

RF Hazard Distance Calculation

The Power density is given by:

$$(1) S = \frac{P \times G}{4 \times \pi \times R^2}$$

Therefore:

$$(2) R = \sqrt{\frac{P \times G}{4 \times \pi \times S}}$$

Where:

S = Power Density = 1 [mW/cm²] - power density limit for general population / uncontrolled exposure at 5.8 GHz.

P = Power input to the antenna [mW].

G = Antenna Gain in the direction of interest [In numeric format].

R = Distance to the center of radiation antenna [cm].

$$(3) P_{dBm} = 10 \times \log P_{mW}$$

Therefore:

$$(4) P_{mW} = 10^{\frac{P_{dBm}}{10}}$$

The hazard distances versus antenna gain are listed in the following table:

Antenna Gain		Max TX power		EIRP		Safe Distance
[dBi]	[Numeric]	[dBm]	[mW]	[dBm]	[mW]	[cm]
23	199.53	29.88	970.56	52.88	194089	124.28
28.5	707.95	29.88	970.56	58.38	688653	234.1

When using the system for applications, all outdoor units must be installed with a separation distance of at least **2.5 meters** from all persons during normal operation.

Warning in the user manual will be provided.