Portable device

According to §15.247(e)(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to KDB447498 D01 General RF Exposure Guidance V05

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] * [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

f(GHz) is the RF channel transmit frequency in GHz；

Power and distance are rounded to the nearest mW and mm before calculation；

The result is rounded to one decimal place for comparison；

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

We use 5mm as separation distance to calculate.

Maximum measured transmitter power:
WIFI:

Test Channel	Frequency (MHz)	Power Setting	Duty Cycle Factor (dB)	Average Output Power (dBm)	Maximum Output Power(dBm)	LIMIT (dBm)	Verdict
	802.11b						
1	2412	Default	0	9.13	9.13	30	PASS
6	2437	Default	0	9.17	9.17	30	PASS
11	2462	Default	0	9.12	9.12	30	PASS
	802.11g						
1	2412	Default	0	8.31	8.31	30	PASS
6	2437	Default	0	8.28	8.28	30	PASS
11	2462	Default	0	8.27	8.27	30	PASS
	802.11n HT20						
1	2412	Default	0	7.42	7.42	30	PASS
6	2437	Default	0	7.35	7.35	30	PASS
11	2462	Default	0	7.03	7.03	30	PASS
	802.11n HT40						
3	2422	Default	0	6.52	6.52	30	PASS
6	2437	Default	0	6.63	6.63	30	PASS
9	2452	Default	0	6.45	6.45	30	PASS

EDR:

Test Channel	Frequency (MHz)	Power Setting	Peak Output Power (dBm)	LIMIT (dBm)	Verdict
1Mbps					
0	2402	Default	2.621	30	PASS
39	2441	Default	2.476	30	PASS
78	2480	Default	2.4	30	PASS
2Mbps					
0	2402	Default	1.976	20.97	PASS
39	2441	Default	2.027	20.97	PASS
78	2480	Default	1.97	20.97	PASS
3Mbps					
0	2402	Default	2.753	20.97	PASS
39	2441	Default	2.235	20.97	PASS
78	2480	Default	2.22	20.97	PASS

BLE:

Test Channel	Frequency (MHz)	Power Setting	Peak Output Power (dBm)	LIMIT (dBm)	Verdict
1Mbps					
00	2402	Default	-5.095	30	PASS
19	2440	Default	-4.827	30	PASS
39	2480	Default	-4.909	30	PASS

Measurement Result

WiFi:

Modulation	Channel Freq. (GHz)	Conducted power (dBm)	Conducted power (mW)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Result calculation	1g SAR
802.11b	2.412	9.13	8.18	9±0.5	9.50	8.91	2.76834	3.00
	2.442	9.17	8.26	9±0.5	9.50	8.91	2.78550	3.00
	2.462	9.12	8.17	9±0.5	9.50	8.91	2.79688	3.00
802.11g	2.412	8.31	6.78	8±1	9.00	7.94	2.46728	3.00
	2.442	8.28	6.73	8±1	9.00	7.94	2.48258	3.00
	2.462	8.27	6.71	8±1	9.00	7.94	2.49272	3.00
802.11n(20 MHz)	2.412	7.42	5.52	7±1	8.00	6.31	1.95983	3.00
	2.442	7.35	5.43	7±1	8.00	6.31	1.97198	3.00
	2.462	7.03	5.05	7±1	8.00	6.31	1.98004	3.00
802.11n(40 MHz)	2.422	6.52	4.49	6±1	7.00	5.01	1.55997	3.00
	2.442	6.63	4.60	6±1	7.00	5.01	1.56640	3.00
	2.452	6.45	4.42	6±1	7.00	5.01	1.56960	3.00

EDR:

Modulation	Channel Freq. (MHz)	Conducted power (dBm)	Conducted power (mW)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Result calculation	1g SAR
GFSK	2.402	2.621	1.83	2±1	3.00	2.00	0.61847	3.00
	2.441	2.476	1.77	2±1	3.00	2.00	0.62296	3.00
	2.480	2.4	1.74	2±1	3.00	2.00	0.62843	3.00
π/4-DQPSK	2.402	1.976	1.58	2±1	3.00	2.00	0.61847	3.00
	2.441	2.027	1.59	2±1	3.00	2.00	0.62347	3.00
	2.480	1.97	1.57	2±1	3.00	2.00	0.62843	3.00
8DPSK	2.402	2.753	1.88	2±1	3.00	2.00	0.61847	3.00
	2.441	2.235	1.67	2±1	3.00	2.00	0.62347	3.00
	2.480	2.22	1.67	2±1	3.00	2.00	0.62843	3.00

BLE:

Modulation	Channel Freq. (MHz)	Conducted power (dBm)	Conducted power (mW)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Result calculation	1g SAR
GFSK	2.402	-5.095	0.31	-4±1	-3.00	0.50	0.15535	3.00
	2.44	-4.827	0.33	-4±1	-3.00	0.50	0.15648	3.00
	2.480	-4.909	0.32	-4±1	-3.00	0.50	0.15785	3.00

Conclusion:
For the max result : 2.79688≤ 3.0 for 1-g SAR, No SAR is required.

Signature: **Date:** 2016-12-01

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