

## RF Exposure (MPE) Calculations

### 905 - 924.6 MHz Frequency Hopping Spread Spectrum Radio

**Applicant:** Robertshaw Controls Company

**FCC ID:** QI2-EMSM-100

#### RF Hazard Distance Calculation (worst case)

**mW/cm2 from Table1: 0.60**

| Max RF Power<br>P, dBm | TX Antenna<br>G, dBi | MPE<br>Safe Distance, cm |
|------------------------|----------------------|--------------------------|
| <b>15.15</b>           | <b>-1.08</b>         | <b>1.8</b>               |

#### Basis of Calculations:

$$E^2/3770 = S, \text{ mW/cm}^2$$

$$E, \text{ V/m} = (P_{\text{watts}} * G_{\text{gain}} * 30)^{.5} / d, \text{ meters}$$

$$d = ((P_{\text{watts}} * G * 30) / 3770 * S)^{.5} \quad P_{\text{watts}} * G_{\text{gain}} = 10^{(P_{\text{dBm}} - 30 + G_{\text{dBi}}) / 10}$$

**NOTE: For mobile or fixed location transmitters, minimum separation distance is 20 cm, even if calculations indicate MPE distance is less**