

### 13 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

#### 13.1 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.

According to §1.1310 and §2.1093 RF exposure is calculated.

Limits for Maximum Permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	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 <sup>2</sup> )	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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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### 13.2 Maximum Permissible Exposure (MPE) Evaluation

**Max. Rated Avg. Power + Max. Tolerance ( $\pm 1$  dBm): 4.19dBm**

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)
2402	3.77	0.00238	1
2442	4.19	0.00262	1
2480	3.83	0.00242	1

#### MPE Prediction (BT4.0 Mode)

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	4.19	(dBm)
Maximum peak output power at antenna input	2.6242185	(mW)
Duty cycle:	100	(%)
Maximum Pav :	2.6242185	(mW)
Antenna gain (Maximum):	3.92	(dBi)
Antenna gain (linear):	2.4660393	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	2442	(MHz)
MPE limit for uncontrolled exposure at prediction	1	(mW/cm <sup>2</sup> )
Power density at predication frequency at 20 (cm)	0.0012881	(mW/cm <sup>2</sup> )

#### Measurement Result

The predicted power density level at 20 cm is 0.0012881mW/cm<sup>2</sup>. This is below the uncontrolled exposure limit of 1mW/cm<sup>2</sup> at 2442MHz.

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