

**§ 15.233 Operation within the bands 43.71–44.49 MHz, 46.60–46.98 MHz, 48.75–49.51 MHz and 49.66–50.0 MHz.**

(a) The provisions shown in this section are restricted to cordless telephones.

(b) An intentional radiator used as part of a cordless telephone system shall operate centered on one or more of the following frequency pairs, subject to the following conditions:

(1) Frequencies shall be paired as shown below, except that channel pairing for channels one through fifteen may be accomplished by pairing any of the fifteen base transmitter frequencies with any of the fifteen handset transmitter frequencies.

(2) Cordless telephones operating on channels one through fifteen must:

(i) Incorporate an automatic channel selection mechanism that will prevent establishment of a link on any occupied frequency; and

(ii) The box or an instruction manual which is included within the box which the individual cordless telephone is to be marketed shall contain information indicating that some cordless telephones operate at frequencies that may cause interference to nearby TVs and VCRs; to minimize or prevent such interference, the base of the cordless telephone should not be placed near or on top of a TV or VCR; and, if interference is experienced, moving the cordless telephone farther away from the TV or VCR will often reduce or eliminate the interference. A statement describing the means and procedures used to achieve automatic channel selection shall be provided in any application for equipment authorization of a cordless telephone operating on channels one through fifteen.

Channel	Base transmitter (MHz)	Handset transmitter (MHz)
1 .....	43.720	48.760
2 .....	43.740	48.840
3 .....	43.820	48.860
4 .....	43.840	48.920
5 .....	43.920	49.020
6 .....	43.960	49.080
7 .....	44.120	49.100
8 .....	44.160	49.160
9 .....	44.180	49.200
10 .....	44.200	49.240
11 .....	44.320	49.280
12 .....	44.360	49.360
13 .....	44.400	49.400

Channel	Base transmitter (MHz)	Handset transmitter (MHz)
14 .....	44.460	49.460
15 .....	44.480	49.500
16 .....	46.610	49.670
17 .....	46.630	49.845
18 .....	46.670	49.860
19 .....	46.710	49.770
20 .....	46.730	49.875
21 .....	46.770	49.830
22 .....	46.830	49.890
23 .....	46.870	49.930
24 .....	46.930	49.990
25 .....	46.970	49.970

(c) The field strength of the fundamental emission shall not exceed 10,000 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

(d) The fundamental emission shall be confined within a 20 kHz band and shall be centered on a carrier frequency shown above, as adjusted by the frequency tolerance of the transmitter at the time testing is performed. Modulation products outside of this 20 kHz band shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits in §15.209, whichever permits the higher emission levels. Emissions on any frequency more than 20 kHz removed from the center frequency shall consist solely of unwanted emissions and shall not exceed the general radiated emission limits in §15.209. Tests to determine compliance with these requirements shall be performed using an appropriate input signal as prescribed in §2.989 of this chapter.

(e) All emissions exceeding 20 microvolts/meter at 3 meters are to be reported in the application for certification.

(f) If the device provides for the connection of external accessories, including external electrical input signals, the device must be tested with the accessories attached. The emission tests shall be performed with the device and accessories configured in a manner which tends to produce the maximum level of emissions within the range of variations that can be expected under normal operating conditions.

(g) The frequency tolerance of the carrier signal shall be maintained

## § 15.235

within  $\pm 0.01\%$  of the operating frequency. The tolerance shall be maintained for a temperature variation of  $-20$  degrees C to  $+50$  degrees C at normal supply voltage, and for variation in the primary voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

(h) For cordless telephones that do not comply with § 15.214(d) of this part, the box or other package in which the individual cordless telephone is to be marketed shall carry a statement in a prominent location, visible to the buyer before purchase, which reads as follows:

NOTICE: The base units of some cordless telephones may respond to other nearby units or to radio noise resulting in telephone calls being dialed through this unit without your knowledge and possibly calls being misbilled. In order to protect against such occurrences, this cordless telephone is provided with the following features: (to be completed by the responsible party).

An application for certification of a cordless telephone shall specify the complete text of the statement that will be carried on the package and indicate where, specifically, it will be located on the carton.

[54 FR 17714, Apr. 25, 1989; 54 FR 32340, Aug. 7, 1989, as amended at 56 FR 3785, Jan. 31, 1991; 56 FR 5659, Feb. 12, 1991; 60 FR 21985, May 4, 1995]

## § 15.235 Operation within the band 49.82–49.90 MHz.

(a) The field strength of any emission within this band shall not exceed 10,000 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in § 15.35 for limiting peak emissions apply.

(b) The field strength of any emissions appearing between the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits in § 15.209, whichever permits the higher emission levels. The field strength of any emissions removed by more than 10 kHz from the band edges

## 47 CFR Ch. I (10–1–05 Edition)

shall not exceed the general radiated emission limits in § 15.209. All signals exceeding 20 microvolts/meter at 3 meters shall be reported in the application for certification.

(c) For a home-built intentional radiator, as defined in § 15.23(a), operating within the band 49.82–49.90 MHz, the following standards may be employed:

(1) The RF carrier and modulation products shall be maintained within the band 49.82–49.90 MHz.

(2) The total input power to the device measured at the battery or the power line terminals shall not exceed 100 milliwatts under any condition of modulation.

(3) The antenna shall be a single element, one meter or less in length, permanently mounted on the enclosure containing the device.

(4) Emissions outside of this band shall be attenuated at least 20 dB below the level of the unmodulated carrier.

(5) The regulations contained in § 15.23 of this part apply to intentional radiators constructed under the provisions of this paragraph.

(d) Cordless telephones are not permitted to operate under the provisions of this section.

## § 15.237 Operation in the bands 72.0–73.0 MHz, 74.6–74.8 MHz and 75.2–76.0 MHz.

(a) The intentional radiator shall be restricted to use as an auditory assistance device.

(b) Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the above specified frequency ranges.

(c) The field strength of any emissions within the permitted 200 kHz band shall not exceed 80 millivolts/meter at 3 meters. The field strength of any emissions radiated on any frequency outside of the specified 200 kHz band shall not exceed 1500 microvolts/meter at 3 meters. The emission limits in this paragraph are based on measurement instrumentation employing an average detector. The provisions in § 15.35 for limiting peak emissions apply.

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