

RF Exposure Evaluation

A calculation based on the **FCC's Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01)** appears below. Since conducted power measurements were unable to be made, output power was calculated using radiated field strength readings.

Antenna Output = 117.7dBuV/m @ 1m

ERP=4πPDR² where PD= power density, R= measurement distance [m]

PD=(field strength)²/(free space impedance)

117.7dBuV/m = 0.767V/m

PD=(0.767)² / 377 = 0.00156W/m²

ERP=4π x 0.000118 x 1² = 0.0196 = 19.6mW

The limit for General Population/Uncontrolled Exposure is

S=1mW/cm²

The distance from the antenna at which this radiation level will be reached is

R=SQRT(EIRP/4πS)

EIRP = 1.64 x ERP

R=SQRT(1.64 x 19.6 / (4π x 1)) = 1.6cm

Due to this small distance and general installation practice (installed inside an RF tight metal tank), the danger of harmful RF radiation exposure from this device is minimal.