

RF Exposure Evaluation

FCC ID: 2AREL-M3

1. Client Information

Applicant : Shenzhenshi DajieKejiYouxianGongsi
Address : Longhuaxinqu Minzhijiedao, HUANGJIA shangyeguangchang B711, Shenzhen Guangdong, 518000, China
Manufacturer : Shenzhenshi DajieKejiYouxianGongsi
Address : Longhuaxinqu Minzhijiedao, HUANGJIA shangyeguangchang B711, Shenzhen Guangdong, 518000, China

2. General Description of EUT

EUT Name	MP3 Player	
Models No.	M1,M2,M3,M4,M5,M6,M7,M8,M9,M1X,M2X,M3X,M4X, M5X,M6X,M7X,M8X,M9X,K1,K2,K3,K4,K5,K6,K7,K8,K9,K10, Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8,Q9,Q10	
Model Difference	All these models are the same PCB, layout and electrical circuit, the only difference is model.	
Product Description	Operation Frequency:	Bluetooth V4.1: 2402~2480 MHz
	Max Peak Output Power:	Bluetooth: 3.904dBm(GFSK)
	Antenna Gain:	1dBi 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 360mAh by Li-ion battery	
Software Version	: v1.1.0.6_F	
Hardware Version	: M3_V1.6-190627	
Connecting I/O Port(S)	: Please refer to the User's Manual	

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:

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

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

2. Calculation:

Test separation: 5mm						
Bluetooth 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	3.612	3±1	4	2.512	0.7786038	3.0
2.441	3.417	3±1	4	3.981	0.7848992	3.0
2.480	3.260	3±1	4	3.981	0.7911445	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	-0.254	0±1	1	1.259	0.3902263	3.0
2.441	3.551	3±1	4	2.512	0.7848992	3.0
2.480	3.904	3±1	4	2.512	0.7911445	3.0
Bluetooth Mode (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	1.336	1±1	2	1.585	0.4912658	3.0
2.441	3.761	3±1	4	2.512	0.7848992	3.0
2.480	3.401	3±1	4	3.162	0.7911445	3.0

So standalone SAR measurements are not required.

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