

*** RF Exposure**

1. Regulation

According to §15.247(i), 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 levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this Chapter.

KDB447498 was used as the guidance.

According to §1.1310 and §2.1093 RF exposure is calculated.

1.1 Result

- Bluetooth

Test frequency [GHz]	Conducted output power [dBm]	Conducted output power [mW]	Min. test separation distance [mm]	SAR test exclusion thresholds ≤ 3.0 for 1-g SAR
2.480	2.00	1.58	5.00	0.50

1. SAR test exclusion thresholds

$$= [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] \cdot [\sqrt{f(GHz)}]$$

$$= [(1.58)/(5)] \cdot [\sqrt{2.480}] = 0.50$$

Mode	Target power [dBm]	Allowed tolerant [dB]	Max tune up power [dBm]	Measured Average power [dBm]
GFSK-Lowest	0.00	2.00	2.00	1.29
GFSK-Middle	0.00	2.00	2.00	0.67
GFSK-Highest	0.00	2.00	2.00	-0.99
π/4DQPSK-Lowest	-3.00	2.00	-1.00	-1.74
π/4DQPSK-Middle	-3.00	2.00	-1.00	-2.39
π/4DQPSK-Highest	-3.00	2.00	-1.00	-4.08
8DPSK-Lowest	-3.00	2.00	-1.00	-1.73
8DPSK-Middle	-3.00	2.00	-1.00	-2.37
8DPSK-Highest	-3.00	2.00	-1.00	-4.08

- Bluetooth Low Energy

Test frequency [GHz]	Conducted output power [dBm]	Conducted output power [mW]	Min. test separation distance [mm]	SAR test exclusion thresholds ≤ 3.0 for 1-g SAR
2.480	3.20	2.09	5.00	0.66

1. SAR test exclusion thresholds
 = [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)]
 = [(2.09)/(5)] · [√2.480] = 0.66

Mode	Target power [dBm]	Allowed tolerant [dB]	Max tune up power [dBm]	Measured Average power [dBm]
BLE-Lowest	1.20	2.00	3.20	3.05
BLE-Middle	1.20	2.00	3.20	2.72
BLE-Highest	1.20	2.00	3.20	1.30

1.2 RF Exposure Compliance Issue

Therefore, EUT is not required the SAR Evaluation.