FCC ID: 2BXKG-M04

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:

[(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

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

BLE:

Modulation	Channel Freq. (GHz)	Conducted power (dBm)	Conducted 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	1.455	1.40	1±1	2.00	1.58	<5	0.49127	3.00	YES
	2.44	1.262	1.34	1±1	2.00	1.58	<5	0.49514	3.00	YES
	2.480	0.345	1.08	0±1	1.00	1.26	<5	0.39651	3.00	YES

2.4GWIFI:

Modulation	Channel Freq. (GHz)	Conducted power (dBm)	Conducted 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	7.922	6.20	7±1	8.00	6.31	<5	1.95983	3.00	YES
	2.437	8.044	6.37	8±1	9.00	7.94	<5	2.48003	3.00	YES
	2.462	7.882	6.14	7±1	8.00	6.31	<5	1.98004	3.00	YES
802.11g	2.412	7.751	5.96	7±1	8.00	6.31	<5	1.95983	3.00	YES
	2.437	7.801	6.03	7±1	8.00	6.31	<5	1.96996	3.00	YES
	2.462	7.749	5.96	7±1	8.00	6.31	<5	1.98004	3.00	YES
802.11n(HT20)	2.412	7.259	5.32	7±1	8.00	6.31	<5	1.95983	3.00	YES
	2.437	7.375	5.46	7±1	8.00	6.31	<5	1.96996	3.00	YES
	2.462	7.261	5.32	7±1	8.00	6.31	<5	1.98004	3.00	YES
802.11n(HT40)	2.422	7.591	5.74	7±1	8.00	6.31	<5	1.96389	3.00	YES
	2.437	7.621	5.78	7±1	8.00	6.31	<5	1.96996	3.00	YES
	2.452	7.578	5.73	7±1	8.00	6.31	<5	1.97601	3.00	YES

LoRa:

Modulation	Channel Freq. (GHz)	Conducted power (dBm)	Conducted 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
LoRa	0.915	-14.09	0.04	-14±1	-13.00	0.05	<5	0.00959	3.00	YES

Note:dbm=dbuv/m-95.2-2.15=86.62-95.2-2.15=-10.73dBm(ERP), so the conduct peak power= -10.73-3.36=-14.09dBm

Conclusion:

BT+WIFI+LoRa supported simultaneous transmission:

BLE+2.4GWIFI+LoRa: ∑MPE Ratio =0.49514/3+2.48003/3+0.00959/3=0.99492≤1, So passed