

Requirements and Test Results (con't)

RF Exposure

Spread Spectrum Transmitters operating under 15.247 must be operated in a manner that ensures the public is not exposed to RF energy levels in excess of the commission's guidelines. Based on the transmitter power and maximum antenna gain (see calculation below) the minimum separation distance was calculated to determine the distance for acceptable MPE power density levels to meet both the Occupational/Controlled Exposure and the General Population/Uncontrolled Exposure requirements of FCC Part 1.1310. The calculation below uses the more stringent General Population MPE Limits.

$$S = \frac{PG}{4\pi D^2}$$

D = Minimum Separation Distance in cm

S = Max allowed Power Density in mW/cm²

Per 1.1310 For the Frequency of 2400 MHz S = 1 mW/cm²

FHSS Transmission Mode:

Power = Max Power Input to Antenna = 5.012 mW

Gain = Max Power Gain of Antenna = 2.0 dBi = 1.6 numeric

$$0.6 \text{ mW/cm}^2 = \frac{5.012 \times 1.6}{4 (3.14) \times D^2} = \frac{8.0192}{12.56 \times D^2}$$

$$D^2 = \frac{8.0192}{12.56 \times 1.0}$$

$$D = \sqrt{0.6384} = 0.799 \text{ cm}$$

The calculation above uses the highest power level for the device in this band.



Retlif Testing Laboratories

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