

FCC ID: 2BOPX-UTBOOK10
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.

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	1.964	1.57	2±1	3.00	2.00	<5	0.61847	3.00	YES
	2.441	2.197	1.66	2±1	3.00	2.00	<5	0.62347	3.00	YES
	2.480	1.743	1.49	2±1	3.00	2.00	<5	0.62843	3.00	YES
π /4DQPSK	2.402	2.702	1.86	3±1	4.00	2.51	<5	0.77860	3.00	YES
	2.441	2.876	1.94	3±1	4.00	2.51	<5	0.78490	3.00	YES
	2.480	2.33	1.71	3±1	4.00	2.51	<5	0.79114	3.00	YES
8DQPSK	2.402	2.98	1.99	3±1	4.00	2.51	<5	0.77860	3.00	YES
	2.441	3.17	2.07	3±1	4.00	2.51	<5	0.78490	3.00	YES
	2.480	2.539	1.79	3±1	4.00	2.51	<5	0.79114	3.00	YES

BLE:1M

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	1.651	1.46	2±1	3.00	2.00	<5	0.61847	3.00	YES
	2.44	1.928	1.56	2±1	3.00	2.00	<5	0.62334	3.00	YES
	2.480	1.508	1.42	2±1	3.00	2.00	<5	0.62843	3.00	YES

BLE:2M

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	1.775	1.50	2±1	3.00	2.00	<5	0.61847	3.00	YES
	2.44	2.061	1.61	2±1	3.00	2.00	<5	0.62334	3.00	YES
	2.480	1.636	1.46	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 calculation	SAR Exclusion threshold	SAR test exclusion
802.11b	2.412	8.054	6.39	8±1	9.00	7.94	<5	2.46728	3.00	YES
	2.437	8.611	7.26	8±1	9.00	7.94	<5	2.48003	3.00	YES
	2.462	8.45	7.00	8±1	9.00	7.94	<5	2.49272	3.00	YES
802.11g	2.412	8.048	6.38	8±1	9.00	7.94	<5	2.46728	3.00	YES
	2.437	8.548	7.16	8±1	9.00	7.94	<5	2.48003	3.00	YES
	2.462	8.54	7.14	8±1	9.00	7.94	<5	2.49272	3.00	YES
802.11n(HT20)	2.412	7.671	5.85	8±1	9.00	7.94	<5	2.46728	3.00	YES
	2.437	8.185	6.58	8±1	9.00	7.94	<5	2.48003	3.00	YES
	2.462	8.13	6.50	8±1	9.00	7.94	<5	2.49272	3.00	YES
802.11n(HT40)	2.422	8.106	6.47	8±1	9.00	7.94	<5	2.47239	3.00	YES
	2.437	8.499	7.08	8±1	9.00	7.94	<5	2.48003	3.00	YES
	2.452	7.893	6.16	8±1	9.00	7.94	<5	2.48766	3.00	YES
802.11ax(HT20)	2.412	7.749	5.96	8±1	9.00	7.94	<5	2.46728	3.00	YES
	2.437	8.226	6.65	8±1	9.00	7.94	<5	2.48003	3.00	YES
	2.462	8.078	6.42	8±1	9.00	7.94	<5	2.49272	3.00	YES
802.11ax(HT40)	2.422	8.301	6.76	8±1	9.00	7.94	<5	2.47239	3.00	YES
	2.437	8.64	7.31	8±1	9.00	7.94	<5	2.48003	3.00	YES
	2.452	7.835	6.07	8±1	9.00	7.94	<5	2.48766	3.00	YES

Conclusion:

For the max result: $2.49272 \leq \text{FCC Limit } 3.0$ for 1g SAR.