Requirements and Test Results (con't)

FCC Section 15.247(i) – RF Exposure

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 the separation distance for acceptable MPE power density levels to meet both the Occupational/Controlled Exposure and the General Population/Uncontrolled Exposure requirements of 1.1310 was calculated.   The calculation below uses the more stringent General Population MPE Limits.

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

D = Minimum Separation Distance in cm

S = Max allowed Power Density in mW/cmsq

Per 1.1310 For Frequency of 900 MHz = 0.6mW/cmsq

DTS Transmission Mode:

Power = Max Power Input to Antenna = 51.76 mW

Gain = Max Power Gain of Antenna = -5.0 dBi = 0.32 numeric

$$0.6\text{mW/cmsq} = \frac{51.76 \times 0.32}{4\,(3.14) \times Dsq} = \frac{16.32}{12.56 \times Dsq}$$

$$Dsq = \frac{16.37}{12.56 \times 0.6} = 0.806$$

D = sq. root 0.806 = 0.9 cm

The unit has an internal antenna and the minimum separation distance will always be maintained.

FHSS Transmission Mode:

Power = Max Power Input to Antenna = 64.12 mW

Gain = Max Power Gain of Antenna = -5.0 dBi = 0.32 numeric

$$0.6\text{mW/cmsq} = \frac{64.12 \times 0.32}{4\,(3.14) \times Dsq} = \frac{20.28}{12.56 \times Dsq}$$

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FCC Section 15.247(i) – RF Exposure

Dsq = $\dfrac{20.28}{12.56 \times 0.6}$ = 0.998

D = sq. root 0.998 = 1 cm

The unit has an internal antenna and the minimum separation distance will always be maintained.

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