CONFORMANCE TEST REPORT
FOR
FCC 47 CFR, Part 15 Subpart C

Report No.: 10-03-MAS-006-01

Client:	Comtrend Corporation
Product:	Multi DSL Wireless Router
Model:	CT-5374
FCC ID:	L9V-5374
Manufacturer/supplier:	Comtrend Corporation

Date test item received:	2010/03/01
Date test campaign completed:	2010/03/15
Date of issue:	2010/03/23

Total number of pages of this test report: 153 pages

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Internal photos 4 pages

Setup photos 2 pages

Test Engineer	Checked By	Approved By
Ivan Tsai	James Cheng	Joe Hsieh

ELECTRONICS TESTING CENTER, TAIWAN
NO.8, LANE 29, WENMING RD.,
LESHAN TSUEN, GUISHAN SHIANG,
TAOYUAN COUNTY, TAIWAN 33383,
R.O.C.TAIWAN, R.O.C.

TEL: (03) 3276170~4
INT: +886-3-3276170~4
FAX: (03) 3276188
INT: +886-3-3276188

Client	: Comtrend Corporation
Address	: 3F-1, 10 Lane 609, Chung Hsin Road, Section 5 San Chung City, Taipei Hsien, Taiwan 241
Manufacturer	: Comtrend Corporation
Address	: 3F-1, 10 Lane 609, Chung Hsin Road, Section 5 San Chung City, Taipei Hsien, Taiwan 241
EUT	: Multi DSL Wireless Router
Trade name	: Comtrend
Model No.	: CT-5374
Power Source	: Adapter: Au-79Dmu I/P: 100-240VAC，50/60Hz，0.5A O/P: 12V dc，1.5A
Regulations applied	: FCC 47 CFR, Part 15 Subpart C (2008)

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⑤ FCC Registration Number: 90588, 91094, 91095

⑥ Industry Canada Site Regisitation number: IC 2949A-1

NVLAP Lab Code 200133-0

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1 GENERAL INFORMATION

1.1 Product Description

a) Type of EUT : Multi DSL Wireless Router

b) Trade Name : Comtrend

c) Model No. : CT-5374

d) FCC ID : L9V-5374

1.2 Characteristics of Device

The EUT is a 2.4 GHz Multi DSL Wireless Router. It conforms to the IEEE 802.11b/g/n protocal and operates in the unlicensed ISM Band at 2.4 GHz.

RF chain	2T2R
Frequency Range	IEEE 802.11b/g, 802.11n HT20: 2412MHz~2462MHz IEEE 802.11n HT40: 2422MHz~2452MHz
Channel Spacing	IEEE 802.11b/g, 802.11n HT20/HT40: 5MHz
Channel Number	IEEE 802.11b/g, 802.11n HT20:11 Channels IEEE 802.11n HT40: 7 Channels
Transmit Data Rate	IEEE 802.11b: 11, 5.5, 2, 1 Mbps IEEE 802.11g: 54, 48, 36, 24, 18, 12, 11, 9, 6 Mbps IEEE 802.11n HT20: 65, 58.5, 52, 39, 26, 19.5, 13, 6.5Mbps IEEE 802.11n HT40: 135, 121.5, 108, 81, 54, 40.5, 27, 13.5 Mbps
Type of Modulation	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20/40: OFDM (64QAM, 16QAM, QPSK, BPSK)

Two antennas are used for this device:

Main Antenna (2.0 dBi)

Auxiliary Antenna (2.0 dBi)

1.3 Test Methodology

All testing were performed according to the procedures in ANSI C63.4 (2003) and FCC CFR 47 Part 2 and Part 15.

1.4 Test Facility

The semi-anechoic chamber and conducted measurement facility used to collect the radiated and conducted data are located inside the Building at No.8, Lane 29, Wen-ming Road, Lo-shan Tsun, Kweishan Hsiang, Taoyuan, Taiwan, R.O.C.

This site has been accreditation as a FCC filing site.

2 PROVISIONS APPLICABLE

2.1 Definition

Unintentional radiator:
A device that intentionally generates and radio frequency energy for use within the device, or that sends radio frequency signals by conduction to associated equipment via connecting wiring, but which is not intended to emit RF energy by radiation or induction.

Class A Digital Device:
A digital device which is marketed for use in commercial or business environment; exclusive of a device which is market for use by the general public, or which is intended to be used in the home.

Class B Digital Device :
A digital device which is marketed for use in a residential environment notwithstanding use in a commercial, business of industrial environment. Example of such devices that are marketed for the general public.

Note : A manufacturer may also qualify a device intended to be marketed in a commercial, business, or industrial environment as a Class B digital device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B Digital Device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B Digital Device, Regardless of its intended use.

Intentional radiator:
A device that intentionally generates and emits radio frequency energy by radiation or induction.

2.2 Requirement for Compliance

(1) Conducted Emission Requirement

For unintentional device, according to §15.107(a) Line Conducted Emission Limits is as following:

Frequency MHz	Quasi Peak dB μ V	Average dB μ V
0.15 - 0.5	66-56*	56-46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

*Decreases with the logarithm of the frequency.

For intentional device, according to §15.207(a) Line Conducted Emission Limits is same as above table.

(2) Radiated Emission Requirement

For unintentional device, according to §15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency MHz	Distance Meters	Radiated dB μ V/m	Radiated μ V/m
30 - 88	3	40.0	100
88 - 216	3	43.5	150
216 - 960	3	46.0	200
above 960	3	54.0	500

For intentional device, according to §15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

(3) Antenna Requirement

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.

(4) Bandwidth Requirement

According to 15.247 (a)(2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

(5) Output Power Requirement

For systems using digital modulation , according to 15.247(b), the maximum peak output power of the intentional radiator shall not exceed 1 Watt. If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(6) Spurious Emissions Measurement

According to 15.247 (c) , 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, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

(7) Power Density Requirement

According to 15.247 (d) , for digitally modulated systems, the peak 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..

2.3 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below :

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42-16.423	399.9-410	4.5-5.25
0.495 - 0.505 **	16.69475 - 16.69525	608-614	5.35-5.46
2.1735 - 2.1905	16.80425 - 16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475 - 156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

2.4 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device :

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2.5 User Information

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual.

The Federal Communications Commission Radio Frequency Interference Statement includes the following paragraph.

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio / TV technician for help.

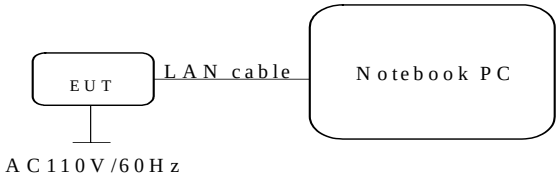
3. SYSTEM TEST CONFIGURATION

3.1 Devices for Tested System

Device	Manufacture	Model No.	Cable Description
Multi DSL Wireless Router*	Comtrend Corporation	CT-5374	1.8m*1 Unshielded Power Line/Adaptor 5.0m*1 Unshielded LAN cable
Notebook PC	HP	nx6320	----

Note:

Remark "*" means equipment under test.



3.2 Description of Test modes

3.2.1 IEEE 802.11b, 802.11g, 802.11n HT20 SISO, 802.11n HT20 MIMO mode:

There are three channels have been tested as following:

Channel	Frequency (MHz)
Low = 1	2412
Middle = 6	2437
High = 11	2462

IEEE 802.11b mode: 1 Mbps data rateis the worse case for full testing.

IEEE 802.11g mode: 6 Mbps data rateis the worse case for full testing.

IEEE 802.11n SISO mode is covered by the worse case 802.11g testing.

IEEE 802.11n HT20 MIMO mode: 13 Mbps data rateis the worse case for full testing.

3.2.2 IEEE 802.11n HT40 SISO, 802.11n HT40 MIMO mode:

There are three channels have been tested as following:

Channel	Frequency (MHz)
Low = 3	2422
Middle = 6	2437
High = 9	2452

IEEE 802.11n HT40 SISO mode: 13.5 Mbps data rate is the worse case for full testing.

IEEE 802.11n HT40 MIMO mode: 27 Mbps data rate is the worse case for full testing.

4 CONDUCTED EMISSION MEASUREMENT

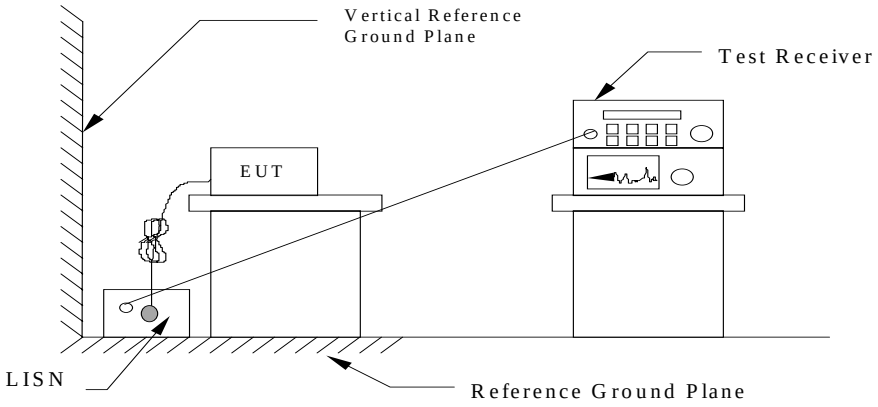
4.1 Standard Applicable

For unintentional and intentional device, Line Conducted Emission Limits are in accordance to § 15.107(a) and §15.207(a) respectively. Both Limits are identical specification.

4.2 Measurement Procedure

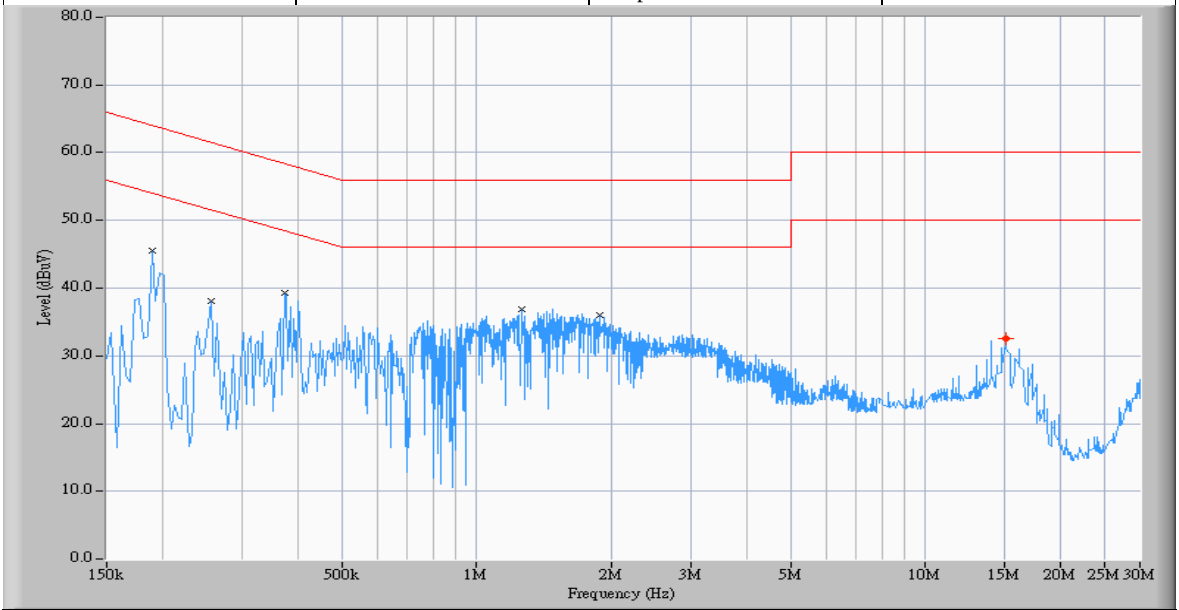
1. Setup the configuration per figure 1.
2. A preliminary scan with a spectrum monitor is performed to identify the frequency of emission that has the highest amplitude relative to the limit by operating the EUT in selected modes of operation, typical cable positions, and with a typical system configuration.
3. Record the 6 highest emissions relative to the limit.
4. Measure each frequency obtained from step 3 by a test receiver set on quasi peak detector function, and then record the accuracy frequency and emission level. If all emissions measured in the specified band are attenuated more than 20 dB from the limit, this step would be ignored, and the peak detector function would be used.
5. Confirm the highest three emissions with variation of the EUT cable configuration and record the final data.
6. Repeat all above procedures on measuring each operation mode of EUT.

Figure 1 : Conducted emissions measurement configuration



4.3 Conducted Emission Data

EUT :	Model :	Status :	
Condition : Line 1	Date : 2010/3/15	Temp. : 26℃	Humi. : 65%

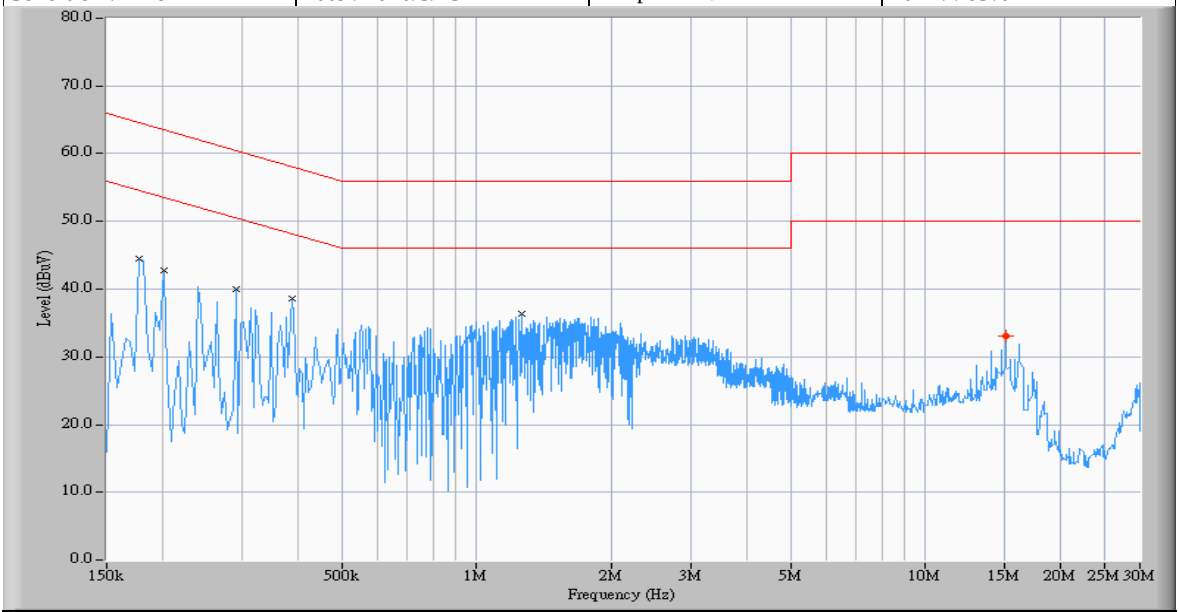


	Freq (MHz)	QP Level (dBuV)	AVG Level (dBuV)	Factor (dB)	QP Result (dBuV)	AVG Result (dBuV)	QP Limit (dBuV)	AVG Limit (dBuV)	QP Margin (dB)	AVG Margin (dB)
1	0.189	45.6	----	0.1	45.7	----	64.1	54.1	-18.4	----
2	0.255	38.1	----	0.1	38.2	----	61.6	51.6	-23.4	----
3	0.373	39.3	----	0.1	39.4	----	58.4	48.4	-19.0	----
4	1.263	36.8	----	0.1	36.9	----	56.0	46.0	-19.1	----
5	1.877	36.1	----	0.1	36.2	----	56.0	46.0	-19.8	----
6	15.107	32.5	----	0.5	33.0	----	60.0	50.0	-27.0	----

Note:

1. Place of measurement: EMC LAB. of the ETC.
2. “***” means the value was too low to be measured.
3. If the data table appeared symbol of "----" means the Q.P. value is under the limit of AVG. so, the AVG. value doesn't need to be measured.
4. “#” means the noise was too low, so record the peak value.
5. The estimated measurement uncertainty of the result measurement is ±2.5dB.

EUT :	Model :	Status :	
Condition : Line 2	Date : 2010/3/15	Temp. : 26℃	Humi. : 65%



	Freq (MHz)	QP Level (dBuV)	AVG Level (dBuV)	Factor (dB)	QP Result (dBuV)	AVG Result (dBuV)	QP Limit (dBuV)	AVG Limit (dBuV)	QP Margin (dB)	AVG Margin (dB)
1	0.177	44.6	----	0.1	44.7	----	64.6	54.6	-19.9	----
2	0.201	42.8	----	0.1	42.9	----	63.6	53.6	-20.7	----
3	0.291	39.9	----	0.1	40.0	----	60.5	50.5	-20.5	----
4	0.388	38.6	----	0.1	38.7	----	58.1	48.1	-19.4	----
5	1.263	36.4	----	0.1	36.5	----	56.0	46.0	-19.5	----
6	15.107	33.0	----	0.5	33.5	----	60.0	50.0	-26.5	----

Note:

1. Place of measurement: EMC LAB. of the ETC.
2. “***” means the value was too low to be measured.
3. If the data table appeared symbol of "----" means the Q.P. value is under the limit of AVG. so, the AVG. value doesn't need to be measured.
4. “#” means the noise was too low, so record the peak value.
5. The estimated measurement uncertainty of the result measurement is ±2.5dB.

4.4 Result Data Calculation

The result data is calculated by adding the LISN Factor to the measured reading. The basic equation with a sample calculation is as follows:

RESULT = READING + LISN FACTOR (Included Cable Loss)

4.5 Conducted Measurement Equipment

The following test equipment are used during the conducted test.

Equipment	Manufacturer	Model No.	Next Cal. Due
RF Test Receiver	Rohde and Schwarz	ESCS30	08/22/2010
LISN	EMCO	37100/2M	03/04/2011

5 ANTENNA REQUIREMENT

5.1 Standard Applicable

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 6 dBi.

5.2 Antenna Construction and Directional Gain

	Main Antenna	Auxiliary Antenna
Antenna gain	2.0dBi	2.0 dBi
Connector	SMA-Plug-Reverse	SMA-Plug-Reverse

The antenna combinations for 2x2 (CCD) modes test:

Frequency Band	Antennas conbination	Ant 1 gain	Ant 2 gain	10^(Ant1/10)	10^(Ant2/10)	10^(Ant1/10) + 10^(Ant2/10)	10*log[10^(Ant1/10) + 10^(Ant2/10)] (dBi)
2.4GHz HT20&HT40	Ant1/Ant2	2	2	1.5849	1.5849	3.1698	5.01

6 EMISSION BANDWIDTH MEASUREMENT

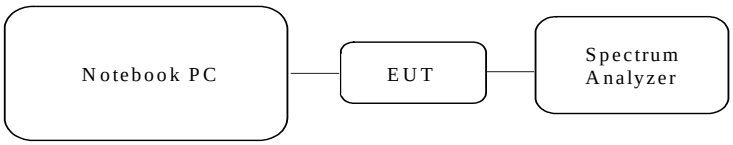
6.1 Standard Applicable

According to 15.247(a)(2), system using digital modulation techniques, the minimum 6dB bandwidth shall be at least 500 kHz.

6.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

Figure 2: Emission bandwidth measurement configuration.



6.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Agilent	E4446A	09/27/2010

6.4 Measurement Data

6.4.1 IEEE 802.11b

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

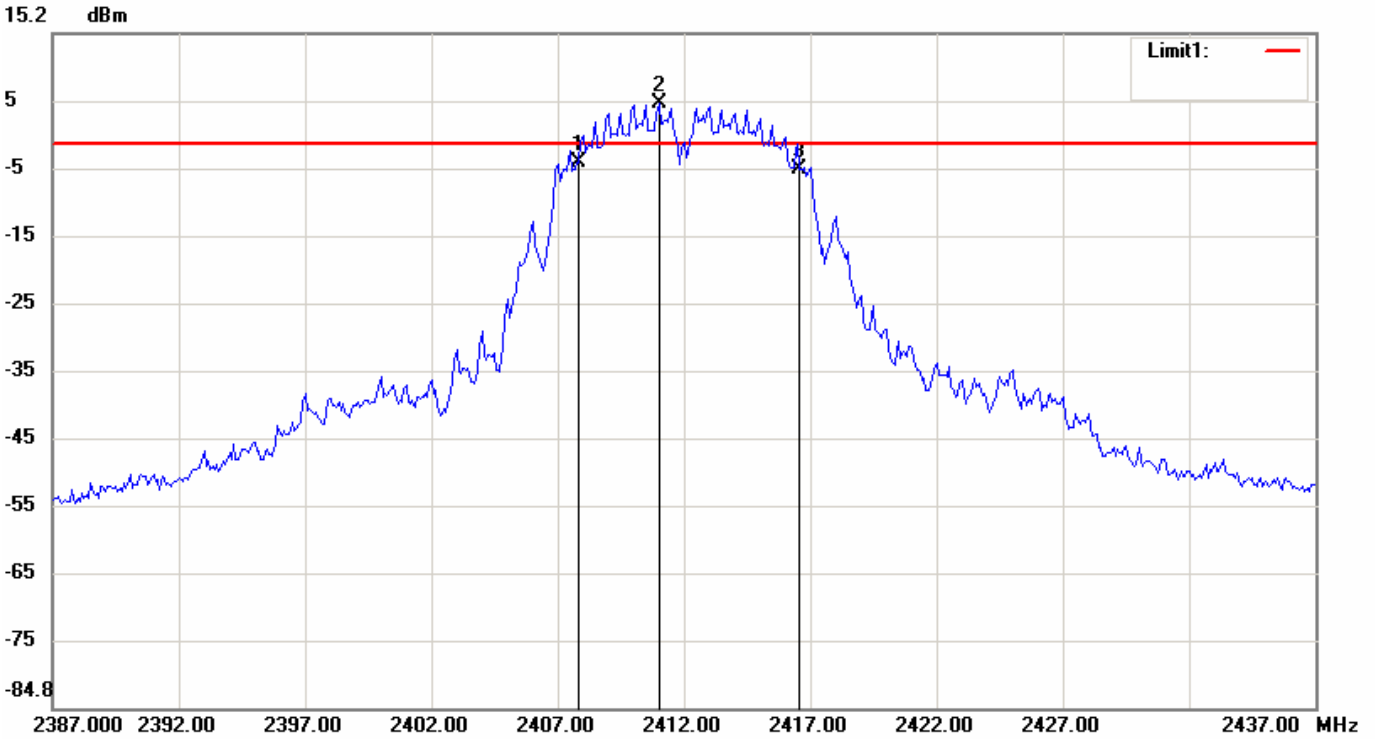
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	6dB Bandwidth (MHz)	FCC Limit (kHz)	Chart
1	2412	1	8.750	500	Page 20
6	2437	1	8.250	500	Page 21
11	2462	1	8.167	500	Page 22

Note:

1.Please refer to page 20 to page 22 for chart
2. The estimated measurement uncertainty of the result measurement is 8.25×10^{-7} *(1GHz≦f≦ 18GHz)*

File: CT-5374 **Data: #74** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:18:33 **Humidity: 51 %**



Condition: **-1.14dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

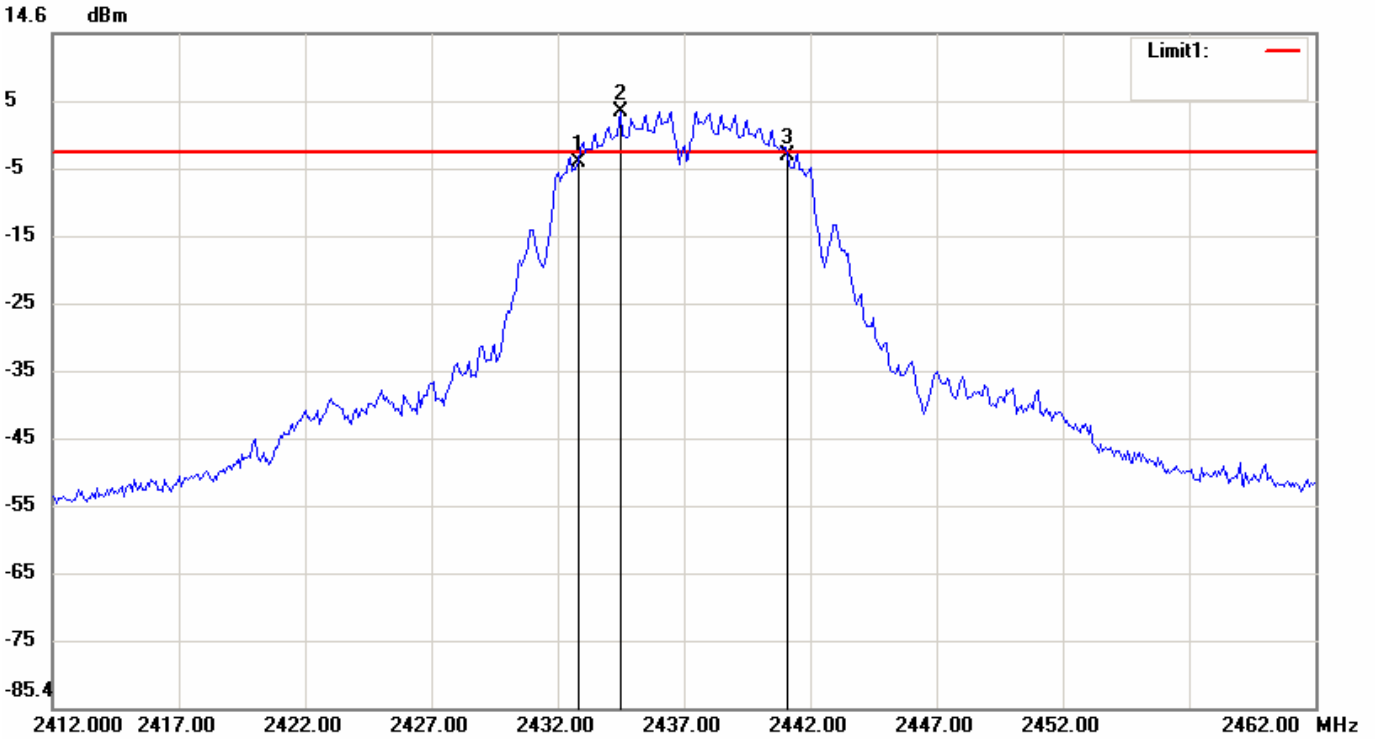
Note: **FCC-802.11B Channel 01-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2407.8333	-3.95
2	2411.0000	4.86
3	2416.5833	-4.83

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	8.75	-0.88

File: CT-5374 **Data: #79** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:27:07 **Humidity: 51 %**



Condition: **-2.98dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

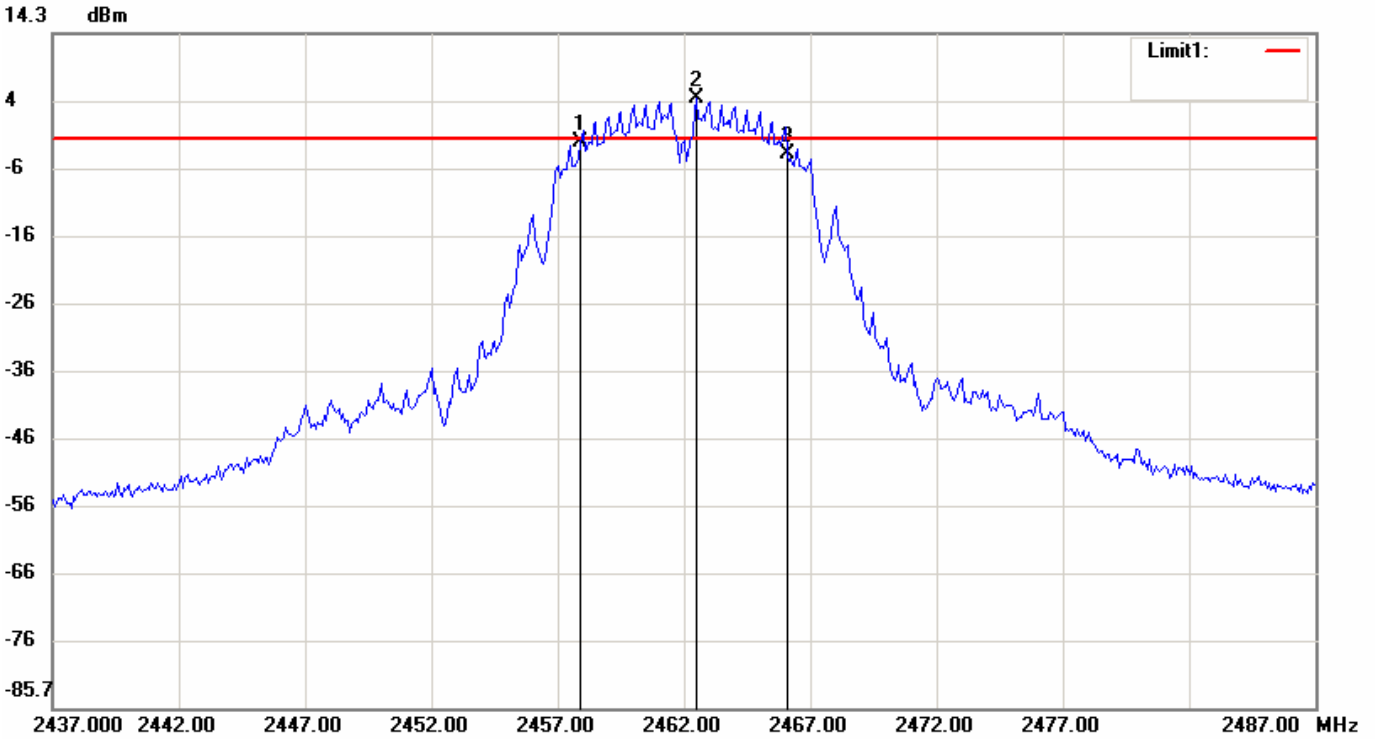
Note: **FCC-802.11B Channel 06-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2432.8333	-4.51
2	2434.5000	3.02
3	2441.0833	-3.56

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	8.25	0.95

File: **CT-5374** **Data:** **#83** **Date:** **2010/3/4** **Temperature:** **16 ℃**

Time: **PM 03:34:31** **Humidity:** **51 %**



Condition: **-1.22dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

Note: **FCC-802.11B Channel 11-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2457.9167	-1.75
2	2462.5000	4.78
3	2466.0833	-3.60

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	8.1666	-1.85

6.4.2 IEEE 802.11g

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

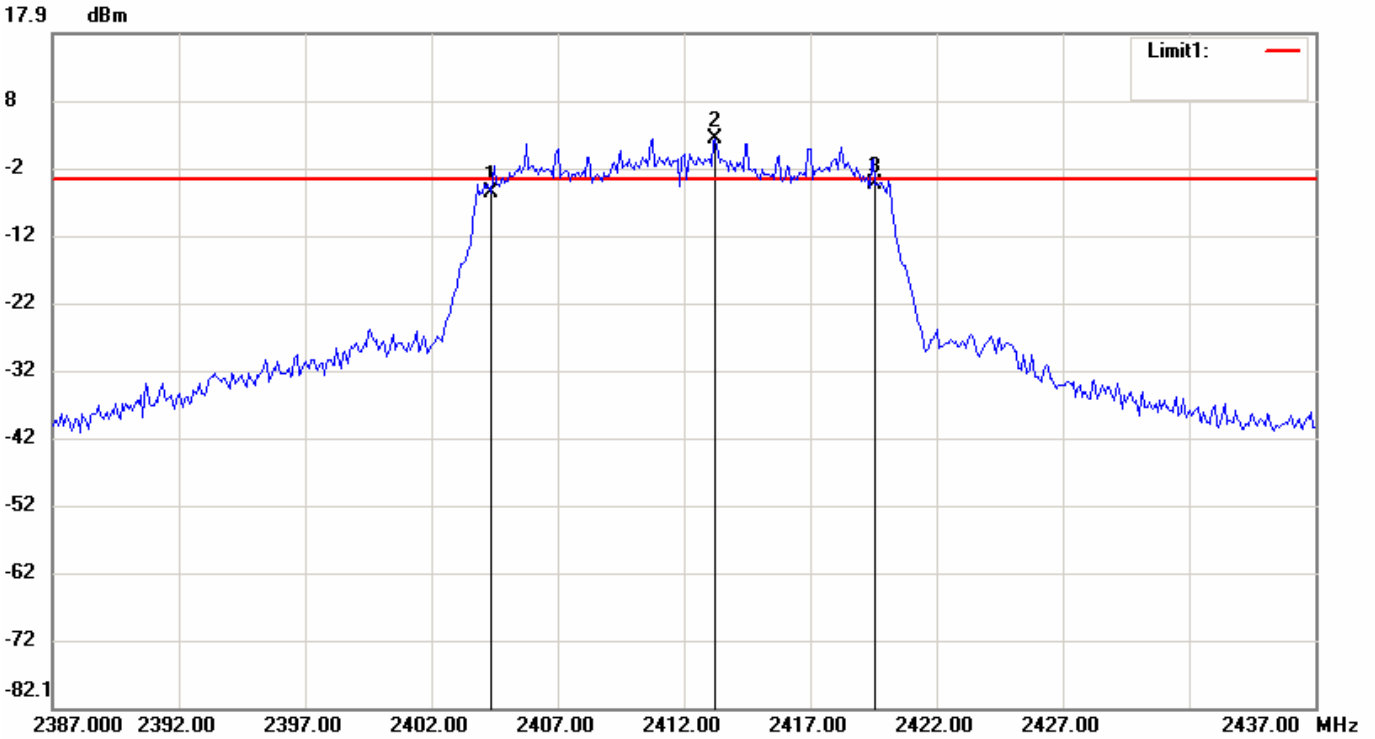
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	6dB Bandwidth (MHz)	FCC Limit (kHz)	Chart
1	2412	6	15.250	500	Page 24
6	2437	6	15.250	500	Page 25
11	2462	6	15.167	500	Page 26

Note:

1.Please refer to page 24 to page 26 for chart
2. The estimated measurement uncertainty of the result measurement is 8.25×10^{-7} *(1GHz≦f≦ 18GHz)*

File: CT-5374 **Data: #88** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:42:32 **Humidity: 51 %**



Condition: **-3.7dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

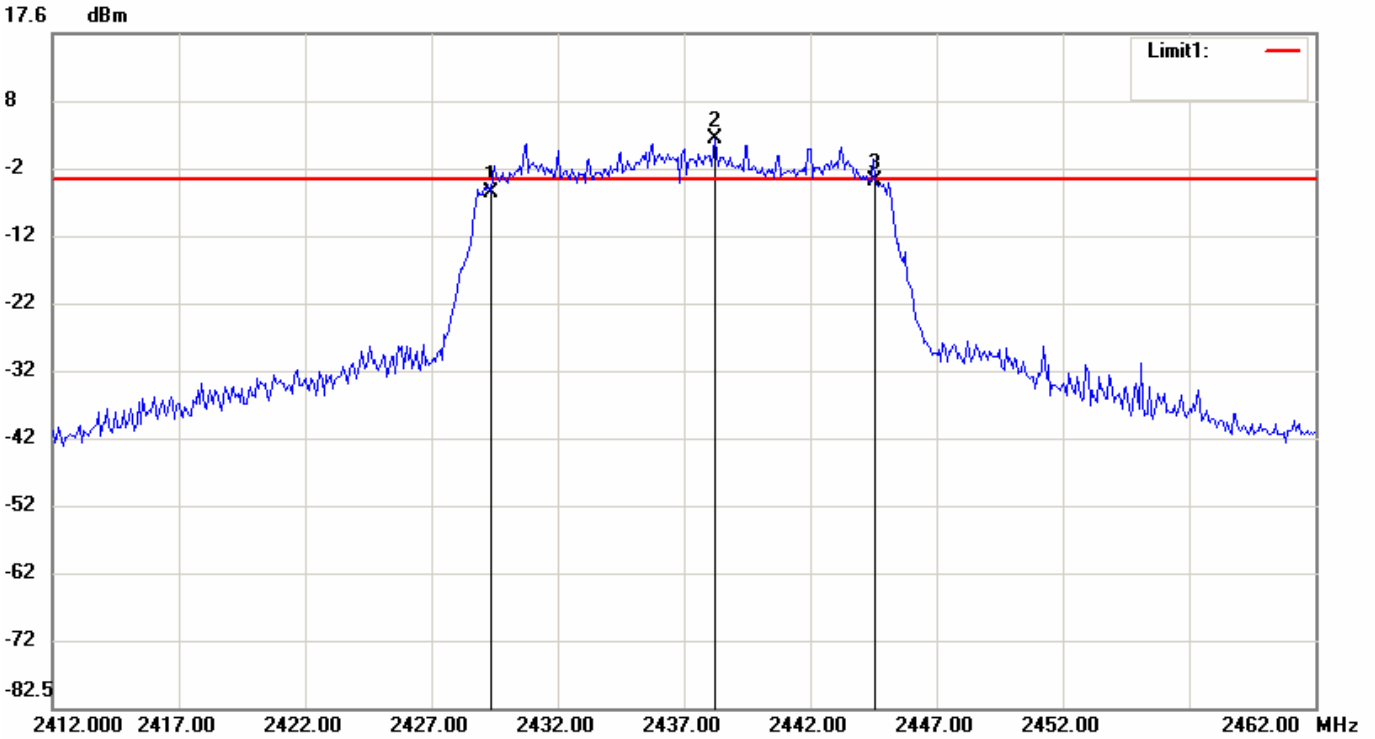
Note: **FCC-802.11G Channel 01-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2404.3333	-5.72
2	2413.2500	2.30
3	2419.5833	-4.53

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	15.25	1.19

File: CT-5374 **Data: #93** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:50:31 **Humidity: 51 %**



Condition: **-4.19dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

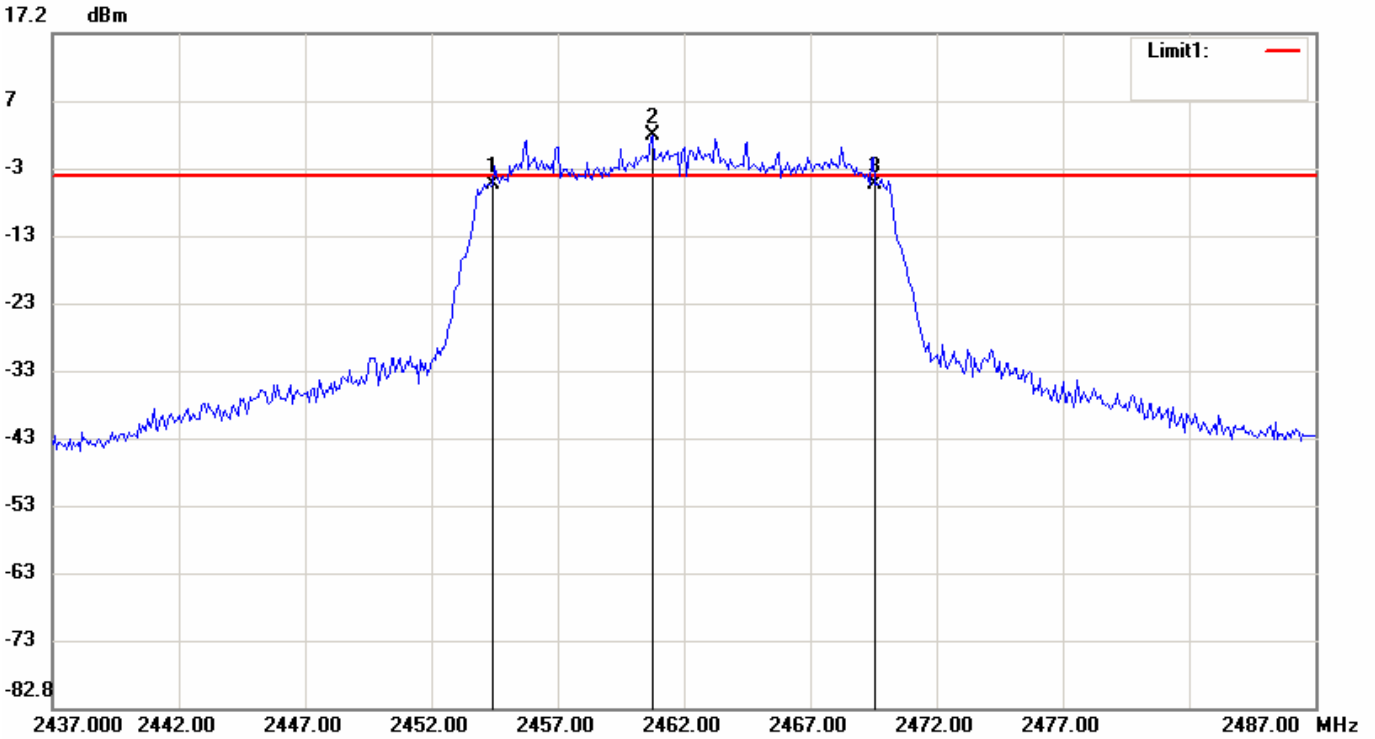
Note: **FCC-802.11G Channel 06-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2429.3333	-6.14
2	2438.2500	1.81
3	2444.5833	-4.41

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	15.25	1.73

File: CT-5374 **Data: #97** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:58:05 **Humidity: 51 %**



Condition: **-4.05dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

Note: **FCC-802.11G Channel 11-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2454.4167	-5.21
2	2460.7500	1.95
3	2469.5833	-5.29

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	15.1666	-0.08

6.4.3 IEEE 802.11n, HT20

6.4.3.1 CHAIN 0

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

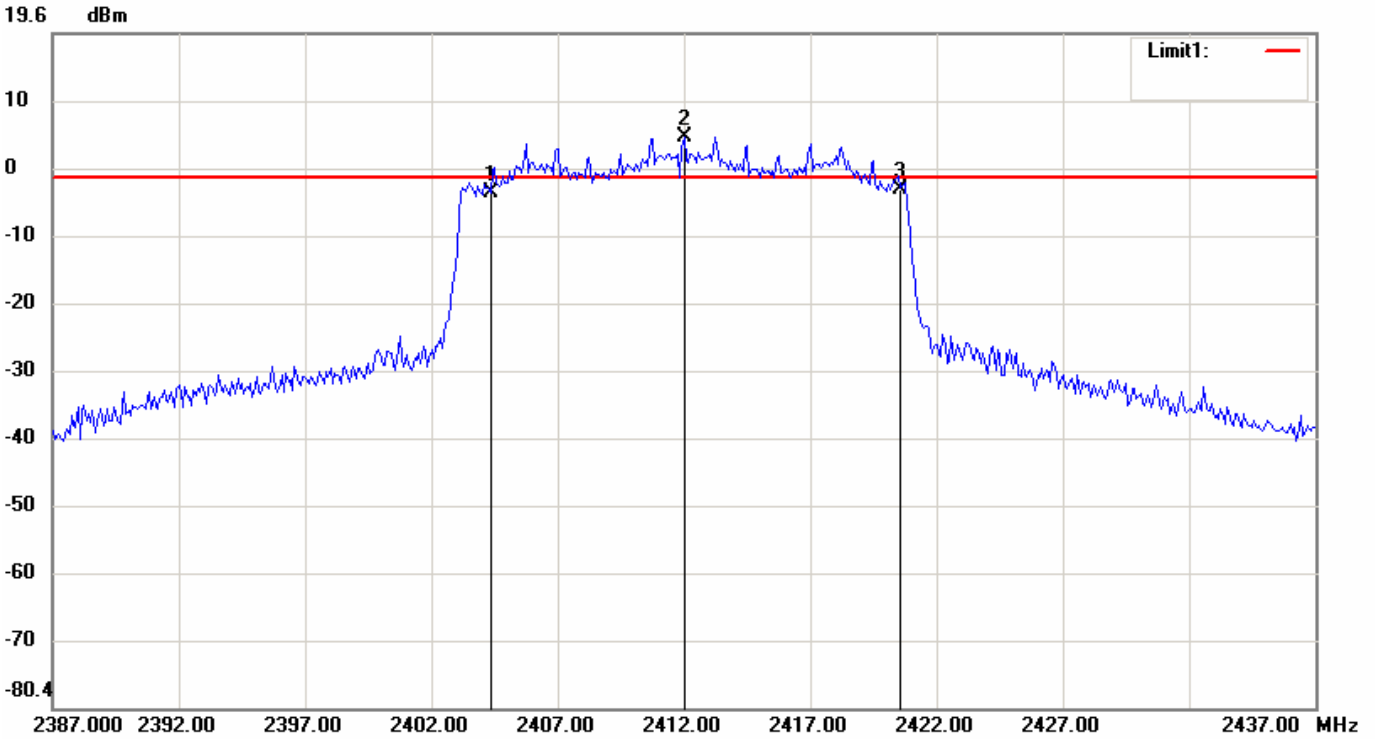
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	6dB Bandwidth (MHz)	FCC Limit (kHz)	Chart
1	2412	6.5	16.25	500	Page 28
6	2437	6.5	15.25	500	Page 29
11	2462	6.5	15.25	500	Page 30

Note:

1.Please refer to page 28 to page 30 for chart
2. The estimated measurement uncertainty of the result measurement is 8.25×10^{-7} *(1GHz* $\leqq f \leqq$ *18GHz)*

File: CT-5374 **Data: #1** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 10:05:24 **Humidity: 51 %**



Condition: **-1.86dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

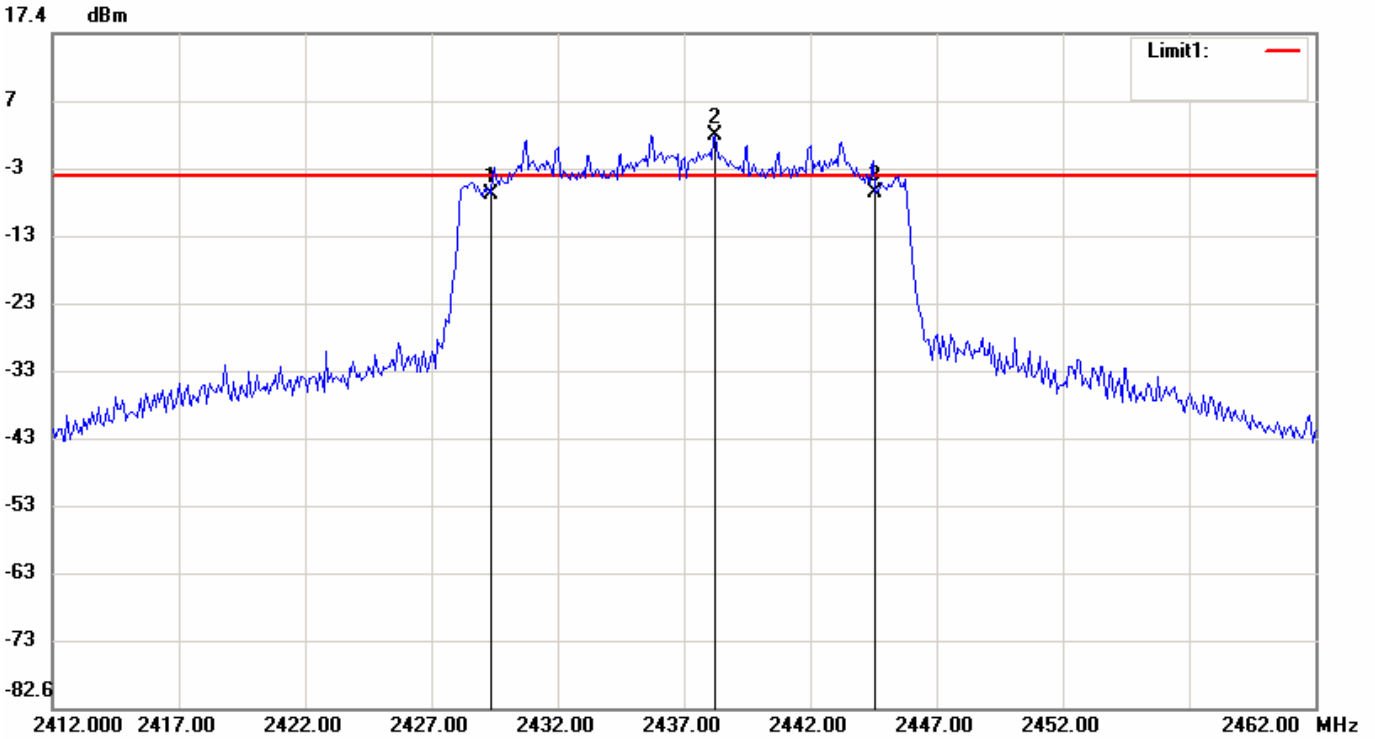
Note: **FCC-802.11GN_HT20 Channel 01-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2404.3333	-4.02
2	2412.0000	4.14
3	2420.5833	-3.44

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	16.25	0.58

File: CT-5374 **Data: #17** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:22:56 **Humidity: 51 %**



Condition: **-3.65dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

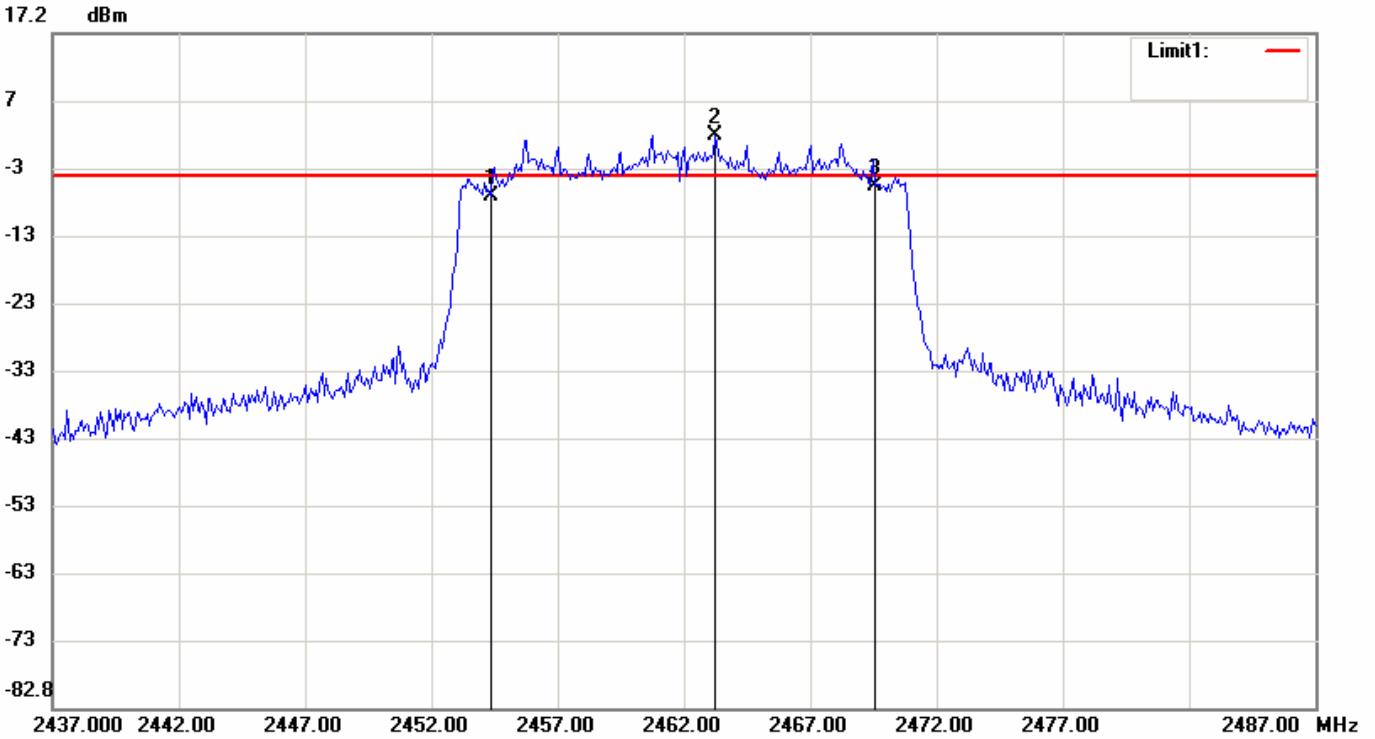
Note: **FCC-802.11GN_HT20 Channel 06-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2429.3333	-6.47
2	2438.2500	2.35
3	2444.5833	-6.20

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	15.25	0.27

File: CT-5374 **Data: #21** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:30:59 **Humidity: 51 %**



Condition: **-3.85dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

Note: **FCC-802.11GN_HT20 Channel 11-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2454.3333	-6.89
2	2463.2500	2.15
3	2469.5833	-5.38

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	15.25	1.51

6.4.3.2 CHAIN 1

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	6dB Bandwidth (MHz)	FCC Limit (kHz)	Chart
1	2412	6.5	17.083	500	Page 32
6	2437	6.5	16.083	500	Page 33
11	2462	6.5	16.833	500	Page 34

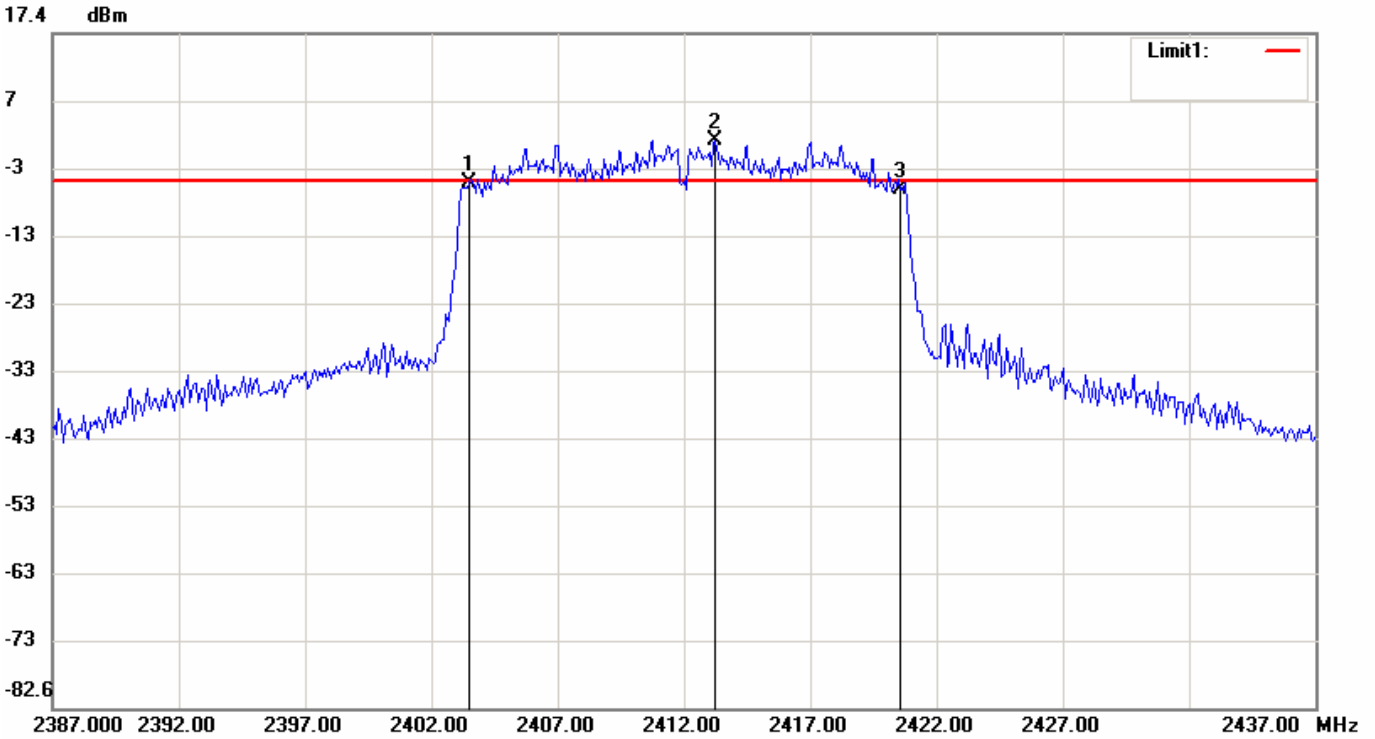
Note:

1.Please refer to page 32 to page 34 for chart

2. The estimated measurement uncertainty of the result measurement is 8.25×10^{-7} *(1GHz≦f≦ 18GHz)*

File: CT-5374 **Data: #8** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 10:31:06 **Humidity: 51 %**



Condition: **-4.46dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

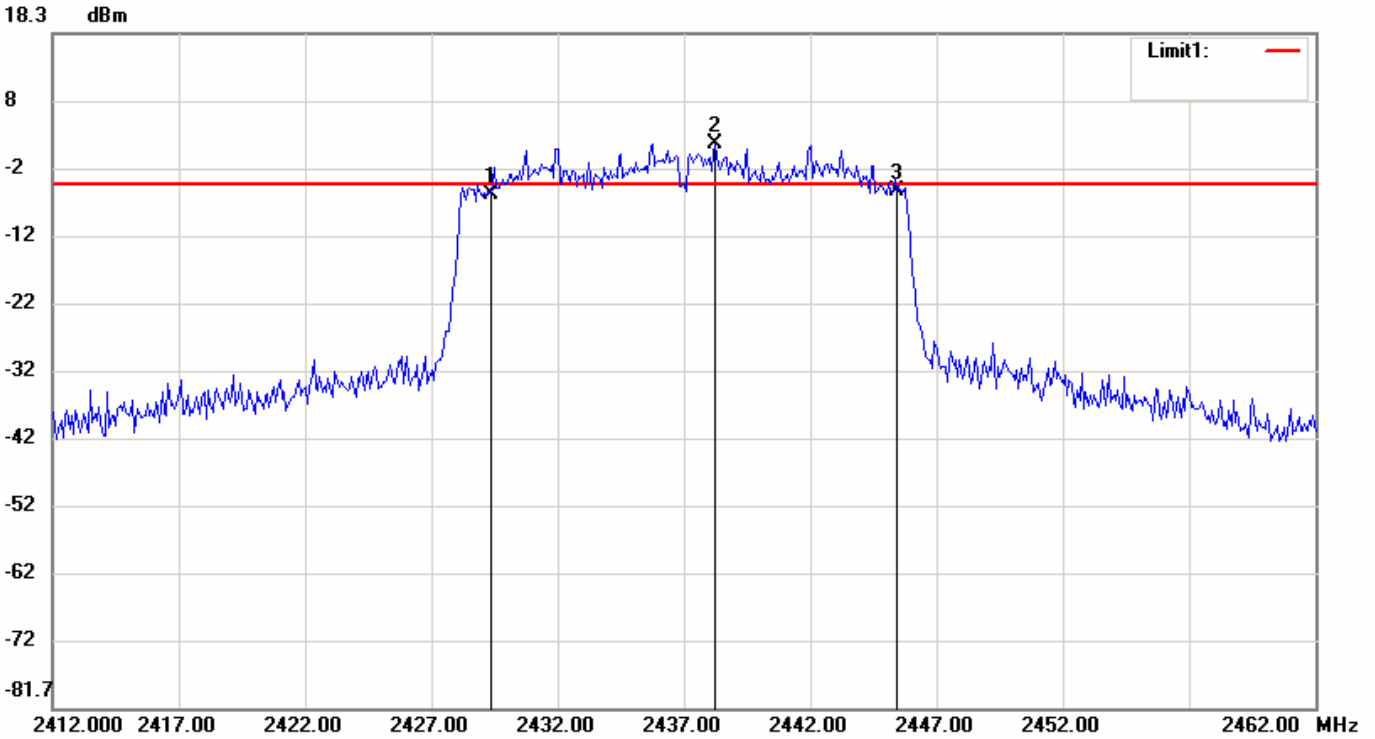
Note: **FCC-802.11GN_HT20 Channel 01-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2403.5000	-4.64
2	2413.2500	1.54
3	2420.5833	-5.88

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	17.0833	-1.24

File: CT-5374 **Data: #13** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:14:41 **Humidity: 51 %**



Condition: **-4.05dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

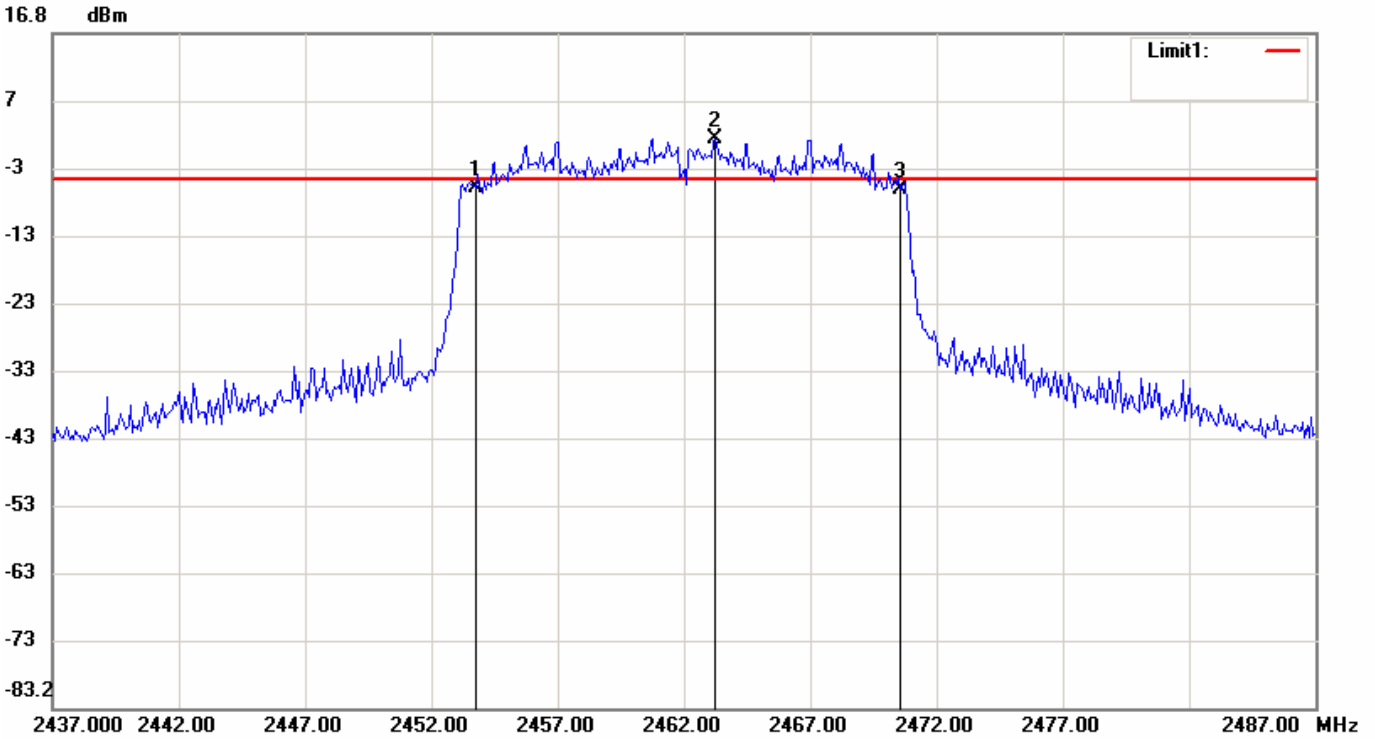
Note: **FCC-802.11GN_HT20 Channel 06-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2429.3333	-5.64
2	2438.2500	1.95
3	2445.4167	-5.18

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	16.0834	0.46

File: CT-5374 **Data: #26** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:48:38 **Humidity: 51 %**



Condition: **-4.73dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

Note: **FCC-802.11GN_HT20 Channel 11-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2453.7500	-6.10
2	2463.2500	1.27
3	2470.5833	-6.23

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	16.8333	-0.13

6.4.4 IEEE 802.11n, HT40

6.4.4.1 CHAIN 0

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

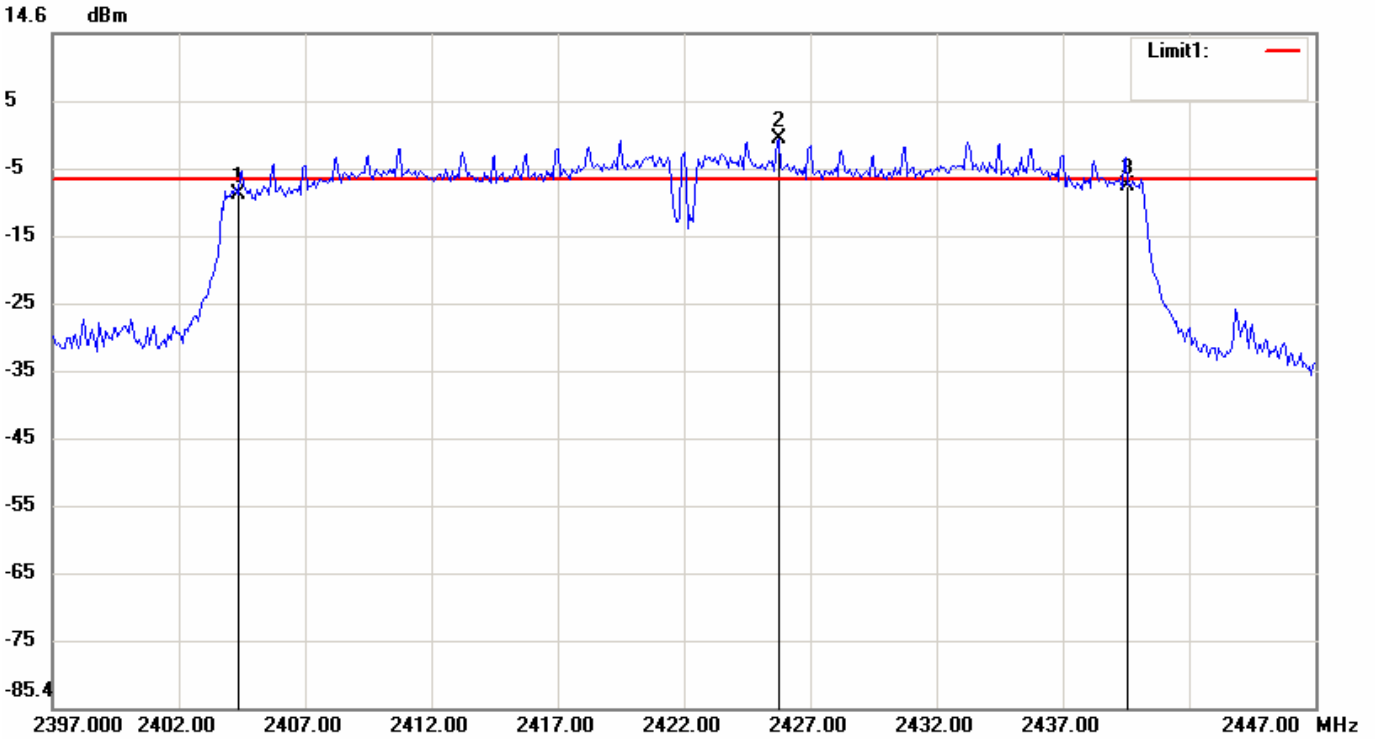
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	6dB Bandwidth (MHz)	FCC Limit (kHz)	Chart
3	2422	13.5	35.25	500	Page 36
6	2437	13.5	35.58	500	Page 37
9	2452	13.5	35.50	500	Page 38

Note:

1.Please refer to page 36 to page 38 for chart
2. The estimated measurement uncertainty of the result measurement is 8.25×10^{-7} *(1GHz≦f≦ 18GHz)*

File: CT-5374 **Data: #31** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 12:46:14 **Humidity: 51 %**



Condition: **-6.98dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

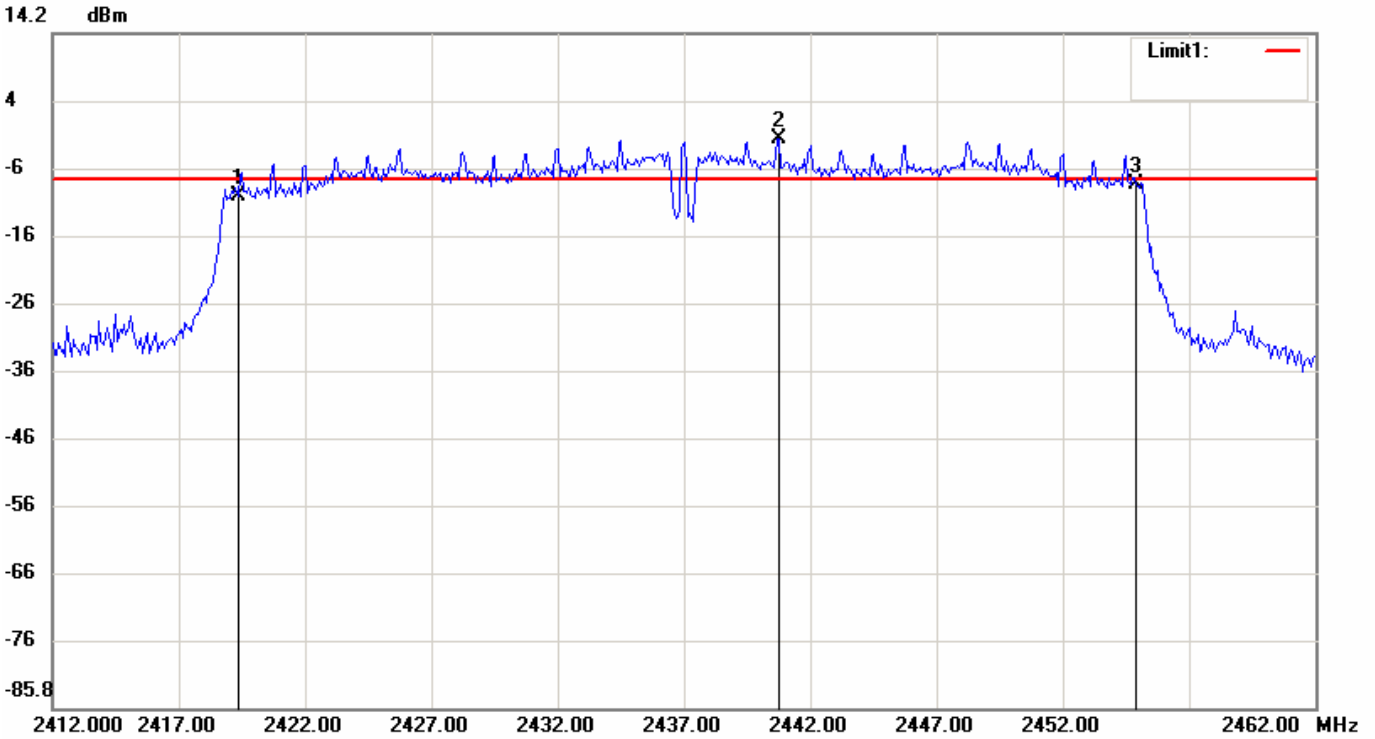
Note: **FCC-802.11GN_HT40 Channel 03-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2404.3333	-9.29
2	2425.7500	-0.98
3	2439.5833	-7.90

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	35.25	1.39

File: CT-5374 **Data:** #45 **Date:** 2010/3/4 **Temperature:** 16 ℃

Time: PM 01:22:00 **Humidity:** 51 %



Condition: -7.32dBm **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

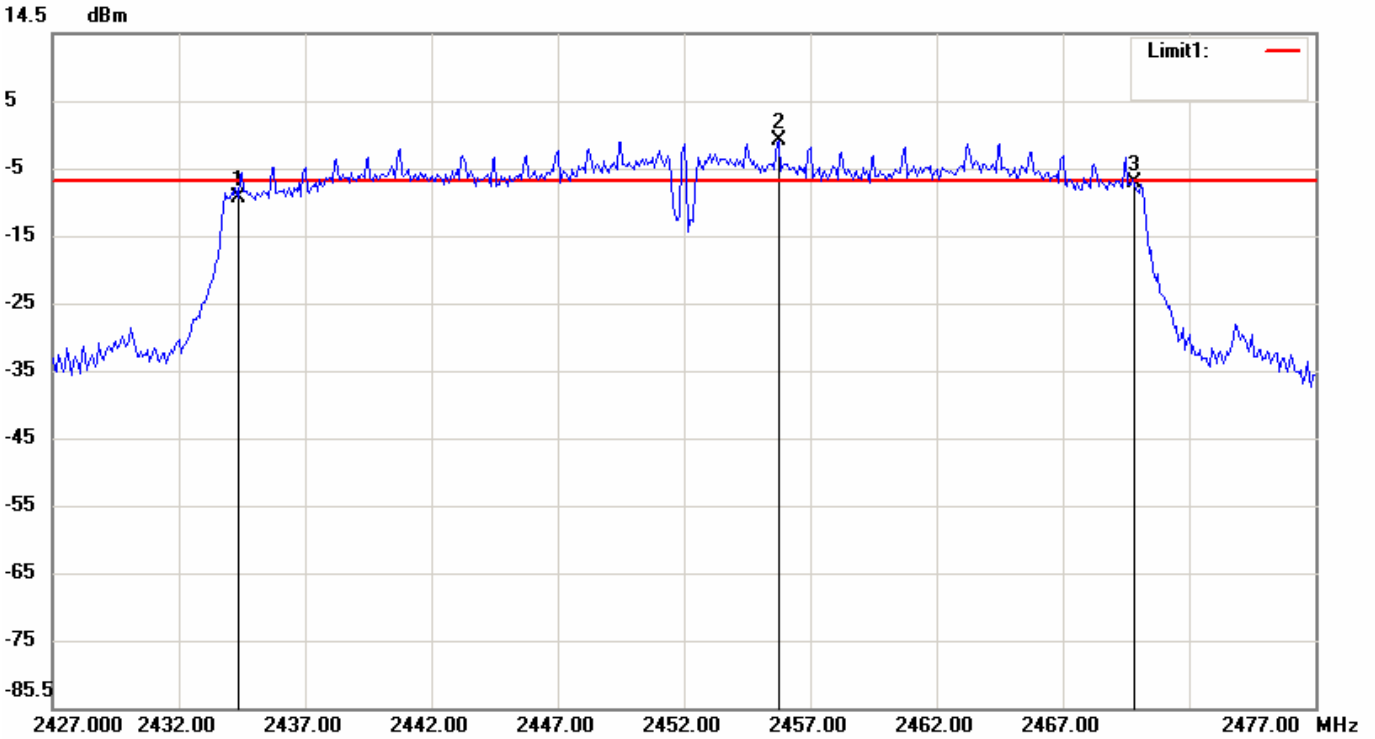
Note: **FCC-802.11GN_HT40 Channel 06-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2419.3333	-9.95
2	2440.7500	-1.32
3	2454.9167	-8.19

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	35.5834	1.76

File: CT-5374 **Data: #49** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 01:38:07 **Humidity: 51 %**



Condition: **-7.36dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

Note: **FCC-802.11GN_HT40 Channel 09-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2434.3333	-9.97
2	2455.7500	-1.36
3	2469.8333	-7.54

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	35.5	2.43

6.4.4.2 CHAIN 1

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

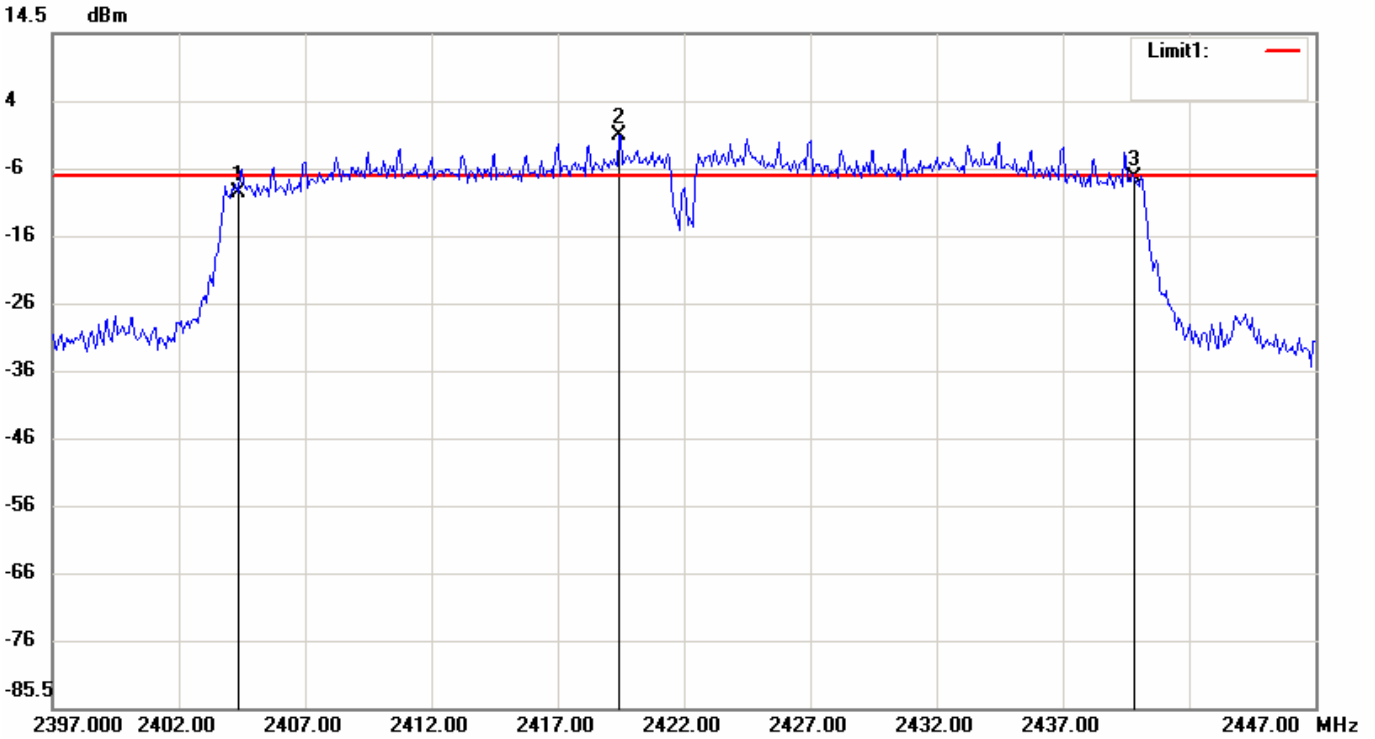
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	6dB Bandwidth (MHz)	FCC Limit (kHz)	Chart
3	2422	13.5	35.500	500	Page 40
6	2437	13.5	35.500	500	Page 41
9	2452	13.5	35.583	500	Page 42

Note:

1.Please refer to page 40 to page 42 for chart
2. The estimated measurement uncertainty of the result measurement is 8.25×10^{-7} *(1GHz* $\leqq f \leqq$ *18GHz)*

File: CT-5374 **Data: #36** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 12:56:20 **Humidity: 51 %**



Condition: **-6.57dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

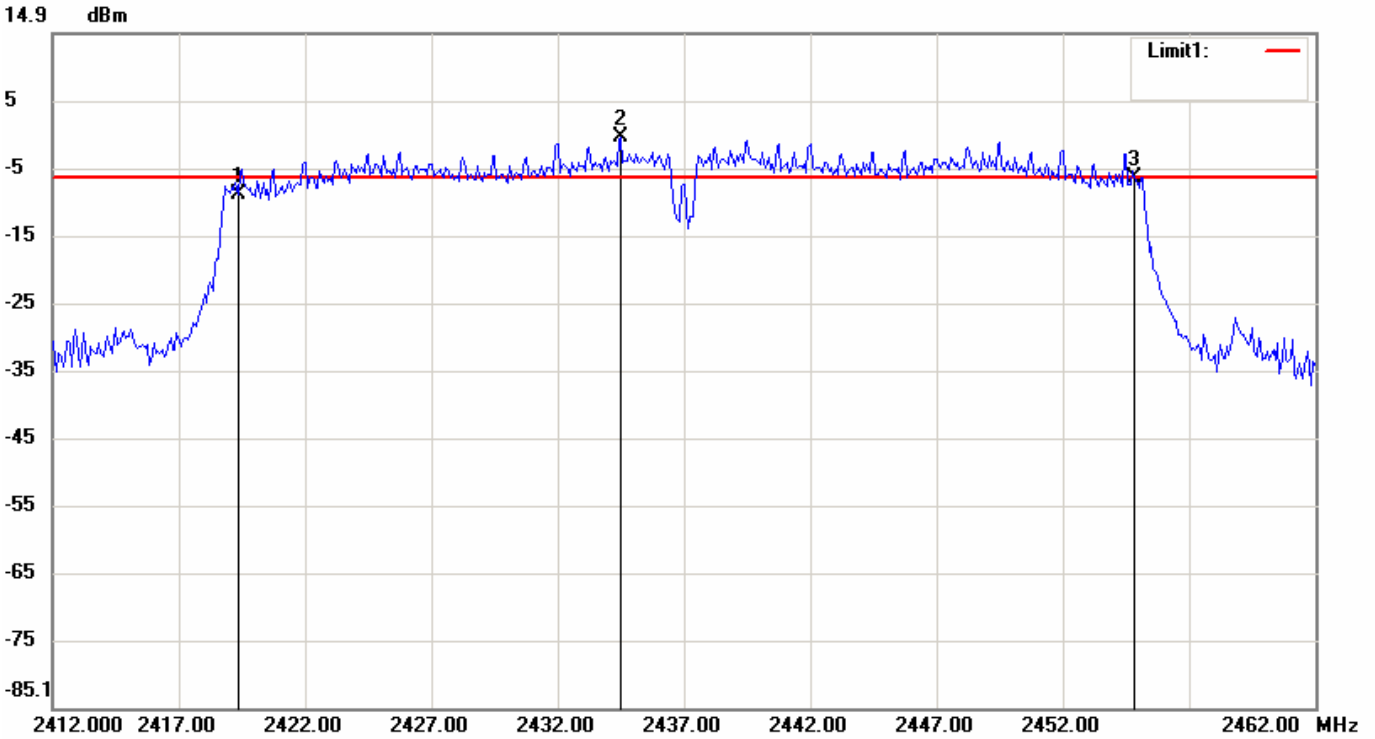
Note: **FCC-802.11GN_HT40 Channel 03-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2404.3333	-9.10
2	2419.4167	-0.57
3	2439.8333	-6.77

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	35.5	2.33

File: CT-5374 **Data: #41** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 01:14:24 **Humidity: 51 %**



Condition: **-6.47dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

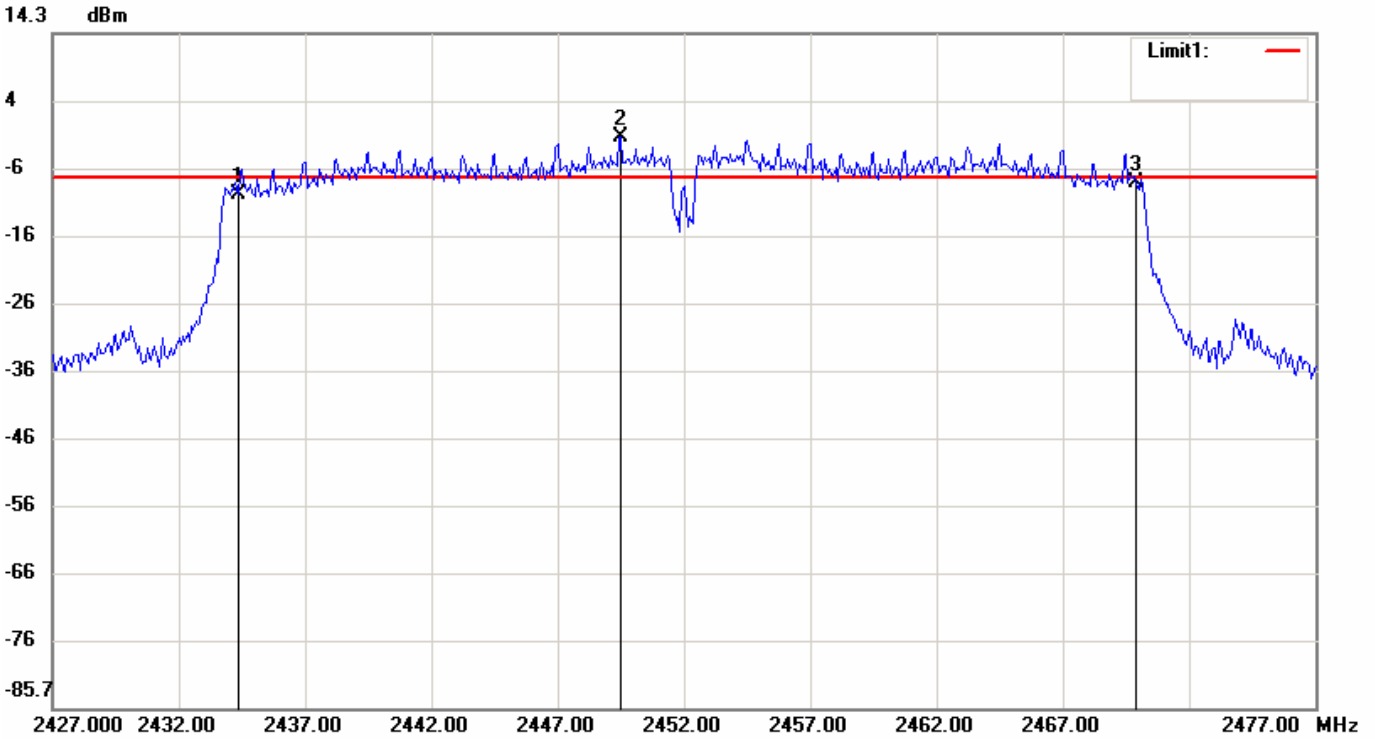
Note: **FCC-802.11GN_HT40 Channel 06-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2419.3333	-8.96
2	2434.5000	-0.47
3	2454.8333	-6.54

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	35.5	2.42

File: CT-5374 **Data:** #54 **Date:** 2010/3/4 **Temperature:** 16 ℃

Time: PM 01:46:39 **Humidity:** 51 %



Condition: -6.99dBm **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

Note: FCC-802.11GN_HT40 Channel 09-6dB EBW

No.	Frequency(MHz)	Level(dBm)
1	2434.3333	-9.47
2	2449.5000	-0.99
3	2469.9167	-7.89

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	35.5834	1.58

6.4.5 IEEE 802.11n, HT40, SISO

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	6dB Bandwidth (MHz)	FCC Limit (kHz)	Chart
3	2422	13.5	35.833	500	Page 44
6	2437	13.5	35.250	500	Page 45
9	2452	13.5	35.583	500	Page 46

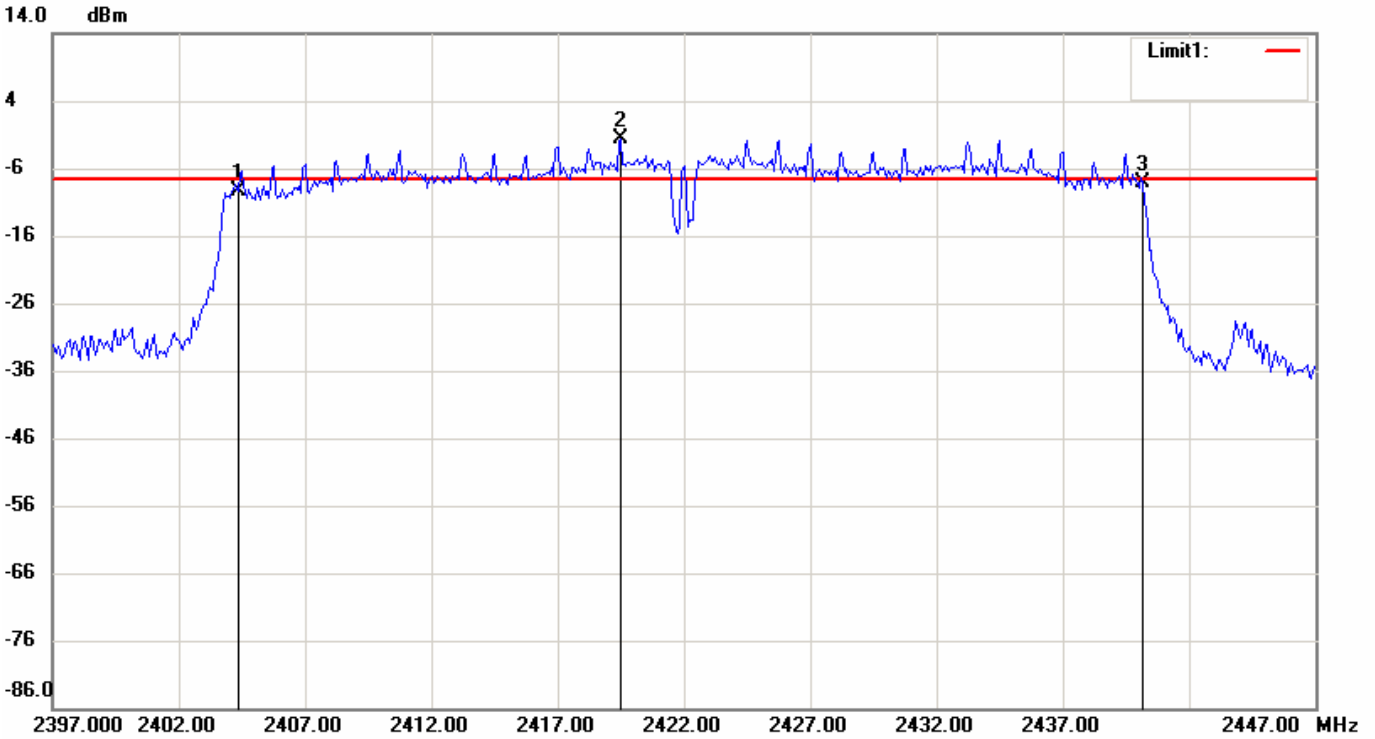
Note:

1.Please refer to page 44 to page 46 for chart

2. The estimated measurement uncertainty of the result measurement is 8.25×10^{-7} *(1GHz≦f≦ 18GHz)*

File: CT-5374 **Data:** #60 **Date:** 2010/3/4 **Temperature:** 16 ℃

Time: PM 02:28:06 **Humidity:** 51 %



Condition: -7.56dBm **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

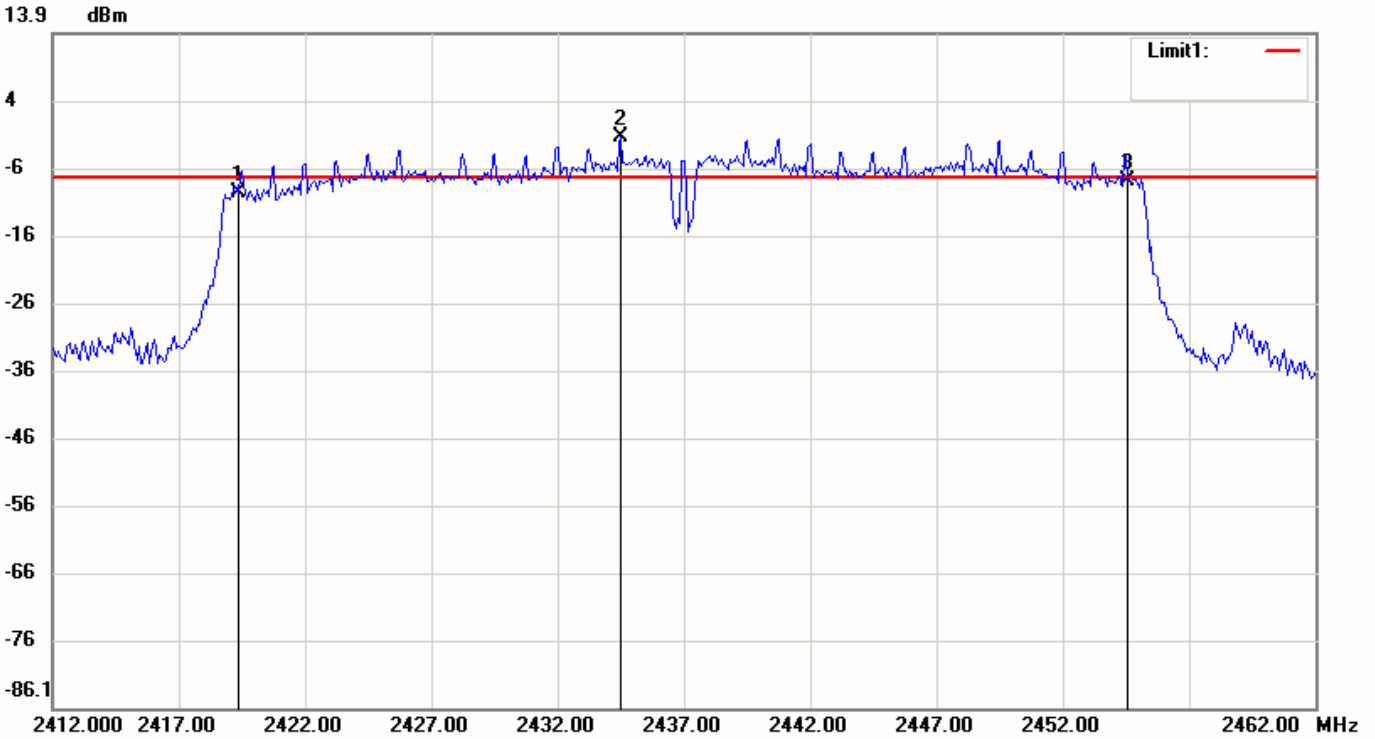
Note: **FCC-802.11GN_HT40 Channel 03-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2404.3333	-9.36
2	2419.5000	-1.56
3	2440.1667	-8.07

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	35.8334	1.29

File: CT-5374 **Data:** #65 **Date:** 2010/3/4 **Temperature:** 16 ℃

Time: PM 02:35:40 **Humidity:** 51 %



Condition: -7.58dBm **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

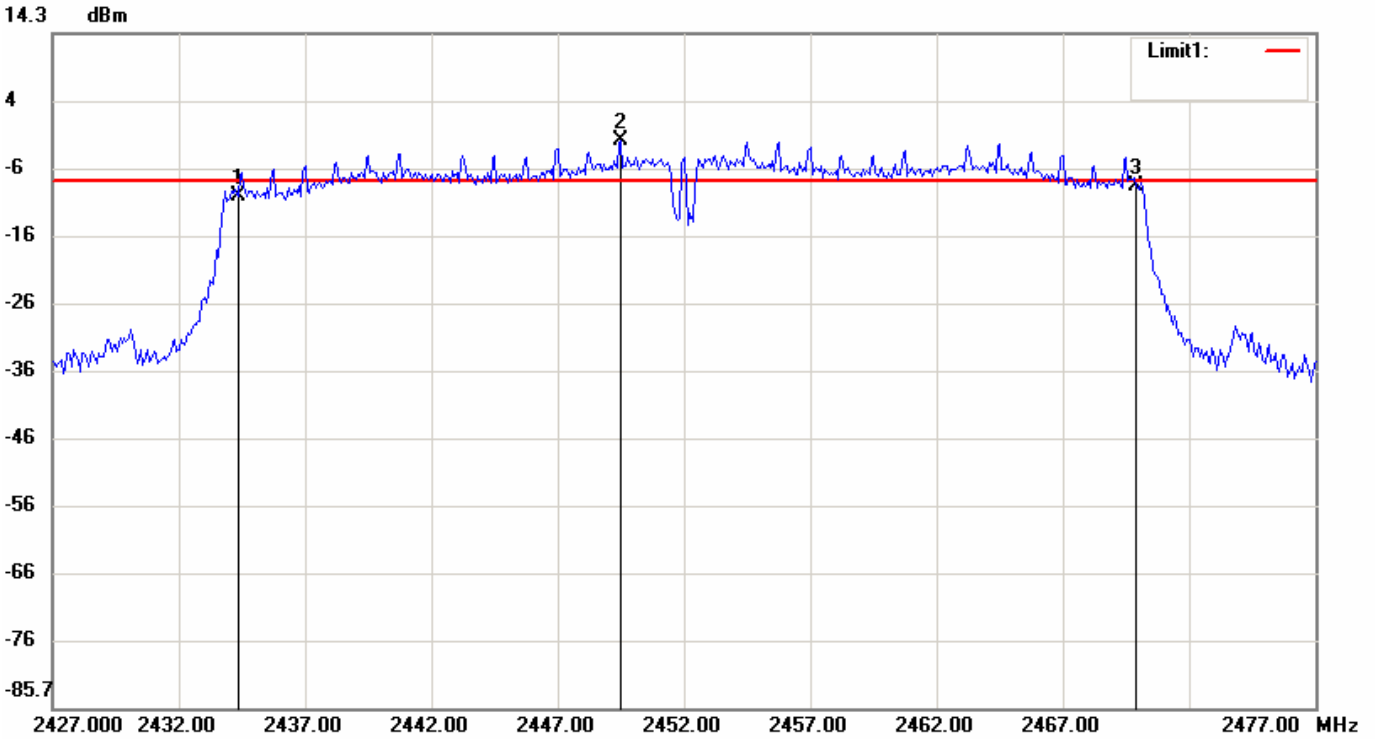
Note: **FCC-802.11GN_HT40 Channel 06-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2419.3333	-9.79
2	2434.5000	-1.58
3	2454.5833	-7.99

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	35.25	1.8

File: CT-5374 **Data: #69** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 02:42:51 **Humidity: 51 %**



Condition: **-7.5dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

Note: **FCC-802.11GN_HT40 Channel 09-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2434.3333	-9.83
2	2449.5000	-1.50
3	2469.9167	-8.20

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	35.5834	1.63

7 OUTPUT POWER MEASUREMENT

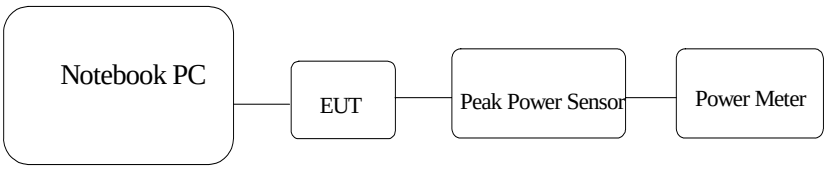
7.1 Standard Applicable

For direct sequence system, according to 15.247(b), the maximum peak output power of the transmitter shall not exceed 1 Watt. 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 6 dBi.

7.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 3. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range.
3. Measure the highest value appearing on power meter and record the level to calculate result data.
4. Repeat above procedures until all frequencies measured were complete.

Figure 3: Output power measurement configuration.



7.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Agilent	E4446A	09/27/2010
Power Meter	Agilent	N1922A	11/02/2010
Peak Power Sensor	Agilent	N1912A	11/02/2010

7.4 Measurement Data

7.4.1 IEEE 802.11b

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Maximum Peak Output Power (dBm)	Maximum Peak Output Power (mW)	FCC Limit (mW)	Chart
1	2412	1	15.88	38.726	1000	-
6	2437	1	15.63	36.559	1000	-
11	2462	1	15.76	37.670	1000	-

Note:

The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

7.4.2 IEEE 802.11g

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Maximum Peak Output Power (dBm)	Maximum Peak Output Power (mW)	FCC Limit (mW)	Chart
1	2412	6	16.11	40.832	1000	-
6	2437	6	20.37	108.893	1000	-
11	2462	6	20.25	105.925	1000	-

Note:

The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

7.4.3 IEEE 802.11n, HT20

7.4.3.1 CHAIN 0

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Maximum Peak Output Power (dBm)	Maximum Peak Output Power (mW)	FCC Limit (mW)	Chart
1	2412	6.5	17.72	59.156	1000	-
6	2437	6.5	20.41	109.901	1000	-
11	2462	6.5	20.27	106.414	1000	-

Note:

The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

7.4.3.2 CHAIN 1

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Maximum Peak Output Power (dBm)	Maximum Peak Output Power (mW)	FCC Limit (mW)	Chart
1	2412	6.5	15.22	33.266	1000	-
6	2437	6.5	21.04	127.057	1000	-
11	2462	6.5	20.35	108.393	1000	-

Note:

The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

7.4.3.3 CHAIN 0 + CHAIN 1

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency (MHz)	CHAIN 0 Peak Power (mW)	CHAIN 1 Peak Power (mW)	Total Power (mW)	Limit (mW)	Chart
1	2412	59.156	33.266	92.422	1000	-
6	2437	109.901	127.057	236.958	1000	-
11	2462	106.414	108.393	214.807	1000	-

Note:

The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

7.4.4 IEEE 802.11n, HT40

7.4.4.1 CHAIN 0

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Maximum Peak Output Power (dBm)	Maximum Peak Output Power (mW)	FCC Limit (mW)	Chart
3	2422	13.5	15.00	31.623	1000	-
6	2437	13.5	19.94	98.628	1000	-
9	2452	13.5	20.01	100.231	1000	-

Note:

The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

7.4.4.2 CHAIN 1

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Maximum Peak Output Power (dBm)	Maximum Peak Output Power (mW)	FCC Limit (mW)	Chart
3	2422	13.5	14.91	30.974	1000	-
6	2437	13.5	20.91	123.310	1000	-
9	2452	13.5	20.52	112.720	1000	-

Note:

The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

7.4.4.3 CHAIN 0 + CHAIN 1

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency (MHz)	CHAIN 0 Peak Power (mW)	CHAIN 1 Peak Power (mW)	Total Power (mW)	Limit (mW)	Chart
3	2422	31.623	30.974	62.597	1000	-
6	2437	98.628	123.310	221.938	1000	-
9	2452	100.231	112.720	212.951	1000	-

Note:

The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

7.4.5 IEEE 802.11n, HT40, SISO

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Maximum Peak Output Power (dBm)	Maximum Peak Output Power (mW)	FCC Limit (mW)	Chart
3	2422	13.5	14.43	27.733	1000	-
6	2437	13.5	19.77	94.842	1000	-
9	2452	13.5	19.88	97.275	1000	-

Note:

The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

8 POWER DENSITY MEASUREMENT

8.1 Standard Applicable

According to 15.247(d), for direct sequence systems, the transmitted power density averaged over any 1 second interval shall not be greater than 8 dBm in any 3 kHz bandwidth within these bands.

8.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 2. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set EUT to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Adjust the center frequency of spectrum analyzer on highest level appearing on spectral display within a 300 kHz frequency span.
4. Set the spectrum analyzer on a 3 kHz resolution bandwidth and 10 kHz video bandwidth as well as max. hold function, then record the measurement result.
5. Repeat above procedures until all measured frequencies were complete.

8.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Agilent	E4446A	09/27/2010

8.4 Measurement Data

8.4.1 IEEE 802.11b

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

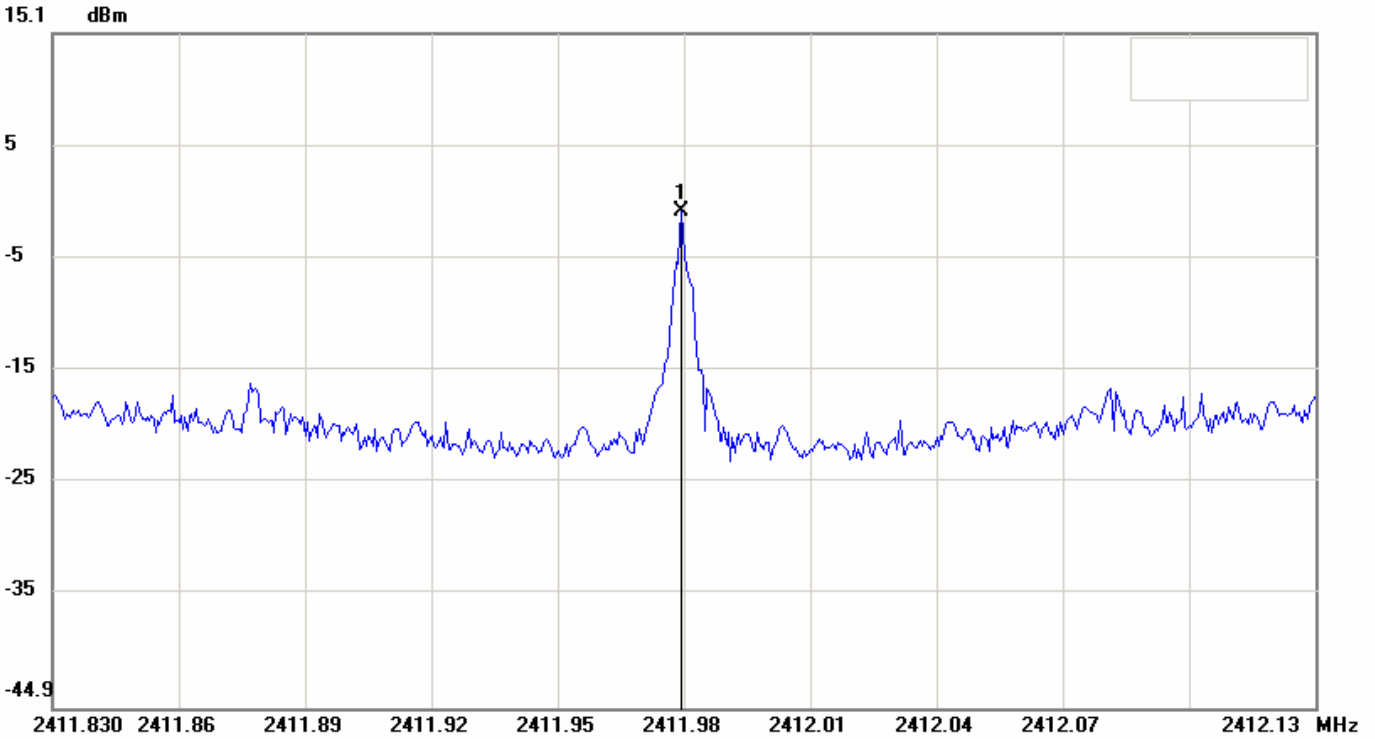
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
1	2412	1	-0.74	8	Page 59
6	2437	1	-4.83	8	Page 60
11	2462	1	-4.49	8	Page 61

Note:

1. *Please refer to page 59 to page 61 for chart*
2. *The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦ 18GHz)*

File: CT-5374 **Data: #77** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:22:56 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

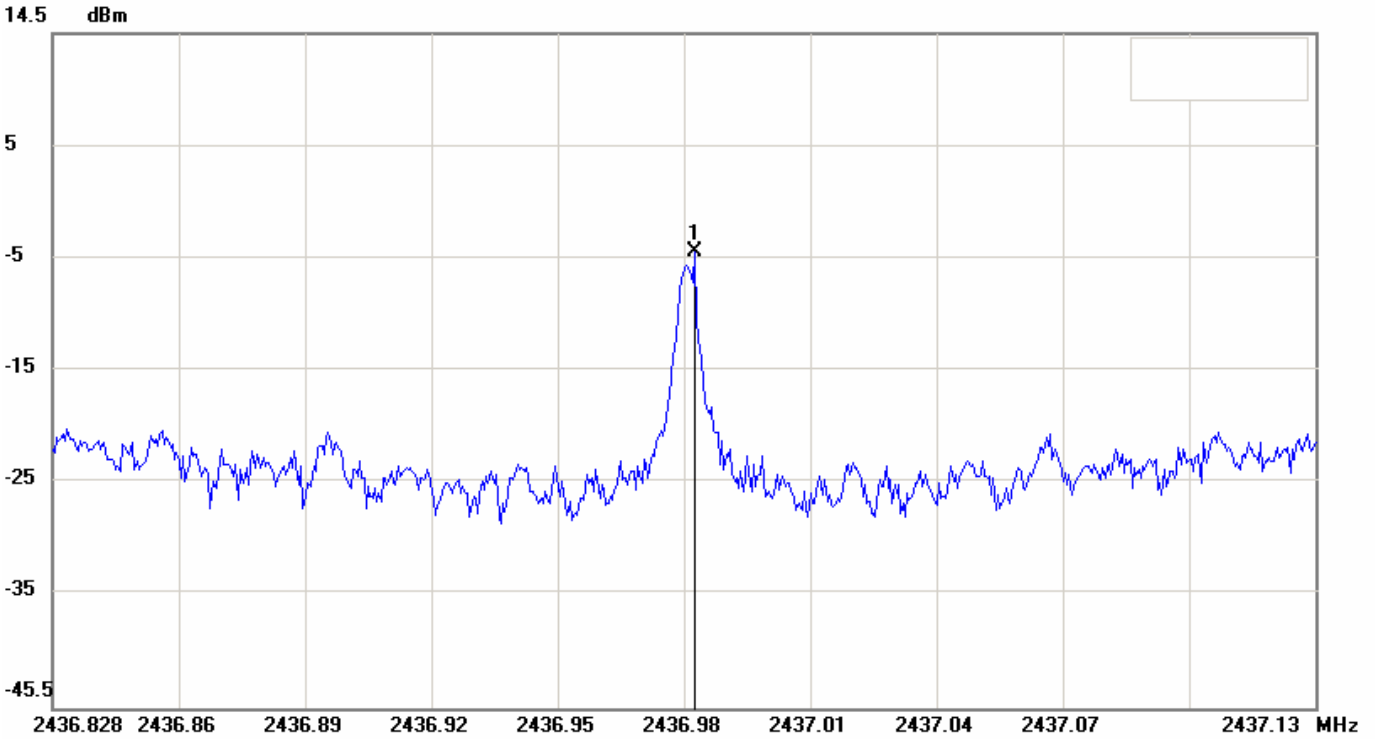
Test Mode:

Note: **FCC-802.11B Channel 01-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2411.9792	-0.74

File: CT-5374 **Data: #82** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:31:29 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

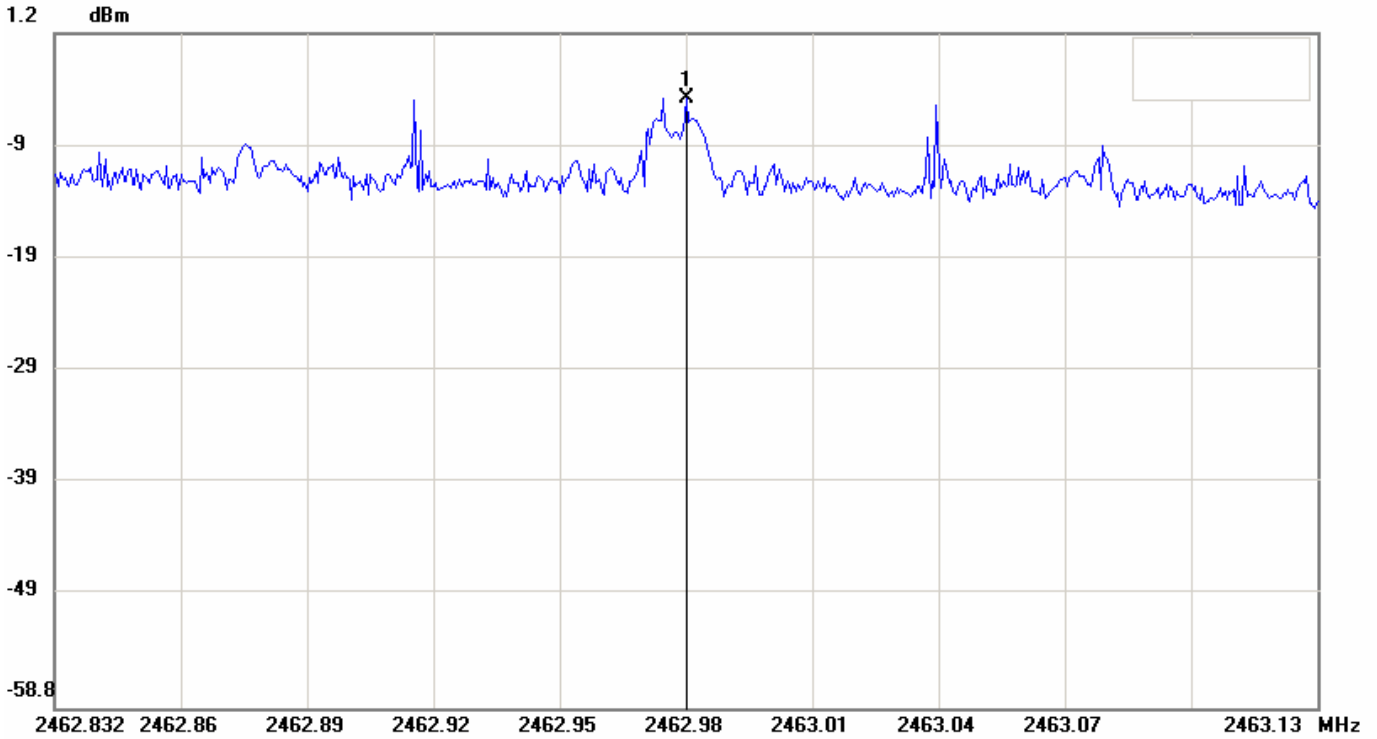
Test Mode:

Note: **FCC-802.11B Channel 06-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2436.9809	-4.83

File: CT-5374 **Data: #86** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:39:17 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

Test Mode:

Note: **FCC-802.11B Channel 11-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2462.9821	-4.49

8.4.2 IEEE 802.11g

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

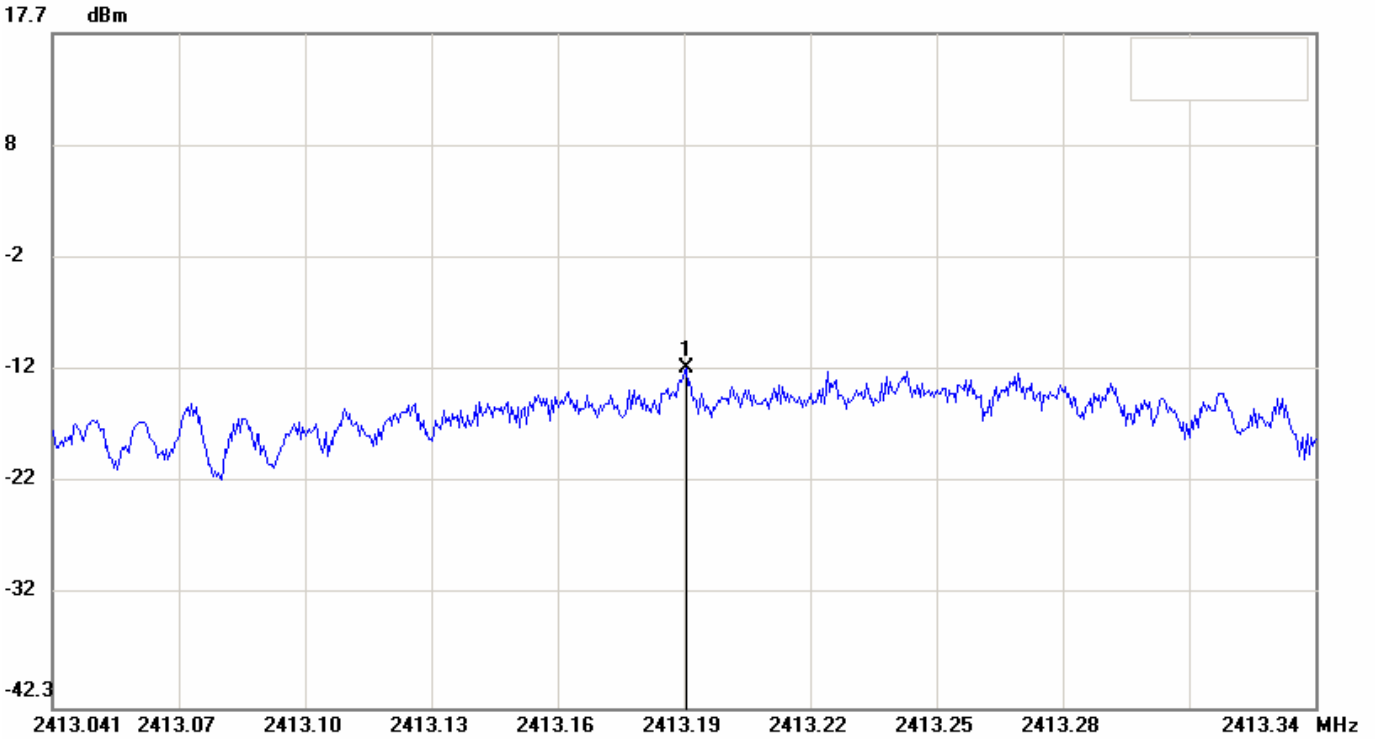
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
1	2412	6	-12.10	8	Page 63
6	2437	6	-10.46	8	Page 64
11	2462	6	-9.50	8	Page 65

Note:

1. *Please refer to page 63 to page 65 for chart*
2. *The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦ 18GHz)*

File: CT-5374 **Data: #91** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:46:55 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

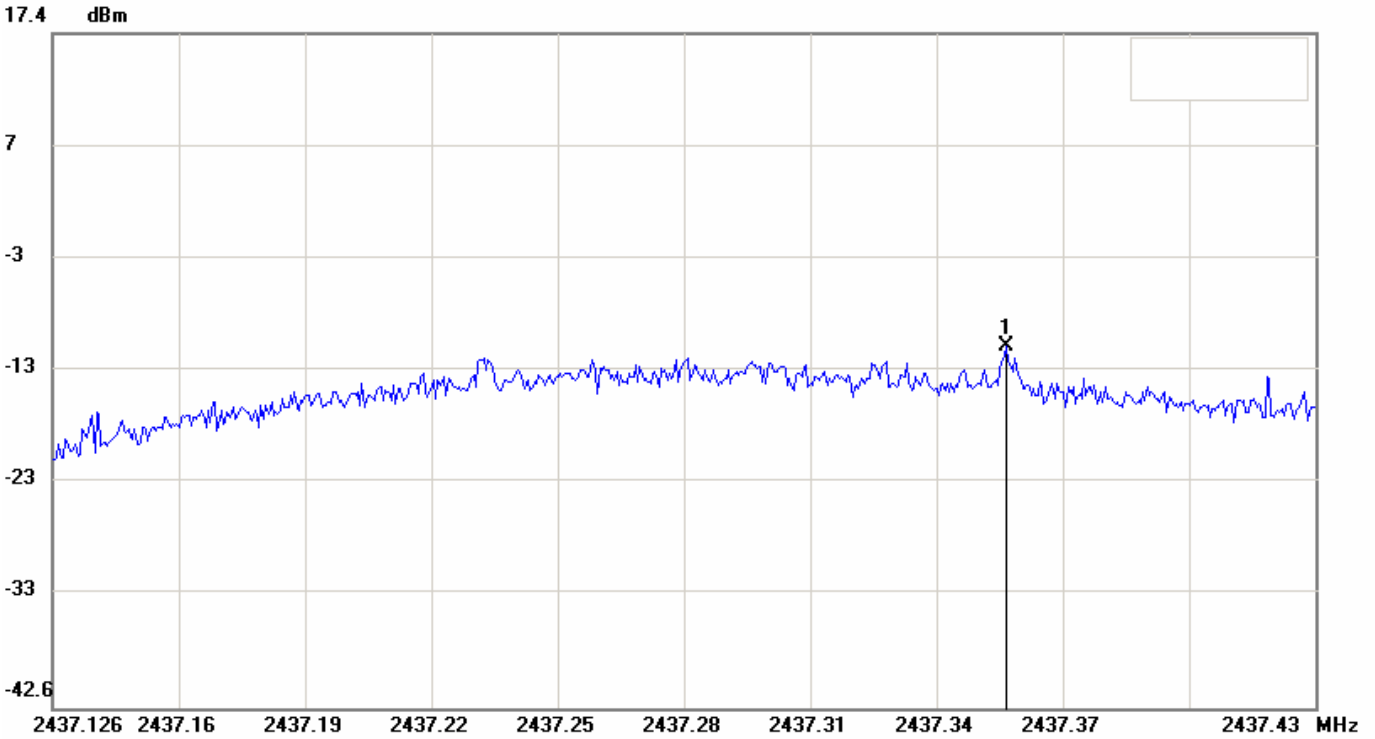
Test Mode:

Note: **FCC-802.11G Channel 01-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2413.1918	-12.10

File: CT-5374 **Data: #96** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:54:53 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

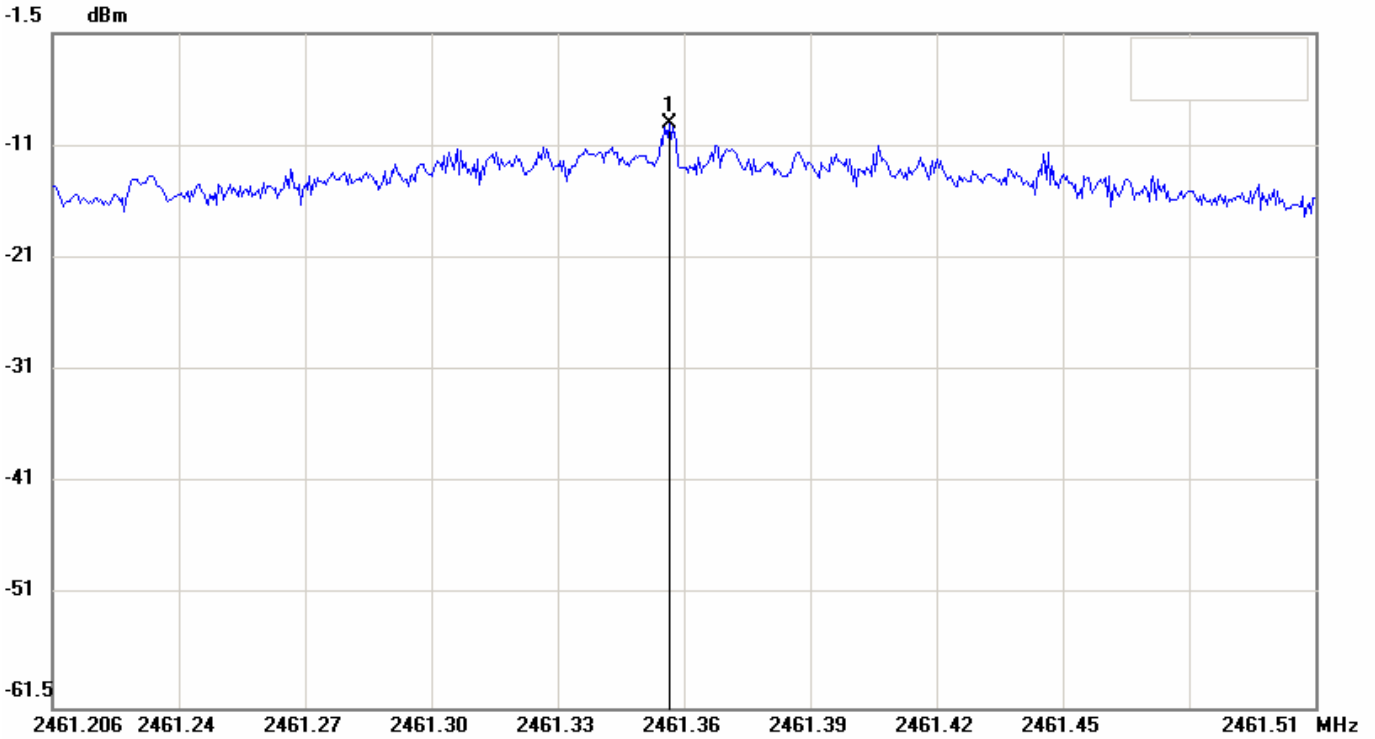
Test Mode:

Note: **FCC-802.11G Channel 06-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2437.3527	-10.46

File: CT-5374 **Data: #100** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 04:02:50 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

Test Mode:

Note: **FCC-802.11G Channel 11-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2461.3530	-9.50

8.4.3 IEEE 802.11n, HT20

8.4.3.1 CHAIN 0

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

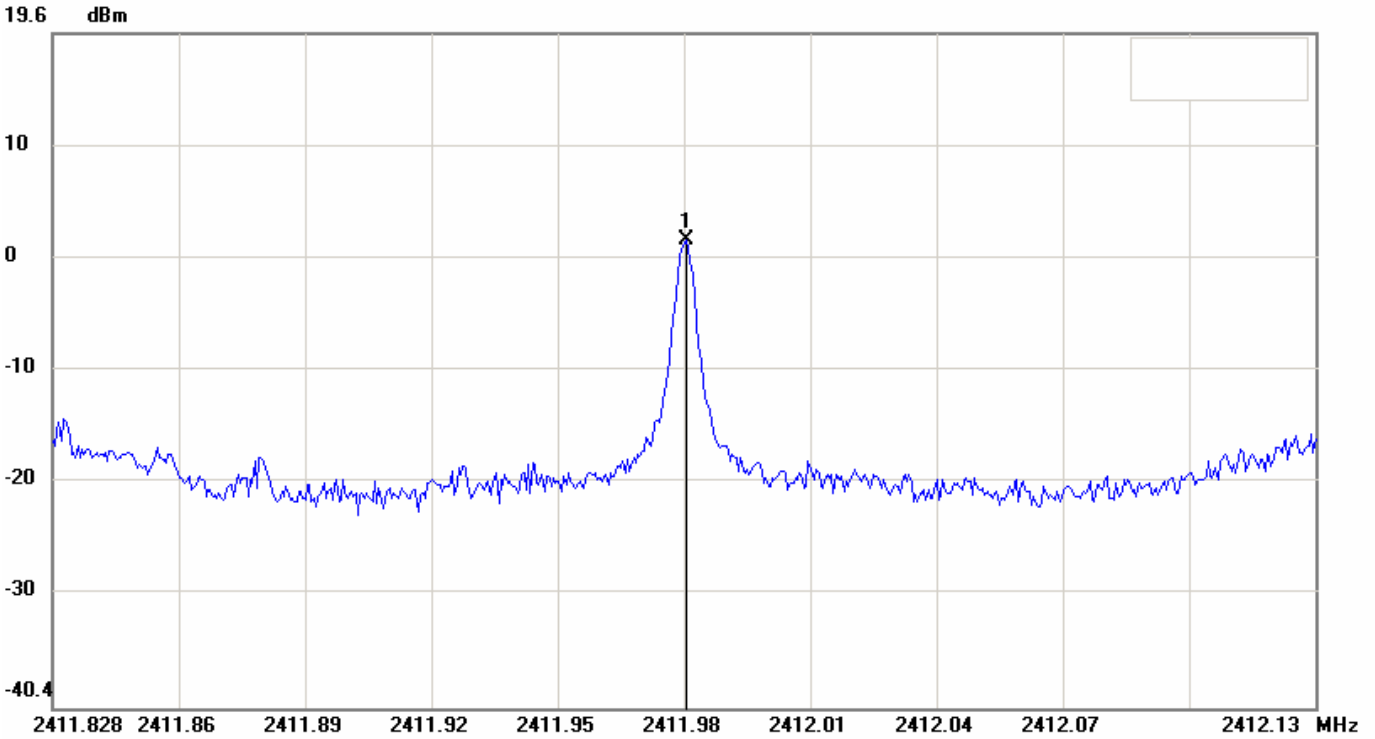
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
1	2412	6.5	1.28	8	Page 67
6	2437	6.5	-4.61	8	Page 68
11	2462	6.5	-10.11	8	Page 69

Note:

1. *Please refer to page 67 to page 69 for chart*
2. *The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦ 18GHz)*

File: CT-5374 **Data: #4** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 10:10:39 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

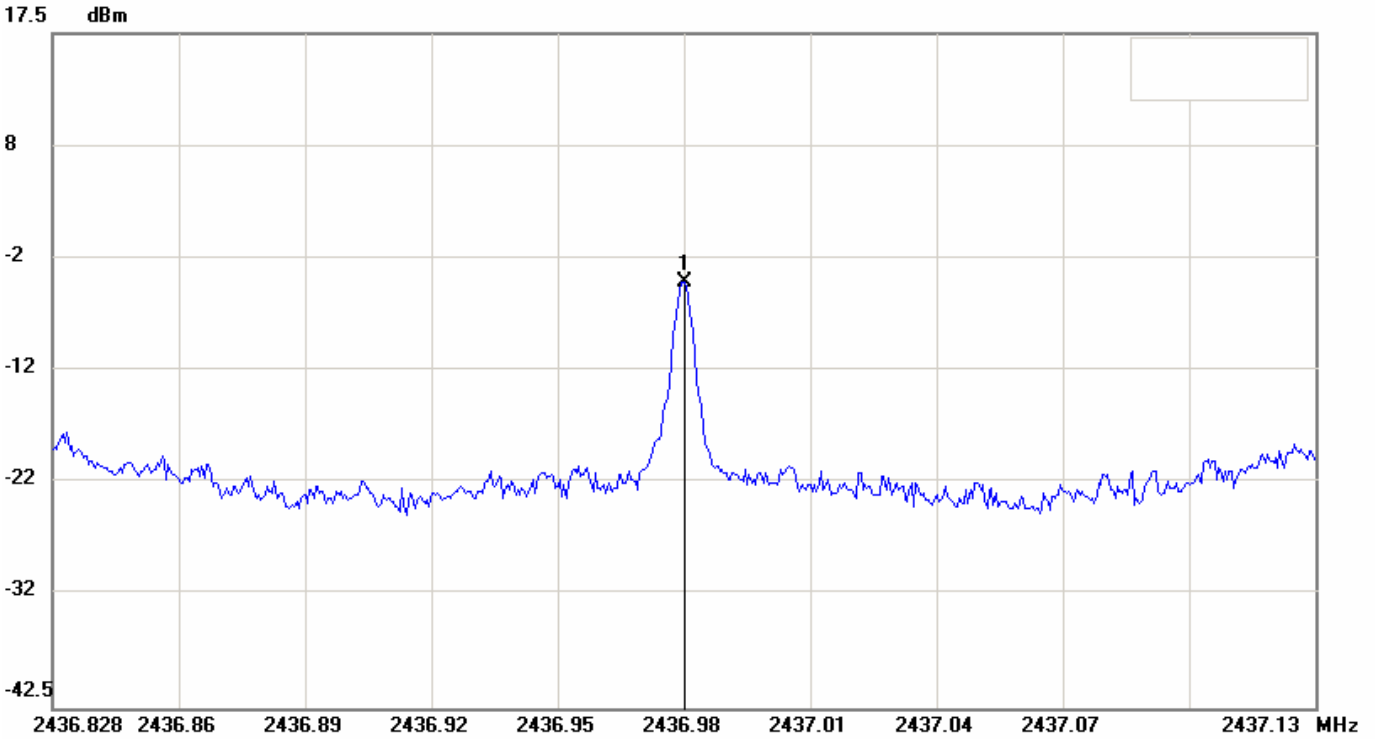
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 01-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2411.9789	1.28

File: CT-5374 **Data: #20** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:27:20 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

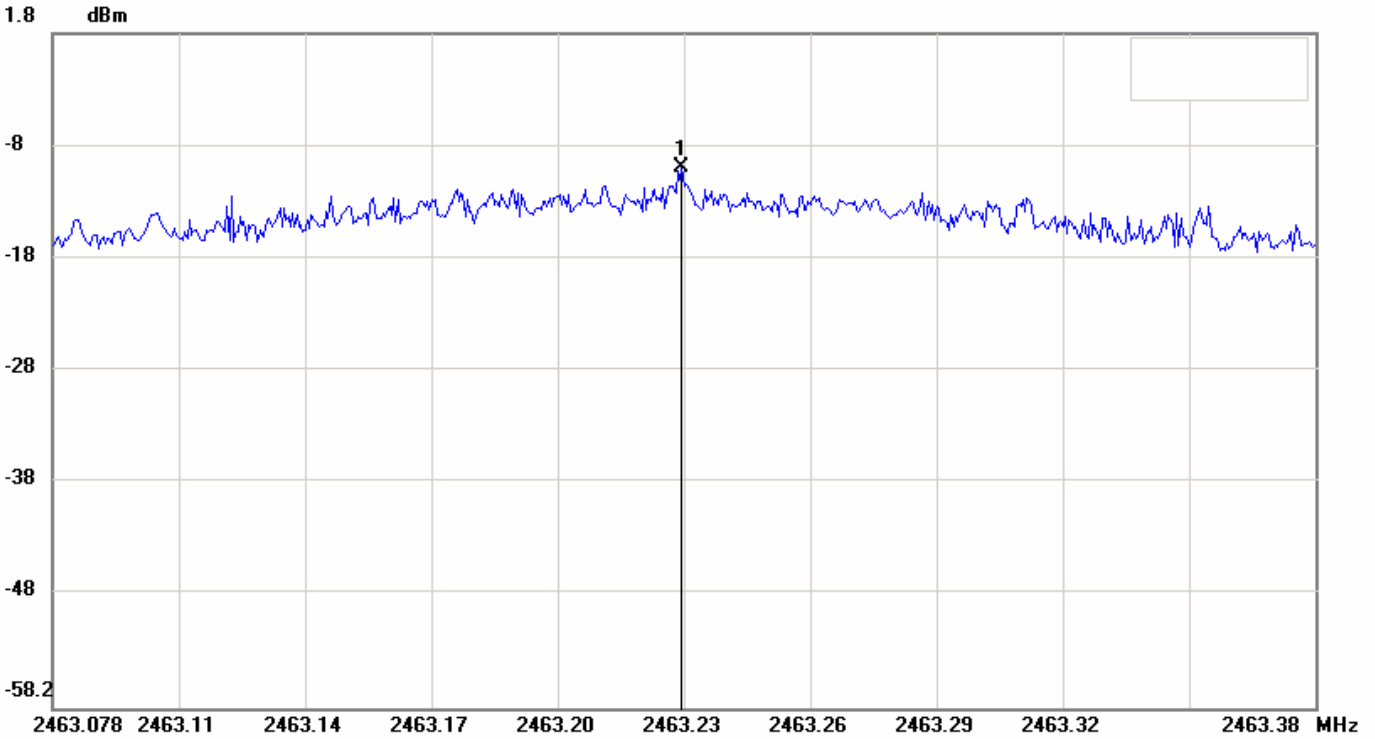
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 06-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2436.9777	-4.61

File: CT-5374 **Data: #24** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:35:44 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

Test Mode:

Note: **FCC-802.11GN_HT20 Channel 11-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2463.2277	-10.11

8.4.3.2 CHAIN 1

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

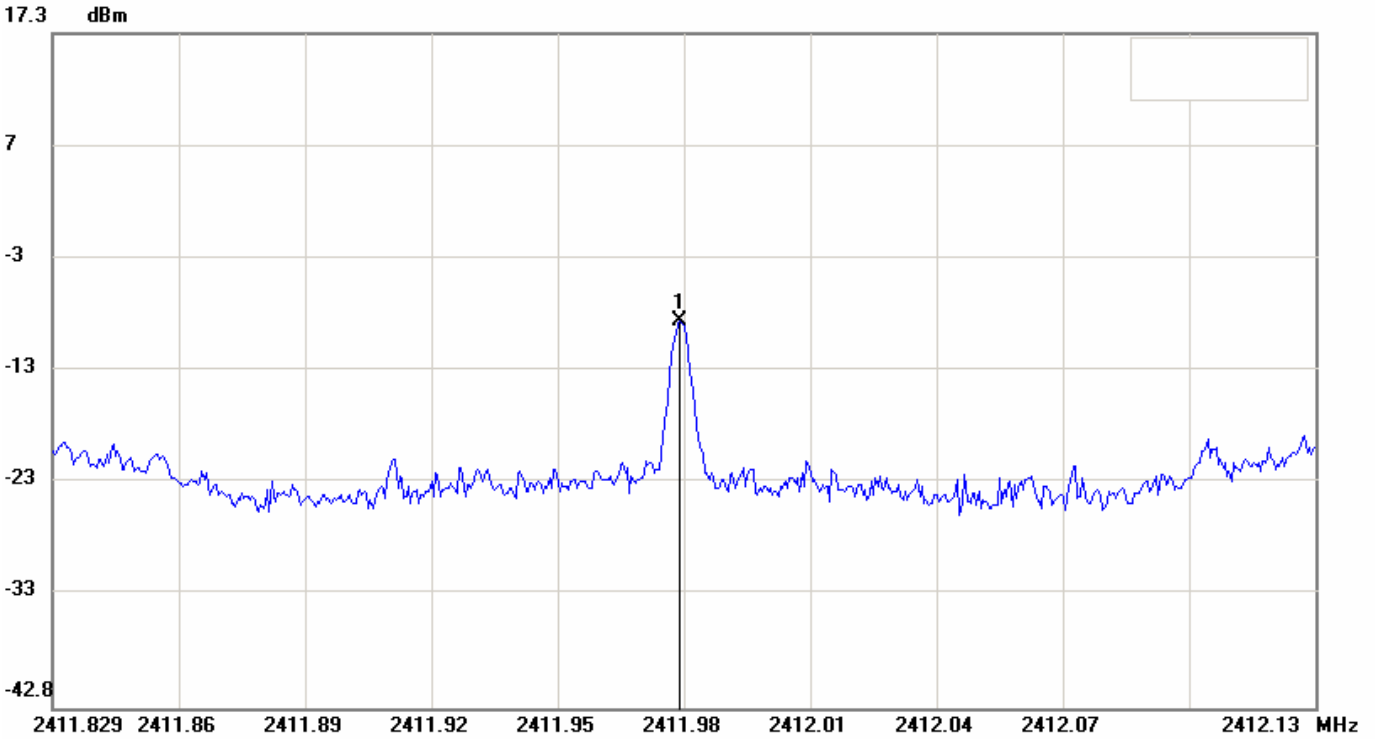
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
1	2412	6.5	-8.35	8	Page 71
6	2437	6.5	-9.19	8	Page 72
11	2462	6.5	-11.11	8	Page 73

Note:

1. *Please refer to page 71 to page 73 for chart*
2. *The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦ 18GHz)*

File: CT-5374 **Data: #11** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 10:35:32 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

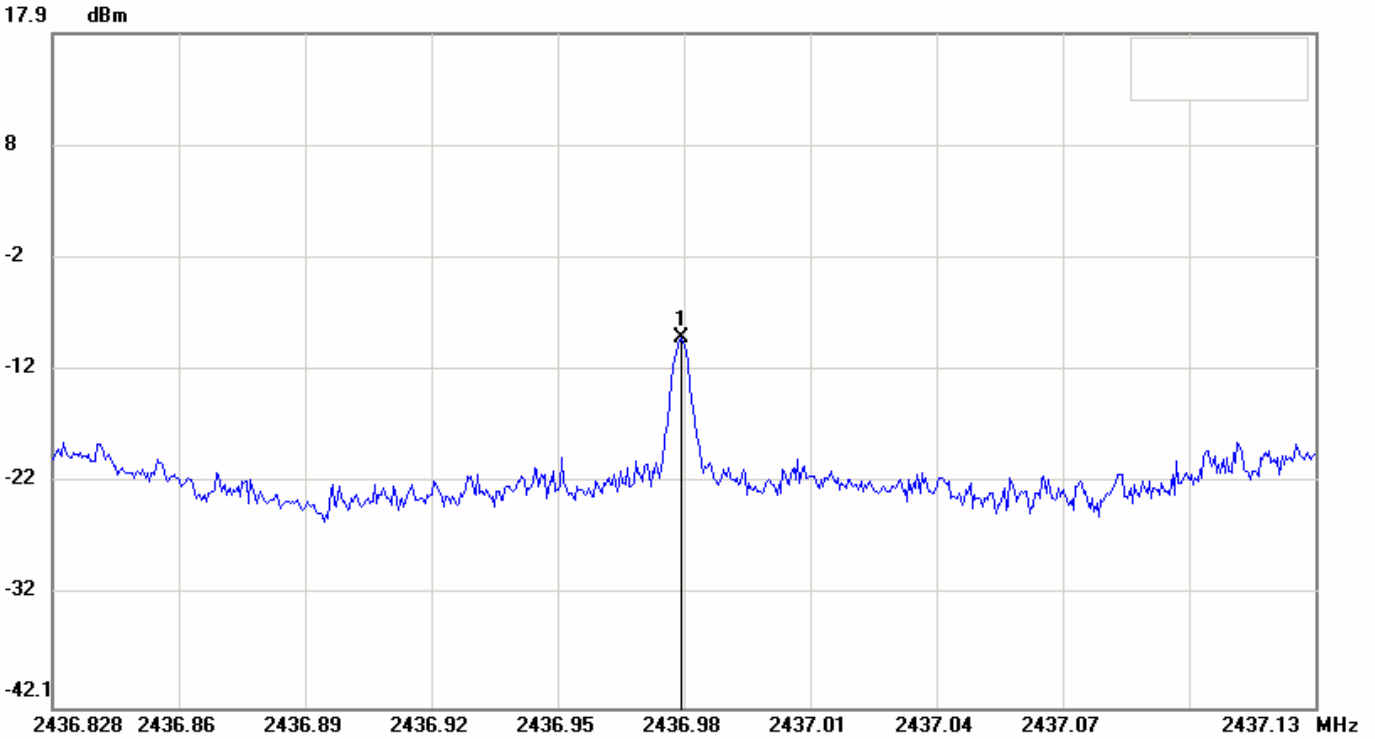
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 01-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2411.9776	-8.35

File: CT-5374 **Data: #16** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:19:05 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

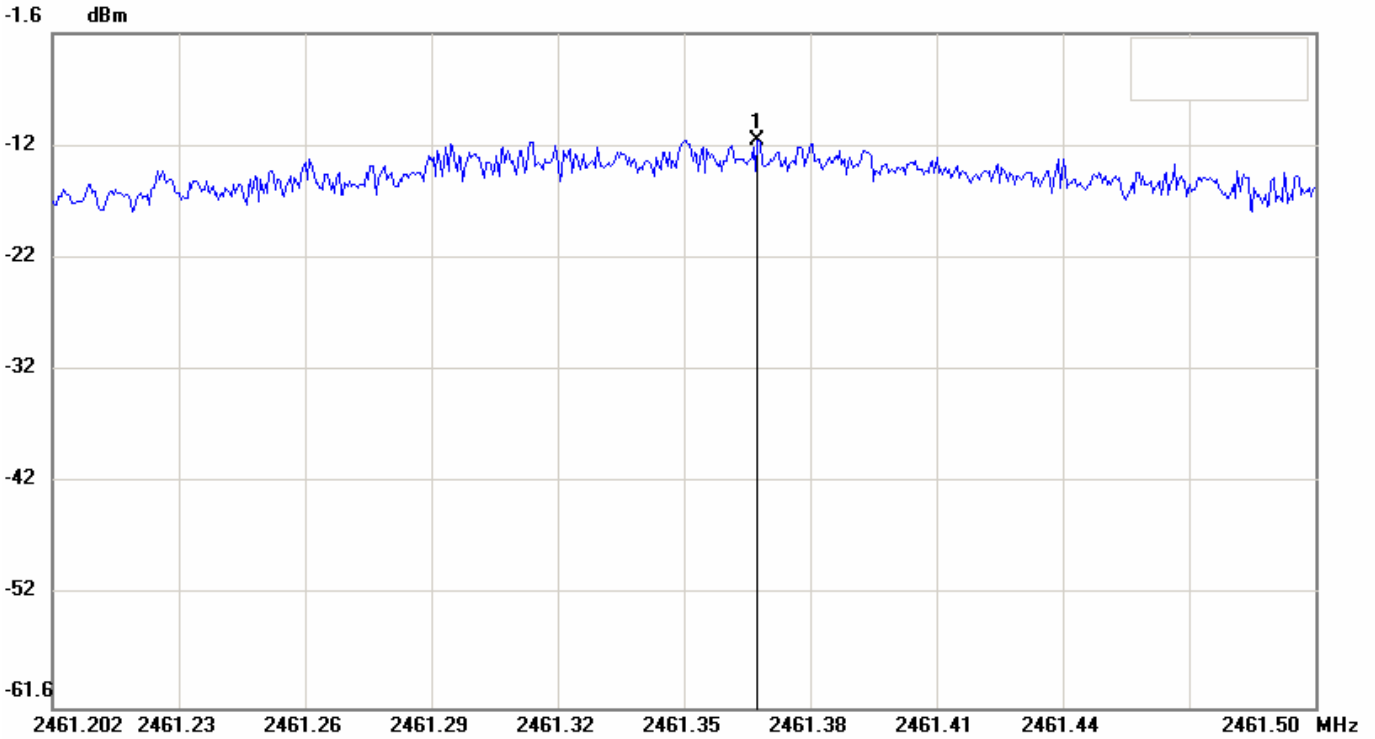
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 06-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2436.9779	-9.19

File: CT-5374 **Data: #29** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:53:22 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

Test Mode:

Note: **FCC-802.11GN_HT20 Channel 11-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2461.3695	-11.11

8.4.3.3 CHAIN 0 + CHAIN 1

Test Date: Mar. 11, 2010 Temperature: 16℃ Humidity: 51%

The highest antenna gain is equal to 5.01 dBi, therefore the FCC limit is as follow.

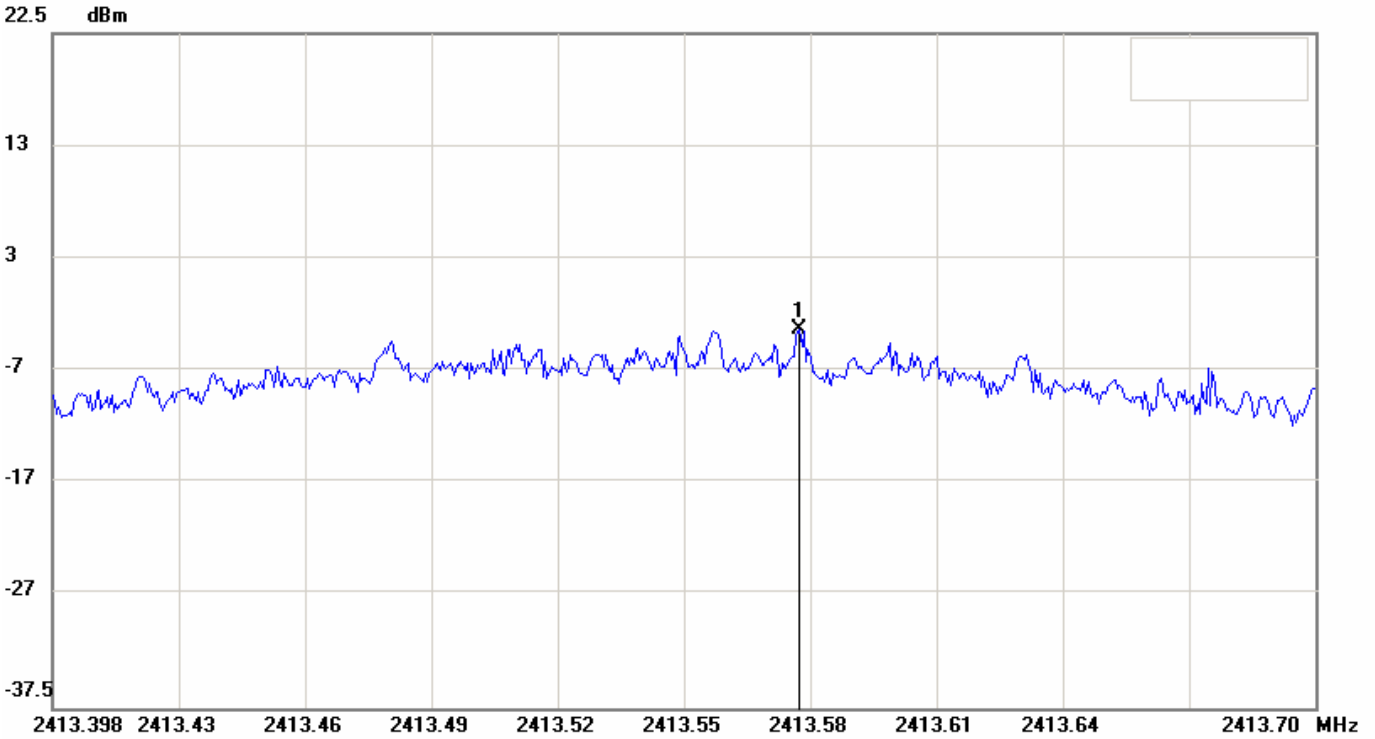
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
1	2412	6.5	-3.80	8	Page 75
6	2437	6.5	-5.75	8	Page 76
11	2462	6.5	-9.90	8	Page 77

Note:

1. Please refer to page 75 to page 77 for chart
2. If antenna gain ≦ 6dBi, FCC Limit =8 dBm
3. If antenna gain > 6dBi, FCC Limit =8 dBm – (highest antenna gain – 6 dBi)
4. The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

File: **Data: #4** **Date: 2010/3/11** **Temperature: 16 ℃**

Time: AM 10:59:57 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

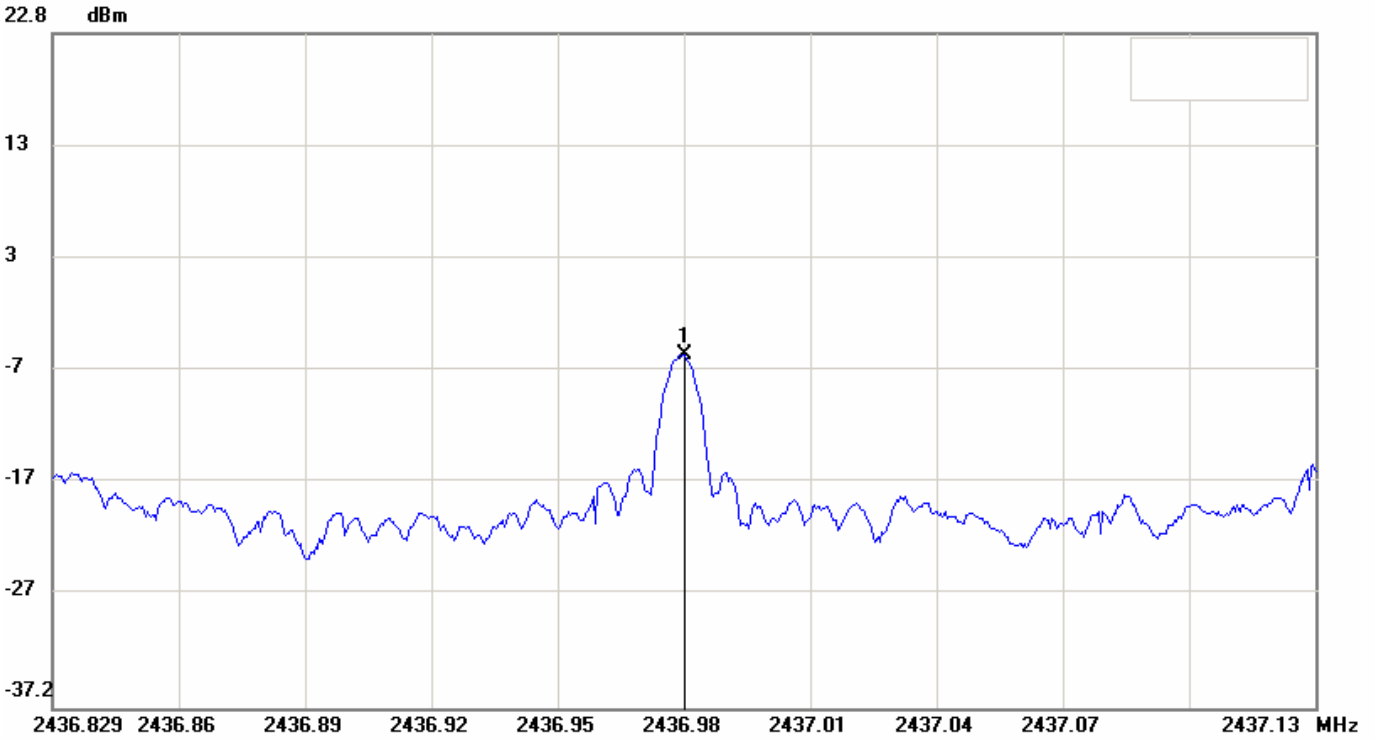
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 01-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2413.5755	-3.81

File: **Data: #9** **Date: 2010/3/11** **Temperature: 16 ℃**

Time: AM 11:07:50 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

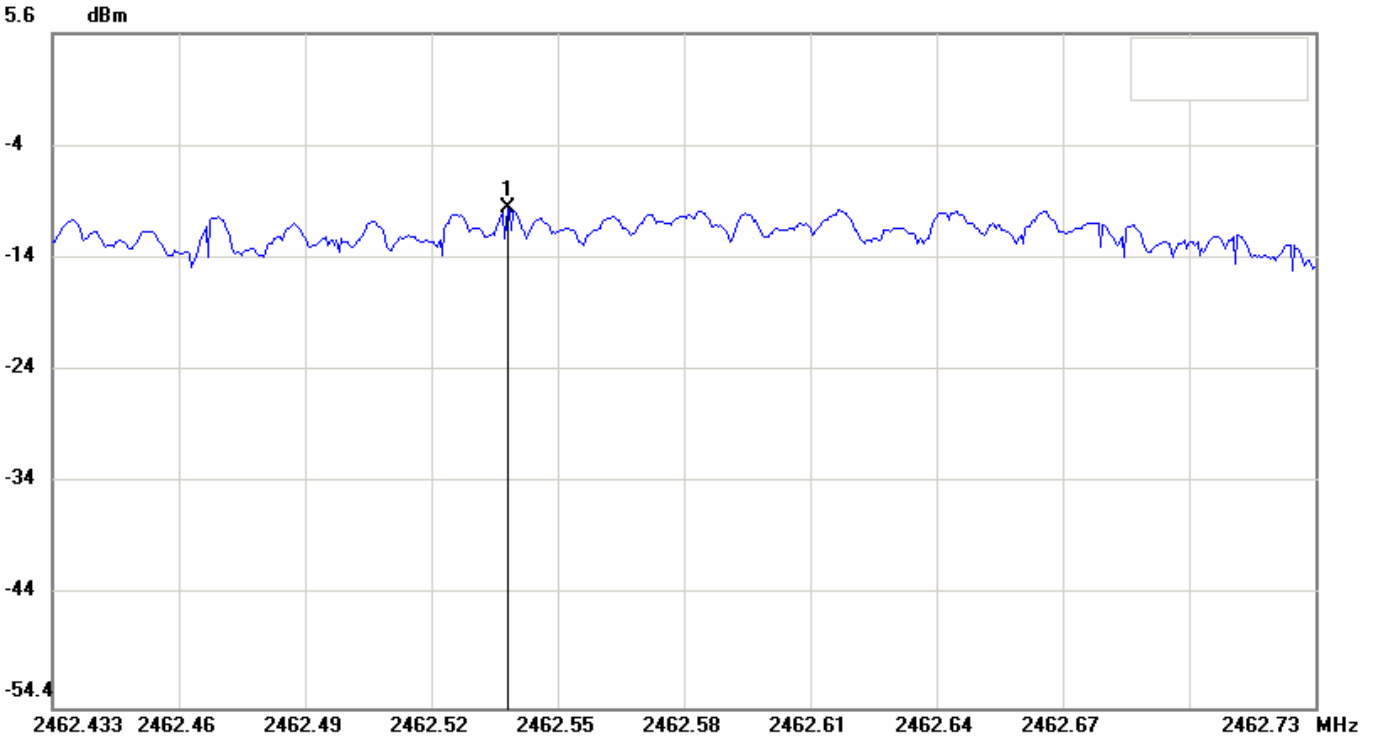
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 06-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2436.9792	-5.75

File: **Data: #13** **Date: 2010/3/11** **Temperature: 16 ℃**

Time: AM 11:15:51 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

Test Mode:

Note: **FCC-802.11GN_HT20 Channel 11-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2462.5413	-9.90

8.4.4 IEEE 802.11n, HT40

8.4.4.1 CHAIN 0

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

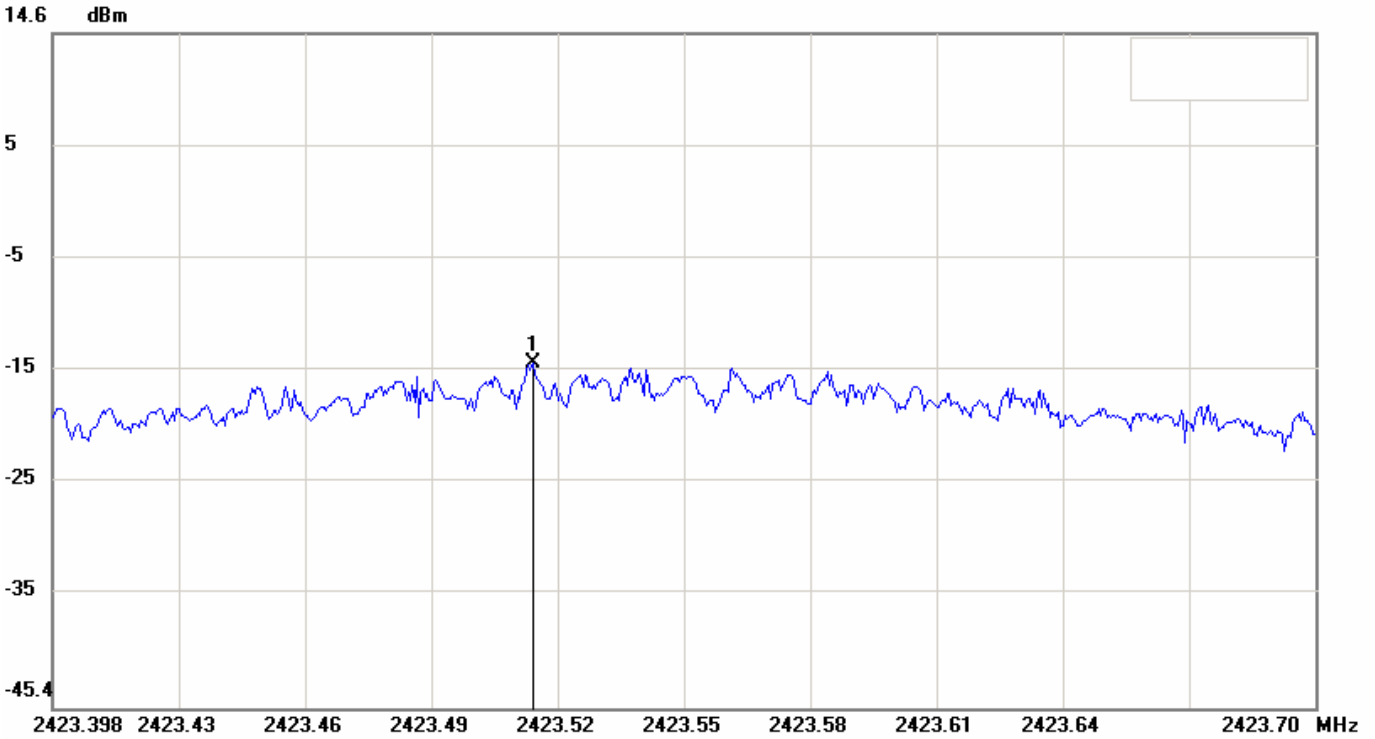
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
3	2422	13.5	-14.78	8	Page 79
6	2437	13.5	-14.06	8	Page 80
9	2452	13.5	-3.90	8	Page 81

Note:

1. *Please refer to page 79 to page 81 for chart*
2. *The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦ 18GHz)*

File: CT-5374 **Data: #34** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 12:50:39 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

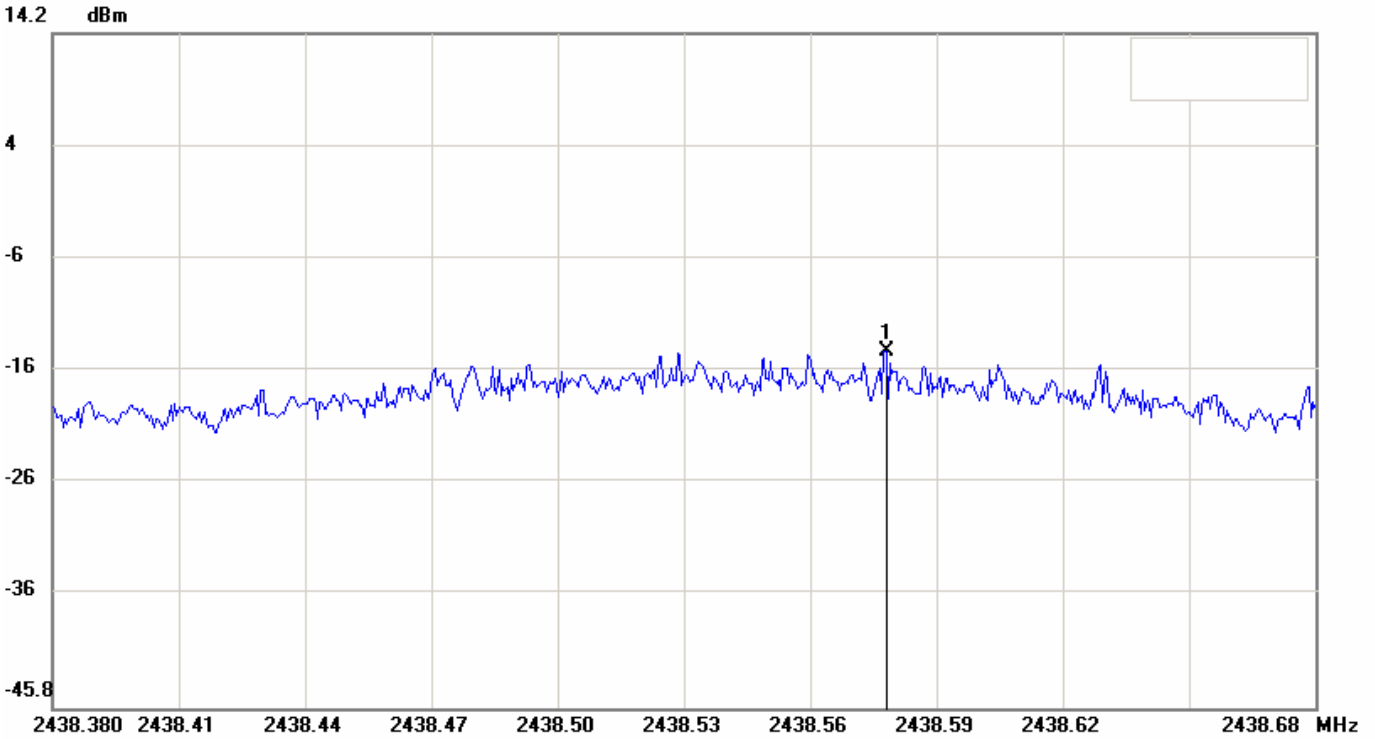
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 03-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2423.5115	-14.78

File: CT-5374 **Data: #48** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 01:26:23 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

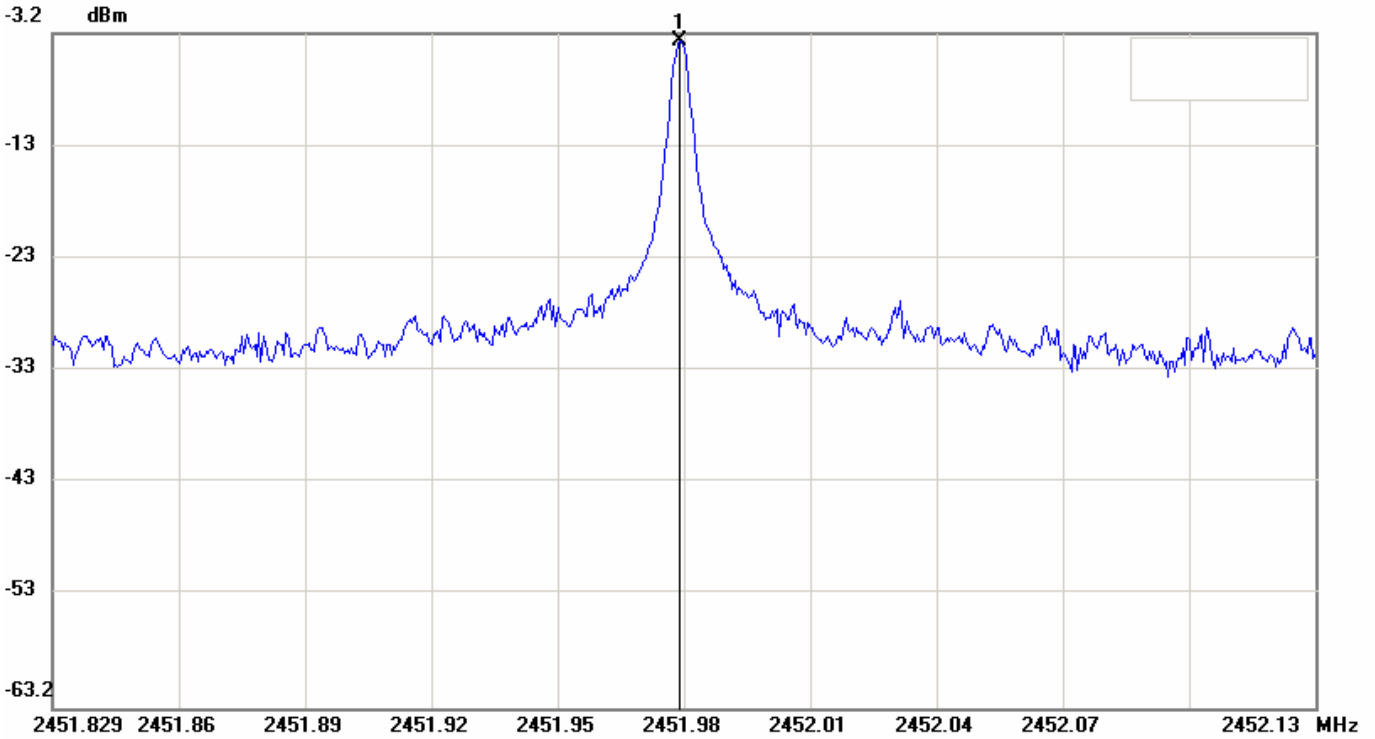
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 06-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2438.5776	-14.06

File: CT-5374 **Data: #52** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 01:42:52 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

Test Mode:

Note: **FCC-802.11GN_HT40 Channel 09-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2451.9784	-3.90

8.4.4.2 CHAIN 1

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

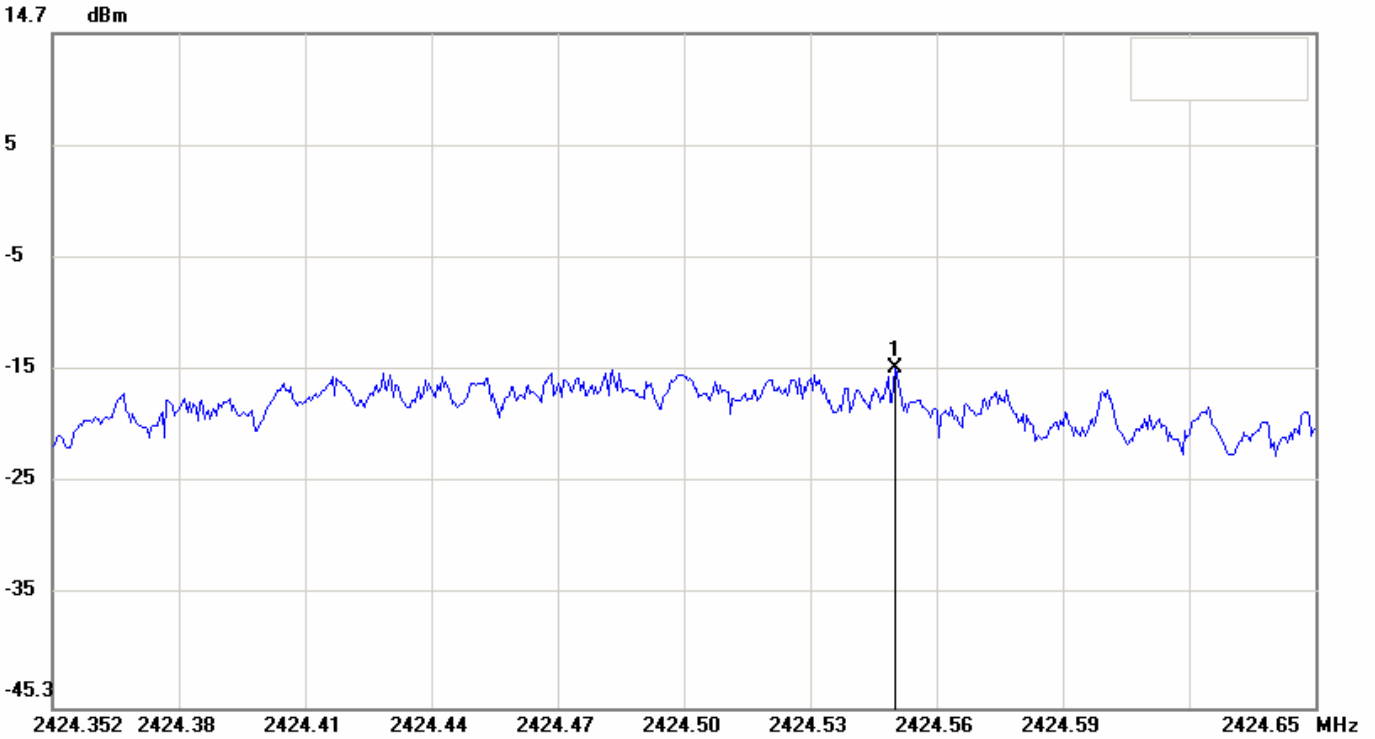
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
3	2422	13.5	-15.12	8	Page 83
6	2437	13.5	-15.45	8	Page 84
9	2452	13.5	-15.02	8	Page 85

Note:

1. *Please refer to page 83 to page 85 for chart*
2. *The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦ 18GHz)*

File: CT-5374 **Data: #39** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 01:00:44 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

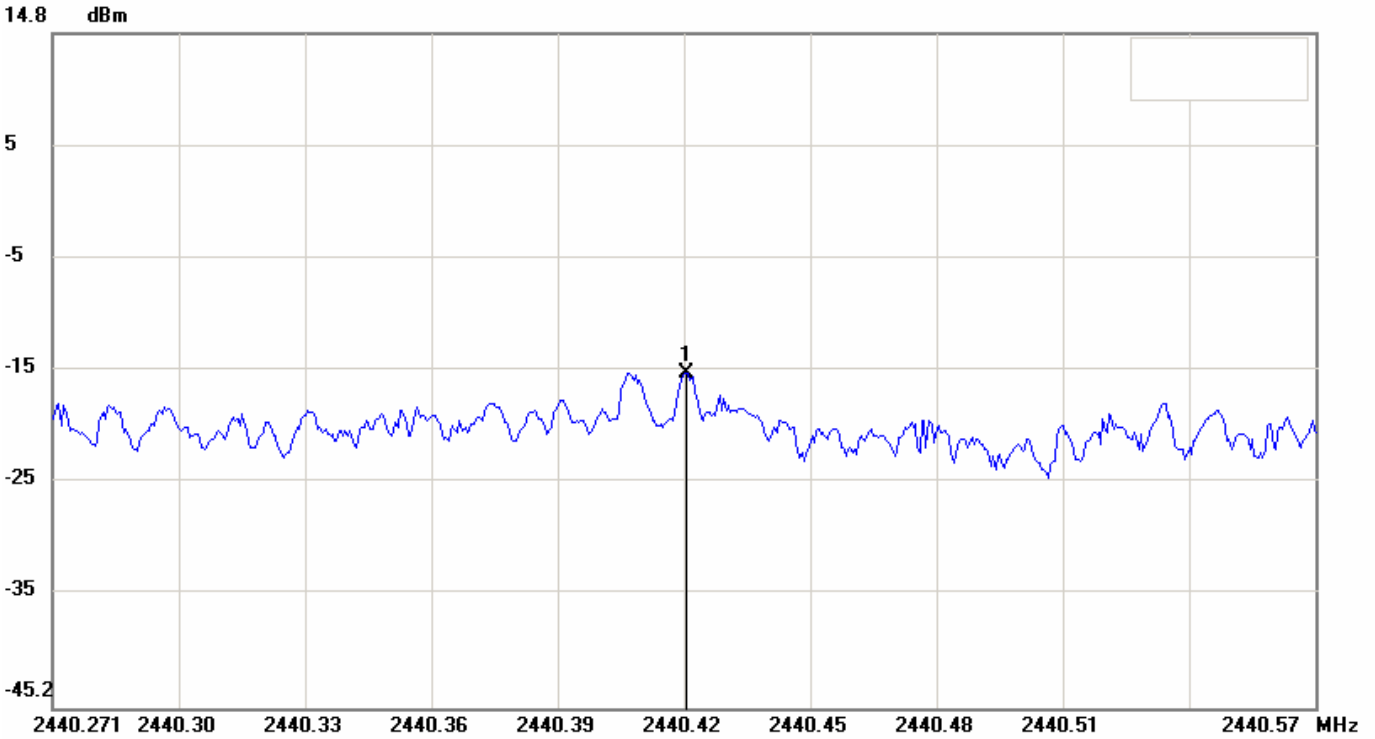
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 03-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2424.5525	-15.12

File: CT-5374 **Data: #44** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 01:18:46 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

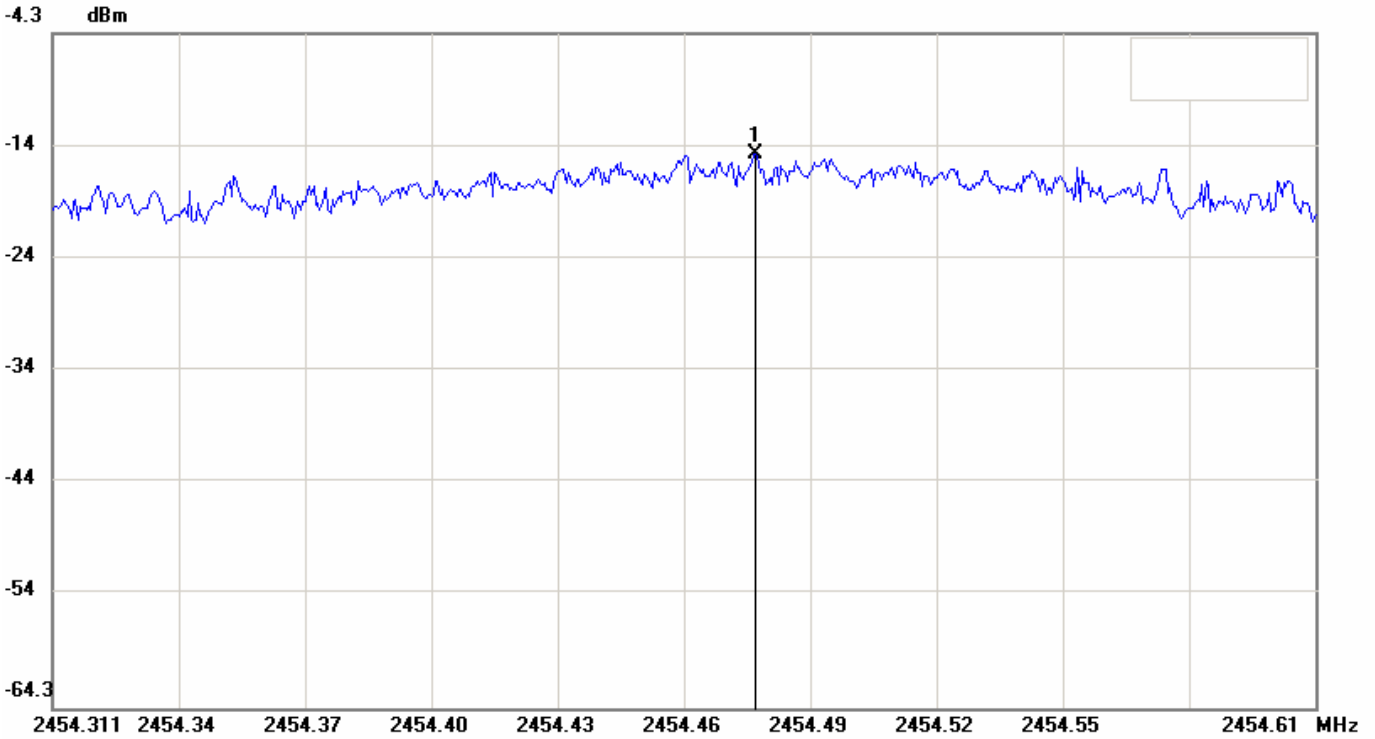
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 06-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2440.4215	-15.45

File: CT-5374 **Data: #57** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 01:51:25 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

Test Mode:

Note: **FCC-802.11GN_HT40 Channel 09-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2454.4782	-15.02

8.4.4.3 CHAIN 0 + CHAIN 1

Test Date: Mar. 11, 2010 Temperature: 16℃ Humidity: 51%

The highest antenna gain is equal to 5.010 dBi, therefore the FCC limit is as follow.

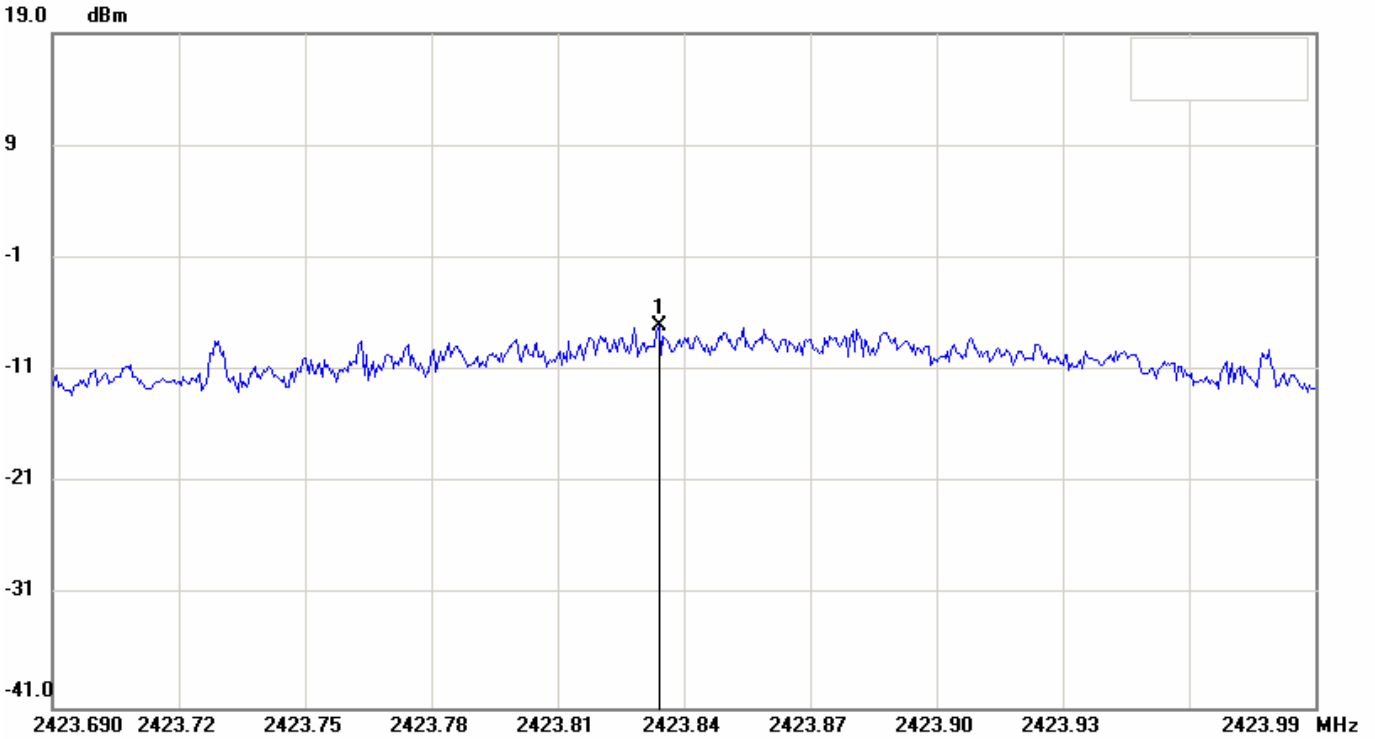
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
3	2422	13.5	-7.03	8	Page 87
6	2437	13.5	-6.97	8	Page 88
9	2452	13.5	-4.95	8	Page 89

Note:

1. Please refer to page 87 to page 89 for chart
2. If antenna gain ≦ 6dBi, FCC Limit =8 dBm
3. If antenna gain > 6dBi, FCC Limit =8 dBm – (highest antenna gain – 6 dBi)
4. The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

File: **Data: #18** **Date: 2010/3/11** **Temperature: 16 ℃**

Time: AM 11:25:31 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

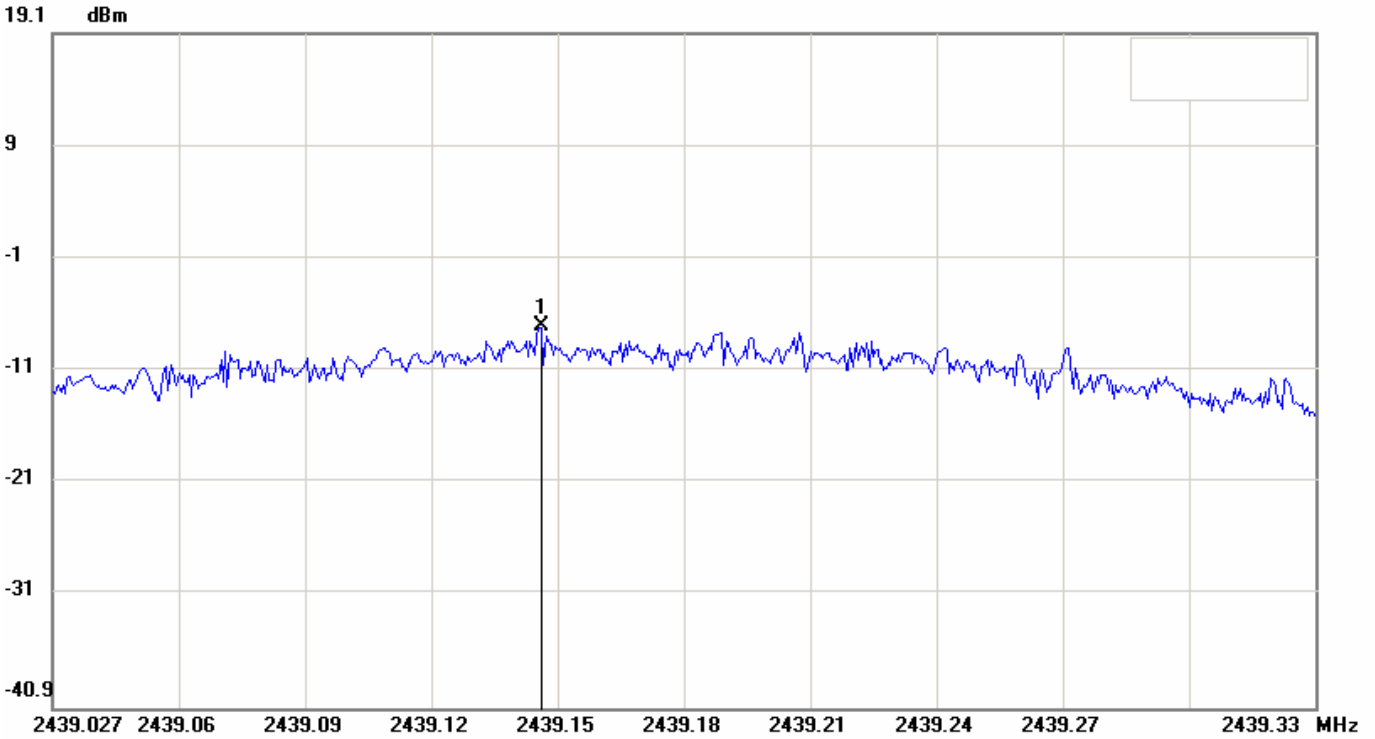
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 03-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2423.8341	-7.03

File: **Data: #23** **Date: 2010/3/11** **Temperature: 16 ℃**

Time: AM 11:34:05 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

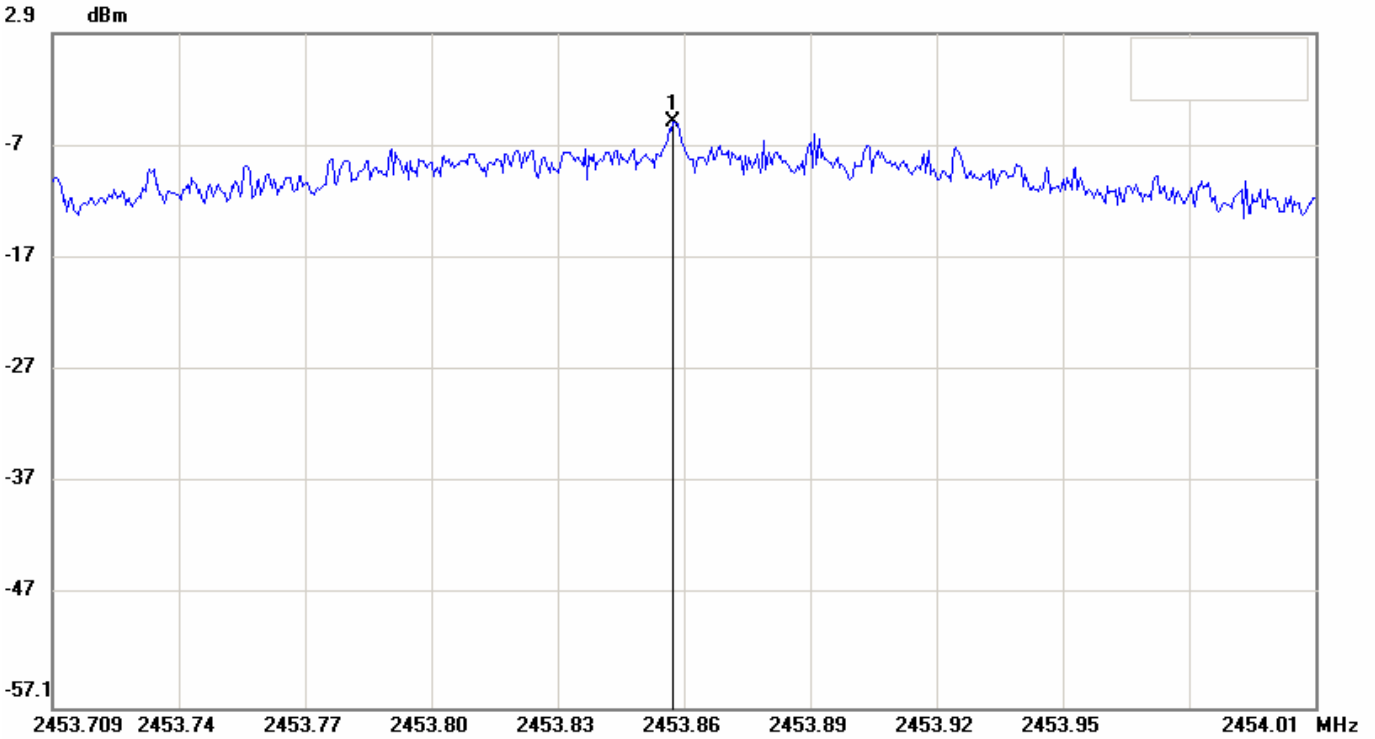
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 06-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2439.1431	-6.97

File: **Data: #27** **Date: 2010/3/11** **Temperature: 16 ℃**

Time: AM 11:41:45 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

Test Mode:

Note: **FCC-802.11GN_HT40 Channel 09-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2453.8564	-4.95

8.4.5 IEEE 802.11n, HT40, SISO

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

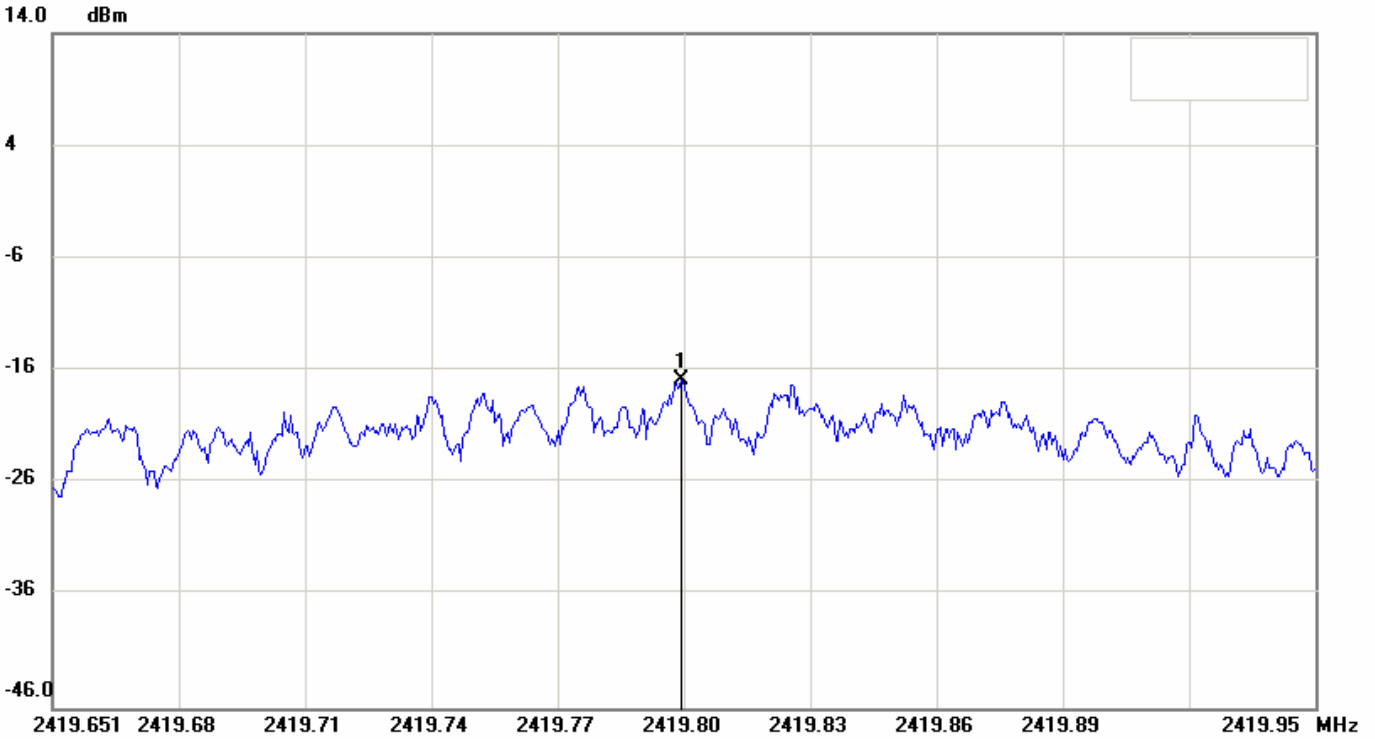
Channel	Frequency (MHz)	Data Transfer Rate (Mbps)	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
3	2422	13.5	-16.89	8	Page 91
6	2437	13.5	-16.77	8	Page 92
9	2452	13.5	-14.89	8	Page 93

Note:

1. *Please refer to page 91 to page 93 for chart*
2. *The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦ 18GHz)*

File: CT-5374 **Data: #63** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 02:32:32 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

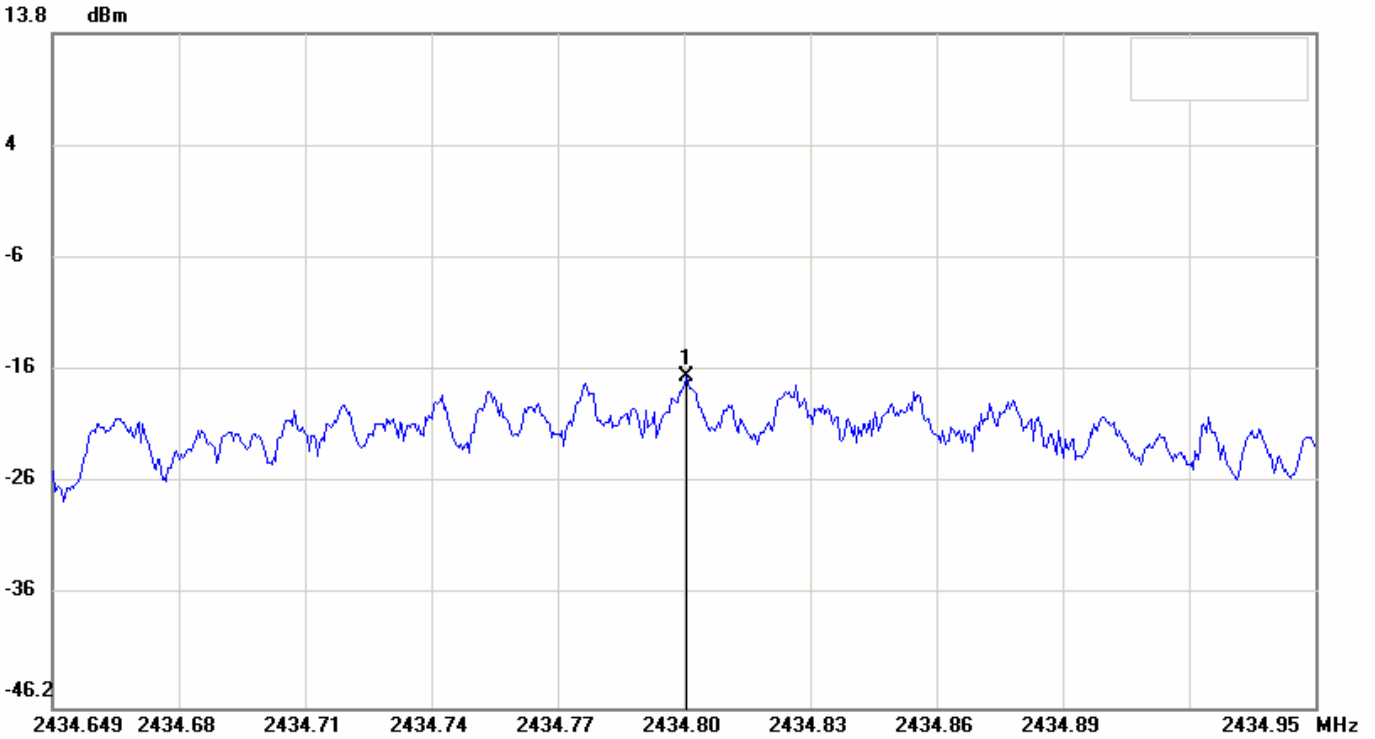
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 03-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2419.8003	-16.89

File: CT-5374 **Data: #68** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 02:40:02 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 20dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

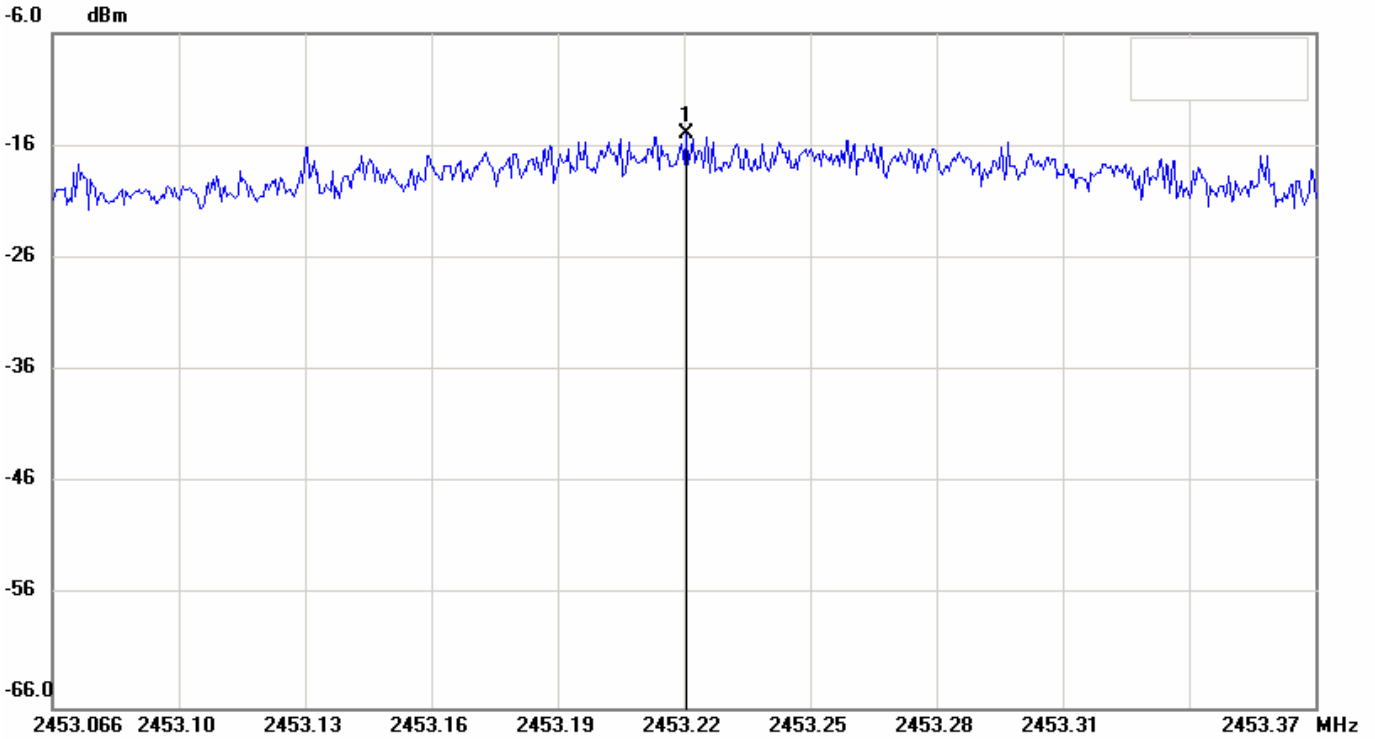
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 06-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2434.7993	-16.77

File: CT-5374 **Data: #72** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 02:47:36 **Humidity: 51 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 100000ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

Test Mode:

Note: **FCC-802.11GN_HT40 Channel 09-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2453.2165	-14.89

9 SPURIOUS EMISSION - RF CONDUCTED MEASUREMENT

9.1 Standard Applicable

According to 12.247 (c) , 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, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

9.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 2. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

9.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Agilent	E4446A	09/27/2010

9.4 Measurement Data

9.4.1 IEEE 802.11b

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency(MHz)	Chart
1	2412	Page 99, Page 101
6	2437	Page 102
11	2462	Page 100, Page 103

All out-of –band conducted emissions were more than 20dB below the carrier.

Note: Please refer to page 99 to page 103 for chart

9.4.2 IEEE 802.11g

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency(MHz)	Chart
1	2412	Page 104, Page 106
6	2437	Page 107
11	2462	Page 105, Page 108

All out-of –band conducted emissions were more than 20dB below the carrier.

Note: Please refer to page 104 to page 108 for chart

9.4.3 IEEE 802.11n, HT20

9.4.3.1 CHAIN 0

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency(MHz)	Chart
1	2412	Page 109, Page 111
6	2437	Page 112
11	2462	Page 110, Page 113

All out-of –band conducted emissions were more than 20dB below the carrier.

Note: Please refer to page 109 to page 113 for chart

9.4.3.2 CHAIN 1

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency(MHz)	Chart
1	2412	Page 114, Page 116
6	2437	Page 117
11	2462	Page 115 Page 118

All out-of –band conducted emissions were more than 20dB below the carrier.

Note: Please refer to page 114 to page 118 for chart

9.4.3.3 CHAIN 0 + CHAIN 1

Test Date: Mar. 11, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency(MHz)	Chart
1	2412	Page 119
6	2437	Page 120
11	2462	Page 121

All out-of –band conducted emissions were more than 20dB below the carrier.

Note: Please refer to page 119 to page 121 for chart

9.4.4 IEEE 802.11n, HT40

9.4.4.1 CHAIN 0

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency(MHz)	Chart
3	2422	Page 122, Page 124
6	2437	Page 125
9	2452	Page 123, Page 126

All out-of –band conducted emissions were more than 20dB below the carrier.

Note: Please refer to page 122 to page 126 for chart

9.4.4.2 CHAIN 1

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency(MHz)	Chart
3	2422	Page 127, Page 129
6	2437	Page 130
9	2452	Page 128, Page 131

All out-of –band conducted emissions were more than 20dB below the carrier.

Note: Please refer to page 127 to page 131 for chart

9.4.4.3 CHAIN 0 + CHAIN 1

Test Date: Mar. 11, 2010 Temperature: 16℃ Humidity: 51%

Channel	Frequency(MHz)	Chart
3	2422	Page 132
6	2437	Page 133
9	2452	Page 134

All out-of –band conducted emissions were more than 20dB below the carrier.

Note: Please refer to page 132 to page 134 for chart

9.4.5 IEEE 802.11n, HT40, SISO

Test Date: Mar. 04, 2010 Temperature: 16℃ Humidity: 51%

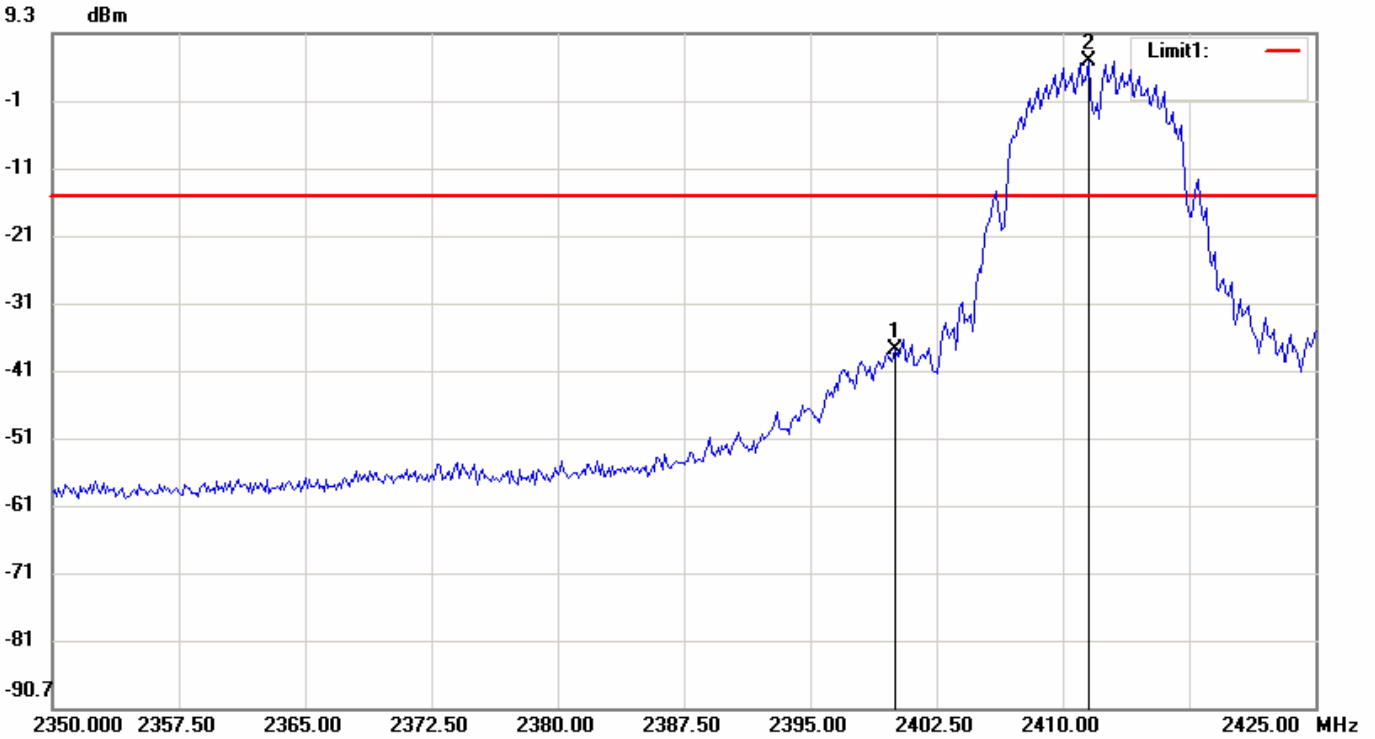
Channel	Frequency(MHz)	Chart
3	2422	Page 135, Page 137
6	2437	Page 138
9	2452	Page 136, Page 139

All out-of –band conducted emissions were more than 20dB below the carrier.

Note: Please refer to page 135 to page 139 for chart

File: CT-5374 **Data: #78** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:23:32 **Humidity: 51 %**



Condition: **-14.89dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 10dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

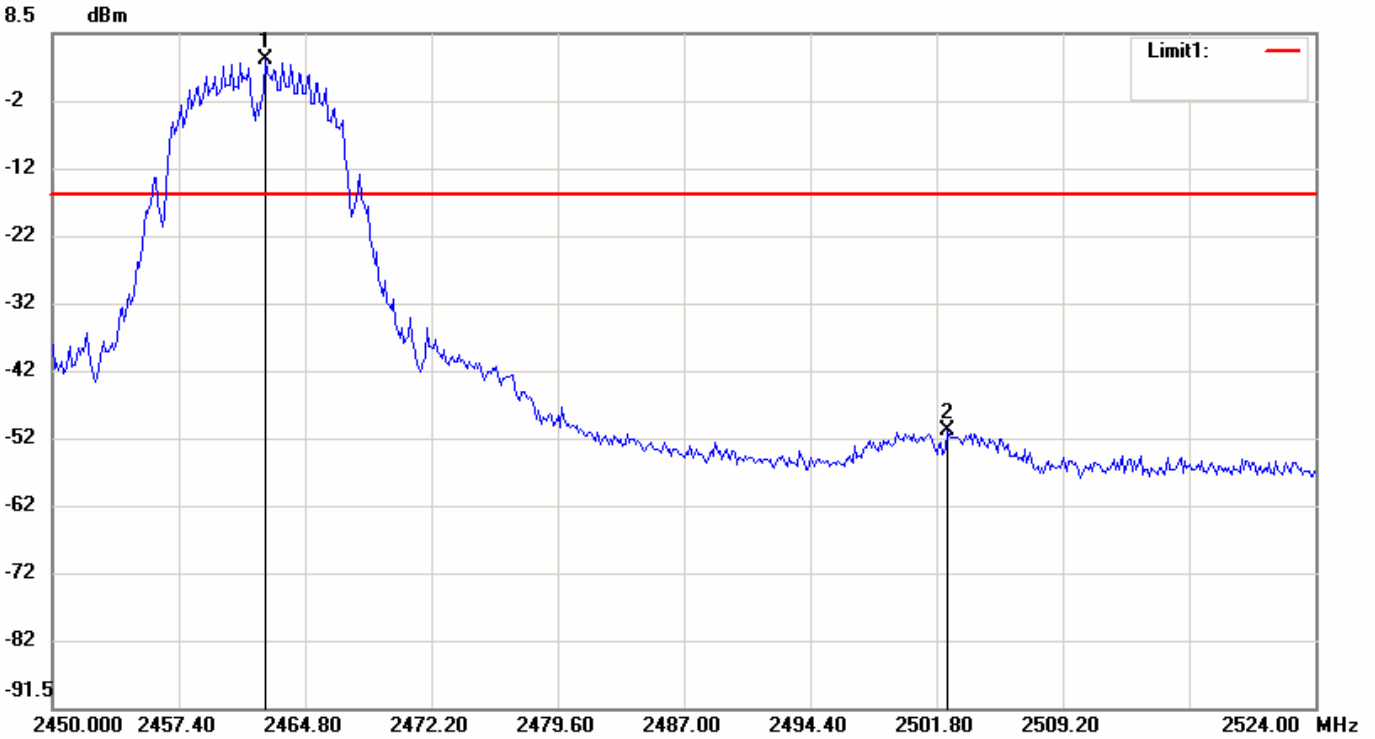
Test Mode:

Note: **FCC-802.11B Channel 01-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2400.0000	-37.49
2	2411.5000	5.11

File: CT-5374 **Data: #87** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:39:52 **Humidity: 51 %**



Condition: **-15.28dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 10dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

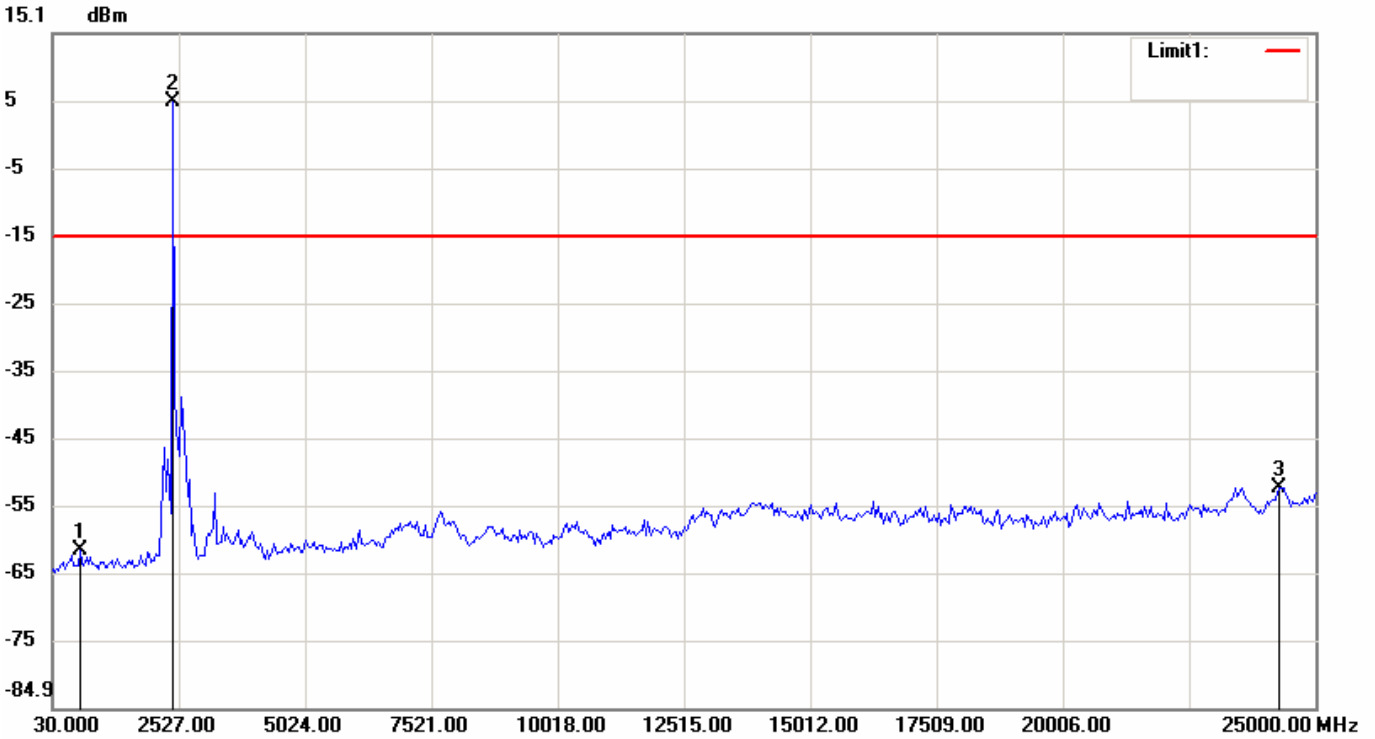
Test Mode:

Note: **FCC-802.11B Channel 11-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2462.4567	4.72
2	2502.4167	-50.41

File: CT-5374 **Data: #75** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:19:22 **Humidity: 51 %**



Condition: **-14.92dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

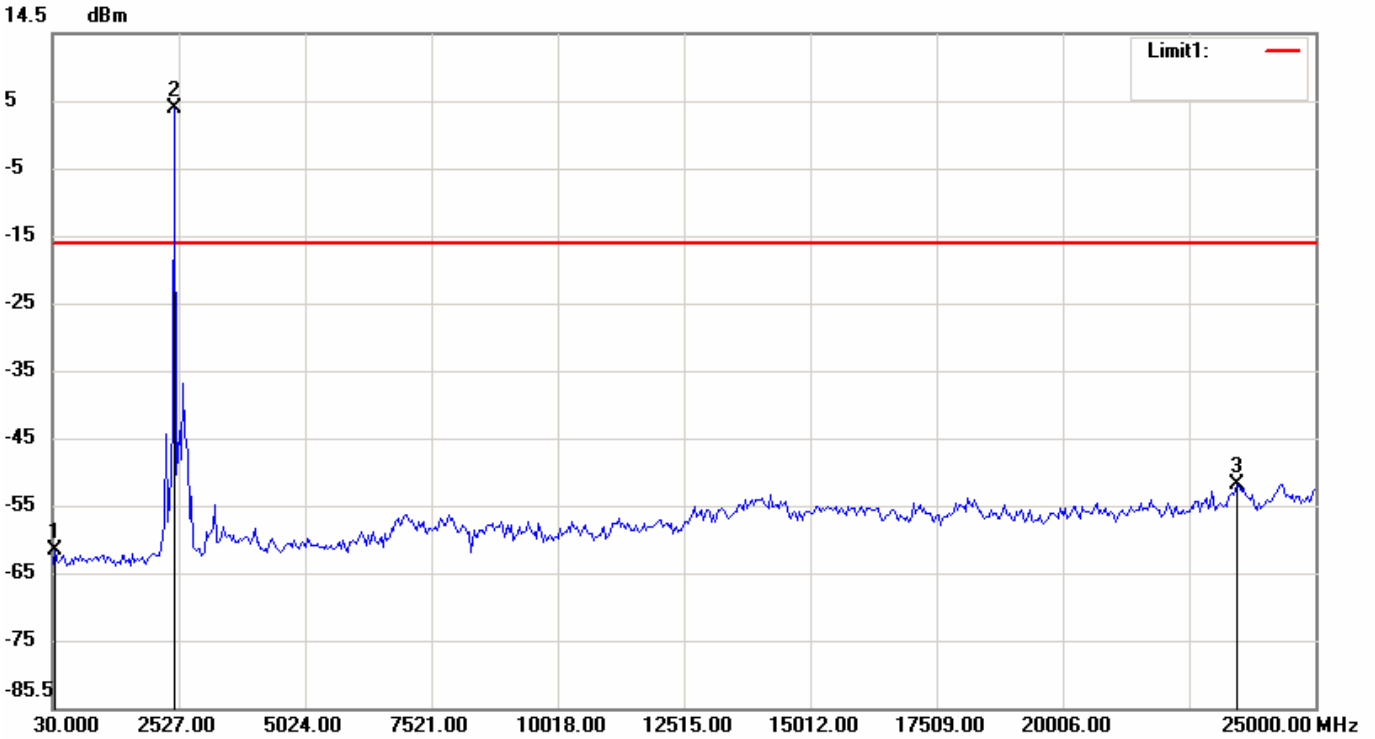
Test Mode:

Note: **FCC-802.11B Channel 01-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	571.0167	-61.47
2	2402.1500	5.08
3	24292.5167	-52.15

File: CT-5374 **Data: #80** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:27:56 **Humidity: 51 %**



Condition: **-16.69dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

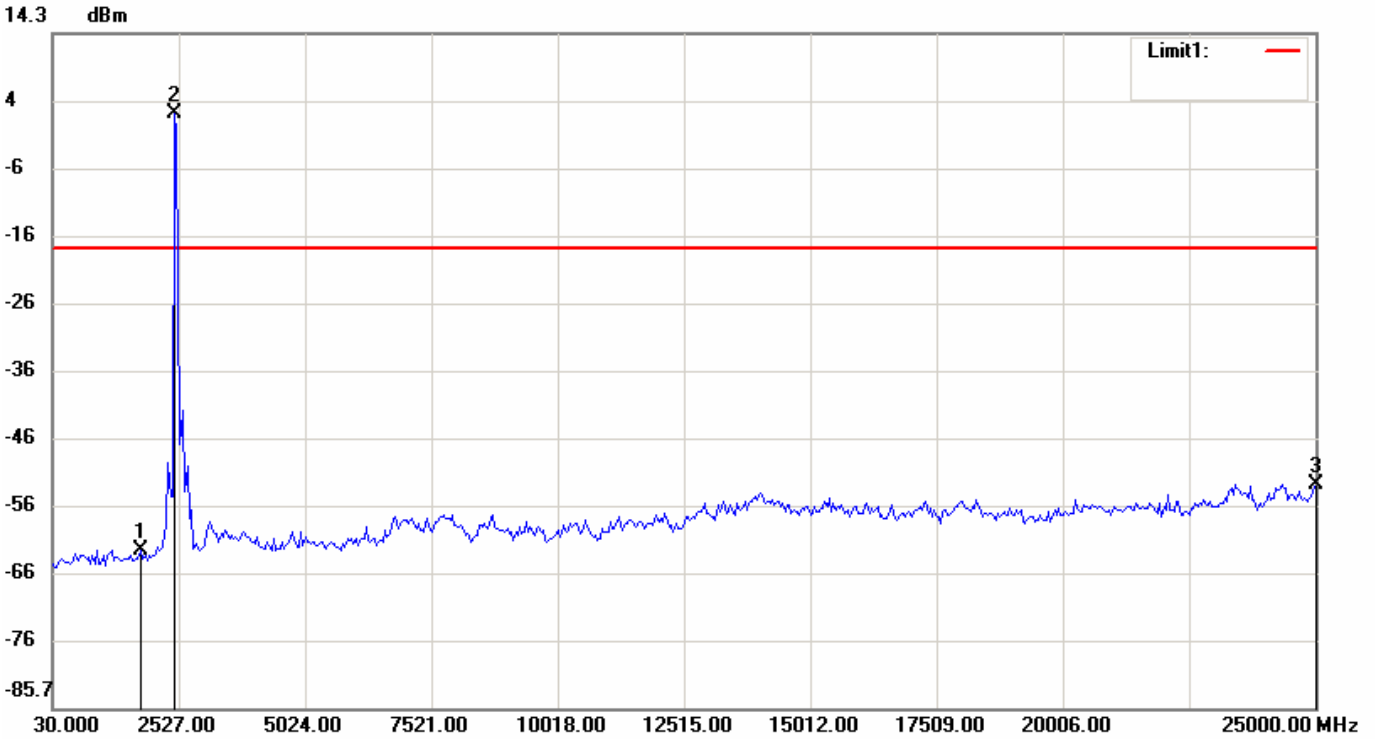
Test Mode:

Note: **FCC-802.11B Channel 06-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	71.6167	-62.12
2	2443.7667	3.31
3	23460.1833	-52.31

File: CT-5374 **Data: #84** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:35:21 **Humidity: 51 %**



Condition: **-17.41dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

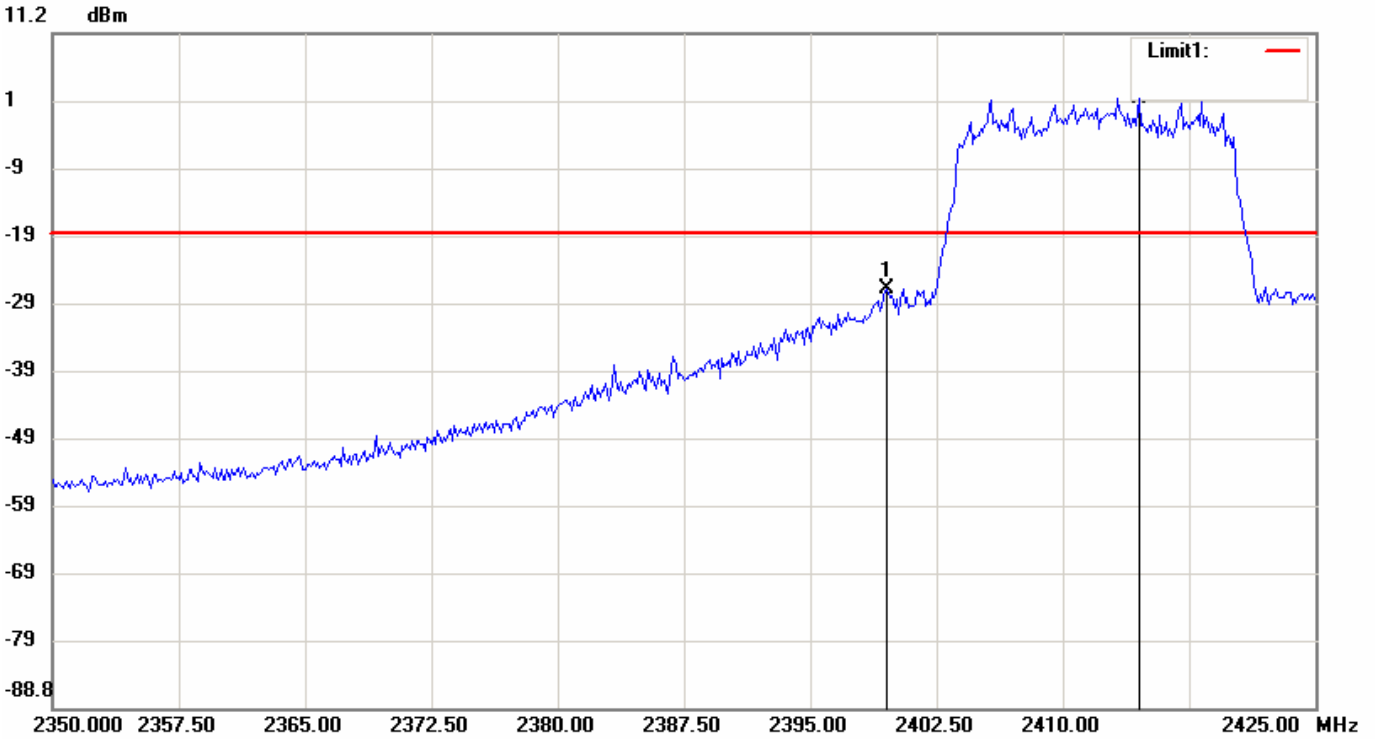
Test Mode:

Note: **FCC-802.11B Channel 11-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1777.9000	-62.16
2	2443.7667	2.59
3	25000.0000	-52.41

File: CT-5374 **Data: #92** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:47:31 **Humidity: 51 %**



Condition: **-18.27dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

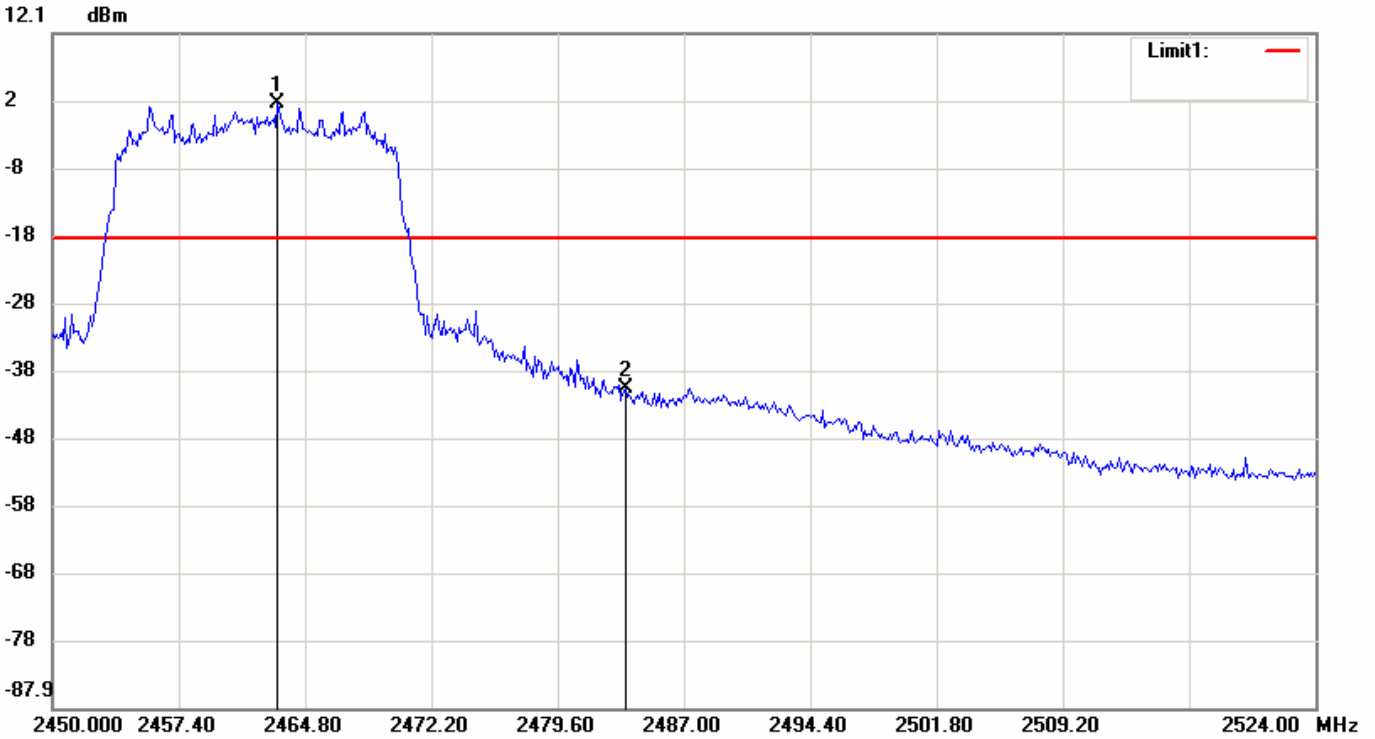
Test Mode:

Note: **FCC-802.11G Channel 01-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2399.5000	-26.66
2	2414.5000	1.73

File: CT-5374 **Data: #101** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 04:03:25 **Humidity: 51 %**



Condition: **-18.39dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

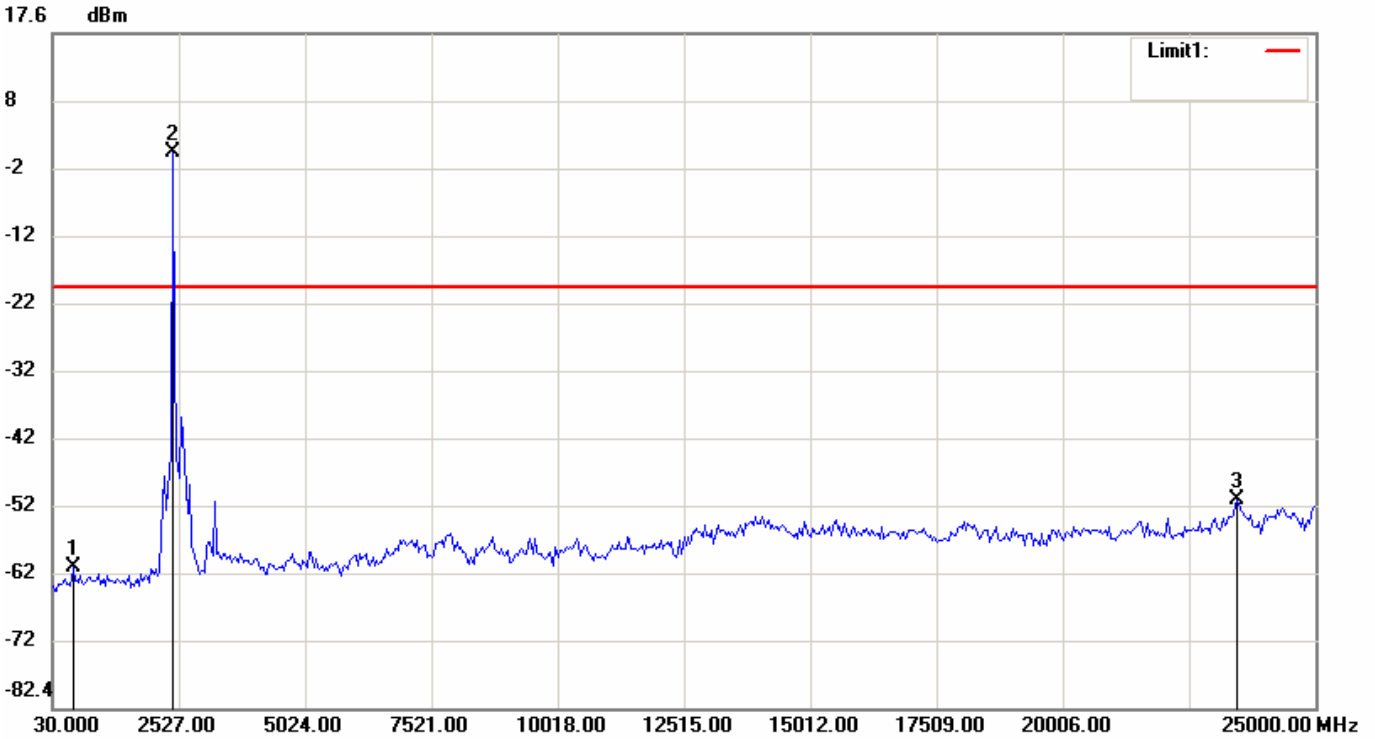
Test Mode:

Note: **FCC-802.11G Channel 11-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2463.1967	1.61
2	2483.5467	-40.48

File: CT-5374 **Data: #89** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:43:21 **Humidity: 51 %**



Condition: **-20.07dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

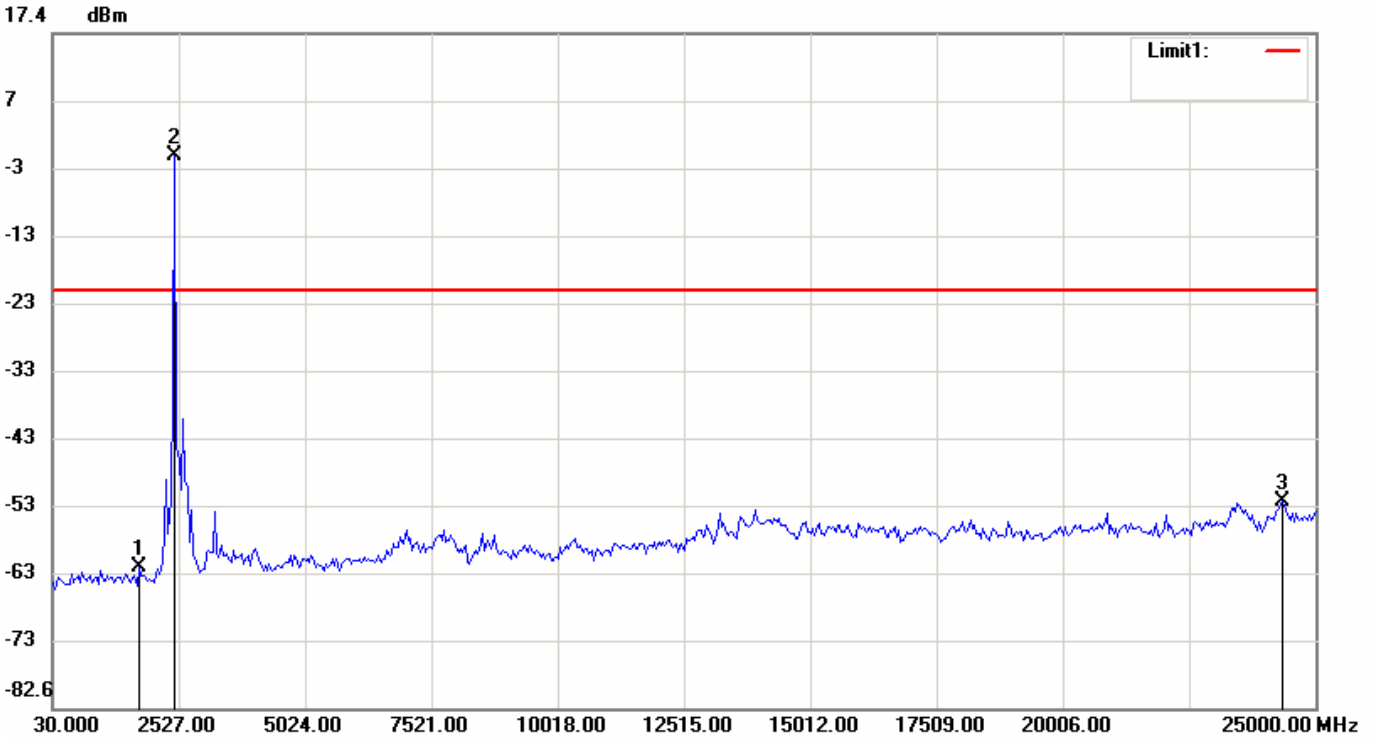
Test Mode:

Note: **FCC-802.11G Channel 01-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	446.1667	-61.60
2	2402.1500	-0.07
3	23460.1833	-51.43

File: CT-5374 **Data: #94** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:51:19 **Humidity: 51 %**



Condition: **-20.6dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

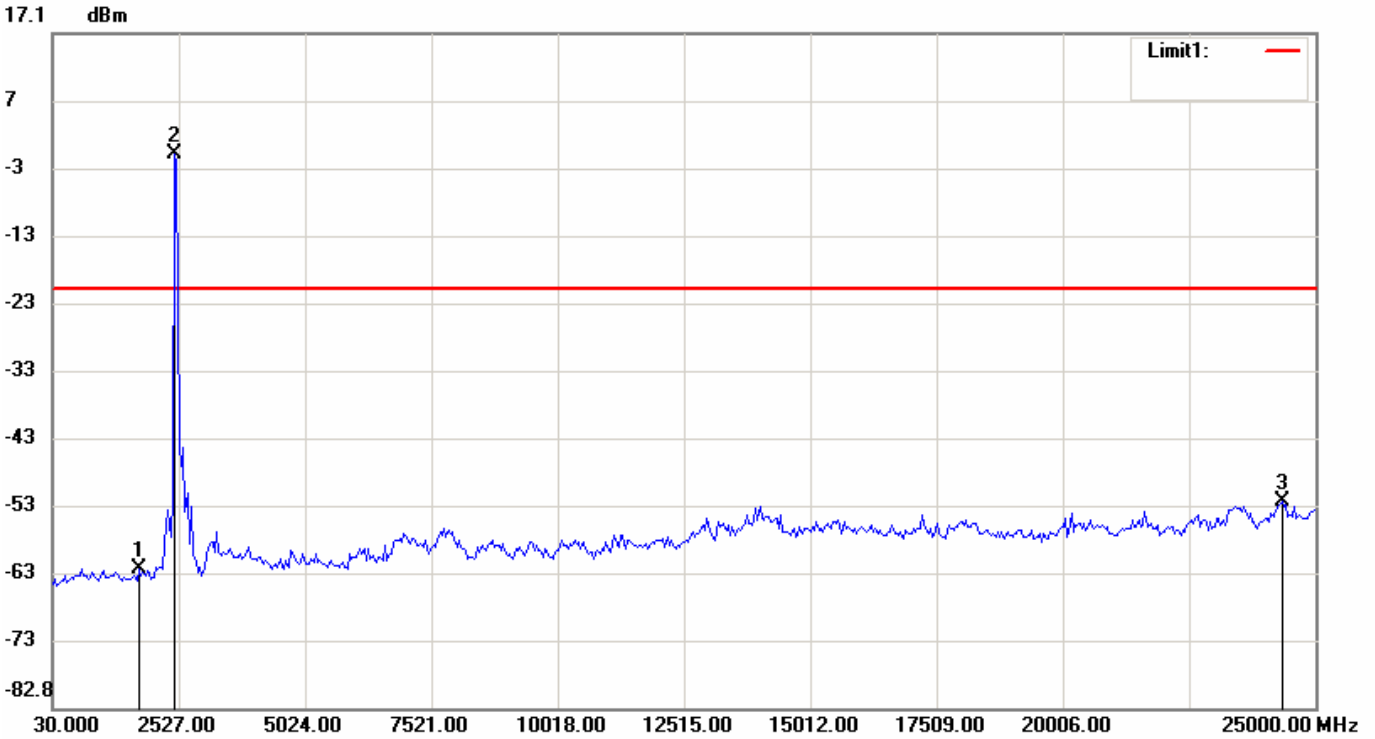
Test Mode:

Note: **FCC-802.11G Channel 06-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1736.2833	-61.63
2	2443.7667	-0.60
3	24334.1333	-52.08

File: CT-5374 **Data: #98** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 03:58:55 **Humidity: 51 %**



Condition: **-20.62dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

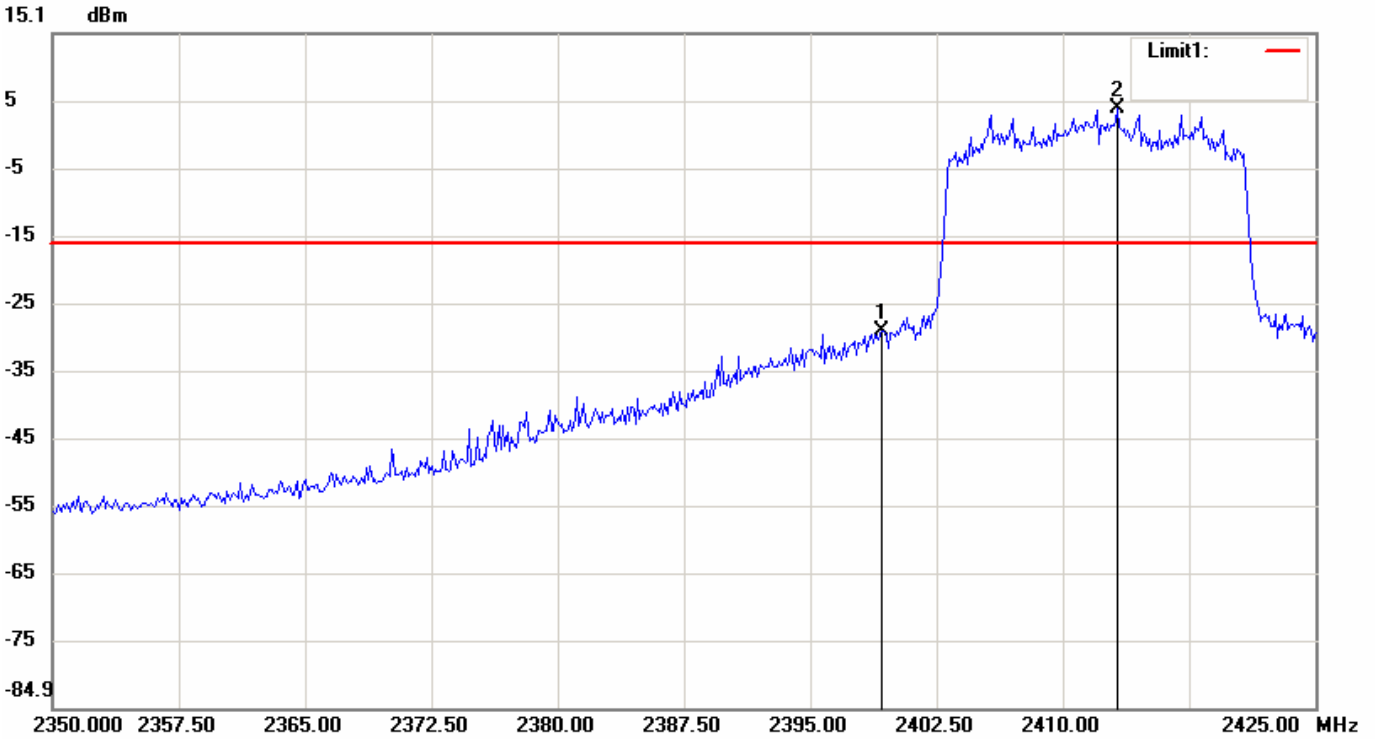
Test Mode:

Note: **FCC-802.11G Channel 11-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1736.2833	-62.13
2	2443.7667	-0.62
3	24334.1333	-52.18

File: CT-5374 **Data: #5** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 10:11:15 **Humidity: 51 %**



Condition: **-15.95dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

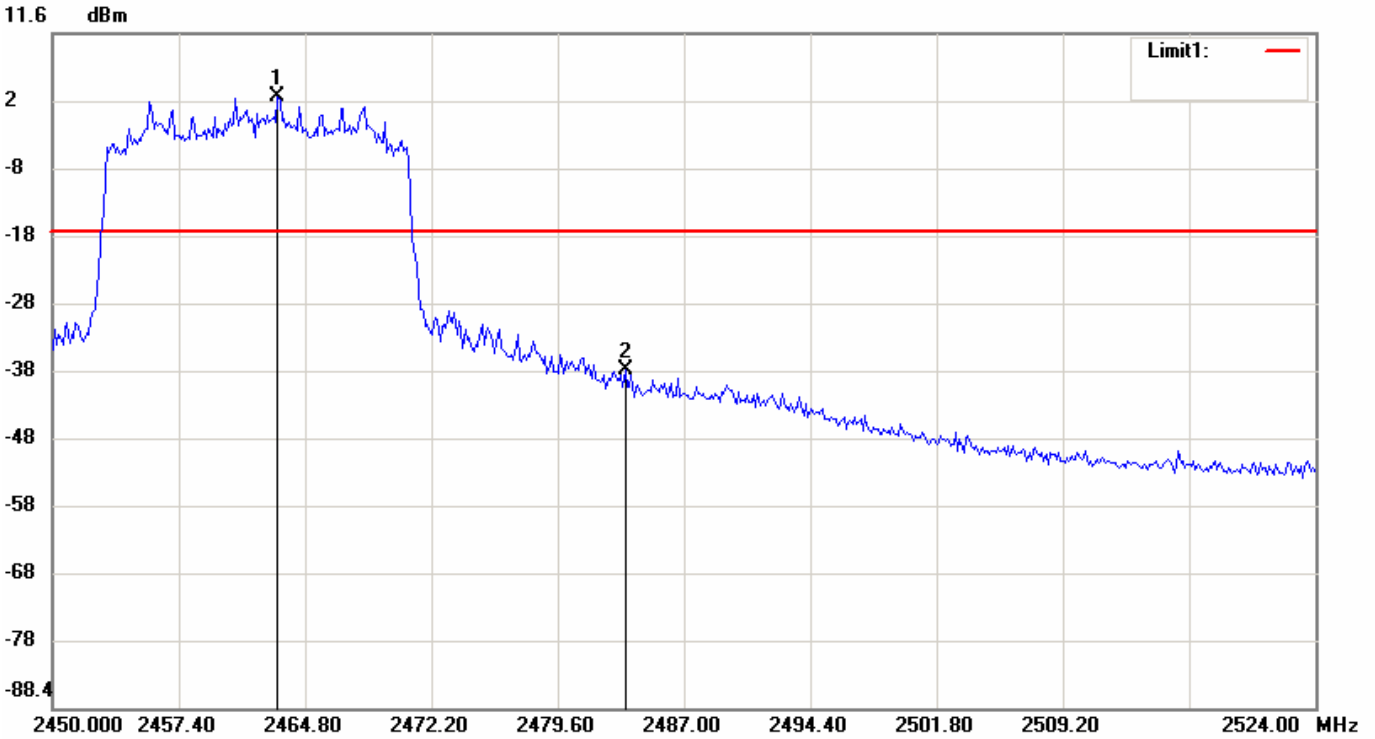
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 01-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2399.2500	-29.16
2	2413.2500	4.05

File: CT-5374 **Data: #25** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:36:19 **Humidity: 51 %**



Condition: **-17.84dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

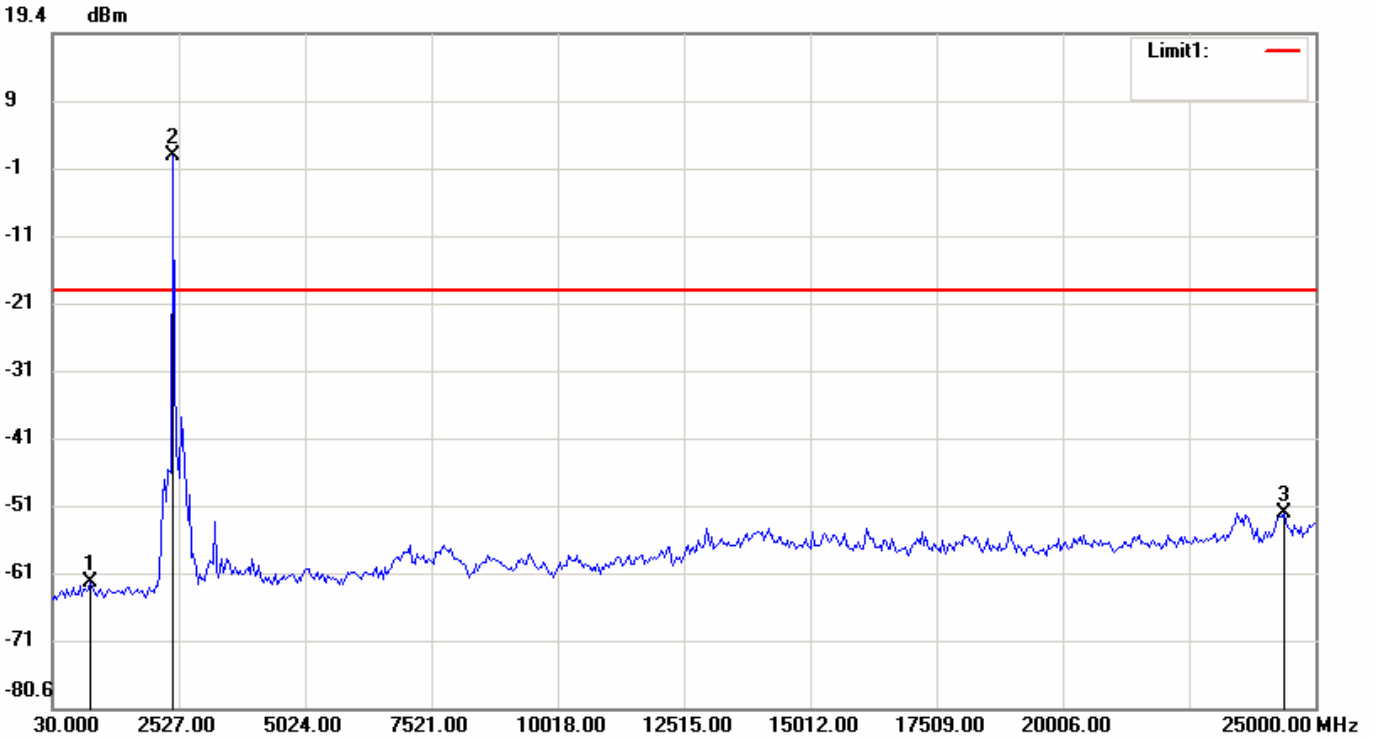
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 11-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2463.1967	2.16
2	2483.5467	-38.19

File: CT-5374 **Data: #2** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 10:06:19 **Humidity: 51 %**



Condition: **-18.76dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

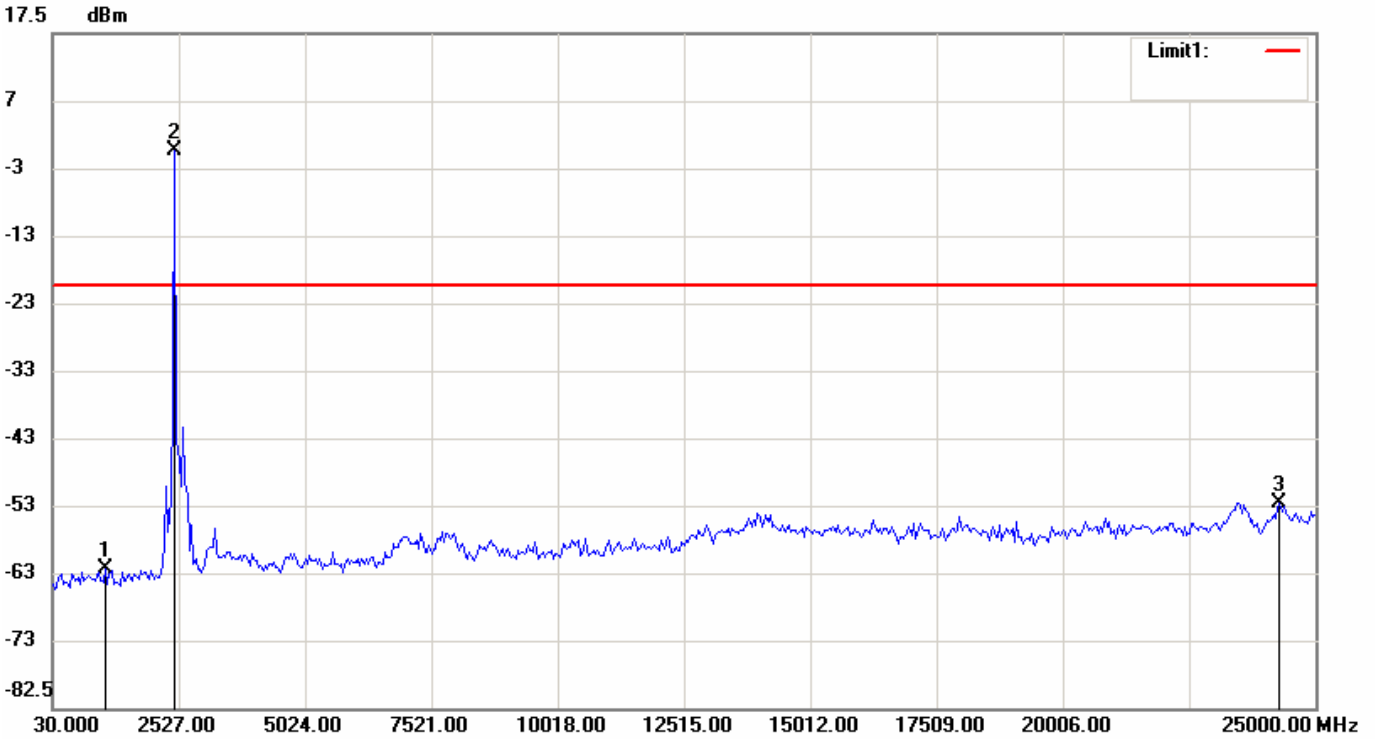
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 01-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	779.1000	-61.97
2	2402.1500	1.24
3	24375.7500	-51.73

File: CT-5374 **Data: #18** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:23:46 **Humidity: 51 %**



Condition: **-19.99dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

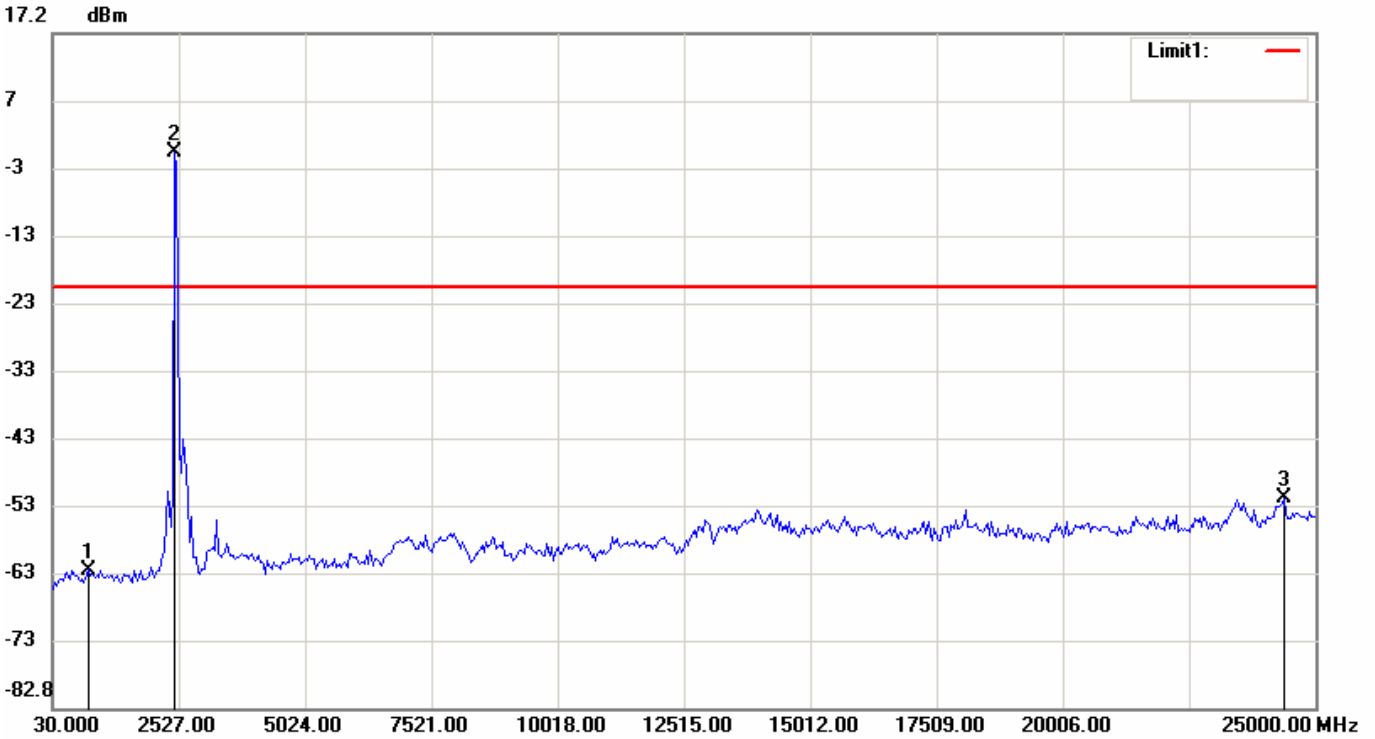
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 06-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1070.4167	-61.98
2	2443.7667	0.01
3	24292.5167	-52.06

File: CT-5374 **Data: #22** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:31:49 **Humidity: 51 %**



Condition: **-20.55dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

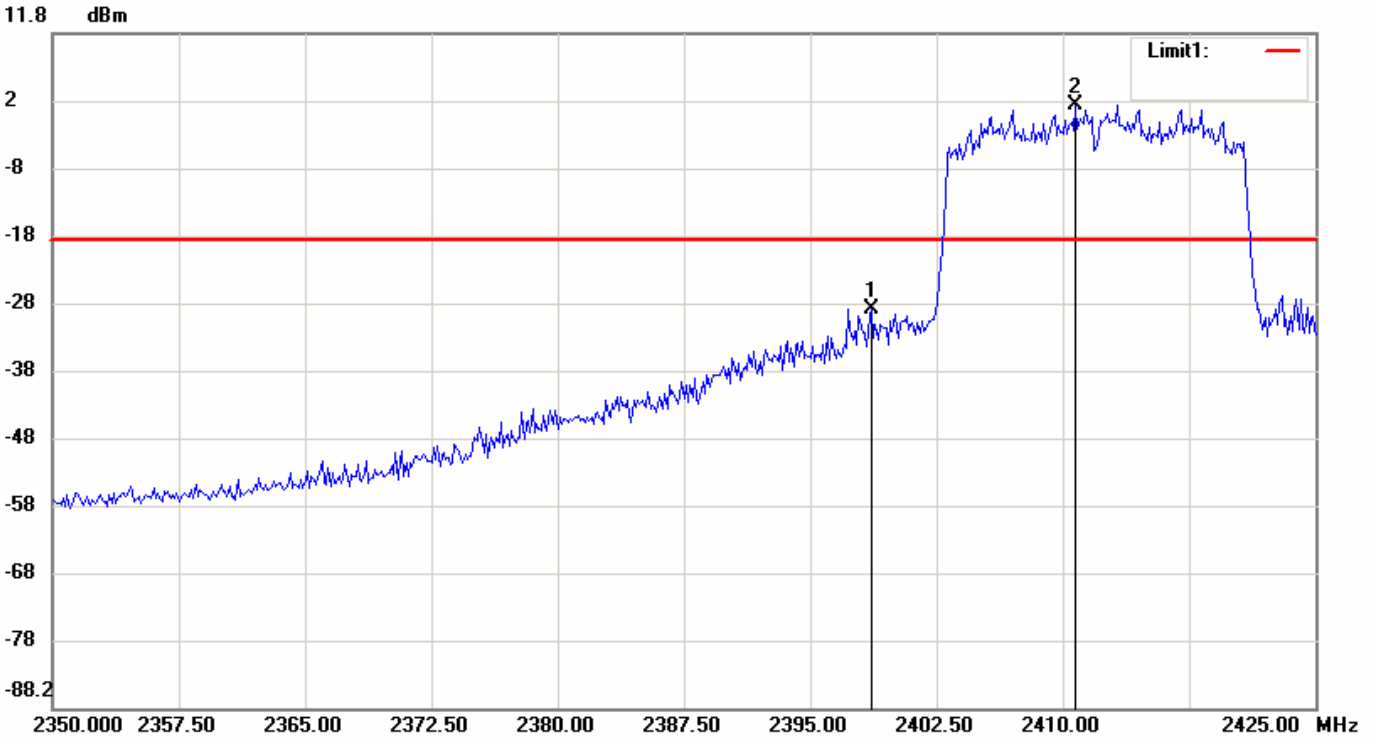
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 11-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	737.4833	-62.31
2	2443.7667	-0.55
3	24375.7500	-51.76

File: CT-5374 **Data: #12** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 10:36:08 **Humidity: 51 %**



Condition: **-18.75dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

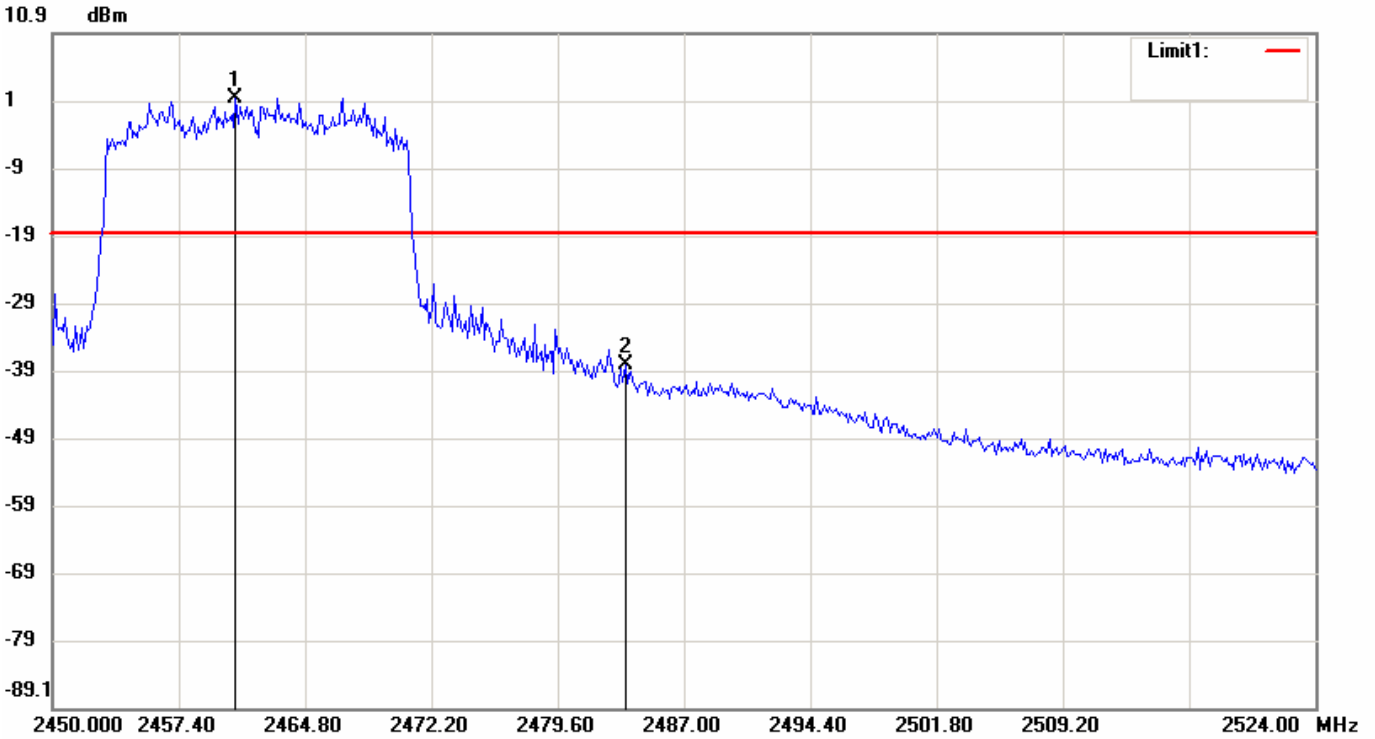
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 01-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2398.6250	-28.96
2	2410.7500	1.25

File: CT-5374 **Data: #30** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:53:57 **Humidity: 51 %**



Condition: **-18.67dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

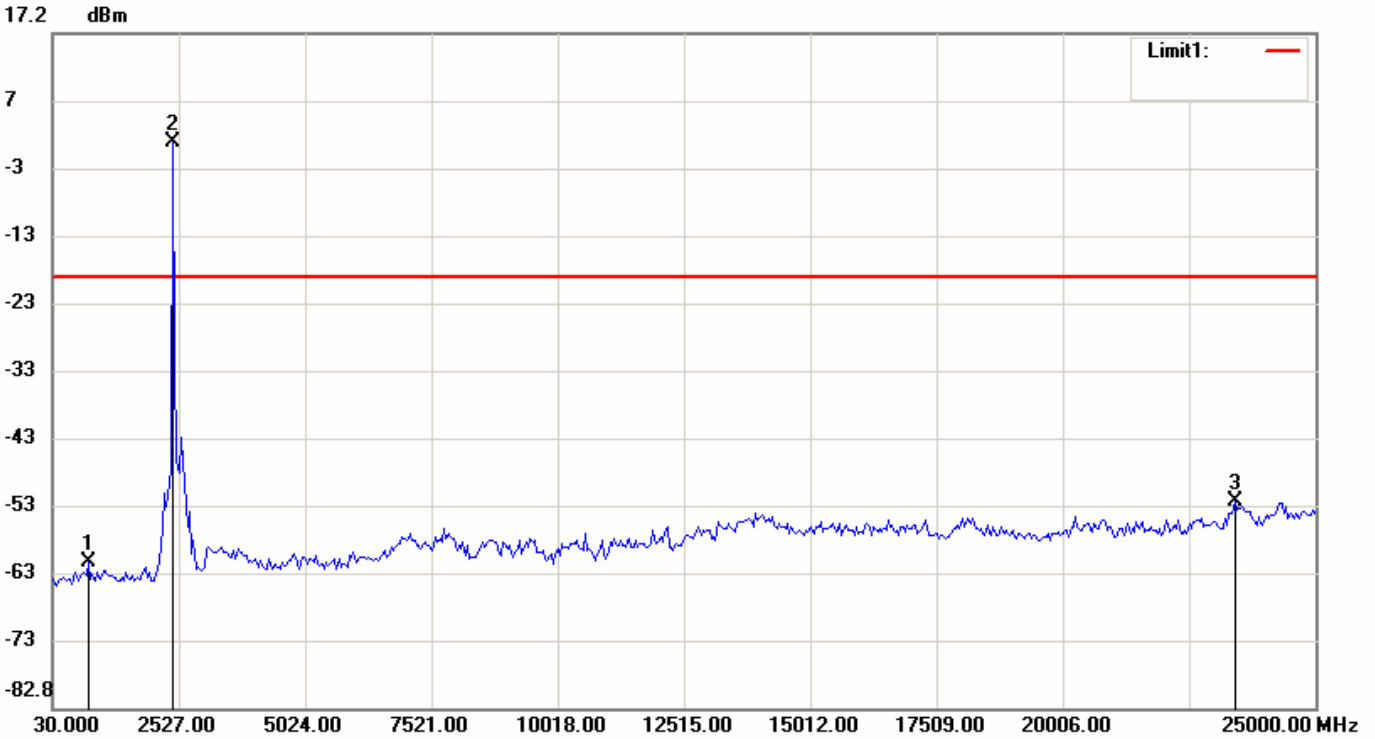
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 11-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2460.7300	1.33
2	2483.5467	-38.33

File: CT-5374 **Data: #9** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 10:31:55 **Humidity: 51 %**



Condition: **-18.87dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

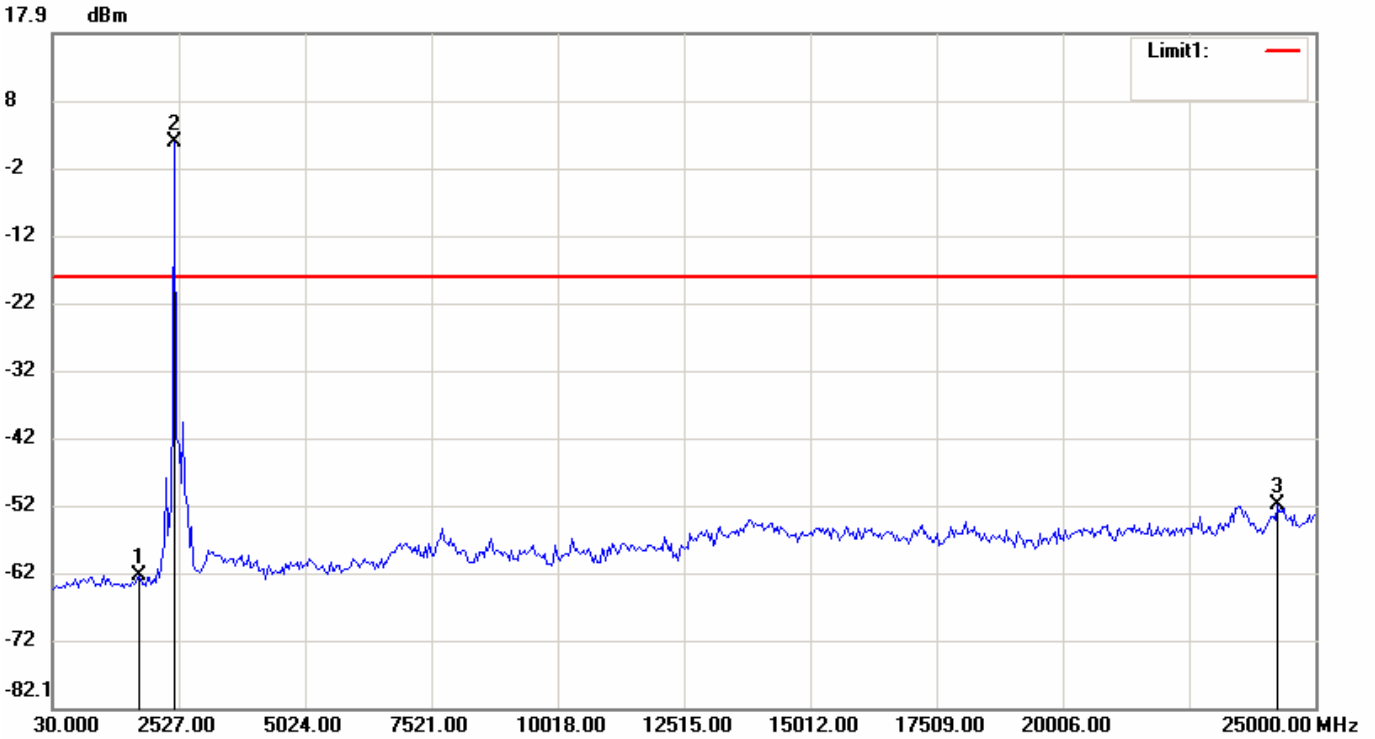
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 01-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	737.4833	-61.25
2	2402.1500	1.13
3	23418.5667	-52.12

File: CT-5374 **Data: #14** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:15:31 **Humidity: 51 %**



Condition: **-18.3dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

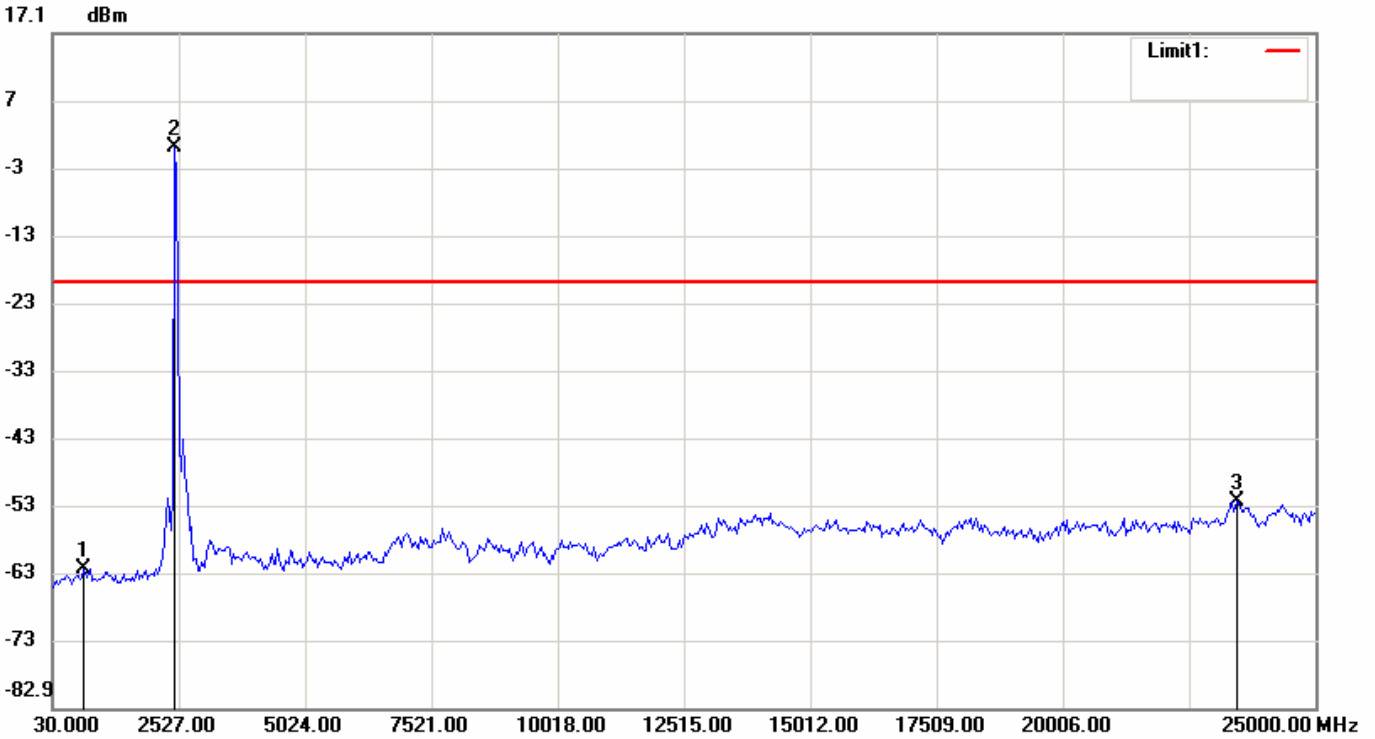
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 06-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1736.2833	-62.48
2	2443.7667	1.70
3	24250.9000	-51.85

File: CT-5374 **Data: #27** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: AM 11:49:27 **Humidity: 51 %**



Condition: **-19.73dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

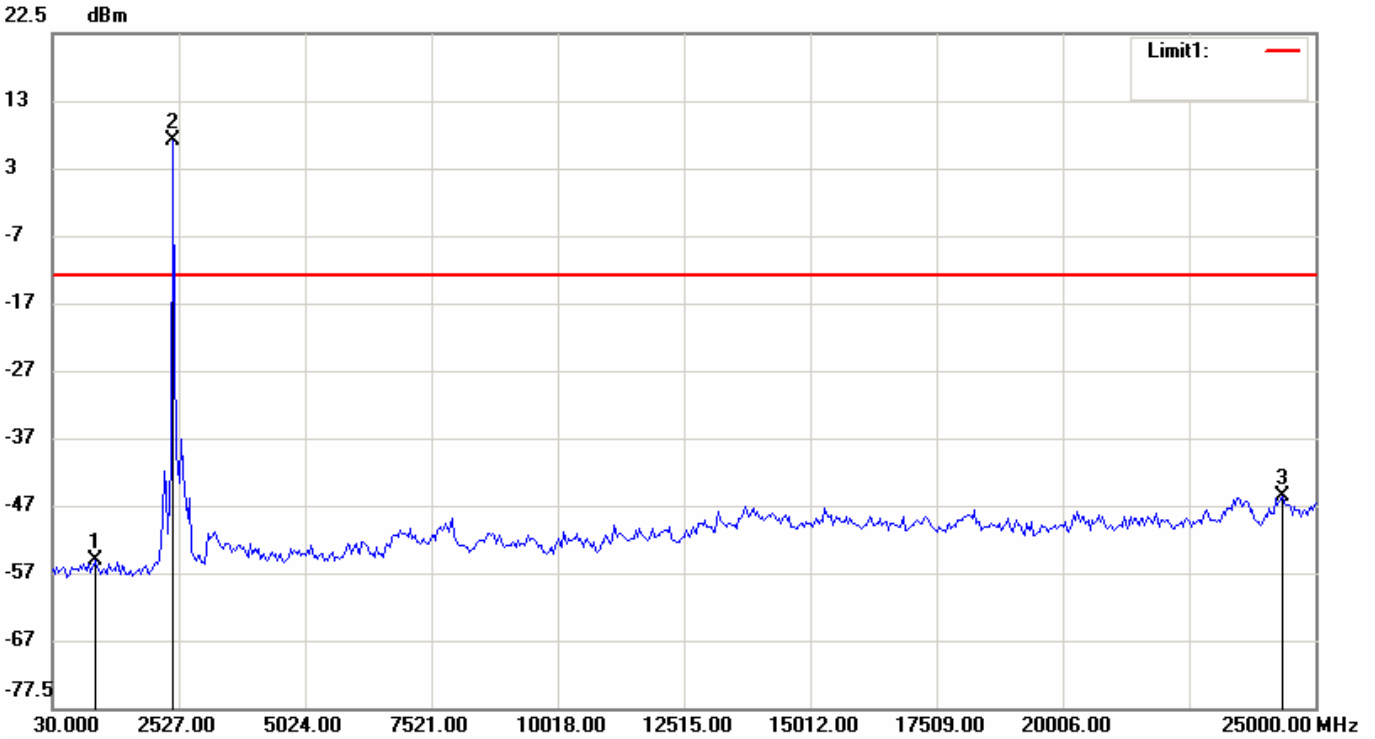
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 11-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	654.2500	-62.27
2	2443.7667	0.27
3	23460.1833	-52.21

File: **Data: #2** **Date: 2010/3/11** **Temperature: 16 ℃**

Time: AM 10:56:22 **Humidity: 51 %**



Condition: **-13.29dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

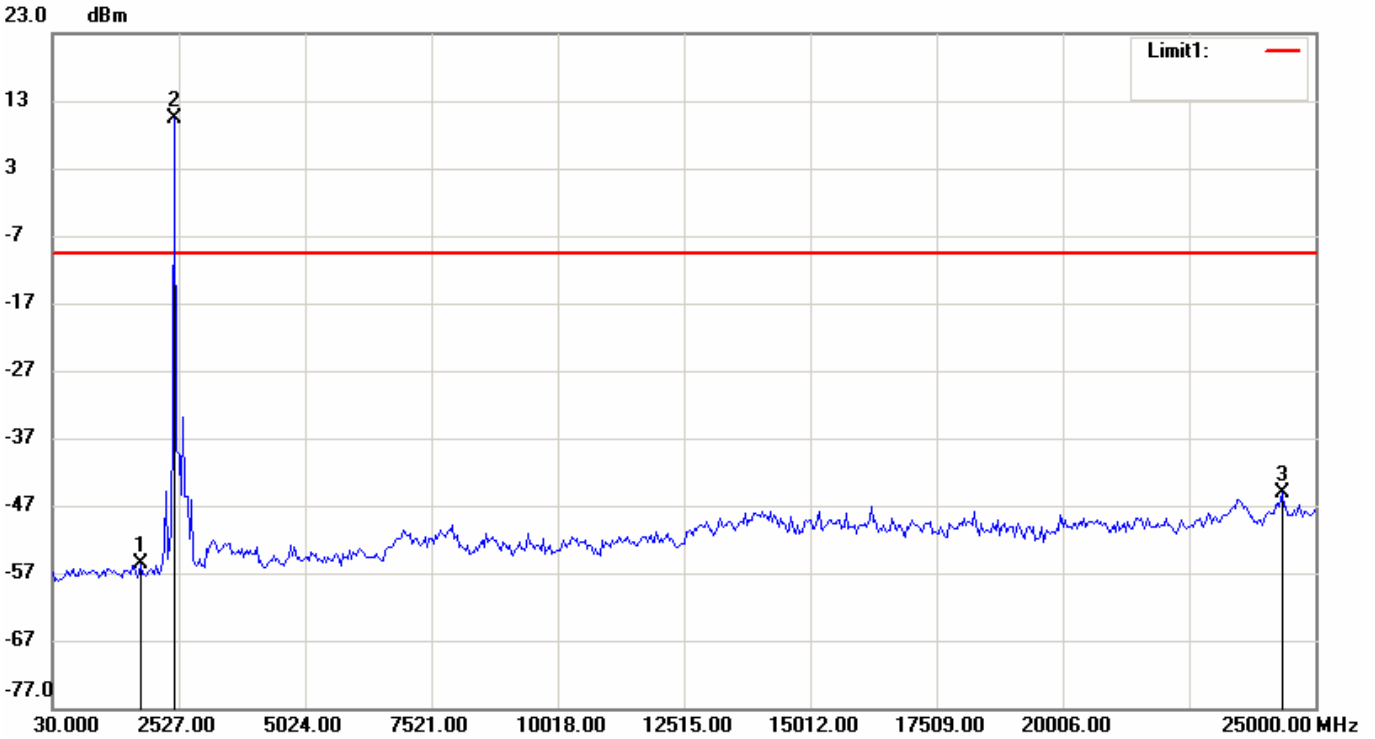
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 01-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	862.3333	-55.52
2	2402.1500	6.71
3	24334.1333	-46.02

File: **Data: #7** **Date: 2010/3/11** **Temperature: 16 ℃**

Time: AM 11:04:16 **Humidity: 51 %**



Condition: **-9.78dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

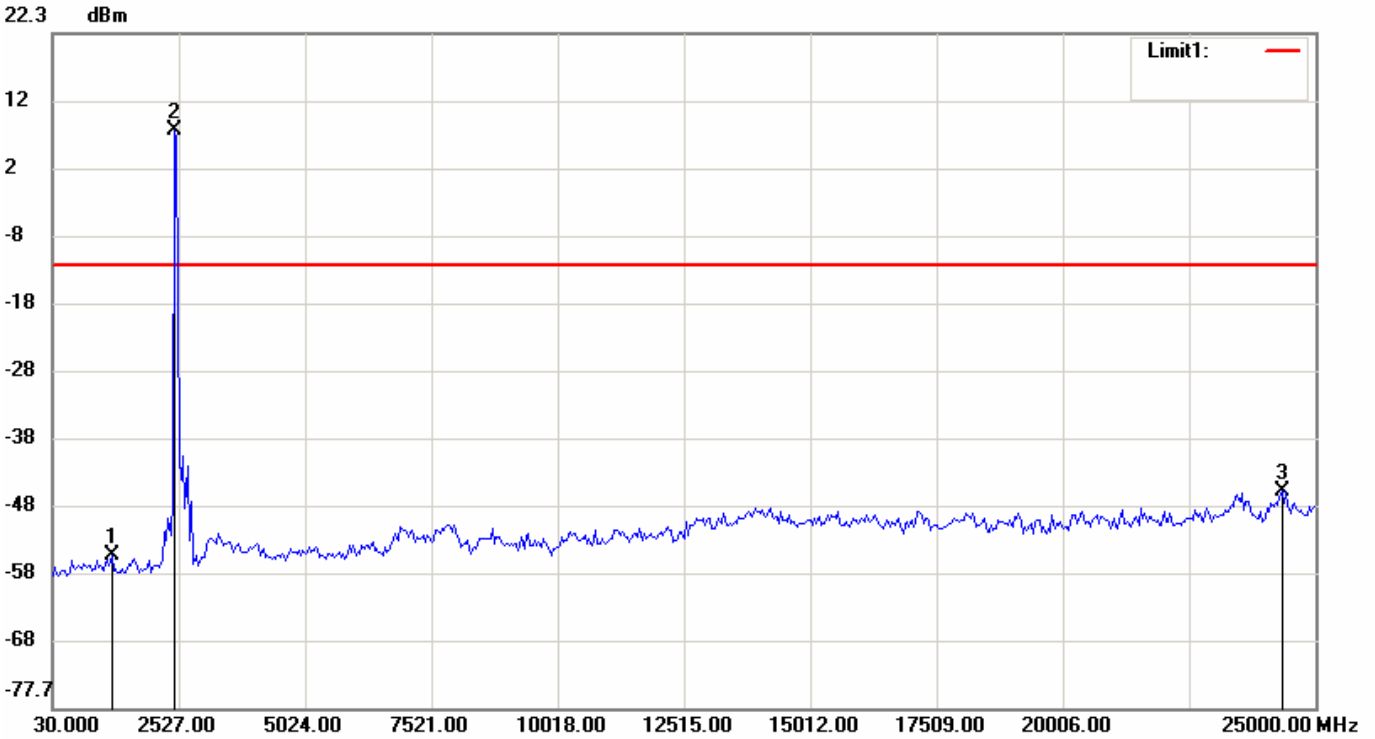
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 06-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1777.9000	-55.61
2	2443.7667	10.22
3	24334.1333	-45.11

File: **Data: #11** **Date: 2010/3/11** **Temperature: 16 ℃**

Time: AM 11:11:56 **Humidity: 51 %**



Condition: **-12.01dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

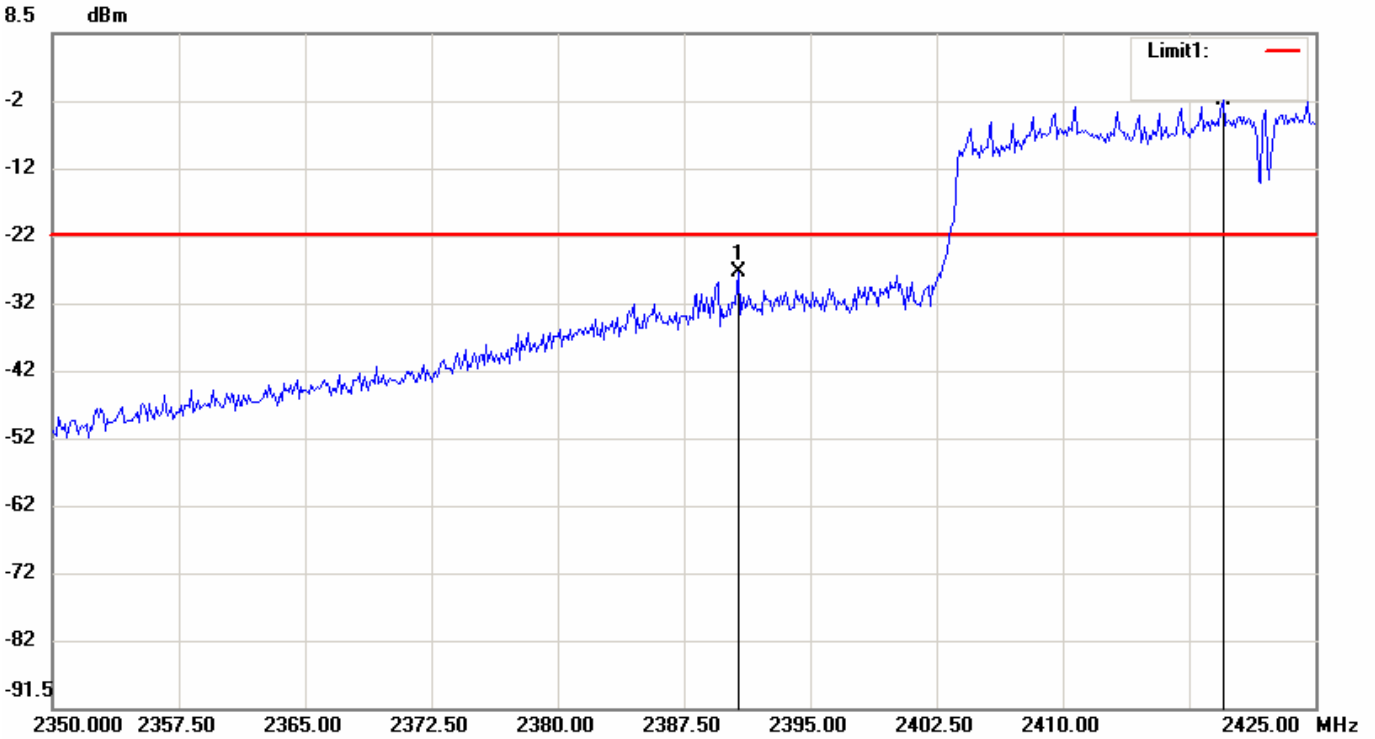
Test Mode:

Note: **FCC-802.11GN_HT20 Channel 11-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1195.2667	-55.17
2	2443.7667	7.99
3	24334.1333	-45.52

File: CT-5374 **Data: #35** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 12:51:15 **Humidity: 51 %**



Condition: **-21.39dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 10dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

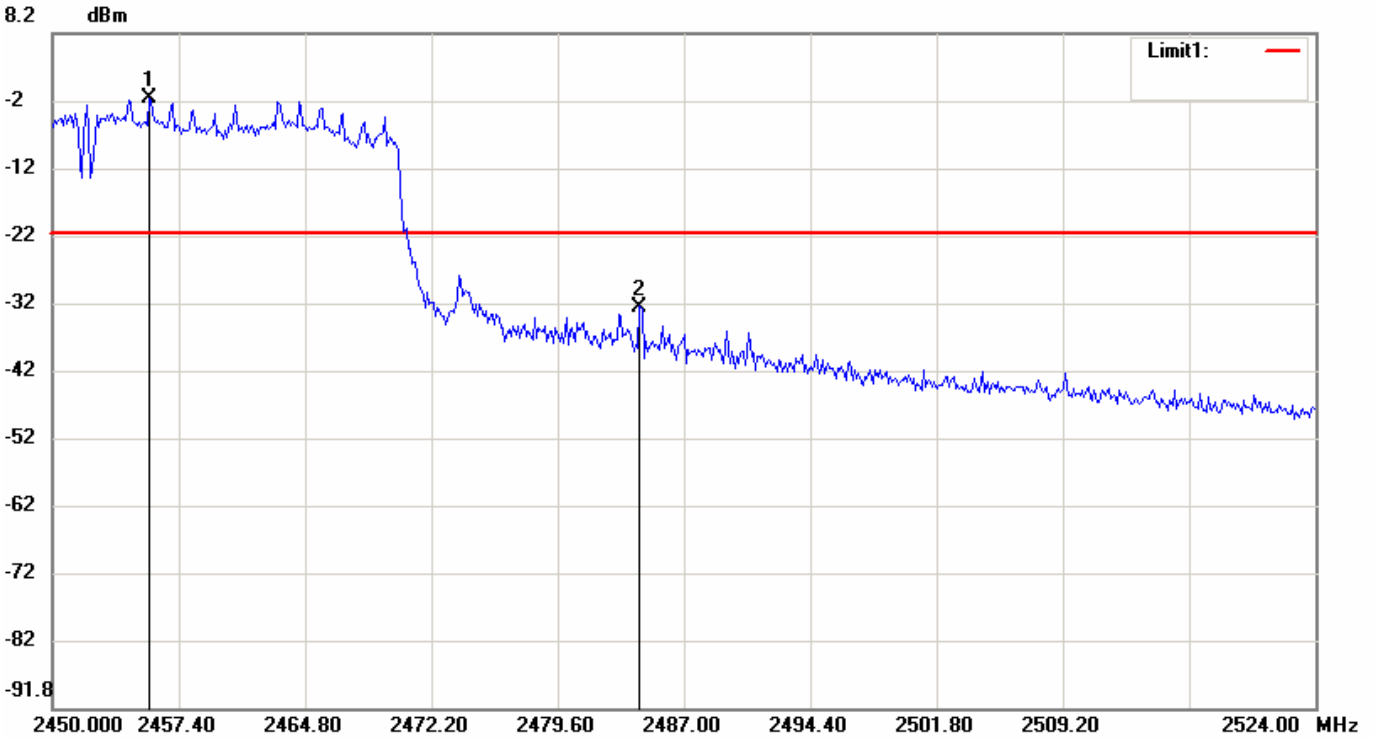
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 03-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2390.7500	-26.90
2	2419.5000	-1.39

File: **CT-5374** **Data:** **#53** **Date:** **2010/3/4** **Temperature:** **16 ℃**

Time: **PM 01:43:27** **Humidity:** **51 %**



Condition: **-21.34dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 10dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

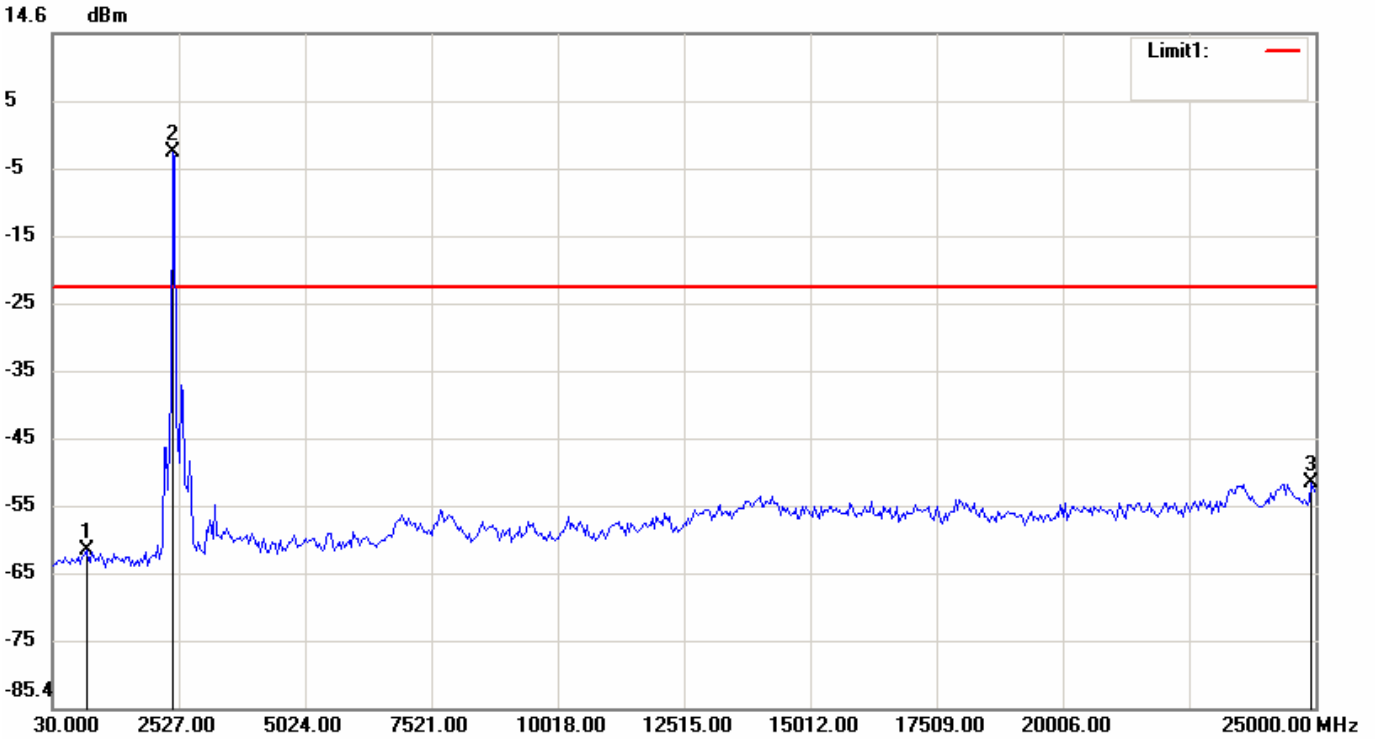
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 09-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2455.6733	-1.34
2	2484.4100	-32.30

File: CT-5374 **Data: #32** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 12:47:05 **Humidity: 51 %**



Condition: **-23.09dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

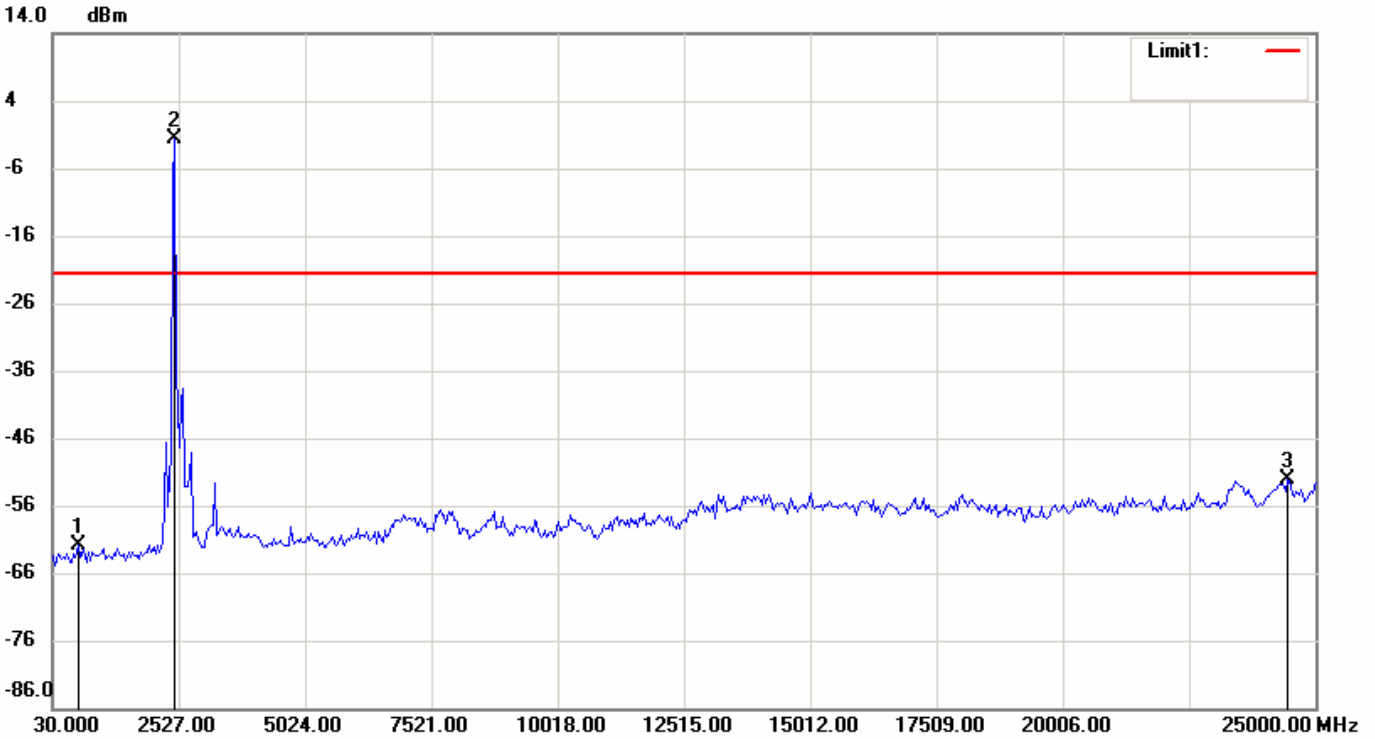
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 03-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	695.8667	-62.08
2	2402.1500	-3.09
3	24916.7667	-52.02

File: CT-5374 **Data: #46** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 01:22:49 **Humidity: 51 %**



Condition: **-21.52dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

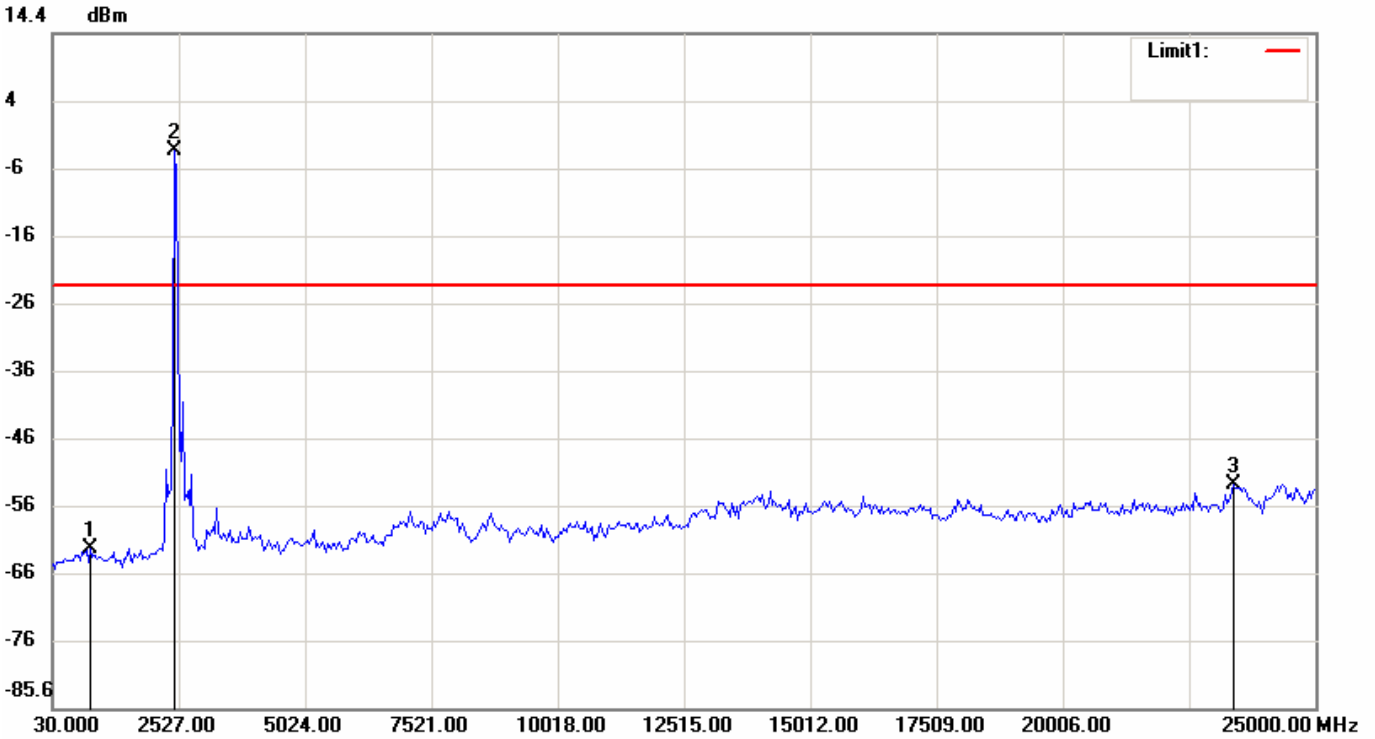
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 06-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	529.4000	-62.00
2	2443.7667	-1.52
3	24458.9833	-52.25

File: CT-5374 **Data: #50** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 01:38:56 **Humidity: 51 %**



Condition: **-22.86dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

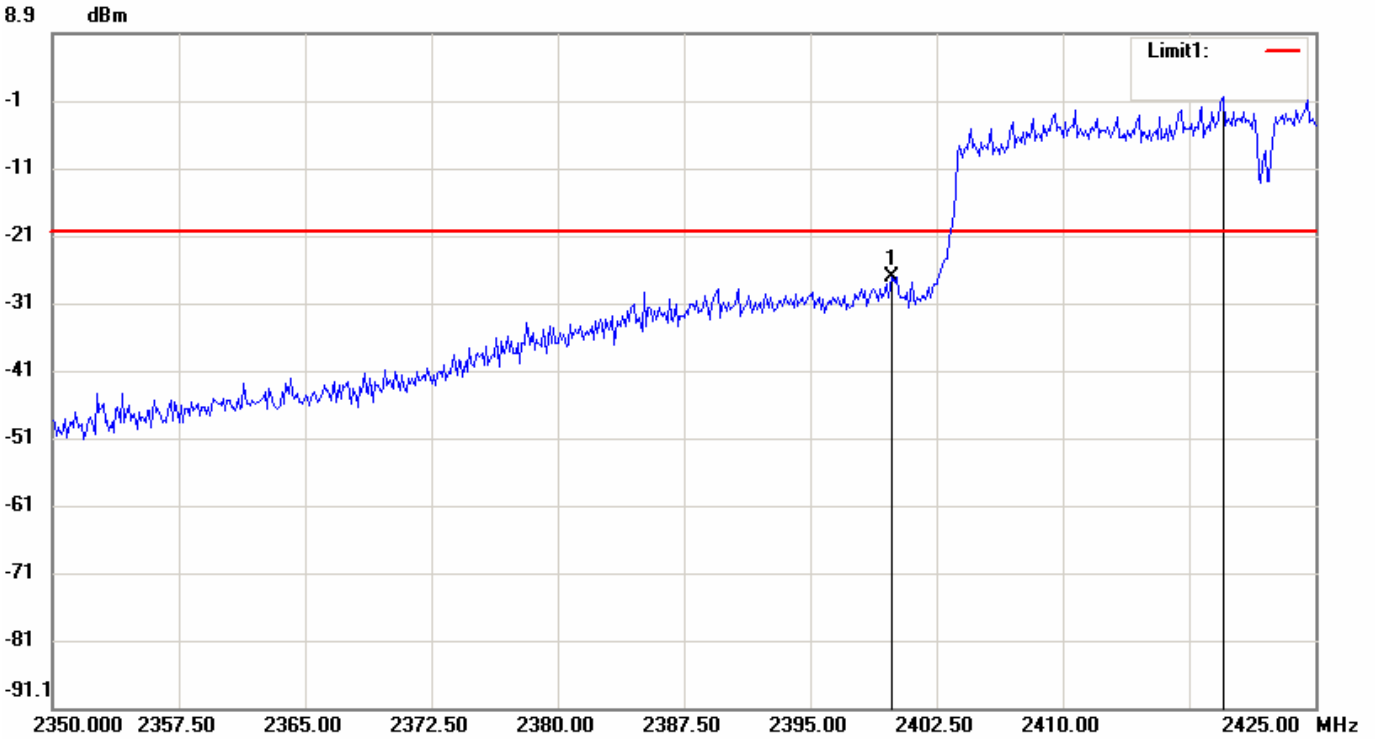
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 09-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	779.1000	-61.99
2	2443.7667	-2.86
3	23376.9500	-52.55

File: CT-5374 **Data: #40** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 01:01:20 **Humidity: 51 %**



Condition: **-20.58dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 10dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

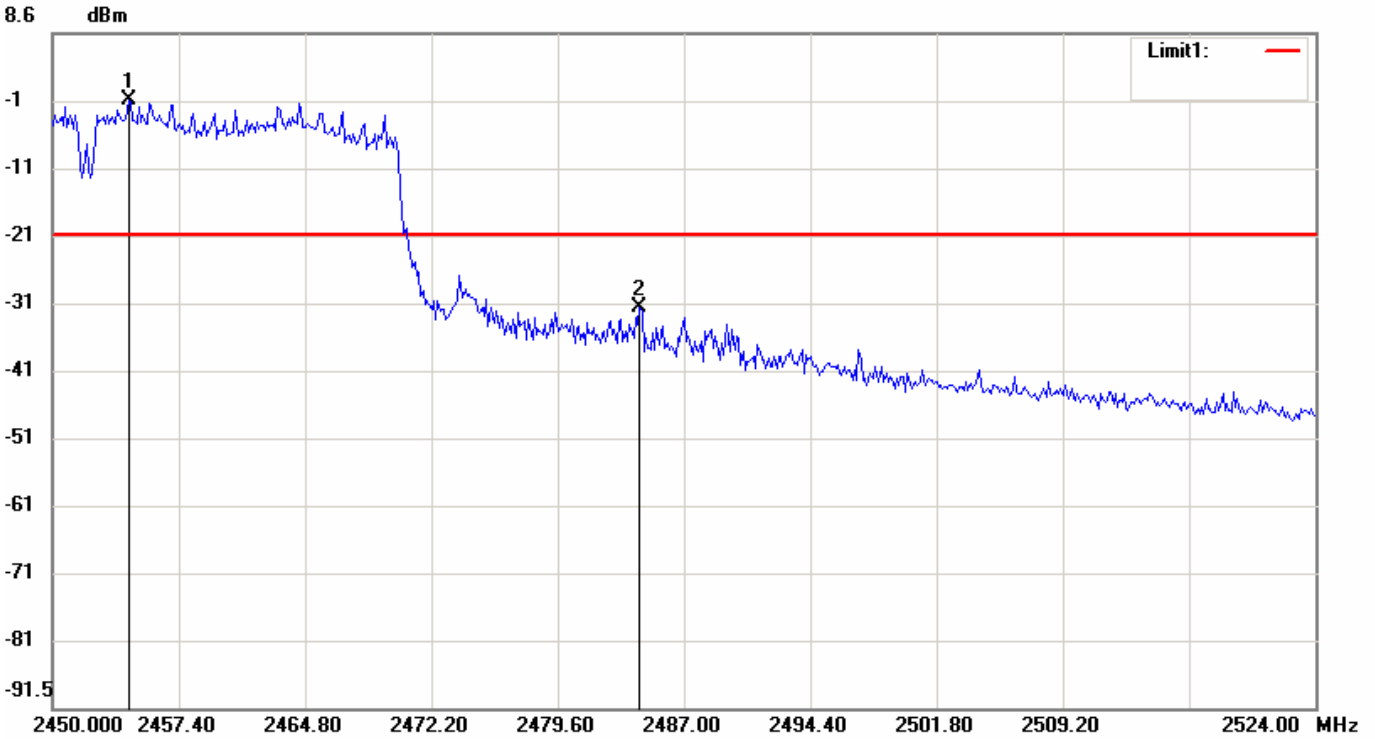
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 03-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2399.8750	-27.19
2	2419.5000	-0.58

File: CT-5374 **Data: #58** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 01:52:00 **Humidity: 51 %**



Condition: **-21.31dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 10dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

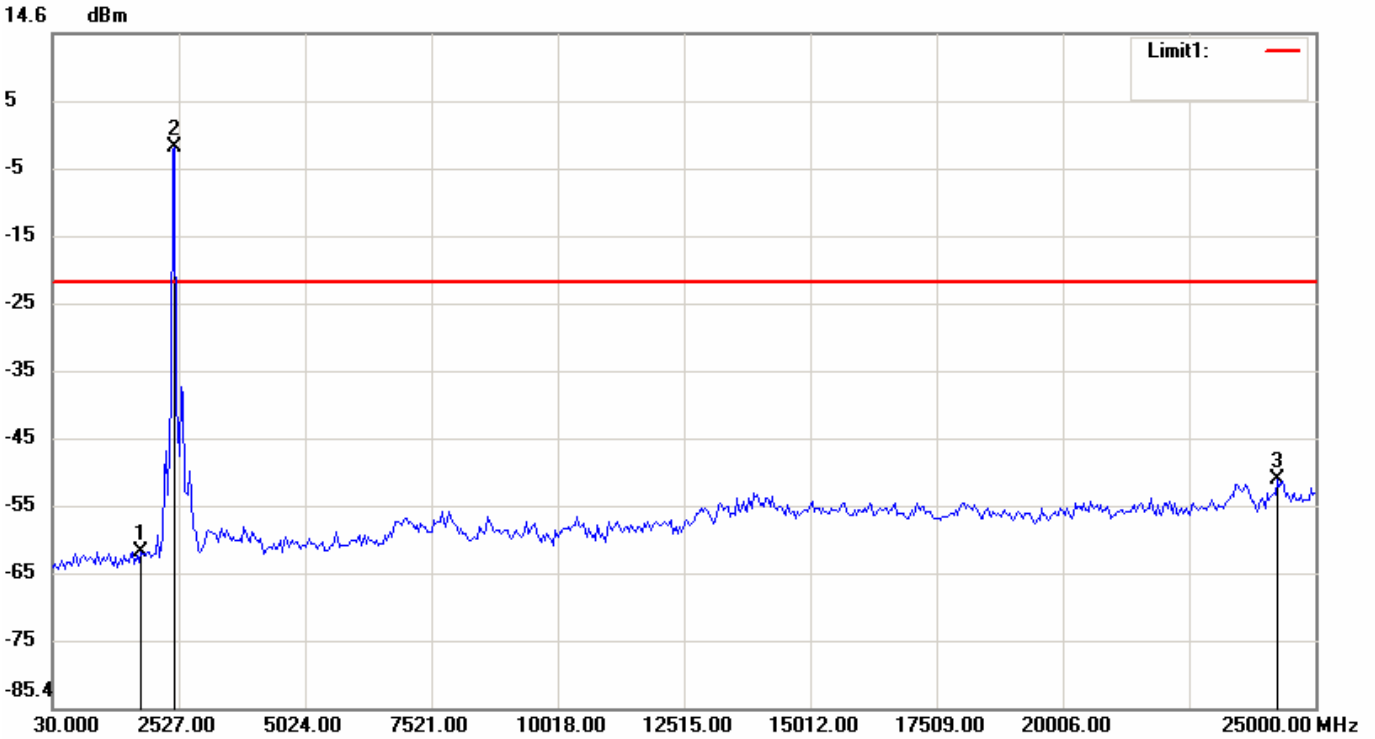
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 09-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2454.4400	-1.31
2	2484.4100	-31.99

File: CT-5374 **Data: #37** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 12:57:08 **Humidity: 51 %**



Condition: **-22.26dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

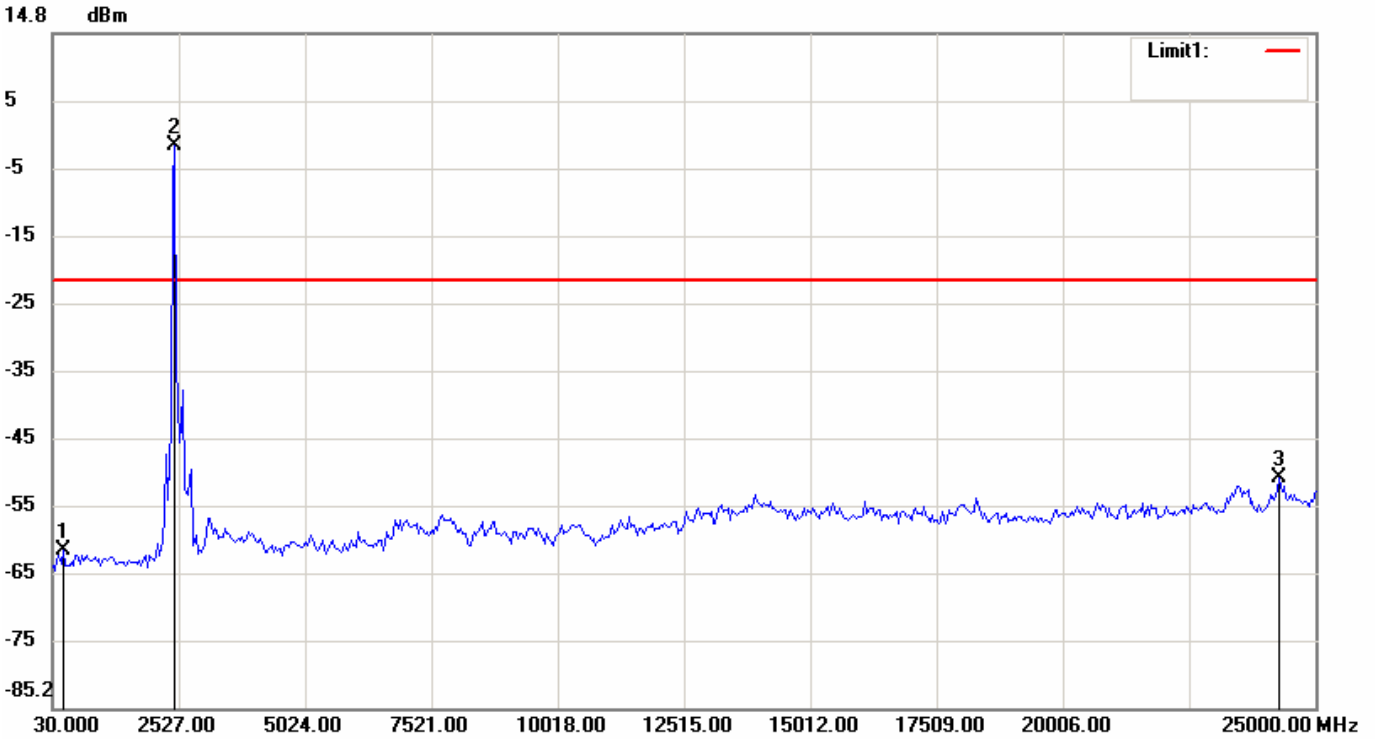
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 03-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1777.9000	-62.27
2	2443.7667	-2.26
3	24250.9000	-51.62

File: CT-5374 **Data: #42** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 01:15:13 **Humidity: 51 %**



Condition: **-21.87dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

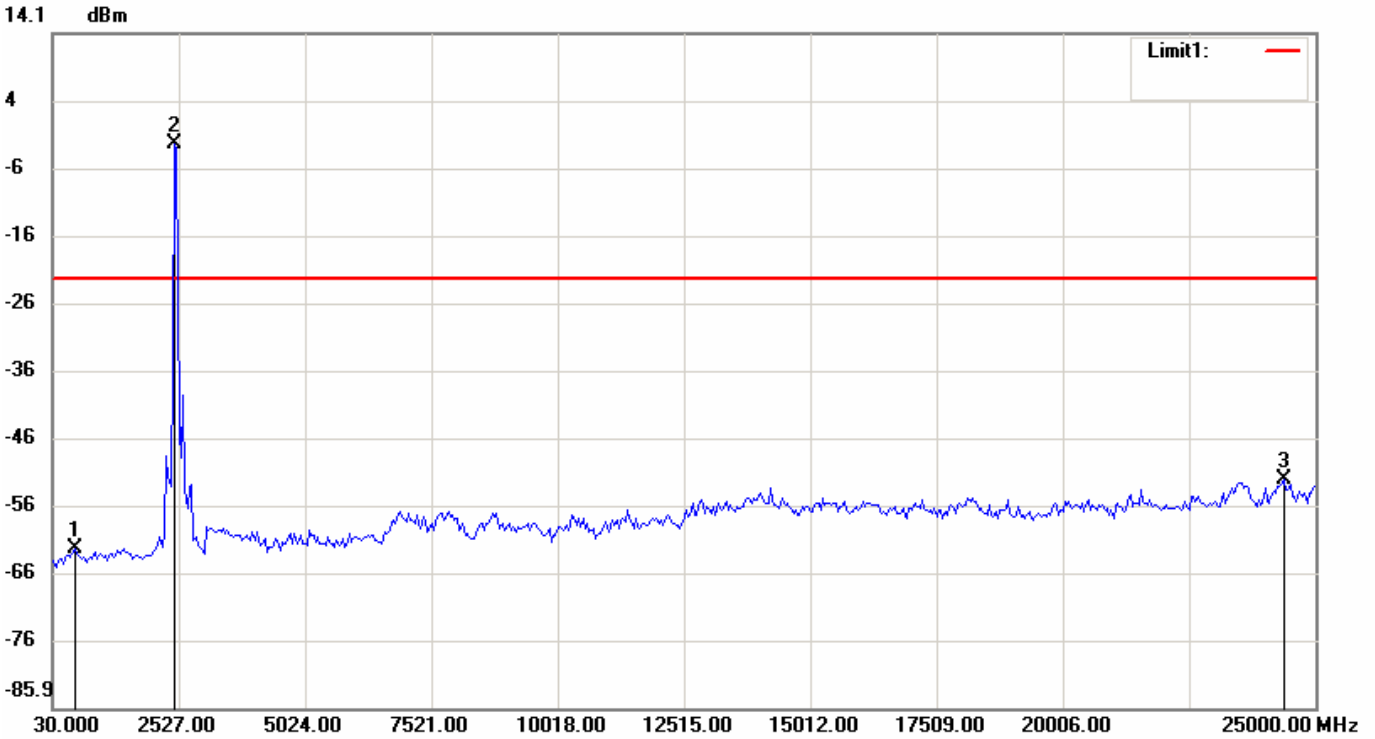
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 06-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	238.0833	-61.85
2	2443.7667	-1.87
3	24292.5167	-51.14

File: CT-5374 **Data:** #55 **Date:** 2010/3/4 **Temperature:** 16 ℃

Time: PM 01:47:28 **Humidity:** 51 %



Condition: -22.33dBm **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

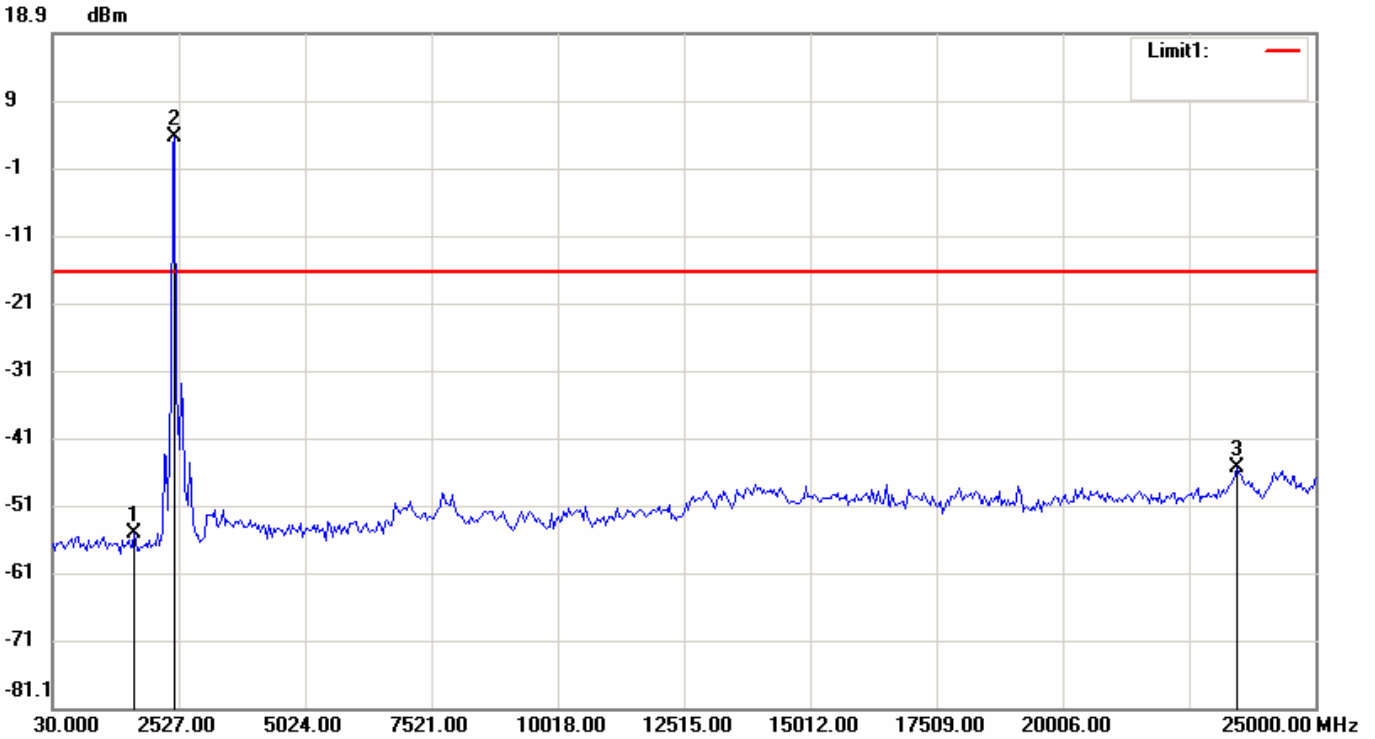
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 09-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	487.7833	-62.35
2	2443.7667	-2.33
3	24375.7500	-52.13

File: **Data: #16** **Date: 2010/3/11** **Temperature: 16 ℃**

Time: AM 11:21:57 **Humidity: 51 %**



Condition: **-16.52dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

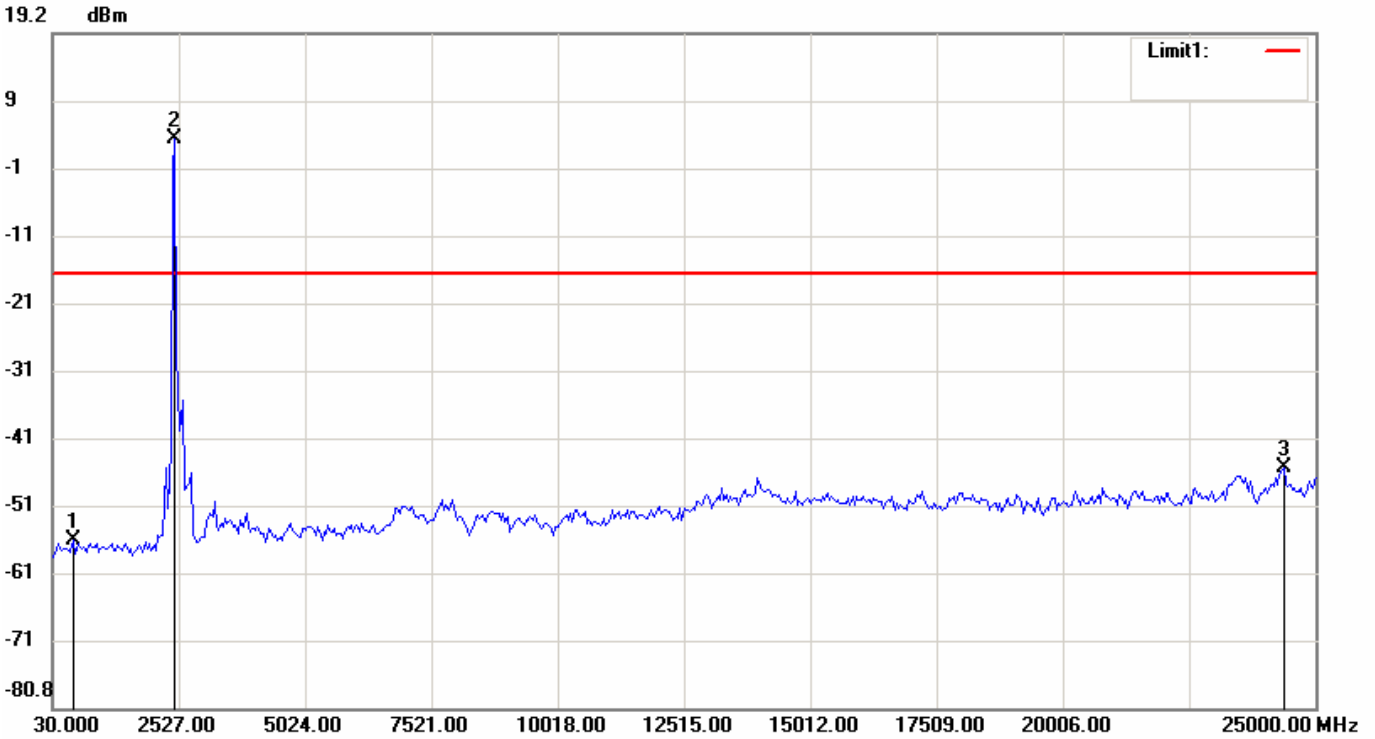
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 03-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1653.0500	-55.23
2	2443.7667	3.48
3	23460.1833	-45.37

File: **Data: #21** **Date: 2010/3/11** **Temperature: 16 ℃**

Time: AM 11:30:32 **Humidity: 51 %**



Condition: **-16.36dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

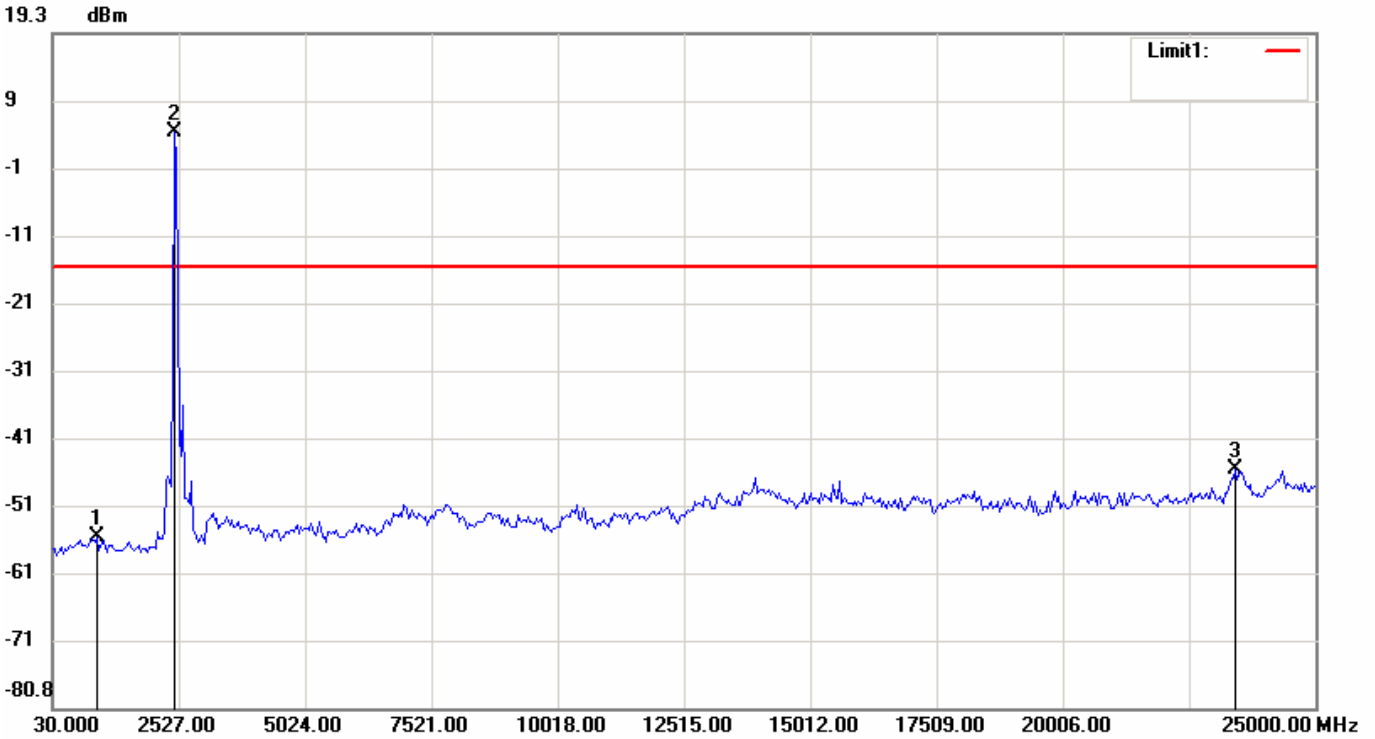
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 06-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	446.1667	-56.00
2	2443.7667	3.64
3	24375.7500	-45.19

File: **Data: #25** **Date: 2010/3/11** **Temperature: 16 ℃**

Time: AM 11:37:49 **Humidity: 51 %**



Condition: **-15.36dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

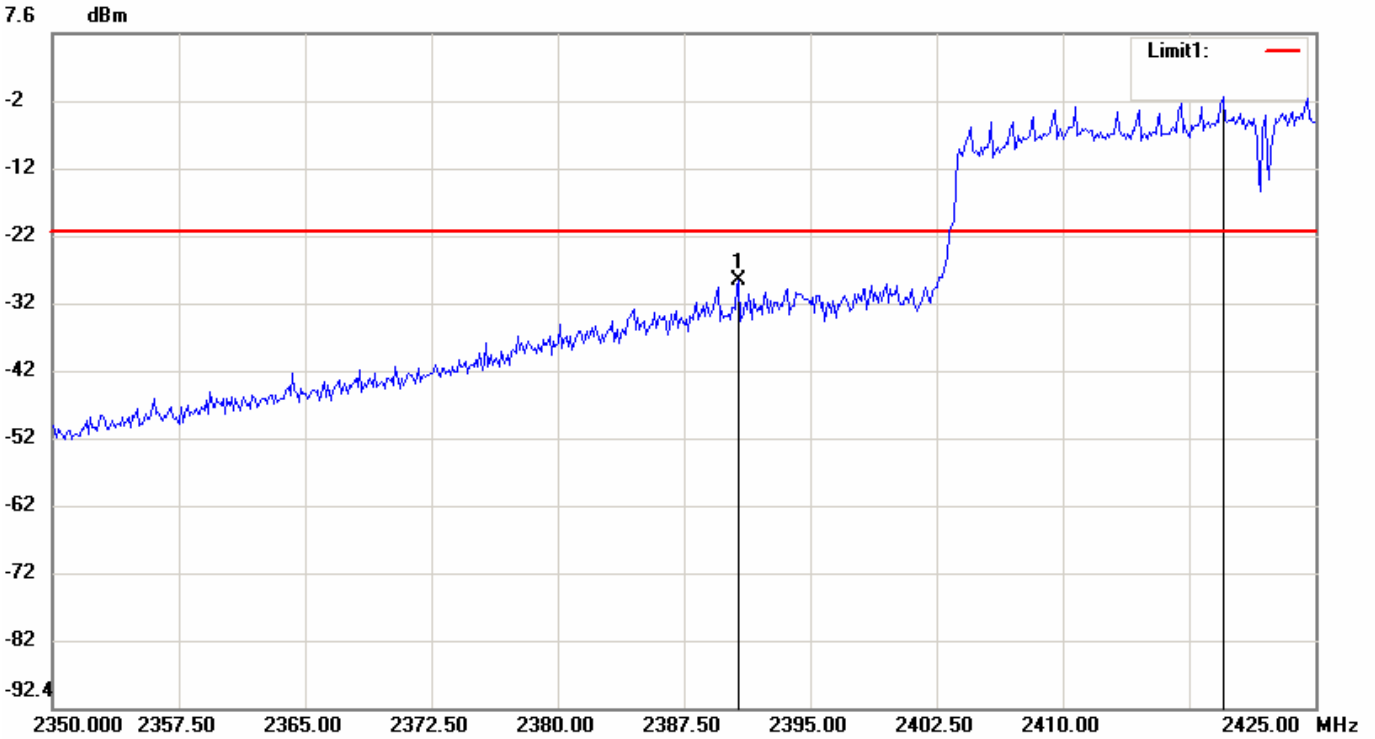
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 09-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	903.9500	-55.34
2	2443.7667	4.64
3	23418.5667	-45.47

File: CT-5374 **Data:** #64 **Date:** 2010/3/4 **Temperature:** 16 ℃

Time: PM 02:33:08 **Humidity:** 51 %



Condition: -21.67dBm **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 10dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

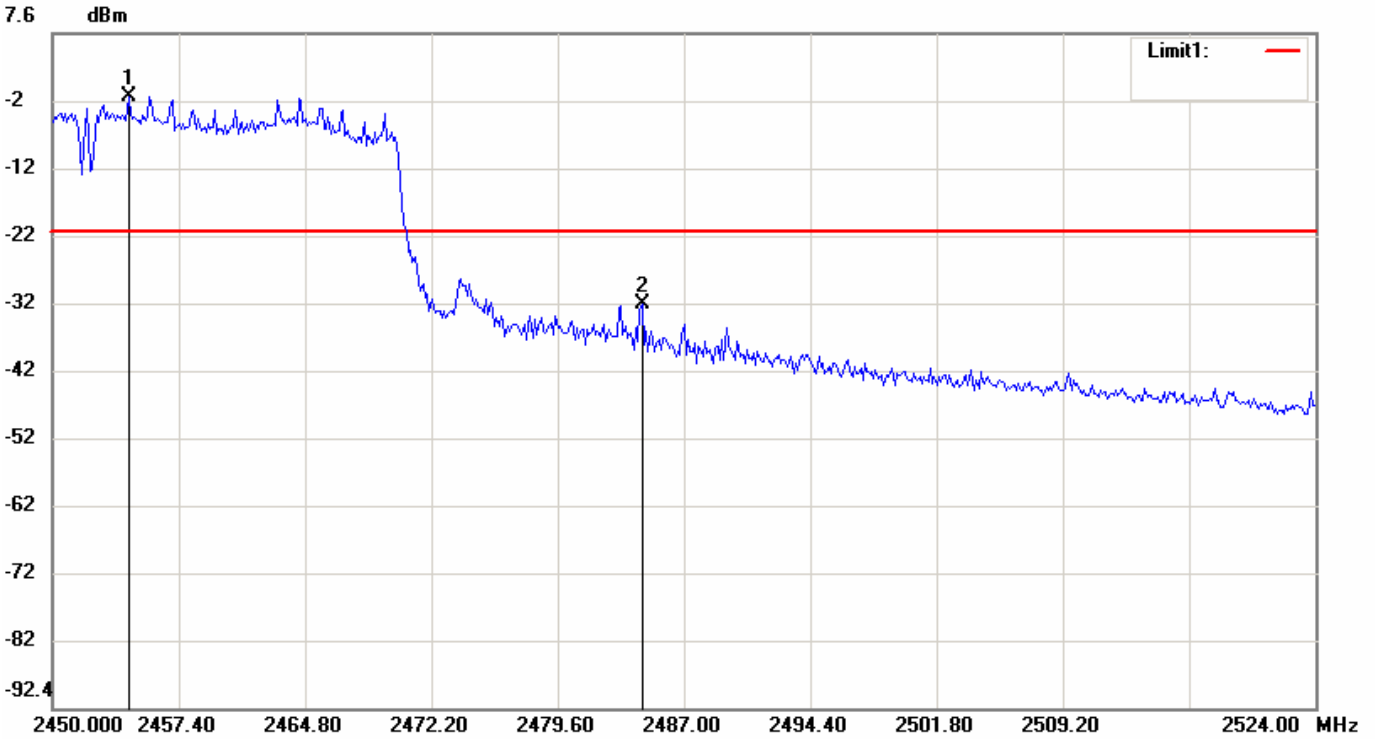
Test Mode:

Note: FCC-802.11GN_HT40 Channel 03-Bandedge

No.	Frequency(MHz)	Level(dBm)
1	2390.7500	-29.04
2	2419.5000	-1.67

File: **CT-5374** **Data:** **#73** **Date:** **2010/3/4** **Temperature:** **16 ℃**

Time: **PM 02:48:11** **Humidity:** **51 %**



Condition: **-21.8dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 10dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

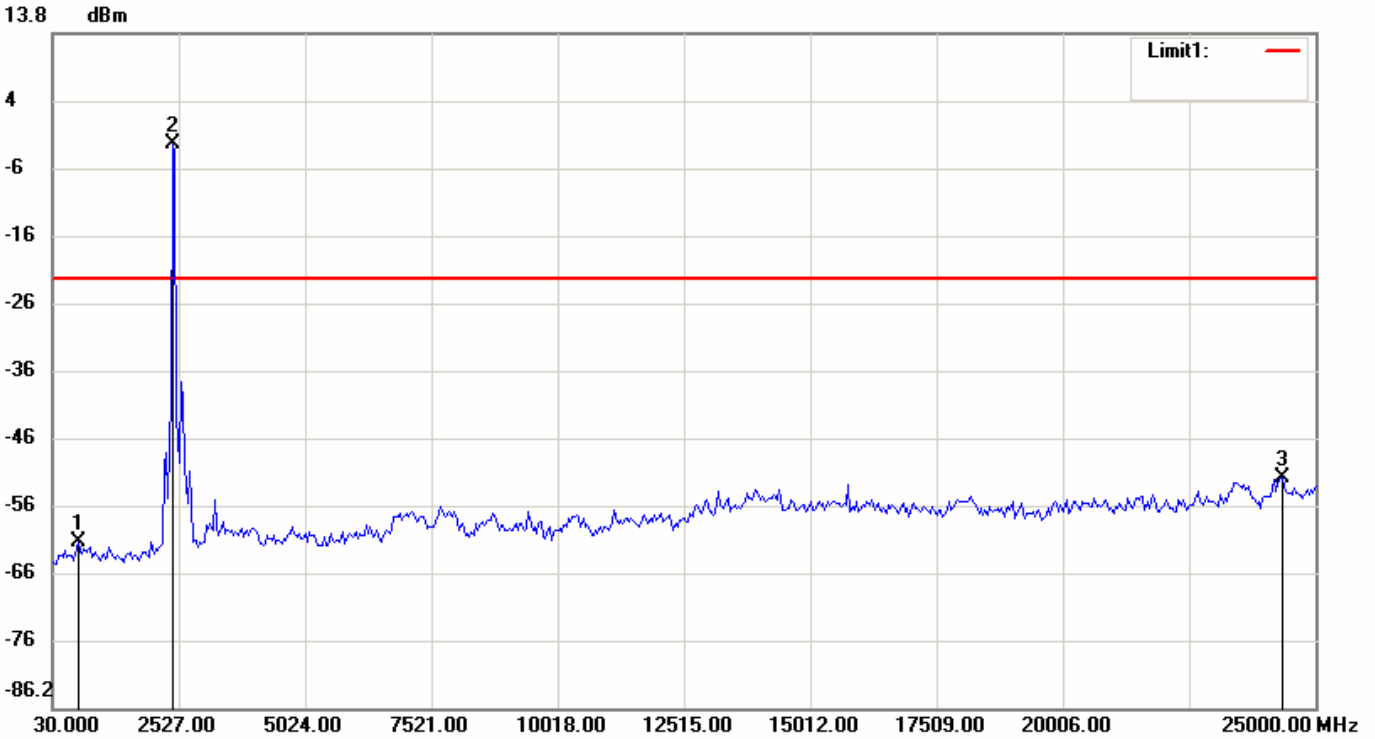
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 09-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2454.4400	-1.80
2	2484.5333	-32.45

File: CT-5374 **Data: #61** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 02:28:57 **Humidity: 51 %**



Condition: **-22.55dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

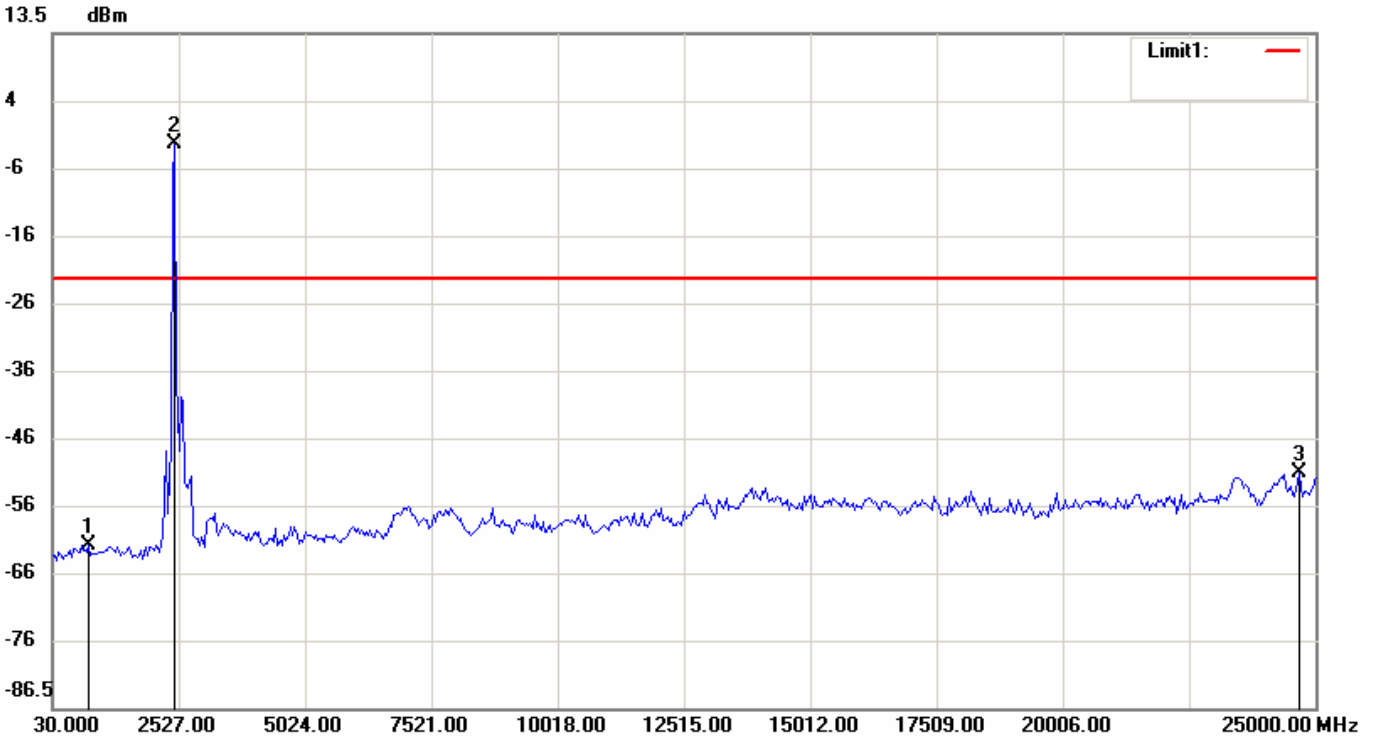
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 03-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	529.4000	-61.53
2	2402.1500	-2.55
3	24334.1333	-52.06

File: CT-5374 **Data: #66** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 02:36:28 **Humidity: 51 %**



Condition: **-22.91dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

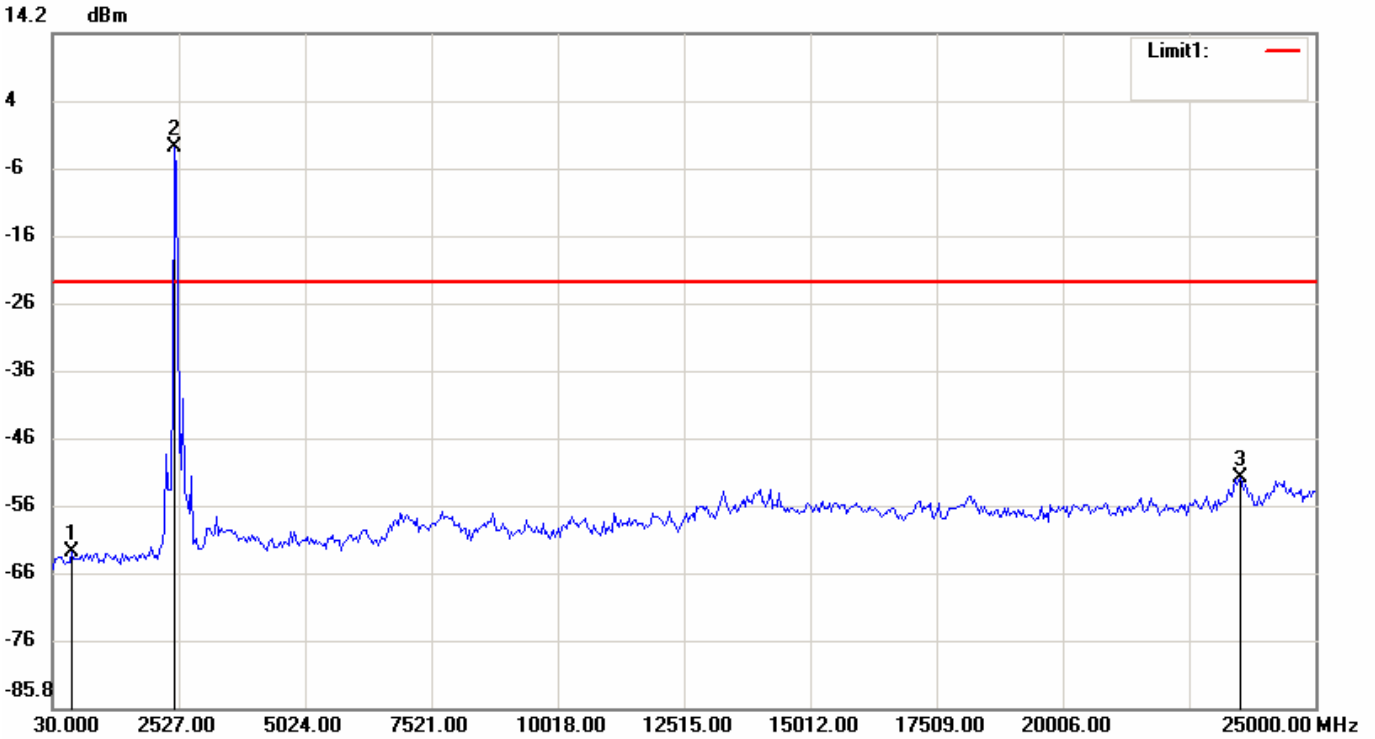
Test Mode:

Note: **FCC-802.11GN_HT40 Channel 06-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	737.4833	-62.45
2	2443.7667	-2.91
3	24667.0667	-51.60

File: CT-5374 **Data: #70** **Date: 2010/3/4** **Temperature: 16 ℃**

Time: PM 02:43:40 **Humidity: 51 %**



Condition: **-22.68dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

Test Mode:

Note: **FCC-802.11GN_HT40 Channel 09-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	404.5500	-62.81
2	2443.7667	-2.68
3	23501.8000	-51.66

10 RADIATED EMISSION MEASUREMENT

10.1 Standard Applicable

For unintentional radiator, the radiated emission shall comply with §15.109(a).

For intentional radiators, according to §15.247 (a), operation under this provision is limited to frequency hopping and direct sequence spread spectrum, and the out band emission shall be comply with §15.247 (c)

10.2 Measurement Procedure

1. Setup the configuration per figure 4 and 5 for frequencies measured below and above 1 GHz respectively.
2. For emission frequencies measured below 1 GHz, it is performed in a semi-anechoic chamber to determine the accurate frequencies of higher emissions. For emission frequencies measured above 1 GHz, a pre-scan be performed with a 1 meter measuring distance before final test.
3. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 120 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.
4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 ° to 360 ° with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.

   Note : A filter was used to avoid pre-amplifier saturated when measure TX operation mode.
5. Repeat step 4 until all frequencies need to be measured were complete.
6. Repeat step 5 with search antenna in vertical polarized orientations.
7. Check the three frequencies of highest emission with varying the datarate, placement of ANT. cables associated with EUT to obtain the worse case and record the result.

Figure 4 : Frequencies measured below 1 GHz configuration

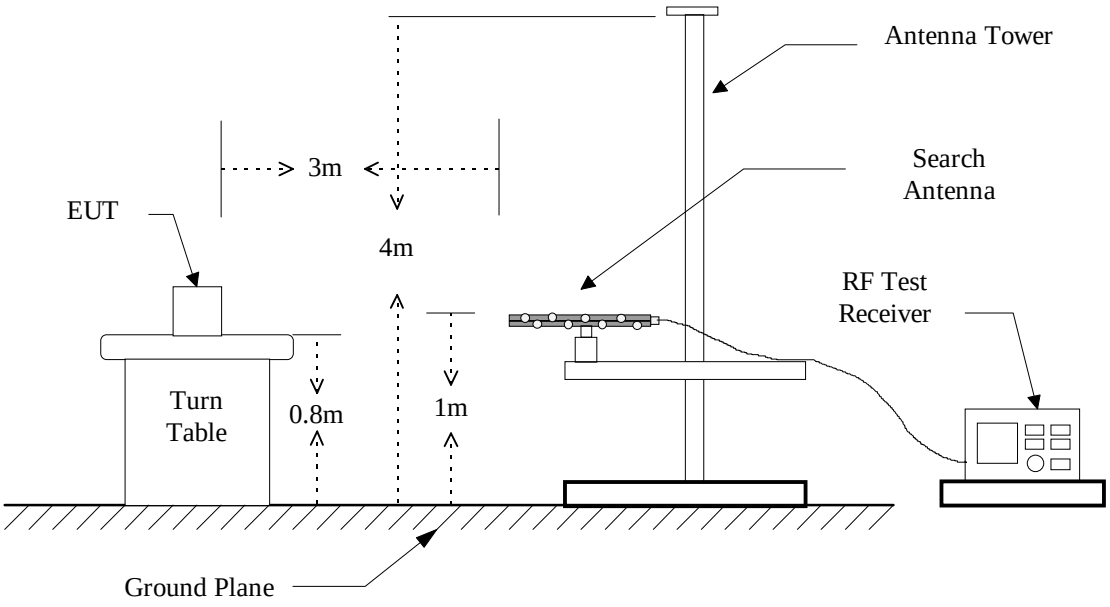
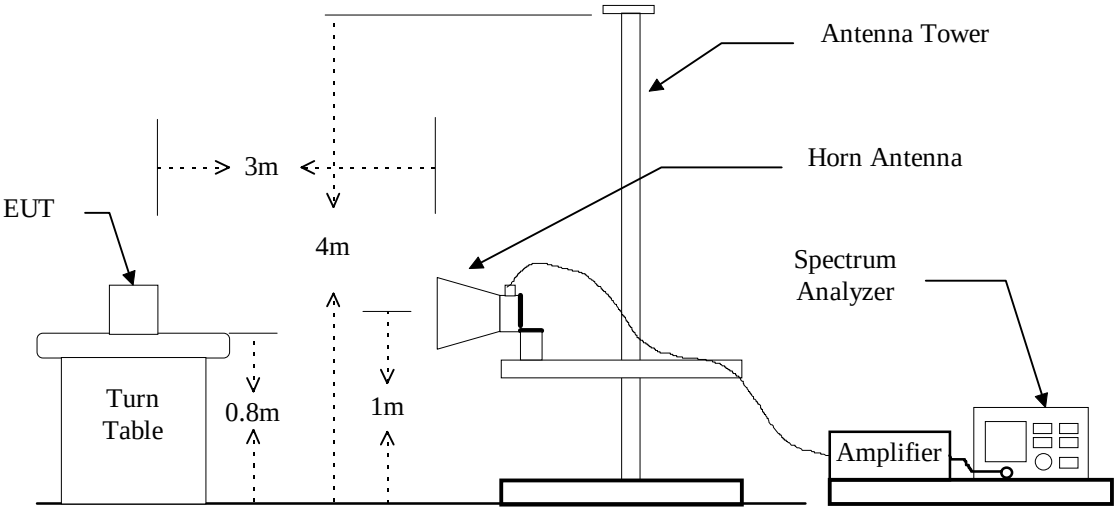


Figure 5 : Frequencies measured above 1 GHz configuration



10.3 Measuring Instrument

The following instrument are used for radiated emissions measurement :

Equipment	Manufacturer	Model No.	Next Cal. Due
EMI Test Receiver	R&S	ESIB7	07/19/2010
Spectrum Analyzer	Rohde & Schwarz	FSU46	11/18/2010
Horn Antenna	EMCO	3115	12/10/2010
BiLog Antenna	Schaffner	CBL 6112B	08/18/2010
Horn Antenna	EMCO	3116	07/13/2010
Preamplifier	Hewlett-Packard	8449B	10/11/2010

Measuring instrument setup in measured frequency band when specified detector function is used :

Frequency Band (MHz)	Instrument	Function	Resolution Bandwidth	Video Bandwidth
30 to 1000	RF Test Receiver	Quasi-Peak	120 kHz	300 kHz
	Spectrum Analyzer	Peak	120 kHz	300 kHz
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz
	Spectrum Analyzer	Average	1 MHz	10 Hz

10.4 Radiated Emission Data

10.4.1 Harmonic

10.4.1.1 IEEE 802.11b
Operation Mode: TX
Test Date: Mar. 12, 2010 Temperature: 12℃ Humidity: 57%

a) Channel 1
Fundamental Frequency: 2412 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4824.000	---	---	---	---	0.5	---	---	74.0	54.0
12060.000	---	---	---	---	5.8	---	---	74.0	54.0
14472.000	---	---	---	---	10.5	---	---	74.0	54.0
19296.000	---	---	---	---	13.3	---	---	74.0	54.0

b) Channel 6
Fundamental Frequency: 2437 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4874.000	---	---	---	---	0.5	---	---	74.0	54.0
7311.000	---	---	---	---	3.7	---	---	74.0	54.0
12185.000	---	---	---	---	5.8	---	---	74.0	54.0
19496.000	---	---	---	---	13.3	---	---	74.0	54.0

c) Channel 11
Fundamental Frequency: 2462 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4924.000	---	---	---	---	0.5	---	---	74.0	54.0
7386.000	---	---	---	---	3.7	---	---	74.0	54.0
12310.000	---	---	---	---	5.8	---	---	74.0	54.0
19696.000	---	---	---	---	13.3	---	---	74.0	54.0
22158.000	---	---	---	---	13.5	---	---	74.0	54.0

Note :
1. Item of margin shown in above table refer to average limit.
2. Remark “---” means that the emissions level is too low to be measured.

10.4.1.2 IEEE 802.11g
Operation Mode: TX
Test Date: Mar. 12, 2010 Temperature: 12℃ Humidity: 57%

a) Channel 1
Fundamental Frequency: 2412 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4824.000	---	---	---	---	0.5	---	---	74.0	54.0
12060.000	---	---	---	---	5.8	---	---	74.0	54.0
14472.000	---	---	---	---	10.5	---	---	74.0	54.0
19296.000	---	---	---	---	13.3	---	---	74.0	54.0

b) Channel 6
Fundamental Frequency: 2437 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4874.000	---	---	---	---	0.5	---	---	74.0	54.0
7311.000	---	---	---	---	3.7	---	---	74.0	54.0
12185.000	---	---	---	---	5.8	---	---	74.0	54.0
19496.000	---	---	---	---	13.3	---	---	74.0	54.0

c) Channel 11
Fundamental Frequency: 2462 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4924.000	---	---	---	---	0.5	---	---	74.0	54.0
7386.000	---	---	---	---	3.7	---	---	74.0	54.0
12310.000	---	---	---	---	5.8	---	---	74.0	54.0
19696.000	---	---	---	---	13.3	---	---	74.0	54.0
22158.000	---	---	---	---	13.5	---	---	74.0	54.0

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark “---” means that the emissions level is too low to be measured.

10.4.1.3 IEEE 802.11n, HT20
Operation Mode: TX
Test Date: Mar. 12, 2010 Temperature: 12℃ Humidity: 57%

a) Channel 1
Fundamental Frequency: 2412 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4824.000	---	---	---	---	0.5	---	---	74.0	54.0
12060.000	---	---	---	---	5.8	---	---	74.0	54.0
14472.000	---	---	---	---	10.5	---	---	74.0	54.0
19296.000	---	---	---	---	13.3	---	---	74.0	54.0

b) Channel 6
Fundamental Frequency: 2437 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4874.000	---	---	---	---	0.5	---	---	74.0	54.0
7311.000	---	---	---	---	3.7	---	---	74.0	54.0
12185.000	---	---	---	---	5.8	---	---	74.0	54.0
19496.000	---	---	---	---	13.3	---	---	74.0	54.0

c) Channel 11
Fundamental Frequency: 2462 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4924.000	---	---	---	---	0.5	---	---	74.0	54.0
7386.000	---	---	---	---	3.7	---	---	74.0	54.0
12310.000	---	---	---	---	5.8	---	---	74.0	54.0
19696.000	---	---	---	---	13.3	---	---	74.0	54.0
22158.000	---	---	---	---	13.5	---	---	74.0	54.0

Note :
1. Item of margin shown in above table refer to average limit.
2. Remark “---” means that the emissions level is too low to be measured.

10.4.1.4 IEEE 802.11n, HT40
Operation Mode: TX
Test Date: Mar. 12, 2010 Temperature: 12℃ Humidity: 57%

a) Channel 3
Fundamental Frequency: 2422 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4844.000	---	---	---	---	0.5	---	---	74.0	54.0
7266.000	---	---	---	---	5.8	---	---	74.0	54.0
12110.000	---	---	---	---	10.5	---	---	74.0	54.0
19376.000	---	---	---	---	13.3	---	---	74.0	54.0

b) Channel 6
Fundamental Frequency: 2437 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4874.000	---	---	---	---	0.5	---	---	74.0	54.0
7311.000	---	---	---	---	3.7	---	---	74.0	54.0
12185.000	---	---	---	---	5.8	---	---	74.0	54.0
19496.000	---	---	---	---	13.3	---	---	74.0	54.0

c) Channel 9
Fundamental Frequency: 2452 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4904.000	---	---	---	---	0.5	---	---	74.0	54.0
7356.000	---	---	---	---	3.7	---	---	74.0	54.0
12260.000	---	---	---	---	5.8	---	---	74.0	54.0
19616.000	---	---	---	---	13.3	---	---	74.0	54.0
22068.000	---	---	---	---	13.5	---	---	74.0	54.0

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.

10.4.1.5 IEEE 802.11n, HT40, SISO
Operation Mode: TX
Test Date: Mar. 12, 2010 Temperature: 12℃ Humidity: 57%

a) Channel 3
Fundamental Frequency: 2422 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4844.000	---	---	---	---	0.5	---	---	74.0	54.0
7266.000	---	---	---	---	5.8	---	---	74.0	54.0
12110.000	---	---	---	---	10.5	---	---	74.0	54.0
19376.000	---	---	---	---	13.3	---	---	74.0	54.0

b) Channel 6
Fundamental Frequency: 2437 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4874.000	---	---	---	---	0.5	---	---	74.0	54.0
7311.000	---	---	---	---	3.7	---	---	74.0	54.0
12185.000	---	---	---	---	5.8	---	---	74.0	54.0
19496.000	---	---	---	---	13.3	---	---	74.0	54.0

c) Channel 9
Fundamental Frequency: 2452 MHz

Frequency	Reading (dBuV)				Factor	Result @3m		Limit @3m	
	H		V		(dB)	(dBuV/m)		(dBuV/m)	
(MHz)	Peak	Ave	Peak	Ave	Corr.	Peak	Ave	Peak	Ave.
4904.000	---	---	---	---	0.5	---	---	74.0	54.0
7356.000	---	---	---	---	3.7	---	---	74.0	54.0
12260.000	---	---	---	---	5.8	---	---	74.0	54.0
19616.000	---	---	---	---	13.3	---	---	74.0	54.0
22068.000	---	---	---	---	13.5	---	---	74.0	54.0

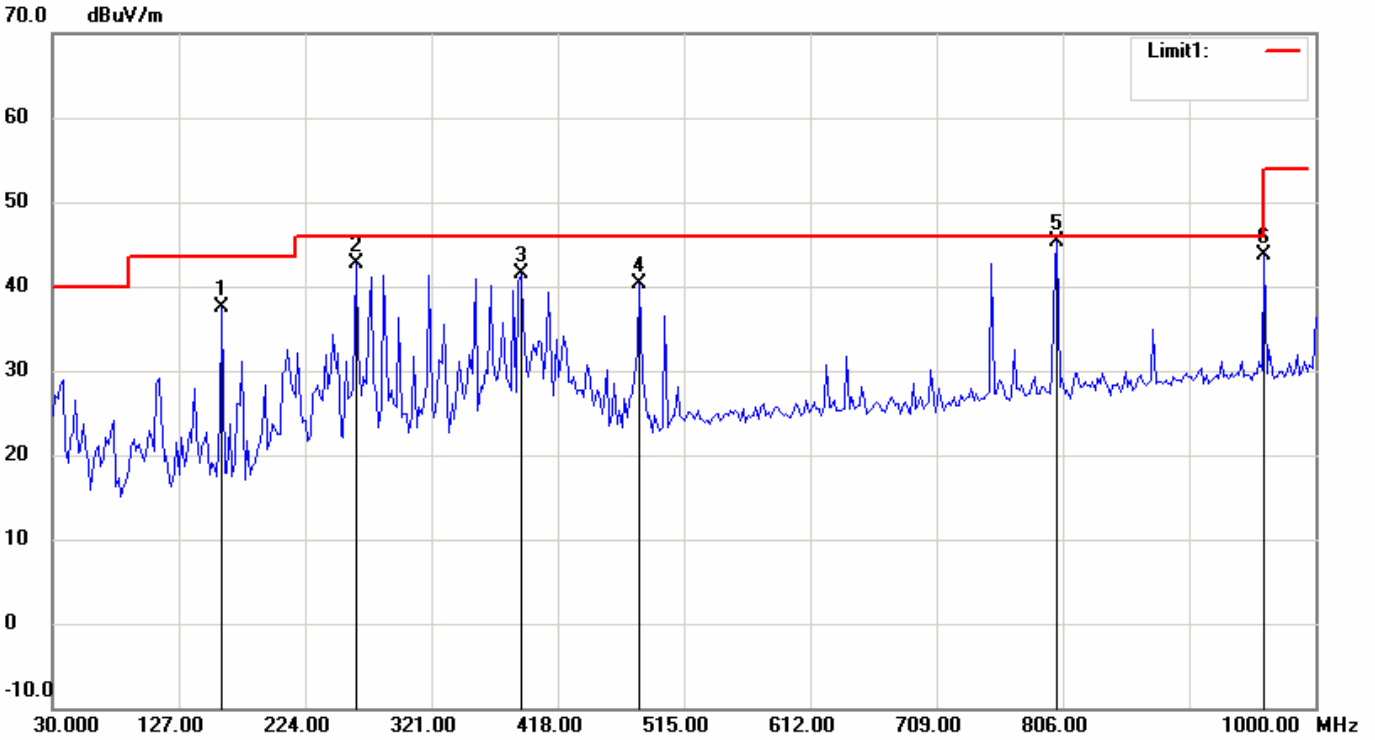
Note :
1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.

10.4.2 Spurious Emission

a) Emission frequencies below 1 GHz

File: **Data: #1** **Date: 2010/3/12** **Temperature: 12 ℃**

Time: AM 09:33:31 **Humidity: 57 %**



Condition: **NCC_LP0002_30-1000MHz** **Polarization: Horizontal**

EUT: **Distance:**

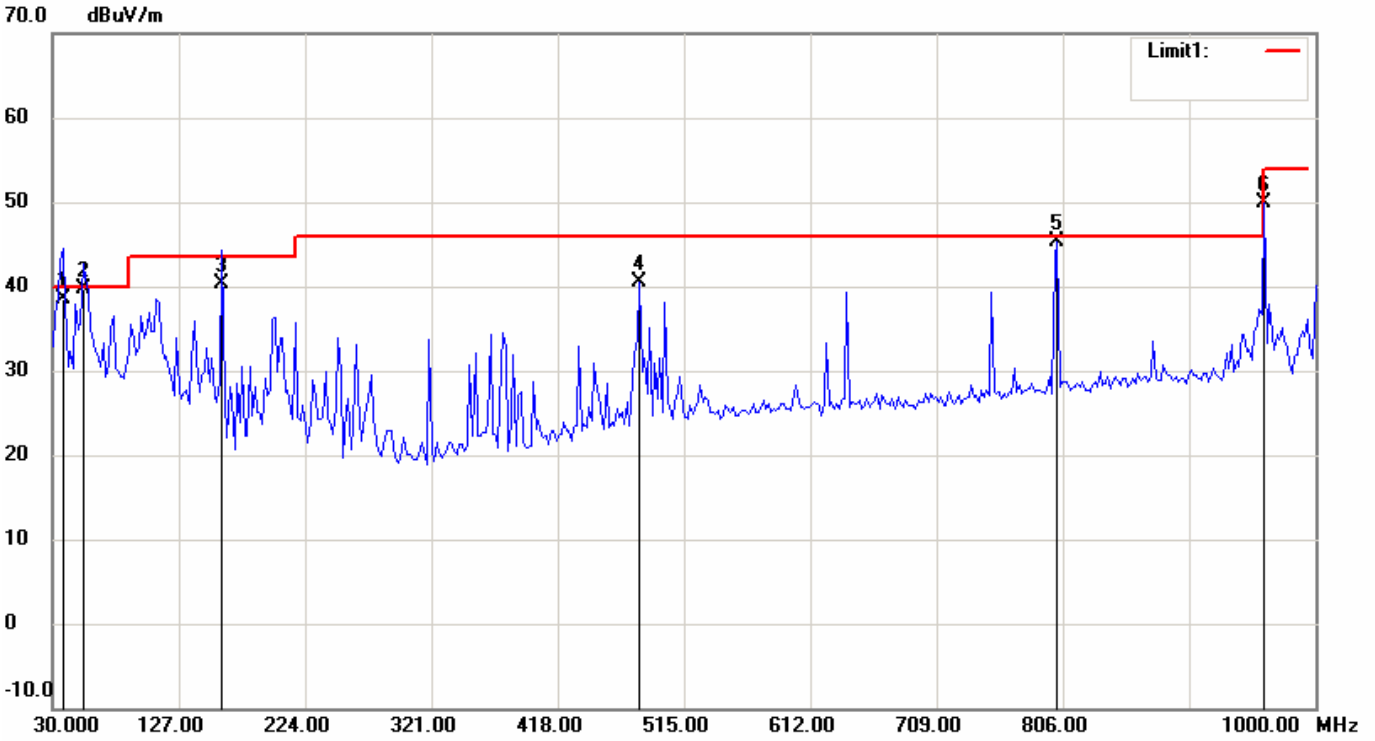
Model:

Test Mode:

No.	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
	(MHz)	(dBuV/m)		Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)
1	160.2405	25.38	peak	12.17	37.55	43.50	-5.95
2	263.2665	27.07	peak	15.70	42.77	46.00	-3.23
3	389.6192	22.68	peak	18.81	41.49	46.00	-4.51
4	480.9820	19.90	peak	20.39	40.29	46.00	-5.71
5	801.7234	21.03	peak	24.34	45.37	46.00	-0.63
6	961.1222	17.39	peak	26.22	43.61	54.00	-10.39

File: **Data: #2** **Date: 2010/3/12** **Temperature: 12 ℃**

Time: AM 09:37:48 **Humidity: 57 %**



Condition: **NCC_LP0002_30-1000MHz** **Polarization: Vertical**

EUT: **Distance:**

Model:

Test Mode:

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	37.7756	22.25	QP	16.17	38.42	40.00	-1.58
2	53.3267	30.51	QP	9.16	39.67	40.00	-0.33
3	160.2405	28.20	QP	12.17	40.37	43.50	-3.13
4	480.9820	20.03	peak	20.39	40.42	46.00	-5.58
5	801.7234	20.88	peak	24.34	45.22	46.00	-0.78
6	961.1222	23.62	peak	26.22	49.84	54.00	-4.16

b) Emission frequencies above 1 GHz

Frequency (MHz)	Reading (dBuV)				Correct Factor (dB/m)	Result @3m (dBuV/m)		Limit @3m (dBuV/m)	
	H		V						
	Peak	AVG	Peak	AVG		Peak	AVG	Peak	AVG
1118.9103	57.4	---	57.8	---	-14.01	43.8	---	74.0	54.0
1280.4486	55.7	---	54.9	---	-13.20	42.5	---	74.0	54.0
1601.2820	56.8	---	---	---	-11.60	45.2	---	74.0	54.0

Note:

1. Place of Measurement: Measuring site of the ETC.
2. If the data table appeared symbol of "---" means the value was too low to be measured.
3. The estimated measurement uncertainty of the result measurement is
   ±4.6dB (30MHz≦f<300MHz).
   ±4.4dB (300MHz≦f≦1000MHz).
   ±2.9dB (1GHz<f≦18GHz).
   ±3.4dB (18GHz<f≦40GHz).

`

10.4.3 Radiated Measurement at Bandedge with Fundamental Frequencies

10.4.3.1 IEEE 802.11b

Test Date: Mar. 12, 2010 Temperature: 12℃ Humidity: 57%

Operation Mode: TX

Operation Channel	Test Frequency (MHz)	Reading (dBuV) H Peak	H Ave	V Peak	V Ave	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Result @3m (dBuV/m) Ave	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.
1	2390.000	28.07	16.59	33.66	22.77	29.8	63.46	52.57	74	54
11	2483.500	28.64	18.63	33.78	22.63	29.8	63.58	52.43	74	54

10.4.3.2 IEEE 802.11g

Test Date: Mar. 12, 2010 Temperature: 12℃ Humidity: 57%

Operation Mode: TX

Operation Channel	Test Frequency (MHz)	Reading (dBuV) H Peak	H Ave	V Peak	V Ave	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Result @3m (dBuV/m) Ave	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.
1	2390.000	37.26	22.32	44.13	23.67	29.8	73.93	53.47	74	54
11	2483.500	37.91	22.41	44.07	23.61	29.8	73.87	53.41	74	54

Note :

1. Remark "---" means that the emissions level is too low to be measured.
2. The result is the highest value of radiated emission from restrict band of 2310 ~ 2390 MHz and 2483.5 ~ 2500 MHz.

10.4.3.3 IEEE 802.11n, HT20

Test Date: Mar. 12, 2010 Temperature: 12℃ Humidity: 57%

Operation Mode: TX

Operation Channel	Test Frequency (MHz)	Reading (dBuV) H Peak	H Ave	V Peak	V Ave	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Result @3m (dBuV/m) Ave	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.
1	2390.000	37.94	22.06	44.00	23.44	29.8	73.80	53.24	74	54
11	2483.500	37.88	22.08	43.98	23.61	29.8	73.78	53.41	74	54

10.4.3.4 IEEE 802.11n, HT40

Test Date: Mar. 12, 2010 Temperature: 12℃ Humidity: 57%

Operation Mode: TX

Operation Channel	Test Frequency (MHz)	Reading (dBuV) H Peak	H Ave	V Peak	V Ave	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Result @3m (dBuV/m) Ave	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.
3	2390.000	35.98	23.89	40.70	23.87	29.8	70.50	53.69	74	54
9	2483.500	41.25	22.60	43.87	22.74	29.8	73.67	52.54	74	54

10.4.3.5 IEEE 802.11n, HT40, SISO

Test Date: Mar. 12, 2010 Temperature: 12℃ Humidity: 57%

Operation Mode: TX

Operation Channel	Test Frequency (MHz)	Reading (dBuV) H Peak	H Ave	V Peak	V Ave	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Result @3m (dBuV/m) Ave	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.
3	2390.000	35.29	23.71	40.96	24.01	29.8	70.76	53.81	74	54
9	2483.500	41.69	22.60	43.30	22.67	29.8	73.10	52.47	74	54

Note :

1. Remark "---" means that the emissions level is too low to be measured.
2. The result is the highest value of radiated emission from restrict band of 2310 ~ 2390 MHz and 2483.5 ~ 2500 MHz.

10.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor, High Pass Filter Loss(if used) and Cable Loss, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

where

Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain