

RF Exposure Evaluation

FCC ID: 2A4RO-M8

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.	:	M8, S5, S6, S8, S9, S15, S16, S18, W6, W8, W9, W16, W18	
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: -2.4dBm π /4-DQPSK: -1.56dBm 8DPSK: -1.18dBm
	:	Antenna Gain:	-0.58dBi PCB Antenna
	:	Modulation Type:	GFSK, π /4-DQPSK
Power Supply	:	Input: DC 5V, 500mA	
Software Version	:	V1.3	
Hardware Version	:	M8-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:

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

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

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	-2.4	-2 ± 1	-1	0.7943	0.2487	3.0
2.441	-3.7	-3 ± 1	-1	0.7943	0.2487	3.0
2.480	-4.5	-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	-1.56	-1 ± 1	0	1.0000	0.3130	3.0
2.441	-2.85	-2 ± 1	-1	0.7943	0.2487	3.0
2.480	-3.59	-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	-1.18	-1 ± 1	0	1.0000	0.3130	3.0
2.441	-2.48	-2 ± 1	-1	0.7943	0.2487	3.0
2.480	-3.06	-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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