



Report No.: TW2011057E File reference No.: 2020-11-19

Applicant: LEADER PREMIUMS LTD.

Product: TWS Bluetooth Wireless Earbuds

Model No.: AF0056

Brand Name: N/A

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



Dated: November 19, 2020

Results appearing herein relate only to the sample tested The technical reports is issued errors and omissions exempt and is subject to withdrawal at

# 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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# **Special Statement:**

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

## **CNAS-LAB Code: L2292**

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

# 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

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# Test Report Conclusion

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

11.0

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Photo of Test Setup and EUT View.

In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES, reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

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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: LEADER PREMIUMS LTD.

Address: Add:9/F., Hengfu Mansion, NO.858. Fuming Road, Ningbo, China

Telephone: -Fax: --

## 1.3 Description of EUT

Product: TWS Bluetooth Wireless Earbuds
Manufacturer: LEADER PREMIUMS LTD.

Address: Add:9/F., Hengfu Mansion, NO.858. Fuming Road, Ningbo, China

Brand Name: N/A
Model Number: AF0056
Additional Model Name N/A

Rating: DC5V or Built-in DC 3.7V,35mAh Li-ion battery

Modulation Type: GFSK, Pi/4D-QPSK, 8DPSK (Bluetooth)

Operation Frequency: 2402-2480MHz

Channel Separate: 1MHz
Channel Number: 79

Antenna Designation Chip antenna with gain 2.58dBi Max (Get from the specification provided by

the applicant)

## 1.4 Submitted Sample: 1 Sample

#### 1.5 Test Duration

2020-11-03 to 2020-11-19

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## 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



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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	2020-06-23	2021-06-22
LISN	R&S	EZH3-Z5	100294	2020-06-23	2021-06-22
LISN	R&S	EZH3-Z5	100253	2020-06-23	2021-06-22
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2020-06-23	2021-06-22
Loop Antenna	EMCO	6507	00078608	2018-06-25	2021-06-24
Spectrum	R&S	FSIQ26	100292	2020-06-23	2021-06-22
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2020-06-23	2021-06-22
Horn Antenna	R&S	BBHA 9120D	9120D-631	2018-07-09	2021-07-08
Power meter	Anritsu	ML2487A	6K00003613	2020-06-23	2021-06-22
Power sensor	Anritsu	MA2491A	32263	2020-06-23	2021-06-22
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2018-07-04	2021-07-03
9*6*6 Anechoic			N/A	2018-02-07	2021-02-06
EMI Test Receiver	RS	ESVB	826156/011	2020-06-23	2021-06-22
EMI Test Receiver	RS	ESH3	860904/006	2020-06-23	2021-06-22
Spectrum	HP/Agilent	ESA-L1500A	US37451154	2020-06-23	2021-06-22
Spectrum	HP/Agilent	E4407B	MY50441392	2020-06-23	2021-06-22
Spectrum	RS	FSP	1164.4391.38	2020-01-16	2021-01-15
RF Cable	7hanadi	ZT26-NJ-NJ-8		2020-06-23	2021-06-22
Kr Cable	Zhengdi	M/FA		2020-06-23	2021-06-22
RF Cable	Zhengdi	7m	-	2020-06-23	2021-06-22
RF Switch	EM	EMSW18	060391	2020-06-23	2021-06-22
Pre-Amplifier	Schwarebeck	BBV9743	#218	2020-06-23	2021-06-22
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2020-06-23	2021-06-22
LISN	SCHAFFNER	NNB42	00012	2020-01-07	2021-01-06

# 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 EUT has been tested according to the following specifications:

Standard	Test Type	Result	Notes
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 and RSS-210	Radiated Emission Test	PASS	Complies
FCC Part 15 Subpart C Paragraph 15.249(d) Limit	Band Edge Test	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

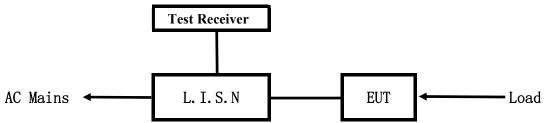
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#### 5. Power Line Conducted Emission Test

## 5.1 Schematics of the test

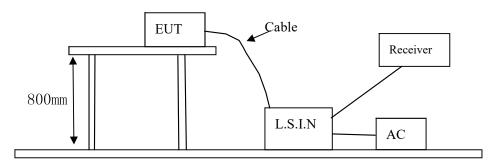


EUT: Equipment Under Test

## 5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2014. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4-2014. AC 120V 60Hz Test voltage.

## Block diagram of Test setup



## 5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2014. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

One channels are provided to the EUT

## A. EUT

Device	Manufacturer	Model	FCC ID	
TWS Bluetooth Wireless	LEADER PREMIUMS LTD.	AF0056	2APYY-AF0056	
Earbuds	LEADER FREMIUMS LID.	A1'0030	ZAF I I-AF0030	

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#### B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

## C. Peripherals

Device	Manufacturer	Model	Rating
Power Supply	KEYU	KA23-0502000DEU	Input: 100-240V~, 50/60Hz, 0.35A;
			Output: DC5V, 2A

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2014

- 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

Energy on av (MHz)	Class B Lim	nits (dB µ V)
Frequency(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
$5.00 \sim 30.00$	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:

Pass

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

**EUT Operating Environment** 

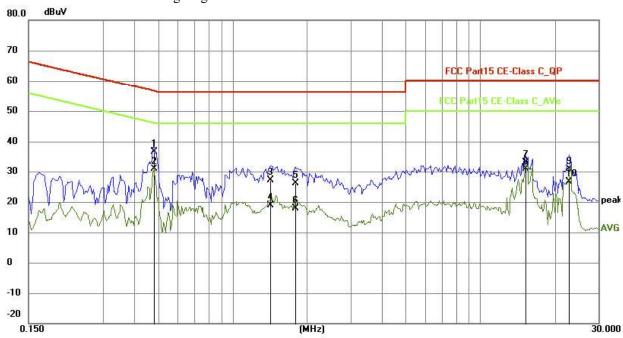
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

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

**Equipment Level: Class B** 

**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	0.4815	26.86	9.77	36.63	56.31	-19.68	QP	Р
2	0.4815	21.02	9.77	30.79	46.31	-15.52	AVG	Р
3	1.4213	17.26	9.79	27.05	56.00	-28.95	QP	Р
4	1.4213	9.00	9.79	18.79	46.00	-27.21	AVG	Р
5	1.7880	16.34	9.80	26.14	56.00	-29.86	QP	Р
6	1.7880	8.09	9.80	17.89	46.00	-28.11	AVG	Р
7	15.2499	22.65	10.39	33.04	60.00	-26.96	QP	Р
8	15.2499	20.55	10.39	30.94	50.00	-19.06	AVG	Р
9	22.8822	19.97	10.86	30.83	60.00	-29.17	QP	Р
10	22.8822	15.69	10.86	26.55	50.00	-23.45	AVG	Р

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

**EUT Operating Environment** 

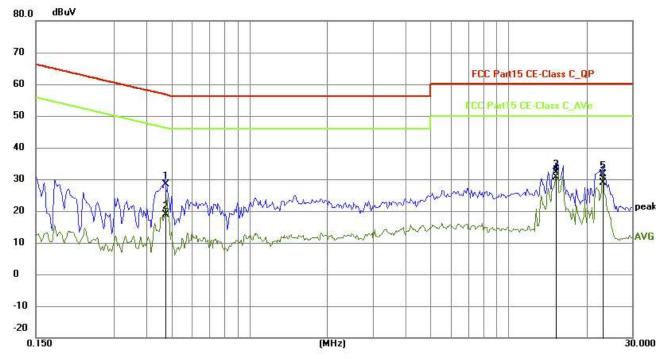
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

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

**Equipment Level: Class B** 

**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	0.4737	18.52	9.77	28.29	56.45	-28.16	QP	Р
2	0.4737	9.18	9.77	18.95	46.45	-27.50	AVG	Р
3	15.2499	21.76	10.39	32.15	60.00	-27.85	QP	Р
4	15.2499	20.13	10.39	30.52	50.00	-19.48	AVG	Р
5	23.1318	20.67	10.87	31.54	60.00	-28.46	QP	Р
6	23.1318	17.97	10.87	28.84	50.00	-21.16	AVG	Р

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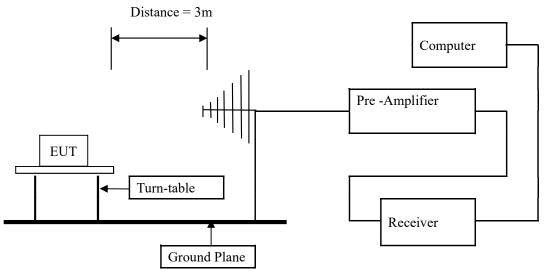
Date: 2020-11-19



#### **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 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz (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**



- 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.

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## 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	Field Stre	Field Strength of Fundamental (3m)			trength of Harmo	nics (3m)
(MHz)	mV/m	dBuV/m		uV/m	dBu	V/m
2400-2483.5	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)

Note:

- 1. RF Field Strength (dBuV) = 20 log RF 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)
30-88	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. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.
- 5. 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.
- 6. Battery full charged during tests.
- 7. 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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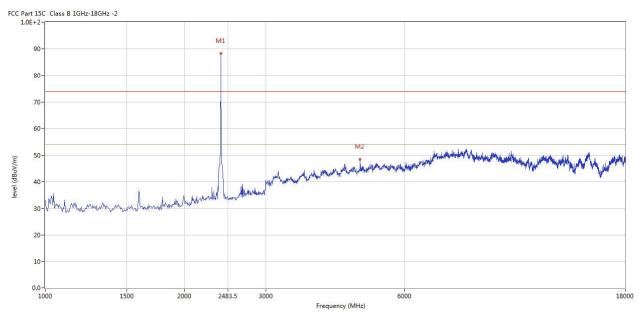


## 6.5 Test result

## A Fundamental & Harmonics Radiated Emission Data

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

#### Horizontal



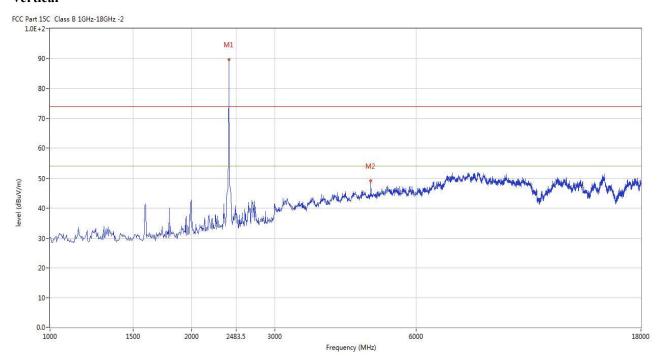
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2402.500	88.24	-3.57	94.0	-5.76	Peak	282.00	100	Horizontal	Pass
2	4803.750	48.38	3.13	54.0	-5.62	Peak	83.00	100	Horizontal	Pass

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## Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2402.500	89.71	-3.57	94.0	4.29	Peak	335.00	100	Vertical	Pass
2	4803.750	49.15	3.13	54.0	-4.85	Peak	18.00	100	Vertical	Pass

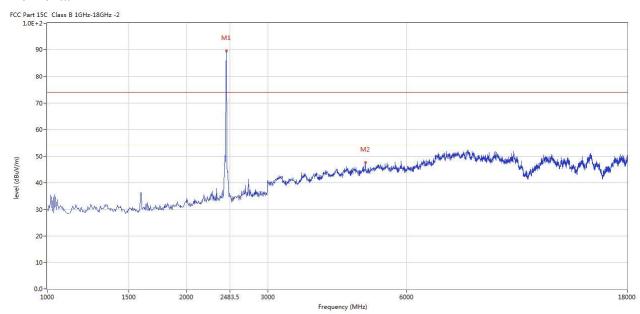
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Please refer to the following test plots for details: Middle Channel-2441MHz

#### Horizontal



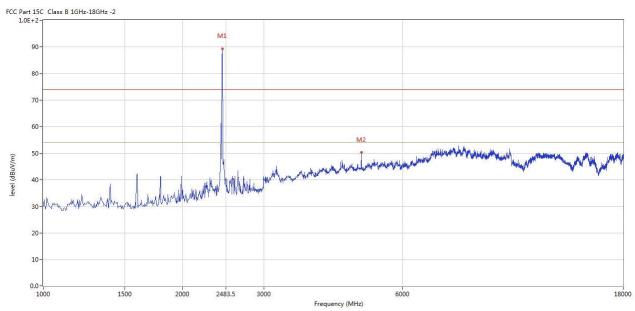
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2440.750	89.45	-3.57	94.0	-4.55	Peak	273.00	100	Horizontal	Pass
2	4880.250	47.58	3.20	54.0	-6.42	Peak	68.00	100	Horizontal	Pass

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## Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2440.750	89.25	-3.57	94.0	-4.75	Peak	344.00	100	Vertical	Pass
2	4880.250	50.32	3.20	54.0	-3.68	Peak	34.00	100	Vertical	Pass

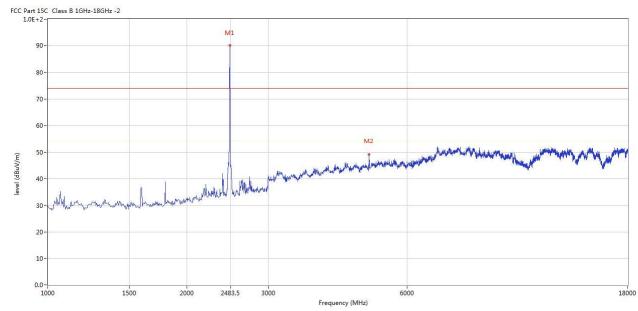
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Please refer to the following test plots for details: High Channel-2480MHz

#### Horizontal



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2480.000	90.00	-3.57	94.0	-4.00	Peak	270.00	100	Horizontal	Pass
2	4961.000	49.20	3.36	54.0	-4.80	Peak	267.00	100	Horizontal	Pass

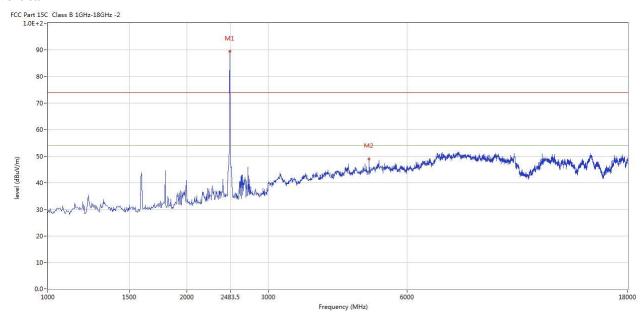
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#### Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2480.000	89.44	-3.57	94.0	-4.56	Peak	349.00	100	Vertical	Pass
2	4961.000	49.01	3.36	54.0	-4.99	Peak	17.00	100	Vertical	Pass

Note: (2) Emission Level = Reading Level + Antenna Factor + Cable Loss-Amplifier

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

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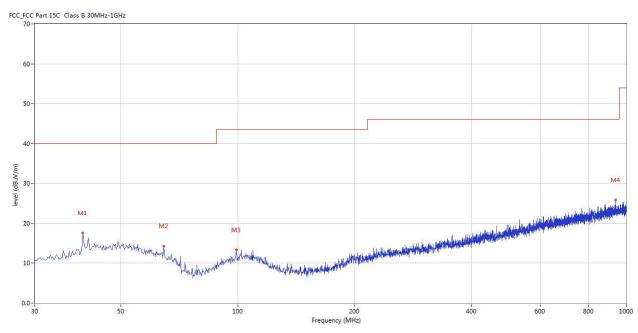


# B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	39.940	17.53	-12.43	40.0	-22.47	Peak	137.00	100	Horizontal	Pass
2	64.426	14.27	-13.43	40.0	-25.73	Peak	158.00	100	Horizontal	Pass
3	99.095	13.36	-13.66	43.5	-30.14	Peak	208.00	100	Horizontal	Pass
4	938.905	25.82	-1.73	46.0	-20.18	Peak	158.00	100	Horizontal	Pass

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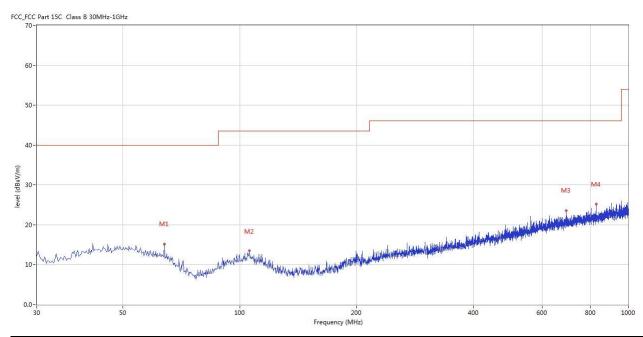


# Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	63.942	15.15	-13.32	40.0	-24.85	Peak	299.00	100	Vertical	Pass
2	105.884	13.37	-13.29	43.5	-30.13	Peak	294.00	100	Vertical	Pass
3	692.829	23.63	-4.35	46.0	-22.37	Peak	319.00	100	Vertical	Pass
4	825.929	25.16	-2.95	46.0	-20.84	Peak	234.00	100	Vertical	Pass

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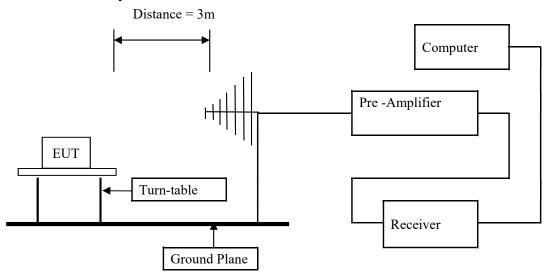


## 7. Band Edge

#### 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.

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

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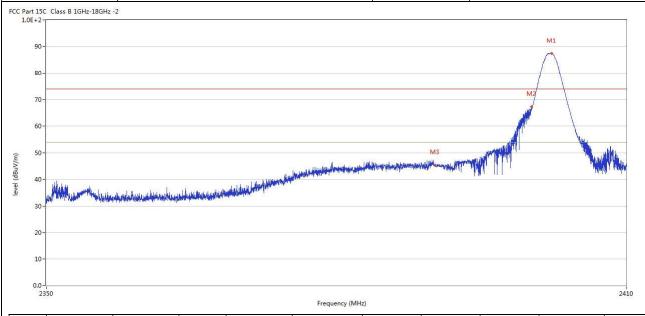
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## 7.6 Test Result

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



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
2	2400.100	67.47	-3.57	74.0	-6.53	Peak	81.00	100	Horizontal	Pass
2*	2400.100	49.62	-3.57	54.0	-4.38	AV	81.00	100	Horizontal	Pass
3	2390.050	46.77	-3.53	54.0	-7.23	Peak	94.00	100	Horizontal	Pass

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Pı	roduct:	TWS	Bluetoo	th Wireless	Earbuds	Detect	or	7	Vertical	
]	Mode		Keeping	g Transmitti	ng	Test Vol	tage	Ι	DC3.7V	
Ten	nperature		24	l deg. C,		Humid	ity	5	6% RH	
Tes	t Result:			Pass						
Part 150 1.0E+2-	Class B 1GHz-18GHz	-2								
90-									M1	
80-										
70-	Ç							M2		
60-								AWV	A	
								AT '		
· FA							M3	ANTICAL PROPERTY.	NAME OF THE PERSON OF THE PERS	. colored
· ·			u Lla.	الدارين المالية	in he high dawning in the high high high high	and the second second second	M3			a printing and
50-	redjeted in face of the distribution of the			h jillye kahali galah hasi kada saka da	· · · · · · · · · · · · · · · · · · ·	NAME OF THE OWNER, WHEN	M3		1	MANTHINANA
50 - 40 - 30 -	erdetaliselesselvationiselest		alleka kiristiya dirilda	h gille teach gold hoch which bet	સ્ત્ર કુમાં કુ જ્યારા કુમાં ક	<b>以在中心的</b>	M3		***	4.4/1/1/160.
50 - 40 - 30 - 20 -	spiljoholisi kaserbah kadish		distribution of the second	high stading photos in which the	الإسلامية المساولة والاستان المساولة المساولة المساولة المساولة المساولة المساولة المساولة المساولة المساولة ا	<b>建设有效的</b>	M3			d Addition to
50 - 40 - 30 -	polipholishesevilableshiph		display the state of the state	h gille taled go ballon Xero a sistemati	ing in the state of	·	M3			MANTH MINN
50- 40- 30- 20- 10-			philips physical phone	de gladende gelekker kener kinderel			M3			2410
50- 40- 30- 20- 10- 0.0- 23	DOMAN	Pasuits	Eactor	g wat " - TP"	Frequency (MHz	z)		Height	ANT	
50- 40- 30- 20- 10- 0.0- 23	Frequency	Results (dBuV/m)	Factor	Limit	Frequency (MHz		Table (o)	Height	ANT	
50- 40- 30- 20- 10- 0.0- 23	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Frequency (MHz	z)		Height (cm)	ANT	2410  Verdic
30- 20- 10-	Frequency	(dBuV/m)	(dB)	Limit	Frequency (MHz Over Limit (dB)	Detector	Table (o)	(cm)		Verdic

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Pro	oduct:	TWS	Bluetoo	th Wireless	Earbuds	Polarit	ty	Н	orizontal	
N	Mode		Keeping	g Transmitti	ng	Test Volt	tage	Ι	OC3.7V	
Tem	perature		24	l deg. C,		Humidi	ity	5	6% RH	
Test	Result:			Pass						
CC Part 15C 1.0E+2-	Class B 1GHz-18GHz	-2				•				-
90 80 70										
50 - 40 - 30 -		TITLE THE PARTY OF			A Comment of the State of the S	aryonnesida filikina Afrika	ifan Maria da	Marantisphologist Marantisphol	in which described when the second of	die allegan
30- 20- 0.0					A CONTRACTOR OF THE PARTY OF TH	ary process and the first state of the first state	office of the second of the se	literaturisten kirilisten dagiah	in which develop have able of the according	A Trapling and
30- 20-	70				2483.5 Frequency (MHz		the second is a second of the	dernaturitativa kallasilasi	to the standard programmy	2500
30- 20- 10- 247	Frequency	Results	Factor	Limit			Table (o)	Height	ANT	1
(W/\ngg) 30-	wex	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Frequency (MHz	2)				2500 Verdic

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P	roduct:	TWS	Bluetoo	th Wireless	Earbuds	Detect	tor		Vertical	
]	Mode		Keeping	g Transmitti	ng	Test Vol	tage		DC3.7V	
Ten	nperature		24	4 deg. C,		Humid	lity		56% RH	
Tes	st Result:			Pass						
C Part 150 1.0E+2-	C Class B 1GHz-18GHz	-2								
80 - 70 -										
70			San Maria							
60-		i i i i i i i i i i i i i i i i i i i								
50 - 40 -					Andrew Market States	T Washington	- Marie Mari	obey, de son fel, and fly, tick of	يسيط الموجود والموجود	again phá ghi ag tha ag th
					Commence of the second	Traffication of the second	والمرابع المرابع المرا	abay, ki sandid an arth disin bh	and a state of the	and the barbands
50- 40- 30-					2483.5 Frequency (MHz		or the state of th	oberg, de sondet ann ette, dete die	in a state of the	2500
30- 20-		Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	2483.5 Frequency (MHz Over Limit (dB)		Table (o)	Height (cm)	ANT	

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

- 2. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.
- 3. 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. The antenna gain is 2.58dBi Max. It fulfills the requirement of this section. Test Result: Pass

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FSK Modulation										
Product:	TWS Bluete	ooth Wirel	ess Earbud	.S	Тє	est Mode:		Keep tran	smitti	ng
Mode	Keep	ing Transm	nitting		Те	st Voltage	DC3.7V			
Temperature		24 deg. C,			F	Humidity		56%	RH	
Test Result:		Pass			I	Detector		PI	K	
0dB Bandwidth		781.56kHz	Z						-	
	Marker	1 [T1 r	ndB]	RBW 30 kHz RF At			F Att	20	dВ	
Ref Lvl	ndB	20.	.00 dB	VI	B₩	100 k	Hz			
10 dBm	BW 78	1.563126	625 kHz	SI	TW	8.5 m	s U	nit		dBm
10						<b>v</b> <sub>1</sub>	[T1]	-3	.57	dBm
								2.40200	301	
0			,			ndH		20	.00	dB
			$\sim$	\		BW ▼ <sub>T1</sub>		1.56312	625	kHz
-10				4		V 11.	[T1]	2.40161	824	aBm GHz
			<b>~</b>	Ť	4	$oldsymbol{ abla}_{\mathrm{T2}}$		-23		dBm
-20		<u> </u>			4	TZ		2.40239	980	GHz
1MAX -30						The second				1
-30		/				V	7			
-40							<u> </u>	AM		
-50							<i>"</i> √	V.	W	. 41
-60									~~	7
-70										
-80										
-90 Center 2.4	02 CH2		300	kua/				C ~ ~	in 3 :	MUZ

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GF	SK Modu	lation										
Pı	roduct:	TV	WS Blueto	oth Wirele	ss Earbuds		T	est Mode:		Keep tra	nsmitting	
1	Mode		Keepin	ıg Transmi	tting		Te	est Voltage		DC3	3.7V	
Tem	nperature		2	4 deg. C,			I	Humidity		56%	RH	
Tes	t Result:			Pass				Detector		P	K	
20dB	Bandwidth		7	81.56kHz						_	-	
(\$)				1 [T1 r		RI	B₩	30 k		RF Att	20 dB	
<b>*</b>	Ref Lvl		ndB		00 dB		3W		Hz		10	
10	10 dBm		BW 781	.563126	25 KHZ	SI	ЛT	8.5 m	s (	Jnit	dBm	1
								$\mathbf{v}_1$		-3	.97 dBm	Α
0										2.44100	301 GHz	
0						,		ndI	3	20	.00 dB	
					$\sim$	\ Λ		BW V Tri		81.56312	625 kHz	
-10						4/		v T.		2.44061	.83 GBM	
					$\checkmark$		ζ.	$oldsymbol{ abla}_{\mathrm{T}1}$		-23	.86 dBm	
-20				Tλ	V		_\/	T2		2.44139	980 GHz	
	1MAX			V				~~~				1MA
-30												
4.0			~	<i>/</i>				V	$\gamma_{\mu}$			
-40		٨								m^		
<b>-</b> 50		hun y	V						7			
-60	· • • • • • • • • • • • • • • • • • • •										When the first	
-70												
-80												
-90												
	Center 2				300	kHz/				Spa	ın 3 MHz	
Date:	: 1	7.NOV.2	020 14	:27:30								

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Mode		oth Wireless Earbuds	1 1	est Mode:	Keep ua	nsmitting	
Wiode	Keepir	g Transmitting		est Voltage	DC3.7V 56% RH PK		
Temperature		4 deg. C,		Humidity			
Test Result:		Pass		Detector			
0dB Bandwidth	7	81.56kHz					
		1 [T1 ndB]	RBW	30 kH	z RF Att	20 dB	
Ref Lvl	ndB	20.00 dB	VBW	100 kH	z		
10 dBm	BW 781	.56312625 kHz	SWT	8.5 ms	Unit	dBm	
10				<b>V</b> 1	[T1] -	4.67 dBm	
					2.4800	0301 GHz	
0		-		ndB	2	0.00 dB	
		^ /		BW	781.5631	2625 kHz	
-10		1	<del>\</del>	$\nabla_{\mathrm{T}1}$	[T1] -2	4.60 dBm	
			1 h		2.4796	1824 GHz	
-20		$\mathcal{N}$	7	$ abla_{\mathrm{T2}}$	[T1] -2	4.58 dBm	
1MAX				T2 V	2.4803	9980 GHz	
-30	, ,	/		V	\		
-40							
-50						41.	
-60						THE PARTY OF THE P	
-70							
-80							
-90							

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Pi/4D-QPSK M	lodulati	on									
Product:	TV	WS Blueto	oth Wirele	ss Earbuds		T	est Mode:		Keep tran	nsmitting	
Mode		Keepir	ng Transmi	tting		Te	est Voltage		DC3.7V 56% RH		
Temperature		2	24 deg. C,			I	Humidity				
Test Result:			Pass				Detector		P	K	
20dB Bandwidth		1	.214MHz						_	-	
			1 [T1 r			RBW	30 k		F Att	20 dB	
Ref Lvl 10 dBm		ndB		00 dB		VBW		Hz		-10	_
10 aBm		BW 1	L.214428	386 MHZ		SWT	8.5 m	.S U1	nit 	dBm	l ■
							<b>v</b> <sub>1</sub>		-3	.56 dBm	A
0									2.40200	301 GHz	
				. //			ndP	8	20	.00 dB	
				$\land \land \land$	\		BW V Ti		1.21442	886 MHz	
-10			^		\\ \	\ ~	<u></u>	- <u>( + + )</u>	2.40137	776 GHz	
				~ ·		W			-23	.75 dBm	
-20		T	$\overline{}$				1		2.40259	218 GHz	
1MAX								ζ,			1MA
-30											
-50	٨							W			
home	<b>V</b>							(	J.M.	my who	
-60											
-70											
-80											
-90 Center 2.	402 GI	Hz		300	kHz,	/			Spa	n 3 MHz	
	.NOV.2		:30:47						-		

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Product:	TV	WS Blueto	oth Wirele	ss Earbuds		Test Mode	:	Keep tra	nsmitting	
Mode		Keepir	ng Transmi	tting		Test Voltage	e	DC3.7V 56% RH PK		
Temperature			24 deg. C,	-		Humidity				
Test Result:			Pass			Detector				
0dB Bandwidth		1	.214MHz					-		
<u> </u>		Marker	1 [T1 n	ndB]	RB	W 30	kHz R	F Att	20 dB	
Ref Lvl		ndB	20.	00 dB	VB					
10 dBm		BW 1	1.214428	886 MHz	SW	T 8.5 1	ms U	nit	dBm	
10						<b>v</b> <sub>1</sub>	[T1]	-(	3.96 dBm	
								2.44100	301 GHz	
0					,	nd	В	20	0.00 dB	
				$\wedge$ /	\	BW		1.21442	886 MHz	
-10				+	1	$\nabla_{\mathrm{T}}$	<u> [T1]</u>	-24	1.11 dBm	
			$\sim$	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	$\sim$	m m		2.44037	7776 GHz	
-20				•		T	2 [T1]	-24	1.03 dBm	
1MAX			~					2.44159	1218 GHZ	
-30										
-40	4						M	Λ		
-50	w/\						1	V 1	Mul	
-60									4	
-70										
-80										
-90										
Center 2	.441 G	Hz		300	kHz/			Spa	an 3 MHz	

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Product:	TWS Blue	tooth Wirele	ss Earbuds	T	est Mode:		Keep tran	nsmitting	
Mode	Keep	oing Transmi	tting	To	est Voltage	DC3.7V 56% RH			
Temperature		24 deg. C,		]	Humidity				
Test Result:		Pass			Detector		PK		
dB Bandwidth		1.214MHz				_	-		
<b>&gt;</b>	Marke	r 1 [T1 n	idB]	RBW	30 kH	Iz RI	7 Att	20 dB	
Ref Lvl	ndB	20.	00 dB	VBW	100 kH	Iz			
10 dBm	BW	1.214428	86 MHz	SWT	8.5 ms	Ur	nit	dBm	
10					$\mathbf{v}_1$	[T1]	<b>-</b> 2	.68 dBm	
							2.48000	301 GHz	
0					ndB		20	.00 dB	
			^ 1		BW		1.21442	886 MHz	
-10			A	\	$\nabla_{\mathrm{Tl}}$	[T1]	-24	.58 dBm	
		^	_/ \/	W W	$\Lambda_{\gamma}$		2.47937	776 GHz	
-20				W	<b>√</b> √ <b>T</b> 2	[T1]	-24	.63 dBm	
1MAX					12		2.48059	218 GHz	
	/	$\int$			7	_			
-30						<del>\                                    </del>			
-40						<del>-\</del>			
						\ .			
-50	M/					W			
We want	/ <b>\</b> /					V	m ) \"		
								~~\	
-60								<b>₩</b> ₩	
70									
-80									
-90									
Center 2.48	GHz		300 ]	kHz/			Spa	ın 3 MHz	

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8QPSK Modulation  Product: TWS Bluetooth				T- 1 1			4 M 1		Keep transmitting			
	1 \						est Mode:					
Mode			g Transmi	ttıng			est Voltage		DC3.7V 56% RH			
Temperature		2	4 deg. C,				Humidity					
Test Result:	Pass						Detector		P	K		
0dB Bandwidth		1.257MHz							-	-		
			1 [T1 r		F	RBW	30 k		7 Att	20 dB		
Ref Lvl		ndB		.00 dB		/BW		Hz				
10 dBm		BW 1	.256513	303 MHz	5	TW	8.5 m	s Uı	nit	dBm	i	
10							$\mathbf{v}_1$	[T1]	-3	.61 dBm	A	
									2.40200	301 GHz	A	
0					,		ndF	3	20	.00 dB		
				/	\		BW		1.25651	303 MHz		
-10					$\rightarrow$	\	∇ <sub>Ti</sub>	[T1]	-23	.49 dBm		
			~~~~	$\mathcal{N}$	V	$\sim$	, ral		2.40137	776 GHz		
-20							<b>√</b> T2	[T1]	-23	.45 dBm		
1MAX							(		2.40263	427 GHz	1M2	
-30												
-40	Λ.								~~			
-60	W- 1								Mary Mary	W. W.		
-70												
-80												
-90										_	ļ	
Center 2.	402 G	Hz		300	kHz/				Spa	n 3 MHz		

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8QPSK Mod	lulation										
Product:	TV	WS Blueto	oth Wirele	ss Earbuds		Test	Mode:		Keep trai	nsmitting	
Mode		Keepir	ng Transmi	tting		Test V	Voltage		DC3.7V 56% RH		
Temperature		2	24 deg. C,			Hun	nidity				
Test Result:			Pass			Det	ector		P	K	
20dB Bandwidth	ı	1.257MHz							-	-	
(ŝ)			1 [T1 r		RI		30 k	Hz Rl	F Att	20 dB	
Ref Lvl 10 dBm		ndB BW 1	20. 256513	.00 dB .803 MHz	VI SV		100 ki 8.5 m	Hz s Uı	nit	dBn	n
10		1					1			1	7
							<b>V</b> <sub>1</sub>		2.44099	.01 dBm	Α
0				1			ndB	,	20	.00 dB	-
							BW		1.25651	303 MHz	
-10			~	/\/	$\backslash \Lambda$	Λ	$ abla_{\mathrm{T}1}$	<u>[T1]</u>	-24	.07 dBm	
			~~ \	√ V	, (				2.44037	776 GHz .02 dBm	1
-20		J	ď				Ì	T2 <b>7</b>	2.44163	427 GHz	1MA
-30											
-40	, il								αN		
-50 <b>M</b>	1. J. M.							\		my how	·
-60											
-70											
-80											
-90											
Center	2.441 G	Hz		300	kHz/				Spa	ın 3 MHz	
Date: 1	7.NOV.2	2020 14	:32:36								

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Product:	TV	VS Blueto	oth Wirele	ss Earbuds		T	est Mode:		Keep transmitting		
Mode			ng Transmi				est Voltage		DC3.7V		
Temperature			4 deg. C,	5			Humidity		56% RH PK		
Test Result:			Pass				Detector				
dB Bandwidth		1	.257MHz							_	
db balldwidth			1 [T1 r	ndB1	R	.BW	30 k	H <sub>2</sub> R	F Att	20 dB	
Ref Lvl		ndB	20.			BW	100 k		_ 1100	20 02	
10 dBm		BW 1	.256513	803 MHz	S	WT	8.5 m	s U	nit	dBr	n
10											1
							<b>▼</b> 1		2.48000	.75 dBn	P
0							ndI	2	2.40000	301 GHz	1
							BW		1.25651	303 MHz	
-10				$\Lambda$	<u>\</u>		$oldsymbol{ abla}_{\mathrm{T}}$	[T1]	-24	.74 dBm	
			<b>/</b> ^	$\sqrt{}$	$  \bigvee  $	١. ٨٨	<b>^</b>		2.47937	776 GHz	
			~~ \	,,,		~	T		-24	.82 dBm	n
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-70											
-80											1
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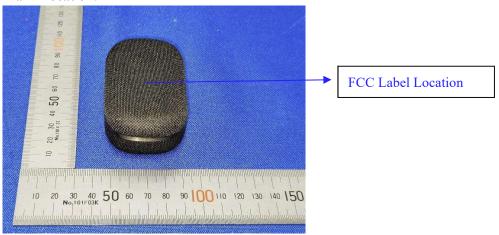


### 10.0 FCC ID Label

### FCC ID: 2APYY-AF0056

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.

## **Mark Location:**



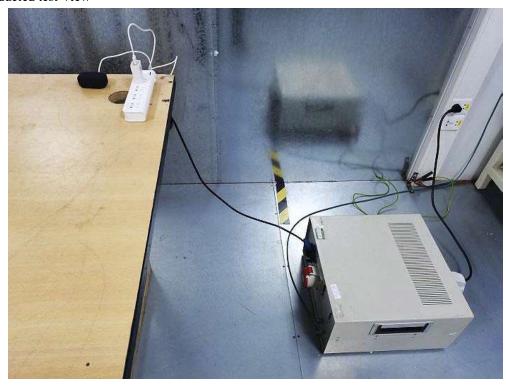
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#### 11.0 Photo of testing

#### 11.1 Conducted test View--



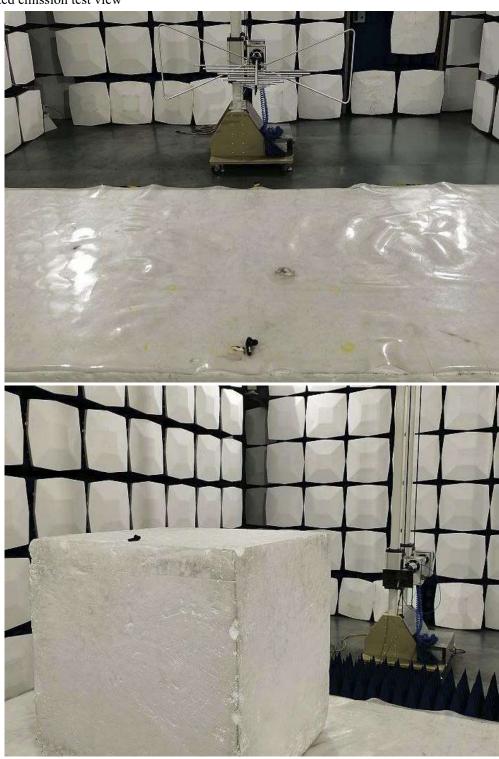
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### Radiated emission test view



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

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# 11.2 Photographs – EUT

Outside View



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### Photographs – EUT

### Outside View





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Outside View



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Outside View



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Outside View



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Outside View



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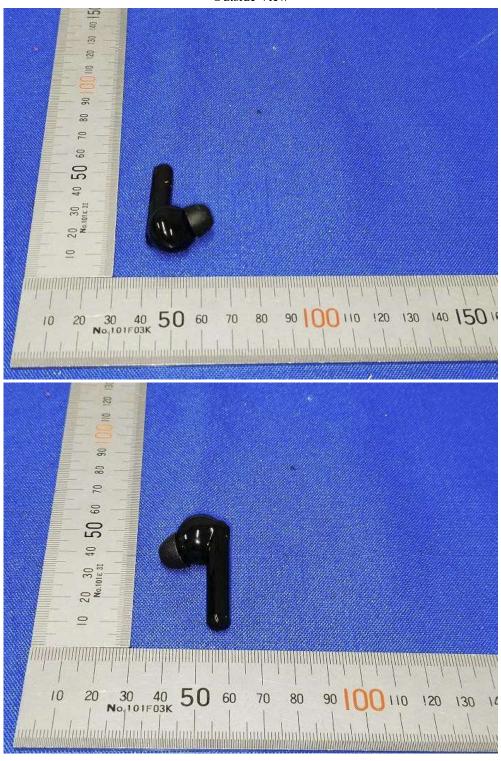
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Outside View



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Outside View





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Outside View



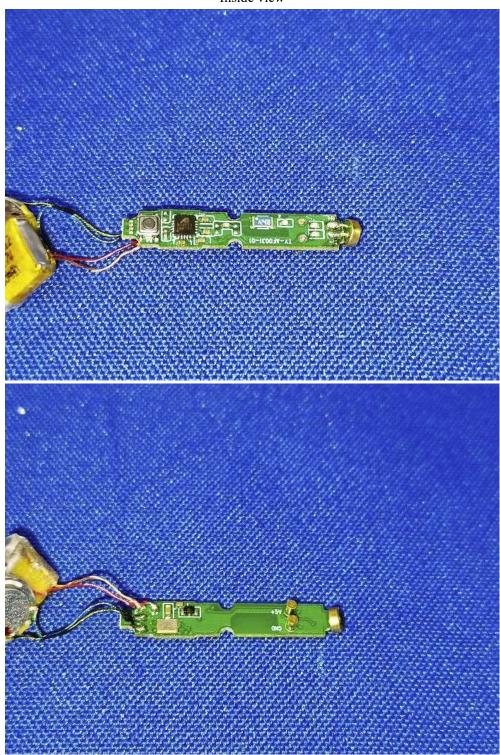
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Inside view



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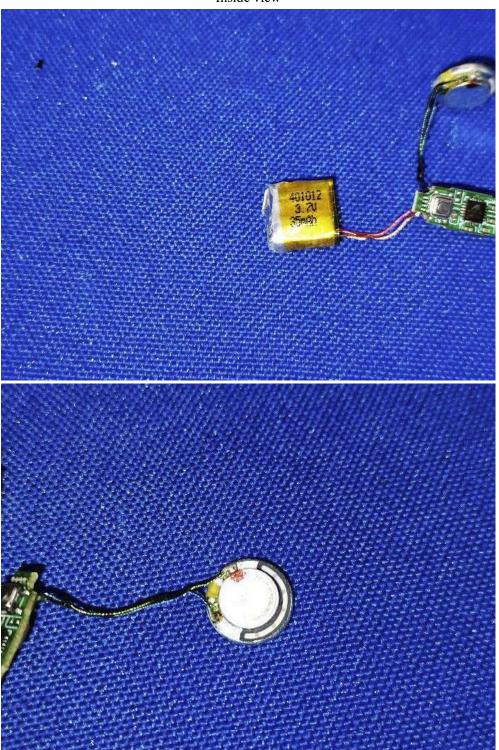
adopt any other remedies which may be appropriate.

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Inside view



-- End of the report--

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