

5 FCC §1.1307(b) (1) & §2.1091 - RF EXPOSURE INFORMATION

5.1 Applicable Standard

According to §1.1310 and §2.1091 (Mobile Devices) RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
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

Note: f = frequency in MHz

* = Plane-wave equivalent power density

5.2 MPE Prediction

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

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

Where: 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

Cellular Band

Downlink:

Maximum peak output power at antenna input terminal (dBm): 10.49
 Maximum peak output power at antenna input terminal (mW): 11.19
 Prediction distance (cm): 40
 Prediction frequency (MHz): 881.5
 Antenna Gain, typical (dBi): 10
 Maximum Antenna Gain (numeric): 10
 Power density at predication frequency and distance (mW/cm²): 0.0056
 MPE limit for uncontrolled exposure at predication frequency (mW/cm²): 0.5877

Uplink:

Maximum peak output power at antenna input terminal (dBm): 29.33
 Maximum peak output power at antenna input terminal (mW): 857.04
 Prediction distance (cm): 40
 Prediction frequency (MHz): 836.5
 Antenna Gain, typical (dBi): 10
 Maximum Antenna Gain (numeric): 10
 Power density at predication frequency and distance (mW/cm²): 0.4263
 MPE limit for uncontrolled exposure at predication frequency (mW/cm²): 0.5577

PCS Band**Downlink:**

Maximum peak output power at antenna input terminal (dBm): 8.98
Maximum peak output power at antenna input terminal (mW): 7.91
Prediction distance (cm): 40
Prediction frequency (MHz): 1960
Antenna Gain, typical (dBi): 12
Maximum Antenna Gain (numeric): 15.85
Power density at predication frequency and distance (mW/cm²): 0.00624
MPE limit for uncontrolled exposure at predication frequency (mW/cm²): 1.0

Uplink:

Maximum peak output power at antenna input terminal (dBm): 28.10
Maximum peak output power at antenna input terminal (mW): 645.65
Prediction distance (cm): 40
Prediction frequency (MHz): 1880
Antenna Gain, typical (dBi): 12
Maximum Antenna Gain (numeric): 15.85
Power density at predication frequency and distance (mW/cm²): 0.509
MPE limit for uncontrolled exposure at predication frequency (mW/cm²): 1.0

Test Result

The device complies with the MPE requirements by providing a safe separation distance of 40 cm between the antenna, including any radiating structure, and any persons when normally operated based on a 12 dBi antenna. The proposed RF exposure safety information has been included in the User's Manual.