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Client: Alion Science and Technology Model: Sensors Communication Module

FCC ID: U3M-SCM2007 Standard: FCC 15.247

## 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<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: 2442 MHz Maximum Measured Output Power: 0.4 Watts Antenna Gain = 4.7 dBi; Numeric Gain = 2.95

$$S = (400 \times 2.95)/(4 \times Pi \times 20^2) = 0.24 \text{ mW/cm}^2$$

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

## **Calculated Power Density**

Antenna Gain = 4.7 dBi Conducted Power (milli-Watt) = 400	
Separation Distance = 20 cm	
FCC Power Density Limit	Calculated Power Density at 20 cm Distance
1 mW/cm <sup>2</sup>	0.24 mW/cm <sup>2</sup>