

## Maximum Permissible Exposure (MPE)

### 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 §2.1091 RF exposure is calculated.

### Limits for Maximum Permissible 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

**Power measurement result:****Tune up procedure**

The output power setting of EUT is set in the factory and followed the max level in below.

There is no tune up procedure except factory default setting:

BLE: -7 dBm+/-1.0dB (Peak)

**LE Mode**

Frequency (MHz)	Peak Reading Power (dBm)	Cable Loss	Output Power (dBm)	Output Power (W)	Limit (W)
Low	-7.41	0.00	-7.41	0.00018	1
Mid	-8.38	0.00	-8.38	0.00015	1
High	-9.53	0.00	-9.53	0.00011	1

## Maximum Permissible Exposure (MPE) Evaluation

### BLE mode

Prediction of MPE limit at a given distance

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

$$S = \frac{P}{4\pi R^2}$$

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 Average output power at antenna input	-7	(dBm)
Power Tolerance	1	dB
Maximum peak output power at antenna input terminal:	0.251188643	(mW)
Duty cycle:	99	(%)
Maximum Pav :	0.248676757	(mW)
Antenna gain (typical):	-4.52	(dBi)
Maximum antenna gain:	0.35318317	(numeric)
Prediction distance:	20	(cm)
MPE limit for uncontrolled exposure at prediction	1	(mW/cm <sup>2</sup> )
Power density at predication frequency at 20 (cm)	0.0000175	(mW/cm <sup>2</sup> )

### Measurement Result

The predicted power density level at 20 cm is 0.0000175 mW/cm<sup>2</sup>. This is below the uncontrolled exposure limit of 1 mW/cm<sup>2</sup>.

~ End of Report ~