

Federal Communications Commission

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www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(1) European Telecommunications Standards Institute, 650 Route des Lucioles, 06921 Sophia Antipolis Cedex, France. A copy of the standard is also available at http://www.etsi.org/deliver/etsi_en/300400_300499/30042201/01.03.02_60/en_30042201v010302p.pdf.

(i) ETSI EN 300 422-1 V1.4.2 (2011-08): “*Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; Part 1: Technical characteristics and methods of measurement*,” Copyright 2011, IBR approved for section 15.236(g).

(ii) [Reserved]

(2) [Reserved]

(Secs. 4(i) and 303(r), Communications Act of 1934, as amended, §§0.131 and 0.331 of the Commission’s Rules and 5 U.S.C. 553 (b)(3)(B) and (d)(3))

[49 FR 20506, May 15, 1984, as amended at 62 FR 18929, Apr. 17, 1997; 70 FR 21661, Apr. 27, 2005; 80 FR 71731, Nov. 17, 2015; 82 FR 41562, Sept. 1, 2017]

§ 90.266 Long distance communications on frequencies below 25 MHz.

(a) The use of any particular frequency between 2 and 25 MHz is limited to those frequencies falling within the bands allocated to the fixed and land mobile services as indicated in §2.106 of the Commission’s Rules and Regulations.

(b) Only in the following circumstances will authority be extended to stations to operate on the frequencies below 25 MHz:

(1) To provide communications circuits to support operations which are highly important to the national interest and where other means of telecommunication are unavailable;

(2) To provide standby and/or backup communications circuits to regular domestic communications circuits which have been disrupted by disasters and/or emergencies.

(c) No protection is afforded to users of these frequencies from harmful interference caused by foreign operations.

(d) In the event that a complaint of harmful interference resulting from operation of these circuits is received from a foreign source, the offending

circuit(s) must cease operation on the particular frequency concerned immediately upon notification by the Commission.

(e) In order to accommodate the situations described in paragraphs (c) and (d) of this section, the equipment shall be capable of transmitting and receiving on any frequency within the bands between 2 and 25 MHz and capable of immediate change among the frequencies, provided, however, that this requirement does not apply to equipment manufactured prior to August 15, 1983.

(f) Only 2K80J3E, 100HA1A, 100HA1B and those emission types listed in §90.237(g) are permitted.

(g) Applicants must fulfill eligibility requirements set out in §90.35(c)(1) and submit communications plans pursuant to §90.129(o).

(h) Exercises or circuits tests which require use of these frequencies for more than seven hours per week cumulative are prohibited unless prior written approval is obtained from the Commission.

[48 FR 32996, July 20, 1983, as amended at 49 FR 48712, Dec. 14, 1984; 52 FR 29856, Aug. 12, 1987; 62 FR 18929, Apr. 17, 1997]

§ 90.267 Assignment and use of frequencies in the 450–470 MHz band for low power use.

(a) The following frequencies between 450–470 MHz are designated for low-power use subject to the provisions of this section. For purposes of this section these frequencies are referred to as “low power frequencies.” Pairs are shown but single frequencies are available for simplex operations.

(b) *Group A1 Frequencies.* The Industrial/Business Pool frequencies in Group A1 are available on a coordinated basis, pursuant to §§90.35(b)(2) and 90.175(b), as follows:

(1) Group A1 frequencies are available for voice and non-voice operations on a co-primary basis. Base, mobile and operational fixed stations will be authorized on Group A1 frequencies. Fixed stations may be licensed as mobile.

(2) Within 80 kilometers (50 miles) of the specified coordinates of the top 100 urban areas listed in §90.741 of this chapter (“80 km circles”) only low

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power operation will be authorized. The coordinates of an operational fixed or base station and the geographic center (latitude and longitude) of a mobile area of operation determine whether a station is within an “80 km circle.”

(i) The maximum ERP for low power operation on Group A1 frequencies is as follows:

Operation	Low side of frequency pair (watts)	High side of frequency pair (watts)
Operational Fixed or Base	20	6
Mobile	6	6
Portable	2	2

(ii) The maximum antenna height for low power fixed stations on Group A1 frequencies will be 23 meters (75 feet) above ground.

451/456.18125	451/456.58125	452/457.10625	452/457.70625
451/456.1875	451/456.5875	452/457.1125	452/457.7125
451/456.19375	451/456.59375	452/457.11875	452/457.71875
451/456.28125	451/456.60625	452/457.13125	452/457.78125
451/456.2875	451/456.6125	452/457.1375	452/457.7875
451/456.29375	451/456.61875	452/457.14375	452/457.79375
451/456.30625	451/456.65625	452/457.15625	452/457.80625
451/456.3125	451/456.6625	452/457.1625	452/457.8125
451/456.31875	451/456.66875	452/457.16875	452/457.81875
451/456.35625	451/456.68125	452/457.18125	452/457.83125
451/456.3625	451/456.6875	452/457.1875	452/457.8375
451/456.36875	451/456.69375	452/457.19375	452/457.84375
451/456.38125	451/456.70625	452/457.28125	452/457.88125
451/456.3875	451/456.7125	452/457.2875	452/457.8875
451/456.39375	451/456.71875	452/457.29375	452/457.89375
451/456.40625	451/456.73125	452/457.48125	452/457.98125
451/456.4125	451/456.7375	452/457.4875	452/457.9875
451/456.41875	451/456.74375	452/457.49375	452/457.99375
451/456.45625	451/456.75625	452.53125 (unpaired)	462/467.18125
451/456.4625	451/456.7625	452.5375 (unpaired)	462/467.1875
451/456.46875	451/456.76875	452.54375 (unpaired)	462/467.19375
451/456.48125	452/457.03125	452/457.63125	462/467.45625
451/456.4875	452/457.0375	452/457.6375	462/467.4625
451/456.49375	452/457.04375	452/457.64375	462/467.46875
451/456.50625	452/457.05625	452/457.65625	462/467.48125
451/456.5125	452/457.0625	452/457.6625	462/467.4875
451/456.51875	452/457.06875	452/457.66875	462/467.49375
451/456.55625	452/457.08125	452/457.68125	462/467.50625
451/456.5625	452/457.0875	452/457.6875	462/467.5125
451/456.56875	452/457.09375	452/457.69375	462/467.51875

(3) Outside the “80 km circles” defined in paragraph (b)(2), full-power operational fixed, base, or mobile stations will be authorized as follows:

(i) Power and antenna height limits are governed by § 90.205 of this chapter;

(ii) For any operational fixed, base or mobile station exceeding the low power or antenna height limits listed in paragraph (b)(2), the 21 dBu F(50,10) contour may not overlap any portion of an “80 km circle;” and,

(iii) Wide area operations will not be permitted. The area of normal day-to-day operations will be described in the application in terms of maximum distance from a geographic center (latitude and longitude).

(4) The Industrial/Business Pool Group A1 Low Power Frequencies are as follows:

(c) *Group A2 Frequencies.* The Industrial/Business Pool frequencies in Group A2 are available nationwide on a coordinated basis, pursuant §§ 90.35(b)(2) and 90.175(b) as follows:

(1) Group A2 frequencies are available for voice and non-voice operations on a

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co-primary basis. Base, mobile or operational fixed stations will be authorized on Group A2 frequencies. Fixed stations may be licensed as mobile.

(2) Low power operation will be authorized nationwide on Group A2 frequencies.

(i) The maximum ERP for low power operation on these frequencies is as follows:

451/456.23125	451/456.53125	452/457.40625	452/457.85625
451/456.2375	451/456.5375	452/457.4125	452/457.8625
451/456.24375	451/456.54375	452/457.41875	452/457.86875
451/456.33125	451/456.63125	452/457.50625	
451/456.3375	451/456.6375	452/457.5125	
451/456.34375	451/456.64375	452/457.51875	
451/456.43125	452/457.30625	452/457.75625	
451/456.4375	452/457.3125	452/457.7625	
451/456.44375	452/457.31875	452/457.76875	

(d) *Group B Frequencies.* The Industrial/Business Pool frequencies in Group B are available nationwide on a coordinated basis, pursuant to §§90.35(b)(2) and 90.175(b) as follows:

(1) Group B frequencies are available for non-voice operations on a primary basis. Voice operations will be permitted on a secondary basis. Base, mobile or operational fixed stations will be authorized on Group B frequencies.

462/467.20625	462/467.28125	462/467.35625	462/467.43125
462/467.2125	462/467.2875	462/467.3625	462/467.4375
462/467.21875	462/467.29375	462/467.36875	462/467.44375
462/467.23125	462/467.30625	462/467.38125	
462/467.2375	462/467.3125	462/467.3875	
462/467.24375	462/467.31875	462/467.39375	
462/467.25625	462/467.33125	462/467.40625	
462/467.2625	462/467.3375	462/467.4125	
462/467.26875	462/467.34375	462/467.41875	

(e) *Group C Frequencies.* The Industrial/Business Pool frequencies in Group C are available nationwide for non-coordinated itinerant use as follows.

(1) Group C frequencies are available for voice and non-voice operations on a co-primary basis. Only mobile operations will be authorized on Group C frequencies. Stations may operate at fixed locations for a temporary period

Operation	Low side of frequency pair	High side of frequency pair (watts)
Operational Fixed or Base	20	6
Mobile	6	6
Portable	2	2

(ii) The maximum antenna height for low power fixed stations will be 23 meters (75 feet) above ground.

(3) The Industrial/Business Pool Group A2 Low Power Frequencies are as follows:

Fixed stations may be licensed as mobile.

(2) Operation on these frequencies is limited to 6 watts ERP for base, mobile or operational fixed stations and 2 watts ERP for portable units. A maximum antenna height of 7 meters (20 ft) above ground is authorized for fixed stations.

(3) The Industrial/Business Pool Group B Frequencies are as follows:

of time. No stations operating at a permanent fixed location will be authorized on Group C frequencies.

(2) Operation on these frequencies is limited to 6 watts effective radiated power for fixed or mobile units and 2 watts ERP for portable units. Stations operating at fixed locations for a temporary period of time will be limited to an antenna height of 7 meters (20 feet) above ground.

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(3) The Industrial/Business Pool Group C Low Power Frequencies are as follows:

461/466.03125	461/466.15625	461/466.28125	462.8125
461/466.0375	461/466.1625	461/466.2875	462.8375 (unpaired)
461/466.04375	461/466.16875	461/466.29375	462/467.8625
461/466.05625	461/466.18125	461/466.30625	462/467.8875
461/466.0625	461/466.1875	461/466.3125	462/467.9125
461/466.06875	461/466.19375	461/466.31875	464/469.48125
461/466.08125	461/466.20625	461/466.33125	464/469.4875
461/466.0875	461/466.2125	461/466.3375	464/469.5125
461/466.09375	461/466.21875	461/466.34375	464/469.51875
461/466.10625	461/466.23125	461/466.35625	464/469.53125
461/466.1125	461/466.2375	461/466.3625	464/469.5375
461/466.11875	461/466.24375	461/466.36875	464/469.5625
461/466.13125	461/466.25625	462.7625 (unpaired)	464/469.56875
461/466.1375	461/466.2625	462.7875 (unpaired)	
461/466.14375	461/466.26875	462.8125 (unpaired)	

(f) *Group D Frequencies.* The Industrial/Business Pool frequencies in Group D are available on a coordinated basis, pursuant to §§ 90.35(b)(2) and 90.175(b). Central station alarm signaling on these frequencies are co-primary with regard to co-channel or adjacent channel base, mobile or data operations.

(1) Base, mobile or operational fixed stations will be authorized on Group D frequencies. Fixed stations may be licensed as mobile.

(2) Unless concurrence is obtained in accordance with section 90.175(b) of this chapter from the Commission-certified frequency coordinator for frequencies designated for central station alarm operations, Group D frequencies subject to § 90.35(c)(63) are limited to central station alarm use within the urban areas described in § 90.35(c)(63). Outside the urban areas described in § 90.35(c)(63), Group D frequencies sub-

ject to § 90.35(c)(63) are available for general Industrial/Business use on a coordinated basis, pursuant to § 90.35(b)(2) and § 90.175(b).

(3) Unless concurrence is obtained in accordance with section 90.175(b) of this chapter from the Commission-certified frequency coordinator for frequencies designated for central station alarm operations, Group D frequencies subject to § 90.35(c)(66) are limited to central station alarm use nationwide.

(4) Operation on Group D frequencies is limited to 2 watts output power for mobile, base or operational fixed stations. Fixed stations used for central station alarm operations may utilize antennas mounted not more than 7 meters (20 feet) above a man-made supporting structure, including antenna structure.

(5) The Industrial/Business Pool Group D Low Power Frequencies are as follows:

460/465.90625	460/465.95625	461/466.00625
460/465.9125	460/465.9625	461/466.0125
460/466.91875	460/465.96875	461/466.01875
460/465.93125	460/465.98125	
460/465.9375	460/465.9875	
460/465.94375	460/465.99375	

(g) *Low Power Public Safety Frequencies.* The frequencies in the Public Safety Pool Low Power Group are available nationwide on a coordinated

basis, pursuant to §§ 90.20(c)(2) and 90.175(b).

(1) Base, mobile or operational fixed stations will be authorized on Public

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Safety Low Power frequencies. Fixed stations may be licensed as mobile.

(2) Operation on these frequencies is limited to 6 watts effective radiated power for base, mobile or operational fixed stations and 2 watts ERP for

portable units. A maximum antenna height of 7 meters (20 feet) above ground is authorized for fixed stations.

(3) The Public Safety Pool Low Power Frequencies are as follows:

453/458.03125	453/458.13125	453/458.95625	460/465.53125
453/458.0375	453/458.1375	453/458.9625	460/465.5375
453/458.04375	453/458.14375	453/458.96875	460/465.54375
453/458.05625	453/458.88125	453/458.98125	460/465.55625
453/458.0625	453/458.8875	453/458.9875	460/465.5625
453/458.06875	453/458.89375	453/458.99375	460/465.56875
453/458.08125	453/458.90625	460/465.48125	
453/458.0875	453/458.9125	460/465.4875	
453/458.09375	453/458.91875	460/465.49375	
453/458.10625	453/458.93125	460/465.50625	
453/458.1125	453/458.9375	460/465.5125	
453/458.11875	453/458.94375	460/465.51875	

(h) Unless otherwise noted, the following conditions apply to all low power frequencies:

(1) Except for itinerant operations on Group C, wide area operations will not be authorized. The area of normal day-to-day operations will be described in the application in terms of maximum distance from a geographic center (latitude and longitude).

(2) A hospital or health care institution holding a license to operate a radio station under this part may operate a medical radio telemetry device with an output power not to exceed 20 milliwatts without specific authorization from the Commission. All licensees operating under this authority must comply with the requirements and limitations set forth in this section.

(3) No limit shall be placed on the length or height above ground level of any commercially manufactured radiating transmission line when the transmission line is terminated in a non-radiating load and is routed at least 7 meters (20 feet) interior to the edge of any structure or is routed below ground level.

(4) Sea-based stations may utilize antennas mounted not more than 7 meters (20 feet) above a man-made supporting structure, including antenna structures.

(5) Continuous carrier operations are prohibited on these frequencies.

(6) Unless specified elsewhere in this part, licensees as of August 5, 1999, licensed for operations with an emission designator wider than 11.25 kHz on low power frequencies that are subject to an authorized bandwidth of 11.25 kHz, may obtain primary status with respect to co-channel licensees by supplying their coordinates to the Commission. These licensees will continue to operate on a secondary basis with respect to adjacent channel licensees. Additionally, these licensees may continue to operate with an authorized bandwidth wider than 11.25 kHz on such low power frequencies, subject to the provisions of §90.209(b) of this chapter.

(7) Unless specified elsewhere in this part, licensees as of August 5, 1999, licensed for operations with an emission designator wider than 11.25 kHz on frequencies that are subject to an authorized bandwidth of 11.25 kHz, which are not low power frequencies, may obtain primary status with respect to co-channel licensees by modifying their license to low power frequencies, supplying their coordinates to the Commission, and otherwise complying with the conditions of paragraphs (b) through (g) of this section. These licensees will continue to operate on a secondary basis with respect to adjacent channel licensees. Additionally, these licensees may continue to operate with an authorized bandwidth wider than 11.25 kHz on such low power

frequencies, subject to the provisions of § 90.209(b) of this chapter.

(8) Applicants proposing to operate with an authorized bandwidth wider than 11.25 kHz, on low power frequencies that are subject to an authorized bandwidth of 11.25 kHz, may be licensed on a secondary, non-interference basis. Such applicants are subject to the conditions of paragraphs (b) through (g) of this section and the provisions of § 90.209(b) of this chapter.

[68 FR 19461, Apr. 21, 2003; 68 FR 55319, Sept. 25, 2003, as amended at 69 FR 4254, Jan. 29, 2004; 75 FR 19284, Apr. 14, 2010; 83 FR 61097, Nov. 27, 2018]

§ 90.269 Use of frequencies for self-powered vehicle detectors.

(a) Frequencies subject to § 90.20(d)(22) may be used for the operation of self-powered vehicle detectors by licensees of base/mobile stations in the Public Safety Pool in accordance with the following conditions:

(1) All stations are limited to 100 milliwatts carrier power and 20K00F7W, 20K00F7X, 20K00F8W, 20K00F8X, 20K00F9W or 20K00F9X emissions. The frequency deviation shall not exceed 5 kHz. No more than two 30 ms. pulses may be emitted for each vehicle sensed.

(2) The transmitters must be crystal controlled with a frequency tolerance of plus or minus .005% from –20° to plus 50 °C. They must be certificated.

(3) The total length of the transmission line plus antenna may not exceed one-half wavelength and must be integral with the unit.

(4) All operation shall be on a secondary, non-interference basis.

(b) [Reserved]

[48 FR 54982, Dec. 8, 1983, as amended at 54 FR 38681, Sept. 20, 1989; 62 FR 18929, Apr. 17, 1997; 63 FR 36610, July 7, 1998]

§ 90.273 Availability and use of frequencies in the 421–430 MHz band.

The frequency bands 422.1875–425.4875 MHz and 427.1875–429.9875 MHz are available for use in the Detroit, Michigan and Cleveland, Ohio areas. The bands 423.8125–425.4875 MHz and 428.8125–429.9875 MHz are available for use in the Buffalo, New York area. Sections 90.273 through 90.281 address the specific rules applicable to these bands.

Use of these bands is also subject to the general technical standards and application procedures contained in other subparts of part 90. The technical standards applicable in this band are the same as those contained in subpart I of part 90 for the 450–470 MHz band. Private land mobile use of these frequencies is subject to accepting any interference from Federal Government radiolocation operations.

(a) The following tables list frequencies available for assignment in the Public Safety and Industrial/Business Pools as indicated. In the tables, the Public Safety Pool frequencies are denoted as “PS” and the Industrial/Business Pool frequencies are denoted as “IB.” The frequencies 422.19375 MHz through 424.99375 MHz are paired with frequencies 427.19375 MHz through 429.99375 MHz, respectively. Only the lower half of each frequency pair, available for base station operation, is listed in the tables. Corresponding mobile and control station frequencies are 5 MHz higher than the base station frequency. The frequencies 425.000 through 425.48125 are unpaired and are available for either single frequency dispatch or paging operations.

TABLE 1—CHANNELS AVAILABLE IN DETROIT AND CLEVELAND AREAS ONLY

Frequency (MHz)	Pool in which assigned
Paired channels:	
422.19375 *	IB
422.200	IB
422.20625 *	IB
422.21250	IB
422.21875 *	IB
422.225	IB
422.23125 *	IB
422.23750	IB
422.24375 *	IB
422.250	IB
422.25625 *	IB
422.26250	IB
422.26875 *	IB
422.275	IB
422.28125 *	IB
422.28750	IB
422.29375 *	IB
422.300	IB
422.30625 *	IB
422.31250	IB
422.31875 *	IB
422.325	IB
422.33125 *	IB
422.33750	IB
422.34375 *	IB
422.350	IB
422.35625 *	IB
422.36250	IB