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[Title 47](#) → [Chapter I](#) → [Subchapter D](#) → [Part 90](#) → Subpart R

Title 47: Telecommunication

[PART 90—PRIVATE LAND MOBILE RADIO SERVICES](#)**Subpart R—Regulations Governing the Licensing and Use of Frequencies in the 763-775 and 793-805 MHz Bands****Contents**

[§90.521](#) Scope.
[§90.523](#) Eligibility.
[§90.525](#) Administration of interoperability channels.
[§90.527](#) Regional plan requirements.
[§90.529](#) State License.
[§90.531](#) Band plan.
[§90.532](#) Licensing of the 758-769 MHz and 788-799 MHz Bands.
[§90.533](#) Transmitting sites near the U.S./Canada or U.S./Mexico border.
[§90.535](#) Modulation and spectrum usage efficiency requirements.
[§90.537](#) Trunking requirement.
[§90.539](#) Frequency stability.
[§90.541](#) Transmitting power and antenna height limits.
[§90.542](#) Broadband transmitting power limits.
[§90.543](#) Emission limitations.
[§90.547](#) Narrowband Interoperability channel capability requirement.
[§90.548](#) Interoperability Technical Standards.
[§90.549](#) Transmitter certification.
[§90.551](#) Construction requirements.
[§90.553](#) Encryption.
[§90.555](#) Information exchange.
[§90.557](#) Secondary fixed signaling operations.
[§90.559](#) Station Identification.

SOURCE: 63 FR 58651, Nov. 2, 1998, unless otherwise noted.

[↑ Back to Top](#)**§90.521 Scope.**

This subpart sets forth the regulations governing the licensing and operations of all systems operating in the 758-775 MHz and 788-805 MHz frequency bands. It includes eligibility, operational, planning and licensing requirements and technical standards for stations licensed in these bands. The rules in this subpart are to be read in conjunction with the applicable requirements contained elsewhere in this part; however, in case of conflict, the provisions of this subpart shall govern with respect to licensing and operation in these frequency bands.

[63 FR 58651, Nov. 2, 1998, as amended at 72 FR 48860, Aug. 24, 2007; 77 FR 62463, Oct. 15, 2012]

[↑ Back to Top](#)**§90.523 Eligibility.**

This section implements the definition of public safety services contained in 47 U.S.C. 337(f)(1). The following are eligible to hold Commission authorizations for systems operating in the 769-775 MHz and 799-805 MHz frequency bands:

(a) *State or local government entities.* Any territory, possession, state, city, county, town, or similar State or local governmental entity is eligible to hold authorizations in the 764-776 MHz and 794-806 MHz frequency bands.

(b) *Nongovernmental organizations.* A nongovernmental organization (NGO) that provides services, the sole or principal purpose of which is to protect the safety of life, health, or property, is eligible to hold an authorization for a system operating in the 764-776 MHz and 794-806 MHz frequency bands for transmission or reception of communications essential to providing such services if (and only for so long as) the NGO applicant/licensee:

(1) Has the ongoing support (to operate such system) of a state or local governmental entity whose mission is the oversight of or provision of services, the sole or principal purpose of which is to protect the safety of life, health, or property;

(2) Operates such authorized system solely for transmission of communication essential to providing services the sole or principal purpose of which is to protect the safety of life, health, or property; and

(3) All applications submitted by NGOs must be accompanied by a new, written certification of support (for the NGO applicant to operate the applied-for system) by the state or local governmental entity referenced in paragraph (b)(1) of this section.

(c) *All NGO authorizations are conditional.* NGOs assume all risks associated with operating under conditional authority. Authorizations issued to NGOs to operate systems in the 764-776 MHz and 794-806 MHz frequency bands include the following condition: If at any time the supporting governmental entity (see paragraph (b)(1)) notifies the Commission in writing of such governmental entity's termination of its authorization of a NGO's operation of a system in the 764-776 MHz and 794-806 MHz frequency bands, the NGO's application shall be dismissed automatically or, if authorized by the Commission, the NGO's authorization shall terminate automatically.

(d) Paragraphs (a) and (b) notwithstanding, no entity is eligible to hold an authorization for a system operating in the 764-776 MHz and 794-806 MHz frequency bands on the basis of services, the sole or principal purpose of which is to protect the safety of life, health or property, that such entity makes commercially available to the public.

(e) A nationwide license for the 758-769 MHz and 788-799 MHz bands shall be issued to the First Responder Network Authority.

[63 FR 58651, Nov. 2, 1998, as amended at 65 FR 53645, Sept. 5, 2000; 72 FR 48860, Aug. 24, 2007; 79 FR 600, Jan. 6, 2014]

[Back to Top](#)

§90.525 Administration of interoperability channels.

(a) States are responsible for administration of the Interoperability channels in the 769-775 MHz and 799-805 MHz frequency bands. Base and control stations must be licensed individually. A public safety entity meeting the requirements of §90.523 may operate mobile or portable units on the Interoperability channels in the 769-775 MHz and 799-805 MHz frequency bands without a specific authorization from the Commission provided it holds a part 90 license. All persons operating mobile or portable units under this authority are responsible for compliance with part 90 of these rules and other applicable federal laws.

(b) License applications for Interoperability channels in the 769-775 MHz and 799-805 MHz frequency bands must be approved by a state-level agency or organization responsible for administering state emergency communications. States may hold the licenses for Interoperability channels or approve other qualified entities to hold such licenses. States may delegate the approval process for interoperability channels to another entity, such as regional planning committees.

[72 FR 48860, Aug. 24, 2007]

[Back to Top](#)

§90.527 Regional plan requirements.

Each regional planning committee must submit a regional plan for approval by the Commission.

(a) *Common elements.* Regional plans must incorporate the following common elements:

(1) Identification of the document as the regional plan for the defined region with the names, business addresses, business telephone numbers, and organizational affiliations of the chairpersons and all members of the planning committee.

(2) A summary of the major elements of the plan and an explanation of how all eligible entities within the region were given an opportunity to participate in the planning process and to have their positions heard and considered fairly.

(3) A general description of how the spectrum would be allotted among the various eligible users within the region with an explanation of how the requirements of all eligible entities within the region were considered and, to the degree possible, met.

(4) An explanation as to how needs were assigned priorities in areas where not all eligible entities could receive licenses.

(5) An explanation of how the plan had been coordinated with adjacent regions.

(6) A detailed description of how the plan put the spectrum to the best possible use by requiring system design with minimum coverage areas, by assigning frequencies so that maximum frequency reuse and offset channel use may be made, by using trunking, and by requiring small entities with minimal requirements to join together in using a single system where possible.

(7) A detailed description of the future planning process, including, but not limited to, amendment process, meeting announcements, data base maintenance, and dispute resolution.

(8) A certification by the regional planning chairperson that all planning committee meetings, including subcommittee or executive committee meetings, were open to the public.

(b) *Modification of regional plans.* Regional plans may be modified by submitting a written request, signed by the regional planning committee, to the Chief, Public Safety and Homeland Security Bureau. The request must contain the full text of the modification. Modifications are considered either major or minor. Regional planning committees must certify that successful coordination with all adjacent regions has occurred for major modifications and that all such regions concur with the major modification. Unless requested otherwise by the regional planning committee, the Bureau will only place major modifications on public notice for comment.

(1) Except as noted below, modifications changing the way channels are allocated, allotted or coordinated are considered major modifications.

(2) Modifications changing how channels are allotted are considered minor modifications only if:

(i) The proposed channel change or channel addition involves a facility located more than seventy miles from the adjacent region border;

(ii) The co-channel or adjacent channel interference contour of the facility changing or adding the channel does not intersect the border of an adjacent region, or

(iii) The proposed channel change or channel addition has been coordinated in writing with any affected adjacent region.

(3) Changes in membership or leadership of regional planning committees are considered minor modifications.

[63 FR 58651, Nov. 2, 1998, as amended at 79 FR 39339, July 10, 2014]

[Back to Top](#)

§90.529 State License.

(a) Narrowband channels designated as state channels in §90.531 are licensed to each state (as defined in §90.7) as follows:

(1) Each state that chooses to take advantage of the spectrum designated as state channels must file an application for up to 2.4 megahertz of this spectrum no later than December 31, 2001. For purposes of this section, the elected chief executive (Governor) of each state, or his or her designee, shall be deemed the person authorized to apply for the State License.

(2) What ever part of this 2.4 megahertz that a state has not applied for by December 31, 2001, will revert to General Use and be administered by the relevant RPC (or RPCs in the instances of states that encompass multiple RPCs).

(b) Each state license will be granted subject to the condition that the state certifies on or before each applicable benchmark date that it is:

(1) Providing or prepared to provide "substantial service" to one-third of their population or territory by June 13, 2014, i.e., within five years of the date that incumbent broadcasters are required to relocate to other portions of the spectrum;

(2) Providing or prepared to provide "substantial service" to two-thirds of their population or territory by June 13, 2019, i.e., within ten years of the date that incumbent broadcasters are required to relocate to other portions of the spectrum.

(2) providing or prepared to provide "substantial service" to two-thirds of their population or territory by January 1, 2017, i.e., within ten years of the date that incumbent broadcasters are required to relocate to other portions of the spectrum.

(c) The Commission will deem a state "prepared to provide substantial service" if the licensee certifies that a radio system has been approved and funded for implementation by the deadline date. "Substantial service" refers to the construction and operation of 700 MHz facilities by public safety entities providing service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal.

(d) If a state licensee fails to meet any condition of the grant the state license is modified automatically to the frequencies and geographic areas where the state certifies that it is providing substantial service.

(e) Any recovered state license spectrum will revert to General Use. However, spectrum licensed to a state under a state license remains unavailable for reassignment to other applicants until the Commission's database reflects the parameters of the modified state license.

[65 FR 66654, Nov. 7, 2000, as amended at 79 FR 20106, Apr. 11, 2014]

[Back to Top](#)

§90.531 Band plan.

This section sets forth the band plan for the 758-775 MHz and 788-805 MHz public safety bands.

(a) *Base and mobile use.* The 763-775 MHz band may be used for base, mobile or fixed (repeater) transmissions. The 793-805 MHz band may be used only for mobile or fixed (control) transmissions.

(b) *Narrowband segments.* There are two band segments that are designated for use with narrowband emissions. Each of these narrowband segments is divided into 960 channels having a channel size of 6.25 kHz as follows:

Frequency range	Channel Nos.
769-775 MHz	1-960
799-805 MHz	961-1920

(1) *Narrowband interoperability channels.* The following narrowband channels are designated for nationwide interoperability licensing and use: 23, 24, 39, 40, 63, 64, 79, 80, 103, 104, 119, 120, 143, 144, 159, 160, 183, 184, 199, 200, 223, 224, 239, 240, 263, 264, 279, 280, 303, 304, 319, 320, 641, 642, 657, 658, 681, 682, 697, 698, 721, 722, 737, 738, 761, 762, 777, 778, 801, 802, 817, 818, 841, 842, 857, 858, 881, 882, 897, 898, 921, 922, 937, 938, 983, 984, 999, 1000, 1023, 1024, 1039, 1040, 1063, 1064, 1079, 1080, 1103, 1104, 1119, 1120, 1143, 1144, 1159, 1160, 1183, 1184, 1199, 1200, 1223, 1224, 1239, 1240, 1263, 1264, 1279, 1280, 1601, 1602, 1617, 1618, 1641, 1642, 1657, 1658, 1681, 1682, 1697, 1698, 1721, 1722, 1737, 1738, 1761, 1762, 1777, 1778, 1801, 1802, 1817, 1818, 1841, 1842, 1857, 1858, 1881, 1882, 1897, 1898.

(i) *Narrowband data Interoperability channels.* The following channel pairs are reserved nationwide for data transmission on a primary basis: 279/1239, 280/1240, 921/1881, and 922/1882. Voice operations are permitted on these channels on a secondary basis.

(ii) *Narrowband calling Interoperability channels.* The following channel pairs are dedicated nationwide for the express purpose of Interoperability calling only: 39/999, 40/1000, 681/1641, and 682/1642. They may not be used primarily for routine, day-to-day communications. Encryption is prohibited on the designated calling channels.

(iii) *Narrowband trunking Interoperability channels.* The following Interoperability channel pairs may be used in trunked mode on a secondary basis to conventional Interoperability operations: 23/983, 24/984, 103/1063, 104/1064, 183/1143, 184/1144, 263/1223, 264/1224, 657/1617, 658/1618, 737/1697, 738/1698, 817/1777, 818/1778, 897/1857, 898/1858. For every ten general use channels trunked at a station, entities may obtain a license to operate in the trunked mode on two of the above contiguous Interoperability channel pairs. The maximum number of Interoperability channel pairs that can be trunked at any one location is eight.

(2) *Narrowband General Use Reserve channels.* The following narrowband channels are designated for General Use subject to Commission approved regional planning committee regional plans and technical rules applicable to General Use channels: 37, 38, 61, 62, 77, 78, 117, 118, 141, 142, 157, 158, 197, 198, 221, 222, 237, 238, 277, 278, 301, 302, 317, 318, 643, 644, 683, 684, 699, 700, 723, 724, 763, 764, 779, 780, 803, 804, 843, 844, 859, 860, 883, 884, 923, 924, 939, 940, 997, 998, 1021, 1022, 1037, 1038, 1077, 1078, 1101, 1102, 1117, 1118, 1157, 1158, 1181, 1182, 1197, 1198, 1237, 1238, 1261, 1262, 1277, 1278, 1603, 1604, 1643, 1644, 1659, 1660, 1683, 1684, 1723, 1724, 1739, 1740, 1763, 1764, 1803, 1804, 1819, 1820, 1843, 1844, 1883, 1884, 1899, 1900.

(i) *T-Band Relocation.* The narrowband channels established in paragraph (b)(2) are designated for priority access by public safety incumbents relocating from the 470-512 MHz band in the urban areas specified in §§90.303 and 90.305 of the Commission's rules provided that

such incumbent commits to return to the Commission an equal amount of T-Band spectrum and obtains concurrence from the relevant regional planning committee(s). Public safety T-Band incumbents shall enjoy priority access for a five year period starting from the date the Public Safety and Homeland Security Bureau releases a public notice announcing the availability of Reserve Channels for licensing.

(ii) *Deployable Trunked Systems.* Outside the urban areas specified in §§90.303 and 90.305 of the Commission's rules, the 700 MHz Regional Planning Committees may designate no more than eight 12.5 kilohertz channel pairs for temporary deployable mobile trunked infrastructure (F2BT) that could be transported into an incident area to assist with emergency response and recovery.

(iii) *General Use.* Outside the urban areas specified in §§90.303 and 90.305 of the Commission's rules, the 700 MHz Regional Planning Committees may designate sixteen to twenty four 12.5 kilohertz channel pairs for General Use, including low power vehicular mobile repeaters (MO3).

(3) *Narrowband low power channels subject to regional planning.* The following narrowband channels are designated for low power use for on-scene incident response purposes using mobiles and portables subject to Commission-approved regional planning committee regional plans. Transmitter power must not exceed 2 watts (ERP): Channels 1-8 paired with Channels 961-968, and Channels 949-958 paired with Channels 1909-1918.

(4) *Narrowband low power itinerant channels.* The following narrowband channels are designated for low power use for on-scene incident response purposes using mobiles and portables. These channels are licensed nationwide for itinerant operation. Transmitter power must not exceed 2 watts (ERP): Channels 9-12 paired with Channels 969-972 and Channels 959-960 paired with Channels 1919-1920.

(5) *Narrowband state channels.* The following narrowband channels are designated for direct licensing to each state (including U.S. territories, districts, and possessions): 25-36, 65-76, 105-116, 145-156, 185-196, 225-236, 265-276, 305-316, 645-656, 685-696, 725-736, 765-776, 805-816, 845-856, 885-896, 925-936, 985-996, 1025-1036, 1065-1076, 1105-1116, 1145-1156, 1185-1196, 1225-1236, 1265-1276, 1605-1616, 1645-1656, 1685-1696, 1725-1736, 1765-1776, 1805-1816, 1845-1856, 1885-1896. Voice operations on these channels are subject to compliance with the spectrum usage efficiency requirements set forth in §90.535(d).

(6) *Narrowband general use channels.* All narrowband channels established in this paragraph (b), other than those listed in paragraphs (b) (1), (b)(4), (b)(5), and (b)(7) of this section are reserved to public safety eligibles subject to Commission approved regional planning committee regional plans. Voice operations on these channels are subject to compliance with the spectrum usage efficiency requirements set forth in §90.535(d).

(7) *Air-ground channels.* The following channels are reserved for air-ground communications to be used by low-altitude aircraft and ground based stations: 21/981, 22/982, 101/1061, 102/1062, 181/1141, 182/1142, 261/1221, 262/1222, 659/1619, 660/1620, 739/1699, 740/1700, 819/1779, 820/1780, 899/1859, and 900/1860.

(i) Airborne use of these channels is limited to aircraft flying at or below 457 meters (1500 feet) above ground level.

(ii) Aircraft are limited to 2 watts effective radiated power (ERP) when transmitting while airborne on these channels.

(iii) Aircraft may transmit on either the mobile or base transmit side of the channel pair.

(iv) States are responsible for the administration of these channels.

(c) [Reserved]

(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 $1+(4 \times n)$, 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]

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.

[Back to Top](#)

§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]

[Back to Top](#)

§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]

[Back to Top](#)

§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 §90.531(b)(2), (b)(5), (b)(6), and (b)(7) 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.

(1) With the exception of licensees designated in paragraph (d)(2) of this section, after December 31, 2014, licensees may only operate in voice mode in these channels at a voice efficiency of at least one voice path per 6.25 kHz of spectrum bandwidth.

(2) Licensees authorized to operate systems in the voice mode on these channels from applications filed on or before December 31, 2014, may continue operating in voice mode on these channels (including modification applications of such licenses granted after December 31, 2014, for expansion or maintenance of such systems) at a voice efficiency of at least one voice path per 12.5 kHz of spectrum bandwidth until December 31, 2016.

(3) The licensees designated in paragraph (d)(2) of this section must, no later than January 31, 2017, file a declaration through the Universal Licensing System that they are operating these channels at a voice efficiency of at least one voice path per 6.25 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]

[Back to Top](#)

§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]

[Back to Top](#)

§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.

(e) The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 parts per million or better when AFC is locked to a base station, and 5 parts per million or better when AFC is not locked.

[63 FR 58651, Nov. 2, 1998, as amended at 65 FR 53646, Sept. 5, 2000; 72 FR 48861, Aug. 24, 2007]

[↑ Back to Top](#)

§90.541 Transmitting power and antenna height limits.

The transmitting power and antenna height of base, mobile, portable and control stations operating in the 769-775 MHz and 799-805 MHz frequency bands must not exceed the maximum limits in this section. Power limits are listed in effective radiated power (ERP).

(a) The transmitting power and antenna height of base stations must not exceed the limits given in paragraph (a) of §90.635.

(b) The transmitting power of a control station must not exceed 200 watts ERP.

(c) The transmitting power of a mobile unit must not exceed 100 watts ERP.

(d) The transmitting power of a portable (hand-held) unit must not exceed 3 watts ERP.

(e) Transmitters operating on the narrowband low power channels listed in §90.531(b)(3) and (4), must not exceed 2 watts ERP.

[79 FR 71326, Dec. 2, 2014]

[↑ Back to Top](#)

§90.542 Broadband transmitting power limits.

(a) The following power limits apply to the 758-768/788-798 MHz band:

(1) Fixed and base stations transmitting a signal in the 758-768 MHz band with an emission bandwidth of 1 MHz or less must not exceed an ERP of 1000 watts and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts ERP in accordance with Table 1 of this section.

(2) Fixed and base stations located in a county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, and transmitting a signal in the 758-768 MHz band with an emission bandwidth of 1 MHz or less must not exceed an ERP of 2000 watts and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 2000 watts ERP in accordance with Table 2 of this section.

(3) Fixed and base stations transmitting a signal in the 758-768 MHz band with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP in accordance with Table 3 of this section.

(4) Fixed and base stations located in a county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, and transmitting a signal in the 758-768 MHz band with an emission bandwidth greater than 1 MHz must not exceed an ERP of 2000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 2000 watts/MHz ERP in accordance with Table 4 of this section.

(5) Licensees of fixed or base stations transmitting a signal in the 758-768 MHz band at an ERP greater than 1000 watts must comply with the provisions set forth in paragraph (b) of this section.

(6) Control stations and mobile stations transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 30 watts ERP.

(7) Portable stations (hand-held devices) transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 3 watts ERP.

(8) For transmissions in the 758-768 MHz and 788-798 MHz bands, licensees may employ equipment operating in compliance with either of the following measurement techniques:

(i) The maximum composite transmit power shall be measured over any interval of continuous transmission using instrumentation calibrated in terms of RMS-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, etc., so as to obtain a true maximum composite measurement for the emission in question over the full bandwidth of the channel.

(ii) A Commission-approved average power technique.

TABLE 1 TO §90.542(a)—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE AND FIXED STATIONS IN THE 758-768 MHz BAND TRANSMITTING A SIGNAL WITH AN EMISSION BANDWIDTH OF 1 MHz OR LESS

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) (watts)
Above 1372 (4500)	65
Above 1220 (4000) To 1372 (4500)	70
Above 1067 (3500) To 1220 (4000)	75
Above 915 (3000) To 1067 (3500)	100

Above 763 (2500) To 915 (3000)	140
Above 610 (2000) To 763 (2500)	200
Above 458 (1500) To 610 (2000)	350
Above 305 (1000) To 458 (1500)	600
Up to 305 (1000)	1000

TABLE 2 TO §90.542(a)—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE AND FIXED STATIONS IN THE 758-768 MHz BAND TRANSMITTING A SIGNAL WITH AN EMISSION BANDWIDTH OF 1 MHz OR LESS

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) (watts)
Above 1372 (4500)	130
Above 1220 (4000) To 1372 (4500)	140
Above 1067 (3500) To 1220 (4000)	150
Above 915 (3000) To 1067 (3500)	200
Above 763 (2500) To 915 (3000)	280
Above 610 (2000) To 763 (2500)	400
Above 458 (1500) To 610 (2000)	700
Above 305 (1000) To 458 (1500)	1200
Up to 305 (1000)	2000

TABLE 3 TO §90.542(a)—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE AND FIXED STATIONS IN THE 758-768 MHz BAND TRANSMITTING A SIGNAL WITH AN EMISSION BANDWIDTH GREATER THAN 1 MHz

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) per MHz (watts/MHz)
Above 1372 (4500)	65
Above 1220 (4000) To 1372 (4500)	70
Above 1067 (3500) To 1220 (4000)	75
Above 915 (3000) To 1067 (3500)	100
Above 763 (2500) To 915 (3000)	140
Above 610 (2000) To 763 (2500)	200
Above 458 (1500) To 610 (2000)	350
Above 305 (1000) To 458 (1500)	600
Up to 305 (1000)	1000

TABLE 4 TO §90.542(a)—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE AND FIXED STATIONS IN THE 758-768 MHz BAND TRANSMITTING A SIGNAL WITH AN EMISSION BANDWIDTH GREATER THAN 1 MHz

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) per MHz (watts/MHz)
Above 1372 (4500)	130
Above 1220 (4000) To 1372 (4500)	140
Above 1067 (3500) To 1220 (4000)	150
Above 915 (3000) To 1067 (3500)	200
Above 763 (2500) To 915 (3000)	280
Above 610 (2000) To 763 (2500)	400
Above 458 (1500) To 610 (2000)	700
Above 305 (1000) To 458 (1500)	1200
Up to 305 (1000)	2000

(b) For base and fixed stations operating in the 758-768 MHz band in accordance with the provisions of paragraph (a)(5) of this section, the power flux density that would be produced by such stations through a combination of antenna height and vertical gain pattern must not exceed 3000 microwatts per square meter on the ground over the area extending to 1 km from the base of the antenna mounting structure.

[72 FR 48861, Aug. 24, 2007, as amended at 79 FR 600, Jan. 6, 2014]

[↑ Back to Top](#)

§90.543 Emission limitations.

Transmitters designed to operate in 769-775 MHz and 799-805 MHz frequency bands must meet the emission limitations in paragraphs (a) through (d) of this section. Class A and Class B signal boosters retransmitting signals in the 769-775 MHz and 799-805 MHz frequency bands are exempt from the limits listed in paragraph (a) of this section when simultaneously retransmitting multiple signals and instead shall be subject to the limit listed in paragraph (c) of this section when operating in this manner. Transmitters operating in 758-768 MHz and 788-798 MHz bands must meet the emission limitations in (e) of this section.

(a) The adjacent channel power (ACP) requirements for transmitters designed for various channel sizes are shown in the following tables. Mobile station requirements apply to handheld, car mounted and control station units. The tables specify a value for the ACP as a function of the displacement from the channel center frequency and measurement bandwidth. In the following tables, "(s)" indicates a swept measurement may be used.

6.25 KHz MOBILE TRANSMITTER ACP REQUIREMENTS

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
6.25	6.25	-40
12.5	6.25	-60
18.75	6.25	-60
25.00	6.25	-65
37.50	25.00	-65
62.50	25.00	-65
87.50	25.00	-65
150.00	100.00	-65
250.00	100.00	-65
350.00	100.00	-65
>400 kHz to 12 MHz	30 (s)	-75
12 MHz to paired receive band	30 (s)	-75
In the paired receive band	30 (s)	-100

12.5 KHz MOBILE TRANSMITTER ACP REQUIREMENTS

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
9.375	6.25	-40
15.625	6.25	-60
21.875	6.25	-60
37.50	25.00	-60
62.50	25.00	-65
87.50	25.00	-65
150.00	100	-65
250.00	100	-65
350.00	100	-65
>400 to 12 MHz	30 (s)	-75
12 MHz to paired receive band	30 (s)	-75
In the paired receive band	30 (s)	-100

25 KHz MOBILE TRANSMITTER ACP REQUIREMENTS

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
15.625	6.25	-40
21.875	6.25	-60
37.50	25	-60
62.50	25	-65
87.50	25	-65
150.00	100	-65
250.00	100	-65
350.00	100	-65
>400 kHz to 12 MHz	30 (s)	-75
12 MHz to paired receive band	30 (s)	-75
In the paired receive band	30 (s)	-100

6.25 KHz BASE TRANSMITTER ACP REQUIREMENTS

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
6.25	6.25	-40
12.50	6.25	-60
18.75	6.25	-60
25.00	6.25	-65
37.50	25	-65
62.50	25	-65
87.50	25	-65
150.00	100	-65
250.00	100	-65
350.00	100	-65
>400 to 12 MHz	30 (s)	-80

12 MHz to paired receive band	30 (s)	-80
In the paired receive band	30 (s)	¹ -85

¹Although we permit individual base transmitters to radiate a maximum ACP of -85 dBc in the paired receive band, licensees deploying these transmitters may not exceed an ACP of -100 dBc in the paired receive band when measured at either the transmitting antenna input port or the output of the transmitter combining network. Consequently, licensees deploying these transmitters may need to use external filters to comply with the more restrictive ACP limit.

12.5 KHZ BASE TRANSMITTER ACP REQUIREMENTS

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
9.375	6.25	-40
15.625	6.25	-60
21.875	6.25	-60
37.5	25	-60
62.5	25	-65
87.5	25	-65
150	100	-65
250	100	-65
350.00	100	-65
>400 kHz to 12 MHz	30 (s)	-80
12 MHz to paired receive band	30 (s)	-80
In the paired receive band	30 (s)	¹ -85

¹Although we permit individual base transmitters to radiate a maximum ACP of -85 dBc in the paired receive band, licensees deploying these transmitters may not exceed an ACP of -100 dBc in the paired receive band when measured at either the transmitting antenna input port or the output of the transmitter combining network. Consequently, licensees deploying these transmitters may need to use external filters to comply with the more restrictive ACP limit.

25 KHZ BASE TRANSMITTER ACP REQUIREMENTS

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
15.625	6.25	-40
21.875	6.25	-60
37.5	25	-60
62.5	25	-65
87.5	25	-65
150	100	-65
250	100	-65
350	100.00	-65
>400 kHz to 12 MHz	30 (s)	-80
12 MHz to paired receive band	30 (s)	-80
In the paired receive band	30 (s)	¹ -85

¹Although we permit individual base transmitters to radiate a maximum ACP of -85 dBc in the paired receive band, licensees deploying these transmitters may not exceed an ACP of -100 dBc in the paired receive band when measured at either the transmitting antenna input port or the output of the transmitter combining network. Consequently, licensees deploying these transmitters may need to use external filters to comply with the more restrictive ACP limit.

(b) *ACP measurement procedure.* The following are the procedures for making the transmitter ACP measurements. For all measurements modulate the transmitter as it would be modulated in normal operating conditions. For time division multiple access (TDMA) systems, the measurements are to be made under TDMA operation only during time slots when the transmitter is active. All measurements are made at the transmitter's output port. If a transmitter has an integral antenna, a suitable power coupling device shall be used to couple the RF signal to the measurement instrument. The coupling device shall substantially maintain the proper transmitter load impedance. The ACP measurements may be made with a spectrum analyzer capable of making direct ACP measurements. "Measurement bandwidth", as used for non-swept measurements, implies an instrument that measures the power in many narrow bandwidths equal to the nominal resolution bandwidth and integrates these powers to determine the total power in the specified measurement bandwidth.

(1) *Setting reference level.* Set transmitter to maximum output power. Using a spectrum analyzer capable of ACP measurements, set the measurement bandwidth to the channel size. For example, for a 6.25 kHz transmitter set the measurement bandwidth to 6.25 kHz. Set the frequency offset of the measurement bandwidth to zero and adjust the center frequency of the instrument to the assigned center frequency to measure the average power level of the transmitter. Record this power level in dBm as the "reference power level."

(2) *Non-swept power measurement.* Using a spectrum analyzer capable of ACP measurements, set the measurement bandwidth and frequency offset from the assigned center frequency as shown in the tables in §90.543 (a) above. Any value of resolution bandwidth may be used as long as it does not exceed 2 percent of the specified measurement bandwidth. Measure the power level in dBm. These measurements should be made at maximum power. Calculate ACP by subtracting the reference power level measured in (b)(1) from the measurements made in this step. The absolute value of the calculated ACP must be greater than or equal to the absolute value of the ACP given in the table for each condition above.

(3) *Swept power measurement.* Set a spectrum analyzer to 30 kHz resolution bandwidth, 1 MHz video bandwidth and average, sample, or RMS detection. Set the reference level of the spectrum analyzer to the RMS value of the transmitter power. Sweep above and below the carrier frequency to the limits defined in the tables. Calculate ACP by subtracting the reference power level measured in (b)(1) from the measurements made in this step. The absolute value of the calculated ACP must be greater than or equal to the absolute value of the ACP given in the table for each condition above.

(c) *Out-of-band emission limit.* On any frequency outside of the frequency ranges covered by the ACP tables in this section, the power of any emission must be reduced below the mean output power (P) by at least $43 + 10 \log (P)$ dB measured in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

(d) *Authorized bandwidth.* Provided that the ACP requirements of this section are met, applicants may request any authorized bandwidth that does not exceed the channel size.

(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations.

(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.

(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log (P)$ dB.

(4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.

(f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

(g) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

[70 FR 21666, Apr. 27, 2005, as amended at 72 FR 48862, Aug. 24, 2007; 79 FR 600, Jan. 6, 2014; 79 FR 39340, July 10, 2014; 79 FR 71326, Dec. 2, 2014]

[Back to Top](#)

§90.547 Narrowband Interoperability channel capability requirement.

(a) Except as noted in this section, mobile and portable transmitters operating on narrowband channels in the 769-775 MHz and 799-805 MHz frequency bands must be capable of being programmed to operate 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); 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, as amended at 72 FR 48863, Aug. 24, 2007; 79 FR 71326, Dec. 2, 2014]

[Back to Top](#)

§90.548 Interoperability Technical Standards.

(a) Transmitters designed after August 11, 2014 to operate on the narrowband interoperability channels in the 769-775 and 799-805 MHz band (see §90.531) shall conform to the following technical standards (transmitters certified prior to this date are grandfathered):

(1) Transmitters designed for voice operation shall include a 12.5 kilohertz bandwidth mode of operation conforming to the following standards: ANSI/TIA-102.BAAA-A-2003 and ANSI/TIA-102.BABA-2003.

(2) Transmitters designed for data transmission shall include a 12.5 kilohertz bandwidth mode of operation conforming to the following standards: ANSI/TIA-102.BAEA-B-2012, ANSI/TIA-102.BAAA-A-2003, ANSI/TIA-102.BAEB-A-2005, and ANSI/TIA-102.BAEE-B-2010.

(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. Material incorporated by reference may be inspected at the Federal Communications Commission, 445 12th Street SW., Washington, DC (Reference Information Center) [202-418-0270] 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.

(1) TIA/EIA, 2500 Wilson Boulevard, Arlington, VA 22201 703-907-7974. These standards are also available from 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, www.ansi.org.

(i) ANSI/TIA-102.BAAA-A-2003, Project 25 FDMA-Common Air Interface, approved September 2003.

(ii) ANSI/TIA-102.BABA-2003, Project 25 Vocoder Description, approved December 2003.

(iii) ANSI/TIA-102.BAEA-B-2012, Project 25 Data Overview—New Technology Standards Project—Digital Radio Technical Standards, approved June 2012.

(iv) ANSI/TIA-102.BAEB-A-2005, Project 25 Packet Data Specification—New Technology Standards Project—Digital Radio Technical Standards, approved March 2005.

(v) ANSI/TIA-102.BAEE-B-2010, Project 25 Radio Management Protocols—New Technology Standards Project—Digital Radio Technical Standards, approved May 2010.

(2) [Reserved]

(c) Equipment certified by the P25 Compliance Assessment Program is presumed to comply with this section.

[79 FR 39340, July 10, 2014, as amended at 79 FR 71326, Dec. 2, 2014]

[Back to Top](#)

§90.549 Transmitter certification.

Transmitters operated in the 758-775 MHz and 788-805 MHz frequency bands must be of a type that have been authorized by the Commission under its certification procedure as required by §90.203.

[79 FR 600, Jan. 6, 2014]

[Back to Top](#)

§90.551 Construction requirements.

Each station authorized under this subpart to operate in the 769-775 MHz and 799-805 MHz frequency bands must be constructed and placed into operation within 12 months from the date of grant of the authorization, except for State channels. However, licensees may request a longer construction period, up to but not exceeding 5 years, pursuant to §90.155(b). State channels are subject to the build-out requirements in §90.529.

[72 FR 48863, Aug. 24, 2007]

[Back to Top](#)

§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 transmitters manufactured after August 11, 2014 must use the Advanced Encryption Standard (AES) specified in ANSI/TIA-102.AAAD-A: Project 25 Digital Land Mobile Radio-Block Encryption Protocol, approved August 20, 2009. Until 2030, manufacturers may also include the Digital Encryption Standard (DES) or Triple Data Encryption Algorithm (TDEA), in addition to but not in place of AES, for compatibility with legacy radios that lack AES capability. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. The standard can also be purchased from TIA/EIA, 2500 Wilson Boulevard, Arlington, VA 22201 703-907-7974; 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, www.ansi.org. Material incorporated by reference may be inspected at the Federal Communications Commission, 445 12th Street SW., Washington, DC (Reference Information Center) 202-418-0270 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.

(c) The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the standard 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 standard 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.)

[66 FR 10636, Feb. 16, 2001, as amended at 67 FR 61006, Sept. 26, 2002; 79 FR 39341, July 10, 2014]

[Back to Top](#)

§90.555 Information exchange.

(a) *Prior notification.* Public safety licensees authorized to operate in the 758-775 MHz and 788-805 MHz bands may notify any licensee authorized to operate in the 746-757 MHz or 776-787 MHz bands that they wish to receive prior notification of the activation or modification of the licensee's base or fixed stations in their area. Thereafter, the 746-757 MHz or 776-787 MHz band licensee must provide the following information to the public safety licensee at least 10 business days before a new base or fixed station is activated or an existing base or fixed station is modified:

- (1) Location;
- (2) Effective radiated power;

(3) Antenna height; and

(4) Channels available for use.

(b) *Purpose of prior notification.* The prior coordination of base or fixed stations is for informational purposes only. Public safety licensees are not afforded the right to accept or reject the activation of a proposed base or fixed station or to unilaterally require changes in its operating parameters. The principal purposes of notification are to:

(1) Allow a public safety licensee to advise the 746-757 or 776-787 MHz band licensee whether it believes a proposed base or fixed station will generate unacceptable interference;

(2) Permit 746-757 and 776-787 MHz band licensees to make voluntary changes in base or fixed station parameters when a public safety licensee alerts them to possible interference; and,

(3) Rapidly identify the source if interference is encountered when the base or fixed station is activated.

(c) *Public Safety Information Exchange.* (1) Upon request by a 746-757 or 776-787 MHz band licensee, public safety licensees authorized to operate radio systems in the 758-775 and 788-805 MHz bands shall provide the operating parameters of their radio system to the 746-757 or 776-787 MHz band licensee.

(2) Public safety licensees who perform the information exchange described in this section must notify the appropriate 746-757 or 776-787 MHz band licensees prior to any technical changes to their radio system.

[72 FR 27713, May 16, 2007, as amended at 72 FR 67578, Nov. 29, 2007; 79 FR 601, Jan. 6, 2014]

[Back to Top](#)

§90.557 Secondary fixed signaling operations.

Trunked and conventional 700 MHz narrowband systems may conduct fixed ancillary signaling and data transmissions subject to the following requirements:

(a) Operations are permitted only on:

(1) Narrowband State License channels specified in §90.531(b)(5), subject to the discretion of the relevant State licensee; and

(2) Narrowband General Use channels specified in §90.531(b)(6), subject to the discretion of the regional planning committee.

(b) All operations must be on a secondary, non-interference basis to the primary mobile operation of any other licensee.

(c) The output power at the remote site must not exceed 30 watts.

(d) Automatic means must be provided to deactivate the remote transmitter in the event the carrier remains on for a period in excess of three minutes.

(e) Operational fixed stations authorized pursuant to this section are exempt from the requirements of §§90.425, 90.429, and 90.559.

(f) Any operations undertaken in a shared use environment must be conducted pursuant to an agreement between the licensee and each participant, as set forth in §90.179.

[79 FR 39341, July 10, 2014]

[Back to Top](#)

§90.559 Station Identification.

(a) Conventional systems of communication shall be identified in accordance with existing regulations governing such matters.

(b) Trunked systems of communication, except as noted in paragraph (c) of this section, shall be identified through the use of an automatic device which transmits the call sign of the base station facility at 30 minute intervals. Such station identification shall be made on the lowest frequency in the base station trunk group assigned the licensee. Should this frequency be in use at the time station identification is required, such identification may be made at the termination of the communication in progress on this frequency. Identification may be made by voice or International Morse Code. When the call sign is transmitted in International Morse Code, it must be at a rate of between 15 to 20 words per minute and by means of tone modulation of the transmitter, the tone frequency being between 800 and 1000 hertz.

(c) Stations operating in the 769-775/799-805 MHz band that are licensed on an exclusive basis, and normally employ digital signals for the transmission of data, text, control codes, or digitized voice may also be identified by digital transmission of the call sign. A licensee that identifies its station in this manner must provide the Commission, upon its request, information sufficient to decode the digital transmission and ascertain the call sign transmitted.

[79 FR 39341, July 10, 2014]

[Back to Top](#)

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