

15 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

15.1 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

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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802.11a Max. output power**802.11a_MIMO**

CH	Frequency (MHz)	Data Rate	Avg. POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
			CH 0	CH 1				
36	5180	6	20.18	18.1	22.49	168.797	24.05	PASS
44	5220	6	20.17	18.09	22.48	168.409	24.05	PASS
48	5240	6	20.09	18.2	22.47	168.163	24.05	PASS
149	5745	6	19.63	18.82	22.47	168.041	24.43	PASS
157	5785	6	19.89	18.51	22.48	168.457	24.43	PASS
165	5825	6	20.12	18.18	22.48	168.567	24.43	PASS

MPE Prediction (802.11a 5150~5250)

Max. output power including tune-up tolerancel:	22.49	(dBm)
Max. output power including tune-up tolerancel:	177.41895	(mW)
Duty cycle:	95.16	(%)
Maximum Pav :	168.83187	(mW)
Peak Antenna gain (Maximum):	11.97	(dBi)
Peak Antenna gain (linear):	15.739829	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	5180	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1	(mW/cm ²)
Power density at predication frequency at 20 (cm) distance	0.529	(mW/cm ²)

Measurement Result

The predicted power density level at 20 cm is 0.529 mW/cm².

This is below the uncontrolled exposure limit of 1 mW/cm² at 5180MHz.

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