

§ 15.35

47 CFR Ch. I (10–1–11 Edition)

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705–10	400
10–30	500

(3) Except for a CB receiver, a receiver employing superheterodyne techniques shall be investigated from 30 MHz up to at least the second harmonic of the highest local oscillator frequency generated in the device. If such receiver is controlled by a digital device, the frequency range shall be investigated up to the higher of the second harmonic of the highest local oscillator frequency generated in the device or the upper frequency of the measurement range specified for the digital device in paragraph (b)(1) of this section.

(c) The above specified frequency ranges of measurements apply to the measurement of radiated emissions and, in the case of receivers, the measurement to demonstrate compliance with the antenna conduction limits specified in §15.111. The frequency range of measurements for AC power line conducted limits is specified in §§15.107 and 15.207 and applies to all equipment subject to those regulations. In some cases, depending on the frequency(ies) generated and used by the equipment, only signals conducted onto the AC power lines are required to be measured.

(d) Particular attention should be paid to harmonics and subharmonics of the fundamental frequency as well as to those frequencies removed from the fundamental by multiples of the oscillator frequency. Radiation at the frequencies of multiplier states should also be checked.

[54 FR 17714, Apr. 25, 1989, as amended at 61 FR 14502, Apr. 2, 1996; 63 FR 42278, Aug. 7, 1998]

§ 15.35 Measurement detector functions and bandwidths.

The conducted and radiated emission limits shown in this part are based on the following, unless otherwise specified elsewhere in this part:

(a) On any frequency or frequencies below or equal to 1000 MHz, the limits

shown are based on measuring equipment employing a CISPR quasi-peak detector function and related measurement bandwidths, unless otherwise specified. The specifications for the measuring instrument using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Interference (CISPR) of the International Electrotechnical Commission. As an alternative to CISPR quasi-peak measurements, the responsible party, at its option, may demonstrate compliance with the emission limits using measuring equipment employing a peak detector function, properly adjusted for such factors as pulse desensitization, as long as the same bandwidths as indicated for CISPR quasi-peak measurements are employed.

NOTE: For pulse modulated devices with a pulse-repetition frequency of 20 Hz or less and for which CISPR quasi-peak measurements are specified, compliance with the regulations shall be demonstrated using measuring equipment employing a peak detector function, properly adjusted for such factors as pulse desensitization, using the same measurement bandwidths that are indicated for CISPR quasi-peak measurements.

(b) Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1 MHz. When average radiated emission measurements are specified in this part, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. Unless otherwise specified, *e.g.*, see §§ 15.250, 15.252, 15.255, and 15.509–15.519, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device, *e.g.*, the total peak power level. Note that the use of a pulse desensitization correction factor may be needed to determine the total peak emission level. The instruction manual or application note for the

measurement instrument should be consulted for determining pulse desensitization factors, as necessary.

(c) Unless otherwise specified, e.g. §15.255(b), when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value. The exact method of calculating the average field strength shall be submitted with any application for certification or shall be retained in the measurement data file for equipment subject to notification or verification.

[54 FR 17714, Apr. 25, 1989, as amended at 56 FR 13083, Mar. 29, 1991; 61 FR 14502, Apr. 2, 1996; 63 FR 42279, Aug. 7, 1998; 67 FR 34855, May 16, 2002; 70 FR 6773, Feb. 9, 2005]

§ 15.37 Transition provisions for compliance with the rules.

Equipment may be authorized, manufactured and imported under the rules in effect prior to June 23, 1989, in accordance with the following schedules:

(a) *For all intentional and unintentional radiators, except for receivers:* Radio frequency equipment verified by the responsible party or for which an application for a grant of equipment authorization is submitted to the Commission on or after June 23, 1992, shall comply with the regulations specified in this part. Radio frequency equipment that is manufactured or imported on or after June 23, 1994, shall comply with the regulations specified in this part.

(b) *For receivers:* Receivers subject to the regulations in this part that are manufactured or imported on or after June 23, 1999, shall comply with the regulations specified in this part. However, if a receiver is associated with a transmitter that could not have been authorized under the regulations in ef-

fect prior to June 23, 1989, e.g., a transmitter operating under the provisions of §15.209 or §15.249 (below 960 MHz), the transition provisions in this section do not apply. Such receivers must comply with the regulations in this part. In addition, receivers are subject to the provisions in paragraph (f) of this section.

(c) There are no restrictions on the operation or marketing of equipment complying with the regulations in effect prior to June 23, 1989.

(d) Prior to May 25, 1991, person shall import, market or operate intentional radiators within the band 902-905 MHz under the provisions of §15.249. Until that date, the Commission will not issue a grant of equipment authorization for equipment operating under §15.249 if the equipment is designed to permit operation within the band 902-905 MHz.

(e) *For cordless telephones:* The manufacture and importation of cordless telephones not complying with §15.214(d) of this part shall cease on or before September 11, 1991. These provisions will not apply to cordless telephones which are repaired or refurbished, or re-imported after repair or refurbishment. Applications for a grant of equipment authorization of cordless telephones not complying with §15.214(d) of this part will not be accepted by the Commission after May 10, 1991. Cordless telephones that have previously received equipment authorization and that, without modification, already comply with the requirements of §15.214(d) of this part, need not be re-authorized.

(f) The manufacture or importation of scanning receivers, and frequency converters designed or marketed for use with scanning receivers, that do not comply with the provisions of §15.121(a)(1) shall cease on or before April 26, 1994. Effective April 26, 1993, the Commission will not grant equipment authorization for receivers that do not comply with the provisions of §15.121(a)(1). These rules do not prohibit the sale or use of authorized receivers manufactured in the United States, or imported into the United States, prior to April 26, 1994.

(g) For CPU boards and power supplies designed to be used with personal