

that the effective radiated power will be further reduced so that, assuming free space attenuation, the desired protection at the actual Grade B contour (64 dB μ V/m for TV and 41 dB μ V/m coverage contour for DTV stations) will be achieved. Directions for calculating powers, heights, and reduction curves are listed in § 90.309 for land mobile stations. Directions for calculating coverage contours are listed in §§ 73.683–685 for TV stations and in § 73.625 for DTV stations.

(ii) Control and mobile stations (including portables) are limited in height and power and therefore shall afford protection to co-channel and adjacent channel TV/DTV stations in accordance with the values specified in Table D (co-channel frequencies based on 40 dB protection) in § 90.309 of this part and a minimum distance of 8 kilometers (5 miles) from all adjacent channel TV/DTV station hypothetical or equivalent Grade B contours (adjacent channel frequencies based on 0 dB protection for TV stations and—23 dB for DTV stations). Since control and mobile stations may affect different TV/DTV stations than the associated base station, particular care must be taken by applicants to ensure that all the appropriate TV/DTV stations are considered (e.g., a base station may be operating on TV Channel 64 and the mobiles on TV Channel 69, in which case TV Channels 63, 64, 65, 68, and 69 must be protected). Since mobiles and portables are able to move and communicate with each other, licensees or coordinators must determine the areas where the mobiles can and cannot roam in order to protect the TV/DTV stations, and advise the mobile operators of these areas and their restrictions.

(iii) In order to protect certain TV/DTV stations and to ensure protection from these stations which may have extremely large contours due to unusual height situations, an additional distance factor must be used by all public safety base, control and mobile stations. For all co-channel and adjacent channel TV/DTV stations which have an HAAT between 350 and 600 meters, public safety stations must add the following DISTANCE FACTOR to the value obtained from the referenced

Tables in § 90.309 and to the distance for control and mobile stations on adjacent TV/DTV channels (96.5 km).

DISTANCE FACTOR = (TV/DTV HAAT – 350) + 14 in kilometers, where HAAT is the TV or DTV station antenna height above average terrain obtained from its authorized or proposed facilities, whichever is greater.

(iv) For all co-channel and adjacent channel TV/DTV stations which have an antenna height above average terrain greater than 600 meters, public safety stations must add 18 kilometers as the DISTANCE FACTOR to the value obtained from the referenced Tables in § 90.309 and to the distance for control and mobile stations on adjacent TV/DTV channels (96.5 km).

NOTE TO § 90.545: The 88.5 km (55.0 mi) Grade B service contour (64 dB μ V/m) is based on a hypothetical TV station operating at an effective radiated power of one megawatt, a transmitting antenna height above average terrain of 610 meters (2000 feet) and the Commission's R-6602 F(50,50) curves. See § 73.699 of this chapter. Maximum facilities for TV stations operating in the UHF band are 5 megawatts effective radiated power at an antenna HAAT of 610 meters (2,000 feet). See § 73.614 of this chapter. The equivalent contour for DTV stations is based on a 41 dB μ V/m signal strength and the distance to the F(50,90) curve. See § 73.625 of this chapter.

[63 FR 58651, Nov. 2, 1998, as amended at 65 FR 53646, Sept. 5, 2000]

§ 90.547 Narrowband Interoperability channel capability requirement.

(a) Except as noted in this section, mobile and portable transmitters operating on narrowband channels in the 764–776 MHz and 794–806 MHz frequency bands must be capable of operating on all of the designated nationwide narrowband Interoperability channels pursuant to the standards specified in this part.

(1) Mobile and portable transmitters that are designed to operate only on the Low Power Channels specified in § 90.531 (b)(3) and (4) are exempt from this Interoperability channel requirement.

(2) Mobile and portable transmitters that are designed to operate only in the data mode must be capable of operation on the data Interoperability channels specified in § 90.531(b)(1)(i);

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but need not be capable of voice operation on other Interoperability channels.

(3) Mobile and portable transmitters that are designed to operate only in the voice mode do not have to operate on the data Interoperability channels specified in § 90.531(b)(1)(i).

(b) Mobile and portable transmitters designed for data are not required to be voice capable, and vice versa.

[67 FR 61005, Sept. 27, 2002]

§ 90.548 Interoperability Technical Standards.

(a) Transmitters operating on those narrowband channels in the 764–776 and 794–806 MHz band designated for interoperability (See 90.531) shall conform to the following technical standards:

(1) Transmitters designed for voice operation shall include a 12.5 kHz bandwidth mode of operation conforming to the following standards, which are incorporated by reference: Project 25 FDMA Common Air Interface—New Technology Standards Project—Digital Radio Technical Standards, approved April 15, 1998, Telecommunications Industry Association, ANSI/TIA/EIA-102.BAAA-1998; Project 25 Vocoder Description, approved May 5, 1998, Telecommunications Industry Association, ANSI/TIA/EIA-102.BABA-1998.

(2) Transmitters designed for data transmission shall include a 12.5 kHz bandwidth mode of operation conforming to the following standards, which are incorporated by reference: Project 25 Data Overview—New Technology Standards Project—Digital Radio Technical Standards, approved March 3, 2000, Telecommunications Industry Association, ANSI/TIA/EIA-102.BAEA-2000; Project 25 Packet Data Specification—New Technology Standards Project—Digital Radio Technical Standards, approved March 3, 2000, Telecommunications Industry Association, ANSI/TIA/EIA-102.BAEB-2000; Project 25 Radio Control Protocol (RCP)—New Technology Standards Project—Digital Radio Technical Standards, approved March 3, 2000, Telecommunications Industry Association, ANSI/TIA/EIA-102.BAEE-2000; Project 25 FDMA Common Air Interface—New Technology Standards Project—Digital Radio Technical

Standards, approved April 15, 1998, Telecommunications Industry Association, ANSI/TIA/EIA-102.BAAA-1998.

(b) The Director of the Federal Register approves these incorporations by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the standards listed in this section that are incorporated by reference may be inspected at the Federal Communications Commission, 445 12th Street, SW., Washington, DC (Reference Information Center) or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. The standards can also be purchased from TIA/EIA, 2500 Wilson Boulevard, Arlington, VA, 22201; Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112; or the American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036 (or via the Internet at www.ansi.org.)

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§ 90.549 Transmitter certification.

Transmitters operated in the 764–776 MHz and 794–806 MHz frequency bands must be certificated as required by § 90.203.

§ 90.551 Construction requirements.

Each station authorized under this subpart to operate in the 764–776 MHz and 794–806 MHz frequency bands must be constructed and placed into operation within 12 months from the date of grant of the authorization. However, licensees may request a longer construction period, up to but not exceeding 5 years, pursuant to § 90.155(b).

§ 90.553 Encryption.

(a) Encryption is permitted on all but the two nationwide Interoperability calling channels. Radios employing encryption must have a readily accessible switch or other readily accessible control that permits the radio user to disable encryption.

(b) If Encryption is employed then the following encryption protocol must be used: Project 25 DES Encryption