

Limits for Maximum Permissible Exposure (MPE)

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)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) 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
1500–100,000			1.0	30

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, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is Reached.

Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

Measurement Result

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power (dBm)	Maximum tune-up Power (mW)	Antenna gain		Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
						(dBi)	(Linear)			
ISM	2402	-0.240	0.946	0±1	1.25	3.0	2.0	0.0050	1	Complies
	2441	0.005	1.001	1±1	1.58	3.0	2.0	0.0063	1	Complies
	2480	-0.068	0.984	0±1	1.25	3.0	2.0	0.0050	1	Complies

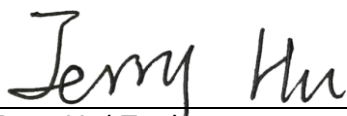
Mode	Frequency (MHz)	output power (dBm)	output power (mW)	Target power (dBm)	Maximum tune-up Power (mW)	Antenna gain		Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
						(dBi)	(Linear)			
IEEE 802.11b	2412	15.23	33.34	15±1	39.81	-0.58	0.87	0.0693	1	Compiles
	2437	14.68	29.37	15±1	39.81	-0.58	0.87	0.0693	1	Compiles
	2462	14.91	30.97	15±1	39.81	-0.58	0.87	0.0693	1	Compiles
IEEE 802.11g	2412	16.43	43.95	16±1	50.11	-0.58	0.87	0.0872	1	Compiles
	2437	16.09	40.64	16±1	50.11	-0.58	0.87	0.0872	1	Compiles
	2462	17.15	51.88	17±1	63.09	-0.58	0.87	0.1098	1	Compiles
IEEE 802.11n HT20	2412	17.48	55.97	17±1	63.09	-0.58	0.87	0.1098	1	Compiles
	2437	17.52	56.49	17±1	63.09	-0.58	0.87	0.1098	1	Compiles
	2462	17.89	61.51	17±1	63.09	-0.58	0.87	0.1098	1	Compiles

Power Density (S) (mW/cm ²)			Limited of Power Density (S) (mW/cm ²)	Test Result
ISM	WIFI	Sum		
0.0063	0.1098	0.1161	1	Complies

The Maximum power is less than the limit, complies with the exemption requirements, SAR is exempted.

Remark: The Max Conducted Peak Output Power data refer to report Report No.: LP23080282C01-31 ,
LP23080282C01-32

Prepared by:



Jerry Hu/ Engineer

Approved & Authorized Signer:



Frank Shen/ Manager

Issue Date: August 6, 2024