

FCC REPORT

Applicant: Smartree Technology Co., Ltd.

Address of Applicant: 5F, A Block, North NO. 8, Shangxue Industrial Park, Bantian Street, Longgang District, Shenzhen, China

Manufacturer/Factory: Smartree Technology Co., Ltd.

Address of Manufacturer/Factory: 5F, A Block, North NO. 8, Shangxue Industrial Park, Bantian Street, Longgang District, Shenzhen, China

Equipment Under Test (EUT)

Product Name: 2.4GHz Baby Monitor

Model No.: BM35QTX

FCC ID: 2AKVZ-BM35QTX

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249:2017

Date of sample receipt: January 09, 2018

Date of Test: January 10-12, 2018

Date of report issued: January 15, 2018

Test Result : PASS *

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

Authorized Signature:

A circular blue ink stamp from GTS Global United Technology Services Co., Ltd. is visible. The stamp contains the text 'GTS', 'GLOBAL UNITED TECHNOLOGY SERVICES CO., LTD.', and 'GLOBAL TESTING'. Overlaid on the stamp is a handwritten signature in black ink, which appears to be 'Robinson Lo'.

Robinson Lo

Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	January 15, 2018	Original

Prepared By:

Bill. Yuan

Date:

January 15, 2018

Project Engineer

Check By:

Andy. Wu

Date:

January 15, 2018

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	$\pm 4.34\text{dB}$	(1)
Radiated Emission	30MHz ~ 1000MHz	$\pm 4.24\text{dB}$	(1)
Radiated Emission	1GHz ~ 26.5GHz	$\pm 4.68\text{dB}$	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	$\pm 3.45\text{dB}$	(1)

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

5 General Information

5.1 General Description of EUT

Product Name:	2.4GHz Baby Monitor
Model No.:	BM35QTX
Operation Frequency:	2410.875MHz~2471.625MHz
Channel numbers:	19
Channel separation:	1MHz
Modulation type:	GFSK
Antenna Type:	Integral Antenna
Antenna gain:	0 dBi(declared by manufacturer)
Power supply:	AC/DC Adapter Model:EP19-050080WXLA Input: AC 100-240V, 50/60Hz, 200mA Max Output: DC 5.0V, 0.8A Or AC/DC Adapter Model: CS3E050070FU Input: AC 100-240V, 50/60Hz, 200mA Output: DC 5.0V, 700mA

Frequency List:							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2410.875	6	2427.750	11	2444.625	16	2461.500
2	2414.250	7	2431.125	12	2448.000	17	2464.875
3	2417.625	8	2434.500	13	2451.375	18	2468.250
4	2421.000	9	2437.875	14	2454.750	19	2471.625
5	2424.375	10	2441.250	15	2458.125	20	

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	2410.875MHz
The middle channel	2441.250MHz
The Highest channel	2471.625MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
<i>Remark: During the test, the dutycycle >98%, 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.</i>	

Pre-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	X	Y	Z
Field Strength(dBuV/m)	94.21	95.45	93.33

Final Test Mode:

The EUT was tested in GFSK.

According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup”:

Y axis (see the test setup photo)

5.3 Description of Support Units

None

5.4 Test Facility

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

- **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen 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 files. Registration 381383, January 08, 2018.

- **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, August 15, 2016

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

5.6 Other Information Requested by the Customer

None.

6 Test Instruments list

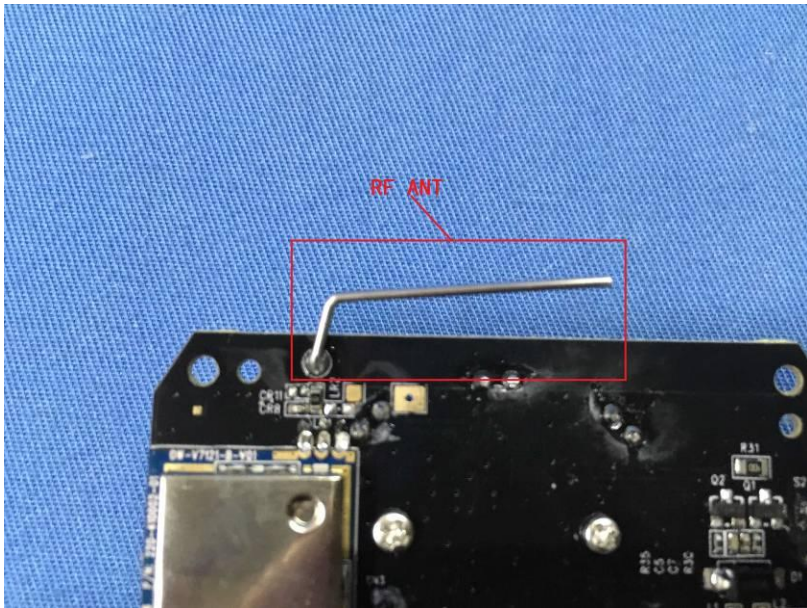
Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July 03 2015	July 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June 28 2017	June 27 2018
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June 28 2017	June 27 2018
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June 28 2017	June 27 2018
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 28 2017	June 27 2018
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	June 28 2017	June 27 2018
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	June 28 2017	June 27 2018
10	Coaxial Cable	GTS	N/A	GTS211	June 28 2017	June 27 2018
11	Coaxial cable	GTS	N/A	GTS210	June 28 2017	June 27 2018
12	Coaxial Cable	GTS	N/A	GTS212	June 28 2017	June 27 2018
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June 28 2017	June 27 2018
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June 28 2017	June 27 2018
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 28 2017	June 27 2018
16	Band filter	Amindeon	82346	GTS219	June 28 2017	June 27 2018
17	Power Meter	Anritsu	ML2495A	GTS540	June 28 2017	June 27 2018
18	Power Sensor	Anritsu	MA2411B	GTS541	June 28 2017	June 27 2018

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	7.3(L)x3.1(W)x2.9(H)	GTS252	May.16 2014	May.15 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June 28 2017	June 27 2018
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June 28 2017	June 27 2018
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June 28 2017	June 27 2018
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June 28 2017	June 27 2018

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Barometer	ChangChun	DYM3	GTS257	June 28 2017	June 27 2018

7 Test results and Measurement Data

7.1 Antenna requirement

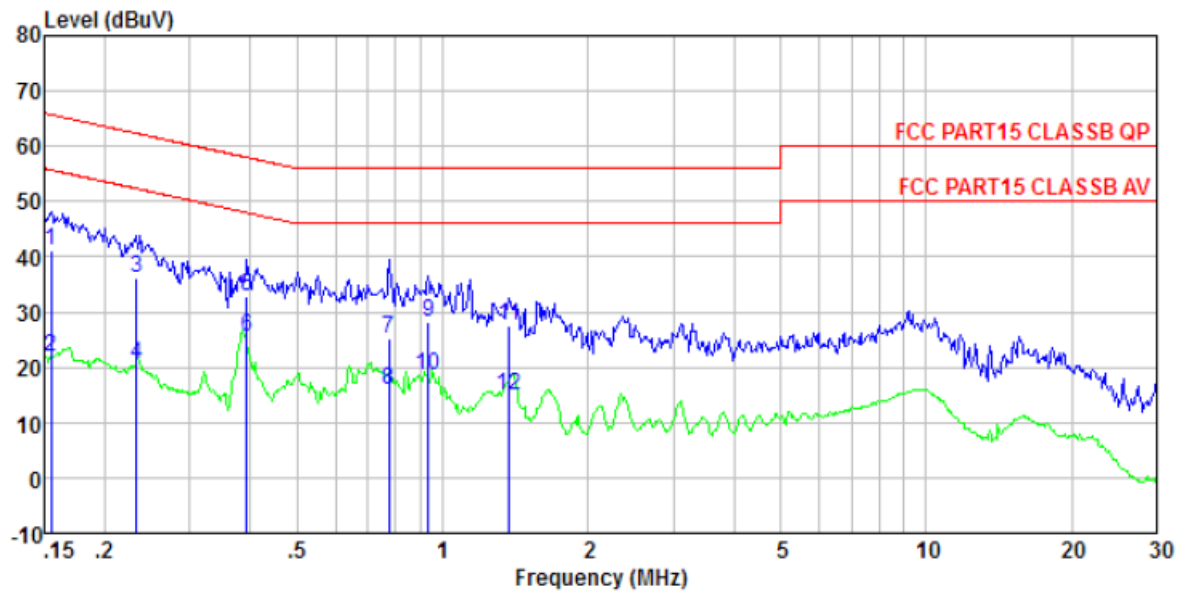
Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: <p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique 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.</p>	
EUT Antenna:	
<p><i>The antenna is Integral antenna, the best case gain of the antenna is 0 dBi</i></p> 	

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, Sweep time=auto																
Limit:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table> <p>* Decreases with the logarithm of the frequency.</p>	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		
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															
Test setup:	<div><p style="text-align: center;">Reference Plane</p><p>Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p></div>																
Test procedure:	<div><div>1. The EUT 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.</div><div>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).</div><div>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.</div></div>																
Test Instruments:	Refer to section 6.0 for details																
Test mode:	Refer to section 5.2 for details																
Test results:	Pass																

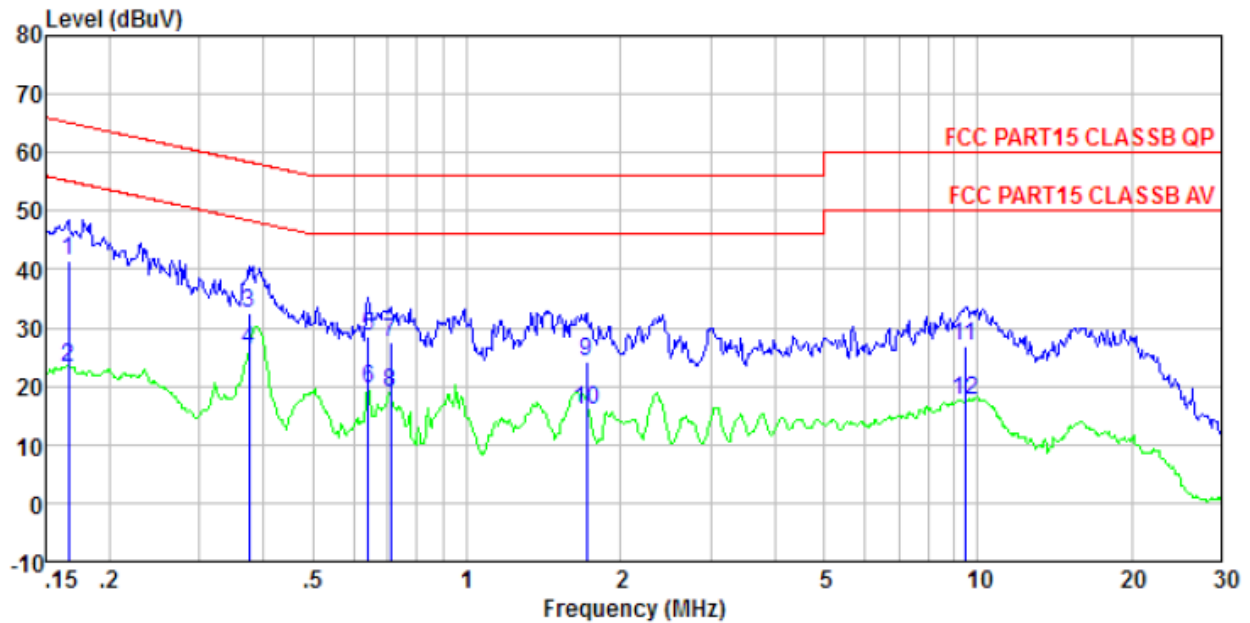
Measurement data

Line:



Freq MHz	Reading level dBuV	IISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.155	40.57	0.40	0.07	41.04	65.74	-24.70	QP
0.155	21.50	0.40	0.07	21.97	55.74	-33.77	Average
0.233	35.54	0.40	0.11	36.05	62.35	-26.30	QP
0.233	20.01	0.40	0.11	20.52	52.35	-31.83	Average
0.393	32.37	0.35	0.11	32.83	57.99	-25.16	QP
0.393	25.23	0.35	0.11	25.69	47.99	-22.30	Average
0.775	24.76	0.24	0.14	25.14	56.00	-30.86	QP
0.775	15.68	0.24	0.14	16.06	46.00	-29.94	Average
0.933	27.92	0.21	0.15	28.28	56.00	-27.72	QP
0.933	18.35	0.21	0.15	18.71	46.00	-27.29	Average
1.374	27.19	0.20	0.16	27.55	56.00	-28.45	QP
1.374	14.68	0.20	0.16	15.04	46.00	-30.96	Average

Neutral:

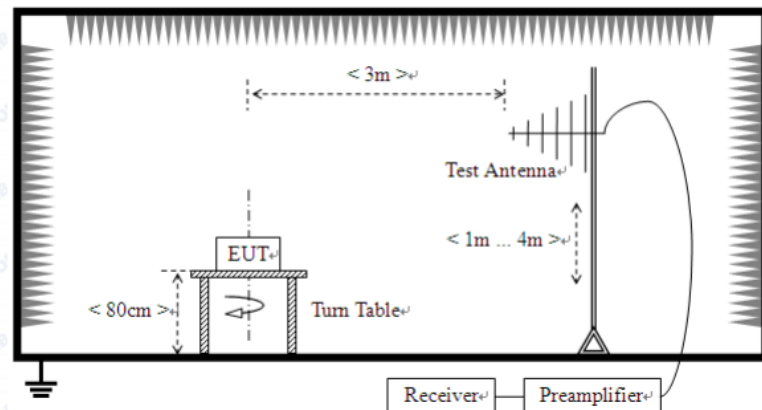


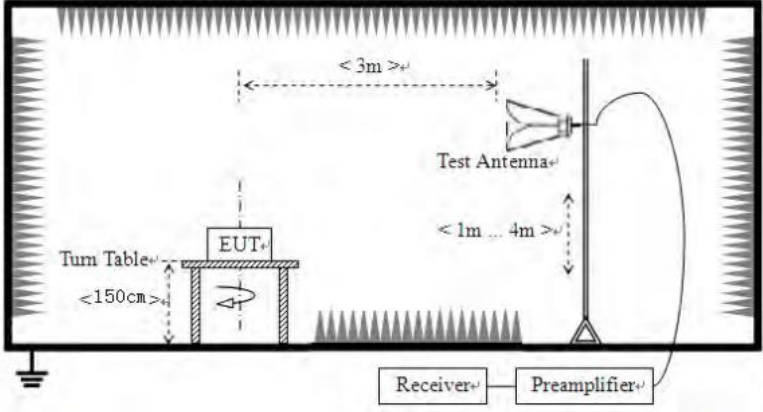
Freq MHz	Reading level dBuV	LISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.166	41.11	0.40	0.08	41.59	65.16	-23.57	QP
0.166	22.85	0.40	0.08	23.33	55.16	-31.83	Average
0.375	32.03	0.36	0.10	32.49	58.39	-25.90	QP
0.375	25.67	0.36	0.10	26.13	48.39	-22.26	Average
0.641	28.04	0.27	0.12	28.43	56.00	-27.57	QP
0.641	19.28	0.27	0.12	19.67	46.00	-26.33	Average
0.708	27.24	0.26	0.13	27.63	56.00	-28.37	QP
0.708	18.66	0.26	0.13	19.05	46.00	-26.95	Average
1.716	23.84	0.20	0.17	24.21	56.00	-31.79	QP
1.716	15.68	0.20	0.17	16.05	46.00	-29.95	Average
9.451	26.42	0.20	0.20	26.82	60.00	-33.18	QP
9.451	17.31	0.20	0.20	17.71	50.00	-32.29	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.

7.3 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	30MHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit: (Field strength of the fundamental signal)	Frequency		Limit (dBuV/m @3m)		Remark
	2400MHz-2483.5MHz		94.00		Average Value
			114.00		Peak Value
Limit: (Spurious Emissions)	Frequency		Limit (dBuV/m @3m)		Remark
	30MHz-88MHz		40.00		Quasi-peak Value
	88MHz-216MHz		43.50		Quasi-peak Value
	216MHz-960MHz		46.00		Quasi-peak Value
	960MHz-1GHz		54.00		Quasi-peak Value
	Above 1GHz		54.00		Average Value
			74.00		Peak Value
Limit: (band edge)	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.				
Test setup:	Below 1GHz				
	<div></div>				
	Above 1GHz				

	
<p>Test Procedure:</p>	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table (0.8m for below 1G and 1.5m for above 1G) 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.
<p>Test Instruments:</p>	<p>Refer to section 6.0 for details</p>
<p>Test mode:</p>	<p>Refer to section 5.2 for details</p>
<p>Test results:</p>	<p>Pass</p>

Measurement data:

7.3.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2410.875	91.30	27.58	5.39	30.18	94.09	114.00	-19.91	Vertical
2410.875	88.84	27.58	5.39	30.18	91.63	114.00	-22.37	Horizontal
2441.250	89.68	27.55	5.43	30.06	92.60	114.00	-21.40	Vertical
2441.250	87.86	27.55	5.43	30.06	90.78	114.00	-23.22	Horizontal
2471.625	92.39	27.52	5.47	29.93	95.45	114.00	-18.55	Vertical
2471.625	89.33	27.52	5.47	29.93	92.39	114.00	-21.61	Horizontal

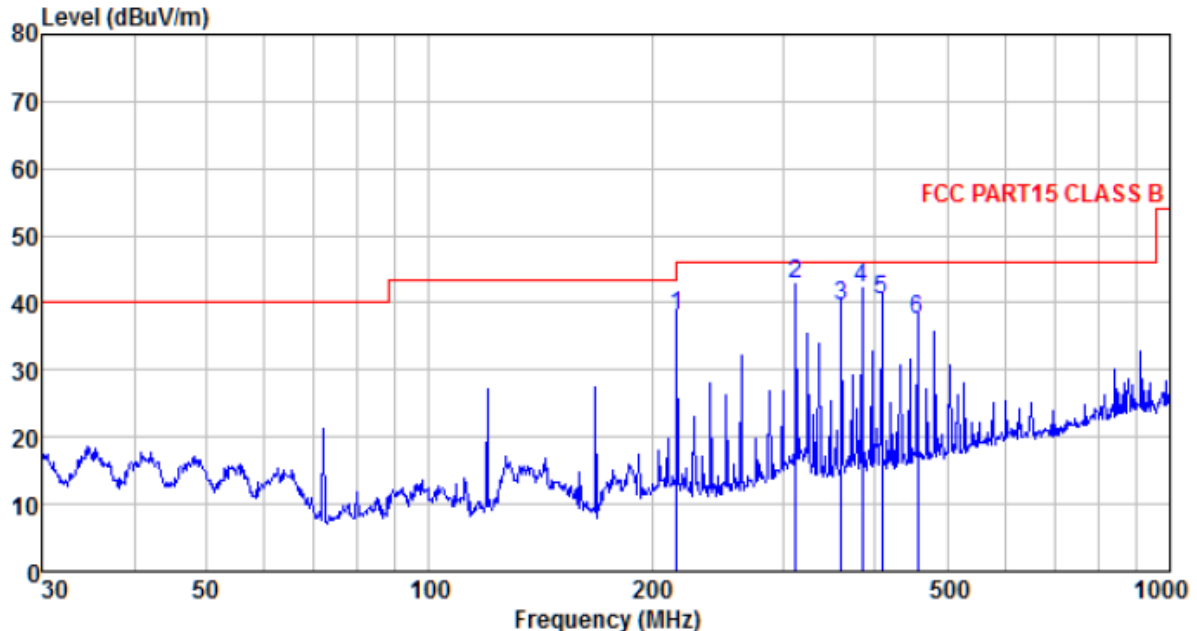
Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2410.875	79.74	27.58	5.39	30.18	82.53	94.00	-11.47	Vertical
2410.875	77.45	27.58	5.39	30.18	80.24	94.00	-13.76	Horizontal
2441.250	78.01	27.55	5.43	30.06	80.93	94.00	-13.07	Vertical
2441.250	77.16	27.55	5.43	30.06	80.08	94.00	-13.92	Horizontal
2471.625	80.81	27.52	5.47	29.93	83.87	94.00	-10.13	Vertical
2471.625	77.85	27.52	5.47	29.93	80.91	94.00	-13.09	Horizontal

7.3.2 Spurious emissions

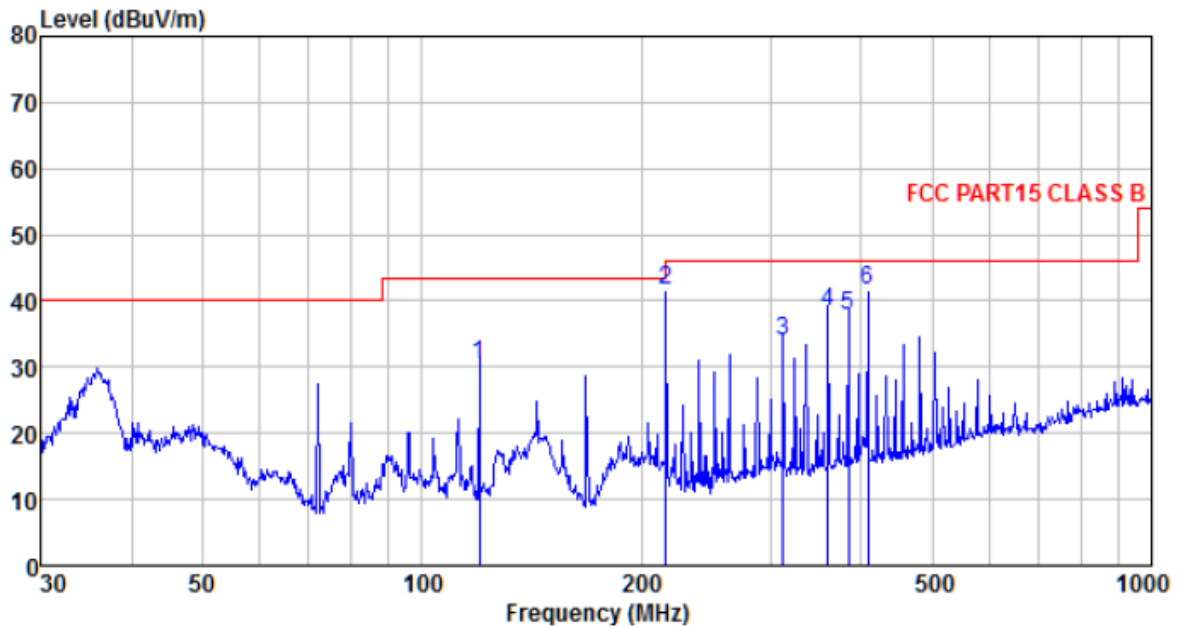
■ Below 1GHz

Horizontal :



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamplifier factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
216.024	62.41	11.02	1.93	37.35	38.01	46.00	-7.99	QP
312.179	63.91	13.85	2.42	37.43	42.75	46.00	-3.25	QP
360.448	59.60	14.70	2.67	37.48	39.49	46.00	-6.51	QP
383.932	61.74	15.08	2.78	37.51	42.09	46.00	-3.91	QP
408.946	59.47	15.50	2.90	37.52	40.35	46.00	-5.65	QP
455.906	55.36	16.48	3.11	37.51	37.44	46.00	-8.56	QP

Vertical :



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
119.856	56.52	9.50	1.36	36.88	30.50	43.50	-13.00	QP
216.024	66.12	11.02	1.93	37.35	41.72	46.00	-4.28	QP
312.179	55.05	13.85	2.42	37.43	33.89	46.00	-12.11	QP
360.448	58.34	14.70	2.67	37.48	38.23	46.00	-7.77	QP
383.932	57.38	15.08	2.78	37.51	37.73	46.00	-8.27	QP
408.946	60.86	15.50	2.90	37.52	41.74	46.00	-4.26	QP

■ Above 1GHz

Test channel:	Lowest channel
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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
4821.750	38.85	31.79	8.62	32.10	47.16	74.00	-26.84	Vertical
7232.625	33.31	36.19	11.68	31.97	49.21	74.00	-24.79	Vertical
9643.500	32.06	38.07	14.16	31.56	52.73	74.00	-21.27	Vertical
12054.375	*					74.00		Vertical
14465.250	*					74.00		Vertical
16876.125	*					74.00		Vertical
4821.750	37.75	31.79	8.62	32.10	46.06	74.00	-27.94	Horizontal
7232.625	33.17	36.19	11.68	31.97	49.07	74.00	-24.93	Horizontal
9643.500	31.69	38.07	14.16	31.56	52.36	74.00	-21.64	Horizontal
12054.375	*					74.00		Horizontal
14465.250	*					74.00		Horizontal
16876.125	*					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
4821.750	28.05	31.79	8.62	32.10	36.36	54.00	-17.64	Vertical
7232.625	22.21	36.19	11.68	31.97	38.11	54.00	-15.89	Vertical
9643.500	22.44	38.07	14.16	31.56	43.11	54.00	-10.89	Vertical
12054.375	*					54.00		Vertical
14465.250	*					54.00		Vertical
16876.125	*					54.00		Vertical
4821.750	27.36	31.79	8.62	32.10	35.67	54.00	-18.33	Horizontal
7232.625	21.78	36.19	11.68	31.97	37.68	54.00	-16.32	Horizontal
9643.500	21.46	38.07	14.16	31.56	42.13	54.00	-11.87	Horizontal
12054.375	*					54.00		Horizontal
14465.250	*					54.00		Horizontal
16876.125	*					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.

Test channel:	Middle channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882.500	38.16	31.85	8.66	32.12	46.55	74.00	-27.45	Vertical
7323.750	33.54	36.37	11.71	31.91	49.71	74.00	-24.29	Vertical
9765.000	33.19	38.27	14.25	31.56	54.15	74.00	-19.85	Vertical
12206.250	*					74.00		Vertical
14647.500	*					74.00		Vertical
17088.750	*					74.00		Vertical
4882.500	38.82	31.85	8.66	32.12	47.21	74.00	-26.79	Horizontal
7323.750	32.27	36.37	11.71	31.91	48.44	74.00	-25.56	Horizontal
9765.000	33.13	38.27	14.25	31.56	54.09	74.00	-19.91	Horizontal
12206.250	*					74.00		Horizontal
14647.500	*					74.00		Horizontal
17088.750	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882.500	29.10	31.85	8.66	32.12	37.49	54.00	-16.51	Vertical
7323.750	21.88	36.37	11.71	31.91	38.05	54.00	-15.95	Vertical
9765.000	22.47	38.27	14.25	31.56	43.43	54.00	-10.57	Vertical
12206.250	*					54.00		Vertical
14647.500	*					54.00		Vertical
17088.750	*					54.00		Vertical
4882.500	29.00	31.85	8.66	32.12	37.39	54.00	-16.61	Horizontal
7323.750	21.38	36.37	11.71	31.91	37.55	54.00	-16.45	Horizontal
9765.000	22.86	38.27	14.25	31.56	43.82	54.00	-10.18	Horizontal
12206.250	*					54.00		Horizontal
14647.500	*					54.00		Horizontal
17088.750	*					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.

Test channel:	Highest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4943.250	42.83	31.90	8.70	32.15	51.28	74.00	-22.72	Vertical
7414.875	33.67	36.49	11.76	31.83	50.09	74.00	-23.91	Vertical
9886.500	36.10	38.62	14.31	31.77	57.26	74.00	-16.74	Vertical
12358.125	*					74.00		Vertical
14829.750	*					74.00		Vertical
17301.375	*					74.00		Vertical
4943.250	42.45	31.90	8.70	32.15	50.90	74.00	-23.10	Horizontal
7414.875	32.73	36.49	11.76	31.83	49.15	74.00	-24.85	Horizontal
9886.500	32.34	38.62	14.31	31.77	53.50	74.00	-20.50	Horizontal
12358.125	*					74.00		Horizontal
14829.750	*					74.00		Horizontal
17301.375	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4943.250	33.90	31.90	8.70	32.15	42.35	54.00	-11.65	Vertical
7414.875	23.63	36.49	11.76	31.83	40.05	54.00	-13.95	Vertical
9886.500	24.64	38.62	14.31	31.77	45.80	54.00	-8.20	Vertical
12358.125	*					54.00		Vertical
14829.750	*					54.00		Vertical
17301.375	*					54.00		Vertical
4943.250	32.92	31.90	8.70	32.15	41.37	54.00	-12.63	Horizontal
7414.875	22.15	36.49	11.76	31.83	38.57	54.00	-15.43	Horizontal
9886.500	21.63	38.62	14.31	31.77	42.79	54.00	-11.21	Horizontal
12358.125	*					54.00		Horizontal
14829.750	*					54.00		Horizontal
17301.375	*					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.

7.3.3 Bandedge emissions

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

Test channel:	Lowest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	50.50	27.59	5.38	34.01	49.46	74.00	-24.54	Horizontal
2400.00	59.13	27.58	5.39	34.01	58.09	74.00	-15.91	Horizontal
2390.00	52.11	27.59	5.38	34.01	51.07	74.00	-22.93	Vertical
2400.00	60.62	27.58	5.39	34.01	59.58	74.00	-14.42	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	37.60	27.59	5.38	34.01	36.56	54.00	-17.44	Horizontal
2400.00	45.77	27.58	5.39	34.01	44.73	54.00	-9.27	Horizontal
2390.00	39.32	27.59	5.38	34.01	38.28	54.00	-15.72	Vertical
2400.00	46.80	27.58	5.39	34.01	45.76	54.00	-8.24	Vertical

Test channel:	Highest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	50.67	27.53	5.47	33.92	49.75	74.00	-24.25	Horizontal
2500.00	46.86	27.55	5.49	29.93	49.97	74.00	-24.03	Horizontal
2483.50	52.69	27.53	5.47	33.92	51.77	74.00	-22.23	Vertical
2500.00	49.16	27.55	5.49	29.93	52.27	74.00	-21.73	Vertical

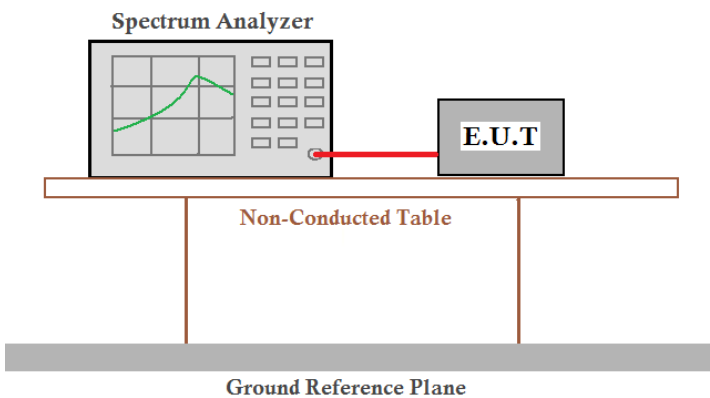
Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	37.79	27.53	5.47	33.92	36.87	54.00	-17.13	Horizontal
2500.00	34.11	27.55	5.49	29.93	37.22	54.00	-16.78	Horizontal
2483.50	39.63	27.53	5.47	33.92	38.71	54.00	-15.29	Vertical
2500.00	35.94	27.55	5.49	29.93	39.05	54.00	-14.95	Vertical

Remark:

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

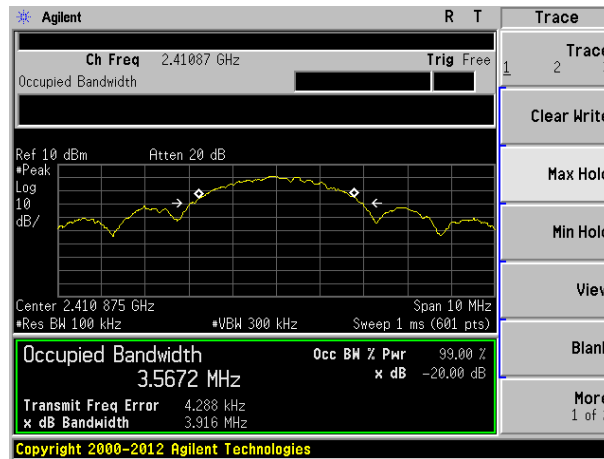
7.4 20dB Occupy Bandwidth

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:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

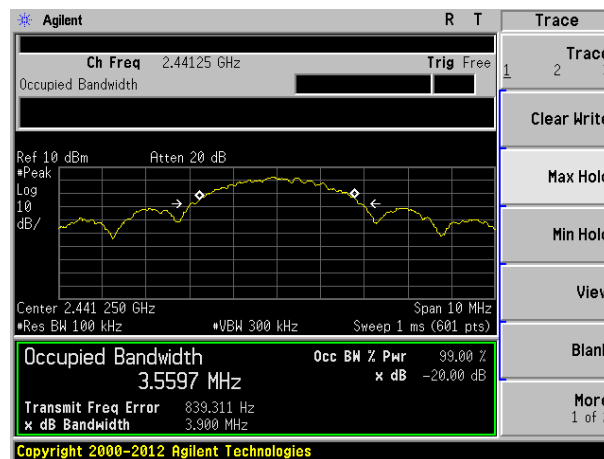
Measurement Data

Test channel	20dB bandwidth(MHz)	Result
Lowest	3.916	
Middle	3.900	
Highest	3.919	

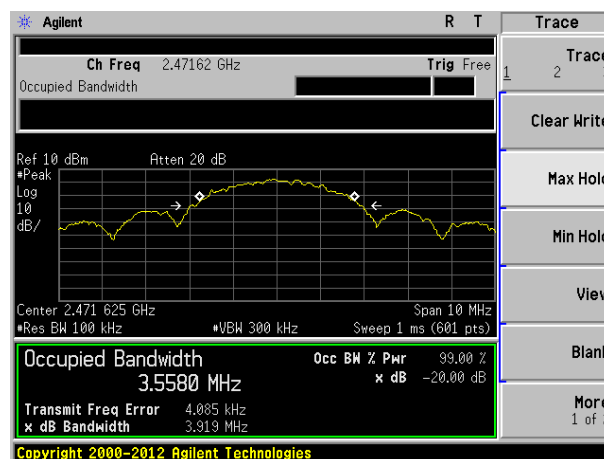
Test plot as follows:



Lowest channel



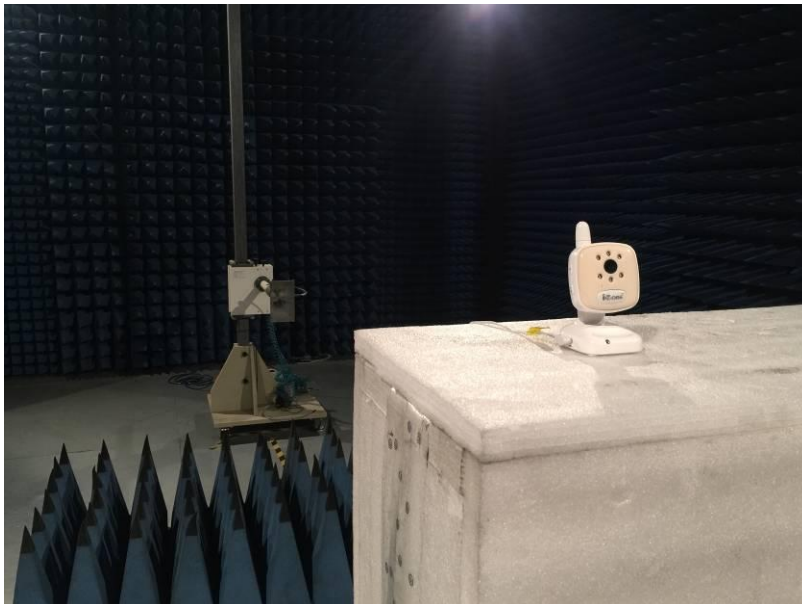
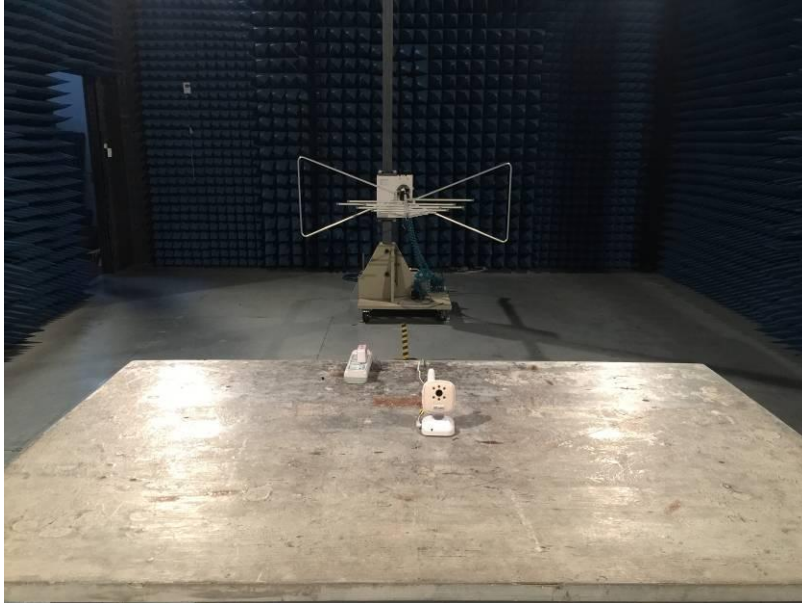
Middle channel



Highest channel

8 Test Setup Photo

Radiated Emission



Conducted Emission



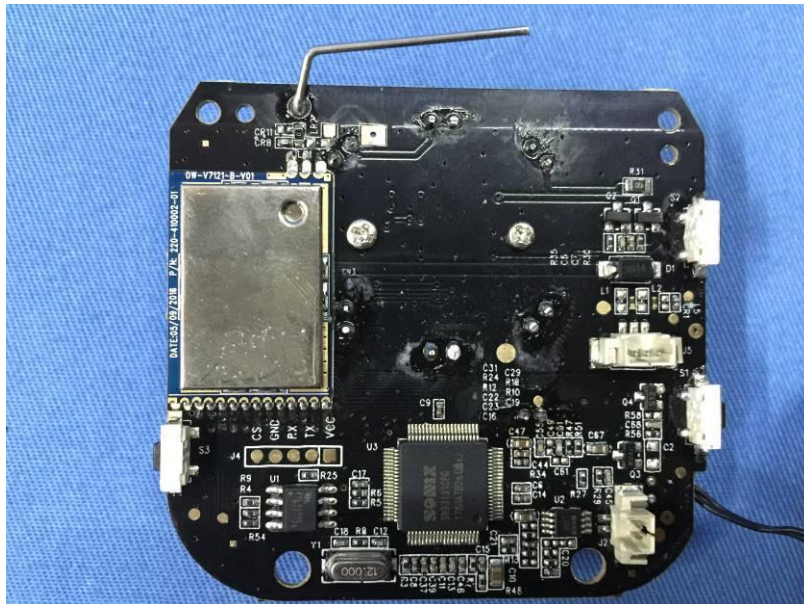
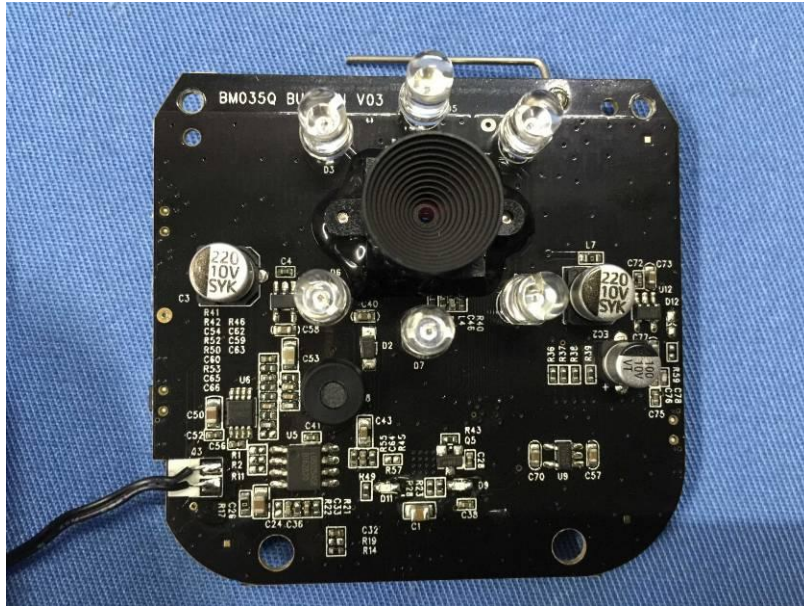
9 EUT Constructional Details

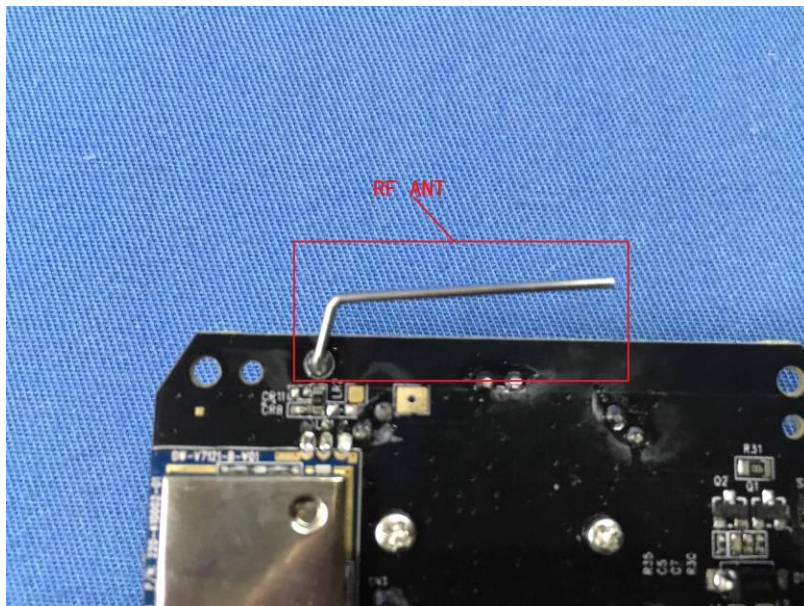
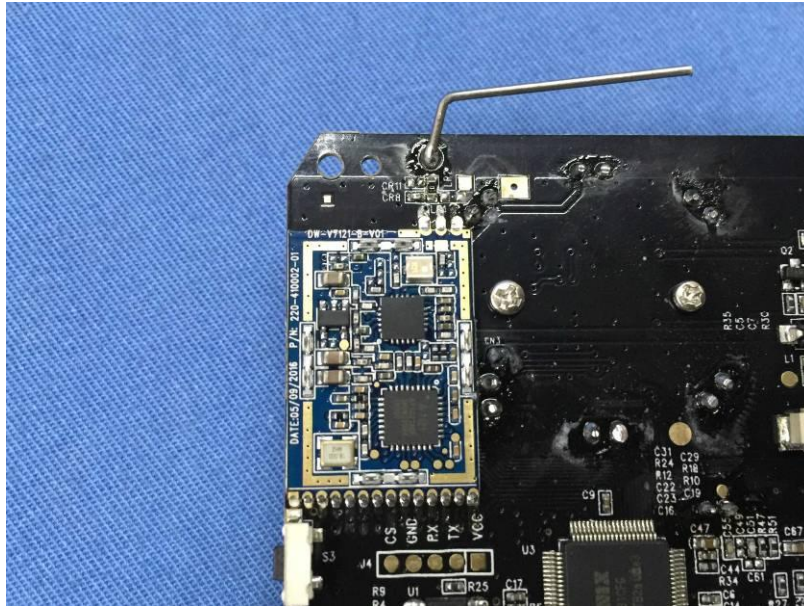


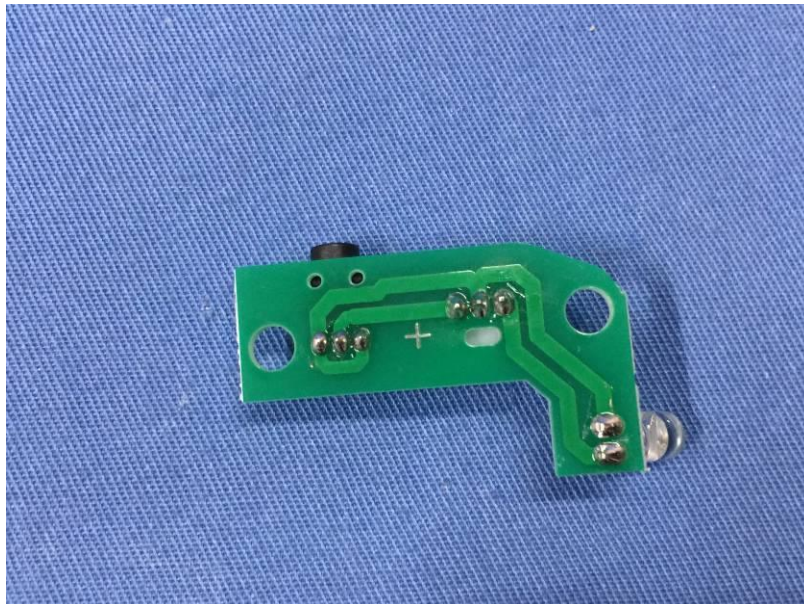
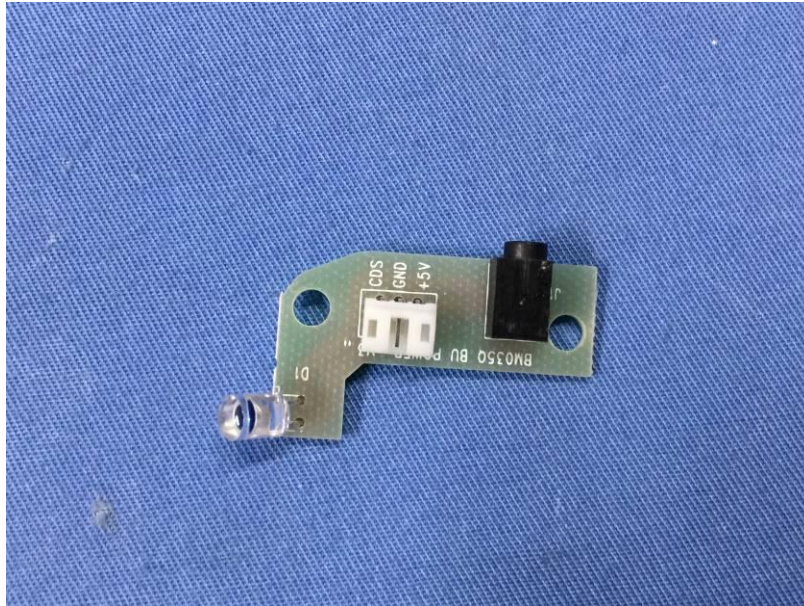
















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