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/cm^2. The electric field generated for a 0.2 mW/cm^2 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: 0.295 Watts
Antenna Gain = 3.5 dBi; Numeric Gain = 2.24

S = (295 x 2.24)/(4 x Pi x 20^2) = 0.13 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 (milli-Watt) = 295	
Separation Distance = 20 cm	
FCC Power Density Limit	Calculated Power Density at 20 cm Distance
0.2 mW/cm^2	0.13 mW/cm^2