

FCC MPE Calculation

Indoor Antenna

RF Power = 1.0 W

Cable Attenuation = 1 dB

Power to Antenna = 0.794 W

General Population Limit = $(851/150) = 5.67 \text{ W/m}^2$

Antenna Gain = 2.0 dBi

Numeric Antenna Gain = 1.58

Minimum Distance

$$R = \sqrt{\frac{GP}{4\pi P_D}} = \sqrt{\frac{1.58 \times 0.794}{4\pi \times 5.67}} = 0.133m$$

The user manual specifies 0.2 m minimum separation distance on page 6 which would result in a power density of:

$$P_D = \frac{GP}{4\pi R^2} = \frac{1.58 \times 0.794}{4\pi \times 0.2^2} = 2.50W / m^2$$

This provides a safety factor of 3.6 dB.