

FCC ID:2BNP8-AR401P-25

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.

BLE1M:

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 calculation	SAR Exclusion threshold	SAR test exclusion
GFSK	2.402	1.594	1.44	1±1	2.00	1.58	<5	0.49127	3.00	YES
	2.441	1.798	1.51	1±1	2.00	1.58	<5	0.49524	3.00	YES
	2.480	1.307	1.35	1±1	2.00	1.58	<5	0.49918	3.00	YES

BLE2M:

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 calculation	SAR Exclusion threshold	SAR test exclusion
GFSK	2.402	1.696	1.48	1±1	2.00	1.58	<5	0.49127	3.00	YES
	2.441	1.943	1.56	1±1	2.00	1.58	<5	0.49524	3.00	YES
	2.480	-0.612	0.87	0±1	1.00	1.26	<5	0.39651	3.00	YES

EDR:

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 calculation	SAR Exclusion threshold	SAR test exclusion
GFSK	2.402	1.853	1.53	1±1	2.00	1.58	<5	0.49127	3.00	YES
	2.441	2.08	1.61	2±1	3.00	2.00	<5	0.62347	3.00	YES
	2.480	1.537	1.42	1±1	2.00	1.58	<5	0.49918	3.00	YES
π /4DQPSK	2.402	1.549	1.43	1±1	2.00	1.58	<5	0.49127	3.00	YES
	2.441	2.868	1.94	2±1	3.00	2.00	<5	0.62347	3.00	YES
	2.480	2.304	1.70	2±1	3.00	2.00	<5	0.62843	3.00	YES
8DQPSK	2.402	2.991	1.99	2±1	3.00	2.00	<5	0.61847	3.00	YES
	2.441	3.163	2.07	3±1	4.00	2.51	<5	0.78490	3.00	YES
	2.480	2.576	1.81	2±1	3.00	2.00	<5	0.62843	3.00	YES

2.4GWIFI:

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	SAR Exclusion threshold	SAR test exclusion
802.11b	2.412	5.471	3.52	5±1	6.00	3.98	<5	1.23657	3.00	YES
	2.437	5.168	3.29	5±1	6.00	3.98	<5	1.24296	3.00	YES
	2.462	4.954	3.13	4±1	5.00	3.16	<5	0.99237	3.00	YES
802.11g	2.412	5.691	3.71	5±1	6.00	3.98	<5	1.23657	3.00	YES
	2.437	5.837	3.83	5±1	6.00	3.98	<5	1.24296	3.00	YES
	2.462	5.133	3.26	5±1	6.00	3.98	<5	1.24932	3.00	YES
802.11n(HT20)	2.412	5.331	3.41	5±1	6.00	3.98	<5	1.23657	3.00	YES
	2.437	5.334	3.42	5±1	6.00	3.98	<5	1.24296	3.00	YES
	2.462	4.722	2.97	4±1	5.00	3.16	<5	0.99237	3.00	YES
802.11n(HT40)	2.422	5.158	3.28	5±1	6.00	3.98	<5	1.23913	3.00	YES
	2.437	5.692	3.71	5±1	6.00	3.98	<5	1.24296	3.00	YES
	2.452	5.638	3.66	5±1	6.00	3.98	<5	1.24678	3.00	YES

5GWIFI:

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	SAR Exclusion threshold	SAR test exclusion
802.11a20	5.18	5.177	3.29	5±1	6.00	3.98	<5	1.81215	3.00	YES
	5.2	5.716	3.73	5±1	6.00	3.98	<5	1.81565	3.00	YES
	5.24	5.867	3.86	5±1	6.00	3.98	<5	1.82262	3.00	YES
802.11ac20	5.18	4.888	3.08	4±1	5.00	3.16	<5	1.43944	3.00	YES
	5.2	5.347	3.43	5±1	6.00	3.98	<5	1.81565	3.00	YES
	5.24	5.689	3.71	5±1	6.00	3.98	<5	1.82262	3.00	YES
802.11ac40	5.19	5.243	3.34	5±1	6.00	3.98	<5	1.81390	3.00	YES
	5.23	5.697	3.71	5±1	6.00	3.98	<5	1.82088	3.00	YES
802.11ac80	5.21	5.28	3.37	5±1	6.00	3.98	<5	1.81739	3.00	YES
802.11n(HT20)	5.18	5.07	3.21	5±1	6.00	3.98	<5	1.81215	3.00	YES
	5.2	5.392	3.46	5±1	6.00	3.98	<5	1.81565	3.00	YES
	5.24	5.737	3.75	5±1	6.00	3.98	<5	1.82262	3.00	YES
802.11n(HT40)	5.19	5.295	3.38	5±1	6.00	3.98	<5	1.81390	3.00	YES
	5.23	5.659	3.68	5±1	6.00	3.98	<5	1.82088	3.00	YES

Conclusion:

For the max result : $1.82262 \leq \text{FCC Limit } 3.0$ for 1g SAR.