

Appendix A: FCC Part 1.1307, 1.1310, 2.1091, 2.1093: RF Exposure

From FCC 1.1310 Table 1A, the maximum permissible RF exposure for an uncontrolled environment is 1 mW/cm². The Electric field generated for a 1 mW/cm² exposure (S) is calculated as follows:

$$S = (P \times G) / (4 \times \pi \times d^2)$$

where:

S = Power density
 P = Transmitter conducted power in watts
 G = Numeric gain
 d = distance to radiation center

Fundamental Operating Frequency: 2458 and 2474 MHz
 Maximum Rated Output Power: 0.9 Watts (900 mW)
 Measured Maximum Output Power: 0.9 Watts (900 mW)
 Antenna Gain = 4 dBi; Numeric Gain = 2.5

$$S = (900 \times 2.5) / (4 \times \pi \times 20^2) = 0.45 \text{ mW/cm}^2$$

Under normal operating conditions, the antenna is designed to maintain a separation distance of 20 cm from all persons. The EUT is mobile and fixed.

Calculated Power Density:

Antenna Gain = 4 dBi Conducted Power (milliWatt) = 900	
Separation Distance = 20 cm	
FCC Power Density Limit	Calculated Power Density at 20 cm Distance
1 mW/cm ²	0.45 mW/cm ²