

MPE Calculations

FCC part 1.1310, Table 1 limits the power density for uncontrolled exposure to 1mW/cm² for systems operating in the UNII bands. The distance, d(cm) from the antenna at which the power density, P_d (mW/cm²) is below this limit is calculated from the maximum EIRP, P_t(mW) using the equation:

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

Re-arranging for the distance at which the power density is 1mW/cm² gives:

$$d = \sqrt{P_t / (4 \pi P_d)}$$

HITACHI ANTENNA(s)

Frequency	Maximum Output Power (dBm)	Max. Antenna Gain (dBi)	EIRP (mW)	Pd at 20cm	Calculated distance (in cm) where Pd < 1mW/ cm ²
2412 - 2462 MHz	16.6	0	45.7	0.009	1.9
5180 - 5320 MHz	17.3	0	53.7	0.010	2.1

ETHERTRONICS ANTENNA(s)

Frequency	Maximum Output Power (dBm)	Max. Antenna Gain (dBi)	EIRP (mW)	Pd at 20cm	Calculated distance (in cm) where Pd < 1mW/ cm ²
2412 - 2462 MHz	16.6	2.0	72.4	0.014	2.4
5180 - 5320 MHz	17.3	5.0	169.8	0.034	3.7

The minimum distance from the antenna that the power density is 1mW/cm² is, therefore, 2.8 cm for all operating frequencies, based on the use of the Hitachi and Ethertronics antennas detailed for this application.

The OEM will be responsible for determining the distance based on the antenna configuration(s) used in their systems. This information is detailed in the OEM compliance guide provided by Intel.