

**APPLICANT: LGC**

**FCC ID: NOONUS-819RAU-1**

**MPE CALCULATION FOR 3 dBi ANTENNA**

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

$$S \text{ (mW/cm}^2\text{)} = 0.50 \text{ from 1.1310 Table 1}$$

$$P \text{ (dBm)} = 17.80 \text{ EUT output power}$$

$$G \text{ (dBi)} = 3.00 \text{ EUT antenna gain}$$

Substitute these parameters into the A above, we have

$$\text{MPE safe distance } d \text{ (cm)} = 4.37$$

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

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**MPE CALCULATION FOR 3 dBi ANTENNA**

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

$$S \text{ (mW/cm}^2\text{)} = 0.50 \text{ from 1.1310 Table 1}$$

$$P \text{ (dBm)} = 17.06 \text{ EUT output power}$$

$$G \text{ (dBi)} = 3.00 \text{ EUT antenna gain}$$

Substitute these parameters into the A above, we have

$$\text{MPE safe distance } d \text{ (cm)} = 4.02$$

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