

RF Exposure Evaluation

FCC ID: 2AMWY-W20

1. Client Information

Applicant	:	Shenzhen PINCUN digital technology Co., LTD.
Address	:	5C038, Exchange Square, 2 South China City, Pinghu Street, Longgang District, Shenzhen, Guangdong, China. 518111
Manufacturer	:	Shenzhen Pinyu Electronics Co., Ltd.
Address	:	No. 169, Xinmu Road, Xinmu Villiage, Pinghu Street, Longgang Dist., Shenzhen, Guangdong, China

2. General Description of EUT

EUT Name	:	True Wireless Stereo Earphones (W20)	
Models No.	:	W20, W16, W16B, HI CAT, W19, W19B, W11, W12, W13, X5, X7, ANC-03, ANC-05, HERO, W20 PRO	
Model Difference	:	All these models are identical in the same PCB, layout and electrical circuit, The only difference is Appearance. therefore, testing was performed with W20 only.	
Product Description	:	Operation Frequency:	Bluetooth V5.0(BT): 2402~2480 MHz
		Antenna Gain:	-0.58dBi Ceramic Antenna
Power Rating	:	Input: DC 5V DC 3.7V 40mAh by Li-ion battery	
Software Version	:	V0.6.3	
Hardware Version	:	V1.3	
Connecting I/O Port(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.

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:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}] \leq 3.0 \text{ for 1-g SAR}$$
$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}] \leq 7.5.0 \text{ for 10-g SAR}$$

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	-6.298	-6±1	-5	0.316	0.098	3.0
2.441	-6.229	-6±1	-5	0.316	0.099	3.0
2.480	-6.382	-6±1	-5	0.316	0.100	3.0

Bluetooth 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	-7.867	-7±1	-6	0.251	0.078	3.0
2.441	-7.840	-7±1	-6	0.251	0.078	3.0
2.480	-5.354	-5±1	-4	0.398	0.125	3.0

So the worst RF Exposure Evaluation is calculated as *0.125 < 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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