</sup>/100 kHz at those prior-filed U.S. DBS space station locations.

(e) If the pfd level calculated from the measured data submitted in accordance with paragraph (d) of this section is in excess of the threshold pfd level of  $-117$  dBW/m<sup>2</sup>/100 kHz:

(1) At the location of any prior-filed U.S. DBS space station as defined in paragraph (b)(1) of this section, then the 17/24 GHz broadcasting-satellite operator must either:

(i) Coordinate its operations that are in excess of the threshold pfd level of  $-117$  dBW/m<sup>2</sup>/100 kHz with the affected prior-filed U.S. DBS space station operator, or

(ii) Adjust its operating parameters so that at the location of the prior-filed U.S. DBS space station, the pfd level of  $-117$  dBW/m<sup>2</sup>/100 kHz is not exceeded.

(2) At the location of any subsequently-filed U.S. DBS space station as defined in paragraph (d)(1) of this section, where the pfd level submitted in accordance with paragraph (d) of this section, is also in excess of the pfd level calculated on the basis of the predicted data submitted in accordance with paragraph (a) of this section that were on file with the Commission at the time the DBS space station application was filed, then the 17/24 GHz broadcasting-satellite operator must either:

(i) Coordinate with the affected subsequently-filed U.S. DBS space station operator all of its operations that are either in excess of the pfd level calculated on the basis of the predicted antenna off-axis gain data, or are in excess of the threshold pfd level of  $-117$  dBW/m<sup>2</sup>/100 kHz, whichever is greater, or

(ii) Adjust its operating parameters so that at the location of the subsequently-filed U.S. DBS space station, either the pfd level calculated on the basis of the predicted off-axis transmitting antenna gain data, or the threshold pfd level of  $-117$  dBW/m<sup>2</sup>/100 kHz, whichever is greater, is not exceeded.

(3) No coordination or adjustment of operating parameters is required in cases where the DBS and 17/24 GHz BSS operating frequencies do not overlap.

(f) The 17/24 GHz BSS applicant or licensee must modify its license, or amend its application, as appropriate, based upon new information:

(1) If the pfd levels submitted in accordance with paragraph (d) of this section, are in excess of those submitted in accordance with paragraph (b) of this section at the location of any prior-filed or subsequently-filed U.S. DBS space station as defined in paragraphs (b)(1) and (d)(1) of this section, or

(2) If the 17/24 GHz BSS operator adjusts its operating parameters in accordance with paragraphs (e)(1)(ii) or (e)(2)(ii) or this section.

(g) Absent an explicit agreement between operators to permit more closely spaced operations, U.S. authorized 17/24 GHz BSS space stations and U.S. authorized DBS space stations with co-frequency assignments may not be licensed to operate at locations separated by less than 0.2 degrees in orbital longitude.

(h) All operational 17/24 GHz BSS space stations must be maintained in geostationary orbits that:

(1) Do not exceed  $0.075^\circ$  of inclination.

(2) Operate with an apogee less than or equal to 35,806 km above the surface of the Earth, and with a perigee greater than or equal to 35,766 km above the surface of the Earth (*i.e.*, an eccentricity of less than  $4.7 \times 10^{-4}$ ).

(i) U.S. authorized DBS networks may claim protection from space path

interference arising from the reverse-band operations of U.S. authorized 17/24 GHz BSS networks to the extent that the DBS space station operates within the bounds of inclination and eccentricity listed below. When the geostationary orbit of the DBS space station exceeds these bounds on inclination and eccentricity, it may not claim protection from any additional space path interference arising as a result of its inclined or eccentric operations and may only claim protection as if it were operating within the bounds listed below:

(1) The DBS space station's orbit does not exceed 0.075° of inclination, and

(2) The DBS space station's orbit maintains an apogee less than or equal to 35,806 km above the surface of the Earth, and a perigee greater than or equal to 35,766 km above the surface of the Earth (*i.e.*, an eccentricity of less than  $4.7 \times 10^{-4}$ ).

[76 FR 50431, Aug. 15, 2011]

**§ 25.265 Acceptance of interference in 2000–2020 MHz.**

(a) MSS receivers operating in the 2000–2020 MHz band must accept interference from lawful operations in the 1995–2000 MHz band, where such interference is due to:

(1) The in-band power of any operations in 1995–2000 MHz (*i.e.*, the portion of transmit power contained in the 1995–2000 MHz band); or

(2) The portion of out-of-band emissions contained in 2000–2005 MHz.

(b) [Reserved]

[78 FR 8267, Feb. 5, 2013]

**Subpart D—Technical Operations**

SOURCE: 58 FR 13421, Mar. 11, 1993, unless otherwise noted.

**§ 25.271 Control of transmitting stations.**

(a) The licensee of a facility licensed under this part is responsible for the proper operation and maintenance of the station.

(b) The licensee of a transmitting earth station licensed under this part shall ensure that a trained operator is present on the earth station site, or at

a designated remote control point for the earth station, at all times that transmissions are being conducted. No operator's license is required for a person to operate or perform maintenance on facilities authorized under this part.

(c) Authority will be granted to operate a transmitting earth station by remote control only on the conditions that:

(1) The parameters of the transmissions of the remote station monitored at the control point, and the operational functions of the remote earth stations that can be controlled by the operator at the control point, are sufficient to ensure that the operations of the remote station(s) are at all times in full compliance with the remote station authorization(s);

(2) The earth station facilities are protected by appropriate security measures to prevent unauthorized entry or operations;

(3) Upon detection by the licensee, or upon notification from the Commission of a deviation or upon notification by another licensee of harmful interference, the operation of the remote station shall be immediately suspended by the operator at the control point until the deviation or interference is corrected, except that transmissions concerning the immediate safety of life or property may be conducted for the duration of the emergency; and

(4) The licensee shall have available at all times the technical personnel necessary to perform expeditiously the technical servicing and maintenance of the remote stations.

(5) International VSAT system operators are required to maintain a control point within the United States, or to maintain a point of contact within the United States available 24 hours a day, 7 days a week, with the ability to shut off any earth station within the VSAT network immediately upon notification of harmful interference.

(d) The licensee shall insure that the licensed facilities are properly secured against unauthorized access or use whenever an operator is not present at the transmitter.

(e) The licensee of an NGSO FSS system operating in the 10.7–14.5 GHz bands shall maintain an electronic web site bulletin board to list the satellite