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 §2.1091 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^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

13.2 Maximum Permissible Exposure (MPE) Evaluation

BT V4.0 Power Table

Frequency (MHz)	Reading Power (dBm)	Output Power (W)
2402.00	9.49	0.0089
2442.00	**9.56**	0.0090
2480.00	9.55	0.0090

MPE Prediction (BT V4.0)

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:	9.56	(dBm)
Maximum peak output power at antenna input terminal:	9.036494737	(mW)
Duty cycle:	99	(%)
Maximum Pav :	8.94612979	(mW)
Antenna gain (typical):	2.15	(dBi)
Maximum antenna gain:	1.640589773	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	2442	(MHz)
MPE limit for uncontrolled exposure at prediction	1	(mW/cm2)
Power density at predication frequency at 20 (cm)	0.002921	(mW/cm^2)

Measurement Result

The predicted power density level at 20 cm is 0.002921 mW/cm2. This is below the uncontrolled exposure limit of 1 mW/cm2 at 2442MHz.