FCC RF Exposure Evaluation (FCC ID: BYM7002)

RF Exposure Requirements: 47 CFR §1.1307(b)

RF Radiation Exposure Limits: 47 CFR §1.1310

RF Radiation Exposure Guidelines: FCC OST/OET Bulletin Number 65

EUT Frequency Band: 2402-2480MHz
5150-5825MHz

Equation:

According to the procedure in KDB447498 (v05r02) section 4.3,

1g-SAR testing is excluded if the following criteria is met.

(P/d)* √f ≤3.0 for 1-g SAR

10g-SAR testing is excluded if the following criteria is met.

(P/d)* √f ≤7.5 for 10-g SAR

Where

P is the time averaged maximum conducted power in mW

d minimum separation distance in mm

f is the frequency in GHz

The distance between the antenna and human body is 5 mm. The calculation was based on the distance of 5 mm.

Radio	Frequency (MHz)	Max E.I.R.P (dBm)	Max E.I.R.P (mW)	Maximum Source-based Duty Cycle (%)	Max source-based average output power (mW)	Measurement distance (mm)	Test Exclusion Threshold Result
BLE	2402-2480	2.175	1.65	100%	1.65	5	0.520
5GHz	5180-5240	24.230	264.85	1.43 %	3.79	5	1.735
5GHz	5260-5320	22.430	174.98	1.43 %	2.50	5	1.153
5GHz	5500-5720	22.100	162.18	1.43 %	2.32	5	1.110
5GHz	5745-5825	23.430	220.29	1.43 %	3.15	5	1.521

The above results show that the device is excluded for both standalone 1g-SAR and 10g-SAR testing.

Per KDB447498, section 4.3.2, b), the simultaneous transmission SAR test exclusion shall be considered.

The standalone SAR value is estimated as follows,

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)]·[√f(GHz)/x] W/kg, for test separation distances ≤ 50 mm; where x = 7.5 for 1-g SAR and x = 18.75 for 10-g SAR

For BLE, standalone 1g-SAR = (P/d)* (√f/7.5) = 0.069 w/kg

standalone 10g-SAR = (P/d)* (√f/18.75) = 0.028 w/kg

For 5GHz, standalone 1g-SAR = (P/d)* (√f/7.5) = 0.231 w/kg

standalone 10g-SAR = (P/d)* (√f/18.75) = 0.093 w/kg

So simultaneous 1g-SAR = 1g-SAR (BLE) + 1g-SAR (5GHz) = 0.30 w/kg < 1.6 W/kg

simultaneous 10g-SAR = 10g-SAR (BLE) + 10g-SAR (5GHz) = 0.121 w/kg < 4 W/kg

The above results show that the device is excluded for both simultaneous 1g-SAR and 10g-SAR testing.

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