

SAR EVALUATION

TABLE 1—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

F= Frequency in MHz

Friis Formula

Friis transmission formula: $Pd = (Pout * G) / (4 * \pi * R^2)$

Where

Pd = power density in mW/cm²

Pout = 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

Pd is 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 r 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

Calculated Result and Limit

BT:

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/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result
						(dBi)	(Linear)			
GFSK	2402	-1.541	0.701	-1±1	1.00	2.0	1.58	0.0031	1	Complies
	2441	1.317	1.354	1±1	1.58	2.0	1.58	0.0050	1	Complies
	2480	1.783	1.501	1±1	1.58	2.0	1.58	0.0050	1	Complies
8DPSK	2402	-1.993	0.632	-1±1	1.00	2.0	1.58	0.0031	1	Complies
	2441	1.045	1.272	1±1	1.58	2.0	1.58	0.0050	1	Complies
	2480	2.616	1.826	2±1	2.00	2.0	1.58	0.0063	1	Complies

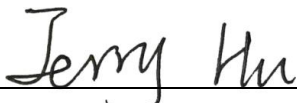
Mode	Frequency (MHz)	output power (dBm)	output power (mW)	Target power (dBm)	Maximum tune-up Power (mW)	Antenna gain		Power Density (S) (mW/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result
						(dBi)	(Linear)			
IEEE 802.11b	2412	14.45	27.86	14±1	31.62	2.0	1.58	0.1000	1	Compiles
	2437	14.32	27.04	14±1	31.62	2.0	1.58	0.1000	1	Compiles
	2462	14.11	25.76	14±1	31.62	2.0	1.58	0.1000	1	Compiles
IEEE 802.11g	2412	14.28	26.79	14±1	31.62	2.0	1.58	0.1000	1	Compiles
	2437	14.31	26.98	14±1	31.62	2.0	1.58	0.1000	1	Compiles
	2462	13.82	24.10	13±1	25.12	2.0	1.58	0.0999	1	Compiles
IEEE 802.11n HT20	2412	13.43	22.03	13±1	25.12	2.0	1.58	0.0630	1	Compiles
	2437	13.70	23.44	13±1	25.12	2.0	1.58	0.0794	1	Compiles
	2462	13.17	20.75	13±1	25.12	2.0	1.58	0.0794	1	Compiles
IEEE 802.11n HT40	2422	11.90	15.49	11±1	15.85	2.0	1.58	0.0501	1	Compiles
	2442	12.52	17.86	12±1	19.95	2.0	1.58	0.0630	1	Compiles
	2462	12.86	19.32	12±1	19.95	2.0	1.58	0.0630	1	Compiles

Power Density (S) (mW/cm ²)			Limited of Power Density (S) (mW/cm ²)	Test Result
BT	WIFI	Sum		
0.0063	0.1000	0.1063	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.: LP23080282C01-35 ,
LP23080282C01-36

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