

11. RF EXPOSURE STATEMENT

1. LIMITS

According to §1.1310 and §2.1091 RF exposure is calculated.

(B) Limits for General Population/Uncontrolled Exposures

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
0.3 - 1.34.....	614	1.63	*(100)	30
1.34 - 30.....	824/f	2.19/f	*(180/ f ²)	30
30 - 300.....	27.5	0.073	0.2	30
300 - 1500.....	f/1500	30
1500 - 100.000.....	1.0	30

F = frequency in MHz

* = Plane-wave equivalent power density

2. MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

S = Power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

2-1 Limit (Down Link)

Max Peak output Power at antenna input terminal	30.040	dBm
Max Peak output Power at antenna input terminal	1009.253	mW
Prediction distance	140.000	cm
Prediction frequency	881.520	MHz
Antenna Gain(typical)	16.000	dBi
Antenna Gain(numeric)	39.811	-
Power density at prediction frequency (S)	0.16313	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.588	mW/cm ²

2-2 Limit (Up Link)

Max Peak output Power at antenna input terminal	30.040	dBm
Max Peak output Power at antenna input terminal	1009.253	mW
Prediction distance	140.000	cm
Prediction frequency	848.800	MHz
Antenna Gain(typical)	16.000	dBi
Antenna Gain(numeric)	39.811	-
Power density at prediction frequency (S)	0.16313	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.566	mW/cm ²

3. RESULTS

The power density level at 140 cm is 0.16313 mW/cm², which is below the uncontrolled exposure limit of 0.588 mW/cm² at Down Link

The power density level at 140 cm is 0.16313 mW/cm², which is below the uncontrolled exposure limit of 0.566 mW/cm² at Up Link

Simultaneous MPE at 140 cm is $(0.16313/0.588) + (0.16313/0.566) = 0.5656 < 1.0$

Warning: In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, it must also have a minimum distance of 140 cm from the body during normal operation.