Test Report

Product Name	802.11bgn USB dongle
Model No	RE300U, RE150U
FCC ID.	XKR-RE300U-RE150U

Applicant	BaudTec Corporation
Address	12F, No.181, Sec.1, Tatung Rd., Hsi-Chih City Taipei County, 221, Taiwan. R.O.C.

Date of Receipt	June 09, 2009
Issue Date	July 06, 2009
Report No.	096143R-RFUSP05V01
Report Version	V1.0

Test Report Certification

Issue Date: July 06, 2009
Report No.: 096143R-RFUSP05V01

Accredited by NIST (NVLAP)
NVLAP Lab Code: 200533-0

Product Name	802.11bgn USB dongle
Applicant	BaudTec Corporation
Address	12F, No.181, Sec.1, Tatung Rd., Hsi-Chih City Taipei County, 221, Taiwan. R.O.C.
Manufacturer	BaudTec Corporation
Model No.	RE300U, RE150U
Rated Voltage	AC 120V/60Hz
Working Voltage	DC 5V(Power by USB)
Trade Name	BaudTec
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2008 ANSI C63.4: 2003
Test Result	Complied

NVLAP Lab Code: 200533-0

The test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.
This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented By : Anita Chou
(Senior Engineering Adm. Specialist / Anita Chou)

Tested By : Eason Hung
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Approved By :
(Manager / Vincent Lin)

Testing Laboratory
0914

TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	802.11bgn USB dongle
Trade Name	BaudTec
Model No.	RE300U, RE150U
FCC ID.	XKR-RE300U-RE150U
Frequency Range	2412-2462MHz for 802.11b/g/n-20BW, 2422-2452MHz for 802.11n-40BW
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: 6.5-135Mbps
Type of Modulation	802.11b:DSSS, DBPSK, DQPSK, CCK 802.11g/n:OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Printed on PCB
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	BaudTec	N/A	Printed on PCB	3.4dBi in 2.4 GHz

802.11b/g/n-20MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

802.11n-40MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2422 MHz	Channel 02:	2427 MHz	Channel 03:	2432 MHz	Channel 04:	2437 MHz
Channel 05:	2442 MHz	Channel 06:	2447 MHz	Channel 07:	2452 MHz		

Note:

1. The EUT is a 802.11bgn USB dongle with a built-in 2.4GHz WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps 、802.11g is 6Mbps、802.11n(20M-BW) is 6.5Mbps and 、802.11n(40M-BW) is 13.5Mbps)
4. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices
5. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
6. The EUT is including two models for different marketing requirement.

1.2. Operational Description

The EUT is a 802.11bgn USB dongle with 11 channels. This device provided four kinds of transmitting speed 1, 2, 5.5 and 11Mbps and the device of RF carrier is DBPSK, DQPSK and CCK (IEEE 802.11b). The device provided of eight kinds of transmitting speed 6, 9, 12, 18, 24, 36, 48 and 54Mbps the device of RF carrier is BPSK, QPSK, 16QAM and 64QAM (IEEE 802.11g).

The device provided of eight kinds of transmitting speed 6.5、13、19.5、26、39、52、58.5 and 65Mbps in 802.11n(20M-BW) mode and 13.5、27、40.5、54、81、108、121.5 and 135Mbps(40M-BW) the device of RF carrier is BPSK, QPSK, 16QAM and 64QAM (IEEE 802.11n), The IEEE 802.11n is Multiple In Multiple out (MIMO) Technology, and three antennas to support 1(Transmit) * 2(Receive) MIMO technology.

This 802.11bgn USB dongle, compliant with IEEE 802.11b and IEEE 802.11g/n, is a high-efficiency Wireless LAN adapter. It allows your computer to connect to a wireless network and to share resources, such as files or printers without being bound to the network wires. Operation in 2.4GHz Direst Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Division Multiplexing (OFDM) radio transmission, the 802.11bgn USB dongle Wired Equivalent Protection (WEP) algorithm is used. In addition, its standard compliance ensures that it can communicate with any IEEE 802.11b and IEEE 802.11g/n network.

Test Mode:	Mode 1: Transmitter (802.11b 1Mbps)
	Mode 2: Transmitter (802.11g 6Mbps)
	Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW)
	Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW)

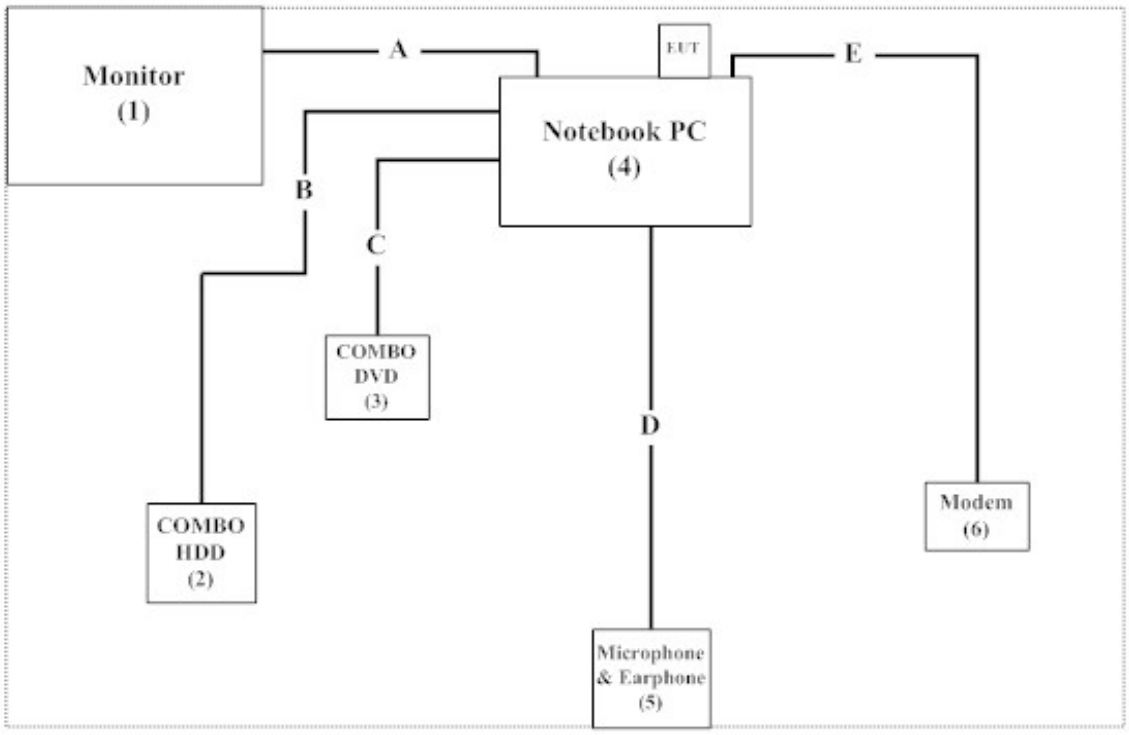
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
(1)	Monitor	Dell	2408WFPb	CN-0G293H-74261-93I-3HWS	Non-Shielded, 1.8m
(2)	COMBO HDD	TeraSys	F12-UF	A0100215-64b0013	Non-Shielded, 1.8m
(3)	COMBO DVD	DELL	PD01S	N/A	N/A
(4)	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m
(5)	Microphone & Earphone	PCHOME	N/A	N/A	N/A
(6)	Modem	ACEEX	DM-1414	0102027556	Non-Shielded, 1.8m

Signal Cable Type		Signal cable Description
A	VGA Cable	Non-shielded, 1.8m, with two ferrite cores bonded.
B	1394 Cable	Non-shielded, 1.2m
C	Combo DVD Cable	Non-shielded, 0.6m
D	Earphone & Microphone Cable	Non-shielded, 2.0m
E	RS-232 Cable	Non-shielded, 1.2m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.4

(2) Execute “MP Diagnostic” Program Ver 0.0022.0317.2009 on the EUT.

(3) Configure the test mode, the test channel, and the data rate to start the continuous transmit

(4) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://tw.quietek.com/modules/myalbum/
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

Site Name: Quietek Corporation
Site Address: No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen,
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TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

Testing Laboratory
0914

2. Conducted Emission

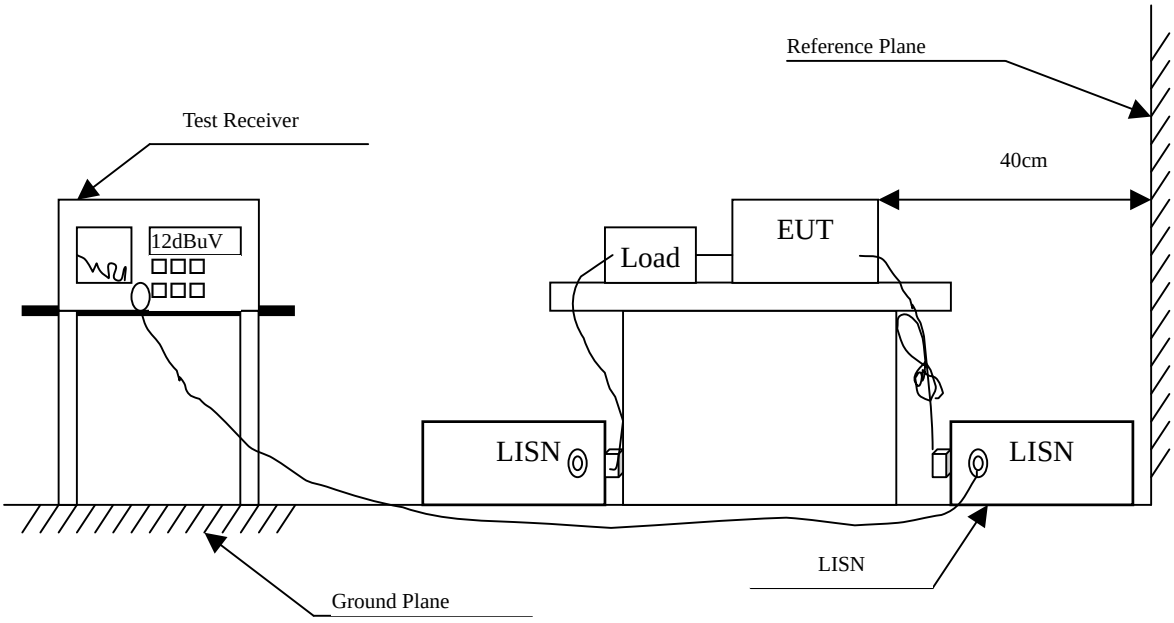
2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2009	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2009	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2009	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2009	
5	No.1 Shielded Room			N/A	

Note: All instruments are calibrated every one year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	QP	AVG
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : 802.11bgn USB dongle
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.162	9.750	31.990	41.740	-23.917	65.657
0.345	9.650	29.750	39.400	-21.029	60.429
0.779	9.650	38.650	48.300	-7.700	56.000
0.908	9.670	31.360	41.030	-14.970	56.000
8.170	9.780	20.010	29.790	-30.210	60.000
17.568	9.990	20.660	30.650	-29.350	60.000
Average					
0.162	9.750	24.330	34.080	-21.577	55.657
0.345	9.650	21.190	30.840	-19.589	50.429
0.779	9.650	20.620	30.270	-15.730	46.000
0.908	9.670	23.680	33.350	-12.650	46.000
8.170	9.780	14.150	23.930	-26.070	50.000
17.568	9.990	13.430	23.420	-26.580	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : 802.11bgn USB dongle
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.170	9.743	29.720	39.463	-25.966	65.429
0.201	9.716	30.410	40.126	-24.417	64.543
0.439	9.647	34.210	43.857	-13.886	57.743
0.630	9.650	28.430	38.080	-17.920	56.000
0.759	9.664	30.890	40.554	-15.446	56.000
3.056	9.690	17.960	27.650	-28.350	56.000
Average					
0.170	9.743	21.150	30.893	-24.536	55.429
0.201	9.716	26.620	36.336	-18.207	54.543
0.439	9.647	23.320	32.967	-14.776	47.743
0.630	9.650	21.780	31.430	-14.570	46.000
0.759	9.664	22.010	31.674	-14.326	46.000
3.056	9.690	11.820	21.510	-24.490	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Peak Power Output

3.1. Test Equipment

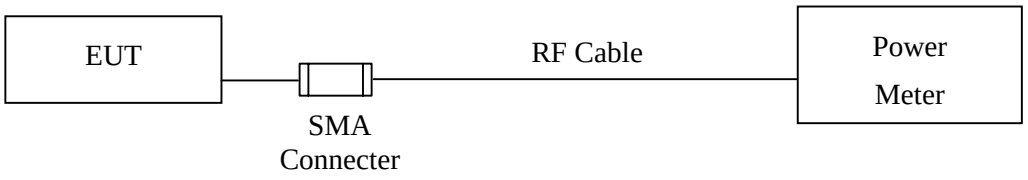
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2009
X	Power Sensor	Anritsu	MA2491A/034457	May, 2009

Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

3.2. Test Setup

Conducted Measurement



3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Test Procedure

The EUT was tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : 802.11bgn USB dongle
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps)

Cable Loss=0.5dB		Peak Power Output				
Channel No.	Frequency (MHz)	Data Rate				Required Limit
		1	2	5.5	11	
1	2412.00	18.92	--	--	--	1Watt= 30 dBm
6	2437.00	18.63	18.61	18.57	18.55	1Watt= 30 dBm
11	2462.00	18.81	--	--	--	1Watt= 30 dBm

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : 802.11bgn USB dongle
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)

Cable Loss=0.5dB		Peak Power Output								
Channel No.	Frequency (MHz)	Data Rate								Required Limit
		6	9	12	18	24	36	48	54	
1	2412.00	22.27	--	--	--	--	--	--	--	1Watt= 30 dBm
6	2437.00	22.27	22.24	22.21	22.2	22.19	22.18	22.19	22.2	1Watt= 30 dBm
11	2462.00	22.43	--	--	--	--	--	--	--	1Watt= 30 dBm

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : 802.11bgn USB dongle
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW)

Cable Loss=0.5dB		Peak Power Output								
Channel No.	Frequency (MHz)	Data Rate								Required Limit
		6.5	13	19.5	26	39	52	58.5	65	
1	2412.00	22.46	--	--	--	--	--	--	--	1Watt= 30 dBm
6	2437.00	22.32	22.3	22.28	22.26	22.26	22.24	22.23	22.27	1Watt= 30 dBm
11	2462.00	22.59	--	--	--	--	--	--	--	1Watt= 30 dBm

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : 802.11bgn USB dongle
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW)

Cable Loss=0.5dB		Peak Power Output								
Channel No.	Frequency (MHz)	Data Rate								Required Limit
		13.5	27	40.5	54	81	108	121.5	135	
1	2422.00	22.28	--	--	--	--	--	--	--	1Watt= 30 dBm
4	2437.00	22.26	22.25	22.21	22.24	22.19	22.18	22.21	22.23	1Watt= 30 dBm
7	2452.00	22.31	--	--	--	--	--	--	--	1Watt= 30 dBm

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

4. Radiated Emission

4.1. Test Equipment

The following test equipment are used during the radiated emission test:

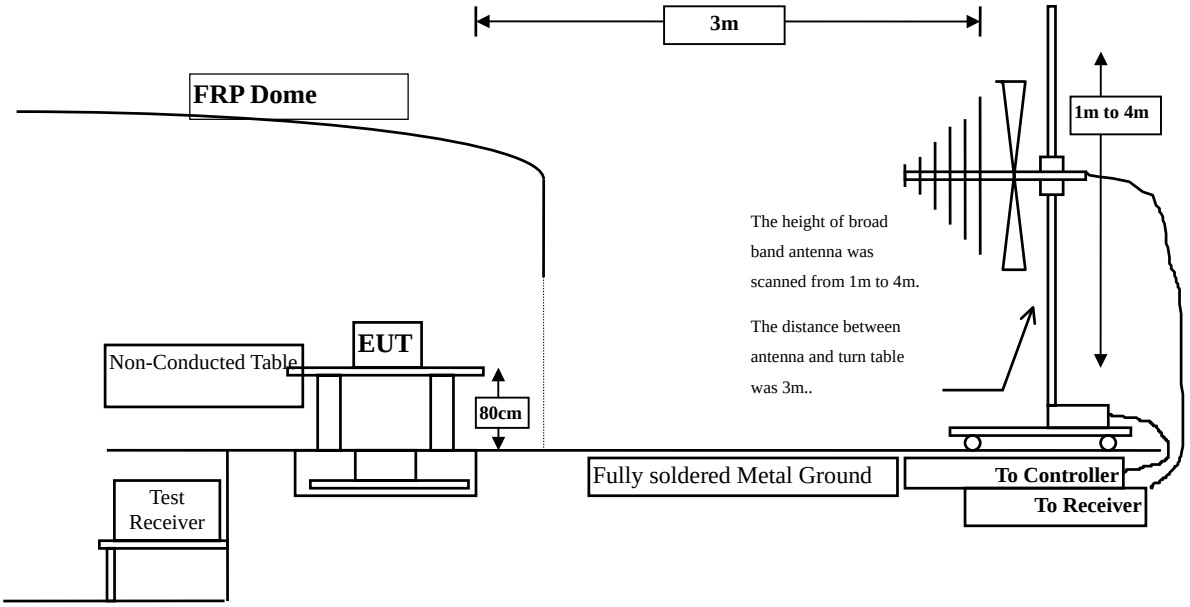
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2008
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2008
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2009
	X	Pre-Amplifier	AGILENT	8447D/2944A09549	Sep., 2008
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2008
	X	Spectrum Analyzer	Advantest	R3162/91700283	Oct., 2008
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2009
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

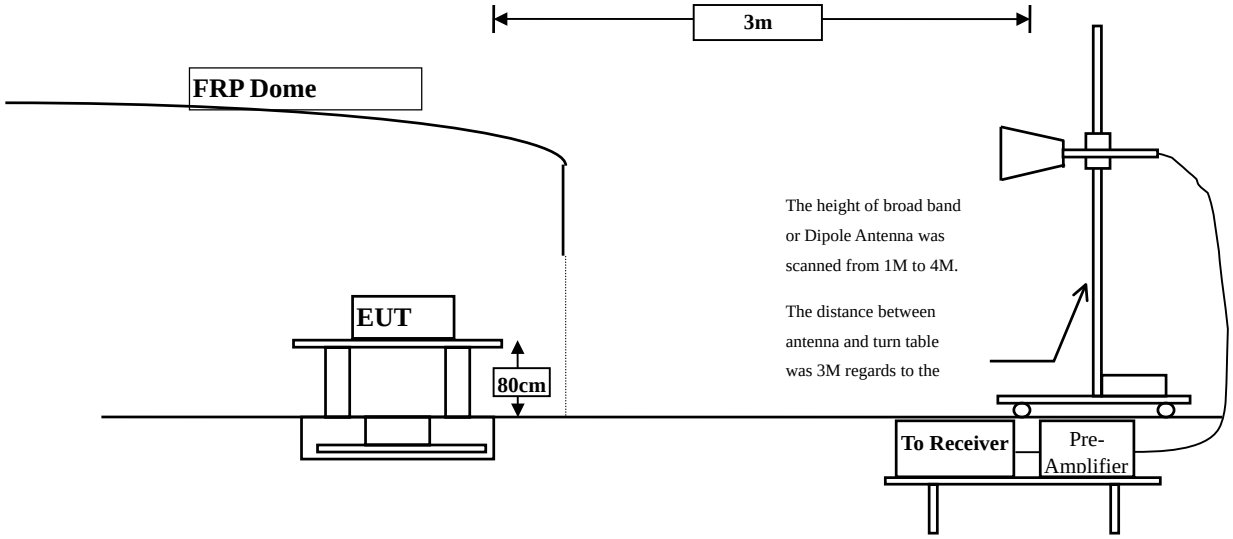
2. The test instruments marked with "X" are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks: E field strength (dBuV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range form 30MHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : 802.11bgn USB dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	9.582	46.420	56.002	-17.998	74.000
7236.000	14.401	37.430	51.831	-22.169	74.000
9648.000	19.795	36.380	56.175	-17.825	74.000
Average Detector:					
4824.000	9.582	42.980	52.562	-1.438	54.000
9648.000	19.795	22.550	42.345	-11.655	54.000
Vertical					
Peak Detector:					
4824.000	8.462	40.140	48.602	-25.398	74.000
7236.000	15.412	36.060	51.472	-22.528	74.000
9648.000	19.005	36.130	55.135	-18.865	74.000
Average Detector:					
9648.000	19.005	22.550	41.555	-12.445	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11bgn USB dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	Db	dBuV	dBuV/m	Db	dBuV/m
Horizontal					
Peak Detector:					
4874.000	9.473	45.500	54.973	-19.027	74.000
7311.000	14.540	35.900	50.439	-23.561	74.000
9748.000	20.024	37.270	57.295	-16.705	74.000
Average Detector:					
4874.000	9.473	41.910	51.383	-2.617	54.000
9748.000	20.024	23.090	43.115	-10.885	54.000
Vertical					
Peak Detector:					
4874.000	8.882	40.430	49.311	-24.689	74.000
7311.000	15.283	35.250	50.533	-23.467	74.000
9748.000	19.228	36.900	56.129	-17.871	74.000
Average Detector:					
9748.000	19.228	23.130	42.359	-11.641	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11bgn USB dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	Db	dBuV	dBuV/m	Db	dBuV/m
Horizontal					
Peak Detector:					
4924.000	9.487	45.000	54.486	-19.514	74.000
7386.000	14.798	35.670	50.468	-23.532	74.000
9848.000	20.005	36.650	56.656	-17.344	74.000
Average Detector:					
4924.000	9.487	41.810	51.296	-2.704	54.000
9848.000	20.005	22.850	42.856	-11.144	54.000
Vertical					
Peak Detector:					
4924.000	9.415	40.840	50.254	-23.746	74.000
7386.000	15.269	34.790	50.059	-23.941	74.000
9848.000	19.191	36.230	55.421	-18.579	74.000
Average Detector:					
9848.000	19.191	22.910	42.101	-11.899	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11bgn USB dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	Db	dBuV	dBuV/m	Db	dBuV/m
Horizontal					
Peak Detector:					
4824.000	9.582	41.150	50.732	-23.268	74.000
7236.000	14.401	36.470	50.871	-23.129	74.000
9648.000	19.795	35.930	55.725	-18.275	74.000
Average Detector:					
9648.000	19.795	22.770	42.565	-11.435	54.000
Vertical					
Peak Detector:					
4824.000	8.462	38.010	46.472	-27.528	74.000
7236.000	15.412	36.370	51.782	-22.218	74.000
9648.000	19.005	36.700	55.705	-18.295	74.000
Average Detector:					
9648.000	19.005	23.120	42.125	-11.875	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11bgn USB dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	Db	dBuV	dBuV/m	Db	dBuV/m
Horizontal					
Peak Detector:					
4874.000	9.473	41.000	50.473	-23.527	74.000
7311.000	14.540	35.700	50.239	-23.761	74.000
9748.000	20.024	36.340	56.364	-17.636	74.000
Average Detector:					
9748.000	20.024	23.070	43.095	-10.905	54.000
Vertical					
Peak Detector:					
4874.000	8.882	38.130	47.011	-26.989	74.000
7311.000	15.283	34.970	50.253	-23.747	74.000
9748.000	19.228	36.330	55.559	-18.441	74.000
Average Detector:					
9748.000	19.228	22.920	42.149	-11.851	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11bgn USB dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	Db	dBuV	dBuV/m	Db	dBuV/m
Horizontal					
Peak Detector:					
4924.000	9.487	41.100	50.586	-23.414	74.000
7386.000	14.798	35.470	50.268	-23.732	74.000
9848.000	20.005	36.870	56.876	-17.124	74.000
Average Detector:					
9848.000	20.005	23.150	43.156	-10.844	54.000
Vertical					
Peak Detector:					
4924.000	9.415	38.160	47.574	-26.426	74.000
7386.000	15.269	34.890	50.159	-23.841	74.000
9848.000	19.191	36.470	55.661	-18.339	74.000
Average Detector:					
9848.000	19.191	23.230	42.421	-11.579	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11bgn USB dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	Db	dBuV	dBuV/m	Db	dBuV/m
Horizontal					
Peak Detector:					
4824.000	9.582	42.920	52.502	-21.498	74.000
7236.000	14.401	37.110	51.511	-22.489	74.000
9648.000	19.795	35.840	55.635	-18.365	74.000
Average Detector:					
9648.000	19.795	23.150	42.945	-11.055	54.000
Vertical					
Peak Detector:					
4824.000	8.462	38.200	46.662	-27.338	74.000
7236.000	15.412	36.420	51.832	-22.168	74.000
9648.000	19.005	36.410	55.415	-18.585	74.000
Average Detector:					
9648.000	19.005	22.970	41.975	-12.025	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11bgn USB dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	Db	dBuV	dBuV/m	Db	dBuV/m
Horizontal					
Peak Detector:					
4874.000	9.473	41.150	50.623	-23.377	74.000
7311.000	14.540	35.140	49.679	-24.321	74.000
9748.000	20.024	36.400	56.425	-17.575	74.000
Average Detector:					
9748.000	20.024	23.220	43.245	-10.755	54.000
Vertical					
Peak Detector:					
4874.000	8.882	37.920	46.801	-27.199	74.000
7311.000	15.283	35.950	51.233	-22.767	74.000
9748.000	19.228	36.700	55.929	-18.071	74.000
Average Detector:					
9748.000	19.228	23.000	42.229	-11.771	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11bgn USB dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	Db	dBuV	dBuV/m	Db	dBuV/m
Horizontal					
Peak Detector:					
4924.000	9.487	41.790	51.276	-22.724	74.000
7386.000	14.798	35.250	50.048	-23.952	74.000
9848.000	20.005	36.410	56.416	-17.584	74.000
Average Detector:					
9848.000	20.005	23.300	43.306	-10.694	54.000
Vertical					
Peak Detector:					
4924.000	9.415	37.690	47.104	-26.896	74.000
7386.000	15.269	35.430	50.699	-23.301	74.000
9848.000	19.191	36.270	55.461	-18.539	74.000
Average Detector:					
9848.000	19.191	23.020	42.211	-11.789	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11bgn USB dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2422MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	Db	dBuV	dBuV/m	Db	dBuV/m
Horizontal					
Peak Detector:					
4844.000	9.536	39.320	48.856	-25.144	74.000
7266.000	14.459	35.700	50.159	-23.841	74.000
9688.000	19.847	36.700	56.547	-17.453	74.000
Average Detector:					
9688.000	19.847	23.210	43.057	-10.943	54.000
Vertical					
Peak Detector:					
4844.000	8.627	37.710	46.337	-27.663	74.000
7266.000	15.363	35.520	50.884	-23.116	74.000
9688.000	19.057	36.420	55.477	-18.523	74.000
Average Detector:					
9688.000	19.057	23.230	42.287	-11.713	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11bgn USB dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	9.473	39.370	48.843	-25.157	74.000
7311.000	14.540	35.120	49.659	-24.341	74.000
9748.000	20.024	36.410	56.435	-17.565	74.000
Average Detector:					
9748.000	20.024	23.100	43.125	-10.875	54.000
Vertical					
Peak Detector:					
4874.000	8.882	37.410	46.291	-27.709	74.000
7311.000	15.283	35.340	50.623	-23.377	74.000
9748.000	19.228	36.700	55.929	-18.071	74.000
Average Detector:					
9748.000	19.228	23.090	42.319	-11.681	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11bgn USB dongle
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2452 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4904.000	9.518	38.950	48.468	-25.532	74.000
7356.000	14.741	35.010	49.750	-24.250	74.000
9808.000	20.066	36.560	56.626	-17.374	74.000
Average Detector:					
9808.000	20.066	23.160	43.226	-10.774	54.000
Vertical					
Peak Detector:					
4904.000	9.235	38.030	47.264	-26.736	74.000
7356.000	15.318	35.530	50.848	-23.152	74.000
9808.000	19.266	36.400	55.666	-18.334	74.000
Average Detector:					
9808.000	19.266	23.140	42.406	-11.594	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11bgn USB dongle
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
90.625	-9.523	41.601	32.077	-11.423	43.500
240.975	-6.945	37.956	31.011	-14.989	46.000
359.800	-2.120	37.862	35.743	-10.257	46.000
599.875	3.458	31.071	34.529	-11.471	46.000
900.575	5.111	30.438	35.549	-10.451	46.000
1000.000	8.637	28.892	37.529	-16.471	54.000
Vertical					
30.000	0.612	33.200	33.812	-6.188	40.000
207.025	-8.142	40.656	32.514	-10.986	43.500
367.075	-2.951	34.274	31.323	-14.677	46.000
689.600	2.094	25.094	27.188	-18.812	46.000
900.575	2.906	30.152	33.058	-12.942	46.000
949.075	6.097	29.120	35.217	-10.783	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
37.275	-4.344	33.288	28.944	-11.056	40.000
216.725	-11.075	43.462	32.387	-13.613	46.000
299.175	-4.080	35.766	31.686	-14.314	46.000
597.450	3.481	28.460	31.941	-14.059	46.000
900.575	5.111	31.122	36.233	-9.767	46.000
1000.000	8.637	28.257	36.894	-17.106	54.000
Vertical					
30.000	0.612	29.232	29.844	-10.156	40.000
90.625	-3.423	38.372	34.948	-8.552	43.500
209.450	-8.230	41.482	33.252	-10.248	43.500
359.800	-4.250	33.164	28.915	-17.085	46.000
689.600	2.094	25.868	27.962	-18.038	46.000
900.575	2.906	30.342	33.248	-12.752	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
406.360	0.547	31.104	31.651	-14.349	46.000
507.240	2.340	30.180	32.520	-13.480	46.000
699.300	2.780	36.650	39.430	-6.570	46.000
809.880	6.010	30.492	36.502	-9.498	46.000
901.060	5.603	28.837	34.440	-11.560	46.000
963.140	6.822	28.078	34.900	-19.100	54.000
Vertical					
528.580	0.970	30.858	31.828	-14.172	46.000
664.380	-1.134	31.667	30.533	-15.467	46.000
699.300	-0.200	35.703	35.503	-10.497	46.000
747.800	1.457	30.203	31.660	-14.340	46.000
842.860	2.080	26.289	28.369	-17.631	46.000
932.100	3.197	26.134	29.331	-16.669	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
507.240	2.340	29.329	31.669	-14.331	46.000
664.380	1.726	31.917	33.643	-12.357	46.000
749.740	3.753	31.628	35.381	-10.619	46.000
809.880	6.010	29.846	35.856	-10.144	46.000
901.060	5.603	29.980	35.583	-10.417	46.000
963.140	6.822	27.905	34.727	-19.273	54.000
Vertical					
528.580	0.970	31.900	32.870	-13.130	46.000
604.240	1.966	27.384	29.351	-16.649	46.000
666.320	-1.110	32.533	31.423	-14.577	46.000
747.800	1.457	30.606	32.063	-13.937	46.000
920.460	3.022	26.933	29.955	-16.045	46.000
968.960	3.740	26.901	30.641	-23.359	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

5. RF antenna conducted test

5.1. Test Equipment

The following test equipments are used during the radiated emission tests:

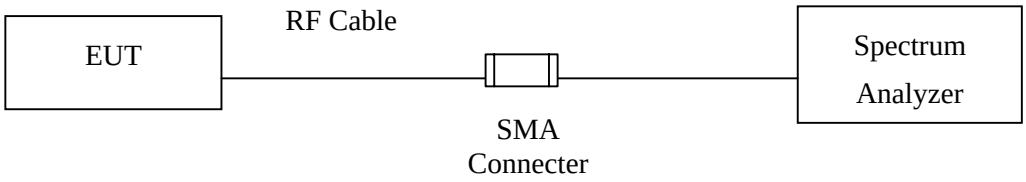
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Nov, 2008
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2009

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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)).

5.4. Test Procedure

The EUT was tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

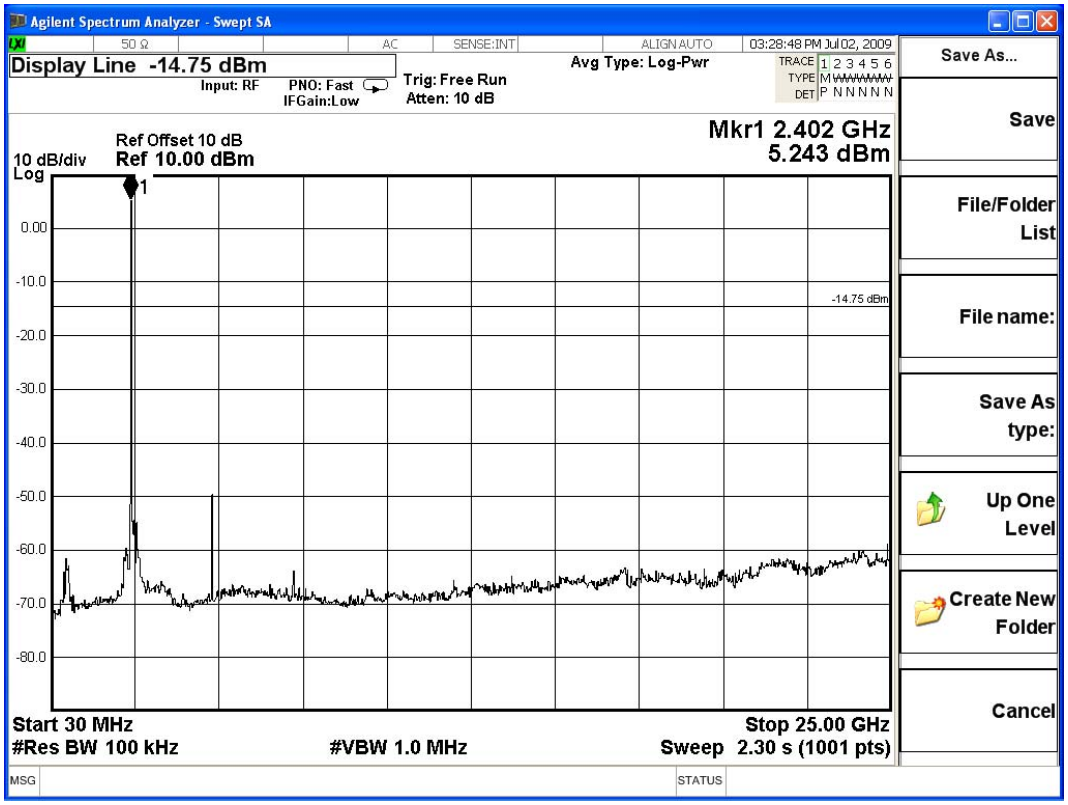
5.5. Uncertainty

The measurement uncertainty
Conducted is defined as ± 1.27dB

5.6. Test Result of RF antenna conducted test

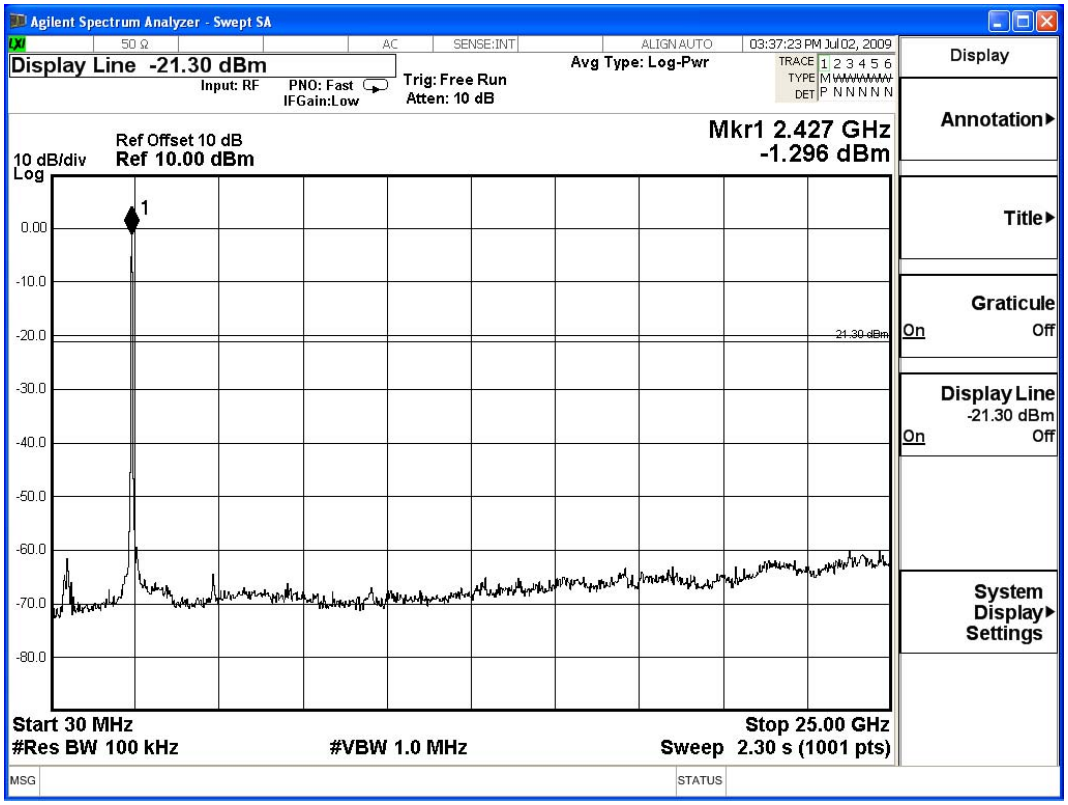
Product : 802.11bgn USB dongle
Test Item : RF antenna conducted test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps)

Channel 01 (2412MHz) 30 MHz -25GHz



Channel 06 (2437MHz) 30 MHz -25GHz

Channel 11 (2462MHz) 30 MHz -25GHz

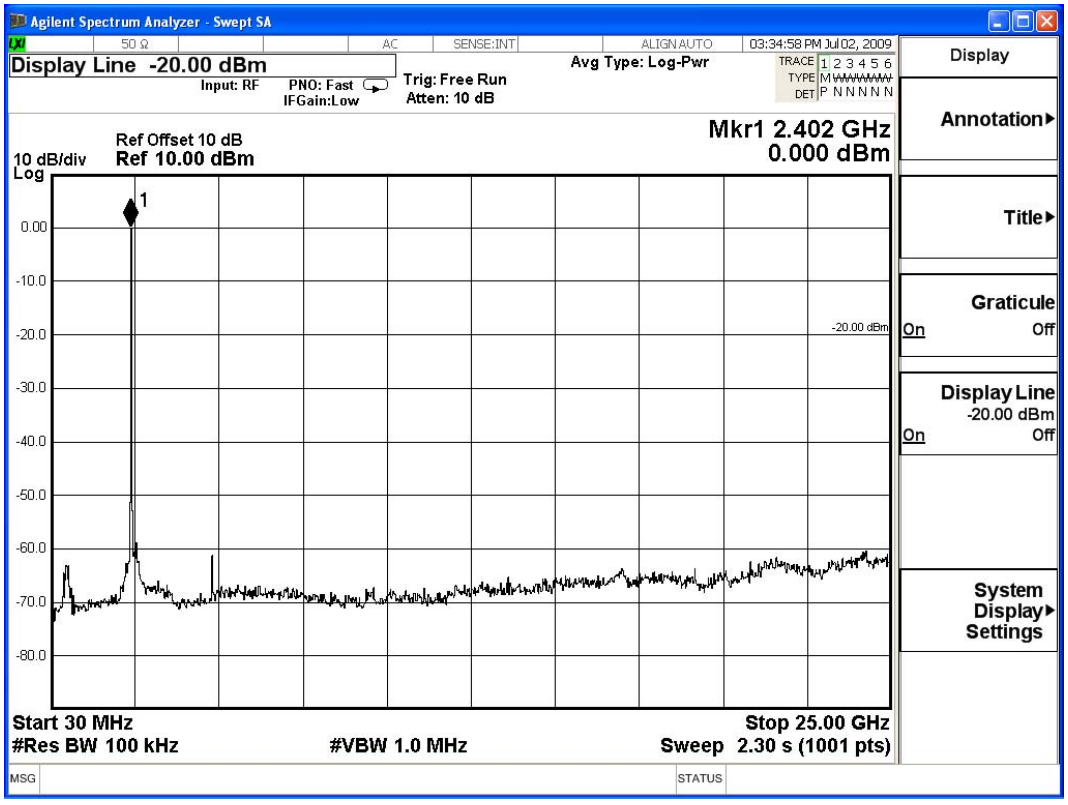


Product : 802.11bgn USB dongle
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)

Channel 01 (2412MHz) 30 MHz -25GHz

Channel 06 (2437MHz) 30 MHz -25GHz

Channel 11 (2462MHz) 30 MHz -25GHz

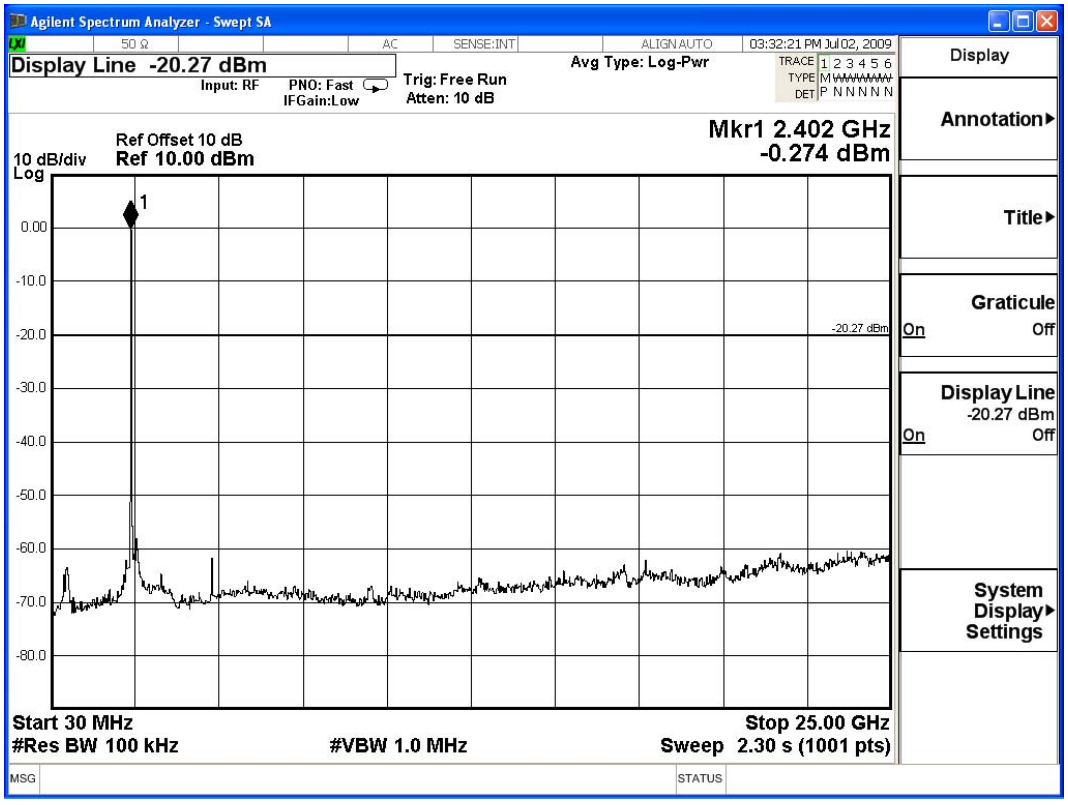


Product : 802.11bgn USB dongle
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW)

Channel 01 (2412MHz) 30 MHz -25GHz

Channel 06 (2437MHz) 30 MHz -25GHz

Channel 11 (2462MHz) 30 MHz -25GHz



Product : 802.11bgn USB dongle
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW)

Channel 01 (2422MHz) 30 MHz -25GHz

Channel 04 (2437MHz) 30 MHz -25GHz

Channel 07 (2452MHz) 30MHz-25GHz

6. Band Edge

6.1. Test Equipment

The following test equipments are used during the band edge tests:

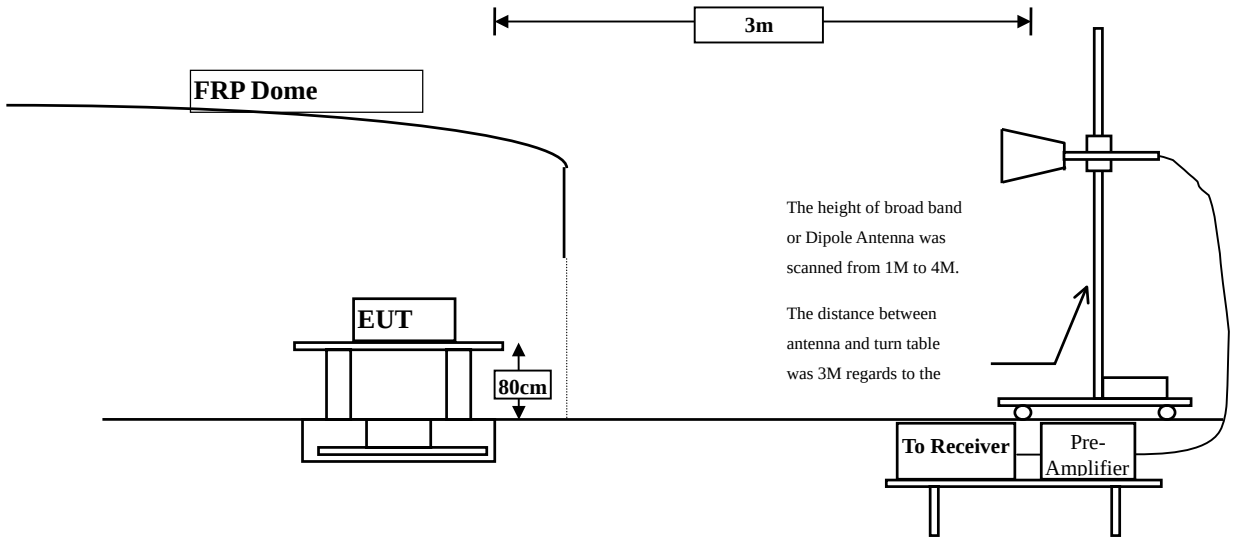
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr, 2009
		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2008
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2008
	X	Pre-Amplifier	AGILENT	8447D/2944A09549	Sep., 2008
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2008
	X	Spectrum Analyzer	Advantest	R3162/91700283	Oct., 2008
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2009
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All instruments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Radiated Measurement:



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

6.5. Uncertainty

± 3.9 dB above 1GHz
± 3.8 dB below 1GHz

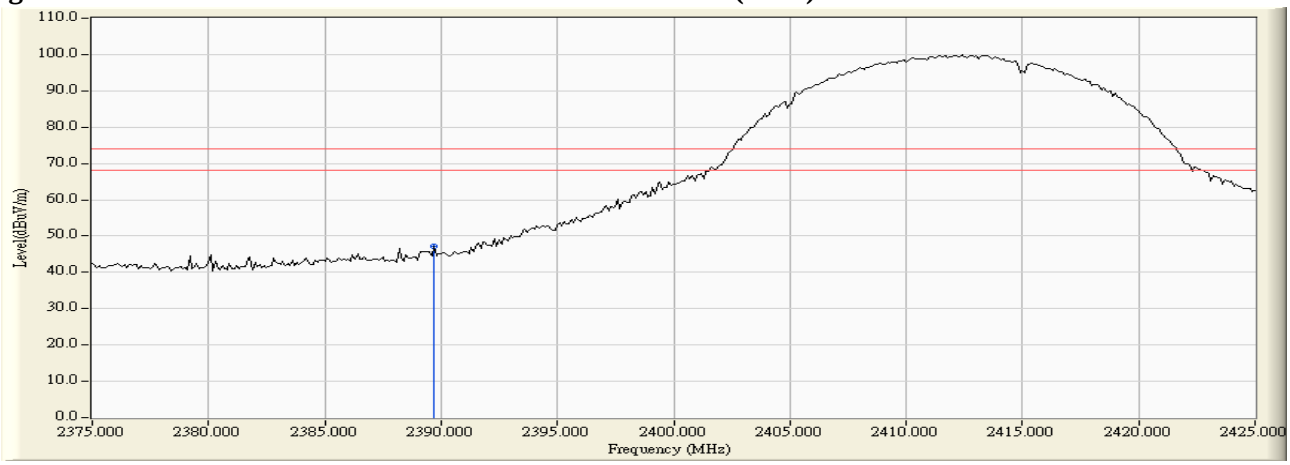
6.6. Test Result of Band Edge

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2389.700	-1.617	48.776	47.159	74.00	54.00	Pass
01 (Average)	--	--	--	--	74.00	54.00	Pass

Figure Channel 01: Horizontal (Peak)



Note:

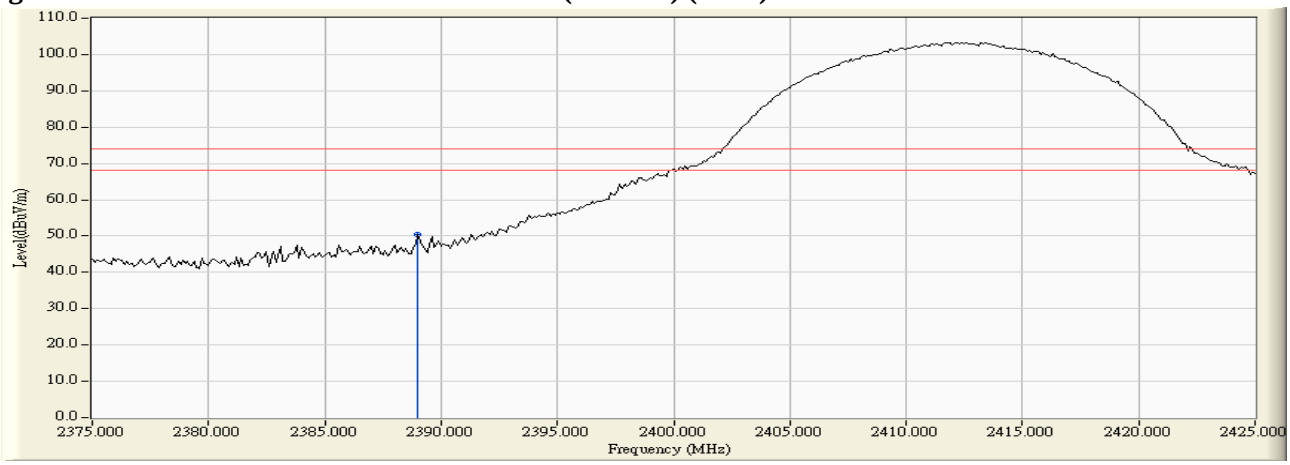
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2412MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2389.000	-2.379	52.781	50.402	74.00	54.00	Pass
01 (Average)	--	--	--	--	74.00	54.00	Pass

Figure Channel 01: (Vertical) (Peak)



Note:

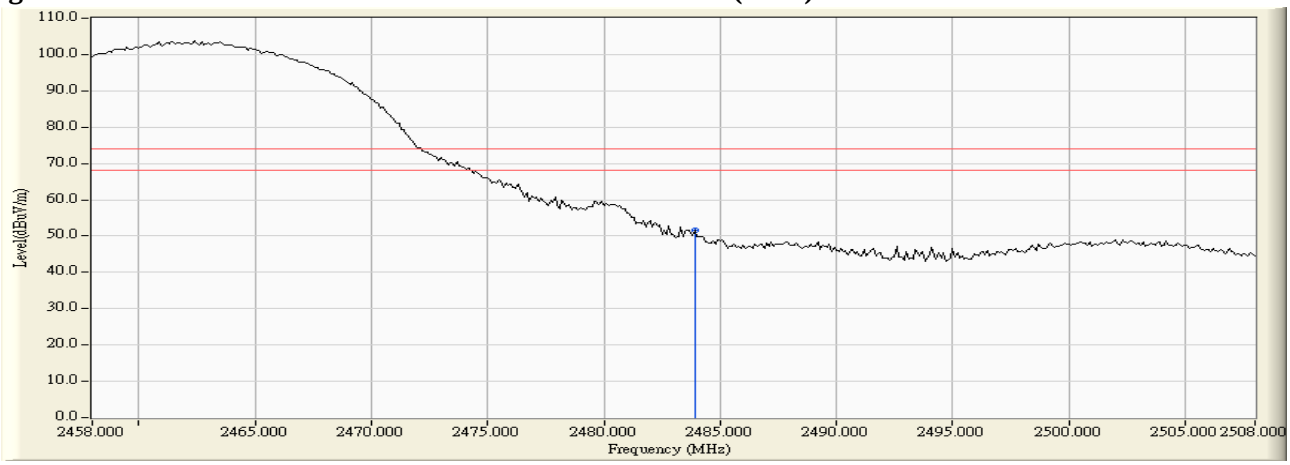
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2483.900	-1.020	52.614	51.594	74.00	54.00	Pass
11(Average)	--	--	--	--	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)



Note:

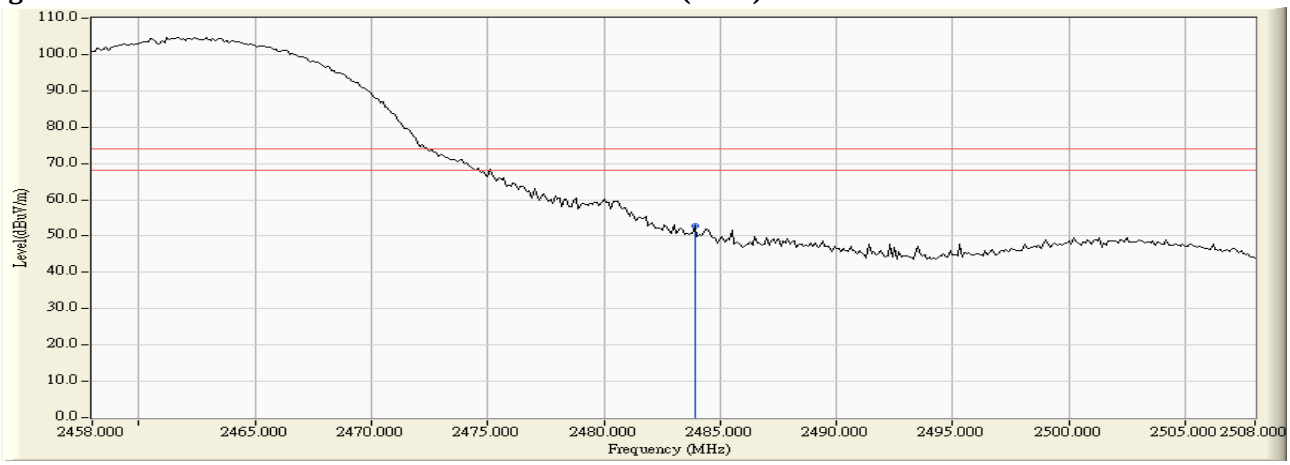
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2462MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2483.900	-1.309	54.046	52.737	74.00	54.00	Pass
11(Average)	--	--	--	--	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)



Note:

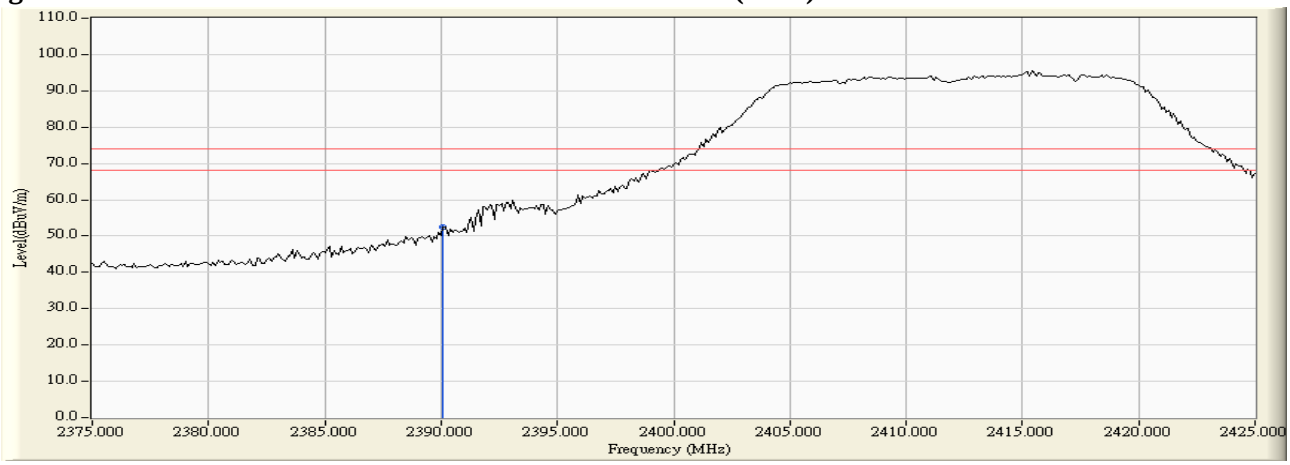
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.100	-1.617	54.126	52.509	74.00	54.00	Pass

Figure Channel 01: Horizontal (Peak)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2412MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	-2.384	58.460	56.077	74.00	54.00	Pass
01 (Average)	2390.000	-2.384	37.222	34.839	74.00	54.00	Pass

Figure Channel 01: Vertical (Peak)

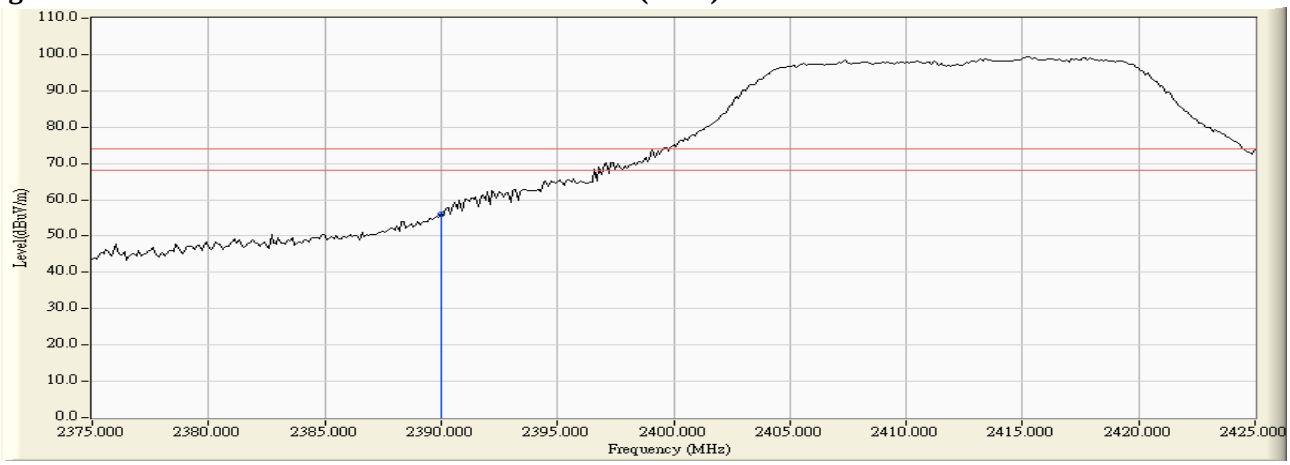
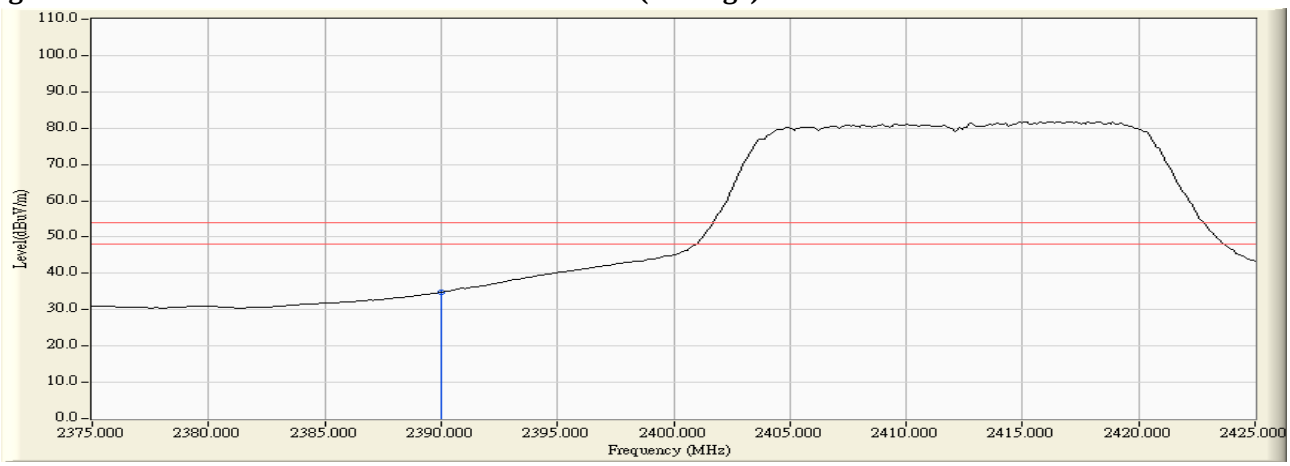


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

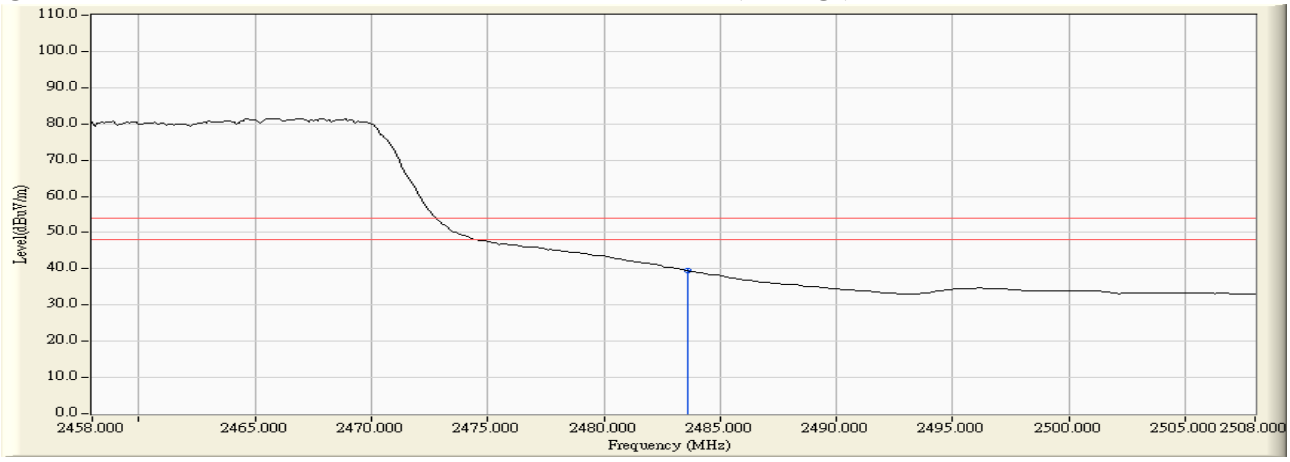
Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2483.600	-1.022	65.506	64.484	74.00	54.00	Pass
11 (Average)	2483.600	-1.022	40.502	39.480	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2462MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2484.200	-1.305	68.432	67.127	74.00	54.00	Pass
11(Average)	2484.200	-1.305	35.977	34.672	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

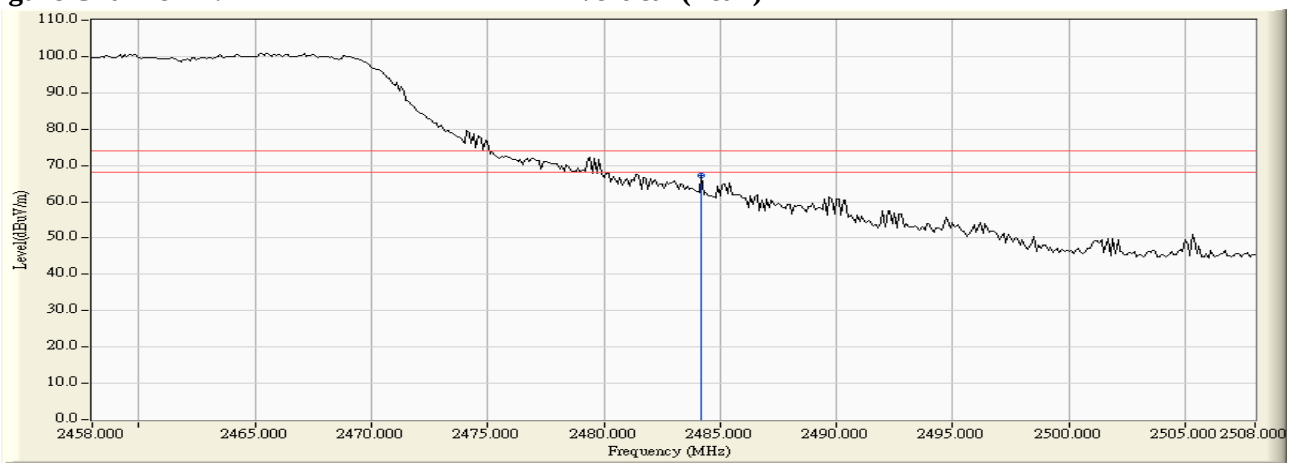
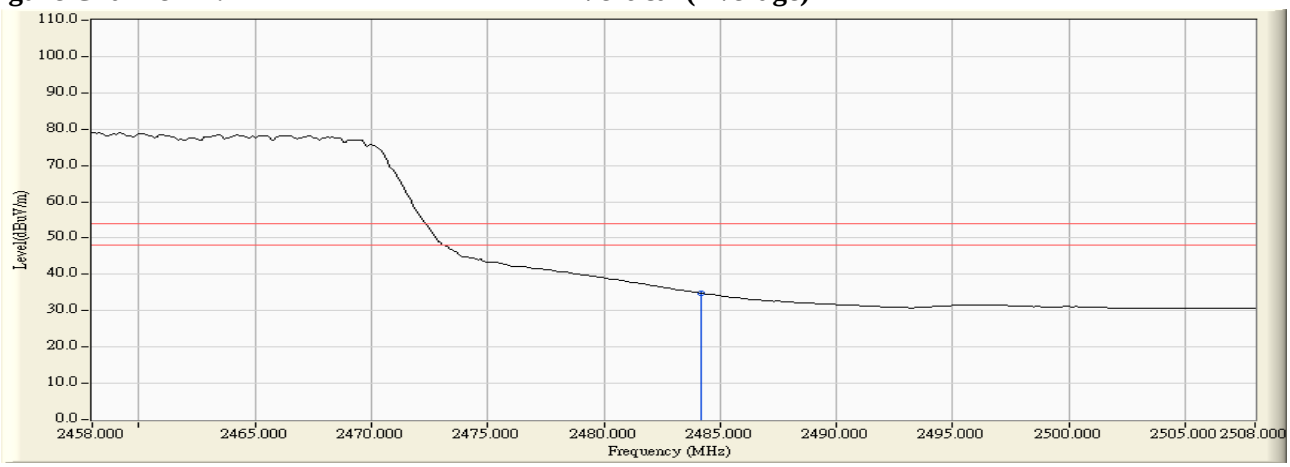


Figure Channel 11: Vertical (Average)



Note:

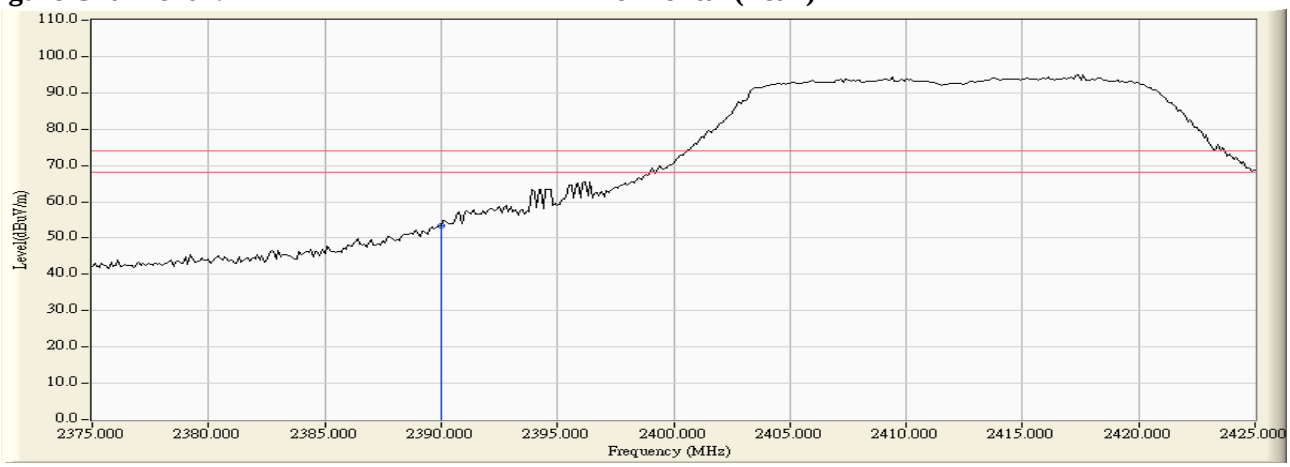
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW) (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	-1.617	55.091	53.474	74.00	54.00	Pass
01 (Average)	--	--	--	--	74.00	54.00	Pass

Figure Channel 01: Horizontal (Peak)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW) (2412MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	-2.384	61.209	58.826	74.00	54.00	Pass
01 (Average)	2390.000	-2.384	37.294	34.911	74.00	54.00	Pass

Figure Channel 01: (Vertical) (Peak)

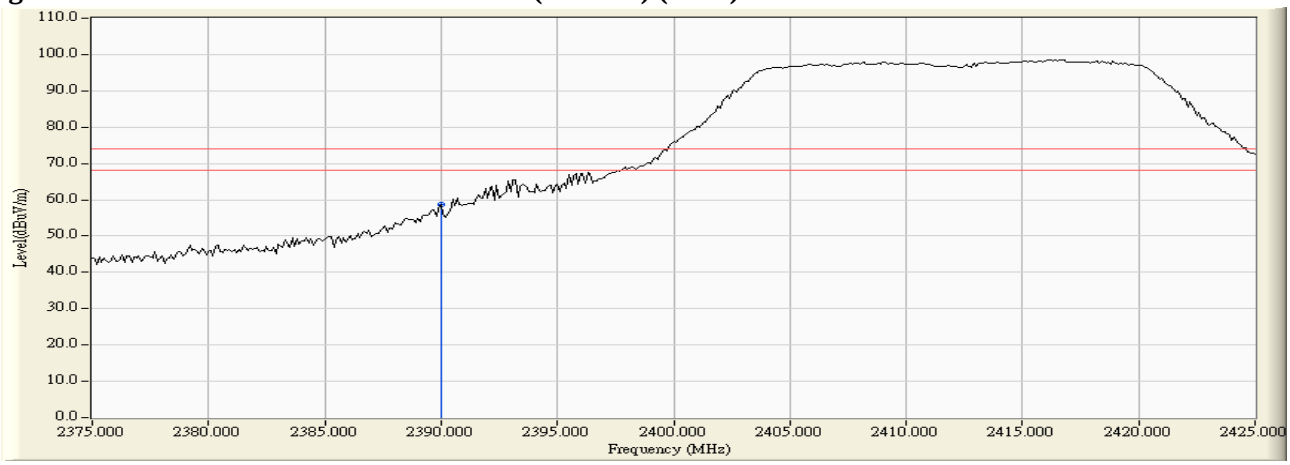
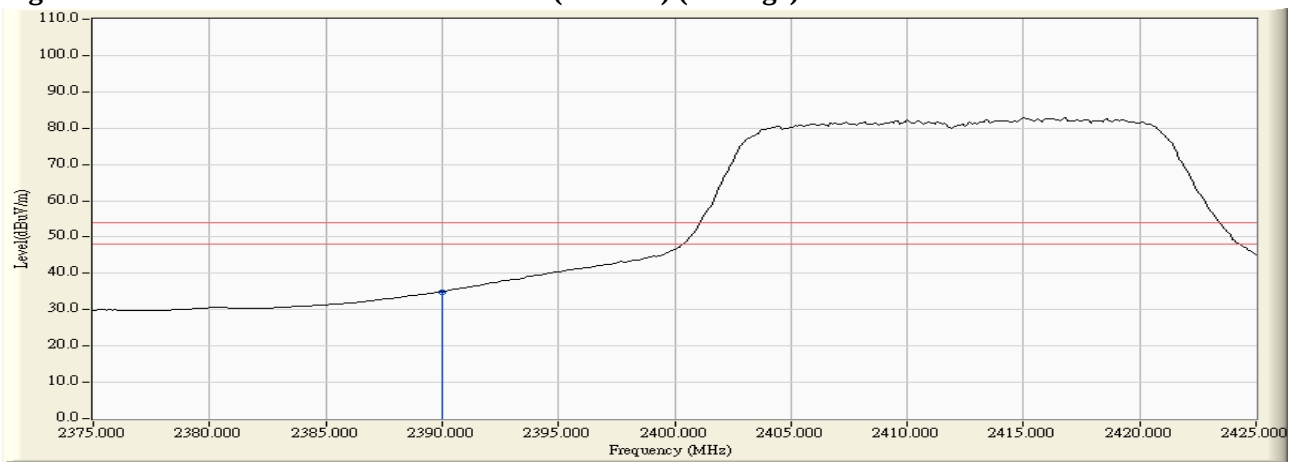


Figure Channel 01: (Vertical) (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

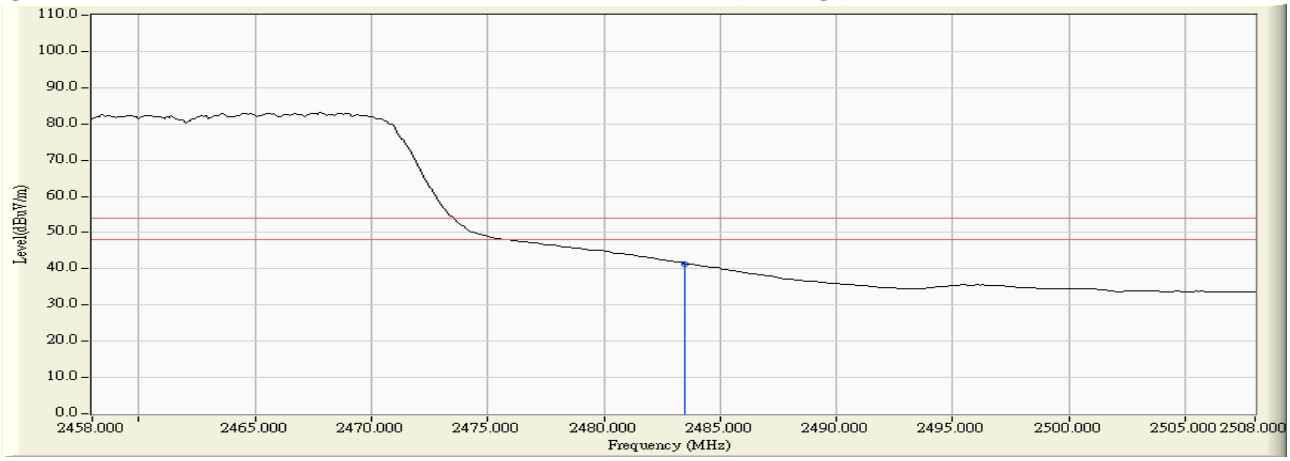
Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW) (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2483.500	-1.023	66.468	65.445	74.00	54.00	Pass
11 (Average)	2483.500	-1.023	42.365	41.342	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW) (2462MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2483.500	-1.314	67.416	66.102	74.00	54.00	Pass
11 (Average)	2483.500	-1.314	41.541	40.227	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

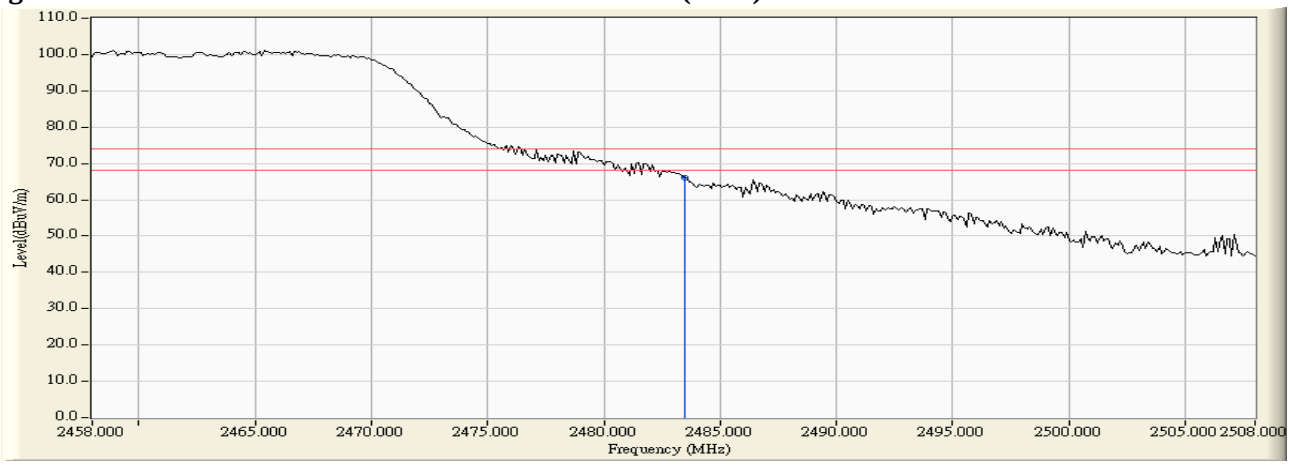
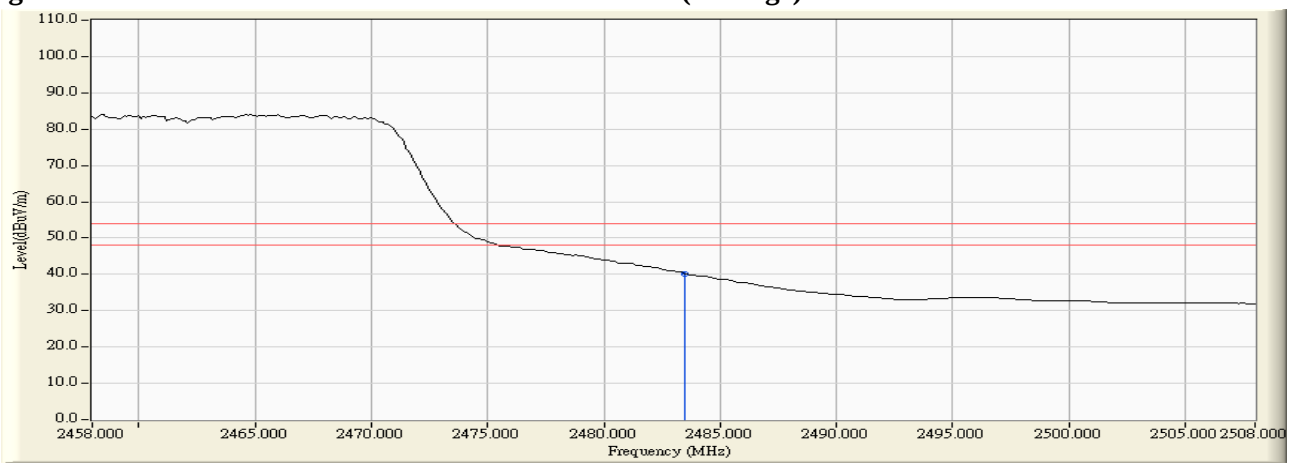


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2422MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2389.600	-1.617	59.151	57.534	74.00	54.00	Pass
01 (Average)	2389.600	-1.617	39.253	37.636	74.00	54.00	Pass

Figure Channel 01: Horizontal (Peak)

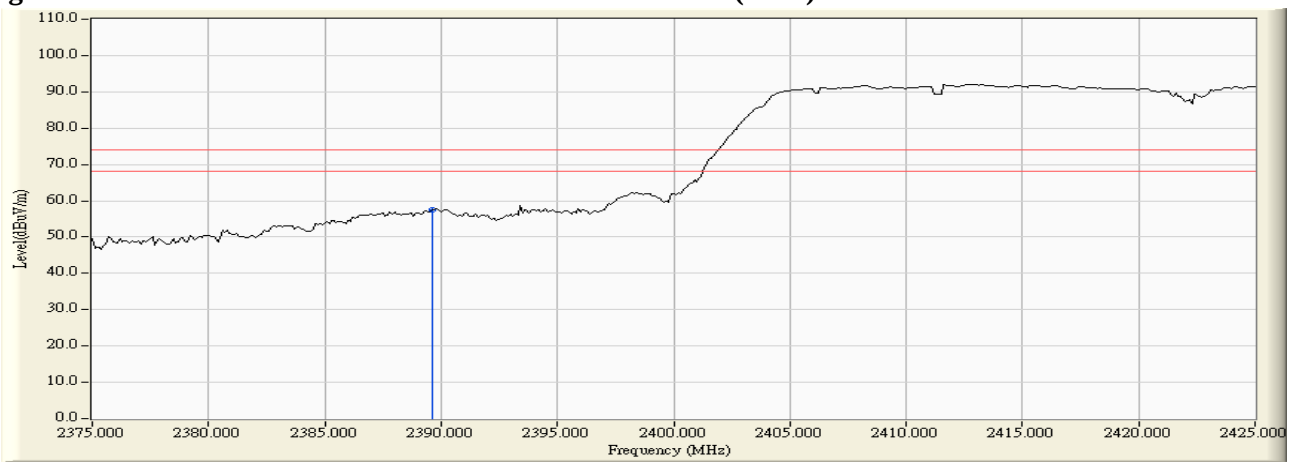
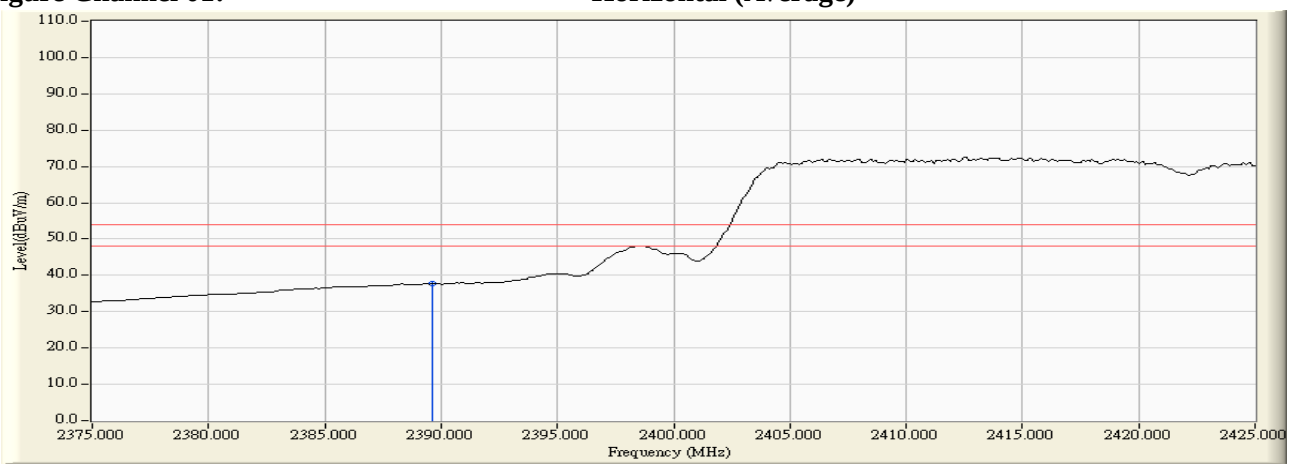


Figure Channel 01: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2422MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2388.800	-2.377	63.182	60.804	74.00	54.00	Pass
01 (Average)	2388.800	-2.377	40.860	38.482	74.00	54.00	Pass
01 (Average)	2389.500	-2.380	42.218	39.837	74.00	54.00	Pass

Figure Channel 01: (Vertical) (Peak)

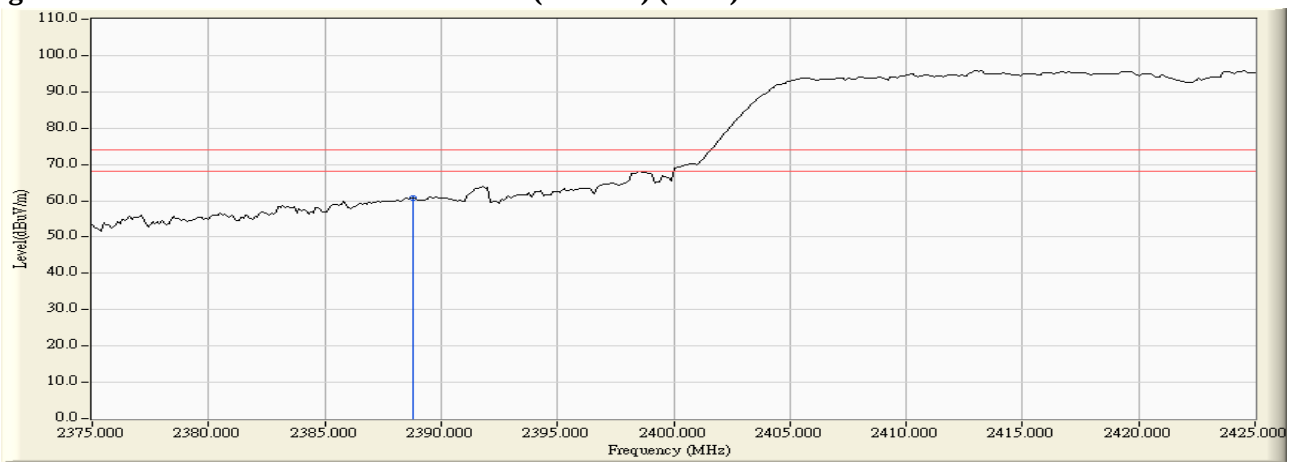
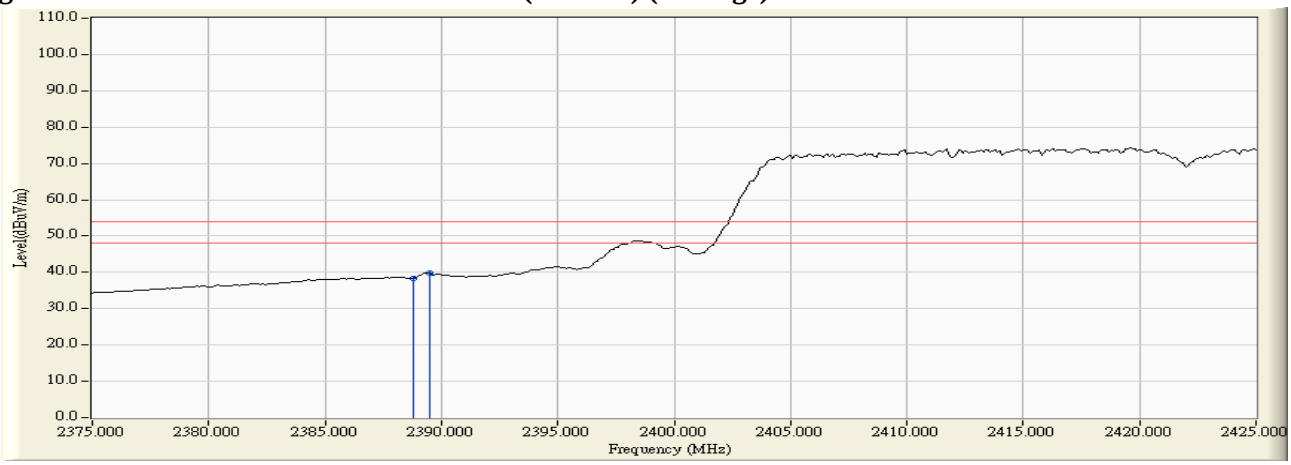


Figure Channel 01: (Vertical) (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2452MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
07 (Peak)	2484.000	-1.020	67.580	66.560	74.00	54.00	Pass
07 (Average)	2484.000	-1.020	44.443	43.423	74.00	54.00	Pass

Figure Channel 07: Horizontal (Peak)

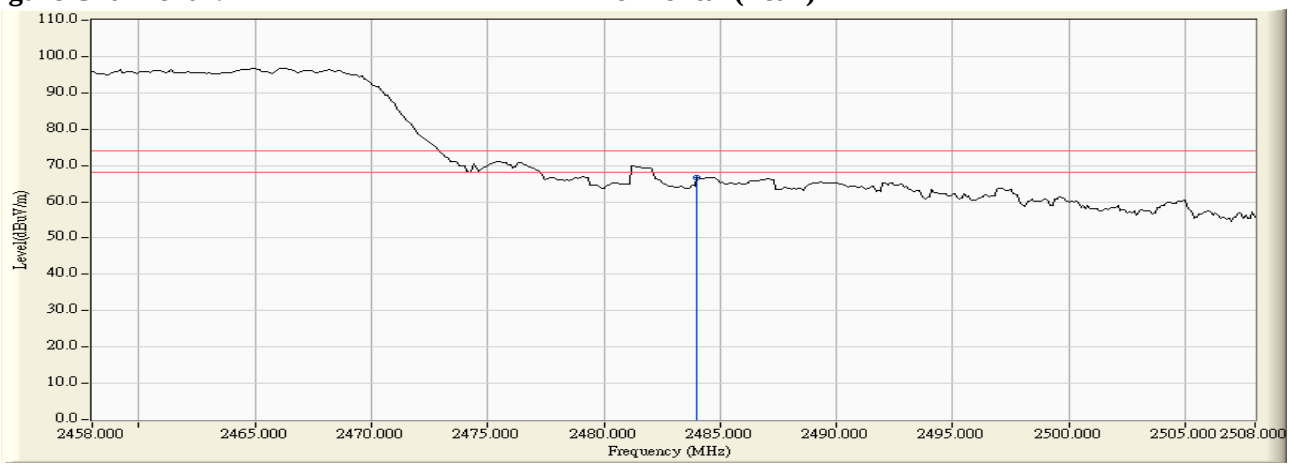
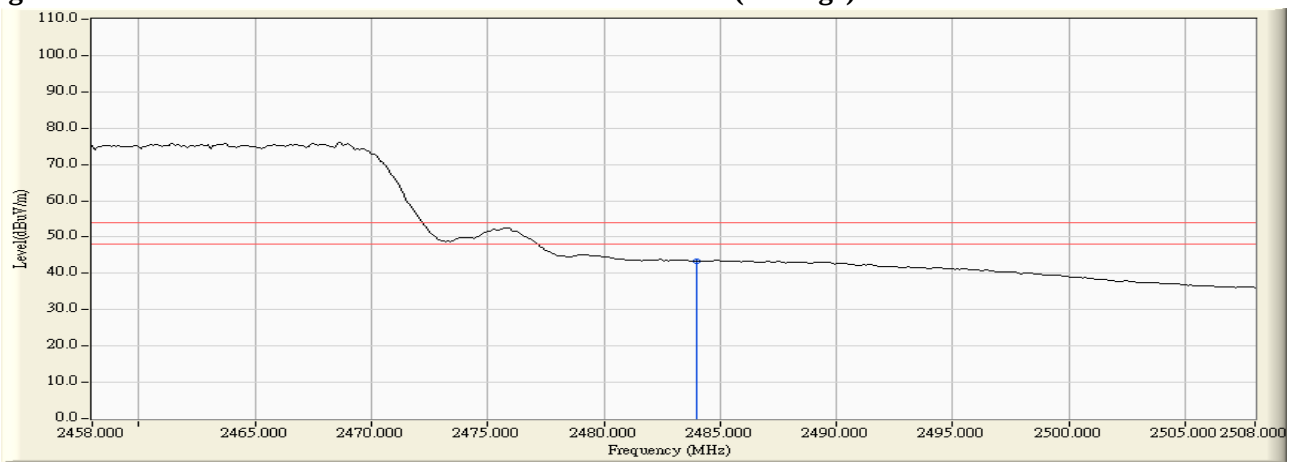


Figure Channel 07: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11bgn USB dongle
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2452MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
07 (Peak)	2486.100	-1.281	68.161	66.879	74.00	54.00	Pass
07 (Average)	2486.100	-1.281	42.786	41.504	74.00	54.00	Pass

Figure Channel 07: Vertical (Peak)

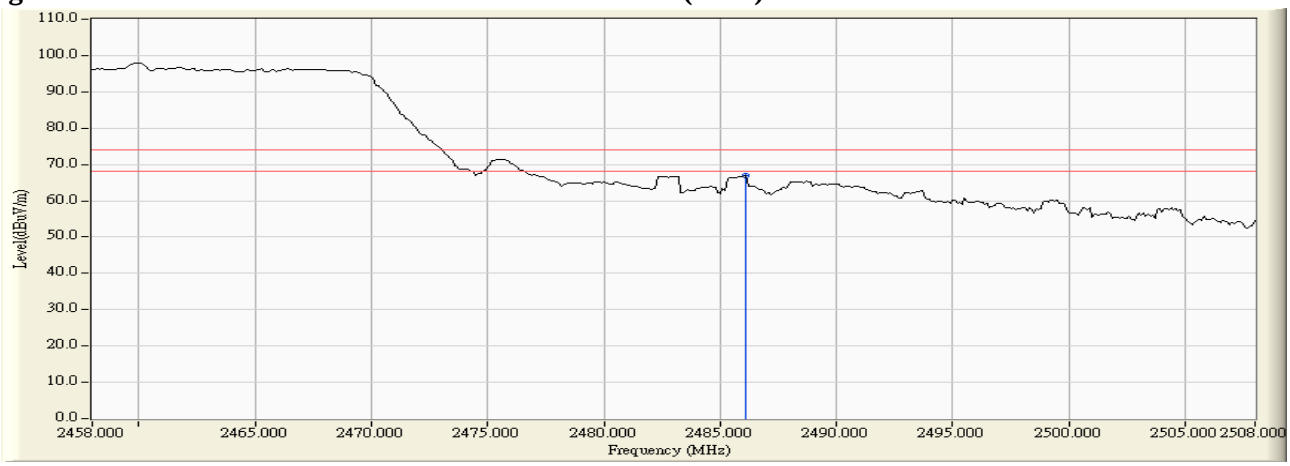
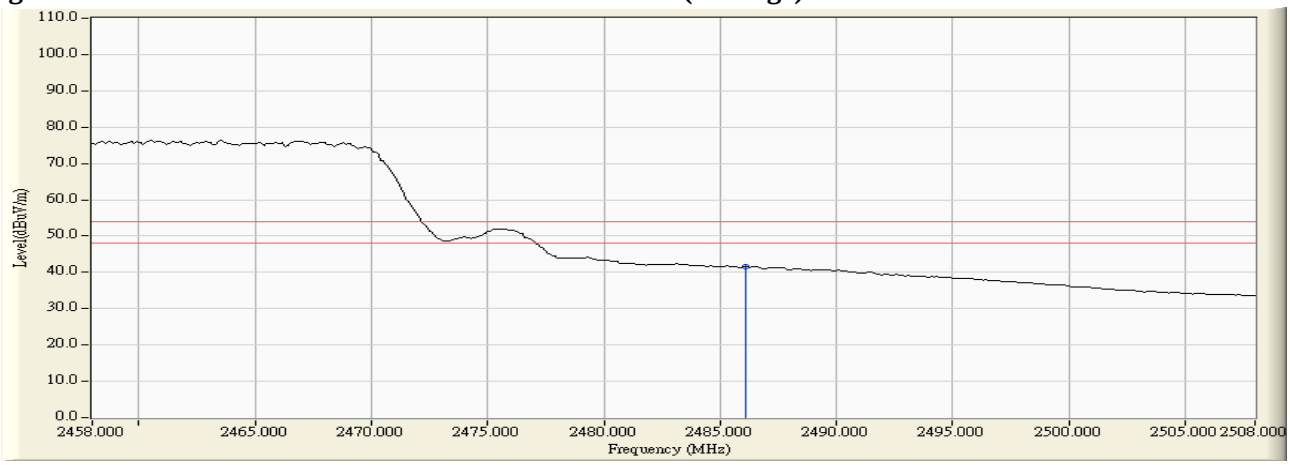


Figure Channel 07: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

7. Occupied Bandwidth

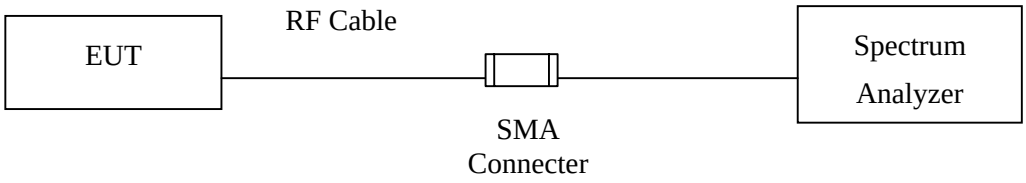
7.1. Test Equipment

The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr, 2009

Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Span greater than RBW.

7.5. Uncertainty

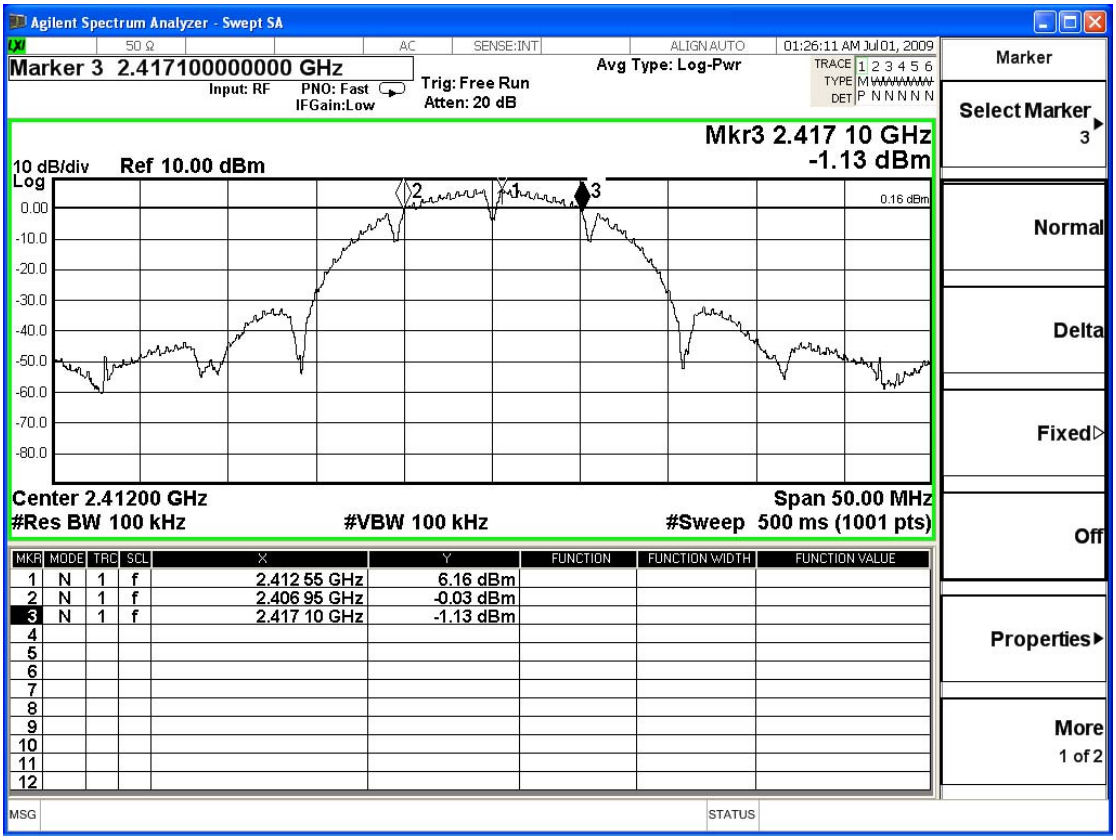
± 150Hz

7.6. Test Result of Occupied Bandwidth

Product : 802.11bgn USB dongle
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	10150	>500	Pass

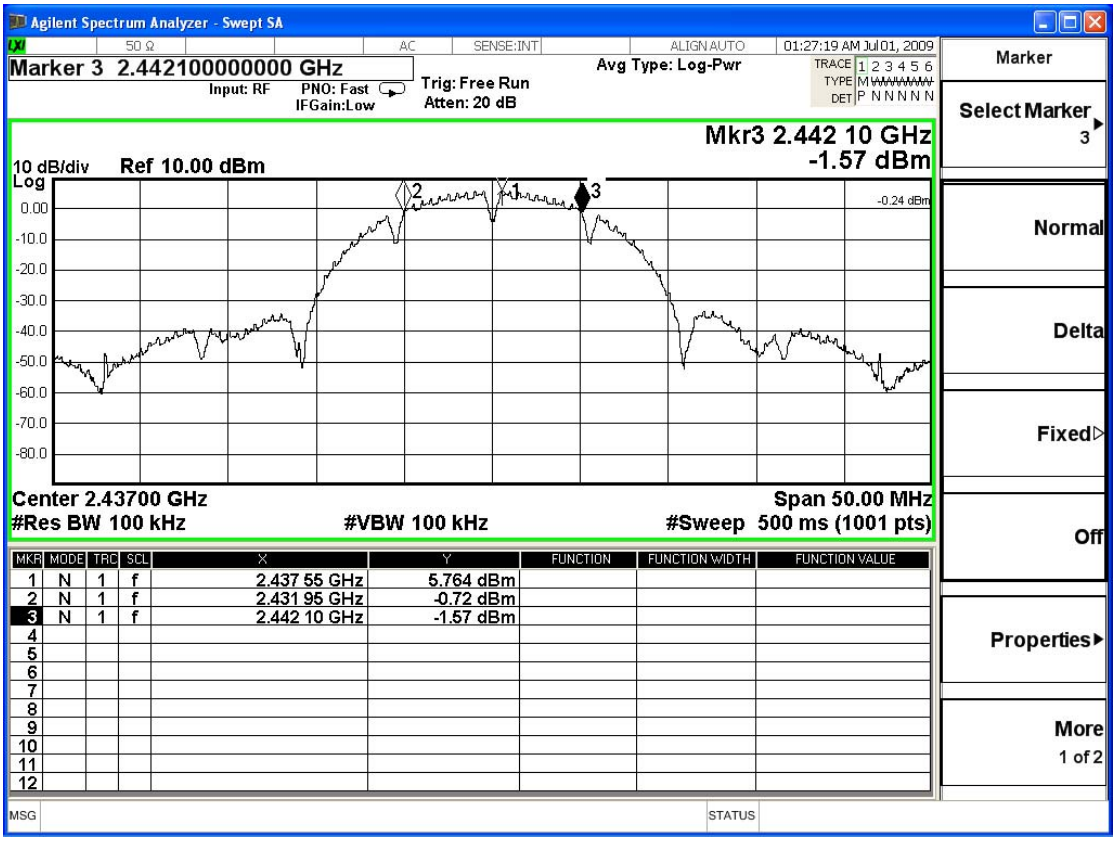
Figure Channel 1:



Product : 802.11bgn USB dongle
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	10150	>500	Pass

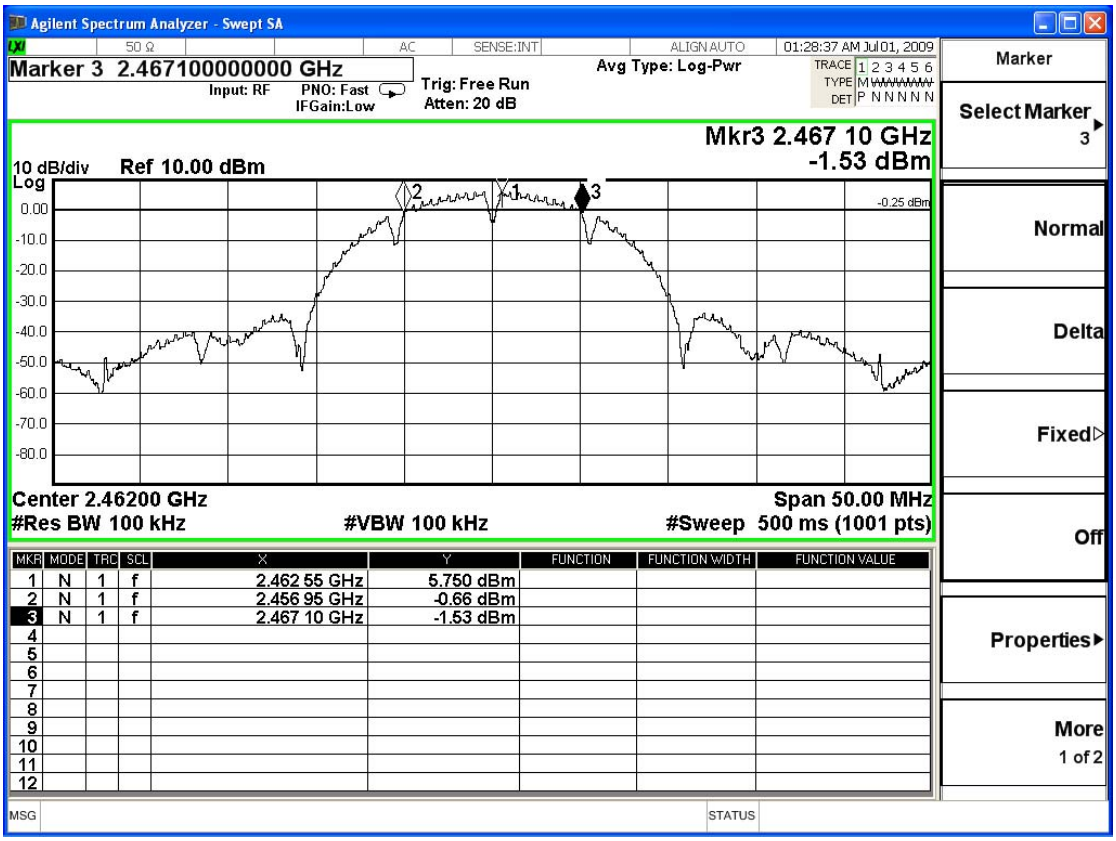
Figure Channel 6:



Product : 802.11bgn USB dongle
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	10150	>500	Pass

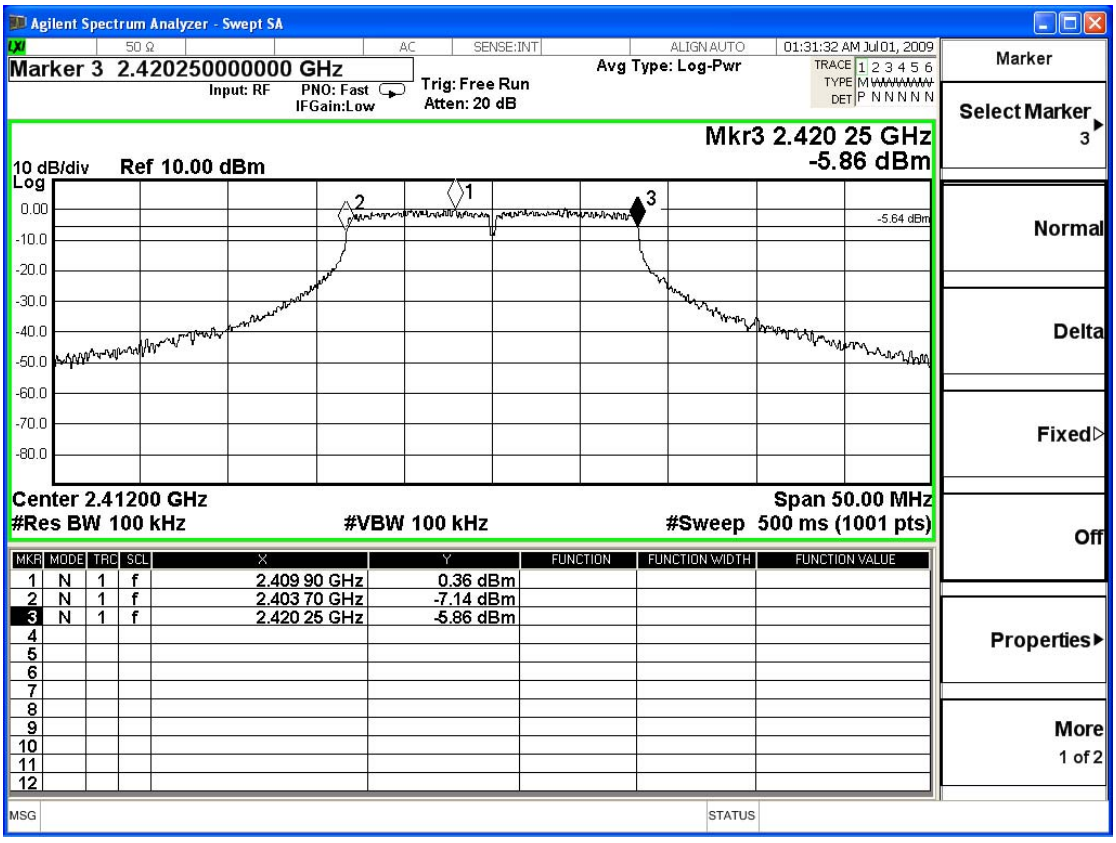
Figure Channel 11:



Product : 802.11bgn USB dongle
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	16550	>500	Pass

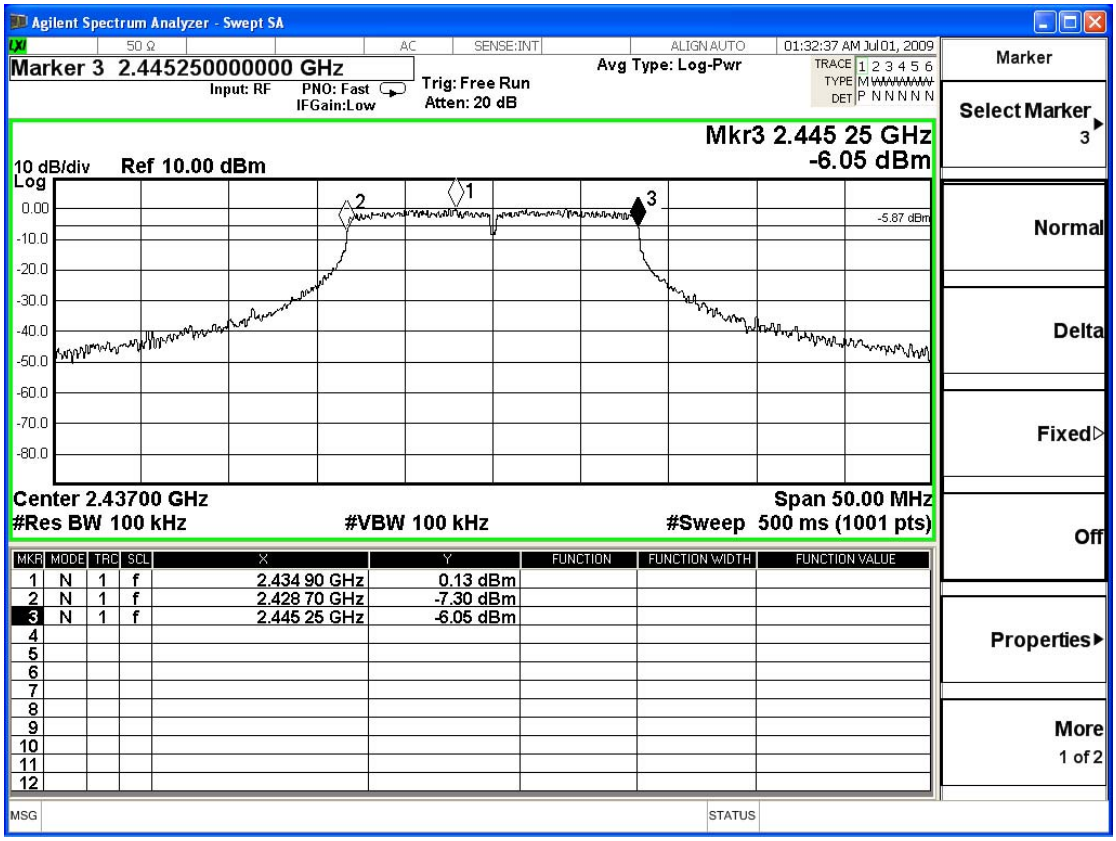
Figure Channel 1:



Product : 802.11bgn USB dongle
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	16550	>500	Pass

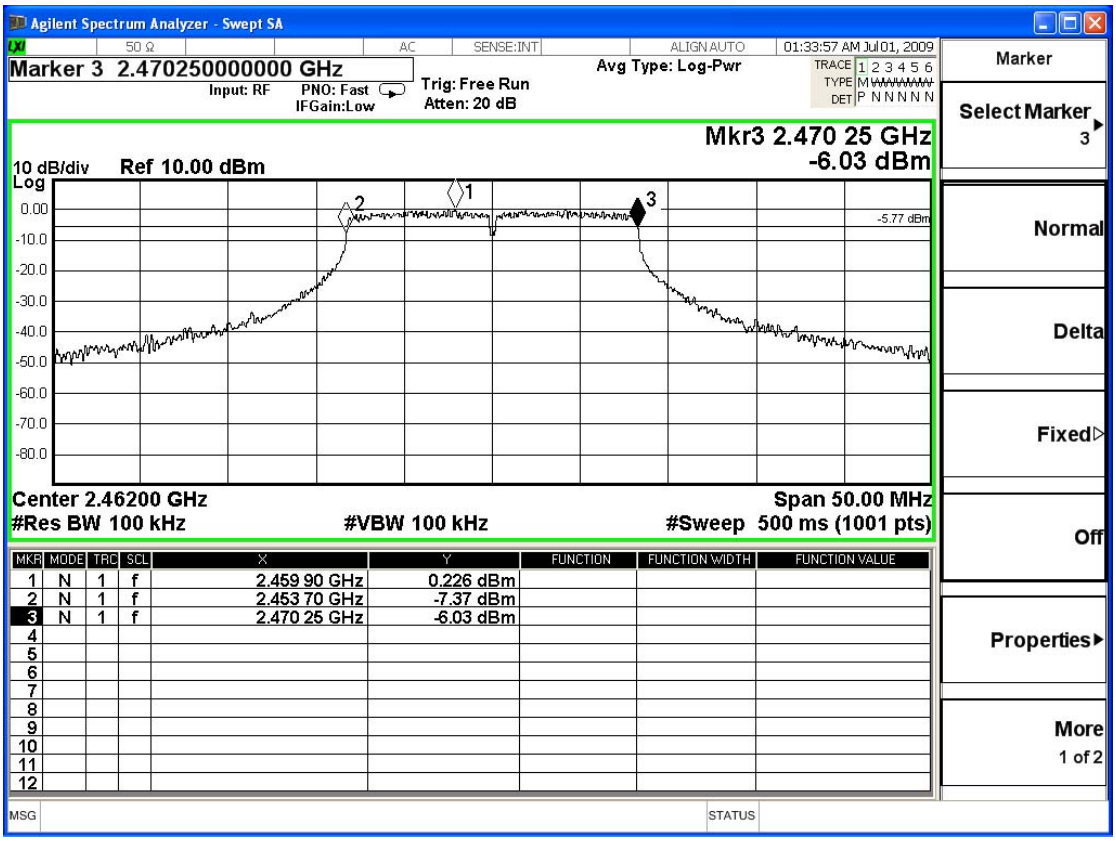
Figure Channel 6:



Product : 802.11bgn USB dongle
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	16550	>500	Pass

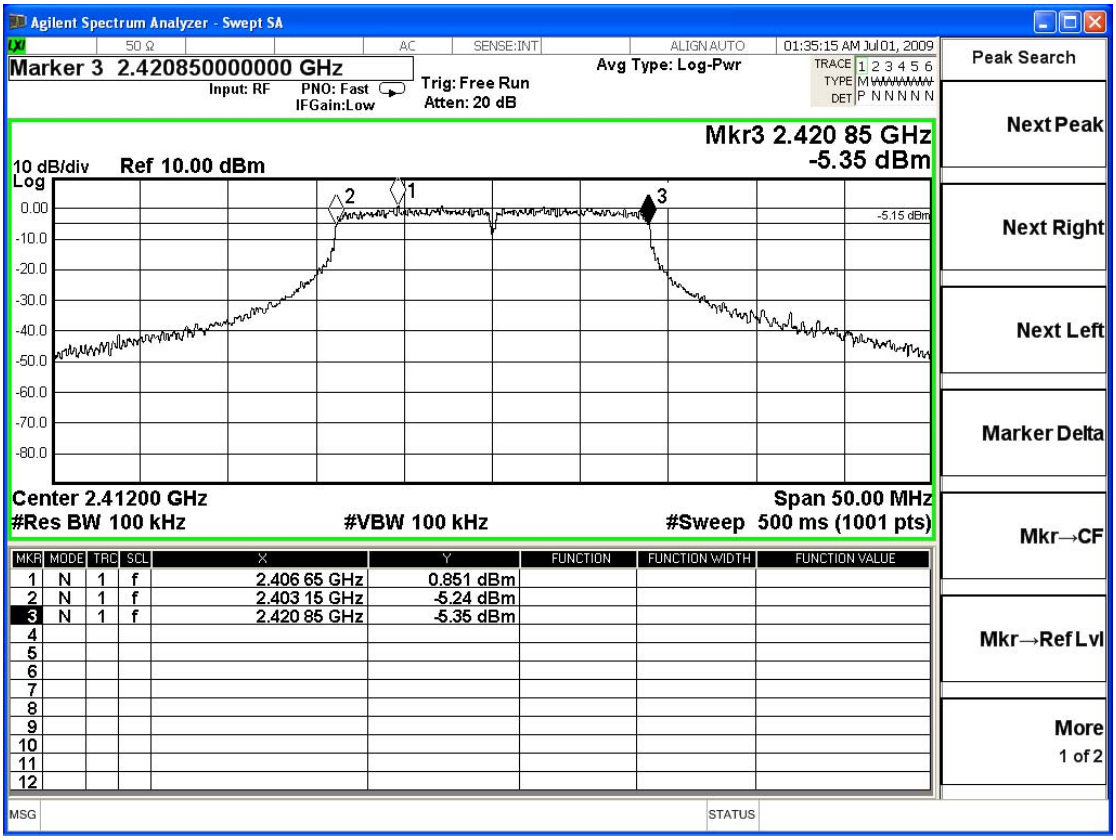
Figure Channel 11:



Product : 802.11bgn USB dongle
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	17700	>500	Pass

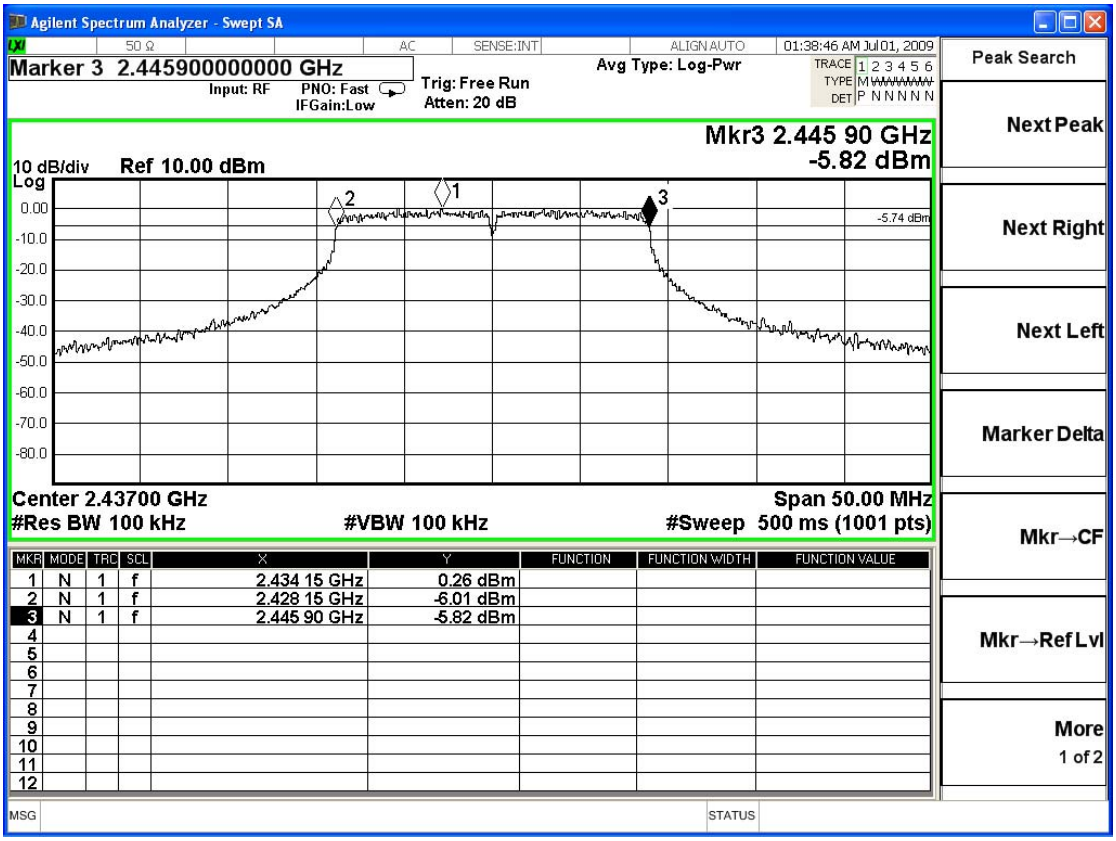
Figure Channel 1:



Product : 802.11bgn USB dongle
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	17750	>500	Pass

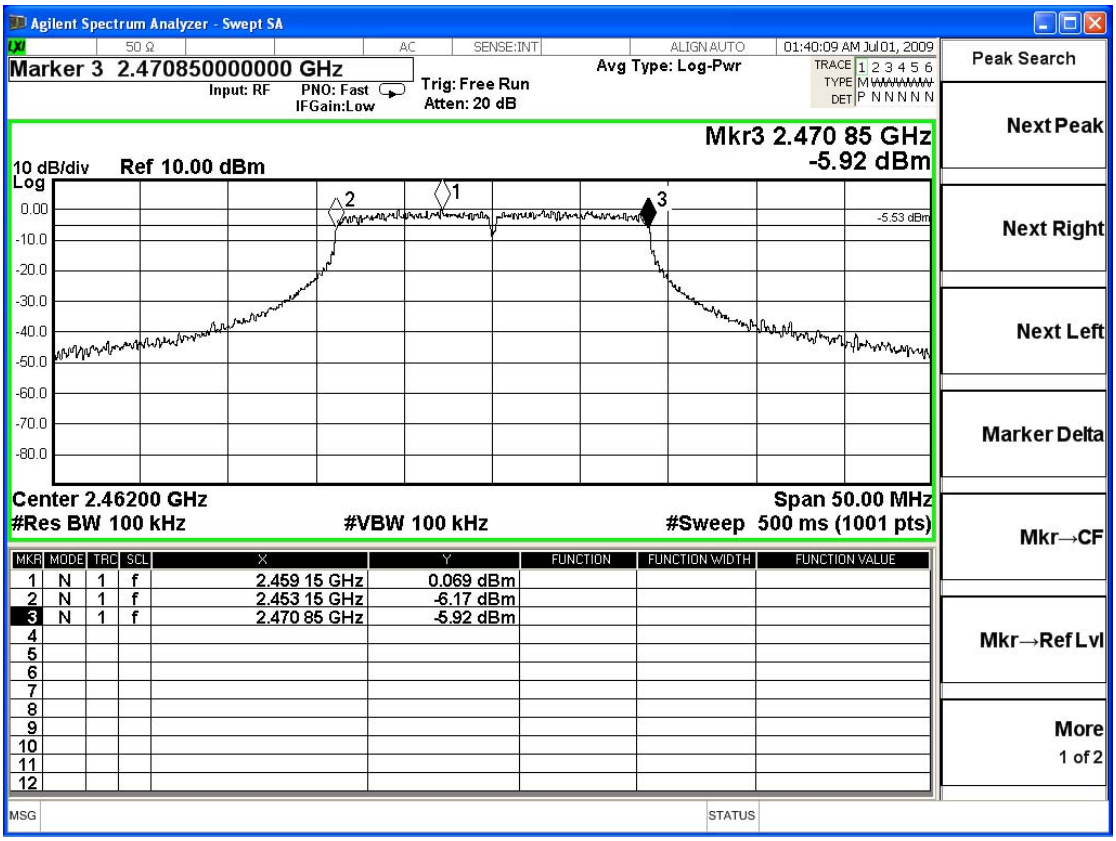
Figure Channel 6:



Product : 802.11bgn USB dongle
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	17700	>500	Pass

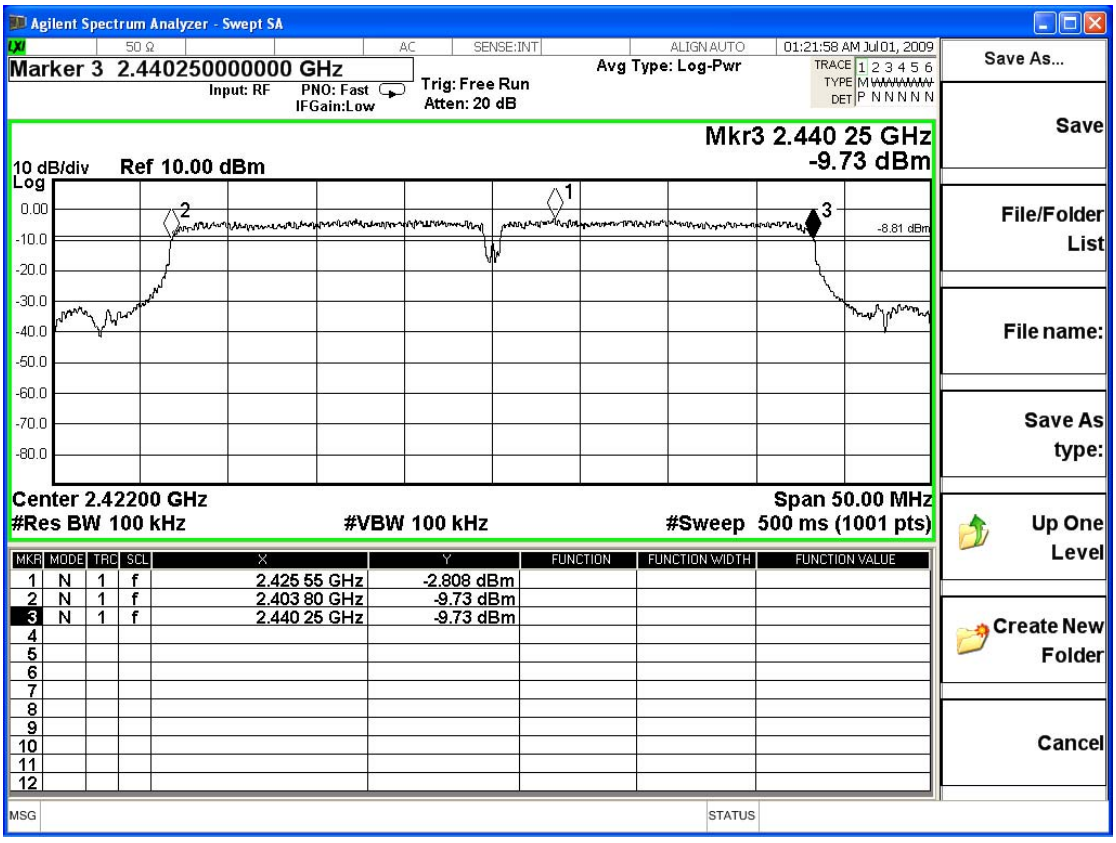
Figure Channel 11:



Product : 802.11bgn USB dongle
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2422MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2422.00	36450	>500	Pass

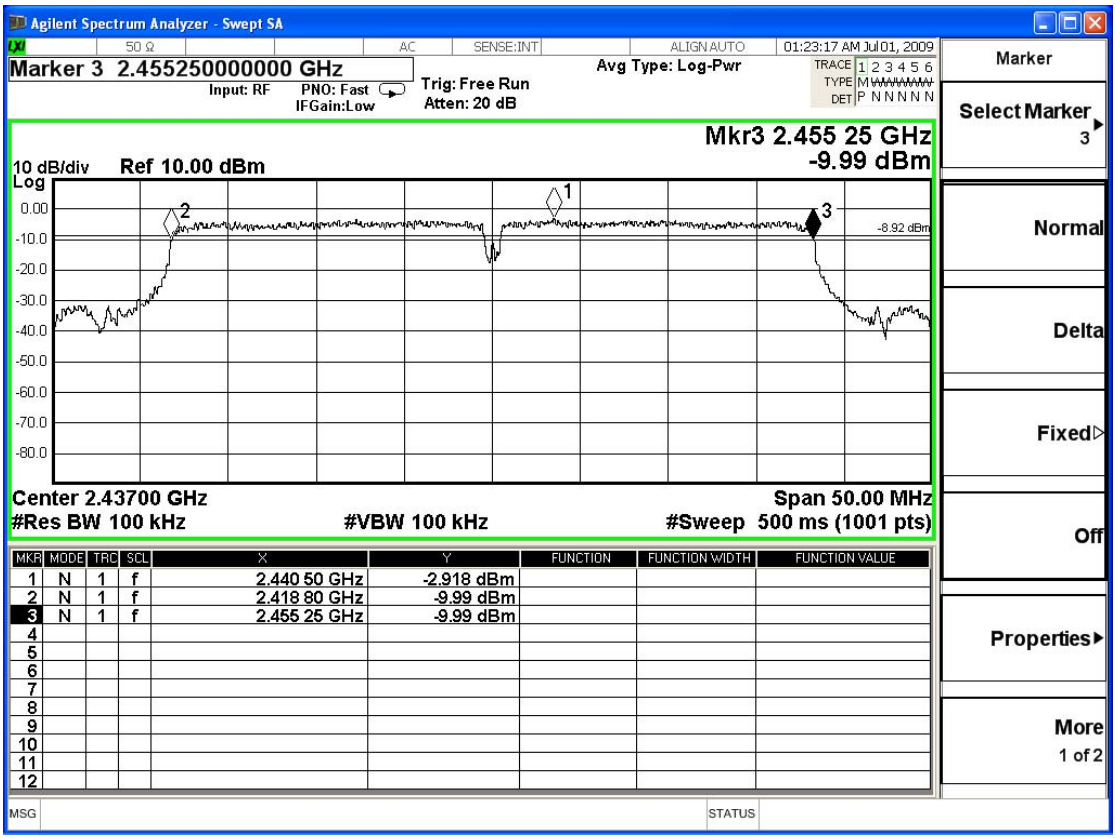
Figure Channel 1:



Product : 802.11bgn USB dongle
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
4	2437.00	36450	>500	Pass

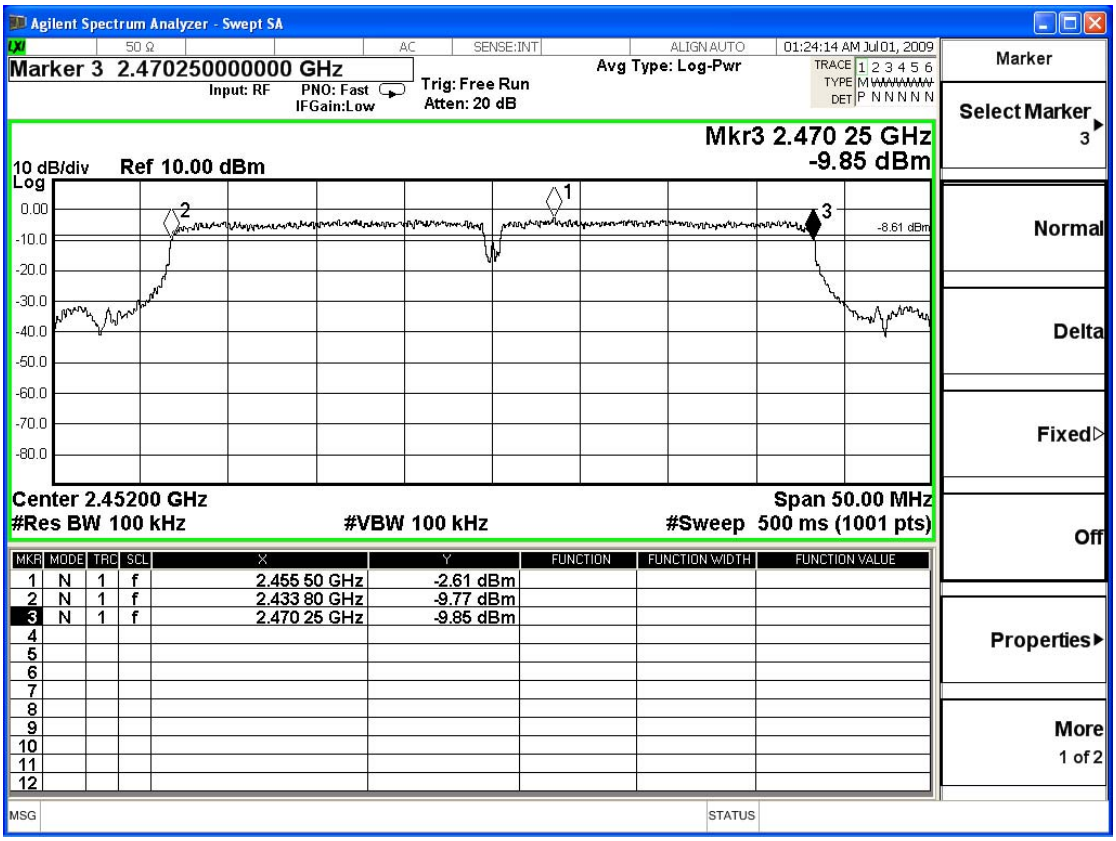
Figure Channel 4:



Product : 802.11bgn USB dongle
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2452MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
7	2452.00	36450	>500	Pass

Figure Channel 7:



8. Power Density

8.1. Test Equipment

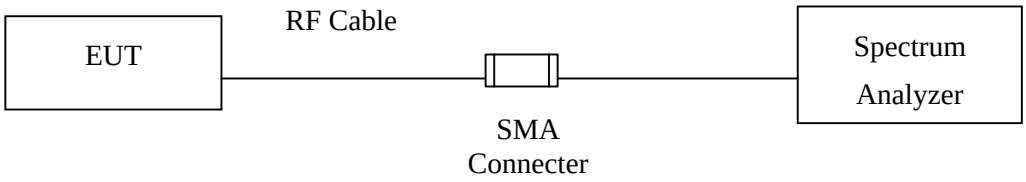
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr, 2009

Note: 1. All equipments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW= 3 kHz, VBW=10KHz, Sweep time=(SPAN/3KHz), detector=Peak detector

8.5. Uncertainty

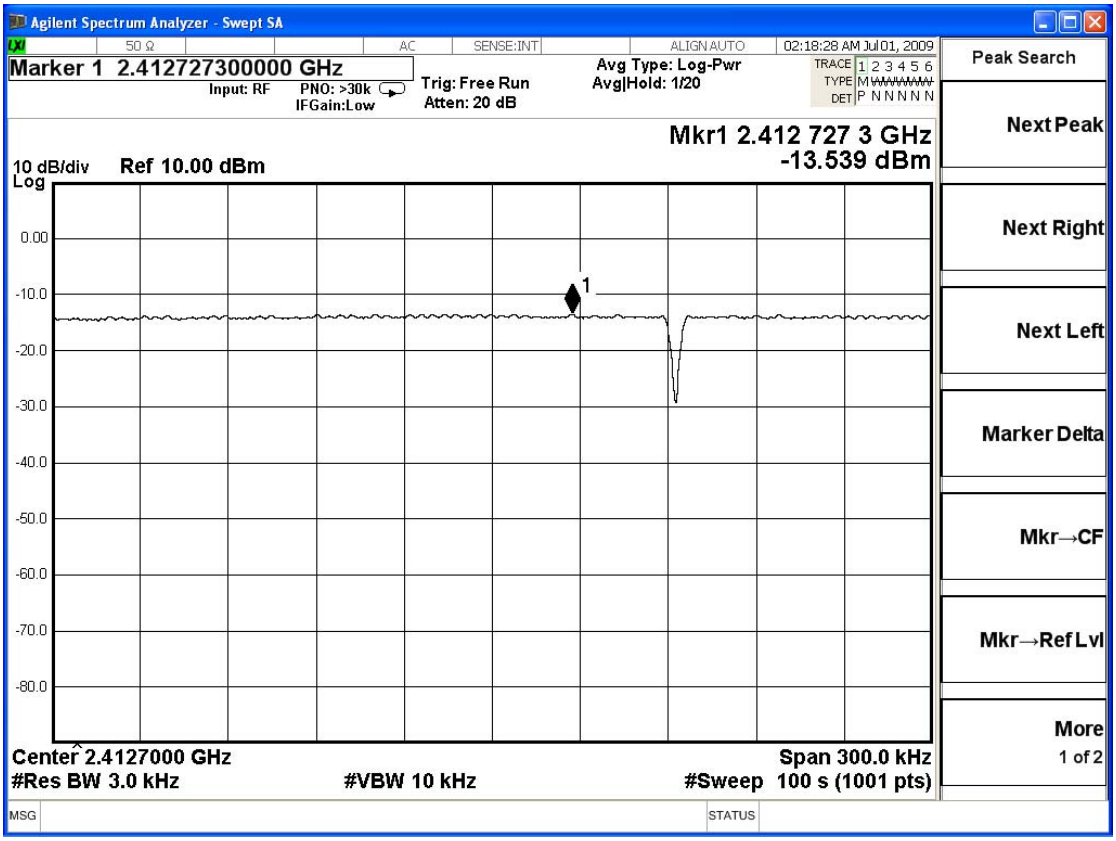
± 1.27 dB

8.6. Test Result of Power Density

Product : 802.11bgn USB dongle
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412.00	-13.539	< 8dBm	Pass

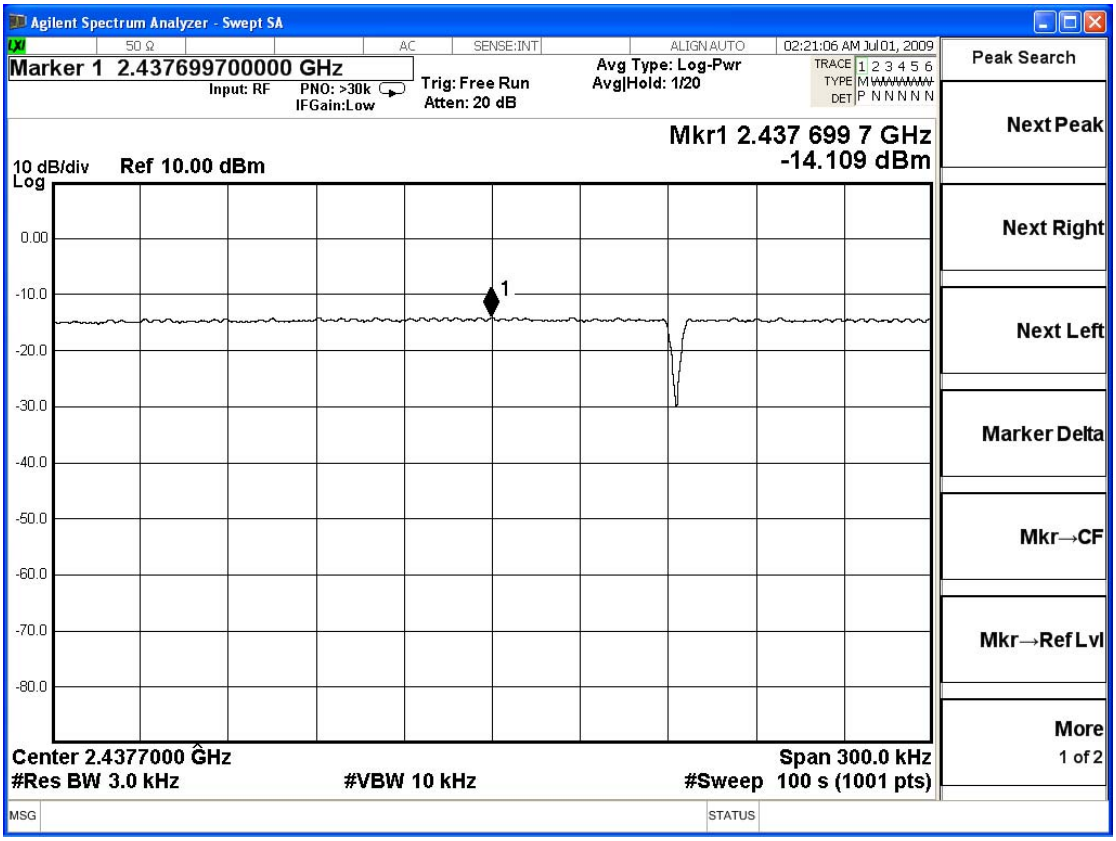
Figure Channel 1:



Product : 802.11bgn USB dongle
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437.000	-14.109	< 8dBm	Pass

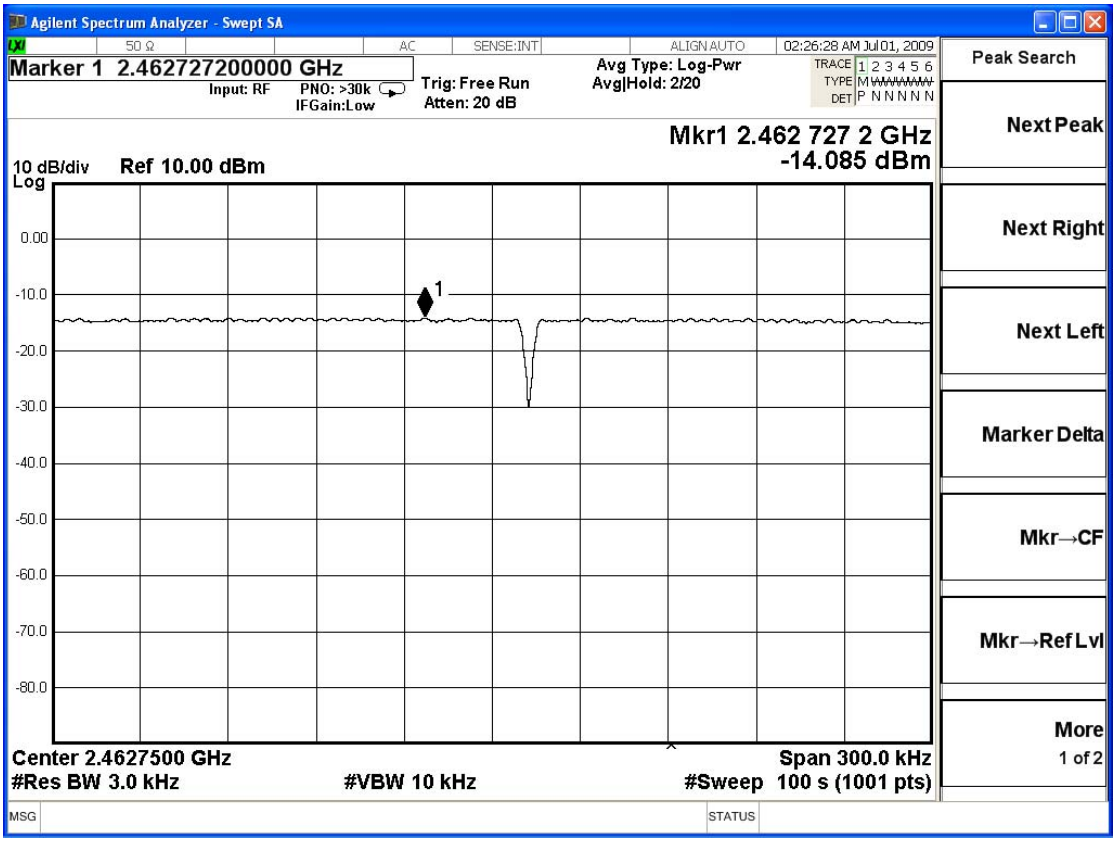
Figure Channel 6:



Product : 802.11bgn USB dongle
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462.00	-14.085	< 8dBm	Pass

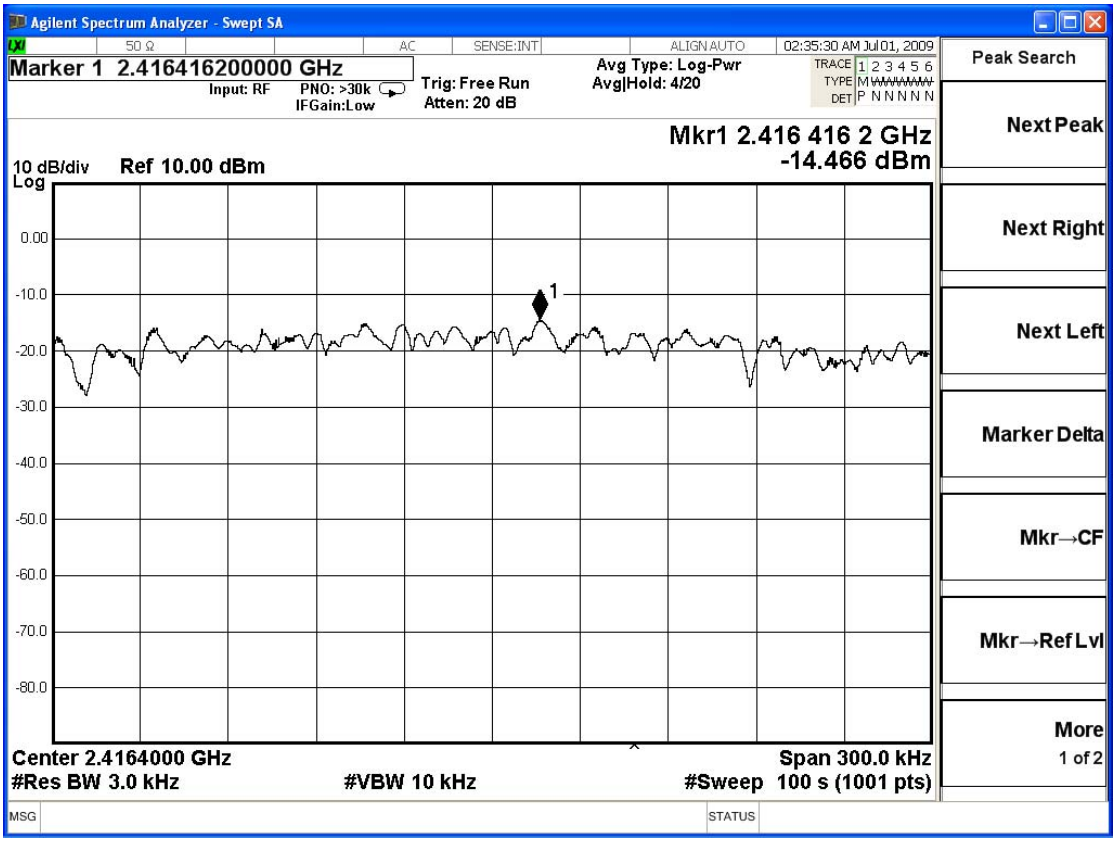
Figure Channel 11:



Product : 802.11bgn USB dongle
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412.00	-14.466	< 8dBm	Pass

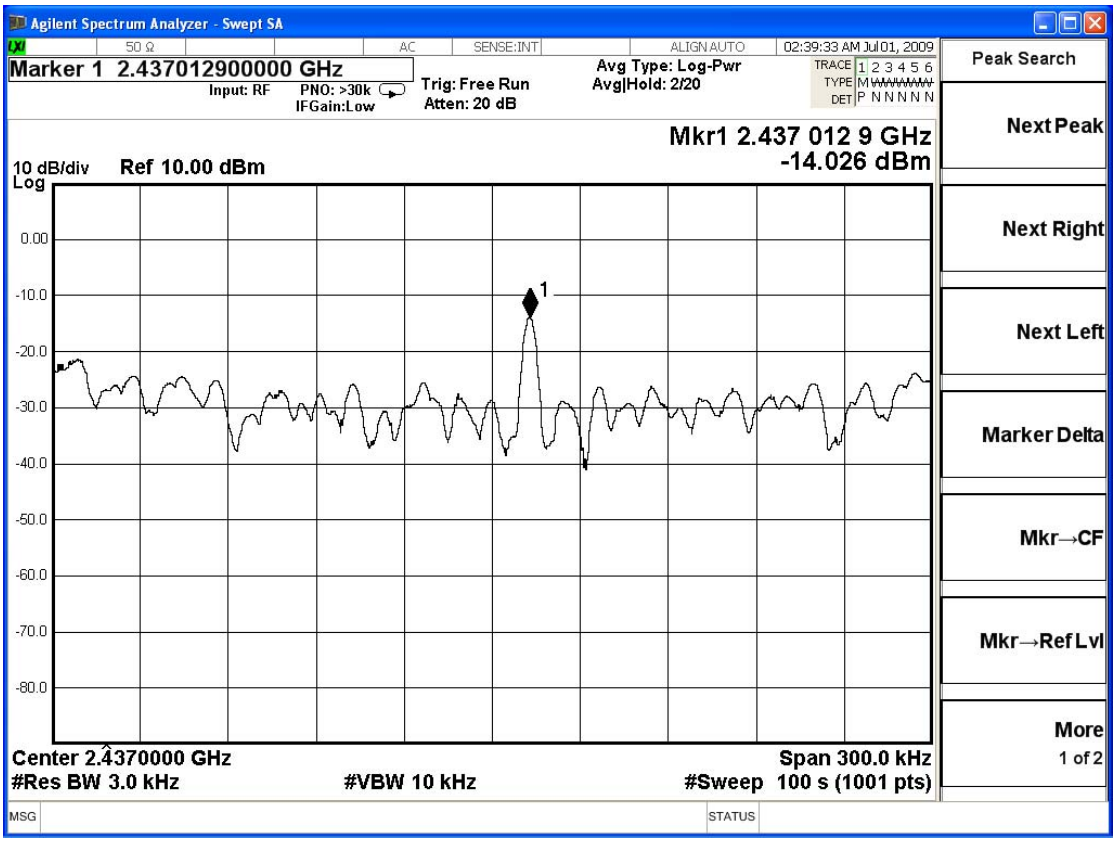
Figure Channel 1:



Product : 802.11bgn USB dongle
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437.000	-14.026	< 8dBm	Pass

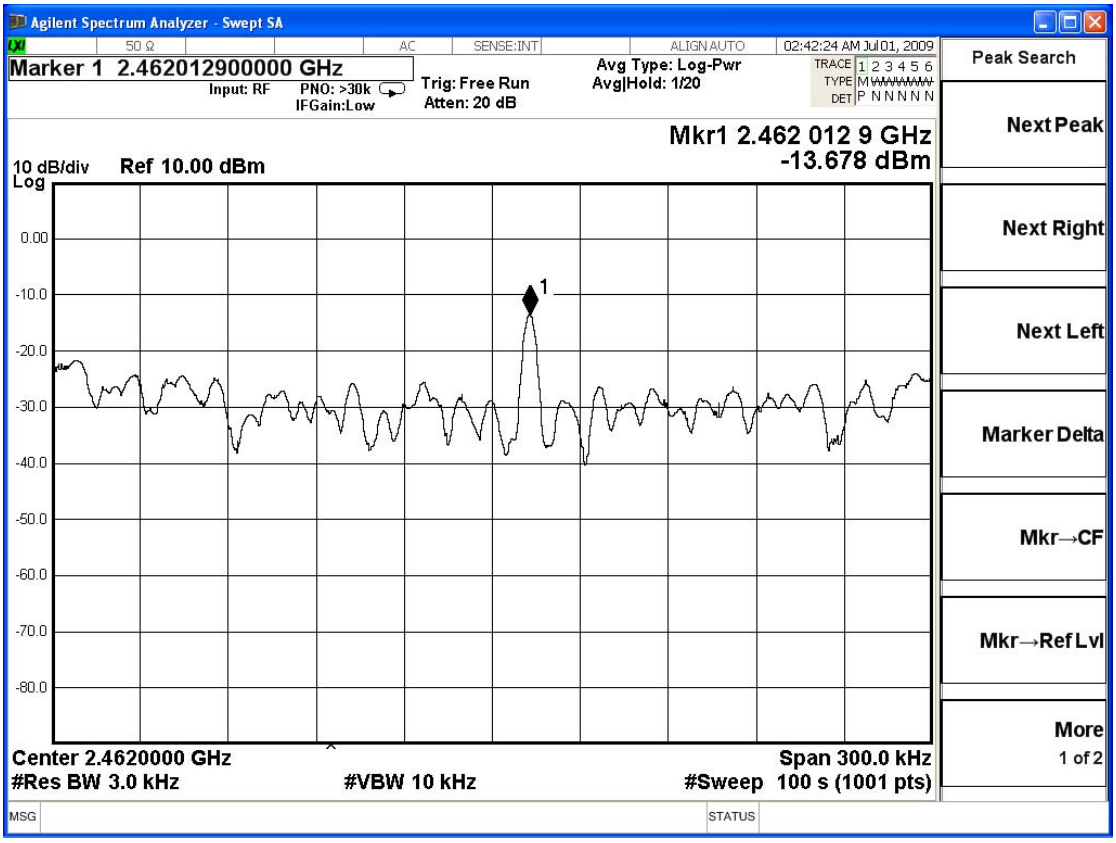
Figure Channel 6:



Product : 802.11bgn USB dongle
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462.00	-13.678	< 8dBm	Pass

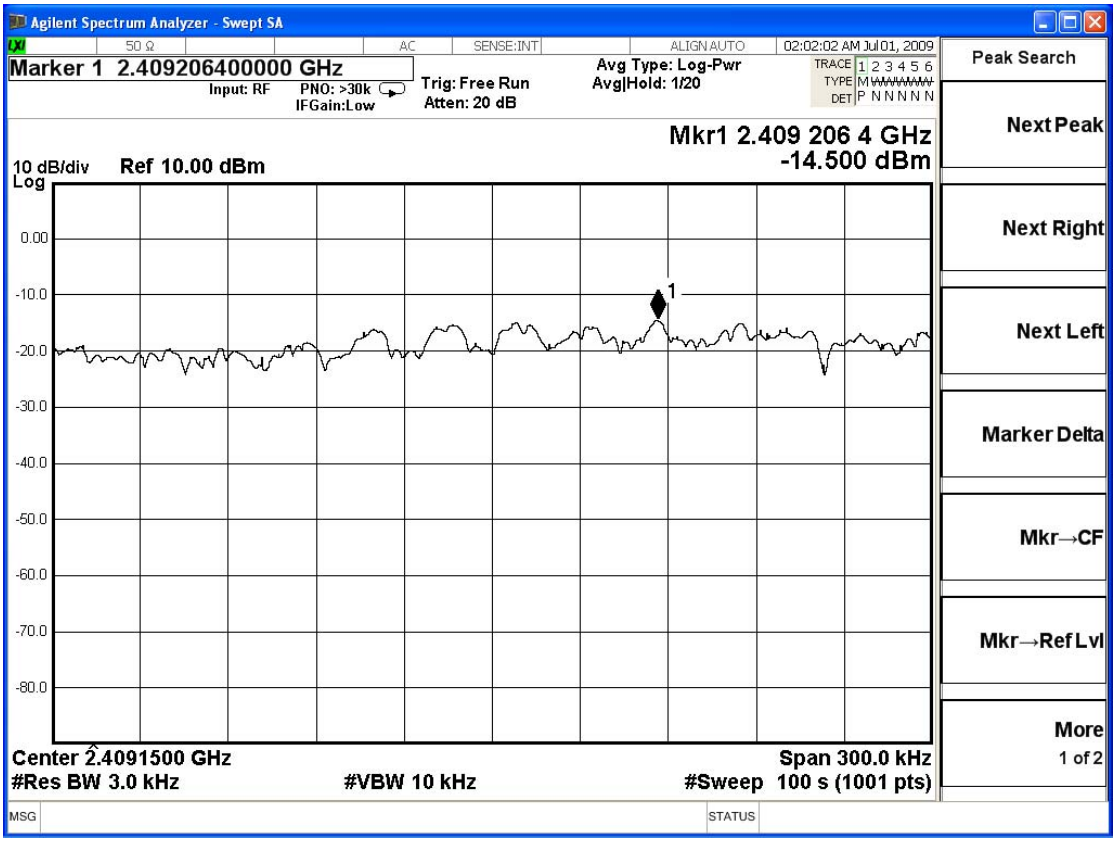
Figure Channel 11:



Product : 802.11bgn USB dongle
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412.00	-14.500	< 8dBm	Pass

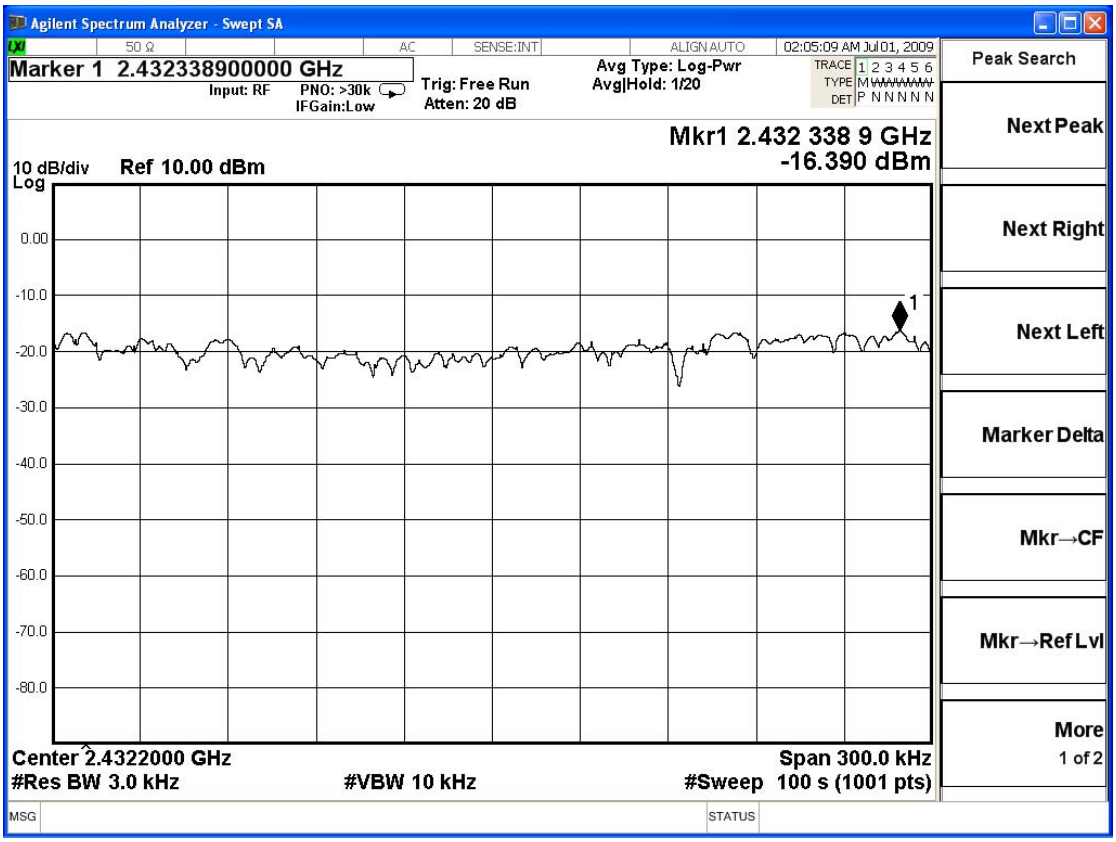
Figure Channel 1:



Product : 802.11bgn USB dongle
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437.000	-16.390	< 8dBm	Pass

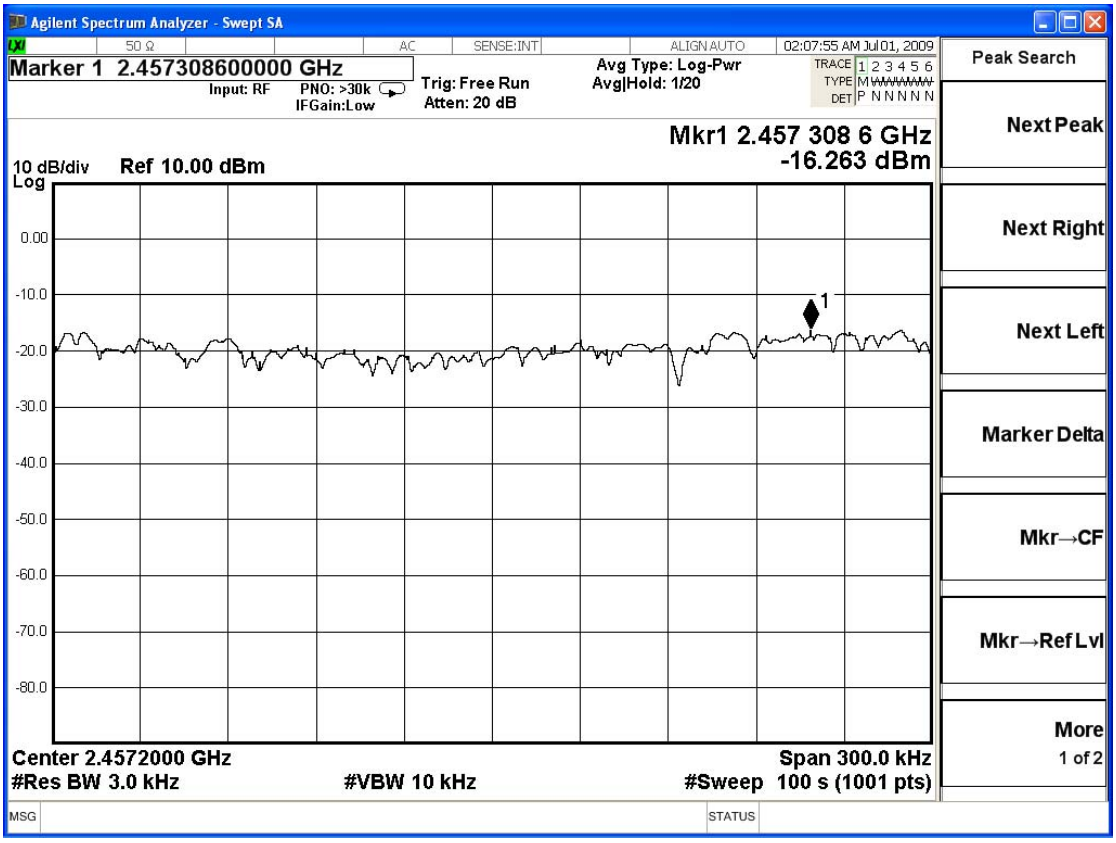
Figure Channel 6:



Product : 802.11bgn USB dongle
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS8 6.5Mbps 20M-BW) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462.00	-16.263	< 8dBm	Pass

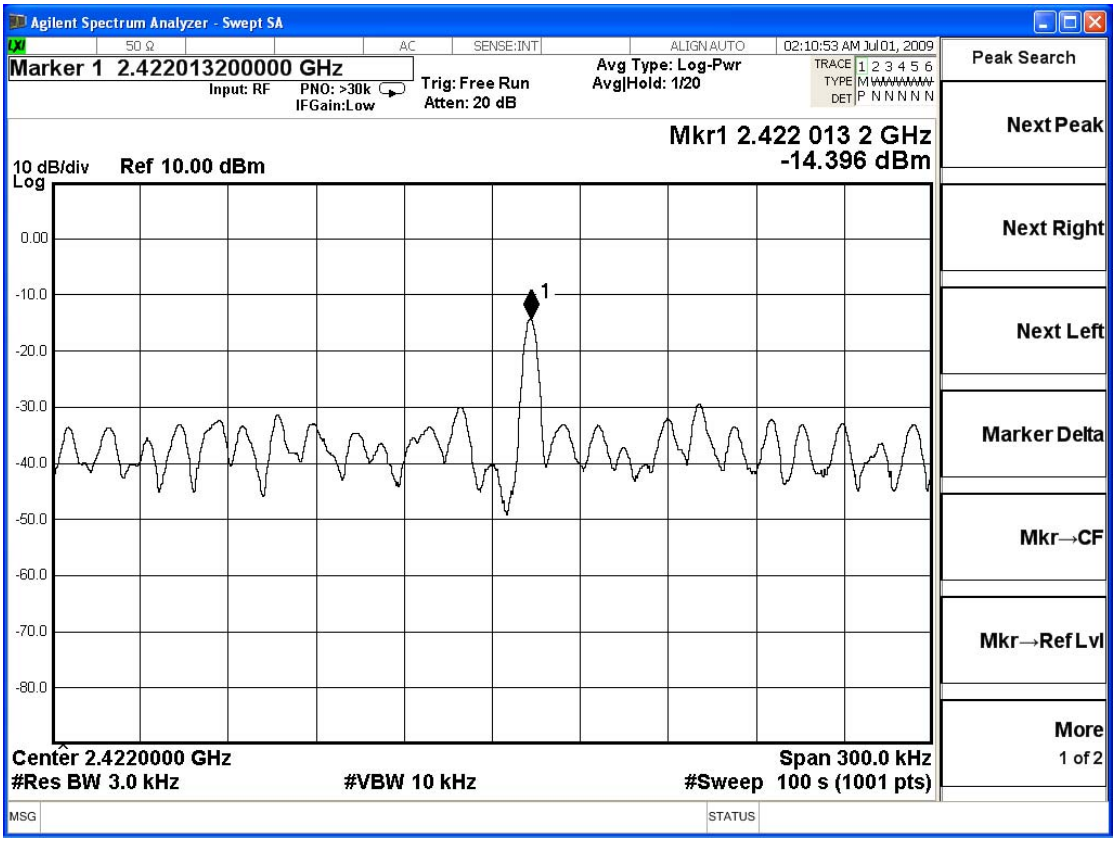
Figure Channel 11:



Product : 802.11bgn USB dongle
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2422MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2422.00	-14.396	< 8dBm	Pass

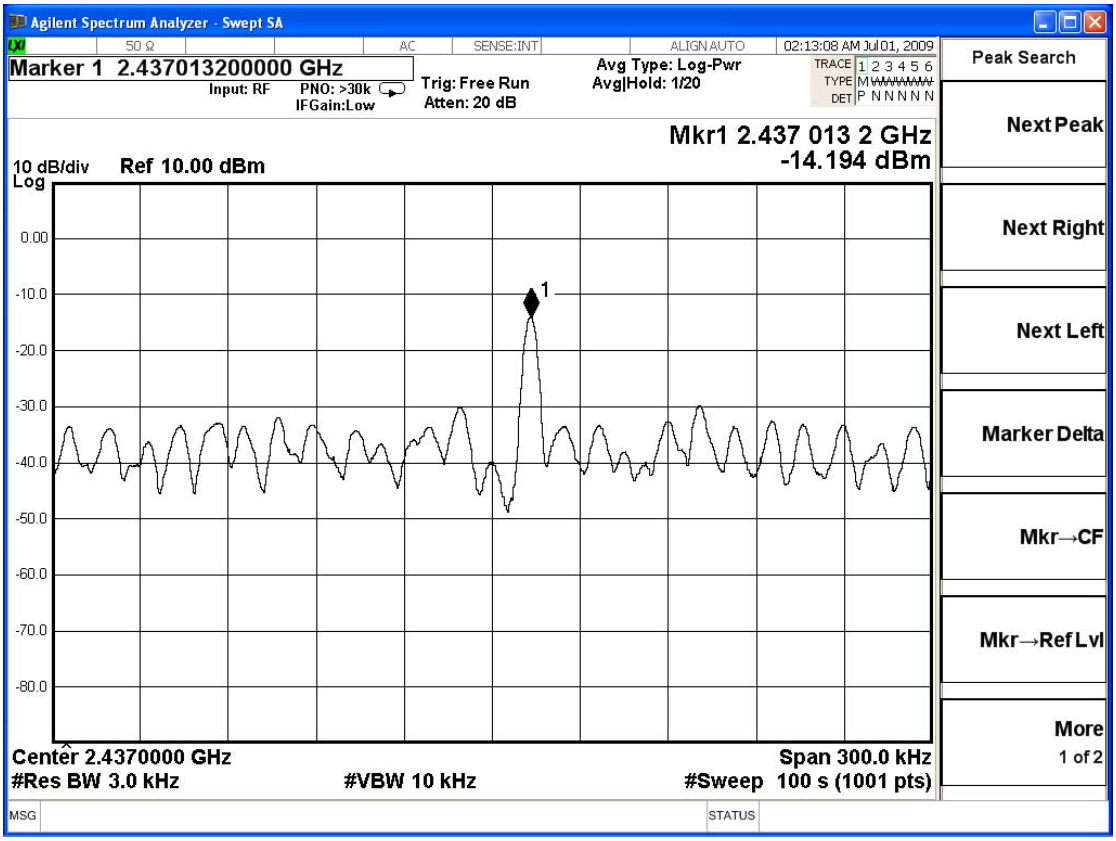
Figure Channel 1:



Product : 802.11bgn USB dongle
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
4	2437.000	-14.194	< 8dBm	Pass

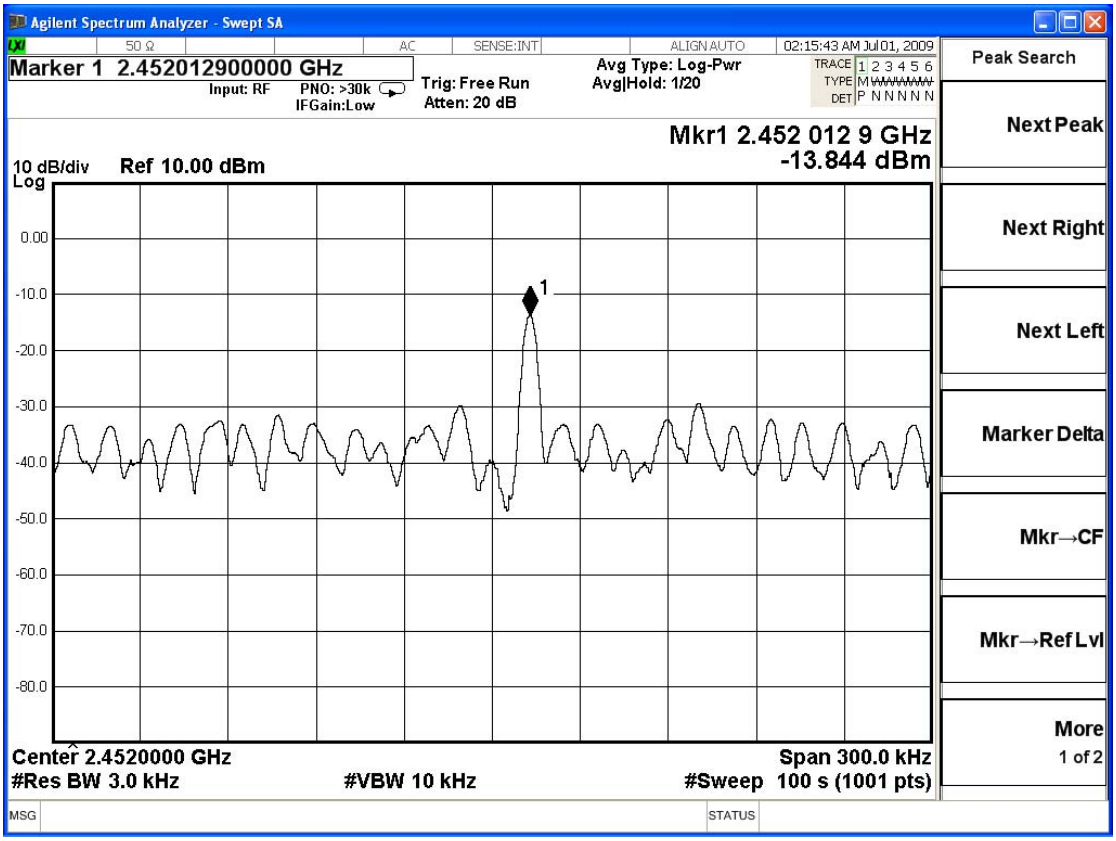
Figure Channel 4:



Product : 802.11bgn USB dongle
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 13.5Mbps 40M-BW) (2452MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
7	2452.00	-13.844	< 8dBm	Pass

Figure Channel 7:



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.