

10. 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. Cellular Downlink

Max Peak output Power at antenna input terminal	23.98	dBm
Max Peak output Power at antenna input terminal	250.035	mW
Prediction distance	20.000	cm
Prediction frequency	869.700	MHz
Antenna Gain(typical)	7.000	dBi
Antenna Gain(numeric)	5.012	–
Power density at prediction frequency(S)	0.249	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.580	mW/cm ²

2-2. PCS Downlink

Max Peak output Power at antenna input terminal	23.95000	dBm
Max Peak output Power at antenna input terminal	248.31331	mW
Prediction distance	20.00000	cm
Prediction frequency	1931.25000	MHz
Antenna Gain(typical)	12.00000	dBi
Antenna Gain(numeric)	15.84893	–
Power density at prediction frequency(S)	0.78294	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.00000	mW/cm ²

2-3. Cellular Uplink

Max Peak output Power at antenna input terminal	24.100	dBm
Max Peak output Power at antenna input terminal	257.040	mW
Prediction distance	20.000	cm
Prediction frequency	824.700	MHz
Antenna Gain(typical)	2.000	dBi
Antenna Gain(numeric)	1.585	–
Power density at prediction frequency(S)	0.081	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.550	mW/cm ²

2-4. PCS Uplink

Max Peak output Power at antenna input terminal	23.95	dBm
Max Peak output Power at antenna input terminal	248.31331	mW
Prediction distance	20.00000	cm
Prediction frequency	1851.25000	MHz
Antenna Gain(typical)	2.00000	dBi
Antenna Gain(numeric)	1.58489	–
Power density at prediction frequency (S)	0.07829	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.00000	mW/cm ²

3. RESULTS

The power density level at 20 cm is 0.081 mW/cm²(Cellular UpLink), 0.249 mW/cm²(Cellular DownLink), 0.078294 mW/cm²(PCS UpLink), 0.7829 mW/cm²(PCS DownLink), which is below the uncontrolled exposure limit for Cellular & PCS band.

Warning: In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, it must also have a minimum distance of 20 cm from the body during normal operation.