

RF Exposure Evaluation

FCC ID: 2APC6-CATBTSPK

1. Client Information

Applicant : Aries Manufacturing A division of Boss Tech Products Inc.
Address : 1580 S. Milwaukee Ave. Suite 103, Libertyville, IL 60048, USA
Manufacturer : LTX Electronics Co., Limited.
Address : No.12, 1st Road BeiAn, Huangjiang Town, Dongguan, Guangdong, China

2. General Description of EUT

EUT Name	:	Bluetooth Speaker	
Models No.	:	CAT-BT-SPK	
Product Description	:	Operation Frequency:	Bluetooth V4.0: 2402MHz~2480MHz
	:	RF Output Power:	GFSK:4.345dBm(Max) π /4-DQPSK:2.118dBm (Max) 8-DPSK:2.673dBm (Max) BLE:6.285dBm (Max)
	:	Antenna Gain:	2dBi PCB Antenna
	:		
Power Supply	:	DC Voltage Supply from USB Port. DC Supply by the Li-ion Battery.	
Power Rating	:	DC 5.0 V from the USB Cable. DC 7.4V by 2000mAh Li-ion Battery.	
Software Version	:	V1.0	
Hardware Version	:	V1.2	
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	4.119	4±1	5	3.162	0.980	3.0
2.441	4.345	4±1	5	3.162	0.988	3.0
2.480	4.095	4±1	5	3.162	0.996	3.0
Bluetooth Mode (π/4-QPSK)						
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	0.343	0±1	1	1.259	0.390	3.0
2.441	2.118	2±1	3	1.995	0.623	3.0
2.480	1.809	1±1	2	1.585	0.499	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	1.097	1±1	2	1.585	0.491	3.0
2.441	2.673	2±1	3	1.995	0.623	3.0
2.480	2.340	2±1	3	1.995	0.628	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	4.716	4±1	5	3.162	0.980	3.0
2.442	6.285	6±1	7	5.012	1.566	3.0
2.480	4.224	4±1	5	3.162	0.996	3.0

So standalone SAR measurements are not required.

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