

## 8. RF Exposure Evaluation

According to FCC 1.1310 : The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in § 1.1307(b)

### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength(V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time
(A) Limits for Occupational /Control Exposures				
300 – 1500	--	--	F/300	6
1500 - 100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300 – 1500	--	--	F/1500	6
1500 - 100000	--	--	1	30

### 8.1 Friis transmission formula : $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

$G$  = gain of antenna in linear scale

$\pi$  = 3.1416

$R$  = distance between observation point and center of the radiator in cm

$P_d$  the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

*The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.*

## 8.2 Test Result of RF Exposure Evaluation

Test Item : RF Exposure Evaluation Data

Test Mode : Normal Operation

### 8.2.1 Output Power into Antenna & RF Exposure Evaluation Distance

#### Antenna: 8 dBi(Patch Antenna)

Test Mode: Down link\_64QAM 3/4

Channel	Frequency (MHz)	Output Power to Antenna (dBm)	Antenna Gain (dBi)	R (cm)
Low	2630.5	22.67	8	9.6384052
Middle	2647.0	<b>23.48</b>	8	10.5804754
High	2683.5	22.89	8	9.88564886

Test Mode Mode: Up link\_16QAM 3/4

Channel	Frequency (MHz)	Output Power to Antenna (dBm)	Antenna Gain (dBi)	R (cm)
Low	2630.5	22.04	8	8.96406878
Middle	2647.0	<b>22.77</b>	8	9.75001268
High	2683.5	22.70	8	9.67175263

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