14. Maximum Permissible Exposure (MPE)

14.1 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

14.2 Maximum Permissible Exposure (MPE) Evaluation

MPE Prediction (802.11n HT20) (worst case)

802.11N HT20

Mode	Channel	power (dBm)	limit(dBm)	result
N HT20	5180	15.5	23.97	pass
	5200	15.67	23.97	pass
	5240	15.87	23.97	pass

Prediction of MPE limit at a given distance

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

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

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:	15.87	(dBm)
Maximum peak output power at antenna input terminal:	38.63669771	(mW)
Duty cycle:	100	(%)
Maximum Pav :	38.63669771	(mW)
Antenna gain (typical):	2.5	(dBi)
Maximum antenna gain:	1.77827941	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	5240	(MHz)
MPE limit for uncontrolled exposure at prediction	1	(mW/cm2)
Power density at predication frequency at 20 (cm)	0.0136757	(mW/cm^2)

Measurement Result

The predicted power density level at 20 cm is 0.0136757mW/cm^2. This is below the uncontrolled exposure limit of 1 mW/cm^2 at 5240MHz.