FCC Section 15.247 (i)
RF Exposure Limits

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 access 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.

$$S = \frac{PG}{4\prod Dsq}$$

D = Minimum Separation Distance in cm

S = Max allowed Power Density in mW/cmsq

Per 1.1310 For the Frequency of 2405 MHz S = 1 mW/cmsq

Power = Max Power Input to Antenna = 45.29mW

Gain = Max Power Gain of Antenna = 2.5 dBi = 1.78 numeric

$$1 \text{ mW/cmsq} = \frac{45.29 \times 1.78}{4 \times (3.14) \times D^2} = \frac{80.62}{12.56 \times D^2}$$

$$D^2 = \frac{80.62}{12.56 \times 1}$$

$$D = \sqrt{6.42} = 2.53 \text{ cm}$$

NOTE: The maximum measured RF power output and maximum antenna gain was utilized in the RF Exposure calculation.