

measurements to the Commission on request.

(2) All applications for transmitting earth stations operating in the 20/30 GHz band must be accompanied by the measurements specified in §§25.138(d) and (e).

(b)(1) In order to demonstrate compliance with §25.209 (a) and (b), the following measurements on a production antenna performed on calibrated antenna range, as a minimum, shall be made at the bottom, middle and top of each allocated frequency band and submitted to the Commission:

(i) Co-polarized patterns for each of two orthogonal senses of polarizations in two orthogonal cuts of the antenna.

(A) In the azimuth plane, plus and minus 7 degrees and plus and minus 180 degrees.

(B) In the elevation plane, zero to forty-five degrees.

(ii) Cross-polarization patterns in the E- and H-planes, plus and minus 9 degrees.

(iii) Main beam gain.

(2) The FCC envelope specified in §25.209 shall be superimposed on each pattern. The minimum tests specified above are recognized as representative of the performance of the antenna in most planes although some increase in sidelobe levels should be expected in the spar planes and orthogonal spar planes.

(3) Applicants seeking authority to use an antenna that does not meet the standards set forth in §§25.209(a) and (b), pursuant to the procedure set forth in §25.220, §25.221, §25.222, §25.223 or §25.226, are required to submit a copy of the manufacturer's range test plots of the antenna gain patterns specified in paragraph (b)(1) of this section.

(c) The tests specified in paragraph (b) of this section are normally performed at the manufacturer's facility; but for those antennas that are very large and only assembled on-site, on-site measurements may be used for product qualification data. If on-site data is to be used for qualification, the test frequencies and number of patterns should follow, where possible, the recommendations in paragraph (b) of this section, and the test data is to be submitted in the same manner as described in paragraph (a) of this section.

(d) For each new or modified transmitting antenna over 3 meters in diameter, the following on-site verification measurements must be completed at one frequency on an available transponder in each frequency band of interest and submitted to the Commission.

(1) Co-polarized patterns in the elevation plane, plus and minus 7 degrees, in the transmit band.

(2) Co-polarized patterns in the azimuth and elevation planes, plus and minus 7 degrees, in the receive band.

(3) *System cross-polarization discrimination on-axis.* The FCC envelope specified in §25.209 shall be superimposed on each pattern. The transmit patterns are to be measured with the aid of a cooperating earth station in coordination with the satellite system control center under the provisions of §25.272.

(e) Certification that the tests required by paragraph (c) of this section have been satisfactorily performed shall be provided to the Commission in notification that construction of the facilities has been completed as required by §25.133.

(f) Antennas less than 3 meters in diameter and antennas on simple (manual) drive mounts that are operated at a fixed site are exempt from the requirements of paragraphs (c) and (d) of this section provided that a detailed technical showing is made that confirms proper installation, pointing procedures, and polarization alignment and manufacturing quality control. These showing must also include a plan for periodic testing and field installation procedures and precautions.

(g) Records of the results of the tests required by this section must be maintained at the antenna site or the earth station operator's control center and be available for inspection.

[58 FR 13419, Mar. 11, 1993, as amended at 69 FR 5710, Feb. 6, 2004; 70 FR 32253, June 2, 2005; 72 FR 50028, Aug. 29, 2007; 74 FR 47102, Sept. 15, 2009; 74 FR 57098, Nov. 4, 2009]

**§25.133 Period of construction; certification of commencement of operation.**

(a)(1) Each license for an earth station governed by this part, except for

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mobile satellite earth station terminals (METs), shall specify as a condition therein the period in which construction of facilities must be completed and station operation commenced. Construction of the earth station must be completed and the station must be brought into operation within 12 months from the date of the license grant except as may be determined by the Commission for any particular application.

(2) Each license for mobile satellite earth station terminals (METs) shall specify as a condition therein the period in which station operation must be commenced. The networks in which the METs will be operated must be brought into operation within 12 months from the date of the license grant except as may be determined by the Commission for any particular application.

(b)(1) Each license for a transmitting earth station included in this part, except for earth stations licensed under a blanket licensing provision, shall also specify as a condition therein that upon the completion of construction, each licensee must file with the Commission a certification containing the following information:

- (i) The name of the licensee;
- (ii) File number of the application;
- (iii) Call sign of the antenna;
- (iv) Date of the license;

(v) A certification that the facility as authorized has been completed and that each antenna facility has been tested and is within 2 dB of the pattern specified in § 25.209, § 25.135 (NVNG MSS earth stations), or § 25.213 (1.6/2.4 GHz Mobile-Satellite Service earth stations);

(vi) The date on which the earth station became operational; and

(vii) A statement that the station will remain operational during the license period unless the license is submitted for cancellation.

(2) For earth stations authorized under any blanket licensing provision in this chapter, a certification containing the information in paragraph (b)(1) of this section must be filed when the network is put into operation.

(c) If the facility does not meet the technical parameters set forth in § 25.209, a request for a waiver must be

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submitted and approved by the Commission before operations may commence.

(d) Each receiving earth station licensed or registered pursuant to § 25.131 must be constructed and placed into service within 6 months after coordination has been completed. Each licensee or registrant must file with the Commission a certification that the facility is completed and operating as provided in paragraph (b) of this section, with the exception of certification of antenna patterns.

[56 FR 24016, May 28, 1991, as amended at 58 FR 68059, Dec. 23, 1993; 59 FR 53327, Oct. 21, 1994; 65 FR 59142, Oct. 4, 2000; 70 FR 32254, June 2, 2005]

### § 25.134 Licensing provisions of Very Small Aperture Terminal (VSAT) and C-band Small Aperture Terminal (CSAT) networks.

(a)(1) VSAT networks operating in the 12/14 GHz bands. All applications for digital VSAT networks granted on or before September 15, 2005, with a maximum outbound downlink EIRP density of +10.0 dBW/4 kHz per carrier and earth station antennas with maximum input power density of -14 dBW/4 kHz will be processed routinely. All applications for analog VSAT networks with maximum outbound downlink power densities of +17.0 dBW/4 kHz per carrier and maximum antenna input power densities of -8.0 dBW/4 kHz shall be processed routinely in accordance with Declaratory Order in the Matter of Routine Licensing of Earth Stations in the 6 GHz and 14 GHz Bands Using Antennas Less than 9 Meters and 5 Meters in Diameter, Respectively, for Both Full Transponder and Narrowband Transmissions, 2 FCC Rcd 2149 (1987) (Declaratory Order).

(a)(2) *Large Networks of Small Antennas operating in the 4/6 GHz frequency bands.* All applications for digital and/or analog operations will be routinely processed provided the network employs antennas that are 4.5 meter or larger in diameter, that are consistent with § 25.209, the power levels are consistent with §§ 25.211(d) and 25.212(d), and frequency coordination has been satisfactorily completed. The use of smaller antennas or non-consistent power levels require the filing of an