

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 V06

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

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where:

- $f(\text{GHz})$ 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

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

BR+EDR:

Antenna Type : FPCB Antenna

Antenna Gain: 2 dBi

Modulation	Channel Freq. (GHz)	Conduct ed power (dBm)	Conducte d power (mW)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Distance (mm)	Result calculatio n	1g SAR Exclusion threshold	SAR test exclusion
GFSK	2.402	0.18	1.042	1±1	2	1.585	<5	0.49127	3.00	YES
	2.441	2.20	1.660	2±1	3	1.995	<5	0.62347	3.00	YES
	2.480	2.30	1.698	2±1	3	1.995	<5	0.62843	3.00	YES
$\pi/4$ -DQPSK	2.402	0.81	1.205	1±1	2	1.585	<5	0.49127	3.00	YES
	2.441	1.91	1.552	2±1	3	1.995	<5	0.62347	3.00	YES
	2.480	1.96	1.570	2±1	3	1.995	<5	0.62843	3.00	YES
8DPSK	2.402	1.01	1.262	1±1	2	1.585	<5	0.49127	3.00	YES
	2.441	2.32	1.706	2±1	3	1.995	<5	0.62347	3.00	YES
	2.480	2.45	1.758	2±1	3	1.995	<5	0.62843	3.00	YES

BLE:

Antenna Type : FPCB Antenna

Antenna Gain: 2 dBi

Modulation	Channel Freq. (GHz)	Conduct ed power (dBm)	Conducte d power (mW)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Distance (mm)	Result calculatio n	1g SAR Exclusion threshold	SAR test exclusion
GFSK	2.402	-2.82	0.522	-2±1	-1	0.794	<5	0.24622	3.00	YES
	2.44	-3.24	0.474	-4±1	-5	0.316	<5	0.09879	3.00	YES
	2.480	-4.21	0.379	-4±1	-5	0.316	<5	0.09960	3.00	YES

2.4G WIFI:

Antenna Type : FPCB Antenna

Antenna Gain: 2 dBi

Modulation	Channel Freq. (GHz)	Conducted power (dBm)-ANT1	Conducted power (dBm)-ANT2	Conducted power (mW)-ANT1	Conducted power (mW)-ANT2	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Distance (mm)	Result calculation	1g SAR Exclusion threshold	SAR test exclusion
802.11b	2.412	9.7	9.6	9.333	9.120	8.7±1	9.7	9.333	<5	2.89880	3.00	YES
	2.442	9.6	9.4	9.120	8.710	8.7±1	9.7	9.333	<5	2.91677	3.00	YES
	2.472	9.7	9.7	9.333	9.333	8.7±1	9.7	9.333	<5	2.93464	3.00	YES
802.11g	2.412	9.5	9.4	8.913	8.710	8.7±1	9.7	9.333	<5	2.89880	3.00	YES
	2.442	9.2	9.3	8.318	8.511	8.7±1	9.7	9.333	<5	2.91677	3.00	YES
	2.472	9.4	9.4	8.710	8.710	8.7±1	9.7	9.333	<5	2.93464	3.00	YES
802.11n20	2.412	9.3	9.1	8.511	8.128	8.5±1	9.5	8.913	<5	2.76834	3.00	YES
	2.442	9.4	9.2	8.710	8.318	8.5±1	9.5	8.913	<5	2.78550	3.00	YES
	2.472	9.4	9.2	8.710	8.318	8.5±1	9.5	8.913	<5	2.80256	3.00	YES
802.11n40	2.422	9.1	9	8.128	7.943	8.5±1	9.5	8.913	<5	2.77407	3.00	YES
	2.442	8.9	8.8	7.762	7.586	8.5±1	9.5	8.913	<5	2.78550	3.00	YES
	2.462	9	8.9	7.943	7.762	8.5±1	9.5	8.913	<5	2.79688	3.00	YES

Conclusion:

For the max result : 2.93464 ≤ 3.0 for 1-g SAR, No SAR is required.

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Signature:

Date: 2018-09-21

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