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§ 22.325 Control points.

Each station in the Public Mobile Services must have at least one control point and a person on duty who is responsible for station operation. This section does not require that the person on duty be at the control point or continuously monitor all transmissions of the station. However, the control point must have facilities that enable the person on duty to turn off the transmitters in the event of a malfunction.

TECHNICAL REQUIREMENTS

§ 22.351 Channel assignment policy.

The channels allocated for use in the Public Mobile Services are listed in the applicable subparts of this part. Channels and channel blocks are assigned in such a manner as to facilitate the rendition of service on an interference-free basis in each service area. Except as otherwise provided in this part, each channel or channel block is assigned exclusively to one licensee in each service area. All applicants for, and licensees of, stations in the Public Mobile Services shall cooperate in the selection and use of channels in order to minimize interference and obtain the most efficient use of the allocated spectrum.

[70 FR 19308, Apr. 13, 2005]

§ 22.352 Protection from interference.

Public Mobile Service stations operating in accordance with applicable FCC rules and the terms and conditions of their authorizations are normally considered to be non-interfering. If the FCC determines, however, that interference that significantly interrupts or degrades a radio service is being caused, it may, in accordance with the provisions of sections 303(f) and 316 of the Communications Act of 1934, as amended, (47 U.S.C. 303(f), 316), require modifications to any Public Mobile station as necessary to eliminate such interference.

(a) *Failure to operate as authorized.* Any licensee causing interference to the service of other stations by failing to operate its station in full accordance with its authorization and applicable FCC rules shall discontinue all transmissions, except those necessary for the immediate safety of life or property, until it can bring its station into full compliance with the authorization and rules.

(b) *Intermodulation interference.* Licensees should attempt to resolve such interference by technical means.

(c) *Situations in which no protection is afforded.* Except as provided elsewhere in this part, no protection from interference is afforded in the following situations:

(1) *Interference to base receivers from base or fixed transmitters.* Licensees should attempt to resolve such interference by technical means or operating arrangements.

(2) *Inteference to mobile receivers from mobile transmitters.* No protection is provided against mobile-to-mobile interference.

(3) *Interference to base receivers from mobile transmitters.* No protection is provided against mobile-to-base interference.

(4) *Interference to fixed stations.* Licensees should attempt to resolve such interference by technical means or operating arrangements.

(5) *Anomalous or infrequent propagation modes.* No protection is provided against interference caused by tropospheric and ionospheric propagation of signals.

(6) *Facilities for which the Commission is not notified.* No protection is provided against interference to the service of any additional or modified transmitter operating pursuant to §§ 1.929 or 22.165, unless and until the licensee modifies its authorization using FCC Form 601.

(7) *In-building radiation systems.* No protection is provided against interference to the service of in-building radiation systems (see § 22.383).

[59 FR 59507, Nov. 17, 1994, as amended at 62 FR 11633, Mar. 12, 1997; 63 FR 68944, Dec. 14, 1998; 70 FR 19308, Apr. 13, 2005]

§ 22.353 Blanketing interference.

Licensees of Public Mobile Services stations are responsible for resolving cases of blanketing interference in accordance with the provisions of this section.

(a) Except as provided in paragraph (c) of this section, licensees must resolve any cases of blanketing interference in their area of responsibility caused by operation of their transmitter(s) during a one-year period following commencement of service from new or modified transmitter(s). Interference must be resolved promptly at no cost to the complainant.

(b) The area of responsibility is that area in the immediate vicinity of the transmitting antenna of stations where the field strength of the electromagnetic radiation from such stations equals or exceeds 115 dBμV/m. To determine the radial distance to the boundary of this area, the following formula must be used:

$$d = 0.394 \times \sqrt{p}$$

where d is the radial distance to the boundary, in kilometers

p is the radial effective radiated power, in kilowatts

The maximum effective radiated power in the pertinent direction, without consideration of the antenna's vertical radiation pattern or height, must be used in the formula.

(c) Licensees are not required to resolve blanketing interference to mobile receivers or non-RF devices or blanketing interference occurring as a result of malfunctioning or mistuned receivers, improperly installed consumer antenna systems, or the use of high gain antennas or antenna booster amplifiers by consumers.

(d) Licensees that install transmitting antennas at a location where there are already one or more transmitting antennas are responsible for resolving any new cases of blanketing interference in accordance with this section.

(e) Two or more licensees that concurrently install transmitting antennas at the same location are jointly responsible for resolving blanketing interference cases, unless the FCC can readily determine which station is causing the interference, in which case the licensee of that station is held fully responsible.

(f) After the one year period of responsibility to resolve blanketing interference, licensees must provide upon request technical information to complainants on remedies for blanketing interference.

§ 22.355 Frequency tolerance.

Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C–1 of this section.

TABLE C–1—FREQUENCY TOLERANCE FOR TRANSMITTERS IN THE PUBLIC MOBILE SERVICES

Frequency range (MHz)	Base, fixed (ppm)	Mobile ≤3 watts (ppm)	Mobile ≤3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929	5.0	n/a	n/a
929 to 960	1.5	n/a	n/a
2110 to 2220	10.0	n/a	n/a

[61 FR 54099, Oct. 17, 1996]

§ 22.357 Emission types.

Any authorized station in the Public Mobile Services may transmit emissions of any type(s) that comply with the applicable emission rule, *i.e.* § 22.359, § 22.861 or § 22.917.

[70 FR 19308, Apr. 13, 2005]

§ 22.359 Emission limitations.

The rules in this section govern the spectral characteristics of emissions in the Public Mobile Services, except for the Air-Ground Radiotelephone Service (see § 22.861, instead) and the Cellular Radiotelephone Service (see § 22.917, instead).

(a) *Out of band emissions.* The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

(b) *Measurement procedure.* Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 30 kHz or more. In the 60 kHz bands immediately outside and adjacent to the authorized frequency range or channel, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower

resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e., 30 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(c) *Alternative out of band emission limit.* Licensees in the Public Mobile Services may establish an alternative out of band emission limit to be used at specified frequencies (band edges) in specified geographical areas, in lieu of that set forth in this section, pursuant to a private contractual arrangement of all affected licensees and applicants. In this event, each party to such contract shall maintain a copy of the contract in their station files and disclose it to prospective assignees or transferees and, upon request, to the FCC.

(d) *Interference caused by out of band emissions.* If any emission from a transmitter operating in any of the Public Mobile Services results in interference to users of another radio service, the FCC may require a greater attenuation of that emission than specified in this section.

[70 FR 19308, Apr. 13, 2005]

§ 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]

§ 22.371 Disturbance of AM broadcast station antenna patterns.

Public Mobile Service licensees that construct or modify towers in the immediate vicinity of AM broadcast stations are responsible for measures necessary to correct disturbance of the AM station antenna pattern which causes operation outside of the radiation parameters specified by the FCC for the AM station, if the disturbance occurred as a result of such construction or modification.

(a) *Non-directional AM stations.* If tower construction or modification is planned within 1 kilometer (0.6 mile) of a non-directional AM broadcast station tower, the Public Mobile Service licensee must notify the licensee of the AM broadcast station in advance of the planned construction or modification. Measurements must be made to determine whether the construction or modification affected the AM station antenna pattern. The Public Mobile Service licensee is responsible for the installation and continued maintenance of any detuning apparatus necessary to restore proper non-directional performance of the AM station tower.

(b) *Directional AM stations.* If tower construction or modification is planned within 3 kilometers (1.9 miles) of a directional AM broadcast station array, the Public Mobile Service licensee must notify the licensee of the

AM broadcast station in advance of the planned construction or modification. Measurements must be made to determine whether the construction or modification affected the AM station antenna pattern. The Public Mobile Service licensee is responsible for the installation and continued maintenance of any detuning apparatus necessary to restore proper performance of the AM station array.

§ 22.377 Certification of transmitters.

Except as provided in paragraph (b) of this section, transmitters used in the Public Mobile Services, including those used with signal boosters, in-building radiation systems and cellular repeaters, must be certificated for use in the radio services regulated under this part. Transmitters must be certificated when the station is ready for service, not necessarily at the time of filing an application.

(a) The FCC may list as certificated only transmitters that are capable of meeting all technical requirements of the rules governing the service in which they will operate. The procedure for obtaining certification is set forth in part 2 of this chapter.

(b) Transmitters operating under a developmental authorization (see subpart D of this part) do not have to be certificated.

[59 FR 59507, Nov. 17, 1994, as amended at 61 FR 31051, June 19, 1996; 63 FR 36603, July 7, 1998; 67 FR 77191, Dec. 17, 2002]

§ 22.383 In-building radiation systems.

Licensees may install and operate in-building radiation systems without applying for authorization or notifying the FCC, provided that the locations of the in-building radiation systems are within the protected service area of the licensee's authorized transmitter(s) on the same channel or channel block.

Subpart D—Developmental Authorizations

§ 22.401 Description and purposes of developmental authorizations.

Eligible entities (*see* § 22.7) may apply for, and the FCC may grant, authority to construct and operate one or more transmitters subject to the rules in this subpart and other limitations, waivers and/or conditions that may be prescribed. Authorizations granted on this basis are developmental authorizations. In general, the FCC grants developmental authorizations in situations and circumstances where it cannot reasonably be determined in advance whether a particular transmitter can be operated or a particular service can be provided without causing interference to the service of existing stations. For example, the FCC may grant developmental authorizations for:

(a) Field strength surveys to evaluate the technical suitability of antenna locations for stations in the Public Mobile Services;

(b) Experimentation leading to the potential development of a new Public Mobile Service or technology; or,

(c) Stations transmitting on channels in certain frequency ranges, to provide a trial period during which it can be individually determined whether such stations can operate without causing excessive interference to existing services.

[59 FR 59507, Nov. 17, 1994, as amended at 70 FR 19309, Apr. 13, 2005]

§ 22.403 General limitations.

The provisions and requirements of this section are applicable to all developmental authorizations.

(a) Developmental authorizations are granted subject to the condition that they may be cancelled by the FCC at any time, upon notice to the licensee, and without the opportunity for a hearing.

(b) Except as otherwise indicated in this subpart, developmental authorizations normally terminate one year from the date of grant. The FCC may, however, specify a different term.

(c) Stations operating under developmental authorizations must not interfere with the services of regularly authorized stations.

(d) A grant of a developmental authorization does not provide any assurance that the FCC will grant an application for regular authorization to operate the same transmitter(s), even if operation during the developmental period has not caused interference and/or the developmental program is successful.