# RF SAFETY EXPOSURE PER FCC REQUIREMENT

The limit for MPE per FCC 47CFR 1.1307 is 1.0mW/cm$^2$ (Power density).The MPE range is calculated as shown in the equation below.

$$P_D = ( P_t G_t /4\pi R^2)$$

$P_D$ = Power density
$G_t$ = Antenna gain
$P_t$ = Peak power
R= Range

$P_D$= 1.0mW/ cm$^2$
$P_t$ = 103.75mW
Antenna gain = 22dBi (14.67 numerical value) for Parabolic Antenna
17dBi (11.33 numerical value) for Flat Panel Antenna.
15dBi (10.0 numerical value) for Omni Antenna.
13dBi (8.7 numerical value) for Yaggi Antenna.

With 22dBi Antenna gain

$$1.0 = (103.75 \times 14.67) / 4\pi R^2$$

$$R = [(103.75 \times 14.67) / 4\pi)]^{1/2} = 11.0\text{cm}$$

With 17dBi Antenna gain

$$R = [(103.75 \times 11.33) / 4\pi)]^{1/2} = 9.7\text{cm}$$

With 15dBi Antenna gain

$$R = [(103.75 \times 10.0) / 4\pi)]^{1/2} = 9.0\text{cm}$$

With 13dBi Antenna gain

$$R = [(103.75 \times 10.0) / 4\pi)]^{1/2} = 8.5\text{cm}.$$

The maximum calculated MPE distance (R) is shown for each antenna.The installation instruction shall indicate that at least the MPE distance + 2cm margin separation shall be provided between antennas and the people.

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