

MPE Calculations

The device is not a portable device (i.e. intended to be worn on the body or be hand-held), so it is classified as being either a mobile device or a fixed mounted device. The documentation associated with the filing for device authorization specifies a minimum separation distance of at least 20cm, consistent with this classification.

FCC part 1.1310, Table 1 limits the power density for uncontrolled exposure. The power density, P_d (mW/cm^2) calculated from the maximum EIRP, P_t (mW) and the distance, d (m), between the transmitting antenna and the closest person, can be calculated using:

$$P_d = P_t / (4 \pi d^2)$$

Frequency	MPE Limit (mW/cm^2)	Output Power (mW)	Max. Antenna Gain (dBi)	EIRP (mW)	Pd at 20cm (mW/cm^2)	Distance where Pd = limit (cm)
2405 to 2475 MHz	1.00	23.4	2.0 Omni	37.2	0.007	1.7
2405 to 2475 MHz	1.00	0.8	10.0 Yagi	8.3	0.002	0.8
2405 to 2475 MHz	1.00	1.5	12.0 Panel	24.0	0.005	1.4

As shown in the calculations above, the power density 20cm from the device is below the maximum permitted level for uncontrolled exposure.

It should also be noted that the output power from the device is a maximum of 23.4mW. This power level is below the FCC's threshold of $60/f$ (24.2mW at 2475 MHz) and therefore the device is below the lower threshold that would require rf exposure evaluation for portable or mobile exposure conditions. The power level is not below the RSS-102 eirp threshold of 20mW.