5.2. RF EXPOSURE REQUIREMENTS @ 1.1310 & 2.1091

5.2.1. Limits

1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in 1.1307(b).

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density ( )	Average Time (minutes)
(A) Limits for Occupational/Control Exposures				
30-300	61.4	0.163	1.0	6
(B) Limits for General Population/Uncontrolled Exposure				
30-300	27.5	0.073	0.2	30

5.2.2. Method of Measurements

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi \cdot r^2} = \frac{EIRP}{4\pi \cdot r^2}$$

Where, P: power input to the antenna in mW
EIRP: Equivalent (effective) isotropic radiated power.
S: power density mW/cm^2
G: numeric gain of antenna relative to isotropic radiator
r: distance to centre of radiation in cm

$$r = \sqrt{\frac{PG}{4\pi \cdot S}} = \sqrt{\frac{EIRP}{4\pi \cdot S}}$$

FCC radio frequency exposure limits may be exceeded at distances closer than r cm from the antenna of this device.

5.2.3. Evaluation of RF Exposure Compliance Requirements

MPE Limit for Occupational/Controlled Exposure, $\mathbf{S_{controlled}[mW/cm^2]}$ = 1.0

MPE Limit for General Population/Uncontrolled Exposure, $\mathbf{S_{uncontrolled}[mW/cm^2]}$ = 0.2

Maximum RF Power conducted, $\mathbf{P_{conducted}[dBm]}$ = 43.98

Maximum Antenna Gain, **G[dBi]** = 9

Maximum EIRP, $\mathbf{P_{EIRP}}$ = 52.98 dBm or 198582 mwatts

User-based time-average for PTT = 50%

Calculated RF Safety Distance for Occupational/Controlled Exposure, $\mathbf{r_{safety\_controlled}[cm]}$ = 89 cm

Calculated RF Safety Distance for General Population/Uncontrolled Exposure, $\mathbf{r_{safety\_uncontrolled}[cm]}$ = 199 cm