

satellite service licensee to conduct mobile-satellite service operations with authority superior to that of other in-band, mobile-satellite service licensees.

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Structural attenuation. The term “structural attenuation” means the signal attenuation caused by transmitting to and from mobile terminals which are located in buildings or other man-made structures that attenuate the transmission of radiofrequency radiation.

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■ 9. Section 25.252 is added to read as follows:

§ 25.252 Special requirements for ancillary terrestrial components operating in the 2000–2020 MHz/2180–2200 MHz bands.

(a) Applicants for an ancillary terrestrial component in these bands must demonstrate that ATC base stations shall not:

(1) Exceed an EIRP of -100.6 dBW/4 kHz for out-of-channel emissions at the edge of the MSS licensee’s selected assignment.

(2) Exceed a peak EIRP of 27 dBW in 1.23 MHz.

(3) Exceed an EIRP toward the physical horizon (not to include man-made structures) of 25.5 dBW in 1.23 MHz.

(4) Be located less than 190 meters from all airport runways and aircraft stand areas, including takeoff and landing paths.

(5) Exceed an aggregate power flux density of -51.8 dBW/m² in a 1.23 MHz bandwidth at all airport runways and aircraft stand areas, including takeoff and landing paths and all ATC base station antennas shall have an overhead gain suppression according to the following.

(6) Be located less than 820 meters from a U.S. Earth Station facility operating in the 2200–2290 MHz band. In its MSS ATC application, the MSS

licensee should request a list of operational stations in the 2200–2290 MHz band.

(7) Exceed an EIRP in the 1559–1610 MHz band of -70 dBW/MHz for wideband emissions and -80 dBW in the 1559–1605 MHz band for narrowband emissions (discrete emissions of less than 700 Hz bandwidth). The wideband EIRP level is to be measured using a root mean square (RMS) detector function with a resolution bandwidth of 1 MHz or equivalent and the video bandwidth is not less than the resolution bandwidth. The narrowband EIRP level is to be measured using an RMS detector function with a resolution bandwidth of 1 kHz or equivalent. The measurements are to be made over a 20 millisecond averaging period when the base station is transmitting.

(8) Use ATC base station antennas that have a gain greater than 17 dBi and must have an overhead gain suppression according to the following:

Angle from direction of maximum gain, in vertical plane, above antenna (degrees)	Antenna discrimination pattern (dB)
0	Gmax
2	Not to Exceed Gmax -14
8 to 180	Not to Exceed Gmax -25

Where: Gmax is the maximum gain of the base station antenna in dBi.

(b) Applicants for an ancillary terrestrial component in these bands must demonstrate that ATC mobile terminals shall:

(1) Observe a peak EIRP limit of 1.0 dBW in 1.23 MHz.

(2) Limit out-of-channel emissions at the edge of a MSS licensee’s selected assignment to an EIRP density of -67 dBW/4 kHz.

(3) Not exceed an EIRP in the 1559–1610 MHz band of -70 dBW/MHz for wideband emissions and -80 dBW in the 1559–1605 MHz band for narrowband emissions (discrete emissions of less than 700 Hz bandwidth). The wideband EIRP level is to be measured using a root mean square (RMS) detector function with a resolution bandwidth of 1 MHz or equivalent and the video bandwidth is not less than the resolution bandwidth. The narrowband EIRP level is to be measured using an RMS detector function with a resolution bandwidth of 1 kHz or equivalent. The measurements are to be made over a 20 millisecond averaging period when the mobile terminal is transmitting.

(c) For ATC operations in the 2000–2020 MHz band, the power of any emission outside the licensee’s frequency band(s) of operation shall be attenuated below the transmitter power

(P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency within the 2000 to 2020 MHz band outside the licensee’s frequency band(s) of operations, emissions shall be attenuated by at least $43 + 10 \log (P)$ dB.

(2) Emissions on frequencies lower than 1995 MHz and higher than 2025 MHz shall be attenuated by at least $70 + 10 \log P$. Emissions in the bands 1995–2000 MHz and 2020–2025 MHz shall be attenuated by at least a value as determined by linear interpolation from $70 + 10 \log P$ at 1995 MHz or 2025 MHz, to $43 + 10 \log P$ dB at the nearest MSS band edge at 2000 MHz or 2020 MHz respectively.

(3) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, in its discretion, require greater attenuation than specified in paragraphs (c)(1) and (2) of this section.

(4) Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.

Note to § 25.252: The preceding rules of § 25.252 are based on cdma2000 system architecture. To the extent that a 2 GHz MSS licensee is able to demonstrate that the use of a different system architecture would

produce no greater potential interference than that produced as a result of implementing the rules of this section, an MSS licensee is permitted to apply for ATC authorization based on another system architecture.

■ 10. Section 25.253 is added to read as follows:

§ 25.253 Special requirements for ancillary terrestrial components operating in the 1626.5–1660.5 MHz/1525–1559 MHz bands.

(a) An applicant for an ancillary terrestrial component in these bands shall:

(1) Implement the maximum available power control for all ATC base stations and mobile terminals under GSM 800 or GSM 1800 standard (dynamic range of 30 dB in steps of 2 dB).

(2) Implement a variable rate vocoder in the ATC mobile terminal such that the duty cycle of the mobile terminal is reduced when the EIRP of the mobile terminals requested by the power control system is increased above a nominal -7.4 dBW. The duty cycle will be reduced by refraining from transmitting on consecutive time slots. The duty cycle of the mobile terminal, as measured over a 0.25 second period, shall comply with the following schedule: