FCC COMPLIANCE TEST REPORT

Technical Statement of Conformity

in accordance with 47 CFR Part 15 Subpart C

The product

Equipment Under Test	: PartyPro- Karaoke PA System
Model Number	: BRIO 320
Product Series	: N/A
Report Number	: HA150389-RA
Issue Date	: 28-OCT-2015
Test Result	: Compliance

is produced by

Brio Sonud Inc.

Floor C, 2 Chung-Yang 1st St, Xindian, New Taipei City, Taiwan

HongAn TECHNOLOGY CO., LTD.

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BSMI Registration No.: SL2-IN-E-0023, SL2-A1-E-0023, SL2-IS-E-0023, SL2-R1-E-0023, SL2-R2-E-0023, SL2-L1-E-0023

FCC Designation No.: TW1071
TAF Accreditation No.: 1163
VCCI Registration No.: R-2156, C-2329, T-219, G-696

Contents

Test Result Certification

Applicant	:	Brio Sound Inc.
Address of Applicant	:	Floor C, 2 Chung-Yang 1st St, Xindian, New Taipei City, Taiwan
Manufacturer	:	Brio Sound Inc.
Address of Manufacturer	:	Floor C, 2 Chung-Yang 1st St, Xindian, New Taipei City, Taiwan
Trade Name	:	BRIO
Equipment Under Test	:	PartyPro- Karaoke PA System
Model Number	:	BRIO 320
Product Series	:	N/A
FCC ID	:	2AF2HBRIO320
Filing Type	:	Certification
Sample Received Date	:	03-JUN-2015
Test Standard	:	

☒ FCC Part 15 Subpart C §15.247

Deviations from standard test methods & any other specifications : NONE

Remark:

1. This report details the results of the test carried out on one sample.
2. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in both ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.203, 15.207, 15.209, 15.247.
3. This report applies to the above sample only and shall not be reproduced in part without written approval of HongAn Technology Co., Ltd.

Documented by: Cherry Chi **Date:** 28-OCT-2015

Cherry Chi / ADM. Dept. Staff

Tested by: Leon Chen **Date:** 20-OCT-2015

Leon Chen / ENG. Dept. Staff

Approved by: Adam Yang **Date:** 28-OCT-2015

Adam Yang / Section Manager

Summary of Test Result

	Test Item	Applicable Standard	Test Result
1	Antenna Requirement	FCC part 15 subpart C §203	Compliance
2	Conducted limits	FCC part 15 subpart C §207	Compliance
3	Radiated emission limits	FCC part 15 subpart C §209	Compliance
4	20 dB Bandwidth	FCC part 15 subpart C §247(a)(1)	Compliance
5	Hopping Frequency Separation	FCC part 15 subpart C §247(a)(1)	Compliance
6	Number of Hopping Channels	FCC part 15 subpart C §247(a)(1)	Compliance
7	Average Time of Occupancy	FCC part 15 subpart C §247(a)(1)(iii)	Compliance
8	Peak Output Power	FCC part 15 subpart C §247(b)	Compliance
9	100kHz Bandwidth of Band Edges	FCC part 15 subpart C §247(d)	Compliance
10	Spurious RF Conducted Emissions	FCC part 15 subpart C §247(d)	Compliance

1 General Description

1.1 Description of EUT

Equipment Under Test	:	PartyPro- Karaoke PA System
Model Number of EUT	:	BRIO 320
Product Series	:	N/A
Power Supply	:	AC/DC Adapter Manufacturer: MINGXIN Power Model No.: MX36W1-1901500U EMC Approval: FCC Input: AC 100~240V, 50/60Hz, 1A Output: DC 19V, 1.5A ☐Shielded ☒Non-Shielded ☐Detachable ☒Un-Detachable, 1.15m ☐w Ferrite Core ☒w/o Ferrite Core
Frequency Range	:	2402~2480MHz
Transmit Power	:	-4.98 dBm
Number of Channels	:	79 Channels
Carrier Frequency of Each Channel	:	

00	2402	20	2422	40	2442	60	2462
01	2403	21	2423	41	2443	61	2463
02	2404	22	2424	42	2444	62	2464
03	2405	23	2425	43	2445	63	2465
04	2406	24	2426	44	2446	64	2466
05	2407	25	2427	45	2447	65	2467
06	2408	26	2428	46	2448	66	2468
07	2409	27	2429	47	2449	67	2469
08	2410	28	2430	48	2450	68	2470
09	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461	-	-

Antenna Specification	**:**	PCB Antenna/ 0 dBi
Modulation Technique	**:**	Bluetooth 3.0+EDR FHSS Bluetooth EDR : π/4-DQPSK, 8-DPSK
Transmit Data Rate	**:**	Bluetooth : 1Mbps Bluetooth EDR : 2/3 Mbps
Specification	**:**	**Dimensions**：9.3"(L)* 6.3" (W)*6.0"(D) **Weight**：2.5Kg **Function**：The EUT is a PartyPro- Karaoke PA System. **※For more detail specification, please refer to the User Manual.**

1.2 Test Instruments

Instrument Name	Manufacture Mode	Model Number	Serial Number	Last Cal. Date	Next Cal. Date
LISN	EMCO	3810/2NM	9702-1821	10-Aug-2015	10-Aug-2016
LISN	Rolf Heine Hochfrequenztechnik	NNB-4/32T	00001	18-Mar-2015	18-Mar-2016
EMI Receiver	R&S	ESCI7	100931	25-Jul-2015	25-Jul-2016
Spectrum Analyzer	R&S	FSV 30	101629	27-Jan-2015	27-Jan-2016
Preamplifier	CHASE	CPA 9231A	0405	24-Aug-2015	24-Aug-2016
Preamplifier	HD	HD17187	004	01-Jun-2015	01-Jun-2016
Microwave Preamplifier	Com-Power	PAM-840	461269	04-Jun-2015	04-Jun-2016
Bilog Antenna	TESEQ	CBL6111D	25769	25-Feb-2015	25-Feb-2016
Bilog Antenna	TESEQ	CBL6111D	38521	04-Jun-2015	04-Jun-2016
Double-Ridged Waveguide Horn	EMCO	3115	9912-5992	01-Jun-2015	01-Jun-2016
Horn Antenna	Com-Power	AH-840	101042	02-Jun-2015	02-Jun-2016
Temp. & Humidity Chamber	Giant Force	GTH-150-20-SP-AR	MMA0907-012	18-JUN-2015	18-JUN-2016
WIDEBAND RADIO COMMUNICATION TESTER	ROHDE&SCHWARZ	CMW-500	141958	05-NOV-2014	05-NOV-2015

※ The test equipments used are calibrated and can be traced to National ITRI and International Standards.

1.3 Auxiliary Equipments

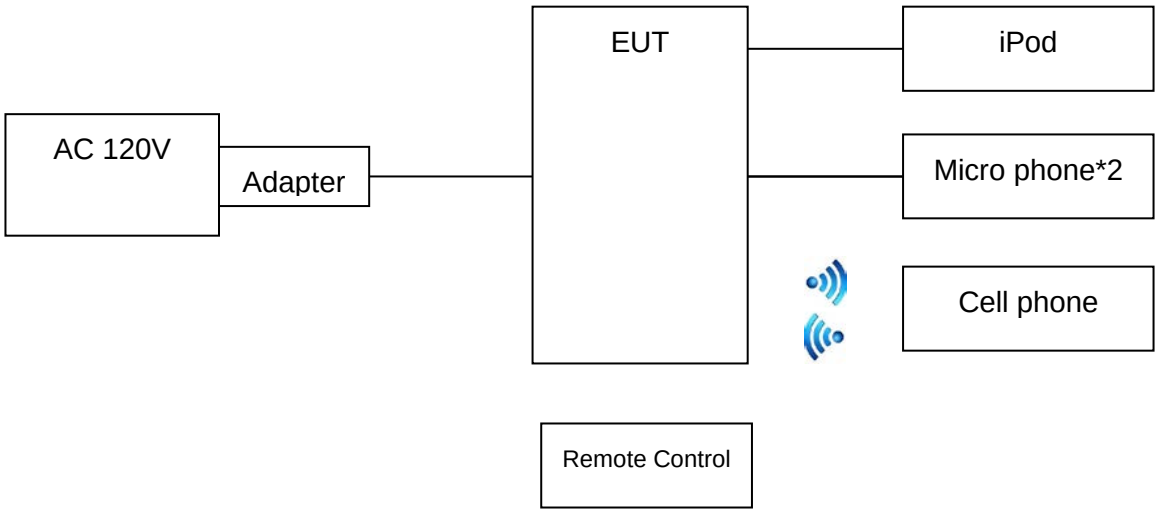
1.3.1. Provided by HongAn Technology Co., Ltd. for RF Test.

No.	Equipment	Model No.	Serial No.	EMC Approved	Brand	Description	
						Data Cable	Power Cable
1	iPod	A1199	7J64160FVQ5	CE Mark, FCC DoC, BSMI ID R33057	APPLE	Shielded(Braid) *1m	N/A
2	Cell phone	GT-9100	N/A	CE Mark, FCC DoC	SAMAUNG	N/A	N/A

1.3.2. Provided by the Manufacturer

N/A

1.4 EUT SETUP



Note: Main Test Sample: BRIO 320

1.5 Identifying the Final Test Mode

1. Mode 1: TX BT mode (1Mbps) CH 00.
2. Mode 2: TX BT mode (1Mbps) CH 38.
3. Mode 3: TX BT mode (1Mbps) CH 78.
4. Mode 4: TX BT mode (2Mbps) CH 00.
5. Mode 5: TX BT mode (2Mbps) CH 38.
6. Mode 6: TX BT mode (2Mbps) CH 78.
7. Mode 7: TX BT mode (3Mbps) CH 00.
8. Mode 8: TX BT mode (3Mbps) CH 38.
9. Mode 9: TX BT mode (3Mbps) CH 78.

Note:

1. After pre-test, we identified that the TX (Packet type DH5 and X axis) was most likely to cause maximum disturbance. Therefore, the Final Assessment was performed for the worst case.

2. The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.
3. Channel Low (2402 MHz), Mid (2440 MHz) and High (2480 MHz) were chosen for full testing.
4. According to its specifications, the EUT must comply with the requirements of the Section 15.203, 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

1.6 Final Test Mode

Conducted Emission: Mode 9.
Radiated Emission (30~1000 MHz): Mode 9.
Radiated Emission (1~26.5GHz): All Mode.

1.7 Condition of Power Supply

The EUT was powered by an adaptor, and the adaptor was connected to the public network.

1.8 EUT Configuration

1. Setup the EUT as shown in Sec.1.4 Block Diagram.
2. Turn on the power of all equipments.
3. Activate the selected Final Test Mode.

1.9 Test Methodology

The tests documented in this report were performed in accordance with ANSI C63.10 (2013).

1.10 General Test Procedures

Conducted Emissions

The EUT is set according to the requirements in Section 6.2 of ANSI C63.10 (2013).

Radiated Emissions

The EUT is set according to the requirements in Section 6.3 of ANSI C63.10 (2013).

1.11 Modification

N/A

1.12 FCC Part 15.205 restricted bands of operations

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37635-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

[2] Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

1.13 Qualification of Test Facility

BSMI Certificate No. : SL2-IS-E-0023, SL2-IN-E-0023, SL2-R1-E-0023, SL2-R2-E-0023, SL2-A1-E-0023, SL2-L1-E-0023.

FCC Designation No. : TW1071

TAF Accreditation No. : 1163

VCCI Certificate No. : R-2156, C-2329, T-219, G-696

2 Power line Conducted Emission Measurement

2.1 Test Instruments

Refer to Sec. 1.2 Test Instruments.

2.2 Test Arrangement and Procedure

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

2.3 Limit (§ 15.207)

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency (MHz)	Limits (dBuV)	
	Q.P. (Quasi-Peak)	A.V. (Average)
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5.0	56	46
5.0 to 30	60	50

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

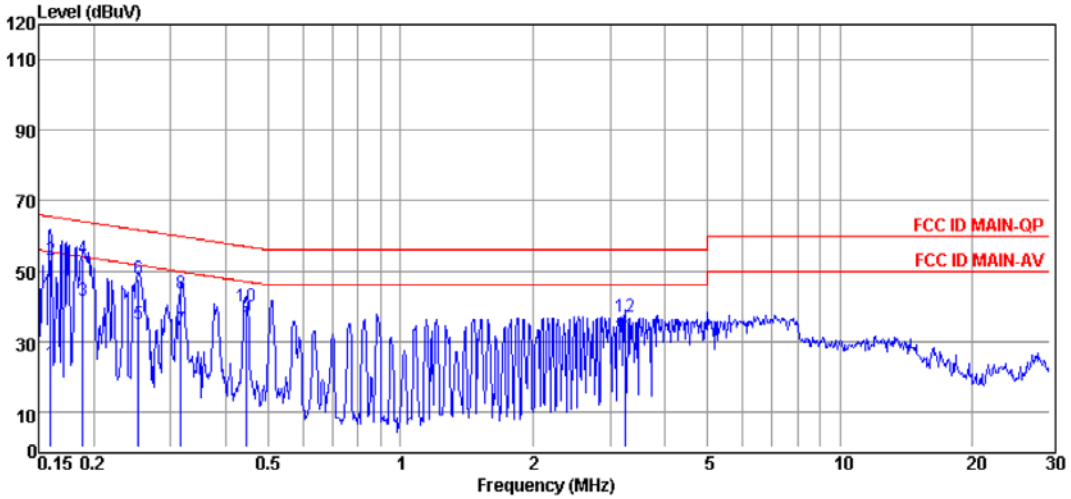
2.4 Test Result

Compliance

The final test data are shown on the following page(s).

Power Line Conducted Emission Test Data

Test Date	:	27-AUG-2015	Power Line	:	Line
Temperature	:	22℃	Humidity	:	53%



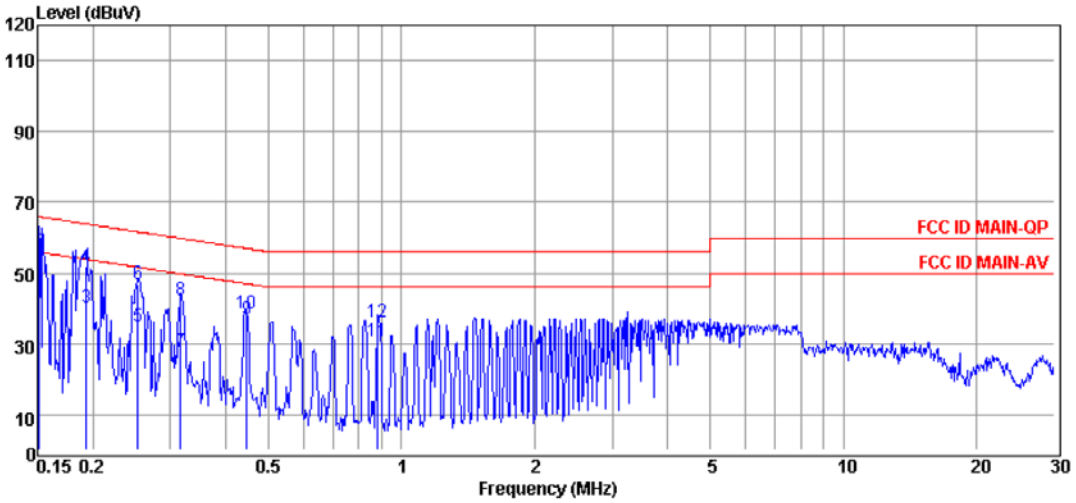
No.	Freq MHz	Reading dBµV	C.F dB	Result dBµV	Limit dBµV	Margin dB	Power Line	Remark
1	0.16	13.70	9.98	23.68	55.47	-31.79	LINE	Average
2	0.16	43.32	9.98	53.30	65.47	-12.17	LINE	QP
3	0.19	31.69	9.94	41.63	54.06	-12.43	LINE	Average
4	0.19	43.73	9.94	53.67	64.06	-10.39	LINE	QP
5	0.25	24.80	9.92	34.72	51.64	-16.92	LINE	Average
6	0.25	37.66	9.92	47.58	61.64	-14.06	LINE	QP
7	0.32	23.24	9.91	33.15	49.80	-16.65	LINE	Average
8	0.32	33.63	9.91	43.54	59.80	-16.26	LINE	QP
9	0.45	27.07	9.92	36.99	46.93	-9.94	LINE	Average
10	0.45	30.13	9.92	40.05	56.93	-16.88	LINE	QP
11	3.24	21.12	10.33	31.45	46.00	-14.55	LINE	Average
12	3.24	26.73	10.33	37.06	56.00	-18.94	LINE	QP

Remark：

1. Measuring frequencies from 0.15 MHz to 30 MHz.
2. The emissions measured in frequency range from 0.15 MHz to 30 MHz were made with an instrument using quasi-peak detector and average detector.
3. The IF bandwidth of SPA between 0.15 MHz to 30 MHz was 10kHz; the IF bandwidth of Test Receiver between 0.15 MHz to 30 MHz was 9kHz.

Power Line Conducted Emission Test Data

Test Date	:	27-AUG-2015	Power Line	:	Neutral
Temperature	:	22℃	Humidity	:	53%



No.	Freq MHz	Reading dBµV	C.F dB	Result dBµV	Limit dBµV	Margin dB	Power Line	Remark
1	0.15	14.29	10.00	24.29	55.91	-31.62	NEUTRAL	Average
2	0.15	45.92	10.00	55.92	65.91	-9.99	NEUTRAL	QP
3	0.19	30.51	9.95	40.46	53.89	-13.43	NEUTRAL	Average
4	0.19	41.86	9.95	51.81	63.89	-12.08	NEUTRAL	QP
5	0.25	25.16	9.92	35.08	51.64	-16.56	NEUTRAL	Average
6	0.25	36.86	9.92	46.78	61.64	-14.86	NEUTRAL	QP
7	0.32	17.83	9.92	27.75	49.80	-22.05	NEUTRAL	Average
8	0.32	32.28	9.92	42.20	59.80	-17.60	NEUTRAL	QP
9	0.45	27.12	9.92	37.04	46.93	-9.89	NEUTRAL	Average
10	0.45	28.83	9.92	38.75	56.93	-18.18	NEUTRAL	QP
11	0.88	20.65	10.11	30.76	46.00	-15.24	NEUTRAL	Average
12	0.88	26.08	10.11	36.19	56.00	-19.81	NEUTRAL	QP

Remark：

1. Measuring frequencies from 0.15 MHz to 30 MHz.
2. The emissions measured in frequency range from 0.15 MHz to 30 MHz were made with an instrument using quasi-peak detector and average detector.
3. The IF bandwidth of SPA between 0.15 MHz to 30 MHz was 10kHz; the IF bandwidth of Test Receiver between 0.15 MHz to 30 MHz was 9kHz.

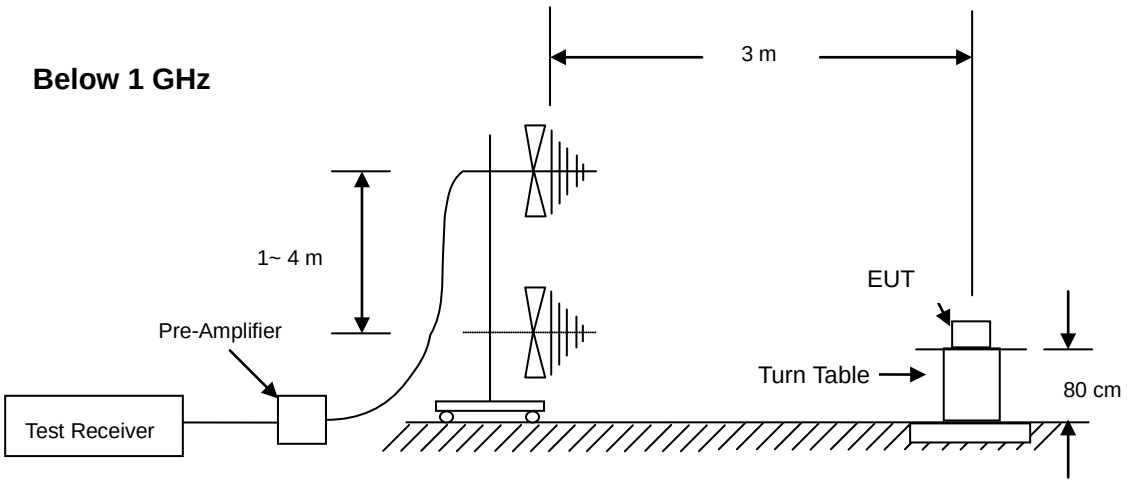
3 Radiated Emission Test

3.1 Test Instruments

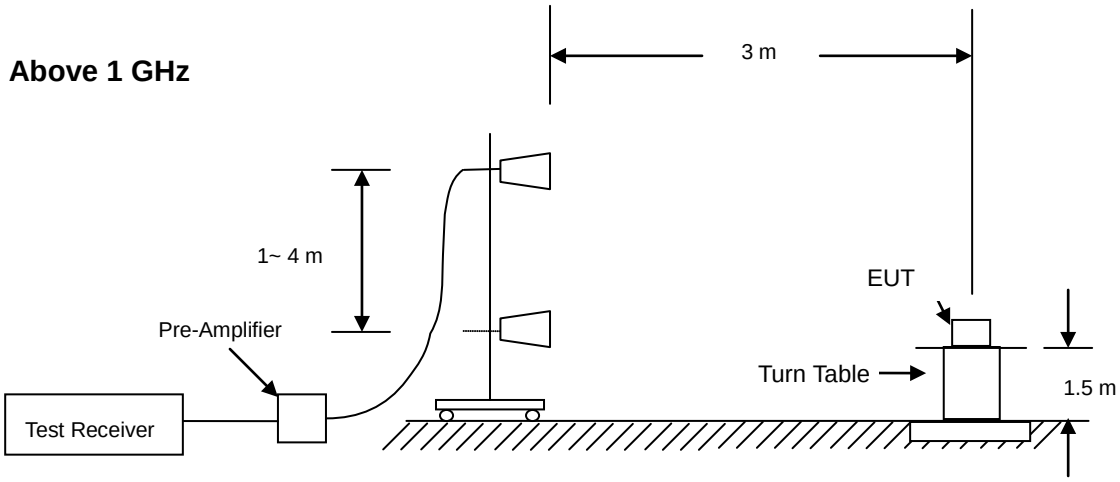
Refer to Sec. 1.2 Test Instruments.

3.2 Test Arrangement and Procedure

Below 1 GHz



Above 1 GHz



1. The EUT is placed on a turntable, which is 0.8 m (below 1GHz) and 1.5m (above 1GHz) above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
4. Maxium procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:
   (a) Below 1 GHz: RBW =100 kHz/ VBW = 1 MHz/ Sweep = AUTO.

(b) Above 1 GHz: Peak: RBW = VBW = 1MHz/ Sweep = AUTO; Average: RBW = 1MHz/ VBW = 10Hz/ Sweep = AUTO.

7. Repeat above procedures until the meausreemnts for all frequencies are complete.

3.3 Limit (§ 15.205 & § 15.209)

1.2.1. Limit of Restricted Band of Operation (§ 15.205)

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

Frequency Band			
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1] 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	
13.36-13.41			

1.2.2. Limit of Spurious Emission (§ 15.209)

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 lesser attenuation.

Frequency (MHz)	Field strength (microvolts/ meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g.§§ 15.231 and 15.241.

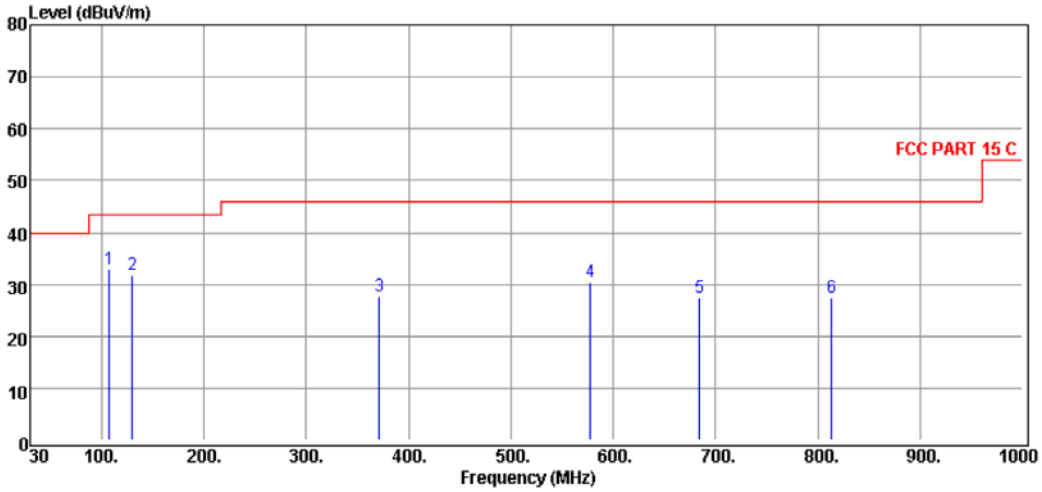
3.4 Test Result

Compliance

The final test data are shown on the following page(s).

Radiated Emission Test Data (Below 1 GHz)

Temperature	:	24℃	Humidity	:	42%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Vertical	Channel	:	CH78 (2480MHz) (3Mbps)
EUT Position	:	Vertical			



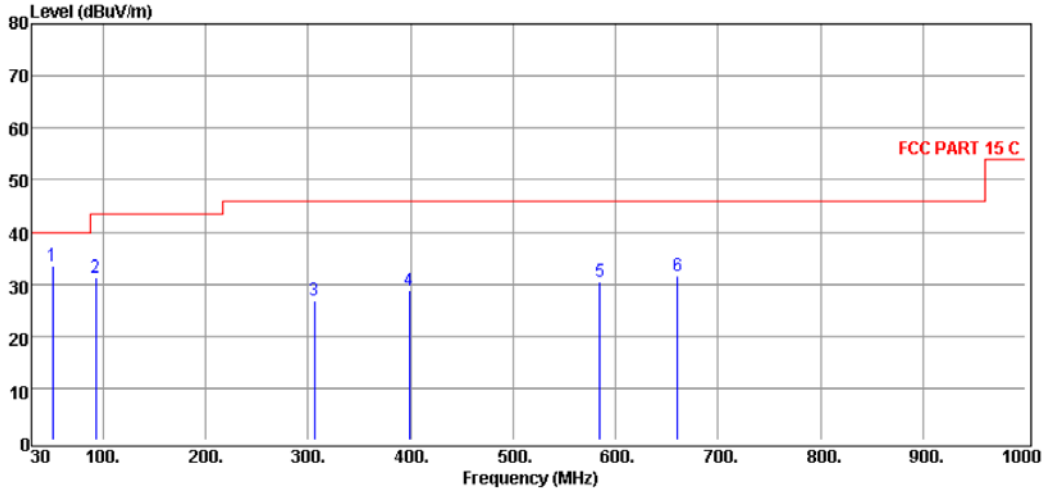
No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	107.60	51.60	-18.64	32.96	43.50	-10.54	HORIZONTAL	Peak
2	129.91	49.66	-17.80	31.86	43.50	-11.64	HORIZONTAL	Peak
3	371.44	42.24	-14.53	27.71	46.00	-18.29	HORIZONTAL	Peak
4	578.05	41.48	-11.07	30.41	46.00	-15.59	HORIZONTAL	Peak
5	684.75	37.03	-9.65	27.38	46.00	-18.62	HORIZONTAL	Peak
6	813.76	34.61	-7.09	27.52	46.00	-18.48	HORIZONTAL	Peak

Remark：

1. Measuring frequencies from 30 MHz to 1 GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode.
3. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
4. All readings are Peak values. None of the peak value reading exceeds the Q.P. limit. Hence, Q.P. reading was not measured.
5. The IF bandwidth of SPA between 30 MHz to 1 GHz was 100 kHz.

Radiated Emission Test Data (Below 1 GHz)

Temperature	:	24℃	Humidity	:	42%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Horizontal	Channel	:	CH78 (2480MHz) (3Mbps)
EUT Position	:	Vertical			



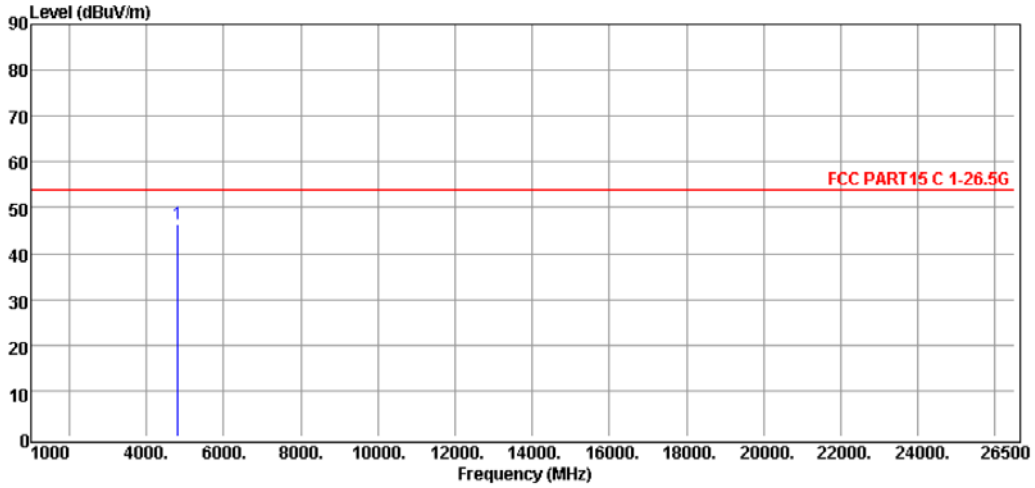
No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	50.37	54.24	-20.73	33.51	40.00	-6.49	VERTICAL	Peak
2	93.05	51.56	-20.16	31.40	43.50	-12.10	VERTICAL	Peak
3	306.45	42.97	-16.23	26.74	46.00	-19.26	VERTICAL	Peak
4	398.60	42.61	-13.94	28.67	46.00	-17.33	VERTICAL	Peak
5	584.84	41.46	-11.00	30.46	46.00	-15.54	VERTICAL	Peak
6	660.50	41.43	-9.97	31.46	46.00	-14.54	VERTICAL	Peak

Remark：

1. Measuring frequencies from 30 MHz to 1 GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode.
3. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
4. All readings are Peak values. None of the peak value reading exceeds the Q.P. limit. Hence, Q.P. reading was not measured.
5. The IF bandwidth of SPA between 30 MHz to 1 GHz was 100 kHz.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Vertical	Channel	:	CH00 (2402MHz) (1Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	4805.00	43.93	2.54	46.47	54.00	-7.53	HORIZONTAL	Peak

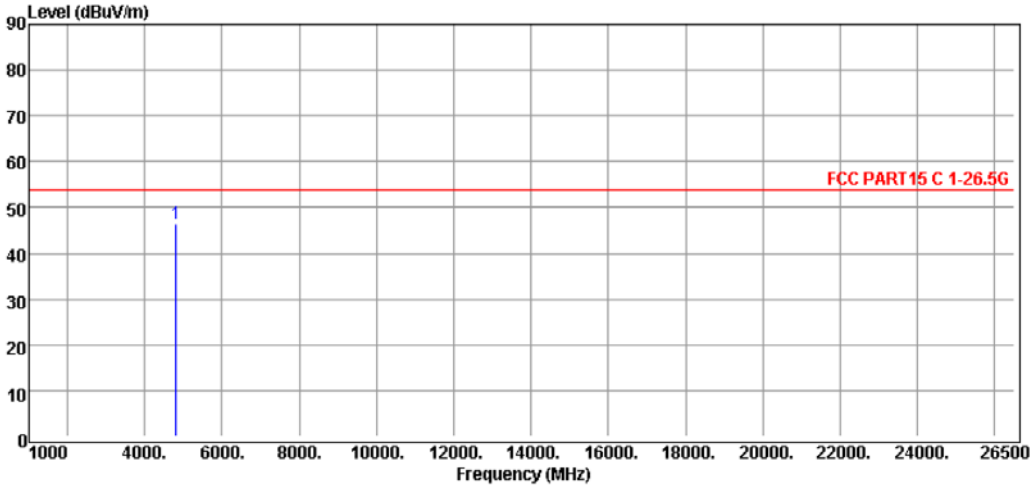
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Horizontal	Channel	:	CH00 (2402MHz) (1Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	4805.00	43.80	2.54	46.34	54.00	-7.66	VERTICAL	Peak

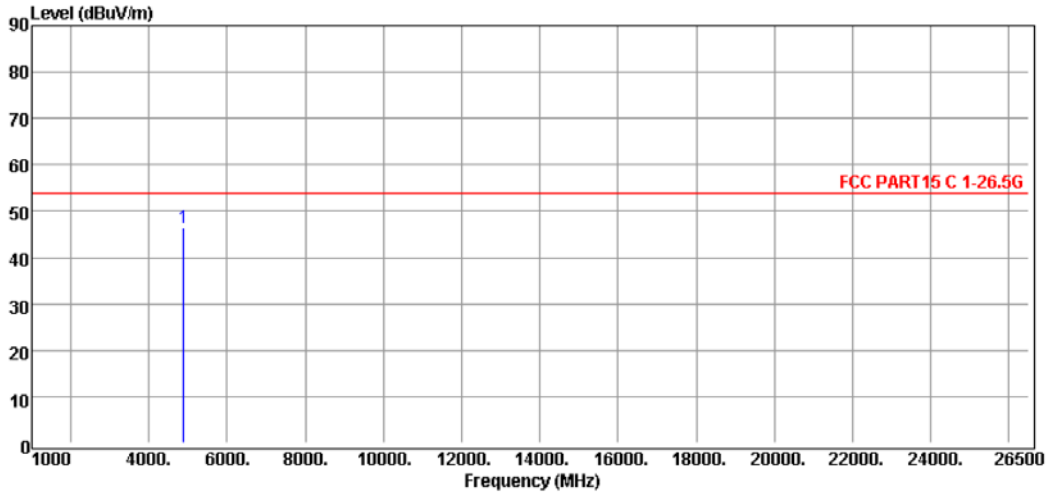
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Vertical	Channel	:	CH 38 (2440MHz) (1Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBμV	dB	dBμV/m	dBμV/m	dB	Pol.	
1	4880.00	43.86	2.68	46.54	54.00	-7.46	HORIZONTAL	Peak

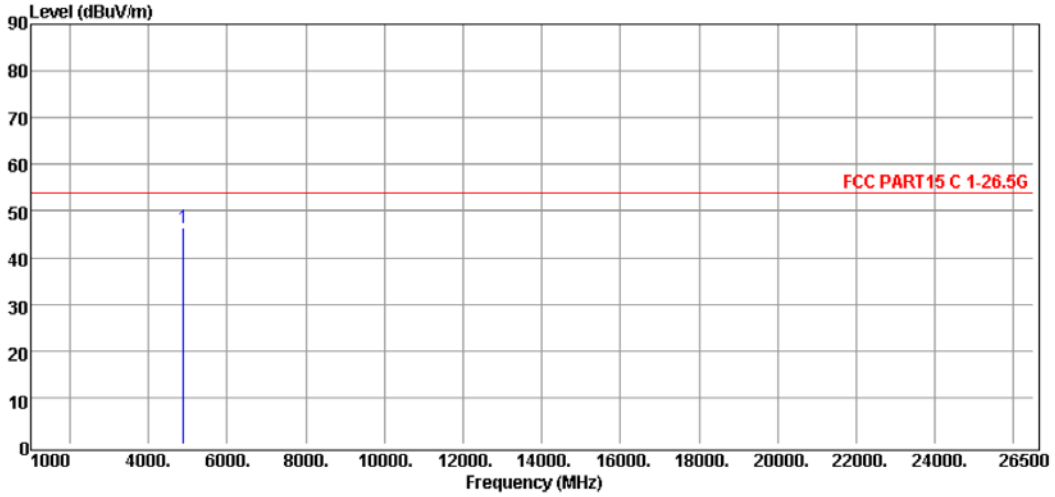
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Horizontal	Channel	:	CH 38 (2440MHz) (1Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	4880.00	43.74	2.68	46.42	54.00	-7.58	VERTICAL	Peak

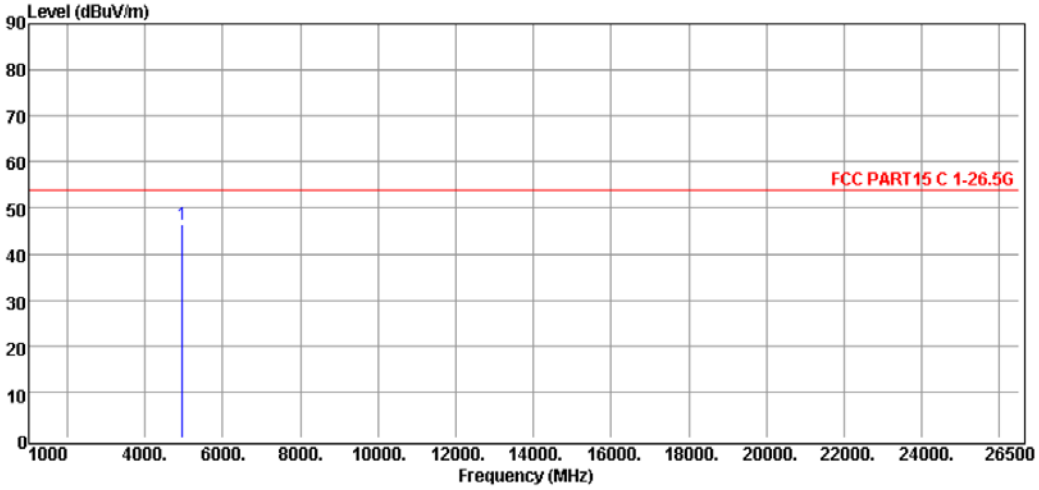
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	24℃
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Vertical	Channel	:	CH78 (2480MHz) (1Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBμV	dB	dBμV/m	dBμV/m	dB	Pol.	
1	4960.00	43.55	2.92	46.47	54.00	-7.53	HORIZONTAL	Peak

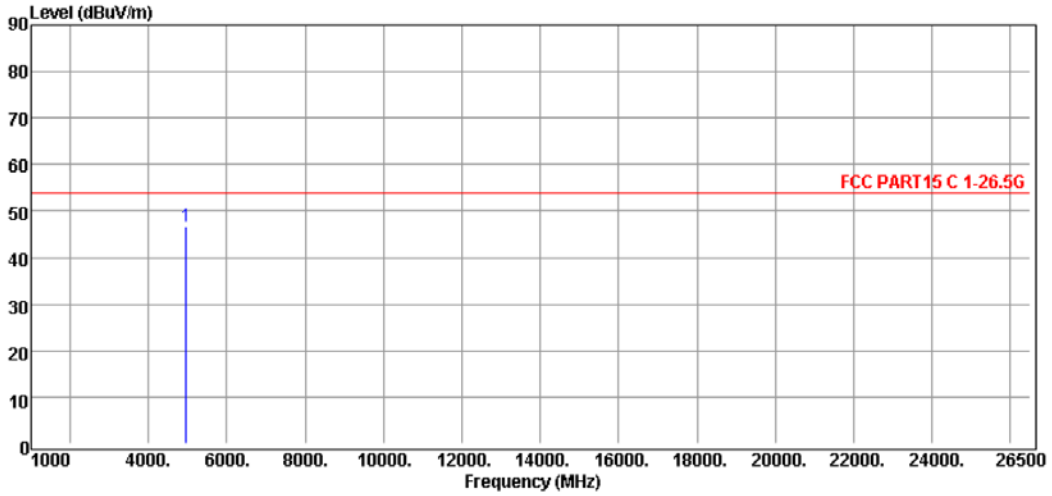
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Horizontal	Channel	:	CH78 (2480MHz) (1Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	4960.00	43.66	2.92	46.58	54.00	-7.42	VERTICAL	Peak

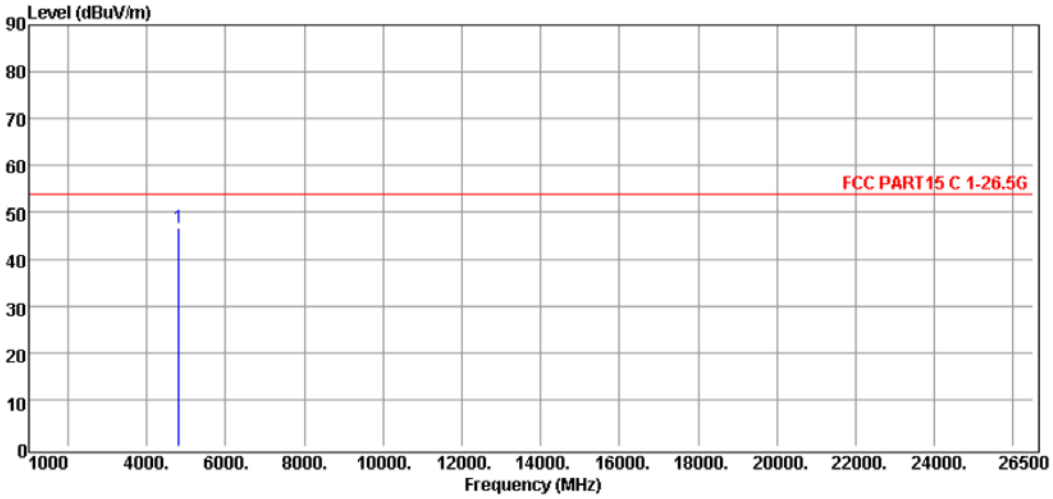
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Vertical	Channel	:	CH00 (2402MHz) (2Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	4805.00	44.29	2.54	46.83	54.00	-7.17	HORIZONTAL	Peak

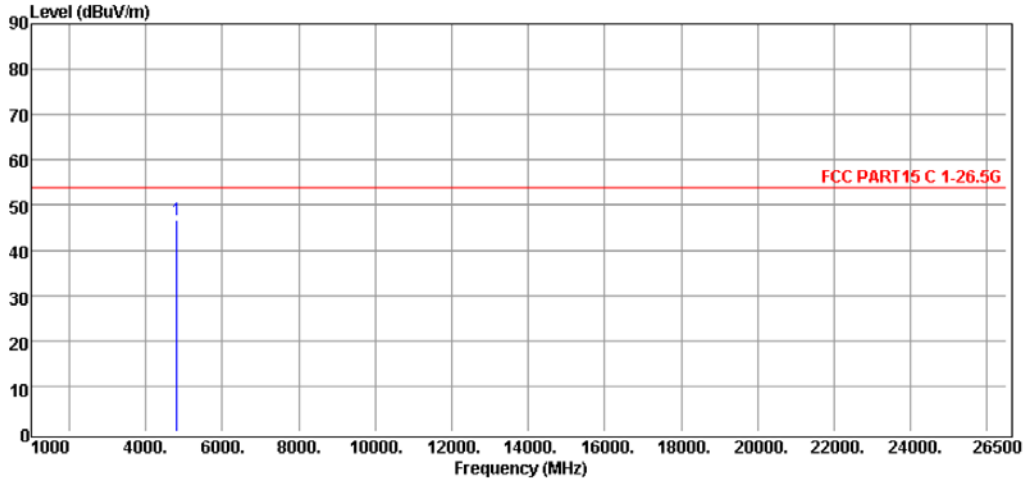
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Horizontal	Channel	:	CH00 (2402MHz) (2Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBμV	dB	dBμV/m	dBμV/m	dB	Pol.	
1	4805.00	44.30	2.54	46.84	54.00	-7.16	VERTICAL	Peak

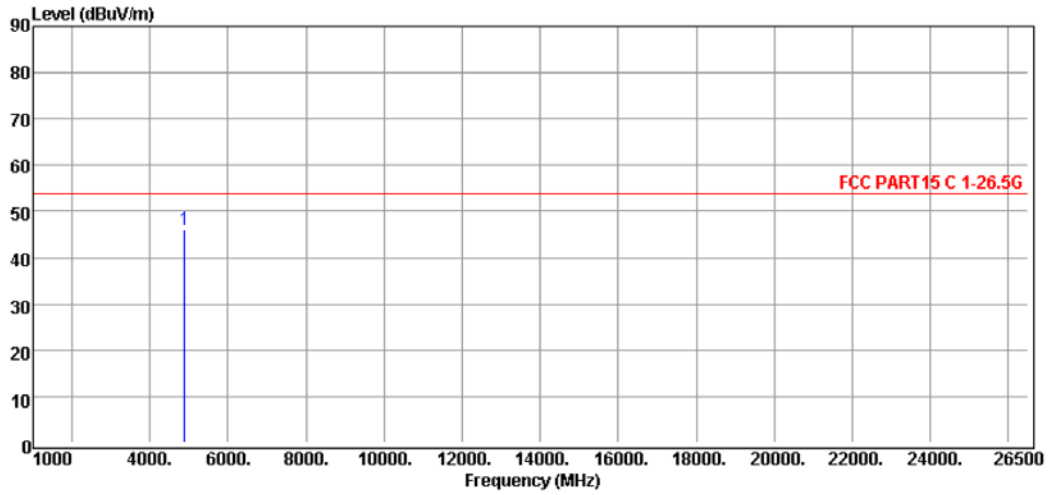
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Vertical	Channel	:	CH 38 (2440MHz) (2Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBμV	dB	dBμV/m	dBμV/m	dB	Pol.	
1	4880.00	43.46	2.68	46.14	54.00	-7.86	HORIZONTAL	Peak

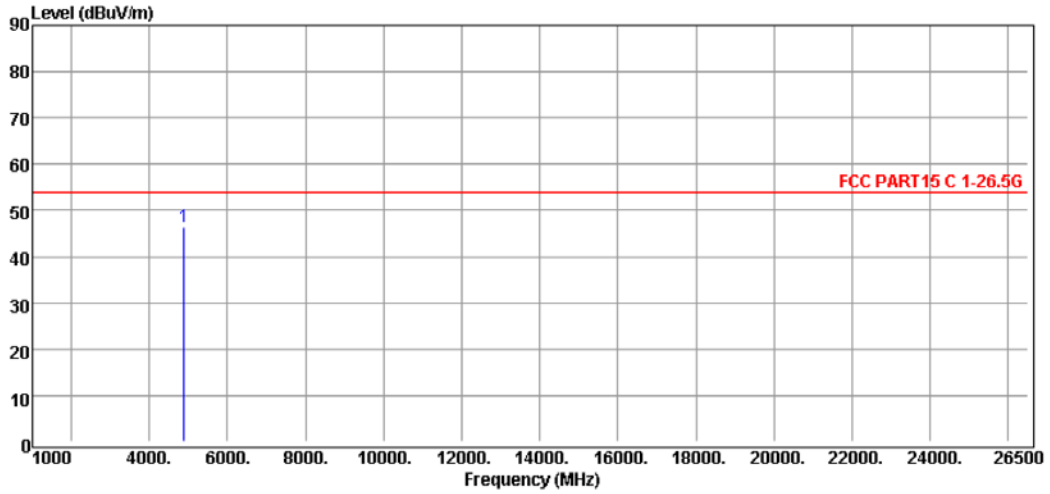
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Horizontal	Channel	:	CH 38 (2440MHz) (2Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	4880.00	43.66	2.68	46.34	54.00	-7.66	VERTICAL	Peak

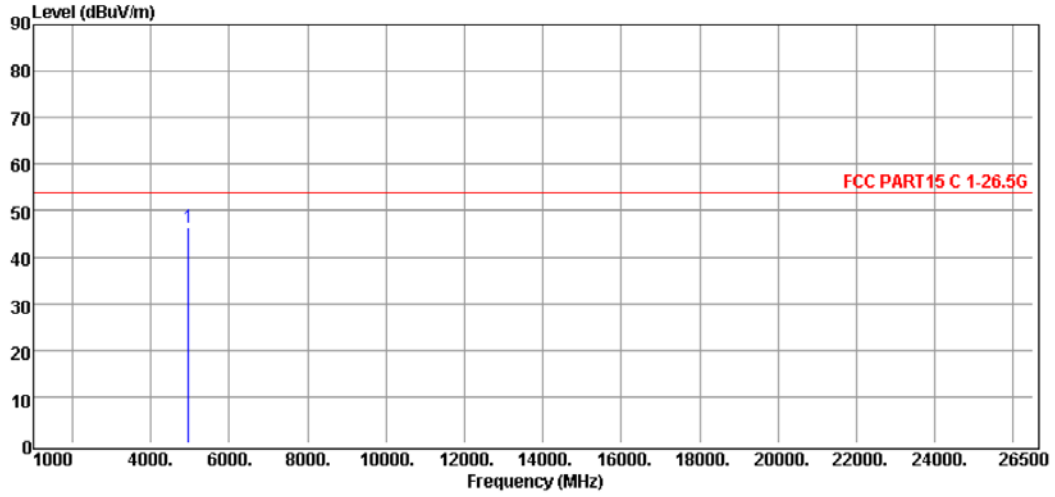
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Vertical	Channel	:	CH78 (2480MHz) (2Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	4960.00	43.33	2.92	46.25	54.00	-7.75	HORIZONTAL	Peak

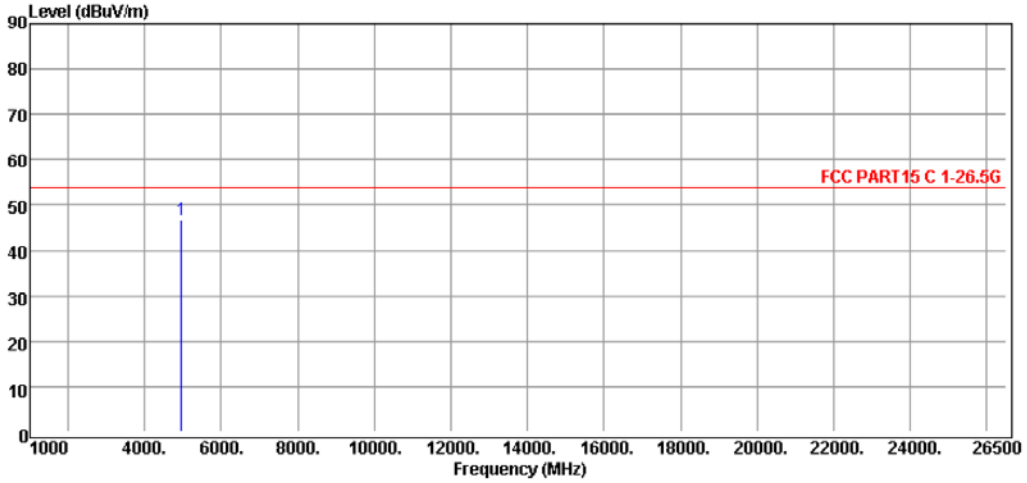
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Horizontal	Channel	:	CH78 (2480MHz) (2Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	4960.00	43.94	2.92	46.86	54.00	-7.14	VERTICAL	Peak

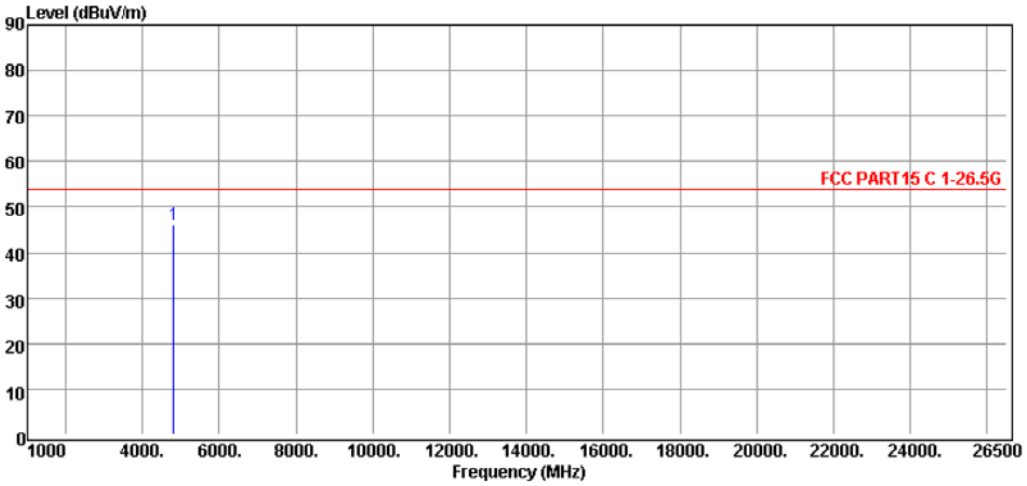
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Vertical	Channel	:	CH00 (2402MHz) (3Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	4805.00	43.61	2.54	46.15	54.00	-7.85	HORIZONTAL	Peak

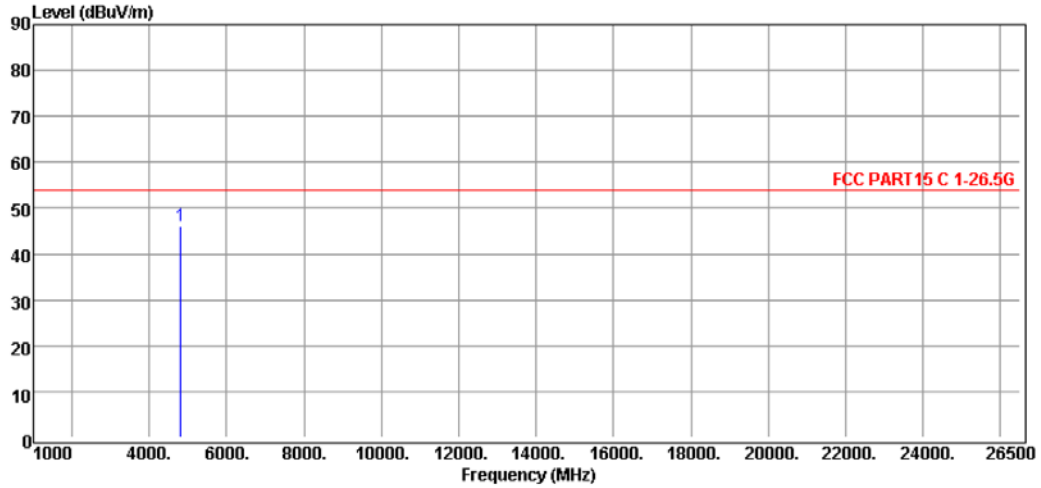
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Horizontal	Channel	:	CH00 (2402MHz) (3Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	4805.00	43.59	2.54	46.13	54.00	-7.87	VERTICAL	Peak

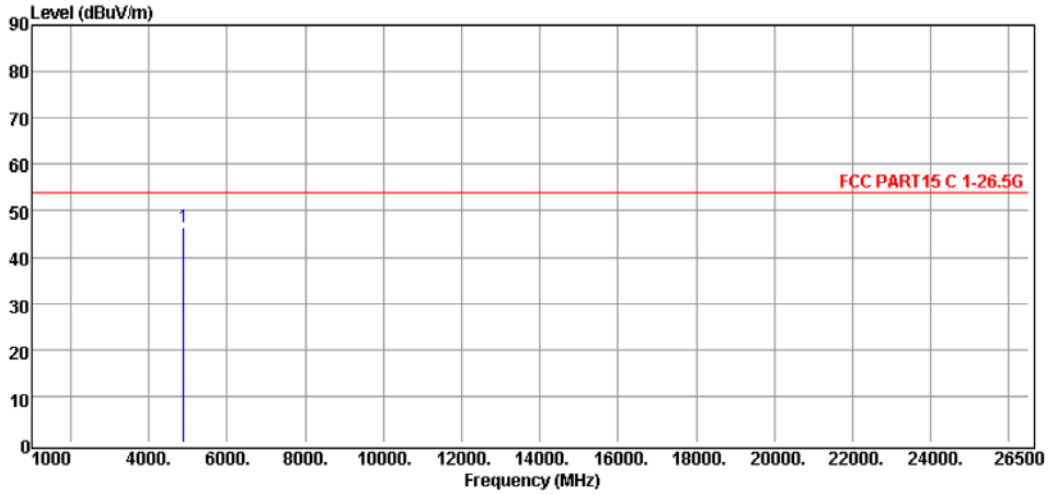
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Vertical	Channel	:	CH 38 (2440MHz) (3Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBμV	dB	dBμV/m	dBμV/m	dB	Pol.	
1	4880.00	43.66	2.68	46.34	54.00	-7.66	HORIZONTAL	Peak

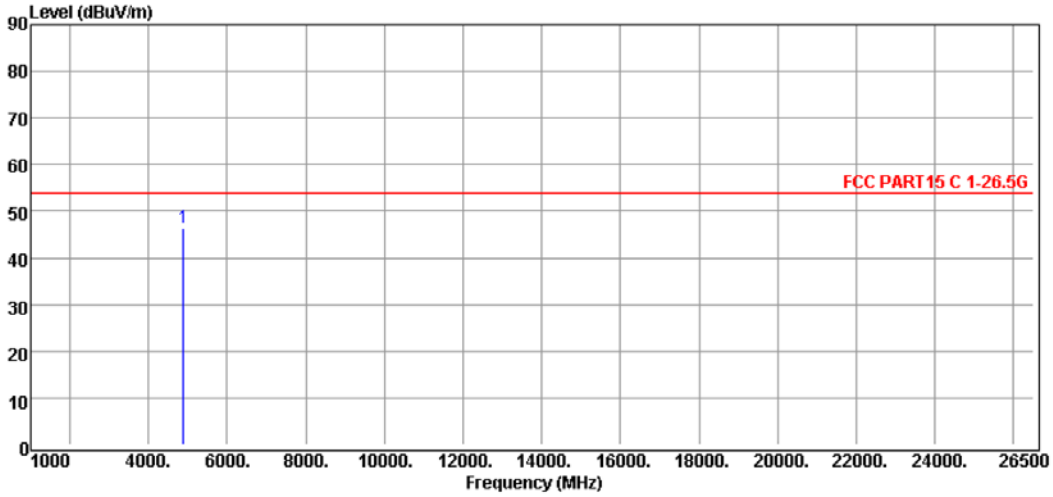
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Horizontal	Channel	:	CH 38 (2440MHz) (3Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	4880.00	43.66	2.68	46.34	54.00	-7.66	VERTICAL	Peak

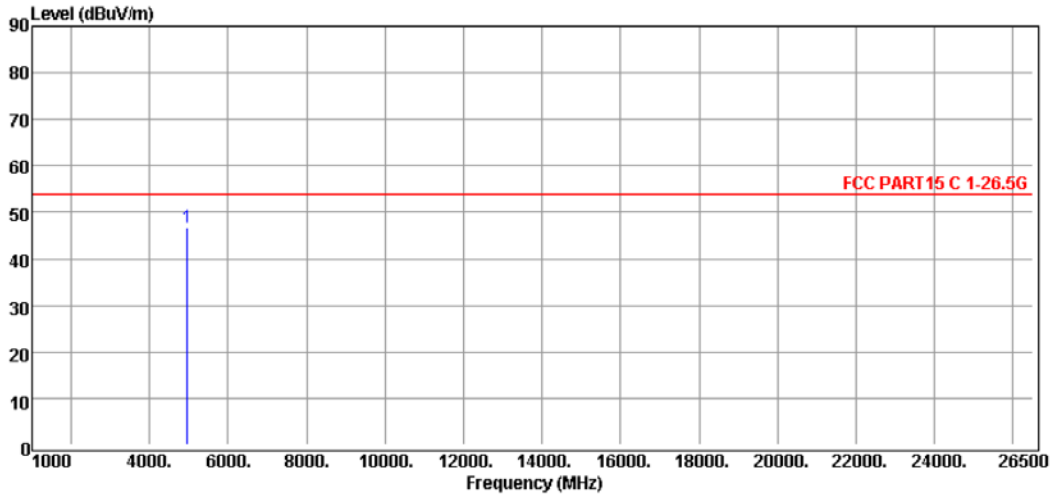
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Vertical	Channel	:	CH78 (2480MHz) (3Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	4960.00	43.83	2.92	46.75	54.00	-7.25	HORIZONTAL	Peak

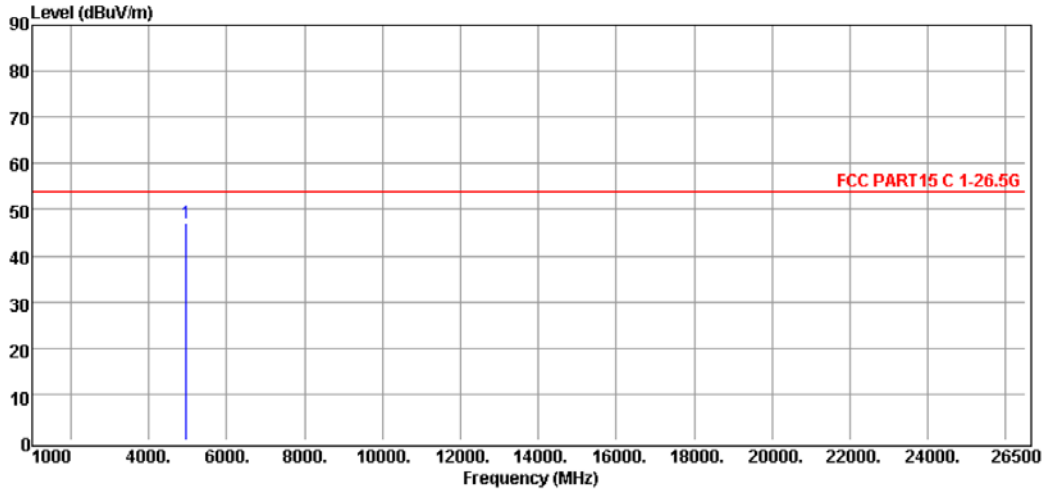
Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

Radiated Emission Test Data (Above 1G and Field Strength to 10th Harmonic)

Temperature	:	24℃	Humidity	:	41%
Test Date	:	20-OCT-2015	Tested by	:	Leon Chen
Polarization	:	Horizontal	Channel	:	CH78 (2480MHz) (3Mbps)
EUT Position	:	Vertical			



No.	Freq	Reading	C.F	Result	Limit	Margin	Antenna	Remark
	MHz	dBµV	dB	dBµV/m	dBµV/m	dB	Pol.	
1	4960.00	44.04	2.92	46.96	54.00	-7.04	VERTICAL	Peak

Remark：

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode.
4. All readings are Peak values. None of the peak value reading exceeds the A.V. limit. Hence, A.V. reading was not measured.
5. Spectrum setting:

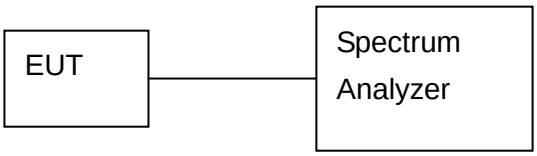
   (a) Peak Setting 1GHz to 10th harmonics of fundamental, RBW = VBW = 1MHz, Sweep = AUTO.

4 20 dB Bandwidth

4.1 Test Instruments

Refer to Sec. 1.2 Test Instruments.

4.2 Test Arrangement and Procedure



1. The transmitter output was connected to a spectrum analyzer (through an attenuator, if it's necessary).
2. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW. Measured the -20 dB bandwidth and plotted the graph.

4.3 Limit

None; For report purpose only.

4.4 Test Result

No non-compliance noted.

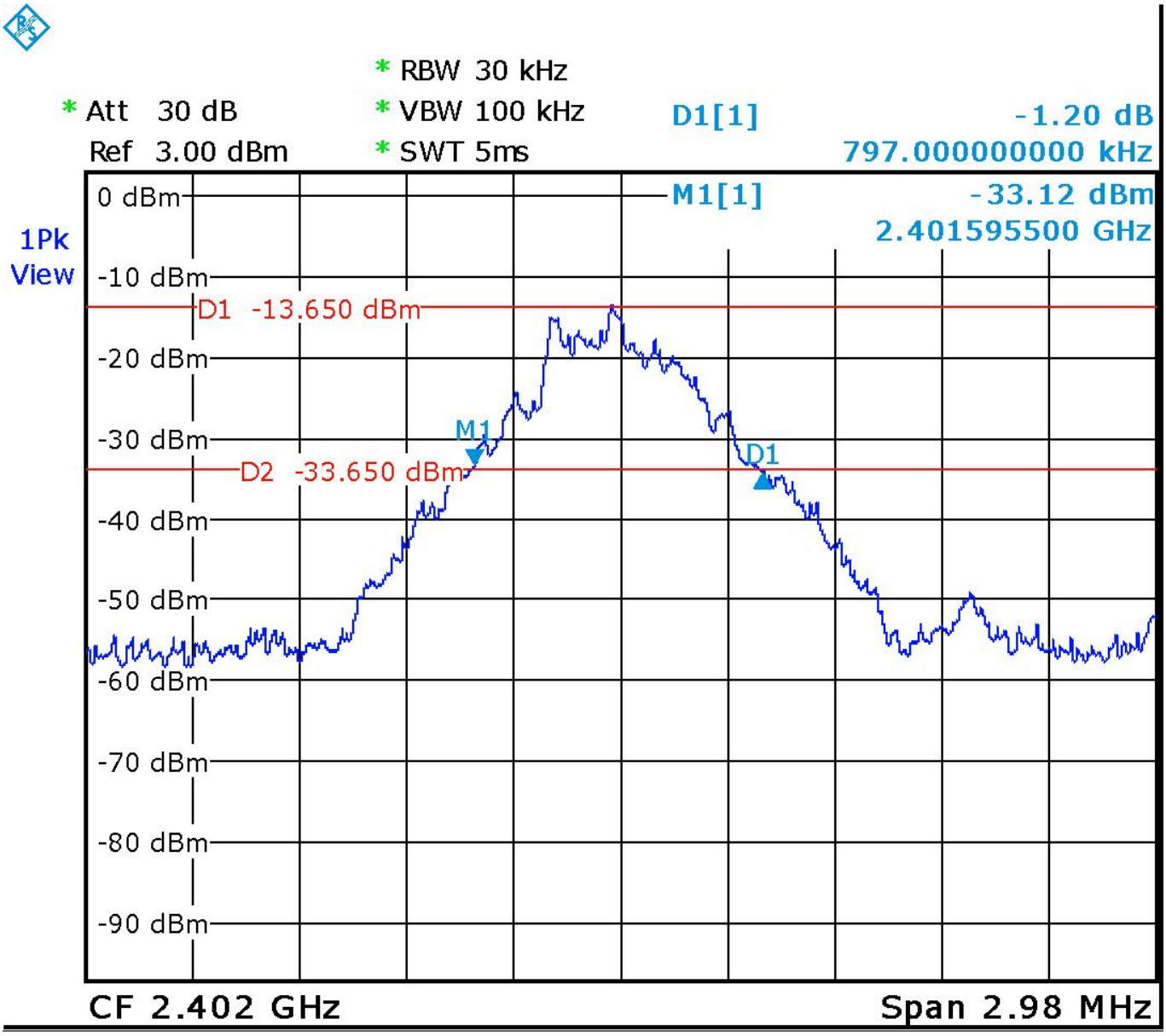
The final test data are shown on the following page(s).

Bluetooth 1 Mbps (DH5)		
Channel	**Frequency (MHz)**	**20dB Bandwidth (MHz)**
Low	2402	0.797
Middle	2440	0.951
High	2480	0.886

Bluetooth 2 Mbps (DH5)		
Channel	**Frequency (MHz)**	**20dB Bandwidth (MHz)**
Low	2402	1.225
Middle	2440	1.255
High	2480	1.237

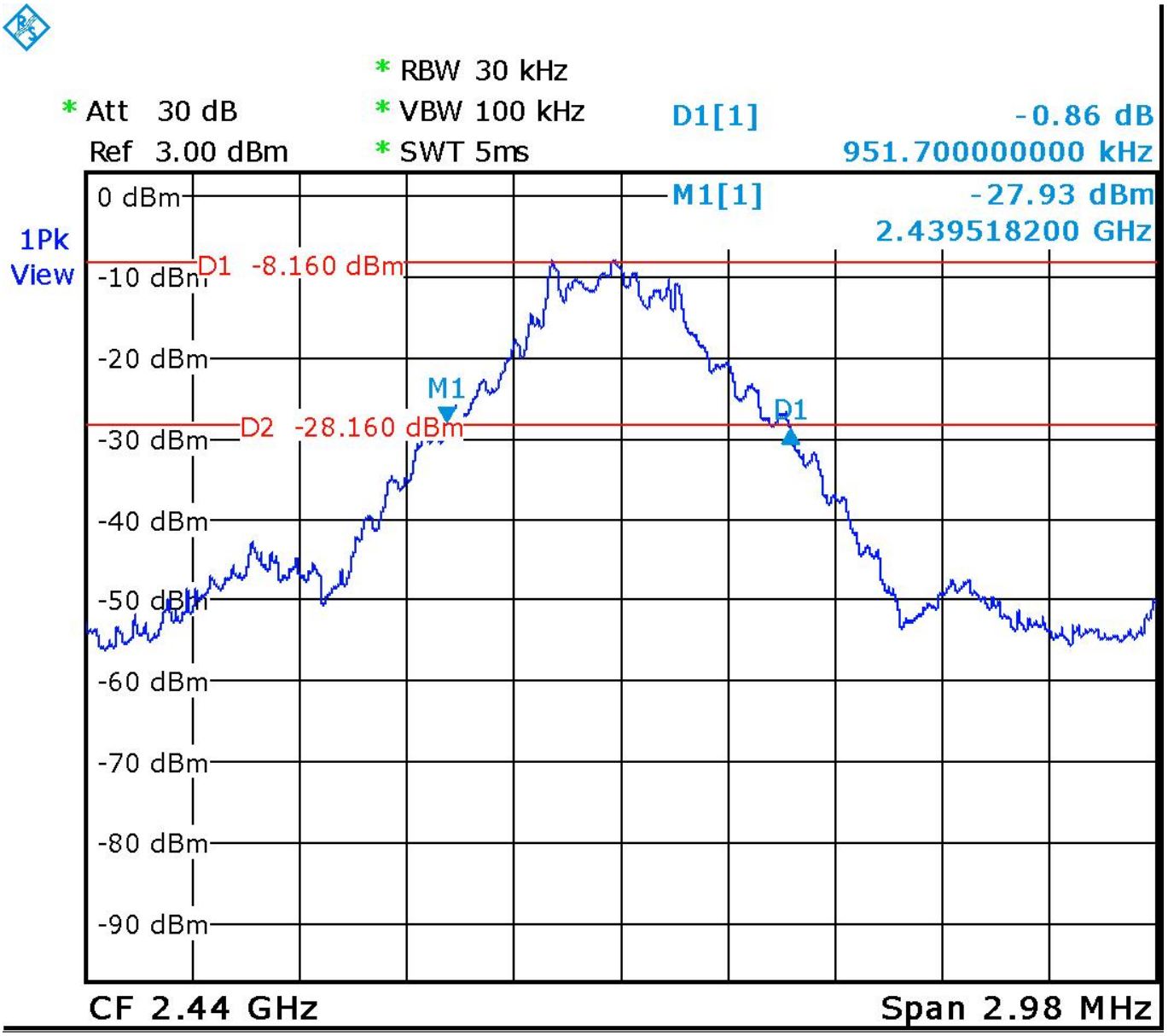
Bluetooth 3 Mbps (DH5)		
Channel	**Frequency (MHz)**	**20dB Bandwidth (MHz)**
Low	2402	1.207
Middle	2440	1.255
High	2480	1.261

Temperature	:	22℃	Humidity	:	57%
Test Date	:	06-OCT-2015	Tested by	:	Leon Chen
Test Mode	:	BT (1 Mbps) DH5	Channel	:	00



Date: 6.OCT.2015 11:36:53

Test Mode : BT (1 Mbps) DH5 Channel : 39



Date: 6.OCT.2015 11:43:59