

## MAXIMUM PERMISSIBLE EXPOSURE (MPE)

## FCC 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 Permissive Exposure (MPE)

Frequency Range	Electric Field	Magnetic Field	Power Density	Averaging Time			
(MHz)	Strength (V/m)	Strength (A/m)	(mW/cm <sup>2</sup> )	(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 <sup>2</sup> )	30			
30-300	27.5	0.073	0.2	30			
300-1500	300-1500 /		f/1500	30			
1500-15000	1500-15000 /		1.0	30			

f = frequency in MHz

\* = Plane-wave equipment power density

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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## **ISED Standard Applicable**

This submittal(s) (test report) is intended to comply with RSS-102 issue 5 Radio frequency Radiation Exposure requirement.

This is a Mobile device, the MPE is required.

Limits for Maximum Permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field Strength (A/m rms)	Power Density (W/m <sup>2</sup> )	Reference Period (minutes)	
0.003-10	83	90	-	Instantaneous*	
0.1-10	-	0.73/ f	-	6**	
1.1-10	87/ f <sup>0.5</sup>	-	-	6**	
10-20	27.46	0.0728	2	6	
20-48	58.07/ f <sup>0.25</sup>	0.1540/ f <sup>0.25</sup>	8.944/ f <sup>0.5</sup>	6	
48-300	22.06	0.05852	1.291	6	
300-6000	3.142 f <sup>0.3417</sup>	0.008335 f <sup>0.3417</sup>	0.02619 <i>f</i> <sup>0.6834</sup>	6	
6000-15000	61.4	0.163	10	6	
15000-150000	61.4	0.163	10	616000/ f <sup>1.2</sup>	
150000-300000	0.158 <i>f</i> <sup>0.5</sup>	4.21 x 10-4 f <sup>0.5</sup>	6.67 x 10-5 <i>f</i>	616000/ f <sup>1.2</sup>	

F = frequency in MHz

- \* = Based on nerve stimulation (NS).
- \*\* = Based on specific absorption rate (SAR)

Maximum Permissible Exposure (MPE) Evaluation

Prediction of MPE limit at a given distance

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

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

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## **Power Density Calculation (Worst Case)**

FCC					ISED					
Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	POWDr	Output Power EIRP (mW)		Limit (mW/cm2)	Pass / Fail	Power Density (W/cm2)	Limit (W/cm2)	Pass / Fail
WLAN 2.4G	2437.00	20	19.09	81.10	0.010	1.000	Pass	0.100	5.404	Pass

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