Shenzhen EBO Technology Co., Ltd.

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TEST REPORT

Applicant: Vcom International Multi-media Corp

Address of Applicant: 80 Little Falls Road, Fairfield, NJ 07004 United States

Equipment Under Test (EUT)

Product Name: WIRELESS HEADPHONE

Model No.: HAMILTONBUHL

Trade Mark: W901-MULTI

FCC ID: 2AAPA-W901-MULTI

Applicable standards: FCC CFR Title 47 Part 15 Subpart B:2016

Date of sample receipt: January 05, 2017

Date of Test: January 05, 2017 To January 25, 2017

Date of report issue: January 25, 2017

Test Result : PASS *

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

Authorized Signature:

Kevin Yu
Laboratory Manager

2 Version

Version No.	Date	Description
00	*January 25, 2017*	*Original*

Prepared By:  ***Date:*** *January 25, 2017*

Project Engineer

Check By:  ***Date:*** *January 25, 2017*

Reviewer

3 Contents

4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	Part15.107	PASS
Radiated Emissions	Part15.109	PASS

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

5 General Information

5.1 Client Information

Applicant:	Vcom International Multi-media Corp
Address of Applicant:	80 Little Falls Road, Fairfield, NJ 07004 United States
Manufacturer:	Vcom International Multi-media Corp
Address of Manufacturer:	80 Little Falls Road, Fairfield, NJ 07004 United States

5.2 General Description of EUT

Product Name:	WIRELESS HEADPHONE
Trade Mark:	HAMILTONBUHL
Model No.:	W901-MULTI
Power supply:	12V⎓1A or AC 12V,1A Adapter: Input:100-240V,50/60Hz,0.3A Output: 12V⎓1A

Receiver frequency： 72.1MHz-74.7MHz(72.1MHz, 72.5MHz, 72.9MHz, 74.7MHz)

5.3 Test mode

Test mode:
Receiving mode — Keep the EUT in receiving mode
Test voltage:
AC 120V/60Hz

5.4 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, July 20, 2010.

● **Industry Canada (IC)**

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.

5.5 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

5.6 Description of Support Units

None.

5.7 Deviation from Standards

Biconical, log.per. antenna and horn antenna were used instead of dipole antenna.
Semi-anechoic Chamber was used as alternation of open air test sites, and all test suites were performed with radiated method in it.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None.

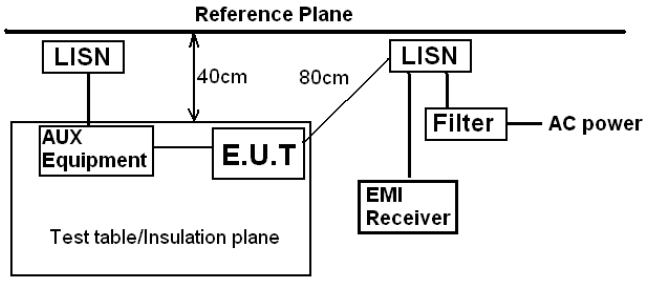
6 Test Instruments list

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 14 2016	June 13 2017
4	Loop Antenna	ZHINAN	ZN30900A	GTS534	June 14 2016	June 13 2017
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June 14 2016	June 13 2017
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 14 2016	June 13 2017
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 27 2016	Mar. 26 2017
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 27 2016	Mar. 26 2017
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 27 2016	Mar. 26 2017
11	Coaxial cable	GTS	N/A	GTS210	Mar. 27 2016	Mar. 26 2017
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 27 2016	Mar. 26 2017
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June 14 2016	June 13 2017
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June 14 2016	June 13 2017
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 14 2016	June 13 2017
16	Band filter	Amindeon	82346	GTS219	Mar. 27 2016	Mar. 26 2017
17	Constant temperature and humidity box	Oregon Scientific	BA-888	GTS248	June 14 2016	June 13 2017
18	D.C. Power Supply	Instek	PS-3030	GTS232	June 14 2016	June 13 2017

Conducted Emission:						
Item	**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 14 2016	June 13 2017
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	June 14 2016	June 13 2017
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	June 14 2016	June 13 2017
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June 14 2016	June 13 2017
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	June 14 2016	June 13 2017
6	Coaxial Cable	GTS	N/A	GTS227	June 14 2016	June 13 2017
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

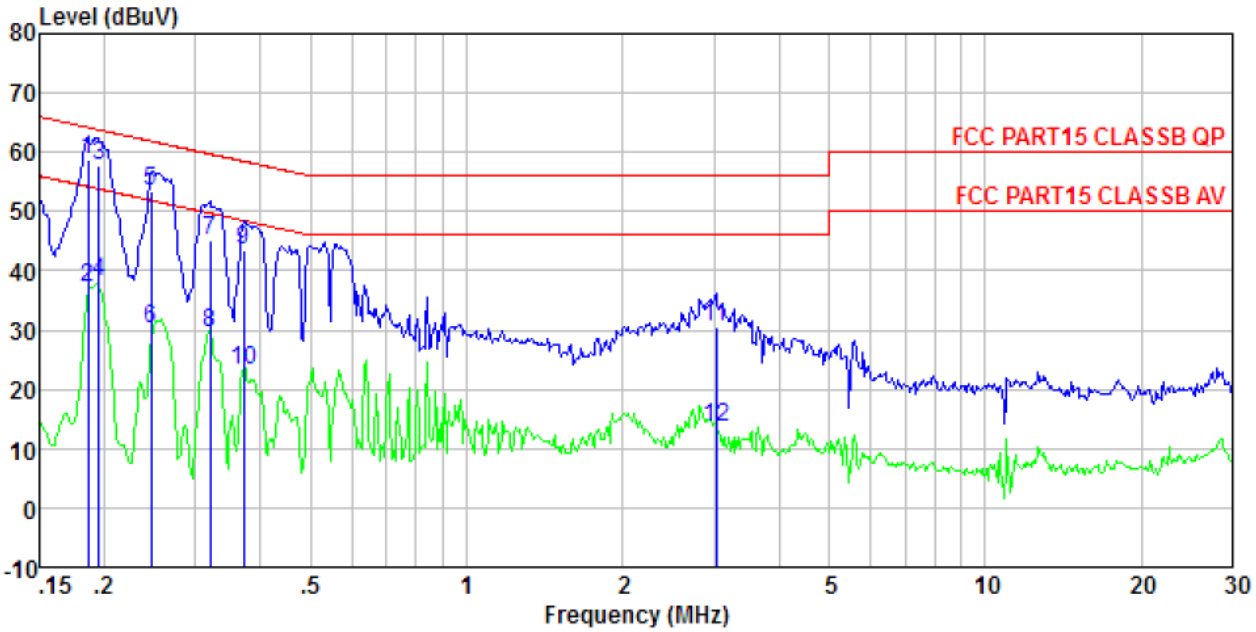
7 Test Results and Measurement Data

7.1 Conducted Emissions

Test Requirement:	FCC Part15 B Section 15.107
Test Method:	ANSI C63.4:2014
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto
Limit:	Frequency range (MHz) / Limit (dBuV): 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 logarithm of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance 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 C63.4: 2014 on conducted measurement.
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.3 for details. All of the mode were tested and found the "Receiving mode" is the worst case. Only the data of worst case was reported.
Test results:	Pass

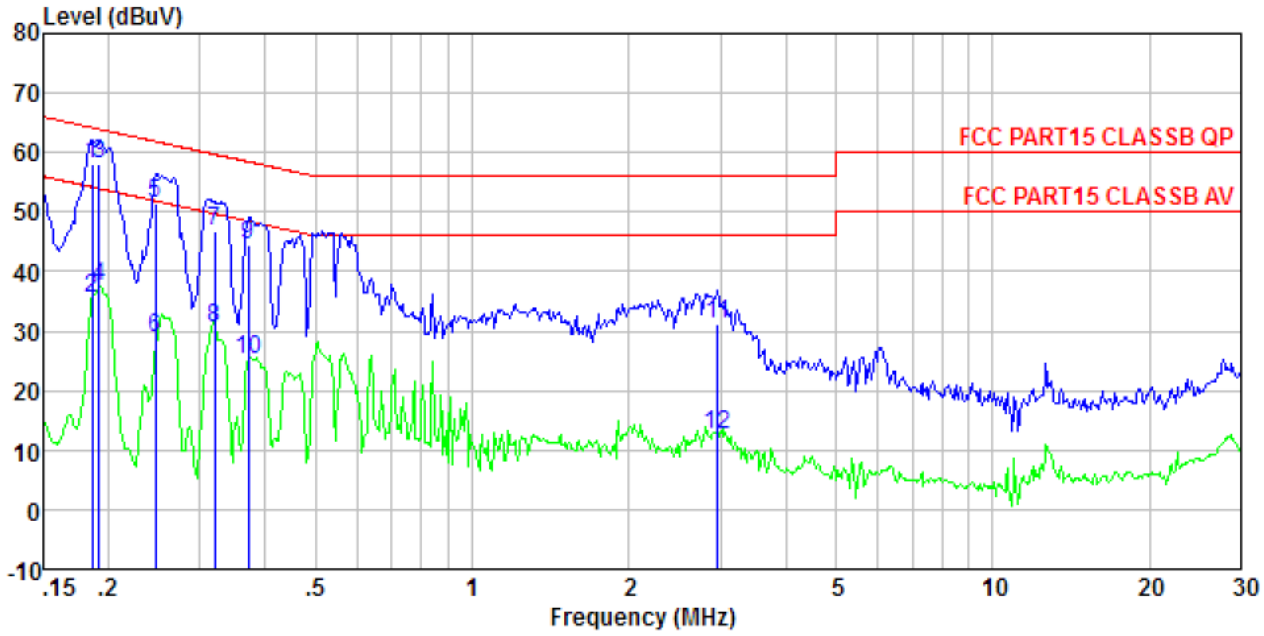
Measurement Data

Test mode:	Receiving mode		LINE



	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.186	58.29	0.42	0.13	58.84	64.20	-5.36	QP
2	0.186	36.47	0.42	0.13	37.02	54.20	-17.18	Average
3	0.195	57.18	0.43	0.13	57.74	63.80	-6.06	QP
4	0.195	37.67	0.43	0.13	38.23	53.80	-15.57	Average
5	0.247	52.74	0.44	0.11	53.29	61.86	-8.57	QP
6	0.247	29.55	0.44	0.11	30.10	51.86	-21.76	Average
7	0.320	44.44	0.44	0.10	44.98	59.71	-14.73	QP
8	0.320	29.03	0.44	0.10	29.57	49.71	-20.14	Average
9	0.371	42.87	0.42	0.10	43.39	58.47	-15.08	QP
10	0.371	22.70	0.42	0.10	23.22	48.47	-25.25	Average
11	3.025	30.15	0.20	0.15	30.50	56.00	-25.50	QP
12	3.025	13.08	0.20	0.15	13.43	46.00	-32.57	Average

Test mode:	Receiving mode		NEUTRAL



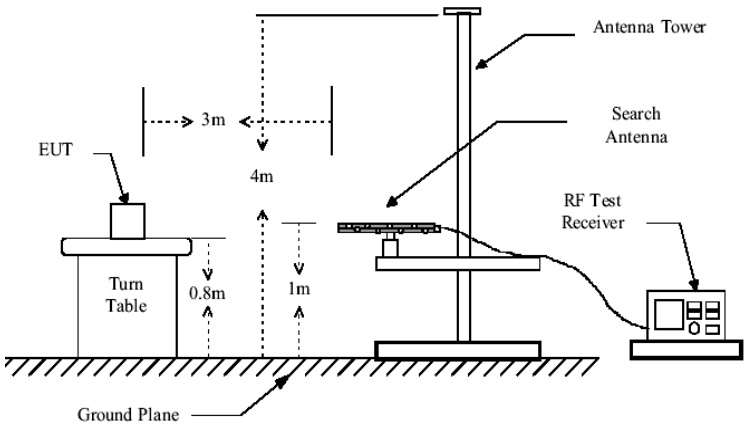
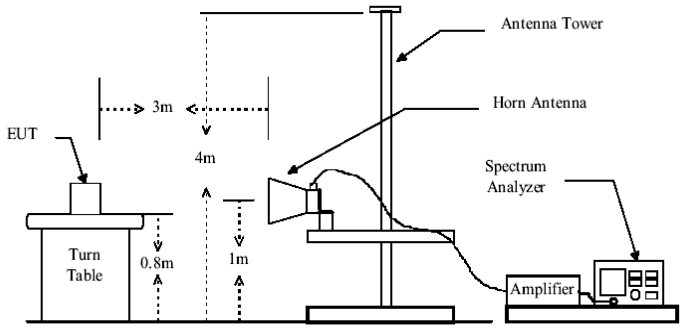
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.186	57.66	0.41	0.13	58.20	64.20	-6.00	QP
2	0.186	35.03	0.41	0.13	35.57	54.20	-18.63	Average
3	0.192	57.64	0.41	0.13	58.18	63.93	-5.75	QP
4	0.192	36.96	0.41	0.13	37.50	53.93	-16.43	Average
5	0.247	50.93	0.42	0.11	51.46	61.86	-10.40	QP
6	0.247	28.36	0.42	0.11	28.89	51.86	-22.97	Average
7	0.320	46.36	0.42	0.10	46.88	59.71	-12.83	QP
8	0.320	29.98	0.42	0.10	30.50	49.71	-19.21	Average
9	0.371	44.01	0.40	0.10	44.51	58.47	-13.96	QP
10	0.371	24.71	0.40	0.10	25.21	48.47	-23.26	Average
11	2.962	30.96	0.20	0.15	31.31	56.00	-24.69	QP
12	2.962	12.37	0.20	0.15	12.72	46.00	-33.28	Average

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.

7.2 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 B Section 15.109</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4:2014</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 6GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.00</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.50</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.00</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.00</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr>
<tr><td>74.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>
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.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. 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.
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.
5. 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.
</td></tr>
</table>

Test setup:	Below 1GHz  Above 1GHz  					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1 012mbar
Measurement Record:	Uncertainty: ± 4.5dB					
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.3 for details. All of the mode were tested and found the "Receiving mode" is the worst case. Only the data of worst case was reported.					
Test results:	Pass					

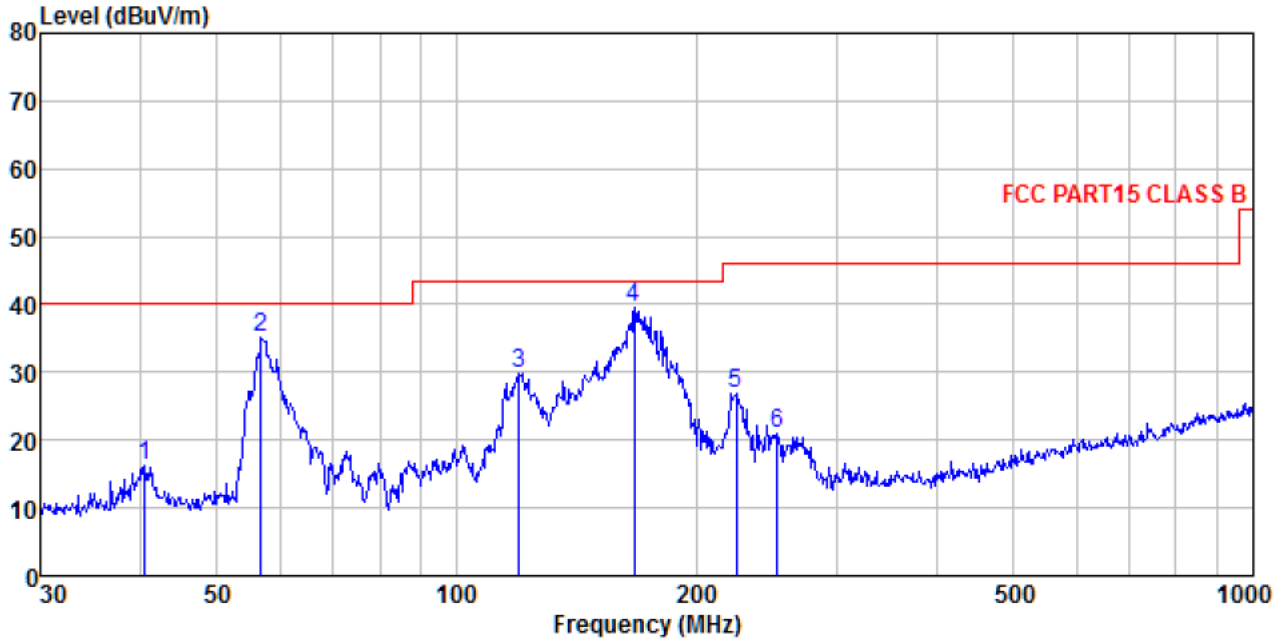
Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

Measurement Data

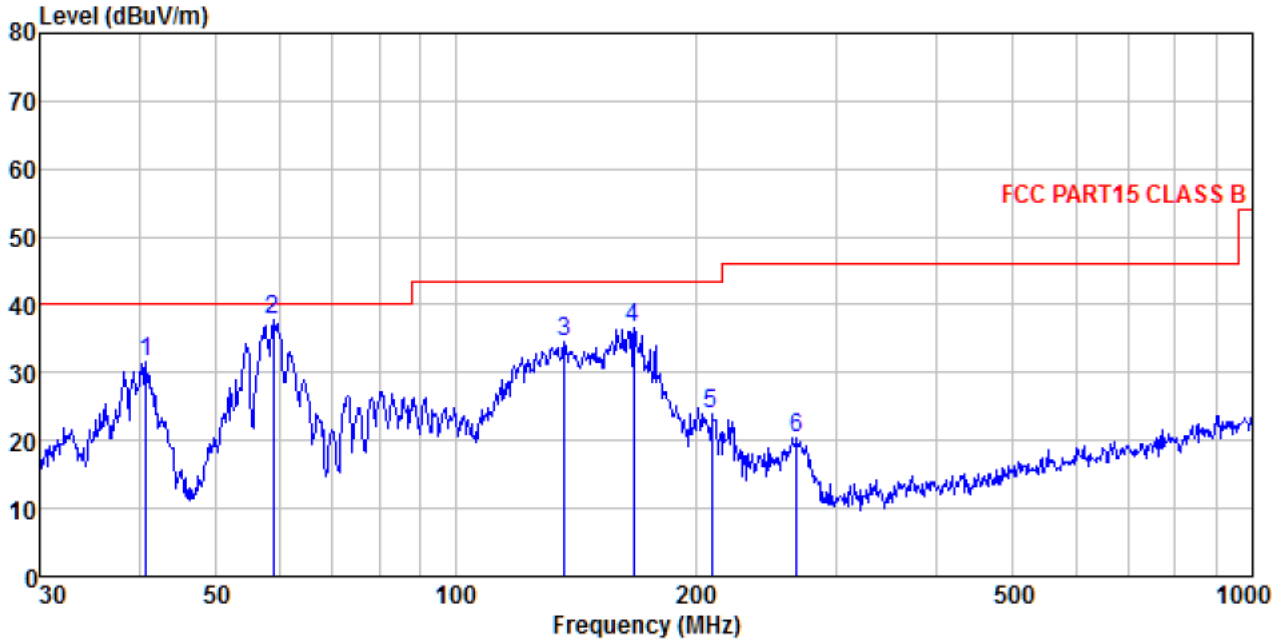
Below 1GHz

Test mode:	Receiving mode	Ant Pol.	Horizontal



	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	40.559	29.90	15.58	30.04	0.67	16.11	40.00	-23.89	QP
2	56.792	49.41	14.89	29.94	0.83	35.19	40.00	-4.81	QP
3	119.856	45.65	12.48	29.57	1.36	29.92	43.50	-13.58	QP
4	167.237	56.46	10.87	29.33	1.67	39.67	43.50	-3.83	QP
5	224.519	41.02	13.41	29.43	1.99	26.99	46.00	-19.01	QP
6	252.948	34.45	14.06	29.66	2.14	20.99	46.00	-25.01	QP

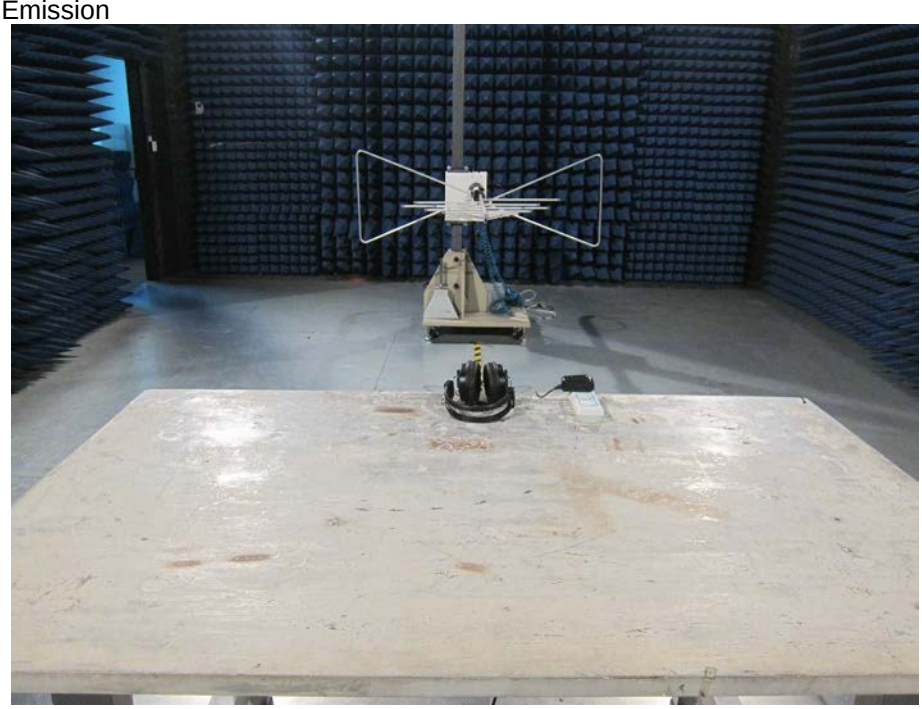
Test mode:	Receiving mode	Ant Pol.	Vertical



	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	40.845	45.50	15.57	30.04	0.67	31.70	40.00	-8.30	QP
2	59.025	52.15	14.76	29.93	0.85	37.83	40.00	-2.17	QP
3	136.939	52.01	10.40	29.47	1.48	34.42	43.50	-9.08	QP
4	167.237	53.53	10.87	29.33	1.67	36.74	43.50	-6.76	QP
5	209.313	38.44	12.87	29.29	1.89	23.91	43.50	-19.59	QP
6	267.546	33.71	14.30	29.77	2.21	20.45	46.00	-25.55	QP

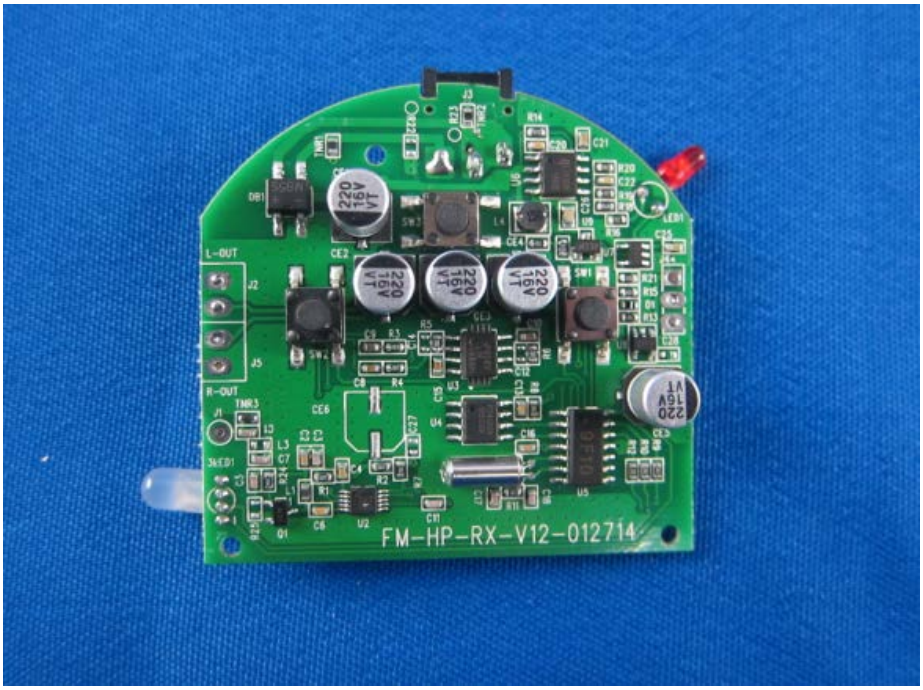
8 Test Setup Photo

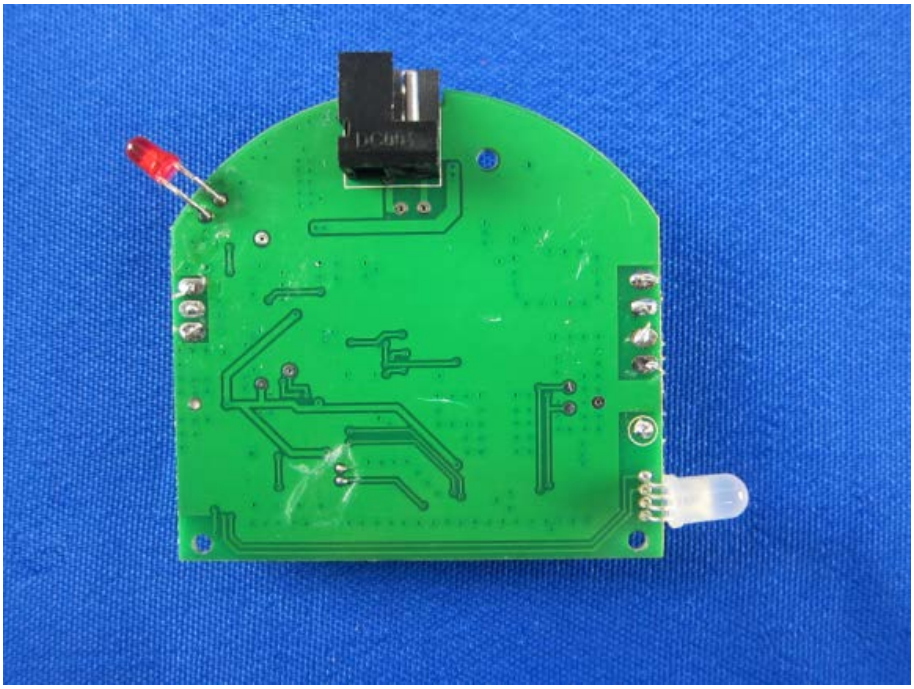
Radiated Emission



Conducted Emission

9 EUT Constructional Details





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