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/cm^2. The electric field generated for a 1 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 watts
G = Numeric gain
d = distance to radiation center

Fundamental Operating Frequency: 2412 - 2462 MHz
Maximum Measured Output Power: 0.089 Watts
Antenna Gain = 4.4 dBi; Numeric Gain = 2.75

S = (89 X 2.75)/ (4 x Pi X 20^2) = 0.05 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 = 4.4 dBi Conducted Power (milli-Watt) = 89	
Separation Distance = 20 cm	
FCC Power Density Limit	Calculated Power Density at 20 cm Distance
1 mW/cm^2	0.05 mW/cm^2