

FCC 47 CFR PART 15 SUBPART C

Product Type : Wireless 802.11 b/g/n ADSL2+ Router

Applicant : BaudTec Corporation

Address : 12F,NO,181,Sec.1.TatungRd.,His-chih City, Taipei
county,221,Taiwan,R.O.C

Trade Name : Baudtec

Model Number : RN243R4

Test Specification : FCC 47 CFR PART 15 SUBPART C: Oct., 2010
ANSI C63.4-2009

Application Purpose : Original

Receive Date : Apr. 09, 2012

Issue Date : May 10, 2012

Issue by

A Test Lab Techno Corp.
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Taiwan Accreditation Eoundation accreditation number: 1330

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	May 10, 2012	Initial Issue	

Verification of Compliance

Issued Date: 05/10/2012

Product Type : Wireless 802.11 b/g/n ADSL2+ Router
Applicant : BaudTec Corporation
Address : 12F,NO,181,Sec.1.TatungRd.,His-chih City,
Taipei county,221,Taiwan,R.O.C
Trade Name : Baudtec
Model Number : RN243R4
FCC ID : XKR-RN243R4
EUT Rated Voltage : DC 12V, 1.0A
Test Voltage : 120 Vac / 60 Hz
Applicable Standard : FCC 47 CFR PART 15 SUBPART C: Oct., 2010
ANSI C63.4-2009
Test Result : Complied
Application Purpose : Original
Performing Lab. : A Test Lab Techno Corp.

No. 140-1, Changan Street, Bade City,
Taoyuan County 334, Taiwan R.O.C.

Tel : +86-3-2710188 / Fax : +86-3-2710190

Taiwan Accreditation Foundation accreditation number:
1330



<http://www.atl-lab.com.tw/e-index.htm>

The above equipment was tested by A Test Lab Techno Corp. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2009 and the energy emitted by the sample tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247 .
The test results of this report relate only to the tested sample identified in this report.

Approved By



(Manager)

(Murphy Wang)

Reviewed By



(Testing Engineer)

(Fly Lu)

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1 General Information

1.1 Summary of Test Result

Standard		Item	Result	Remark
15.247	RSS-GEN			
15.207	7.2.2	AC Power Conducted Emission	PASS	-----
-----	6	Receiver Radiated Emissions	PASS	-----
Standard		Item	Result	Remark
15.247	RSS-210			
15.247(d)	A8.5	Transmitter Radiated Emissions	PASS	-----
15.247(b)(3)	A8.4	Max. Output Power	PASS	-----
15.247(a)(2)	A8.2 (a)	6dB RF Bandwidth	PASS	-----
15.247(e)	A8.2 (b)	Power Spectral Density	PASS	-----
15.247(c)	A8.5	Out of Band Conducted Spurious Emission	PASS	-----
15.247(d)	A8.5	Band Edge Measurement	PASS	-----
15.247(c)	A8.5	Occupied Bandwidth Measurement	PASS	-----
15.203	-	Antenna Requirement	PASS	-----

The test results of this report relate only to the tested sample(s) identified in this report. Manufacturer or whom it may concern should recognize the pass or fail of the test result.

1.2 Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 2.24 dB.

Radiated Emission

The measurement uncertainty is evaluated as ± 3.072 dB.

2 EUT Description

Product	:	Wireless 802.11 b/g/n ADSL2+ Router
Trade Name	:	Baudtec
Model No.	:	RN243R4
Applicant	:	BaudTec Corporation 12F,NO,181,Sec.1.TatungRd.,His-chih City, Taipei county,221,Taiwan,R.O.C
Manufacturer	:	BaudTec Corporation 12F,NO,181,Sec.1.TatungRd.,His-chih City, Taipei county,221,Taiwan,R.O.C
FCC ID	:	XKR-RN243R4
Frequency Range	:	IEEE 802.11b / 802.11g / draft 802.11n Standard-20MHz: 2412 ~ 2462 MHz draft 802.11n Wide-40MHz: 2422 ~ 2452 MHz
Modulation Type	:	IEEE 802.11b:DSSS IEEE 802.11g:DSSS + OFDM draft 802.11n Standard-20MHz channel mode: OFDM draft 802.11n Wide-40MHz channel mode: OFDM
Antenna Type	:	Dipole Antenna
Antenna Gain	:	3 dBi
RF Output Power	:	IEEE 802.11b: 0.021 W / 13.29 dBm IEEE 802.11g: 0.081 W / 19.07 dBm draft 802.11n Standard-20MHz: 0.065 W / 18.16 dBm draft 802.11n Wide-40MHz: 0.061 W / 17.83 dBm
Component		
Power Adapter	:	OEM, ADS10-W120100 I/P: 100-240V~, 50-60Hz, 0.5A O/P: 12VDC, 1.0A Cable out: Non-Shielded, 1.5m, Non-Detachable at Power Adaptor

3 Test Methodology

3.1. Mode of Operation

Decision of Test ATL has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Normal Operation Mode
Mode 2: IEEE 802.11b Link Mode
Mode 3: IEEE 802.11g Link Mode
Mode 4: draft 802.11n Standard-20MHz Link Mode
Mode 5: draft 802.11n Wide-40MHz Link Mode
Mode 6: Receiver Mode

Software used to control the EUT for staying in continuous transmitting mode was programmed.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode only.

IEEE 802.11b (Chain A) mode:

Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 1Mbps data rate were chosen for full testing.

IEEE 802.11g (Chain A) mode:

Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 6Mbps data rate were chosen for full testing.

draft 802.11n Standard-20 MHz (Chain A + Chain B) Channel mode:

Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 13Mbps data rate were chosen for full testing.

draft 802.11n Wide-40 MHz (Chain A + Chain B) Channel mode:

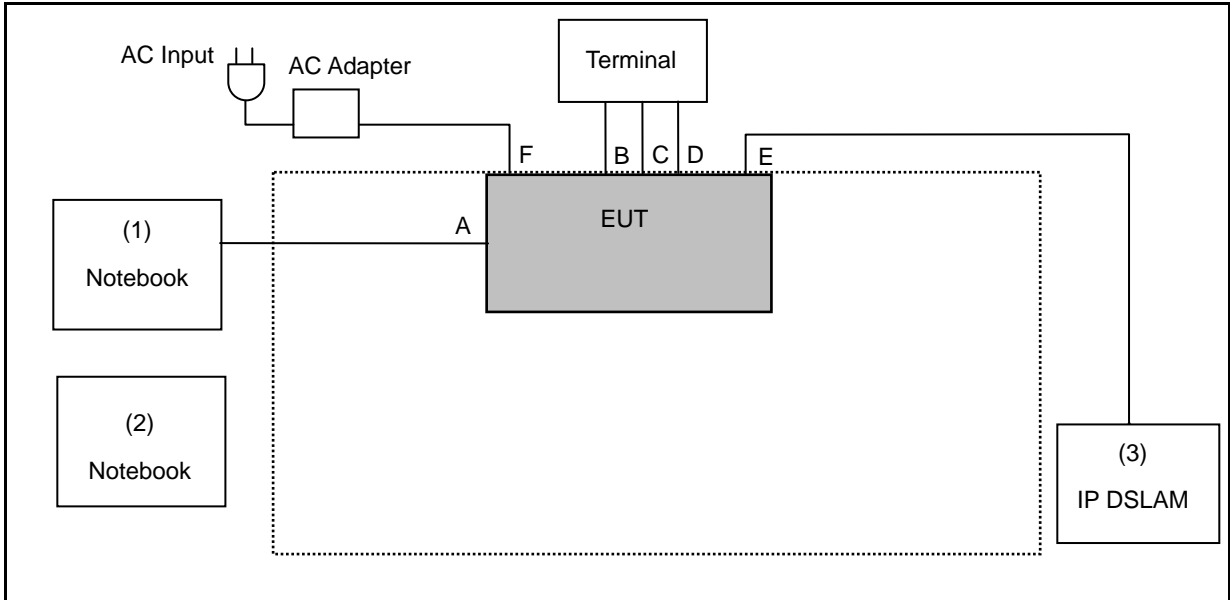
Channel Low (2422MHz), Channel Mid (2437MHz) and Channel High (2452MHz) with 27Mbps data rate were chosen for full testing.

3.2. EUT Exercise Software

1.	Setup the EUT shown on 3.3.
2.	Turn on the power of all equipment.
3.	EUT is connected to LAN port of Notebook.
4.	Turn on Wi-Fi function link to Notebook.
5.	EUT run test program.

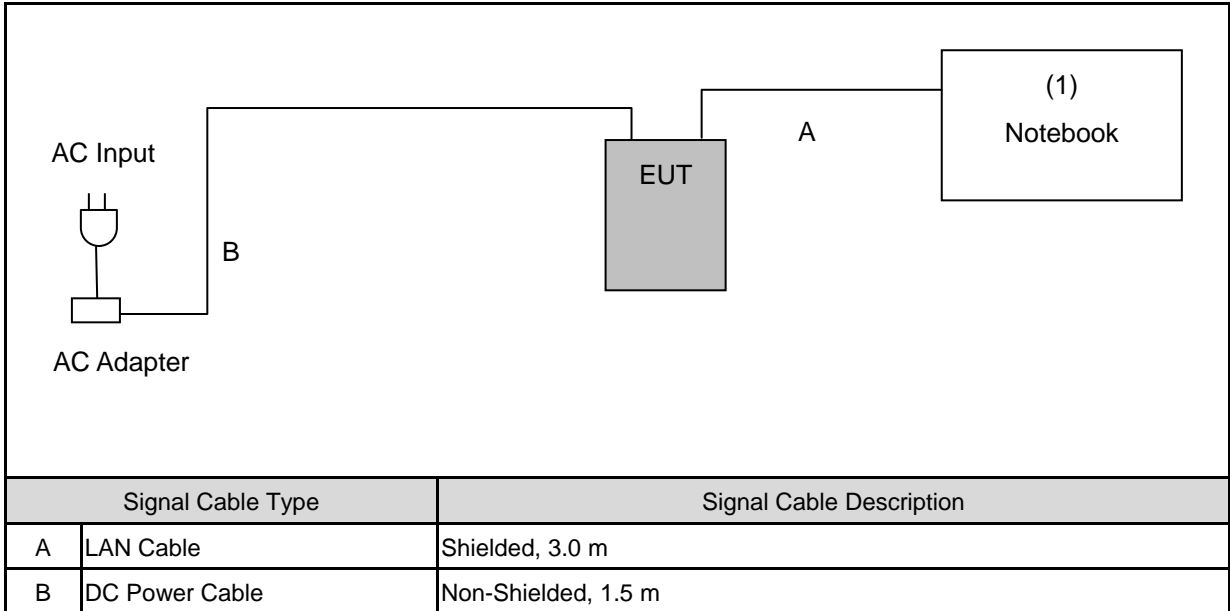
3.3. Configuration of Test System Details

Conducted Emission



Signal Cable Type		Signal Cable Description
A	LAN Cable	Non-Shielded, 3.0m
B	LAN Cable	Non-Shielded, 3.0m
C	LAN Cable	Non-Shielded, 3.0m
D	LAN Cable	Non-Shielded, 3.0m
E	Telecom Cable	Non-Shielded, 3.0m
F	DC Power Cable	Non-Shielded, 1.5m

Devices Description					
	Product	Manufacturer	Model Number	Serial Number	Power Cord
(1)	Notebook	DELL	D830	CN-OHN341-48643 -88Q-1221	Non-Shielded, 2.0m
(2)	Notebook	DELL	D531	CN-OXM006-48643 -87A-3398	Non-Shielded, 2.0m
(3)	IP DSLAM	Draytek	Vigor Access A24M	N/A	N/A

Radiated Emission


Devices Description				
Product	Manufacturer	Model Number	Serial Number	Power Cord
(1) Notebook	DELL	640M	CN-0MG532-70166-6C8-036T	Non-Shielded, 2.0m

3.4. Test Site Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	26
Humidity (%RH)	25-75	60
Barometric pressure (mbar)	860-1060	950

4 Conducted Emission Measurement

4.1. Limit

Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

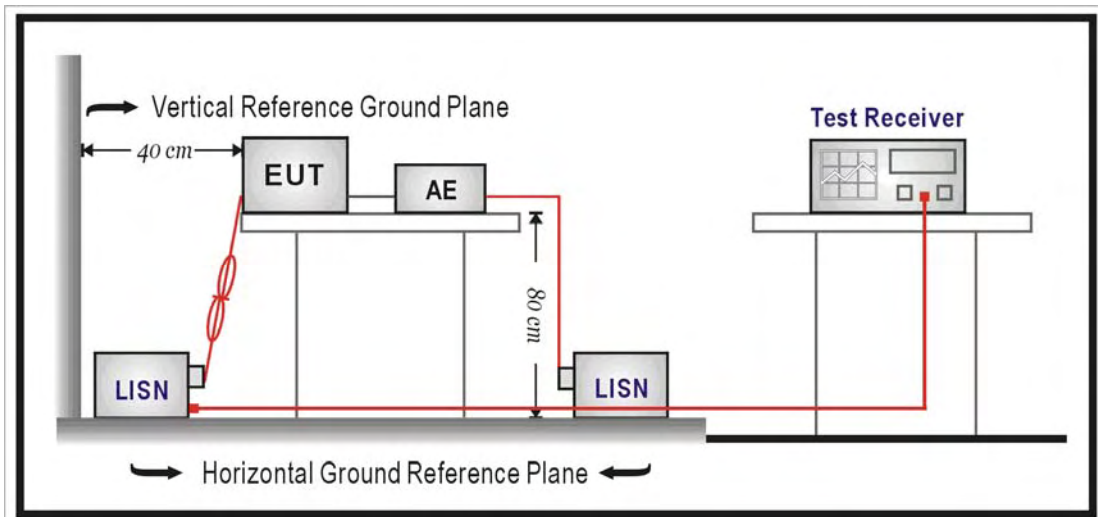
4.2. Test Instruments

Describe	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Test Receiver	R&S	ESCI	100367	06/30/2011	(1)
LISN	R&S	ENV216	101040	03/07/2012	(1)
LISN	R&S	ENV216	101041	03/07/2012	(1)
Test Site	ATL	TE05	TE05	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

4.3. Test Setup



4.4. Test Procedure

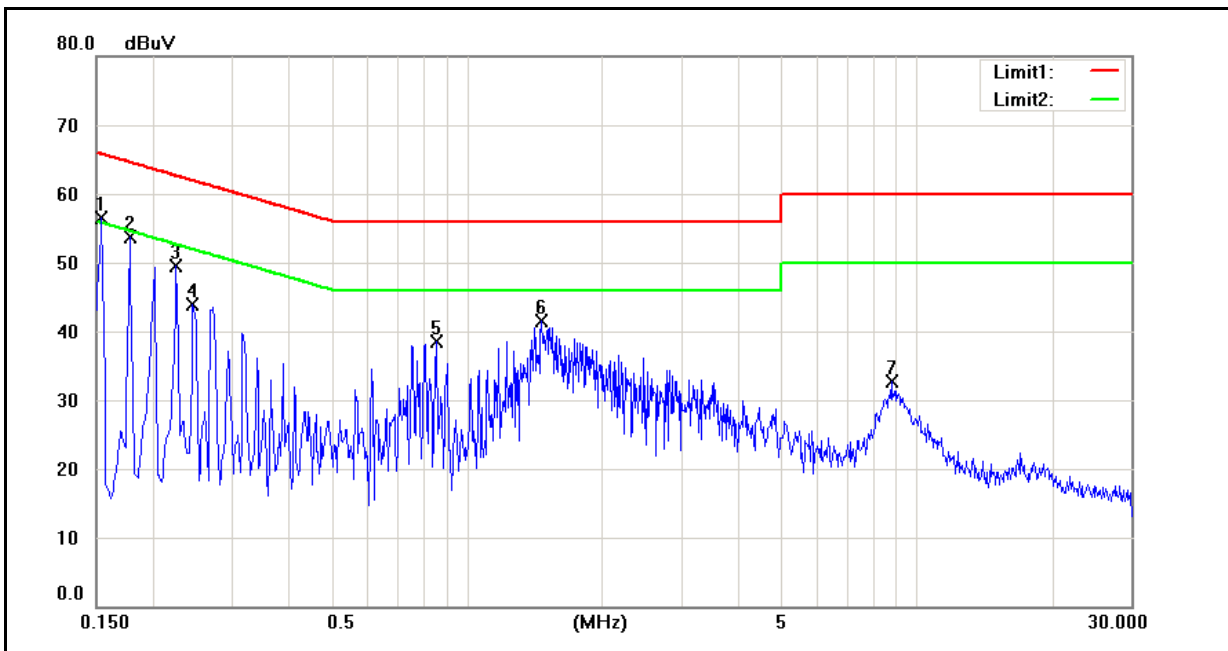
The power line conducted emission measurements were performed in a shielded enclosure. The EUT was assembled on a wooden table which is 80 centimeters high, was placed 40 centimeters from the back wall and at least 1 meter from the sidewall.

Power was fed to the EUT from the public utility power grid through a line filter and EMCO Model 3162/2 SH Line Impedance Stabilization Networks (LISN). The LISN housing, measuring instrumentation case, ground plane, etc., were electrically bonded together at the same RF potential. The Spectrum analyzer was connected to the AC line through an isolation transformer. The 50-ohm output of the LISN was connected to the spectrum analyzer directly. Conducted emission levels were in the CISPR quasi-peak detection mode. The analyzer's 6 dB bandwidth was set to 9 KHz. No post-detector video filter was used.

The spectrum was scanned from 150 KHz to 30 MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in paragraph 4.1.

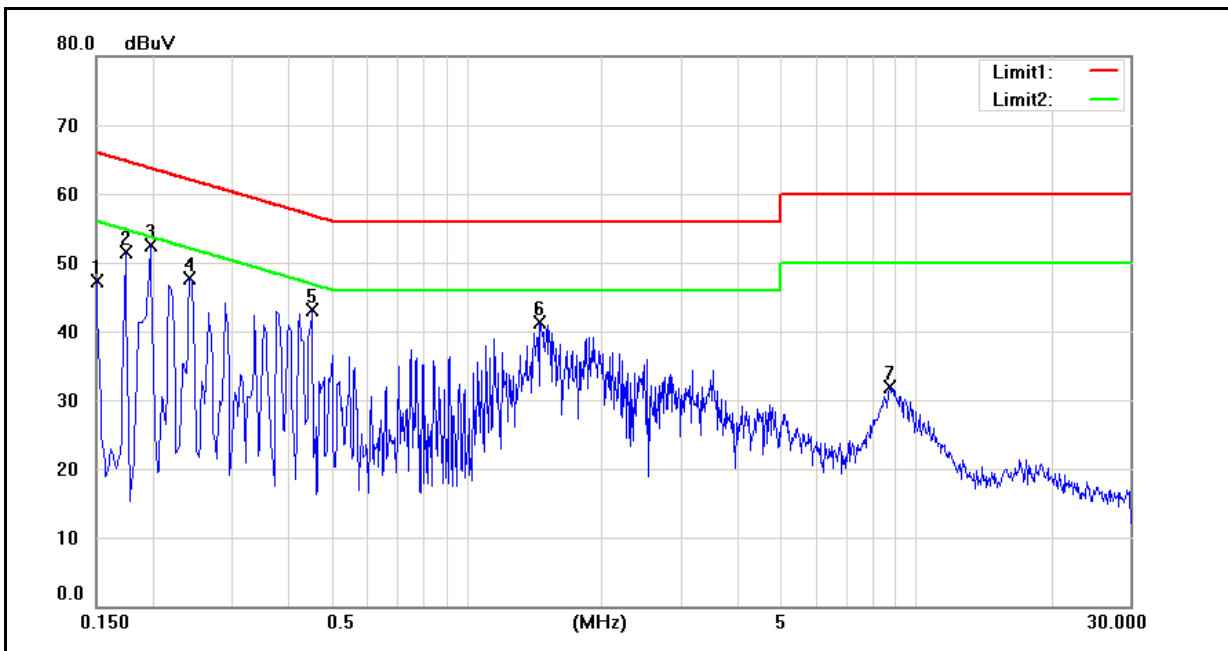
4.5. Test Result

Standard:	FCC Part 15C	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 1	Date:	04/16/2012
		Test By:	Fly Lu
Description:			



No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1540	41.72	22.42	9.65	51.37	32.07	65.78	55.78	-14.41	-23.71	Pass
2	0.1780	31.91	7.07	9.65	41.56	16.72	64.58	54.58	-23.02	-37.86	Pass
3	0.2260	31.89	7.65	9.65	41.54	17.30	62.60	52.60	-21.06	-35.30	Pass
4	0.2460	28.80	16.43	9.65	38.45	26.08	61.89	51.89	-23.44	-25.81	Pass
5	0.8580	27.11	13.98	9.68	36.79	23.66	56.00	46.00	-19.21	-22.34	Pass
6	1.4660	25.97	19.83	9.70	35.67	29.53	56.00	46.00	-20.33	-16.47	Pass
7	8.7940	15.82	7.17	10.10	25.92	17.27	60.00	50.00	-34.08	-32.73	Pass

Standard:	FCC Part 15C	Line:	N
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 1	Date:	04/16/2012
		Test By:	Fly Lu
Description:			



No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1500	42.34	25.72	9.65	51.99	35.37	66.00	56.00	-14.01	-20.63	Pass
2	0.1740	35.45	7.85	9.65	45.10	17.50	64.77	54.77	-19.67	-37.27	Pass
3	0.1980	35.45	22.44	9.65	45.10	32.09	63.69	53.69	-18.59	-21.60	Pass
4	0.2420	30.83	15.62	9.65	40.48	25.27	62.03	52.03	-21.55	-26.76	Pass
5	0.4540	31.76	17.24	9.65	41.41	26.89	56.80	46.80	-15.39	-19.91	Pass
6	1.4620	28.92	20.03	9.70	38.62	29.73	56.00	46.00	-17.38	-16.27	Pass
7	8.7300	15.81	7.16	10.11	25.92	17.27	60.00	50.00	-34.08	-32.73	Pass

5 Radiated Interference Measurement

5.1. Limit

According to §15.209(a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V}/\text{m}$ at meter)	Measurement Distance (meters)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 - 88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

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

5.2. Test Instruments

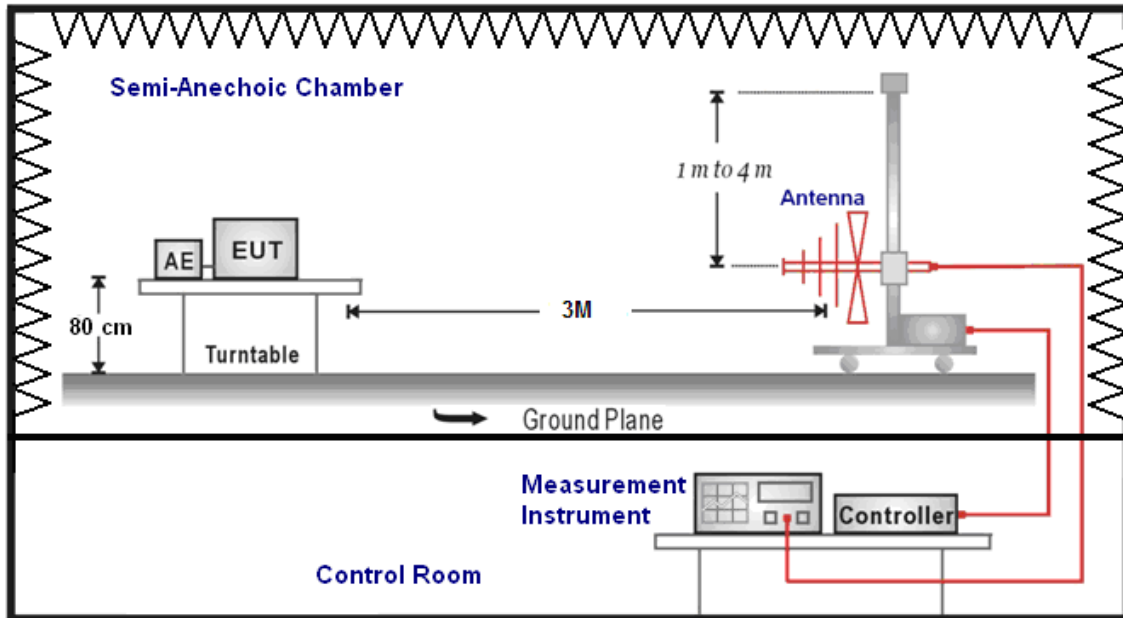
3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/16/2012	(1)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/16/2012	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/22/2012	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/22/2012	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	07/29/2011	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/29/2011	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/28/2011	(1)
Loop Antenna	COM-POWER CORPORATION	AL-130	121014	08/14/2009	(3)
Test Site	ATL	TE01	888001	12/20/2011	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years. (3) Calibration period 3 years.

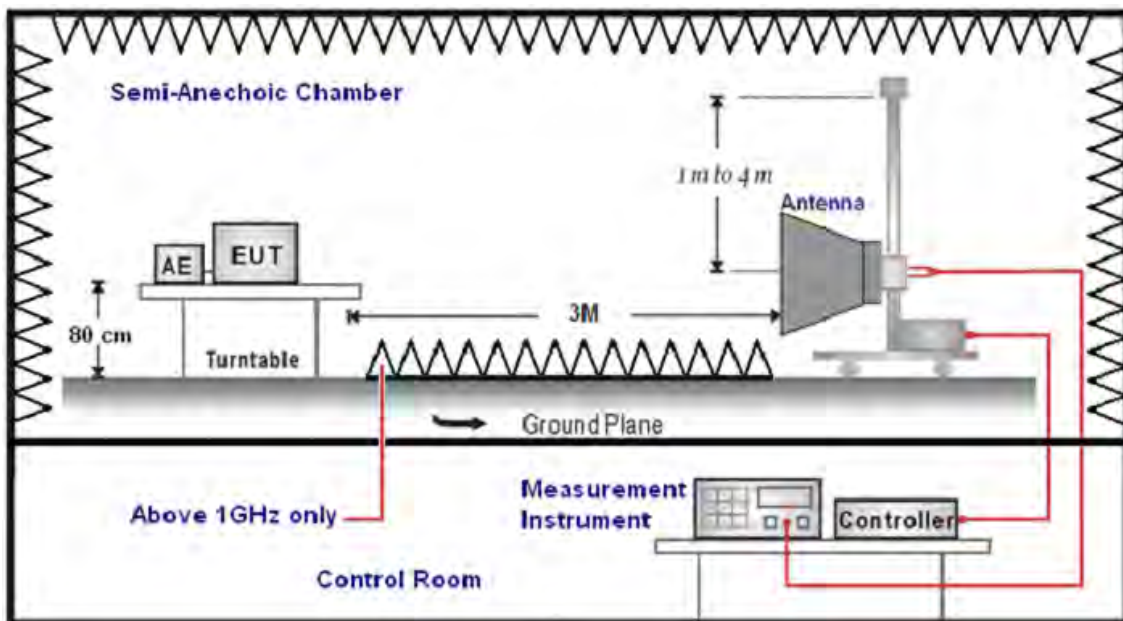
NOTE: N.C.R. = No Calibration Request.

5.3. Setup

Below 1GHz



Above 1GHz



5.4. Test Procedure

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 meters height, top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 9 kHz to 26.5 GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

A nonconductive material surrounded the EUT to supporting the EUT for standing on three orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

SCHWARZBECK MESS-ELEKTRONIK Biconilog Antenna (model VULB9163) at 3 Meter and the SCHWARZBECK Double Ridged Guide Antenna (model BBHA9120D&9170) was used in frequencies 1 – 26.5 GHz at a distance of 1 meter. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20dB/decade).

For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts pre meter ($\mu\text{V}/\text{m}$).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro volts per meter (dBuV/m).

The actual field intensity in referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

(1) Amplitude (dBuV/m) = FI (dBuV) +AF (dBuV) +CL (dBuV)-Gain (dB)

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

(2) Actual Amplitude (dBuV/m) = Amplitude (dBuV)-Dis(dB)

The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:

(a) For fundamental frequency : Transmitter Output < +30dBm

(b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

Data of measurement within this frequency range without mark in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

5.5. Test Result

Below 1GHz

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 1	Date:	04/13/2012
Ant.Polar.:	Horizontal	Test By:	Fly Lu

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	107.0000	36.88	-13.79	23.09	43.50	-20.41	QP
2	200.0000	43.07	-13.99	29.08	43.50	-14.42	QP
3	362.5000	39.48	-8.74	30.74	46.00	-15.26	QP
4	550.0000	34.04	-6.36	27.68	46.00	-18.32	QP
5	715.5000	28.91	-3.06	25.85	46.00	-20.15	QP
6	892.0000	32.43	-0.02	32.41	46.00	-13.59	QP

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 1	Date:	04/13/2012
Ant.Polar.:	Vertical	Test By:	Fly Lu

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	124.5000	41.84	-16.18	25.66	43.50	-17.84	QP
2	289.0000	37.90	-10.88	27.02	46.00	-18.98	QP
3	471.0000	35.70	-7.56	28.14	46.00	-17.86	QP
4	625.0000	33.84	-4.53	29.31	46.00	-16.69	QP
5	767.5000	29.48	-2.03	27.45	46.00	-18.55	QP
6	934.0000	30.28	0.72	31.00	46.00	-15.00	QP

Note: No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

Above 1GHz

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RN243R4			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 2			Date:	04/12/2012		
Frequency:	2412MHz			Test By:	Fly Lu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2820.000	40.61	1.56	42.17	74.00	-31.83	peak	H
4598.000	36.95	7.26	44.21	74.00	-29.79	peak	H
6327.000	35.46	12.32	47.78	74.00	-26.22	peak	H
2925.000	39.00	1.94	40.94	74.00	-33.06	peak	V
4598.000	37.76	7.26	45.02	74.00	-28.98	peak	V
5851.000	35.62	10.60	46.22	74.00	-27.78	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RN243R4			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 2			Date:	04/12/2012		
Frequency:	2437MHz			Test By:	Fly Lu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2799.000	40.54	1.49	42.03	74.00	-31.97	peak	H
4612.000	37.16	7.30	44.46	74.00	-29.54	peak	H
6166.000	36.00	11.60	47.60	74.00	-26.40	peak	H
2946.000	39.63	2.00	41.63	74.00	-32.37	peak	V
4598.000	38.08	7.26	45.34	74.00	-28.66	peak	V
6166.000	35.51	11.60	47.11	74.00	-26.89	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RN243R4			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 2			Date:	04/12/2012		
Frequency:	2462MHz			Test By:	Fly Lu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2778.000	39.93	1.42	41.35	74.00	-32.65	peak	H
4514.000	36.74	7.00	43.74	74.00	-30.26	peak	H
6047.000	35.56	11.07	46.63	74.00	-27.37	peak	H
3002.000	39.74	2.20	41.94	74.00	-32.06	peak	V
4591.000	37.37	7.22	44.59	74.00	-29.41	peak	V
5956.000	35.65	10.79	46.44	74.00	-27.56	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RN243R4			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 3			Date:	04/12/2012		
Frequency:	2412MHz			Test By:	Fly Lu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2785.000	40.45	1.44	41.89	74.00	-32.11	peak	H
4234.000	38.53	6.08	44.61	74.00	-29.39	peak	H
5935.000	35.86	10.75	46.61	74.00	-27.39	peak	H
2463.000	41.28	0.27	41.55	74.00	-32.45	peak	V
4297.000	37.19	6.29	43.48	74.00	-30.52	peak	V
6229.000	35.66	11.88	47.54	74.00	-26.46	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RN243R4			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 3			Date:	04/12/2012		
Frequency:	2437MHz			Test By:	Fly Lu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2792.000	40.38	1.47	41.85	74.00	-32.15	peak	H
4745.000	37.04	7.71	44.75	74.00	-29.25	peak	H
6110.000	35.42	11.35	46.77	74.00	-27.23	peak	H
2813.000	41.18	1.53	42.71	74.00	-31.29	peak	V
4745.000	36.99	7.71	44.70	74.00	-29.30	peak	V
6502.000	35.10	13.09	48.19	74.00	-25.81	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RN243R4			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 3			Date:	04/12/2012		
Frequency:	2462MHz			Test By:	Fly Lu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2778.000	40.60	1.42	42.02	74.00	-31.98	peak	H
4675.000	37.45	7.50	44.95	74.00	-29.05	peak	H
6299.000	36.10	12.19	48.29	74.00	-25.71	peak	H
3170.000	39.71	2.58	42.29	74.00	-31.71	peak	V
5011.000	36.51	8.54	45.05	74.00	-28.95	peak	V
6341.000	35.63	12.38	48.01	74.00	-25.99	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RN243R4			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 4			Date:	04/12/2012		
Frequency:	2412MHz			Test By:	Fly Lu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2729.000	40.06	1.24	41.30	74.00	-32.70	peak	H
4493.000	37.45	6.93	44.38	74.00	-29.62	peak	H
5956.000	35.39	10.79	46.18	74.00	-27.82	peak	H
2470.000	41.31	0.30	41.61	74.00	-32.39	peak	V
4325.000	37.02	6.39	43.41	74.00	-30.59	peak	V
6103.000	36.35	11.32	47.67	74.00	-26.33	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RN243R4			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 4			Date:	04/12/2012		
Frequency:	2437MHz			Test By:	Fly Lu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2449.000	41.75	0.20	41.95	74.00	-32.05	peak	H
3898.000	38.58	4.92	43.50	74.00	-30.50	peak	H
5585.000	35.76	10.14	45.90	74.00	-28.10	peak	H
2526.000	41.72	0.53	42.25	74.00	-31.75	peak	V
4458.000	37.39	6.81	44.20	74.00	-29.80	peak	V
6075.000	35.90	11.19	47.09	74.00	-26.91	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RN243R4			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 4			Date:	04/12/2012		
Frequency:	2462MHz			Test By:	Fly Lu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2806.000	40.03	1.52	41.55	74.00	-32.45	peak	H
4815.000	36.25	7.93	44.18	74.00	-29.82	peak	H
6152.000	35.79	11.54	47.33	74.00	-26.67	peak	H
2806.000	39.79	1.52	41.31	74.00	-32.69	peak	V
4787.000	37.73	7.85	45.58	74.00	-28.42	peak	V
6341.000	35.34	12.38	47.72	74.00	-26.28	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RN243R4			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 5			Date:	04/12/2012		
Frequency:	2422MHz			Test By:	Fly Lu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2792.000	41.43	1.47	42.90	74.00	-31.10	peak	H
4612.000	37.09	7.30	44.39	74.00	-29.61	peak	H
6145.000	35.75	11.50	47.25	74.00	-26.75	peak	H
2792.000	41.22	1.47	42.69	74.00	-31.31	peak	V
4612.000	36.87	7.30	44.17	74.00	-29.83	peak	V
6320.000	35.55	12.29	47.84	74.00	-26.16	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RN243R4			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 5			Date:	04/12/2012		
Frequency:	2437MHz			Test By:	Fly Lu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3142.000	39.43	2.52	41.95	74.00	-32.05	peak	H
4941.000	38.26	8.31	46.57	74.00	-27.43	peak	H
6481.000	34.92	13.00	47.92	74.00	-26.08	peak	H
2785.000	39.64	1.44	41.08	74.00	-32.92	peak	V
4395.000	37.48	6.61	44.09	74.00	-29.91	peak	V
5872.000	36.37	10.64	47.01	74.00	-26.99	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RN243R4			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 5			Date:	04/12/2012		
Frequency:	2452MHz			Test By:	Fly Lu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2456.000	41.30	0.23	41.53	74.00	-32.47	peak	H
4430.000	37.60	6.72	44.32	74.00	-29.68	peak	H
5914.000	35.68	10.71	46.39	74.00	-27.61	peak	H
2778.000	40.41	1.42	41.83	74.00	-32.17	peak	V
4612.000	36.95	7.30	44.25	74.00	-29.75	peak	V
6117.000	36.11	11.38	47.49	74.00	-26.51	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 6	Date:	04/13/2012
Modulation:	IEEE 802.11b	Test By:	Fly Lu
Frequency:	2437MHz		

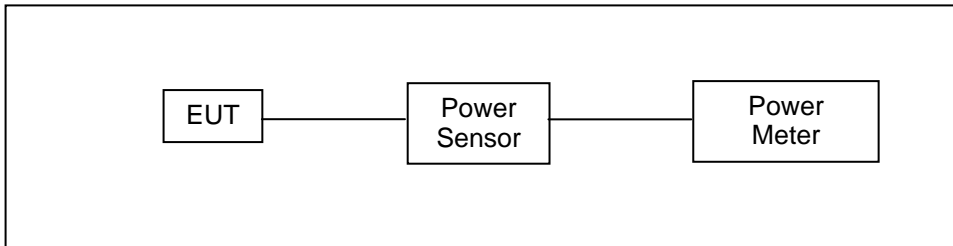
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Peak Limit (dBuV/m)	AVG. Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2778.000	39.99	1.42	41.41	74.00	54.00	-32.59	peak	H
4682.000	36.13	7.52	43.65	74.00	54.00	-30.35	peak	H
5977.000	35.21	10.82	46.03	74.00	54.00	-27.97	peak	H
2505.000	40.55	0.45	41.00	74.00	54.00	-33.00	peak	V
4311.000	37.22	6.34	43.56	74.00	54.00	-30.44	peak	V
6061.000	35.57	11.13	46.70	74.00	54.00	-27.30	peak	V

6 Maximum Conducted Output Power Measurement

6.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm.

6.2. Test Setup



6.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Single Channel PK Power Sensor	Agilent	N1911A	MY45101619	07/19/2010	(2)
Wideband Power Meter	Agilent	N1921A	MY45241957	07/19/2010	(2)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

6.4. Test Procedure

The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to power sensor. The maximum peak output power shall not exceed 1 watt.

Use a direct connection between the antenna port of transmitter and the power sensor, for prevent the power sensor input attenuation 40-50 dB. Set the RBW Bandwidth of the emission or use a channel power meter mode.

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm). For antennas with gains greater than 6 dBi, transmitter output level must be decreased by an amount equal to $(\text{GAIN} - 6)/3$ dBm.

The antenna port of the EUT was connected to the input of a power sensor. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

6.5. Test Result

Model Number	RN243R4					
Test Item	Maximum Conducted Output Power					
Test Mode	Mode 2: IEEE 802.11b Link Mode					
Date of Test	04/16/2012			Test Site	TE02	
Frequency (MHz)	Data Rate	Average Power		Peak Power		Limit (dBm)
		(dBm)	(W)	(dBm)	(W)	
2412	1	10.34	0.011	13.14	0.021	< 30
2437		10.46	0.011	13.17	0.021	< 30
2462		10.55	0.011	13.29	0.021	< 30

Model Number	RN243R4					
Test Item	Maximum Conducted Output Power					
Test Mode	Mode 3: IEEE 802.11g Link Mode					
Date of Test	04/16/2012			Test Site	TE02	
Frequency (MHz)	Data Rate	Average Power		Peak Power		Limit (dBm)
		(dBm)	(W)	(dBm)	(W)	
2412	6	7.72	0.006	18.05	0.064	< 30
2437		8.40	0.007	18.62	0.073	< 30
2462		8.62	0.007	19.07	0.081	< 30

Model Number	RN243R4											
Test Item	Maximum Conducted Output Power											
Test Mode	Mode 4: draft 802.11n Standard-20MHz Link Mode											
Date of Test	04/16/2012						Test Site		TE02			
Frequency (MHz)	Data Rate	Average Power				Peak Power						Limit (dBm)
		Chain A		Chain B		Chain A		Chain B		Total		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
2412	13 M	4.20	0.003	4.65	0.003	14.40	0.028	15.08	0.032	17.76	0.060	< 30
2437		4.79	0.003	4.72	0.003	14.90	0.031	15.12	0.033	18.02	0.063	< 30
2462		5.08	0.003	4.85	0.003	15.10	0.032	15.19	0.033	18.16	0.065	< 30

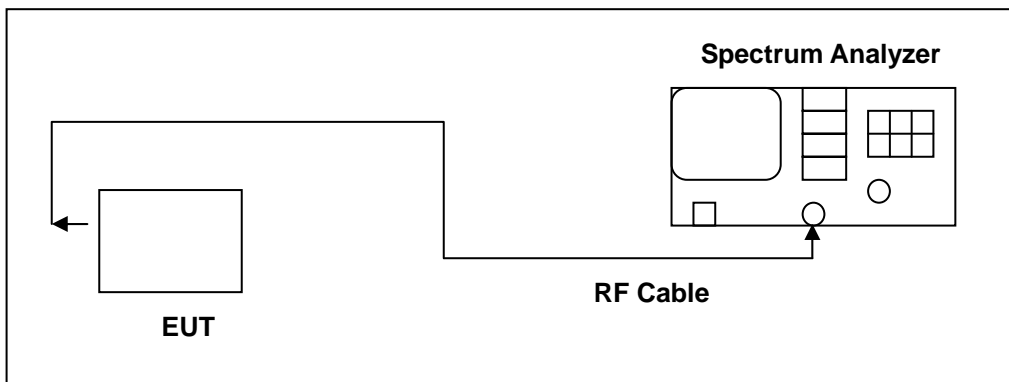
Model Number	RN243R4											
Test Item	Maximum Conducted Output Power											
Test Mode	Mode 5: draft 802.11n Wide-40MHz Link Mode											
Date of Test	04/16/2012						Test Site		TE02			
Frequency (MHz)	Data Rate	Average Power				Peak Power						Limit (dBm)
		Chain A		Chain B		Chain A		Chain B		Total		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
2422	27 M	3.82	0.002	4.25	0.003	13.78	0.024	14.22	0.026	17.02	0.050	< 30
2437		4.44	0.003	4.23	0.003	14.36	0.027	14.36	0.027	17.37	0.055	< 30
2452		4.65	0.003	4.31	0.003	15.15	0.033	14.47	0.028	17.83	0.061	< 30

7 6dB RF Bandwidth Measurement

7.1. Limit

Systems using digital modulation techniques may operate in the 2400–2483.5 MHz bands. The minimum 6 dB band-width shall be at least 500 kHz.

7.2. Test Setup



7.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/28/2010	(2)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

7.4. Test Procedure

The EUT was setup to ANSI C63.4, 2009; tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A peak output reading was taken, a DISPLAY line was drawn 6 dB lower than peak level. The 6 dB bandwidth was determined from where the channel output spectrum intersected the display line.

The test was performed at 3 channels (Channel 1, 6, 11)

7.5. Test Result

Model Number	RN243R4		
Test Item	6dB RF Bandwidth		
Test Mode	Mode 2: IEEE 802.11b Link Mode		
Date of Test	04/16/2012	Test Site	TE02
Ant. Port	Frequency (MHz)	Measurement (kHz)	Limit (kHz)
Chain A	2412	10219	> 500
	2437	10230	> 500
	2462	10212	> 500

Model Number	RN243R4		
Test Item	6dB RF Bandwidth		
Test Mode	Mode 3: IEEE 802.11g Link Mode		
Date of Test	04/16/2012	Test Site	TE02
Ant. Port	Frequency (MHz)	Measurement (kHz)	Limit (kHz)
Chain A	2412	16459	> 500
	2437	16462	> 500
	2462	16470	> 500

Model Number	RN243R4		
Test Item	6dB RF Bandwidth		
Test Mode	Mode 4: draft 802.11n Standard-20MHz Link Mode		
Date of Test	04/16/2012	Test Site	TE02
Ant. Port	Frequency (MHz)	Measurement (kHz)	Limit (kHz)
Chain A	2412	17677	> 500
	2437	17666	> 500
	2462	17650	> 500
Chain B	2412	17696	> 500
	2437	17671	> 500
	2462	17597	> 500

Model Number	RN243R4		
Test Item	6dB RF Bandwidth		
Test Mode	Mode 5: draft 802.11n Wide-40MHz Link Mode		
Date of Test	04/16/2012	Test Site	TE02
Ant. Port	Frequency (MHz)	Measurement (kHz)	Limit (kHz)
Chain A	2422	36265	> 500
	2437	36170	> 500
	2452	36149	> 500
Chain B	2422	36027	> 500
	2437	35918	> 500
	2452	36031	> 500

7.6. Test Graphs

Mode 2: IEEE 802.11b Link Mode _ Chain A	
2412	<p>Agilent R T Freq/Channel</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.39700000 GHz</p> <p>Stop Freq 2.42700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/Offset 10.3 dB</p> <p>Center 2.412 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>14.8706 MHz x dB -6.00 dB</p> <p>Transmit Freq Error 1.172 kHz</p> <p>x dB Bandwidth 10.219 MHz</p>
2437	<p>Agilent R T Freq/Channel</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.42200000 GHz</p> <p>Stop Freq 2.45200000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/Offset 10.3 dB</p> <p>Center 2.437 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>14.8904 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -4.748 kHz</p> <p>x dB Bandwidth 10.230 MHz</p>
2462	<p>Agilent R T Freq/Channel</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.44700000 GHz</p> <p>Stop Freq 2.47700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/Offset 10.3 dB</p> <p>Center 2.462 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>14.8801 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -14.251 kHz</p> <p>x dB Bandwidth 10.212 MHz</p>

Mode 3: IEEE 802.11g Link Mode _ Chain A	
2412	<p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/Offset 10.3 dB</p> <p>Center 2.412 GHz Span 30 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth 16.8257 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -122.728 kHz x dB Bandwidth 16.459 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.39700000 GHz</p> <p>Stop Freq 2.42700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
2437	<p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/Offset 10.3 dB</p> <p>Center 2.437 GHz Span 30 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth 16.8028 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -135.610 kHz x dB Bandwidth 16.462 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.42200000 GHz</p> <p>Stop Freq 2.45200000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
2462	<p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/Offset 10.3 dB</p> <p>Center 2.462 GHz Span 30 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth 16.7652 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -91.710 kHz x dB Bandwidth 16.470 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.44700000 GHz</p> <p>Stop Freq 2.47700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

Mode 4: draft 802.11n Standard-20MHz Link Mode _ Chain A

<p>2412</p>	
<p>2437</p>	
<p>2462</p>	

Mode 4: draft 802.11n Standard-20MHz Link Mode _ Chain B

<p>2412</p>	<p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/Offset 10.3 dB</p> <p>Center 2.412 GHz Span 30 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth 17.7695 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -7.683 kHz x dB Bandwidth 17.696 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.39700000 GHz</p> <p>Stop Freq 2.42700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/Offset 10.3 dB</p> <p>Center 2.437 GHz Span 30 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth 17.7608 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -20.240 kHz x dB Bandwidth 17.671 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.42200000 GHz</p> <p>Stop Freq 2.45200000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2462</p>	<p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/Offset 10.3 dB</p> <p>Center 2.462 GHz Span 30 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth 17.7712 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -14.487 kHz x dB Bandwidth 17.597 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.44700000 GHz</p> <p>Stop Freq 2.47700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

Mode 5: draft 802.11n Wide-40MHz Link Mode _ Chain A

<p>2422</p>	
<p>2437</p>	
<p>2452</p>	

Mode 5: draft 802.11n Wide-40MHz Link Mode _ Chain B

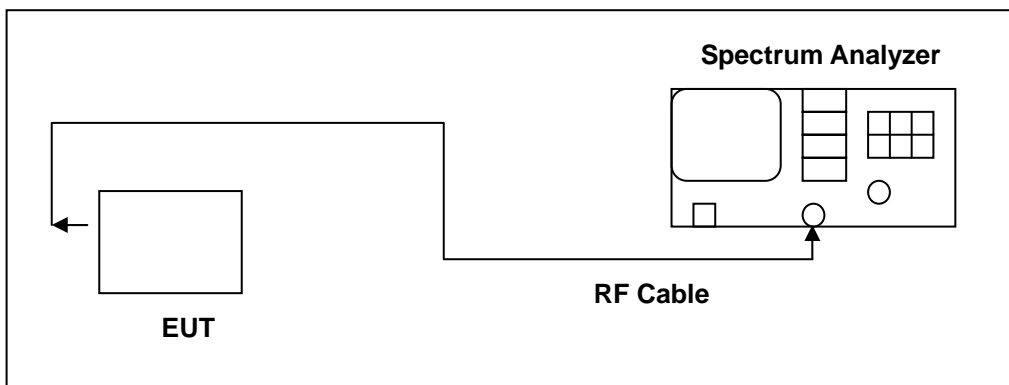
<p>2422</p>	<p>Agilent R T</p> <p>Ch Freq 2.422 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/ Offset 10.3 dB</p> <p>Center 2.422 GHz Span 50 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 % 36.1268 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -18.556 kHz x dB Bandwidth 36.027 MHz</p> <p>Freq/Channel Center Freq 2.42200000 GHz Start Freq 2.39700000 GHz Stop Freq 2.44700000 GHz CF Step 5.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/ Offset 10.3 dB</p> <p>Center 2.437 GHz Span 50 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 % 36.1414 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -18.113 kHz x dB Bandwidth 35.918 MHz</p> <p>Freq/Channel Center Freq 2.43700000 GHz Start Freq 2.41200000 GHz Stop Freq 2.46200000 GHz CF Step 5.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
<p>2452</p>	<p>Agilent R T</p> <p>Ch Freq 2.452 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/ Offset 10.3 dB</p> <p>Center 2.452 GHz Span 50 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 % 36.0942 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -4.535 kHz x dB Bandwidth 36.031 MHz</p> <p>Freq/Channel Center Freq 2.45200000 GHz Start Freq 2.42700000 GHz Stop Freq 2.47700000 GHz CF Step 5.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>

8 Maximum Power Density Measurement

8.1. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

8.2. Test Setup



8.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/28/2010	(2)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

8.4. Test Procedure

The EUT was setup to ANSI C63.4, 2009; tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The spectrum analyzer RES BW was set to 3 kHz. The START and STOP frequencies were set to the band edges of the maximum output pass band. If there is no clear maximum amplitude in any given portion of the band, it may be necessary to make measurements at a number of bands defined by several START and STOP frequency pairs. The specification calls for a 1 second interval at each 3 kHz bandwidth; total SWEEP TIME is calculated as follows:

$$\text{SWEEP TIME (SEC)} = (\text{Fstop, kHz} - \text{Fstart, kHz}) / 3 \text{ kHz}$$

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

8.5. Test Result

Model Number	RN243R4		
Test Item	Maximum Power Density		
Test Mode	Mode 2: IEEE 802.11b Link Mode		
Date of Test	04/16/2012	Test Site	TE02
Ant. Port	Frequency (MHz)	Measurement (dBm)	Limit (dBm)
Chain A	2412	-17.80	< 8
	2437	-17.66	< 8
	2462	-17.89	< 8

Model Number	RN243R4		
Test Item	Maximum Power Density		
Test Mode	Mode 3: IEEE 802.11g Link Mode		
Date of Test	04/16/2012	Test Site	TE02
Ant. Port	Frequency (MHz)	Measurement (dBm)	Limit (dBm)
Chain A	2412	-18.94	< 8
	2437	-18.97	< 8
	2462	-19.25	< 8

Model Number	RN243R4		
Test Item	Maximum Power Density		
Test Mode	Mode 4: draft 802.11n Standard-20MHz Link Mode		
Date of Test	04/16/2012	Test Site	TE02
Ant. Port	Frequency (MHz)	Measurement (dBm)	Limit (dBm)
Chain A	2412	-21.73	< 8
	2437	-21.73	< 8
	2462	-21.52	< 8
Chain B	2412	-22.42	< 8
	2437	-22.96	< 8
	2462	-23.83	< 8

Model Number	RN243R4		
Test Item	Maximum Power Density		
Test Mode	Mode 5: draft 802.11n Wide-40MHz Link Mode		
Date of Test	04/16/2012	Test Site	TE02
Ant. Port	Frequency (MHz)	Measurement (dBm)	Limit (dBm)
Chain A	2422	-24.45	< 8
	2437	-23.04	< 8
	2452	-23.25	< 8
Chain B	2422	-25.92	< 8
	2437	-26.07	< 8
	2452	-25.83	< 8

8.6. Test Graphs

Mode 2: IEEE 802.11b Link Mode _ Chain A	
2412	<p>Agilent R T Freq/Channel Mkr1 2.41263275 GHz Ref 15 dBm #Atten 20 dB Peak -17.8 dBm Log 10 dB/ Offst 10.3 dB DI 8.0 dBm M1 S2 S3 FC AA Center 2.413 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p>
2437	<p>Agilent R T Freq/Channel Mkr1 2.43767200 GHz Ref 15 dBm #Atten 20 dB Peak -17.66 dBm Log 10 dB/ Offst 10.3 dB DI 8.0 dBm M1 S2 S3 FC AA Center 2.438 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p>
2462	<p>Agilent R T Freq/Channel Mkr1 2.46263275 GHz Ref 15 dBm #Atten 20 dB Peak -17.89 dBm Log 10 dB/ Offst 10.3 dB DI 8.0 dBm M1 S2 S3 FC AA Center 2.463 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p>

Mode 3: IEEE 802.11g Link Mode _ Chain A

<p>2412</p>	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.41604500 GHz -18.94 dBm</p> <p>Peak Log 10 dB/ Offst 10.3 dB DI 8.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.416 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p> <p>Freq/Channel Center Freq 2.41604500 GHz Start Freq 2.41589500 GHz Stop Freq 2.41619500 GHz CF Step 30.0000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.44104425 GHz -18.97 dBm</p> <p>Peak Log 10 dB/ Offst 10.3 dB DI 8.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.441 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p> <p>Freq/Channel Center Freq 2.44104425 GHz Start Freq 2.44089425 GHz Stop Freq 2.44119425 GHz CF Step 30.0000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
<p>2462</p>	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.45918700 GHz -19.25 dBm</p> <p>Peak Log 10 dB/ Offst 10.3 dB DI 8.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.459 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p> <p>Freq/Channel Center Freq 2.45918700 GHz Start Freq 2.45903700 GHz Stop Freq 2.45933700 GHz CF Step 30.0000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>

Mode 4: draft 802.11n Standard-20MHz Link Mode _ Chain A

<p>2412</p>	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.41604425 GHz 21.73 dBm</p> <p>Peak Log 10 dB/ Offst 10.3 dB DI 8.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.416 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p> <p>Freq/Channel Center Freq 2.41604425 GHz Start Freq 2.41589425 GHz Stop Freq 2.41619425 GHz CF Step 30.0000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.43040750 GHz 21.73 dBm</p> <p>Peak Log 10 dB/ Offst 10.3 dB DI 8.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.43 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p> <p>Freq/Channel Center Freq 2.43040675 GHz Start Freq 2.43025675 GHz Stop Freq 2.43055675 GHz CF Step 30.0000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
<p>2462</p>	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.45540825 GHz 21.52 dBm</p> <p>Peak Log 10 dB/ Offst 10.3 dB DI 8.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.455 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p> <p>Freq/Channel Center Freq 2.45540825 GHz Start Freq 2.45525825 GHz Stop Freq 2.45555825 GHz CF Step 30.0000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>

Mode 4: draft 802.11n Standard-20MHz Link Mode _ Chain B

<p>2412</p>	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.40540850 GHz 22.42 dBm</p> <p>Center 2.405 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.44356475 GHz 22.96 dBm</p> <p>Center 2.444 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p>
<p>2462</p>	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.45978350 GHz 23.83 dBm</p> <p>Center 2.46 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p>

Mode 5: draft 802.11n Wide-40MHz Link Mode _ Chain A

2422	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.41417925 GHz 24.45 dBm</p> <p>Peak Log 10 dB/ Offst 10.3 dB DI 8.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.414 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p> <p>Freq/Channel Center Freq 2.41418000 GHz Start Freq 2.41403000 GHz Stop Freq 2.41433000 GHz CF Step 30.0000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
2437	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.44479350 GHz 23.04 dBm</p> <p>Peak Log 10 dB/ Offst 10.3 dB DI 8.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.445 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p> <p>Freq/Channel Center Freq 2.44479275 GHz Start Freq 2.44464275 GHz Stop Freq 2.44494275 GHz CF Step 30.0000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
2452	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.45979425 GHz 23.25 dBm</p> <p>Peak Log 10 dB/ Offst 10.3 dB DI 8.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.46 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p> <p>Freq/Channel Center Freq 2.45979275 GHz Start Freq 2.45964275 GHz Stop Freq 2.45994275 GHz CF Step 30.0000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>

Mode 5: draft 802.11n Wide-40MHz Link Mode _ Chain B

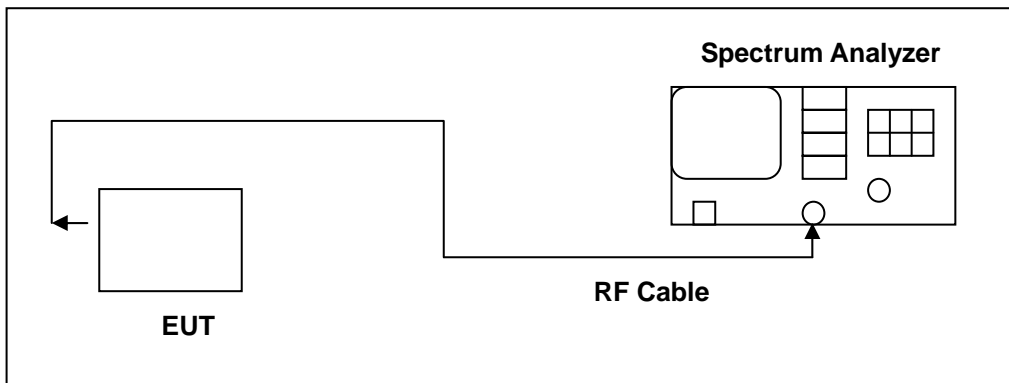
<p>2422</p>	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.41420500 GHz -25.92 dBm</p> <p>Peak Log 10 dB/ Offst 10.3 dB DI 8.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.414 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p> <p>Freq/Channel Center Freq 2.41420500 GHz Start Freq 2.41405500 GHz Stop Freq 2.41435500 GHz CF Step 30.0000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.44037500 GHz -26.07 dBm</p> <p>Peak Log 10 dB/ Offst 10.3 dB DI 8.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.44 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p> <p>Freq/Channel Center Freq 2.44037500 GHz Start Freq 2.44022500 GHz Stop Freq 2.44052500 GHz CF Step 30.0000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>
<p>2452</p>	<p>Agilent R T</p> <p>Ref 15 dBm #Atten 20 dB Mkr1 2.44420550 GHz -25.83 dBm</p> <p>Peak Log 10 dB/ Offst 10.3 dB DI 8.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.444 GHz Span 300 kHz #Res BW 3 kHz #VBW 10 kHz #Sweep 100 s (401 pts)</p> <p>Freq/Channel Center Freq 2.44420550 GHz Start Freq 2.44405550 GHz Stop Freq 2.44435550 GHz CF Step 30.0000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off</p>

9 Out of Band Conducted Emissions Measurement

9.1. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

9.2. Test Setup



9.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/28/2010	(2)
Spectrum Analyzer	Agilent	E4408B	MY45107753	07/07/2011	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

9.4. Test Procedure

In any 100 kHz bandwidth outside the EUT pass band, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20 dB below that of the maximum in-band 100 kHz emission, antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

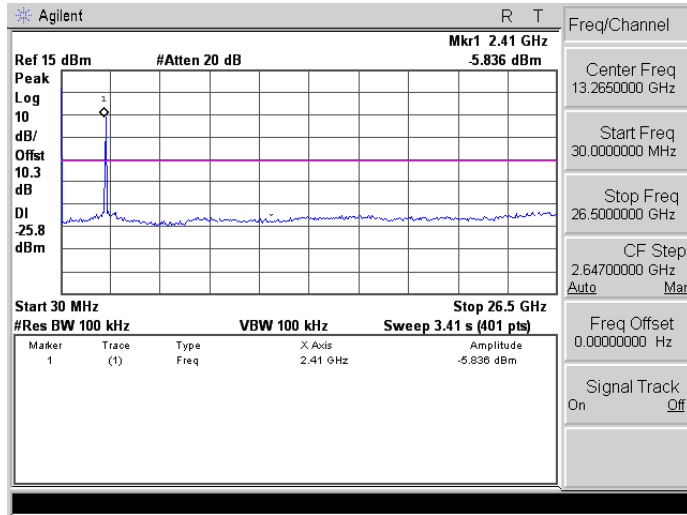
All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the pass band. The test was performed at 3 channels (Channel 1, 6, 11)

9.5. Test Graphs

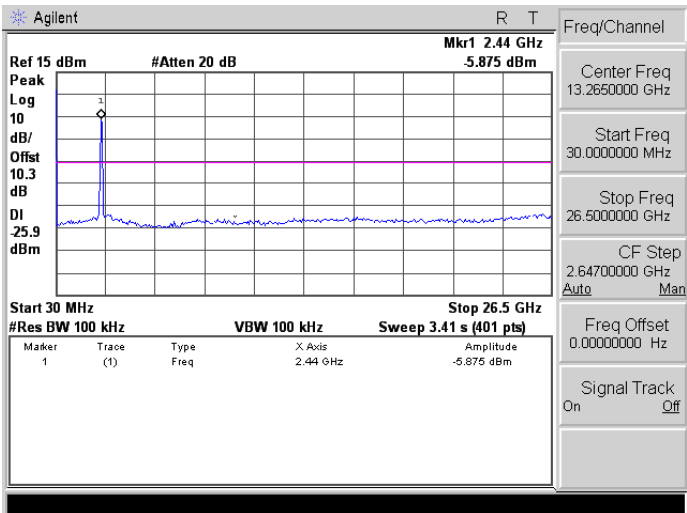
Mode 2: IEEE 802.11b Link Mode _ Chain A											
2412	<p>Agilent R T Ref 15 dBm #Atten 20 dB Mkr1 2.41 GHz -0.28 dBm Peak Log 10 dB/ Offst 10.3 dB DI -20.3 dBm Start 30 MHz Stop 26.5 GHz #Res BW 100 kHz VBW 100 kHz Sweep 3.41 s (401 pts) <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.41 GHz</td> <td>-0.28 dBm</td> </tr> </tbody> </table> Freq/Channel: Center Freq 13.2650000 GHz, Start Freq 30.0000000 MHz, Stop Freq 26.5000000 GHz, CF Step 2.64700000 GHz, Freq Offset 0.0000000 Hz, Signal Track Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.41 GHz	-0.28 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.41 GHz	-0.28 dBm							
2437	<p>Agilent R T Ref 15 dBm #Atten 20 dB Mkr1 2.44 GHz 0.447 dBm Peak Log 10 dB/ Offst 10.3 dB DI -19.6 dBm Start 30 MHz Stop 26.5 GHz #Res BW 100 kHz VBW 100 kHz Sweep 3.41 s (401 pts) <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.44 GHz</td> <td>0.447 dBm</td> </tr> </tbody> </table> Freq/Channel: Center Freq 13.2650000 GHz, Start Freq 30.0000000 MHz, Stop Freq 26.5000000 GHz, CF Step 2.64700000 GHz, Freq Offset 0.0000000 Hz, Signal Track Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.44 GHz	0.447 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.44 GHz	0.447 dBm							
2462	<p>Agilent R T Ref 15 dBm #Atten 20 dB Mkr1 2.46 GHz 0.474 dBm Peak Log 10 dB/ Offst 10.3 dB DI -19.5 dBm Start 30 MHz Stop 26.5 GHz #Res BW 100 kHz VBW 100 kHz Sweep 3.41 s (401 pts) <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.46 GHz</td> <td>0.474 dBm</td> </tr> </tbody> </table> Freq/Channel: Center Freq 13.2650000 GHz, Start Freq 30.0000000 MHz, Stop Freq 26.5000000 GHz, CF Step 2.64700000 GHz, Freq Offset 0.0000000 Hz, Signal Track Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.46 GHz	0.474 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.46 GHz	0.474 dBm							

Mode 3: IEEE 802.11g Link Mode _ Chain A

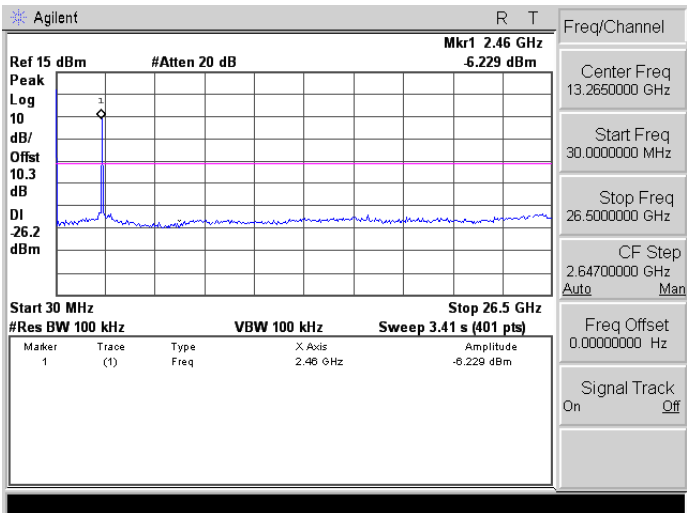
2412



2437

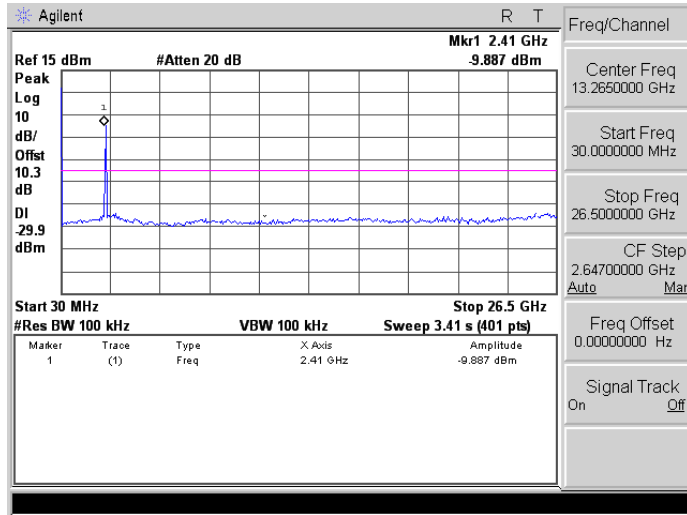


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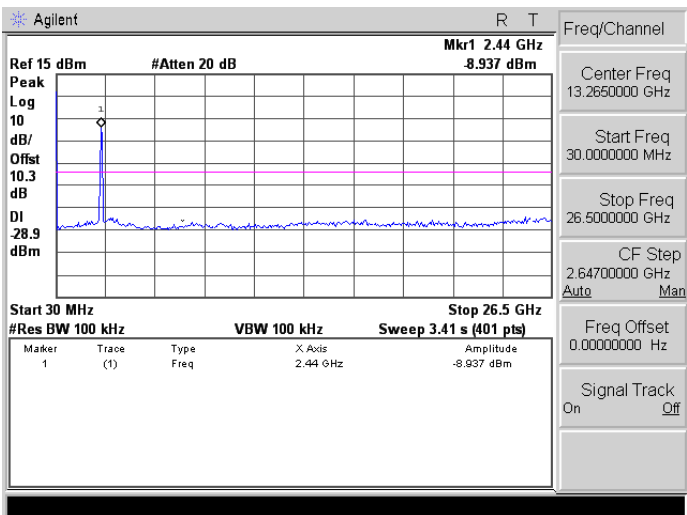


Mode 4: draft 802.11n Standard-20MHz Link Mode _ Chain A

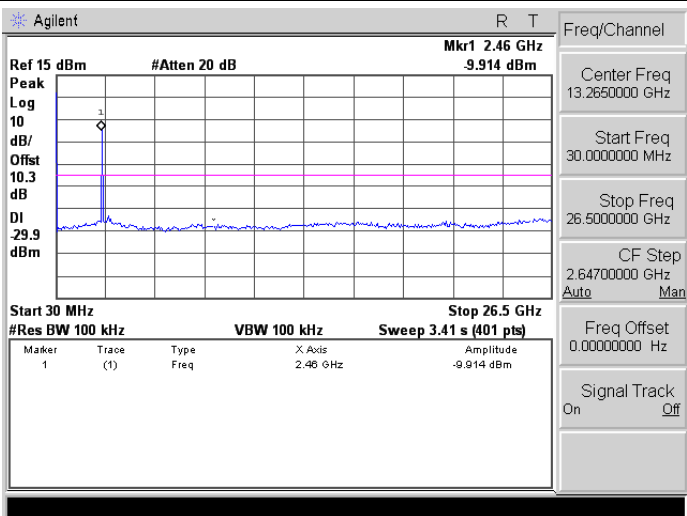
2412



2437

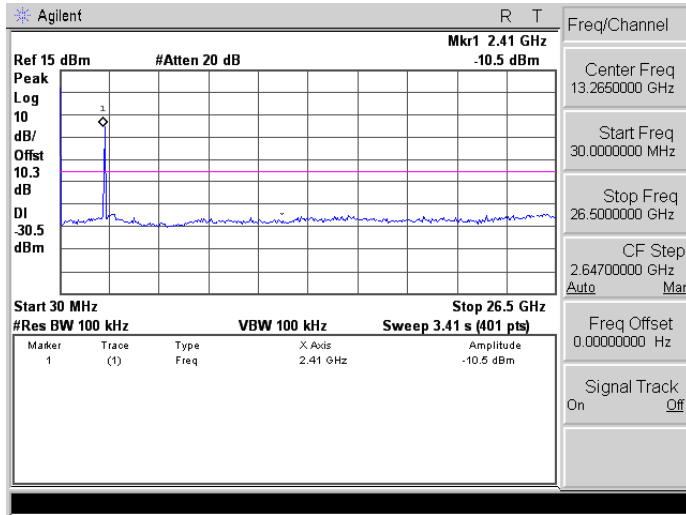


2462

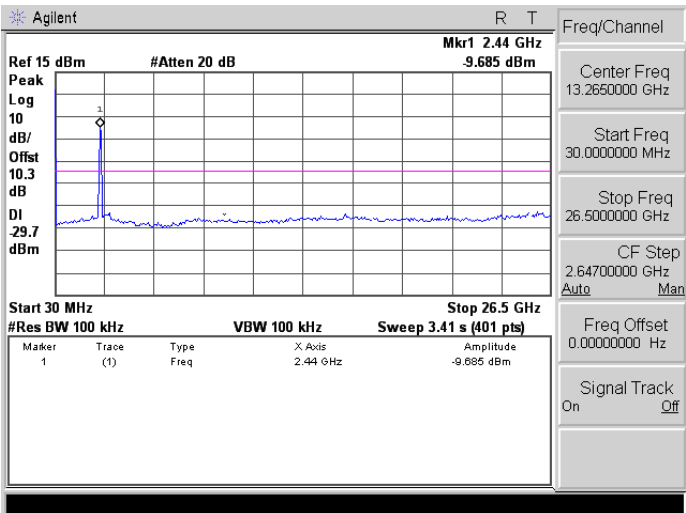


Mode 4: draft 802.11n Standard-20MHz Link Mode _ Chain B

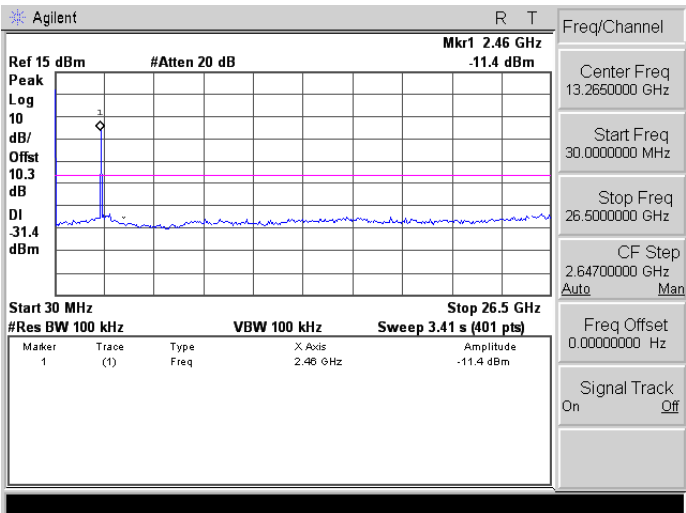
2412



2437

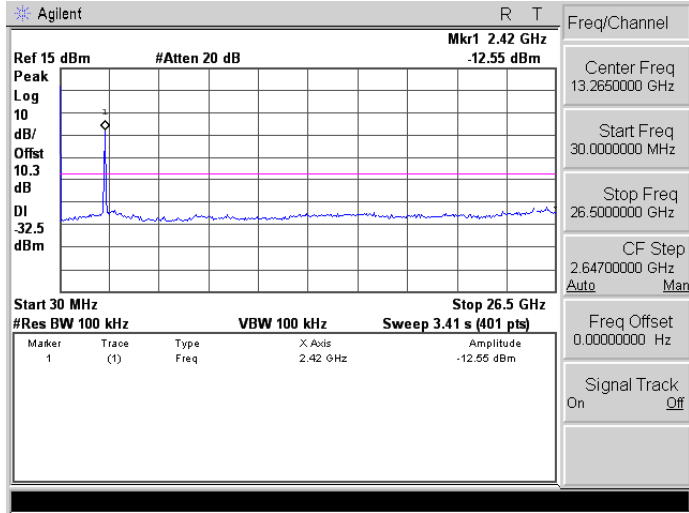


2462

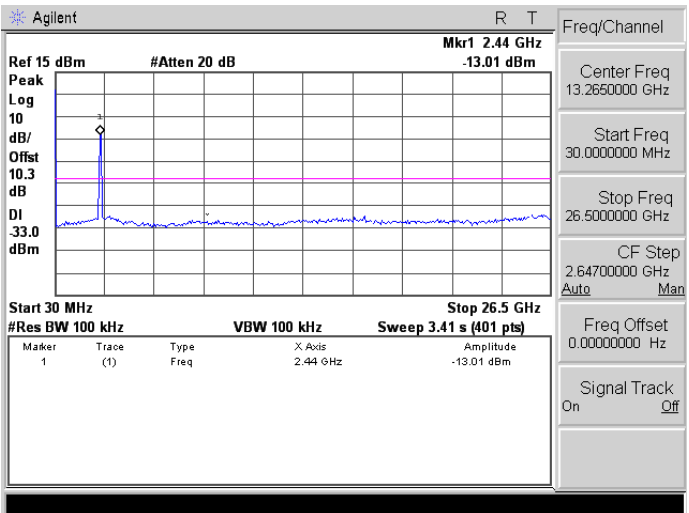


Mode 5: draft 802.11n Wide-40MHz Link Mode _ Chain A

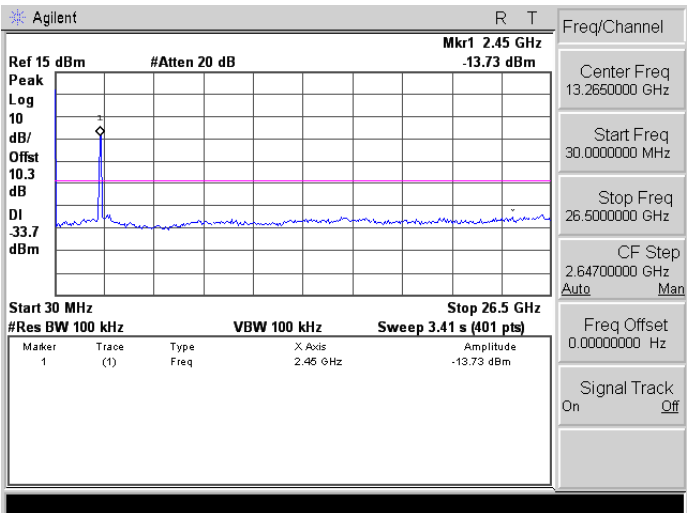
2422



2437

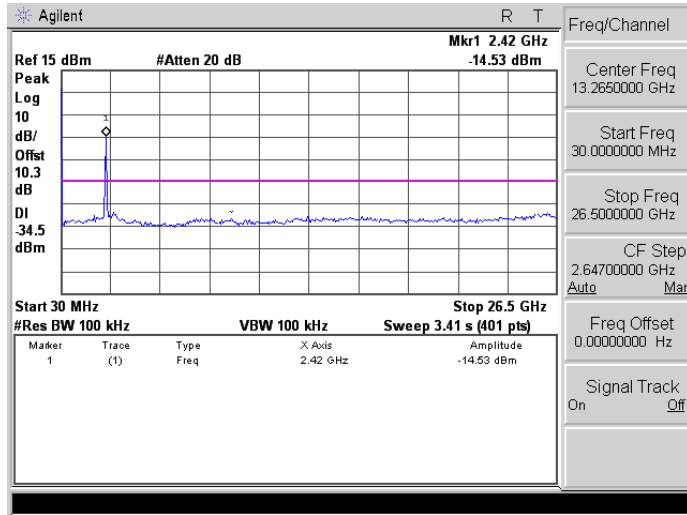


2452

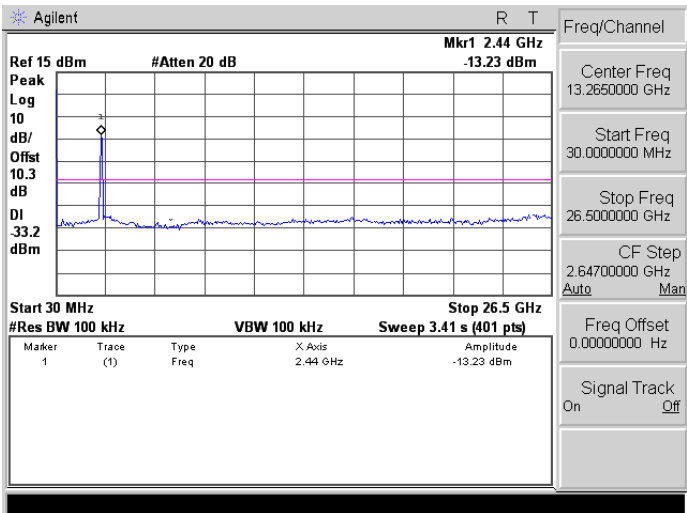


Mode 5: draft 802.11n Wide-40MHz Link Mode _ Chain B

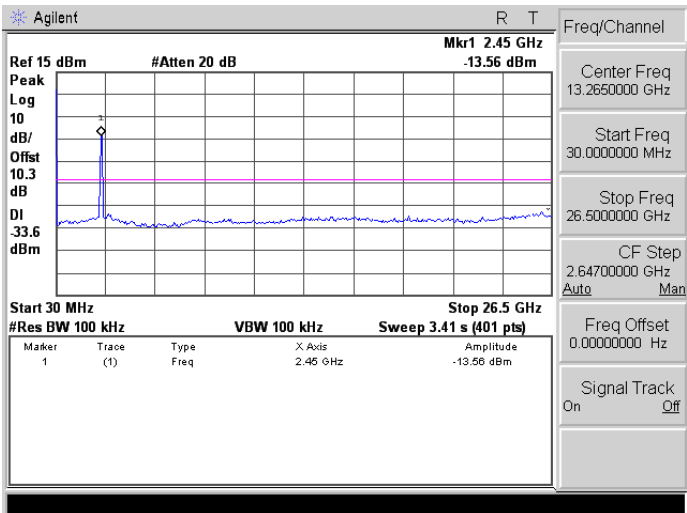
2422



2437



2452

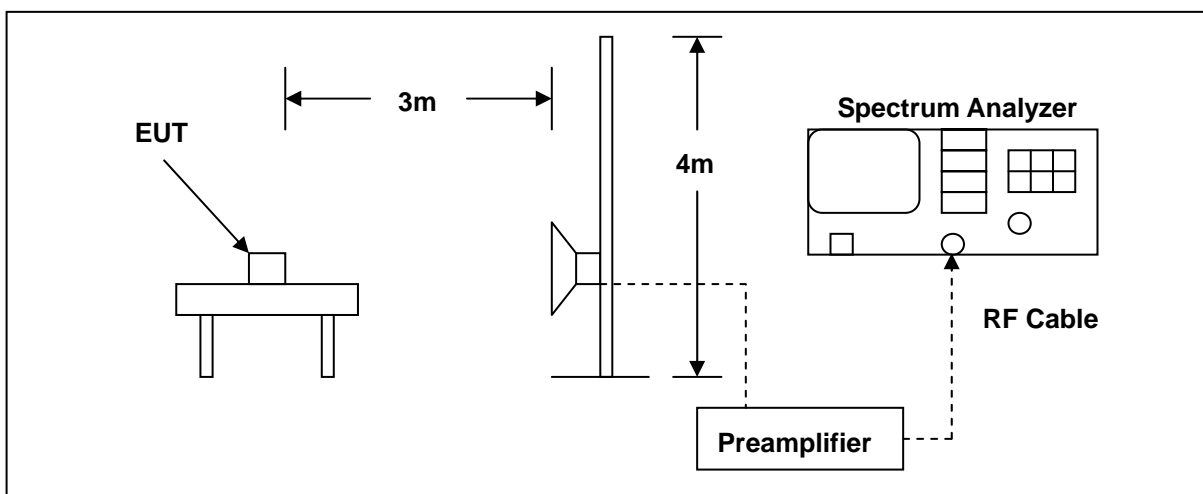


10 Band Edges Measurement

10.1.Limit

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

10.2.Test Setup



10.3.Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY45107753	07/07/2011	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/22/2012	(1)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	9120D	9120D-550	06/29/2011	(1)
Test Site	ATL	TE01	888001	12/20/2011	(1)

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

10.4. Test Procedure

The EUT was setup to ANSI C63.4, 2009; tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The emissions on the harmonics frequencies, the limits, and the margin of compliance are presented. These tests were made when the transmitter was in full radiated power. The additional test was performed to show compliance with the requirement at the band-edge frequency 2483.5 MHz and up to 2500 MHz and at 2390.0 MHz.

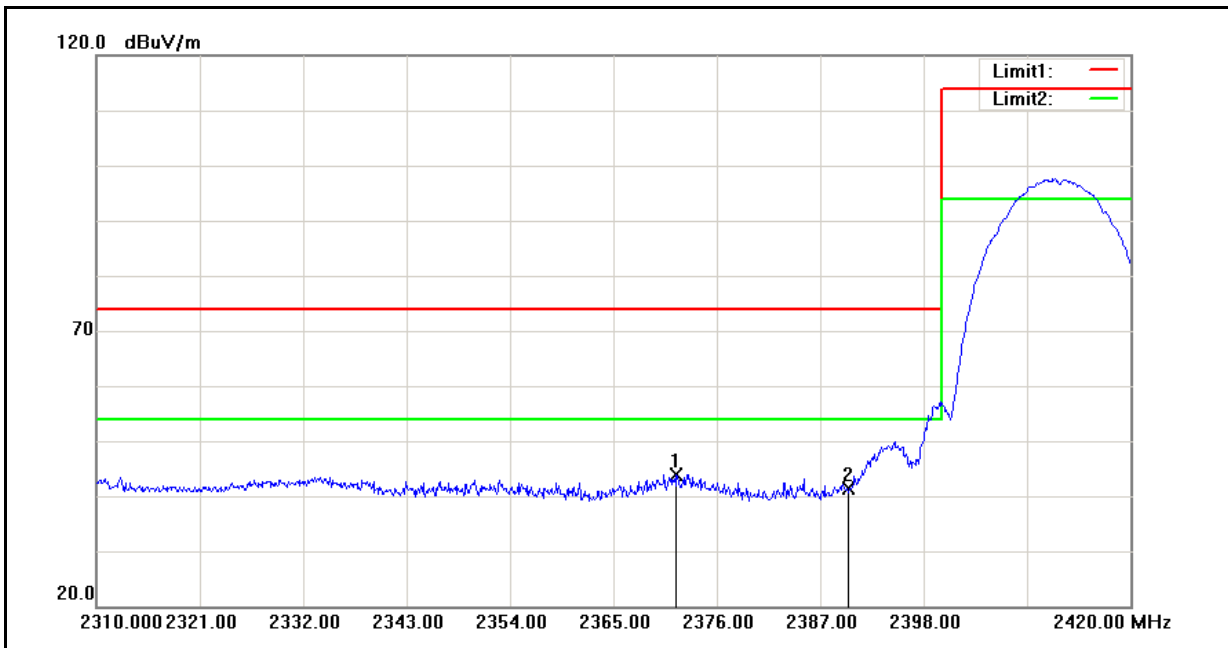
The transmitter was configured with the worst case antenna and setup to transmit at the highest channel. Then the field strength was measured at 2483.5 MHz.

The transmitter was then configured with the worst case antenna and setup to transmit at the lowest channel. Then the field strength was measured at 2390.0 MHz. These tests were performed at 4 different bit rates.

For measurements the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

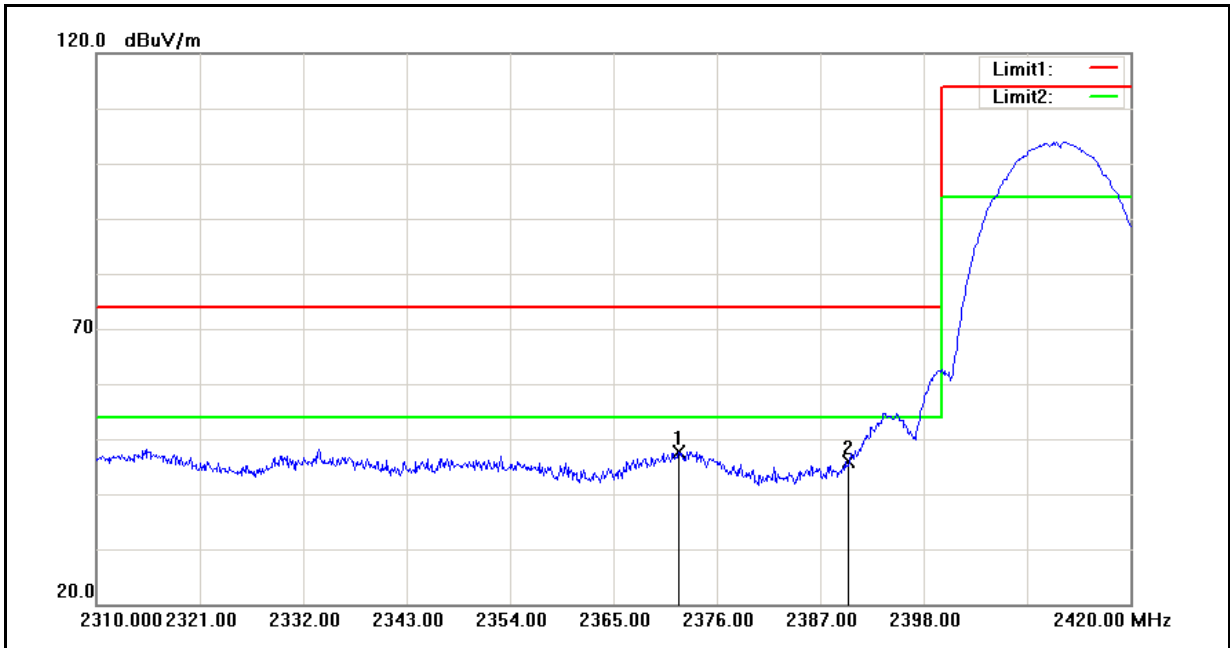
10.5.Test Result

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/12/2012
Frequency:	2412 MHz	Test By:	Fly Lu
Ant.Polar.:	Horizontal		



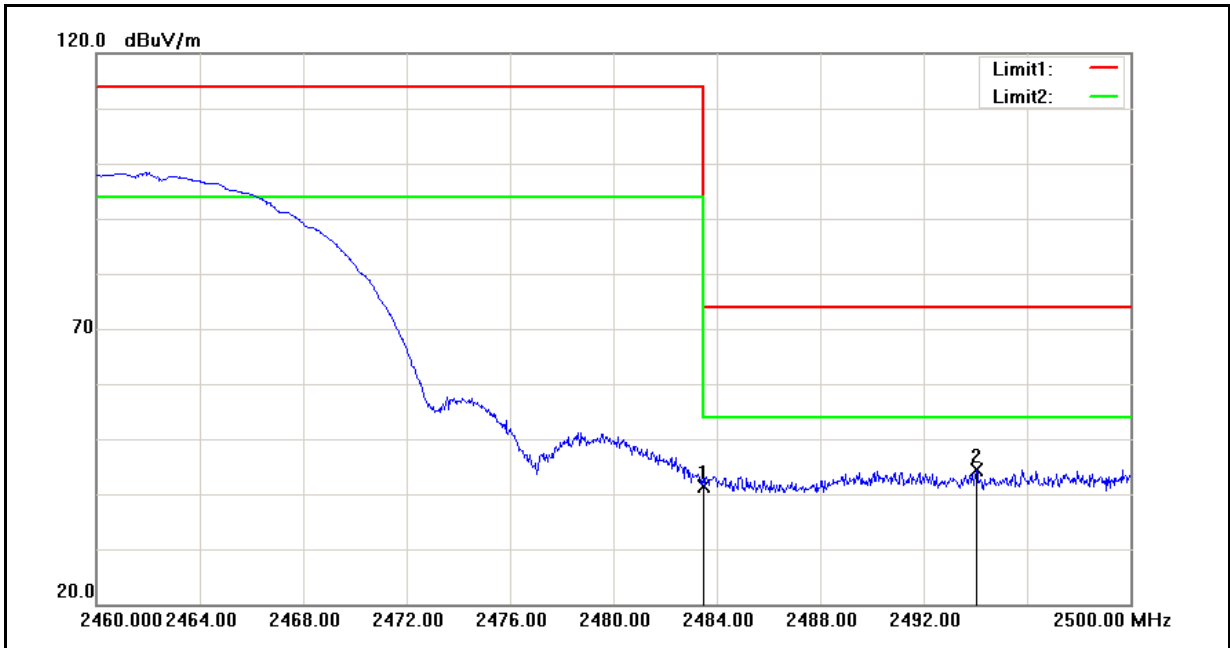
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2371.710	43.98	-0.13	43.85	74.00	-30.15	peak
2	2390.000	41.49	-0.06	41.43	74.00	-32.57	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/12/2012
Frequency:	2412 MHz	Test By:	Fly Lu
Ant.Polar.:	Vertical		



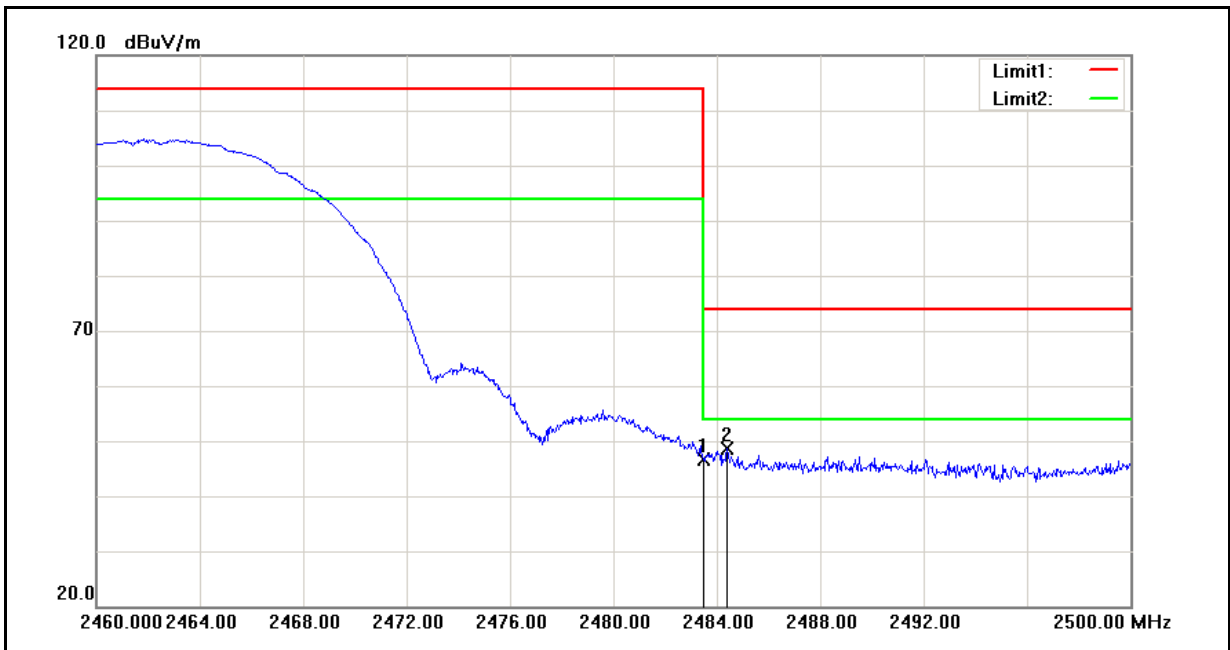
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2371.930	47.88	-0.13	47.75	74.00	-26.25	peak
2	2390.000	45.94	-0.06	45.88	74.00	-28.12	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/12/2012
Frequency:	2462 MHz	Test By:	Fly Lu
Ant.Polar.:	Horizontal		



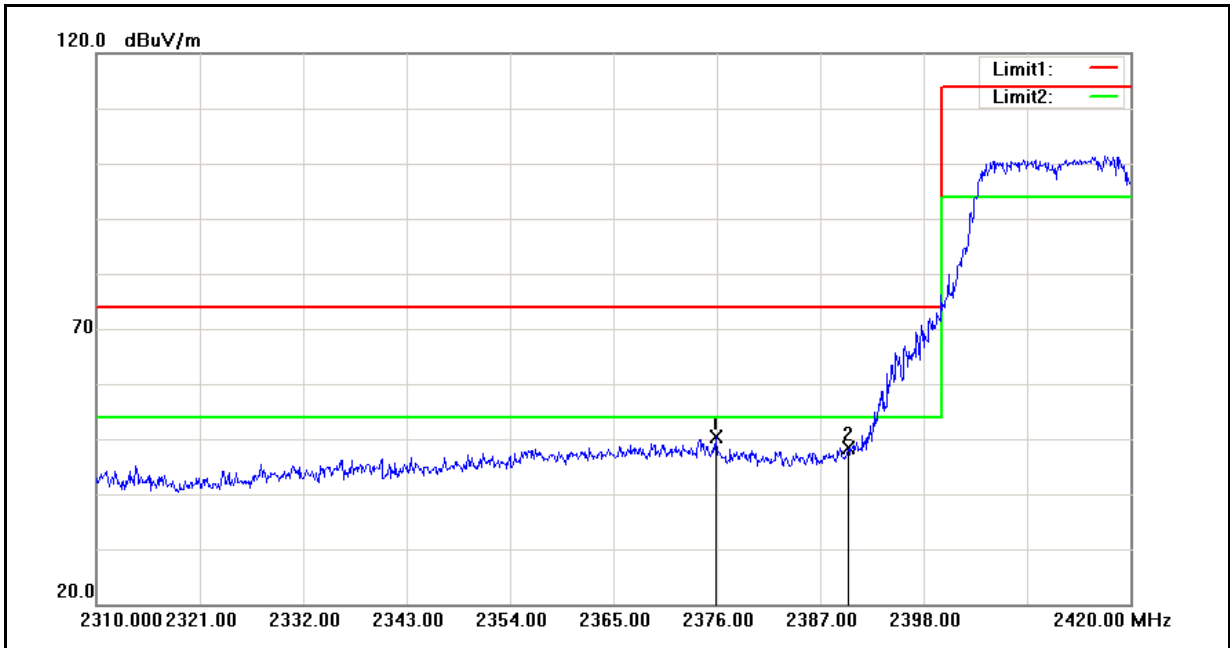
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	41.15	0.35	41.50	74.00	-32.50	peak
2	2494.040	44.01	0.40	44.41	74.00	-29.59	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/12/2012
Frequency:	2462 MHz	Test By:	Fly Lu
Ant.Polar.:	Vertical		



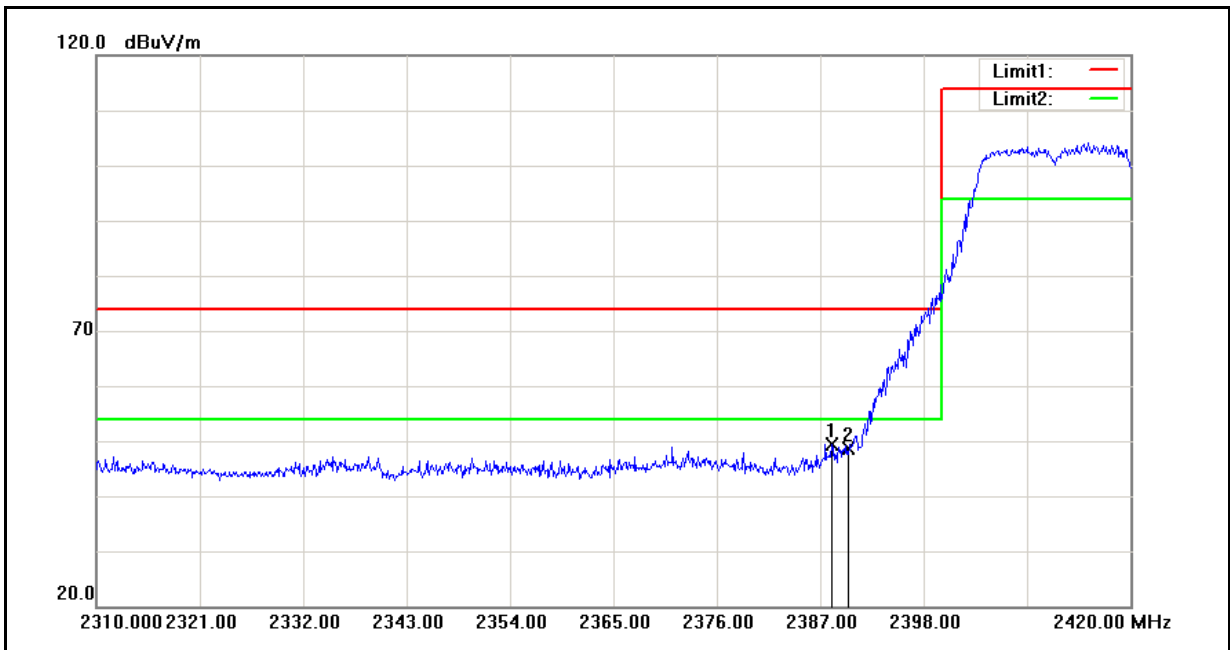
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	46.31	0.35	46.66	74.00	-27.34	peak
2	2484.400	48.18	0.35	48.53	74.00	-25.47	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/12/2012
Frequency:	2412 MHz	Test By:	Fly Lu
Ant.Polar.:	Horizontal		



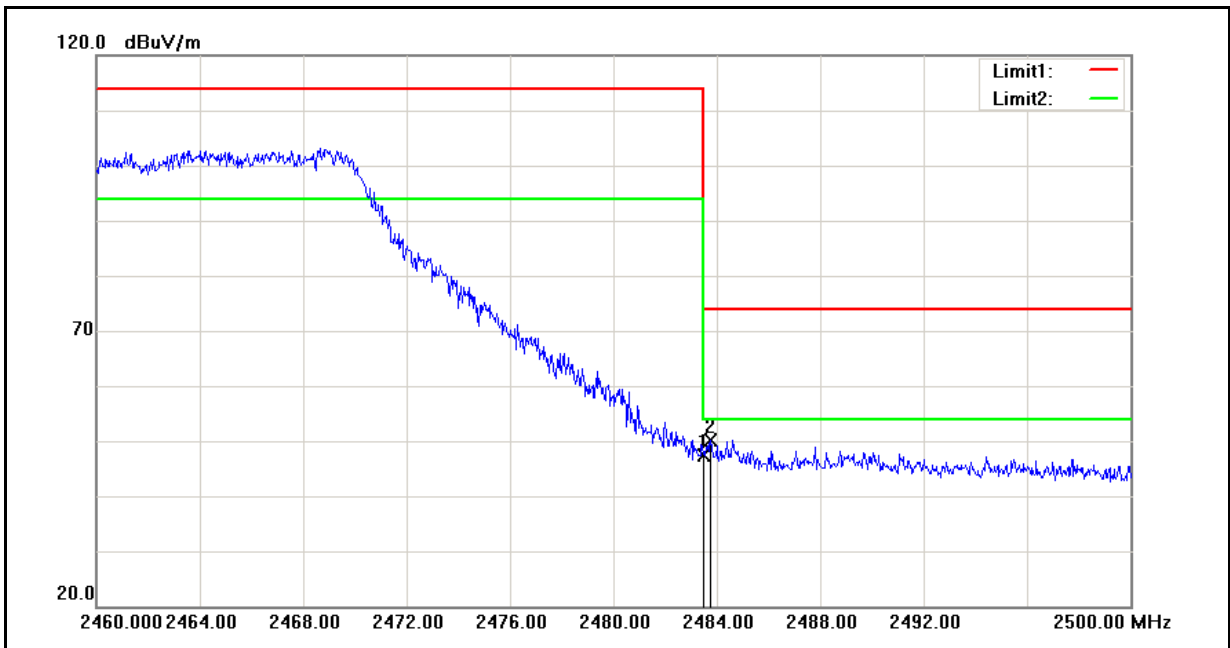
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2375.890	50.53	-0.12	50.41	74.00	-23.59	peak
2	2390.000	48.34	-0.06	48.28	74.00	-25.72	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/12/2012
Frequency:	2412 MHz	Test By:	Fly Lu
Ant.Polar.:	Vertical		



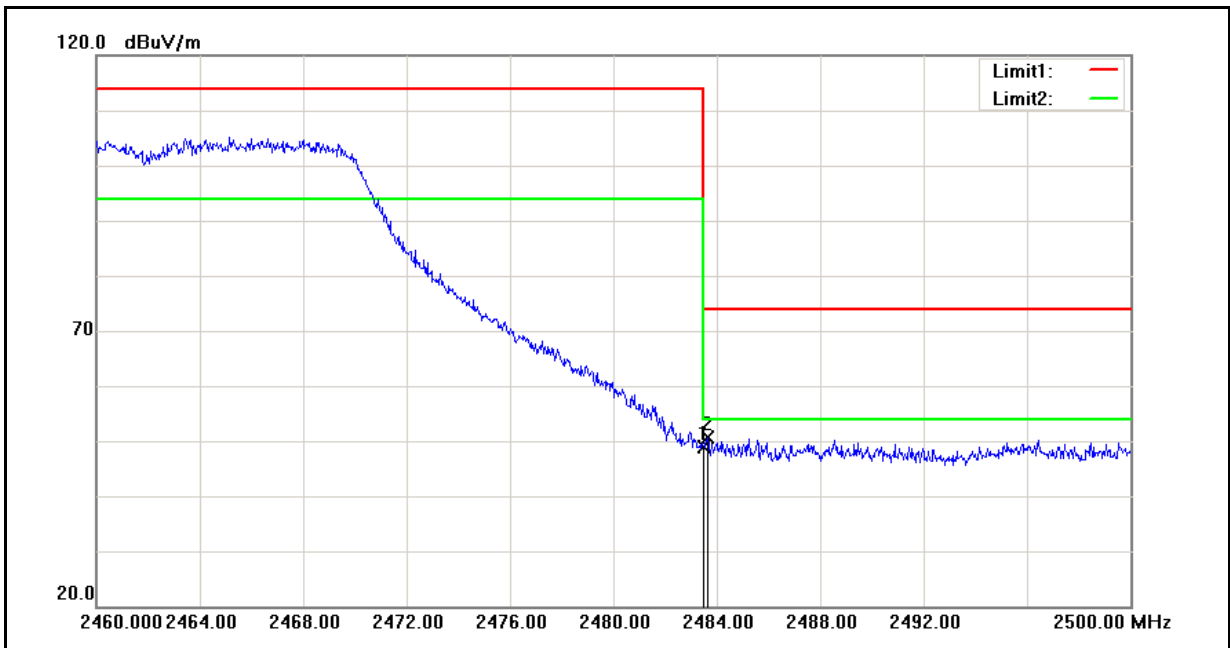
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.210	49.46	-0.07	49.39	74.00	-24.61	peak
2	2390.000	48.72	-0.06	48.66	74.00	-25.34	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/12/2012
Frequency:	2462 MHz	Test By:	Fly Lu
Ant.Polar.:	Horizontal		



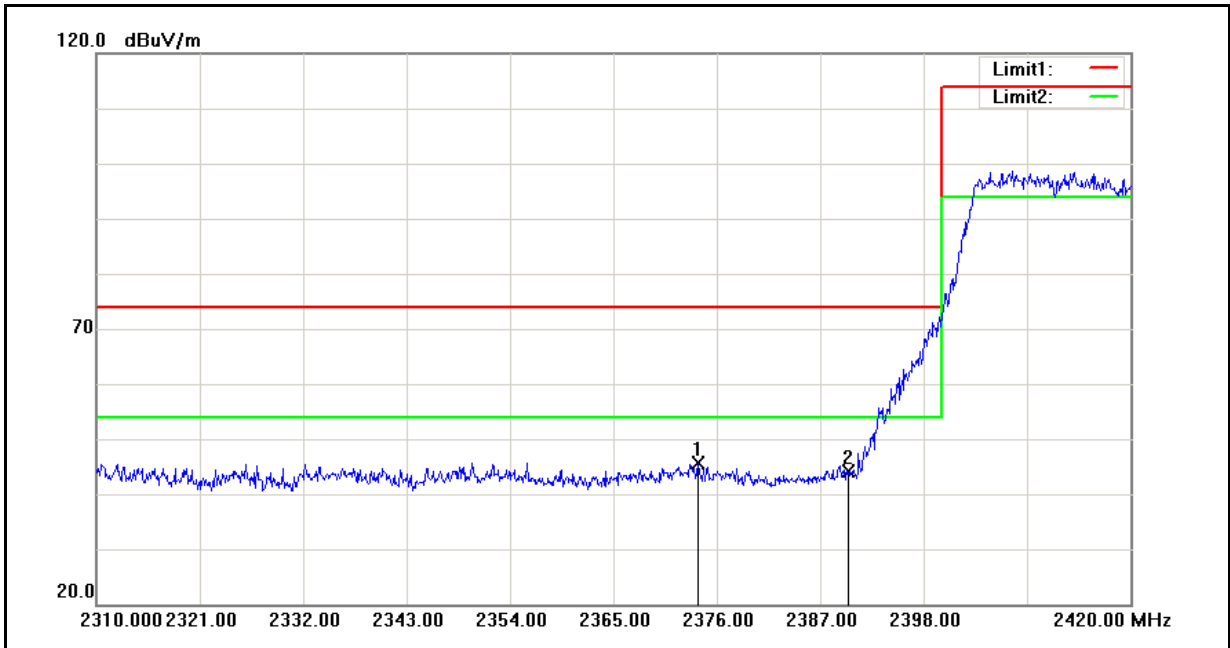
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	47.06	0.35	47.41	74.00	-26.59	peak
2	2483.760	49.86	0.35	50.21	74.00	-23.79	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/12/2012
Frequency:	2462 MHz	Test By:	Fly Lu
Ant.Polar.:	Vertical		



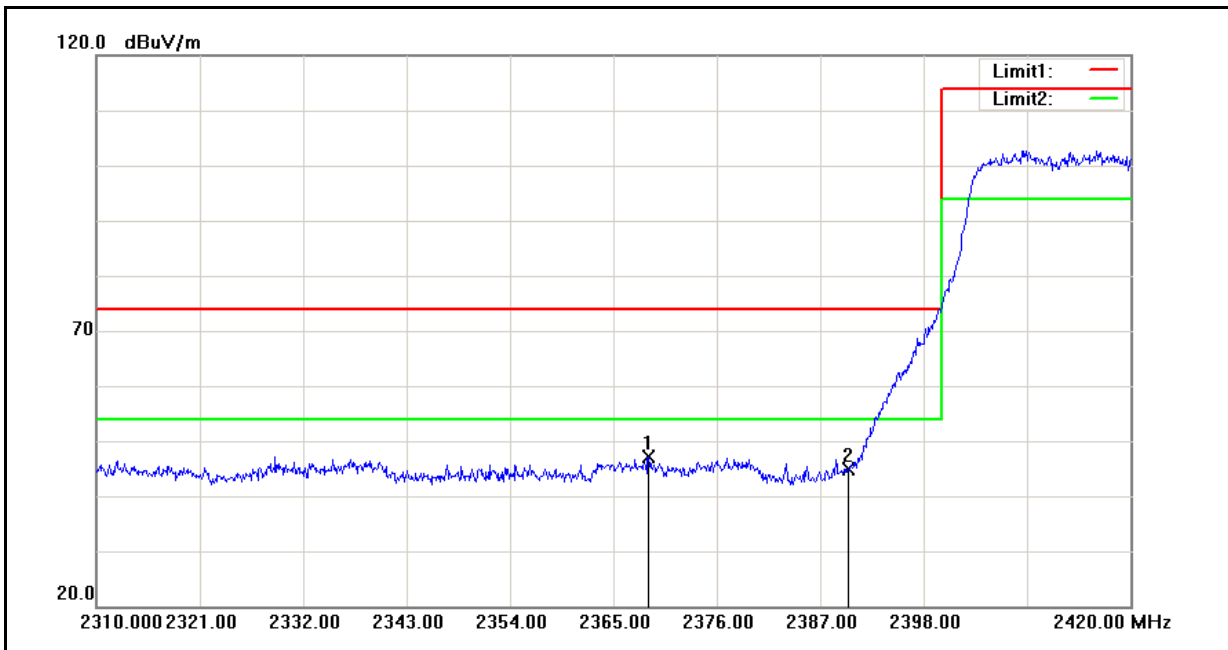
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	48.43	0.35	48.78	74.00	-25.22	peak
2	2483.640	50.36	0.35	50.71	74.00	-23.29	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/12/2012
Frequency:	2412 MHz	Test By:	Fly Lu
Ant.Polar.:	Horizontal		



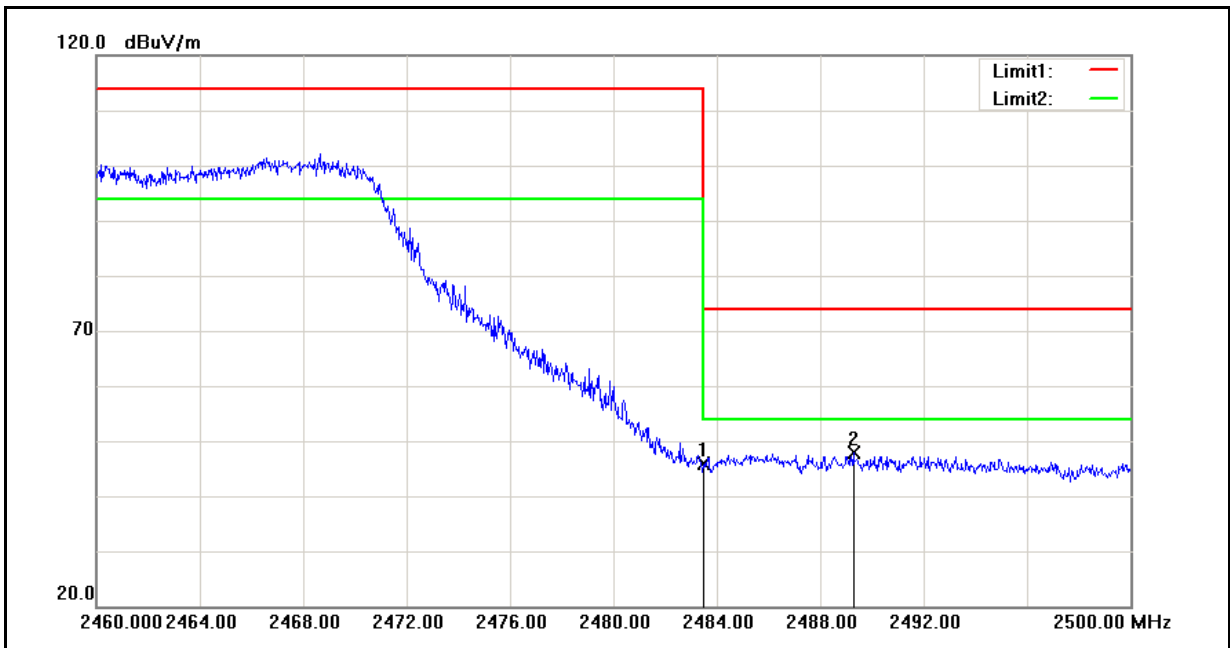
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2374.020	45.84	-0.13	45.71	74.00	-28.29	peak
2	2390.000	44.30	-0.06	44.24	74.00	-29.76	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/12/2012
Frequency:	2412 MHz	Test By:	Fly Lu
Ant.Polar.:	Vertical		



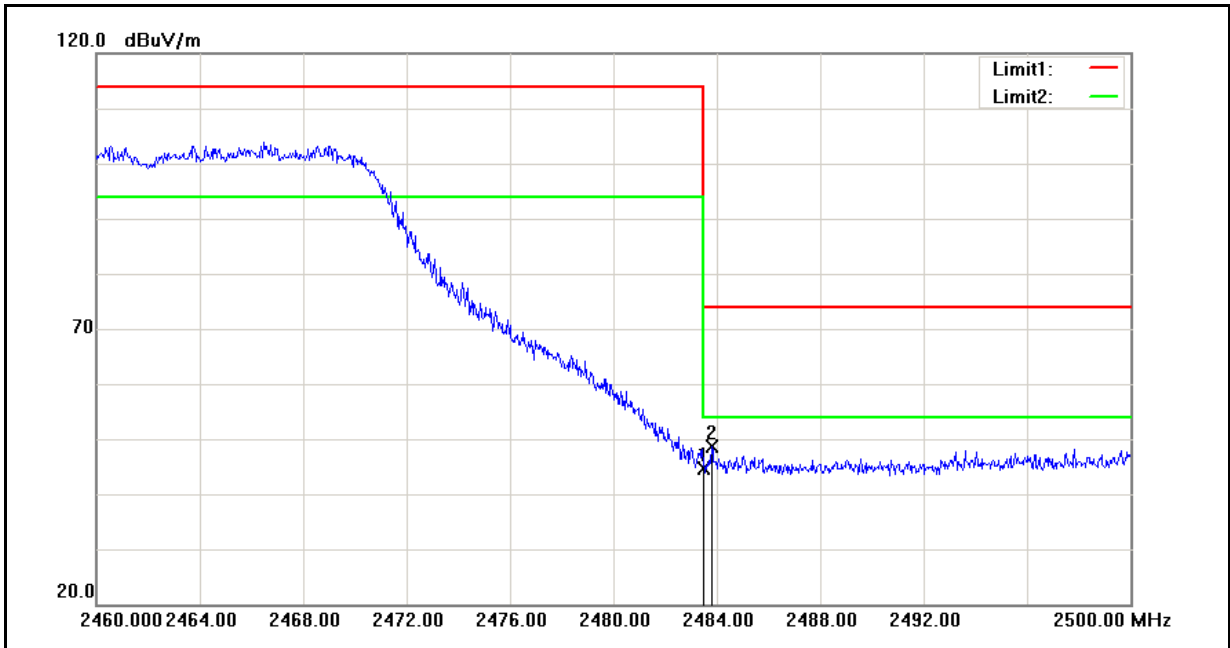
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2368.740	47.21	-0.15	47.06	74.00	-26.94	peak
2	2390.000	44.84	-0.06	44.78	74.00	-29.22	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/12/2012
Frequency:	2462 MHz	Test By:	Fly Lu
Ant.Polar.:	Horizontal		



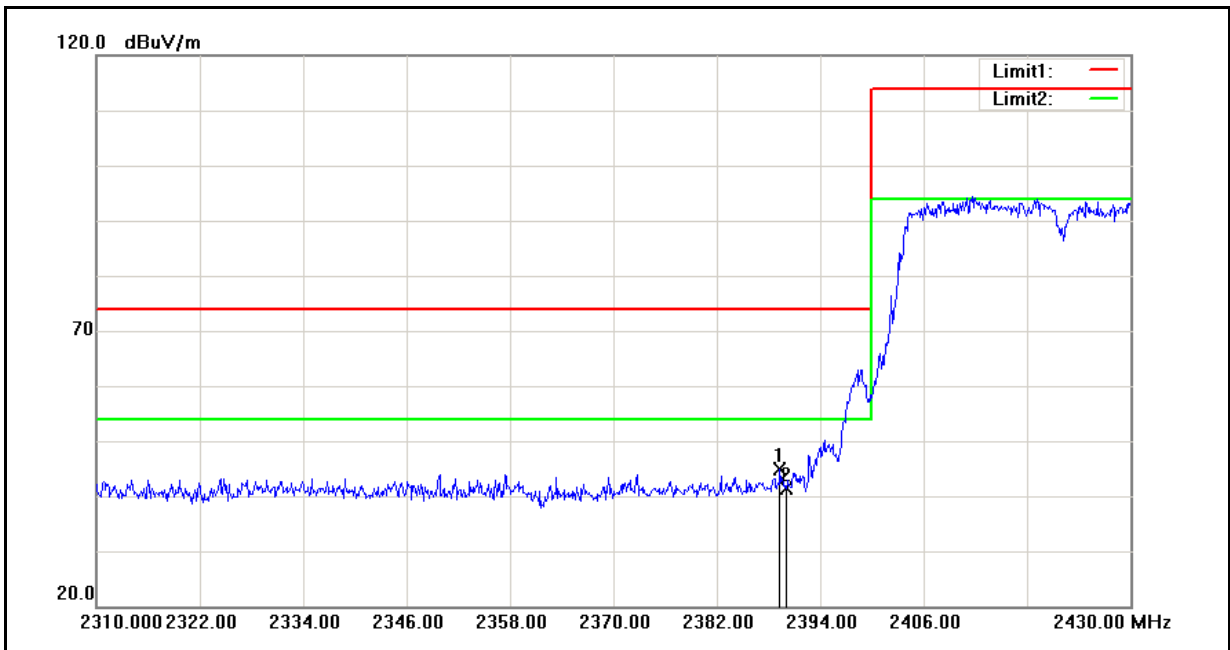
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	45.41	0.35	45.76	74.00	-28.24	peak
2	2489.280	47.50	0.38	47.88	74.00	-26.12	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/12/2012
Frequency:	2462 MHz	Test By:	Fly Lu
Ant.Polar.:	Vertical		



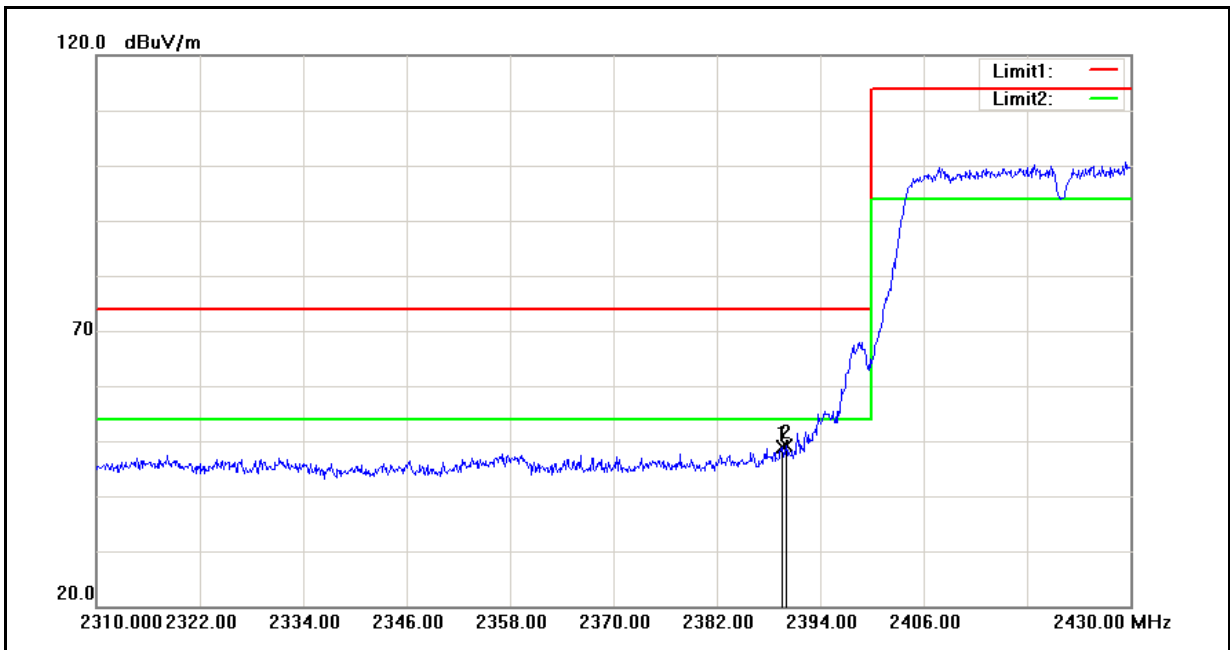
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	44.20	0.35	44.55	74.00	-29.45	peak
2	2483.800	48.26	0.35	48.61	74.00	-25.39	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/12/2012
Frequency:	2422 MHz	Test By:	Fly Lu
Ant.Polar.:	Horizontal		



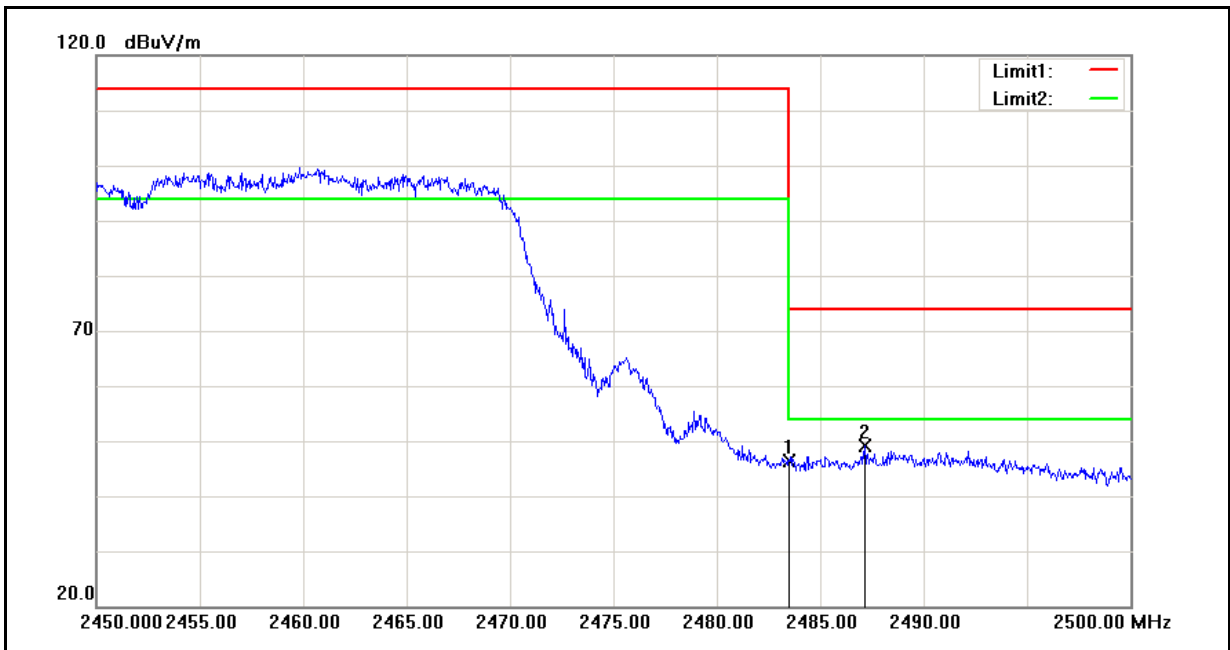
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.320	44.93	-0.06	44.87	74.00	-29.13	peak
2	2390.000	41.54	-0.06	41.48	74.00	-32.52	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/12/2012
Frequency:	2422 MHz	Test By:	Fly Lu
Ant.Polar.:	Vertical		



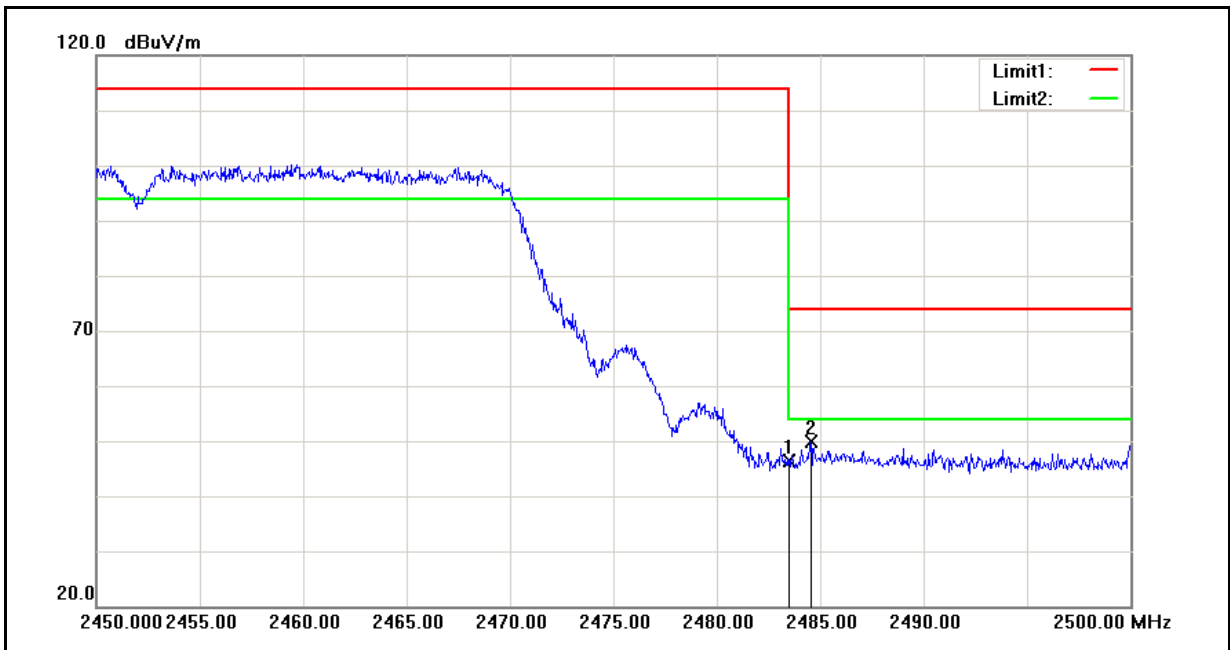
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.560	49.06	-0.06	49.00	74.00	-25.00	peak
2	2390.000	49.20	-0.06	49.14	74.00	-24.86	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/12/2012
Frequency:	2452 MHz	Test By:	Fly Lu
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	46.13	0.35	46.48	74.00	-27.52	peak
2	2487.150	48.87	0.37	49.24	74.00	-24.76	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RN243R4	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/12/2012
Frequency:	2452 MHz	Test By:	Fly Lu
Ant.Polar.:	Vertical		



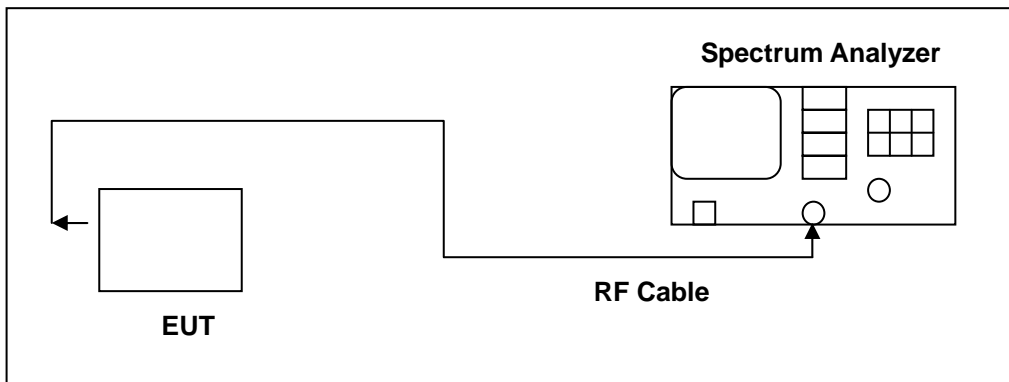
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	45.94	0.35	46.29	74.00	-27.71	peak
2	2484.550	49.46	0.35	49.81	74.00	-24.19	peak

11 99 % Occupied Bandwidth Measurement

11.1.Limit

N/A

11.2.Test Setup



11.3.Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/28/2010	(2)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

11.4.Test Procedure

The transmitter shall be operated at its maximum carrier power measured under normal test conditions. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual.

The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded.

11.5.Test Result

Model Number	RN243R4		
Test Item	99 % Occupied Bandwidth		
Test Mode	Mode 2: IEEE 802.11b Link Mode		
Date of Test	04/16/2012	Test Site	TE02
Ant. Port	Frequency (MHz)	Measurement (MHz)	Limit (MHz)
Chain A	2412	14.8706	-----
	2437	14.8904	-----
	2462	14.8801	-----

Model Number	RN243R4		
Test Item	99 % Occupied Bandwidth		
Test Mode	Mode 3: IEEE 802.11g Link Mode		
Date of Test	04/16/2012	Test Site	TE02
Ant. Port	Frequency (MHz)	Measurement (MHz)	Limit (MHz)
Chain A	2412	16.8257	-----
	2437	16.8028	-----
	2462	16.7652	-----

Model Number	RN243R4		
Test Item	99 % Occupied Bandwidth		
Test Mode	Mode 4: draft 802.11n Standard-20MHz Link Mode		
Date of Test	04/16/2012	Test Site	TE02
Ant. Port	Frequency (MHz)	Measurement (MHz)	Limit (MHz)
Chain A	2412	17.8881	-----
	2437	17.7969	-----
	2462	17.8671	-----
Chain B	2412	17.7695	-----
	2437	17.7608	-----
	2462	17.7712	-----

Model Number	RN243R4		
Test Item	99 % Occupied Bandwidth		
Test Mode	Mode 5: draft 802.11n Wide-40MHz Link Mode		
Date of Test	04/16/2012	Test Site	TE02
Ant. Port	Frequency (MHz)	Measurement (MHz)	Limit (MHz)
Chain A	2422	36.2725	-----
	2437	36.2049	-----
	2452	36.1639	-----
Chain B	2422	36.1268	-----
	2437	36.1414	-----
	2452	36.0942	-----

11.6. Test Graphs

Mode 2: IEEE 802.11b Link Mode _ Chain A	
2412	<p>Agilent R T Freq/Channel</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.39700000 GHz</p> <p>Stop Freq 2.42700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/ Offst 10.3 dB</p> <p>Center 2.412 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>14.8706 MHz x dB -6.00 dB</p> <p>Transmit Freq Error 1.172 kHz</p> <p>x dB Bandwidth 10.219 MHz</p>
2437	<p>Agilent R T Freq/Channel</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.42200000 GHz</p> <p>Stop Freq 2.45200000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/ Offst 10.3 dB</p> <p>Center 2.437 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>14.8904 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -4.748 kHz</p> <p>x dB Bandwidth 10.230 MHz</p>
2462	<p>Agilent R T Freq/Channel</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.44700000 GHz</p> <p>Stop Freq 2.47700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/ Offst 10.3 dB</p> <p>Center 2.462 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>14.8801 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -14.251 kHz</p> <p>x dB Bandwidth 10.212 MHz</p>

Mode 3: IEEE 802.11g Link Mode _ Chain A

<p>2412</p>	
<p>2437</p>	
<p>2462</p>	

Mode 4: draft 802.11n Standard-20MHz Link Mode _ Chain A

<p>2412</p>	
<p>2437</p>	
<p>2462</p>	

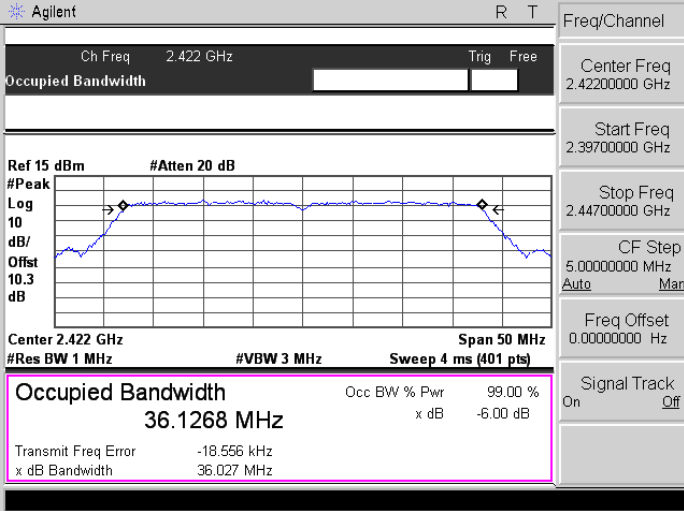
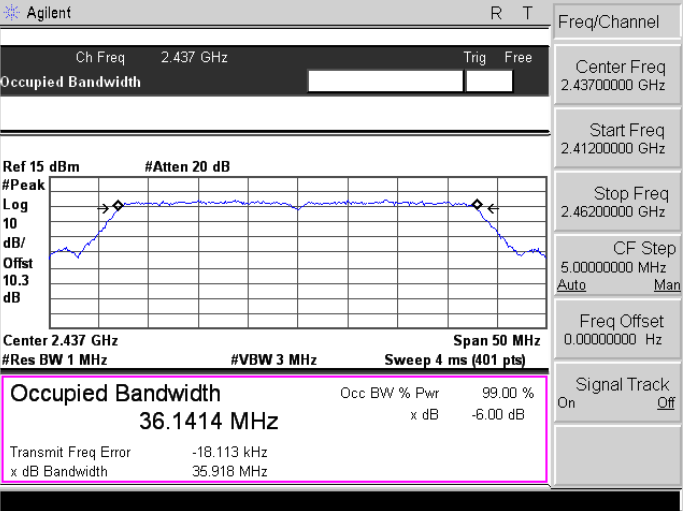
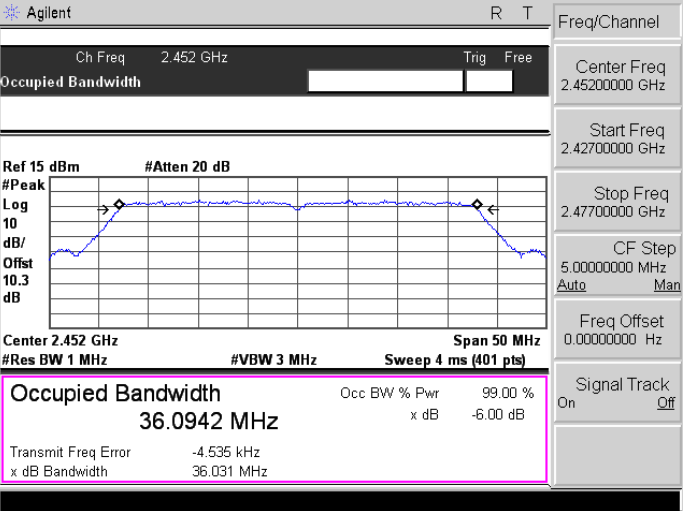
Mode 4: draft 802.11n Standard-20MHz Link Mode _ Chain B

<p>2412</p>	<p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/Offset 10.3 dB</p> <p>Center 2.412 GHz Span 30 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth 17.7695 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -7.683 kHz x dB Bandwidth 17.696 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.39700000 GHz</p> <p>Stop Freq 2.42700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/Offset 10.3 dB</p> <p>Center 2.437 GHz Span 30 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth 17.7608 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -20.240 kHz x dB Bandwidth 17.671 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.42200000 GHz</p> <p>Stop Freq 2.45200000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2462</p>	<p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/Offset 10.3 dB</p> <p>Center 2.462 GHz Span 30 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth 17.7712 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -14.487 kHz x dB Bandwidth 17.597 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.44700000 GHz</p> <p>Stop Freq 2.47700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

Mode 5: draft 802.11n Wide-40MHz Link Mode _ Chain A

<p>2422</p>	
<p>2437</p>	
<p>2452</p>	

Mode 5: draft 802.11n Wide-40MHz Link Mode _ Chain B

<p>2422</p>	 <p>Agilent R T</p> <p>Ch Freq 2.422 GHz Trig Free</p> <p>Center Freq 2.42200000 GHz</p> <p>Start Freq 2.39700000 GHz</p> <p>Stop Freq 2.44700000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/ Offst 10.3 dB</p> <p>Center 2.422 GHz Span 50 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 % 36.1268 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -18.556 kHz x dB Bandwidth 36.027 MHz</p>
<p>2437</p>	 <p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.41200000 GHz</p> <p>Stop Freq 2.46200000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/ Offst 10.3 dB</p> <p>Center 2.437 GHz Span 50 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 % 36.1414 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -18.113 kHz x dB Bandwidth 35.918 MHz</p>
<p>2452</p>	 <p>Agilent R T</p> <p>Ch Freq 2.452 GHz Trig Free</p> <p>Center Freq 2.45200000 GHz</p> <p>Start Freq 2.42700000 GHz</p> <p>Stop Freq 2.47700000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Ref 15 dBm #Atten 20 dB</p> <p>#Peak Log 10 dB/ Offst 10.3 dB</p> <p>Center 2.452 GHz Span 50 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 4 ms (401 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 % 36.0942 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -4.535 kHz x dB Bandwidth 36.031 MHz</p>

12 Antenna Measurement

12.1.Limit

For intentional device, according to 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And According to 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

12.2.Antenna Connector Construction

The antenna used in this product is **Dipole antenna**. And the maximum Gain of this antenna is only **3 dBi**.