

1. RF EXPOSURE (MPE)

1.1. Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

FCC RF Exposure: §1.1310 and §2.1091

Limits for Maximum Permissible Exposure (MPE)

| 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 |
| 1500-15000 | / | / | 1.0 | 30 |

F = frequency in MHz

* = Plane-wave equipment power density

IC Exemption from Routine Evaluation Limits – RF Exposure Evaluation: RSS 102 Issue 4, section 2.5.2

RF exposure evaluation is required if the separation distance between the user and the device's radiating element is greater than 20 cm, except when the device operates as follows:

above 1.5 GHz and the maximum e.i.r.p. of the device is equal to or less than 5 W.

1.2. Result:

The Measured Max. peak output power is 10.08dBm (10.185mW) refer to section 6.5.

MPE Prediction

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

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: | 11.01 | (dBm) |
| Maximum Peak output power at antenna input terminal: | 12.61827535 | (mW) |
| Duty cycle: | 100 | (%) |
| Maximum Pav : | 12.61827535 | (mW) |
| Antenna gain (typical): | 2 | (dBi) |
| Maximum antenna gain: | 1.584893192 | (numeric) |
| Prediction distance: | 20 | (cm) |
| Prediction frequency: | 2402 | (MHz) |
| | | |
| MPE limit for uncontrolled exposure at prediction | 1 | (mW/cm ²) |
| Power density at predication frequency at 20 (cm) | 0.0039806 | (mW/cm ²) |

The predicted power density level at 20 cm is 0.00398 mW/cm². This is below the uncontrolled exposure limit of 1 mW/ cm² at 2402MHz.