

RF Exposure evaluation (FCC 2.1091)

The EUT is a wireless device used in a mobile/fixed application, at least 20 cm from any body part of the user or nearby persons.

The maximum conducted power is 5 W.

According to the Applicant, the transmitter is most often used with 2 dBi monopole whips, but it can be used with about anything depending on the application.

Using the formula for the Power Density $S = \text{EIRP} / 4\pi D^2$, the distance D, where the Maximum Permissible Exposure (MPE) satisfies the FCC 1.1310 limit ($S = \text{MPE}$) for General Population/Uncontrolled Exposure, can be calculated as:

$$D \geq \sqrt{(\text{EIRP} / 4\pi S)}$$

The MPE Limit in the frequency range 2450 – 2483.5 MHz is 10 W/m².

In the Table below, the minimum distance D (in meters) is presented for different antenna gain used with the 5 Watt and 2 Watt transmitters.

| Antenna gain, dBi | Antenna gain, numerical | Conducted Output Power = 5W | | Conducted Output Power = 2 W | |
|-------------------|-------------------------|-----------------------------|-------------------------|------------------------------|-------------------------|
| | | EIRP, Watt | Minimum Distance, meter | EIRP, Watt | Minimum Distance, meter |
| 0 | 1.0 | 5.0 | 1.0 | 2.0 | >0.2 |
| 2 | 1.58 | 7.92 | 0.251 | 3.16 | >0.2 |
| 5 | 3.16 | 15.8 | 0.355 | 6.32 | 0.22 |
| 10 | 10.0 | 50 | 0.631 | 20 | 0.4 |
| 15 | 31.6 | 158 | 1.121 | 63.2 | 0.71 |
| 20 | 100 | 500 | 1.995 | 200 | 1.26 |
| 25 | 316.2 | 1580 | 3.546 | 632.4 | 2.24 |
| 30 | 1000 | 5000 | 6.308 | 2000 | 4.0 |

User Manual must contain a Warning/ Guidance about RF Exposure.