

APPLICATION FOR CERTIFICATION

Class II PERMISSIVE CHANGE

On Behalf of

SMC Networks, Inc.

2.4GHz 802.11n 3T3R wifi module

Model No. : SMC-RT359333DB24

FCC ID : JI5-RT359333DB24

Brand : SMC Networks, Inc.

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

Prepared by : AUDIX Technology Corporation
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Date of Test : Jul. 25, 2013
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TEST REPORT CERTIFICATION (Class II Permissive Change)

Applicant : SMC Networks, Inc.
Manufacturer : MAINTEK COMPUTER
EUT Description : 2.4GHz 802.11n 3T3R wifi module
FCC ID : **JI5-RT359333DB24**
(A) Model No. : SMC-RT359333DB24
(B) Serial No. : N/A
(C) Brand : SMC Networks, Inc.
(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.

This report is based on report of EM-F1010981.

Date of Test: Jul. 25, 2013

Date of Report: Aug. 05, 2013

Producer: Julie Hsu
(Julie Hsu/Administrator)

Signatory: Leon Liu
(Leon Liu/Deputy General Manager)

1. DESCRIPTION OF VERSION

Edition No.	Date of Rev.	Revision Summary	Report No.
0	Jan. 25, 2013	Original Report.	EM-F1010981
Rev. A	Aug. 06, 2013	1. To add new antennas. 2. Supplementary test data are recorded in this report.	EM-F1020586

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Description	:	2.4GHz 802.11n 3T3R wifi module
Model Number	:	SMC-RT359333DB24
Serial Number	:	N/A
Brand	:	SMC Networks, Inc.
FCC ID	:	JI5-RT359333DB24
Applicant	:	SMC Networks, Inc. 20 Mason, Irvine, California, United States, 92618
Manufacturer	:	MAINTEK COMPUTER 233 Jinfeng Rd., Suzhou, Jiangsu, PRC
Fundamental Range	:	2412MHz ~ 2462MHz
Radio Technology	:	802.11b: DSSS Modulation (DBPSK/DQPSK/CCK) 802.11g/n-HT20/n-HT40: OFDM Modulation 3T3R, (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 450Mbps
Antenna Gain	:	4.5dBi
Date of Receipt of Sample	:	Jul. 04, 2013
Date of Test	:	Jul. 25, 2013

Information for Class II Permissive:

1. The EUT is an additional version with original FCC ID: JI5-RT359333DB24.
The differences with original report are as follow:
(a) To add new antennas.
2. The EUT was re-measured with the radiated emission (Transmitting mode) and maximum peak output power measurement, the test data are reported in this report of EM-F1020586.
3. This report is based on report of EM-F1010981.

2.2. Data Rate Relative to Output Power

802.11b			
Channel	Modulation	Date Rate(Mbps)	Power(dBm)
1	DBPSK	1	18.22
1	DQPSK	2	18.19
1	CCK	5.5	18.17
1	CCK	11	18.16

802.11g			
Channel	Modulation	Date Rate (Mbps)	Power (dBm)
1	BPSK	6	15.57
1	BPSK	9	15.55
1	QPSK	12	15.53
1	QPSK	18	15.49
1	16-QAM	24	15.44
1	16-QAM	36	15.48
1	64-QAM	48	15.45
1	64-QAM	54	15.44

802.11n-HT20			
Channel	Modulation	Date Rate (Mbps)	Power (dBm)
1	BPSK	6.5	16.61
1	QPSK	13	16.58/
1	QPSK	19.5	16.53
1	16-QAM	26	16.51
1	16-QAM	39	16.47
1	64-QAM	52	16.49
1	64-QAM	58.6	16.50
1	64-QAM	65	16.46

802.11g-HT40			
Channel	Modulation	Date Rate (Mbps)	Power (dBm)
3	BPSK	13.5	14.78
3	QPSK	27	14.73
3	QPSK	40.5	14.72
3	16-QAM	54	14.69
3	16-QAM	81	14.74
3	64-QAM	108	14.72
3	64-QAM	121.5	14.71
3	64-QAM	135	14.65

2.3. 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

2.4. Tested Supporting System Details

2.4.1. NOTEBOOK PC

Model Number	:	N20A Series
Serial Number	:	WB200903001
Manufacturer	:	ASUS
USB Cable	:	Non-Shielded, Detachable, 0.25m
AC Adapter	:	ASUS, M/N SADP-65NB BB
		DC Cord: Non-Shielded, Undetachable, 1.8m
		Bonded a ferrite core
AC Power Cord	:	Non-Shielded, Detachable, 1.8m

2.5. 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 : **Semi-Anechoic Chamber**
 (Semi-AC)
 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

2.6. 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

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)

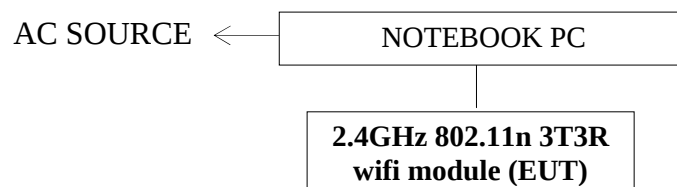
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 07, 12'	Aug. 06, 13'
2.	Test Receiver	R & S	ESCS30	100338	Jul. 01, 13'	Jun. 30, 14'
3.	Amplifier	Agilent	8447D	2944A06305	Feb. 19, 13'	Feb. 18, 14'
4.	Log Periodic Antenna	Schwarzbeck	UHALP 9108-A	0810	Mar. 03, 13'	Mar. 02, 14'
5.	Biconical Antenna	CHASE	VBA6106A	1264	Mar. 03, 13'	Mar. 02, 14'

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

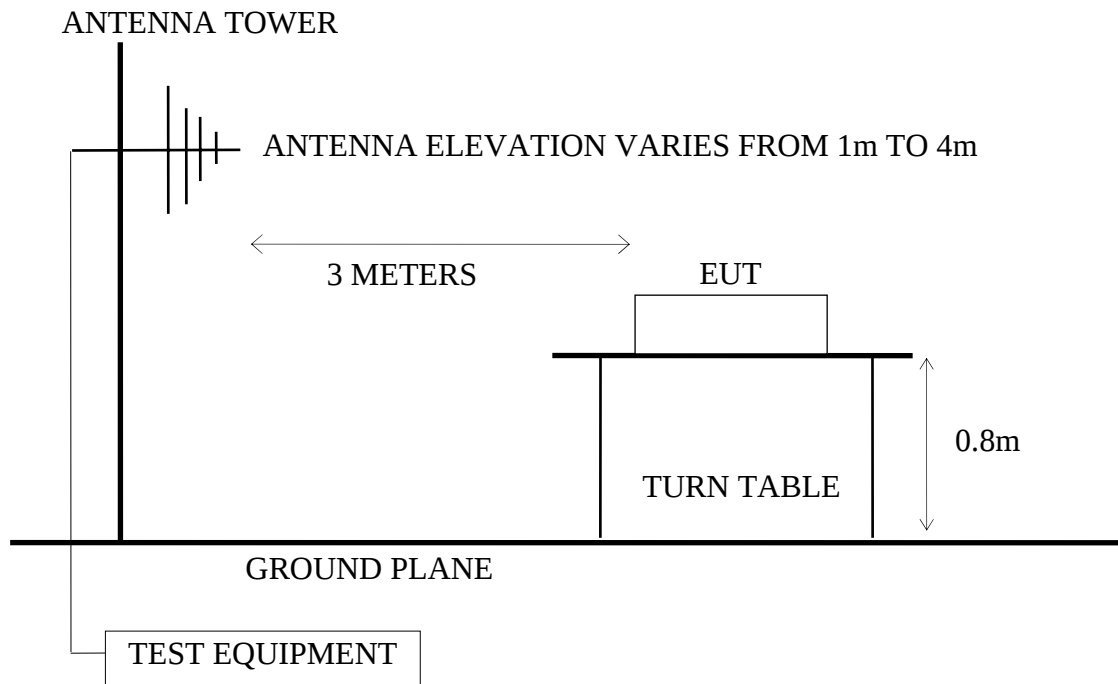
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 07, 12'	Aug. 06, 13'
2.	Test Receiver	R & S	ESCS30	100338	Jul. 01, 13'	Jun. 30, 14'
3.	Pre-Amplifier	HP	8449B	3008A00529	Jan. 31, 13'	Jan. 30, 14'
4.	2.4GHz Notch Filter	K&L	7NSL10-244 1.5E130.5-0 0	1	Jun. 13, 13'	Jun. 12, 14'
5.	3.5G High Pass Filter	Microwave Circuits	H3G018G1	484796	Jun. 13, 13'	Jun. 12, 14'
6.	Horn Antenna	EMCO	3115	9609-4927	May 07, 13'	May 06, 14'

3.2. Test Setup

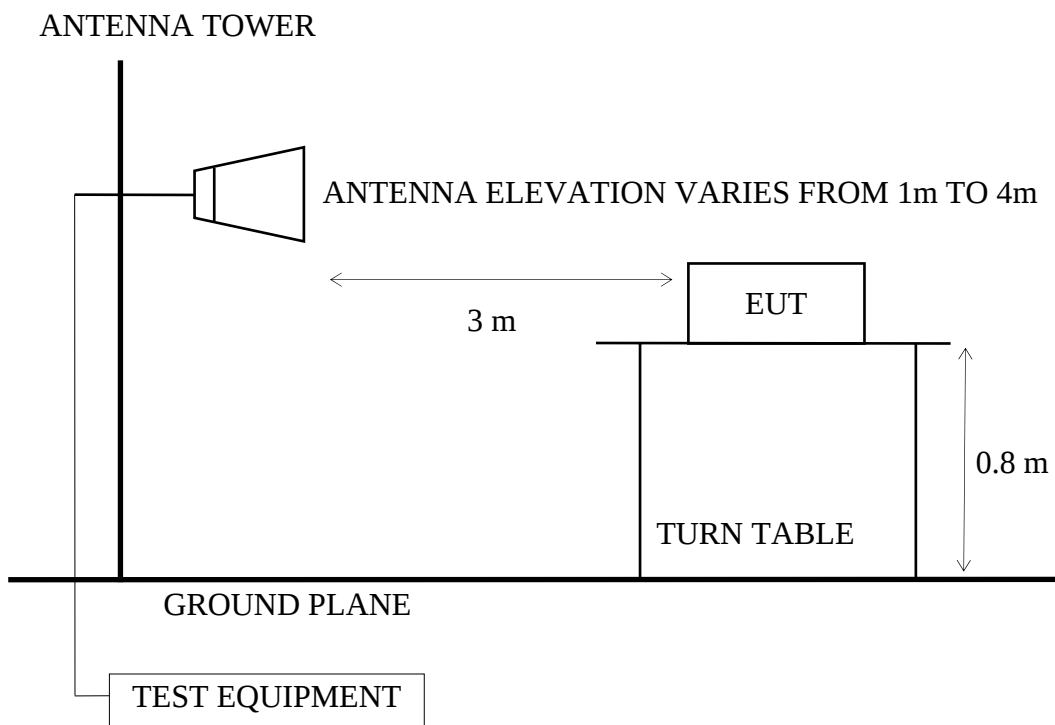
3.2.1. Block Diagram of connection between EUT and simulators



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, RSS-210 §2.7/Table 2)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMITS	
		$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
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 $\text{dB}\mu\text{V/m}$ (Peak) 54.0 $\text{dB}\mu\text{V/m}$ (Average)	

- Remark :
- (1) Emission level ($\text{dB}\mu\text{V/m}$) = 20 log Emission level ($\mu\text{V/m}$)
 - (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 (2.4GHz 802.11n 3T3R 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 “RT3593QA”.
- 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 6
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, RSS-Gen and RSS-210 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 10th 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 40000MHz 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 : 2.4GHz 802.11n 3T3R wifi module

M/N : SMC-RT359333DB24

Test Date : Jul. 25, 2013 Temperature : 26 Humidity : 58%

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 6	2437MHz	Transmit	# 5	# 1
2.	802.11g	CH 6	2437MHz		# 6	# 2
3.	802.11n-HT20	CH 6	2437MHz		# 7	# 3
4.	802.11n-HT40	CH 6	2437MHz		# 8	# 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 6	2437MHz	Transmit	---(Note 3)	# 3 (Note 2)
2.	802.11g	CH 6	2437MHz		---(Note 3)	---(Note 3)
3.	802.11n-HT20	CH 6	2437MHz		---(Note 3)	---(Note 3)
4.	802.11n-HT40	CH 6	2437MHz		---(Note 3)	---(Note 3)

Note: 1. Above all final readings were measured with Peak and Average detector.

2. For measurements above 4.0GHz-5.5GHz, the peak measured value complies with the average limit, it is unnecessary to perform an average measurement. (According to ANSI C63.4-2003 section 8.3.1.2)

3. 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	# 5, # 6	# 7, # 8
2.		CH 11	2462MHz		# 1, # 2	# 3, # 4
3.	802.11g	CH 1	2412MHz	Transmit	# 5, # 6	# 7, # 8
4.		CH 11	2462MHz		# 1, # 2	# 3, # 4
5.	802.11n-HT20	CH 1	2412MHz	Transmit	# 5, # 6	# 7, # 8
6.		CH 11	2462MHz		# 1, # 2	# 3, # 4
7.	802.11n-HT40	CH 3	2422MHz	Transmit	# 5, # 6	# 7, # 8
8.		CH 9	2452MHz		# 1, # 2	# 3, # 4

3.6.1. For 30-1000MHz Frequency Range Measurement Results

802.11b, Transmit, Frequency: 2437MHz

Site no. : A/C Chamber
 Dis. / Ant. : 3m VBA6106A/UHALP9108A
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 26°C/58%
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2437Hz (802.11B)

Data no. : 5
 Ant. pol. : HORIZONTAL
 Engineer : Johnny_Hsueh

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	30.000	24.86	1.10	9.13	35.09	40.00	4.91	QP
2	198.780	22.07	3.00	15.74	40.81	43.50	2.69	QP
3	298.690	26.72	3.90	12.57	43.19	46.00	2.81	QP
4	399.570	17.69	4.80	20.36	42.85	46.00	3.15	QP
5	498.510	18.79	6.50	18.35	43.64	46.00	2.36	QP
6	697.360	23.32	6.50	12.14	41.96	46.00	4.04	QP

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

Site no. : A/C Chamber
 Dis. / Ant. : 3m VBA6106A/UHALP9108A
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 26°C/58%
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2437Hz (802.11B)

Data no. : 1
 Ant. pol. : VERTICAL
 Engineer : Johnny_Hsueh

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	30.000	24.86	1.10	10.09	36.05	40.00	3.95	QP
2	199.750	22.09	3.00	8.92	34.01	43.50	9.49	QP
3	298.690	26.72	3.90	9.31	39.93	46.00	6.07	QP
4	400.540	17.66	4.80	14.14	36.60	46.00	9.40	QP
5	498.510	18.79	6.50	13.35	38.64	46.00	7.36	QP
6	696.390	23.29	6.50	7.38	37.17	46.00	8.83	QP

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. : 6
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2437Hz (802.11G)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	30.000	24.86	1.10	9.13	35.09	40.00	4.91	QP
2	198.780	22.07	3.00	16.33	41.40	43.50	2.10	QP
3	299.660	26.77	3.90	11.35	42.02	46.00	3.98	QP
4	398.600	17.67	4.80	16.93	39.40	46.00	6.60	QP
5	498.510	18.79	6.50	15.06	40.35	46.00	5.65	QP
6	700.270	23.46	6.50	11.23	41.19	46.00	4.81	QP

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

Site no. : A/C Chamber Data no. : 2
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2437Hz (802.11G)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	30.000	24.86	1.10	8.96	34.91	40.00	5.09	QP
2	199.750	22.09	3.00	9.48	34.56	43.50	8.94	QP
3	298.690	26.72	3.90	8.17	38.79	46.00	7.21	QP
4	400.540	17.66	4.80	12.56	35.02	46.00	10.98	QP
5	499.480	18.83	6.50	13.71	39.04	46.00	6.96	QP
6	700.270	23.46	6.50	7.23	37.19	46.00	8.81	QP

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. : 7
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2437Hz(802.11HT_20)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	30.000	24.86	1.10	7.82	33.77	40.00	6.23	QP
2	198.780	22.07	3.00	15.50	40.57	43.50	2.93	QP
3	299.660	26.77	3.90	11.86	42.53	46.00	3.47	QP
4	398.600	17.67	4.80	17.82	40.29	46.00	5.71	QP
5	499.480	18.83	6.50	12.74	38.07	46.00	7.93	QP
6	700.270	23.46	6.50	10.53	40.49	46.00	5.51	QP

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

Site no. : A/C Chamber Data no. : 3
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2437Hz(802.11HT_20)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	30.000	24.86	1.10	9.54	35.50	40.00	4.50	QP
2	199.750	22.09	3.00	10.70	35.79	43.50	7.71	QP
3	298.690	26.72	3.90	9.51	40.13	46.00	5.87	QP
4	398.600	17.67	4.80	15.82	38.29	46.00	7.71	QP
5	499.480	18.83	6.50	13.74	39.07	46.00	6.93	QP
6	700.270	23.46	6.50	6.53	36.49	46.00	9.51	QP

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. : 8
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2437Hz(802.11HT_40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	30.000	24.86	1.10	9.96	35.91	40.00	4.09	QP
2	198.780	22.07	3.00	16.29	41.36	43.50	2.14	QP
3	298.690	26.72	3.90	12.24	42.86	46.00	3.14	QP
4	398.600	17.67	4.80	17.26	39.73	46.00	6.27	QP
5	498.510	18.79	6.50	12.92	38.21	46.00	7.79	QP
6	699.300	23.39	6.50	8.40	38.29	46.00	7.71	QP

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

Site no. : A/C Chamber Data no. : 4
 Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
 Limit : FCC PART-15C
 Env. / Ins. : E4446A 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2437Hz(802.11HT_40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	30.000	24.86	1.10	7.75	33.71	40.00	6.29	QP
2	199.750	22.09	3.00	10.07	35.16	43.50	8.34	QP
3	298.690	26.72	3.90	7.62	38.25	46.00	7.75	QP
4	398.600	17.67	4.80	10.26	32.73	46.00	13.27	QP
5	499.480	18.83	6.50	7.20	32.53	46.00	13.47	QP
6	700.270	23.46	6.50	2.69	32.65	46.00	13.35	QP

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.	: 3
Dis. / Ant.	: 3m 3115(4927)	Ant. pol.	: VERTICAL
Limit	: FCC PART-15C (1G-AV)	Engineer	: Johnny_Hsueh
Env. / Ins.	: E4446A 26°C/58%		
EUT	: SMC-RT359333DB24		
Power Rating	: DC 5V		
Test Mode	: Tx 2437Hz(802.11B)		

		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dBμV)	(dBμV/m)	(dBμV/m)	(dB)	
1	4874.500	33.18	9.15	9.51	51.84	54.00	2.16	Peak

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

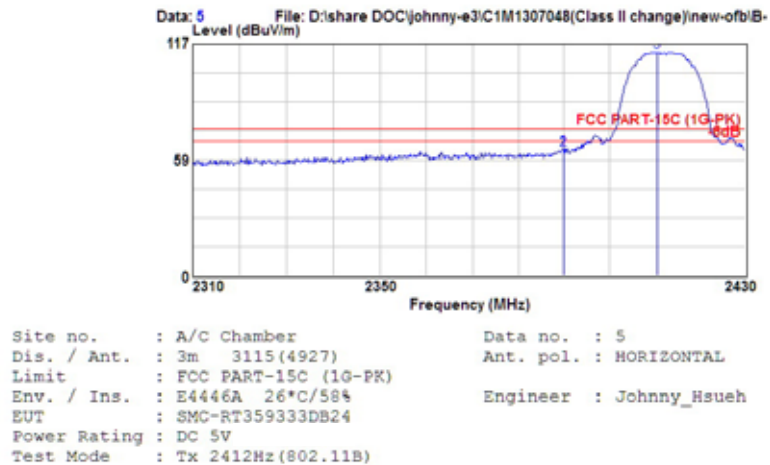
3. The signal is too low to measure in horizontal polarization, thus only vertical is presented

3.6.3. Restricted Bands Measurement Results

Date of Test : Jul. 25, 2013 Temperature : 26

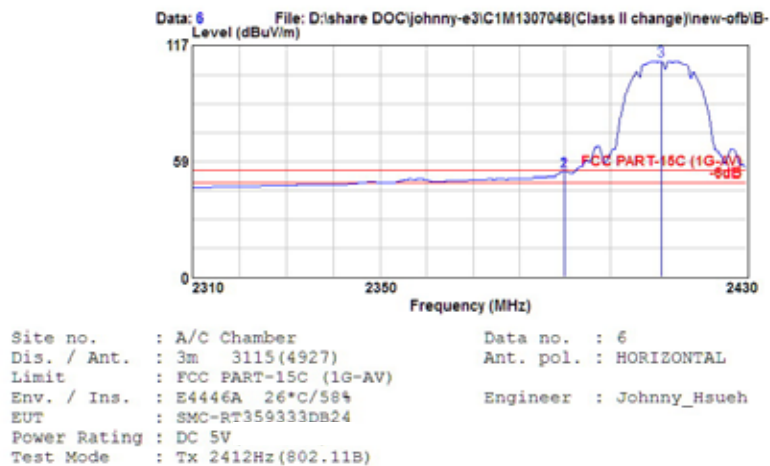
EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

Test Mode : 802.11b, Transmit, Channel: 01, Frequency: 2412MHz



	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.800	28.47	6.34	29.35	64.17	74.00	9.83	Peak
2	2390.000	28.47	6.34	28.53	63.35	74.00	10.65	Peak
3	2410.560	28.51	6.36	77.85	112.73	74.00	-38.73	Peak

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



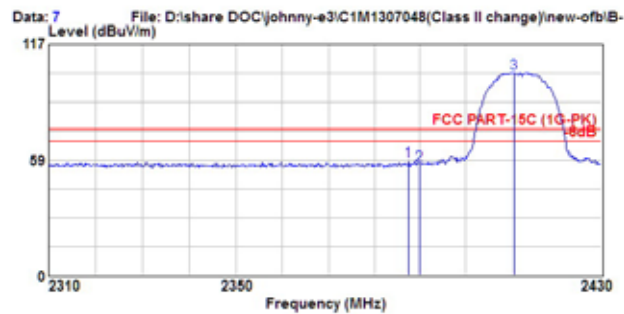
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.920	28.47	6.34	18.73	53.55	54.00	0.45	Average
2	2390.000	28.47	6.34	18.74	53.55	54.00	0.45	Average
3	2411.160	28.51	6.36	74.32	109.19	54.00	-55.19	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

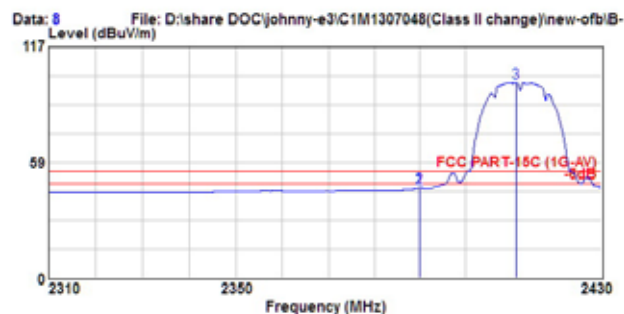
Test Mode : 802.11b, Transmit, Channel: 01, Frequency: 2412MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2412MHz(802.11B)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2387.520	28.47	6.33	23.26	58.06	74.00	15.94	Peak
2	2390.000	28.47	6.34	21.40	56.21	74.00	17.79	Peak
3	2410.800	28.51	6.36	67.56	102.43	74.00	-28.43	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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2412MHz(802.11B)

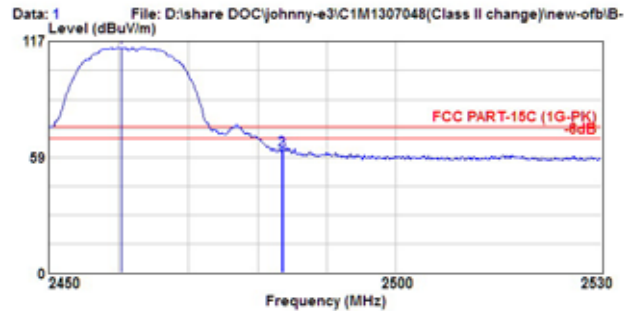
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.920	28.47	6.34	11.01	45.82	54.00	8.18	Average
2	2390.000	28.47	6.34	11.02	45.84	54.00	8.16	Average
3	2411.160	28.51	6.36	64.14	99.01	54.00	-45.01	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

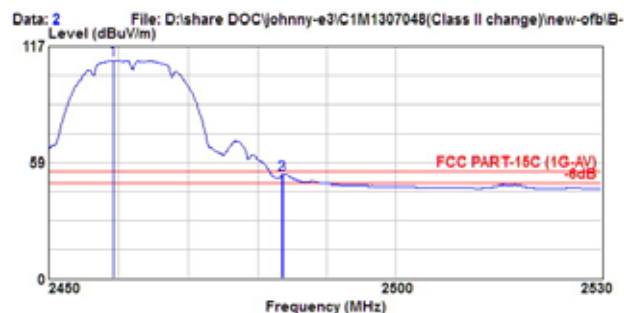
Test Mode : 802.11b, Transmit, Channel: 11, Frequency: 2462MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2462Hz(802.11B)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2460.400	28.62	6.42	79.01	114.06	74.00	-40.06	Peak
2	2483.500	28.66	6.45	26.94	62.06	74.00	11.94	Peak
3	2483.600	28.66	6.45	26.65	61.76	74.00	12.24	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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2462Hz(802.11B)

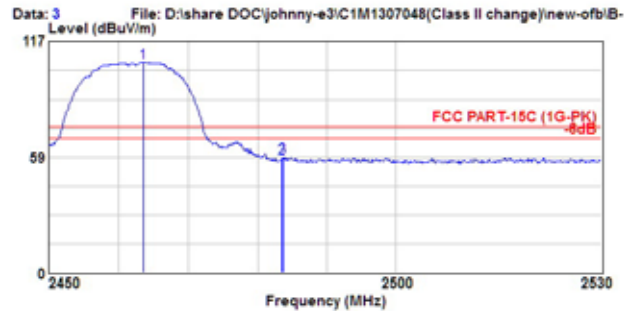
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2459.200	28.62	6.42	75.16	110.21	54.00	-56.21	Average
2	2483.500	28.66	6.45	17.11	52.23	54.00	1.77	Average
3	2483.600	28.66	6.45	17.27	52.39	54.00	1.61	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

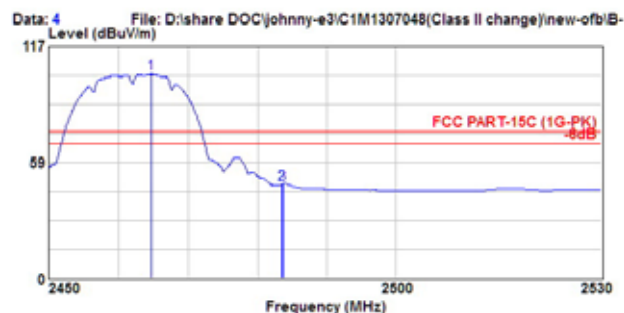
Test Mode : 802.11b, Transmit, Channel: 11, Frequency: 2462MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2462Hz(802.11B)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2463.600	28.62	6.42	71.37	106.42	74.00	-32.42	Peak
2	2483.500	28.66	6.45	22.86	57.97	74.00	16.03	Peak
3	2483.600	28.66	6.45	23.46	58.58	74.00	15.42	Peak

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



Site no. : A/C Chamber Data no. : 4
 Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
 Limit : FCC PART-15C (1G-PK)
 Env. / Ins. : E4446A 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2462Hz(802.11B)

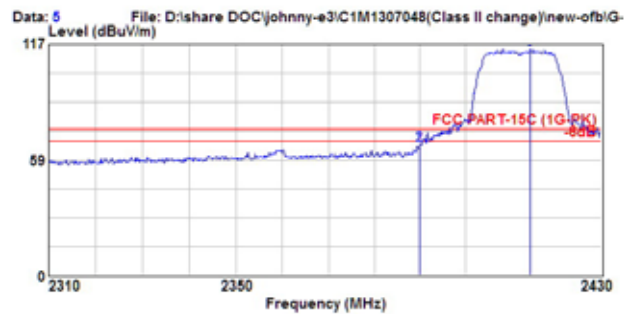
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2464.640	28.62	6.42	68.15	103.20	74.00	-29.20	Average
2	2483.500	28.66	6.45	12.44	47.55	74.00	26.45	Average
3	2483.600	28.66	6.45	12.50	47.61	74.00	26.39	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

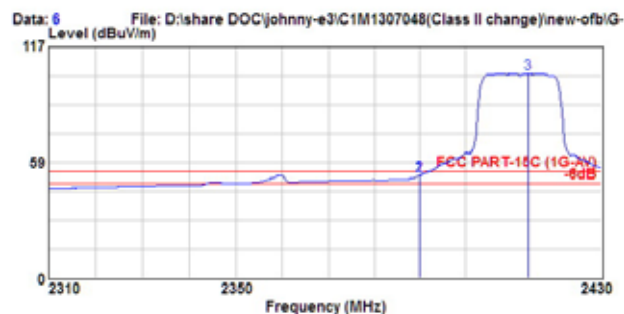
Test Mode : 802.11g, Transmit, Channel: 01, Frequency: 2412MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2412Hz(802.11G)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.920	28.47	6.34	30.93	65.75	74.00	8.25	Peak
2	2390.000	28.47	6.34	31.29	66.10	74.00	7.90	Peak
3	2414.160	28.51	6.36	79.49	114.36	74.00	-40.36	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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2412Hz(802.11G)

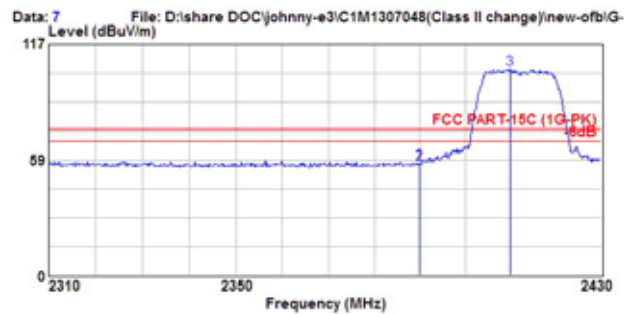
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.920	28.47	6.34	17.28	52.10	54.00	1.90	Average
2	2390.000	28.47	6.34	17.36	52.18	54.00	1.82	Average
3	2413.800	28.51	6.36	68.77	103.65	54.00	-49.65	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

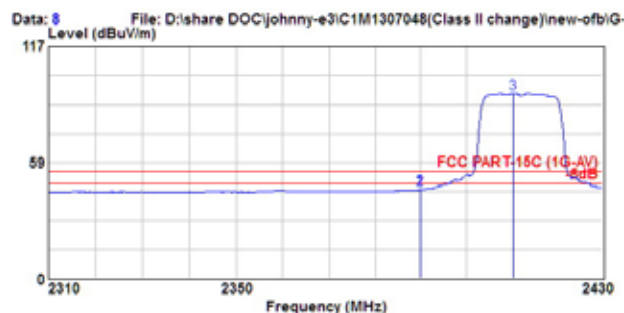
Test Mode : 802.11g, Transmit, Channel: 01, Frequency: 2412MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2412MHz (802.11G)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.920	28.47	6.34	21.98	56.80	74.00	17.20	Peak
2	2390.000	28.47	6.34	21.93	56.74	74.00	17.26	Peak
3	2409.960	28.51	6.36	69.38	104.25	74.00	-30.25	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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2412MHz (802.11G)

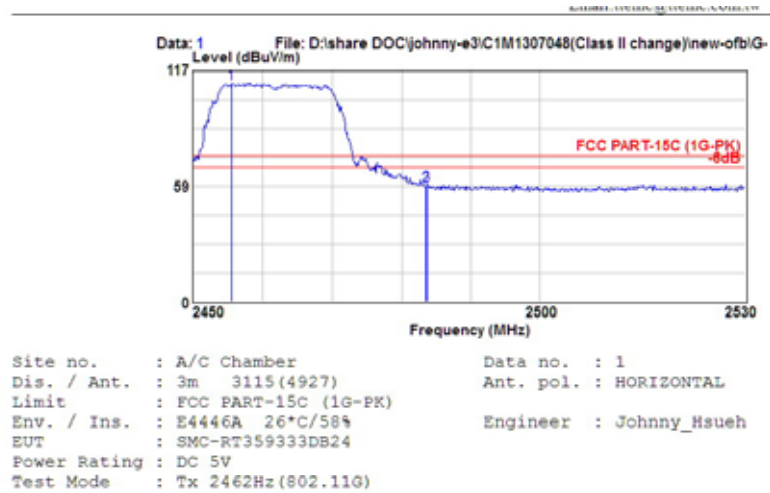
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.920	28.47	6.34	9.97	44.78	54.00	9.22	Average
2	2390.000	28.47	6.34	9.99	44.81	54.00	9.19	Average
3	2410.320	28.51	6.36	58.41	93.29	54.00	-39.29	Average

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 : Jul. 25, 2013 Temperature : 26

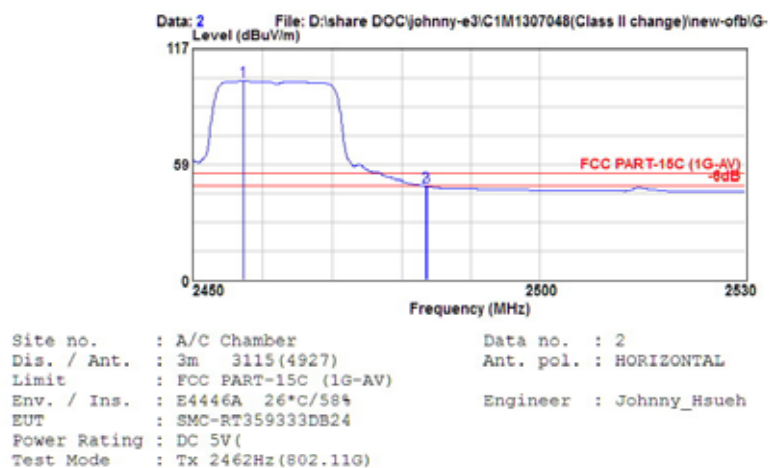
EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

Test Mode : 802.11g, Transmit, Channel: 11, Frequency: 2462MHz



	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2455.600	28.62	6.42	75.54	110.59	74.00	-36.59	Peak
2	2483.500	28.66	6.45	23.41	58.52	74.00	15.48	Peak
3	2483.600	28.66	6.45	23.76	58.88	74.00	15.12	Peak

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



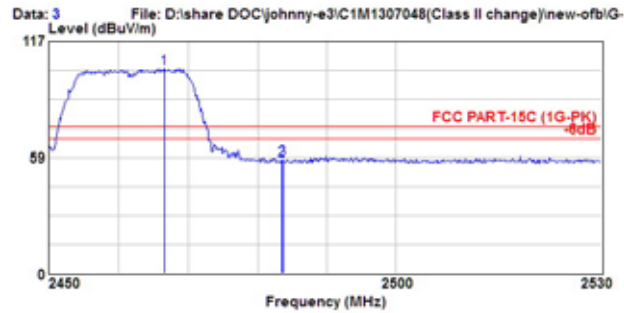
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2457.200	28.62	6.42	65.79	100.83	54.00	-46.83	Average
2	2483.500	28.66	6.45	12.45	47.56	54.00	6.44	Average
3	2483.600	28.66	6.45	12.40	47.51	54.00	6.49	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

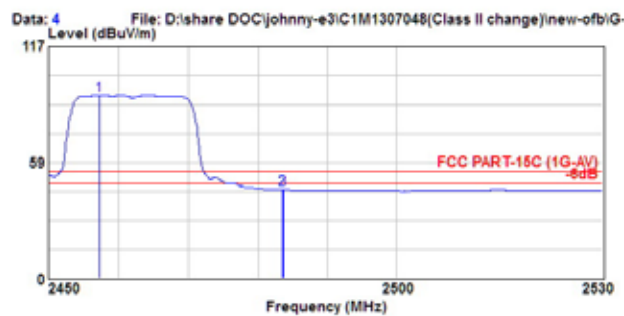
Test Mode : 802.11g, Transmit, Channel: 11, Frequency: 2462MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2462Hz(802.11G)

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2466.480	28.62	6.42	68.30	103.35	74.00	-29.35	Peak
2 2483.500	28.66	6.45	21.86	56.98	74.00	17.02	Peak
3 2483.600	28.66	6.45	22.30	57.41	74.00	16.59	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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2462Hz(802.11G)

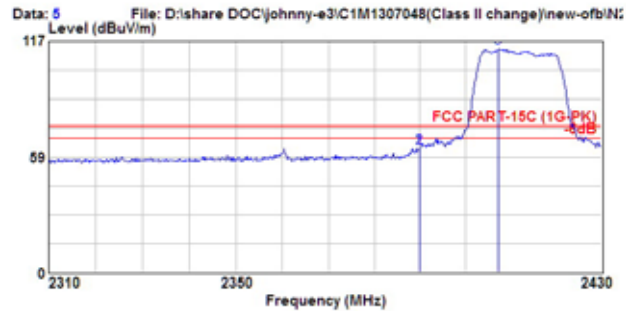
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2457.200	28.62	6.42	57.36	92.40	54.00	-38.40	Average
2 2483.500	28.66	6.45	9.62	44.73	54.00	9.27	Average
3 2483.600	28.66	6.45	9.61	44.72	54.00	9.28	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

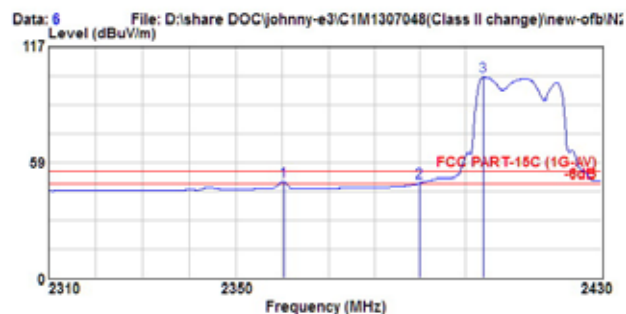
Test Mode : 802.11n-HT20, Transmit, Channel: 01, Frequency: 2412MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2412Hz(802.11HT_20)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.920	28.47	6.34	27.90	62.72	74.00	11.28	Peak
2	2390.000	28.47	6.34	28.10	62.92	74.00	11.08	Peak
3	2407.320	28.51	6.36	78.59	113.46	74.00	-39.46	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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2412Hz(802.11HT_20)

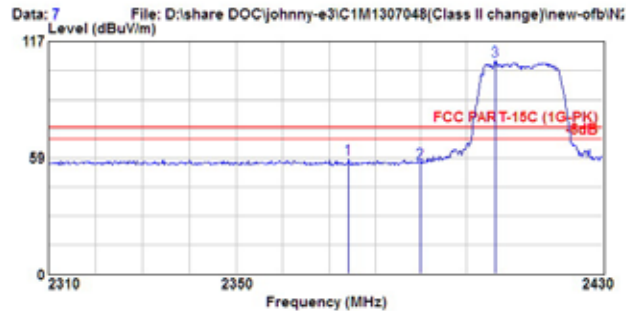
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2360.400	28.40	6.30	14.31	49.01	54.00	4.99	Average
2	2390.000	28.47	6.34	13.51	48.32	54.00	5.68	Average
3	2403.960	28.51	6.36	67.06	101.93	54.00	-47.93	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

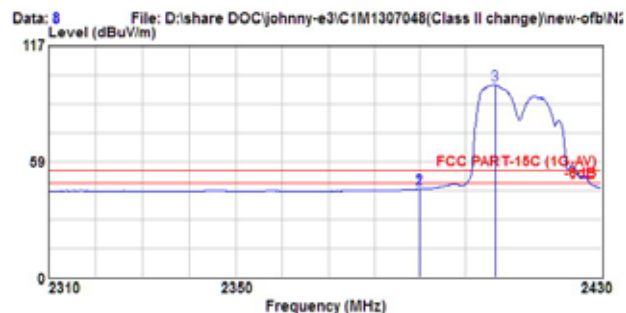
Test Mode : 802.11n-HT20, Transmit, Channel: 01, Frequency: 2412MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2412Hz(802.11HT_20)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2374.320	28.43	6.32	23.20	57.96	74.00	16.04	Peak
2	2390.000	28.47	6.34	21.22	56.03	74.00	17.97	Peak
3	2406.360	28.51	6.36	72.40	107.27	74.00	-33.27	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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2412Hz(802.11HT_20)

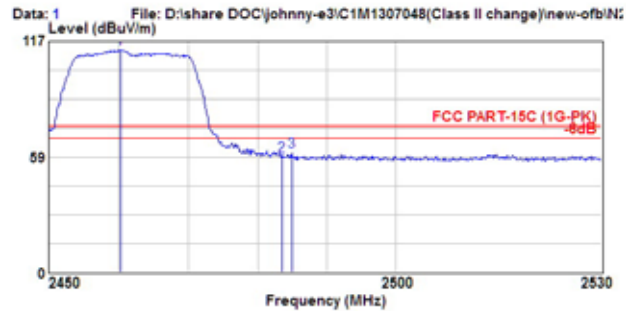
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.920	28.47	6.34	9.99	44.80	54.00	9.20	Average
2	2390.000	28.47	6.34	10.01	44.82	54.00	9.18	Average
3	2406.600	28.51	6.36	62.41	97.28	54.00	-43.28	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

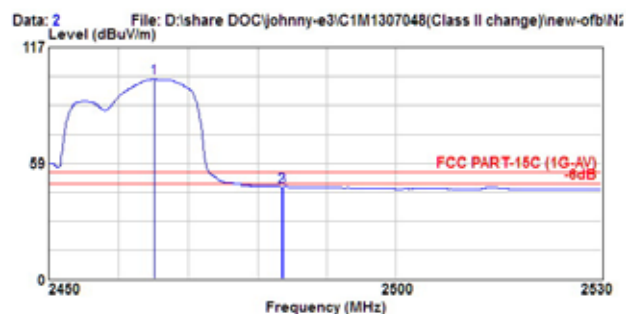
Test Mode : 802.11n-HT20, Transmit, Channel: 11, Frequency: 2462MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2462Hz(802.11HT_20)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2460.240	28.62	6.42	77.75	112.79	74.00	-38.79	Peak
2	2483.500	28.66	6.45	23.88	58.99	74.00	15.01	Peak
3	2484.880	28.66	6.45	25.95	61.07	74.00	12.93	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. : 2
 Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
 Limit : FCC PART-15C (1G-AV)
 Env. / Ins. : E4446A 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2462Hz(802.11HT_20)

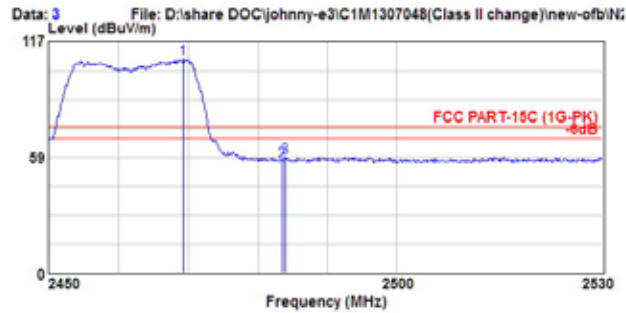
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2465.040	28.62	6.42	66.21	101.26	54.00	-47.26	Average
2	2483.500	28.66	6.45	11.54	46.65	54.00	7.35	Average
3	2483.600	28.66	6.45	11.54	46.65	54.00	7.35	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

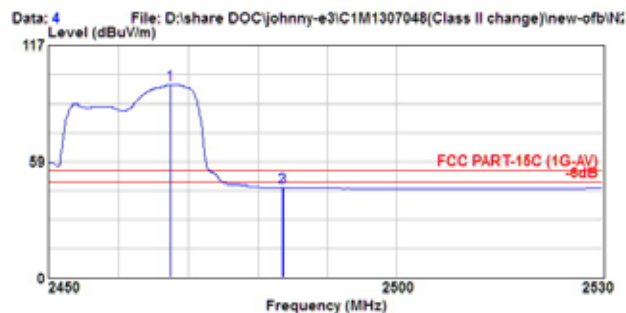
Test Mode : 802.11n-HT20, Transmit, Channel: 11, Frequency: 2462MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2462Hz(802.11HT_20)

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2469.280	28.62	6.43	73.32	108.38	74.00	-34.38	Peak
2 2483.500	28.66	6.45	21.58	56.70	74.00	17.30	Peak
3 2483.840	28.66	6.45	23.21	58.32	74.00	15.68	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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2462Hz(802.11HT_20)

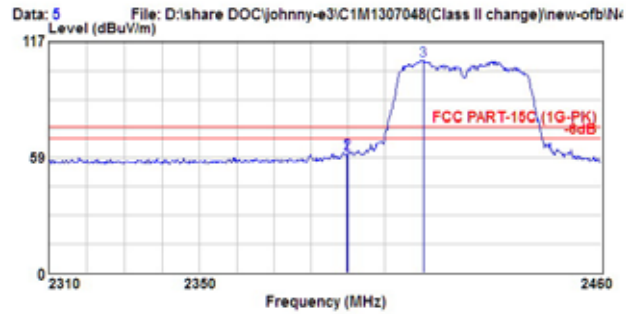
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2467.440	28.62	6.42	62.55	97.60	54.00	-43.60	Average
2 2483.500	28.66	6.45	10.22	45.34	54.00	8.66	Average
3 2483.600	28.66	6.45	10.23	45.34	54.00	8.66	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

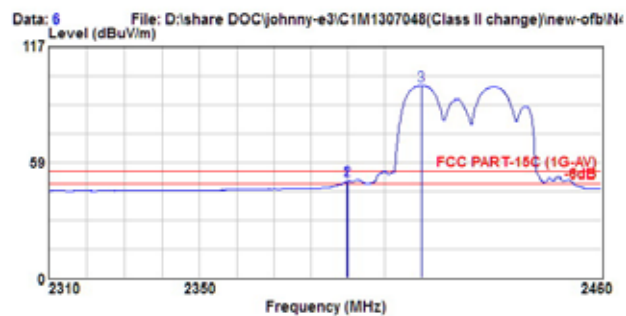
Test Mode : 802.11n-HT40, Transmit, Channel: 03, Frequency: 2422MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2422Hz(802.11HT_40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.800	28.47	6.34	25.00	59.82	74.00	14.18	Peak
2	2390.000	28.47	6.34	25.84	60.66	74.00	13.34	Peak
3	2410.650	28.51	6.36	72.55	107.43	74.00	-33.43	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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2422Hz(802.11HT_40)

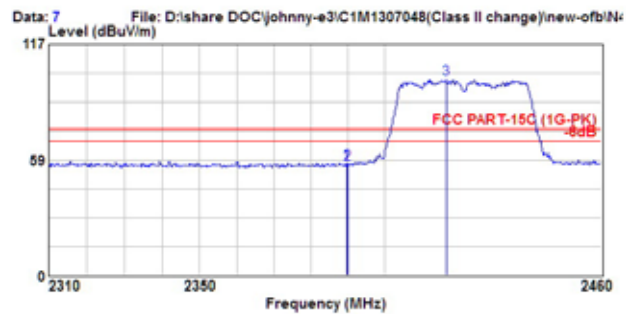
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.800	28.47	6.34	14.35	49.16	54.00	4.84	Average
2	2390.000	28.47	6.34	14.41	49.22	54.00	4.78	Average
3	2410.200	28.51	6.36	62.60	97.48	54.00	-43.48	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

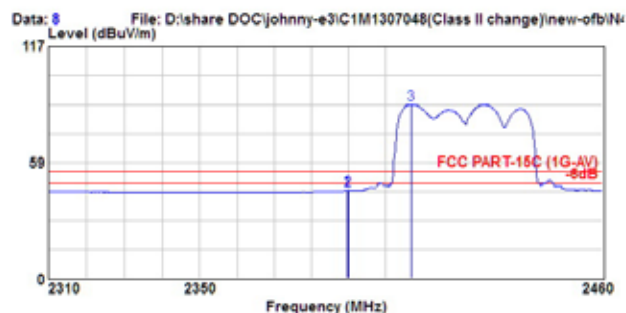
Test Mode : 802.11n-HT40, Transmit, Channel: 03, Frequency: 2422MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2422Hz(802.11HT_40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.800	28.47	6.34	21.94	56.76	74.00	17.24	Peak
2	2390.000	28.47	6.34	21.81	56.62	74.00	17.38	Peak
3	2416.950	28.51	6.37	64.48	99.36	74.00	-25.36	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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2422Hz(802.11HT_40)

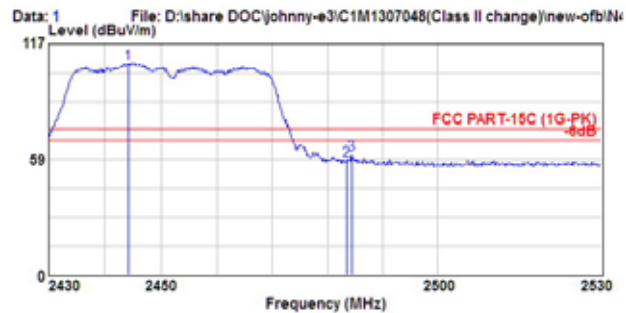
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.800	28.47	6.34	9.44	44.25	54.00	9.75	Average
2	2390.000	28.47	6.34	9.44	44.25	54.00	9.75	Average
3	2407.200	28.51	6.36	53.03	87.90	54.00	-33.90	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

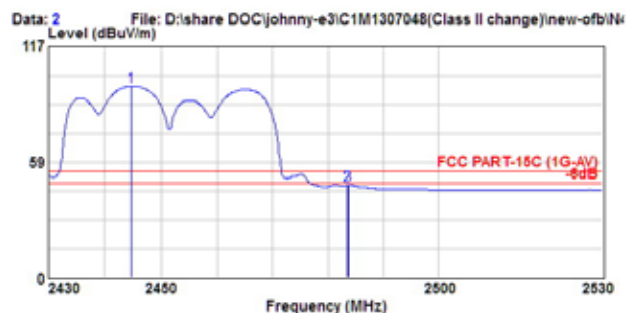
Test Mode : 802.11n-HT40, Transmit, Channel: 09, Frequency: 2452MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2452Hz(802.11HT_40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2444.100	28.59	6.40	72.02	107.01	74.00	-33.01	Peak
2	2483.500	28.66	6.45	22.66	57.77	74.00	16.23	Peak
3	2484.300	28.66	6.45	25.84	60.96	74.00	13.04	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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2452Hz(802.11HT_40)

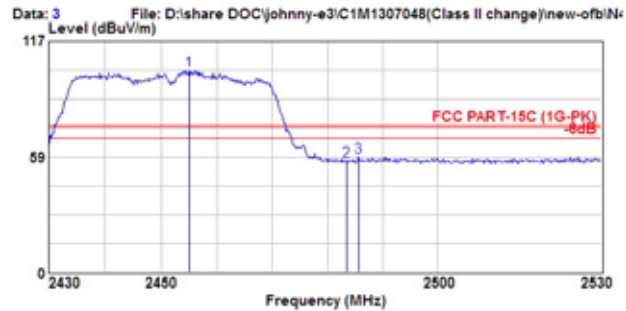
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2444.800	28.59	6.40	62.03	97.01	54.00	-43.01	Average
2	2483.500	28.66	6.45	11.76	46.88	54.00	7.12	Average
3	2483.600	28.66	6.45	11.81	46.93	54.00	7.07	Average

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 : Jul. 25, 2013 Temperature : 26

EUT : 2.4GHz 802.11n 3T3R wifi module Humidity : 58%

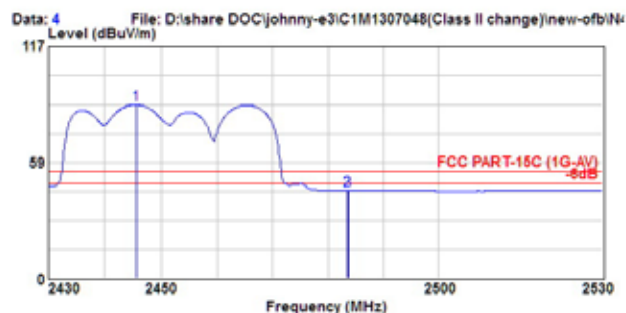
Test Mode : 802.11n-HT40, Transmit, Channel: 09, Frequency: 2452MHz



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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2452Hz(802.11HT_40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2455.100	28.62	6.42	67.14	102.19	74.00	-28.19	Peak
2	2483.500	28.66	6.45	21.48	56.60	74.00	17.40	Peak
3	2485.600	28.66	6.45	23.40	58.52	74.00	15.48	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 26°C/58% Engineer : Johnny_Hsueh
 EUT : SMC-RT359333DB24
 Power Rating : DC 5V
 Test Mode : Tx 2452Hz(802.11HT_40)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2445.600	28.59	6.41	52.69	87.68	54.00	-33.68	Average
2	2483.500	28.66	6.45	9.33	44.45	54.00	9.55	Average
3	2483.600	28.66	6.45	9.32	44.44	54.00	9.56	Average

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

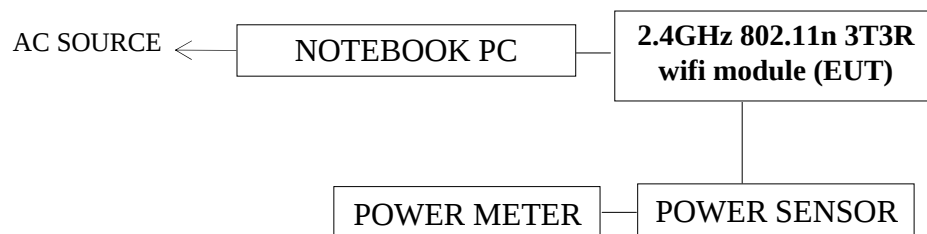
4. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

4.1. 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'

4.2. Block Diagram of Test Setup



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

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

4.4. Operating Condition of EUT

The test program “RT3593QA” 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 power sensor and record the reading of power meter.

The measurement guideline was according to KDB 558074 D01 V03.

4.6. Test Results

PASSED. All the test results are listed below.

(Test Date : Jul. 25, 2013 Temperature : 25 Humidity : 61%)

4.6.1. For 802.11b

Mode	Channel	Frequency	Total 1 Peak Output Power (dBm)	Power Setting	Total 2 Peak Output Power (dBm)	Power Setting	Total 0 Peak Output Power (dBm)	Power Setting
1.	CH 1	2412MHz	21.16	0D	21.12	0D	20.92	0D
2.	CH 6	2437MHz	26.54	15	26.21	13	26.18	14
3.	CH 11	2462MHz	24.13	12	24.01	12	24.07	12

4.6.2. For 802.11g

Mode	Channel	Frequency	Total 1 Peak Output Power (dBm)	Power Setting	Total 2 Peak Output Power (dBm)	Power Setting	Total 0 Peak Output Power (dBm)	Power Setting
4.	CH 1	2412MHz	22.69	10	23.21	10	22.85	10
5.	CH 6	2437MHz	27.28	1F	26.85	1F	27.08	1F
6.	CH 11	2462MHz	23.21	17	22.31	16	25.12	16

4.6.3. For 802.11n-HT20

Mode	Channel	Frequency	Ant.1	Ant.2	Ant.0	Total Peak Output Power (dBm)	Power Setting
7.	CH 1	2412MHz	20.59	20.64	19.85	25.1459	0B-0B-0B
8.	CH 6	2437MHz	22.07	22.54	21.82	26.9249	13-15-16
9.	CH 11	2462MHz	21.18	21.39	21.25	26.0454	12-14-14

4.6.4. For 802.11n-HT40

Mode	Channel	Frequency	Ant.1	Ant.2	Ant.0	Total Peak Output Power (dBm)	Power Setting
10.	CH 3	2422MHz	19.06	18.53	18.54	23.4884	03 06 06
11.	CH 6	2437MHz	21.31	21.26	21.95	26.2894	12-14-14
12.	CH 9	2452MHz	21.15	19.38	21.84	25.6793	0F-0F-0F

5. DEVIATION TO TEST SPECIFICATIONS

【NONE】

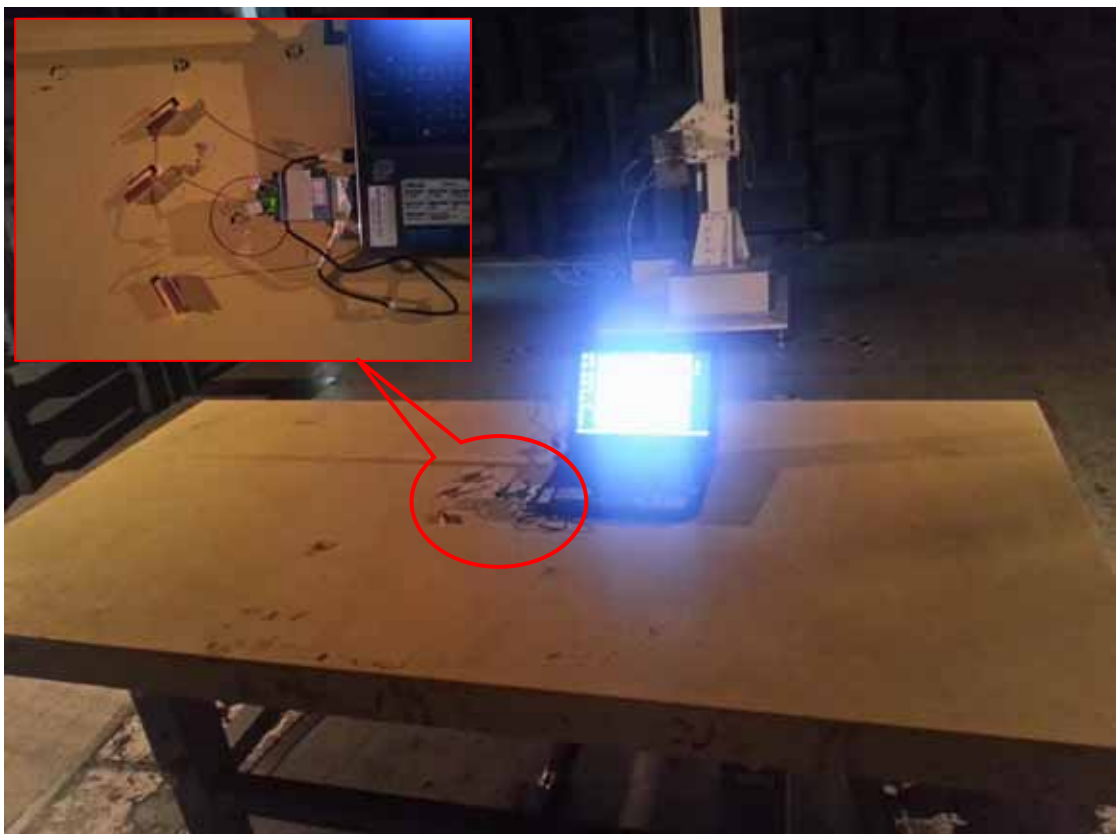
6. PHOTOGRAPHS

6.1. Photos of Radiated Measurement at Semi-Anechoic Chamber

6.1.1. Frequency Below 1GHz



6.1.2. Frequency Above 1GHz



6.2. Photo of Section RF Conducted Measurement

