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border must limit their effective radiated power in accordance with the following formula:

$$PW = 0.0175 \times dkm^{*} \; * \; 6.6666 \times hm^{*} \; * \; -3.1997$$

PW is effective radiated power in watts
dkm is distance in kilometers
hm is antenna HAAT in meters; see §24.53 for HAAT calculation method

(f) All power levels specified in this section are expressed in terms of the maximum power, averaged over a 100 millisecond interval, when measured with instrumentation calibrated in terms of an rms-equivalent voltage with a resolution bandwidth equal to or greater than the authorized bandwidth.

(g) Additionally, PCS stations will be subject to any power limits imposed by international agreements.

[58 FR 59183, Nov. 8, 1993; 59 FR 15269, Mar. 31, 1994, as amended at 62 FR 27511, May 20, 1997; 65 FR 35853, June 6, 2000]

§ 24.133 Emission limits.

(a) The power of any emission shall be attenuated below the transmitter power (P), as measured in accordance with §24.132(f), in accordance with the following schedule:

(1) For transmitters authorized a bandwidth greater than 10 kHz:

(i) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency (f_d in kHz) of up to and including 40 kHz: at least 116 Log_{10} ((f_d+10)/6.1) decibels or 50 plus 10 Log_{10} (P) decibels or 70 decibels, whichever is the lesser attenuation;

(ii) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 40 kHz: at least 43+10 Log_{10} (P) decibels or 80 decibels, whichever is the lesser attenuation.

(2) For transmitters authorized a bandwidth of 10 kHz:

(i) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency (f_d in kHz) of up to and including 20 kHz: at least 116 × Log_{10} ((f_d+5)/3.05) decibels or 50+10×Log_{10} (P) decibels or 70 decibels, whichever is the lesser attenuation;

(ii) On any frequency outside the authorized bandwidth and removed from the edge of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 20 kHz: at least 43+10 Log $_{10}$ (P) decibels or 80 decibels, whichever is the lesser attenuation.

(b) The measurements of emission power can be expressed in peak or average values provided they are expressed in the same parameters as the transmitter power.

(c) 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.

(d) The following minimum spectrum analyzer resolution bandwidth settings will be used: 300 Hz when showing compliance with paragraphs (a)(1)(i) and (a)(2)(i) of this section; and 30 kHz when showing compliance with paragraphs (a)(1)(ii) and (a)(2)(ii) of this section.

[58 FR 59183, Nov. 8, 1993. Redesignated at 59 FR 18499, April 19, 1994, as amended at 59 FR 14119, Mar. 25, 1994; 66 FR 10968, Feb. 21, 2001]

§ 24.134 Co-channel separation criteria.

The minimum co-channel separation distance between base stations in different service areas is 113 kilometers (70 miles). A co-channel separation distance is not required for the base stations of the same licensee or when the affected parties have agreed to other co-channel separation distances.

§ 24.135 Frequency stability.

(a) The frequency stability of the transmitter shall be maintained within ±0.0001 percent (±1 ppm) of the center frequency over a temperature variation of −30° Celsius to +50° Celsius at normal supply voltage, and over a variation in the primary supply voltage of 85 percent to 115 percent of the rated supply voltage at a temperature of 20° Celsius.

(b) For battery operated equipment, the equipment tests shall be performed using a new battery without any further requirement to vary supply voltage.