

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 fixed transmitter sites using six or more narrowband channels in the 769–775 MHz and 799–805 MHz frequency bands must be trunked, except for those described in paragraph (b) of this section. This paragraph does not apply to Vehicular Repeater Systems (MO3) authorized on the General Use and State License channels listed in § 90.531(b).

(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, as amended at 83 FR 30367, June 28, 2018]

**§ 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 segment must be 1 part per million or better.