sites listed in paragraph (a)(1)(ii) of this section, there being no restriction on a mobile earth station operating within the 1615.8–1626.5 MHz band.

(iv) For airborne mobile earth stations operating in the 1610.0–1626.5 MHz band, the separation distance shall be the larger of the distances specified in paragraph (a)(1) (i), (ii) or (iii) of this section, as applicable, or the distance, \(d\), as given by the formula:

\[d (\text{km}) = 4.1 \sqrt{h}\]

where \(h\) is the altitude of the aircraft in meters above ground level.

(v) Smaller geographic protection zones may be used in lieu of the areas specified in paragraphs (a)(1) (i), (ii), (iii), and (iv) of this section if agreed to by the Mobile-Satellite Service licensee and the Electromagnetic Spectrum Management Unit (ESMU), National Science Foundation, Washington, D.C. upon a showing by the Mobile-Satellite Service licensee that the operation of a mobile earth station will not cause harmful interference to a radio astronomy observatory during periods of observation.

(vi) The ESMU shall notify Mobile-Satellite Service space station licensees authorized to operate mobile earth stations in the 1610.0–1626.5 MHz band of periods of radio astronomy observations. The Mobile-Satellite systems shall be capable of terminating operations within the frequency bands and protection zones specified in paragraphs (a)(1)(i) through (iv) of this section, as applicable, after the first position fix of the mobile earth station either prior to transmission or, based upon its location within the protection zone at the time of initial transmission of the mobile earth station. Once the Mobile-Satellite Service system determines that a mobile earth station is located within an RAS protection zone, the Mobile-Satellite Service system shall immediately initiate procedures to relocate the mobile earth station operations to a non-RAS frequency.

(vii) A beacon-actuated protection zone may be used in lieu of fixed protection zones in the 1610.6–1613.8 MHz band if a coordination agreement is reached between a mobile-satellite system licensee and the ESMU on the specifics of beacon operations.

(viii) Additional radio astronomy sites, not located within 100 miles of the 100 most populous urbanized areas as defined by the United States Census Bureau at the time, may be afforded similar protection one year after notice to the mobile-satellite system licensees by issuance of a public notice by the Commission.

(2) Mobile-Satellite Service space stations transmitting in the 1613.8–1626.5 MHz band shall take whatever steps necessary to avoid causing harmful interference to the radio astronomy facilities listed in paragraphs (a)(1)(i) and (ii) of this section during periods of observation.

(3) Mobile-Satellite Service space stations operating in the 2483.5–2500 MHz frequency band shall limit spurious emission levels in the 4990–5000 MHz band so as not to exceed \(-241\ dB (\text{W/m}^2/\text{Hz})\) at the surface of the Earth.

(4) The Radioastronomy Service shall avoid scheduling radio astronomy observations during peak MSS/RDSS traffic periods to the greatest extent practicable.

(b) If a Mobile-Satellite Service space station operator in the 2496–2500 MHz band intends to operate at powers levels that exceed the PFD limits in §25.208(v), or if actual operations routinely exceed these PFD limits, we require the Mobile-Satellite Service operator to receive approval from each operational BRS system in the affected geographical region.


(a) Definitions.

(1) **Allocated bandwidth.** The term “allocated bandwidth” refers to the entry in the Table of Frequency Allocations of a given frequency band for the purpose of its use by one or more terrestrial or space radiocommunication services under specified conditions. This term shall be applied to the 2310–2390 MHz band for satellite DARS.
§ 25.215 Technical requirements for space stations in the Direct Broadcast Satellite Service.

In addition to § 25.148(f), space station antennas operating in the 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 shall be at least 30 dB within its primary coverage area.

[67 FR 51114, Aug. 7, 2002]

§ 25.216 Limits on emissions from mobile earth stations for protection of aeronautical radionavigation-satellite service.

(a) The e.i.r.p. density of emissions from mobile earth stations placed in service on or before July 21, 2002 with assigned uplink frequencies between 1610 MHz and 1660.5 MHz shall not exceed 70 dBW/MHz, averaged over any 2 millisecond active transmission interval, in the band 1559–1587.42 MHz. The e.i.r.p. of discrete emissions of less than 700 Hz bandwidth generated by such stations shall not exceed 80 dBW, averaged over any 2 millisecond