Report No.: GTSE14090160501

FCC REPORT

Applicant:	Guangzhou Fengmao Technology Co., Ltd.
Address of Applicant:	NO.16 Xinqiao Village, Shilian Road, Shiji Town, Panyu District, Guangzhou, China

Equipment Under Test (EUT)

Product Name:	Bluetooth speaker
Model No.:	FG01, FF01
FCC ID:	2AC9C–FG01
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249:2013
Date of sample receipt:	September 11, 2014
Date of Test:	September 11-18, 2014
Date of report issued:	September 18, 2014
Test Result :	PASS *

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

Authorized Signature:

Robinson Lo
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 GTS 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	*September 18, 2014*	*Original*

Prepared By: Edward.Pan ***Date:*** *September 18, 2014*

Project Engineer

Check By: hank.yan ***Date:*** *September 18, 2014*

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.

5 General Information

5.1 Client Information

Applicant:	Guangzhou Fengmao Technology Co., Ltd.
Address of Applicant:	NO.16 Xinqiao Village, Shilian Road, Shiji Town, Panyu District, Guangzhou, China
Factory:	Guangzhou Fengmao Technology Co., Ltd.
Address of Factory:	NO.16 Xinqiao Village, Shilian Road, Shiji Town, Panyu District, Guangzhou, China

5.2 General Description of EUT

Product Name:	Bluetooth speaker
Model No.:	FG01, FF01
Test Model No.:	FG01
Remark: All above models are identical in the same module electric power, wiring diagram, components and interior structure and electrical circuits. The only difference is the model name for commercial purpose	
Operation Frequency:	2402~2480 MHz
Channel numbers:	79
Channel separation:	1MHz
Modulation type:	GFSK, Pi/4 QPSK, 8DPSK
Antenna Type:	PCB Antenna
Antenna gain:	0dBi
Power supply:	DC 5V Or DC 3.7V Li-ion battery

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
3	2404MHz	23	2424MHz	43	2444MHz	63	2464MHz
4	2405MHz	24	2425MHz	44	2445MHz	64	2465MHz
5	2406MHz	25	2426MHz	45	2446MHz	65	2466MHz
6	2407MHz	26	2427MHz	46	2447MHz	66	2467MHz
7	2408MHz	27	2428MHz	47	2448MHz	67	2468MHz
8	2409MHz	28	2429MHz	48	2449MHz	68	2469MHz
9	2410MHz	29	2430MHz	49	2450MHz	69	2470MHz
10	2411MHz	30	2431MHz	50	2451MHz	70	2471MHz
11	2412MHz	31	2432MHz	51	2452MHz	71	2472MHz
12	2413MHz	32	2433MHz	52	2453MHz	72	2473MHz
13	2414MHz	33	2434MHz	53	2454MHz	73	2474MHz
14	2415MHz	34	2435MHz	54	2455MHz	74	2475MHz
15	2416MHz	35	2436MHz	55	2456MHz	75	2476MHz
16	2417MHz	36	2437MHz	56	2457MHz	76	2477MHz
17	2418MHz	37	2438MHz	57	2458MHz	77	2478MHz
18	2419MHz	38	2439MHz	58	2459MHz	78	2479MHz
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

5.3 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode with GFSK, Pi/4 QPSK, 8DPSK modulation. GFSK is found as worse case and is reported

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	X	Y	Z
Field Strength(dBuV/m)	90.86	94.44	91.13

Final Test Mode:

The EUT was tested in GFSK modulation, and found the Y axis is the worst case.

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

Y axis (see the test setup photo). New battery used during all test.

5.4 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC Approval
Emerson Network Power	USB Charger	A1299	N/A	Verification

5.5 Test Facility

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

● **CNAS —Registration No.: CNAS L5775**

CNAS has accredited Global United Technology Services Co., Ltd. To ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

● **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
Tel: 0755-27798480
Fax: 0755-27798960

5.7 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. 28 2014	Mar. 27 2015
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	Dec. 05 2013	Dec. 04 2014
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 01 2014	Jul. 01 2015
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 23 2014	Feb. 22 2015
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 27 2014	June 27 2015
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 28 2014	Mar. 27 2015
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 29 2014	Mar. 28 2015
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 29 2014	Mar. 28 2015
11	Coaxial cable	GTS	N/A	GTS210	Mar. 29 2014	Mar. 28 2015
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 29 2014	Mar. 28 2015
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 01 2014	Jul. 01 2015
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 01 2014	Jul. 01 2015
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 27 2014	June 27 2015
16	Band filter	Amindeon	82346	GTS219	Mar. 29 2014	Mar. 28 2015

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	Sep. 06 2014	Sep. 05 2015
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 01 2014	Jul. 01 2015
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jul. 01 2014	Jul. 01 2015
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jul. 01 2014	Jul. 01 2015
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 01 2014	Jul. 01 2015
6	Coaxial Cable	GTS	N/A	GTS227	Jul. 01 2014	Jul. 01 2015
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
1	Barometer	ChangChun	DYM3	GTS257	July 08 2014	July 08 2015

7 Test results and Measurement Data

7.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203

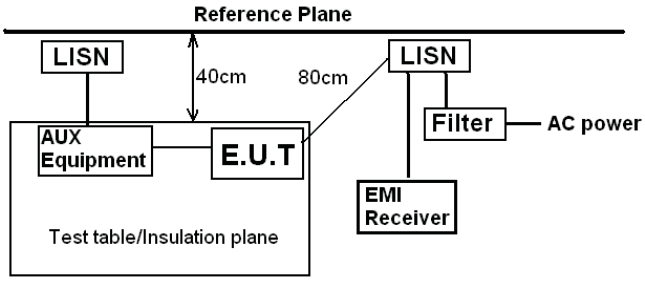
15.203 requirement:

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.

EUT Antenna:

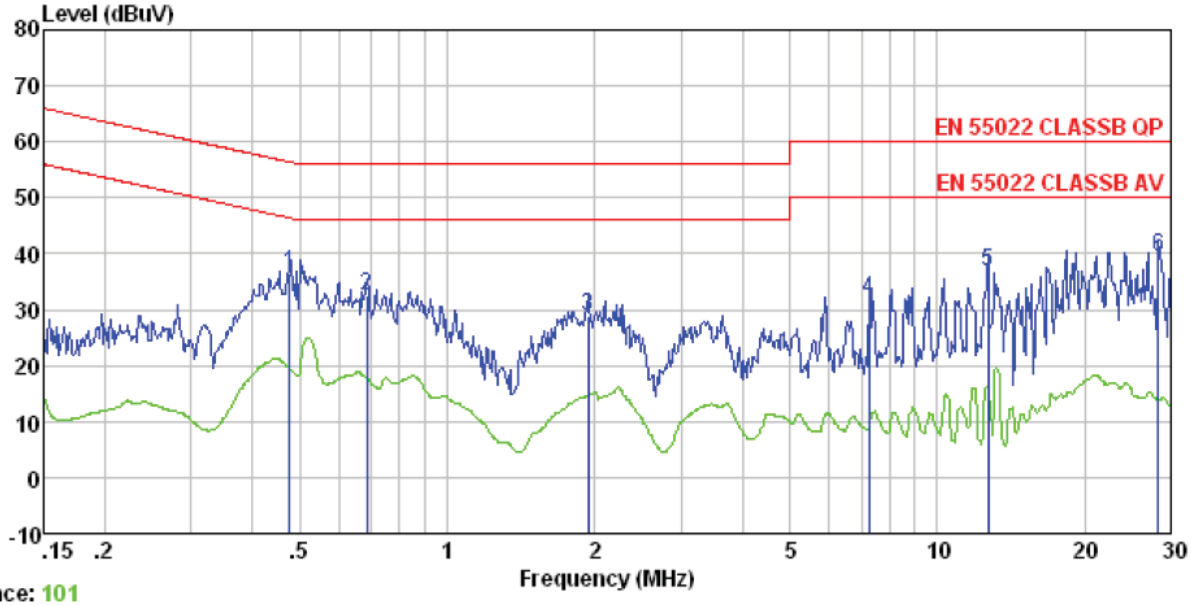
The antenna is PCB Antenna, the best case gain of the antenna is 0dBi

7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.4:2003
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: 2003 on conducted measurement.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement data:

Line:

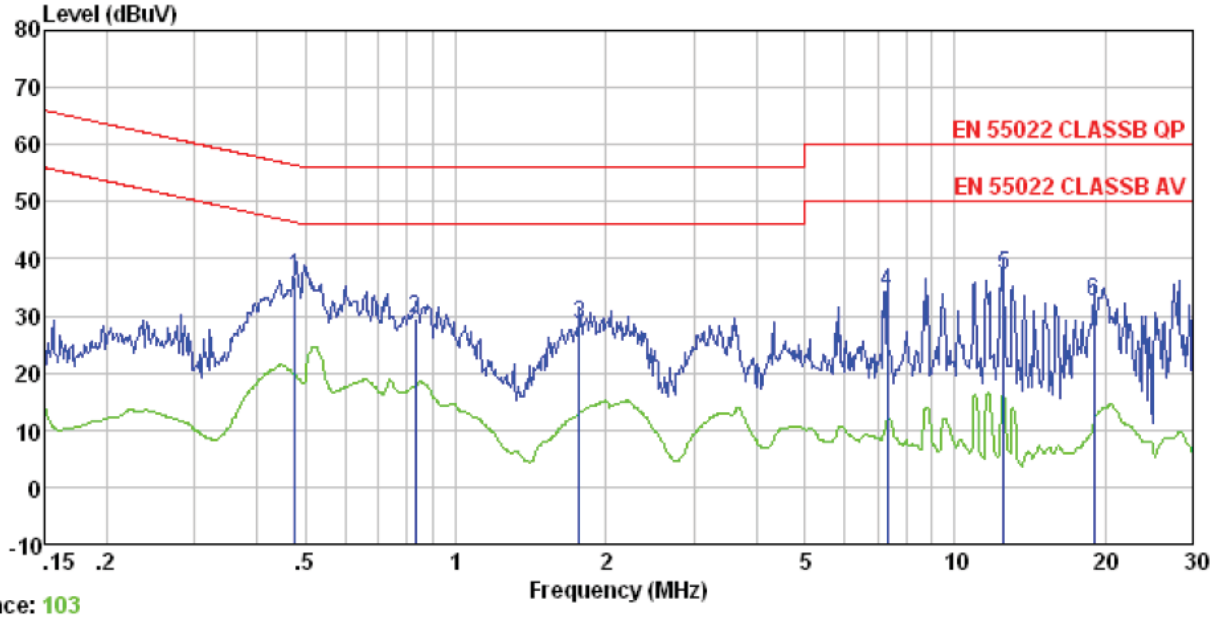


Trace: 101

Condition : EN 55022 CLASSB QP LISN-2013 LINE
Job No. : 1605RF
Test mode : Bluetooth mode
Test Engineer: Mike

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.476	36.29	0.12	0.11	36.52	56.41	-19.89	QP
2	0.686	32.17	0.14	0.13	32.44	56.00	-23.56	QP
3	1.939	28.48	0.12	0.14	28.74	56.00	-27.26	QP
4	7.252	31.54	0.26	0.17	31.97	60.00	-28.03	QP
5	12.716	36.22	0.35	0.21	36.78	60.00	-23.22	QP
6	28.302	38.48	0.84	0.24	39.56	60.00	-20.44	QP

Neutral:



Trace: 103

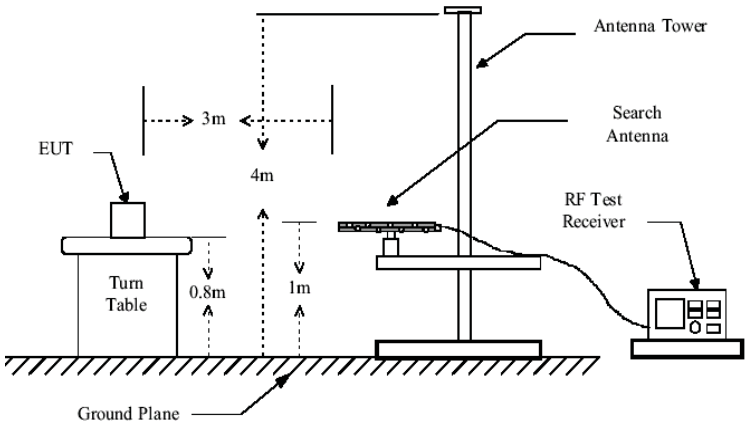
Condition : EN 55022 CLASSB QP LISN-2013 NEUTRAL
Job No. : 1605RF
Test mode : Bluetooth mode
Test Engineer: Mike

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.476	36.57	0.06	0.11	36.74	56.41	-19.67	QP
2	0.830	29.16	0.07	0.13	29.36	56.00	-26.64	QP
3	1.772	28.37	0.09	0.14	28.60	56.00	-27.40	QP
4	7.329	33.94	0.19	0.17	34.30	60.00	-25.70	QP
5	12.516	36.65	0.32	0.21	37.18	60.00	-22.82	QP
6	19.021	31.82	0.47	0.22	32.51	60.00	-27.49	QP

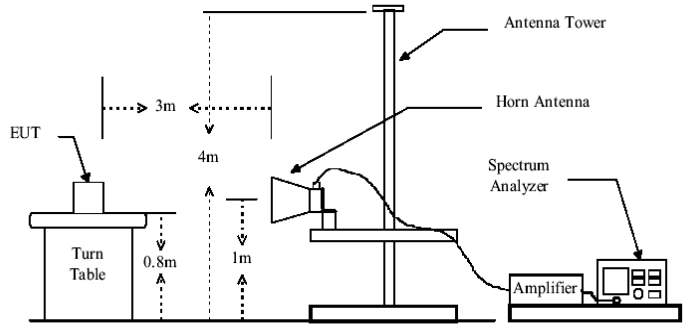
Notes:

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

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4:2003</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 25GHz</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>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Field strength of the fundamental signal)</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td rowspan="2">2400MHz-2483.5MHz</td><td>94.00</td><td>Average Value</td></tr>
<tr><td>114.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Spurious Emissions)</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>Limit:
(band edge)</td><td>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.</td></tr>
<tr><td>Test setup:</td><td>Below 1GHz
 

Above 1GHz</td></tr>
</table>

	
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. 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.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

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)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2402.00	95.48	27.58	5.39	34.01	94.44	114.00	-19.56	Vertical
2402.00	93.09	27.58	5.39	34.01	92.05	114.00	-21.95	Horizontal
2441.00	94.33	27.48	5.43	33.96	93.28	114.00	-20.72	Vertical
2441.00	90.17	27.48	5.43	33.96	89.12	114.00	-24.88	Horizontal
2480.00	93.75	27.52	5.47	33.92	92.82	114.00	-21.18	Vertical
2480.00	89.87	27.52	5.47	33.92	88.94	114.00	-25.06	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	85.73	27.58	5.39	34.01	84.69	94.00	-9.31	Vertical
2402.00	83.61	27.58	5.39	34.01	82.57	94.00	-11.43	Horizontal
2441.00	84.45	27.48	5.43	33.96	83.40	94.00	-10.60	Vertical
2441.00	81.42	27.48	5.43	33.96	80.37	94.00	-13.63	Horizontal
2480.00	83.13	27.52	5.47	33.92	82.20	94.00	-11.80	Vertical
2480.00	80.39	27.52	5.47	33.92	79.46	94.00	-14.54	Horizontal

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
35.01	52.91	14.30	0.61	32.06	35.76	40.00	-4.24	Vertical
45.38	46.65	15.54	0.72	32.00	30.91	40.00	-9.09	Vertical
61.78	40.87	14.03	0.87	31.93	23.84	40.00	-16.16	Vertical
96.10	36.80	14.90	1.16	31.75	21.11	43.50	-22.39	Vertical
366.82	36.10	16.48	2.70	31.98	23.30	46.00	-22.70	Vertical
593.05	34.84	20.35	3.70	31.07	27.82	46.00	-18.18	Vertical
40.56	34.91	15.58	0.67	32.05	19.11	40.00	-20.89	Horizontal
53.51	35.51	15.08	0.80	31.95	19.44	40.00	-20.56	Horizontal
103.81	34.87	14.78	1.22	31.78	19.09	43.50	-24.41	Horizontal
276.12	36.78	14.55	2.25	32.17	21.41	46.00	-24.59	Horizontal
449.56	35.83	17.57	3.08	31.72	24.76	46.00	-21.24	Horizontal
827.49	34.77	22.37	4.57	31.28	30.43	46.00	-15.57	Horizontal

■ 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	36.13	31.78	8.60	32.09	44.42	74.00	-29.58	Vertical
7206.00	31.05	36.15	11.65	32.00	46.85	74.00	-27.15	Vertical
9608.00	30.77	37.95	14.14	31.62	51.24	74.00	-22.76	Vertical
12010.00	*					74.00		Vertical
14412.00	*					74.00		Vertical
4804.00	40.17	31.78	8.60	32.09	48.46	74.00	-25.54	Horizontal
7206.00	32.70	36.15	11.65	32.00	48.50	74.00	-25.50	Horizontal
9608.00	30.08	37.95	14.14	31.62	50.55	74.00	-23.45	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	25.16	31.78	8.60	32.09	33.45	54.00	-20.55	Vertical
7206.00	19.87	36.15	11.65	32.00	35.67	54.00	-18.33	Vertical
9608.00	19.02	37.95	14.14	31.62	39.49	54.00	-14.51	Vertical
12010.00	*					54.00		Vertical
14412.00	*					54.00		Vertical
4804.00	29.26	31.78	8.60	32.09	37.55	54.00	-16.45	Horizontal
7206.00	21.96	36.15	11.65	32.00	37.76	54.00	-16.24	Horizontal
9608.00	18.65	37.95	14.14	31.62	39.12	54.00	-14.88	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.*

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	33.94	31.85	8.67	32.12	42.34	74.00	-31.66	Vertical
7323.00	29.60	36.37	11.72	31.89	45.80	74.00	-28.20	Vertical
9764.00	29.48	38.35	14.25	31.62	50.46	74.00	-23.54	Vertical
12205.00	*					74.00		Vertical
14646.00	*					74.00		Vertical
4882.00	37.54	31.85	8.67	32.12	45.94	74.00	-28.06	Horizontal
7323.00	31.05	36.37	11.72	31.89	47.25	74.00	-26.75	Horizontal
9764.00	28.58	38.35	14.25	31.62	49.56	74.00	-24.44	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	23.39	31.85	8.67	32.12	31.79	54.00	-22.21	Vertical
7323.00	18.66	36.37	11.72	31.89	34.86	54.00	-19.14	Vertical
9764.00	17.95	38.35	14.25	31.62	38.93	54.00	-15.07	Vertical
12205.00	*					54.00		Vertical
14646.00	*					54.00		Vertical
4882.00	27.24	31.85	8.67	32.12	35.64	54.00	-18.36	Horizontal
7323.00	20.61	36.37	11.72	31.89	36.81	54.00	-17.19	Horizontal
9764.00	17.40	38.35	14.25	31.62	38.38	54.00	-15.62	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.*

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	35.37	31.93	8.73	32.16	43.87	74.00	-30.13	Vertical
7440.00	30.55	36.59	11.79	31.78	47.15	74.00	-26.85	Vertical
9920.00	30.33	38.81	14.38	31.88	51.64	74.00	-22.36	Vertical
12400.00	*					74.00		Vertical
14880.00	*					74.00		Vertical
4960.00	39.26	31.93	8.73	32.16	47.76	74.00	-26.24	Horizontal
7440.00	32.13	36.59	11.79	31.78	48.73	74.00	-25.27	Horizontal
9920.00	29.57	38.81	14.38	31.88	50.88	74.00	-23.12	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	24.58	31.93	8.73	32.16	33.08	54.00	-20.92	Vertical
7440.00	19.47	36.59	11.79	31.78	36.07	54.00	-17.93	Vertical
9920.00	18.67	38.81	14.38	31.88	39.98	54.00	-14.02	Vertical
12400.00	*					54.00		Vertical
14880.00	*					54.00		Vertical
4960.00	28.59	31.93	8.73	32.16	37.09	54.00	-16.91	Horizontal
7440.00	21.52	36.59	11.79	31.78	38.12	54.00	-15.88	Horizontal
9920.00	18.24	38.81	14.38	31.88	39.55	54.00	-14.45	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.*

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

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	44.23	27.59	5.38	30.18	47.02	74.00	-26.98	Horizontal
2400.00	61.22	27.58	5.39	30.18	64.01	74.00	-9.99	Horizontal
2390.00	44.91	27.59	5.38	30.18	47.70	74.00	-26.30	Vertical
2400.00	63.40	27.58	5.39	30.18	66.19	74.00	-7.81	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	34.48	27.59	5.38	30.18	37.27	54.00	-16.73	Horizontal
2400.00	45.80	27.58	5.39	30.18	48.59	54.00	-5.42	Horizontal
2390.00	34.52	27.59	5.38	30.18	37.31	54.00	-16.69	Vertical
2400.00	47.57	27.58	5.39	30.18	50.36	54.00	-3.64	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	46.50	27.53	5.47	29.93	49.57	74.00	-24.43	Horizontal
2500.00	45.41	27.55	5.49	29.93	48.52	74.00	-25.48	Horizontal
2483.50	47.57	27.53	5.47	29.93	50.64	74.00	-23.36	Vertical
2500.00	46.54	27.55	5.49	29.93	49.65	74.00	-24.35	Vertical

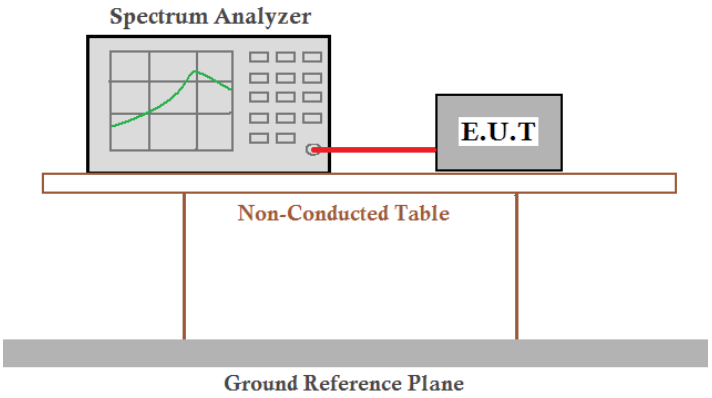
Average value:

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	37.32	27.53	5.47	29.93	40.39	54.00	-13.61	Horizontal
2500.00	35.13	27.55	5.49	29.93	38.24	54.00	-15.76	Horizontal
2483.50	38.65	27.53	5.47	29.93	41.72	54.00	-12.28	Vertical
2500.00	35.16	27.55	5.49	29.93	38.27	54.00	-15.73	Vertical

Remark:

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

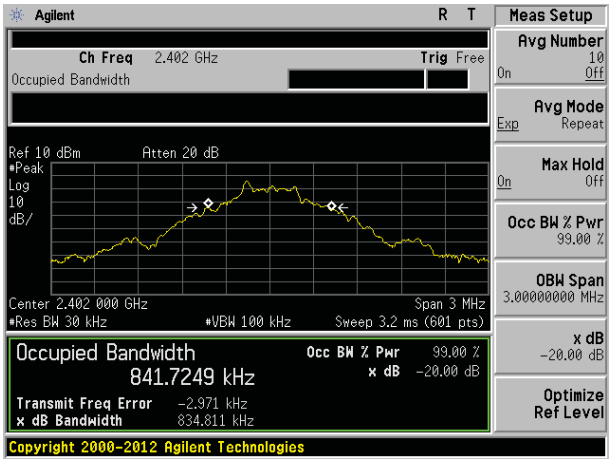
7.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.4:2003
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

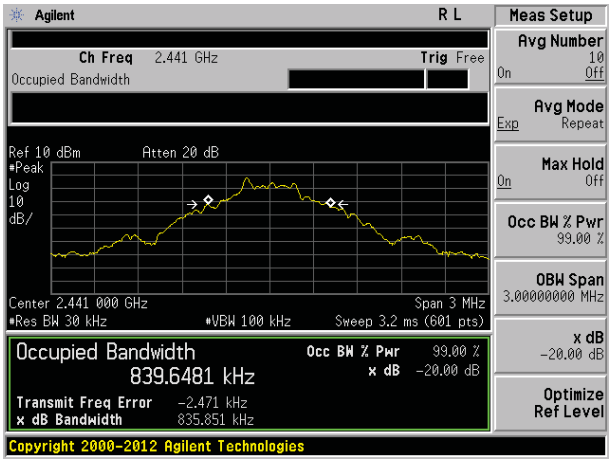
Measurement Data

Test channel	20dB bandwidth(KHz)	Result
Lowest	834.811	Pass
Middle	835.851	Pass
Highest	833.500	Pass

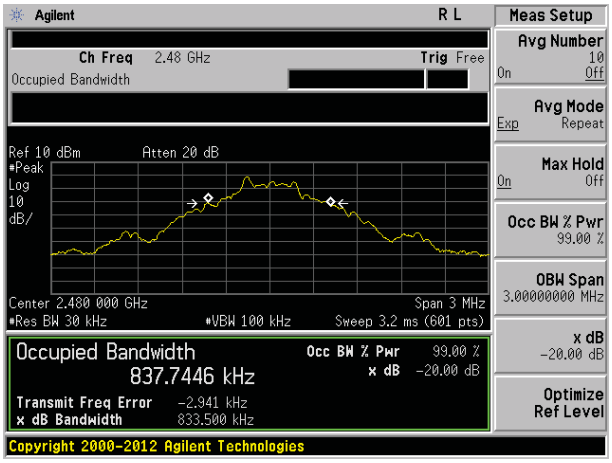
Test plot as follows:



Lowest channel



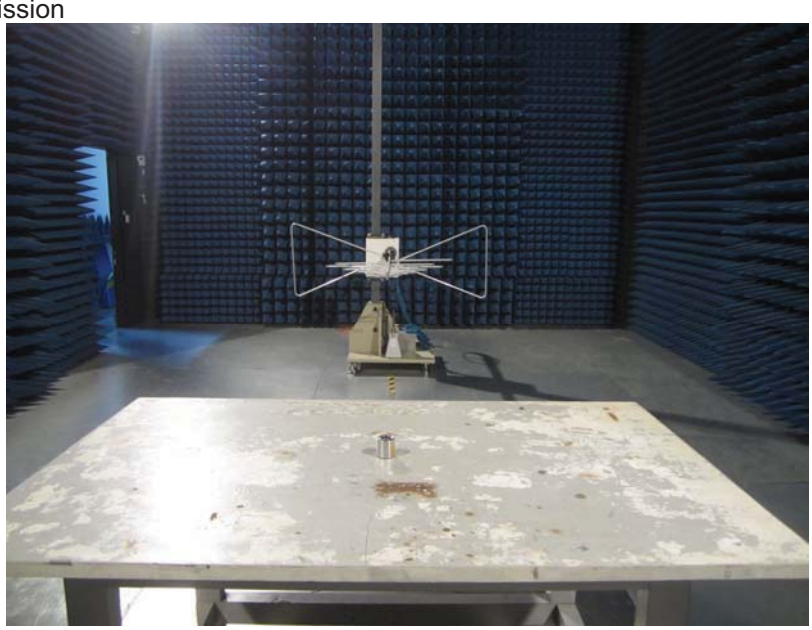
Middle channel

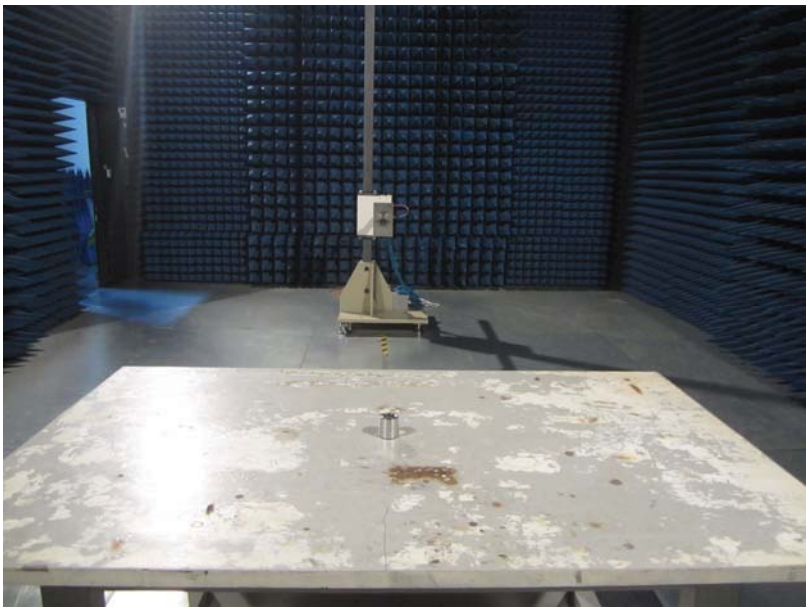


Highest channel

8 Test Setup Photo

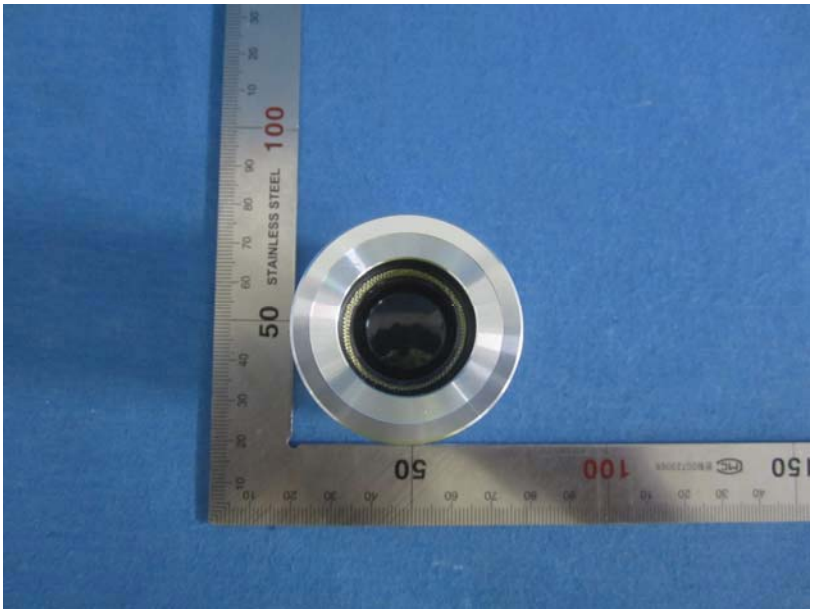
Radiated Emission

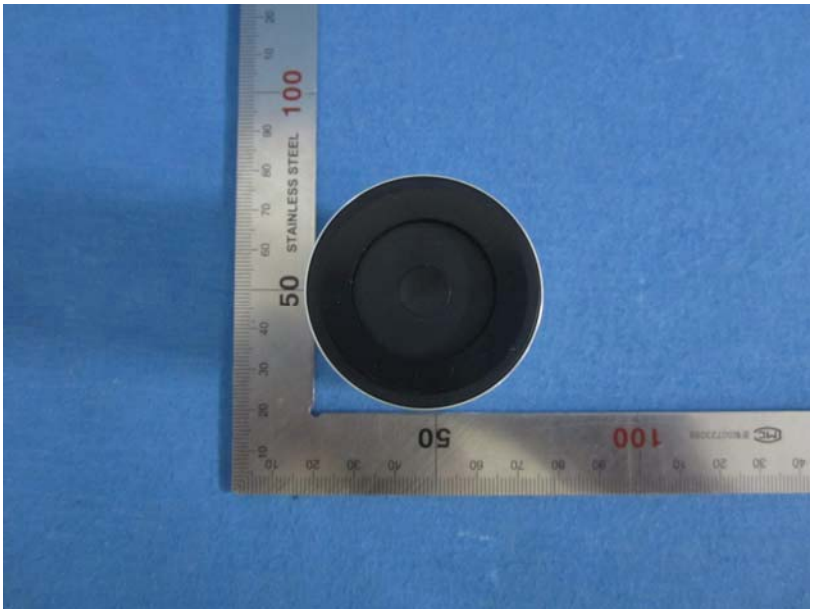




Conducted Emission

EUT Constructional Details

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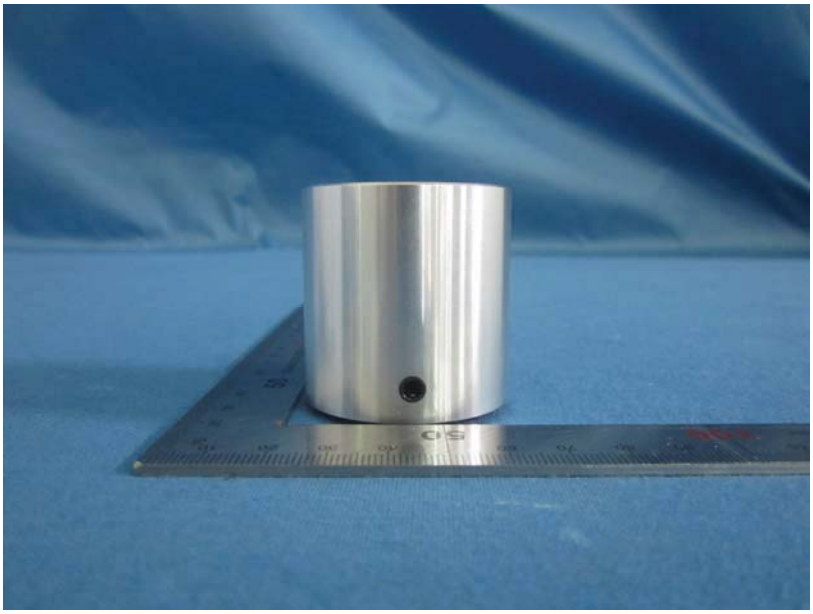
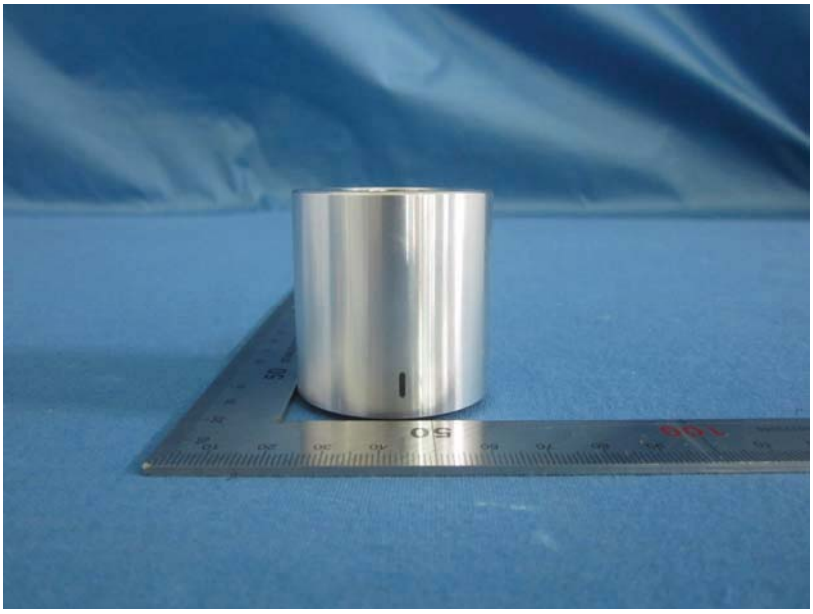
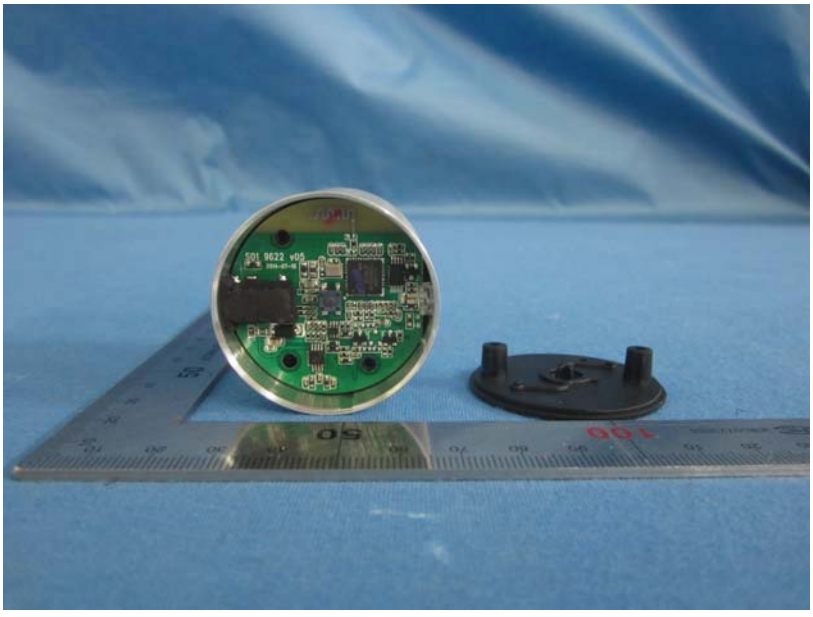
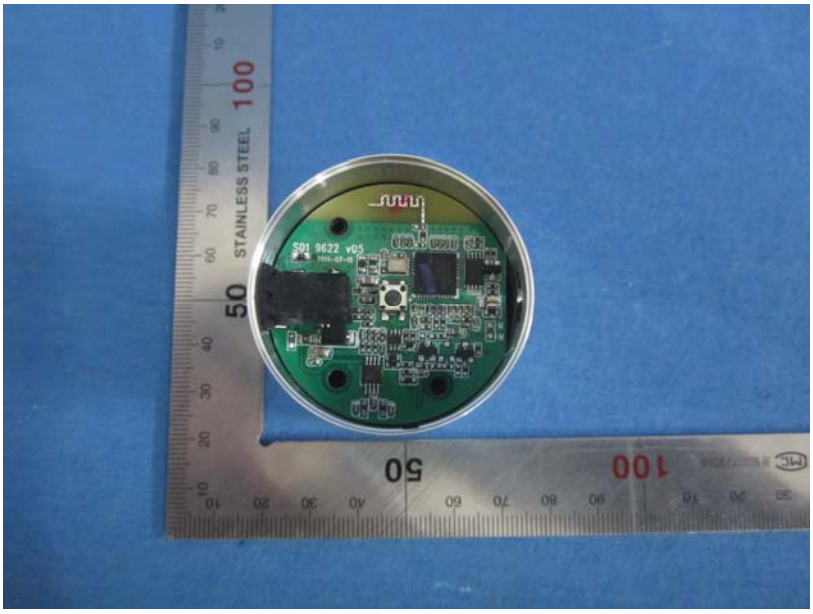
100
50





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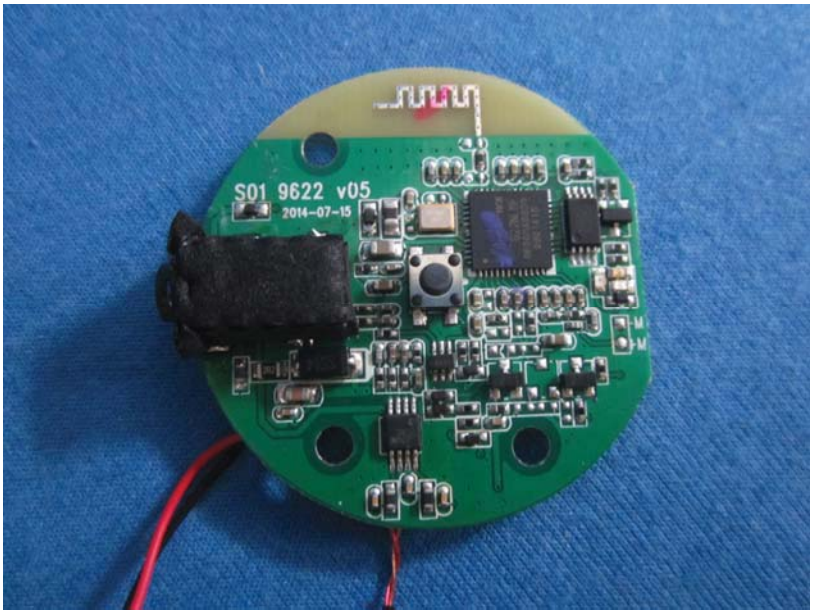
50
S01 9622 v05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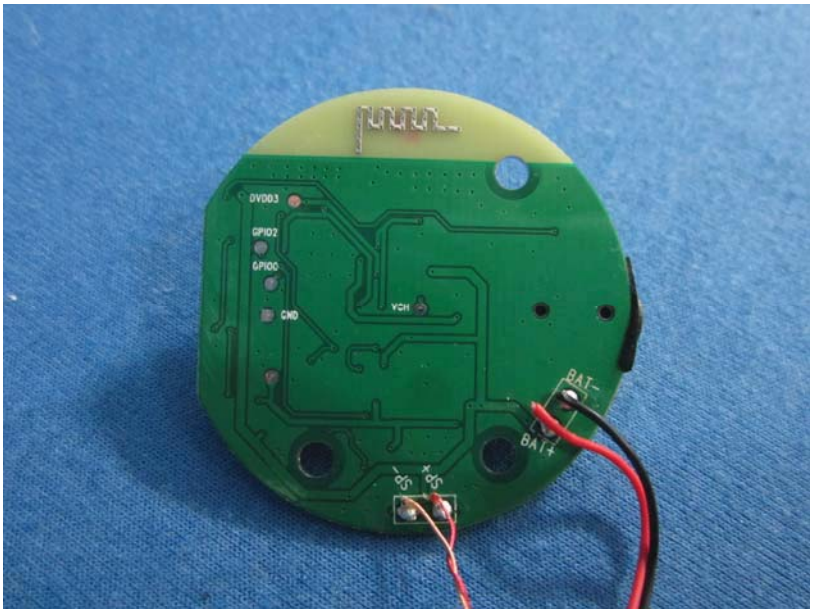
2014-07-15


DVDD3
GPIO2
GPIO0
GND
VCH
BAT-
BAT+


- PN 702030
+ 3.7V 1.48WH
2014/8/23

------End------