

§ 90.532

(d) *Combining channels.* Except as noted in this section, at the discretion of the appropriate regional planning committee, contiguous channels may be used in combination in order to accommodate requirements for larger bandwidth emissions, in accordance with this paragraph. Interoperability channels may not be combined with channels in another group except for channels for secondary trunking channels.

(1) *Narrowband.* Subject to compliance with the spectrum usage efficiency requirements set forth in § 90.535, two or four contiguous narrowband (6.25 kHz) channels may be used in combination as 12.5 kHz or 25 kHz channels, respectively. The lower (in frequency) channel for two channel combinations must be an odd (*i.e.*, 1, 3, 5 * * *) numbered channel. The lowest (in frequency) channel for four channel combinations must be a channel whose number is equal to $1 + (4xn)$, where $n =$ any integer between 0 and 479, inclusive (*e.g.*, channel number 1, 5, * * * 1917). Channel combinations are designated by the lowest and highest channel numbers separated by a hyphen, *e.g.*, “1-2” for a two channel combination and “1-4” for a four channel combination.

(2) [Reserved]

(e) *Channel pairing.* In general, channels must be planned and assigned in base/mobile pairs that are separated by 30 MHz. However, until December 31, 2006, channels other than those listed in paragraphs (b)(1) and (c)(1), may be planned and assigned in base/mobile pairs having a different separation, where necessary because 30 MHz base/mobile pairing is precluded by the presence of one or more co-channel or adjacent channel TV/DTV broadcast stations.

(f) *Internal guard band.* The internal guard band (768–769/798–799 MHz) is reserved.

(g) *Broadband.* The 758–768 MHz and 788–798 MHz bands are allocated for broadband communications.

[63 FR 58651, Nov. 2, 1998, as amended at 65 FR 66654, Nov. 7, 2000; 66 FR 10635, 10636, Feb. 16, 2001; 67 FR 61005, Sept. 27, 2002; 67 FR 76700, Dec. 13, 2002; 72 FR 48860, Aug. 24, 2007; 77 FR 62463, Oct. 15, 2012; 79 FR 71325, Dec. 2, 2014]

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EFFECTIVE DATE NOTE: At 79 FR 71325, Dec. 2, 2014, § 90.531(b)(2) and (b)(7) were revised. These paragraphs contain information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

§ 90.532 Licensing of the 758–769 MHz and 788–799 MHz Bands.

Pursuant to Section 6201 of the Middle Class Tax Relief and Job Creation Act of 2012, Public Law 112–96, 126 Stat. 156 (2012), a nationwide license for use of the 758–769 MHz and 788–799 MHz bands shall be issued to the First Responder Network Authority for a initial license term of ten years from the date of the initial issuance of the license. Prior to expiration of the term of such initial license, the First Responder Network Authority shall submit to the Commission an application for the renewal of such license. Such renewal application shall demonstrate that, during the preceding license term, the First Responder Network Authority has met the duties and obligations set forth under the foregoing Act. A renewal license shall be for a term not to exceed ten years.

[77 FR 62463, Oct. 15, 2012]

§ 90.533 Transmitting sites near the U.S./Canada or U.S./Mexico border.

This section applies to each license to operate one or more public safety transmitters in the 758–775 MHz and 788–805 MHz bands, at a location or locations North of Line A (see § 90.7) or within 120 kilometers (75 miles) of the U.S.-Mexico border, until such time as agreements between the government of the United States and the government of Canada or the government of the United States and the government of Mexico, as applicable, become effective governing border area non-broadcast use of these bands. Public safety licenses are granted subject to the following conditions:

(a) Public safety transmitters operating in the 758–775 MHz and 788–805 MHz bands must conform to the limitations on interference to Canadian television stations contained in agreement(s) between the United States and Canada for use of television channels in the border area.

(b) Public safety facilities must accept any interference that may be caused by operations of UHF television broadcast transmitters in Canada and Mexico.

(c) Conditions may be added during the term of the license, if required by the terms of international agreements between the government of the United States and the government of Canada or the government of the United States and the government of Mexico, as applicable, regarding non-broadcast use of the 758–775 MHz and 788–805 MHz bands.

[43 FR 54791, Nov. 22, 1978, as amended at 67 FR 76700, Dec. 13, 2002; 72 FR 48861, Aug. 24, 2007; 79 FR 600, Jan. 6, 2014]

§ 90.535 Modulation and spectrum usage efficiency requirements.

Transmitters designed to operate in 769–775 MHz and 799–805 MHz frequency bands must meet the following modulation standards:

(a) All transmitters in the 769–775 MHz and 799–805 MHz frequency bands must use digital modulation. Mobile and portable transmitters may have analog modulation capability only as a secondary mode in addition to its primary digital mode except on the interoperability channels listed in § 90.531(b)(1). Analog modulation is prohibited on the interoperability channels. Mobile and portable transmitters that only operate on the low power channels designated in § 90.531(b)(3) and (4) are exempt from this digital modulation requirement.

(b) Transmitters designed to operate in the narrowband segment using digital modulation must be capable of maintaining a minimum data (non-voice) rate of 4.8 kbps per 6.25 kHz of bandwidth.

(c) Transmitters designed to operate in the wideband segment using digital modulation must be capable of maintaining a minimum data (non-voice) rate of 384 kbps per 150 kHz of bandwidth.

(d) Transmitters designed to operate on the channels listed in paragraphs (b)(2), (5), (6), and (7) of § 90.531 must be capable of operating in the voice mode at an efficiency of at least one voice

path per 12.5 kHz of spectrum bandwidth.

[63 FR 58651, Nov. 2, 1998, as amended at 65 FR 53645, Sept. 5, 2000; 65 FR 66655, Nov. 7, 2000; 67 FR 76701, Dec. 13, 2002; 70 FR 21673, Apr. 27, 2005; 72 FR 48861, Aug. 24, 2007; 79 FR 71326, Dec. 2, 2014; 81 FR 66833, Sept. 29, 2016]

§ 90.537 Trunking requirement.

(a) *General use and State License channels.* All systems using six or more narrowband channels in the 769–775 MHz and 799–805 MHz frequency bands must be trunked systems, except for those described in paragraph (b) of this section.

(b) *Interoperability and low power channels.* Trunking is permitted only on Interoperability channels specified in § 90.531(b)(1)(iii). Trunked use must be strictly on a secondary, non-interference basis to conventional operations. The licensee must monitor and immediately release these channels when they are needed for interoperability purposes. All systems using narrowband low power channels listed in § 90.531(b)(3) and (4) are exempt from the trunking requirements described in paragraph (a) of this section.

[79 FR 39340, July 10, 2014]

§ 90.539 Frequency stability.

Transmitters designed to operate in 769–775 MHz and 799–805 MHz frequency bands must meet the frequency stability requirements in this section.

(a) Mobile, portable and control transmitters must normally use automatic frequency control (AFC) to lock on to the base station signal.

(b) The frequency stability of base transmitters operating in the narrowband segment must be 100 parts per billion or better.

(c) The frequency stability of mobile, portable, and control transmitters operating in the narrowband segment must be 400 parts per billion or better when AFC is locked to the base station. When AFC is not locked to the base station, the frequency stability must be at least 1.0 ppm for 6.25 kHz, 1.5 ppm for 12.5 kHz (2 channel aggregate), and 2.5 ppm for 25 kHz (4 channel aggregate).

(d) The frequency stability of base transmitters operating in the wideband