

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 0.2 mW/cm². The electric field generated for a 0.2 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 milliwatts
 G = Numeric gain
 d = distance to radiation center (cm)

Fundamental Operating Frequency: 154.6 MHz
 Measured Maximum Output Power: 0.363 W
 Antenna Gain = 3.5 dBi; Numeric Gain = 2.24

$$S = (363 \times 2.24) / (4 \times \pi \times 20^2) = 0.16 \text{ mW/cm}^2$$

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 = 3.5 dBi Conducted Power (mW) = 363	
Separation Distance = 20 cm	
FCC Power Density Limit	Calculated Power Density at 20 cm Distance
0.2 mW/cm ²	0.16 mW/cm ²