

RF Exposure Evaluation

FCC ID: 2A4PI-ASYORENA3

1. Client Information

Applicant	:	Shen Zhen You Ren Ke Ji You Xian Gong Si
Address	:	Room 904, Liutang Building, Baomin 2 road, Xixiang Street, Bao'an District, Shenzhen, Guangdong Province, China, 518000
Manufacturer	:	Shen Zhen You Ren Ke Ji You Xian Gong Si
Address	:	Room 904, Liutang Building, Baomin 2 road, Xixiang Street, Bao'an District, Shenzhen, Guangdong Province, China, 518000

2. General Description of EUT

EUT Name	:	Bluetooth Speaker	
Model(s) No.	:	Asyoren A3	
Model Different	:	----	
Product Description	:	Operation Frequency:	Bluetooth 5.0: 2402MHz~2480MHz
	:	Number of Channel:	Bluetooth 5.0: 79 channels
	:	Antenna Gain:	2 dBi FPC Antenna
	:	Modulation Type:	GFSK, Pi/4-DQPSK, 8-DPSK
	:	Bit Rate of Transmitter:	Bluetooth :1/2/3Mbps
Power Supply	:	Input: DC 5V DC 7.4V by 2500mAh Rechargeable Li-ion battery	
Software Version	:	ATS2819_S230_DU261_BT02_V1.01_2021_1123_1036[BT02]	
Hardware Version	:	BT02_MAIN_V1.4	

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:

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

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

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	-4.235	-4±1	-3	0.501	0.155	3.0
2.441	-0.817	0±1	1	1.259	0.393	3.0
2.480	-2.602	-2±1	-1	0.794	0.250	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	-2.282	-2±1	-1	0.794	0.246	3.0
2.441	-6.646	-6±1	-5	0.316	0.099	3.0
2.480	0.022	0±1	1	1.259	0.397	3.0
Bluetooth Mode (8-DPSK)						
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	-1.868	-1±1	0	1.000	0.310	3.0
2.441	-2.899	-2±1	-1	0.794	0.248	3.0
2.480	0.360	0±1	1	1.259	0.397	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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