

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 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

IC Exemption from Routine Evaluation Limits – SAR Evaluation: RSS 102 Issue 4

SAR evaluation is required if the separation distance between the user and the radiating element of the device is less than or equal to 20 cm, except when the device operates as follows:

above 2.2 GHz and up to 3 GHz inclusively, and with output power (i.e. the higher of the conducted or radiated (e.i.r.p.) source-based, time-averaged output power) that is less than or equal to 20 mW for general public use and 100 mW for controlled use;

Maximum Permissible Exposure (MPE) Evaluation

2.4GHz mode:

The worst case of Average power: refer to FCC test report for detail measurement date.

Power measurement:

Frequency (MHz)	Peak Reading Power (dBm)	Cable Loss	Output Power (dBm)	Output Power (W)	Limit (W)
Low	3.79	0.00	3.79	0.00239	1
Mid	5.59	0.00	5.59	0.00362	1
High	6.01	0.00	6.01	0.00399	1

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 output power at antenna input terminal:	6.01	(dBm)
Maximum output power at antenna input terminal:	3.990249024	(mW)
Tune-Up power Tolerance:	2	dB
Duty cycle:	100	(%)
Maximum Pav :	6.324118514	(mW)
Antenna gain (typical):	2.5	(dBi)
Maximum antenna gain:	1.77827941	(numeric)
Prediction distance:	20	(cm)
MPE limit for uncontrolled exposure at prediction	1	(mW/cm ²)
Power density at predication frequency at 20 (cm)	0.0022385	(mW/cm ²)

Measurement Result:

The predicted power density level at 20 cm is 0.0022385 mW/cm².. This is below the uncontrolled exposure limit of 1 mW/cm².