

4 FCC §1.1310 & §2.1091 - RF Exposure Information

4.1 Applicable Standards

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

4.2 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

Uplink:

Maximum output power at antenna input terminal (dBm): 26.8

Maximum output power at antenna input terminal (mW): 478.63

Prediction distance (cm): 20

Prediction frequency (MHz): 836

Maximum Antenna Net Gain (dBi): 6.26

Maximum Antenna Net Gain (numeric): 4.23

Power density at predication frequency and distance (mW/cm²): 0.403

MPE limit for uncontrolled exposure at predication frequency (mW/cm²): 0.557

Downlink:

Maximum output power at antenna input terminal (dBm): 6.1
Maximum output power at antenna input terminal (mW): 4.07
Prediction distance (cm): 20
Prediction frequency (MHz): 881
Maximum Antenna Net Gain (dBi): 6.34
Maximum Antenna Net Gain (numeric): 4.31
Power density at predication frequency and distance (mW/cm²): 0.003
MPE limit for uncontrolled exposure at predication frequency (mW/cm²): 0.587

PCS Band

Uplink:

Maximum output power at antenna input terminal (dBm): 28.4
Maximum output power at antenna input terminal (mW): 691.83
Prediction distance (cm): 20
Prediction frequency (MHz): 1880
Maximum Antenna Net Gain (dBi): 1.94
Maximum Antenna Net Gain (numeric): 1.56
Power density at predication frequency and distance (mW/cm²): 0.215
MPE limit for uncontrolled exposure at predication frequency (mW/cm²): 1.0

Downlink:

Maximum output power at antenna input terminal (dBm): 1.84
Maximum output power at antenna input terminal (mW): 1.53
Prediction distance (cm): 20
Prediction frequency (MHz): 1960
Maximum Antenna Net Gain (dBi): 6.34
Maximum Antenna Net Gain (numeric): 4.31
Power density at predication frequency and distance (mW/cm²): 0.001
MPE limit for uncontrolled exposure at predication frequency (mW/cm²): 1.0

4.3 MPE Result

The device complies with the MPE requirements by providing a safe separation distance of 20 cm between the antennas, including any radiating structure. The proposed RF exposure safety information has been included in the User's Manual.