



RF Exposure Evaluation

FCC ID: ZRR-ZT2111

1. Client Information

Applicant	:	Shenzhen Adition Audio Science & Technology CO., LTD.
Address	:	Floor1-5, No.2 Building, Huidebao Industrial Park, No.11, Second Industrial Zone, Baihua Community, Guangming Sub-district, Guangming District, Shenzhen City, China
Manufacturer	:	Shenzhen Adition Audio Science & Technology CO., LTD.
Address	:	Floor1-5, No.2 Building, Huidebao Industrial Park, No.11, Second Industrial Zone, Baihua Community, Guangming Sub-district, Guangming District, Shenzhen City, China

2. General Description of EUT

EUT Name	:	Self-Tuning Hearing Aids	
Model(s)	:	ZT2111	
Model Difference	:	----	
Product Description	:	Operation Frequency:	Bluetooth 5.0(BDR+EDR): 2402MHz~2480MHz
	:	Number of Channel:	79 channels
	:	RF Output Power:	-2.05dBm (Max)
	:	Antenna Gain:	-0.58dBi PCB Antenna
	:	Modulation Type:	GFSK(1Mbps) π/4-DQPSK(2Mbps) 8-DPSK(3Mbps)
Power Supply	:	USB Input: DC 5V/1A DC 3.7V by 2200mAh Li-ion battery	
Software Version	:	N/A	
Hardware Version	:	N/A	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
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.

TB-RF-074-1.0

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 (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	-2.76	-2±1	-1	0.794	0.246	3.0
2.441	-2.94	-2±1	-1	0.794	0.248	3.0
2.480	-2.07	-2±1	-1	0.794	0.250	3.0

Test separation: 5mm						
Bluetooth (π/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	-2.60	-2±1	-1	0.794	0.246	3.0
2.441	-2.78	-2±1	-1	0.794	0.248	3.0
2.480	-2.23	-2±1	-1	0.794	0.250	3.0

Test separation: 5mm						
Bluetooth (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	-2.75	-2±1	-1	0.794	0.246	3.0
2.441	-2.85	-2±1	-1	0.794	0.248	3.0
2.480	-2.05	-2±1	-1	0.794	0.250	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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