

**RF Exposure Evaluation (FCC 2.1091, 24.52)**

The RFFE is a RF power amplifier that is integrated into a larger system to form a portable PCS base station. To calculate the safe distance where the Maximum Permissible Exposure (MPE) satisfies the FCC 1.1310 limit for General Population/Uncontrolled Exposure, the formula is used:

$$D \geq \sqrt{(EIRP / 4\pi S)}$$

D is the distance from the antenna in meters

EIRP is the effective radiating power with respect to an isotropic radiator

S is the power density in  $W/m^2$

The RFFE has a maximum conducted power of 20W and the antenna used with the system has a gain of 12 dBi. This results in an EIRP of 316.2W. The MPE limit at 1960 MHz is  $1.0 \text{ mW/cm}^2$  (or  $10 \text{ W/m}^2$ ) for the General Population/Uncontrolled Exposure. When these values are entered in the above formula, the distance D to satisfy the MPE standard is 1.59m. A RF Safety section is included in the user's manual that states the minimum separation distance of 1.59m between the antenna and any personnel.

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