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# **FCC REPORT**

Applicant: RWD INDUSTRIAL CO., LTD

**Address of Applicant:** 3F, Block1, Chuangxinghong Industrial Zone, Dashuikeng,

No1398 Guanguang RD, Guanlan, Bao'an District, Shenzhen,

China

**Equipment Under Test (EUT)** 

Product Name: IFIDELITY TRUWIRELESS BLUETOOTH EARBUDS

Trade Mark: LEEDS

Model No.: RWD-S18BT, 7199-90

**FCC ID**: 2AFH27199-90

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.249:2015

Date of sample receipt: June 16, 2016

**Date of Test:** June 16, 2016 To June 30, 2016

Date of report issued: June 30, 2016

Test Result: PASS \*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Kevin Yu Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the EBO product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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### 2 Version

Version No.	Date	Description
00	June 30, 2016	Original

Prepared By:	Jason	Date:	June 30, 2016	
	Project Engineer			
Check By:	Canyo	Date:	June 30, 2016	
	Reviewer			



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# 4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Pass: The EUT complies with the essential requirements in the standard.

Remark: Test according to ANSI C63.4 2014 and ANSI C63.10 2013.

### 4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)
Note (1). The measurement upon	ertainty is for coverage factor of k	=2 and a layel of confidence of (	)E0/

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.



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### 5 General Information

### 5.1 Client Information

Applicant:	RWD INDUSTRIAL CO., LTD	
Address of Applicant:	3F, Block1, Chuangxinghong Industrial Zone, Dashuikeng, No1398	
	Guanguang RD, Guanlan, Bao'an District, Shenzhen, China	
Manufacturer:	RWD INDUSTRIAL CO., LTD	
Address of Manufacturer:	3F, Block1, Chuangxinghong Industrial Zone, Dashuikeng, No1398	
	Guanguang RD, Guanlan, Bao'an District, Shenzhen, China	

### 5.2 General Description of EUT

Product Name:	IFIDELITY TRUWIRELESS BLUETOOTH EARBUDS
Trade Mark:	LEEDS
Model No.:	RWD-S18BT, 7199-90
Test Model No.:	7199-90
Operation Frequency:	2402MHz~2480MHz
Channel numbers:	79
Channel separation:	1MHz
Modulation type:	GFSK, Pi/4QPSK, 8DPSK
Antenna Type:	PCB Antenna
Antenna gain:	0dBi (declare by Applicant)
Power supply:	DC 3.7V 70mAh Li-ion battery



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Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	21	2422MHz	41	2442MHz	61	2462MHz
2	2403MHz	22	2423MHz	42	2443MHz	62	2463MHz
i							
19	2420MHz	39	2440MHz	59	2460MHz	79	2480MHz
20	2421MHz	40	2441MHz	60	2461MHz		

#### Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2402MHz
The middle channel	2441MHz
The Highest channel	2480MHz



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#### 5.3 Test mode

Transmitting mode Keep the Bluetooth in continuously transmitting mode

Remark: 1.During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

2. Worst case GFSK modulation

#### Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	Х	Y	Z
Field Strength(dBuV/m)	93.35	95.60	92.18

#### **Final Test Mode:**

According to ANSI C63.10 standards, the test results are both the "worst case" and "worst setup":

Y axis (see the test setup photo)

### 5.4 Description of Support Units

None

### 5.5 Test Facility

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

#### • FCC —Registration No.: 600491

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 28, 2013.

#### • Industry Canada (IC) —Registration No.: 9079A-2

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, June 26, 2013.

### 5.6 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

#### 5.7 Other Information Requested by the Customer

None.

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### 6 Test Instruments list

Radia	Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)	
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 27 2016	Mar. 26 2017	
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A	
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June 30 2015	June 29 2016	
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June 30 2015	June 29 2016	
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 30 2015	June 29 2016	
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 27 2016	Mar. 26 2017	
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A	
8	Coaxial Cable	GTS	N/A	GTS213	Mar. 27 2016	Mar. 26 2017	
9	Coaxial Cable	GTS	N/A	GTS211	Mar. 27 2016	Mar. 26 2017	
10	Coaxial cable	GTS	N/A	GTS210	Mar. 27 2016	Mar. 26 2017	
11	Coaxial Cable	GTS	N/A	GTS212	Mar. 27 2016	Mar. 26 2017	
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June 30 2015	June 29 2016	
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June 30 2015	June 29 2016	
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 30 2015	June 29 2016	
15	Band filter	Amindeon	82346	GTS219	Mar. 27 2016	Mar. 26 2017	
16	Constant temperature and humidity box	Oregon Scientific	BA-888	GTS248	June 30 2015	June 29 2016	
17	D.C. Power Supply	Instek	PS-3030	GTS232	June 30 2015	June 29 2016	



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Cond	Conducted Emission:						
Item	n Test Equipment Manufacturer		Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)	
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0( H)	GTS264	June 30 2015	June 29 2016	
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	June 30 2015	June 29 2016	
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	June 30 2015	June 29 2016	
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June 30 2015	June 29 2016	
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	June 30 2015	June 29 2016	
6	Coaxial Cable	GTS	N/A	GTS227	June 30 2015	June 29 2016	
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A	



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### 7 Test results and Measurement Data

### 7.1 Antenna requirement:

Standard requirement: FCC Part15 C Section 15.203

#### 15.203 requirement:

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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### E.U.T Antenna:

The antenna is PCB antenna, the best case gain of the antenna is 0dBi



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#### 7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207	·						
Test Method:	ANSI C63.10:2013							
Test Frequency Range:	150KHz to 30MHz							
Class / Severity:	Class B							
Receiver setup:	RBW=9KHz, VBW=30KHz, Sv	weep time=auto						
Limit:	Francisco (MIII-)	Limit (c	dBuV)					
	Frequency range (MHz)	Quasi-peak	Average					
	0.15-0.5	66 to 56*	56 to 46*					
	0.5-5	56	46					
	5-30	60	50					
	* Decreases with the logarithn	n of the frequency.						
Test setup:	Reference Plane		_					
	AUX Equipment  Test table/Insulation plane  Remark E.U.T: Equipment Under Test LISN  Receiver  Remark E.U.T: Equipment Under Test LISN Line impedence Stabilization Network Test table height=0.8m							
Test procedure:	The E.U.T and simulators a line impedance stabilization 50ohm/50uH coupling impedance.  The peripheral devices are LISN that provides a 50ohm termination. (Please refer to the coupling of the coupling termination).	n network (L.I.S.N.). The dance for the measuri also connected to the n/50uH coupling imped	nis provides a ing equipment. main power through a dance with 50ohm					
	termination. (Please refer to the block diagram of the test setup and photographs).  3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.							
Test Instruments:	Refer to section 6.0 for details							
Test mode:	Refer to section 5.3 for details	;						
Test results:	Pass							
D ALIVEUT': DELL DC	- 1.1: - : : : : : : : : : : : : : : : : : :							

Remark: AUX EUT is DELL PC model inspiron with FCC DOC approved

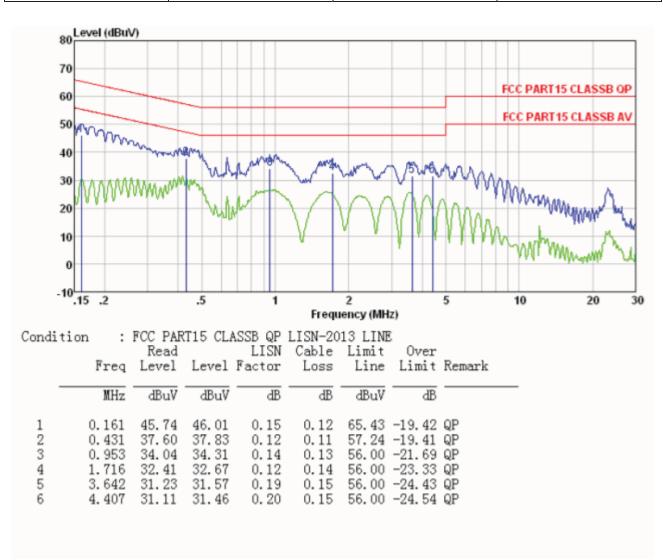


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#### Measurement data:



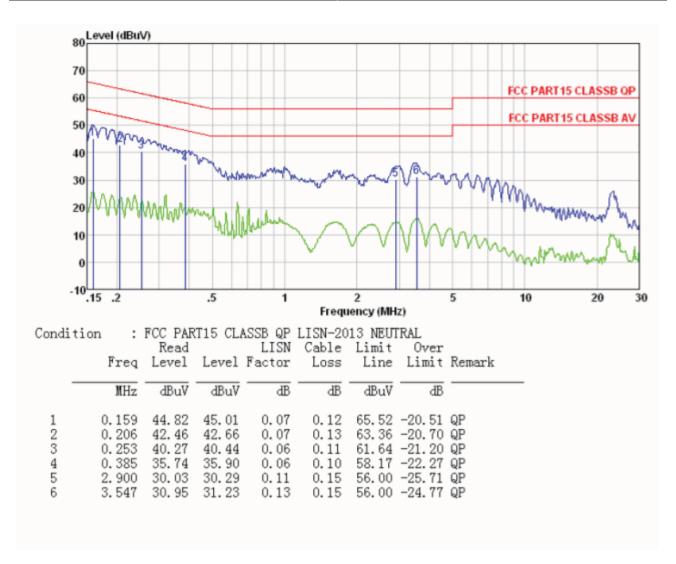




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Test mode:	Bluetooth mode		NEUTRAL
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#### Notes

- 1. An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission
- 3. Final Level =Receiver Read level + LISN Factor + Cable Loss
- 4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.



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#### 7.3 Radiated Emission Method

7.5 Radiated Lillission Me	tiloa					
Test Requirement:	FCC Part15 C S	Section 15.20	9			
Test Method:	ANSI C63.10:20	013				
Test Frequency Range:	30MHz to 25GH	ŀz				
Test site:	Measurement D	Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark	
·	30MHz- 1GHz	Quasi-peal	120KHz	300KHz	Quasi-peak Value	
	Above 1015	Peak	1MHz	3MHz	Peak Value	
	Above 1GHz		1MHz	10Hz	Average Value	
Limit:	Freque	ency	Limit (dBuV	/m @3m)	Remark	
(Field strength of the	2400MHz-24	183 5MHz	94.0		Average Value	
fundamental signal)	114.00 Peak Value					
Limit:	Freque	ency	Limit (dBuV	/m @3m)	Remark	
(Spurious Emissions)	30MHz-8		40.0		Quasi-peak Value	
(5)	88MHz-2		43.5		Quasi-peak Value	
	216MHz-9		46.0		Quasi-peak Value	
	960MHz-	·1GHz	54.0		Quasi-peak Value	
	Above 1	IGHz	54.0 74.0		Average Value Peak Value	
Limit: (band edge)	harmonics, shall	II be attenuate to the genera	ed by at least al radiated em	50 dB belov	bands, except for w the level of the in Section 15.209,	
Test setup:	EUT	3m < www. 4m		Anten  Sea Ante  RF Test Receiver	enna	



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	Antenna Tower  Horn Antenna  Spectrum Analyzer  Turn Table  Amplifier
Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. *:1.5m for above 1GHz
	The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
	<ol> <li>The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</li> </ol>
	4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
	The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
	6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

### Measurement data:



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### 7.3.1 Field Strength of The Fundamental Signal

#### Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2402.00	91.60	27.58	5.39	30.18	94.39	114.00	-19.61	Vertical
2402.00	89.64	27.58	5.39	30.18	92.43	114.00	-21.57	Horizontal
2441.00	90.01	27.55	5.43	30.06	92.93	114.00	-21.07	Vertical
2441.00	88.75	27.55	5.43	30.06	91.67	114.00	-22.33	Horizontal
2480.00	92.54	27.52	5.47	29.93	95.60	114.00	-18.40	Vertical
2480.00	89.58	27.52	5.47	29.93	92.64	114.00	-21.36	Horizontal

#### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2402.00	81.10	27.58	5.39	30.18	83.89	94.00	-10.11	Vertical
2402.00	78.65	27.58	5.39	30.18	81.44	94.00	-12.56	Horizontal
2441.00	79.34	27.55	5.43	30.06	82.26	94.00	-11.74	Vertical
2441.00	76.35	27.55	5.43	30.06	79.27	94.00	-14.73	Horizontal
2480.00	81.95	27.52	5.47	29.93	85.01	94.00	-8.99	Vertical
2480.00	78.97	27.52	5.47	29.93	82.03	94.00	-11.97	Horizontal



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### 7.3.2 Spurious emissions

#### ■ Below 1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
40.85	27.41	15.57	0.67	30.04	13.61	40.00	-26.39	Vertical
95.09	26.46	14.84	1.15	29.72	12.73	43.50	-30.78	Vertical
166.07	26.52	10.85	1.66	29.33	9.70	43.50	-33.80	Vertical
390.72	26.55	16.87	2.81	29.54	16.69	46.00	-29.32	Vertical
556.77	26.72	19.67	3.55	29.30	20.64	46.00	-25.36	Vertical
955.44	25.75	23.46	5.06	29.10	25.17	46.00	-20.83	Vertical
37.03	27.52	14.82	0.63	30.06	12.91	40.00	-27.10	Horizontal
64.89	26.59	12.71	0.90	29.89	10.31	40.00	-29.70	Horizontal
126.77	27.47	11.41	1.41	29.53	10.76	43.50	-32.74	Horizontal
239.15	37.37	14.04	2.06	29.56	23.91	46.00	-22.09	Horizontal
564.64	27.13	19.83	3.58	29.30	21.24	46.00	-24.77	Horizontal
774.16	29.46	21.72	4.36	29.20	26.34	46.00	-19.67	Horizontal



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#### ■ Above 1GHz

Test channel: Lowest channel

#### Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4804.00	39.57	31.78	8.60	32.09	47.86	74.00	-26.14	Vertical
7206.00	33.95	36.15	11.65	32.00	49.75	74.00	-24.25	Vertical
9608.00	33.54	37.95	14.14	31.62	54.01	74.00	-19.99	Vertical
12010.00	*					74.00		Vertical
14412.00	*					74.00		Vertical
4804.00	43.77	31.78	8.60	32.09	52.06	74.00	-21.94	Horizontal
7206.00	35.72	36.15	11.65	32.00	51.52	74.00	-22.48	Horizontal
9608.00	32.78	37.95	14.14	31.62	53.25	74.00	-20.75	Horizontal
12010.00	*					74.00		Horizontal
14412.00	*					74.00		Horizontal

#### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4804.00	26.90	31.78	8.60	32.09	35.19	54.00	-18.81	Vertical
7206.00	21.59	36.15	11.65	32.00	37.39	54.00	-16.61	Vertical
9608.00	20.32	37.95	14.14	31.62	40.79	54.00	-13.21	Vertical
12010.00	*					54.00		Vertical
14412.00	*					54.00		Vertical
4804.00	30.55	31.78	8.60	32.09	38.84	54.00	-15.16	Horizontal
7206.00	23.77	36.15	11.65	32.00	39.57	54.00	-14.43	Horizontal
9608.00	19.92	37.95	14.14	31.62	40.39	54.00	-13.61	Horizontal
12010.00	*					54.00		Horizontal
14412.00	*					54.00		Horizontal

#### Remark:

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 3. "\*", means this data is the too weak instrument of signal is unable to test.



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Test channel: Middle channel

#### Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882.00	36.84	31.85	8.67	32.12	45.24	74.00	-28.76	Vertical
7323.00	32.24	36.37	11.72	31.89	48.44	74.00	-25.56	Vertical
9764.00	31.66	38.35	14.25	31.62	52.64	74.00	-21.36	Vertical
12205.00	*					74.00		Vertical
14646.00	*					74.00		Vertical
4882.00	40.87	31.85	8.67	32.12	49.27	74.00	-24.73	Horizontal
7323.00	33.52	36.37	11.72	31.89	49.72	74.00	-24.28	Horizontal
9764.00	30.82	38.35	14.25	31.62	51.80	74.00	-22.20	Horizontal
12205.00	*					74.00		Horizontal
14646.00	*					74.00		Horizontal

#### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882.00	26.00	31.85	8.67	32.12	34.40	54.00	-19.60	Vertical
7323.00	21.00	36.37	11.72	31.89	37.20	54.00	-16.80	Vertical
9764.00	19.91	38.35	14.25	31.62	40.89	54.00	-13.11	Vertical
12205.00	*					54.00		Vertical
14646.00	*					54.00		Vertical
4882.00	29.92	31.85	8.67	32.12	38.32	54.00	-15.68	Horizontal
7323.00	22.98	36.37	11.72	31.89	39.18	54.00	-14.82	Horizontal
9764.00	19.36	38.35	14.25	31.62	40.34	54.00	-13.66	Horizontal
12205.00	*					54.00		Horizontal
14646.00	*					54.00		Horizontal

### Remark:

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 3. "\*", means this data is the too weak instrument of signal is unable to test.



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### Test channel: Highest channel

#### Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4960.00	35.79	31.93	8.73	32.16	44.29	74.00	-29.71	Vertical
7440.00	30.97	36.59	11.79	31.78	47.57	74.00	-26.43	Vertical
9920.00	30.82	38.81	14.38	31.88	52.13	74.00	-21.87	Vertical
12400.00	*					74.00		Vertical
14880.00	*					74.00		Vertical
4960.00	39.64	31.93	8.73	32.16	48.14	74.00	-25.86	Horizontal
7440.00	32.49	36.59	11.79	31.78	49.09	74.00	-24.91	Horizontal
9920.00	29.96	38.81	14.38	31.88	51.27	74.00	-22.73	Horizontal
12400.00	*					74.00		Horizontal
14880.00	*					74.00		Horizontal

#### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4960.00	24.72	31.93	8.73	32.16	33.22	54.00	-20.78	Vertical
7440.00	19.72	36.59	11.79	31.78	36.32	54.00	-17.68	Vertical
9920.00	18.93	38.81	14.38	31.88	40.24	54.00	-13.76	Vertical
12400.00	*					54.00		Vertical
14880.00	*					54.00		Vertical
4960.00	28.62	31.93	8.73	32.16	37.12	54.00	-16.88	Horizontal
7440.00	21.79	36.59	11.79	31.78	38.39	54.00	-15.61	Horizontal
9920.00	18.40	38.81	14.38	31.88	39.71	54.00	-14.29	Horizontal
12400.00	*					54.00		Horizontal
14880.00	*					54.00		Horizontal

### Remark:

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 3. "\*", means this data is the too weak instrument of signal is unable to test.



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### 7.3.3 Bandedge emissions

All of the restriction bands were tested, and only the data of worst case was exhibited.

#### Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	41.48	27.59	5.38	30.18	44.27	74.00	-29.73	Horizontal
2400.00	58.57	27.58	5.39	30.18	61.36	74.00	-12.64	Horizontal
2390.00	42.26	27.59	5.38	30.18	45.05	74.00	-28.95	Vertical
2400.00	60.29	27.58	5.39	30.18	63.08	74.00	-10.92	Vertical

#### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	31.98	27.59	5.38	30.18	34.77	54.00	-19.23	Horizontal
2400.00	43.44	27.58	5.39	30.18	46.23	54.00	-7.77	Horizontal
2390.00	32.29	27.59	5.38	30.18	35.08	54.00	-18.92	Vertical
2400.00	45.31	27.58	5.39	30.18	48.10	54.00	-5.90	Vertical

Test channel: Highest channel
-------------------------------

#### Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	43.68	27.53	5.47	29.93	46.75	74.00	-27.25	Horizontal
2500.00	42.78	27.55	5.49	29.93	45.89	74.00	-28.11	Horizontal
2483.50	44.81	27.53	5.47	29.93	47.88	74.00	-26.12	Vertical
2500.00	43.94	27.55	5.49	29.93	47.05	74.00	-26.95	Vertical

#### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	34.81	27.53	5.47	29.93	37.88	54.00	-16.12	Horizontal
2500.00	33.18	27.55	5.49	29.93	36.29	54.00	-17.71	Horizontal
2483.50	36.36	27.53	5.47	29.93	39.43	54.00	-14.57	Vertical
2500.00	32.91	27.55	5.49	29.93	36.02	54.00	-17.98	Vertical

#### Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor



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### 7.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215					
Test Method:	ANSI C63.10:2013					
Limit:	Operation Frequency range 2400MHz~2483.5MHz					
Test setup:	Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane					
Test Instruments:	Refer to section 6.0 for details					
Test mode: Refer to section 5.3 for details						
Test results:	Pass					

#### **Measurement Data**

### **Measurement Data**

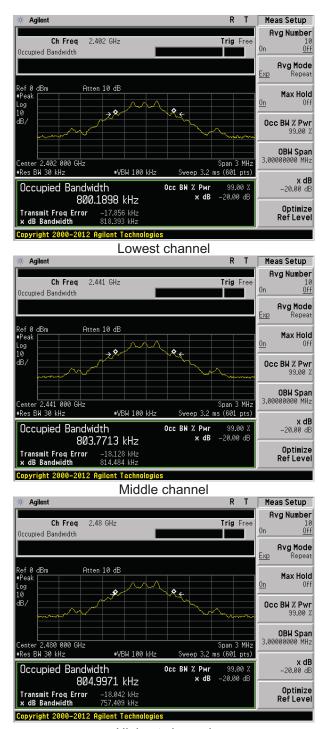
Test channel	20dB bandwidth(MHz)	Result
Lowest	0.818	Pass
Middle	0.814	Pass
Highest	0.757	Pass

Test plot as follows:



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Highest channel

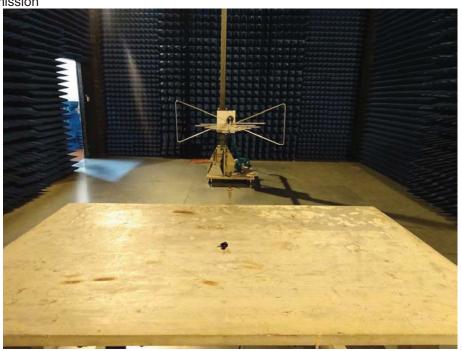


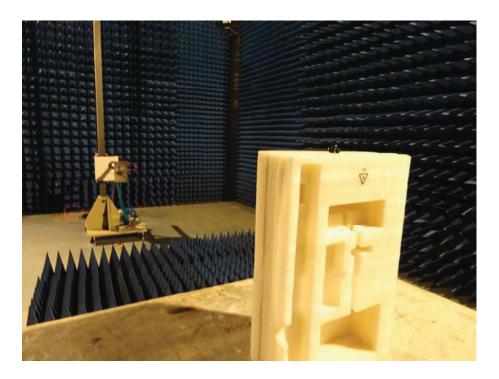
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# 8 Test Setup Photo

Radiated Emission







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#### Conducted Emission

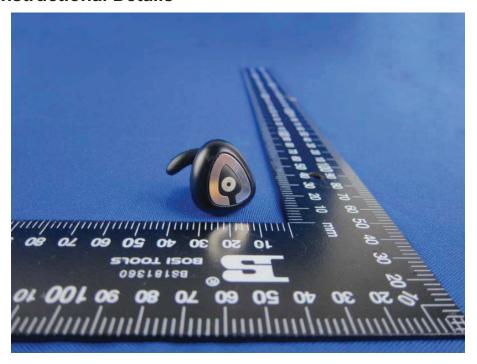


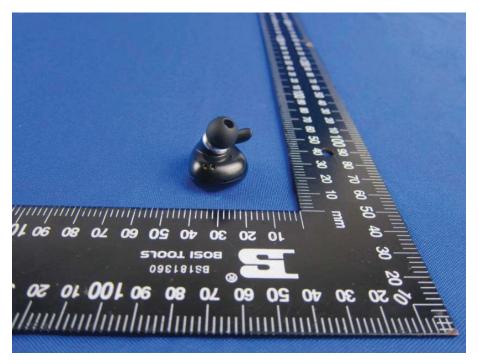


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### 9 EUT Constructional Details

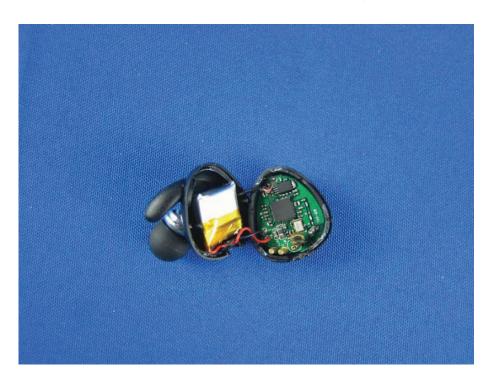


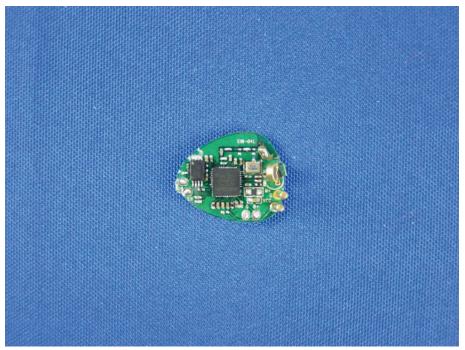




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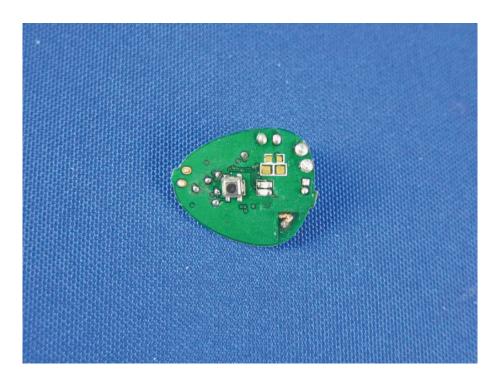


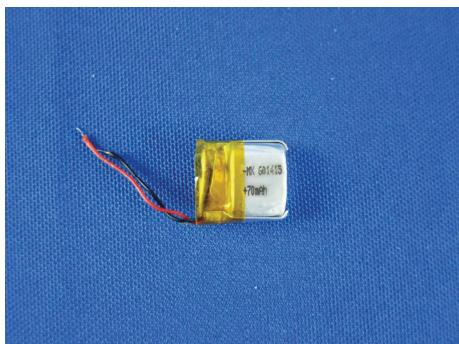




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