



Prüfbericht-Nr.: <i>Test report no.:</i>	NN20MVZN 001	Auftrags-Nr.: <i>Order no.:</i>	168275244	Seite 1 von 30 <i>Page 1 of 30</i>	
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2020-07-27		
Auftraggeber: <i>Client:</i>	Tiinlab Acoustic Technology Limited Tianliao Building 1403, Zone A Tianliao Industrial Park, Taoyuan Str., Nanshan Dist., Shenzhen, P.R. China				
Prüfgegenstand: <i>Test item:</i>	Mi True Wireless Earphones 2 Basic				
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	TWSEJ08WM (Trademark: MI)				
Auftrags-Inhalt: <i>Order content:</i>	FCC and IC approval				
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209 CFR47 FCC Part 15: Subpart B Section 15.107 CFR47 FCC Part 15: Subpart B Section 15.109 CFR47 FCC Part 2: Section 2.1093 RSS-247 Issue 2 February 2017 RSS-Gen Issue 5 April 2018 ICES-003 Issue 6 January 2016 RSS-102 Issue 5 March 2015				
Wareneingangsdatum: <i>Date of sample receipt:</i>	2020-07-11	Please refer to photo documents			
Prüfmuster-Nr.: <i>Test sample no.:</i>	A002865303-001~005				
Prüfzeitraum: <i>Testing period:</i>	2020-07-12 - 2020-08-17				
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.				
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.				
Prüfergebnis*: <i>Test result*:</i>	Pass				
geprüft von: <i>tested by:</i>	 Ryan Yang	genehmigt von: <i>authorized by:</i>	 Winnie Hou		
Datum: <i>Date:</i>	2020-09-24	Ausstellungsdatum: <i>Issue date:</i>	2020-09-24		
Stellung / Position	Assistant Project Manager	Stellung / Position	Technical Certifier		
Sonstiges / Other:	FCC ID: 2ASDITWSEJ08WM IC: 24662-TWSEJ08WM HVIN: V7				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged:</i>				
* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet	
Legend:	1 = very good	2 = good	3 = satisfactory	4 = sufficient	5 = poor
	P(ass) = passed a.m. test specifications(s)	F(ail) = failed a.m. test specifications(s)	N/A = not applicable	N/T = not tested	
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>					

Test Summary

5.1.1 ANTENNA REQUIREMENT*RESULT: Pass***5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER***RESULT: Pass***5.1.3 CONDUCTED POWER SPECTRAL DENSITY***RESULT: Pass***5.1.4 6dB BANDWIDTH***RESULT: Pass***5.1.5 99% BANDWIDTH***RESULT: Pass***5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH***RESULT: Pass***5.1.7 RADIATED SPURIOUS EMISSION***RESULT: Pass***5.1.8 20dB BANDWIDTH***RESULT: Pass***5.1.9 CARRIER FREQUENCY SEPARATION***RESULT: Pass***5.1.10 NUMBER OF HOPPING FREQUENCY***RESULT: Pass***5.1.11 TIME OF OCCUPANCY***RESULT: Pass***5.1.12 CONDUCTED EMISSION ON AC MAINS***RESULT: Pass***5.1.13 RADIATED EMISSION***RESULT: Pass***6.1.1 ELECTROMAGNETIC FIELDS***RESULT: Pass*

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results of Bluetooth (BDR/EDR) mode

Appendix C: Test Results of Bluetooth (BLE)

Appendix D: Test Results of FCC Part 15B and ICES-003

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China

FCC Registration No.: 694916

ISED wireless device testing laboratory: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

TÜV Rheinland (Shenzhen) Co., Ltd.

Radio Spectrum Testing (TS8997)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
Signal Analyzer	R&S	FSV 40	101441	2021-08-10
OSP	R&S	OSP 150	101017	2020-12-17
Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A
Test Software	R&S	WMS32 (V11.00.00)	N/A	N/A
Power Meter	R&S	NRP2	107105	2020-12-17
Wideband Power Sensor	R&S	NRP-Z81	105350	2020-12-17
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2021-07-23
Unwanted Emission Testing (TS9975)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	2021-08-11
Signal Analyzer	R&S	FSV 40	101439	2021-08-10
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	2021-08-10
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2021-08-10
Amplifier	R&S	SCU-18F	180070	2021-08-10
Amplifier	R&S	SCU40A	100475	2020-09-20
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2022-08-08
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	2022-08-08
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2022-08-08

Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2020-09-01
Wideband Ridged Horn Antenna (12-18 GHz)	Steatite	QMS-00208	18313	2021-09-02
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2021-07-06
Conducted Emission on AC Mains				
Equipment	Manufacturer	Model No.	Serial No.	Cali. until
EMI Test Receiver	R&S	ESR3	102428	2021-08-16
Artificial Mains Network	R&S	ENV216	102333	2021-08-16
EMC32 test software	R&S	EMC32(Ver.10.50.01)	N/A	N/A
Radiated Emission				
Equipment	Manufacturer	Model No.	Serial No.	Cali. until
3m SAC	ETS	SAC3	CT001632-Q1362	2021-08-23
EMI Test Receiver	R&S	ESR7	102111	2021-01-02
Horn Antenna	R&S	HF907	102706	2021-08-07
Preamplifier	FIT	SCU-18F	180077	2021-08-16
Trilog-Broadband antenna	SCHWARZBECK	VULB9168	0945	2020-12-08
Switching Controller Interface	R&S	OSP 120	102039	N/A
EMC32 test software	R&S	EMC32(Ver.10.50.01)	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-7}$
RF Power (conducted)	± 2.5 dB
Radiated Emission of Transmitter, valid up to 26.5 GHz	± 6 dB
Radiated Emission of Receiver, valid up to 26.5 GHz	± 6 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 dB
Radiated Emission (3m SAC), 30MHz to 1000MHz	± 4.52 dB
Radiated Emission (3m SAC), above 1000MHz	± 4.37 dB
Temperature	± 1 °C
Humidity	± 5 %
Voltage (DC)	± 1 %
Voltage (AC, <10kHz)	± 2 %

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B & C & D of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at 362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a Mi True Wireless Earphones 2 Basic which supports Bluetooth 5.0(dual mode) technology. It has an integral battery, microphone and antenna, and It can charge via bottom contacts with charging case.

The electrical circuit design and PCB layout, the left earphone and right earphone are identical except the location of antenna, details as shown in internal photos.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	Mi True Wireless Earphones 2 Basic
Type Designation	TWSEJ08WM
Trademark	MI
FCC ID	2ASDITWSEJ08WM
IC	24662-TWSEJ08WM
HVIN	V7
Operating Voltage	DC 3.8V@51mAh via internal rechargeable lithium battery Via charger box (for earphones) Via power adapter (for charger box)
Testing Voltage	Via USB port (for earphones) Via charger box (for earphones) AC 120V@60Hz(for charger box)
Antenna Type	Chip Antenna
Antenna Gain	0.2 dBi (Max)

Technical Specification of Bluetooth (BDR/EDR)	
Operating Frequency	2402 MHz to 2480 MHz
Type of Modulation	GFSK(BDR), $\pi/4$ -DQPSK(EDR), 8DPSK(EDR)
Channel Number	79 channels
Channel Separation	1MHz
Technical Specification of BLE	
Frequency Range	2402 MHz to 2480 MHz
Type of Modulation	GFSK(BT_LE)
Channel Number	40 channels
Data Rate	1 Mbps
Channel Separation	2 MHz

Table 3: RF Channel and Frequency of Bluetooth (BDR/EDR)

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	20	2422.00	40	2442.00	60	2462.00
1	2403.00	21	2423.00	41	2443.00	61	2463.00
2	2404.00	22	2424.00	42	2444.00	62	2464.00
3	2405.00	23	2425.00	43	2445.00	63	2465.00
4	2406.00	24	2426.00	44	2446.00	64	2466.00
5	2407.00	25	2427.00	45	2447.00	65	2467.00
6	2408.00	26	2428.00	46	2448.00	66	2468.00
7	2409.00	27	2429.00	47	2449.00	67	2469.00
8	2410.00	28	2430.00	48	2450.00	68	2470.00
9	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00
14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	78	2480.00
19	2421.00	39	2441.00	59	2461.00		

Table 4: RF Channel and Frequency of Bluetooth (BLE)

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

Table 5: Frequency Hopping Information

Technical Specification	Description
Hopping Range	<p>Hereby we declare that the maximum frequency of this device is: 2402-2480MHz. This is according the Bluetooth Core Specification for devices which will be operated in the USA. This was checked during the Bluetooth Qualification tests (Test Case: TRM/CA/04-E).</p>
Hopping Sequence	<p>Example of a 79 hopping sequence in data mode:</p> <p>33,04,21,44,23,42,53,46,55,48,40,59,72,29,76,31,08,73,07,75,09,45,60,39,58,13,47,11,77,52,35,50,65,54,67,56,69,62,71,64,7,25,27,66,57,70,74,61,78,63,10,41,05,43,15,44,64,68,02,70,06,01,51,03,55,05,03,66,53,49,36,47,</p>
Receiver input bandwidth	<p>The input bandwidth of the receiver is 1MHz. In every connection one Bluetooth device is the master and the other one is the slave. The master determines the hopping sequence. The slave follows this sequence. Both devices shift between RX and TX time slot according to the clock of the master.</p> <p>Additionally the type of connection is set up at the beginning of the connection. The master adapts its hopping frequency and its TX/RX timing according to the packet type of the connection. Also the slave of the connection will use these settings.</p> <p>Repeating of a packer has no influence on the hopping sequence. The hopping sequence generated by the master of the connection will be followed in any case.</p> <p>That means a repeated packet will not be send on the same frequency, it is send on the next frequency of the hopping sequence.</p>

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth transmitting mode (BDR & EDR mode)
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- B. On, Bluetooth transmitting mode (BLE)
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- C. On, Transmitting on Hopping channel
- D. On, BT connecting mode
- E. On, Charging mode (for earphones)
- F. On, Charging mode (for charger box)
- G. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- ID Label and Location Info

- User Manual

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013 and ANSI C63.4: 2014.

According to clause 3.1, all tests were performed on model TWSEJ08WM in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 6: Auxiliary Equipment Used during Test

Description	Manufacturer	Model	S/N	Rating
Laptop	Lenovo	T480	PF-16A6N8	N/A
DC power Supply	Topward	3303D	809332	0-30 Volts, 0-3 Amps
Adapter	HUAWEI	HW-050100C01	N/A	Input: 100-240V, 50/60Hz, 0.2A Output: 5V@1A
Mobile phone	Xiaomi	M1908C3KE	N/A	N/A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

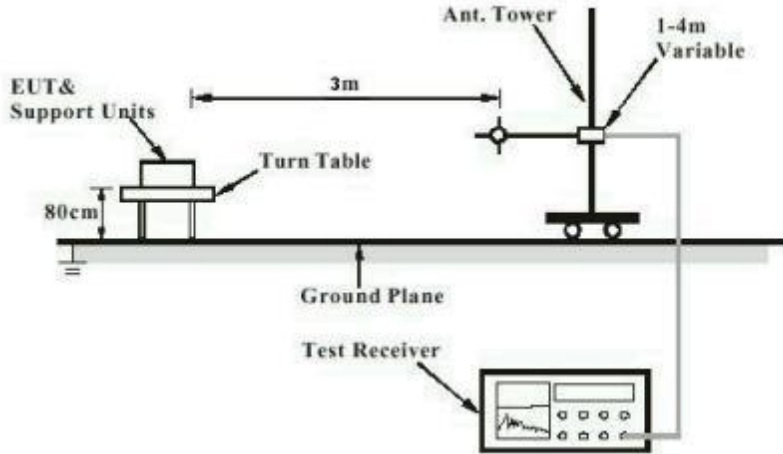


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

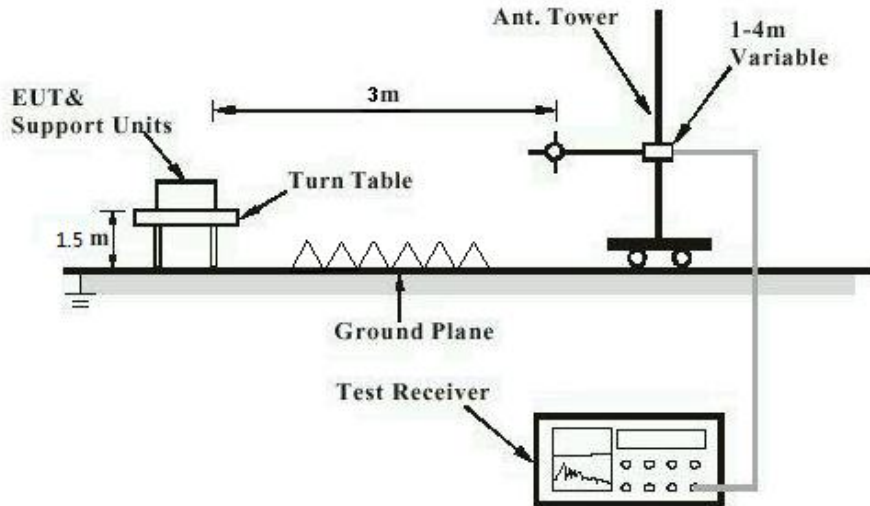


Diagram of Measurement Configuration for Mains Conduction Measurement

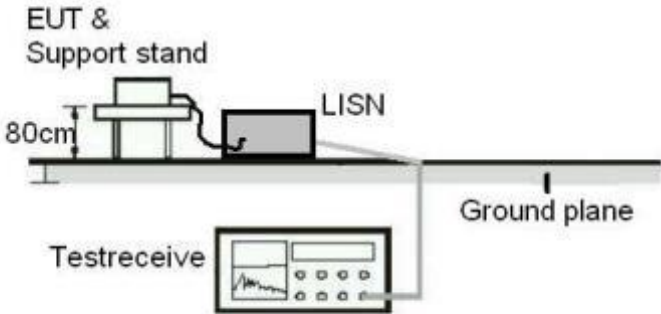
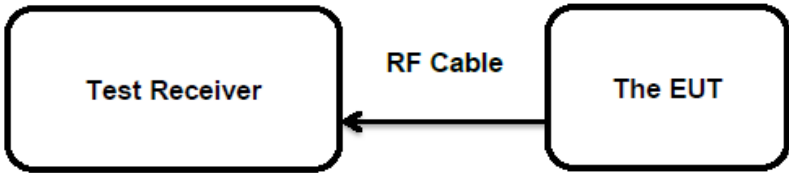


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.247(b)(4) and Part 15.203
RSS-Gen Clause 6.8

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 0.2 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Peak Conducted Output Power

RESULT:
Pass
Test Specification

Test standard : FCC Part 15.247(b)(1)&(3)
 : RSS-247 Clause 5.4(b)&(d)
 Basic standard : ANSI C63.10: 2013
 Limits : FHSS < 0.125 Watts, DSSS < 1.0 Watts
 Kind of test site : Shielded Room

Test Setup

Date of testing : 2020-08-05
 Input voltage : Via USB port
 Operation mode : A, B
 Test channel : Low / Middle / High
 Ambient temperature : 25 °C
 Relative humidity : 56 %
 Atmospheric pressure : 101 kPa

Note: This test was carried out on right earphone only.

Table 7: Test Result of Maximum Peak Conducted Output Power, Bluetooth (BDR/EDR)

Test Mode	Test Channel (MHz)	Measured Average Power		Measured Peak Power		Limit (W)
		(dBm)	(W)	(dBm)	(W)	
GFSK (BDR)	2402.0	5.70	0.0037	6.00	0.0040	< 0.125
	2441.0	5.60	0.0036	5.80	0.0038	
	2480.0	5.00	0.0032	5.20	0.0033	
8DPSK (EDR)	2402.0	2.40	0.0017	6.00	0.0040	
	2441.0	2.40	0.0017	5.80	0.0038	
	2480.0	1.70	0.0015	5.20	0.0033	
Max. Measured Value		5.70	0.0037	6.00	0.0040	

Table 8: Test Result of Maximum Peak Conducted Output Power, Bluetooth (BLE)

Test Mode	Test Channel (MHz)	Measured Average Power		Measured Peak Power		Limit (W)
		(dBm)	(W)	(dBm)	(W)	
GFSK (BLE)	2402.0	6.21	0.0042	6.30	0.0043	< 1.0
	2440.0	5.70	0.0037	6.09	0.0041	
	2480.0	5.42	0.0035	5.58	0.0036	
Max. Measured Value		6.21	0.0042	6.30	0.0043	

Note:

- 1) The cable loss is taken into account in results.
- 2) Antenna gain(G) : 0.2 dBi,
 e.i.r.p.=P_(Av power)+ G, which is far below the 4 W

5.1.3 Conducted Power Spectral Density

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.247(e) RSS-247 Clause 5.2(b)
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 8 dBm / 3kHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2020-08-12
Input voltage	:	Via USB port
Operation mode	:	B
Test channel	:	Low / Middle / High
Ambient temperature	:	25 °C
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Note: This test was carried out on right earphone only.

For the measurement records, refer to the appendix C.

5.1.4 6dB Bandwidth

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.247(a)(2) RSS-247 Clause 5.2(a)
Basic standard	:	ANSI C63.10: 2013
Limits	:	> 500 KHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2020-08-05
Input voltage	:	Via USB port
Operation mode	:	B
Test channel	:	Low / Middle / High
Ambient temperature	:	25 °C
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Note: This test was carried out on right earphone only.

For the measurement records, refer to the appendix C.

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5.1.5 99% Bandwidth

RESULT:**Pass****Test Specification**

Test standard : RSS-Gen Clause 6.6
Basic standard : ANSI C63.10: 2013
Kind of test site : Shielded Room

Test Setup

Date of testing : 2020-08-05
Input voltage : Via USB port
Operation mode : A, B
Test channel : Low / Middle / High
Ambient temperature : 25 °C
Relative humidity : 56 %
Atmospheric pressure : 101 kPa

Note: This test was carried out on right earphone only.

For the measurement records, refer to the appendix B & C.

5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(d) RSS-247 Clause 5.5
Basic standard	: ANSI C63.10: 2013
Limits	: 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: Refer to test result
Input voltage	: Via USB port
Operation mode	: A, B
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 56 %
Atmospheric pressure	: 101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

Note: This test was carried out on right earphone only.

For the measurement records, refer to the appendix B & C.

5.1.7 Radiated Spurious Emission

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	2020-08-11 ~ 2020-08-12
Input voltage	:	Via USB port
Operation mode	:	A, B
Test channel	:	Low / Middle / High
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix B & C.

5.1.8 20dB Bandwidth

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.247(a)(1) RSS-247 Clause 5.1(a)
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2020-08-05
Input voltage	:	Via USB port
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 °C
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Note: This test was carried out on right earphone only.

For the measurement records, refer to the appendix B.

5.1.9 Carrier Frequency Separation

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(a)(1) RSS-247 Clause 5.1(b)
Basic standard	: ANSI C63.10: 2013
Limits	: $\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth, whichever is greater
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2020-08-05
Input voltage	: Via USB port
Operation mode	: C
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 56 %
Atmospheric pressure	: 101 kPa

Note: This test was carried out on right earphone only.

For the measurement records, refer to the appendix B.

5.1.10 Number of Hopping Frequency**RESULT:****Pass****Test Specification**

Test standard	:	FCC part 15.247(a)(1)(iii) RSS-247 Clause 5.1(d)
Basic standard	:	ANSI C63.10: 2013
Limits	:	≥ 15 non-overlapping channels
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2020-08-05
Input voltage	:	Via USB port
Operation mode	:	C
Ambient temperature	:	25 °C
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

Note: This test was carried out on right earphone only.

For the measurement records, refer to the appendix B.

5.1.11 Time of Occupancy

RESULT:**Pass****Test Specification**

Test standard : FCC part 15.247(a)(1)(iii)
RSS-247 Clause 5.1(d)

Basic standard : ANSI C63.10: 2013

Limits : < 0.4s

Kind of test site : Shielded Room

Test Setup

Date of testing : 2020-08-05

Input voltage : Via USB port

Operation mode : C

Test channel : Low / Middle / High

Ambient temperature : 25 °C

Relative humidity : 56 %

Atmospheric pressure : 101 kPa

Note: This test was carried out on right earphone only.

For the measurement records, refer to the appendix B.

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Page 27 of 30**5.1.12 Conducted Emission on AC Mains****RESULT:****Pass****Test Specification**

Test standard : FCC Part 15.207(a) & FCC Part 15.107(a)
RSS-Gen Clause 8.8 & ICES-003

Basic standard : ANSI C63.10: 2013 & ANSI C63.4: 2014

Frequency range : 0.15 – 30MHz

Limits : FCC Part 15.207(a) & FCC Part 15.107(a)
RSS-Gen Table 3 & ICES-003 Table 2

Kind of test site : Shielded Room

Test Setup

Date of testing : 2020-07-31

Input voltage : Via charger box (for earphones)
AC 120V @60Hz (for charger box)

Operation mode : D, E, F

Earthing : Not connected

Ambient temperature : 22 °C

Relative humidity : 64 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix C & D.

5.1.13 Radiated Emission

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.109(a) ICES-003
Basic standard	:	ANSI C63.4: 2014
Frequency range	:	30 - 6000MHz
Classification	:	Class B
Limits	:	FCC Part 15.109(a) ICES-003 Table 5 & Table 7
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	Refer to test result
Input voltage	:	Via charger box (for earphones) AC 120V @60Hz (for charger box)
Operation mode	:	E, F
Earthing	:	Not connected
Ambient temperature	:	24 °C
Relative humidity	:	50 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix D.

6 Safety Human Exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT:**Pass****Test Specification**

Test standard : CFR47 FCC Part 2: Section 2.1093
FCC KDB Publication 447498 v06
RSS-102 Issue 5 March 2015

Measurement Record:

The minimum distance for the EUT is less than 5mm.

Please refer to RF exposure.

7 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

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