

(e) An earth station using asymmetrical antennas without skew angle adjustment capability must comply with the gain values specified in paragraph (a)(1) of this section, in the plane orthogonal to the to the main plane of the antenna, or, alternatively, in the plane corresponding to the maximum skew angle experienced at any location at which the earth station may be located.

(f) A GSO FSS earth station with an antenna that does not conform to the applicable standards in paragraphs (a) and (b) of this section will be author-

ized only if the applicant demonstrates that the antenna will not cause unacceptable interference. This demonstration must comply with the requirements in §25.138, §25.218, §25.220, §25.221, §25.222, §25.226, or §25.227, as appropriate.

(g) [Reserved]

(h) The gain of any transmitting antenna in a gateway earth station communicating with NGSO FSS satellites in the 10.7–11.7 GHz, 12.75–13.15 GHz, 13.2125–13.25 GHz, 13.8–14.0 GHz, and/or 14.4–14.5 GHz bands must lie below the envelope defined as follows:

29–25log <sub>10</sub> (θ) .....	dBi	for 1° ≤ θ ≤ 36°.
– 10 .....	dBi	for 36° ≤ θ ≤ 180°.

Where θ and dBi are as defined in paragraph (a)(1) of this section. This envelope may be exceeded by up to 3 dB in 10% of the range of θ angles from ±7–180°.

[48 FR 40255, Sept. 6, 1983, as amended at 50 FR 2675, Jan. 18, 1985; 50 FR 39004, Sept. 26, 1985; 58 FR 13420, Mar. 11, 1993; 66 FR 10630, Feb. 16, 2001; 70 FR 32255, June 2, 2005; 72 FR 50029, Aug. 29, 2007; 73 FR 70901, Nov. 24, 2008; 74 FR 57099, Nov. 4, 2009; 78 FR 8427, Feb. 6, 2013; 78 FR 14927, Mar. 8, 2013; 79 FR 8322, Feb. 12, 2014; 81 FR 55336, Aug. 18, 2016; 83 FR 34491, July 20, 2018]

**§ 25.210 Technical requirements for space stations.**

(a)–(b) [Reserved]

(c) Space station antennas operating in the Direct Broadcast Satellite Service or operating in the Fixed-Satellite Service for reception of feeder links for Direct Broadcast Satellite Service must be designed to provide a cross-polarization isolation such that the ratio of the on-axis co-polar gain to the cross-polar gain of the antenna in the assigned frequency band is at least 27 dB within the primary coverage area.

(d)–(e) [Reserved]

(f) All space stations in the Fixed-Satellite Service operating in any portion of the 3600–4200 MHz, 5091–5250 MHz, 5850–7025 MHz, 10.7–12.7 GHz, 12.75–13.25 GHz, 13.75–14.5 GHz, 15.43–15.63 GHz, 18.3–20.2 GHz, 24.75–25.25 GHz, or 27.5–30.0 GHz bands, including feeder links for other space services, and in the Broadcasting-Satellite Service in

the 17.3–17.8 GHz band (space-to-Earth), shall employ state-of-the-art full frequency reuse, either through the use of orthogonal polarizations within the same beam and/or the use of spatially independent beams. This requirement does not apply to telemetry, tracking, and command operation.

(g)–(h) [Reserved]

(i) 17/24 GHz BSS space station antennas transmitting in the 17.3–17.8 GHz band must be designed to provide a cross-polarization isolation such that the ratio of the on axis co-polar gain to the cross-polar gain of the antenna in the assigned frequency band is at least 25 dB within its primary coverage area.

(j) Space stations operated in the geostationary satellite orbit must be maintained within 0.05° of their assigned orbital longitude in the east/west direction, unless specifically authorized by the Commission to operate with a different longitudinal tolerance, and except as provided in Section 25.283(b) (End-of-life Disposal).

[58 FR 13420, Mar. 11, 1993, as amended at 61 FR 9952, Mar. 12, 1996; 62 FR 5931, Feb. 10, 1997; 62 FR 61457, Nov. 18, 1997; 68 FR 51508, Aug. 27, 2003; 69 FR 54587, Sept. 9, 2004; 70 FR 32256, June 2, 2005; 72 FR 50029, Aug. 29, 2007; 78 FR 8428, Feb. 6, 2013; 79 FR 8323, Feb. 12, 2014; 81 FR 55338, Aug. 18, 2016; 83 FR 34491, July 20, 2018]

**§ 25.211 Analog video transmissions in the FSS.**

(a) [Reserved]