

RF Exposure Evaluation

FCC ID: 2AVZT-Q8

1. Client Information

Applicant : Yin gege Musical Instrument Co., Ltd.
Address : B501, Tingwei 33, Chuanggu 33, Huale Road, Henggang Street, Longgang District, Shenzhen, Guangdong, China
Manufacturer : Dongguan Baorui Silicone Products Co., Ltd.
Address : No.16 Building, Shundi Industrial Zone, Dongfeng Management Zone, Humen Town, Dongguan City, Guangdong Province, China

2. General Description of EUT

EUT Name	:	Hand roll piano	
Models No.	:	Q8,Q1,Q2,Q3,Q5,Q6,Q7,Q9,Q10,Q11,S1,S2,S3,S5,S6	
Model Difference	:	All these models are in the same PCB, layout and electrical circuit, the only difference is color.	
Product Description	:	Operation Frequency:	Bluetooth V4.2: 2402~2480 MHz
	:	Antenna Gain:	0dBi PCB Antenna
Power Supply	:	DC Voltage Supply from AC/DC Adapter DC Voltage supplied by Li-ion battery.	
Power Rating	:	Input: DC 5V DC 3.7V 2000mAh by 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 verified for the RF conduction test 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	-1.292	-1 ± 1	0	1.00	0.30997	3.0
2.441	-0.913	-1 ± 1	0	1.00	0.31247	3.0
2.480	-1.205	-1 ± 1	0	1.00	0.31496	3.0

So the worst RF Exposure Evaluation is calculated as **0.315 < limit 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.

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