

RF Exposure Evaluation

FCC ID:2A4QB-ESEP020

1. Client Information

Applicant	:	Earshots Limited
Address	:	PO Box 95, Cromwell 9342, New Zealand
Manufacturer	:	Huizhou CCA Industrial Co., LTD
Address	:	Section B, 2nd Floor, Section B1, 1st Floor, Section A, 1st-4th Floor, Building A, No. 122, Hongchuan Avenue North, Tongqiao , Zhongkai state, Huizhou city, Guangdong , China

2. General Description of EUT

EUT Name	:	Earshots
Model(s) No.	:	ESEP020
Model Different	:	----
Product Description	Operation Frequency:	Bluetooth 5.2: 2402MHz~2480MHz Bluetooth LE 5.2: 2402MHz~2480MHz
	Number of Channel:	Bluetooth 5.2: 79 channels Bluetooth LE 5.2: 40 channels
	Antenna Gain:	-1dBi PIFA Antenna
	Modulation Type:	GFSK, Pi/4-DQPSK, 8-DPSK
	Bit Rate of Transmitter:	Bluetooth :1/2/3Mbps Bluetooth LE:1/2Mbps
Power Supply (Earphone)	Input: Output DC 5V DC 3.7V by 50mAh Li-ion battery	
Power Supply (Charger Box)	Input: Output DC 5V DC 3.7V by 1500mAh Li-ion battery	
Software Version	:	284
Hardware Version	:	D
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.

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)] * $\sqrt{f_{\text{GHz}}}$] ≤ 3.0 for 1-g SAR

- [(max. power of channel, including tune-up tolerance, mW)/(min. test separation, mm)] * $\sqrt{f_{\text{GHz}}}$] $\leq 7.5.0$ 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	7.371	7±1	8	6.310	1.956	3.0
2.441	6.522	6±1	7	5.012	1.566	3.0
2.480	7.192	7±1	8	6.310	1.987	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	7.113	7±1	8	6.310	1.956	3.0
2.441	7.145	7±1	8	6.310	1.972	3.0
2.480	7.264	7±1	8	6.310	1.987	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	7.493	7±1	8	6.310	1.956	3.0
2.441	7.590	7±1	8	6.310	1.972	3.0
2.480	7.740	7±1	8	6.310	1.987	3.0
Bluetooth LE Mode(1Mbps)						
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	7.434	7±1	8	6.310	1.956	3.0
2.442	7.195	7±1	8	6.310	1.972	3.0
2.480	7.100	7±1	8	6.310	1.987	3.0
Bluetooth LEMode(2Mbps)						
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	7.519	7±1	8	6.310	1.956	3.0
2.442	7.195	7±1	8	6.310	1.972	3.0
2.480	7.126	7±1	8	6.310	1.987	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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