(i) The ESV applicant shall provide a detailed showing of the measures it intends to employ to maintain the effective aggregate EIRP-density from all simultaneously transmitting co-frequency terminals operating with the same satellite transponder at least 1 dB below the EIRP-density limits defined in paragraph (a)(1)(i) of this section. In this context the term ''effective'' means that the resultant co-polarized and cross-polarized EIRP-density experienced by any GSO or non-GSO satellite shall not exceed that produced by a single ESV transmitter operating at 1 dB below the limits defined in paragraph (a)(1)(i) of this section.

(ii) The ESV applicant shall provide a detailed showing that an individual ESV terminal is capable of automatically ceasing emissions within 100 milliseconds if the ESV transmitter exceeds the off-axis EIRP-density limit specified in paragraph (a)(3)(i) of this section and that the individual transmitter is self-monitoring and capable of shutting itself off. The ESV applicant shall also provide a detailed showing that one or more transmitters are capable of automatically ceasing or reducing emissions within 100 milliseconds of receiving the appropriate command from the system's central control and monitoring station if the aggregate off-axis EIRP spectral-densities of the transmitter or transmitters exceed the off-axis EIRP-density limits specified in paragraph (a)(3)(i) of this section.

(4) There shall be an exhibit included with the application describing the geographic area(s) in which the ESVs will operate.

(5) The point of contact referred to in paragraph (a)(3) of this section and, if applicable paragraph (a)(6) of this section, must be included in the application.

(6) ESVs that exceed the radiation guidelines of §1.1310 of this chapter, Radiofrequency radiation exposure limits, must provide, with their environmental assessment, a plan for mitigation of radiation exposure to the extent required to meet those guidelines.

(7) Except for ESV systems operating pursuant to paragraph (a)(2) of this section, ESV systems authorized pursuant to this section shall be eligible for a license that lists Permitted List as an authorized point of communication.

(c) Operations of ESVs in the 14.0–14.2 GHz (Earth-to-space) frequency band within 125 km of the NASA TDRSS facilities on Guam (located at latitude: 13°36′55″ N, longitude 144°51′22″ E) or White Sands, New Mexico (latitude: 32°20′59″ N, longitude 106°36′31″ W and latitude: 32°32′40″ N, longitude 106°36′48″ W) are subject to coordination through the National Telecommunications and Information Administration (NTIA) Interdepartment Radio Advisory Committee (IRAC). When NTIA seeks to provide similar protection to future TDRSS sites that have been coordinated through the IRAC Frequency Assignment Subcommittee process, NTIA will notify the Commission that the site is nearing operational status. Upon public notice from the Commission, all Ku-band ESV operators must cease operations in the 14.0–14.2 GHz band within 125 km of the new TDRSS site until after NTIA/IRAC coordination for the new TDRSS facility is complete. ESV operations will then again be permitted to operate in the 14.0–14.2 GHz band within 125 km of the new TDRSS site, subject to any operational constraints developed in the coordination process.

(d) Operations of ESVs in the 14.47–14.5 GHz (Earth-to-space) frequency band within (a) 45 km of the radio observatory on St. Croix, Virgin Islands (latitude 17°46′ N, longitude 64°35′ W); (b) 125 km of the radio observatory on Mauna Kea, Hawaii (at latitude 19°48′ N, longitude 155°28′ W); and (c) 90 km of the Arecibo Observatory on Puerto Rico (latitude 18°20′46″ W, longitude 66°45′11″ N) are subject to coordination through the National Telecommunications and Information Administration (NTIA) Interdepartment Radio Advisory Committee (IRAC).

[74 FR 47105, Sept. 15, 2009, as amended at 77 FR 50051, Aug. 20, 2012; 78 FR 8429, Feb. 6, 2013; 79 FR 8324, Feb. 12, 2014]

§ 25.223 Alternative licensing rules for feeder-link earth stations in the 17/24 GHz BSS.

(a) This section applies to license applications for earth stations that transmit to 17/24 GHz Broadcasting-Satellite Service space stations that

are not eligible for routine processing under § 25.212(f).

(b) All applications for earth station licenses in the 24.75–25.25 GHz portion of 17/24 GHz BSS shall be routinely processed if they meet the following requirements:

32.5–25log(θ)	dBW/MHz	for 2° $\leq\theta$ $\leq$7°
11.4	dBW/MHz	for 7° $\leq\theta$ $\leq$9.2°
35.5–25log(θ)	dBW/MHz	for 9.2° $\leq\theta$ $\leq$48°
3.5	dBW/MHz	for 48° $\leq\theta$ $\leq$180°

Where θ is the angle in degrees from the axis of the main lobe.

(2) 17/24 GHz BSS earth station antenna off-axis EIRP spectral density

(1) 17/24 GHz BSS earth station antenna off-axis EIRP spectral density for co-polarized signals shall not exceed the following values, within ±3° of the GSO arc, under clear sky conditions:

for co-polarized signals shall not exceed the following values, for all directions other than within ±3° of the GSO arc, under clear sky conditions:

35.5–25log(θ)	dBW/MHz	for 2° $\leq\theta$ $\leq$7°
14.4	dBW/MHz	for 7° $\leq\theta$ $\leq$9.2°
38.5–25log(θ)	dBW/MHz	for 9.2° $\leq\theta$ $\leq$48°
6.5	dBW/MHz	for 48° $\leq\theta$ $\leq$180°

Where θ is the angle in degrees from the axis of the main lobe.

(3) The values given in paragraphs (b)(1) and (2) of this section may be exceeded by 3 dB, for values of θ >10°, provided that the total angular range over which this occurs does not exceed 20°

when measured along both sides of the GSO arc.

(4) 17/24 GHz BSS earth station antenna off-axis EIRP spectral density for cross-polarized signals shall not exceed the following values, in all directions greater than + 3 relative to the GSO arc, under clear sky conditions:

22.5–25log(θ)	dBW/MHz	for 2° $\leq\theta$ $\leq$7°
1.4	dBW/MHz	for 7° $\leq\theta$ $\leq$9.2°

Where is the angle in degrees from the axis of the main lobe.

(c) Each earth station license applicant that proposes levels in excess of those defined in paragraph (b) of this section must certify that all potentially affected parties acknowledge and do not object to the use of the applicant's higher power densities. For proposed power density levels less than or equal to 3 dB in excess of the limits defined in paragraph (b) of this section, the potentially affected parties are operators of co-frequency U.S.-authorized 17/24 GHz BSS satellites at angular separations of up to ±6° from the proposed satellite points of communication; for power density levels greater than 3 dB and less than or equal to 6 dB in excess of the limits defined in paragraph (b) of

this section, potentially affected parties are operators of co-frequency U.S.-authorized satellites up to ±10° from the proposed satellite points of communication. Power density levels greater than 6 dB in excess of the limits defined in paragraph (b) of this section will not be permitted.

(d) Licensees authorized pursuant to paragraph (c) of this section shall bear the burden of coordinating with any future applicants or licensees whose proposed compliant operations at 10 degrees or smaller orbital spacing, as defined by paragraph (b) of this section, is potentially or actually adversely affected by the operation of the non-compliant licensee. If no good faith agreement can be reached, however, the non-compliant licensee shall reduce its

earth station EIRP spectral density levels to be compliant with those specified in paragraph (b) of this section.

[72 FR 50030, Aug. 29, 2007, as amended at 79 FR 8324, Feb. 12, 2014]

§ 25.224 Protection of receive-only earth stations in the 17/24 GHz BSS.

(a) Notwithstanding § 25.209(c) of this part, receive-only earth stations operating in the 17/24 GHz broadcasting-satellite service can claim no greater protection from interference than they would receive if the equivalent antenna diameter were equal to or greater than 45 cm and the antenna meets the co-polar and cross-polar performance patterns represented by the following set of formulas (adopted in Recommendation ITU–R BO.1213–1, dated November 2005) that are valid for $D/\lambda \geq 11$: