

FCC MPE Calculation Outdoor Antenna

RF Power = 0.250 W

Cable Attenuation = 1 dB

Power to Antenna = 0.199 W

General Population Limit = (849/150) = 5.66 W/m²

Antenna Gain = 10.1 dBi

Numeric Antenna Gain = 10.2

Minimum Distance

$$R = \sqrt{\frac{GP}{4\pi P_D}} = \sqrt{\frac{10.2 \times 0.199}{4\pi \times 5.66}} = 0.169m$$

The user manual specifies 0.3 m minimum separation distance on page 6 which would result in a power density of:

$$P_D = \frac{GP}{4\pi R^2} = \frac{10.2 \times 0.199}{4\pi \times 0.3^2} = 1.79W / m^2$$

This provides a safety factor of 5 dB.