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300 Hz for measurements on any frequency removed from the center frequency of the assigned channel by no more than 250 percent of the authorized bandwidth and 30 kHz for measurements on any frequency removed from the center frequency of the assigned channel by more than 250 percent of the authorized bandwidth.

§ 22.361 Standby facilities.

Licensees of stations in the Public Mobile Services may install standby transmitters for the purpose of continuing service in the event of failure or during required maintenance of regular transmitters without obtaining separate authorization, provided that operation of the standby transmitters would not increase the service areas or interference potential of the stations, and that such standby transmitters use the same antenna as the regular transmitters they temporarily replace.

TABLE C–2.—TECHNICAL REQUIREMENTS FOR DIRECTIONAL ANTENNAS

Frequency range	Maximum beamwidth	Suppression
35 to 512 MHz	80°	10 dB
512 to 1500 MHz	20°	13 dB
1500 to 2500 MHz	12°	13 dB

[59 FR 59507, Nov. 17, 1994; 60 FR 9889, Feb. 22, 1995]

§ 22.363 Directional antennas.

Fixed transmitters for point-to-point operation must use a directional transmitting antenna with the major lobe of radiation in the horizontal plane directed toward the receiving antenna or passive reflector of the station for which the transmissions are intended. Directional antennas used in the Public Mobile Services must meet the technical requirements given in Table C–2 to § 22.361.

(a) Maximum beamwidth is for the major lobe at the half power points.

(b) Suppression is the minimum attenuation for any secondary lobe referenced to the main lobe.

(c) An omnidirectional antenna may be used for fixed transmitters where there are two or more receive locations at different azimuths.

§ 22.365 Antenna structures; air navigation safety.

Licensees that own their antenna structures must not allow these antenna structures to become a hazard to air navigation. In general, antenna structure owners are responsible for registering antenna structures with the FCC if required by part 17 of this chapter, and for installing and maintaining any required marking and lighting. However, in the event of default of this responsibility by an antenna structure owner, each FCC permittee or licensee authorized to use an affected antenna structure will be held responsible by the FCC for ensuring that the antenna structure continues to meet the requirements of part 17 of this chapter. See § 17.6 of this chapter.

(a) *Marking and lighting.* Antenna structures must be marked, lighted and maintained in accordance with Part 17 of this chapter and all applicable rules and requirements of the Federal Aviation Administration.

(b) *Maintenance contracts.* Antenna structure owners (or licensees and permittees, in the event of default by an antenna structure owner) may enter into contracts with other entities to monitor and carry out necessary maintenance of antenna structures. Antenna structure owners (or licensees and permittees, in the event of default by an antenna structure owner) that make such contractual arrangements continue to be responsible for the maintenance of antenna structures in regard to air navigation safety.

[61 FR 4365, Feb. 6, 1996]

§ 22.367 Wave polarization.

Public mobile station antennas must be of the correct type and properly installed such that the electromagnetic emissions have the polarization required by this section.

(a) *Vertical.* Waves radiated by the following must be vertically polarized:

(1) Base, mobile, dispatch, and auxiliary test transmitters in the Paging and Radiotelephone Service;

(2) Transmitters in the Offshore Radiotelephone Service;

(3) Transmitters on channels in the 72–76 MHz frequency range;

(4) Base, mobile and auxiliary test transmitters in the Cellular Radiotelephone Service;

(5) Control and repeater transmitters on channels in the 900–960 MHz frequency range;

(6) Rural subscriber stations communicating with base transmitters in the Paging and Radiotelephone Service pursuant to § 22.563.

(7) Ground and airborne mobile transmitters in the Air-ground Radiotelephone Service.

(b) *Horizontal.* Waves radiated by transmitters in the Public Mobile Services, other than transmitters required by paragraph (a) of this section to radiate a vertically polarized wave must be horizontally polarized, except as otherwise provided in paragraphs (c) and (d) of this section.

(c) *Circular.* If communications efficiency would be improved and/or interference reduced, the FCC may authorize transmitters other than those listed in paragraphs (a)(1) through (a)(7) of this section to radiate a circularly polarized wave.

(d) *Any polarization.* Public Land Mobile stations transmitting on channels higher than 960 MHz are not limited as to wave polarization.

§ 22.369 Quiet zones.

Quiet zones are those areas where it is necessary to restrict radiation so as to minimize possible impact on the operations of radio astronomy or other facilities that are highly sensitive to interference. The areas involved and procedures required are as follows:

(a) *NRAO, NRRO.* The requirements of this paragraph are intended to minimize possible interference at the National Radio Astronomy Observatory site located at Green Bank, Pocahontas County, West Virginia, and at the Naval Radio Research Observatory site at Sugar Grove, Pendleton County, West Virginia.

(1) Carriers planning to construct and operate a new or modified Public Mobile Services station at a permanent fixed location within the area bounded by N.39°15prime; on the north, W.78°30prime; on the east, N.37°30prime; on the south, and W.80°30prime; on the west must notify the Director, National Radio Astronomy Observatory, Post Office Box No. 2, Green Bank, West Virginia 24944, in writing, of the technical details of the proposed operation. The notification must include the geographical coordinates of the antenna location, the antenna height, antenna directivity (if any), the channel, the emission type and power.

(2) When an application for authority to operate a station is filed with the FCC, the notification required in paragraph (a)(1) of this section should be sent at the same time. The application must state the date that notification in accordance with paragraph (a)(1) of this section was made. After receipt of such applications, the FCC will allow a period of 20 days for comments or objections in response to the notifications indicated.

(3) If an objection is received during the 20-day period from the National Radio Astronomy Observatory for itself or on behalf of the Naval Radio Research Observatory, the FCC will, after consideration of the record, take whatever action is deemed appropriate.

(b) *Table Mountain.* The requirements of this paragraph are intended to minimize possible interference at the Table Mountain Radio Receiving Zone of the Research Laboratories of the Department of Commerce located in Boulder County, Colorado.

(1) Carriers planning to construct and operate a new or modified Public Mobile Services station at a permanent fixed location in the vicinity of Boulder County, Colorado are advised to give consideration, prior to filing applications, to the need to protect the Table Mountain Radio Receiving Zone from interference. To prevent degradation of the present ambient radio signal level at the site, the Department of Commerce seeks to ensure that the field strengths of any radiated signals (excluding reflected signals) received on this 1800 acre site (in the vicinity of coordinates 40°07prime;50Prime; North Latitude, 105°14prime;40Prime; West Longitude) resulting from new assignments (other than mobile stations) or from the modification or relocation of existing facilities do not exceed the values given in Table C–3 of this section.