

11. 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 ²)	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

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

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d the limit of MPE, 1 mW/ cm². 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.

11.2 EUT Operating Condition

A software provided by client enabled the EUT to transmit and receive data at low, middle and high channel individually.

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11.3 Test Result of RF Exposure Evaluation

Test Item : RF Exposure Evaluation Data

Test Mode : Normal Operation

11.3.1 Output Peak Power & RF Exposure Evaluation Distance

Sleeve Dipole Antenna gain : 1.53 dBi

Channel	Channel Frequency (MHz)	Output Peak Power (dBm)	Antenna Gain (dBi)	Power Density at 20 cm (mW/cm ²)	LIMITS (mW/cm ²)
Low	2402	11.68	1.53	0.00417	1
Middle	2441	11.27	1.53	0.00379	1
High	2481	11.07	1.53	0.00362	1

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