

CELLPHONE-MATE, INC.
PROJECT #: 03U2456

CDMA:

5dBi Antenna Gain:

Formula used in the MPE Calculations:

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

Since

$$\begin{aligned}S (\text{mW/cm}^2) &= 1.00 \quad \text{from 1.1310 Table 1} \\ PG (\text{dBm}) &= 24.8 \quad \text{EUT output power EIRP}\end{aligned}$$

Substitute these parameters into the A above, we have
MPE safe distance $d (\text{cm}) = 4.9\text{cm}$

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

3.5dBi Antenna Gain:

Formula used in the MPE Calculations:

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

Since

$$\begin{aligned}S (\text{mW/cm}^2) &= 1.00 \quad \text{from 1.1310 Table 1} \\ PG (\text{dBm}) &= 29.3 \quad \text{EUT output power EIRP}\end{aligned}$$

Substitute these parameters into the A above, we have
MPE safe distance $d (\text{cm}) = 8.2\text{cm}$

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

GSM:

5dBi Antenna Gain:

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

$$S (\text{mW/cm}^2) = 1.00 \quad \text{from 1.1310 Table 1}$$

$$PG (\text{dBm}) = 23.7 \quad \text{EUT output power EIRP}$$

Substitute these parameters into the A above, we have

$$\text{MPE safe distance } d (\text{cm}) = 4.3\text{cm}$$

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

3.5dBi Antenna Gain:

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

$$S (\text{mW/cm}^2) = 1.00 \quad \text{from 1.1310 Table 1}$$

$$PG (\text{dBm}) = 26.3 \quad \text{EUT output power EIRP}$$

Substitute these parameters into the A above, we have

$$\text{MPE safe distance } d (\text{cm}) = 5.8\text{cm}$$

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