FCC TEST REPORT
for
Dongguan PengQiDa Electronics Co., Ltd

Bluetooth Speaker
Model No.: P-33, P-50, P-52, P-53, P-56, P-57, P-58, P-59, P-60, P-61, P-62, P-65, P-68, P-69, P-80, P-82, P-83, P-85, P-88, P-90, GS802

Prepared for	:	Dongguan PengQiDa Electronics Co., Ltd
Address	:	No. 27, LingXia Road, TianTouJiao Village, Qiaotou Town, Dongguan City, Guangdong, China
Prepared By	:	Anbotek Compliance Laboratory Limited
Address	:	1/F, 1 /Building, SEC Industrial Park, No. 4 Qianhai Road, Nanshan District, Shenzhen, 518054, China Tel: (86) 755-26066544 Fax: (86) 755-26014772

Report Number	:	201304761F
Date of Test	:	Apr. 11~22, 2013
Date of Report	:	Apr. 22, 2013

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TEST REPORT

Applicant	:	Dongguan PengQiDa Electronics Co., Ltd
Manufacturer	:	Dongguan PengQiDa Electronics Co., Ltd
EUT	:	Bluetooth Speaker
Model No.	:	P-33, P-50, P-52, P-53, P-56, P-57, P-58, P-59, P-60, P-61, P-62, P-65, P-68, P-69, P-80, P-82, P-83, P-85, P-88, P-90, GS802
Serial No.	:	N/A
Rating	:	DC 5.0V
Trade Mark	:	N/A

Measurement Procedure Used:

FCC Part15 Subpart C, Paragraph 15.207, 15.249 & 15.209

The device described above is tested by Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.
This report applies to above tested sample only and shall not be reproduced in part without written approval of Anbotek Compliance Laboratory Limited

Date of Test : Apr. 11~22, 2013

Prepared by : Rock zeng
(Tested Engineer / Rock Zeng)

Reviewer : Sally. zhang
(Project Manager / Sally Zhang)

Approved & Authorized Signer : Tom. Chen
(Manager / Tom Chen)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	Bluetooth Speaker
Model Number	:	P-33, P-50, P-52, P-53, P-56, P-57, P-58, P-59, P-60, P-61, P-62, P-65, P-68, P-69, P-80, P-82, P-83, P-85, P-88, P-90, GS802 (Note: The above samples are same except the model number, so we prepare "P-88" for FCC test only.)
Test Power Supply	:	DC 5.0V
Frequency	:	2402~2480MHz
Antenna Specification	:	Printed Antenna:1.87dBi
Applicant	:	Dongguan PengQiDa Electronics Co., Ltd
Address	:	No. 27, LingXia Road, TianTouJiao Village, Qiaotou Town, Dongguan City, Guangdong, China
Manufacturer	:	Dongguan PengQiDa Electronics Co., Ltd
Address	:	No. 27, LingXia Road, TianTouJiao Village, Qiaotou Town, Dongguan City, Guangdong, China
Date of receiver	:	Apr. 11, 2013
Date of Test	:	Apr. 11~22, 2013

1.2. Auxiliary Equipment Used during Test

Adapter	:	Model: CW0502000 Input: 100-240V~, 50-60Hz, 0.4A Max Output: DC 5.0V

1.3. Description of Test Facility

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

CNAS - LAB Code: L3503
Anbotek Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

FCC-Registration No.: 752021
Anbotek Compliance Laboratory Limited, EMC Laboratory has been registed and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 752021, August 20, 2010.

IC-Registration No.: 8058A-1
Anbotek Compliance Laboratory Limited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A-1, August 30, 2010.

Test Location
All Emissions tests were performed at
Anbotek Compliance Laboratory Limited. at 1/F, 1 /Building, SEC Industrial Park, No. 4 Qianhai Road, Nanshan District, Shenzhen, 518054, China

1.4. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 4.3dB
Conduction Uncertainty	:	Uc = 3.4dB

2. Test Procedure

GENERAL: This report shall NOT be reproduced except in full without the written approval of Anbotek Compliance Laboratory Limited. The EUT was transmitting a test signal during the testing.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-2009 using a spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100KHz and the video bandwidth was 300KHz up to 1.0GHz and 1.0MHz with a video BW of 3.0MHz above 1.0GHz. The ambient temperature of the EUT was 74.3oF with a humidity of 69%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

Example:
Freq (MHz) METER READING + ACF = FS
20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

ANSI STANDARD C63.4-2009 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

3. Conducted Limits

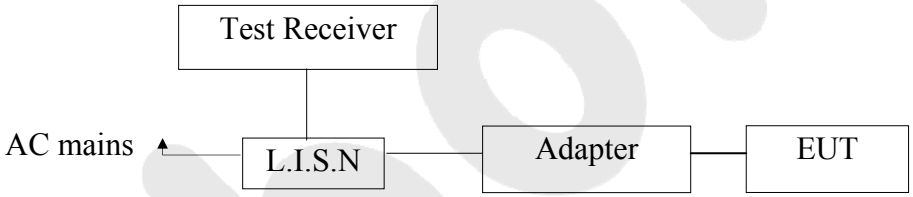
Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Nov. 12, 2012	1 Year
2.	LISN	SchwarzBeck	NSLK 8126	8126377	May 19, 2012	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	May 19, 2012	1 Year
4.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A

Conduction Uncertainty : Uc = 3.4dB

3.1. Block Diagram of Test Setup

3.1.1. Block diagram of connection between the EUT and simulators



(EUT: Bluetooth Speaker)

3.2. Power Line Conducted Emission Measurement Limits (15.207)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.3. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

EUT : Bluetooth Speaker
Model Number : P-88
Applicant : Dongguan PengQiDa Electronics Co., Ltd

3.4. Operating Condition of EUT

3.4.1. Setup the EUT and simulator as shown as Section 3.1.

3.4.2. Turn on the power of all equipment.

3.4.3. Let the EUT work in test mode (Charging) and measure it.

3.5. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.4-2003 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9KHz.

The frequency range from 150KHz to 30MHz is checked.

The test results are reported on Section 3.6.

Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
5.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Nov. 12, 2012	1 Year
6.	LISN	SchwarzBeck	NSLK 8126	8126377	May 19, 2012	1 Year
7.	RF Switching Unit	Compliance Direction	RSU-M2	38303	May 19, 2012	1 Year
8.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A

Conduction Uncertainty : Uc = 3.4dB

3.6. Power Line Conducted Emission Measurement Results

PASS.

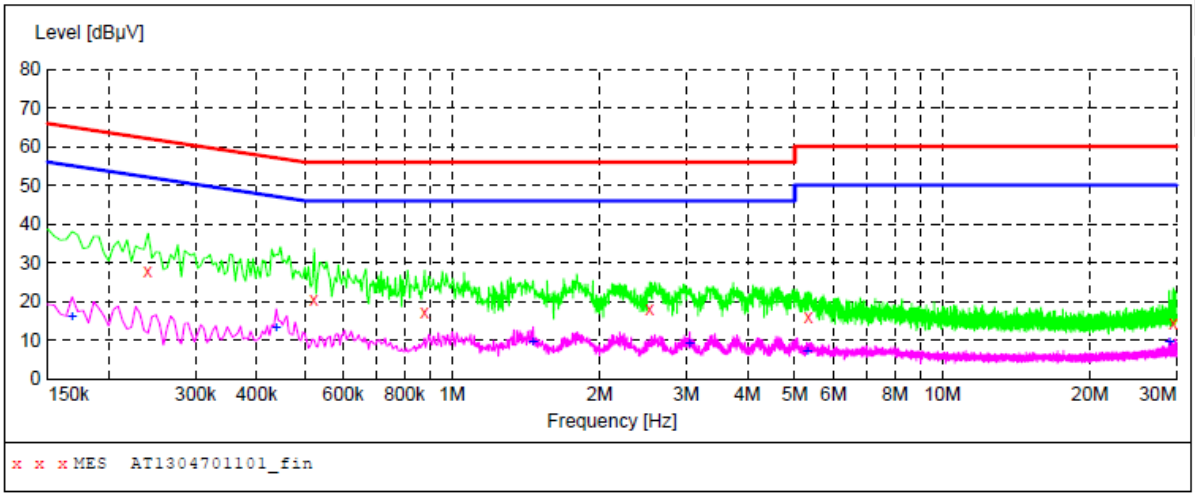
The frequency range from 150KHz to 30 MHz is investigated.

Please refer the following pages.

CONDUCTED EMISSION TEST DATA

EUT:	Bluetooth Speaker M/N: P-88
Operating Condition:	Charging
Test Site:	1# Shielded Room
Operator:	Finley Li
Test Specification:	AC 120V/60Hz
Comment:	Live Line
	Tem:25℃ Hum:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



MEASUREMENT RESULT: "AT1304701101_fin"

4/11/2013 11:48PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.240000	28.00	20.1	62	34.1	QP	L1	GND
0.523500	20.30	20.1	56	35.7	QP	L1	GND
0.879000	17.20	20.1	56	38.8	QP	L1	GND
2.530000	17.90	20.4	56	38.1	QP	L1	GND
5.338000	16.00	20.5	60	44.0	QP	L1	GND
29.539000	14.50	20.9	60	45.5	QP	L1	GND

MEASUREMENT RESULT: "AT1304701101_fin2"

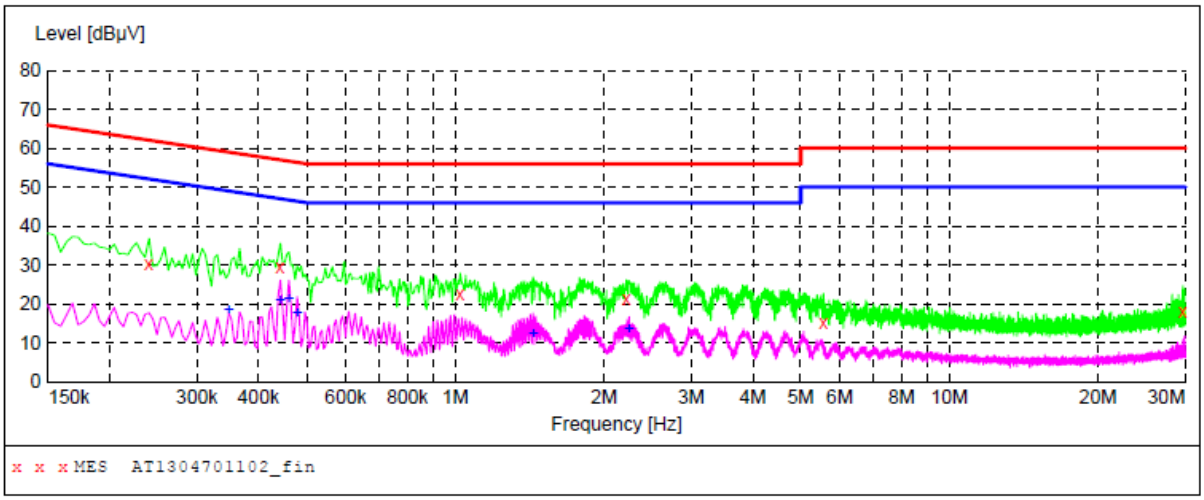
4/11/2013 11:48PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.168000	16.00	20.1	55	39.1	AV	L1	GND
0.438000	13.10	20.1	47	34.0	AV	L1	GND
1.463500	9.50	20.3	46	36.5	AV	L1	GND
3.052000	8.90	20.4	46	37.1	AV	L1	GND
5.293000	7.10	20.5	50	42.9	AV	L1	GND
28.999000	9.50	20.9	50	40.5	AV	L1	GND

CONDUCTED EMISSION TEST DATA

EUT:	Bluetooth Speaker M/N: P-88
Operating Condition:	Charging
Test Site:	1# Shielded Room
Operator:	Finley Li
Test Specification:	AC 120V/60Hz
Comment:	Neutral Line
	Tem:25℃ Hum:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



MEASUREMENT RESULT: "AT1304701102_fin"

4/11/2013 11:51PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.240000	30.30	20.1	62	31.8	QP	N	GND
0.442500	29.60	20.1	57	27.4	QP	N	GND
1.022500	22.70	20.2	56	33.3	QP	N	GND
2.219500	21.20	20.3	56	34.8	QP	N	GND
5.558500	15.40	20.5	60	44.6	QP	N	GND
29.660500	18.20	20.9	60	41.8	QP	N	GND

MEASUREMENT RESULT: "AT1304701102_fin2"

4/11/2013 11:51PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.348000	18.60	20.1	49	30.4	AV	N	GND
0.442500	21.10	20.1	47	25.9	AV	N	GND
0.460500	21.20	20.1	47	25.5	AV	N	GND
0.478500	17.70	20.1	46	28.7	AV	N	GND
1.436500	12.50	20.3	46	33.5	AV	N	GND
2.246500	13.70	20.3	46	32.3	AV	N	GND

4. Radiation Interference

4.1. Requirements (15.249, 15.209):

FIELD STRENGTH	FIELD STRENGTH	S15.209	
of Fundamental:	of Harmonics	30 - 88 MHz	40 dBuV/m @3M
902-928 MHZ		88 - 216 MHz	43.5
2.4-2.4835 GHz		216 - 960 MHz	46
94 dBμV/m @3m	54 dBμV/m @3m	ABOVE 960 MHz	54dBuV/m

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 15.209, whichever is the lesser attenuation.

4.2 Test Procedure

The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

All readings from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All reading are above 1GHz, peak & average values with a resolution bandwidth of 1MHz. The EUT is tested in 9*6*6 Chamber.
The test results are listed in Section 4.3.

Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Nov. 12, 2012	1 Year
2.	Trilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	May 17, 2012	1 Year
3.	Pre-amplifier	Compliance Direction	PAP-0203	22008	May 19, 2012	1 Year
4.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

Radiation Uncertainty : Ur = 4.3dB

4.3 Test Results

PASS.

Please refer the following pages.

Data:

Horizontal
CH Low (2402MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
232.95	1.58	13.50	38.90	57.19	33.43	46.00	-11.19	QP
2402.00	2.17	31.21	35.30	86.76	92.75	114.0	-27.24	Peak
2402.00	2.17	31.21	35.30	84.74	89.28	94.0	-9.26	AV
4804.04	2.56	34.01	34.71	41.35	43.66	74.0	-32.65	Peak
4804.04	2.56	34.01	34.71	38.22	40.21	54.0	-15.78	AV
7207.98	2.98	36.16	35.15	38.94	42.54	74.0	-35.06	Peak
7207.98	2.98	36.16	35.15	28.21	39.76	54.0	-25.79	AV
9608.00	---	---	---	---	---	---	---	---
12010.00	---	---	---	---	---	---	---	---
14412.00	---	---	---	---	---	---	---	---
16814.00	---	---	---	---	---	---	---	---

Vertical
CH Low (2402MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
38.19	1.43	12.13	38.45	53.19	28.13	40.00	-11.87	QP
2402.00	2.17	31.21	35.30	84.62	89.65	114.0	-24.35	Peak
2402.00	2.17	31.21	35.30	81.31	88.41	94.0	-5.59	AV
4804.10	2.56	34.01	34.71	41.07	42.27	74.0	-31.73	Peak
4804.10	2.56	34.01	34.71	38.45	40.65	54.0	-13.35	AV
7207.93	2.98	36.16	35.15	37.89	41.33	74.0	-32.67	Peak
7207.93	2.98	36.16	35.15	34.22	38.19	54.0	-15.81	AV
9608.00	---	---	---	---	---	---	---	---
12010.00	---	---	---	---	---	---	---	---
14412.00	---	---	---	---	---	---	---	---
16814.00	---	---	---	---	---	---	---	---

Horizontal
CH Middle (2441MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
316.98	1.60	13.52	38.82	56.25	32.65	46.00	-13.35	QP
2441.00	2.19	31.22	34.60	85.44	90.42	114.0	-23.58	Peak
2441.00	2.19	31.22	34.60	83.36	84.51	94.0	-9.49	AV
4882.08	2.57	35.00	34.58	39.27	42.79	74.0	-31.21	Peak
4882.08	2.57	35.00	34.58	37.68	40.02	54.0	-13.98	AV
7323.05	3.00	36.17	35.14	35.51	42.22	74.0	-31.78	Peak
7323.05	3.00	36.17	35.14	34.77	40.16	54.0	-13.84	AV
9764.00	---	---	---	---	---	---	---	---
12205.00	---	---	---	---	---	---	---	---
14646.00	---	---	---	---	---	---	---	---
17087.00	---	---	---	---	---	---	---	---

Vertical
CH Middle (2441MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
155.49	1.50	13.40	38.89	53.11	29.12	43.50	-14.38	QP
2441.01	2.19	31.22	34.60	81.46	91.07	114.0	-22.93	Peak
2441.01	2.19	31.22	34.60	82.25	86.35	94.0	-7.65	AV
4882.11	2.57	35.00	34.58	43.36	43.48	74.0	-30.52	Peak
4882.11	2.57	35.00	34.58	35.19	40.76	54.0	-13.24	AV
7323.02	3.00	36.17	35.14	37.05	42.21	74.0	-31.79	Peak
7323.02	3.00	36.17	35.14	38.44	40.44	54.0	-13.56	AV
9764.00	---	---	---	---	---	---	---	---
12205.00	---	---	---	---	---	---	---	---
14646.00	---	---	---	---	---	---	---	---
17087.00	---	---	---	---	---	---	---	---

Horizontal
CH High (2480MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
314.68	1.60	13.52	38.82	54.12	29.52	46.00	-16.48	QP
2480.00	2.20	31.65	36.00	97.78	90.41	114.0	-23.59	Peak
2480.00	2.20	31.65	36.00	88.51	85.76	94.0	-8.24	AV
4960.05	2.58	35.06	34.79	43.19	44.04	74.0	-29.96	Peak
4960.05	2.58	35.06	34.79	37.82	42.82	54.0	-11.18	AV
7439.99	3.02	36.19	34.90	41.37	43.84	74.0	-30.16	Peak
7439.99	3.02	36.20	35.20	37.40	41.92	54.0	-12.08	AV
9920.00	---	---	---	---	---	---	---	---
12400.00	---	---	---	---	---	---	---	---
14880.00	---	---	---	---	---	---	---	---
17360.00	---	---	---	---	---	---	---	---

Vertical
CH High (2480MHz)

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBμV	Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
404.19	1.62	13.54	38.45	53.16	27.22	46.00	-18.78	QP
2480.00	2.20	31.65	36.00	83.79	91.45	114.0	-22.55	Peak
2480.00	2.20	31.65	36.00	82.12	86.17	94.0	-7.83	AV
4960.10	2.58	35.06	34.79	40.58	42.44	74.0	-31.56	Peak
4960.10	2.58	35.06	34.79	38.31	40.05	54.0	-13.95	AV
7439.96	3.02	36.19	34.90	38.68	42.76	74.0	-31.24	Peak
7439.96	3.02	36.20	35.20	36.91	40.21	54.0	-13.79	AV
9920.00	---	---	---	---	---	---	---	---
12400.00	---	---	---	---	---	---	---	---
14880.00	---	---	---	---	---	---	---	---
17360.00	---	---	---	---	---	---	---	---

NOTE: “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5. Occupied Bandwidth

5.1. Requirements (15.249):

The field strength of any emissions appearing outside the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 50 dB below the level of the carrier or to the general limits of 15.249.

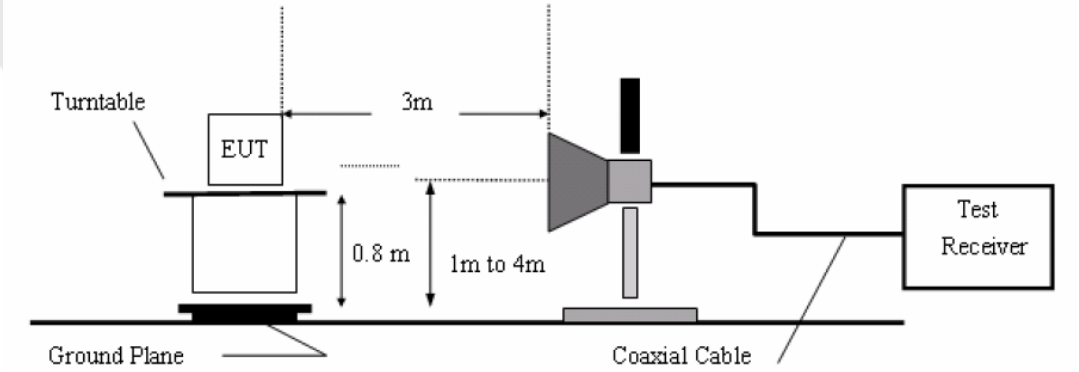
5.2. Test Procedure

The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Nov. 12, 2012	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	July 03, 2012	1 Year
3.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 07, 2012	1 Year
4.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

5.3. Test Configuration:

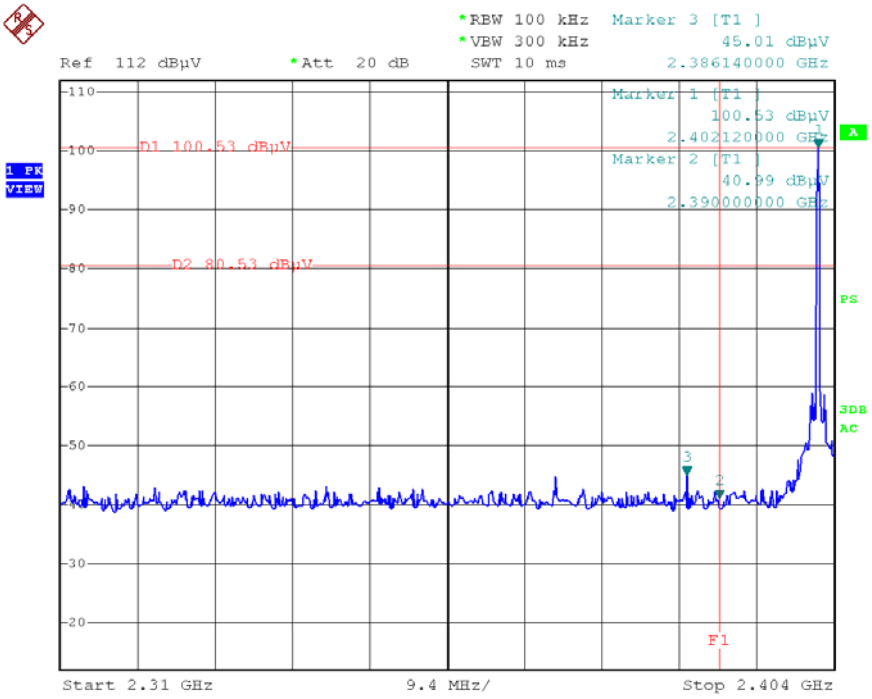


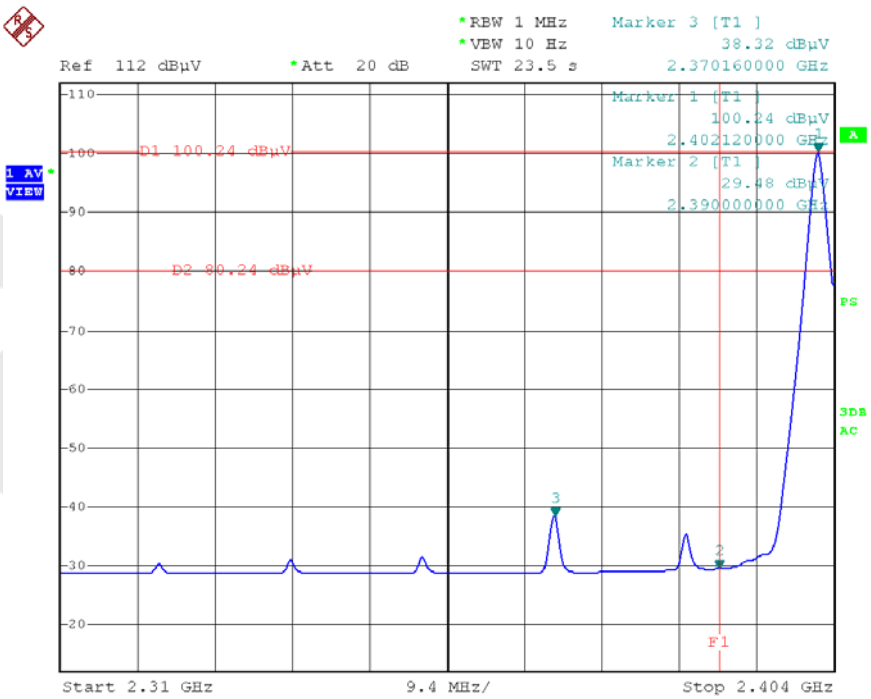
5.4. Test Results

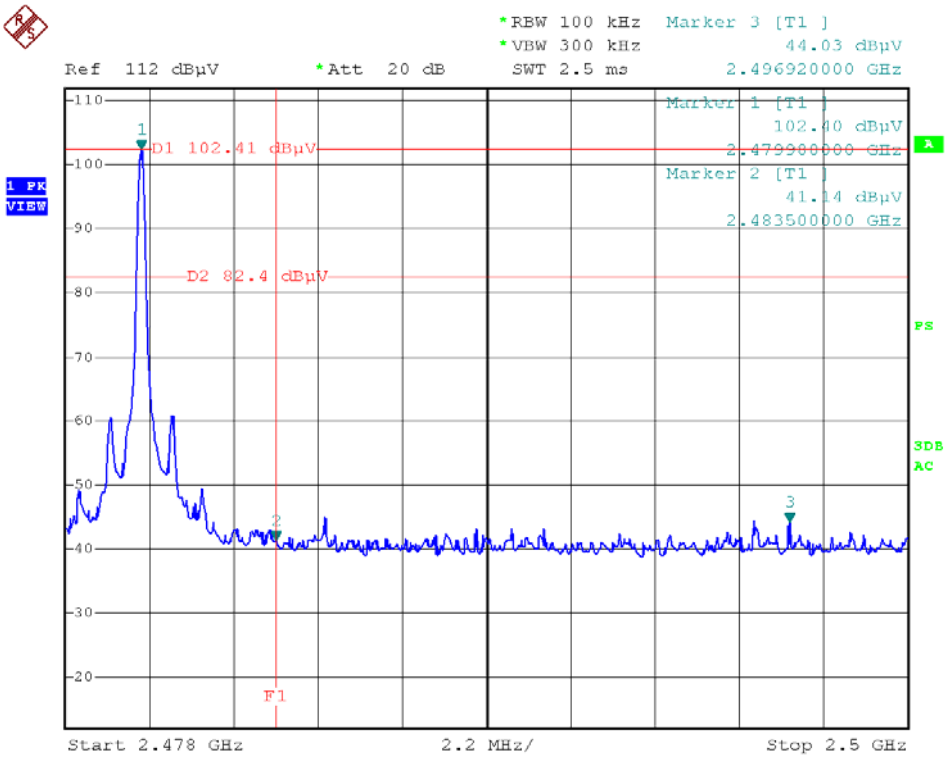
Pass.

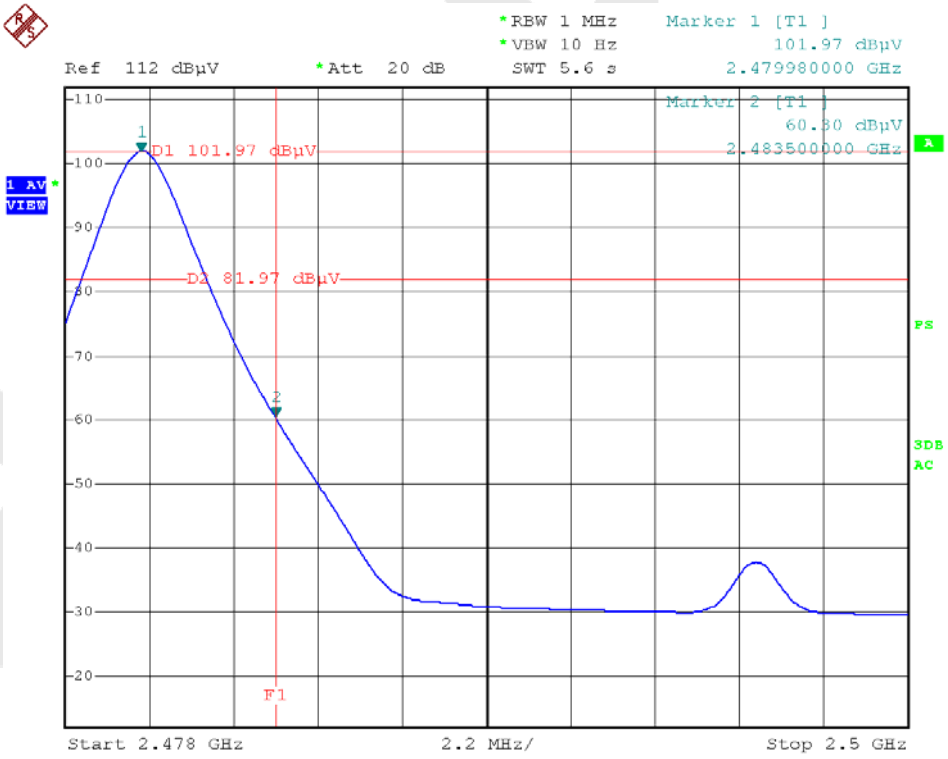
Please refer the following plot.

(Note: Marker 3 means the highest value in 2.39GHz~2.4GHz or 2.4835~2.5GHz)





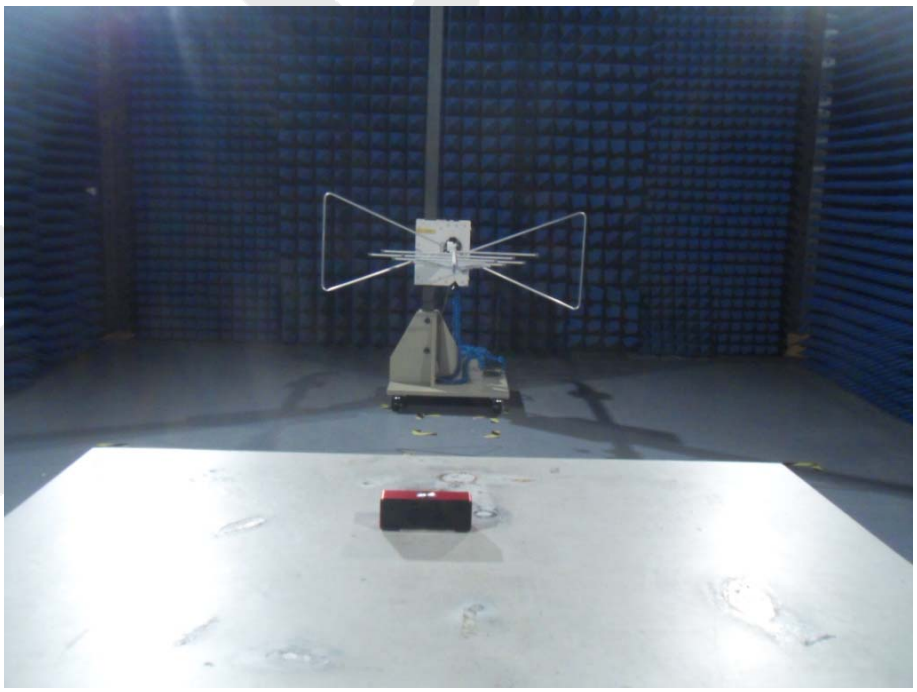

*RBW 100 kHz
*VBW 300 kHz
SWT 2.5 ms
Marker 3 [T1]
44.03 dBµV
2.496920000 GHz
Ref 112 dBµV
*Att 20 dB
Marker 1 [T1]
102.40 dBµV
2.479980000 GHz
Marker 2 [T1]
41.14 dBµV
2.483500000 GHz
D1 102.41 dBµV
D2 82.4 dBµV
1 PK
VIEW
PS
3DB
AC
F1
Start 2.478 GHz
2.2 MHz/
Stop 2.5 GHz


*RBW 1 MHz
*VBW 10 Hz
SWT 5.6 s
Marker 1 [T1]
101.97 dBµV
2.479980000 GHz
Ref 112 dBµV
*Att 20 dB
Marker 2 [T1]
60.30 dBµV
2.483500000 GHz
D1 101.97 dBµV
D2 81.97 dBµV
1 AV
VIEW
PS
3DB
AC
F1
Start 2.478 GHz
2.2 MHz/
Stop 2.5 GHz

6. PHOTOGRAPH

6.1. Photo of Power Line Conducted Emission Measurement

6.2. Photo of Radiation Emission Test



APPENDIX I (External Photos)

Figure 1
The EUT-Front View

Figure 2
The EUT-Back View

Figure 3
The EUT-Port View

Figure 4
The EUT-Button View

APPENDIX Ⅱ(Internal Photos)

Figure 5
The EUT-Inside View

Figure 6
The EUT-Inside View

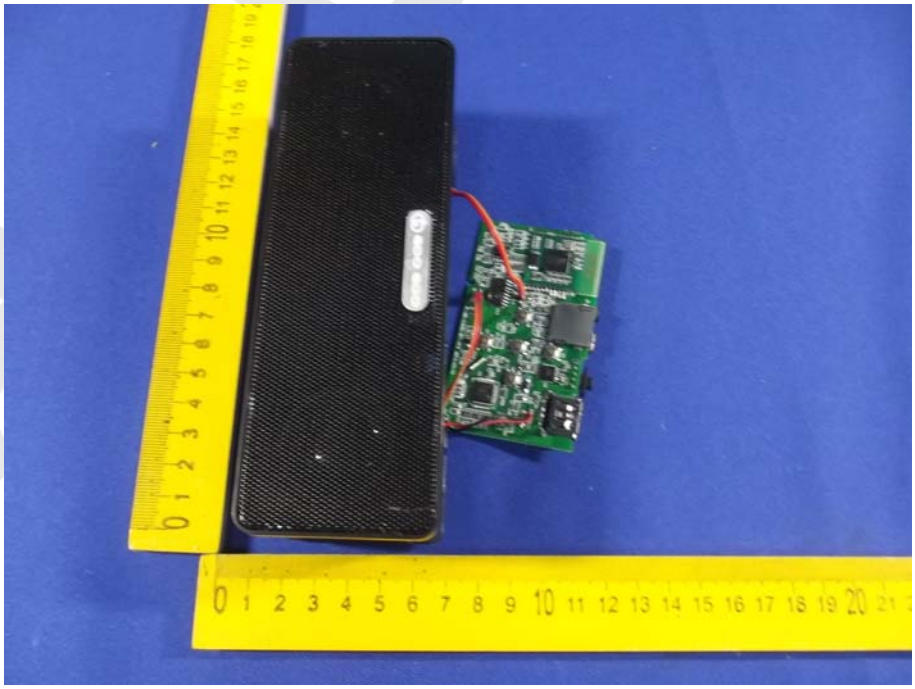


Figure 7
PCB of the EUT-Front View

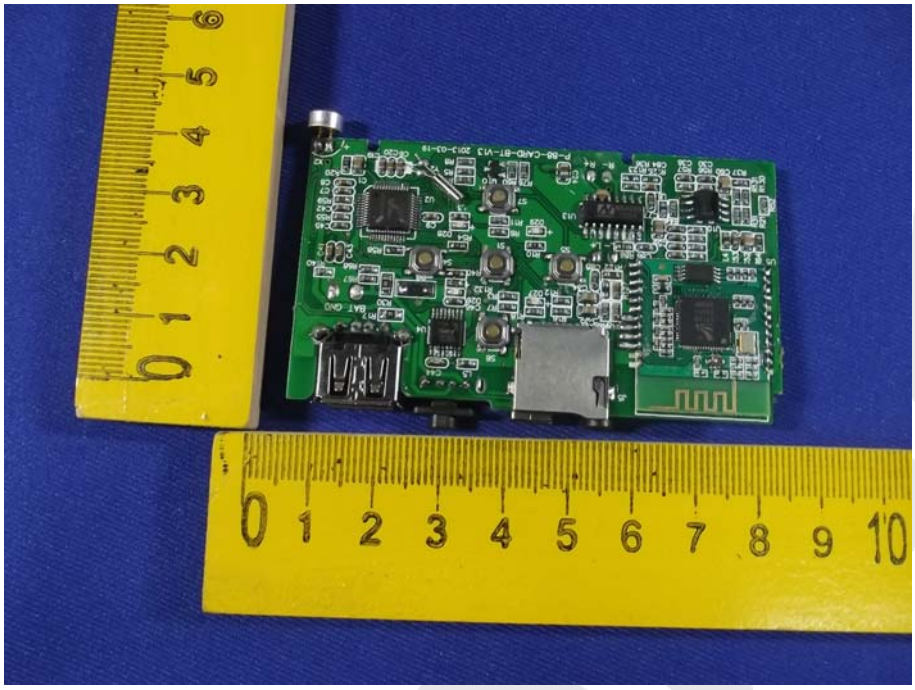


Figure 8
PCB of the EUT-Back View

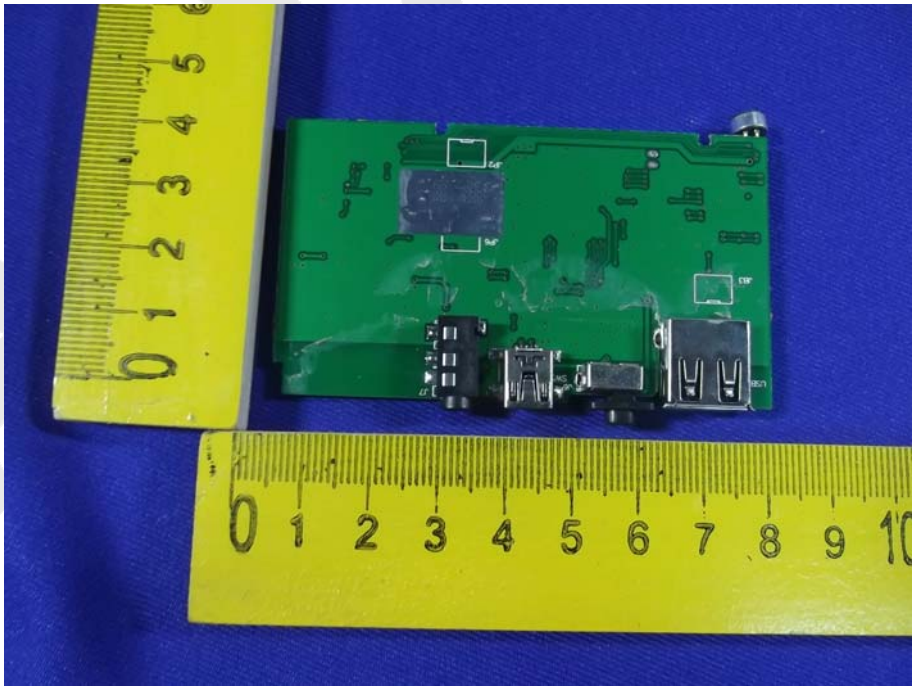


Figure 9
PCB of the EUT-Front View(BT module)