Federal Communications Commission

control may be used to increase the e.i.r.p. density in the 6 MHz band in this frequency range to compensate for rain attenuation, to the extent that the power flux-density at the FSS space station does not exceed the value resulting from use by an earth station of an e.i.r.p. of 71 dBW or 51 dBW, as appropriate, in the 6 MHz band in clear-sky conditions.

(g) All earth stations in the Fixed-Satellite Service in the 20/30 GHz band, and feeder-link earth stations operating in the 24.75–25.25 GHz band (Earth-to-space) and providing service to geostationary satellites in the 17/24 GHz BSS, shall employ uplink adaptive power control or other methods of fade compensation such that the earth station transmissions shall be conducted at the power level required to meet the desired link performance while reducing the level of mutual interference between networks.

(h) ESV transmissions in the 5925– 6425 MHz (Earth-to-space) band shall not exceed an e.i.r.p. spectral density towards the radio-horizon of 17 dBW/ MHz, and shall not exceed an e.i.r.p. towards the radio-horizon of 20.8 dBW. The ESV network shall shut-off the ESV transmitter if the e.i.r.p. spectral density towards the radio-horizon or e.i.r.p. towards the radio-horizon are exceeded.

(i) Within 125 km of the TDRSS sites identified in §25.222(d), ESV transmissions in the 14.0-14.2 GHz (Earth-tospace) band shall not exceed an e.i.r.p. spectral density towards the horizon of 12.5 dBW/MHz, and shall not exceed an e.i.r.p. towards the horizon of 16.3 dBW.

(j) Within 125 km of the Tracking and Data Relay System Satellite (TDRSS) sites identified in §25.226(c), VMES transmissions in the 14.0–14.2 GHz (Earth-to-space) band shall not exceed an EIRP spectral density towards the horizon of 12.5 dBW/MHz, and shall not exceed an EIRP towards the horizon of 16.3 dBW.

(k) Within radio line-of-sight of the Tracking and Data Relay System Satellite (TDRSS) sites identified in §25.227(c), ESAA transmissions in the 14.0-14.2 GHz (Earth-to-space) band shall not exceed an EIRP spectral density towards or below the horizon of 12.5 dBW/MHz, and shall not exceed an EIRP towards or below the horizon of 16.3 dBW.

[48 FR 40255, Sept. 6, 1983, as amended at 58 FR 13420, Mar. 11, 1993; 61 FR 52307, Oct. 7, 1996; 62 FR 61457, Nov. 18, 1997; 66 FR 10623, Feb. 16, 2001; 70 FR 4784, Jan. 31, 2005; 70 FR 32255, June 2, 2005; 72 FR 50029, Aug. 29, 2007; 74 FR 57098, Nov. 4, 2009; 78 FR 8427, Feb. 6, 2013; 78 FR 14927, Mar. 8, 2013]

§25.205 Minimum angle of antenna elevation.

(a) Earth station antennas shall not normally be authorized for transmission at angles less than 5° measured from the horizontal plane to the direction of maximum radiation. However, upon a showing that the transmission path will be seaward and away from land masses or upon special showing of need for lower angles by the applicant, the Commission will consider authorizing transmissions at angles between 3° and 5° in the pertinent directions. In certain instances, it may be necessary to specify minimum angles greater than 5° because of interference considerations.

(b) ESVs making a special showing requesting angles of elevation less than 5° measured from the horizontal plane to the direction of maximum radiation pursuant to (a) of this Section must still meet the effective isotropically radiated power (e.i.r.p.) and e.i.r.p. density towards the horizon limits contained in §25.204(h) and (i).

(c) VMESs making a special showing requesting angles of elevation less than 5° measured from the horizontal plane to the direction of maximum radiation pursuant to (a) of this section must still meet the EIRP and EIRP density towards the horizon limits contained in §25.204(j).

(d) While on the ground, ESAAs shall not be authorized for transmission at angles less than 5° measured from the plane of the horizon to the direction of maximum radiation. While in flight there is no minimum angle of antenna elevation.

[70 FR 4784, Jan. 31, 2005, as amended at 74 FR 57099, Nov. 4, 2009; 78 FR 14927, Mar. 8, 2013]

§25.206 Station identification.

The requirement for transmission of station identification is waived for all

radio stations licensed under this part with the exception of satellite uplinks carrying broadband video information which are required to incorporate ATIS in accordance with the provisions set forth under §25.308 of these rules.

[55 FR 21551, May 25, 1990]

§25.207 Cessation of emissions.

Space stations shall be made capable of ceasing radio emissions by the use of appropriate devices (battery life, timing devices, ground command, etc.) that will ensure definite cessation of emissions.

§25.208 Power flux density limits.

(a) In the band 3650–4200 MHz, the power flux density at the Earth's surface produced by emissions from a space station for all conditions and for all methods of modulation shall not exceed the following values:

- -152 dB(W/m²) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;
- $-152{+}(\delta{-}5)/2~dB(\bar{W}/m^2)$ in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane; and
- $-\,142~{\rm dB}({\rm W/m^2})$ in any 4 kHz 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.

(b) In the bands 10.95–11.2 and 11.45– 11.7 GHz for GSO FSS space stations and 10.7–11.7 GHz for NGSO FSS space stations, the power flux-density at the Earth's surface produced by emissions from a space station for all conditions and for all methods of modulation shall not exceed the lower of the following values:

(1) $-150 \text{ dB}(W/m^2)$ in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane; -150+ $(\delta-5)/2 \text{ dB}(W/m^2)$ in any 4 kHz band for angles of arrival (δ) (in degrees) between 5 and 25 degrees above the horizontal plane; and $-140 \text{ dB}(W/m^2)$ in any 47 CFR Ch. I (10–1–13 Edition)

4 kHz band for angles of arrival between 25 and 90 degrees above the horizontal plane; or

(2) $-126 \text{ dB}(W/m^2)$ in any 1 MHz band for angles of arrival between 0 and 5 degrees above the horizontal plane; -126+ $(\delta-5)/2 \text{ dB}(W/m^2)$ in any 1 MHz band for angles of arrival (δ) (in degrees) between 5 and 25 degrees above the horizontal plane; and $-116 \text{ dB}(W/m^2)$ in any 1 MHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

NOTE TO PARAGRAPH (b): These limits relate to the power flux density, which would be obtained under assumed free-space propagation conditions.

(c) In the 17.7–17.8 GHz, 18.3–18.8 GHz, 19.3–19.7 GHz, 22.55–23.00 GHz, 23.00–23.55 GHz, and 24.45–24.75 GHz frequency bands, the power flux density at the Earth's surface produced by emissions from a space station for all conditions for all methods of modulation shall not exceed the following values:

 $(1) -115 \text{ dB} (W/m^2)$ in any 1 MHz band for angles of arrival between 0 and 5 degrees above the horizontal plane.

(2) -115 + 0.5 (δ -5) dB (W/m²) in any 1 MHz band for angles of arrival d (in degrees) between 5 and 25 degrees above the horizontal plane.

 $(3) -105 \text{ dB} (W/m^2)$ in any 1 MHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

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

(e) In the 18.8–19.3 GHz frequency band, the power flux-density at the Earth's surface produced by emissions from a space station for all conditions and for all methods of modulation shall not exceed the following values:

$-115 - X dB(W/m^2 \div MHz)$	for 0° ≤δ <5°
$-115 - X + ((10 + X)/20)(\delta - 5) dB(W/m^2 \div MHz) \ \ldots \\$	for $5^{\circ} \leq \delta < 25^{\circ}$
$-105 \text{ dB}(W/m^2 \div MHz)$	for $25^{\circ} \leq \delta < 90^{\circ}$