

RF Exposure Evaluation

FCC ID: 2A4RO-M6

1. Client Information

Applicant	:	Shenzhen Amesra Technology Co., Ltd.
Address	:	Room 406, Building B, Enterprise Business Network Maker Center, Huarong Road, Gaofeng Community, Dalang Street, Longhua District, Shenzhen, China
Manufacturer	:	Shenzhen Amesra Technology Co., Ltd.
Address	:	Room 406, Building B, Enterprise Business Network Maker Center, Huarong Road, Gaofeng Community, Dalang Street, Longhua District, Shenzhen, China

2. General Description of EUT

EUT Name	:	Bluetooth Adapter	
Model(s) No.	:	M6, M2, M3, M5, M7, M9, M10, M12, M13, M15, M18	
Model Different	:	All these models are identical in the same PCB layout and electrical circuit, the only difference is that names and appearance.	
Product Description	:	Operation Frequency:	Bluetooth 5.0(BT): 2402~2480 MHz
		Number of Channel:	Bluetooth: 79 Channels
		RF Output Power:	GFSK: -4.22dBm π /4-DQPSK: -3.4dBm 8DPSK: -3.07dBm
		Antenna Gain:	-0.58dBi PCB Antenna
		Modulation Type:	GFSK, π /4-DQPSK
Power Supply	:	Input: DC 5V, 500mA	
Software Version	:	V1.3	
Hardware Version	:	M6-V01	
Remark: The antenna gain provided by the applicant, the adapter and verified for the RF conduction test and adapter provided by TOBY test lab.			

Note: More test information about the EUT please refer the RF Test Report.

SAR Test Exclusion Calculations

1. FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v06.

- (1) Clause 4.3: General SAR test reduction and exclusion guidance

- Sub clause 4.31: Standalone SAR test exclusion considerations

- 1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6GHz at test separation distance ≤ 5 mm are determined by:

- $$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{\text{GHz}}}] \leq 3.0 \text{ for 1-g SAR}$$

- $$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{\text{GHz}}}] \leq 7.5.0 \text{ for 10-g SAR}$$

2. Calculation:

Test separation: 5mm						
Bluetooth Mode (GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-4.22	-4 ± 1	-3	0.5012	0.1569	3.0
2.441	-4.63	-4 ± 1	-3	0.5012	0.1569	3.0
2.480	-4.66	-4 ± 1	-3	0.5012	0.1569	3.0
Bluetooth Mode ($\pi/4$ -DQPSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-3.48	-3 ± 1	-2	0.6310	0.1975	3.0
2.441	-3.4	-3 ± 1	-2	0.6310	0.1975	3.0
2.480	-3.86	-3 ± 1	-2	0.6310	0.1975	3.0
Bluetooth Mode (8DPSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-3.07	-3 ± 1	-2	0.6310	0.1975	3.0
2.441	-3.46	-3 ± 1	-2	0.6310	0.1975	3.0
2.480	-3.48	-3 ± 1	-2	0.6310	0.1975	3.0

Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

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