

RF Exposure Evaluation

FCC ID: 2AKI8-20526

1. Client Information

Applicant	:	TOPWAY EM ENTERPRISE LTD.
Address	:	8F BLOCK B BUILDING 6 BAONENG S & T PARK LONG HUA SHENZHEN GD China
Manufacturer	:	Shenzhen Jia Hua Li Dian Zi You Xian Gong Si
Address	:	NO 101, 201, BUILDING E, NEW INDUSTRIAL ZONE, SHENZHU ROAD, LIUYUE SHENKENG VILLAGE, HENGANG, LONGGANG DISTRICT, SHENZHEN CHINA

2. General Description of EUT

EUT Name	:	Pro True Wireless Earbuds	
Model(s) No.	:	21TW06, 20526	
Model Different	:	All these models are in the same PCB, layout and circuit, the only difference is the model and color.	
Product Description	:	Operation Frequency:	Bluetooth V5.0(BT): 2402~2480 MHz
	:	Number of Channel:	Bluetooth: 79 Channels
	:	Max Peak Output Power:	Bluetooth: -0.252 dBm(π /4-DQPSK)
	:	Antenna Gain:	0.8 dBi Caremic Antenna
	:	Modulation Type:	GFSK π /4-DQPSK 8-DPSK
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 300mAh Li-ion battery	
Software Version	:	v5.0	
Hardware Version	:	v1.0	
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:

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

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

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	-0.324	0±1	1	1.259	0.390	3.0
2.441	-1.196	-1±1	0	1.000	0.312	3.0
2.480	-2.475	-2±1	1	1.259	0.397	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	-0.252	0±1	1	1.259	0.390	3.0
2.441	-1.297	-1±1	0	1.000	0.312	3.0
2.480	-2.229	-2±1	1	1.259	0.397	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	-0.262	0±1	1	1.259	0.390	3.0
2.441	-0.975	0±1	1	1.259	0.393	3.0
2.480	-2.152	-2±1	1	1.259	0.397	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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