

Applicant: Shenzhen Glory Star Technology Industrial Co., Ltd

Product: wireless earphone

Model No.: G101C, Y-TWS31-1, Y-TWS31-2, Y-TWS31-3, G39, G002,

G102, G102A, G35, G36, L04, L17, L18, L14, L15

Trademark: Glory Star

Test Standards: FCC Part 15.249

Test result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.10 & FCC Part 15 Subpart C,

Paragraph 15.249 regulations for the evaluation of

electromagnetic compatibility

Approved By

Terry Tang

Manager

withdrawal at

Dated: February 18, 2025

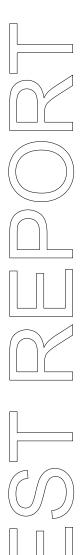
Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to

## SHENZHEN TIMEWAY TESTING LABORATORIES

Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China

Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com



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Date: 2025-02-18



## **Special Statement:**

## FCC-Registration No.: 744189

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 744189.

## Industry Canada (IC) — Registration No.:5205A

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

## **A2LA** (Certification Number:5013.01)

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

CAB identifier: CN0033

Date: 2025-02-18



## Test Report Conclusion Content

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#### 1.0 General Details

#### 1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TESTING LABORATORIES.

Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le

Village, Nanshan District, Shenzhen, China

Telephone: (755) 83448688 Fax: (755) 83442996

Site on File with the Federal Communications Commission – United Sates

Registration Number: 744189 For 3m Anechoic Chamber

## 1.2 Applicant Details

Applicant: Shenzhen Glory Star Technology Industrial Co., Ltd

Address: Room2102, Block 1st, Yi Luan Building, Xixiang Road 230, BaoAn District, Shenzhen, China

### 1.3 Description of EUT

Product: wireless earphone

Manufacturer: Shenzhen Glory Star Technology Industrial Co., Ltd

Address: Room2102, Block 1st, Yi Luan Building, Xixiang Road 230, BaoAn District,

Shenzhen, China

Trademark: Glory Star Model Number: G101C

Additional Model Name Y-TWS31-1, Y-TWS31-2, Y-TWS31-3, G39, G002, G102, G102A, G35, G36,

L04, L17, L18, L14, L15

Rating: DC5V input or Built-in DC3.7V, 40mAh Li-ion battery for earphones and DC5V

input or Built-in DC3.7V, 300mAh Li-ion battery for charger base.

Serial No.: YTWS310001

Hardware Version: V2.0 Software Version: V6.0

Operation Frequency: 2402-2480MHz

Modulation Type: GFSK, 月/4DQPSK, 8DPSK

Number of Channels: 79 Channel Separation: 1MHz

Antenna Designation Chip antenna with gain 1.7dBi maximum (Get from the antenna specification)

#### 1.4 Submitted Sample: 2 Samples

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### 1.5 Test Duration

2025-01-06 to 2025-02-18

#### 1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB

Radiated Emissions below 1GHz Uncertainty =4.7dB

Radiated Emissions above 1GHz Uncertainty =6.0dB

Conducted Power Uncertainty =6.0dB

Occupied Channel Bandwidth Uncertainty = 5%

Conducted Emissions Uncertainty = 3.6dB

Note: The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

1.7 Test Engineer

The sample tested by

Print Name: Andy Xing

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2.0 Test Equipment							
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date		
ESPI Test Receiver	R&S	ESPI 3	100379	2024-07-12	2025-07-11		
LISN	R&S	EZH3-Z5	100294	2024-07-12	2025-07-11		
LISN	R&S	EZH3-Z5	100253	2024-07-12	2025-07-11		
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2024-07-12	2025-07-11		
Loop Antenna	EMCO	6507	00078608	2022-07-18	2025-07-17		
Spectrum	R&S	FSIQ26	100292	2024-07-12	2025-07-11		
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2022-07-18	2025-07-17		
Horn Antenna	R&S	BBHA 9120D	9120D-631	2022-07-18	2025-07-17		
Power meter	Anritsu	ML2487A	6K00003613	2024-07-12	2025-07-11		
Power sensor	Anritsu	MA2491A	32263	2024-07-12	2025-07-11		
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2022-07-18	2025-07-17		
9*6*6 Anechoic			N/A	2022-07-26	2025-07-25		
EMI Test Receiver	RS	ESVB	826156/011	2024-07-12	2025-07-11		
EMI Test Receiver	RS	ESCS 30	834115/006	2024-07-12	2025-07-11		
Spectrum	HP/Agilent	E4407B	MY50441392	2024-07-12	2025-07-11		
Spectrum	RS	FSP	1164.4391.38	2024-07-12	2025-07-11		
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA	1	2024-07-12	2025-07-11		
RF Cable	Zhengdi	7m	1	2024-07-12	2025-07-11		
Pre-Amplifier	Schwarebeck	BBV9743	#218	2024-07-12	2025-07-11		
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2024-07-12	2025-07-11		
LISN	SCHAFFNER	NNB42	00012	2024-07-12	2025-07-11		
ESPI Test Receiver	R&S	ESPI 3	100379	2024-07-12	2025-07-11		
LISN	R&S	EZH3-Z5	100294	2024-07-12	2025-07-11		

## 2.2 Automation Test Software

#### For Conducted Emission Test

Name	Version		
EZ-EMC	Ver.EMC-CON 3A1.1		

## For Radiated Emissions

Name	Version	
EMI Test Software BL410-EV18.91	V18.905	
EMI Test Software BL410-EV18.806 High Frequency	V18.06	

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#### 3.0 Technical Details

## 3.1 Summary of test results

The EU	Γ has been	tested a	according	to the	following	specifications:

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.203	Antenna Requirement	Pass	Complies
FCC Part 15, Paragraph 15.207	Conducted Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(a) & 15.249(b) Limit	Field Strength of Fundamental	Pass	Complies
FCC Part 15, Paragraph 15.209	Radiated Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(d) Limit	Band Edge Test	Pass	Complies
FCC Part 15.215(c)	20dB bandwidth	Pass	Complies

#### 3.2 Test Standards

FCC Part 15 Subpart C, Paragraph 15.249, ANSI C63.4:2014 and ANSI C63.10:2013

#### 4.0 EUT Modification

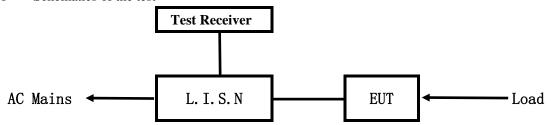
No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

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#### 5.0 Power Line Conducted Emission Test

#### 5.1 Schematics of the test

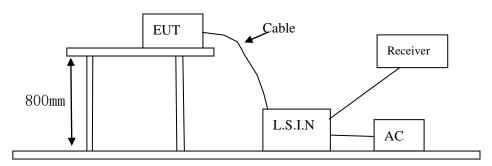


**EUT: Equipment Under Test** 

#### 5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.10-2013. The Frequency spectrum from 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.10-2013.

Test Voltage: 120V~, 60Hz Block diagram of Test setup



## 5.3 Configuration of the EUT

The EUT was configured according to ANSI C63.10-2013. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

79 channels are provided to the EUT

#### A. EUT

Device	Manufacturer	Model	FCC ID
		G101C, Y-TWS31-1,	
	Shenzhen Glory Star	Y-TWS31-2,	
wireless earphone	Technology Industrial Co.,	Y-TWS31-3, G39, G002,	2AS7V-Y-TWS31-1
	Ltd	G102, G102A, G35, G36,	
		L04, L17, L18, L14, L15	

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#### B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

## C. Peripherals

Device	Manufacturer	Model	Rating
Power Supply	Xiaomi	MDY-12-EF	Input: 100-240V~, 50/60Hz, 1.7A;
			Output: DC5V, 3A;
			5-20A; 6.2- 3.25A(67W Max)

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.10-2013

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency	Limits (dB µ V)					
(MHz)	Quasi-peak Level	Average Level				
$0.15 \sim 0.50$	66.0~56.0*	56.0~46.0*				
$0.50 \sim 5.00$	56.0	46.0				
5.00 ~ 30.00	60.0	50.0				

Notes:

- 1. \*Decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

## 5.6 Test Results:

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## A: Conducted Emission on Live Terminal (150kHz to 30MHz)

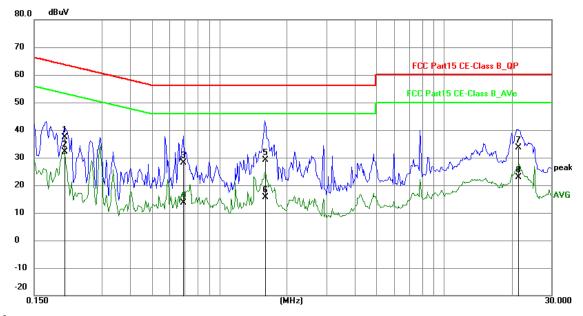
## **EUT Operating Environment**

Temperature: 25°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Charging and Communication by BT** 

**Results: Pass** 

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2046	26.99	10.32	37.31	63.42	-26.11	QP	Р
2	0.2046	21.77	10.32	32.09	53.42	-21.33	AVG	Р
3	0.6920	17.63	10.46	28.09	56.00	-27.91	QP	Р
4	0.6920	3.19	10.46	13.65	46.00	-32.35	AVG	Р
5	1.5969	18.02	10.99	29.01	56.00	-26.99	QP	Р
6	1.5969	4.54	10.99	15.53	46.00	-30.47	AVG	Р
7	21.2676	17.53	16.16	33.69	60.00	-26.31	QP	Р
8	21.2676	6.70	16.16	22.86	50.00	-27.14	AVG	Р

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## B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

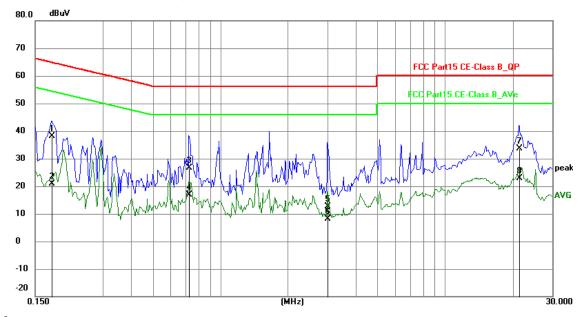
## **EUT Operating Environment**

Temperature: 25°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Charging and Communication by BT

**Results: Pass** 

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1773	27.76	10.33	38.09	64.61	-26.52	QP	Р
2	0.1773	10.66	10.33	20.99	54.61	-33.62	AVG	Р
3	0.7272	16.11	10.46	26.57	56.00	-29.43	QP	Р
4	0.7272	6.46	10.46	16.92	46.00	-29.08	AVG	Р
5	3.0039	1.02	11.68	12.70	56.00	-43.30	QP	Р
6	3.0039	-3.46	11.68	8.22	46.00	-37.78	AVG	Р
7	21.3495	17.54	16.14	33.68	60.00	-26.32	QP	Р
8	21.3495	6.85	16.14	22.99	50.00	-27.01	AVG	Р

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#### **6** Radiated Emission Test

- 6.1 Test Method and test Procedure:
- (1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 9kHz to 25 GHz was investigated. The frequency spectrum is set as follows:

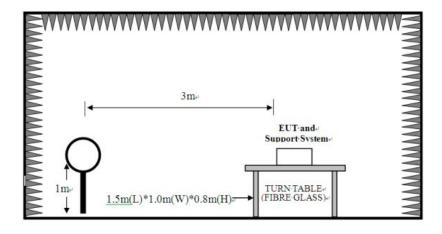
Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
ADOVE IGHZ	Peak	1MHz	10Hz	Average

(Note: for Fundamental frequency radiated emission measurement, RBW=3MHz, VBW=10MHz). Measurements were made at 3 meters.

- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) The antenna polarization: Vertical polarization and Horizontal polarization.

#### **Block diagram of Test setup**

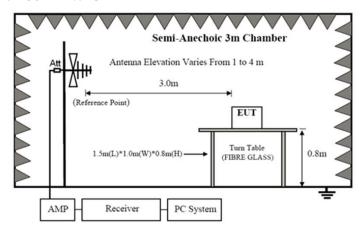
For radiated emissions from 9kHz to 30MHz



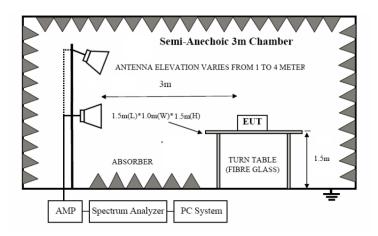
Date: 2025-02-18



For radiated emissions from 30MHz to1GHz



For radiated emissions above 1GHz



- 6.2 Configuration of the EUT
  Same as section 5.3 of this report
- 6.3 EUT Operating Condition

  Same as section 5.4 of this report.
- 6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

## A FCC Part 15 Subpart C Paragraph 15.249(a) Limit

Fundamental Frequency	ndamental Frequency Field Strength of Fundamental (3m)			Field Strength of Harmonics (3m)		
(MHz)	mV/m	dBuV/m	uV/m	dBuV/m		

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2400-2483.5 50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)
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Note:

- 1. RF Field Strength  $(dBuV) = 20 \log RF \text{ Voltage } (uV)$
- 2.Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
- 3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

## B. Frequencies in restricted band are complied to limit on Paragraph 15.209.

Frequency Range (MHz)	Distance (m)	Field strength (dB $\mu$ V/m)
0.009-0.490	3	20log(2400/F(kHz)) +40log (300/3)
0.490-1.705	3	20log(24000/F(kHz)) +40log (30/3)
1.705-30	3	69.5
30-80	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note:

- 1. RF Voltage  $(dBuV) = 20 \log RF \text{ Voltage } (uV)$
- 2. In the Above Table, the tighter limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
- 4. All scanning using PK detector. And the final emission level was get using QP detector for frequency range from 30-1000MHz.As to 1G-25G, the final emission level got using PK. For fundamental measurement, PK detector used.
- 5. The three modulation modes of GFSK, Pi/4D-QPSK and 8DPSK were tested. And only the worst case was recorded in the test report. GFSK was the worst case.
- 6. Battery was fully charged during test

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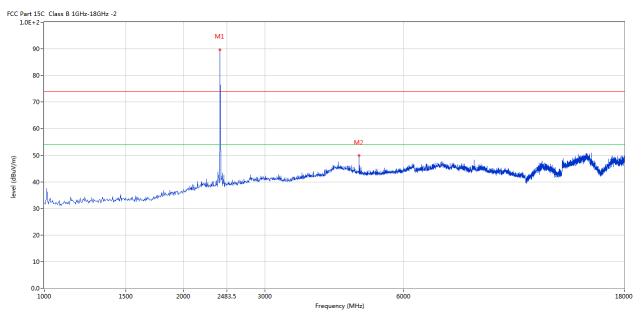


#### 6.5 Test result

## A Fundamental & Harmonics Radiated Emission Data

Please refer to the following test plots for details: Low Channel-2402MHz

#### Horizontal



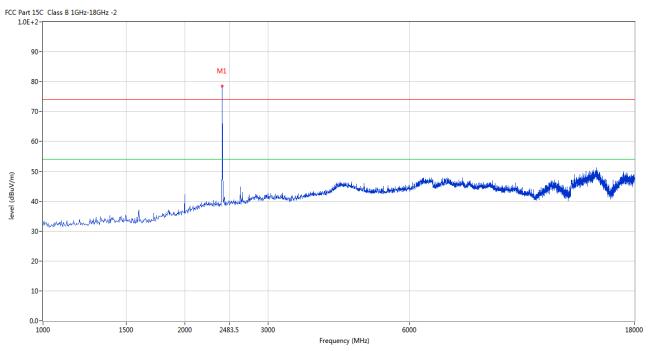
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2402	89.71	-3.57	114.0	-24.29	Peak	261.00	100	Horizontal	Pass
2	4802.799	49.89	3.12	74.0	-24.11	Peak	314.00	100	Horizontal	Pass

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## Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2402	78.53	-3.57	114.0	-35.47	Peak	168.00	100	Vertical	Pass

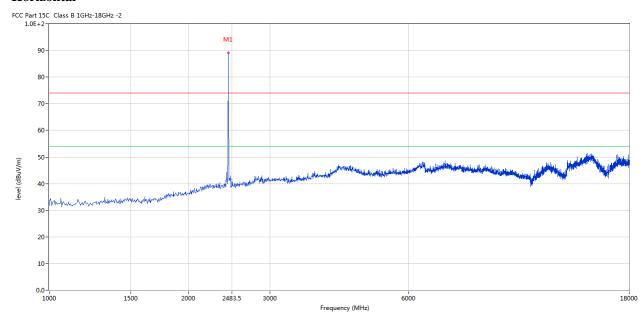
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Please refer to the following test plots for details: Middle Channel-2441MHz

#### **Horizontal**



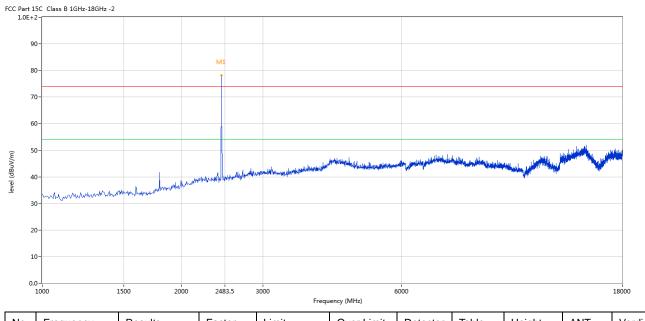
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2441	89.10	-3.57	114.0	-24.90	Peak	259.00	100	Horizontal	Pass

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## Vertical



١	Ю.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1		2441	78.16	-3.57	114.0	-35.84	Peak	185.00	100	Vertical	Pass

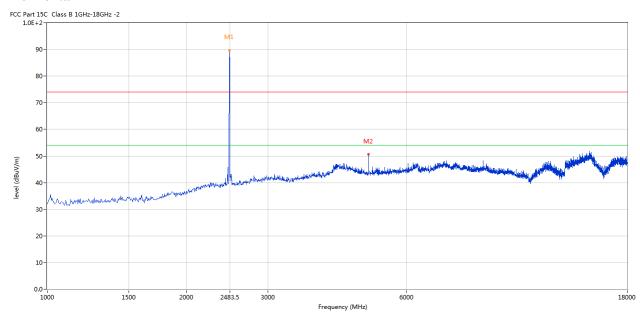
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Please refer to the following test plots for details: High Channel-2480MHz

#### **Horizontal**



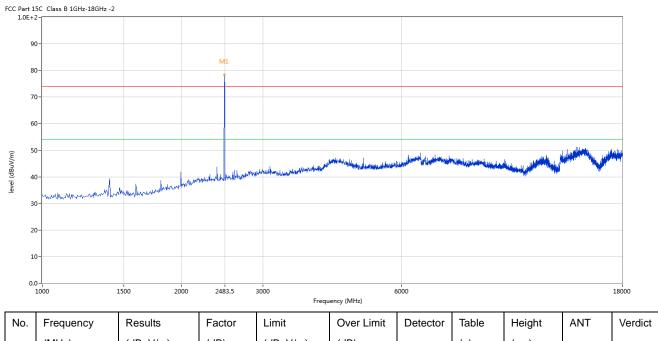
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2480	89.63	-3.57	114.0	-24.37	Peak	235.00	100	Horizontal	Pass
2	4960.010	50.57	3.36	74.0	-23.43	Peak	199.00	100	Horizontal	Pass

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#### Vertical



No	. Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2480	78.38	-3.57	114.0	-35.62	Peak	297.00	100	Vertical	Pass

Note: (1) Emission Level = Reading Level + Antenna Factor + Cable Loss-Amplifier

- (2) Margin=Emission-Limits
- (3) According to section 15.35(b), the peak limit is 20dB higher than the average limit
- (4) For test purpose, keep EUT continuous transmitting
- (5) For emission above 18GHz and Below 30MHz, It is only the floor noise and less than the limit for more than 20dB. No necessary to take down.
- (6) the measured PK value less than the AV limit.

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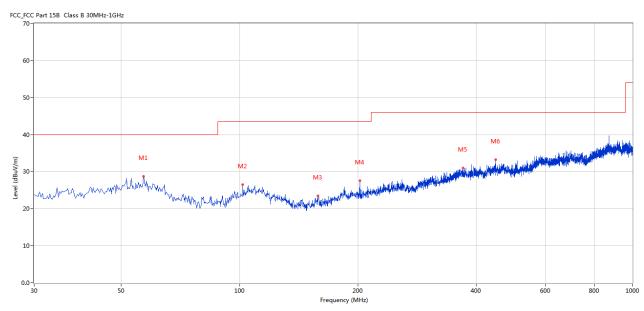


# B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

**Results:** Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Margin	Detector	Table	Height	Antenna	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(Degree)	(cm)		
1	56.911	28.69	-4.97	40.0	11.31	Peak	138.00	100	Horizontal	Pass
2	101.762	26.50	-6.95	43.5	17.00	Peak	233.00	100	Horizontal	Pass
3	158.493	23.43	-9.59	43.5	20.07	Peak	225.00	100	Horizontal	Pass
4	202.374	27.60	-7.16	43.5	15.90	Peak	298.00	100	Horizontal	Pass
5	370.142	30.93	-1.73	46.0	15.07	Peak	252.00	100	Horizontal	Pass
6	448.208	33.21	-0.94	46.0	12.79	Peak	124.00	100	Horizontal	Pass

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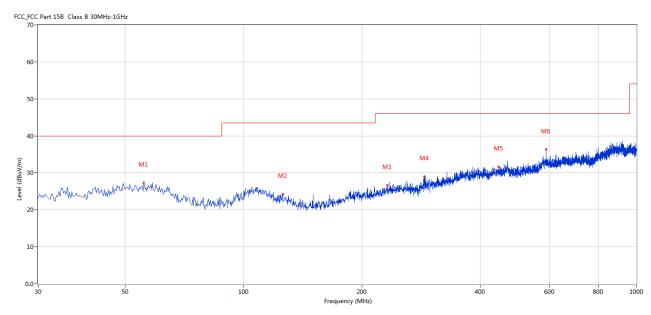


## Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Margin	Detector	Table	Height	Antenna	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(Degree)	(cm)		
1	55.699	27.26	-5.08	40.0	12.74	Peak	135.00	100	Vertical	Pass
2	125.764	24.21	-7.98	43.5	19.29	Peak	224.00	100	Vertical	Pass
3	231.952	26.62	-5.46	46.0	19.38	Peak	181.00	100	Vertical	Pass
4	288.925	29.01	-4.45	46.0	16.99	Peak	132.00	100	Vertical	Pass
5	445.541	31.67	-0.92	46.0	14.33	Peak	77.00	100	Vertical	Pass
6	589.308	36.32	1.83	46.0	9.68	Peak	351.00	100	Vertical	Pass

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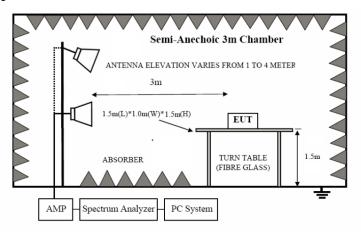


#### 7. Band Edge

#### 7.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.10–2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) Set Spectrum as RBW=1MHz, VBW=3MHz and Peak detector used for PK value. RBW=1MHz, VBW=10Hz and Peak detector used for AV value.
- (3) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (4) The antenna polarization: Vertical polarization and Horizontal polarization.

## 7. 2 Radiated Test Setup



For the actual test configuration, please refer to the related items – Photos of Testing

## 7.3 Configuration of the EUT

Same as section 5.3 of this report

## 7.4 EUT Operating Condition

Same as section 5.4 of this report.

## 7.5 Band Edge Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

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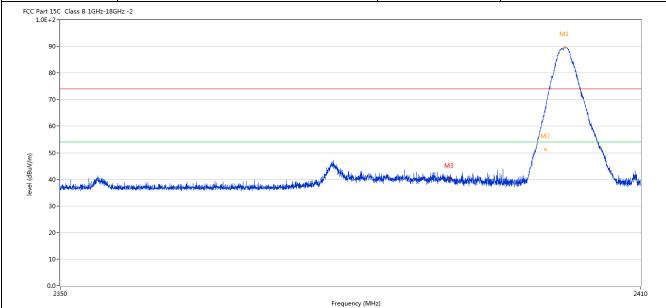
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#### 7.6 Test Result

Product:	wireless earphone	Polarity	Horizontal
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass		



١	No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1		2402.022	89.55	-3.57	74.0	15.55	Peak	259.00	100	Horizontal	N/A
2	2	2400.042	66.40	-3.57	74.0	-7.60	Peak	264.00	100	Horizontal	Pass
2	2**	2400.042	51.31	-3.57	54.0	-2.69	AV	264.00	100	Horizontal	Pass
3	3	2390.070	40.21	-3.53	74.0	-33.79	Peak	133.00	100	Horizontal	Pass

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J	Product:		wireless e	arphone		Detect	tor		Vertical	
	Mode	I	Keeping Tra	ansmitting		Test Vol	tage		DC3.7V	
Te	mperature		24 de	g. C,		Humid	ity	:	56% RH	
Te	est Result:		Pas	SS						
CC Par 1.0E	t 15C Class B 1GHz-18GF E+2-	łz -2								
	70-					M1				
3uV/m)	the hit profit with the management and prilled to be delicated by the model to a specifically related to the model to be a second of the model			M <del>3</del> M4	li. ku.	M2				
level (dBuV/m)	40- 30- 20-	manuncaana pro-ganida publisii da da	kabudendent dervendent di	ci solgtik develede i sollerine tek helde der	Marken sentindis med antonis medical			Marian P	<b>\</b>	ets studies solved b
	30 - 20 -	manuncasan pro-partido publicir da Lui	dababan dababan dababa	is solgili develop i sollerine del heir dev	Frequency (MHz)	olithic gallery pla		Militain	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	2410
	30- 20- 10- 0.0- 2350	Results	Factor	Limit	Frequency (MHz)  Over Limit	Detector	Table (o)	Height	ANT	2410
No.	30 - 20 - 10 - 2350				Frequency (MHz)		Table (o) 167.00	Height (cm)		241
No.	20- 10- 2350 Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Frequency (MHz)  Over Limit (dB)	Detector	(o)	(cm)	ANT	verdid
No.	20- 10- 2350 Frequency (MHz) 2402.097	Results (dBuV/m) 78.44	Factor (dB) -3.57	Limit (dBuV/m) 74.0	Frequency (MHz)  Over Limit (dB)  4.44	Detector Peak	(o) 167.00	(cm)	ANT Vertical	Verdid
No.	20- 10- 2350 Frequency (MHz) 2402.097 2400.027	Results (dBuV/m) 78.44 55.94	Factor (dB) -3.57	Limit (dBuV/m) 74.0 74.0	Over Limit (dB) 4.44 -18.06	Detector Peak Peak	(o) 167.00 167.00	(cm) 100 100	ANT  Vertical  Vertical	Verdid N/A Pass
	Frequency (MHz) 2402.097 2400.027	Results (dBuV/m) 78.44 55.94 40.93	Factor (dB) -3.57 -3.57	Limit (dBuV/m) 74.0 74.0 54.0	Over Limit (dB) 4.44 -18.06 -13.07	Detector Peak Peak AV	(o) 167.00 167.00 167.00	(cm) 100 100 100	ANT  Vertical  Vertical  Vertical	Verdid  N/A  Pass  Pass

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]	Product:		wireless	s earphone		P	olarity		Horizont	al
	Mode		Keeping 7			Test	t Voltage		DC3.7V	7
Te	mperature		24 (	leg. C,		Н	ımidity		56% RF	I
Te	est Result:		F	Pass						
2 Part 1 1.0E+	15C Class B 1GHz-18GHz 2-	:-2								
9	0-		M1							
Q	0-									
			_/_							
7	0-									
6	0-									
5	0-				1					
	Intelligent Landson Control	J		M2	May .					
4	O - Marin Anni Bullindian in Anna Aire	parage a shrink of the state of		•	- Anti-Anti-Anti-Anti-Anti-Anti-Anti-Anti-		which the example	Parket of the parket in the parket	halippa and the first of the second	A A CONTRACTOR OF THE PARTY OF
3	137	someodic and district lift of and and the services			- In the second second		a destablishment of the second points	pagagat ya maga titli maga titli	hite, gaptir dikana yelali daharik ini bir di sapi	
3	0-	ngangkan katan dipilak di dipilak di			- Angelong Stephel		and the large of the angelower		kityyystät tiilissä <sub>ki</sub> elikistaalikeen oh <sub>e</sub> esyy	N. A. WALLEY, M.
2	0-	introduced plane the principle of the second			- Alighten lightha		a dia di dia periore di Antonio d	en derek eren eren eren eren eren eren eren	hity, yakir ilil and yakih kindik yakir anda sapa	
3 2 1	0-	network of the second of the s			multiplitan likelikk	ngilandugan ara gilan mel	a dia di didina per per negalebe	en der de versej tille versej til	hityyysia Pilan y Allahadi ede ee ee ee ee	Haylan are 1994
3 2 1 0.	0-	and the second s		2483		naklesi ganeri adan nel	a de de de la constante de la	nadandi kanglidha selek	hityyysia Pilan y Allahandi ede ee ee ee ee	2500
3 2 1 0.	0	Results	Factor	2483.	5	Detector	Table	Height	ANT	2500
3 2 1 0.	0		Factor (dB)	Т	5 Frequency (MHz)					2500
3 2 1 0.	0- 0- 0- 0- 2470 Frequency	Results		Limit	5 Frequency (MHz)		Table	Height		
3 2 1 0.	o- 0- 0- 0- 0- 0- 0- 0- 0- 0- 0- 0- 0- 0-	Results (dBuV/m)	(dB)	Limit (dBuV/m)	5 Frequency (MHz) Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	2500 Verd

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	Pro	oduct:		wireless e	earphone		Detec	tor		Vertical	
	M	Iode	]	Keeping Tr	ansmitting		Test Vo	ltage		DC3.7V	
Те	mp	perature		24 de	g. C,		Humio	dity		56% RH	
Te	est i	Result:		Pa	SS						
	rt 15C E+2-r	C Class B 1GHz-18GH	lz -2			•			•		
	90-										
	80-			استهم	M1						
	70-				1						
	60-			/_	_\						
					N.						
				_/	W.						
n//m)	50-				M <sub>M</sub> 2						
evel (dBuV/m)		phone de la villa produce de la constantidad de la	<del>adrijos dajsiji klasso kida d</del> i se bejebe		M/M2	When the showing to be a factor	aderoal had a part before high			op held stage of the left for	and the latest and
level (dBuV/m)		بايستام ي بالم، دونون الانصار به را الأفارة	معادي مطيئية المقادمة المقادمة المعادمة المعادمة المعادمة المعادمة المعادمة المعادمة المعادمة المعادمة المعادمة		M <sup>2</sup>	······································	addienado hasi <mark>an parighesta e di</mark> Al	de de la companya de	ego-pada a la	ya ka di katika terpisa di katika den	de la companya de la
level (dBuV/m)	40-	open des after speed some or a bigle	andreg sendaging bilder an beken distribution bester		M <sup>2</sup>	Manish shirawayalah ka palashisa	adical his aspect for a distri	bolonisti ashlan dan bili	gantida di kalika	and the state of t	ligi, a yelina dirak
level (dBuV/m)	40- 30- 20-	الماعة المائة	mire, nden filosofiis den inchr		MA M2	سمير المرابعة	adicani in inga pagingan di jih	de high a shinn da high	rancisia di Nasaria	والمرابط المراجع والمتعادل المطوم	ing any disease of
level (dBuV/m)	40- 30-	Handan, other hipsall stranger of the file	mbrey nedgosi bidda a tobid a de a chenhar		M <sup>2</sup>	Manadhashkan ayada kaya ayabka a	<del>ak</del> maksila saksi osidi		and the second	and the survey of the survey o	he a selection
level (dBuV/m)	40- 30- 20- 10-	Apart App of the september of the State of t	mbrey nedgoje bilana biska dena kondur		2483.	5	مادر معاددها و م	de Nesember	oran midrael & allian	ng hajda siaka na Majdhainja dha	2500
	40- 30- 20- 10- 0.0- 24	Handan Herrich Hande Stage et al. Handan Han		I same	1	5 Frequency (MHz)					2500
	40- 30- 20- 10- 0.0- 24	470	Results	Factor	Limit	5 Frequency (MHz)	Detector	Table	Height	ANT	2500
No.	40- 30- 20- 10- 0.0- 24	Frequency MHz)	Results (dBuV/m)	(dB)	Limit (dBuV/m)	5 Frequency (MHz) Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	2500 Verdic
(ш/\ngp)   No .	40- 30- 20- 10- 0.0- 24	470	Results		Limit	5 Frequency (MHz)		Table	Height		

Note: 1. The PK emission level less than the AV limit. No necessary to record the AV emission level.

2. The three modulation modes of GFSK, Pi/4D-QPSK and 8DPSK were tested. And only the worst case was recorded in the test report. GFSK was the worst case.

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## 8.0 Antenna Requirement

### **Applicable Standard**

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

This product has a Chip antenna with gain 1.7dBi maximum. It fulfills the requirement of this section.

Test Result: Pass

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#### 9.0 20dB Bandwidth Measurement

## **Test Configuration**



#### **Test Procedure**

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW.

The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

#### Limit

N/A

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#### **Test Result**

Product:	wireless earphor	ne	Test Mode:	Keep transmitting	
Mode	Keeping Transmit	ting	Test Voltage	DC3.7V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	PK	
0dB Bandwidth	978kHz				
Ref 10 di	Bm *Att 20 de	*RBW 30 *VBW 10	0 kHz ms 97	1 [T1 ] -0.73 dB 8.000000000 kHz	
10			Marke	r 1 [T1 ] -19,92 dBm	
_0		2		2.401532000 GHz A	
PK		$M_{\Lambda}$	Marke		
10				-0.65 dBm 2.401868888 GHz	
	1 1	\ \frac{\frac{1}{2}}{2}			
20 <u>-</u> 1	-20.65 dBm		- L		
30			M		
40	Mal			3DB	
-50	<i>I</i>			harm	
who				The state of the s	
60					
70					
9.0					
80					
-90					
Center 2.	402 GHz	300 kHz/	•	Span 3 MHz	

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Date: 13.FEB.2025 14:12:05

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Product:	W	vireless ea	rphone		Test	Mode:		Keep trans	smitting
Mode	Kee	eping Tra	nsmitting		Test	Voltage		DC3.	7V
Temperature		24 deg	. C,		Huı	nidity		56%	RH
Test Result:		Pass			De	tector		PK	-
0dB Bandwidth		984kI	Hz						
Ref 10 di	3m	*Att 2	0 dB	*RBW 30 *VBW 10 SWT 5	00 kHz	984	.000000	.19 dB 000 kHz	
10						Marker		.56 dBm	
_0			2			2	l	l l.	A
PK			/h	$\Lambda_{\Lambda}$		Marker	2 [T1		
10				4		2	-0	.58 dBm	
-20 <u>D1</u>	-20 58 dBm	1 <b>X</b> A	JV	1	1 ا				
30	20100 4211.					L,			
	<i></i>					Ardy.			
40	1					\ <u></u>	M	:	BDB
-50	<i>-</i>						<del>\</del>		
wat can							`	Mark	
60									
70									
80									
-90									
Center 2.	441 GHz	1	300	kHz/			Spa	n 3 MHz	

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Span 3 MHz

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Product:	W	ireless earphor	ne	Test	Mode:		Keep tran	smitting
Mode	Kee	ping Transmit	ting	Test '	Voltage		DC3	.7V
Temperature		24 deg. C,			Humidity		56% RH	
Test Result:		Pass				PK		K
OdB Bandwidth		984kHz						-
			*RBW 30	) kHz	Delta	1 [T1 ]		
<b>75</b> /			*VBW 10				.29 dB	
Ref 10 dB	m	Att 20 dB	SWT 5	ms		.000000	000 kHz	
10					Marker			
		2	2			-19	.68 dBm	A
-0			1-1-		Marker		000 GHZ	
PK			$\sim$		11011101		.57 dBm	
-10		N	-		- 2	<del>. 479868</del>	000 GHz	
		1	1	1				
-20 <u>-1</u>	-20.57 dBm_	NA -		<u>~</u>				
		$ f ^{2}$		1.				
30		√'		•	<u> </u>			
	لسمر				<u> </u>			
					7			
-40	7.				1	A-C		
	1 4				<b> </b> ∨	<b>f</b> \		3DB
-50	<i>r</i>					<del>\</del>		
~~~						\ \ \	www	
60							_ ,	
70								

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Center 2.48 GHz

300 kHz/

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Product:	wireless ear	phone	Test Mode:	Keep transmitting	
Mode	Keeping Trans	smitting	Test Voltage	DC3.7V	
Temperature	24 deg.	C,	Humidity	56% RH	
Test Result:	Pass		Detector	PK	
20dB Bandwidth	1.236MI	Hz			
Ref 10 d	Bm *Att 20	* RBW 30 * VBW 10 * O dB SWT 5	ms ndB [	-0.74 dBm 2.401868000 GHz T1] 20.00 dB 1.2360000000 MHz	
		~~~	Temp	1 [T1 nd8] A -20.29 dBm 2.401394000 GHz 2 [T1 nd8] -20.75 dBm	
20	11-		F2	2.402630000 GHz	
-40			<u></u>	3DB	
60					
70 80					
-90					
Center 2.	402 GHz	300 kHz/	•	Span 3 MHz	

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Product:	W	ireless earpl	none		Test	Mode:		Keep trai	nsmitting
Mode	Kee	eping Transn	nitting		Test	Voltage		DC3	3.7V
Temperature		24 deg. C.	,		Hur	nidity		56%	RH
Test Result:		Pass			Det	tector		P	K
20dB Bandwidth		1.236MHz	Z					-	-
Ref 10 di	Bm	*Att 20 (	dB	*RBW 30 *VBW 10 SWT 5	00 kHz		1 [T1 -0	.57 dBm	
10						ndB [T BW 1	1] 20 .236000	.00 dB	
_0			1			Temp 1	[T1 nd]		A
L PK			$\left\langle \right\rangle$		۸.	2	-20 .440394	.59 dBm	
10				***	M	Temp 2 T2 2	-20	.95 dBm	•
20						* Z	.441630	JUU GHZ	
30	<i> </i>								
	<i>-</i>					L.,			
-40	V-V-					1.	$\mathcal{M}$	My A	3DB
50								7	
60									
70									
70									
80									
-90									
Center 2.	441 GHz	· · ·	300	kHz/		•	Spa	n 3 MHz	•

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Product:	wireless	earphone	Test Mode:	Keep transmitting	
Mode	Keeping T	ransmitting	Test Voltage	DC3.7V	
Temperature	24 de	eg. C,	Humidity	56% RH	
Test Result:	Pa	ass	Detector	PK	
0dB Bandwidth	1.278	BMHz			
Ref 10 dF	3m *Att	* VBW	ndB [T]	-0.60 dBm 479868000 GHz ] 20 00 dB 278000000 MHz [T1 ndB] A	
<b>PK AXH</b> 10	71	1	Temp 2	-20.44 dBm 479400000 GHz <del>[T1 ndb]</del> -20.71 dBm 480678000 GHz	
30					
-40 -50	VW			3рв	
60					
70					
-90					
Center 2.4	48 GHz	300 kHz/		Span 3 MHz	

The report refers only to the sample tested and does not apply to the bulk.

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Report No.: TWN2501655E

Date: 2025-02-18



Product:	wireless earp	hone	Test Mode:	Keep transmitting	
Mode	Keeping Trans	mitting	Test Voltage	DC3.7V	
Temperature	24 deg. (	7,	Humidity	56% RH	
Test Result:	Pass		Detector	PK	
20dB Bandwidth	1.236MH	[z			
Ref 10 dE  10  -0  -10  -20	3m *Att 20	* VBW	100 kHz 5 ms 2  ndB [1 BW 1 Temp 1	-1 [T1] -1.34 dBm 2.401868000 GHz  2.1 [T1	
30 40 50			ty	3DB	
<b>-</b> -70					
80 90					
Center 2.4	102 GHz	300 kHz/		Span 3 MHz	

The report refers only to the sample tested and does not apply to the bulk.

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Product:	wii	Test Mode:		Keep transmitting					
Mode	Keeping Transmitting				Test Voltage		DC3.7V		
Temperature	emperature 24 deg. C,					56% RH			
Test Result:		Detector		PK					
OdB Bandwidth		1.230MHz							
Ref 10 dl	∃m *	Att 20 de	*RBW 3 *VBW 1 SWT 5	00 kHz		.440868	.35 dBm		
			1			.230000			
-0 -10			Manage	An.	7emp 1 2	-21 .440394	.32 dBm		
20	7:		•	\	<b>T</b> 2 2	-21 .441624	.01 dBm )00 GHz		
30									
					L.				
40					<u> </u>	who	3DB		
							- VV		
60									
70									
80									
-90									
Center 2.	441 GHz		300 kHz/			Spa	n 3 MHz		

The report refers only to the sample tested and does not apply to the bulk.

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Report No.: TWN2501655E

Date: 2025-02-18



Product:	wireless earphone				Test Mode:		Keep transmitting			
Mode Keeping Transmitting					Test Voltage		DC3.7V			
Temperature 24 deg. C,					Humidity		56% RH			
Test Result:	Result: Pass				Detector			PK		
20dB Bandwidth		1.230MHz								
Ref 10 di	Зm	*Att 20 c	iB	*RBW 30 *VBW 10 SWT 5	0 kHz	ndB [T	.479868 1] 20 .230000	.60 dBm 000 GHz .00 dB		
-0 MAXH10		M/	$\overline{\mathcal{M}}$	1_	<u> </u>	Temp 1	.479400	.63 dBm	A	
20		13				r2 2	-21 .480630			
30						7				
-40 5g	N. N.						3	^_	3DB	
<b>60</b>								24		
70										
<b>-</b> -80										
Center 2.	48 GHz		300 1	kHz/				n 3 MHz		

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## 10.0 FCC ID Label

## **FCC ID: 2AS7V-Y-TWS31-1**

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

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# **11.0** Photo of testing

## 11.1 Conducted test View



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## Radiated emission test view



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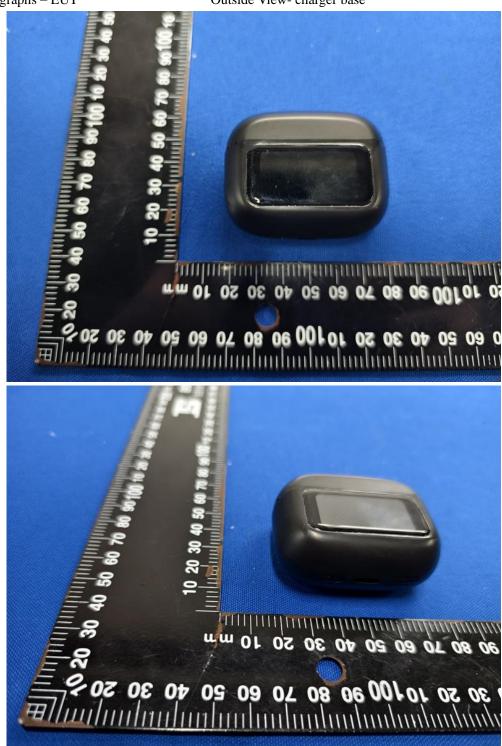
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## 11.2 Photographs – EUT

## Outside View- charger base



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Outside View - charger base



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Outside View - charger base



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Outside View - charger base



Date: 2025-02-18



Inside View - charger base



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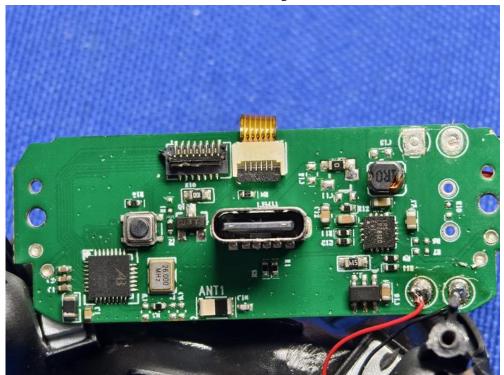
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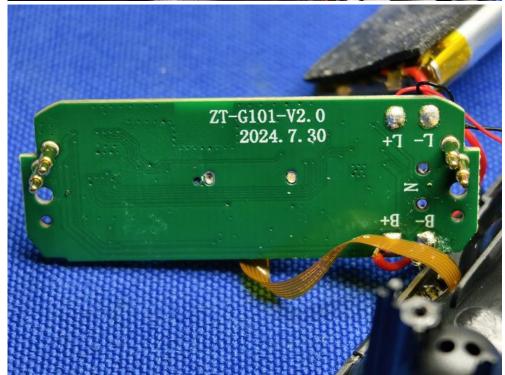
Report No.: TWN2501655E

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Inside View - charger base





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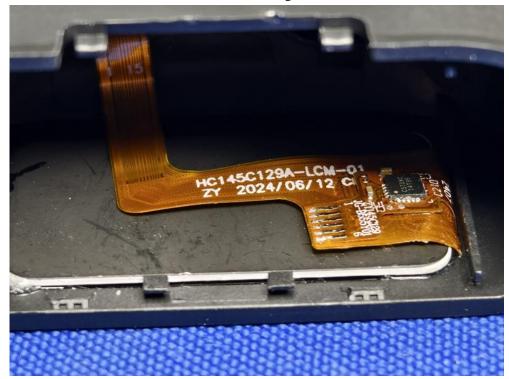
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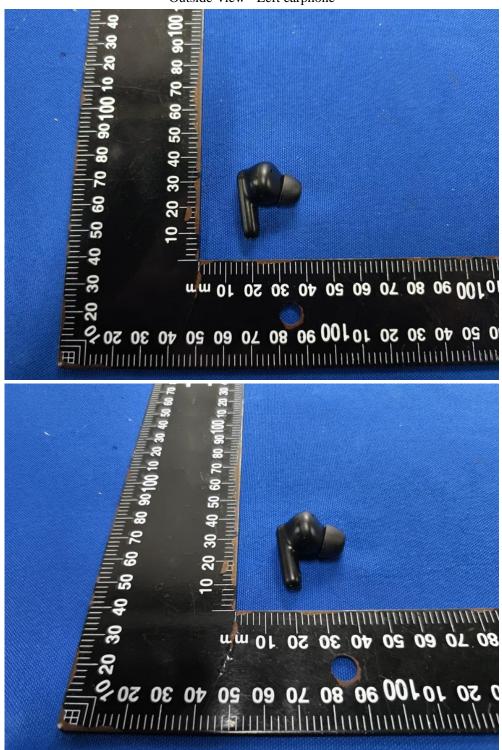
Inside View - charger base



Date: 2025-02-18



Outside View - Left earphone



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Outside View - Left earphone



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Outside View - Left earphone



Date: 2025-02-18







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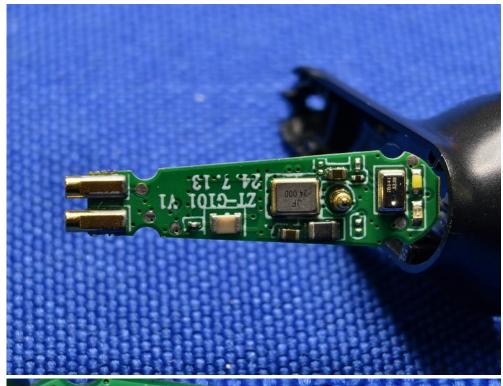
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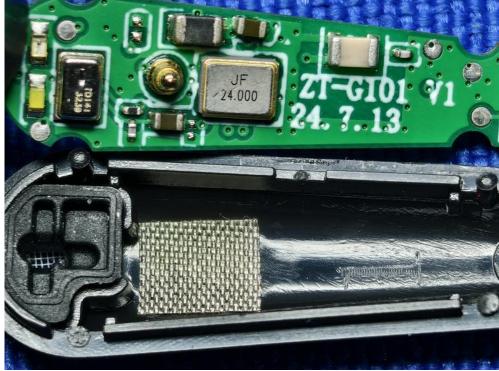
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Date: 2025-02-18



Inside View - Left earphone





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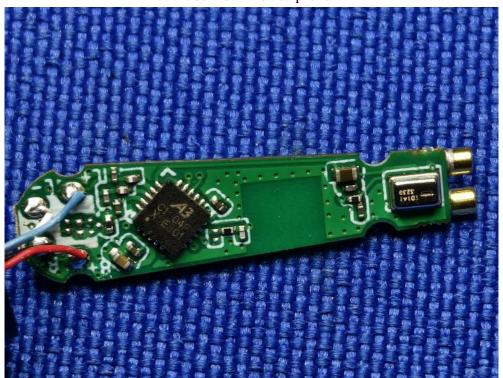
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Inside View - Left earphone



Date: 2025-02-18



Outside View - Right earphone



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Outside View - Right earphone



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Outside View - Right earphone

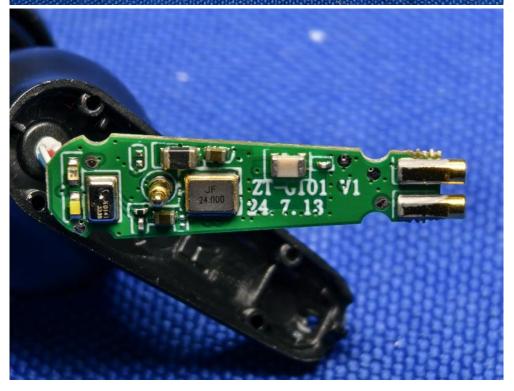


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Inside View - Right earphone





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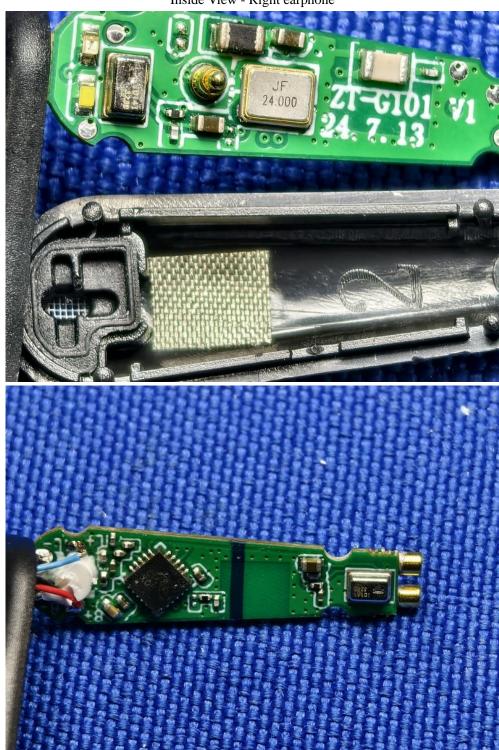
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Inside View - Right earphone



-- End of the report--

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