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/OPort(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.

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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	-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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