

**MPE CALCULATION for ARCi CPE TX ANTENNA WITH
OUTPUT POWER: 13.1 dBm
GAIN 11 dBi**

Formula used in the MPE Calculations:

$$E^2/3770 = S, \text{ mW/cm}^2$$
$$P_{\text{watts}} * G_{\text{gain}} = 10^{(P_{\text{dBm}} - 30 + G_{\text{dBi}})/10}$$
$$E, \text{ V/m} = (P_{\text{watts}} * G_{\text{gain}} * 30)^{.5} / d, \text{ meters}$$
$$d = ((P_{\text{watts}} * G * 30) / 3770 * S)^{0.5} \text{ ----- (A)}$$

Since

$$S \text{ (mW/cm}^2\text{)} = 1.00 \text{ from 1.1310 Table 1}$$
$$P \text{ (dBm)} = 13.1 \text{ EUT output power}$$
$$G \text{ (dBi)} = 11.0 \text{ EUT antenna gain}$$

Substitute these parameters into the A above, we have

$$\text{MPE safe distance } d \text{ (cm)} = 4.5$$

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

**MPE CALCULATION for ARCi HUB TX ANTENNA
OUTPUT POWER: 16 dBm
GAIN 13 dBi**

Formular used in the MPE Calculations:

$$E^2/3770 = S, \text{ mW/cm}^2$$
$$P_{\text{watts}} * G_{\text{gain}} = 10^{(P_{\text{dBm}} - 30 + G_{\text{dBi}})/10}$$
$$E, \text{ V/m} = (P_{\text{watts}} * G_{\text{gain}} * 30)^{.5} / d, \text{ meters}$$
$$d = ((P_{\text{watts}} * G * 30) / 3770 * S)^{0.5} \text{ ----- (A)}$$

Since

$$S \text{ (mW/cm}^2\text{)} = 1.00 \text{ from 1.1310 Table 1}$$
$$P \text{ (dBm)} = 16.0 \text{ EUT output power}$$
$$G \text{ (dBi)} = 13.0 \text{ EUT antenna gain}$$

Substitute these parameters into the A above, we have

$$\text{MPE safe distance } d \text{ (cm)} = 8.0$$

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