

8. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

8.1 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

8.2 Maximum Permissible Exposure (MPE) Evaluation

Freq. (MHz)	Ant. Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Actual Peak FS (dBuV/m)	Actual AV FS (dBuV/m)	Peak Limit at 3m (dBuV/m)	AV Limit at 3m (dBuV/m)	Margin (dB)
5736.0	V	95.24	85.29	7.37	102.61	92.66	114.00	94.00	-1.34
5736.0	H	94.56	84.84	7.37	101.93	92.21	114.00	94.00	-1.79
5762.0	V	93.40	84.68	7.41	100.81	92.09	114.00	94.00	-1.91
5762.0	H	93.67	83.80	7.41	101.08	91.21	114.00	94.00	-2.79
5814.0	V	93.27	83.59	7.51	100.78	91.10	114.00	94.00	-2.90
5814.0	H	91.74	81.99	7.51	99.25	89.50	114.00	94.00	-4.50

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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MPE Prediction

Prediction of MPE limit at a given distance

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

$$S = \frac{P}{4 \pi R^2}$$

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

$$\text{dBm} = \text{dBuV/m} - 95.2$$

$$\text{maximum filed strength} = 102.61 \text{ dBuV/m}$$

$$102.61 \text{ dBuV/m} - 95.2 = 7.41 \text{ dBm}$$

Maximum peak output power at antenna input terminal:	7.41	(dBm)
Maximum peak output power at antenna input terminal:	5.508076964	(mW)
Duty cycle:	100	(%)
Maximum Pav :	5.508076964	(mW)
Antenna gain (typical):	2	(dBi)
Maximum antenna gain:	1.584893192	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	5736	(MHz)
MPE limit for uncontrolled exposure at prediction	1	(mW/cm ²)
Power density at predication frequency at 20 (cm)	0.0017376	(mW/cm ²)

Measurement Result

The predicted power density level at 20 cm is 0.0016254mW/cm². This is below the uncontrolled exposure limit of 1 mW/cm² at 5736MHz.

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