

Report No.: TW2310264E

Applicant: Maxell Corporation of America

Product: Jelleez TWS Bluetooth Earphones

Model No.: TW MINI EB, TW MINI-WHT, TW MINI-BLK, TW185B,

199460, 199461, JTW-WHT, JTW-BLK

Trademark: MAXELL

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

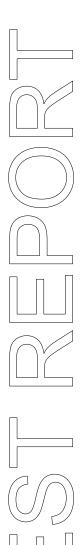
Dated: November 06, 2023

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:**

## 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** 

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## Test Report Conclusion

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11.0

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Photo of Test Setup and EUT View....

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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: Maxell Corporation of America

Address: 3 Garret Mountain Plaza Woodland Park, NJ 07424 USA

Telephone: -Fax: --

## 1.3 Description of EUT

Product: Jelleez TWS Bluetooth Earphones

Manufacturer: Shenzhen Swetz Sound Technology Co., Limited

Address: No.19, Jianlong Street, Baoan Community, Yuanshan, Longgang District,

Shenzhen, Guangdong, P.R.C.

Trademark: MAXELL
Model Number: TW MINI EB

Additional Model Name TW MINI-WHT, TW MINI-BLK, TW185B, 199460, 199461, JTW-WHT,

JTW-BLK

Rating: DC5V input or Built-in DC3.7V, 60mAh Li-ion battery for earphones and

DC5V input or Built-in DC3.7V, 420mAh Li-ion battery for charger base.

Hardware Version: V1.4

Software Version: SDK AB537XA2 S178 20200707

Serial No.: 231101

Operation Frequency: 2402-2480MHz

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

Number of Channels: 79 Channel Separation: 1MHz

Antenna Designation Chip antenna with gain 2.25dB maximum (Get from the antenna specification)

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1.4 Submitted Sample: 2 Samples

1.5 Test Duration

2023-10-20 to 2023-11-06

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	2.0 Test Equipment								
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date				
ESPI Test Receiver	R&S	ESPI 3	100379	2023-07-14	2024-07-13				
LISN	R&S	EZH3-Z5	100294	2023-07-14	2024-07-13				
LISN	R&S	EZH3-Z5	100253	2023-07-14	2024-07-13				
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2023-07-14	2024-07-13				
Loop Antenna	EMCO	6507	00078608	2022-07-18	2025-07-17				
Spectrum	R&S	FSIQ26	100292	2023-07-14	2024-07-13				
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	2024-07-17				
Power meter	Anritsu	ML2487A	6K00003613	2023-07-14	2024-07-13				
Power sensor	Anritsu	MA2491A	32263	2023-07-14	2024-07-13				
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2022-07-18	2025-07-17				
9*6*6 Anechoic		1	N/A	2022-07-26	2025-07-25				
EMI Test Receiver	RS	ESVB	826156/011	2023-07-14	2024-07-13				
EMI Test Receiver	RS	ESCS 30	834115/006	2023-07-14	2024-07-13				
Spectrum	HP/Agilent	E4407B	MY50441392	2023-07-14	2024-07-13				
Spectrum	RS	FSP	1164.4391.38	2023-07-14	2024-07-13				
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA	1	2023-07-14	2024-07-13				
RF Cable	Zhengdi	7m		2023-07-14	2024-07-13				
Pre-Amplifier	Schwarebeck	BBV9743	#218	2023-07-14	2024-07-13				
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2023-07-14	2024-07-13				
LISN	SCHAFFNER	NNB42	00012	2023-07-14	2024-07-13				
ESPI Test Receiver	R&S	ESPI 3	100379	2023-07-14	2024-07-13				
LISN	R&S	EZH3-Z5	100294	2023-07-14	2024-07-13				

## 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 E	UT has	been	tested	accord	ling to	o 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

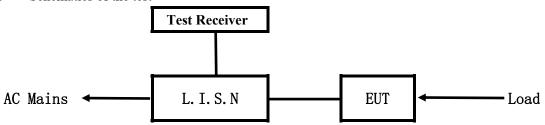
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#### 5.0 Power Line Conducted Emission Test

#### 5.1 Schematics of the test

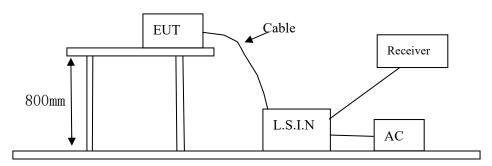


**EUT: Equipment Under Test** 

#### 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
		TW MINI EB, TW	
L-11 TWC D1441-	C11 Ct C 1	MINI-WHT, TW	
Jelleez TWS Bluetooth  Earphones	Shenzhen Swetz Sound Technology Co., Limited	MINI-BLK, TW185B,	WKA-TW185B
		199460, 199461, JTW-WHT,	
		JTW-BLK	

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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 C63.10-2013

- 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			
$5.00 \sim 30.00$	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:

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

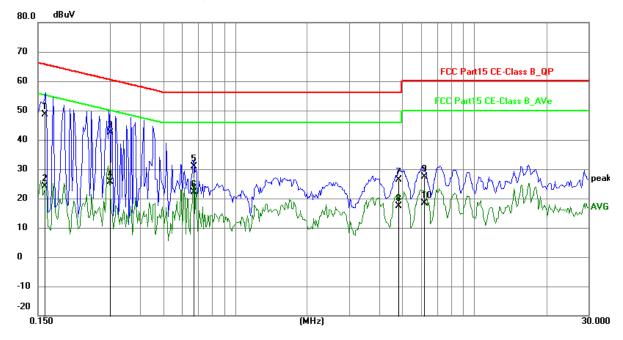
**EUT Operating Environment** 

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

**EUT set Condition: Charging + 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	0.1598	38.75	9.78	48.53	65.47	-16.94	QP	Р
2	0.1598	14.46	9.78	24.24	55.47	-31.23	AVG	Р
3	0.2987	32.57	9.76	42.33	60.28	-17.95	QP	Р
4	0.2987	15.89	9.76	25.65	50.28	-24.63	AVG	Р
5	0.6687	21.10	9.78	30.88	56.00	-25.12	QP	Р
6	0.6687	12.28	9.78	22.06	46.00	-23.94	AVG	Р
7	4.8224	16.57	9.92	26.49	56.00	-29.51	QP	Ч
8	4.8224	7.47	9.92	17.39	46.00	-28.61	AVG	Р
9	6.1534	17.35	9.98	27.33	60.00	-32.67	QP	Р
10	6.1534	8.50	9.98	18.48	50.00	-31.52	AVG	Р

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

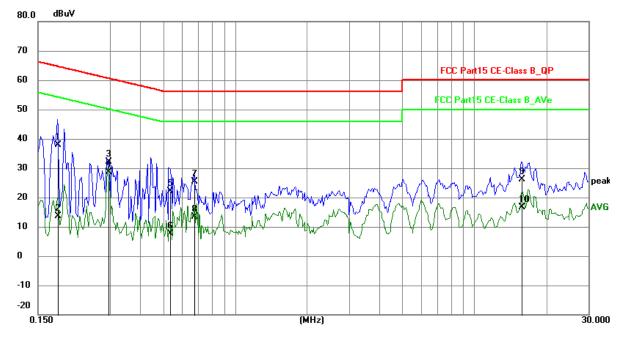
**EUT Operating Environment** 

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

**EUT set Condition: Charging + 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	0.1815	28.16	9.76	37.92	64.42	-26.50	QP	Р
2	0.1815	3.97	9.76	13.73	54.42	-40.69	AVG	Р
3	0.2943	22.35	9.76	32.11	60.40	-28.29	QP	Р
4	0.2943	18.79	9.76	28.55	50.40	-21.85	AVG	Р
5	0.5322	12.47	9.77	22.24	56.00	-33.76	QP	Р
6	0.5322	-2.25	9.77	7.52	46.00	-38.48	AVG	Р
7	0.6719	15.57	9.78	25.35	56.00	-30.65	QP	Р
8	0.6719	3.57	9.78	13.35	46.00	-32.65	AVG	Р
9	15.8014	15.78	10.43	26.21	60.00	-33.79	QP	Р
10	15.8014	6.27	10.43	16.70	50.00	-33.30	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:

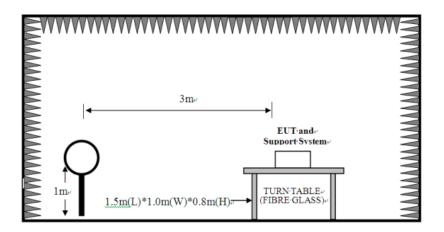
Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
Above 1CHz	Peak	1MHz	3MHz	Peak
Above 1GHz	Peak	1MHz	10Hz	Average

(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

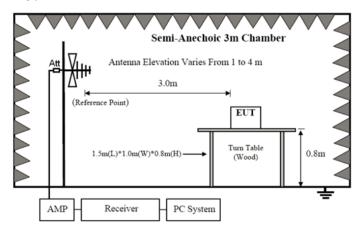


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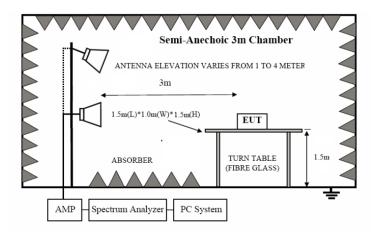
Date: 2023-11-06



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	Field Stre	ength of Fundamental (3m)	Field S	trength of Harmonics (3m)
(MHz)	mV/m	dBuV/m	uV/m	dBuV/m

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2400-2483 5	50	04 (4	114 (D 1)	500	E1 (1	74 (Dools)
	50	94 (Average)	114 (Peak)	500	1 54 (Average)	74 (Peak)
2 100 2 103.3	20	) ( ( 1 t C t a 5 c )	III (I care)	500	3 1 (11vorugo)	/ 1 (1 cars)

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)
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. 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.
- 7. Battery fully charged was used during the test.
- 8. The left and right earphones are identical in the schematics, but the PCB layout and part placement are different. The left and right earphones are test. In the test report only the worst case is recorded and the left earphone is the worst case.

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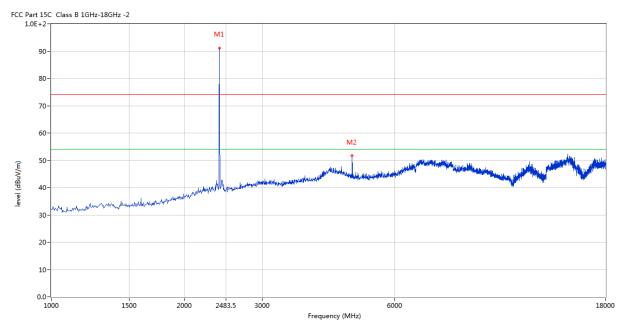


## 6.5 Test result

## A Fundamental & Harmonics Radiated Emission Data

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

#### Horizontal



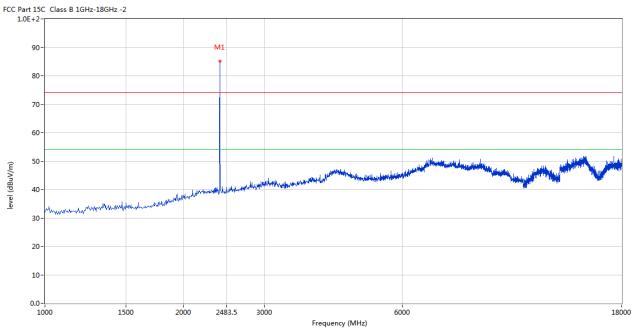
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2402	91.15	-3.57	114.0	-22.85	Peak	83.00	100	Horizontal	Pass
2	4802.799	52.10	3.12	74.0	-21.90	Peak	66.00	100	Horizontal	Pass

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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)		
Ī	1	2402	85.18	-3.57	114.0	-28.82	Peak	146.00	100	Vertical	Pass

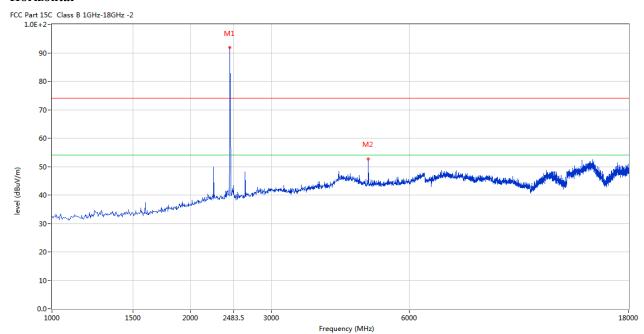
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Please refer to the following test plots for details: Middle Channel-2441MHz

#### Horizontal



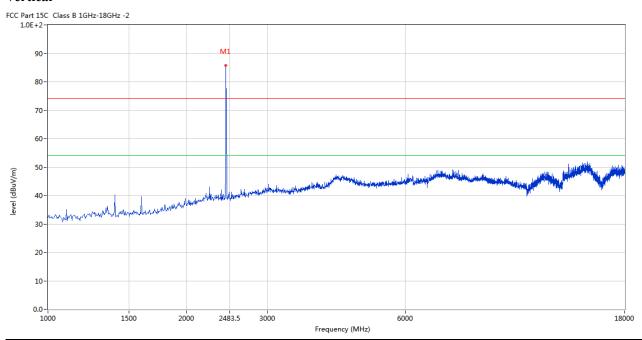
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2441	91.85	-3.57	114.0	-22.18	Peak	63.00	100	Horizontal	Pass
2	4879.280	52.76	3.20	74.0	-21.24	Peak	63.00	100	Horizontal	Pass

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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	2441	85.68	-3.57	114.0	-28.32	Peak	1.00	100	Vertical	Pass

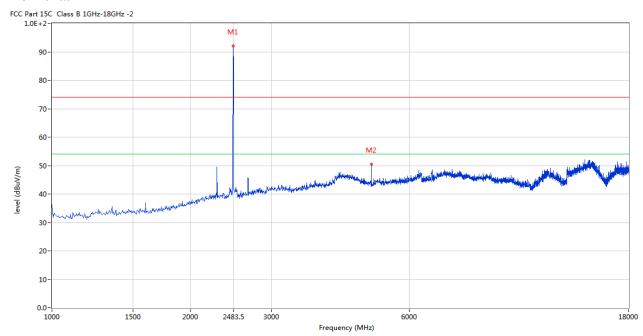
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Please refer to the following test plots for details: High Channel-2480MHz

#### Horizontal



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2480	91.98	-3.57	114.0	-22.02	Peak	174.00	100	Horizontal	Pass
2	4960.010	50.45	3.36	74.0	-23.55	Peak	252.00	100	Horizontal	Pass

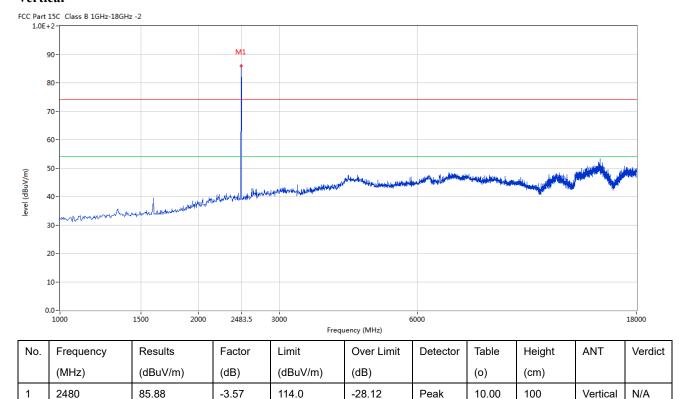
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#### Vertical



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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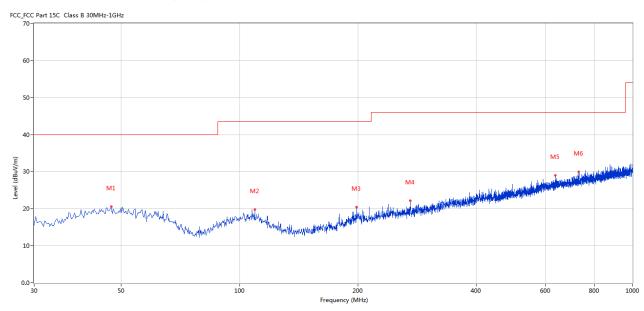


# B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

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	47.213	20.53	-11.41	40.0	19.47	Peak	127.00	100	Horizontal	Pass
2	109.278	19.81	-13.56	43.5	23.69	Peak	235.00	100	Horizontal	Pass
3	198.253	20.38	-13.49	43.5	23.12	Peak	191.00	100	Horizontal	Pass
4	272.197	22.16	-11.69	46.0	23.84	Peak	97.00	100	Horizontal	Pass
5	636.098	29.06	-4.77	46.0	16.94	Peak	154.00	100	Horizontal	Pass
6	730.892	29.98	-3.71	46.0	16.02	Peak	341.00	100	Horizontal	Pass

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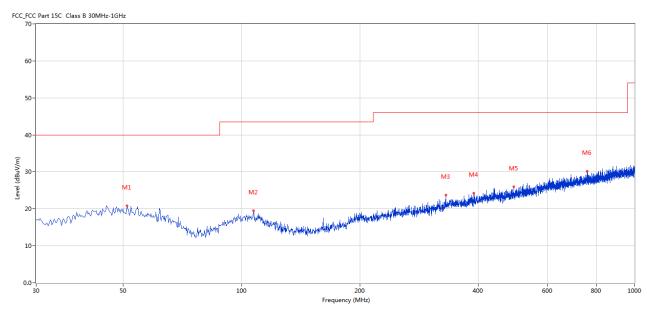


## Radiated Emission In Vertical (30MHz----1000MHz)

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	51.092	20.86	-11.41	40.0	19.14	Peak	55.00	100	Vertical	Pass
2	107.096	19.52	-13.39	43.5	23.98	Peak	204.00	100	Vertical	Pass
3	330.867	23.75	-10.17	46.0	22.25	Peak	306.00	100	Vertical	Pass
4	390.022	24.31	-8.88	46.0	21.69	Peak	311.00	100	Vertical	Pass
5	493.544	25.97	-7.15	46.0	20.03	Peak	200.00	100	Vertical	Pass
6	758.530	30.18	-3.24	46.0	15.82	Peak	138.00	100	Vertical	Pass

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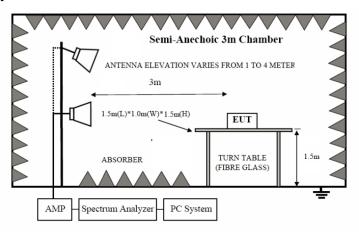


#### 7. Band Edge

#### 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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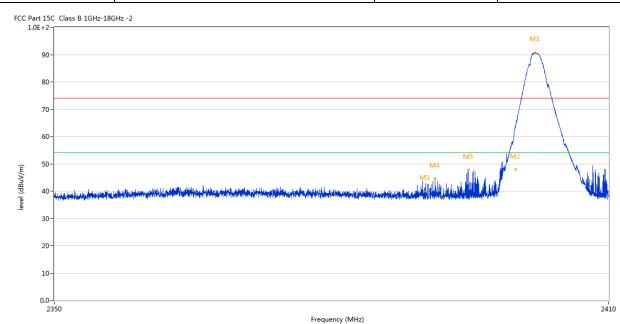
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#### 7.6 Test Result

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



Frequency Results Factor Limit Over Limit Detector Table Height ANT Verdict (dBuV/m) (dB) (dBuV/m) (MHz) (dB) (o) (cm) 2401.977 90.73 -3.57 74.0 16.73 Peak 100 N/A 1 281.00 Horizontal 2400.000 61.83 -3.57 74.0 -12.17 281.00 2 Peak 100 Horizontal Pass 2\*\* 2400.000 48.31 -3.57 54.0 -5.69 ΑV 281.00 100 Horizontal Pass 74.0 Pass 3 2390.000 39.95 -3.53 -34.05 Peak 148.67 100 Horizontal 4 2391.075 44.54 -3.53 74.0 -29.46 Peak 173.00 100 Horizontal Pass 5 2394.674 47.65 -3.55 74.0 -26.35 Peak 271.00 100 Horizontal Pass

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	Product:	Jelleez	TWS Blue	tooth Earpho	nes	Detect	tor		Vertical	
	Mode	k	Keeping Tra	ansmitting		Test Vol	tage	]	DC3.7V	
Те	mperature		24 deg	g. C,		Humid	lity	:	56% RH	
Τe	est Result:		Pas	SS						
CC Part 1	15C Class B 1GHz-18GF	Hz -2								1
9	90-							M1		
1	80-							$ \wedge$		
	70-							$\overline{}$		_
•	70							/ \		
6	60-									
:	50-					M6 - M4	M5	M2	$\overline{}$	-
	40-	Idea Idea	r dira a a toli and	authors a second	on of the late of the	M3 <sup>†</sup>	فالبارا والمأمنية والإمران	<b>/</b> •	As and less	
ē	<b>金田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田田</b>				children bar di bara de bara d	AND PERSONAL PROPERTY.	of the contribution between	r	**************************************	vi
									444	
	30-								4-24-4	
8	20-									
2										
2	10-									
2	20-			Frequ	ency (MHz)				24	110
1 0	10-	Results	Factor	Frequ	ency (MHz)  Over Limit	Detector	Table	Height	24	ı
1 0	20-	Results (dBuV/m)	Factor (dB)	1	1	Detector	Table (o)	Height (cm)	1	ı
1 0 No.	20- 10- 2350 Frequency			Limit	Over Limit	Detector Peak		_	1	ı
0 No.	200- 100- 2350 Frequency (MHz)	(dBuV/m)	(dB)	Limit (dBuV/m)	Over Limit		(0)	(cm)	ANT	Verdi
1 1 0 No.	20- 10- 2350 Frequency (MHz) 2401.842	(dBuV/m) 84.91	(dB) -3.57	Limit (dBuV/m) 74.0	Over Limit (dB)	Peak	(o) 149.00	(cm)	ANT Vertical	Verdi N/A Pass
No. 11222**	Frequency (MHz) 2401.842 2400.000	(dBuV/m) 84.91 56.34	(dB) -3.57 -3.57	Limit (dBuV/m) 74.0 74.0	Over Limit (dB) 10.91 -17.66	Peak Peak	(o) 149.00 149.00	(cm) 100 100	ANT  Vertical  Vertical	Verdi N/A Pass Pass
2	Frequency (MHz) 2401.842 2400.000 2400.000	(dBuV/m) 84.91 56.34 42.78	(dB) -3.57 -3.57 -3.57	Limit (dBuV/m) 74.0 74.0 54.0	Over Limit (dB) 10.91 -17.66 -11.22	Peak Peak AV	(o) 149.00 149.00 149.00	(cm) 100 100 100	ANT  Vertical  Vertical  Vertical	Verdi
No. 1 2 2** 3	Frequency (MHz) 2401.842 2400.000 2390.000	(dBuV/m) 84.91 56.34 42.78 39.32	(dB) -3.57 -3.57 -3.57 -3.53	Limit (dBuV/m) 74.0 74.0 54.0 74.0	Over Limit (dB) 10.91 -17.66 -11.22 -34.68	Peak Peak AV Peak	(o) 149.00 149.00 149.00 68.67	(cm) 100 100 100 100	ANT  Vertical  Vertical  Vertical  Vertical	Verdi N/A Pass Pass Pass

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	Product:	Jellee	z TWS Bl	uetooth Earp	hones	P	olarity		Horizon		
	Mode		Keeping '	Transmitting		Tes	t Voltage		DC3.7V		
7	emperature		24 0	deg. C,		Hı	umidity		56% RH		
-	Test Result:		I	Pass							
	ort 15C Class B 1GHz-18G	Hz -2									
	90-		M1	\_							
	80-										
	70-		f								
	60-		/	**							
Ē	50-	1		M2-	\.						
level (dBuV/m)	40-	Charles of the last beautiful from the last beautiful		•	A. Williams			diniyasild başılındı.			
<u>u</u>	30-										
	20-										
	10-										
	0.0-			2483.5						2500	
	2470			Fre	quency (MHz)						
				<del></del>			I		1		
No		Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdi	

	No.	Frequency	Results	Factor	Limit	Over	Detector	Table	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)		(o)	(cm)		
	1	2480.017	91.20	-3.57	74.0	17.20	Peak	267.00	100	Horizontal	N/A
	2	2483.500	55.57	-3.57	74.0	-18.43	Peak	267.00	100	Horizontal	Pass
	2**	2483.500	40.54	-3.57	54.0	-13.46	AV	267.00	100	Horizontal	Pass
Ī										-	

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Product:		Jelleez	TWS Blue	etooth Earpho	ones	Detec	tor		Vertical	
Mode		ŀ	Keeping Transmitting		Test Vo	ltage		DC3.7V		
Te	Temperature 24 deg. C,			g. C,	Humidity			56% RH		
Τe	est Result:		Pa	SS						
	ort 15C Class B 1GHz-18 DE+2-	BGHz -2								
	90-		M	1						
			بسمر ا	in my						
	80-									
	70-									
			/							
	60-		1	η <sub>1</sub>						
(L	50-			M2						
(dBuV/m)	50-	li saldanario de la disconició		M2		at saidt se mas M	d. od	I dituin di		
level (dBuV/m)	40-	hindd mae'r ddin o'r bernadd y		M2		أر وزيد المحاديد	ulangijki asalgil da sadiga	an did to live , historia to	and the state of t	
level (dBuV/m)	50-	him dd again a dag o b		M2		المراجعة المعادلية المعادلة ا	oleratik Lauket de spiera	ang blob produced by the same of a	ad <sub>ed</sub> a kwilifik di u	of production and
level (dBuV/m)	40-	hisaldheynosin an dhear dh		M2		ng alami Alempina de de	olegajás Lapidel de Apirja	has jekskopski presi a bekensen ko	ndi tarankilish ya	
level (dBuV/m)	50- 40- 30-	him ild angun ini madaga pila		M2		, all act officers in a	والموافدة المالية الما	ni debelen, bilanda	A separatification	ng paglagan yan
	30- 20-	kineddd wywen i wir ar ddwyr o'r br		M2		ng Alasi Hanjinsi da d	dene de la partica	may blok per part of the complete	ud <sub>ari a</sub> rgalijah <sub>a</sub> nkuu	of plants
	30- 20-	hineddd agweniau o ddineo o dd		M2 2483		and the special type of	obratiki kapital de spirja	nasyldak del fera, solid essen k d	alke eggeldfish jolen	2500
	30- 20-	Results	Factor		.5	Detector	Table	Height	ANT	
	30- 20- 10- 2470		Factor (dB)	<u></u>	.5 Frequency (MHz)					
	30- 20- 10- 2470	Results		Limit	.5 Frequency (MHz)		Table	Height		2500 Verdict

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

- 2. For Restricted band test, 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.
- 3. The left and right earphones are identical in the schematics, but the PCB layout and part placement are different. The left and right earphones are test. In the test report only the worst case is recorded and the left earphone is 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 2.25dBi 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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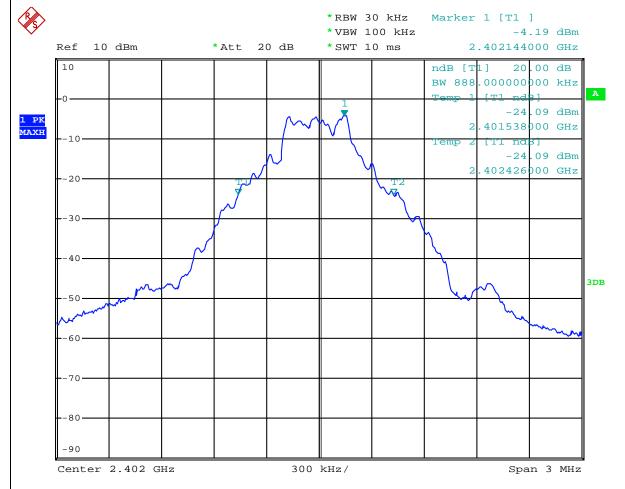
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#### **Test Result**

GFSK			
Product:	Jelleez TWS Bluetooth Earphones	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	888kHz		



Date: 6.NOV.2023 13:56:06

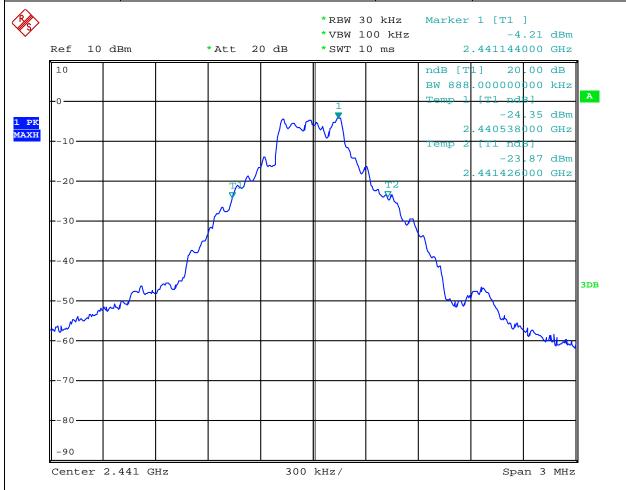
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GFSK			
Product:	Jelleez TWS Bluetooth Earphones	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	888kHz		



Date: 6.NOV.2023 14:04:43

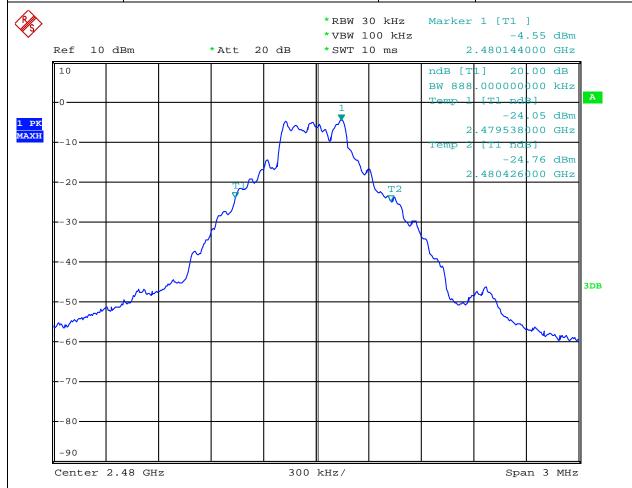
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Date: 2023-11-06



GFSK			
Product:	Jelleez TWS Bluetooth Earphones	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	888kHz		



Date: 6.NOV.2023 14:08:52

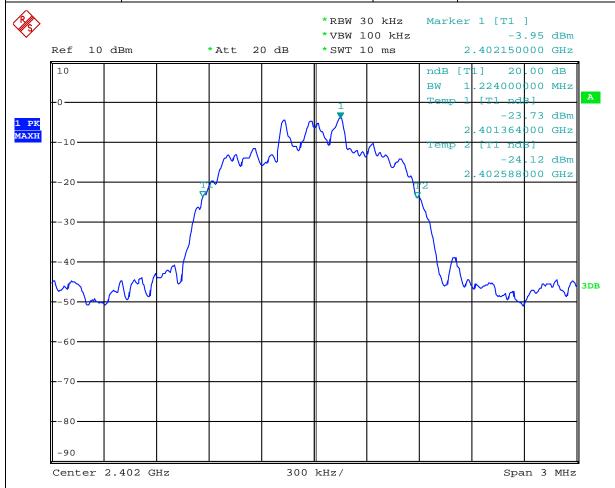
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Л/4DQPSK			
Product:	Jelleez TWS Bluetooth Earphones	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.224MHz		



Date: 6.NOV.2023 14:21:17

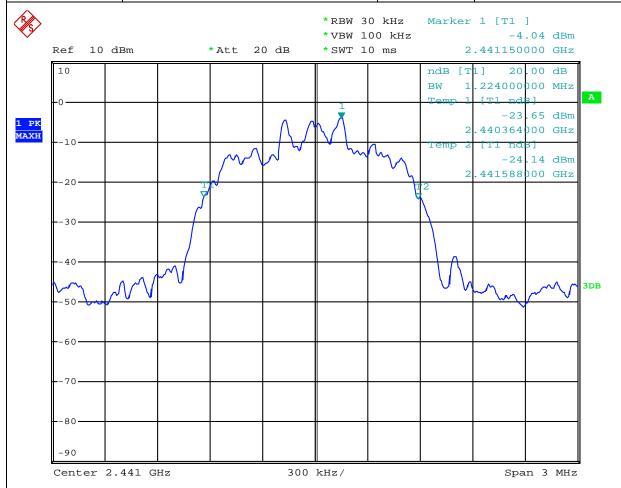
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Л/4DQPSK			
Product:	Jelleez TWS Bluetooth Earphones	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.224MHz		



Date: 6.NOV.2023 14:18:01

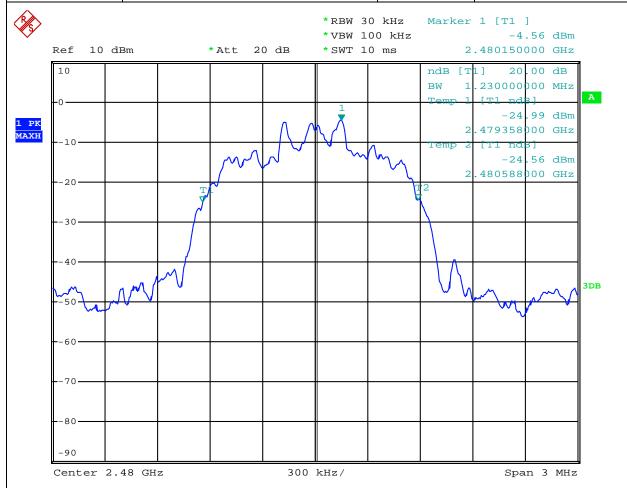
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Л/4DQPSK			
Product:	Jelleez TWS Bluetooth Earphones	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.230MHz		



Date: 6.NOV.2023 14:11:08

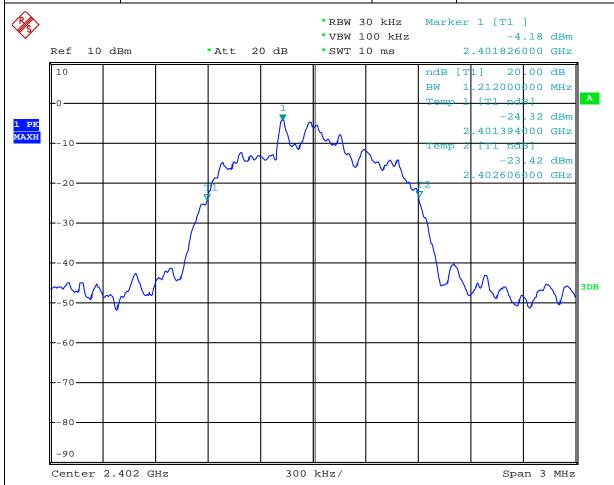
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8DPSK			
Product:	Jelleez TWS Bluetooth Earphones	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.212MHz		



Date: 6.NOV.2023 14:24:14

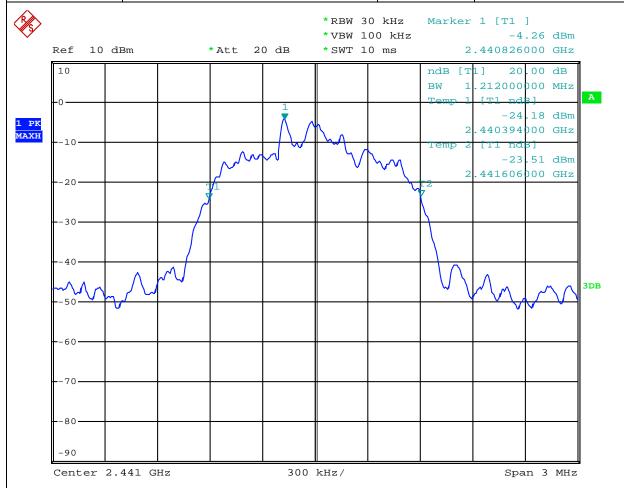
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8DPSK			
Product:	Jelleez TWS Bluetooth Earphones	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.212MHz		



Date: 6.NOV.2023 14:25:58

Date: 2023-11-06



Product:	Jelleez TWS Bluetooth Earphones			Test Mode:		Keep transmitting		
Mode Keeping Transmitting		Test Voltage		DC3.7V				
Temperature 24 deg. C,			Humidity		56% RH			
Test Result: Pass		Detector		PK				
0dB Bandwidth		1.212MHz						
Ref 10 di	3m	*Att 20 dB	*RBW 30 *VBW 10 *SWT 10	0 kHz		1 [T1 -4 .479826	.52 dBm	
10		1		1	ndB [T BW 1 <del>Temp 1</del>		.00 dB 000 MHz	A
10					2 Temp 2	-24 .479394 [Tl nd	_	
20		V1		VV VE2		-24 .480606	.13 dBm	
30								
40								
-50					$\mathcal{N}$	$\Lambda_{\Lambda}$	$\mathcal{A}_{\Delta}$	3DB
60							,	
70								
-90								
Center 2.	18 GHz 300 kHz/			Span 3 MHz				

Note: The left and right earphones are identical in the schematics, but the PCB layout and part placement are different. The left and right earphones are test. In the test report only the worst case is recorded and the left earphone is the worst case.

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

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# 10.0 FCC ID Label

## FCC ID: WKA-TW185B

The applicant declares that because the earphone size is too small, the FCC ID number is printed on the user manual

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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 - 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



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Outside View - charger base



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Outside View



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Inside View - charger base





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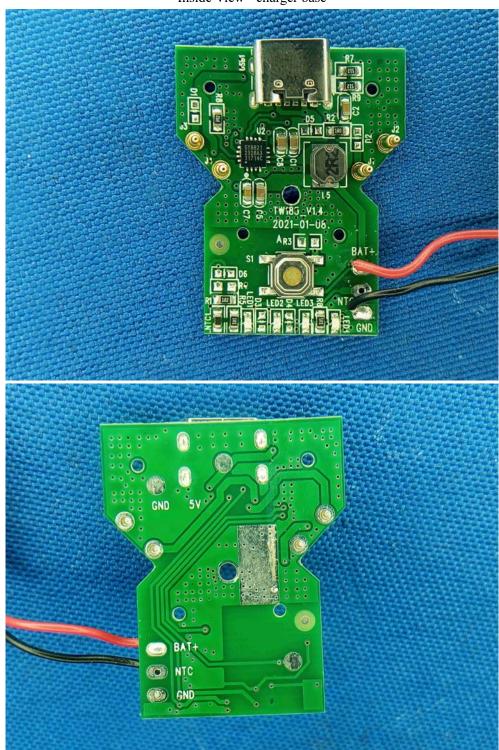
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Inside View - charger base



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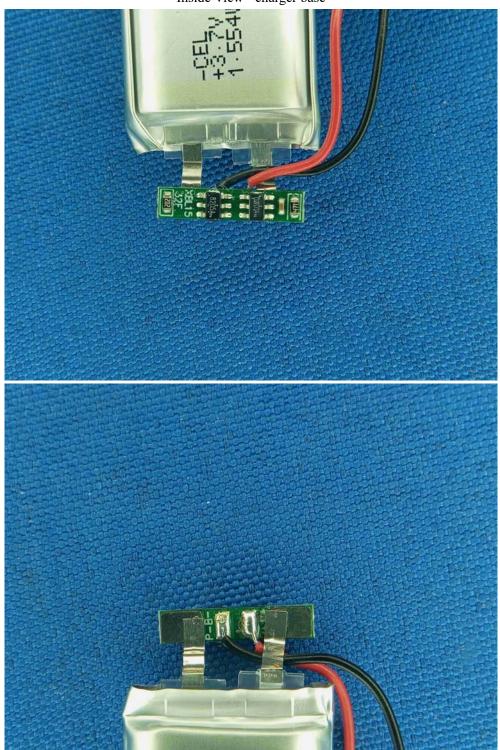
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Inside View - charger base



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Outside View - Left earphone



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Outside View - Left earphone



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Inside View - Left earphone



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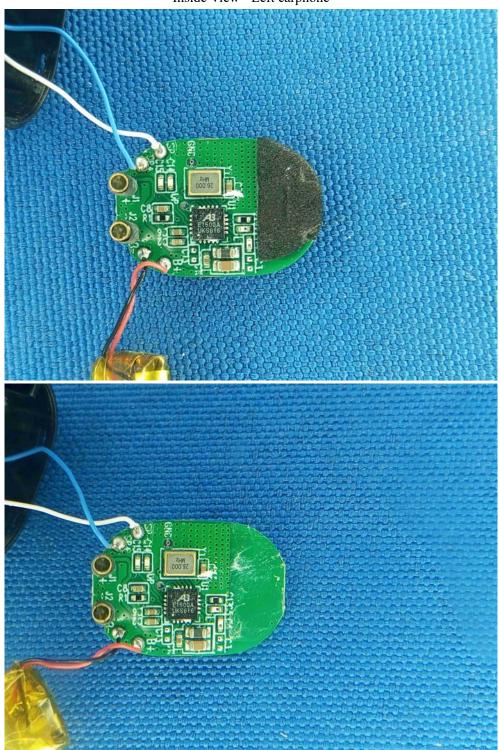
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Inside View - Left earphone



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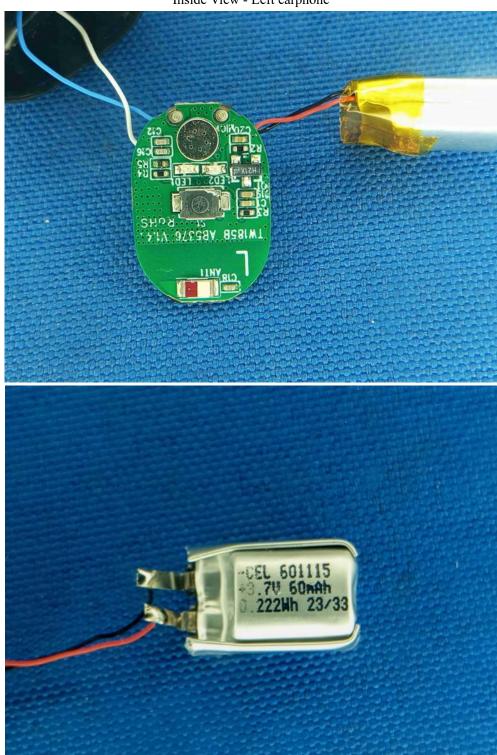
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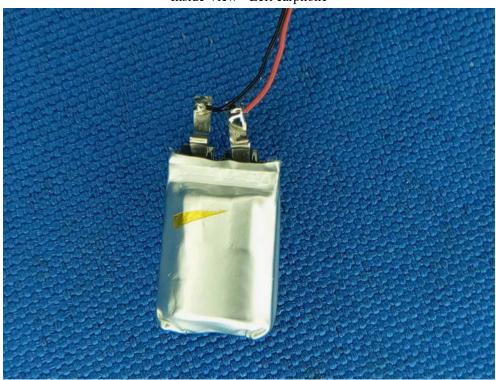
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Inside View - Left earphone



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Outside View - Right earphone



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Outside View - Right earphone



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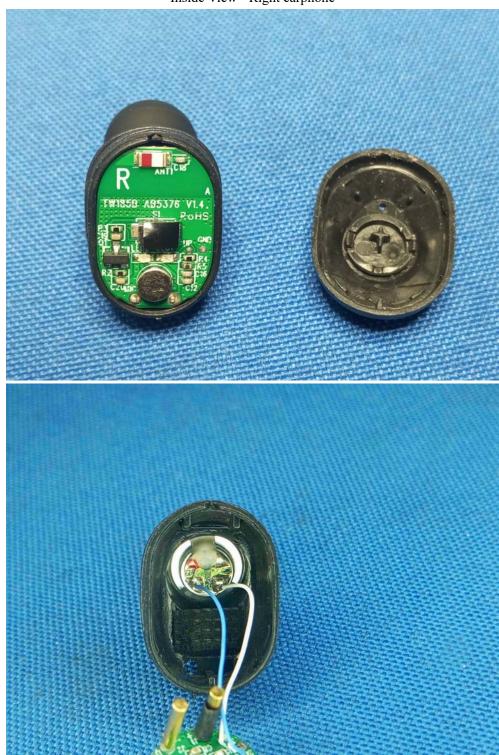
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Inside View - Right earphone



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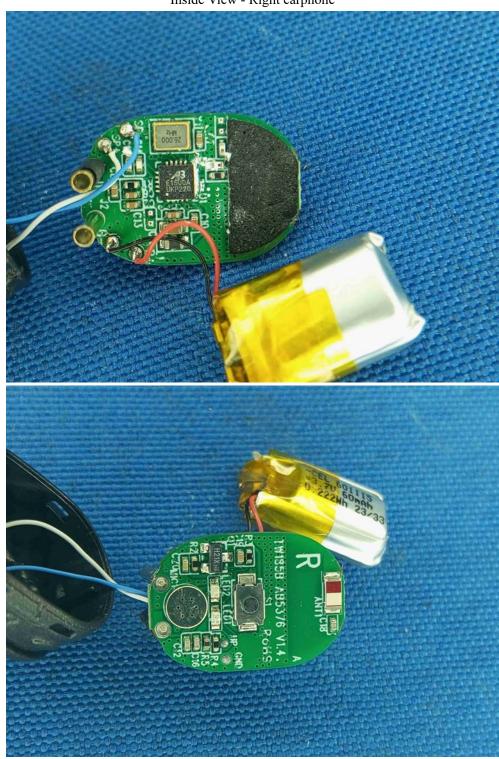
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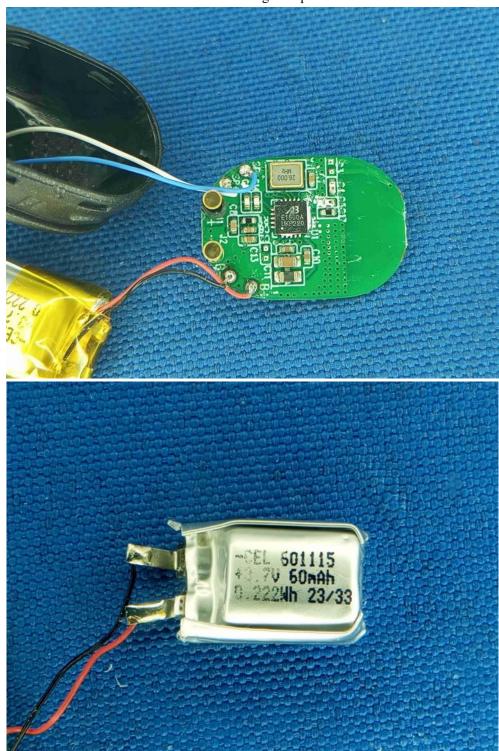
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Inside View - Right earphone



-- End of the report--