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

According to §1.1310 and §2.1091 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 |

f = frequency in MHz
* = Plane-wave equivalent power density

**MPE Prediction**

Predication of MPE limit at a given distance

Equation from page 18 of 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

Maximum peak output power at antenna input terminal: 23.15 (dBm)
Maximum peak output power at antenna input terminal: 206.54 (mW)
Prediction distance: 20 (cm)
Predication frequency: 835 (MHz)
Antenna Gain (typical): 2 (dBi)
antenna gain: 1.6 (numeric)
Power density at predication frequency at 20 cm: 0.066 ($mW/cm^2$)

MPE limit for uncontrolled exposure at prediction frequency: 0.56 ($mW/cm^2$)

**Test Result**

The EUT is a mobile device. The power density level at 20 cm is 0.08 $mW/cm^2$, which is below the uncontrolled exposure limit of 0.56 $mW/cm^2$ at 835 MHz.