

RF Exposure Evaluation

FCC ID: 2A34Z- MP-100

1. Client Information

Applicant	:	Qingdao Meijia Instrument Co., Ltd
Address	:	No. 303 Songyun Road Industrial Park Zhangjialou Town Huangdao District Qingdao, China
Manufacturer	:	Qingdao Meijia Instrument Co., Ltd
Address	:	No. 303 Songyun Road Industrial Park Zhangjialou Town Huangdao District Qingdao, China

2. General Description of EUT

EUT Name	:	DIGITAL PIANO	
Model(s) No.	:	MP-100, SE-1, MP-200	
Product Description	:	Operation Frequency:	Bluetooth V5.0(BDR+EDR): 2402~2480 MHz Bluetooth 5.0(BLE): 2402MHz~2480MHz
		Number of Channel:	Bluetooth 5.0(BDR+EDR): 79 channels Bluetooth 5.0(BLE): 40 channels
		Antenna Gain:	-0.58dBi PCB Antenna
		Modulation Type:	GFSK, π /4-DQPSK for BT GFSK for BLE
		Bit Rate of Transmitter:	GFSK(1Mbps) π /4-DQPSK(2Mbps)
Power Supply	:	Input: 100-240V~ 50/60Hz 1.5V Max Output: DC18V, 2A	
Software Version	:	IISUPDATA V3.0	
Hardware Version	:	BT266 V2.0	
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.

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:

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

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

2. Calculation:

Test separation: 5mm						
BT 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	3.686	3±1	4.0	2.51	0.7863	3.0
2.441	3.035	3±1	4.0	2.51	0.7863	3.0
2.480	2.684	2±1	3.0	2.00	0.9899	3.0
BT Mode (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	4.312	4±1	5.0	3.16	0.9899	3.0
2.441	3.705	3±1	4.0	2.51	0.7863	3.0
2.480	3.315	3±1	4.0	2.51	0.7863	3.0
BLE 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	4.034	4±1	5.0	3.16	0.9899	3.0
2.442	3.774	3±1	4.0	2.51	0.7863	3.0
2.480	2.956	3±1	4.0	2.51	0.7863	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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