# 11 FCC §1.1307(b)(1) & §2.1091 - RF EXPOSURE

## 11.1 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

## 11.2 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

## 11.3 Test Result

Cellular Band UL:

| | |
|---|---|
| Maximum peak output power at antenna input terminal (dBm): | 30.56 |
| Maximum peak output power at antenna input terminal (mW): | 1137.63 |
| Prediction distance (cm): | 20.00 |
| Prediction frequency (MHz): | 824.20 |
| Antenna Gain, typical (dBi): | 5.00 |
| Cable Loss (dB) | 2.00 |
| Maximum Antenna Gain+ Cable Loss (numeric): | 2.00 |
| Power density at predication frequency and distance ($mW/cm^2$): | 0.4516 |
| MPE limit for uncontrolled exposure at predication frequency ($mW/cm^2$): | 0.5495 |

Cellular Band DL:

| | |
|---|---|
| Maximum peak output power at antenna input terminal (dBm): | 9.51 |
| Maximum peak output power at antenna input terminal (mW): | 8.93 |
| Prediction distance (cm): | 20.00 |
| Prediction frequency (MHz): | 869.20 |
| Antenna Gain, typical (dBi): | 5.00 |
| Cable Loss (dB) | 2.00 |
| Maximum Antenna Gain+ Cable Loss (numeric): | 2.00 |
| Power density at predication frequency and distance ($mW/cm^2$): | 0.0035 |
| MPE limit for uncontrolled exposure at predication frequency ($mW/cm^2$): | 0.5795 |

PCS Band UL:

| | |
|---|---|
| Maximum peak output power at antenna input terminal (dBm): | 29.96 |
| Maximum peak output power at antenna input terminal (mW): | 990.83 |
| Prediction distance (cm): | 20.00 |
| Prediction frequency (MHz): | 1850.20 |
| Antenna Gain, typical (dBi): | 5.00 |
| Cable Loss (dB) | 2.00 |
| Maximum Antenna Gain+ Cable Loss (numeric): | 2.00 |
| Power density at predication frequency and distance ($mW/cm^2$): | 0.3933 |
| MPE limit for uncontrolled exposure at predication frequency ($mW/cm^2$): | 1.0 |

PCS Band DL:

| | |
|---|---|
| Maximum peak output power at antenna input terminal (dBm): | 11.34 |
| Maximum peak output power at antenna input terminal (mW): | 13.61 |
| Prediction distance (cm): | 20.00 |
| Prediction frequency (MHz): | 1930.20 |
| Antenna Gain, typical (dBi): | 5.00 |
| Cable Loss (dB) | 2.00 |
| Maximum Antenna Gain+ Cable Loss (numeric): | 2.00 |
| Power density at predication frequency and distance ($mW/cm^2$): | 0.0054 |
| MPE limit for uncontrolled exposure at predication frequency ($mW/cm^2$): | 1.0 |

(Note: The MPE was calculated with the cable loss between EUT and the antenna was 2 dB.)