RF Hazard Distance Calculation

The Power density is given by:

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

Therefore:

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

Where:

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	
28.5	707.9458	29.943	986.961	58.443	698714.9	235.800688	

Max TX power 29.843 obtained at mid frequency 5785 MHz at 40MHz channel BW.
General public will not be exposed to dangerous RF level, when the fixed radio device will be used at distance above 2.358 meter.
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.