

RF Exposure Statement:**Calculation Method of RF safety Distance:**

The power density S, in mW/ cm² is:

$$S = (P \cdot G) / (4 \cdot \pi \cdot r^2) \quad (\text{Eq. 1})$$

Rearranging and solving for distance yields:

$$r = \sqrt{(P \cdot G) / (4 \cdot \pi \cdot S)} \quad (\text{Eq. 2})$$

Where:

P = power input into the antenna in mW

S = allowable power density in mW/cm²

G = numeric gain of the antenna relative to an isotropic radiator

r = distance to center of radiation in cm

The limit for Maximum Permissible Exposure (MPE) for General Population/Uncontrolled Exposure in the frequency band 30 – 300 MHz is .2 mW/cm² (47 CFR 1.1310).

Antennas intended for use with this device have an approximate gain of 2 dBi. The maximum transmitter power is 100 mW.

For 2 dBi gain antenna case, transmitter power = 100 mW, and substituting S = .2 mW/cm² :

First convert the antenna gain from dB to numeric:

$$G = 10^{(2/10)}$$

$$G = 1.58$$

Then substitute P, G, and S into Eq. 2 to solve for the minimum safety distance:

$$r = \sqrt{(P \cdot G) / (4 \cdot \pi \cdot S)}$$

$$r = \sqrt{((100 \cdot 1.58) / (4 \cdot \pi \cdot .2))}$$

$$r = 7.9 \text{ cm } \mathbf{OR} \text{ } 3.1 \text{ inches}$$

So the safe minimum safe distance for a 2 dBi gain antenna is 3.1 inches.

Therefore, the localized specific absorption rate (SAR) limits as specified in ANSI/IEEE Std. C95.1-1992 are not exceeded when the device is used as described in the Operator Guide.