APPLICATION FOR CERTIFICATION

On Behalf of

SMC Networks, Inc.

2x2 2.4G WiFi Module

Model No. : SMC-RT539222SB24

FCC ID : JI5-RT539222SB24

Brand : SMC

Prepared for : SMC Networks, Inc.
20 Mason, Irvine, California, United States, 92618

Prepared by : AUDIX Technology Corporation
EMC Department
No. 53-11, Dingfu, Linkou Dist.,
New Taipei City 244, Taiwan, R.O.C.

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File Number	:	C1M1304047
Report Number	:	EM-F1020309
Date of Test	:	Apr. 17 ~ 19, 2013
Date of Report	:	Apr. 23, 2013

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TEST REPORT CERTIFICATION

Applicant	:	SMC Networks, Inc.
Manufacturer	:	MAINTEK COMPUTER
EUT Description	:	2x2 2.4G WiFi Module
FCC ID	:	**JI5-RT539222SB24**
	(A) Model No.	: SMC-RT539222SB24
	(B) Serial No.	: N/A
	(C) Brand	: SMC
	(D) Power Supply	: DC 5V (Powered by Notebook PC)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C, Oct. 2012
And ANSI C63.4:2003

(FCC 47 CFR Part 15C, §15.205 and §15.207 and §15.209 and §15.247)

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: Apr. 17 ~ 19, 2013 Date of Report: Apr. 23, 2013

Producer: _____
(Annie Yu/Administrator)

Signatory: _____
(Leon Liu/Deputy General Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	2x2 2.4G WiFi Module
Model Number	:	SMC-RT539222SB24
Serial Number	:	N/A
Brand	:	SMC
FCC ID	:	JI5-RT539222SB24
Applicant	:	SMC Networks, Inc. 20 Mason, Irvine, California, United States, 92618
Manufacturer	:	MAINTEK COMPUTER 233 Jinfeng Rd., Suzhou, Jiangsu, PRC
Fundamental Range	:	2412-2462MHz
Operating Band	:	2400-2483.5MHz
Radio Technology	:	802.11b: DSSS Modulation (DBPSK/DQPSK/CCK) 802.11g/n-HT20/n-HT40: OFDM Modulation 2T2R, (BPSK/QPSK/16QAM/64QAM)
Data Transfer Rate	:	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/48/54Mbps 802.11n: up to 300Mbps
Antenna Gain	:	1.8dBi
Date of Receipt of Sample	:	Apr. 08, 2013
Date of Test	:	Apr. 17 ~ 19, 2013

1.2. Data Rate Relative to Output Power

802.11b			
Channel	Modulation	Date Rate(Mbps)	Power(dBm)
1	DBPSK	1	20.43
1	DQPSK	2	20.41
1	CCK	5.5	20.41
1	CCK	11	20.38

802.11g			
Channel	Modulation	Date Rate (Mbps)	Power (dBm)
1	BPSK	6	23.00
1	BPSK	9	22.98
1	QPSK	12	22.97
1	QPSK	18	22.97
1	16-QAM	24	22.91
1	16-QAM	36	22.88
1	64-QAM	48	22.87
1	64-QAM	54	22.84

802.11n-HT20			
Channel	Modulation	Date Rate (Mbps)	Power (dBm)
1	BPSK	6.5	23.41
1	QPSK	13	23.40
1	QPSK	19.5	23.37
1	16-QAM	26	23.35
1	16-QAM	39	23.34
1	64-QAM	52	23.31
1	64-QAM	58.6	23.30
1	64-QAM	65	23.27

802.11g-HT40			
Channel	Modulation	Date Rate (Mbps)	Power (dBm)
3	BPSK	13.5	23.76
3	QPSK	27	23.71
3	QPSK	40.5	23.70
3	16-QAM	54	23.68
3	16-QAM	81	23.68
3	64-QAM	108	23.68
3	64-QAM	121.5	23.61
3	64-QAM	135	23.59

1.3. Test Configuration for Each Test Item

Test Item	802.11b	802.11g	802.11n-HT20	802.11n-HT40
	Data Rate for Test(Mbps)			
6dB Bandwidth	1	6	6.5	13.5
Peak Power Spectral Density	1	6	6.5	13.5
Peak Output Power	1	6	6.5	13.5
Band Edge	1	6	6.5	13.5

1.4. Tested Supporting System Details

1.4.1. NOTEBOOK PC

Model Number	:	NA701 14
Serial Number	:	N/A
Brand	:	EPSON
AC Adapter	:	M/N: FSP065-R4B DC Cord: Non-Shielded, Undetachable, 1.5m
USB Cable	:	Non-Shielded, Detachable, 0.25m
Power Cord	:	Non-Shielded, Detachable, 1.5m

1.5. Description of Test Facility

Name of Firm	:	**AUDIX Technology Corporation** EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan, R.O.C.
Test Site (C7/Semi-AC)	:	**No. 7 Shielded Room &** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan, R.O.C. **Semi-Anechoic Chamber** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan, R.O.C. May 14, 2009 Renewal on Federal Communication Commission Registration Number: 90993
NVLAP Lab. Code	:	200077-0
TAF Accreditation No	:	1724

1.6. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conduction Test	150kHz~30MHz	±1.73dB
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
Band edges	± 0.13dB
Power spectral density	± 0.13dB
Emission Limitations	± 0.13dB

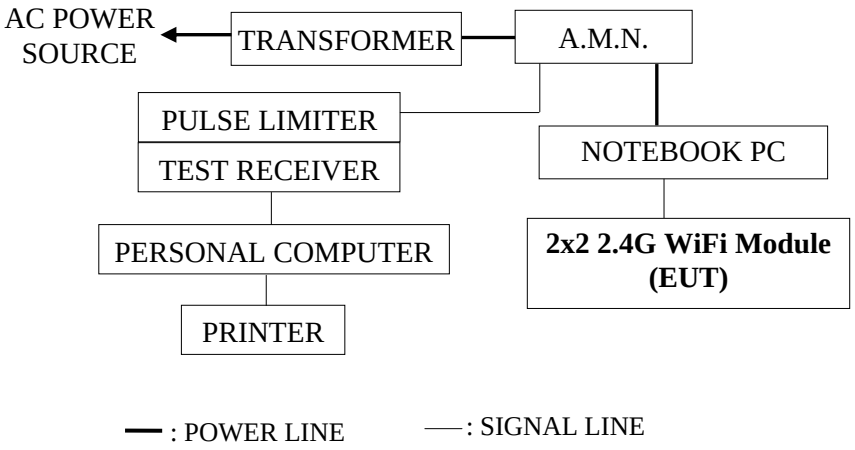
2. CONDUCTED EMISSION MEASUREMET

2.1. Test Equipment

The following test equipment was used during the conducted emission measurement：
(No. 7 Shielded Room)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101276	Apr. 10, 13’	Apr. 09, 14’
2.	A.M.N.	R&S	ENV4200	100169	May 04, 12’	May 03, 13’
3.	Pulse Limiter	R&S	ESH3-Z2	101495	Feb. 02, 13’	Feb. 01, 14’

2.2. Block Diagram of Test Setup



2.3. Powerline Conducted Emission Limit §15.207, Class B]

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.

2.4. Operating Condition of EUT

2.4.1. Setup the EUT and simulator as shown on 2.2.

2.4.2. Turn on the power of all equipment.

2.4.3. The Notebook PC was running test software "RT5X7XQA" to set EUT (2x2 2.4G WiFi Module) on transmitting and receiving during all testing.

2.5. Test Procedure

The EUT (link Notebook PC) was placed on the table which was above the ground by 80cm and Notebook PC's adapter'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 ESCI 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)

2.6. Conducted Emission Measurement Results

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

EUT was performed during this section testing and all the test results are attached in next pages.

EUT：2x2 2.4G WiFi Module M/N：SMC-RT539222SB24

Test Date：Apr. 19, 2013 Temperature：25℃ Humidity：52%

Reference Test Data：Neutral # 2; Line # 1

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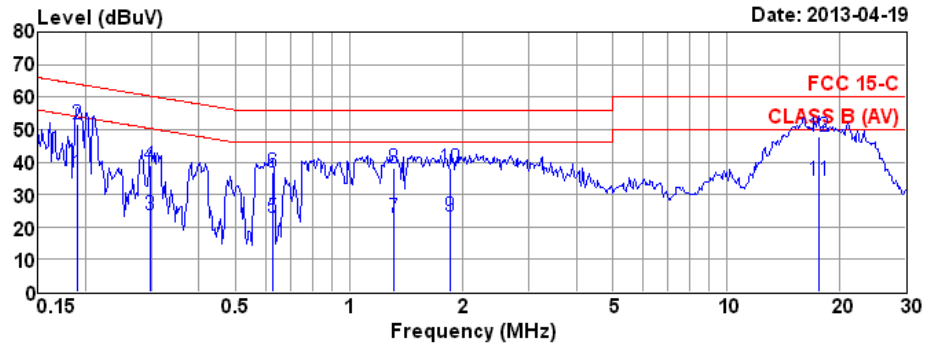
Data: 2 File: D:\test data\REPORT\2013\C1M1304XXX\C1M1304047-C-D.EM6 (2)



Site no. : No.7 Shielded Room Data no. : 2
Dis. / Ant. : ENV4200 Ant. pol. : NEUTRAL
Limit : FCC 15-C
Env. / Ins. : 25*C / 52% ESCI (1276) Engineer : Fate
EUT : SMC-RT539222SB24
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	0.19	10.23	9.93	16.19	36.35	54.02	17.67	Average
2	0.19	10.23	9.93	31.56	51.72	64.02	12.30	QP
3	0.30	10.20	9.96	3.56	23.72	50.32	26.60	Average
4	0.30	10.20	9.96	18.61	38.77	60.32	21.55	QP
5	0.63	10.16	9.99	2.76	22.91	46.00	23.09	Average
6	0.63	10.16	9.99	16.58	36.73	56.00	19.27	QP
7	1.31	10.14	10.01	2.93	23.08	46.00	22.92	Average
8	1.31	10.14	10.01	17.92	38.07	56.00	17.93	QP
9	1.86	10.14	10.00	2.96	23.10	46.00	22.90	Average
10	1.86	10.14	10.00	18.13	38.27	56.00	17.73	QP
11	17.57	9.96	9.97	14.23	34.16	50.00	15.84	Average
12	17.57	9.96	9.97	28.10	48.03	60.00	11.97	QP

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

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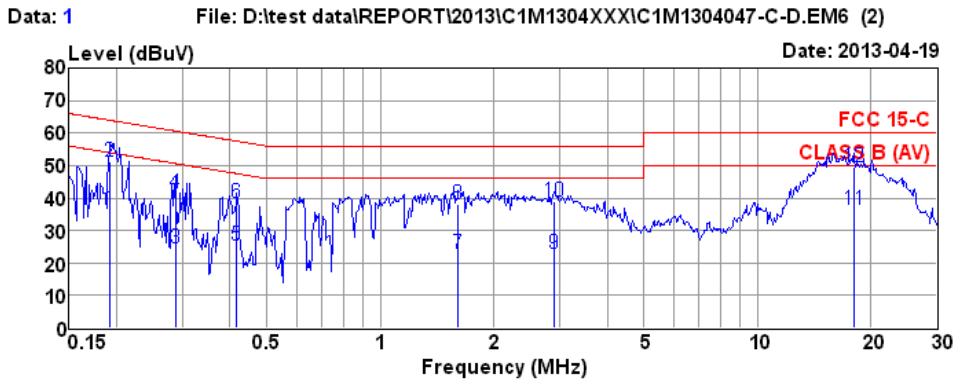


Site no. : No.7 Shielded Room
Dis. / Ant. : ENV4200
Limit : FCC 15-C
Env. / Ins. : 25*C / 52% ESCI (1276)
EUT : SMC-RT539222SB24
Power Rating : 120Vac/60Hz
Test Mode : Operating

Data no. : 1
Ant. pol. : LINE
Engineer : Fate

	Freq. (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.19	10.24	9.93	16.28	36.45	53.93	17.48	Average
2	0.19	10.24	9.93	31.15	51.32	63.93	12.61	QP
3	0.29	10.22	9.95	4.44	24.61	50.63	26.02	Average
4	0.29	10.22	9.95	21.49	41.66	60.63	18.97	QP
5	0.42	10.20	9.97	5.25	25.42	47.51	22.09	Average
6	0.42	10.20	9.97	18.50	38.67	57.51	18.84	QP
7	1.61	10.18	10.00	2.61	22.79	46.00	23.21	Average
8	1.61	10.18	10.00	17.96	38.14	56.00	17.86	QP
9	2.90	10.18	10.03	2.77	22.98	46.00	23.02	Average
10	2.90	10.18	10.03	18.84	39.05	56.00	16.95	QP
11	18.04	9.94	9.98	16.32	36.24	50.00	13.76	Average
12	18.04	9.94	9.98	29.83	49.75	60.00	10.25	QP

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

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

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

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

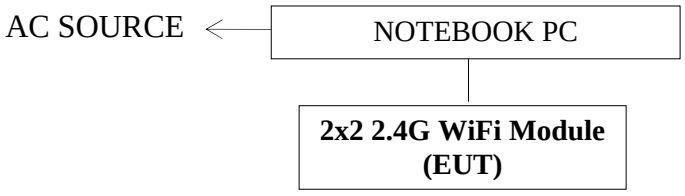
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 07, 12’	Aug. 06, 13’
2.	Test Receiver	R & S	ESCS30	100338	Jul. 04, 12’	Jul. 03, 13’
3.	Amplifier	Agilent	8447D	2944A06305	Feb. 19, 13’	Feb. 18, 14’
4.	Log Periodic Antenna	Schwarzbeck	UHALP 9108-A	0810	Mar. 02, 13’	Mar. 01, 14’
5.	Biconical Antenna	CHASE	VBA6106 A	1264	Mar. 02, 13’	Mar. 01, 14’

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

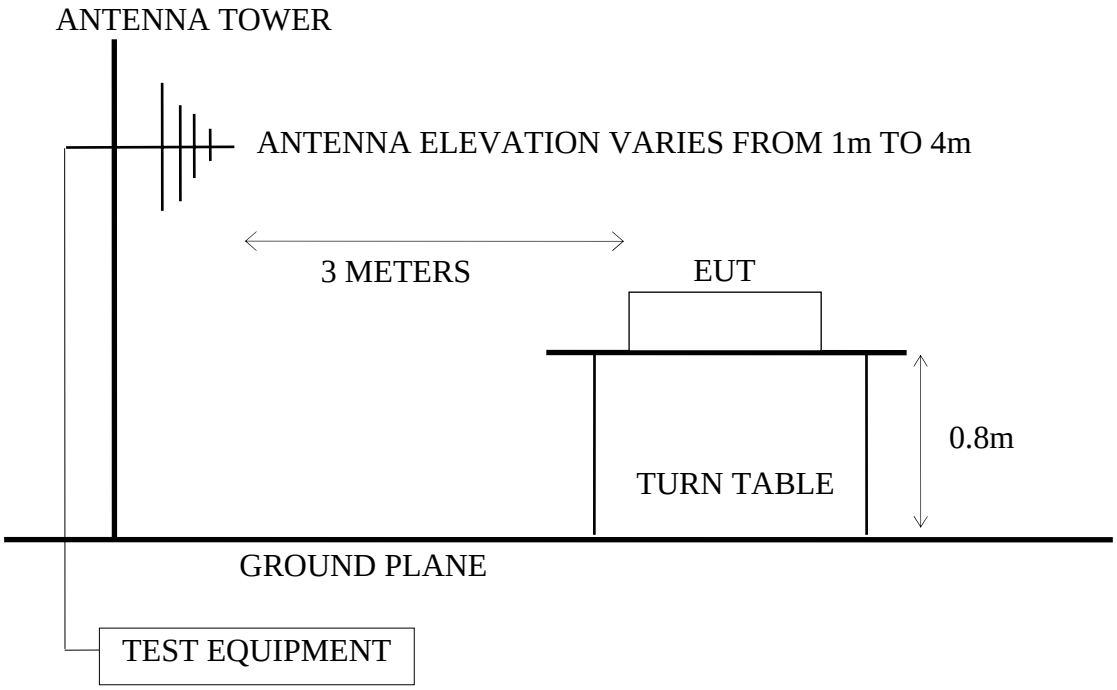
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 07, 12’	Aug. 06, 13’
2.	Pre-Amplifier	HP	8449B	3008A02678	Mar. 08, 13’	Mar. 07, 14’
3.	3.5G High Pass Filter	HP	84300-80038	005	Jan. 03, 13’	Jan. 02, 14’
4.	2.4G Notch Filter	EWT	EWT-14-0070-R1	G2	Feb. 14, 13’	Feb. 13, 14’
5.	Horn Antenna	EMCO	3115	9112-3775	May 09, 12’	May 08, 13’
6.	Horn Antenna	EMCO	3116	2653	Oct. 15, 12’	Oct. 14, 13’
7.	Signal Generator	HP	83732B	US34490489	May 16, 12’	May 15, 13’

3.2. Test Setup

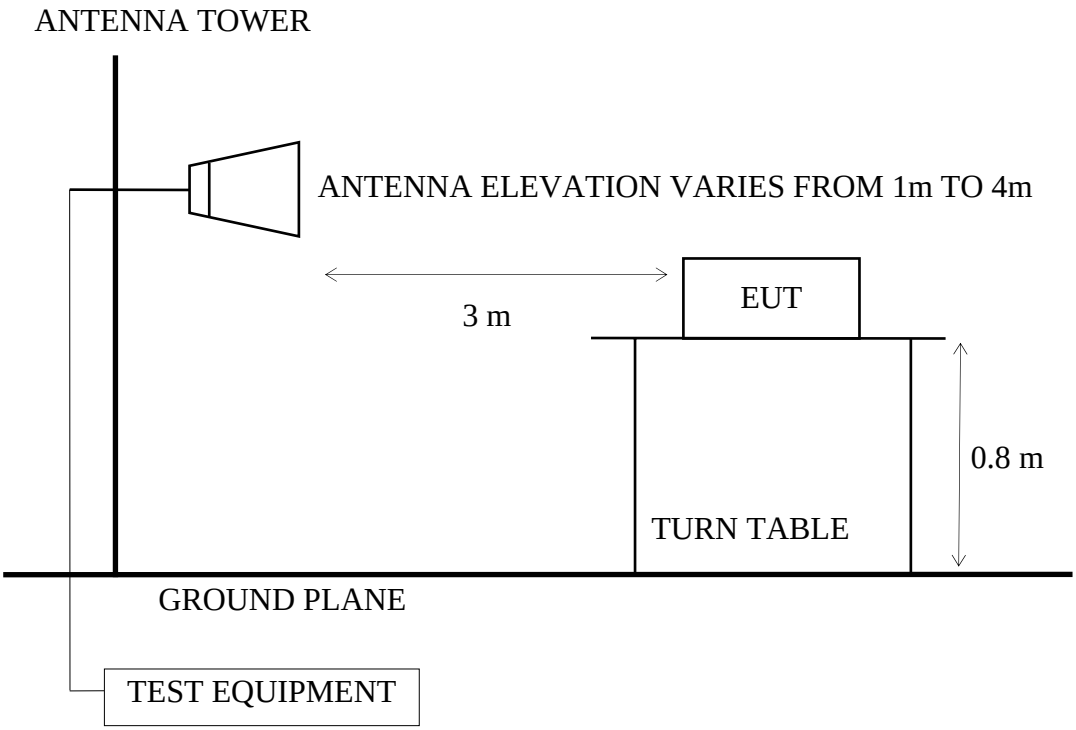
3.2.1. Block Diagram of connection between EUT and simulators



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



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



3.3. Radiated Emission Limits (§15.209)

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).

3.4. Operating Condition of EUT

3.4.1. Set up the EUT (2x2 2.4G WiFi Module) via Notebook PC and simulator as shown on 3.2.

3.4.2. To turn on the power of all equipments.

3.4.3. The EUT was set the Notebook PC using test program “RT5X7XQA”.

3.4.4. The EUT supports 802.11b/g/n-HT20/n-HT40 modes, we performed pre-scan high, middle, low channels for each mode for spurious emission and listed the worst channel of each mode in test report.

The worst channel of each mode as following:

Mode	Type of Network	Channel
1.	802.11b	CH 1
2.	802.11g	CH 6
3.	802.11n-HT20	CH 6
4.	802.11n-HT40	CH 6

3.5. 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 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 4.2.2, peak detector is an alternate option for frequency from 30MHz to 1000MHz.

For emissions above 1GHz were measured with peak and average detectors, and performed measurement in 1 m distance for frequency range from 5500MHz up to 25GHz where there is no emission be found.

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.

3.6. Test Results

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

EUT：2x2 2.4G WiFi Module　　M/N：SMC-RT539222SB24

Test Date：Apr. 19, 2013　　Temperature：21℃　　Humidity：64%

The EUT linked to notebook PC (with stand, side and lie conditions) modes were evaluated, select the **worst test mode (lie)** was tested in this section.

For Frequency Range 30MHz~1000MHz:

The EUT with following test modes were performed during this section testing and all the test results are listed in section 3.6.1.

Mode	Type of Network	Channel	Frequency	Test Mode	Reference Test Data	
					Horizontal	Vertical
1.	802.11b	CH 1	2412MHz	Transmit	# 6	# 1
2.	802.11g	CH 6	2437MHz		# 7	# 2
3.	802.11n-HT20	CH 6	2437MHz		# 8	# 3
4.	802.11n-HT40	CH 6	2437MHz		# 9	# 4

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

2.4GHz 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 3.6.2.

Mode	Type of Network	Channel	Frequency	Test Mode	Reference Test Data	
					Horizontal	Vertical
1.	802.11b	CH 1	2412MHz	Transmit	# 9	# 3
2.	802.11g	CH 6	2437MHz		# 9	# 3
3.	802.11n-HT20	CH 6	2437MHz		# 8	# 2
4.	802.11n-HT40	CH 6	2437MHz		# 8	# 2

Note: 1. Above all final readings were measured with Peak and Average detector.
2. The emissions (up to 25GHz) not reported are too low to be measured.

For Restricted Bands:

The EUT was tested in restricted bands and all the test results are listed in section 3.6.4. (The restricted bands defined in part 15.205(a))

Mode	Type of Network	Channel	Frequency	Test Mode	Reference Test Data	
					Horizontal	Vertical
1.	802.11b	CH 1	2412MHz	Transmit	# 3, # 4	# 1, # 2
2.		CH 11	2462MHz		# 5, # 6	# 7, # 8
3.	802.11g	CH 1	2412MHz	Transmit	# 1, # 2	# 3, # 4
4.		CH 11	2462MHz		# 5, # 6	# 7, # 8
5.	802.11n-HT20	CH 1	2412MHz	Transmit	# 1, # 2	# 3, # 4
6.		CH 11	2462MHz		# 5, # 6	# 7, # 8
7.	802.11n-HT40	CH 3	2422MHz	Transmit	# 1, # 2	# 3, # 4
8.		CH 9	2452MHz		# 5, # 6	# 7, # 8

3.6.1. For 30-1000MHz Frequency Range Measurement Results

802.11b, Transmit, Frequency: 2412MHz

Site no. : A/C Chamber Data no. : 6
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
Limit : FCC PART-15C
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2412MHz(802.11b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	99.840	17.08	2.10	19.12	38.30	43.50	5.20	Peak
2	197.810	22.02	3.00	17.38	42.41	43.50	1.09	Peak
3	300.630	14.52	3.90	25.81	44.22	46.00	1.78	Peak
4	501.420	18.95	6.52	7.74	33.22	46.00	12.78	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. : A/C Chamber Data no. : 1
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
Limit : FCC PART-15C
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2412MHz(802.11b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	100.810	17.17	2.10	19.96	39.23	43.50	4.27	Peak
2	197.810	22.02	3.00	9.17	34.20	43.50	9.30	Peak
3	299.660	26.77	3.90	10.39	41.06	46.00	4.94	Peak
4	501.420	18.95	6.52	12.39	37.87	46.00	8.13	Peak

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

802.11g, Transmit, Frequency: 2437MHz

Site no. : A/C Chamber Data no. : 7
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
Limit : FCC PART-15C
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2437MHz(802.11g)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	100.810	17.17	2.10	19.18	38.45	43.50	5.05	Peak
2	197.810	22.02	3.00	16.80	41.83	43.50	1.67	Peak
3	300.630	14.52	3.90	25.13	43.55	46.00	2.45	Peak
4	498.510	18.79	6.50	5.86	31.15	46.00	14.85	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. : A/C Chamber Data no. : 2
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
Limit : FCC PART-15C
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2437MHz(802.11g)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	100.810	17.17	2.10	19.22	38.49	43.50	5.01	Peak
2	197.810	22.02	3.00	8.37	33.40	43.50	10.10	Peak
3	299.660	26.77	3.90	10.08	40.75	46.00	5.25	Peak
4	498.510	18.79	6.50	11.98	37.27	46.00	8.73	Peak

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

802.11n-HT20, Transmit, Frequency: 2437MHz

Site no. : A/C Chamber Data no. : 8
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
Limit : FCC PART-15C
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2437MHz(802.11n20)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	99.840	17.08	2.10	19.03	38.21	43.50	5.29	Peak
2	197.810	22.02	3.00	16.96	41.99	43.50	1.51	Peak
3	300.630	14.52	3.90	25.92	44.33	46.00	1.67	Peak
4	501.420	18.95	6.52	7.88	33.36	46.00	12.64	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. : A/C Chamber Data no. : 3
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
Limit : FCC PART-15C
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2437MHz(802.11n20)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	99.840	17.08	2.10	19.30	38.48	43.50	5.02	Peak
2	197.810	22.02	3.00	9.66	34.69	43.50	8.81	Peak
3	299.660	26.77	3.90	10.39	41.06	46.00	4.94	Peak
4	501.420	18.95	6.52	11.54	37.02	46.00	8.98	Peak

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

802.11n-HT40, Transmit, Frequency: 2437MHz

Site no. : A/C Chamber Data no. : 9
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
Limit : FCC PART-15C
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2437MHz(802.11n40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	100.810	17.17	2.10	19.11	38.38	43.50	5.12	Peak
2	197.810	22.02	3.00	16.78	41.81	43.50	1.69	Peak
3	300.630	14.52	3.90	25.26	43.68	46.00	2.32	Peak
4	497.540	18.71	6.43	8.16	33.30	46.00	12.70	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. : A/C Chamber Data no. : 4
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
Limit : FCC PART-15C
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2437MHz(802.11n40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	100.810	17.17	2.10	19.07	38.34	43.50	5.16	Peak
2	197.810	22.02	3.00	10.21	35.24	43.50	8.26	Peak
3	299.660	26.77	3.90	10.39	41.06	46.00	4.94	Peak
4	501.420	18.95	6.52	11.77	37.25	46.00	8.75	Peak

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

3.6.2. 2.4GHz for Above 1GHz Frequency Range Measurement Results

802.11b Transmit, Frequency: 2412MHz

```
Site no.      : A/C Chamber                 Data no.  : 9
Dis. / Ant.   : 3m   3115(4927)             Ant. pol. : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21*C/64%            Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11b)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	4820.500	33.09	9.14	12.20	54.43	74.00	19.57	Peak
2	4820.500	33.09	9.14	10.19	52.42	54.00	1.58	Average

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.      : A/C Chamber                 Data no.  : 3
Dis. / Ant.   : 3m   3115(4927)             Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21*C/64%            Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11b)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	4820.500	33.09	9.14	13.68	55.91	74.00	18.09	Peak
2	4820.500	33.09	9.14	10.89	53.12	54.00	0.88	Average

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

802.11g, Transmit, Frequency: 2437MHz

Site no. : A/C Chamber Data no. : 9
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2437MHz(802.11g)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	4873.000	33.18	9.15	20.08	62.40	74.00	11.60	Peak
2	4873.000	33.18	9.15	10.07	52.40	54.00	1.60	Average

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. : A/C Chamber Data no. : 3
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2437MHz(802.11g)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	4873.000	33.18	9.15	9.83	52.15	54.00	1.85	Average
2	4873.000	33.18	9.15	20.19	62.51	74.00	11.49	Peak

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

802.11n/HT-20, Transmit, Frequency: 2437MHz

Site no. : A/C Chamber Data no. : 8
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2437MHz(802.11n20)

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
3246.280	30.83	7.39	11.34	49.57	74.00	24.43	Peak
3246.280	30.83	7.39	10.35	48.57	54.00	5.43	Average
4873.000	33.18	9.15	12.21	54.53	74.00	19.47	Peak
4873.000	33.18	9.15	3.08	45.41	54.00	8.59	Average

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. : A/C Chamber Data no. : 2
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2437MHz(802.11n20)

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
3246.280	30.83	7.39	10.49	48.72	74.00	25.28	Peak
3246.280	30.83	7.39	9.50	47.72	54.00	6.28	Average
4868.500	33.18	9.15	14.66	56.99	74.00	17.01	Peak
4868.500	33.18	9.15	5.82	48.15	54.00	5.85	Average

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

802.11n/HT-40, Transmit, Frequency: 2437MHz

Site no. : A/C Chamber Data no. : 8
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2437MHz(802.11n40)

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
3246.280	30.83	7.39	12.00	50.23	74.00	23.77	Peak
3246.280	30.83	7.39	11.08	49.30	54.00	4.70	Average
4873.000	33.18	9.15	8.66	50.98	74.00	23.02	Peak
4873.000	33.18	9.15	1.32	43.65	54.00	10.35	Average

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

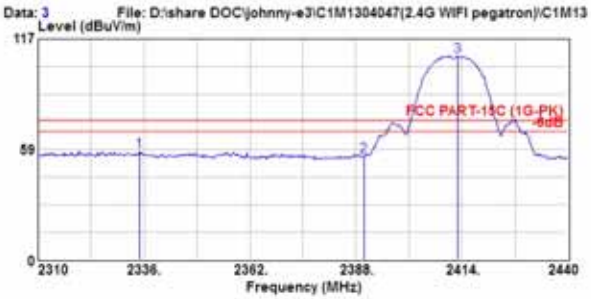
Site no. : A/C Chamber Data no. : 2
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 21*C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2437MHz(802.11n40)

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
3246.280	30.83	7.39	10.66	48.89	74.00	25.11	Peak
3246.280	30.83	7.39	10.10	48.32	54.00	5.68	Average
4873.000	33.18	9.15	10.18	52.50	74.00	21.50	Peak
4873.000	33.18	9.15	1.31	43.64	54.00	10.36	Average

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

3.6.3. Restricted Bands Measurement Results

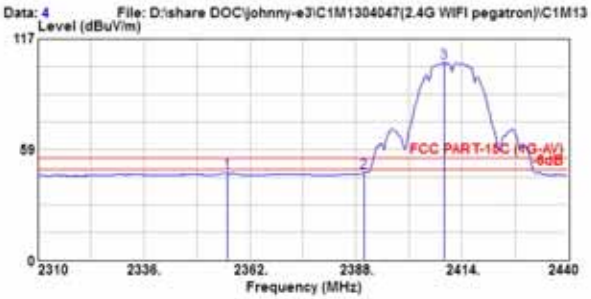
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11b, Transmit, Channel: 01, Frequency: 2412MHz		




```
Site no.      : A/C Chamber                    Data no.   : 3
Dis. / Ant.   : 3m   3115(4927)                Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%               Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11b)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	2334.960	28.36	6.27	22.87	57.50	74.00	16.50	Peak
2	2390.000	28.47	6.34	20.34	55.15	74.00	18.85	Peak
3	2412.960	28.51	6.36	73.06	107.93	74.00	-33.93	Peak

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

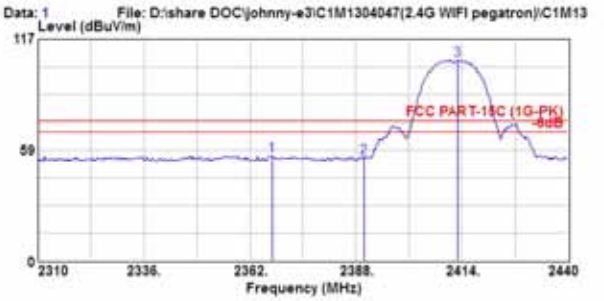



```
Site no.      : A/C Chamber                    Data no.   : 4
Dis. / Ant.   : 3m   3115(4927)                Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%               Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11b)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	2356.410	28.40	6.29	11.73	46.43	54.00	7.57	Average
2	2390.000	28.47	6.34	11.46	46.27	54.00	7.73	Average
3	2409.710	28.51	6.36	69.40	104.28	54.00	-50.28	Average

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

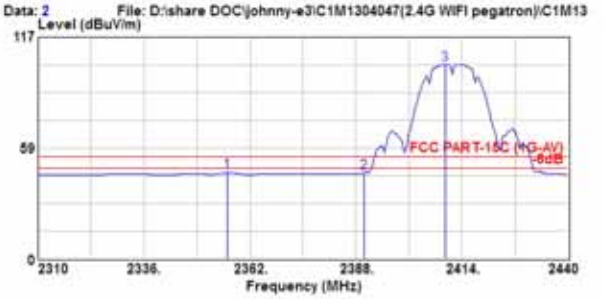
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11b, Transmit, Channel: 01, Frequency: 2412MHz		




```
Site no.      : A/C Chamber                 Data no.  : 1
Dis. / Ant.   : 3m    3115(4927)            Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%            Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11b)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2367.460	28.40	6.31	21.03	55.74	74.00	18.26	Peak
2	2390.000	28.47	6.34	19.54	54.35	74.00	19.65	Peak
3	2412.960	28.51	6.36	70.92	105.79	74.00	-31.79	Peak

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

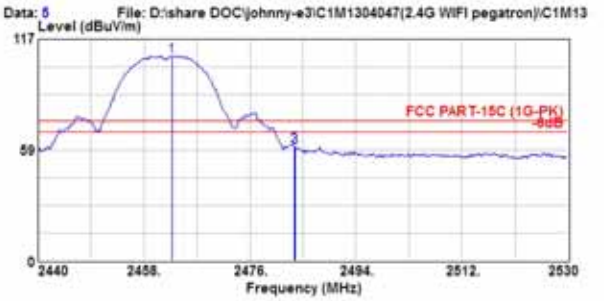



```
Site no.      : A/C Chamber                 Data no.  : 2
Dis. / Ant.   : 3m    3115(4927)            Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%            Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11b)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2356.410	28.40	6.29	10.97	45.67	54.00	8.33	Average
2	2390.000	28.47	6.34	10.70	45.51	54.00	8.49	Average
3	2409.970	28.51	6.36	67.76	102.63	54.00	-48.63	Average

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

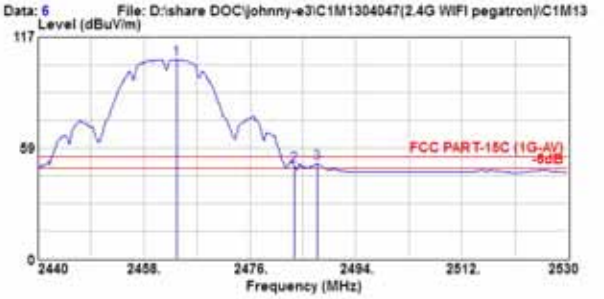
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11b, Transmit, Channel: 11, Frequency: 2462MHz		




```
Site no.      : A/C Chamber                    Data no.   : 5
Dis. / Ant.   : 3m    3115(4927)               Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%               Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2462MHz(802.11b)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.680	28.62	6.42	73.06	108.11	74.00	-34.11	Peak
2	2483.500	28.66	6.45	25.58	60.70	74.00	13.30	Peak
3	2483.740	28.66	6.45	25.07	60.19	74.00	13.81	Peak

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

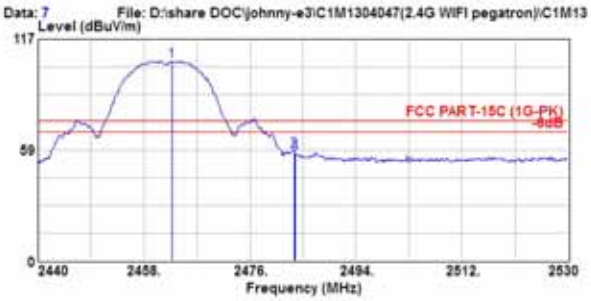



```
Site no.      : A/C Chamber                    Data no.   : 6
Dis. / Ant.   : 3m    3115(4927)               Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%               Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2462MHz(802.11b)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2463.580	28.62	6.42	70.16	105.21	54.00	-51.21	Average
2	2483.500	28.66	6.45	14.17	49.29	54.00	4.71	Average
3	2487.430	28.66	6.45	15.20	50.31	54.00	3.69	Average

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

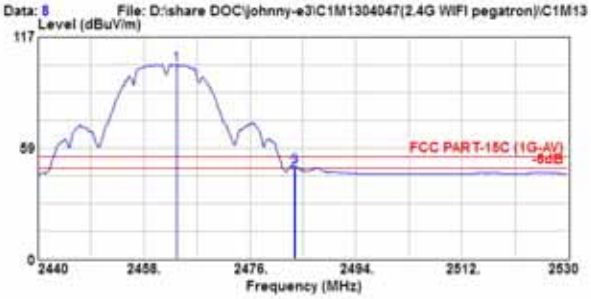
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11b, Transmit, Channel: 11, Frequency: 2462MHz		




```
Site no.      : A/C Chamber                  Data no.  : 7
Dis. / Ant.   : 3m   3115(4927)              Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%             Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2462MHz(802.11b)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.680	28.62	6.42	70.39	105.44	74.00	-31.44	Peak
2	2483.500	28.66	6.45	22.69	57.80	74.00	16.20	Peak
3	2483.740	28.66	6.45	21.19	56.31	74.00	17.69	Peak

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

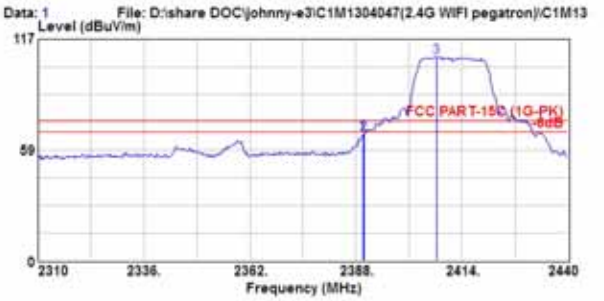



```
Site no.      : A/C Chamber                  Data no.  : 8
Dis. / Ant.   : 3m   3115(4927)              Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%             Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2462MHz(802.11b)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2463.580	28.62	6.42	67.50	102.55	54.00	-48.55	Average
2	2483.500	28.66	6.45	11.78	46.89	54.00	7.11	Average
3	2483.740	28.66	6.45	13.47	48.58	54.00	5.42	Average

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

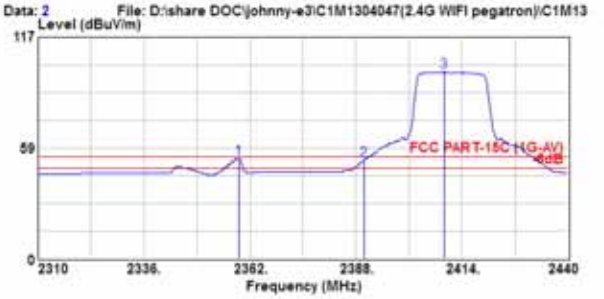
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11g, Transmit, Channel: 01, Frequency: 2412MHz		




```
Site no.      : A/C Chamber                 Data no.   : 1
Dis. / Ant.   : 3m    3115(4927)            Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%            Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11g)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.820	28.47	6.34	31.96	66.78	74.00	7.22	Peak
2	2390.000	28.47	6.34	32.15	66.96	74.00	7.04	Peak
3	2407.760	28.51	6.36	72.66	107.53	74.00	-33.53	Peak

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

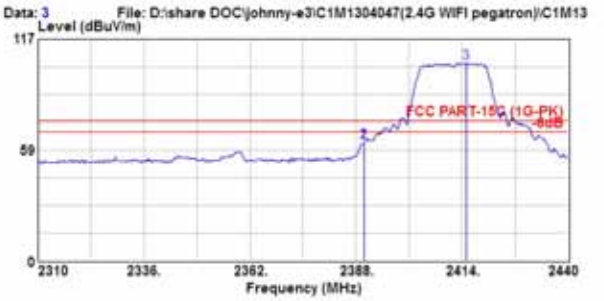



```
Site no.      : A/C Chamber                 Data no.   : 2
Dis. / Ant.   : 3m    3115(4927)            Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%            Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11g)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2359.270	28.40	6.30	18.32	53.03	54.00	0.97	Average
2	2390.000	28.47	6.34	17.30	52.12	54.00	1.88	Average
3	2409.710	28.51	6.36	63.83	98.71	54.00	-44.71	Average

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

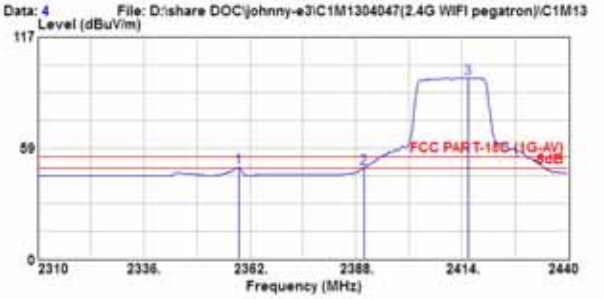
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11g, Transmit, Channel: 01, Frequency: 2412MHz		




```
Site no.      : A/C Chamber                Data no.  : 3
Dis. / Ant.   : 3m   3115(4927)            Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%           Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11g)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.950	28.47	6.34	27.66	62.47	74.00	11.53	Peak
2	2390.000	28.47	6.34	27.66	62.47	74.00	11.53	Peak
3	2415.170	28.51	6.36	69.42	104.30	74.00	-30.30	Peak

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

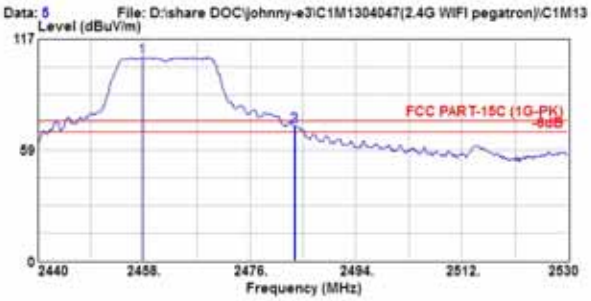



```
Site no.      : A/C Chamber                Data no.  : 4
Dis. / Ant.   : 3m   3115(4927)            Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%           Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11g)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2359.270	28.40	6.30	13.54	48.25	54.00	5.75	Average
2	2390.000	28.47	6.34	13.21	48.02	54.00	5.98	Average
3	2415.560	28.51	6.36	60.51	95.39	54.00	-41.39	Average

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

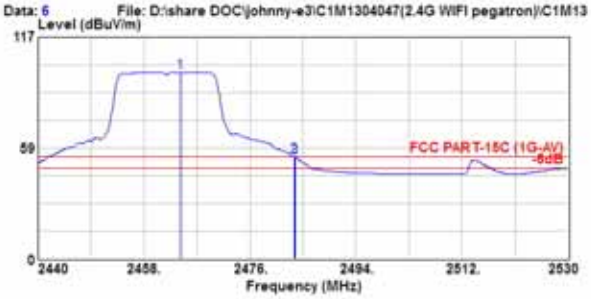
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11g, Transmit, Channel: 11, Frequency: 2462MHz		




```
Site no.      : A/C Chamber                 Data no.   : 5
Dis. / Ant.   : 3m    3115(4927)            Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%            Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2462MHz(802.11g)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2457.730	28.62	6.42	72.37	107.41	74.00	-33.41	Peak
2	2483.500	28.66	6.45	36.26	71.38	74.00	2.62	Peak
3	2483.740	28.66	6.45	36.04	71.15	74.00	2.85	Peak

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

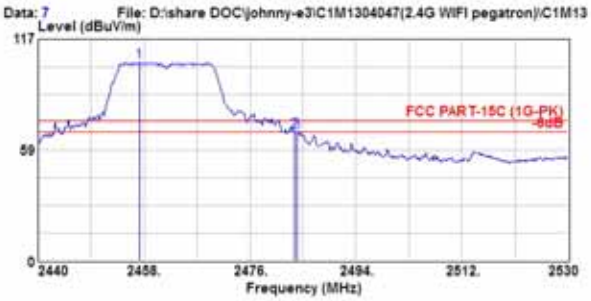



```
Site no.      : A/C Chamber                 Data no.   : 6
Dis. / Ant.   : 3m    3115(4927)            Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%            Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2462MHz(802.11g)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2464.210	28.62	6.42	63.54	98.58	54.00	-44.58	Peak
2	2483.500	28.66	6.45	18.80	53.91	54.00	0.09	Peak
3	2483.740	28.66	6.45	18.46	53.58	54.00	0.42	Peak

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

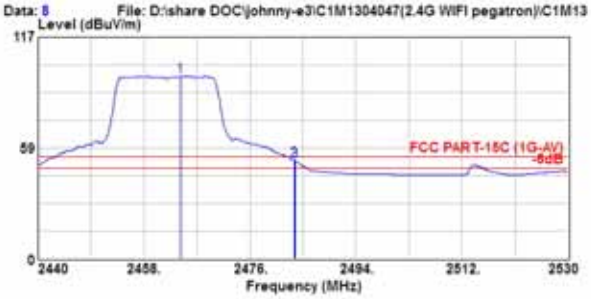
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11g, Transmit, Channel: 11, Frequency: 2462MHz		




```
Site no.      : A/C Chamber                  Data no.  : 7
Dis. / Ant.   : 3m   3115(4927)              Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%             Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2462MHz(802.11g)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2457.260	28.62	6.42	69.95	104.99	74.00	-30.99	Peak
2	2483.500	28.66	6.45	33.24	68.35	74.00	5.65	Peak
3	2484.010	28.66	6.45	33.23	68.34	74.00	5.66	Peak

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

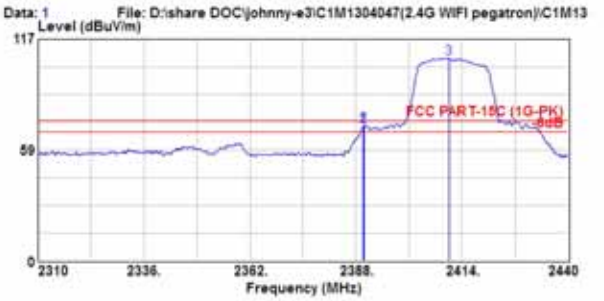



```
Site no.      : A/C Chamber                  Data no.  : 8
Dis. / Ant.   : 3m   3115(4927)              Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%             Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2462MHz(802.11g)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2464.210	28.62	6.42	61.16	96.20	54.00	-42.20	Average
2	2483.500	28.66	6.45	16.85	51.97	54.00	2.03	Average
3	2483.740	28.66	6.45	16.53	51.65	54.00	2.35	Average

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

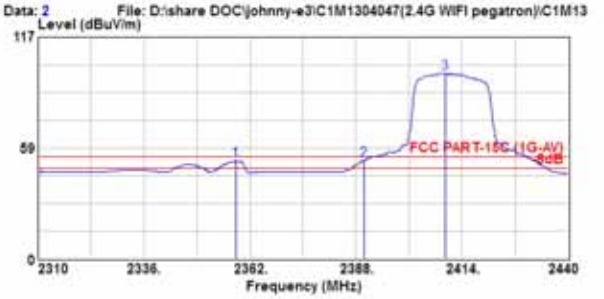
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11n-HT20, Transmit, Channel: 01, Frequency: 2412MHz		




```
Site no.      : A/C Chamber                Data no.   : 1
Dis. / Ant.   : 3m    3115(4927)           Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%           Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11n20)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.690	28.47	6.34	35.78	70.60	74.00	3.40	Peak
2	2390.000	28.47	6.34	36.43	71.24	74.00	2.76	Peak
3	2411.010	28.51	6.36	72.07	106.94	74.00	-32.94	Peak

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

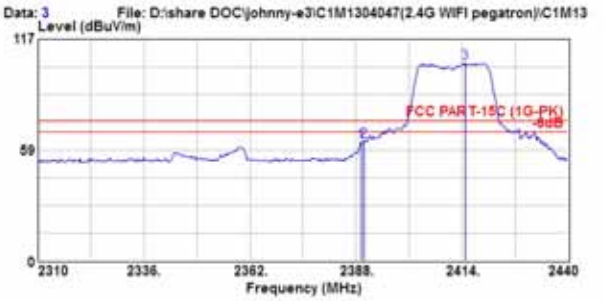



```
Site no.      : A/C Chamber                Data no.   : 2
Dis. / Ant.   : 3m    3115(4927)           Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%           Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11n20)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2358.620	28.40	6.29	17.03	51.72	54.00	2.28	Average
2	2390.000	28.47	6.34	17.24	52.06	54.00	1.94	Average
3	2409.970	28.51	6.36	62.97	97.84	54.00	-43.84	Average

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

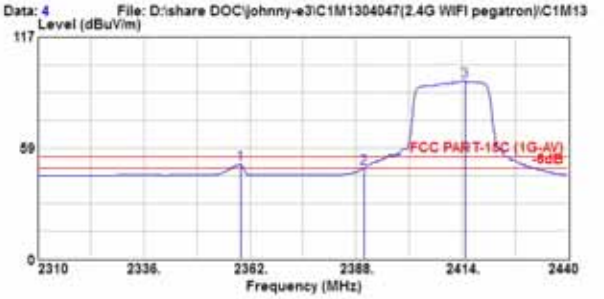
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11n-HT20, Transmit, Channel: 01, Frequency: 2412MHz		




```
Site no.      : A/C Chamber                 Data no.  : 3
Dis. / Ant.   : 3m    3115(4927)            Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%            Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11n20)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.300	28.47	6.34	27.84	62.65	74.00	11.35	Peak
2	2390.000	28.47	6.34	28.34	63.16	74.00	10.84	Peak
3	2414.910	28.51	6.36	69.40	104.28	74.00	-30.28	Peak

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

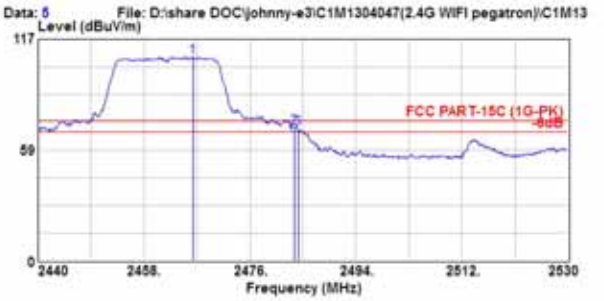



```
Site no.      : A/C Chamber                 Data no.  : 4
Dis. / Ant.   : 3m    3115(4927)            Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%            Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2412MHz(802.11n20)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2359.660	28.40	6.30	15.18	49.88	54.00	4.12	Average
2	2390.000	28.47	6.34	13.22	48.04	54.00	5.96	Average
3	2414.910	28.51	6.36	59.00	93.88	54.00	-39.88	Average

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

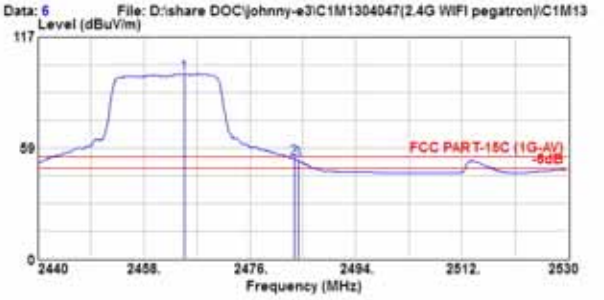
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11n-HT20, Transmit, Channel: 11, Frequency: 2462MHz		




```
Site no.      : A/C Chamber                  Data no.   : 5
Dis. / Ant.   : 3m   3115(4927)              Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%             Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2462MHz(802.11n20)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2466.280	28.62	6.42	72.41	107.46	74.00	-33.46	Peak
2	2483.500	28.66	6.45	35.25	70.37	74.00	3.63	Peak
3	2484.100	28.66	6.45	34.32	69.43	74.00	4.57	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.      : A/C Chamber                  Data no.   : 6
Dis. / Ant.   : 3m   3115(4927)              Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%             Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2462MHz(802.11n20)
```

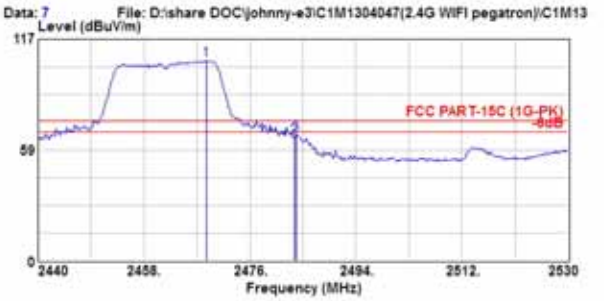
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2464.930	28.62	6.42	62.76	97.81	54.00	-43.81	Average
2	2483.500	28.66	6.45	17.62	52.74	54.00	1.26	Average
3	2484.100	28.66	6.45	16.85	51.96	54.00	2.04	Average

```
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： Apr. 19, 2013 Temperature： 21℃

EUT： 2x2 2.4G WiFi Module Humidity： 64%

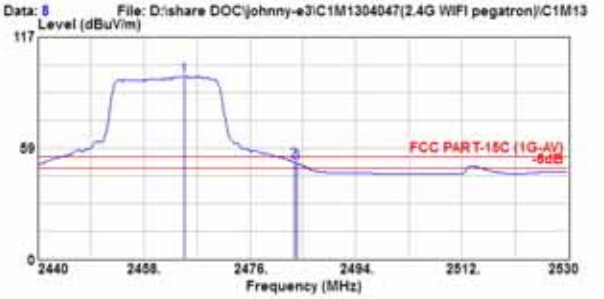
Test Mode： 802.11n-HT20, Transmit, Channel: 11, Frequency: 2462MHz




```
Site no.      : A/C Chamber                Data no.  : 7
Dis. / Ant.   : 3m   3115(4927)            Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%           Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2462MHz(802.11n20)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2468.530	28.62	6.43	70.79	105.85	74.00	-31.85	Peak
2	2483.500	28.66	6.45	29.74	64.86	74.00	9.14	Peak
3	2483.830	28.66	6.45	31.24	66.36	74.00	7.64	Peak

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

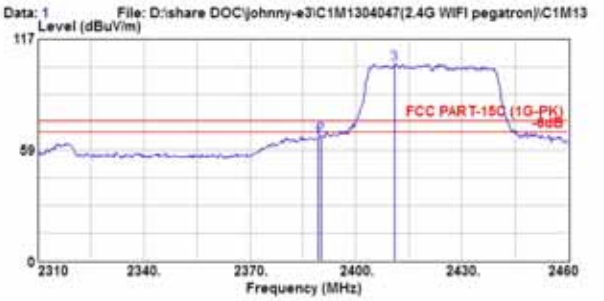



```
Site no.      : A/C Chamber                Data no.  : 8
Dis. / Ant.   : 3m   3115(4927)            Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%           Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2462MHz(802.11n20)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2464.930	28.62	6.42	61.44	96.49	54.00	-42.49	Average
2	2483.500	28.66	6.45	16.14	51.26	54.00	2.74	Average
3	2484.010	28.66	6.45	15.50	50.61	54.00	3.39	Average

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

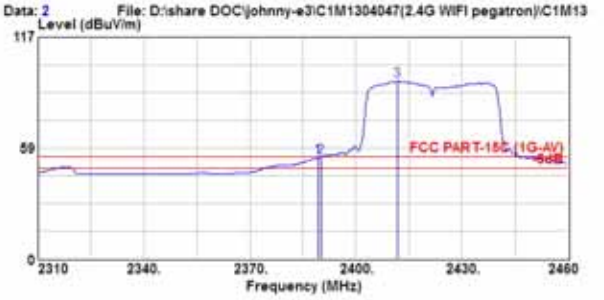
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11n-HT40, Transmit, Channel: 03, Frequency: 2422MHz		




```
Site no.      : A/C Chamber                 Data no.   : 1
Dis. / Ant.   : 3m    3115(4927)            Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%            Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2422MHz(802.11n40)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.350	28.47	6.34	29.97	64.79	74.00	9.21	Peak
2	2390.000	28.47	6.34	31.25	66.06	74.00	7.94	Peak
3	2411.100	28.51	6.36	69.27	104.14	74.00	-30.14	Peak

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

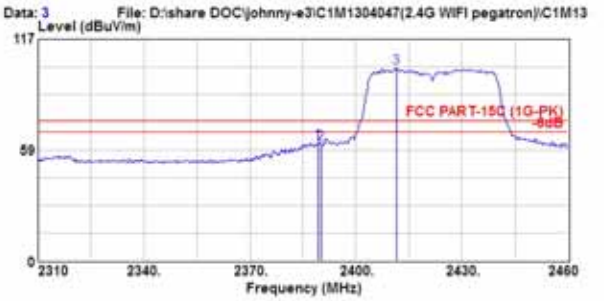



```
Site no.      : A/C Chamber                 Data no.   : 2
Dis. / Ant.   : 3m    3115(4927)            Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%            Engineer   : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2422MHz(802.11n40)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.350	28.47	6.34	18.56	53.38	54.00	0.62	Average
2	2390.000	28.47	6.34	18.75	53.56	54.00	0.44	Average
3	2411.850	28.51	6.36	58.83	93.71	54.00	-39.71	Average

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

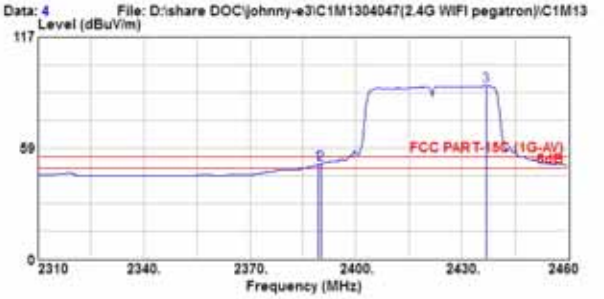
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11n-HT40, Transmit, Channel: 03, Frequency: 2422MHz		




```
Site no.      : A/C Chamber                 Data no.  : 3
Dis. / Ant.   : 3m   3115(4927)             Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%            Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2422MHz(802.11n40)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.350	28.47	6.34	27.76	62.58	74.00	11.42	Peak
2	2390.000	28.47	6.34	26.82	61.63	74.00	12.37	Peak
3	2411.550	28.51	6.36	66.84	101.71	74.00	-27.71	Peak

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

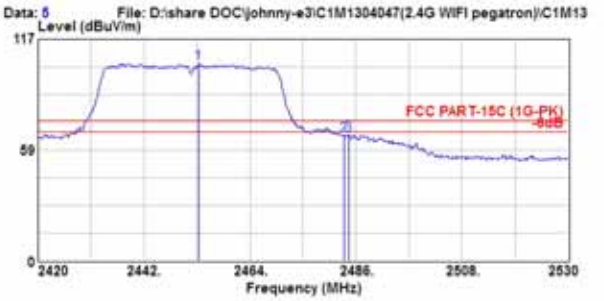



```
Site no.      : A/C Chamber                 Data no.  : 4
Dis. / Ant.   : 3m   3115(4927)             Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%            Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2422MHz(802.11n40)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.350	28.47	6.34	15.07	49.89	54.00	4.11	Average
2	2390.000	28.47	6.34	15.24	50.06	54.00	3.94	Average
3	2437.050	28.59	6.39	56.50	91.48	54.00	-37.48	Average

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

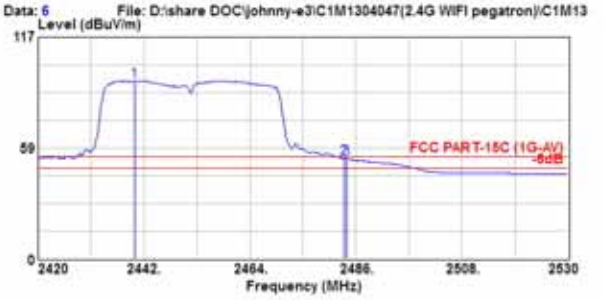
Date of Test：	Apr. 19, 2013	Temperature：	21℃
EUT：	2x2 2.4G WiFi Module	Humidity：	64%
Test Mode：	802.11n-HT40, Transmit, Channel: 09, Frequency: 2452MHz		




```
Site no.      : A/C Chamber                 Data no.  : 5
Dis. / Ant.   : 3m   3115(4927)             Ant. pol. : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : E4446A  21°C/64%            Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2452MHz(802.11n40)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2453.440	28.59	6.42	69.42	104.42	74.00	-30.42	Peak
2	2483.500	28.66	6.45	30.92	66.04	74.00	7.96	Peak
3	2484.460	28.66	6.45	31.23	66.34	74.00	7.66	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.      : A/C Chamber                 Data no.  : 6
Dis. / Ant.   : 3m   3115(4927)             Ant. pol. : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : E4446A  21°C/64%            Engineer  : Johnny_Hsueh
EUT           : SMC-RT539222SB24
Power Rating  : DC 3.3V
Test Mode     : Tx2452MHz(802.11n40)
```

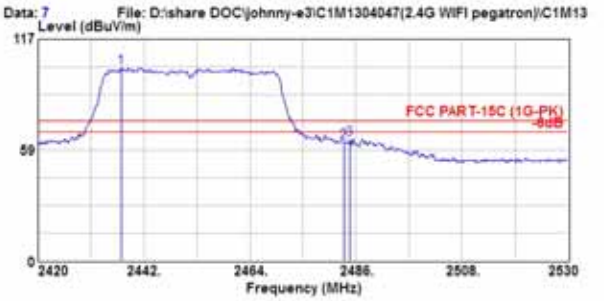
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2440.020	28.59	6.40	58.85	93.84	54.00	-39.84	Average
2	2483.500	28.66	6.45	18.09	53.21	54.00	0.79	Average
3	2484.130	28.66	6.45	17.93	53.04	54.00	0.96	Average

```
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： Apr. 19, 2013 Temperature： 21℃

EUT： 2x2 2.4G WiFi Module Humidity： 64%

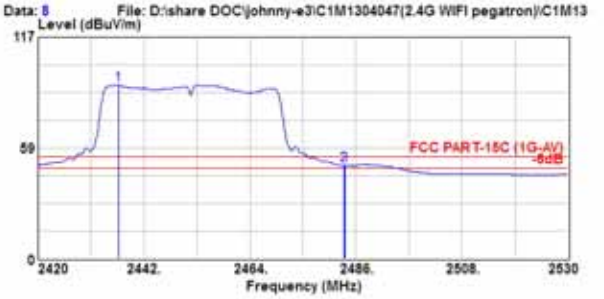
Test Mode： 802.11n-HT40, Transmit, Channel: 09, Frequency: 2452MHz



Site no. : A/C Chamber Data no. : 7
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 21°C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2452MHz(802.11n40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.270	28.59	6.39	67.14	102.12	74.00	-28.12	Peak
2	2483.500	28.66	6.45	27.35	62.47	74.00	11.53	Peak
3	2484.790	28.66	6.45	28.91	64.02	74.00	9.98	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. : A/C Chamber Data no. : 8
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 21°C/64% Engineer : Johnny_Hsueh
EUT : SMC-RT539222SB24
Power Rating : DC 3.3V
Test Mode : Tx2452MHz(802.11n40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2436.720	28.59	6.39	56.71	91.69	54.00	-37.69	Average
2	2483.500	28.66	6.45	14.44	49.56	54.00	4.44	Average
3	2483.800	28.66	6.45	14.46	49.58	54.00	4.42	Average

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

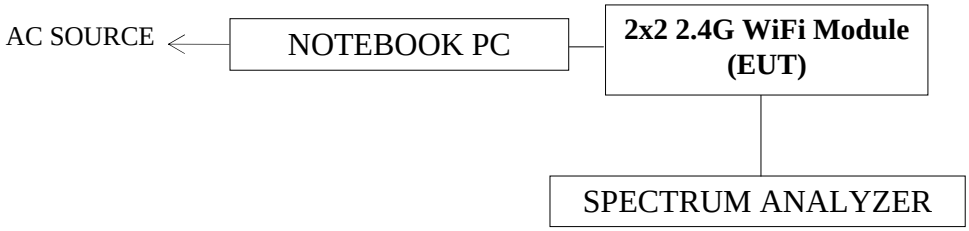
4. 6dB BANDWIDTH MEASUREMENT

4.1. Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	N9030A-544	US51350140	Oct. 17, 12'	Oct. 16, 13'

4.2. Block Diagram of Test Setup



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

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

4.4. Operating Condition of EUT

The test program "RT5X7XQA" was used to enable the EUT to transmit data at different channel frequency individually.

4.5. 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.

4.6. Test Results

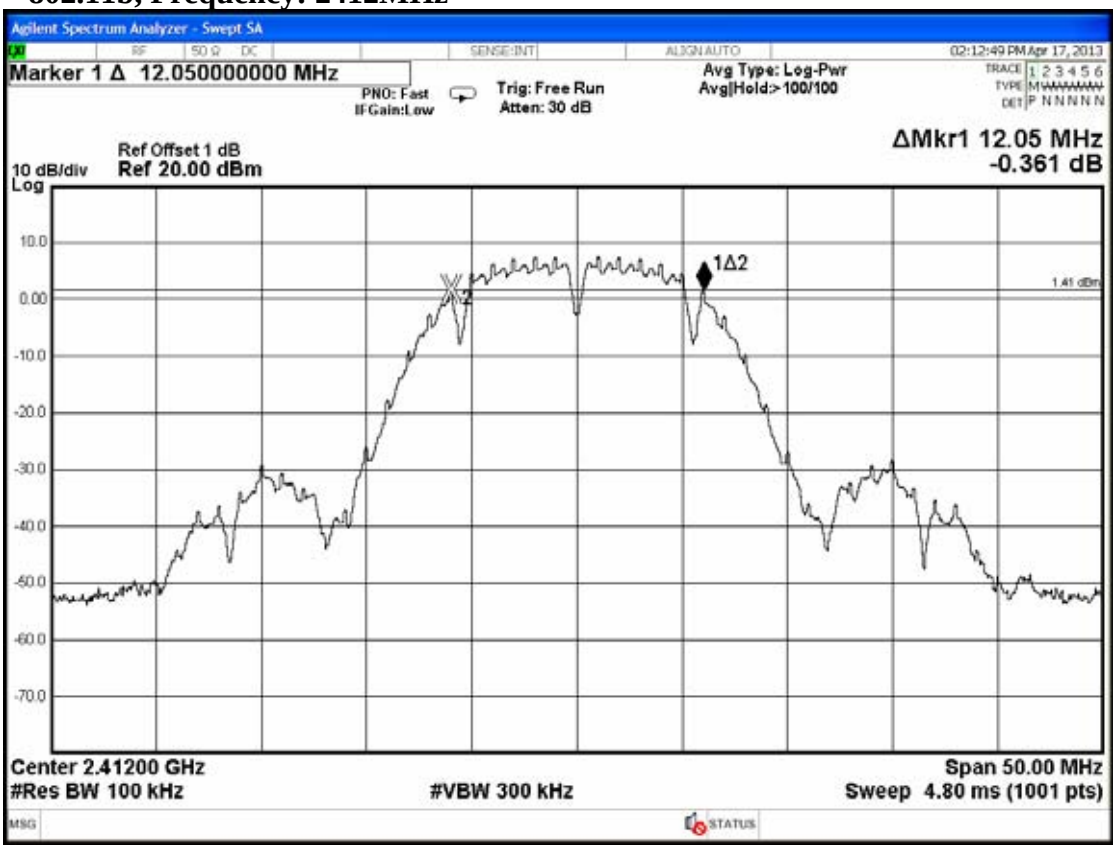
PASSED. All the test results are attached in next pages.

(Test Date : Apr. 17, 2013 Temperature : 25℃ Humidity : 55%)

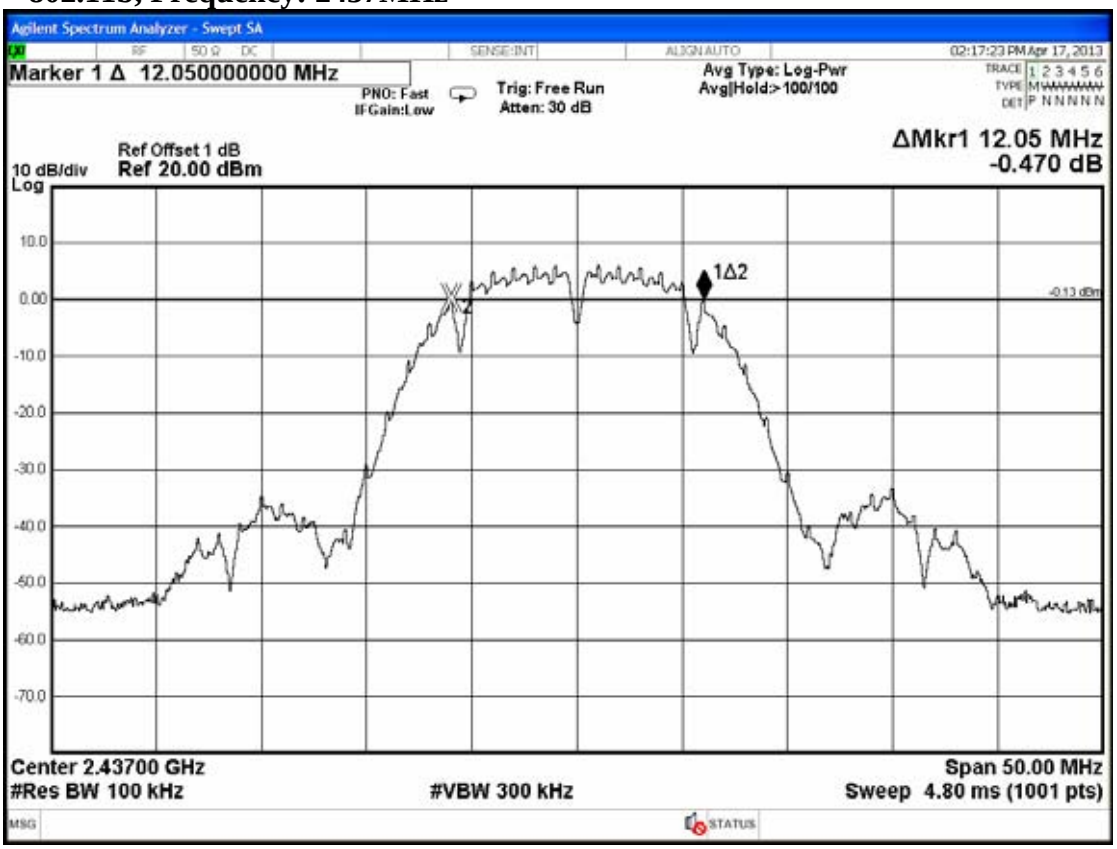
Mode	Type of Network	Channel	Frequency	**6dB Bandwidth**
1.	802.11b	CH 1	2412MHz	**12.05MHz**
2.		CH 6	2437MHz	**12.05MHz**
3.		CH 11	2462MHz	**12.05MHz**
4.	802.11g	CH 1	2412MHz	**16.55MHz**
5.		CH 6	2437MHz	**16.55MHz**
6.		CH 11	2462MHz	**16.55MHz**
7.	802.11n-HT20	CH 1	2412MHz	**17.65MHz**
8.		CH 6	2437MHz	**17.65MHz**
9.		CH 11	2462MHz	**17.65MHz**
10.	802.11n-HT40	CH 3	2422MHz	**36.48MHz**
11.		CH 6	2437MHz	**36.48MHz**
12.		CH 9	2452MHz	**36.48MHz**

[Limit: least 500kHz]

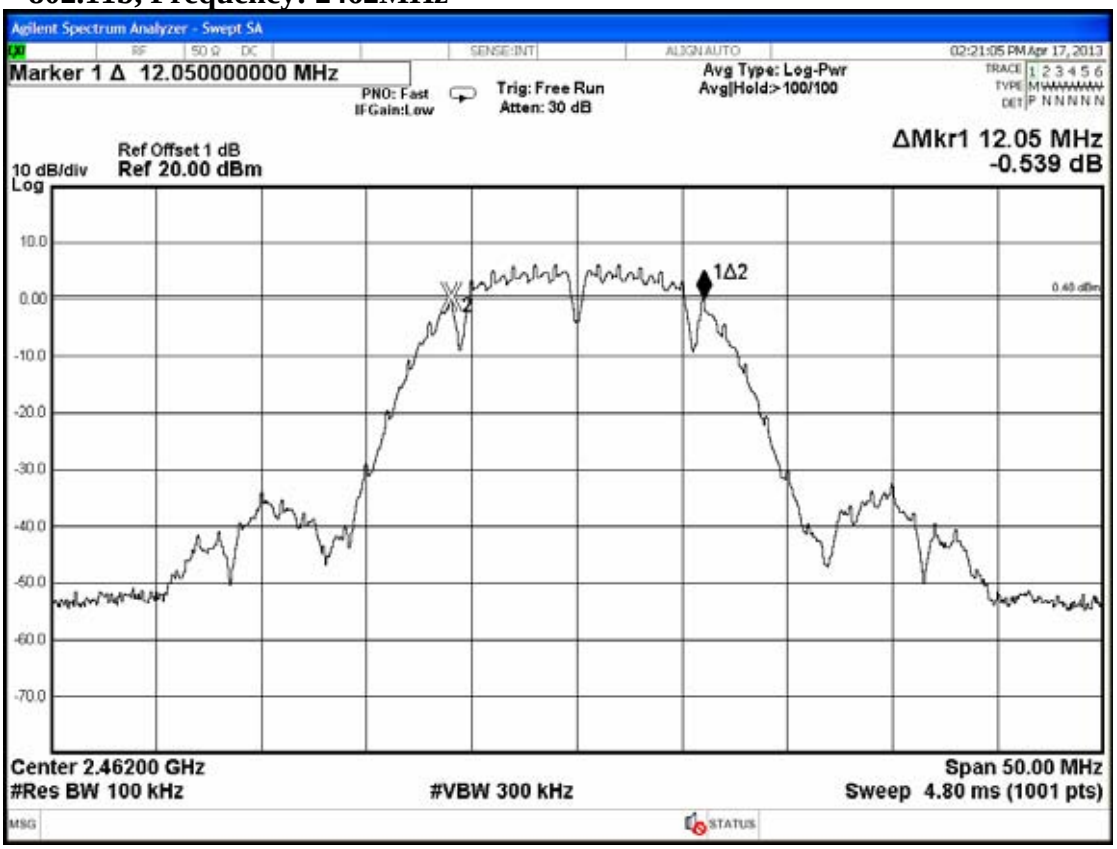
802.11b, Frequency: 2412MHz



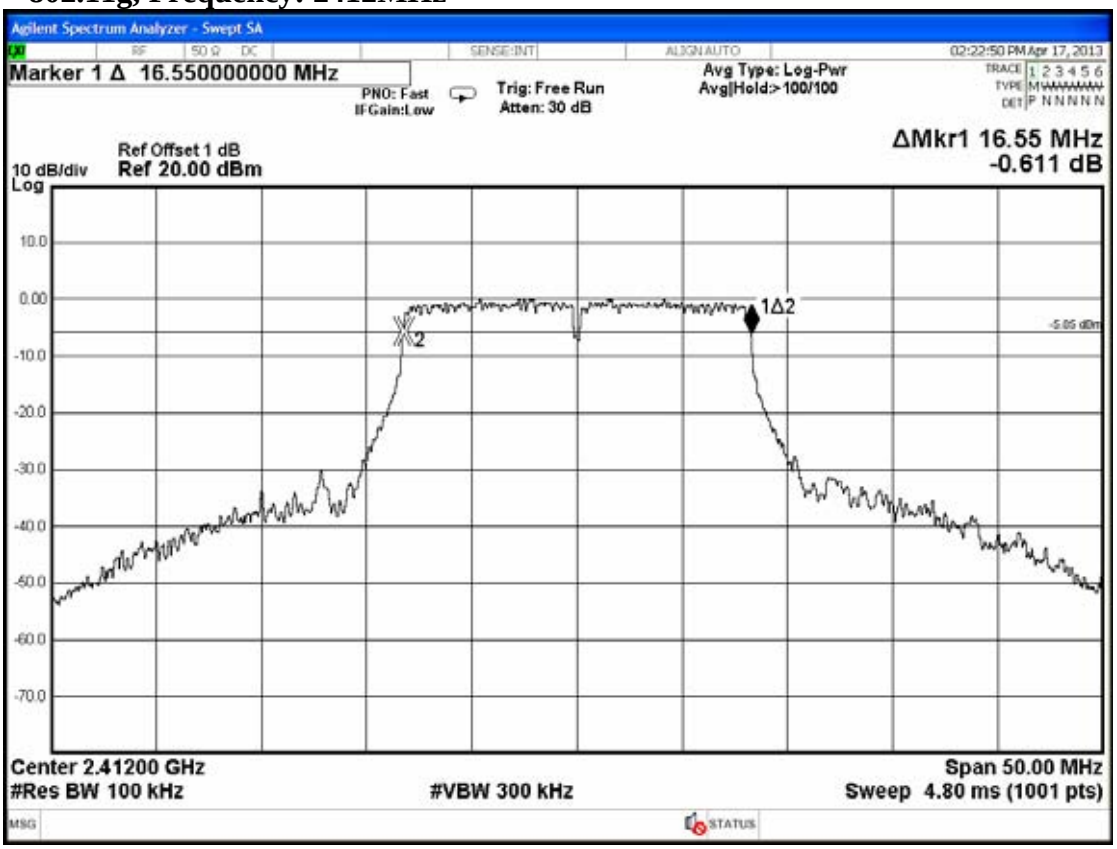
802.11b, Frequency: 2437MHz



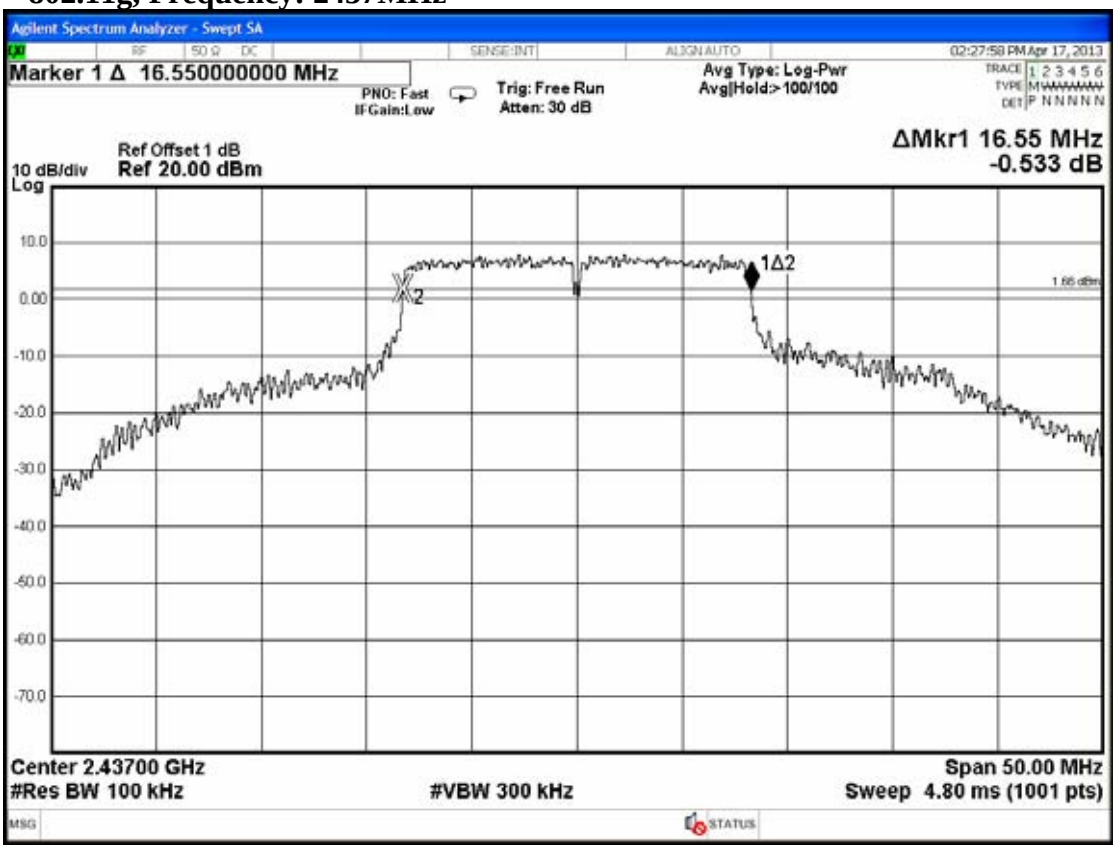
802.11b, Frequency: 2462MHz



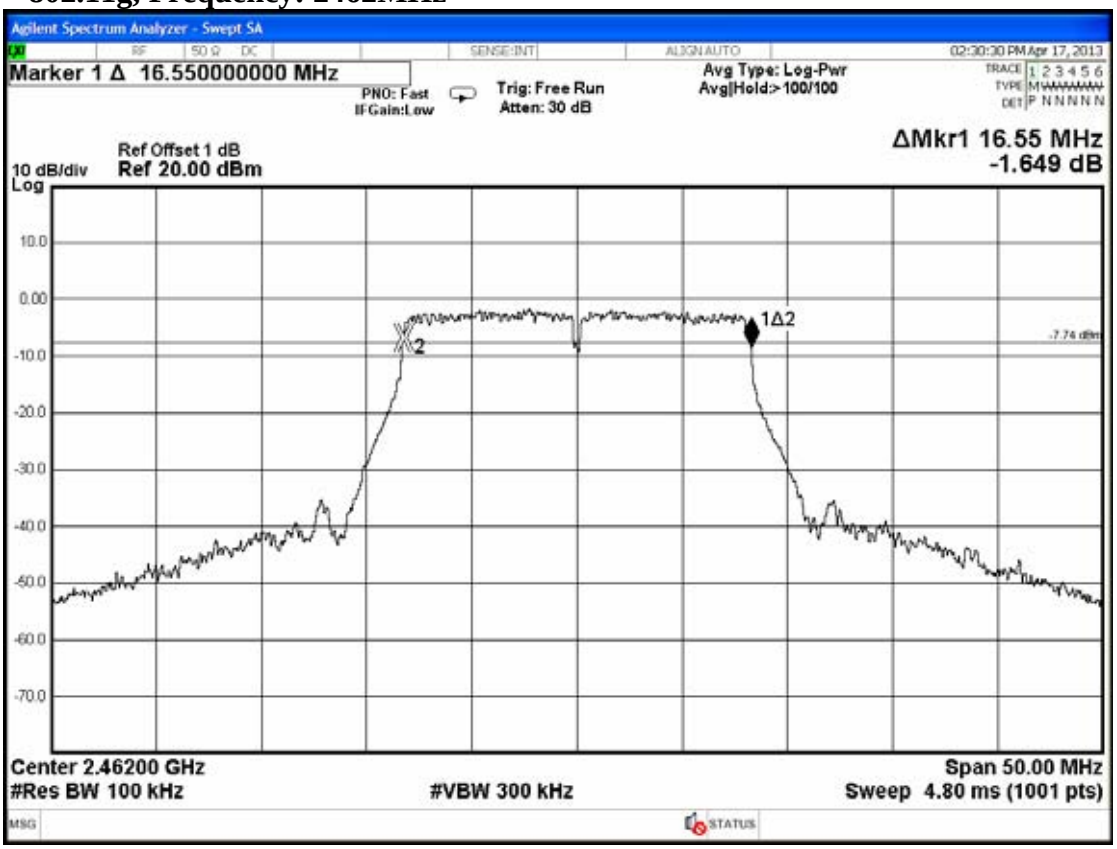
802.11g, Frequency: 2412MHz



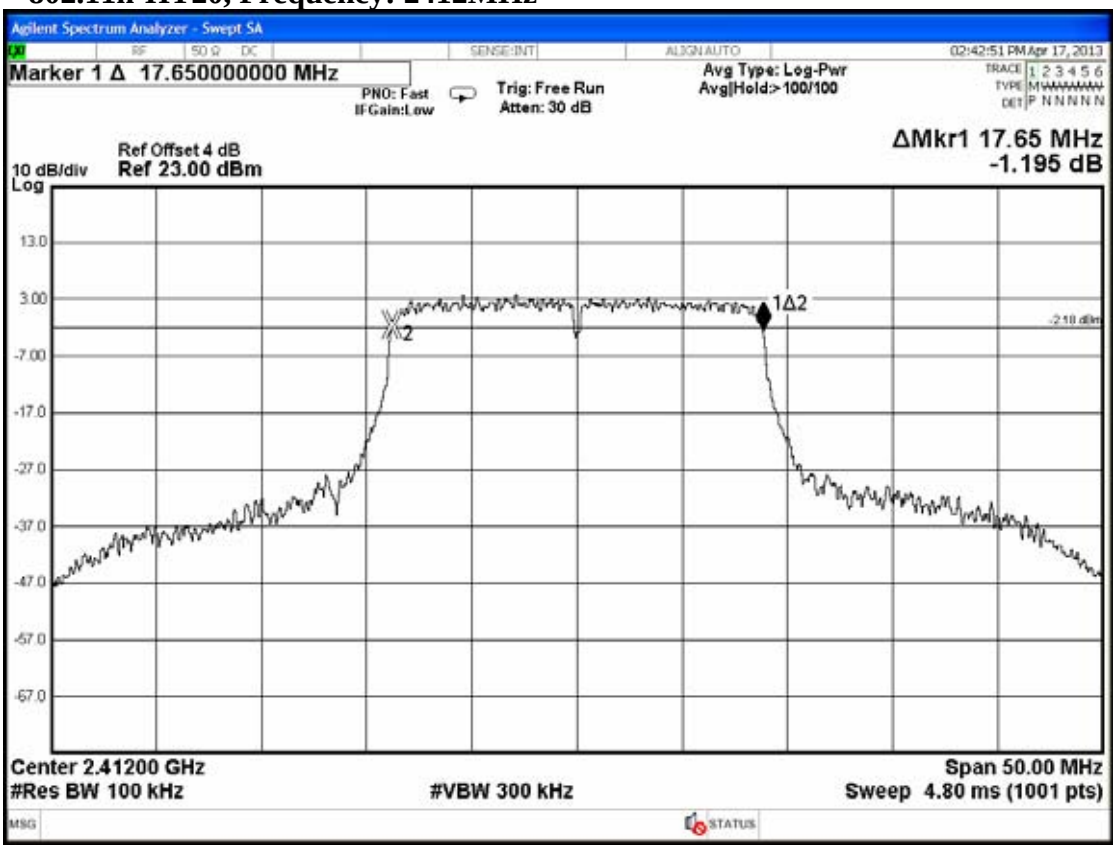
802.11g, Frequency: 2437MHz



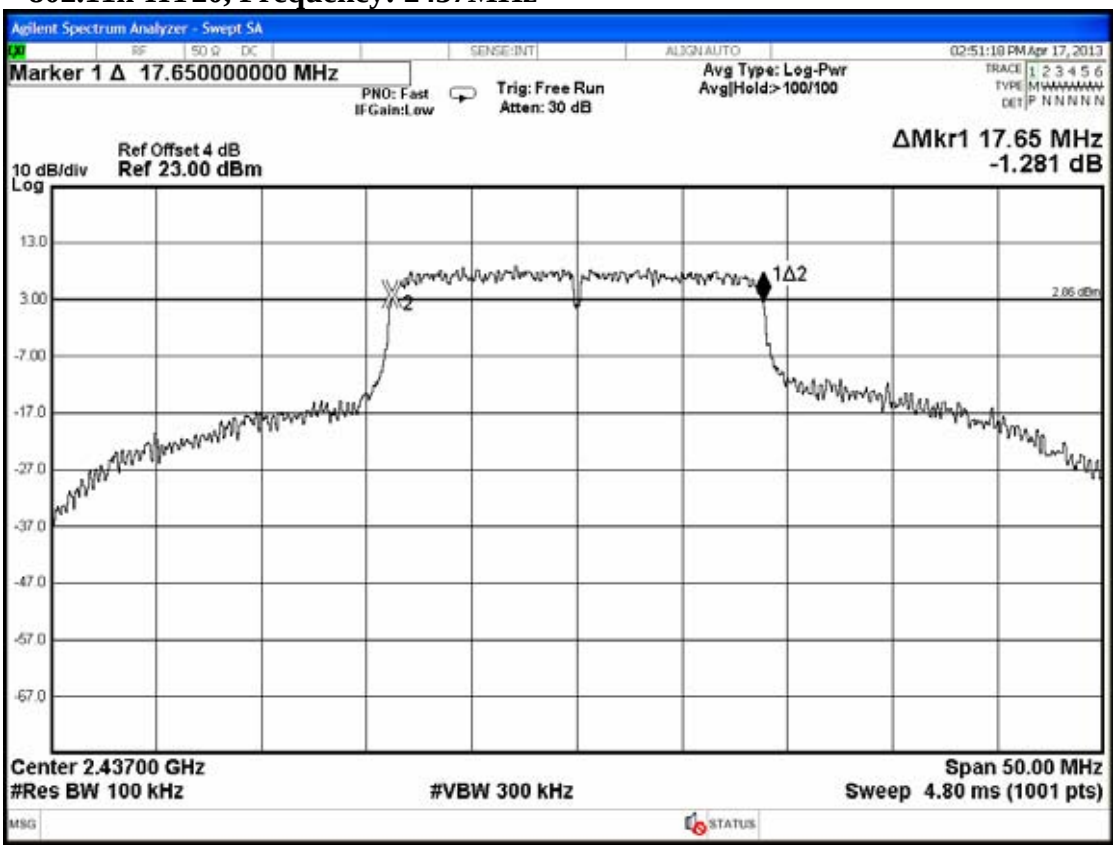
802.11g, Frequency: 2462MHz



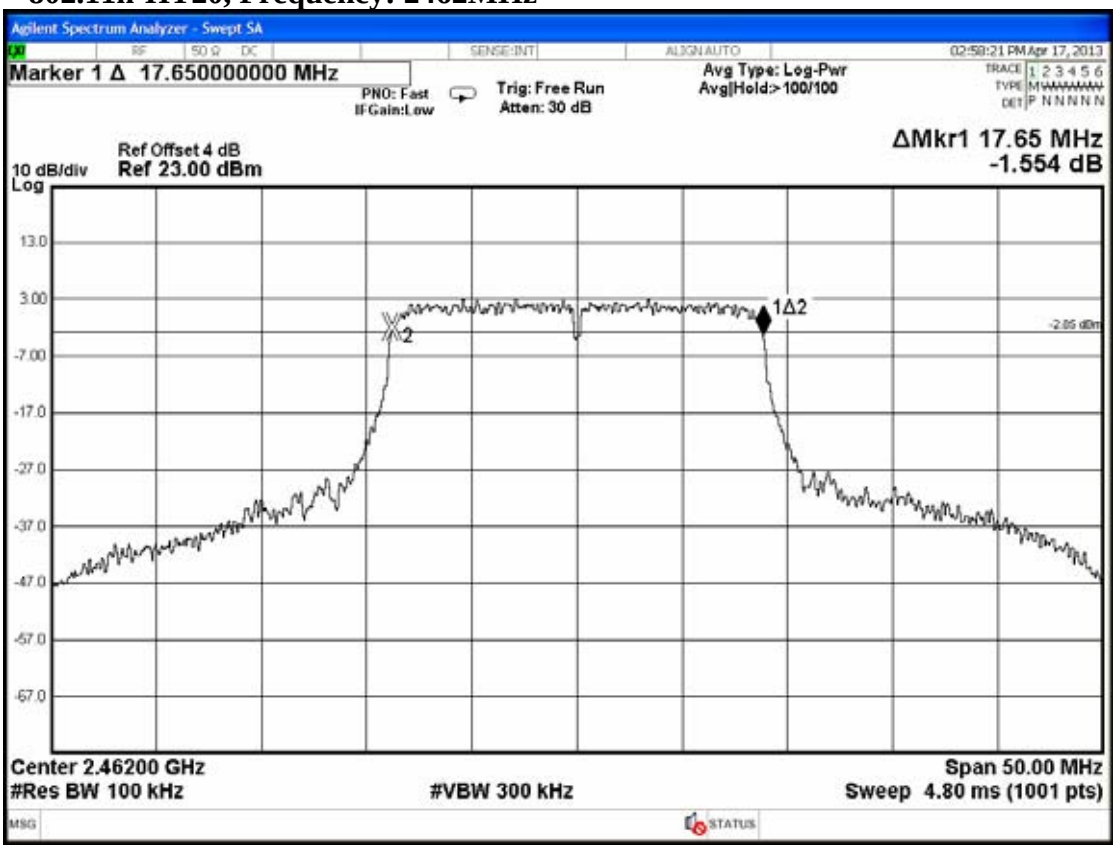
802.11n-HT20, Frequency: 2412MHz



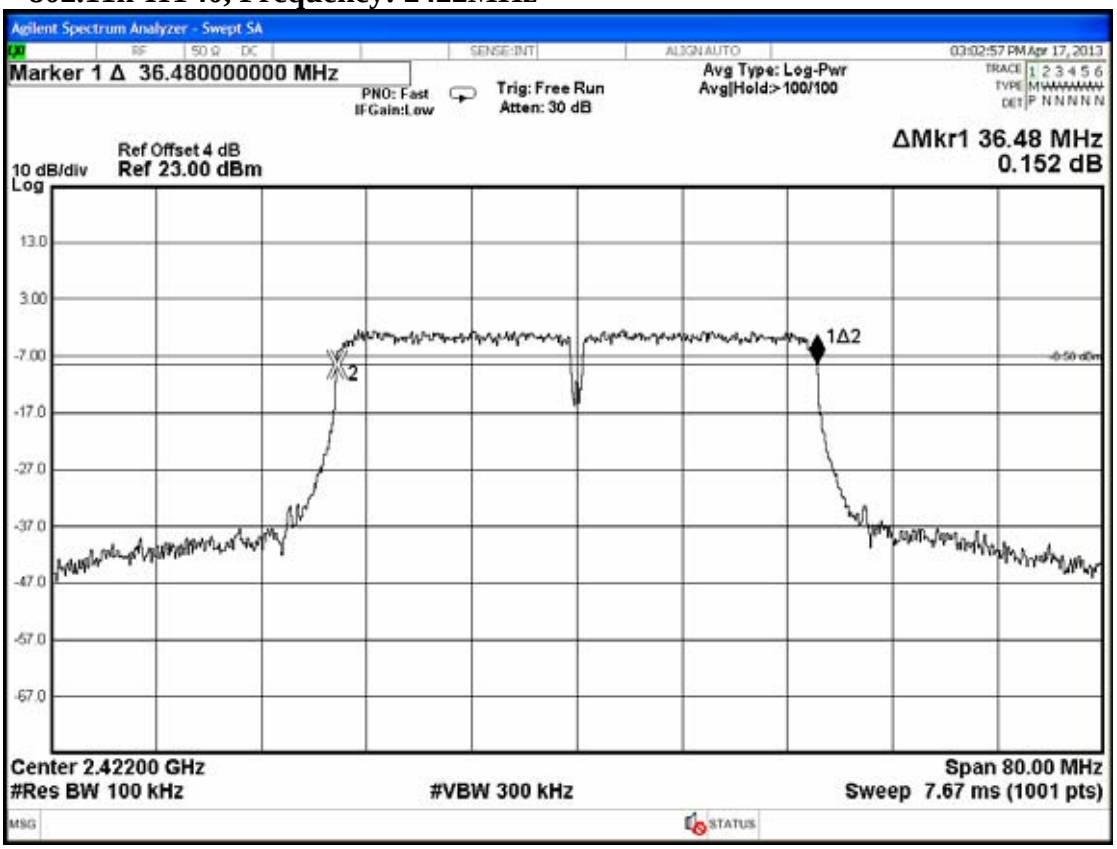
802.11n-HT20, Frequency: 2437MHz



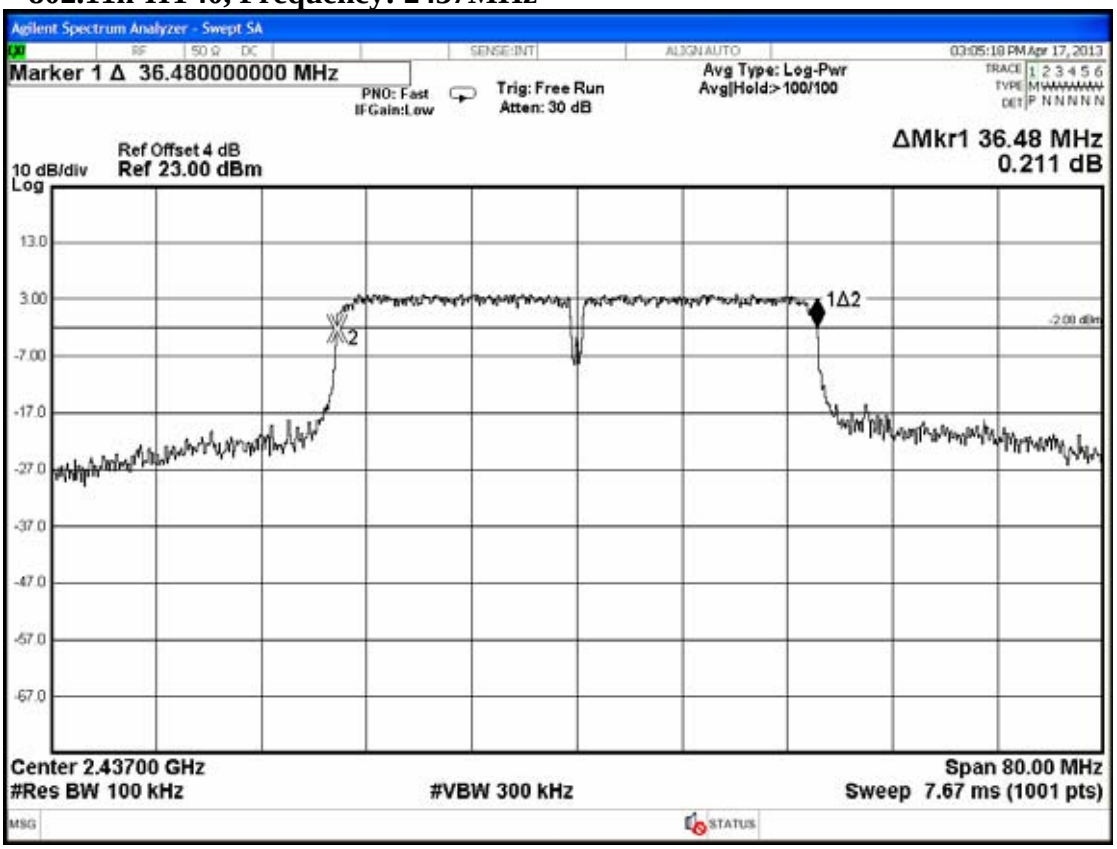
802.11n-HT20, Frequency: 2462MHz



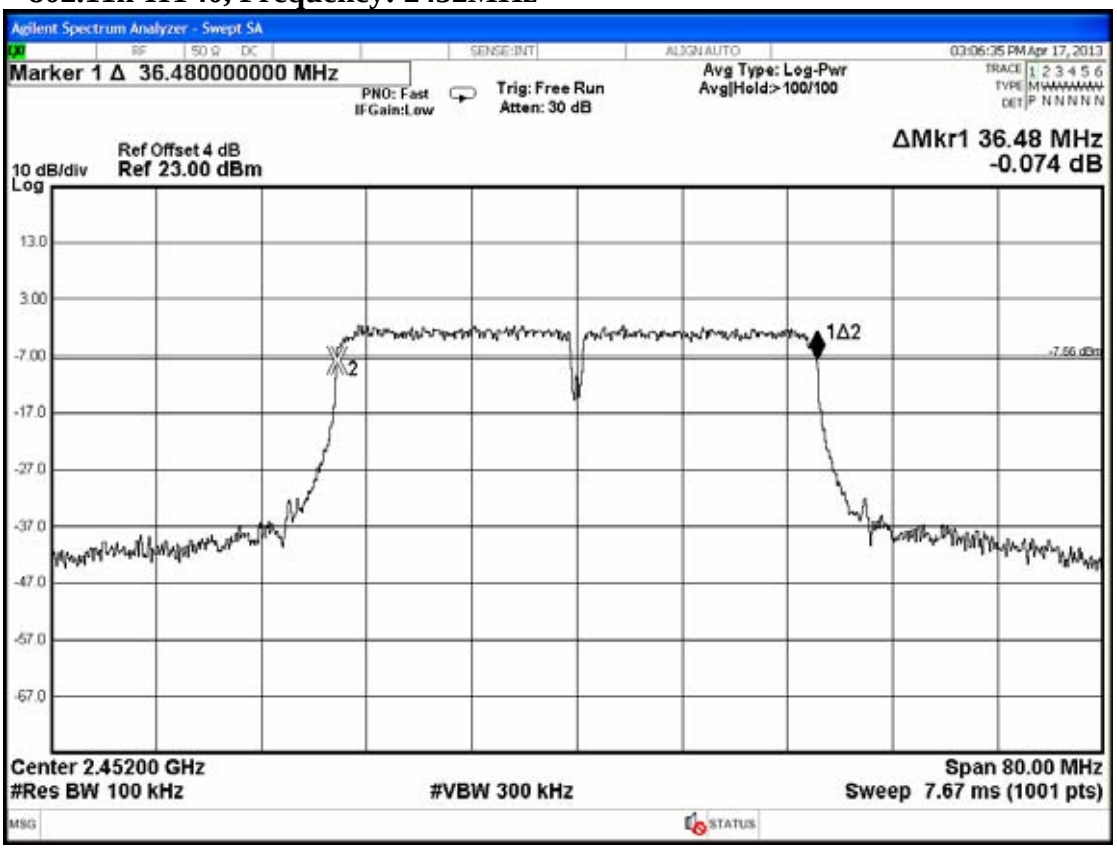
802.11n-HT40, Frequency: 2422MHz



802.11n-HT40, Frequency: 2437MHz



802.11n-HT40, Frequency: 2452MHz



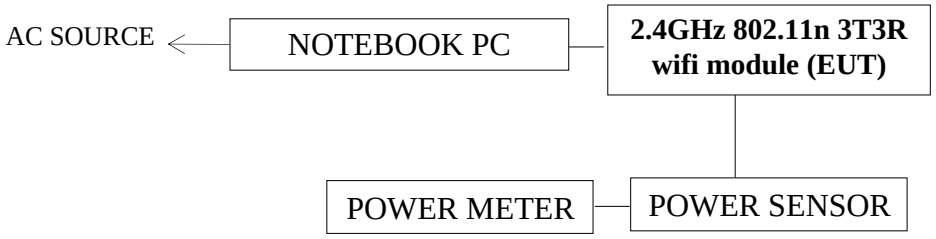
5. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

5.1. Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Power Meter	Anritsu	ML2495A	1145008	Oct. 30, 12’	Oct. 29, 13’
2.	Power Sensor	Anritsu	MA2411B	1126096	Oct. 30, 12’	Oct. 29, 13’

5.2. Block Diagram of Test Setup



5.3. Specification Limits (§15.247(b)-(3))

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

5.4. Operating Condition of EUT

The test program “RT5X7XQA” was used to enable the EUT to transmit data at different channel frequency individually.

5.5. Test Procedure

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

The measurement guideline was according to KDB 558074 D01 V03.

5.6. Test Results

PASSED. All the test results are listed below.

(Test Date : Apr. 17, 2013 Temperature : 25℃ Humidity : 55%)

5.6.1. For 802.11b/802.11g

Mode	Type of Network	Channel	Frequency	**Peak Output Power (dBm)**
1.	802.11b	CH 1	2412MHz	**20.43**
2.		CH 6	2437MHz	**18.70**
3.		CH 11	2462MHz	**19.25**
4.	802.11g	CH 1	2412MHz	**23.00**
5.		CH 6	2437MHz	**24.97**
6.		CH 11	2462MHz	**22.00**

[Limit: 1Watt. (30dBm)]

5.6.2. For 802.11n-HT20/802.11n-HT40

Mode	Type of Network	Channel	Frequency	**Peak Output Power (dBm)**		**Total Peak Output Power (dBm)**	Power Setting
				Ant.0	**Ant.1**		
1.	802.11n-HT20	CH 1	2412MHz	**20.5**	**20.3**	**23.4115**	11 13
2.		CH 6	2437MHz	**24.57**	**24.07**	**27.3375**	1C 1E
3.		CH 11	2462MHz	**23.27**	**22.29**	**25.8179**	14 16
4.	802.11n-HT40	CH 3	2422MHz	**21**	**20.5**	**23.7675**	0E 10
5.		CH 6	2437MHz	**24.7**	**24.58**	**27.6507**	1C 1E
6.		CH 9	2452MHz	**21**	**19.5**	**23.3247**	10 12

[Limit: 1Watt. (30dBm)]

6. EMISSION LIMITATIONS MEASUREMENT

Pursuant to KDB558074 D01 V03 that emission levels below limits specified in 15.209 would not be required.

7. BAND EDGES MEASUREMENT

7.1. Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	N9030A-544	US51350140	Oct. 17, 12’	Oct. 16, 13’

7.2. Block Diagram of Test Setup

The same as section.4.2.

7.3. Specification Limits [§15.247(c)]

7.3.1.The highest level should be at least 20 dB below of reference level

7.4. Operating Condition of EUT

The test program “RT5X7XQA” was used to enable the EUT to transmit data at different channel frequency individually.

7.5. Test Procedure

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

The measurement guideline was according to KDB 558074 D01 V03.

Pursuant to KDB 662911 D01, we performed conducted tests for both antenna chains and submit test data measured on ANT 0 as worse performance.

7.6. Test Results

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

Pursuant to KDB 662911, the test results of 802.11n-H20/H40 have been included 3 dB is calculated from 10log(N), where N is the number of outputs.

(Test Date : Apr. 17, 2013 Temperature : 25℃ Humidity : 55%)

802.11b

Below Band edge: The highest emission level is -41.015dBm on 2.39990GHz。
Upper Band edge : The highest emission level is -52.253dBm on 2.48360GHz。

802.11g

Below Band edge: The highest emission level is -30.823dBm on 2.39990GHz。
Upper Band edge : The highest emission level is -50.521dBm on 2.48360GHz。

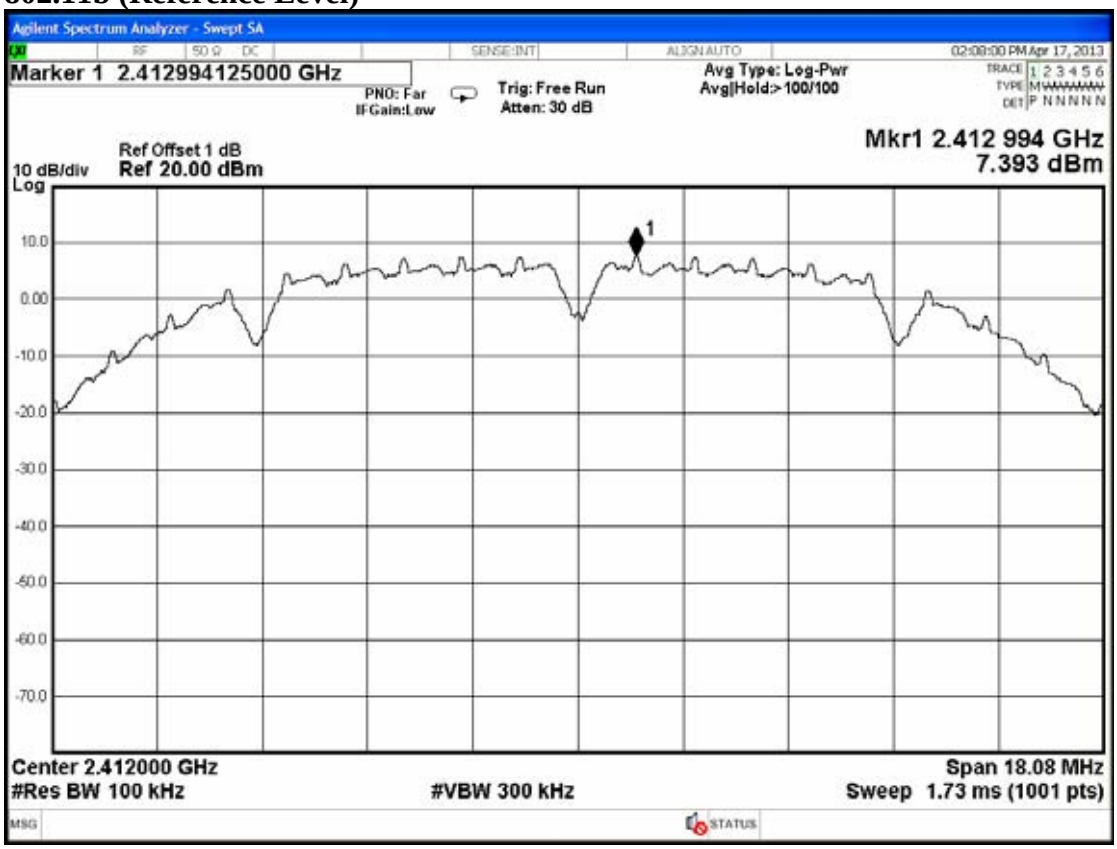
802.11n-HT20

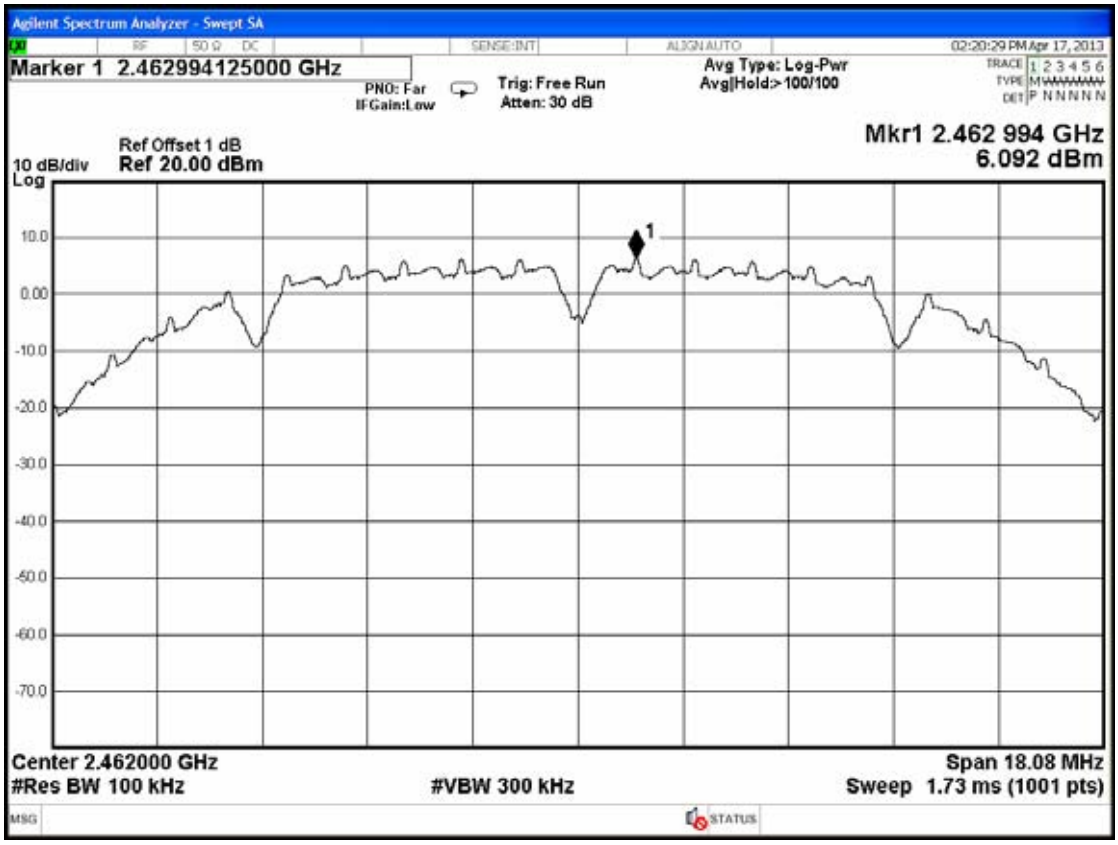
Below Band edge: The highest emission level is -32.583dBm on 2.39990GHz。
Upper Band edge : The highest emission level is -38.760dBm on 2.48360GHz。

802.11n-HT40

Below Band edge: The highest emission level is -37.416dBm on 2.39990GHz。
Upper Band edge : The highest emission level is -39.608dBm on 2.48360GHz。

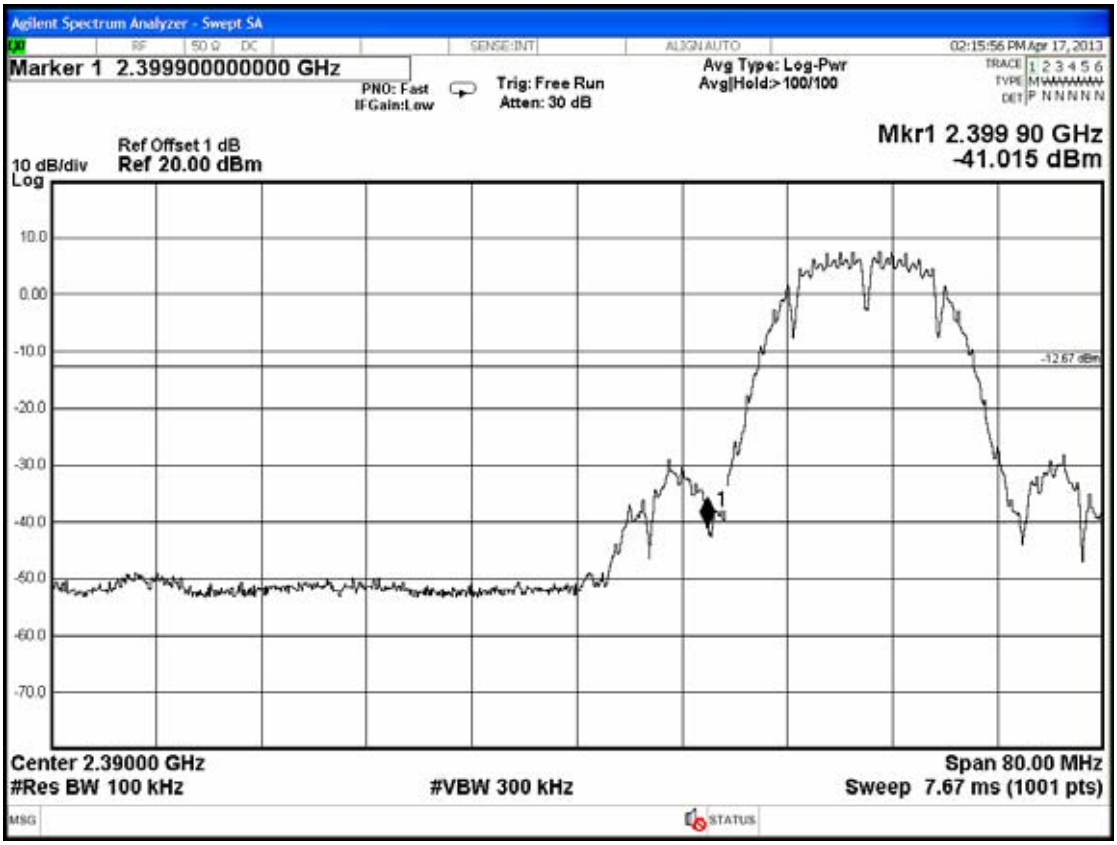
802.11b (Reference Level)





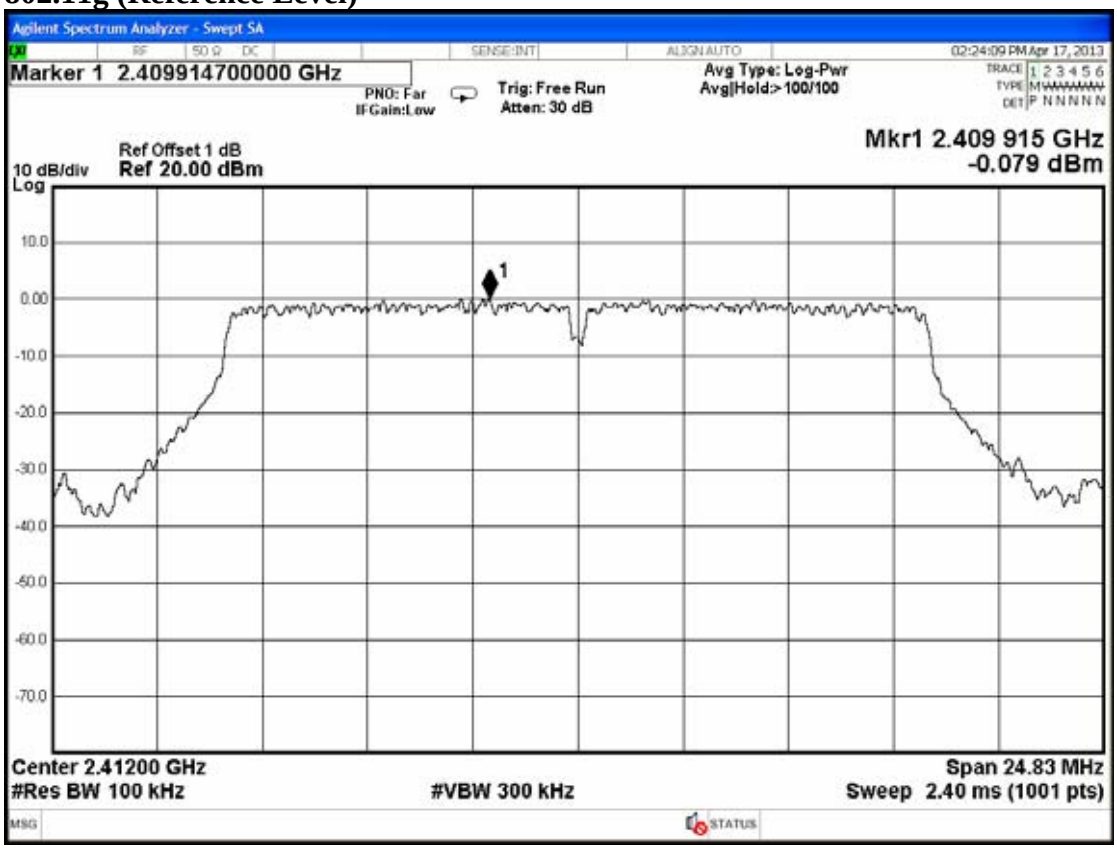
802.11b (Band edge)

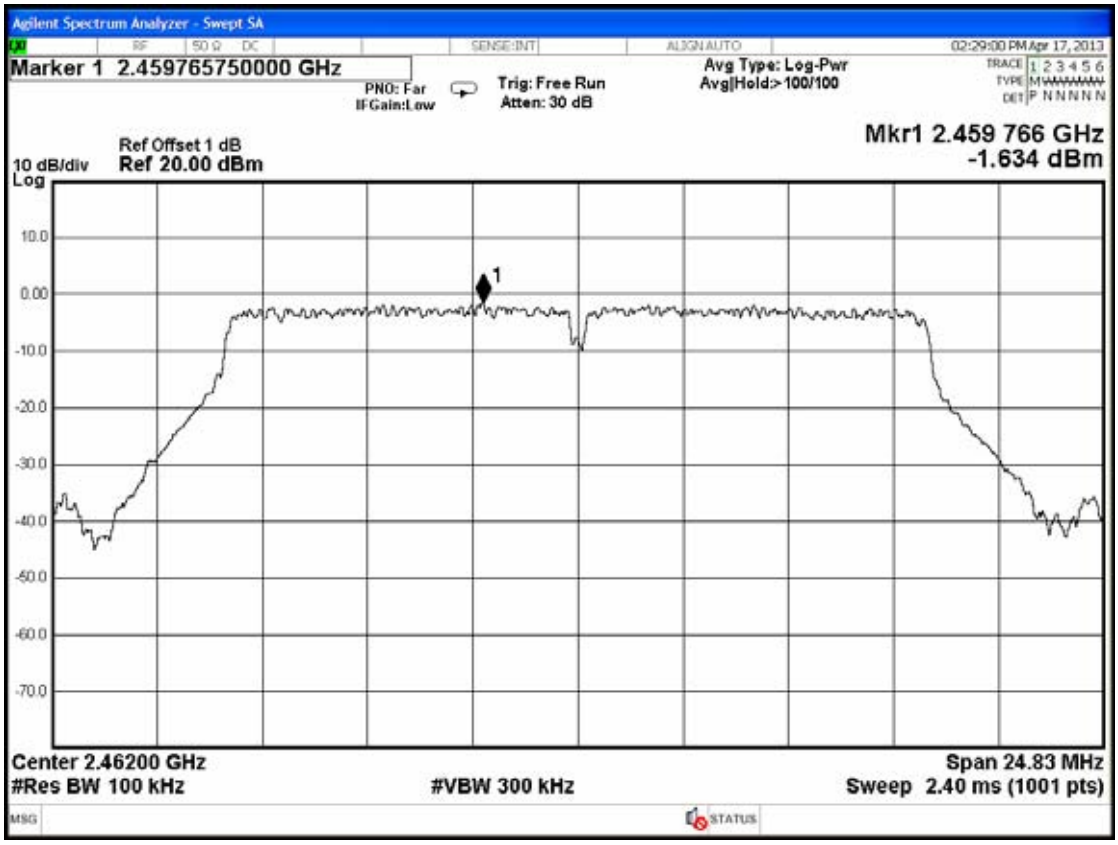
Below Band edge



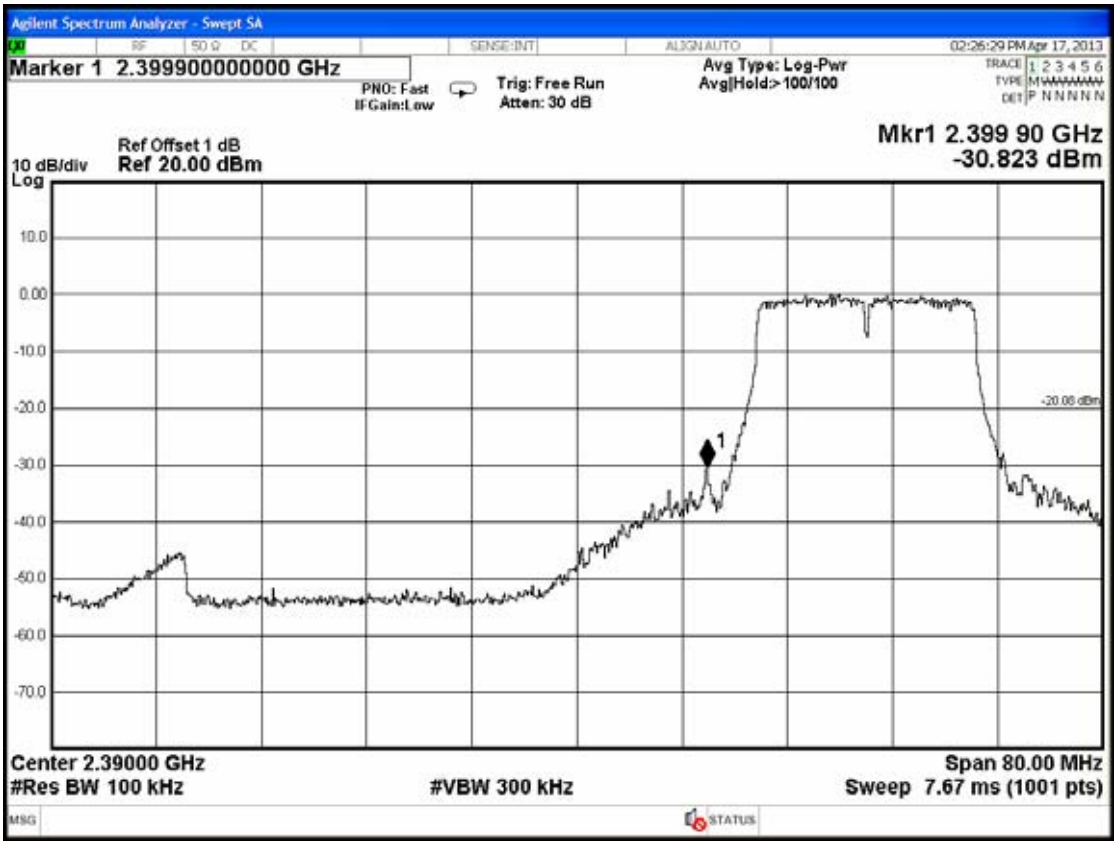
Upper Band edge

802.11g (Reference Level)

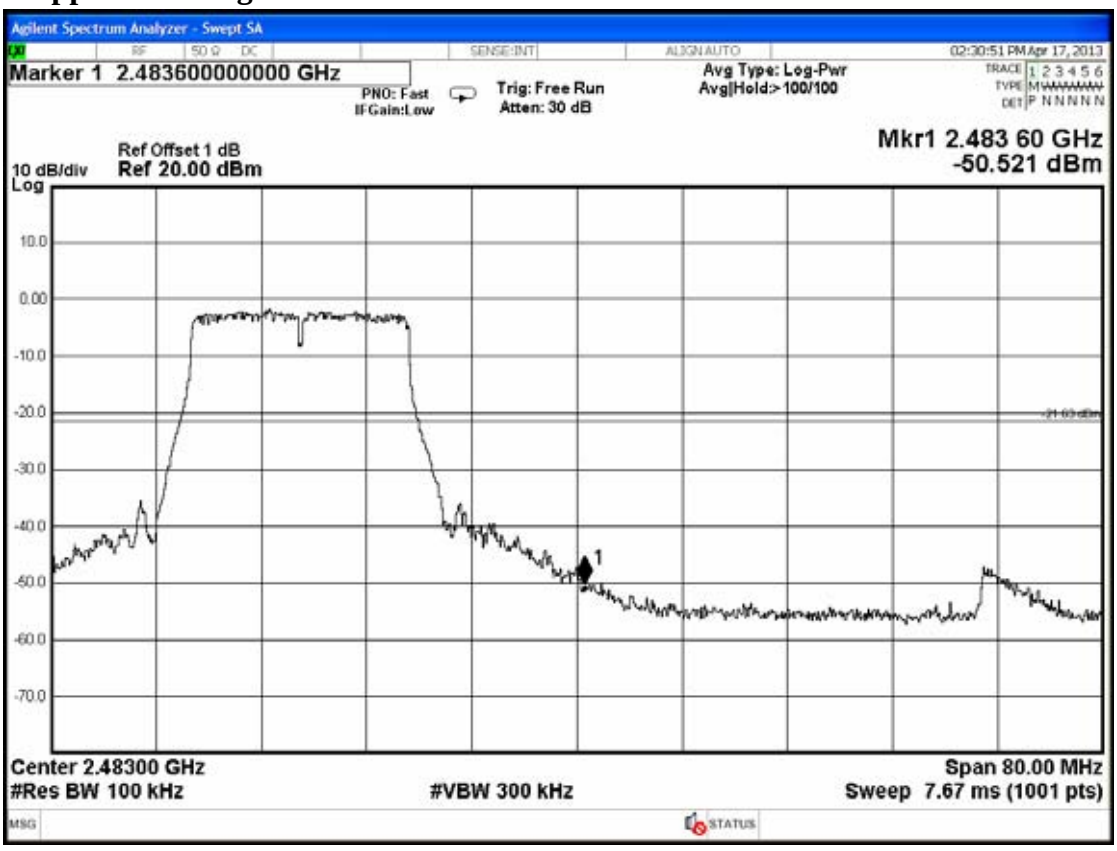




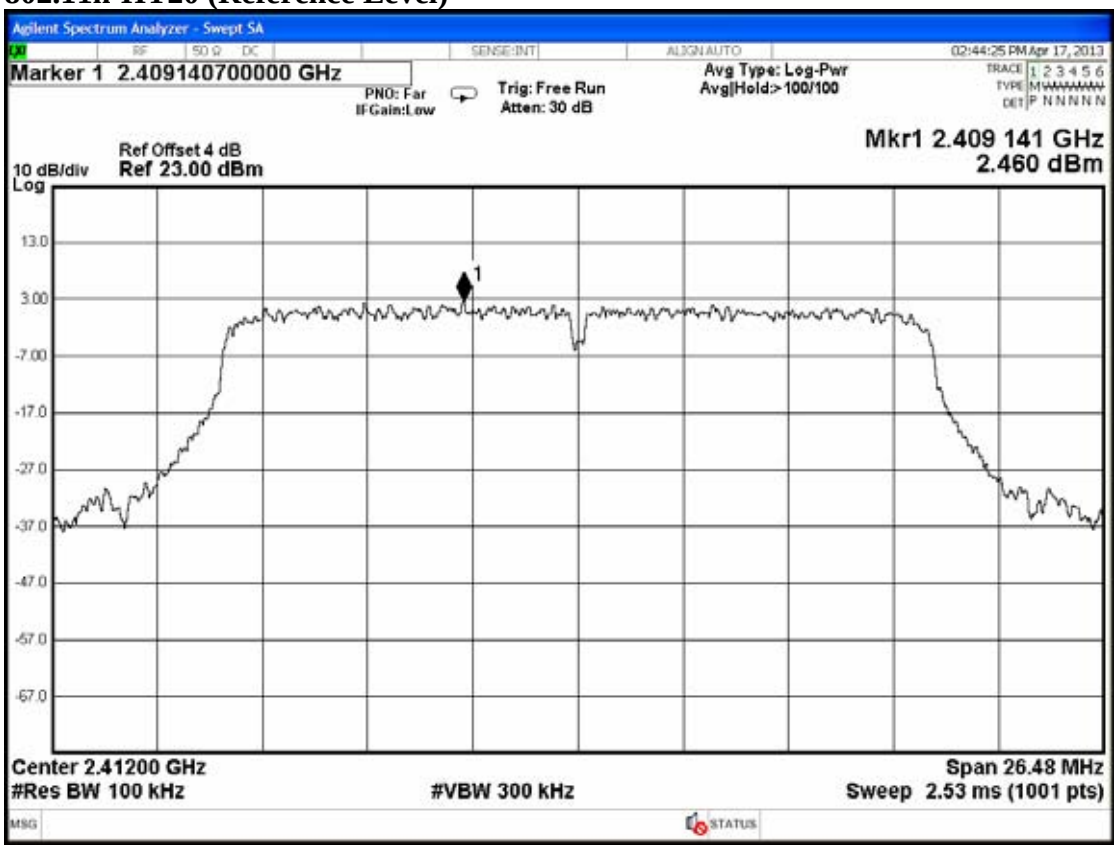
802.11g (Band edge)
Below Band edge

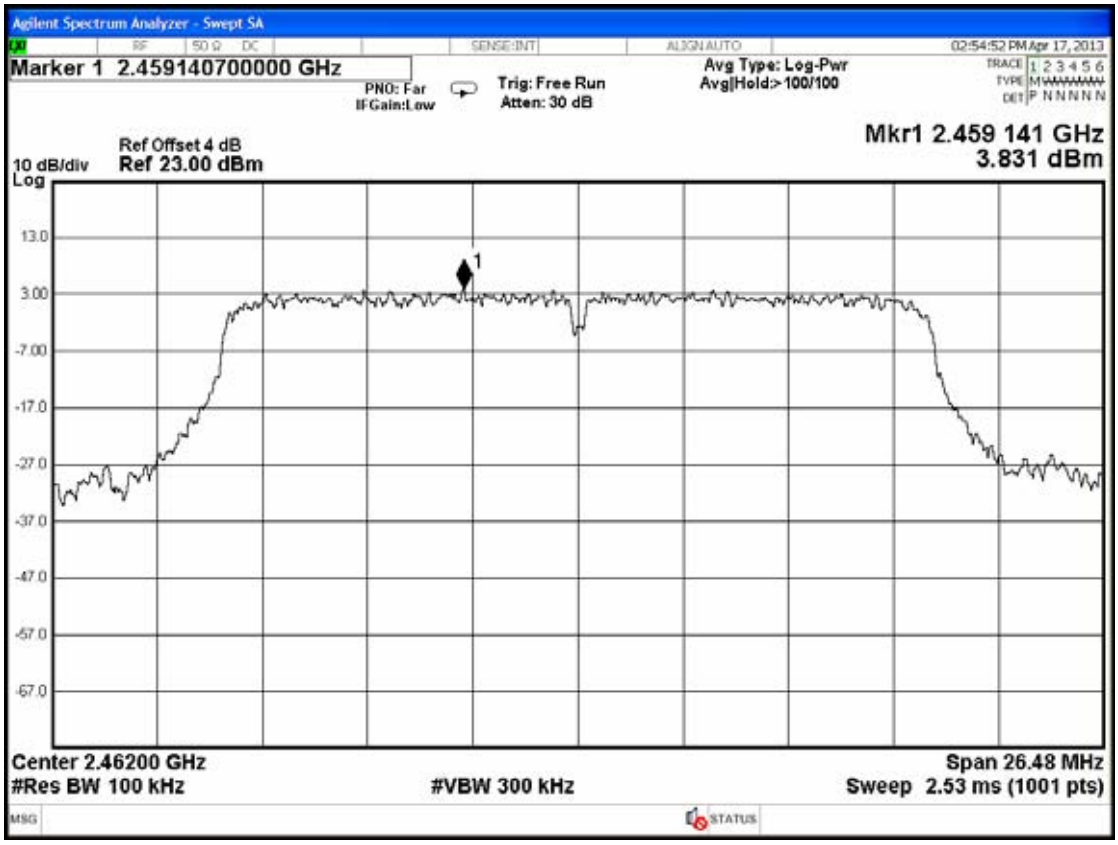


Upper Band edge

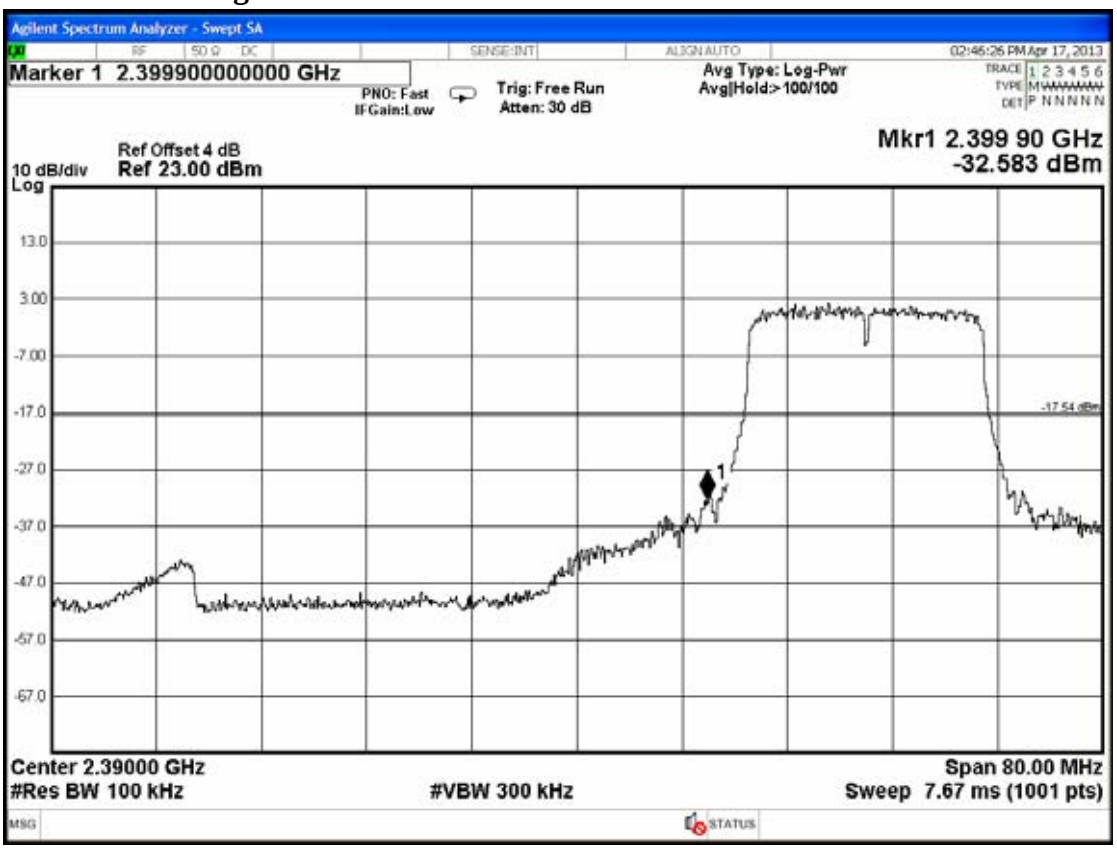


802.11n-HT20 (Reference Level)

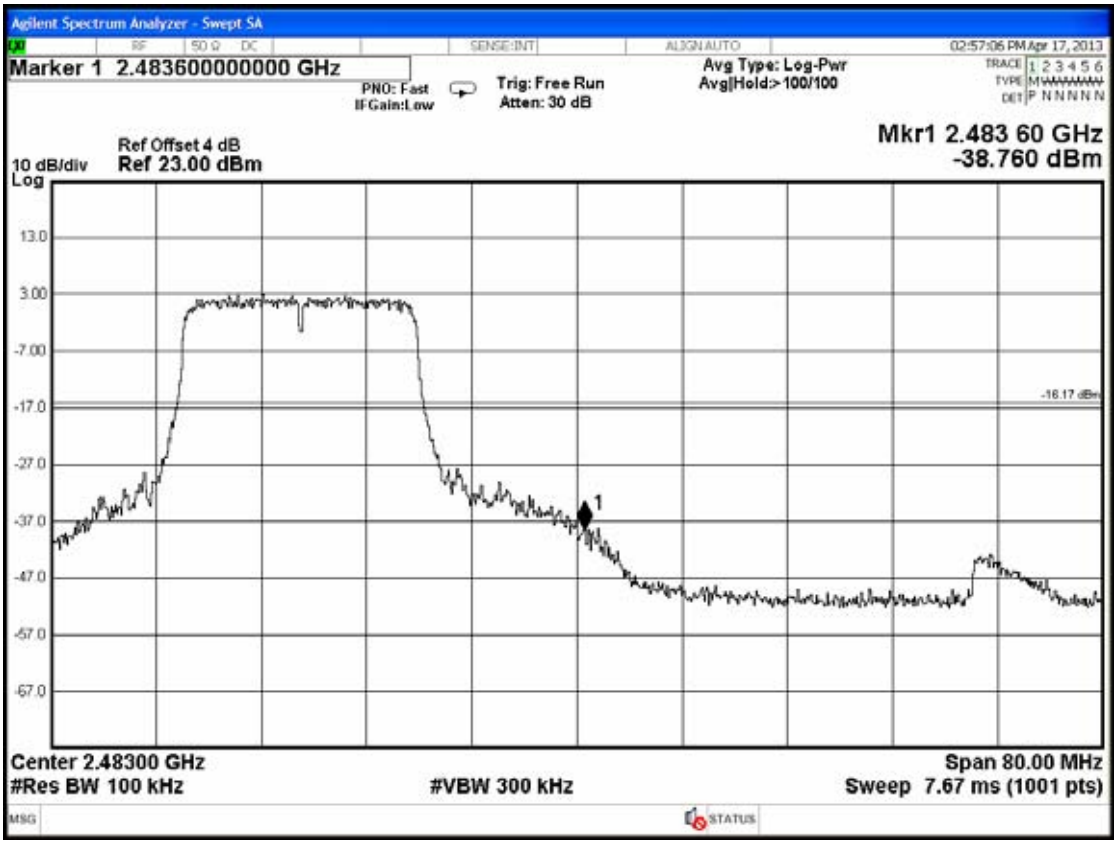




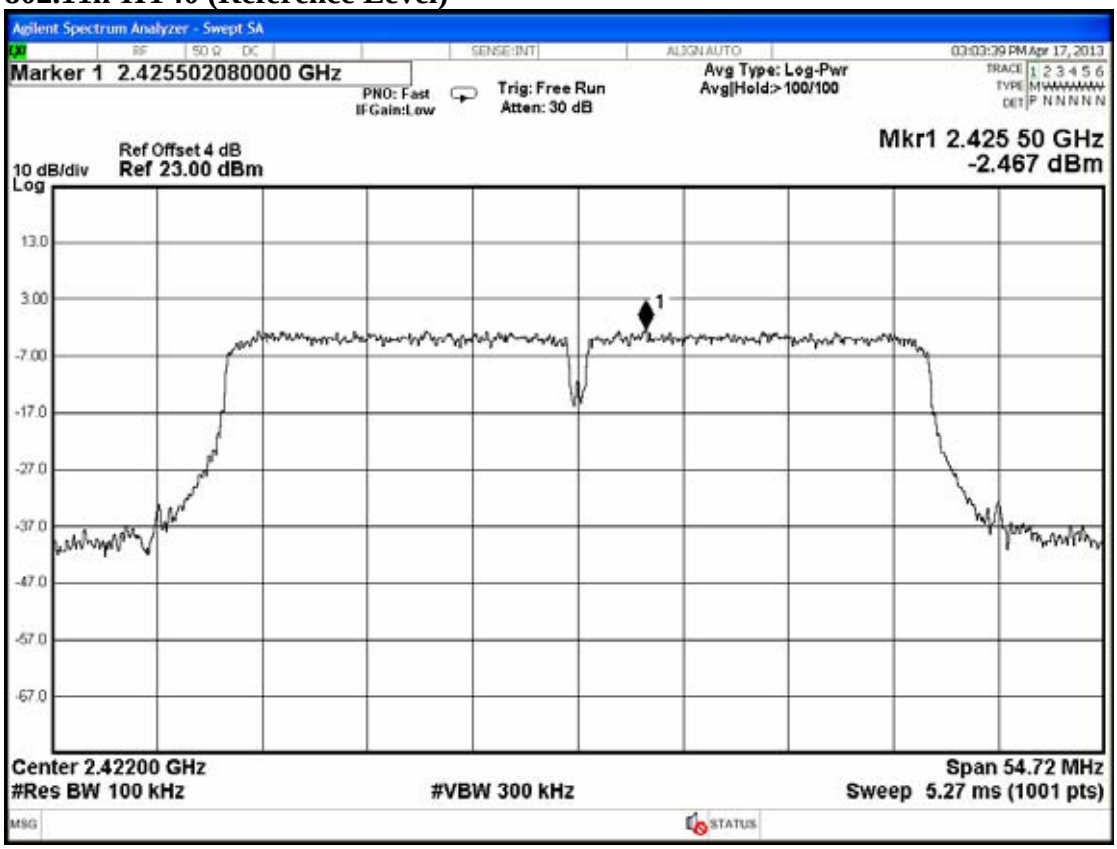
802.11n-HT20 (Band edge)
Below Band edge

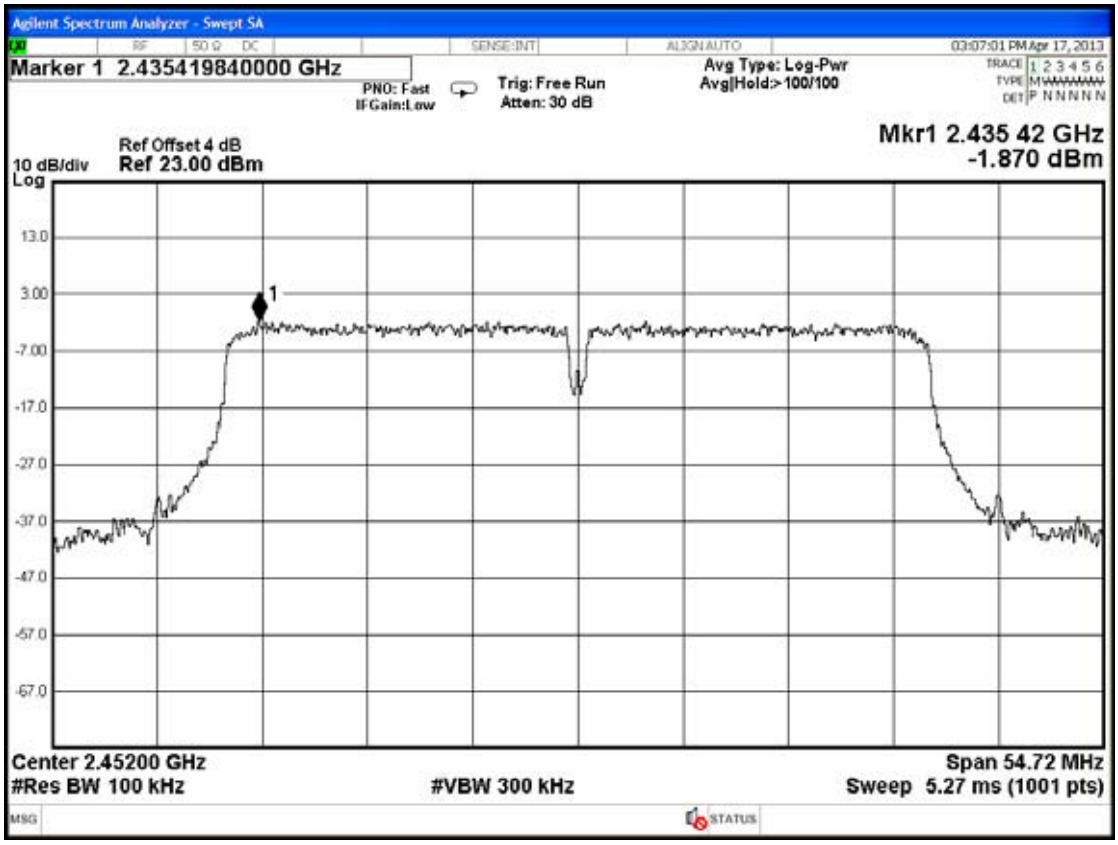


Upper Band edge

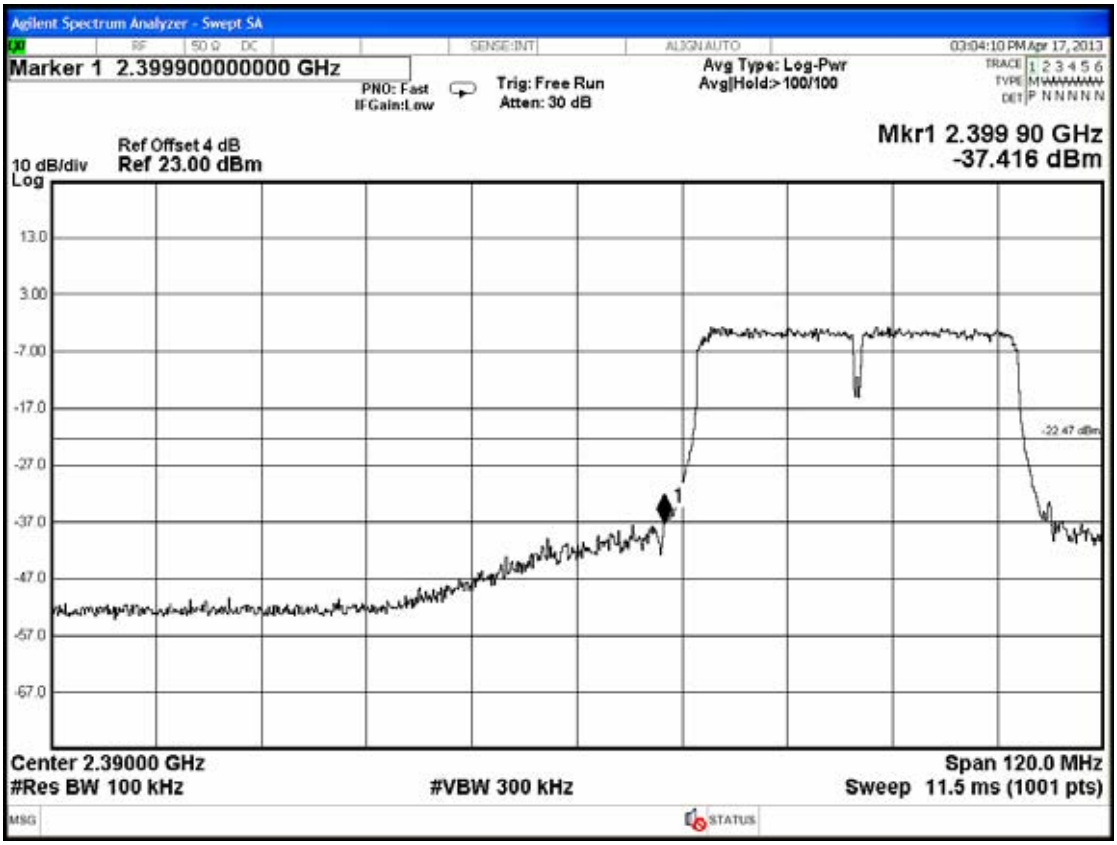


802.11n-HT40 (Reference Level)

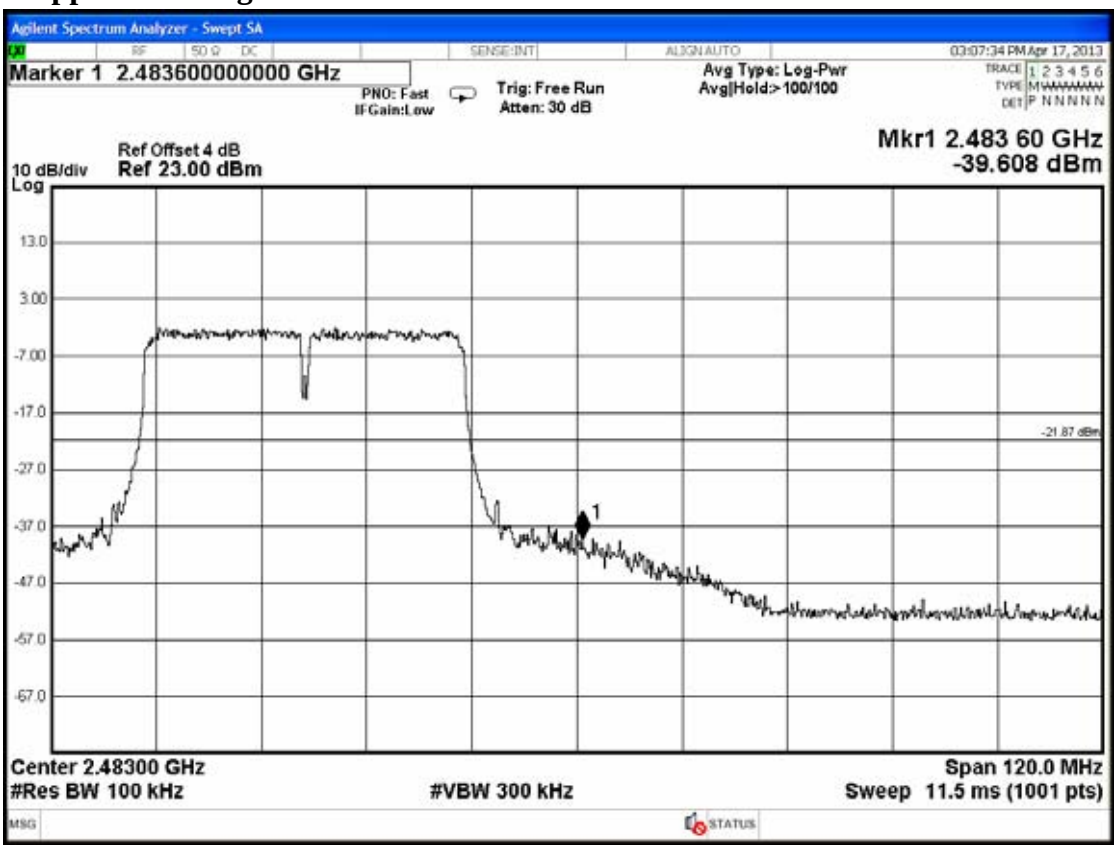




802.11n-HT40 (Band edge)
Below Band edge



Upper Band edge



8. POWER SPECTRAL DENSITY MEASUREMENT

8.1. Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	N9030A-544	US51350140	Oct. 17, 12’	Oct. 16, 13’

8.2. Block Diagram of Test Setup

The same as section.4.2.

8.3. 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.

8.4. Operating Condition of EUT

The test program “RT5X7XQA” was used to enable the EUT to transmit data at different channel frequency individually.

8.5. 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.

Pursuant to KDB 662911 D01, we performed conducted tests for both antenna chains and submit test data measured on ANT 0 as worse performance.

8.6. Test Results

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

Pursuant to KDB 662911, the test results of 802.11n-H20/H40 have been included 3 dB is calculated from 10log(N), where N is the number of outputs.

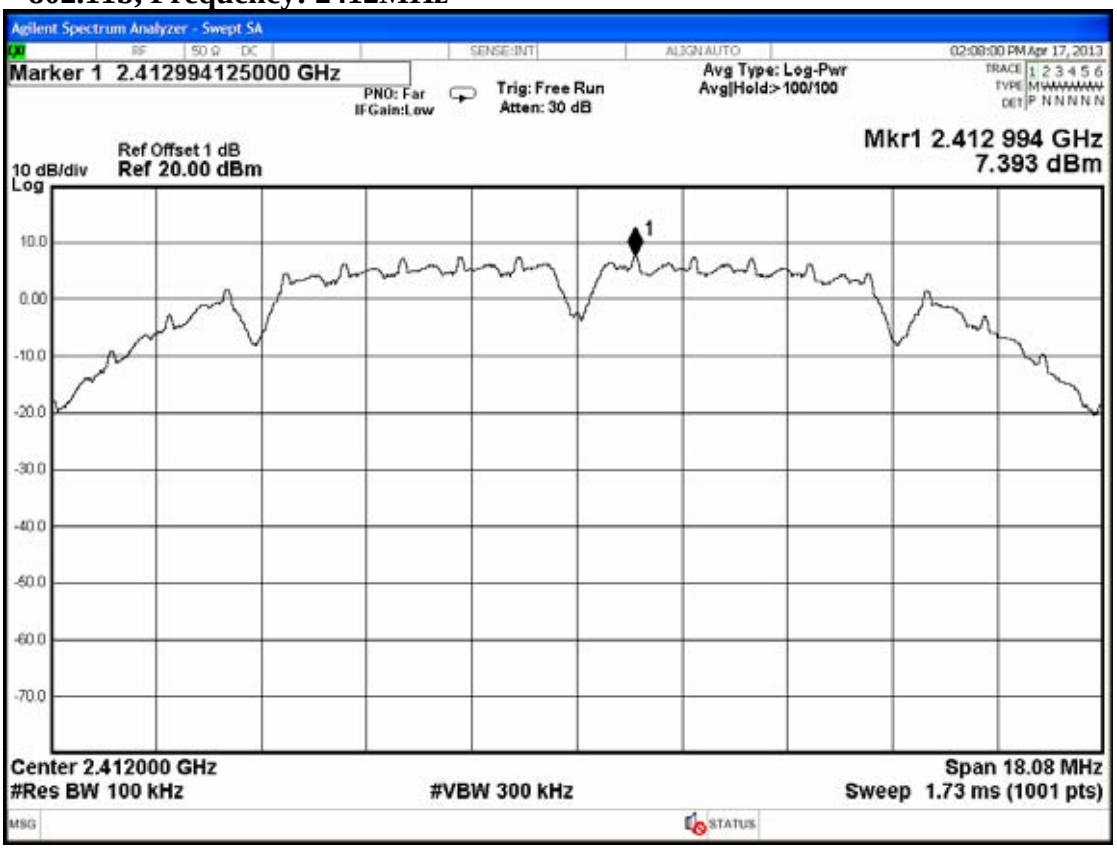
(Test Date : Apr. 17, 2013 Temperature : 25℃ Humidity : 55%)

8.6.1. For 802.11b/802.11g/802.11n-HT20/802.11n-HT40

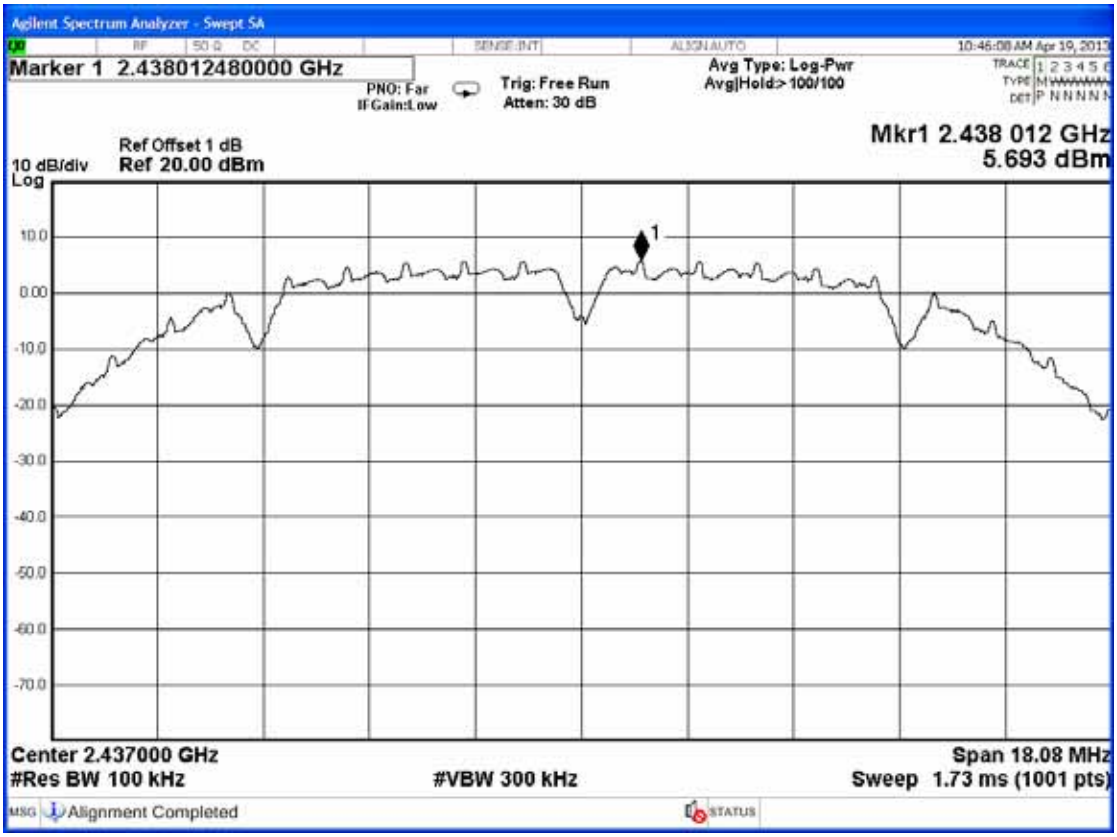
Mode	Type of Network	Channel	Frequency	**Power Spectral Density (dBm)**
1.	802.11b	CH 1	2412MHz	**7.393**
2.		CH 6	2437MHz	**5.693**
3.		CH 11	2462MHz	**6.092**
4.	802.11g	CH 1	2412MHz	**-0.079**
5.		CH 6	2437MHz	**7.711**
6.		CH 11	2462MHz	**-1.634**
7.	802.11n-HT20	CH 1	2412MHz	**2.460**
8.		CH 6	2437MHz	**7.777**
9.		CH 11	2462MHz	**3.381**
10.	802.11n-HT40	CH 3	2422MHz	**-2.467**
11.		CH 6	2437MHz	**3.881**
12.		CH 9	2452MHz	**-1.870**

[Limit: 8dBm]

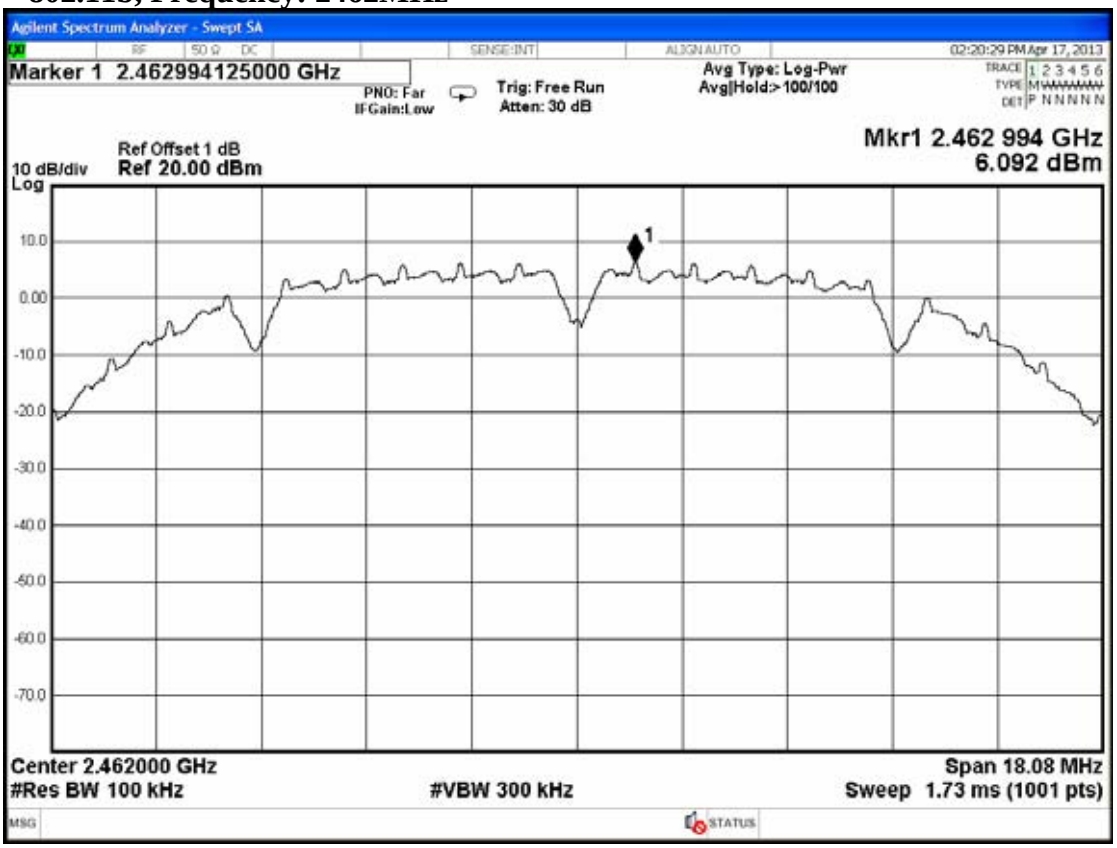
802.11b, Frequency: 2412MHz



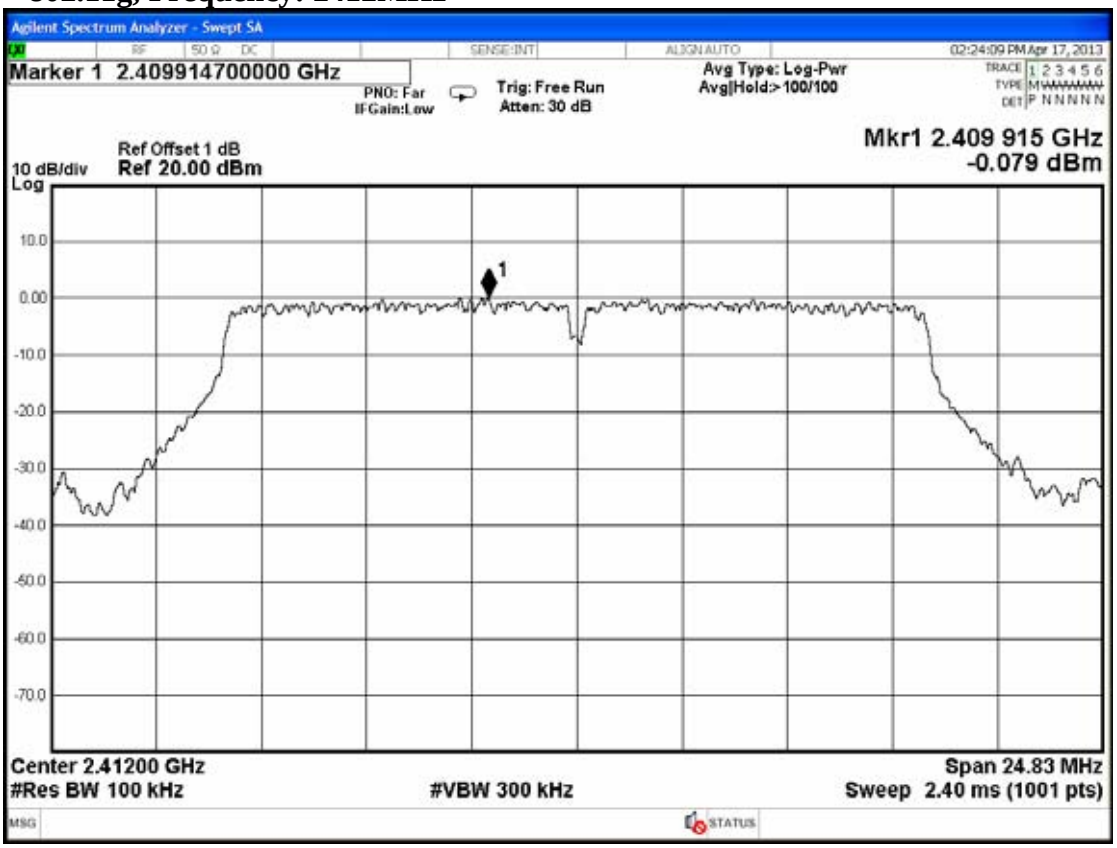
802.11b, Frequency: 2437MHz



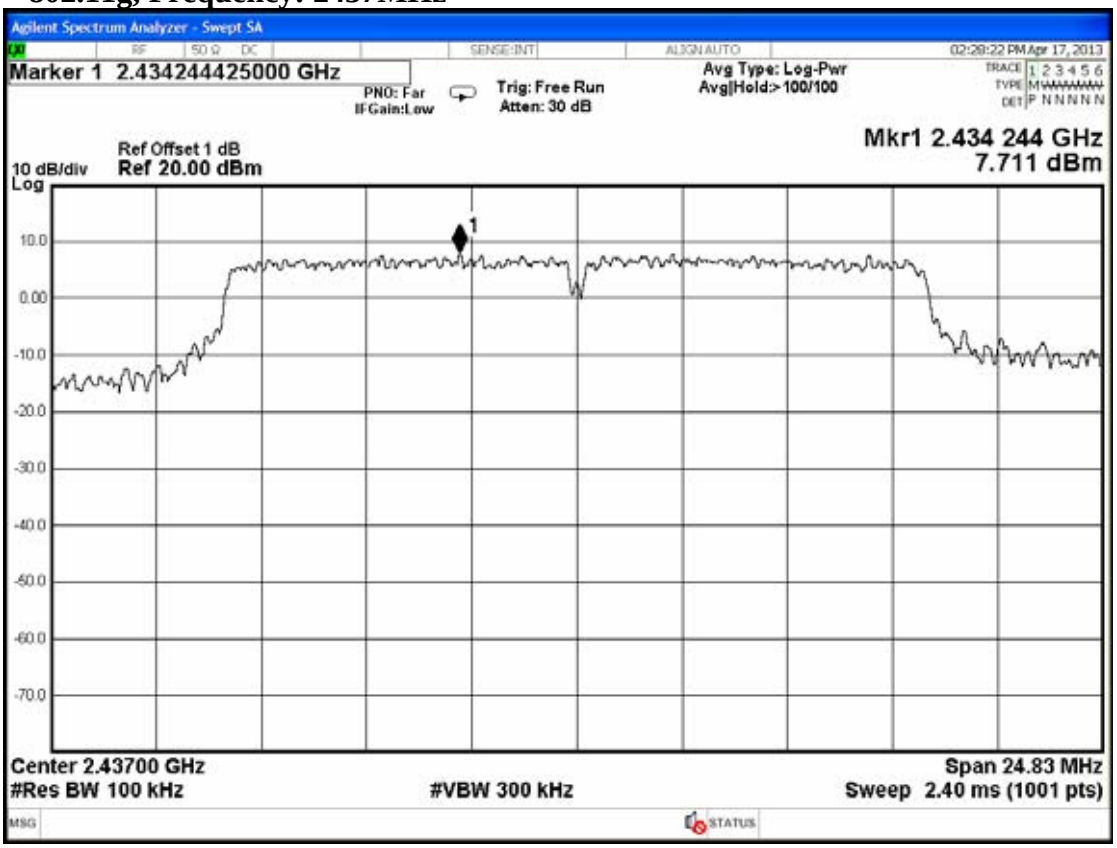
802.11b, Frequency: 2462MHz



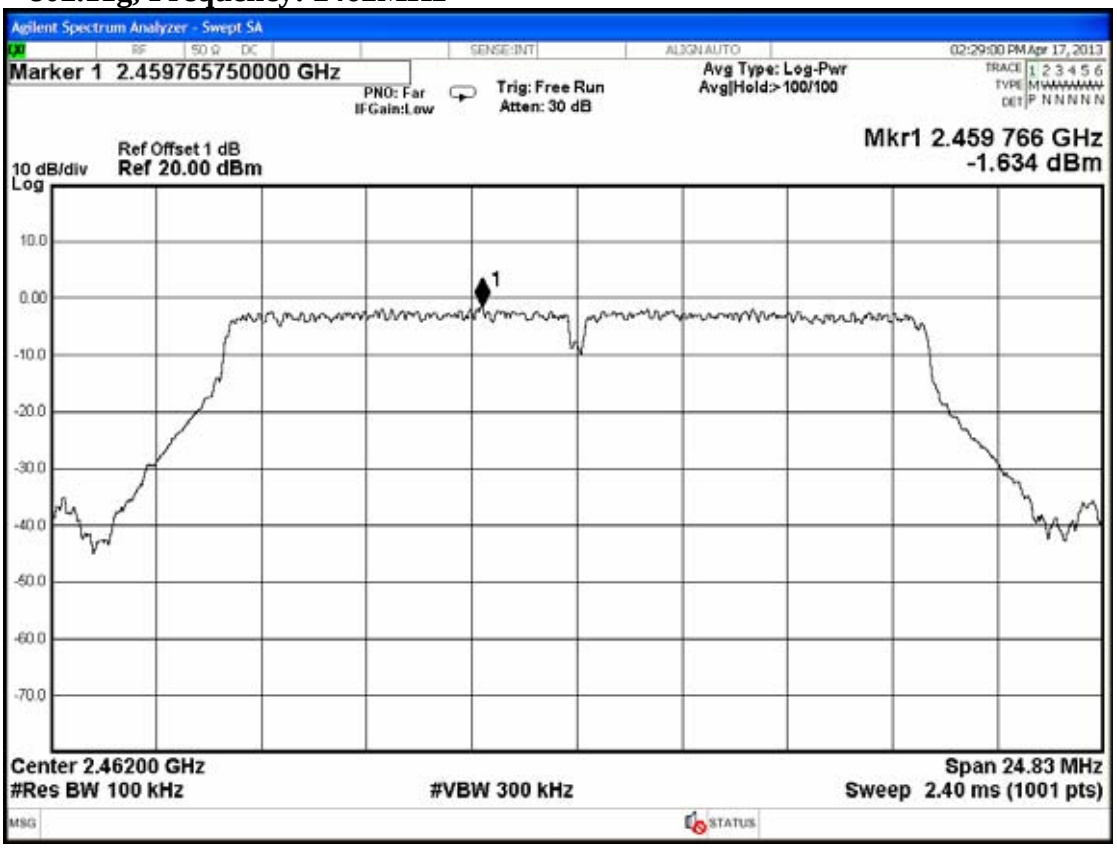
802.11g, Frequency: 2412MHz



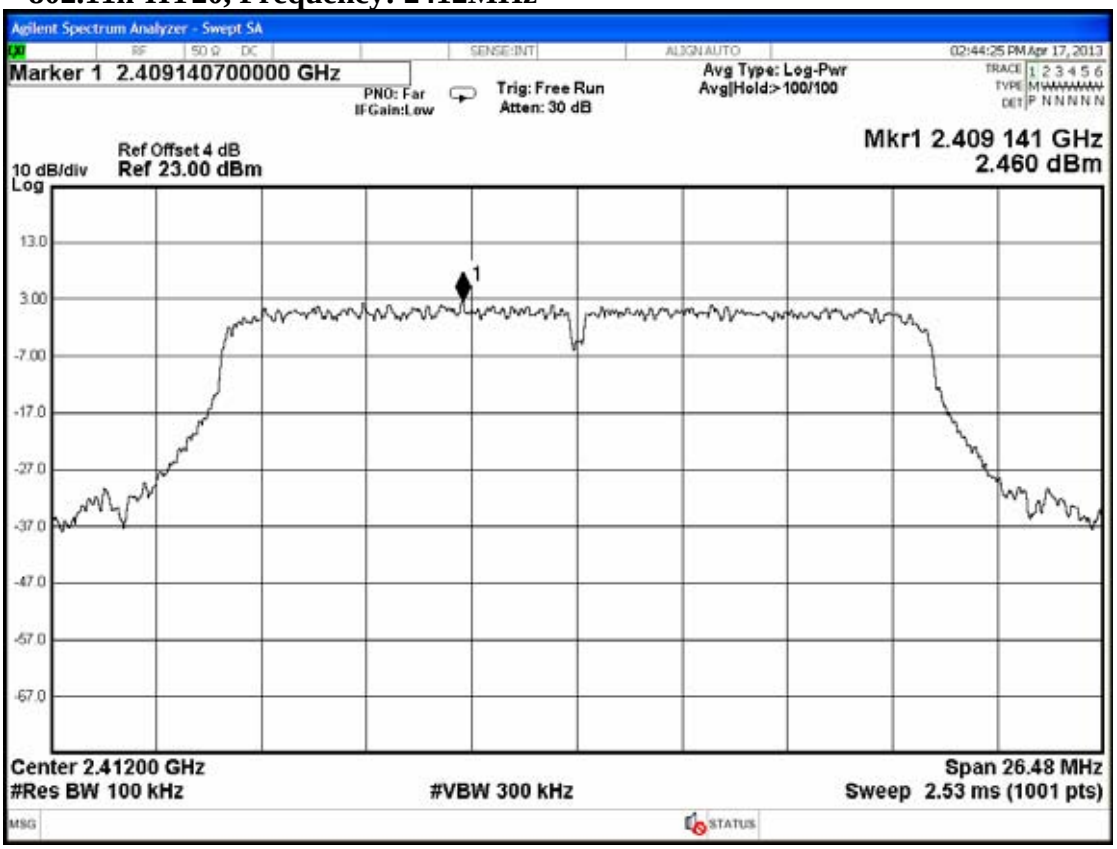
802.11g, Frequency: 2437MHz



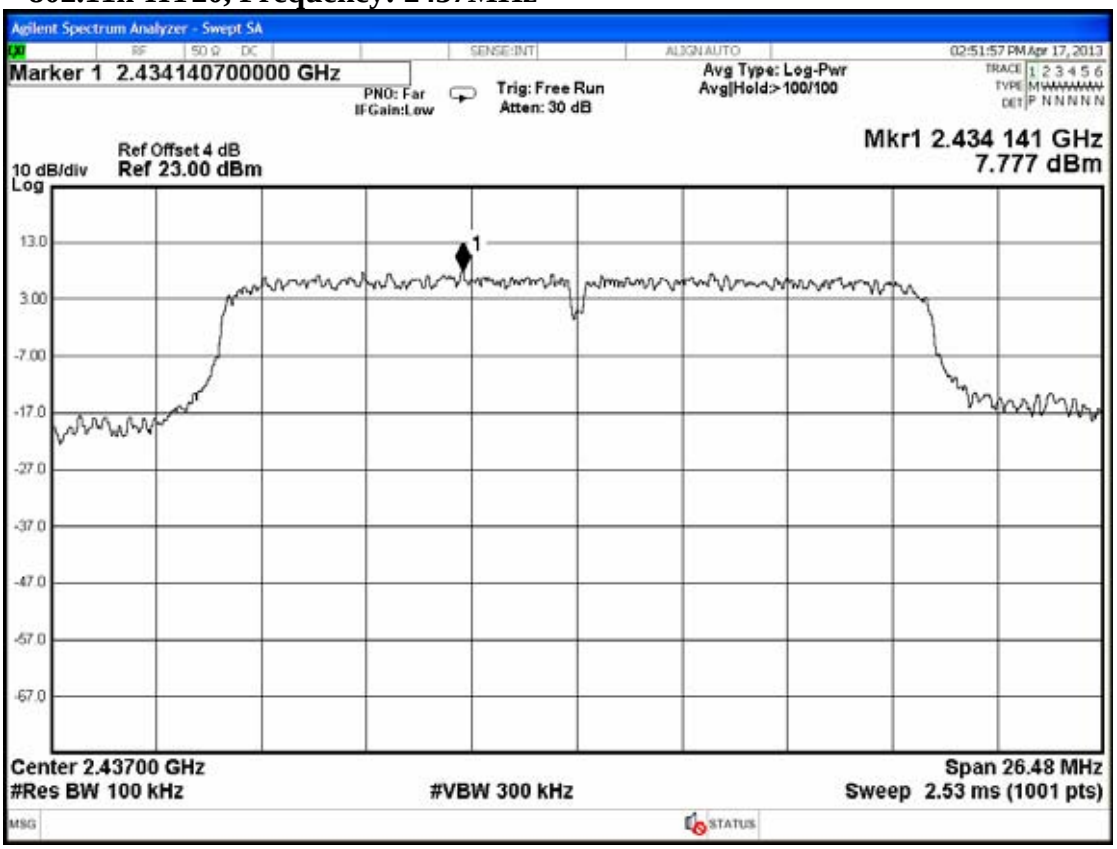
802.11g, Frequency: 2462MHz



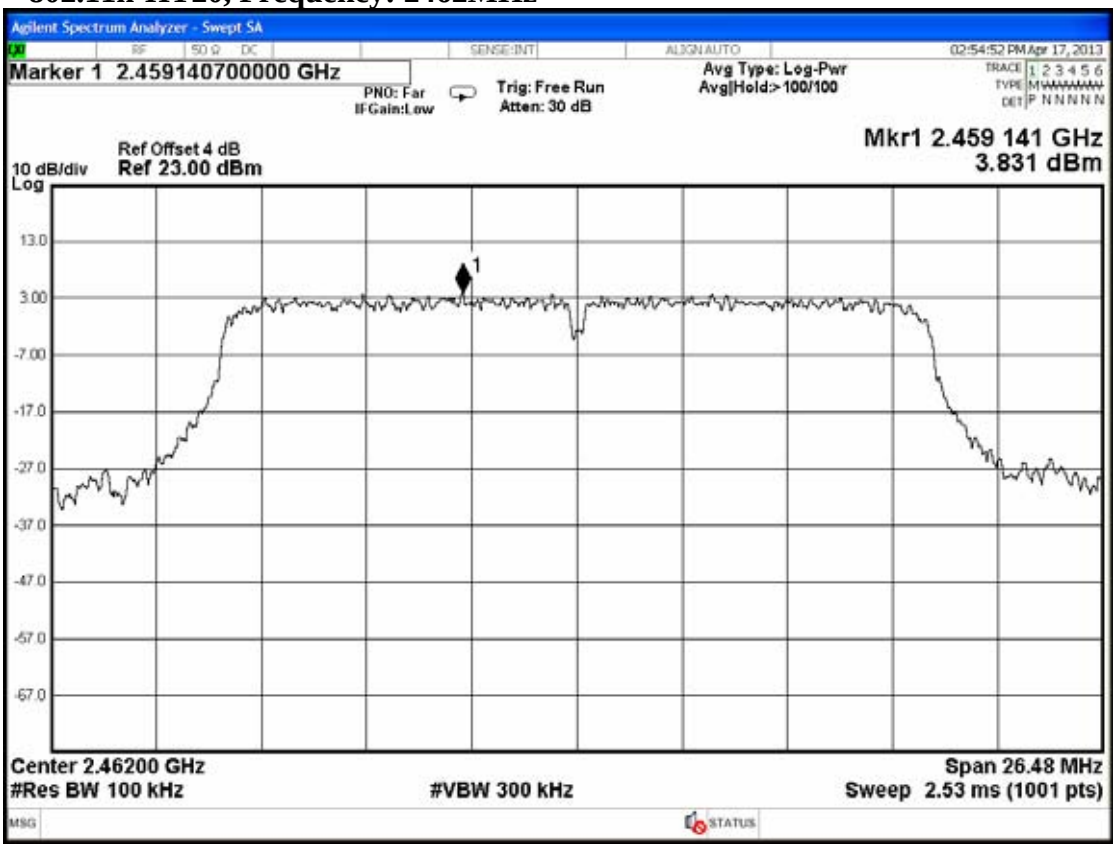
802.11n-HT20, Frequency: 2412MHz



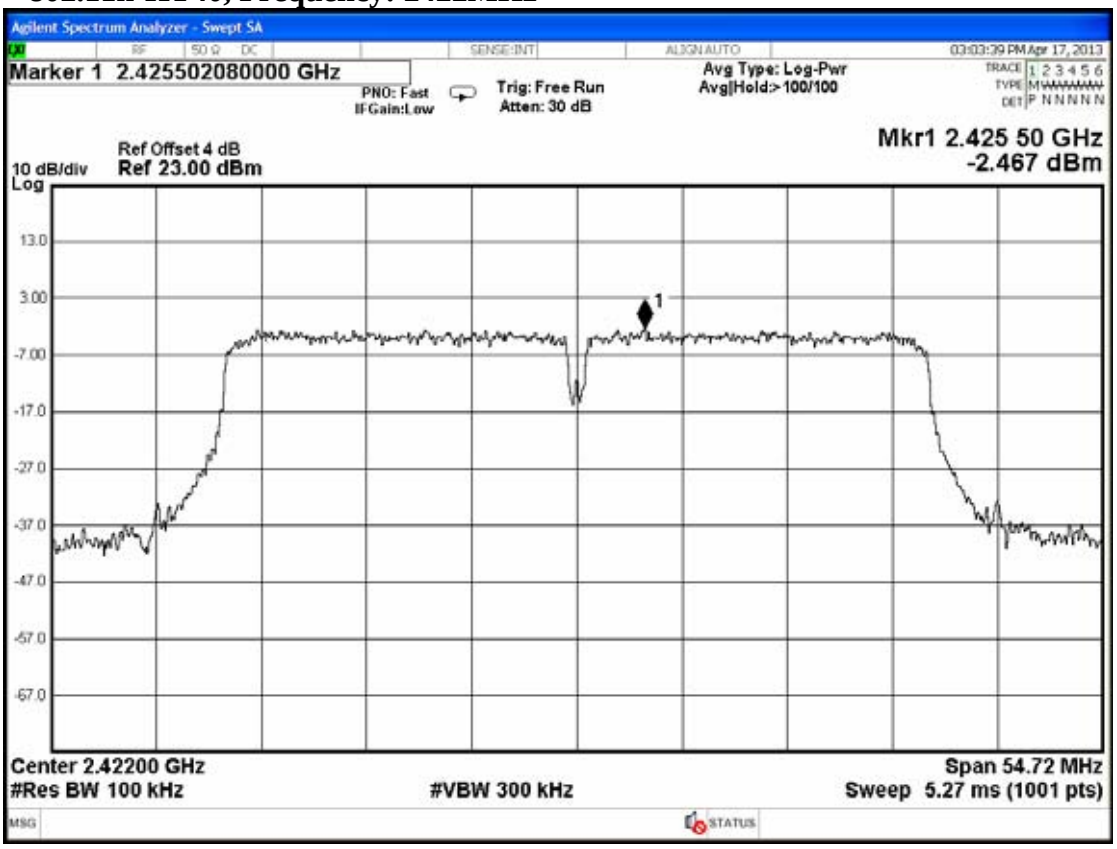
802.11n-HT20, Frequency: 2437MHz



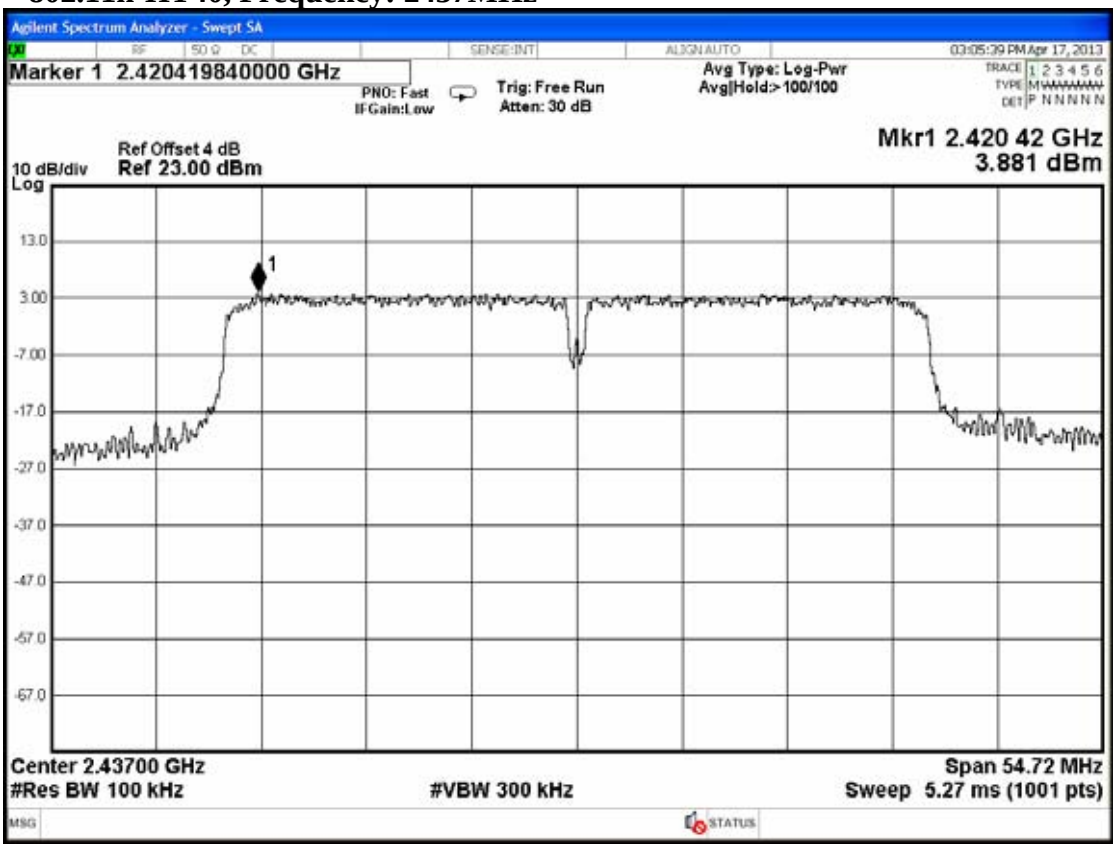
802.11n-HT20, Frequency: 2462MHz



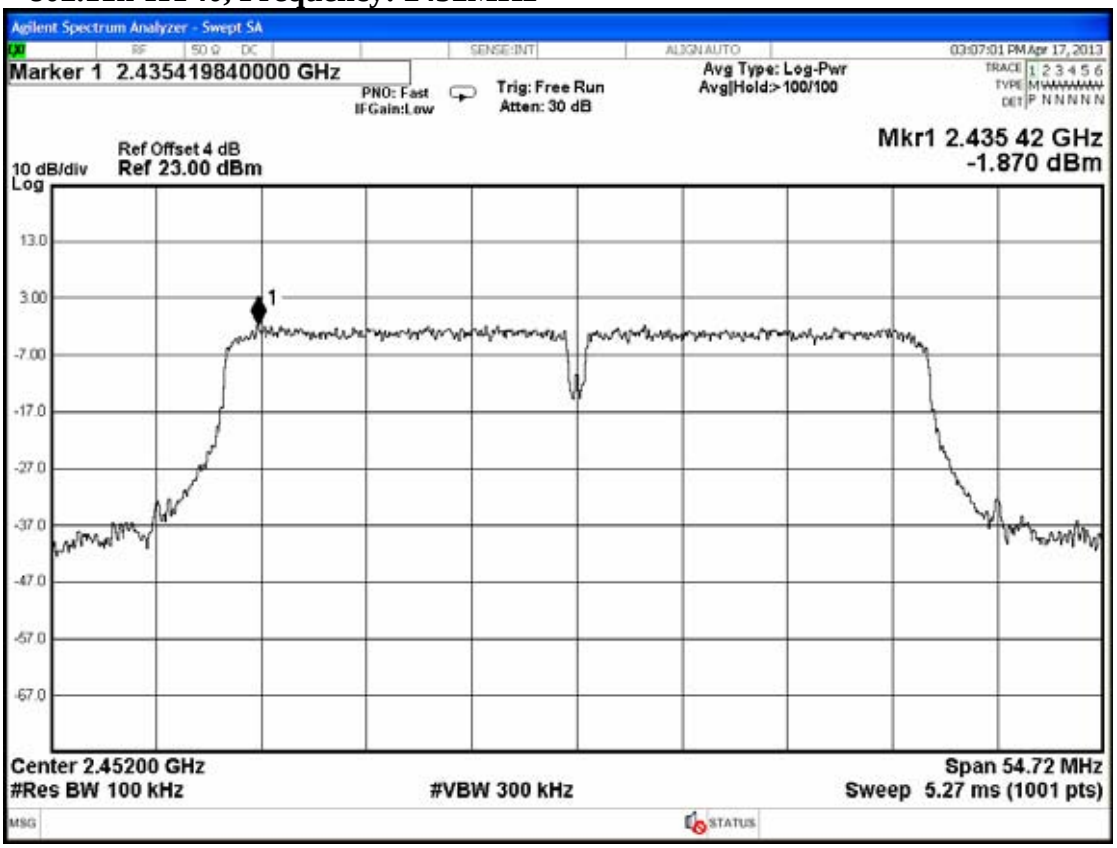
802.11n-HT40, Frequency: 2422MHz



802.11n-HT40, Frequency: 2437MHz



802.11n-HT40, Frequency: 2452MHz



9. DEVIATION TO TEST SPECIFICATIONS

【NONE】

10. PHOTOGRAPHS

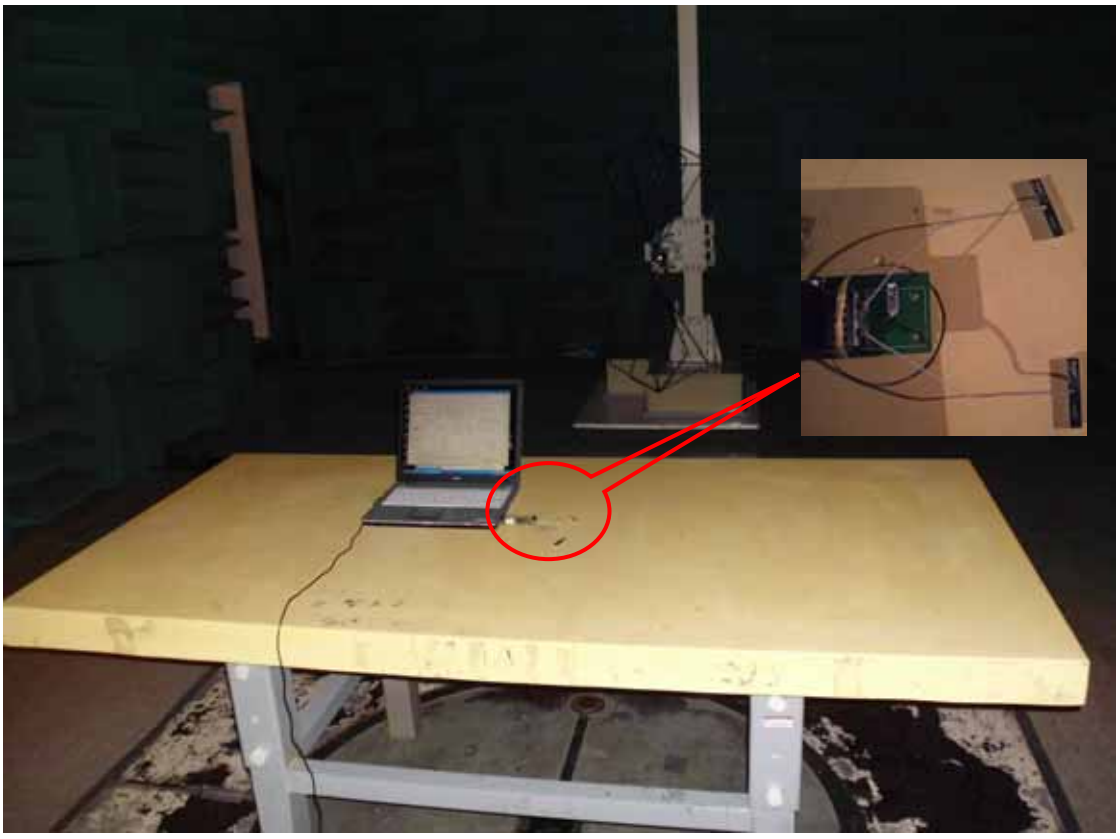
10.1. Photos of Conducted Disturbance Measurement

FRONT VIEW OF CONDUCTED MEASUREMENT

BACK VIEW OF CONDUCTED MEASUREMENT

10.2.Photos of Radiated Measurement at Semi-Anechoic Chamber

10.2.1.Frequency Below 1GHz



10.2.2. Frequency Above 1GHz

10.3.Photo of RF Conducted Measurement