APPLICATION FOR CERTIFICATION
On Behalf of
reIDEA Technology Ltd.
bPoint Plug Smart (Wireless Plug)
Model No.: CB4P1
FCC ID: 2ABYY-CB4X1
Brand: bPoint

Prepared for : reIDEA Technology Ltd.
Rm. B502C, 5F.2, No.185, Kewang Rd.
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Prepared by : AUDIX Technology Corporation
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TEST REPORT CERTIFICATION

Applicant	:	reIDEA Technology Ltd.
Manufacturer	:	IModesty Tech Dongguan R&D Center
EUT Description	:	bPoint Plug Smart (Wireless Plug)
FCC ID	:	2ABYY-CB4X1
	(A) Model No.	: CB4P1
	(B) Serial No.	: N/A
	(C) Brand	: bPoint
	(D) Power Supply	: AC 120V, 60Hz
	(E) Test Voltage	: AC 120V, 60Hz

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C, Oct. 2013
(FCC CFR 47 Part 15C, §15.205, §15.207, §15.209 and §15.247)
AND ANSI C63.4:2003

The device described above was tested by AUDIX Technology Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C limits.

The measurement results are contained in this test report and AUDIX Technology Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the requirements of FCC standards.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Technology Corporation.

Date of Test: 2014. 04. 17 ~ 29 Date of Report: 2014. 04. 30

Producer: _____
(Tina Huang/Administrator)

Signatory: _____
(Ben Cheng/Manager)

1. DESCRIPTION OF REVISION HISTORY

Edition No.	Date of Rev.	Revision Summary	Report No.
0	2014. 04. 30	Original Report	EM-F140241

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product	bPoint Plug Smart (Wireless Plug)
Model Number	CB4P1
Serial Number	N/A
Brand Name	bPoint
Applicant	reIDEA Technology Ltd. Rm. B502C, 5F.2, No.185, Kewang Rd. Longtan Township, Taoyuan County, 25152, Taiwan
Manufacturer	IModesty Tech Dongguan R&D Center Room No.303, Building No.8, Chuangyi Centor, Lanfeng Industrial Zone,Dongguan, China, ZIP: 523000
FCC ID	2ABYY-CB4X1
Fundamental Range	Bluetooth Low Energy: 2402MHz ~ 2480MHz
Frequency Channel	40 channels
Radio Technology	GFSK
Data Transfer Rate	1Mbps
Antenna Type	PCB Antenna, -3.16dBi(Peak)
Date of Receipt of Sample	2014. 04. 04
Date of Test	2014. 04. 17 ~ 29

2.2. Tested Supporting System Details

2.2.1. Support Peripheral Unit

No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	DC Power Supply	TOP WARD	3303A	N/A	N/A
2.	Notebook PC	DELL	P20G	P20G001	N/A
3.	Power Socket	N/A	N/A	N/A	N/A
4.	Test Jig	N/A	N/A	N/A	N/A

2.2.2. Cable Lists

No.	Cable Description Of The Above Support Units
1.	DC Power Cable*2: Non-Shielded, Detachable, 0.6m
2.	USB Cable: Shielded, Detachable, 1.0m, Bonded a ferrite core Adapter: DELL, M/N AA90PM111 AC Power Code: Non-Shielded, Detachable, 1.8m DC Power Cable: Non-Shielded, Undetachable, 1.8m, Bonded a ferrite core
3.	AC Power Code: Non-Shielded, Detachable, 1.8m
4.	Bus Cable: Non-Shielded, Undetachable, 0.1m

2.3. Description of Test Facility

Name of Firm	:	**AUDIX Technology Corporation** EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan
Test Site (C8/Semi-AC)	:	**No. 8 Shielded Room &** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan **Semi-Anechoic Chamber** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan May 11, 2012 Renewal on Federal Communication Commission Registration Number: 90993
NVLAP Lab. Code	:	200077-0
TAF Accreditation No	:	1724

2.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conduction Test	150kHz~30MHz	±3.43dB
Radiation Test (Distance: 3m)	30MHz~300MHz	± 2.91dB
	300MHz~1000MHz	± 2.74dB
	Above 1GHz	± 5.02dB

Remark：Uncertainty = $ku_c(y)$

Test Item	Uncertainty
6dB Bandwidth	± 0.05kHz
Maximum peak output power	± 0.33dBm
Emission Limitations	± 0.13dB
Band edges	± 0.13dB
Power spectral density	± 0.13dB

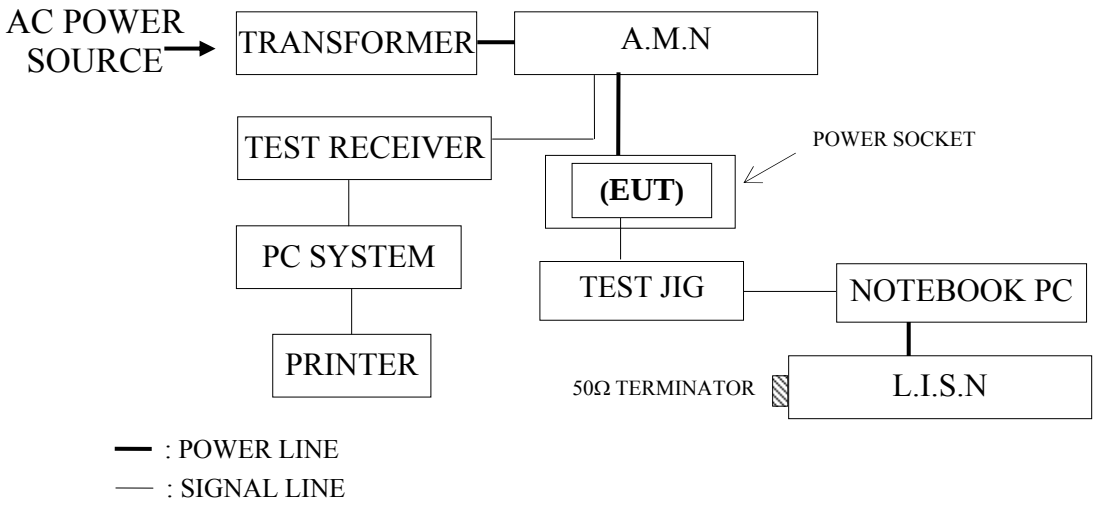
3. CONDUCTED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipment was used during the powerline conducted emission measurement: (No. 8 Shielded Room)

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Due Date
1.	Test Receiver	R&S	ESR3	101774	2015. 02. 18
2.	A.M.N.	R&S	ESH2-Z5	100366	2015. 06. 20
3.	L.I.S.N.	Kyoritsu	KNW-407	8-855-9	2014. 12. 25

3.2. Block Diagram of Test Setup



EUT: bPoint Plug Smart (Wireless Plug)

3.3. Powerline Conducted Emission Limit (§15.207, RSS-Gen §7.2.2/Table 2)

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark: 1. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.
2. The lower limit applies at the band edges.

3.4. Operating Condition of EUT

3.4.1. Setup the **EUT (bPoint Plug Smart (Wireless Plug))** as shown on 3.2.

3.4.2. Turn on the power of all equipment.

3.4.3. The Notebook PC was running test software "ISRT" to set EUT (bPoint Plug Smart (Wireless Plug)) on transmitting and receiving during all testing.

3.5. Test Procedure

The EUT (link Power Socket) was placed on the table which was above the ground by 80cm and Power Socket's power cord connected to the AC mains through an Artificial Mains Network (A.M.N.). This provided a 50 ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.)
Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions simulators of the interface cables should be manipulated according to ANSI C63.4-2003, regulation during conducted measurement.

The bandwidth of the R&S Test Receiver ESR3 was set at 9kHz.

The frequency range from 150kHz to 30MHz was checked.

All the final readings from Test Receiver were measured with the Quasi-Peak detector and Average detector. Remark: If the Average limit is met when using a Quasi-Peak detector, the Average detector is unnecessary)

3.6. Powerline Conducted Emission Measurement Results

PASSED. All emissions not reported below are too low against the prescribed limits.

The EUT was measured during this section testing and all the test results are listed in next pages.

EUT：bPoint Plug Smart (Wireless Plug) Model No.：CB4P1

Test Date：2014. 04. 29 Temperature：21℃ Humidity：67%

The details are as follows：

Mode	Reference Test Data	
	Neutral	Line
1.	# 2	# 1

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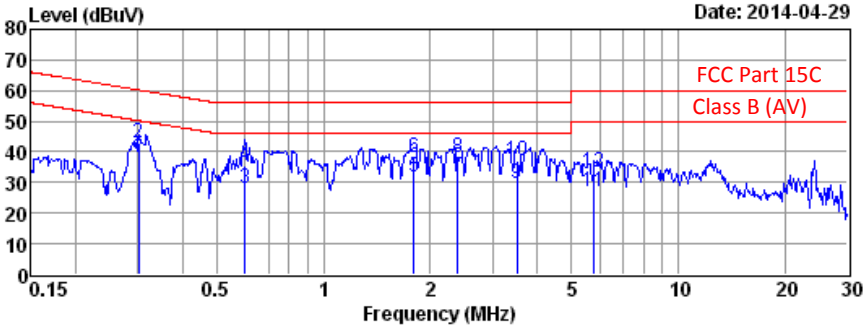
Email:emc@audixtech.com

Data: 2 File: D:\test data\REPORT\2014\C1M1404XXX\C1M1404114-C-D(rf).EM6 (2)



Site no. : No.8 Shielded Room Data no. : 2
Condition : ESH2-Z5 366 Phase : NEUTRAL
Limit : FCC Part 15C
Env. / Ins. : 21*C / 67% ESCS (265) Engineer : Fate
EUT : CB4P1
Power Rating : 120Vac, 60Hz
Test Mode : OPERATING

	Freq. (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.302	0.22	0.03	28.08	38.18	50.19	12.01	Average
2	0.302	0.22	0.03	32.73	42.83	60.19	17.36	QP
3	0.601	0.23	0.04	17.73	27.86	46.00	18.14	Average
4	0.601	0.23	0.04	25.13	35.26	56.00	20.74	QP
5	1.800	0.25	0.07	21.61	31.77	46.00	14.23	Average
6	1.800	0.25	0.07	27.85	38.01	56.00	17.99	QP
7	2.384	0.27	0.09	21.45	31.66	46.00	14.34	Average
8	2.384	0.27	0.09	27.86	38.07	56.00	17.93	QP
9	3.509	0.32	0.11	19.52	29.81	46.00	16.19	Average
10	3.509	0.32	0.11	26.86	37.15	56.00	18.85	QP
11	5.774	0.39	0.14	16.86	27.26	50.00	22.74	Average
12	5.774	0.39	0.14	23.14	33.54	60.00	26.46	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

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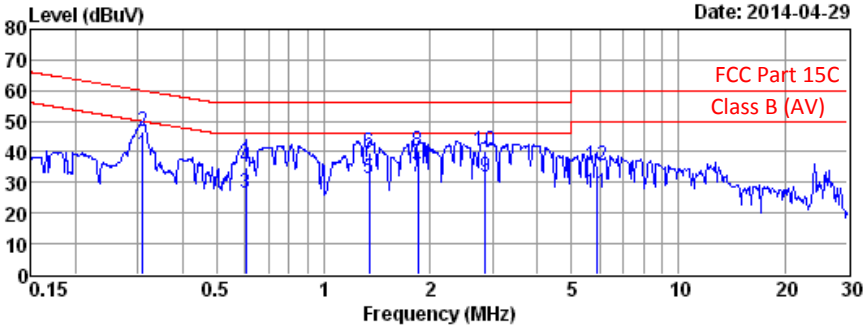
Data: 1 File: D:\test data\REPORT\2014\C1M1404XXX\C1M1404114-C-D(rf).EM6 (2)



Site no. : No.8 Shielded Room Data no. : 1
Condition : ESH2-Z5 366 Phase : LINE
Limit : FCC Part 15C
Env. / Ins. : 21*C / 67% ESCS (265) Engineer : Fate
EUT : CB4P1
Power Rating : 120Vac, 60Hz
Test Mode : OPERATING

	Freq. (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.310	0.19	0.03	29.22	39.29	49.97	10.68	Average
2	0.310	0.19	0.03	36.57	46.64	59.97	13.33	QP
3	0.604	0.20	0.04	16.60	26.70	46.00	19.30	Average
4	0.604	0.20	0.04	24.93	35.03	56.00	20.97	QP
5	1.345	0.22	0.06	21.34	31.47	46.00	14.53	Average
6	1.345	0.22	0.06	29.57	39.70	56.00	16.30	QP
7	1.848	0.24	0.07	21.75	31.90	46.00	14.10	Average
8	1.848	0.24	0.07	30.15	40.30	56.00	15.70	QP
9	2.854	0.27	0.10	21.53	31.76	46.00	14.24	Average
10	2.854	0.27	0.10	29.77	40.00	56.00	16.00	QP
11	5.867	0.35	0.14	16.36	26.72	50.00	23.28	Average
12	5.867	0.35	0.14	24.95	35.31	60.00	24.69	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

4. RADIATED EMISSION MEASUREMENT

4.1. Test Equipment

The following test equipment was used during the radiated emission measurement:

4.1.1. For Frequency Range 30MHz~1000MHz (at Semi-Anechoic Chamber)

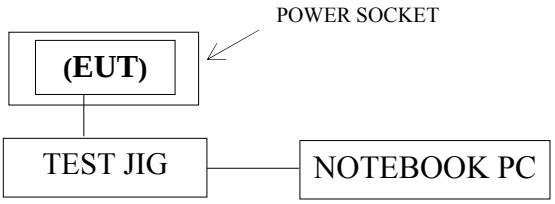
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Due Date
1	Spectrum Analyzer	Agilent	N9030A-544	US51350140	2014. 07. 29
2	Test Receiver	R & S	ESCS30	100338	2014. 06. 30
3	Amplifier	HP	8447D	2944A06305	2015. 02. 17
4	Bilog Antenna	CHASE	CBL6112D	33821	2014. 08. 07

4.1.2. For Frequency Above 1GHz (at Semi-Anechoic Chamber)

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Due Date
1	Spectrum Analyzer	Agilent	N9030A-544	US51350140	2014. 07. 29
2	Test Receiver	R & S	ESCS30	100338	2014. 06. 30
3	Amplifier	Agilent	8449B	3008A02676	2015. 02. 20
4	2.4GHz Notch Filter	K&L	7NSL10-2441. 5E130.5-00	1	2014. 06. 12
5	3G High Pass Filter	Microware Circuits	H3G018G1	484796	2014. 06. 12
6	Horn Antenna	EMCO	3115	9609-4927	2014. 06. 16
7	Horn Antenna	EMCO	3116	2653	2014. 10. 10

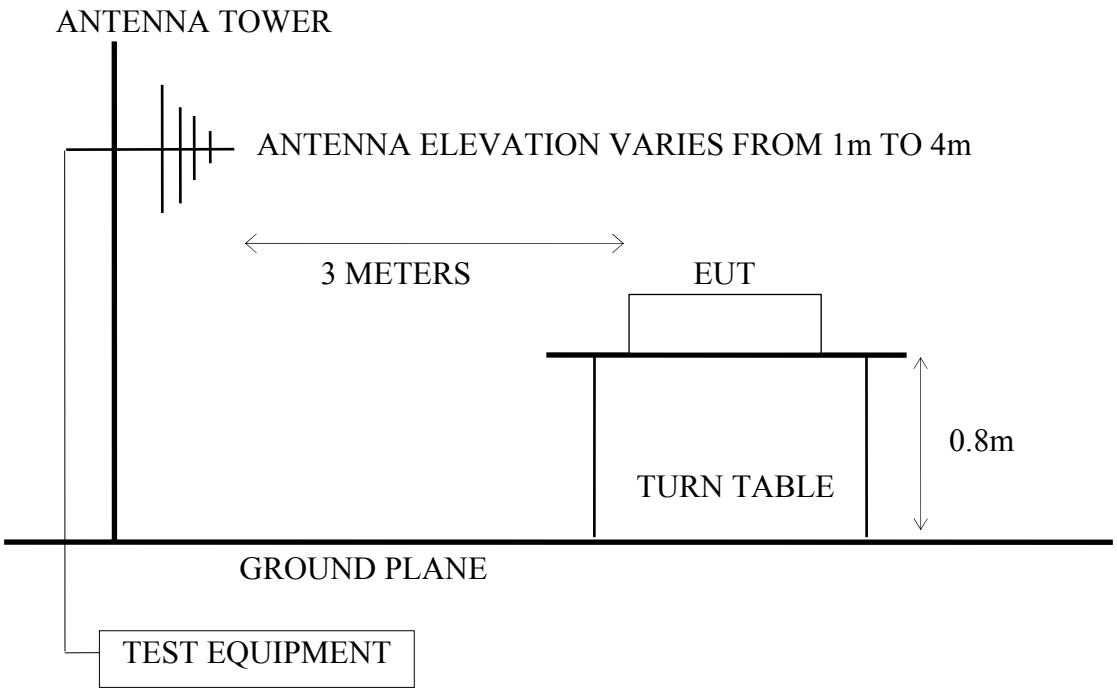
4.2. Test Setup

4.2.1. Block Diagram of connection between EUT and simulators

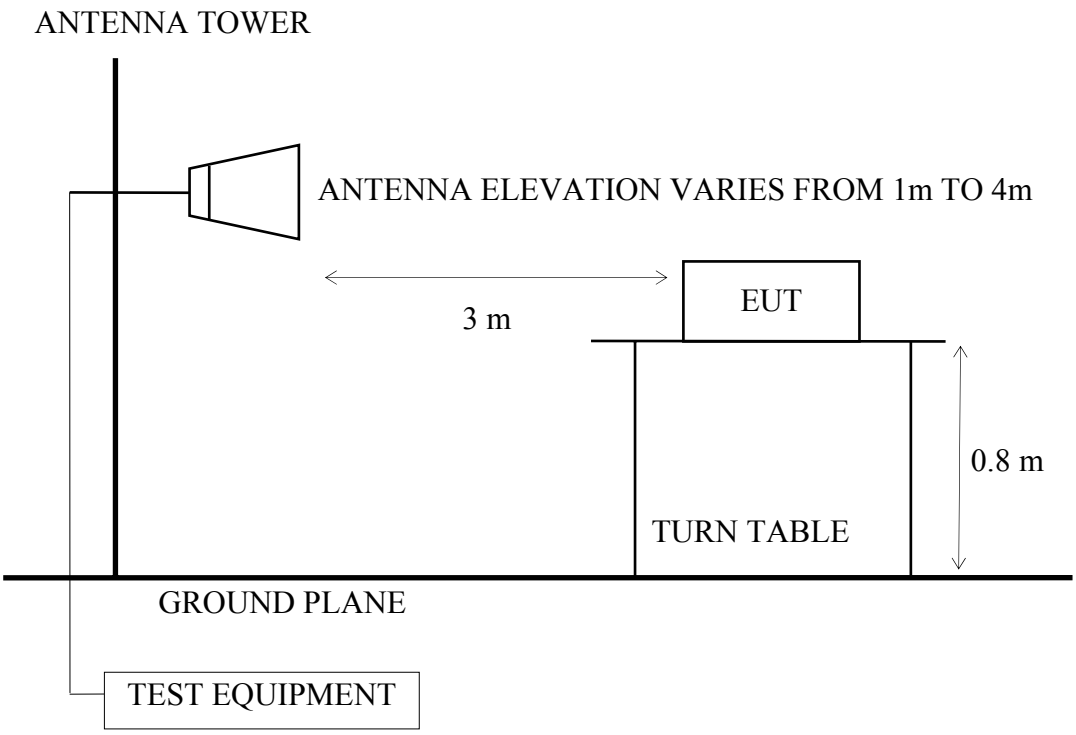


EUT: bPoint Plug Smart (Wireless Plug)

4.2.2. Semi-Anechoic Chamber (3m) Setup Diagram for 30-1000MHz



4.2.3. Semi-Anechoic Chamber (3m) Setup Diagram for above 1GHz



4.3. Radiated Emission Limits (§15.209, RSS-210 §2.7/Table 2)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMITS	
		μV/m	dBμV/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0
Above 1000	3	74.0 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark：(1) Emission level (dBμV/m) = 20 log Emission level (μV/m)
(2) The tighter limit applies at the edge between two frequency bands.
(3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
(4) The limits in this table are based on CFR 47 Part 15.205(a)(b) and Part 15.209 (a).
(5) The over 1GHz limit, FCC limit is used based on CFR 47 Part 15.35(b) and Part 15.205(b) & Part 15.209(e) and Part 15.207(c).

4.4. Operating Condition of EUT

4.4.1. Set up the EUT and simulator as shown on 4.2.
4.4.2. To turn on the power of all equipment.
4.4.3. The EUT (bPoint Plug Smart (Wireless Plug)) linked Notebook PC, the test program “ISRT” was used to enable the EUT to transmit data at different channel frequency individually.

4.5. Test Procedure

The EUT and its simulators were placed on a turn table which was 0.8 meter above the ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set 3 meters away from the receiving antenna which was mounted on an antenna tower. The antenna moved up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna such as calibrated biconical and log-periodical antenna or horn antenna were used as a receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4-2003 regulation.

The bandwidth of the R&S Test Receiver ESCS30 was set at 120kHz. (For 30MHz to 1000MHz)

The resolution bandwidth and video bandwidth of test spectrum analyzer is 1MHz for peak detection (PK) at frequency above 1GHz.

The resolution bandwidth of test spectrum analyzer is 1MHz and the video bandwidth is 10Hz for average detection (AV) at frequency above 1GHz.

The frequency range from 30MHz to 25GHz (Up to 10^{th} harmonics from fundamental frequency) was checked. 30MHz to 1000MHz was measured with Quasi-Peak detector.

Pursuant to ANSI C63.4 8.3.1.2, when peak value complies with the average limit, we didn't perform measurement in average detector.

4.6. Test Results

PASSED.
(All emissions not reported for there is no emission be found.)

EUT: bPoint Plug Smart (Wireless Plug) M/N: CB4P1

Test Date: 2014. 04. 29 Temperature: 26℃ Humidity: 43%

For Frequency Range 30MHz~1000MHz:

The EUT with following test modes was performed during this section testing and all the test results are listed in section 4.6.1.

Mode	Channel	Frequency	Test Mode	Reference Test Data	
				Horizontal	Vertical
1.	CH 0	2402MHz	Transmit	# 1	# 2
2.	CH 19	2440MHz		# 1	# 2
3.	CH 39	2480MHz		# 1	# 2

* Above all final readings were measured with Quasi-Peak detector.

For Frequency above 1GHz:

The EUT with following test modes was performed during this section testing and all the test results are listed in section 4.6.2.

Mode	Chnnel	Frequency	Test Mode	Test Frequency Range
1.	CH 0	2402MHz	Transmit	**1000-2680MHz***
2.				2680-4000MHz
3.				4000-5500MHz
4.				5500-7500MHz
5.				7500-18000MHz
6.				18000-25000MHz
7.	CH 19	2440MHz	Transmit	**1000-2680MHz***
8.				2680-4000MHz
9.				4000-5500MHz
10.				5500-7500MHz
11.				7500-18000MHz
12.				18000-25000MHz
13.	CH 39	2480MHz	Transmit	**1000-2680MHz***
14.				2680-4000MHz
15.				**4000-5500MHz***
16.				5500-7500MHz
17.				7500-18000MHz
18.				18000-25000MHz

Note: 1. Above all final readings were measured with Peak and Average detector.
2."*" means there is spurious emission falling the frequency band and be measures.
3. The emissions (up to 25GHz) not reported that there is no emission to be found.

For Restricted Bands:

The EUT was tested in restricted bands and all the test results are listed in section 4.6.3. (The restricted bands defined in part 15.205(a))

Mode	Channel	Frequency	Test Mode	Reference Test Data No.	
				Horizontal	Vertical
1	CH 0	2402MHz	Transmit	# 3, # 4	# 1, # 2
2	CH 39	2480MHz		# 7, # 10	# 5, # 9

4.6.1. For 30-1000MHz Frequency Range Measurement Results

Bluetooth Low Energy, Transmit, Frequency: 2402MHz

Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : HORIZONTAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : TX2402

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	101.78	11.48	2.10	9.70	23.28	43.50	20.22	QP
2	431.58	16.88	5.20	8.21	30.29	46.00	15.71	QP
3	768.17	20.35	6.80	1.71	28.86	46.00	17.14	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : VERTICAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : TX2402

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	53.28	8.61	1.50	19.84	29.95	40.00	10.05	QP
2	204.60	10.38	3.10	13.08	26.56	43.50	16.94	QP
3	702.21	19.53	6.50	2.58	28.61	46.00	17.39	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Bluetooth Low Energy, Transmit, Frequency: 2440MHz

Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : HORIZONTAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : TX2440

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	101.78	11.48	2.10	9.85	23.43	43.50	20.07	QP
2	431.58	16.88	5.20	7.94	30.02	46.00	15.98	QP
3	639.16	19.39	6.28	3.51	29.18	46.00	16.82	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : VERTICAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : TX2440

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	54.25	8.38	1.50	19.92	29.80	40.00	10.20	QP
2	259.89	14.10	3.53	21.70	39.33	46.00	6.67	QP
3	702.21	19.53	6.50	3.95	29.98	46.00	16.02	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Bluetooth Low Energy, Transmit, Frequency: 2480MHz

Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : HORIZONTAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : TX2480

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	85.29	8.40	1.90	16.36	26.66	40.00	13.34	QP
2	431.58	16.88	5.20	8.12	30.20	46.00	15.80	QP
3	786.60	20.49	6.90	1.42	28.81	46.00	17.19	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : VERTICAL
Limit : 30M-1G
Env. / Ins. : 26*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : TX2480

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	101.78	11.48	2.10	4.24	17.82	43.50	25.68	QP
2	198.78	10.14	3.00	6.71	19.85	43.50	23.65	QP
3	702.21	19.53	6.50	2.97	29.00	46.00	17.00	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

4.6.2. For above 1GHz Frequency Range Measurement Results

Date of Test： 2014. 04. 29 Temperature： 26℃

EUT： bPoint Plug Smart (Wireless Plug) Humidity： 43%

Test Mode： **Bluetooth Low Energy, Transmit, Channel 0, Frequency: 2400MHz**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (Horizontal) (dBμV)	Emission Level (Horizontal) (dBμV/m)	Limits (dBμV/m)	Margin (dB)
1535.92	25.89	5.67	18.55	50.11	54.00	3.89

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (Vertical) (dBμV)	Emission Level (Vertical) (dBμV/m)	Limits (dBμV/m)	Margin (dB)
1194.88	24.83	4.57	20.29	49.69	54.00	4.31
1535.92	25.89	5.67	20.94	52.50	54.00	1.50

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.
3. The peak measured value complies with the average limit, it is unnecessary to perform an average measurement. (According to ANSI C63.4-2003 section 8.3.1.2)

Date of Test： 2014. 04. 29 Temperature： 26℃

EUT： bPoint Plug Smart (Wireless Plug) Humidity： 43%

Test Mode： **Bluetooth Low Energy, Transmit, Channel 19, Frequency: 2440MHz**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (Vertical) (dBμV)	Emission Level (Vertical) (dBμV/m)	Limits (dBμV/m)	Margin (dB)
1201.60	24.88	4.59	21.34	50.81	54.00	3.19
1535.92	25.89	5.67	18.89	50.45	54.00	3.55

Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.
3. The peak measured value complies with the average limit, it is unnecessary to perform an average measurement. (According to ANSI C63.4-2003 section 8.3.1.2)
4. Horizontal not reported that there is no emission to be found.

Date of Test： 2014. 04. 29 Temperature： 26℃

EUT： bPoint Plug Smart (Wireless Plug) Humidity： 43%

Test Mode： **Bluetooth Low Energy, Transmit, Channel 39, Frequency: 2480MHz**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (Vertical) (dBμV)	Emission Level (Vertical) (dBμV/m)	Limits (dBμV/m)	Margin (dB)
1199.92	24.88	4.59	21.25	50.72	54.00	3.28
1535.92	25.89	5.67	18.96	50.52	54.00	3.48
4960.00	33.34	9.12	10.48	52.94	54.00	1.06

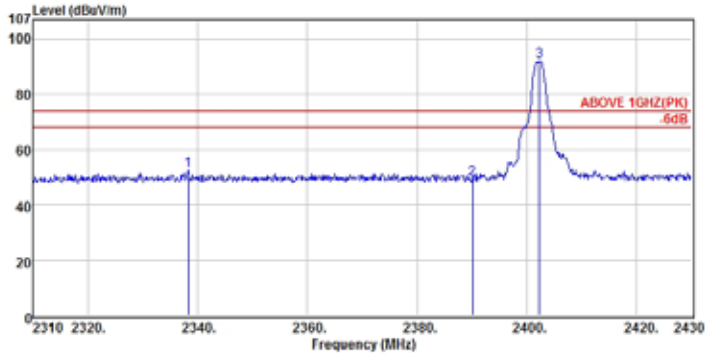
Remarks: 1. Emission level=Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.
3. The peak measured value complies with the average limit, it is unnecessary to perform an average measurement. (According to ANSI C63.4-2003 section 8.3.1.2)
4. Horizontal not reported that there is no emission to be found.

4.6.3. Restricted Bands Measurement Results

Date of Test： 2014. 04. 29 Temperature： 26℃

EUT： bPoint Plug Smart (Wireless Plug) Humidity： 43%

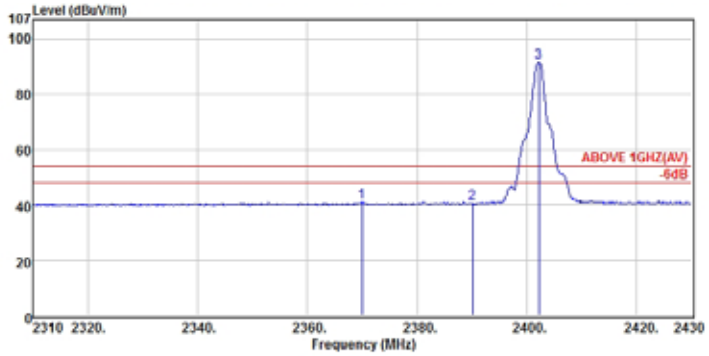
Test Mode： **Bluetooth Low Energy, Transmit, Channel 0, Frequency: 2402MHz**



Site no. : Audix NO.1 Chamber Data no. : 3
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : Out of Band

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2338.32	28.36	6.28	17.85	52.49	74.00	21.51	Peak
2	2390.04	28.47	6.34	14.47	49.28	74.00	24.72	Peak
3	2402.28	28.47	6.36	57.25	92.08	74.00	-18.08	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 4
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : Out of Band

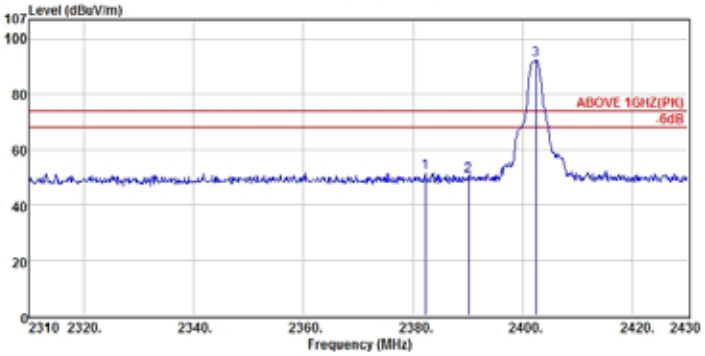
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2370.00	28.43	6.31	6.25	40.99	54.00	13.01	Average
2	2390.04	28.47	6.34	5.60	40.41	54.00	13.59	Average
3	2402.16	28.47	6.36	56.58	91.41	54.00	-37.41	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test： 2014. 04. 29 Temperature： 26℃

EUT： bPoint Plug Smart (Wireless Plug) Humidity： 43%

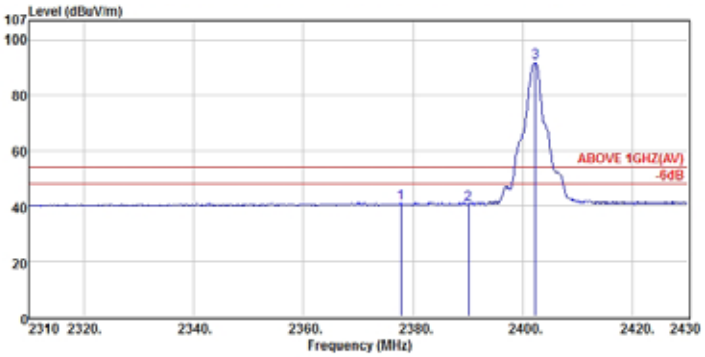
Test Mode： **Bluetooth Low Energy, Transmit, Channel 0, Frequency: 2402MHz**



Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : Out of Band

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2382.24	28.43	6.33	16.95	51.71	74.00	22.29	Peak
2	2390.04	28.47	6.34	15.52	50.33	74.00	23.67	Peak
3	2402.40	28.47	6.36	57.46	92.29	74.00	-18.29	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : Out of Band

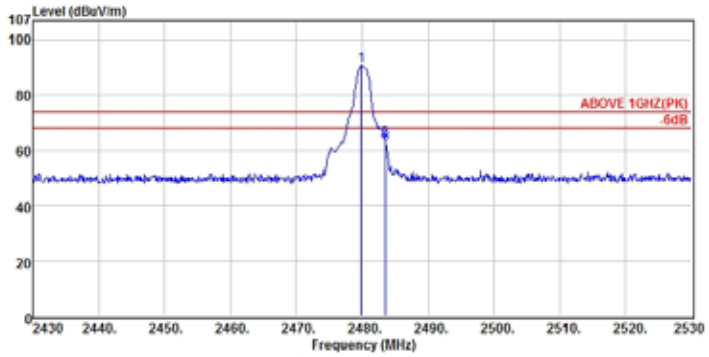
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2377.80	28.43	6.32	6.37	41.12	54.00	12.88	Average
2	2390.04	28.47	6.34	5.77	40.58	54.00	13.42	Average
3	2402.28	28.47	6.36	56.98	91.81	54.00	-37.81	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test： 2014. 04. 29 Temperature： 26℃

EUT： bPoint Plug Smart (Wireless Plug) Humidity： 43%

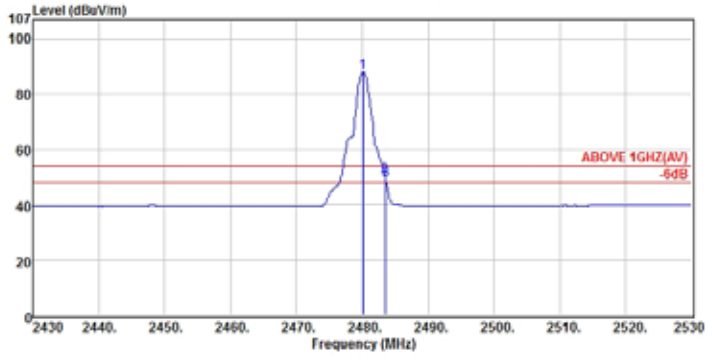
Test Mode： **Bluetooth Low Energy, Transmit, Channel 39, Frequency: 2480MHz**



Site no. : Audix NO.1 Chamber Data no. : 7
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : Out of Band

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2479.90	28.66	6.44	55.41	90.51	74.00	-16.51	Peak
2	2483.50	28.66	6.45	28.44	63.55	74.00	10.45	Peak
3	2483.60	28.66	6.45	27.33	62.44	74.00	11.56	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 10
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : Out of Band

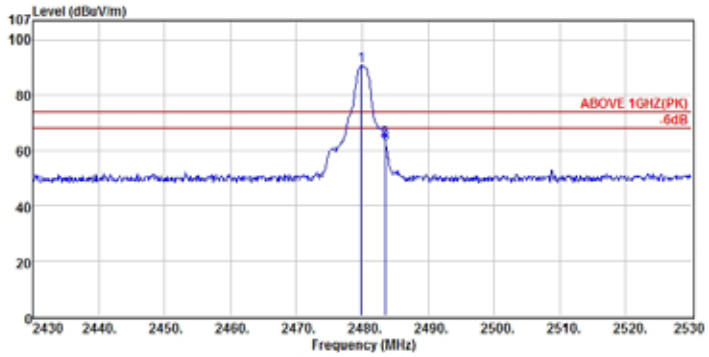
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2480.10	28.66	6.44	52.82	87.92	54.00	-33.92	Average
2	2483.50	28.66	6.45	14.88	49.99	54.00	4.01	Average
3	2483.60	28.66	6.45	13.68	48.79	54.00	5.21	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Date of Test： 2014. 04. 29 Temperature： 26℃

EUT： bPoint Plug Smart (Wireless Plug) Humidity： 43%

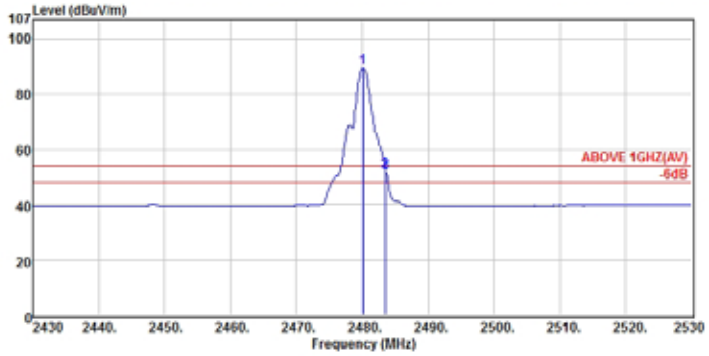
Test Mode： **Bluetooth Low Energy, Transmit, Channel 39, Frequency: 2480MHz**



Site no. : Audix NO.1 Chamber Data no. : 5
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(PK)
Env. / Ins. : 28*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : Out of Band

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2479.90	28.66	6.44	55.55	90.65	74.00	-16.65	Peak
2	2483.50	28.66	6.45	28.48	63.59	74.00	10.41	Peak
3	2483.60	28.66	6.45	27.39	62.50	74.00	11.50	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 9
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : ABOVE 1GHZ(AV)
Env. / Ins. : 28*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : Out of Band

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2480.10	28.66	6.44	54.31	89.41	54.00	-35.41	Average
2	2483.50	28.66	6.45	17.18	52.29	54.00	1.71	Average
3	2483.60	28.66	6.45	16.79	51.90	54.00	2.10	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

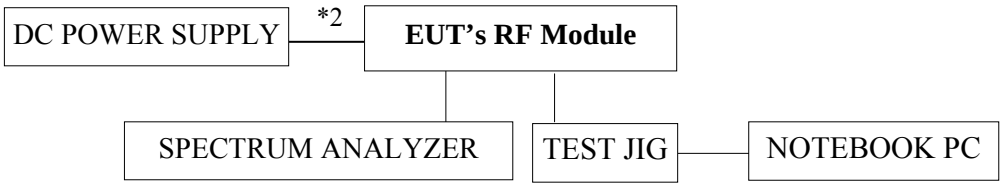
5. 6dB BANDWIDTH MEASUREMENT

5.1. Test Equipment

The following test equipment was used during the Emission Bandwidth measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Due Date
1	Spectrum Analyzer	Agilent	N9030A-544	US51350140	2014. 07. 29

5.2. Block Diagram of Test Setup



EUT: bPoint Plug Smart (Wireless Plug)

5.3. Specification Limits [§15.247(a)(2)]

The minimum 6dB bandwidth shall be at least 500kHz.

5.4. Operating Condition of EUT

5.4.1. Setup the **EUT (bPoint Plug Smart (Wireless Plug))'s RF Module** as shown on 5.2.

5.4.2. Turn on the power of all equipment.

5.4.3. The Notebook PC was running test software "ISRT" to set EUT (bPoint Plug Smart (Wireless Plug)) on transmitting during all testing.

5.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 1.5% EBW, VBW≥3xRBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.
The measurement guideline was according to KDB 558074 D01 V03.

5.6. Test Results

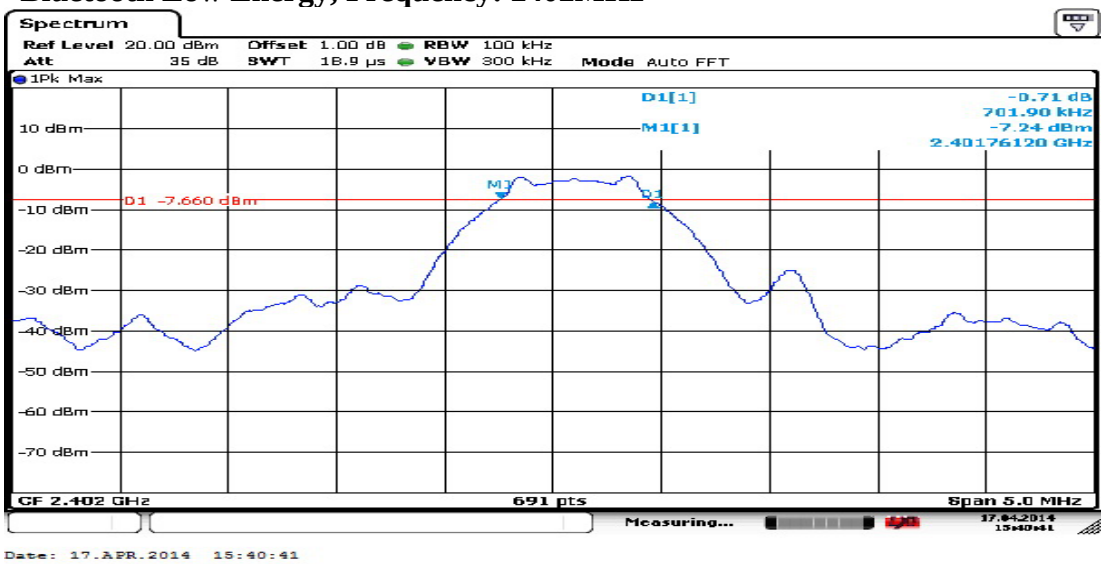
PASSED. All the test results are attached in next pages.

Test Date: 2014. 04. 17 Temperature: 26℃ Humidity: 43%

Mode	Type of Network	Channel	Frequency	**6dB Bandwidth**
1	Bluetooth Low Energy	CH0	2402MHz	**0.70190 MHz**
2		CH19	2440MHz	**0.70910 MHz**
3		CH39	2480MHz	**0.71640 MHz**

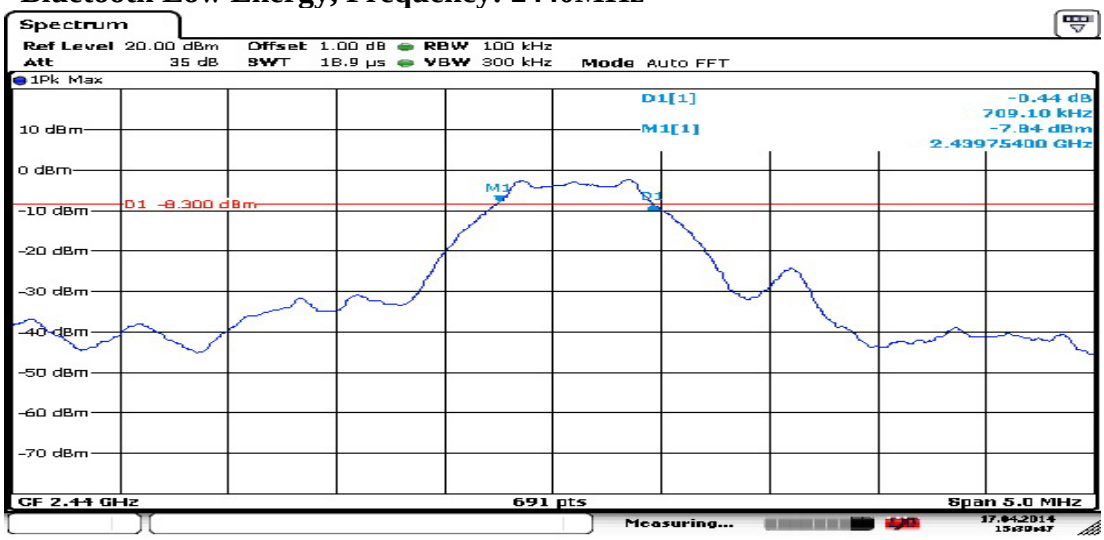
[Limit: least 500kHz]

Bluetooth Low Energy, Frequency: 2402MHz



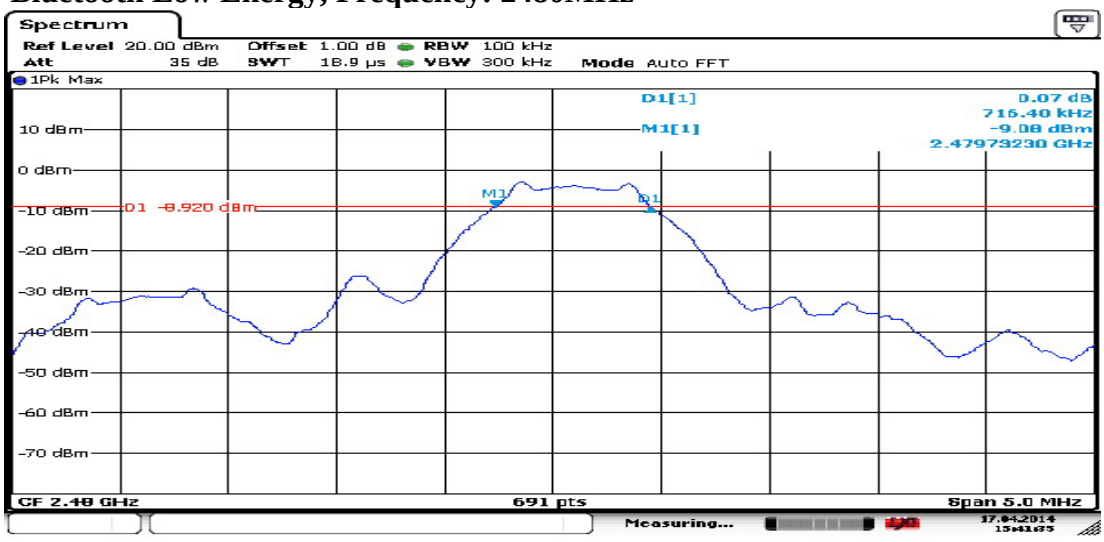
Date: 17.APR.2014 15:40:41

Bluetooth Low Energy, Frequency: 2440MHz



Date: 17.APR.2014 15:39:47

Bluetooth Low Energy, Frequency: 2480MHz



Date: 17.APR.2014 15:41:35

6. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

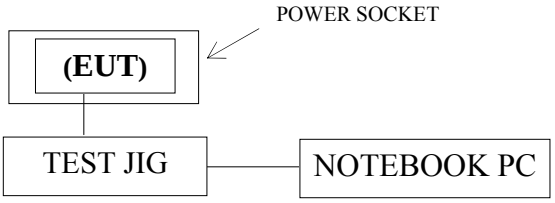
6.1. Test Equipment

The following test equipment was used during the maximum peak output power measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Due Date
1	Spectrum Analyzer	Agilent	N9030A-544	US51350140	2014. 07. 29
2	Test Receiver	R & S	ESCS30	100338	2014. 06. 30
3	Amplifier	Agilent	8449B	3008A02676	2015. 02. 20
4	2.4GHz Notch Filter	K&L	7NSL10-2441. 5E130.5-00	1	2014. 06. 12
5	3G High Pass Filter	Microware Circuits	H3G018G1	484796	2014. 06. 12
6	Horn Antenna	EMCO	3115	9609-4927	2014. 06. 16
7	Horn Antenna	EMCO	3116	2653	2014. 10. 10

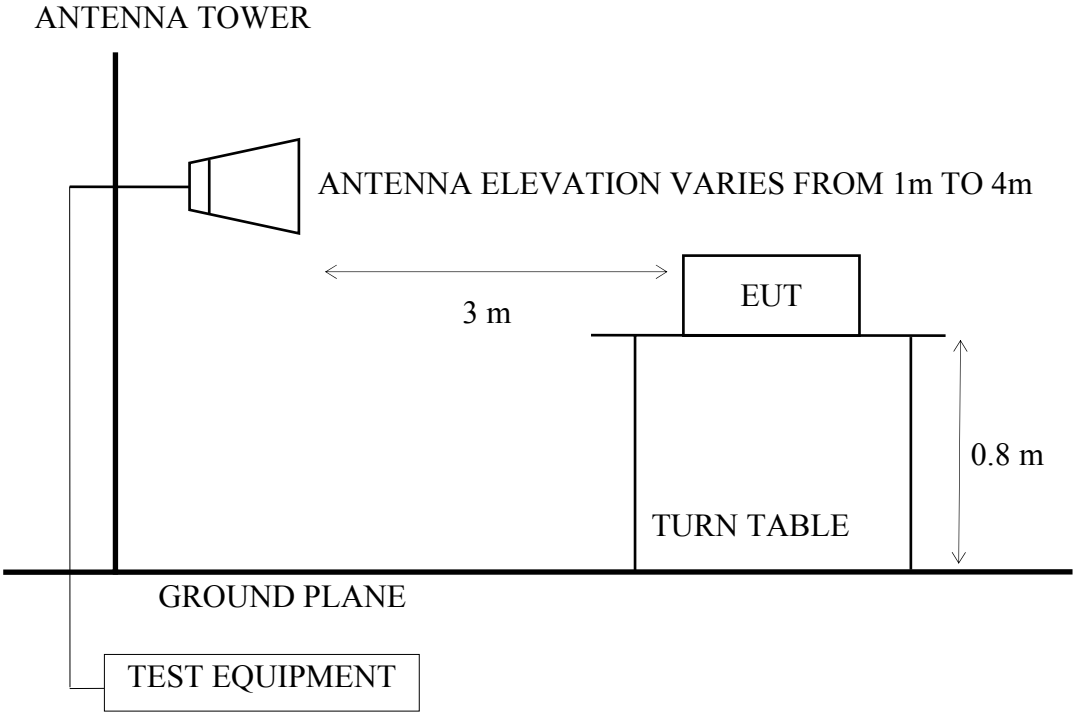
6.2. Block Diagram of Test Setup

6.2.1. Block Diagram of connection between EUT and simulators



EUT: bPoint Plug Smart (Wireless Plug)

6.2.2. Semi-Anechoic Chamber (3m) Setup Diagram



6.3. Specification Limits [§15.247(b)-(3)]

The Limits of maximum Peak Output Power for digital modulation in 2400-2483.5MHz is: 1Watt. (30dBm)

6.4. Operating Condition of EUT

6.4.1. Setup the **EUT (bPoint Plug Smart (Wireless Plug))** as shown on 6.2.

6.4.2. Turn on the power of all equipment.

6.4.3. The Notebook PC was running test software "ISRT" to set EUT (bPoint Plug Smart (Wireless Plug)) on transmitting and receiving during all testing.

6.5. Test Procedure

The transmitter output was connected to the Spectrum Analyzer and record the reading of power meter.

The measurement guideline was according to KDB 558074 D01 V03 and KDB412172 D01.

6.6. Test Results

PASSED. All the test results are listed below.

Test Date: 2014. 04. 17 Temperature: 26℃ Humidity: 43%

Mode	Type of Network	Channel	Frequency	**Output Power(dBm)**
1	Bluetooth Low Energy	CH0	2402MHz	**-5.10 dBm**
2		CH19	2440MHz	**-4.93 dBm**
3		CH39	2480MHz	**-6.49 dBm**

[Limit: 1Watt. (30dBm)]

Bluetooth Low Energy, Transmit, Channel 0, Frequency: 2400MHz

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EMC Department
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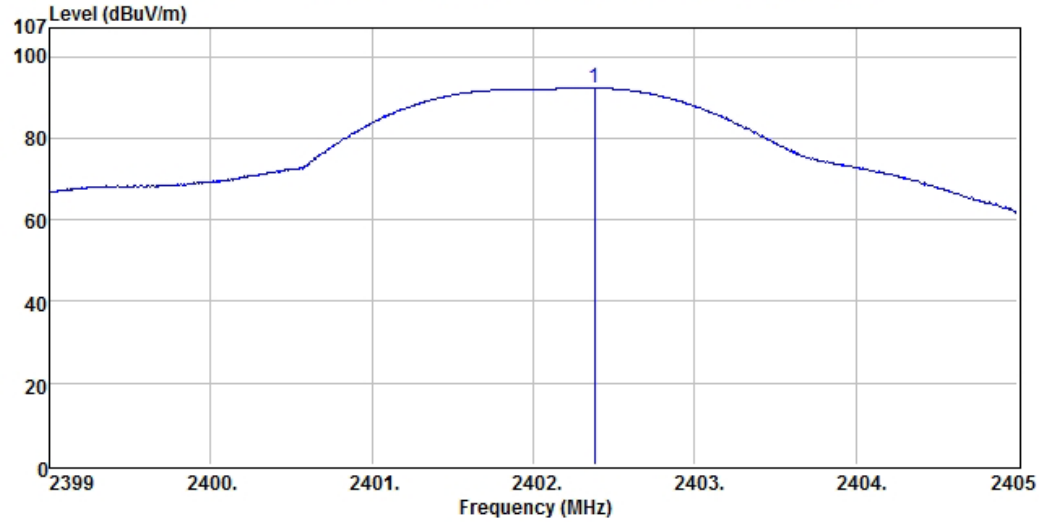
Taiwan R.O.C. Post Code:24443
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:ttemc@ttemc.com.

Data: 11 File: \\Em_chamber\rf\2014\C1M1404114\BT\8DPSK OUT OF BAND.EM6 (14)



Site no. : Audix NO.1 Chamber Data no. : 11
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit :
Env. / Ins. : 26*C / 43% N9010A Engineer : Wenbin_Yang
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : Power

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2402.38	28.47	6.36	57.45	92.28			Peak

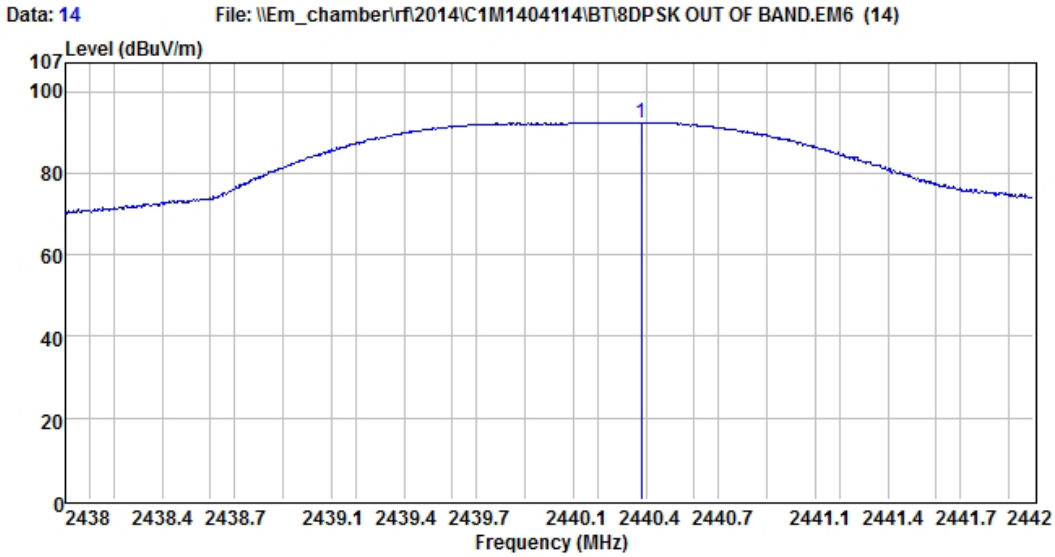
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Channel	Test Frequency	Emission Level (dBμv/m)	E (V/m)	EIRP (dBm)	Peak Output Power (dBm)
0	2402MHz	92.28	0.04	-2.95	-5.10

Pursuant to KDB412172 D01,
ERP (peak output power)=(E x d)2/30-2.15dBi,
Where d= distance in meter and E=electric field strength in V/m.

Bluetooth Low Energy, Transmit, Channel 19, Frequency: 2440MHz

AUDIX Technology Corporation
EMC Department
No.53-11, Dingfu, Linkou Dist., New Taipei City,
Taiwan R.O.C. Post Code:24443
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:ttemc@ttemc.com.



Site no. : Audix NO.1 Chamber
Dis. / Ant. : 3m 3115(4927)
Limit :
Env. / Ins. : 26*C / 43% N9010A
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : Power

Data no. : 14
Ant. pol. : HORIZONTAL
Engineer : Wenbin_Yang

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2440.38	28.59	6.40	57.46	92.45			Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Channel	Test Frequency	Emission Level (dBμv/m)	E (V/m)	EIRP (dBm)	Peak Output Power (dBm)
19	2440MHz	92.45	0.04	-2.78	-4.93

Pursuant to KDB412172 D01,
ERP (peak output power)=(E x d)2/30-2.15dBi,
Where d= distance in meter and E=electric field strength in V/m.

Bluetooth Low Energy, Transmit, Channel 39, Frequency: 2480MHz

AUDIX Technology Corporation
EMC Department
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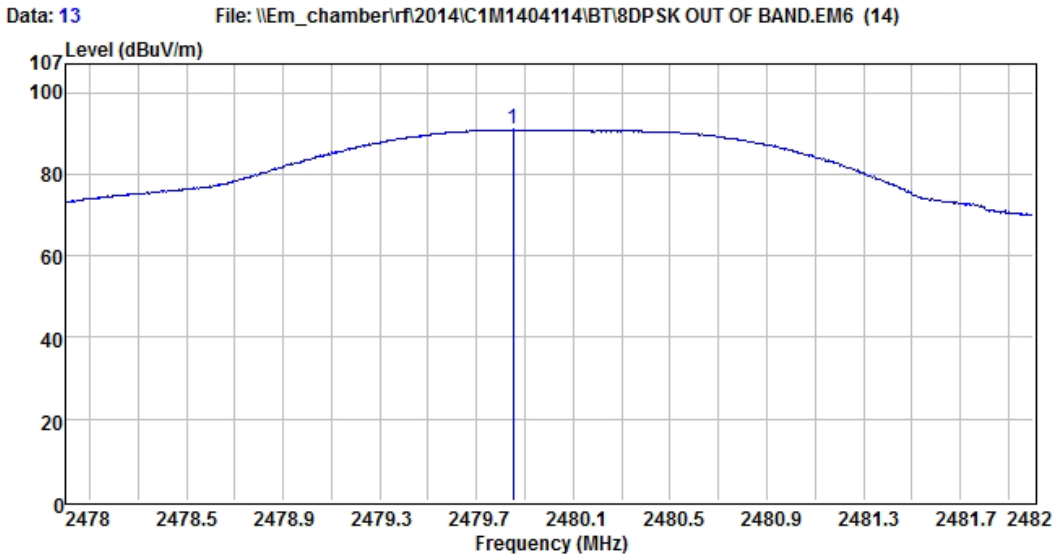
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:ttemc@ttemc.com.



Site no. : Audix NO.1 Chamber
Dis. / Ant. : 3m 3115(4927)
Limit :
Env. / Ins. : 26*C / 43% N9010A
EUT : CB4P1
Power Rating : 120Vac/60Hz
Test Mode : Power

Data no. : 13
Ant. pol. : VERTICAL
Engineer : Wenbin_Yang

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2479.85	28.66	6.44	55.79	90.89			Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
2. The emission levels that are 20dB below the official limit are not reported.

Channel	Test Frequency	Emission Level (dBμv/m)	E (V/m)	EIRP (dBm)	Peak Output Power (dBm)
39	2480MHz	90.89	0.04	-4.34	-6.49

Pursuant to KDB412172 D01,
ERP (peak output power)=(E x d)2/30-2.15dBi,
Where d= distance in meter and E=electric field strength in V/m.

7. EMISSION LIMITATIONS MEASUREMENT

Pursuant to KDB 558074 D01 V03 that emission levels below limits specified in 15.209 would not be required.

8. BAND EDGES MEASUREMENT

8.1. Test Equipment

The following test equipment was used during the band edges measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Due Date
1	Spectrum Analyzer	Agilent	N9030A-544	US51350140	2014. 07. 29

8.2. Block Diagram of Test Setup

The same as section.5.2.

8.3. Specification Limits [§15.247(c)]

The highest level should be at least 20 dB below reference level as measured in section 8.6.

8.4. Operating Condition of EUT

8.4.1. Setup the **EUT (bPoint Plug Smart (Wireless Plug))'s RF Module** as shown on 5.2.

8.4.2. Turn on the power of all equipment.

8.4.3. The Notebook PC was running test software "ISRT" to set EUT (bPoint Plug Smart (Wireless Plug)) on transmitting during all testing.

8.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. Set both RBW=100 kHz and VBW to 300kHz with suitable frequency span including 100kHz bandwidth from band edge.

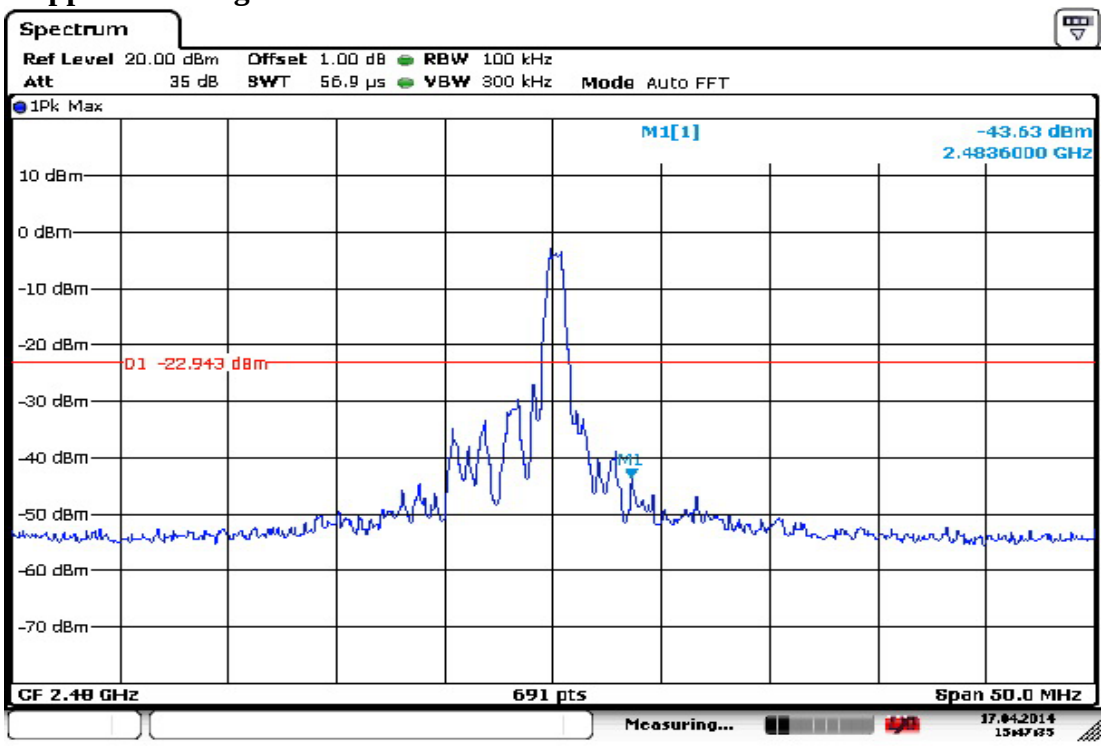
The measurement guideline was according to KDB 558074 D01 V03.

8.6. Test Results

PASSED. All the test results are attached in next pages.

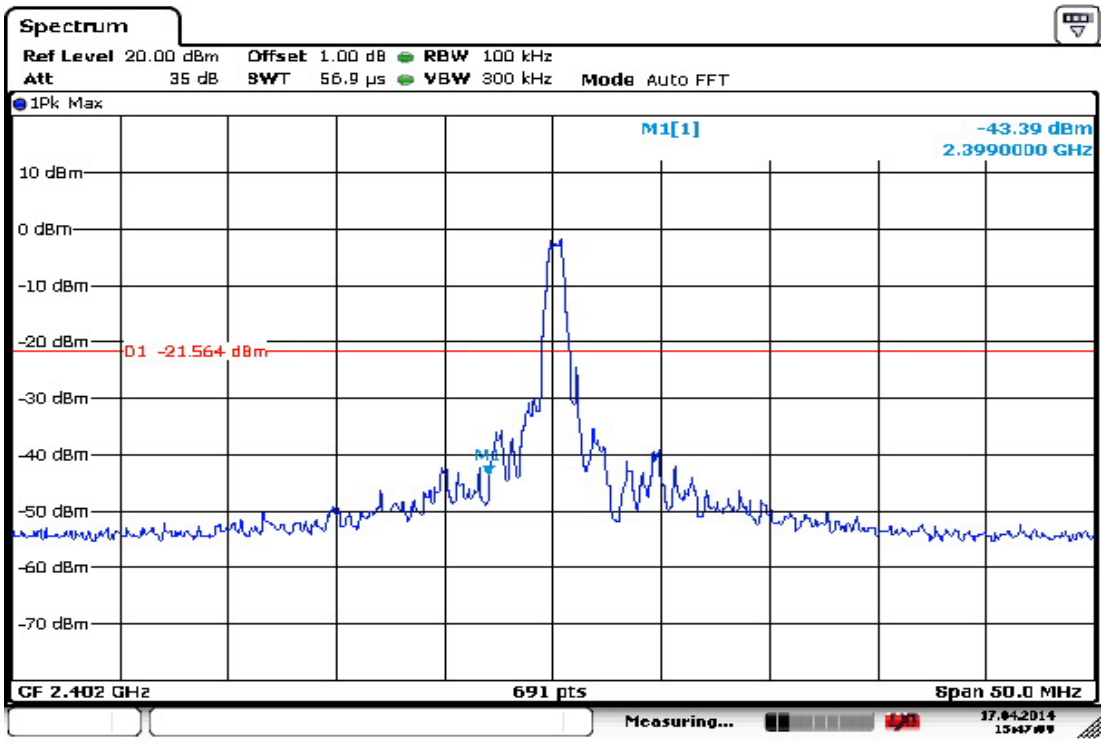
Test Date: 2014. 04. 17 Temperature: 26℃ Humidity: 43%

Bluetooth Low Energy,
Upper Band edge



Date: 17.APR.2014 15:47:36

Below Band edge



Date: 17.APR.2014 15:47:09

9. POWER SPECTRAL DENSITY MEASUREMENT

9.1. Test Equipment

The following test equipment was used during the power spectral density measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Due Date
1	Spectrum Analyzer	Agilent	N9030A-544	US51350140	2014. 07. 29

9.2. Block Diagram of Test Setup

The same as section.5.2.

9.3. Specification Limits [§15.247(d)]

The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band.

9.4. Operating Condition of EUT

9.4.1. Setup the **EUT (bPoint Plug Smart (Wireless Plug))'s RF Module** as shown on 5.2.

9.4.2. Turn on the power of all equipment.

9.4.3. The Notebook PC was running test software "ISRT" to set EUT (bPoint Plug Smart (Wireless Plug)) on transmitting during all testing.

9.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using 100kHz RBW and ≥300kHz VBW, set sweep time = Auto.

The measurement guideline was according to KDB 558074 D01 V03.

9.6. Test Results

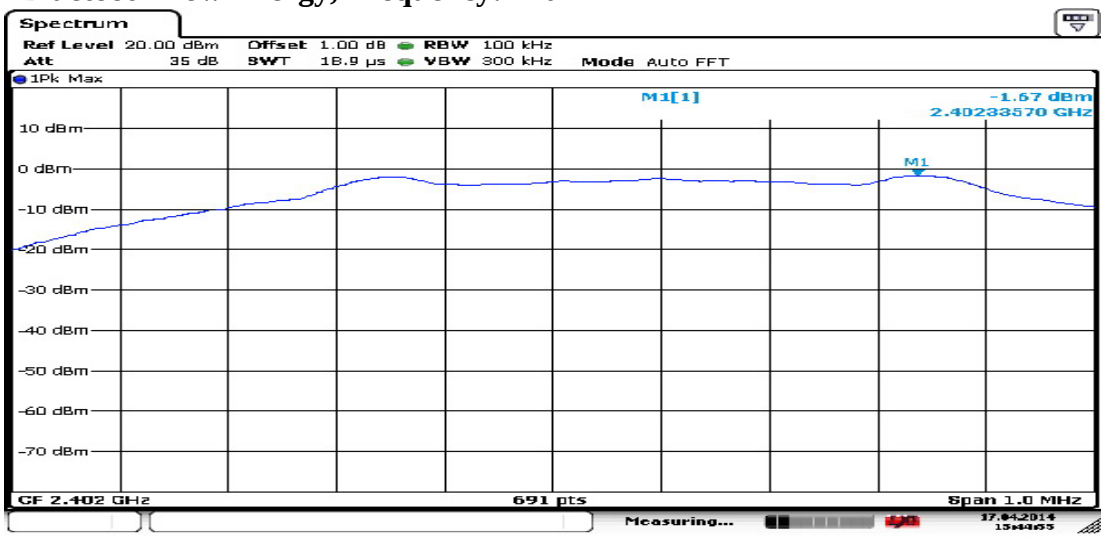
PASSED. All the test results are attached in next pages.

Test Date: 2014. 04. 17 Temperature: 26℃ Humidity: 43%

Mode	Type of Network	Channel	Frequency	**Power Spectral Density**
1	Bluetooth Low Energy	CH0	2402MHz	**-1.67 dBm**
2		CH19	2440MHz	**-2.35 dBm**
3		CH39	2480MHz	**-3.00 dBm**

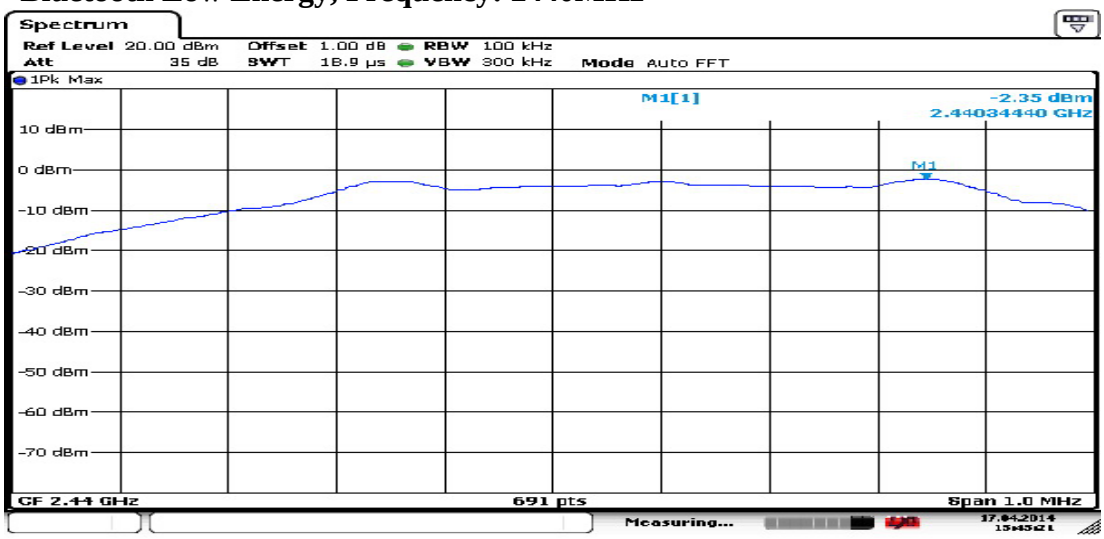
[Limit: 8dBm]

Bluetooth Low Energy, Frequency: 2402MHz



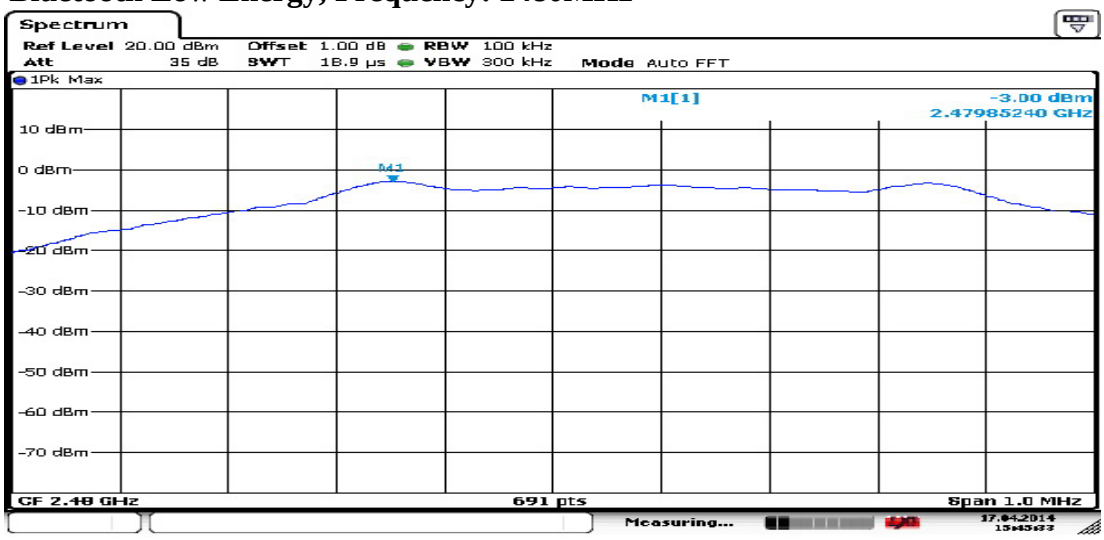
Date: 17.APR.2014 15:44:56

Bluetooth Low Energy, Frequency: 2440MHz



Date: 17.APR.2014 15:45:21

Bluetooth Low Energy, Frequency: 2480MHz



Date: 17.APR.2014 15:45:34

10. DEVIATION TO TEST SPECIFICATIONS

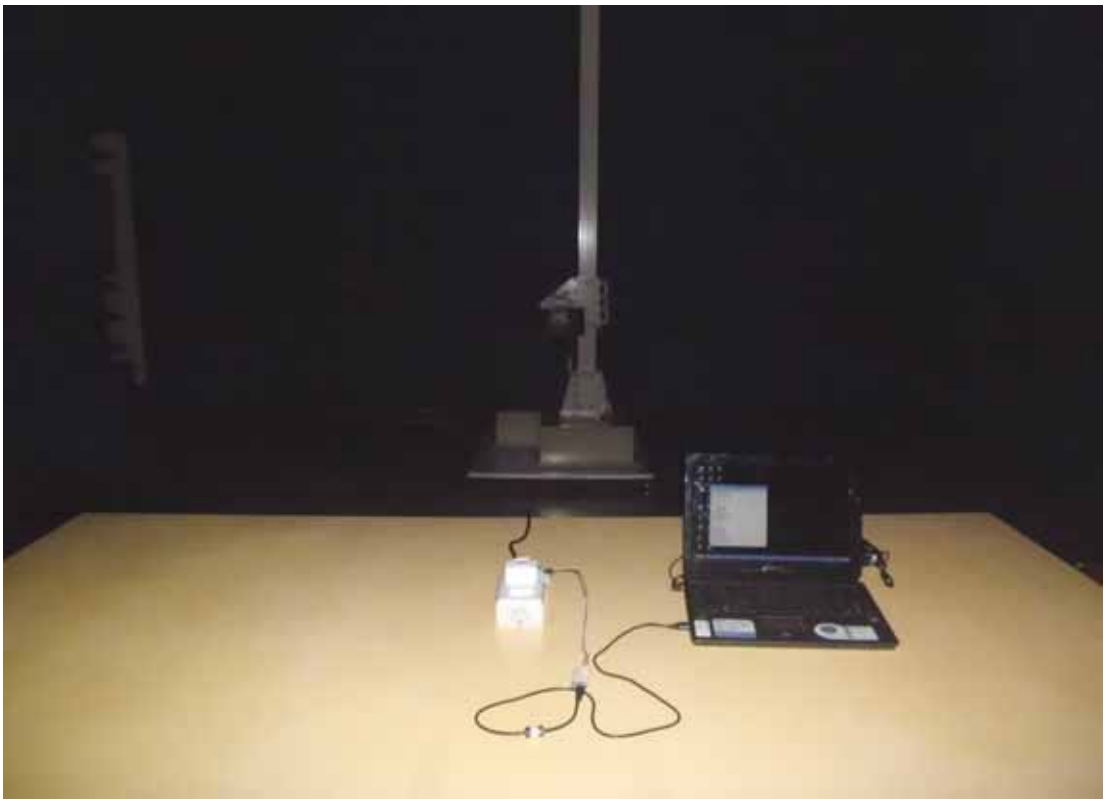
【NONE】

11. PHOTOGRAPHS

11.1. Photos of Radiated Measurement at Semi-Anechoic Chamber

11.1.1. Frequency Range 30MHz~1GHz

11.1.2. Frequency Range Above 1GHz



11.2. Photo of Section RF Conducted Measurement