1 MAXIMUM PERMISSIBLE 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.

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^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

1.2 Maximum Permissible Exposure (MPE) Evaluation

802.11g Main						
CH	Freq. (MHz)	Data Rate	Max. Avg. Output include tune up tolerance Power (dBm)	Max. Avg. Output include tune up tolerance Power (mW)	Limit	RESULT
1	2412	6	14.29	26.85	1 Watt = 30.00 dBm	PASS
6	2437	6	14.28	26.79	1 Watt = 30.00 dBm	PASS
11	2462	6	14.25	26.61	1 Watt = 30.00 dBm	PASS

MPE Prediction (802.11b 2412~2462)

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

Max. output power including tune-up tolerancel:	14.29	(dBm)
Max. output power including tune-up tolerancel:	26.853444	(mW)
Duty cycle:	97	(%)
Maximum Pav :	26.047841	(mW)
Peak Antenna gain (Maximum):	2.5	(dBi)
Peak Antenna gain (linear):	1.7782794	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	2412	(MHz)
MPE limit for uncontrolled exposure at prediction	1	(mW/cm^2)
Power density at predication frequency at 20 (cm)	0.009220	(mW/cm^2)

Measurement Result

The predicted power density level at 20 cm is 0.00922 mW/cm2.

This is below the uncontrolled exposure limit of 1 mW/cm2 at 2412MHz.

BLE mode:			
CH	Frequency (MHz)	Max. Avg. Output include tune up tolerance Power (dBm)	Required Limit
0	2402	5.09	1 Watt = 30 dBm
20	2442	5.05	1 Watt = 30 dBm
39	2480	4.61	1 Watt = 30 dBm

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

Max. output power including tune-up tolerancel:	5.09	(dBm)
Max. output power including tune-up tolerancel:	3.2284941	(mW)
Duty cycle:	62.4	(%)
Maximum Pav :	2.0145803	(mW)
Peak Antenna gain (Maximum):	2.5	(dBi)
Peak Antenna gain (linear):	1.7782794	(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)	0.000713	(mW/cm^2)

Measurement Result

The predicted power density level at 20 cm is 0.000713 mW/cm2.

This is below the uncontrolled exposure limit of 1 mW/cm2 at 2402MHz.

~ End of Report ~