RF Exposure Evaluation

FCC ID: 2BC49-WS15

1. Client Information

Applicant	:	Shenzhen James Audio Technology Co., Ltd
Address	:	4 Floor, A building, Rongli Industrial Park, No.2 Guiyuan Road community, Guanlan Town, longhua New district, Shenzhen, China
Manufacturer	:	Shenzhen James Audio Technology Co., Ltd
Address	:	4 Floor, A building, Rongli Industrial Park, No.2 Guiyuan Road community, Guanlan Town, longhua New district, Shenzhen, China

2. General Description of EUT

EUT Name	:	Wearable Wireless speaker	
Model(s) No.	:	WS15, WS15A, WS15B, WS15C, WS15D, Wearable speaker-WS15, Wearable speaker, WS15S, WS20, WS20A, WS20B, Wearable speaker-WS20, Wearable speaker-WS11, Wearable speaker-WS10	
Model Difference	:	All PCB boards and circuit diagrams are the same, the only difference is that appearance.	
Product Description	:	Operation Frequency:	Bluetooth V5.4: 2402MHz~2480MHz
		Antenna Gain:	-0.68dBi PCB Antenna
Power Rating	:	Input: DC 5V, 1000mA	
Li-ion Polymer Battery	:	DC 3.7V 600mAh Rechargeable Li-ion battery	
Software Version	:	AC6956C4 ,CPU,QFN32	
Hardware Version	:	WS15-AC6956C4-V1.0	
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.

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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:
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation, mm)]*[$\sqrt{f_{(GHz)}}$] ≤3.0 for 1-g SAR
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation, mm)]*[$\sqrt{f_{(GHz)}}$] ≤7.5.0 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	2.58	3±1	4	2.512	0.779	**3.0**
2.441	2.61	3±1	4	2.512	0.785	**3.0**
2.480	1.95	2±1	3	1.995	0.628	**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	3.38	3±1	4	2.512	0.779	**3.0**
2.441	3.39	3±1	4	2.512	0.785	**3.0**
2.480	2.48	2±1	3	1.995	0.628	**3.0**

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.

-----END OF THE REPORT-----