

RF Exposure Considerations for V5000 Distribution Node

FCC ID: QWP—60V5000

For this fixed piece of equipment, there is an intended separation distance greater than 20cm between the user and the antenna. This means that the RF exposure performance can be assessed by the Maximum Permissible Exposure (MPE) calculation using the limits defined in FCC rule part §1.1310, table B1 for the general population / uncontrolled exposure category.

The transmitter operation for the V5000 Distribution Node covers the 60GHz operating band.

MPE CALCULATION

The MPE calculation used to calculate the safe operating distance for the user is:

$$S = \text{EIRP} / 4 \pi R^2$$

Where S = Power density

 EIRP = Effective Isotropic Radiated Power

 R = distance to the centre of radiation of the antenna (safe operating distance)

Values for V5000

Transmitter frequency range = 58.200 – 64.800 GHz

Maximum EIRP at Tile (declared) = 38.0dBm (6309.57mW)

Power Density Requirement

From table 1 (b) - Limits for General Population/ Uncontrolled Exposure of
FCC Rule Part 1.1310 for 58 - 65GHz

$$S_{\text{req1}} = 1.0 \text{ mW/cm}^2$$

Calculation:

$$S = \text{EIRP} / 4 \pi R^2$$

$$R^2 = \text{EIRP} / 4 \pi S$$

$$R^2 = 6309.57 / 12.56 \times 1$$

$$R^2 = 502.35$$

$$R = 22.4 \text{ cm (0.22 m)}$$

Conclusion

The required RF exposure limits for General Population/ Uncontrolled Exposure will not be exceeded provided a minimum separation distance of 22cm is maintained