

RF Exposure Evaluation

FCC ID: 2A22D-XT-18

1. Client Information

Applicant	:	Shenzhen Xizhe Technology Co., Ltd.
Address	:	5th Floor, Building A1, Anle Industrial Park, No.172, Hangcheng Avenue, Bao'an District, Shenzhen, China
Manufacturer	:	Shenzhen Xizhe Technology Co., Ltd.
Address	:	5th Floor, Building A1, Anle Industrial Park, No.172, Hangcheng Avenue, Bao'an District, Shenzhen, China

2. General Description of EUT

EUT Name	:	True Wireless Earphone	
Model(s) No.	:	XT-18, XT-16, XT-8, XT-5, XT-3	
Model Different	:	All PCB boards and circuit diagrams are the same, the only difference is that colors and names are different.	
Product Description	Operation Frequency:	Bluetooth V5.0(BT): 2402~2480 MHz	
	Number of Channel:	Bluetooth: 79 Channels	
	Max Peak Output Power:	Bluetooth: 6.410 dBm(8-DQPSK)	
	Antenna Gain:	0.8 dBi Caremic Antenna	
	Modulation Type:	GFSK(1Mbps) π/4-DQPSK(2Mbps) 8-DPSK(3Mbps)	
Power Supply (Earphone)	:	Input: Output DC 5V DC 3.7V by 45mAh Li-ion battery	
Power Supply (Charger Box)	:	Input: Output DC 5V DC 3.7V by 300mAh Li-ion battery	
Software Version	:	V003	
Hardware Version	:	V1.1	
Remark: The antenna gain and adapter provided by the applicant, the adapter and 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	5.391	5±1	6	3.981	1.234	3.0
2.441	4.508	4±1	5	3.162	0.988	3.0
2.480	5.785	5±1	6	3.981	1.254	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	5.905	5±1	6	3.981	1.234	3.0
2.441	5.103	5±1	6	3.981	1.244	3.0
2.480	6.298	6±1	7	5.012	1.579	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	6.410	6±1	7	5.012	1.554	3.0
2.441	5.568	5±1	6	3.981	1.244	3.0
2.480	4.347	4±1	5	3.162	0.996	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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