

**APPENDIX A: RF EXPOSURE**

From FCC 1.1310 Table 1B, the maximum permissible RF exposure for an uncontrolled environment is 1 mW/cm<sup>2</sup>. The electric field generated for a 1 mW/cm<sup>2</sup> 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: 451.35 MHz  
 Maximum Rated Output Power: 1.0 Watt (1000 mW)  
 Antenna Gain = 3.2 dBi; Numeric Gain = 2.1

$$S = (1500 \times 2.1) / (4 \times \pi \times 20^2) = 0.63 \text{ mW/cm}^2$$

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:**

<b>Antenna Gain = 3.2 dBi Conducted Power = 1500 mW</b>	
Separation Distance = 20 cm	
FCC power density limit	Calculated Power density at 20 cm distance
1 mW/cm <sup>2</sup>	0.63 mW/cm <sup>2</sup>