



Test Report

Product Name	ADSL2/2+ 11n Wireless Router
Model No	ASW915N+, M505N
FCC ID.	RK9-ASW915N

Applicant	CastleNet Technology Inc.
Address	No.64, Chung-Shan Rd. Tu-Cheng City, Taipei 236 Taiwan

Date of Receipt	July 20, 2009
Issue Date	Aug. 21, 2009
Report No.	097337R-RFUSP42V01
Report Version	V1.0

The test results relate only to the samples tested.

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Test Report Certification

Issue Date: Aug. 21, 2009

Report No.: 097337R-RFUSP42V01



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

Product Name	ADSL2/2+ 11n Wireless Router
Applicant	CastleNet Technology Inc.
Address	No.64, Chung-Shan Rd. Tu-Cheng City, Taipei 236 Taiwan
Manufacturer	CastleNet Technology Inc.
Model No.	ASW915N+, M505N
EUT Rated Voltage	AC 100-240V /50-60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	CastleNet
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2008 ANSI C63.4: 2003
Test Result	Complied



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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	ADSL2/2+ 11n Wireless Router
Trade Name	CastleNet
Model No.	ASW915N+, M505N
FCC ID.	RK9-ASW915N
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: 13-300Mbps
Type of Modulation	802.11b:DSSS DBPSK, DQPSK, CCK 802.11g/n:OFDM BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Dipole
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto
Power Adapter (1)	MFR: UMEC, M/N: UP0121A-12PA Input: AC 100-240V, 50/60Hz, 0.4A MAX Output: DC +12V, 1A, 12W MAX Cable out: Non-Shielded, 1.6m
Power Adapter (2)	MFR: OEM, M/N: ADS0129-W 120110 Input: AC 100-240V, 50-60Hz, 0.5A Output: DC 12V, 1.0A Cable Out: Non-Shielded, 1.6m

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	KINSUN	6602113053-300	1.62dBi in 2.4 GHz

Note: The antenna of EUT is conform to FCC 15.203.

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 an ADSL2/2+ 11n Wireless Router with a built-in 2.4GHz WLAN transceiver.
2. The EUT is including two models for different marketing requirement.
3. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
4. 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 13Mbps and 、802.11n(40M-BW) is 27Mbps)
5. 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
6. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

1.2. Operational Description

The EUT is an ADSL2/2+ 11n Wireless Router 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 13,26,39,52,78,104,117and 130Mbps in 802.11n(20M-BW) mode and 27,54,81,108,162,216,243,270 and 300Mbps(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 two antennas to support 2(Transmit) * 2(Receive) MIMO technology.

This ADSL2/2+ 11n Wireless Router, 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 Direct Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Division Multiplexing (OFDM) radio transmission, the ADSL2/2+ 11n Wireless Router 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 11Mbps)
	Mode 2: Transmitter (802.11g 54Mbps)
	Mode 3: Transmitter (802.11n MCS8 13Mbps 20M-BW)
	Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW)

Note:

1. 802.11b 、 802.11g are tested by chain A.
2. 802.11n(20M-BW) 、 802.11n(40M-BW) are testd by chain A + chain B

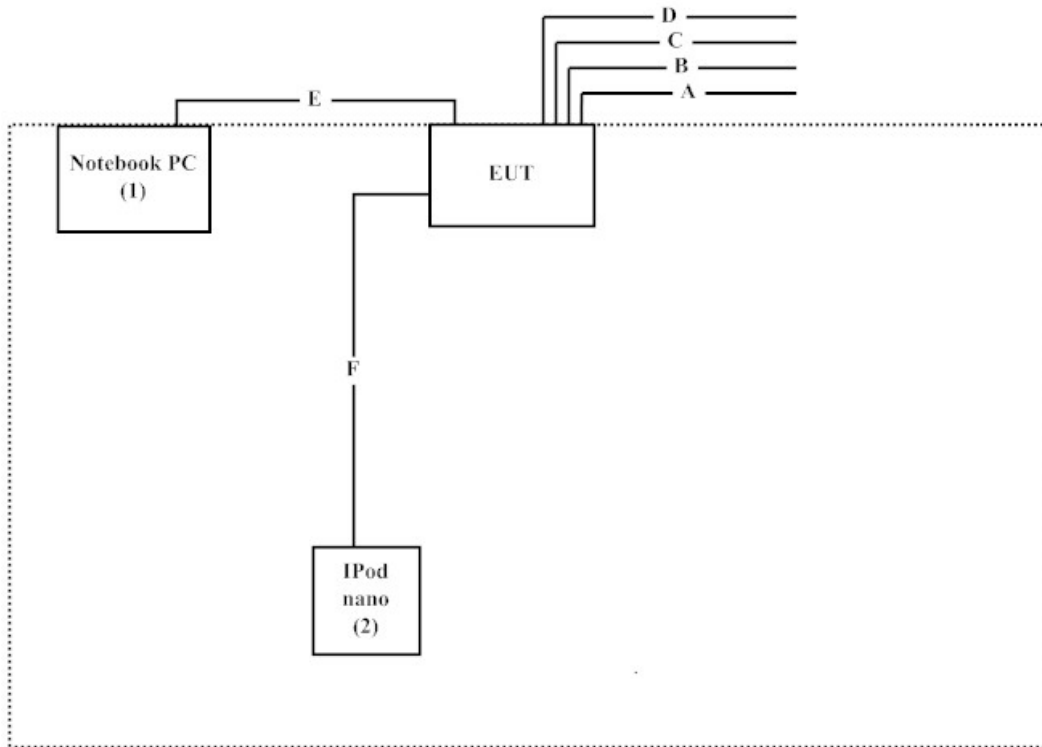
1.3. Tested System Details

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)	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m
(2)	iPod nano	Apple	A1199	5U705F9HVQ5	N/A

	Signal Cable Type	Signal cable Description
A	RJ-11 Cable	Non-Shielded, 2m
B	RJ-45 Cable	Non-Shielded, 2m
C	RJ-45 Cable	Non-Shielded, 2m
D	RJ-45 Cable	Non-Shielded, 2m
E	RJ-45 Cable	Non-Shielded, 2m
F	IPOD 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 “TELNET.exe” 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/>

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 Registration Number: 92195



Accreditation on NVLAP
 NVLAP Lab Code: 200533-0



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2. Conducted Emission

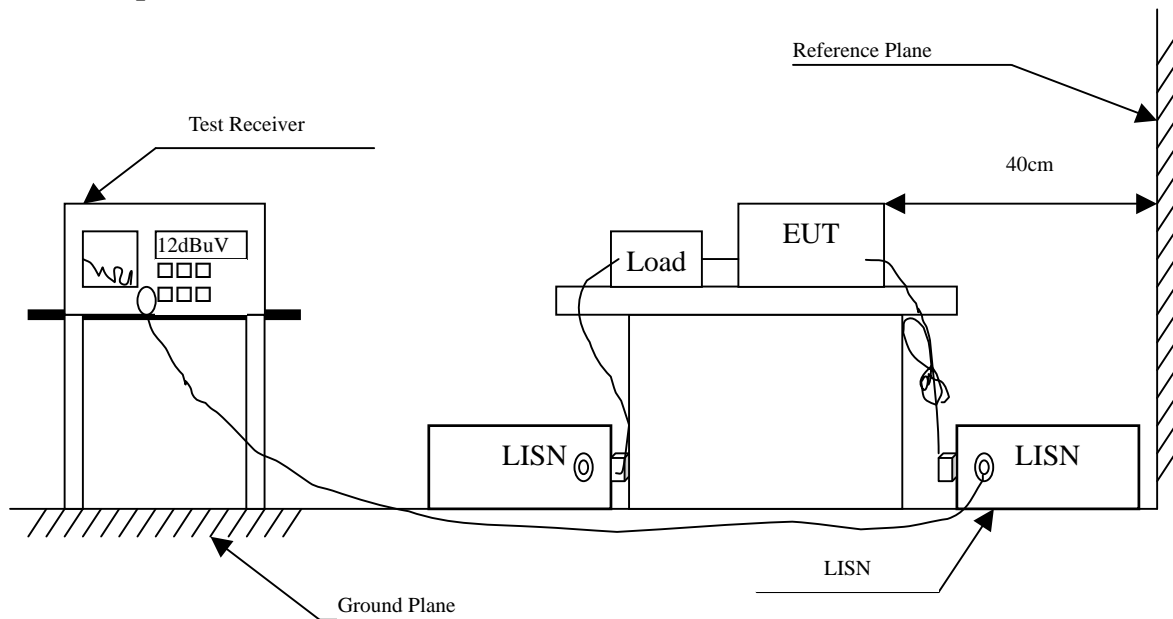
2.1. Test Equipment

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 : ADSL2/2+ 11n Wireless Router
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW) (2437MHz)-Adapter 1

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 1					
Quasi-Peak					
0.173	9.734	34.790	44.525	-20.818	65.343
0.248	9.677	35.810	45.487	-17.713	63.200
0.338	9.650	35.490	45.140	-15.489	60.629
0.498	9.640	31.090	40.730	-15.327	56.057
0.623	9.630	36.100	45.730	-10.270	56.000
1.330	9.670	32.920	42.590	-13.410	56.000
Average					
0.173	9.734	24.870	34.605	-20.738	55.343
0.248	9.677	25.500	35.177	-18.023	53.200
0.338	9.650	26.150	35.800	-14.829	50.629
0.498	9.640	19.500	29.140	-16.917	46.057
0.623	9.630	25.920	35.550	-10.450	46.000
1.330	9.670	22.420	32.090	-13.910	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

Product : ADSL2/2+ 11n Wireless Router
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW) (2437MHz)-Adapter 1

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 2					
Quasi-Peak					
0.173	9.739	45.400	55.139	-10.204	65.343
0.252	9.685	38.610	48.295	-14.791	63.086
0.505	9.640	39.120	48.760	-7.240	56.000
0.978	9.670	36.050	45.720	-10.280	56.000
3.568	9.700	34.780	44.480	-11.520	56.000
12.224	9.880	25.700	35.580	-24.420	60.000
Average					
0.173	9.739	36.130	45.869	-9.474	55.343
0.252	9.685	28.150	37.835	-15.251	53.086
0.505	9.640	32.070	41.710	-4.290	46.000
0.978	9.670	23.540	33.210	-12.790	46.000
3.568	9.700	24.550	34.250	-11.750	46.000
12.224	9.880	18.510	28.390	-21.610	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW) (2437MHz)-Adapter 2

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 1					
Quasi-Peak					
0.189	9.820	37.570	47.390	-17.496	64.886
0.283	9.830	27.210	37.040	-25.160	62.200
0.478	9.820	25.530	35.350	-21.279	56.629
2.189	9.850	27.930	37.780	-18.220	56.000
3.224	9.860	27.520	37.380	-18.620	56.000
16.087	10.190	22.630	32.820	-27.180	60.000
Average					
0.189	9.820	26.180	36.000	-18.886	54.886
0.283	9.830	14.710	24.540	-27.660	52.200
0.478	9.820	15.980	25.800	-20.829	46.629
2.189	9.850	19.360	29.210	-16.790	46.000
3.224	9.860	19.610	29.470	-16.530	46.000
16.087	10.190	15.640	25.830	-24.170	50.000

Note:

4. All Reading Levels are Quasi-Peak and average value.
5. "■" means the worst emission level.
6. Measurement Level = Reading Level + Correct Factor

Product : ADSL2/2+ 11n Wireless Router
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW) (2437MHz)-Adapter 2

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 2					
Quasi-Peak					
0.201	9.860	28.720	38.580	-25.963	64.543
0.255	9.858	31.520	41.378	-21.622	63.000
1.009	9.830	27.670	37.500	-18.500	56.000
1.908	9.850	30.600	40.450	-15.550	56.000
3.306	9.860	28.530	38.390	-17.610	56.000
16.650	10.220	22.280	32.500	-27.500	60.000
Average					
0.201	9.860	14.490	24.350	-30.193	54.543
0.255	9.858	18.430	28.288	-24.712	53.000
1.009	9.830	17.820	27.650	-18.350	46.000
1.908	9.850	21.500	31.350	-14.650	46.000
3.306	9.860	20.180	30.040	-15.960	46.000
16.650	10.220	15.530	25.750	-24.250	50.000

Note:

4. All Reading Levels are Quasi-Peak and average value.
5. "■" means the worst emission level.

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:

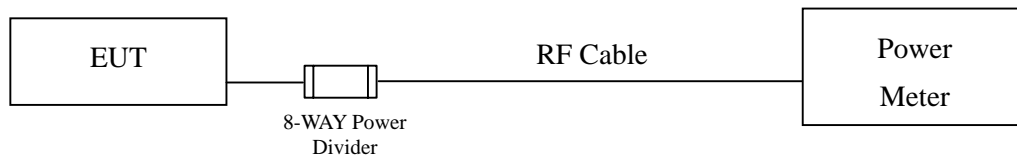
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Nov, 2008
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2009
X	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2009

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.
3. The power combiner is used for measure 11n mode.

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 : ADSL2/2+ 11n Wireless Router
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11b 11Mbps)

Cable Loss=0.5dB		Peak Power Output					
Channel No.	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit
		1	2	5.5	11		
1	2412.00	--	--	--	14.87	19.21	1Watt= 30 dBm
6	2437.00	13.82	14.13	14.69	14.92	19.16	1Watt= 30 dBm
11	2462.00	--	--	--	14.87	18.94	1Watt= 30 dBm

Note:

1. Peak Power Output Value =Reading value on peak power meter + cable loss

Product : ADSL2/2+ 11n Wireless Router
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11g 54Mbps)

Cable Loss=0.5dB		Peak Power Output										
Channel No.	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	
		6	9	12	18	24	36	48	54	54		
1	2412.00	--	--	--	--	--	--	--	--	5.81	17.17	1Watt= 30 dBm
6	2437.00	5.5	5.63	5.81	5.92	6.05	6.12	6.33	6.67	17.11	17.11	1Watt= 30 dBm
11	2462.00	--	--	--	--	--	--	--	--	6.05	16.55	1Watt= 30 dBm

Note:

1. Peak Power Output Value =Reading value on peak power meter + cable loss

Product : ADSL2/2+ 11n Wireless Router
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n MCS8 13Mbps 20M-BW)

Cable Loss=0.5dB		Peak Power Output									
Channel No.	Frequency (MHz)	Average Power								Peak Power	Required Limit
		For different Data Rate (Mbps)									
		13	26	39	52	78	104	117	130	13	
1	2412.00	13.97	--	--	--	--	--	--	--	24.55	1Watt= 30 dBm
6	2437.00	10.13	9.87	9.52	9.33	9.15	9.02	8.73	8.61	20.03	1Watt= 30 dBm
11	2462.00	13.78	--	--	--	--	--	--	--	24.66	1Watt= 30 dBm

Note:

1. Peak Power Output Value =Reading value on peak power meter + cable loss
2. The power combiner is used for measure 11n mode.

Product : ADSL2/2+ 11n Wireless Router
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW)

Cable Loss=0.5dB		Peak Power Output									
Channel No.	Frequency (MHz)	Average Power								Peak Power	Required Limit
		For different Data Rate (Mbps)									
		27	54	81	108	162	216	243	270	27	
1	2422.00	9.66	--	--	--	--	--	--	--	19.81	1Watt= 30 dBm
4	2437.00	10.04	9.88	9.62	9.5	9.31	9.1	8.75	8.53	21.3	1Watt= 30 dBm
7	2452.00	10.45	--	--	--	--	--	--	--	21.56	1Watt= 30 dBm

Note:

1. Peak Power Output Value =Reading value on peak power meter + cable loss
2. The power combiner is used for measure 11n mode.

4. Radiated Emission

4.1. Test Equipment

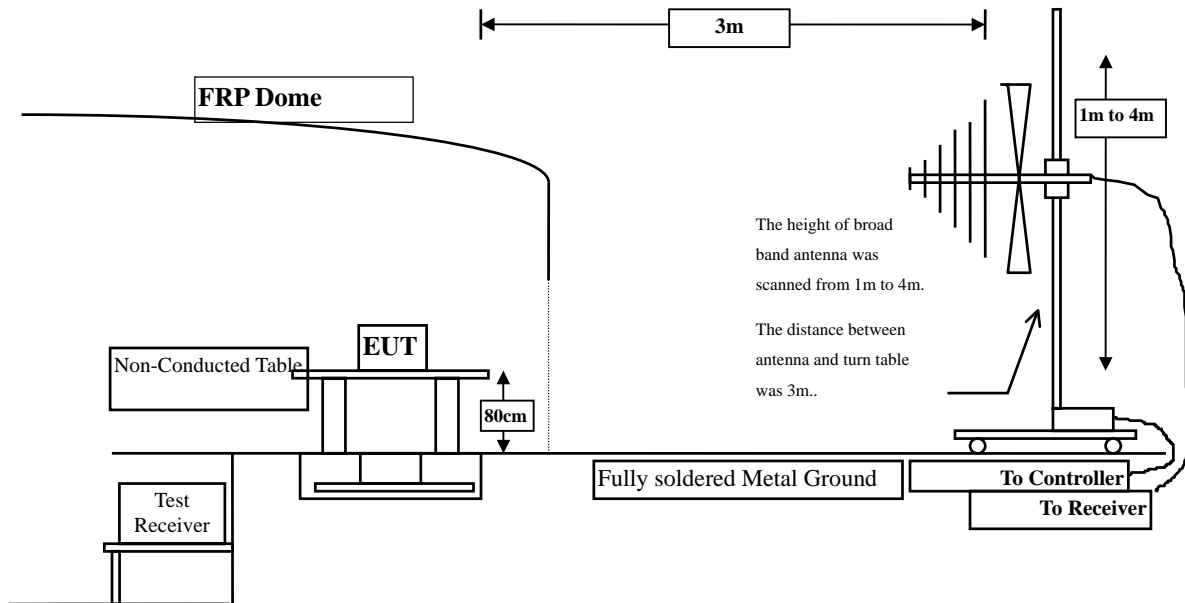
The following test equipment are used during the radiated emission test:

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

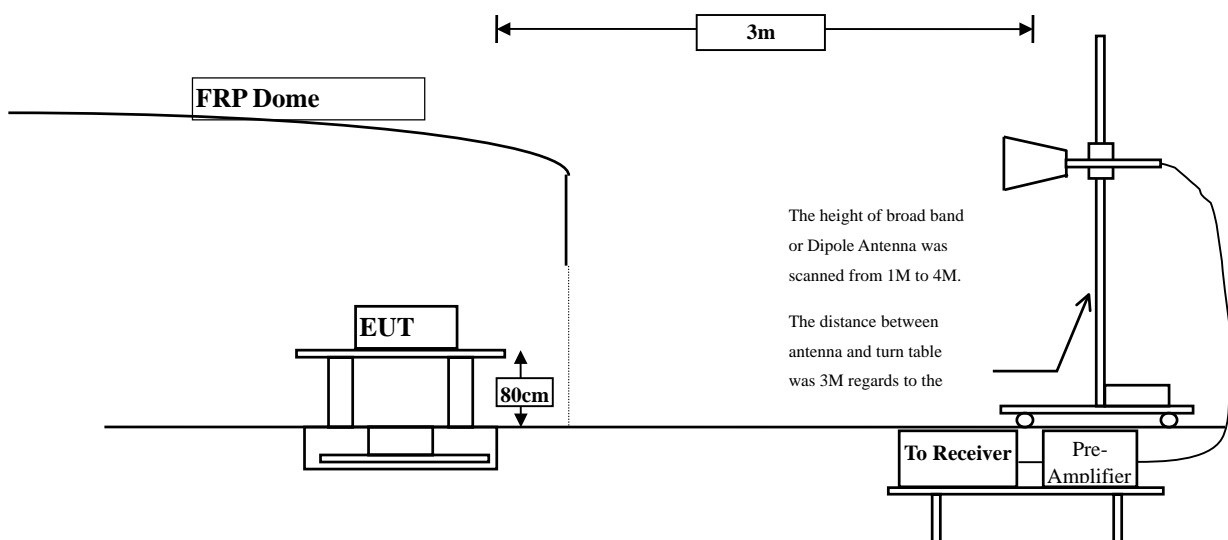
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with "X" are used to measure the final test results.

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 beamwidth of the antenna.

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

The frequency range from 30MHz to 10th harmonics is checked.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : ADSL2/2+ 11n Wireless Router
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11b 11Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.478	52.580	56.058	-17.942	74.000
7236.000	7.874	42.310	50.184	-23.816	74.000
9648.000	13.283	41.650	54.933	-19.067	74.000
Average Detector:					
4824.000	3.478	47.570	51.048	-2.952	54.000
9648.000	13.283	28.200	41.483	-12.517	54.000
Vertical					
Peak Detector:					
4824.000	3.570	53.360	56.930	-17.070	74.000
7236.000	8.819	44.490	53.309	-20.691	74.000
9648.000	13.761	43.050	56.810	-17.190	74.000
Average Detector:					
4824.000	3.570	46.690	50.260	-3.740	54.000
9648.000	13.761	31.930	45.690	-8.310	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11b 11Mbps) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.100	53.370	56.470	-17.530	74.000
7311.000	7.417	40.980	48.397	-25.603	74.000
9748.000	13.322	41.040	54.362	-19.638	74.000
Average Detector:					
4874.000	3.100	48.080	50.180	-3.820	54.000
9748.000	13.322	27.330	40.652	-13.348	54.000
Vertical					
Peak Detector:					
4874.000	3.574	55.200	58.774	-15.226	74.000
7311.000	8.230	43.590	51.820	-22.180	74.000
9748.000	13.421	41.290	54.711	-19.289	74.000
Average Detector:					
4874.000	3.574	46.946	50.520	-3.480	54.000
9748.000	13.421	28.140	41.561	-12.439	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11b 11Mbps) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	3.364	52.280	55.644	-18.356	74.000
7386.000	6.624	42.200	48.824	-25.176	74.000
9848.000	13.631	40.780	54.410	-19.590	74.000
Average Detector:					
4924.000	3.364	48.100	51.464	-2.536	54.000
9848.000	13.631	27.290	40.920	-13.080	54.000
Vertical					
Peak Detector:					
4924.000	4.221	54.610	58.831	-15.169	74.000
7386.000	7.305	43.950	51.255	-22.745	74.000
9848.000	13.600	40.930	54.530	-19.470	74.000
Average Detector:					
4924.000	4.221	45.929	50.150	-3.850	54.000
7386.000	13.600	27.930	41.530	-12.470	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11g 54Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.478	49.990	53.468	-20.532	74.000
7236.000	7.874	41.800	49.674	-24.326	74.000
9648.000	13.283	41.320	54.603	-19.397	74.000
Average					
Detector:					
9648.000	13.283	27.210	40.493	-13.507	54.000
Vertical					
Peak Detector:					
4824.000	3.570	53.440	57.010	-16.990	74.000
7236.000	8.819	43.610	52.429	-21.571	74.000
9648.000	13.761	41.500	55.260	-18.740	74.000
Average					
Detector:					
4824.000	3.570	47.040	50.610	-3.390	54.000
9648.000	13.761	27.330	41.090	-12.910	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11g 54Mbps) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.100	52.870	55.970	-18.030	74.000
7311.000	7.417	41.810	49.227	-24.773	74.000
9748.000	13.322	34.530	47.852	-26.148	74.000
Average Detector:					
4874.000	3.100	47.930	51.030	-2.970	54.000
Vertical					
Peak Detector:					
4874.000	3.574	55.640	59.214	-14.786	74.000
7311.000	8.230	44.060	52.290	-21.710	74.000
9748.000	13.421	41.180	54.601	-19.399	74.000
Average Detector:					
4874.000	3.574	48.036	51.610	-2.390	54.000
9748.000	13.421	27.410	40.831	-13.169	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11g 54Mbps) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	3.364	50.660	54.024	-19.976	74.000
7386.000	6.624	41.180	47.804	-26.196	74.000
9848.000	13.631	40.790	54.420	-19.580	74.000
Average Detector:					
4924.000	3.364	48.280	51.644	-2.356	54.000
9848.000	13.631	27.190	40.820	-13.180	54.000
Vertical					
Peak Detector:					
4924.000	4.221	53.710	57.931	-16.069	74.000
7386.000	7.305	44.960	52.265	-21.735	74.000
9848.000	13.600	41.180	54.780	-19.220	74.000
Average Detector:					
4924.000	4.221	45.949	50.170	-3.830	54.000
9848.000	13.600	27.450	41.050	-12.950	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n MCS8 13Mbps 20M-BW) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.478	50.480	53.958	-20.042	74.000
7236.000	7.874	41.910	49.784	-24.216	74.000
9648.000	13.283	42.080	55.363	-18.637	74.000
Average Detector:					
9648.000	13.283	27.410	40.693	-13.307	54.000
Vertical					
Peak Detector:					
4824.000	3.570	54.500	58.070	-15.930	74.000
7236.000	8.819	42.930	51.749	-22.251	74.000
9648.000	13.761	42.020	55.780	-18.220	74.000
Average Detector:					
4824.000	3.570	46.190	49.760	-4.240	54.000
9648.000	13.761	27.230	40.990	-13.010	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n MCS8 13Mbps 20M-BW) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.100	51.280	54.380	-19.620	74.000
7311.000	7.417	41.680	49.097	-24.903	74.000
9748.000	13.322	41.230	54.552	-19.448	74.000
Average					
Detector:					
4837.000	3.100	44.652	47.752	-6.248	54.000
9748.000	13.322	27.090	40.412	-13.588	54.000
Vertical					
Peak Detector:					
4874.000	3.574	58.220	61.794	-12.206	74.000
7311.000	8.230	45.430	53.660	-20.340	74.000
9748.000	13.421	41.210	54.631	-19.369	74.000
Average					
Detector:					
4874.000	3.574	46.386	49.960	-4.040	54.000
9748.000	13.421	27.310	40.731	-13.269	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n MCS8 13Mbps 20M-BW) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	3.364	50.580	53.944	-20.056	74.000
7386.000	6.624	41.380	48.004	-25.996	74.000
9848.000	13.631	40.820	54.450	-19.550	74.000
Average Detector:					
4924.000	3.364	45.430	48.794	-5.206	54.000
9848.000	13.631	27.005	40.635	-13.365	54.000
Vertical					
Peak Detector:					
4924.000	4.221	60.120	64.341	-9.659	74.000
7386.000	7.305	44.840	52.145	-21.855	74.000
9848.000	13.600	40.710	54.310	-19.690	74.000
Average Detector:					
4924.000	4.221	45.699	49.920	-4.080	54.000
9848.000	13.600	27.330	40.930	-13.070	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW) (2422MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4844.000	3.329	47.730	51.059	-22.941	74.000
7266.000	7.681	41.670	49.351	-24.649	74.000
9688.000	13.217	41.300	54.517	-19.483	74.000
Average Detector:					
9688.000	13.217	27.040	40.257	-13.743	54.000
Vertical					
Peak Detector:					
4844.000	3.575	56.340	59.915	-14.085	74.000
7266.000	8.564	42.700	51.264	-22.736	74.000
9688.000	13.553	41.270	54.823	-19.177	74.000
Average Detector:					
4844.000	3.575	47.515	51.090	-2.910	54.000
9688.000	13.553	27.420	40.973	-13.027	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.100	48.000	51.100	-22.900	74.000
7311.000	7.417	41.750	49.167	-24.833	74.000
9748.000	13.322	40.850	54.172	-19.828	74.000
Average					
Detector:					
9748.000	13.322	27.120	40.442	-13.558	54.000
Vertical					
Peak Detector:					
4874.000	3.574	54.850	58.424	-15.576	74.000
7311.000	8.230	42.510	50.740	-23.260	74.000
9748.000	13.421	40.610	54.031	-19.969	74.000
Average					
Detector:					
4874.000	3.574	46.716	50.290	-3.710	54.000
9748.000	13.421	27.130	40.551	-13.449	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW) (2452 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4904.000	3.145	48.710	51.855	-22.145	74.000
7356.000	6.664	41.800	48.463	-25.537	74.000
9808.000	13.495	39.850	53.345	-20.655	74.000
Average Detector:					
4904.000	3.145	48.045	51.190	-2.810	54.000
9808.000	13.495	27.015	40.510	-13.490	54.000
Vertical					
Peak Detector:					
4904.000	3.849	55.690	59.539	-14.461	74.000
7356.000	7.389	41.960	49.348	-24.652	74.000
9808.000	13.417	40.420	53.837	-20.163	74.000
Average Detector:					
4904.000	3.849	47.541	51.390	-2.610	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 : ADSL2/2+ 11n Wireless Router
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11b 11Mbps)(2437 MHz)-Adapter 1

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
256.980	-5.478	37.123	31.645	-14.355	46.000
398.600	-2.791	30.566	27.775	-18.225	46.000
499.480	-0.442	30.346	29.903	-16.097	46.000
697.360	2.720	23.328	26.048	-19.952	46.000
870.020	4.798	23.217	28.015	-17.985	46.000
967.020	6.391	24.425	30.816	-23.184	54.000
Vertical					
251.160	-7.898	42.119	34.221	-11.779	46.000
371.440	-3.274	35.854	32.579	-13.421	46.000
499.480	-1.342	30.177	28.834	-17.166	46.000
674.080	-0.947	32.889	31.942	-14.058	46.000
875.840	1.211	27.972	29.183	-16.817	46.000
965.080	7.397	23.027	30.424	-23.576	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.

Product : ADSL2/2+ 11n Wireless Router
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11g 54Mbps)(2437 MHz)-Adapter 1

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
255.040	-5.498	42.564	37.066	-8.934	46.000
371.440	-1.634	36.137	34.502	-11.498	46.000
507.240	0.254	29.609	29.863	-16.137	46.000
674.080	2.353	32.772	35.125	-10.875	46.000
875.840	4.861	26.799	31.660	-14.340	46.000
932.100	6.430	24.526	30.956	-15.044	46.000
Vertical					
249.220	-8.023	42.266	34.243	-11.757	46.000
371.440	-3.274	36.384	33.109	-12.891	46.000
499.480	-1.342	30.853	29.510	-16.490	46.000
674.080	-0.947	33.069	32.122	-13.878	46.000
875.840	1.211	28.699	29.910	-16.090	46.000
967.020	7.541	23.536	31.077	-22.923	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.

Product : ADSL2/2+ 11n Wireless Router
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n MCS8 13Mbps 20M-BW)(2437 MHz)-Adapter 1

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
249.220	-6.403	42.266	35.863	-10.137	46.000
371.440	-1.634	36.384	34.749	-11.251	46.000
497.540	-0.760	31.657	30.897	-15.103	46.000
633.340	1.387	28.419	29.806	-16.194	46.000
763.320	3.813	25.818	29.632	-16.368	46.000
875.840	4.861	28.699	33.560	-12.440	46.000
Vertical					
253.100	-7.994	41.738	33.745	-12.255	46.000
371.440	-3.274	35.600	32.325	-13.675	46.000
499.480	-1.342	28.985	27.642	-18.358	46.000
749.740	1.998	23.870	25.868	-20.132	46.000
899.120	2.608	27.089	29.697	-16.303	46.000
967.020	7.541	22.791	30.332	-23.668	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.

Product : ADSL2/2+ 11n Wireless Router
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW)(2437 MHz)-Adapter 1

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
255.040	-5.498	39.850	34.352	-11.648	46.000
359.800	-2.120	29.737	27.618	-18.382	46.000
544.100	2.992	24.303	27.295	-18.705	46.000
674.080	2.353	34.328	36.681	-9.319	46.000
786.600	4.305	23.994	28.299	-17.701	46.000
930.160	6.700	22.428	29.128	-16.872	46.000
Vertical					
253.100	-7.994	40.129	32.136	-13.864	46.000
371.440	-3.274	34.426	31.151	-14.849	46.000
629.460	-4.201	27.795	23.594	-22.406	46.000
763.320	1.823	24.853	26.677	-19.323	46.000
825.400	3.125	24.872	27.996	-18.004	46.000
961.200	6.724	23.404	30.128	-23.872	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.

Product : ADSL2/2+ 11n Wireless Router
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11b 11Mbps)(2437 MHz)-Adapter 2

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
37.760	-2.617	36.266	33.650	-6.350	40.000
138.640	-7.497	45.318	37.821	-5.679	43.500
299.660	-4.929	43.315	38.386	-7.614	46.000
400.540	0.780	37.055	37.835	-8.165	46.000
499.480	1.808	33.058	34.865	-11.135	46.000
600.360	3.235	34.446	37.681	-8.319	46.000
Vertical					
39.700	-12.570	46.030	33.460	-6.540	40.000
177.440	-1.460	37.821	36.361	-7.139	43.500
249.220	-5.171	38.057	32.886	-13.114	46.000
299.660	-4.239	36.498	32.259	-13.741	46.000
365.620	0.123	32.756	32.879	-13.121	46.000
687.660	2.166	31.325	33.492	-12.508	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 : ADSL2/2+ 11n Wireless Router
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11g 54Mbps)(2437 MHz)-Adapter 2

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
39.700	-3.710	35.311	31.601	-8.399	40.000
68.800	-14.710	48.277	33.567	-6.433	40.000
138.640	-7.497	44.594	37.097	-6.403	43.500
249.220	-6.291	42.435	36.144	-9.856	46.000
299.660	-4.929	43.861	38.932	-7.068	46.000
901.060	5.647	31.981	37.628	-8.372	46.000
Vertical					
39.700	-12.570	47.075	34.505	-5.495	40.000
175.500	-2.042	38.057	36.015	-7.485	43.500
249.220	-5.171	38.650	33.479	-12.521	46.000
299.660	-4.239	37.721	33.482	-12.518	46.000
499.480	-0.382	34.116	33.733	-12.267	46.000
670.200	-1.017	41.270	40.252	-5.748	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 : ADSL2/2+ 11n Wireless Router
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n MCS8 13Mbps 20M-BW)(2437 MHz)-Adapter 2

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
39.700	-3.710	37.709	33.999	-6.001	40.000
138.640	-7.497	43.981	36.484	-7.016	43.500
249.220	-6.291	42.167	35.876	-10.124	46.000
299.660	-4.929	42.616	37.687	-8.313	46.000
400.540	0.780	37.982	38.762	-7.238	46.000
600.360	3.235	33.287	36.522	-9.478	46.000
Vertical					
39.700	-12.570	44.746	32.176	-7.824	40.000
101.780	-5.618	43.798	38.180	-5.320	43.500
499.480	-0.382	32.343	31.960	-14.040	46.000
602.300	1.468	31.646	33.114	-12.886	46.000
687.660	2.166	31.669	33.836	-12.164	46.000
965.080	3.625	28.845	32.470	-21.530	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.

Product : ADSL2/2+ 11n Wireless Router
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW)(2437 MHz)-Adapter 2

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
39.700	-3.710	36.961	33.251	-6.749	40.000
138.640	-7.497	42.788	35.291	-8.209	43.500
299.660	-4.929	41.818	36.889	-9.111	46.000
400.540	0.780	34.601	35.381	-10.619	46.000
600.360	3.235	33.737	36.972	-9.028	46.000
1000.000	9.421	28.783	38.204	-15.796	54.000
Vertical					
39.700	-12.570	47.580	35.010	-4.990	40.000
103.720	-5.156	43.099	37.943	-5.557	43.500
165.800	-4.803	39.546	34.743	-8.757	43.500
299.660	-4.239	37.042	32.803	-13.197	46.000
687.660	2.166	32.364	34.531	-11.469	46.000
749.740	1.841	31.350	33.191	-12.809	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.

5. RF antenna conducted test

5.1. Test Equipment

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

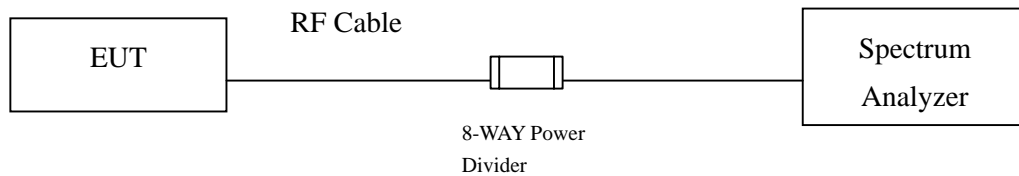
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Nov, 2008
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2009
X	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2009

Note:

4. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
5. The test instruments marked with “X” are used to measure the final test results.
6. The power combiner is used for measure 11n mode.

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 $\pm 1.27\text{dB}$

5.6. Test Result of RF antenna conducted test

Product : ADSL2/2+ 11n Wireless Router
 Test Item : RF antenna conducted test
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11b 11Mbps)

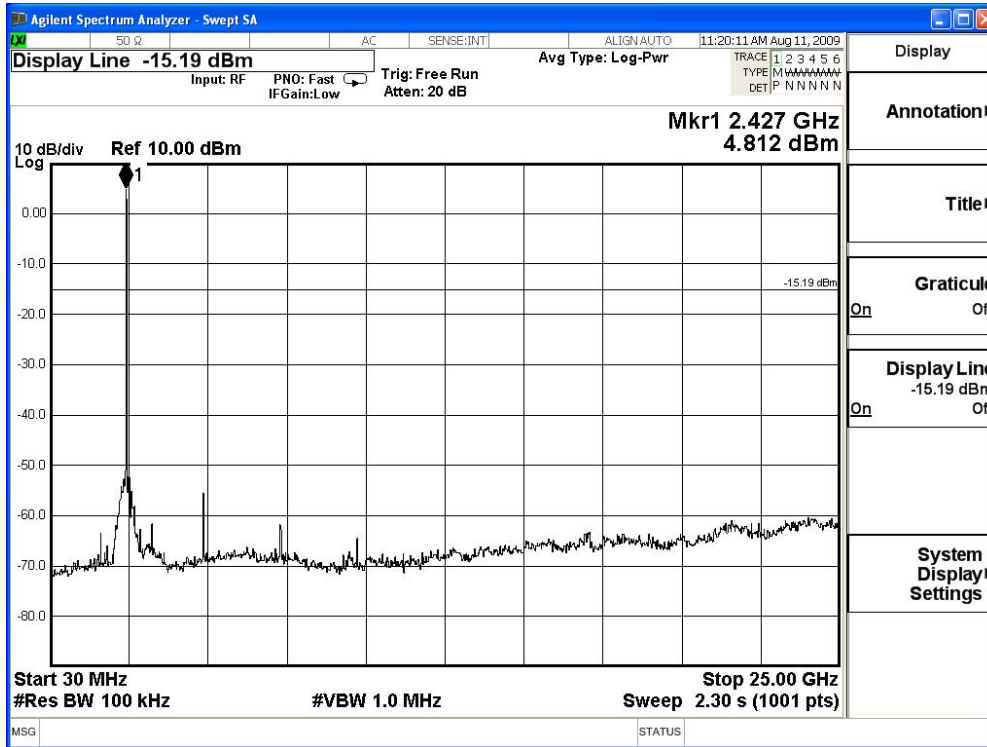
Channel 01 (2412MHz) 30-25GHz

Chain A



Channel 06 (2437MHz) 30-25GHz

Chain A



Channel 11 (2462MHz) 30-25GHz

Chain A



Product : ADSL2/2+ 11n Wireless Router
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11g 54Mbps)

Channel 01 (2412MHz) 30-25GHz

Chain A



Channel 06 (2437MHz) 30-25GHz

Chain A



Channel 11 (2462MHz) 30-25GHz

Chain A



Product : ADSL2/2+ 11n Wireless Router
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n MCS8 13Mbps 20M-BW)

Channel 01 (2412MHz) 30-25GHz

Chain A+B



Channel 06 (2437MHz) 30-25GHz

Chain A+B



Channel 11 (2462MHz) 30-25GHz

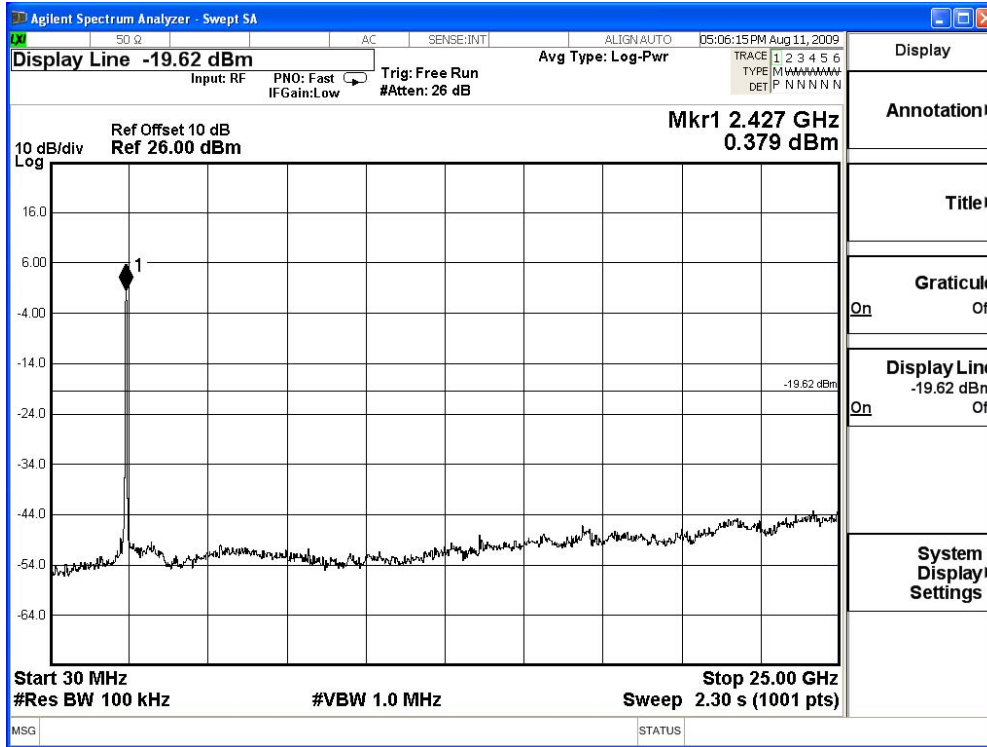
Chain A+B



Product : ADSL2/2+ 11n Wireless Router
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW)

Channel 01 (2422MHz) 30-25GHz

Chain A+B



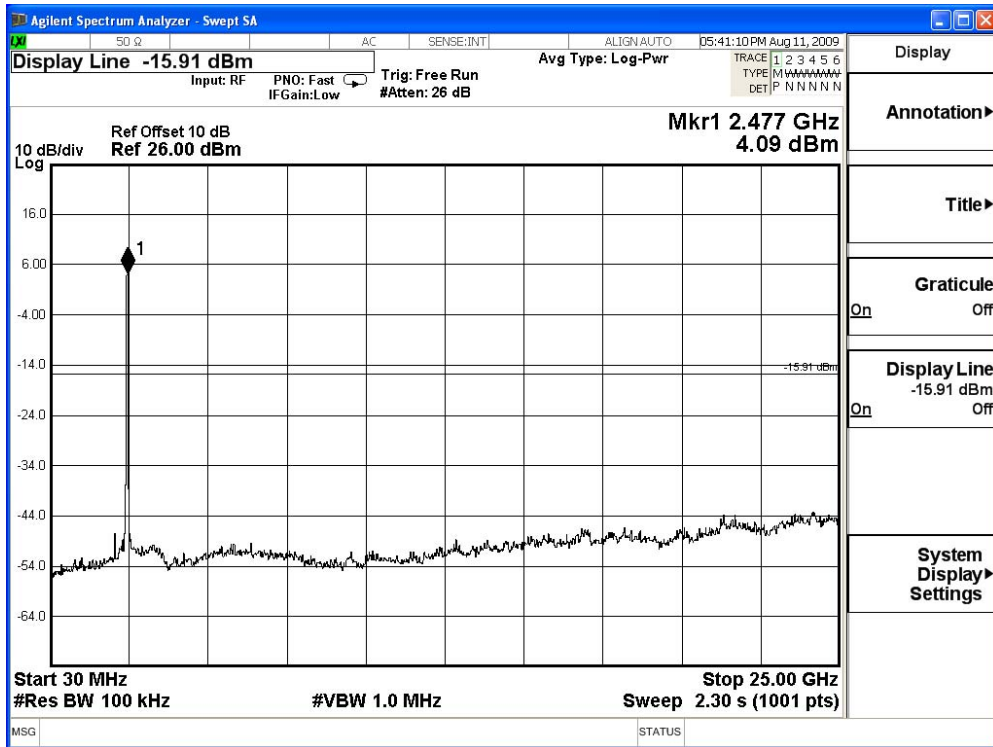
Channel 04 (2437MHz) 30-25GHz

Chain A+B



Channel 07 (2452MHz) 30-25GHz

Chain A+B



6. Band Edge

6.1. Test Equipment

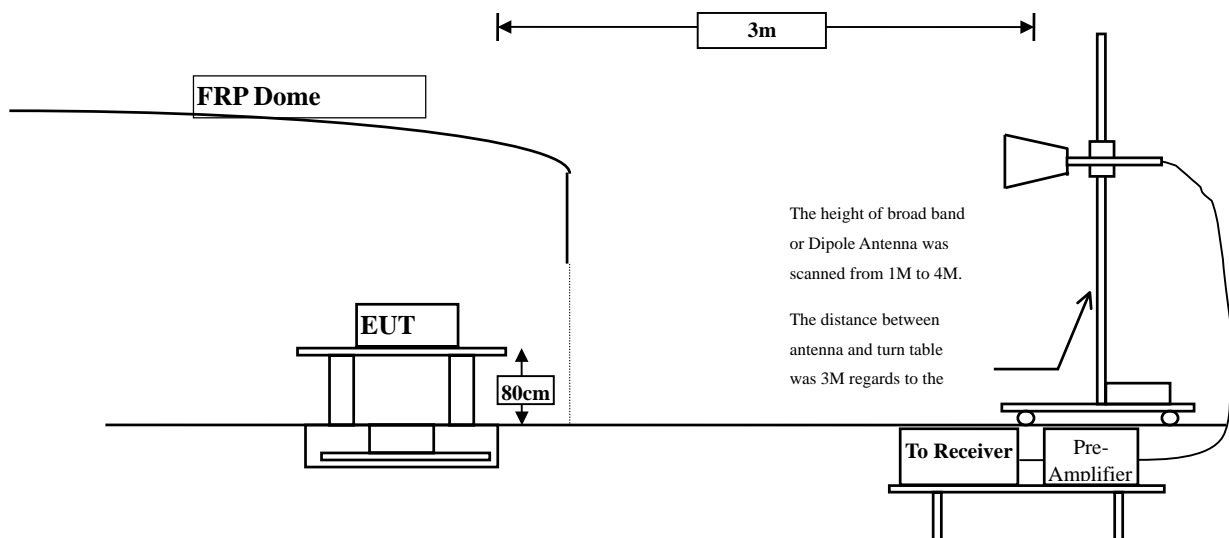
The following test equipments are used during the band edge tests:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.	
☒ Site # 3		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
		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
	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.

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

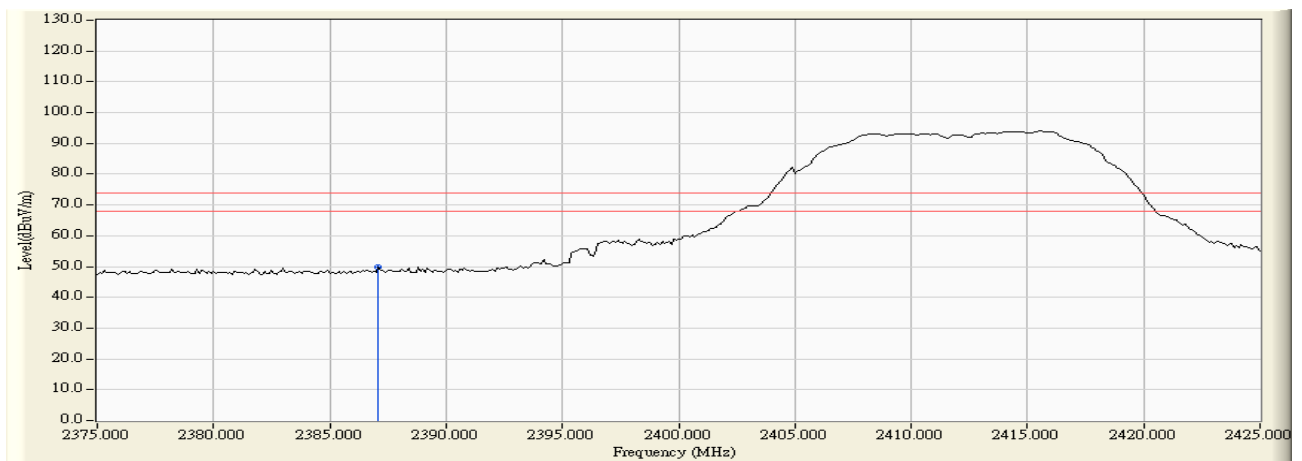
6.6. Test Result of Band Edge

Product : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11b 11Mbps)

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)	2387.100	2.929	46.866	49.795	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11b 11Mbps)

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	1.931	59.541	61.472	74.00	54.00	Pass
01 (Average)	2390.000	1.931	45.504	47.435	74.00	54.00	Pass

Figure Channel 01: (Vertical) (Peak)

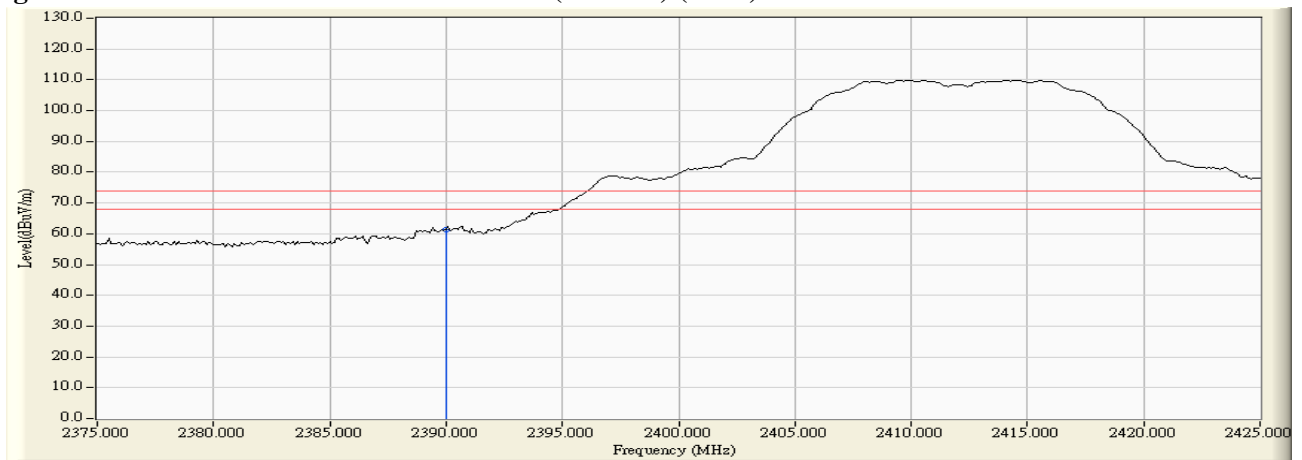
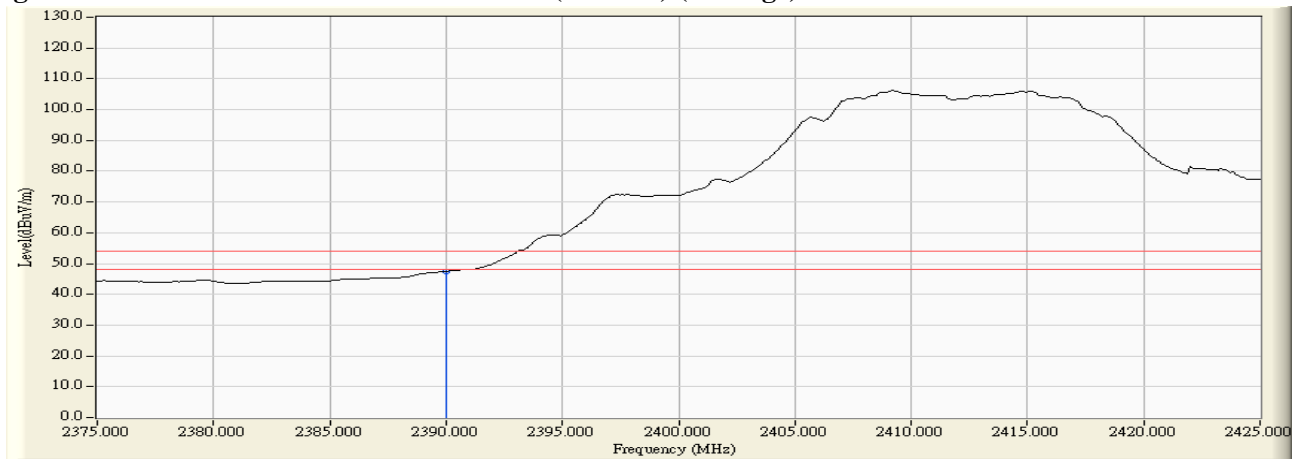


Figure Channel 01: (Vertical) (Average)



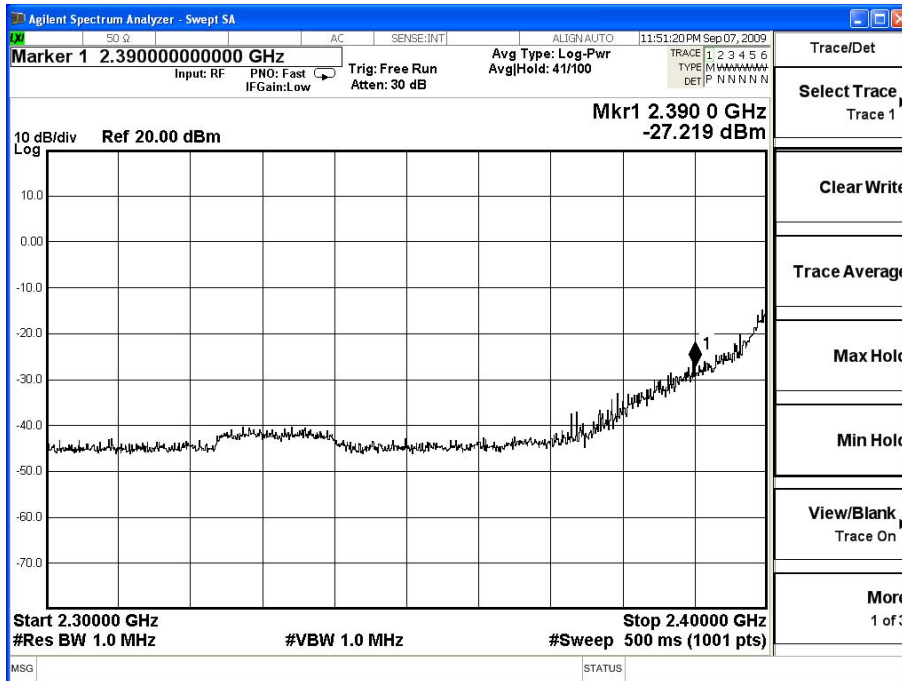
Note:

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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11b 11Mbps)

RF Conducted Measurement:

Figure Channel 01: (Peak)

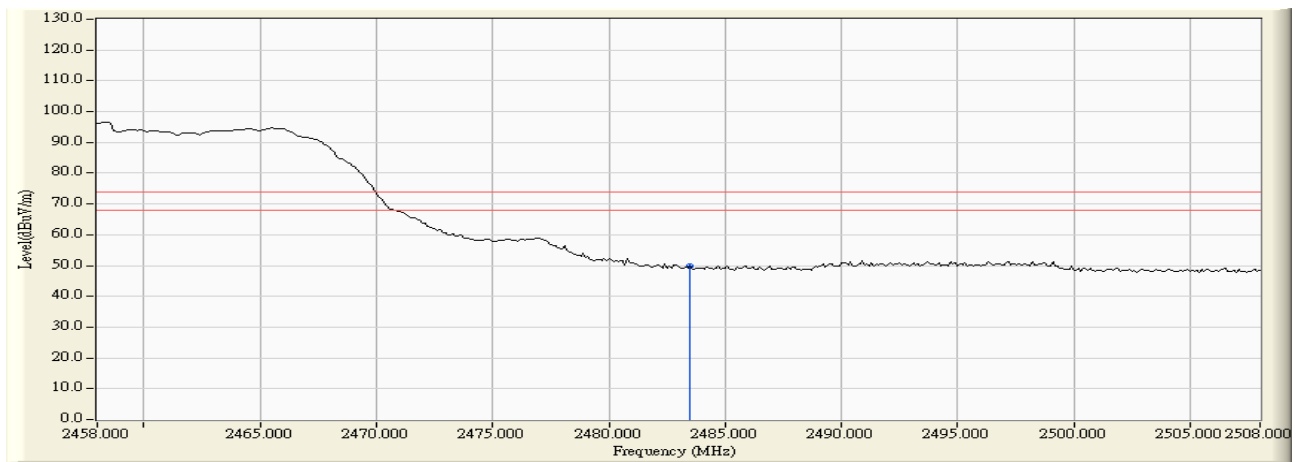


Product : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11b 11Mbps)

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	3.077	46.853	49.930	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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11b 11Mbps)

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	2.554	58.005	60.558	74.00	54.00	Pass
11 (Average)	2483.500	2.554	47.349	49.902	74.00	54.00	Pass

Figure Channel 11: (Vertical) (Peak)

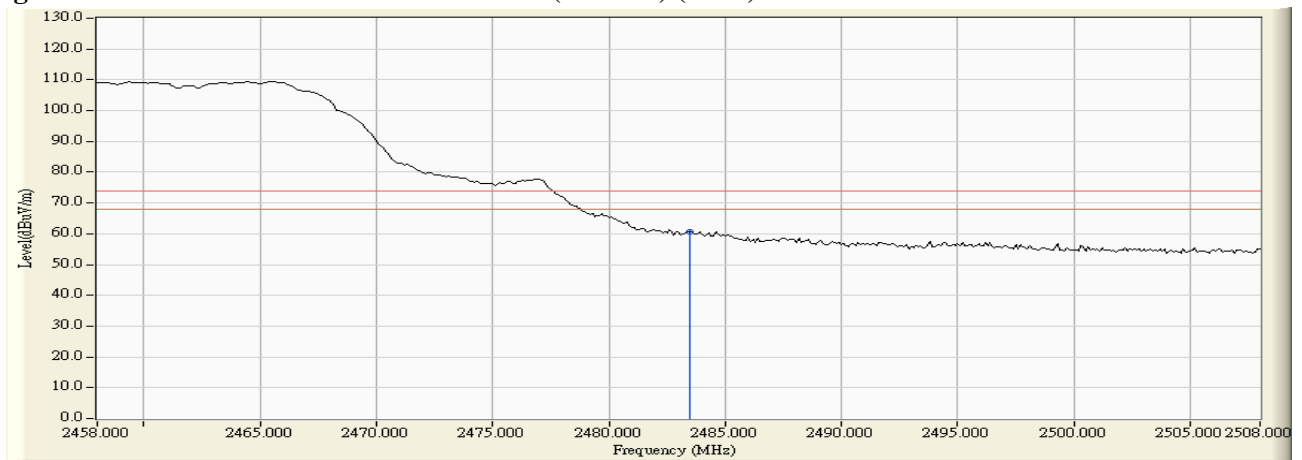
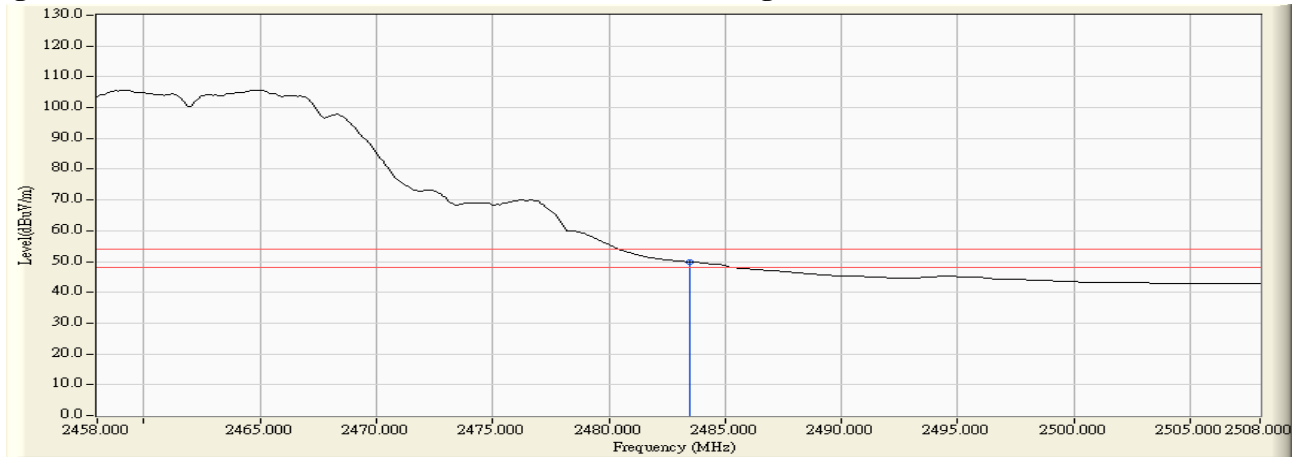


Figure Channel 11: (Vertical) (Average)



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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11g 54Mbps)

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)	2387.500	-1.620	61.455	59.835	74.00	54.00	Pass
01 (Average)	2387.500	-1.620	43.261	41.641	74.00	54.00	Pass
01 (Average)	2390.000	-1.617	45.668	44.051	74.00	54.00	Pass

Figure Channel 01: Horizontal (Peak)

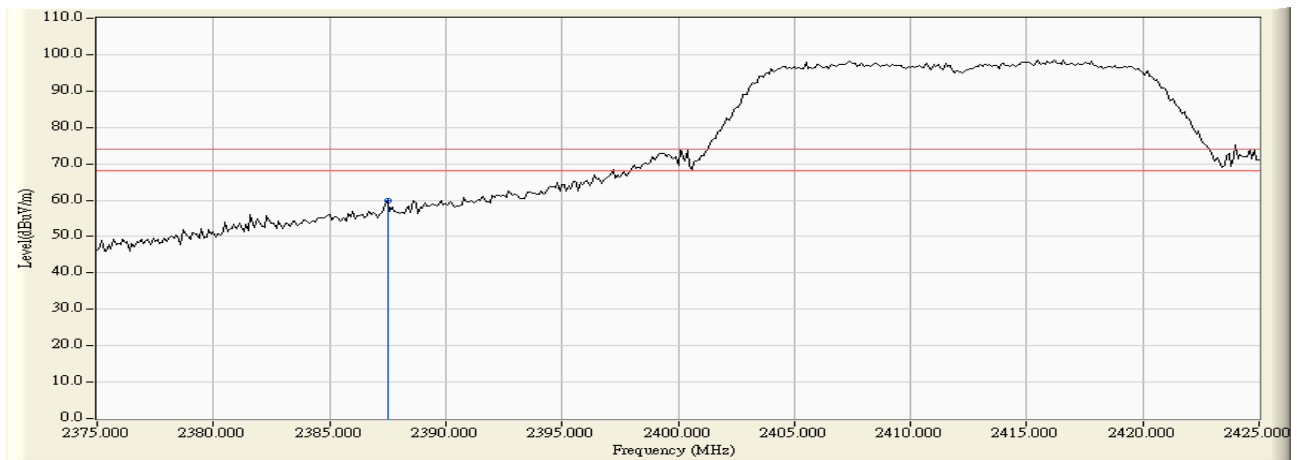
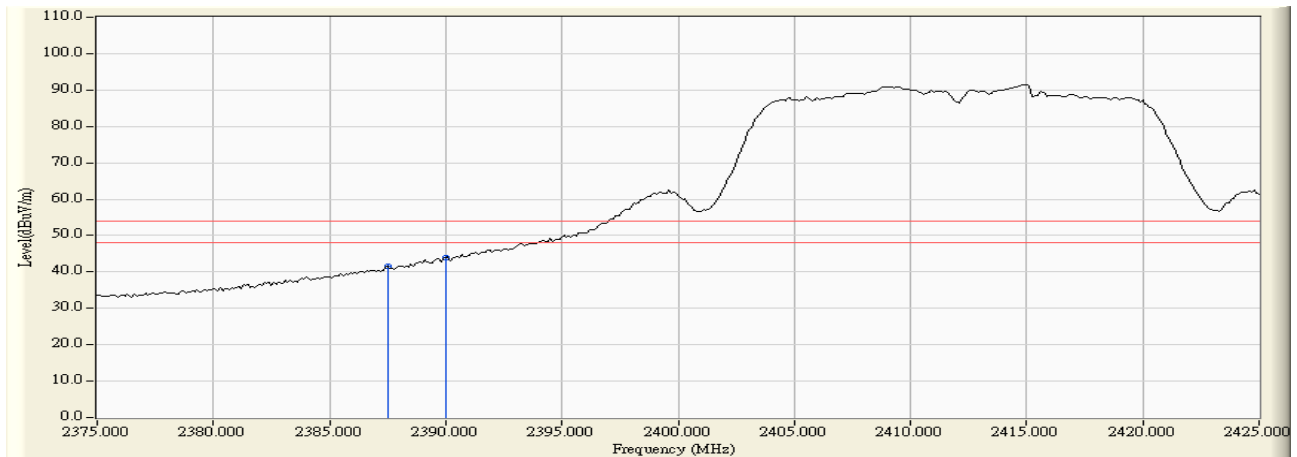


Figure Channel 01: Horizontal (Average)



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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11g 54Mbps)

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)	2388.100	-2.375	70.079	67.705	74.00	54.00	Pass
01 (Average)	2388.100	-2.375	51.176	48.802	74.00	54.00	Pass
01 (Average)	2390.000	-2.384	54.155	51.772	74.00	54.00	Pass

Figure Channel 01: (Vertical) (Peak)

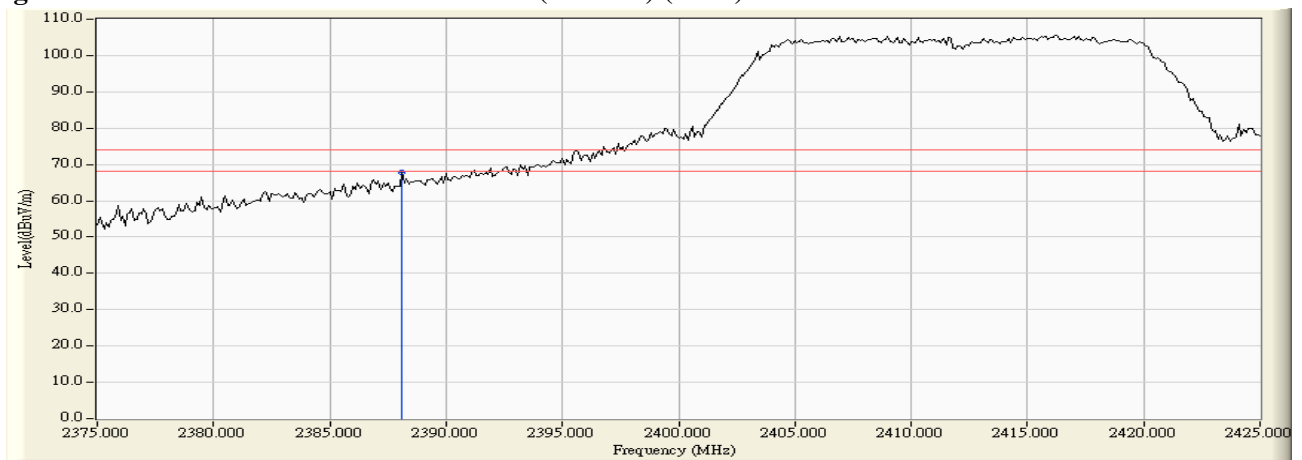
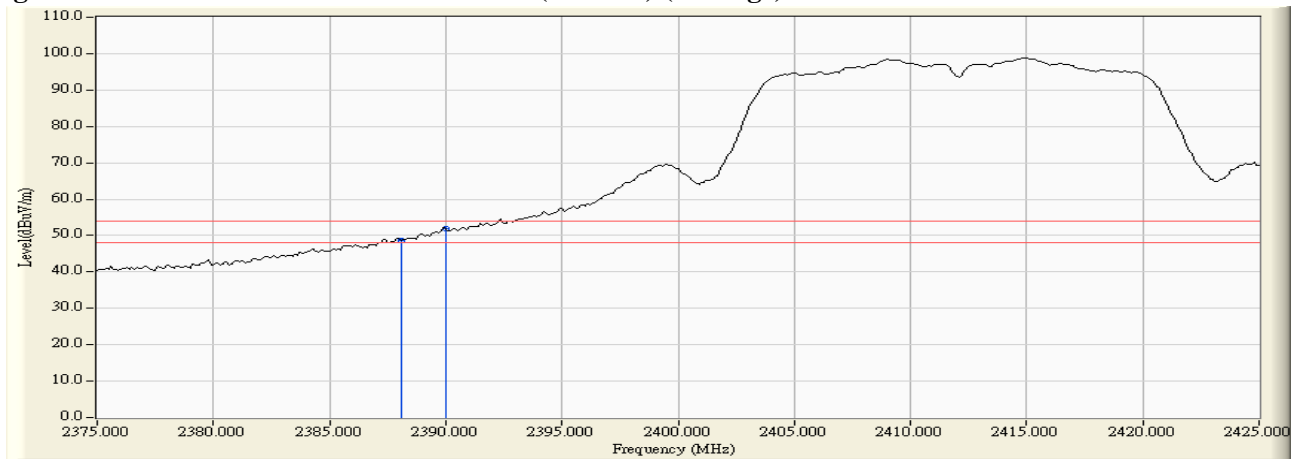


Figure Channel 01: (Vertical) (Average)



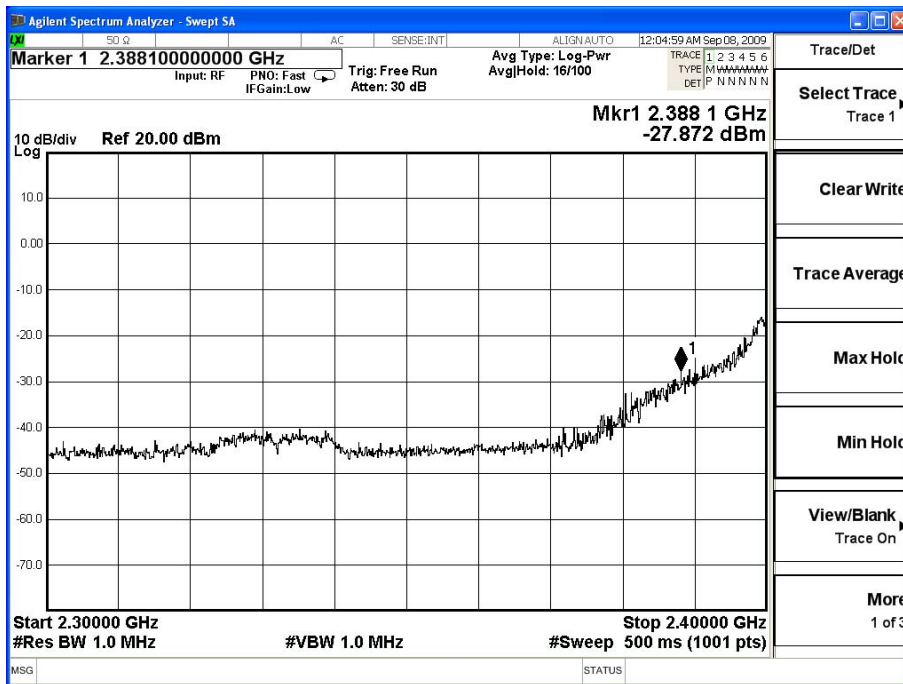
Note:

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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11g 54Mbps)

RF Conducted Measurement:

Figure Channel 01: (Peak)



Product : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11g 54Mbps)

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	63.414	62.391	74.00	54.00	Pass
11 (Average)	2483.500	-1.023	48.399	47.376	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

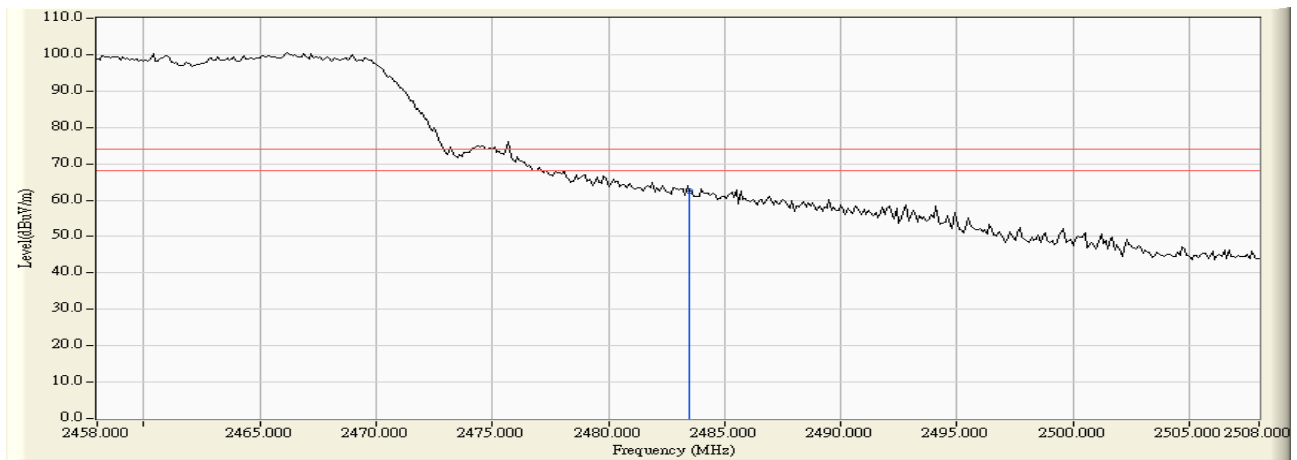
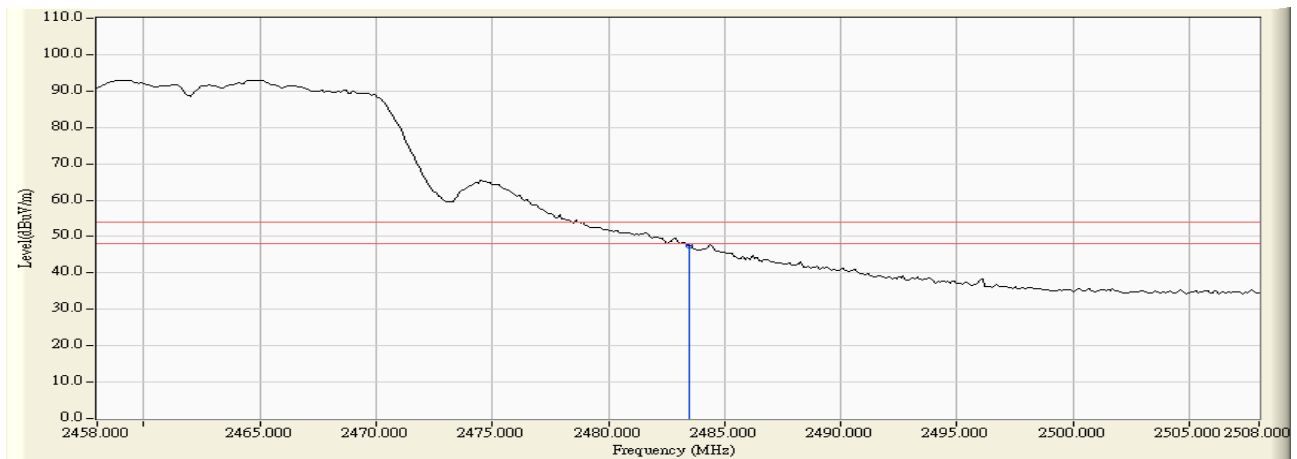


Figure Channel 11: Horizontal (Average)



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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11g 54Mbps)

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)	2484.100	-1.306	69.456	68.150	74.00	54.00	Pass
11 (Average)	2484.100	-1.306	53.397	52.091	74.00	54.00	Pass
11 (Average)	2483.500	-1.314	53.395	52.081	74.00	54.00	Pass

Figure Channel 01: (Vertical) (Peak)

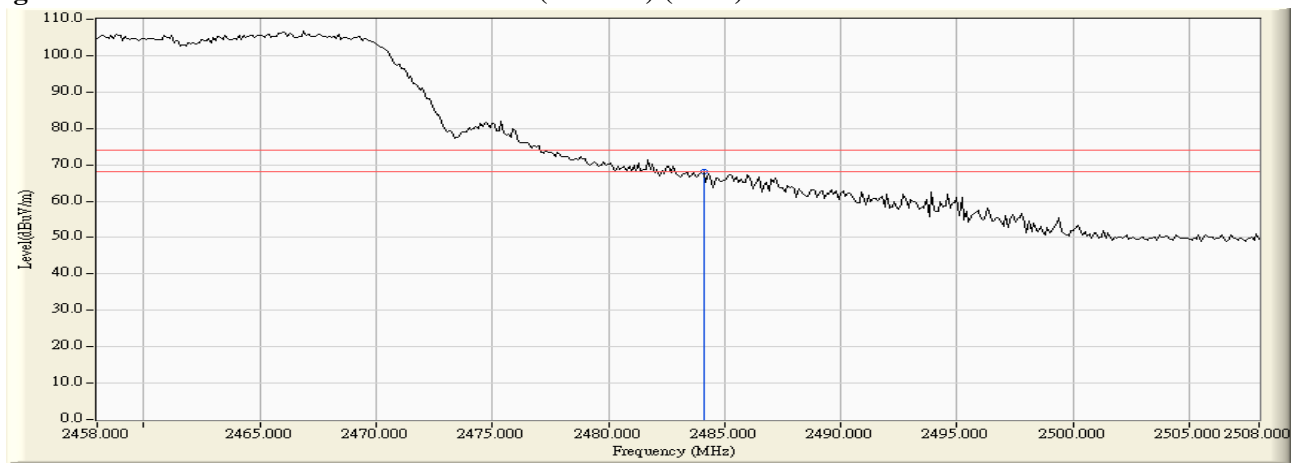
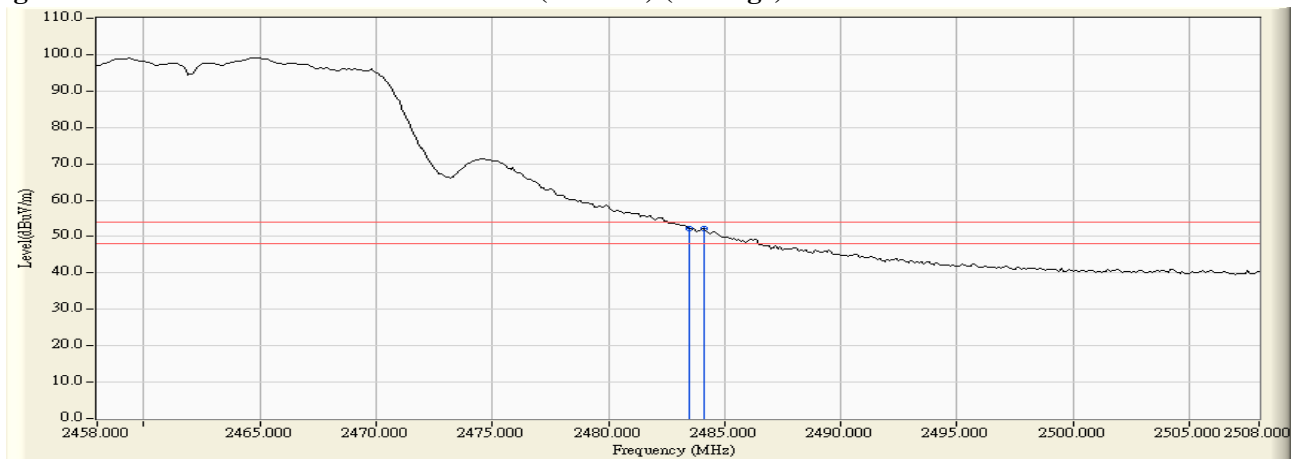


Figure Channel 01: (Vertical) (Average)



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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n MCS8 13Mbps 20M-BW)

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)	2389.200	-1.618	65.395	63.777	74.00	54.00	Pass
01 (Average)	2389.200	-1.618	44.807	43.189	74.00	54.00	Pass
01 (Average)	2390.000	-1.617	45.984	44.367	74.00	54.00	Pass

Figure Channel 01: Horizontal (Peak)

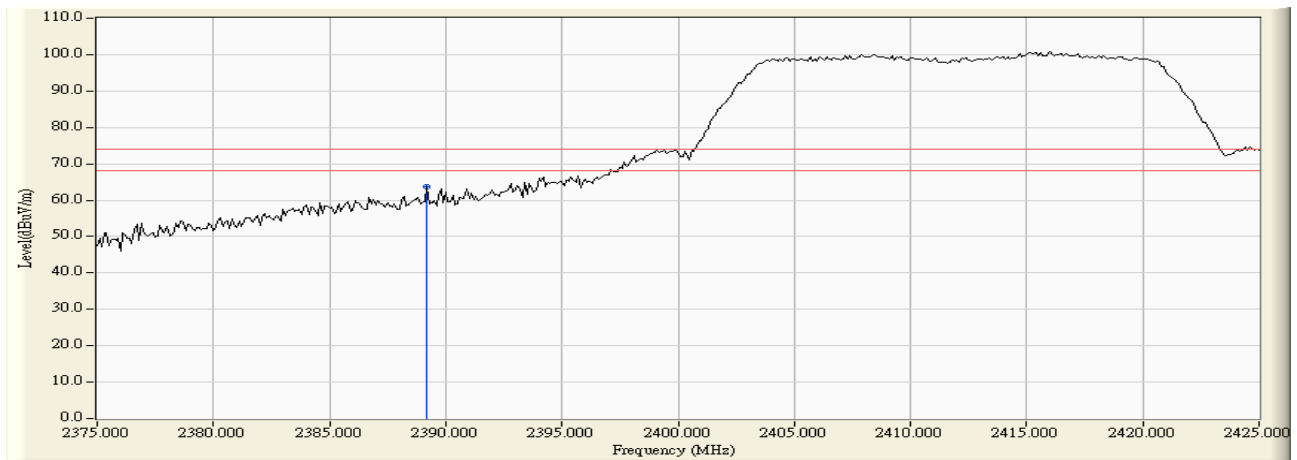
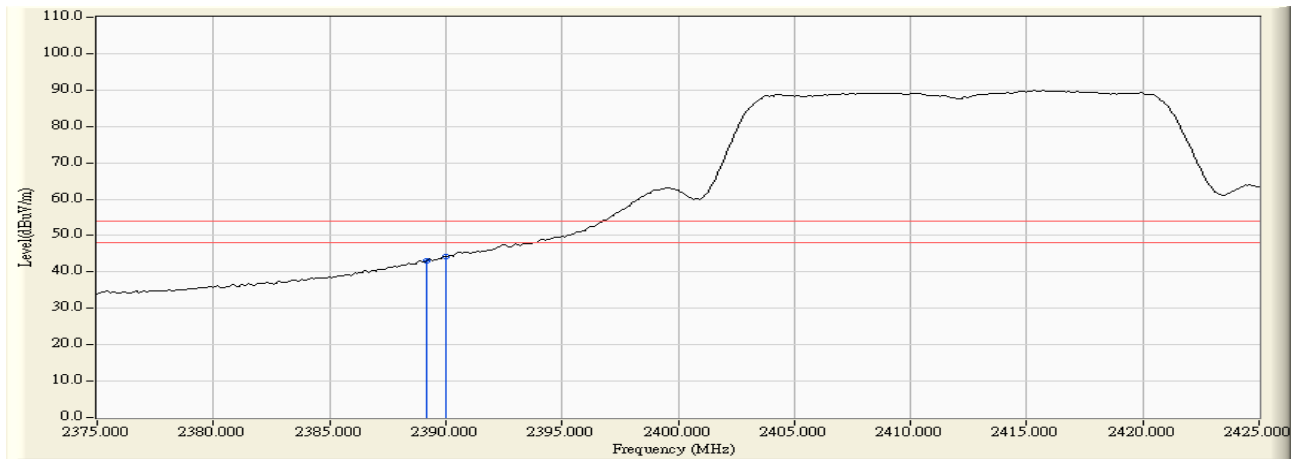


Figure Channel 01: Horizontal (Average)



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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n MCS8 13Mbps 20M-BW)

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)	2389.600	-2.381	70.548	68.167	74.00	54.00	Pass
01 (Average)	2389.600	-2.381	53.388	51.007	74.00	54.00	Pass
01 (Average)	2390.000	-2.384	54.021	51.638	74.00	54.00	Pass

Figure Channel 01: (Vertical) (Peak)

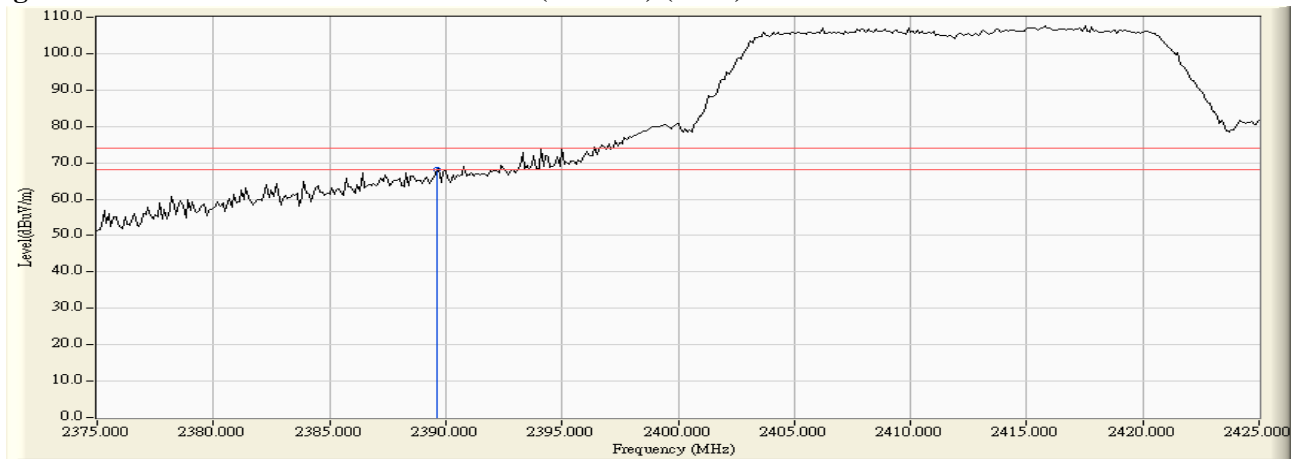
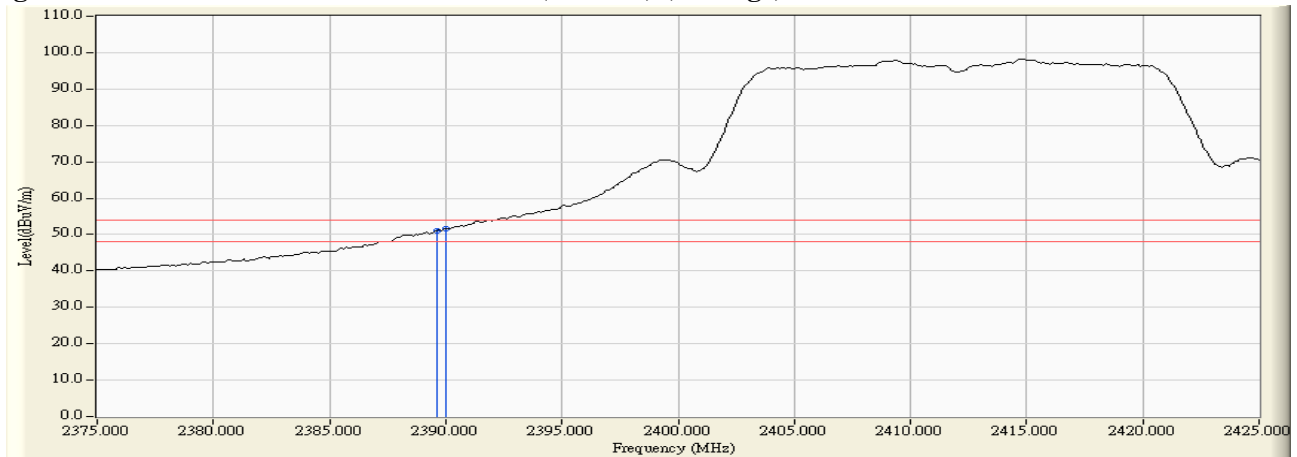


Figure Channel 01: (Vertical) (Average)



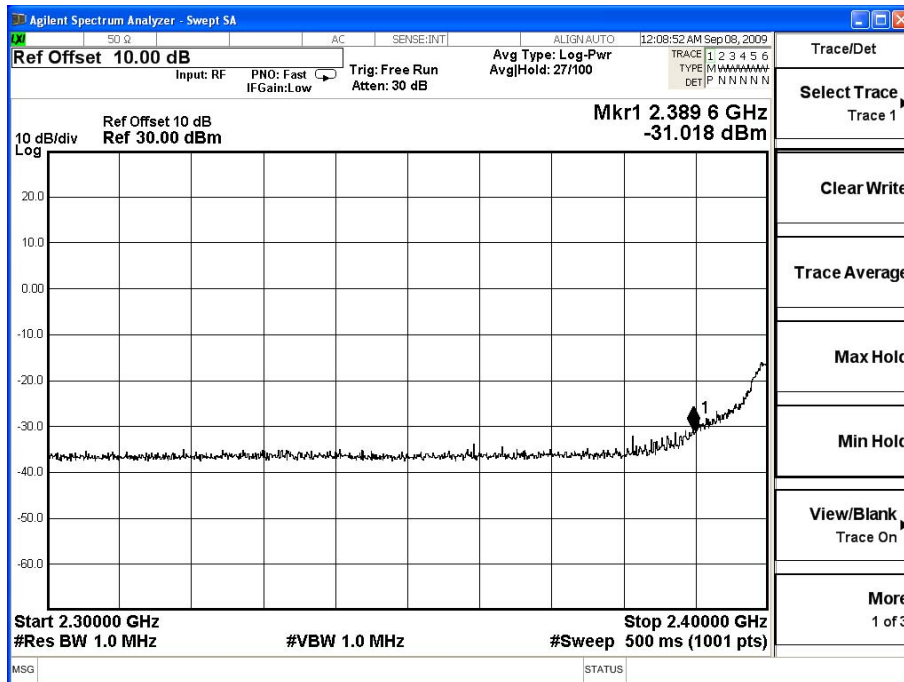
Note:

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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n MCS8 13Mbps 20M-BW)

RF Conducted Measurement:

Figure Channel 01: (Peak)



Product : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n MCS8 13Mbps 20M-BW)

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)	2484.700	-1.016	67.945	66.929	74.00	54.00	Pass
11 (Average)	2483.500	-1.023	50.993	49.970	74.00	54.00	Pass
11 (Average)	2484.700	-1.016	49.105	48.089	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

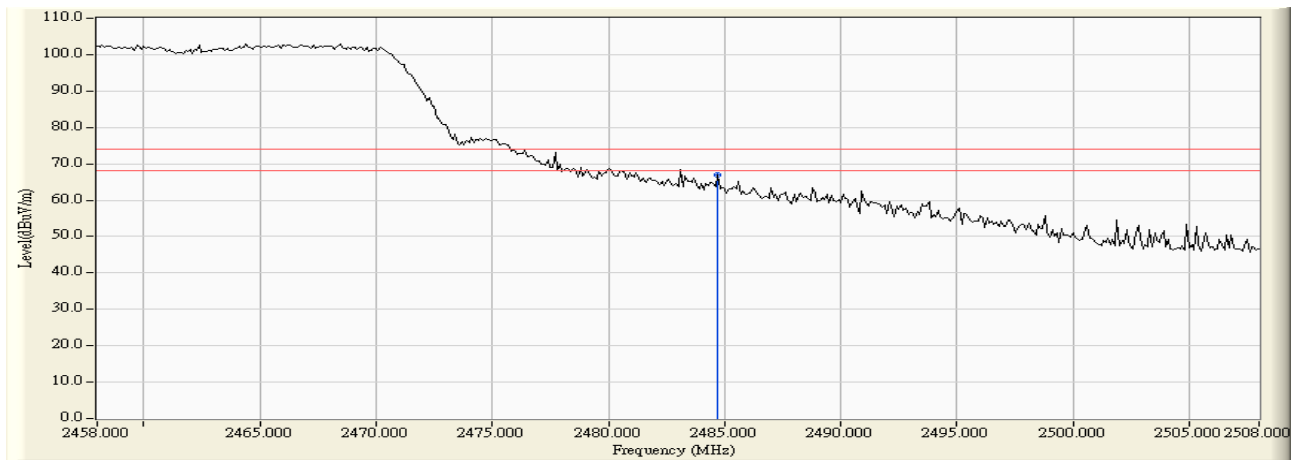
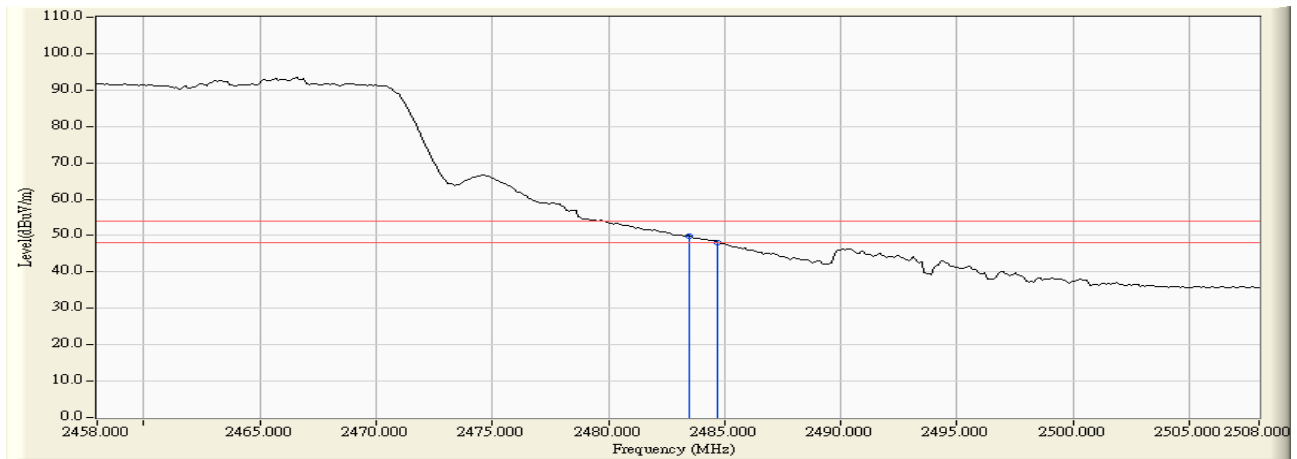


Figure Channel 11: Horizontal (Average)



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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n MCS8 13Mbps 20M-BW)

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)	2484.500	-1.302	68.828	67.527	74.00	54.00	Pass
11 (Average)	2483.500	-1.314	53.369	52.055	74.00	54.00	Pass
11 (Average)	2484.500	-1.302	52.366	51.065	74.00	54.00	Pass

Figure Channel 11: (Vertical) (Peak)

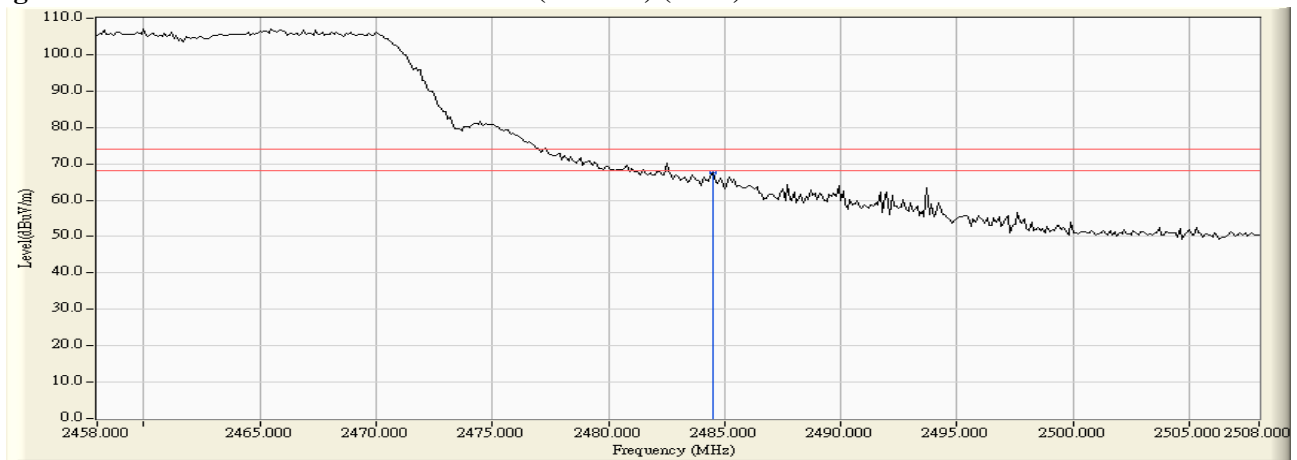
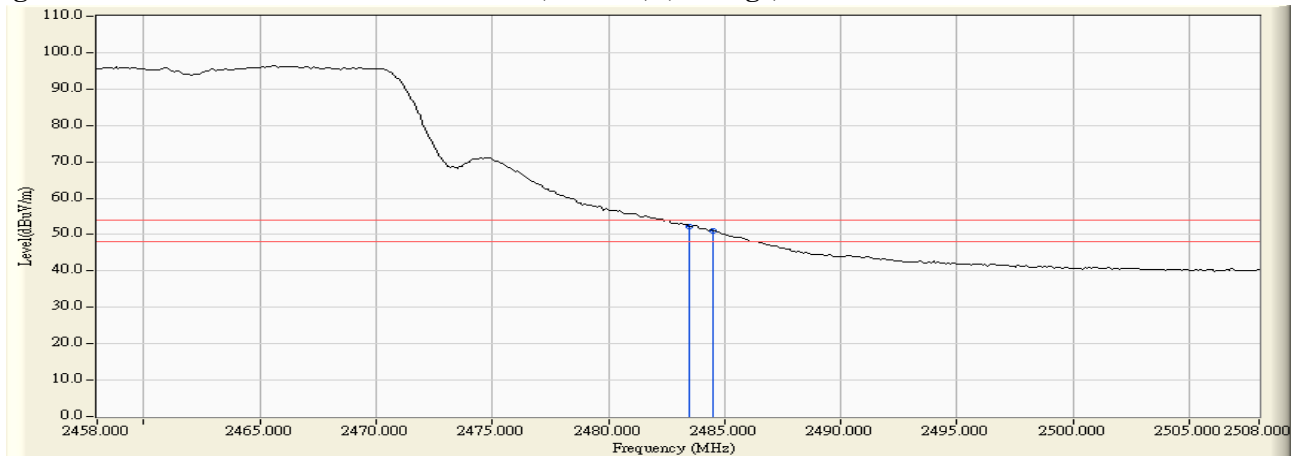


Figure Channel 11: (Vertical) (Average)



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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW)

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)	2387.000	-1.620	59.607	57.986	74.00	54.00	Pass
01 (Average)	2387.000	-1.620	42.486	40.865	74.00	54.00	Pass
01 (Average)	2390.000	-1.617	43.671	42.054	74.00	54.00	Pass

Figure Channel 01: Horizontal (Peak)

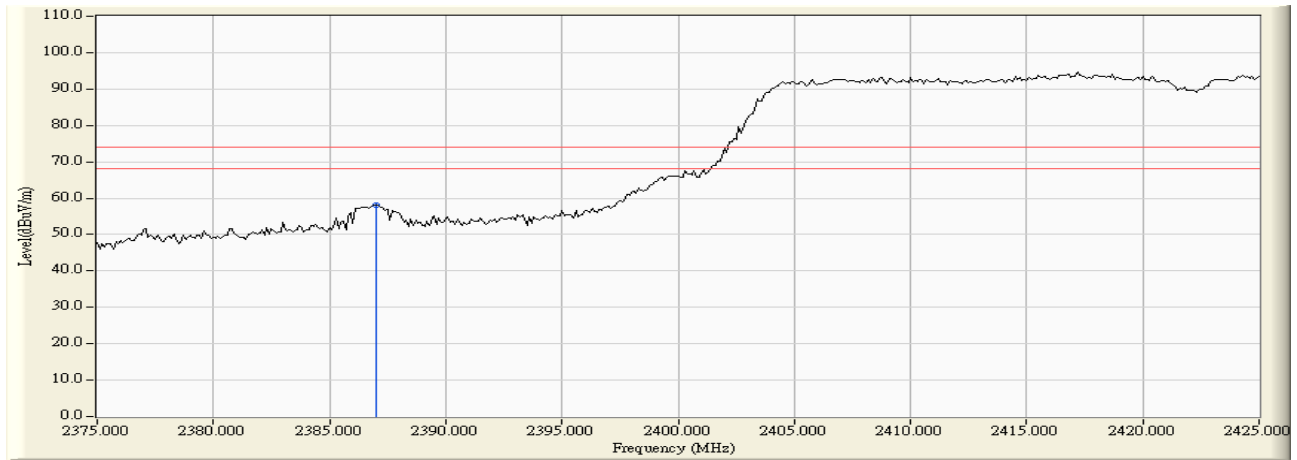
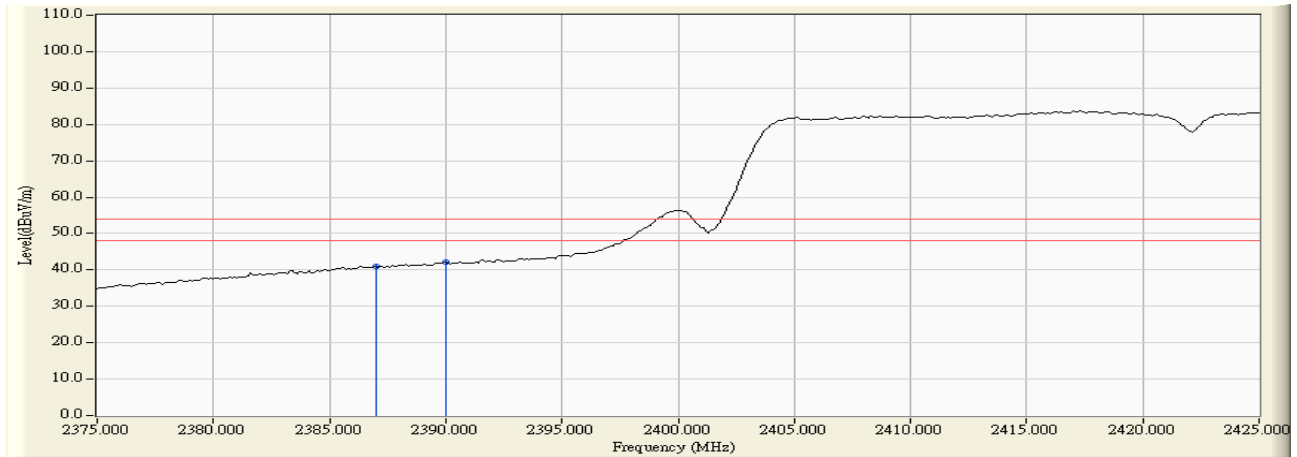


Figure Channel 01: Horizontal (Average)



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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW)

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)	2386.200	-2.366	67.685	65.319	74.00	54.00	Pass
01 (Average)	2386.200	-2.366	50.294	47.928	74.00	54.00	Pass
01 (Average)	2390.000	-2.384	51.838	49.455	74.00	54.00	Pass

Figure Channel 01: Vertical (Peak)

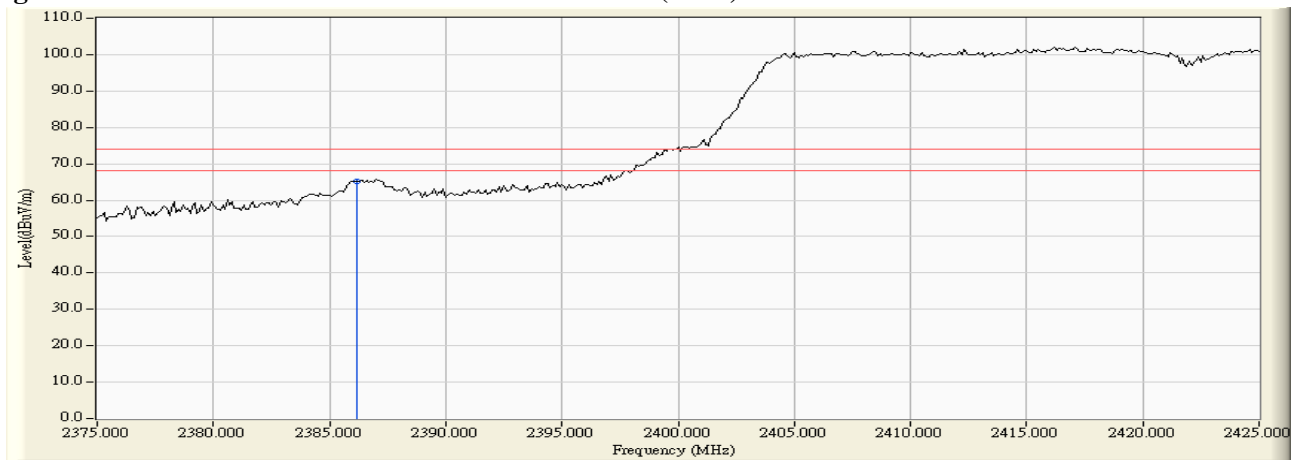
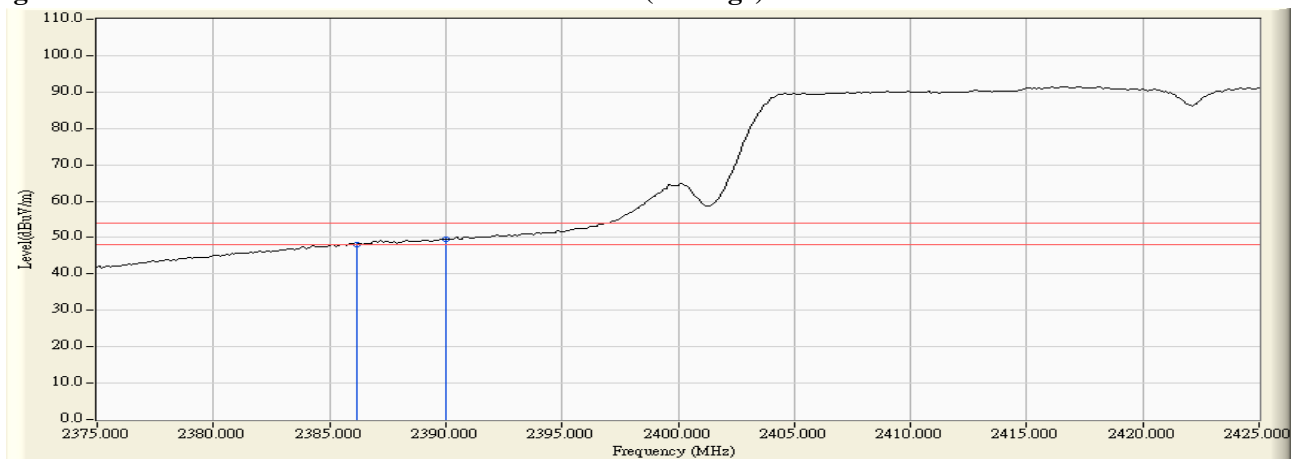


Figure Channel 01: Vertical (Average)



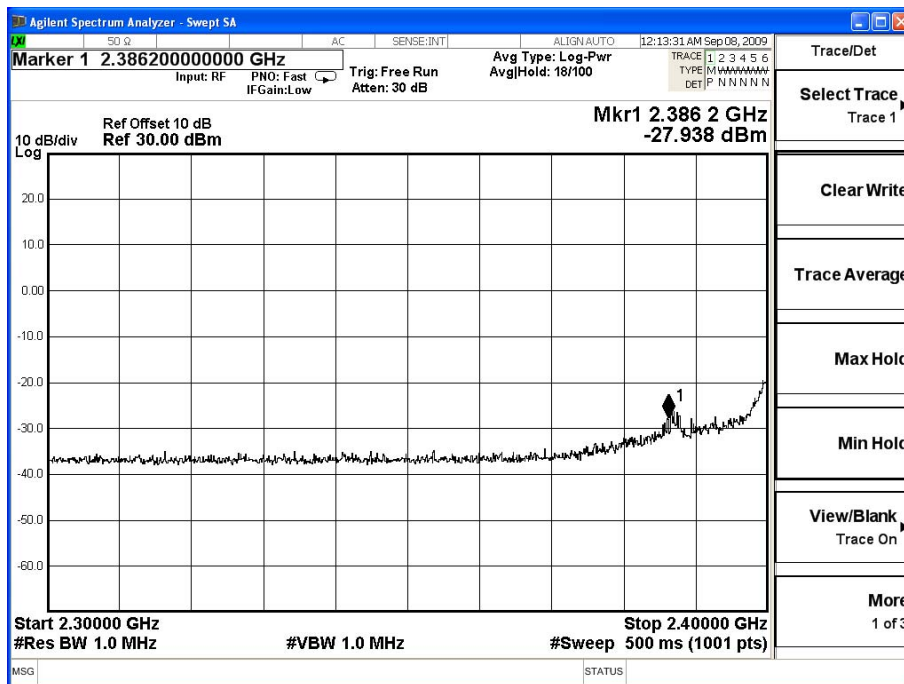
Note:

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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW)

RF Conducted Measurement:

Figure Channel 01: (Peak)



Product : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW)

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)	2487.400	-1.001	64.354	63.354	74.00	54.00	Pass
07 (Average)	2483.500	-1.023	50.902	49.879	74.00	54.00	Pass
07 (Average)	2487.400	-1.001	49.967	48.967	74.00	54.00	Pass

Figure Channel 07: Horizontal (Peak)

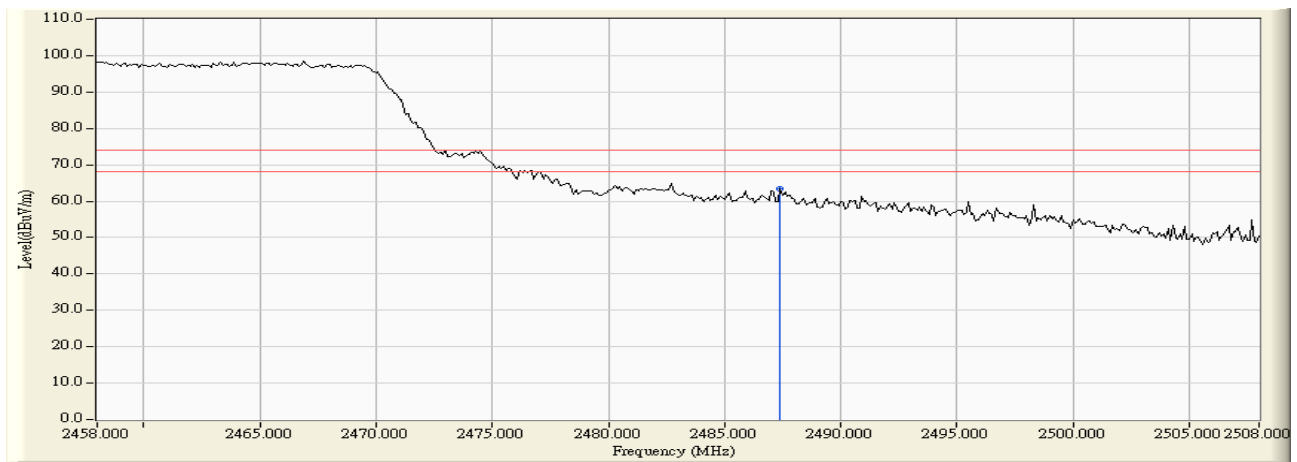
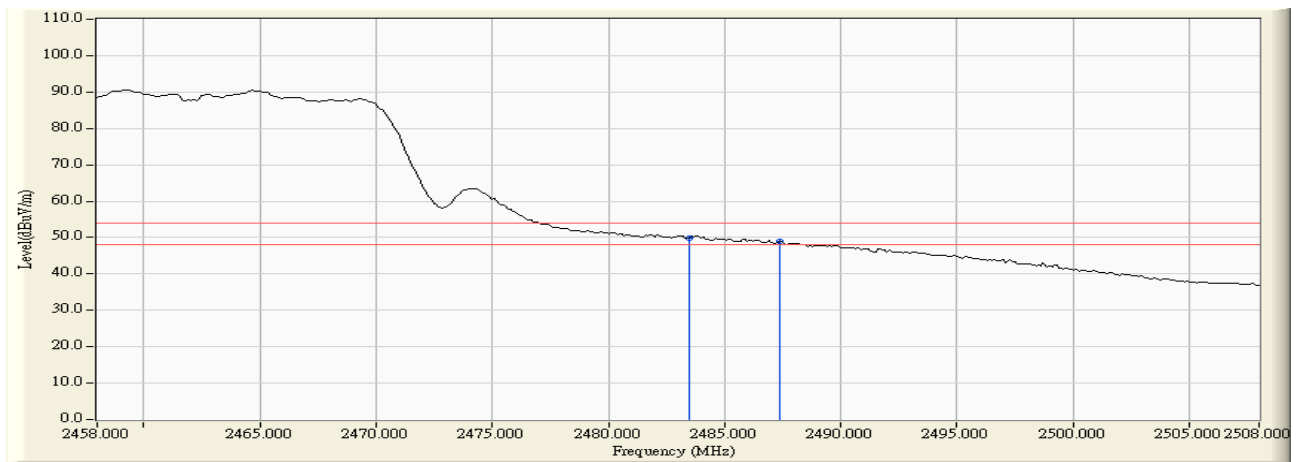


Figure Channel 07: Horizontal (Average)



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 : ADSL2/2+ 11n Wireless Router
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmitter (802.11n MCS8 27Mbps 40M-BW)

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)	2485.400	-1.290	66.752	65.462	74.00	54.00	Pass
07 (Average)	2483.500	-1.314	53.220	51.906	74.00	54.00	Pass
07 (Average)	2485.400	-1.290	52.309	51.019	74.00	54.00	Pass

Figure Channel 07: Vertical (Peak)

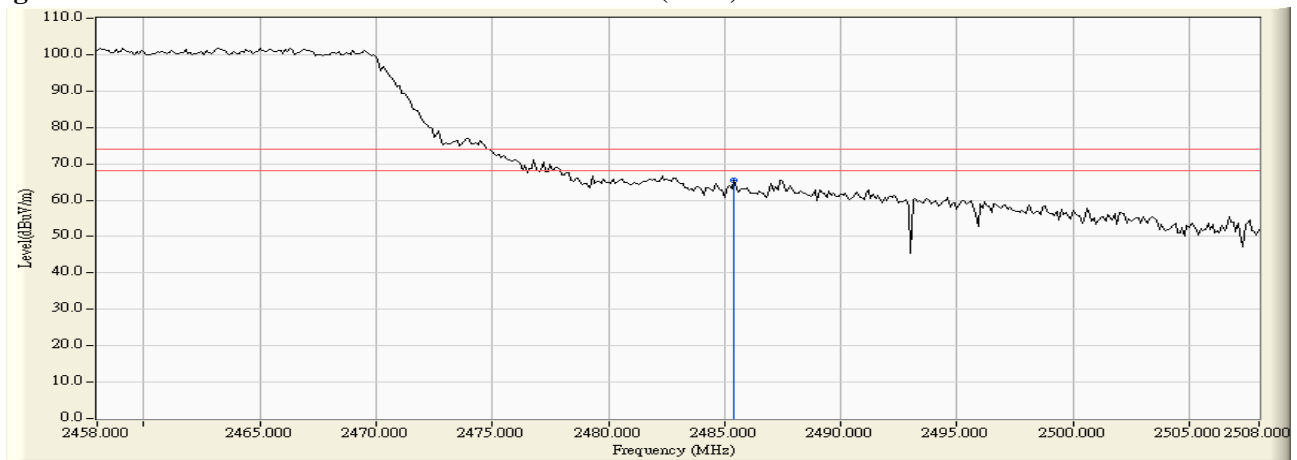
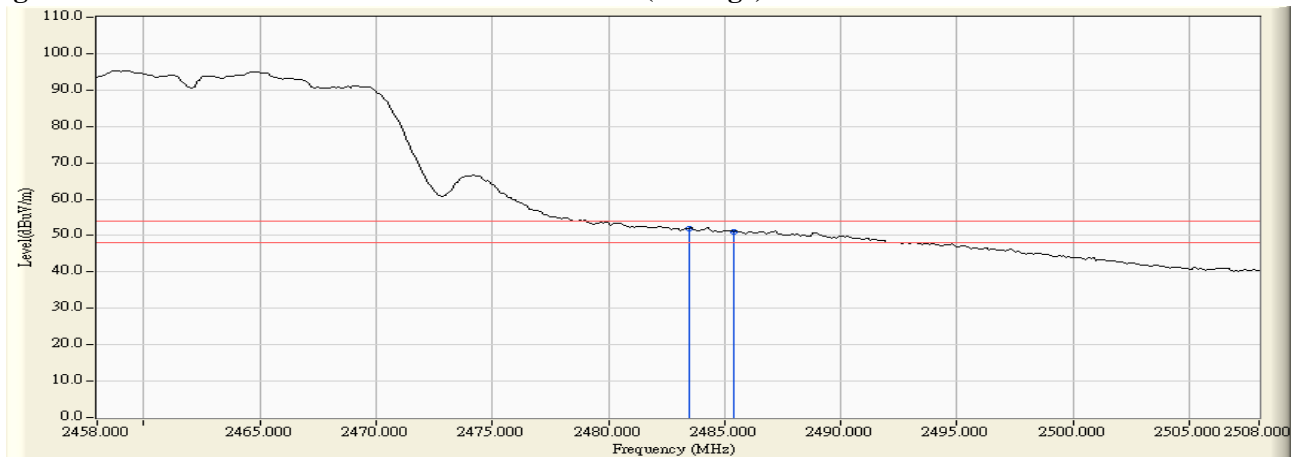


Figure Channel 07: Vertical (Average)



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

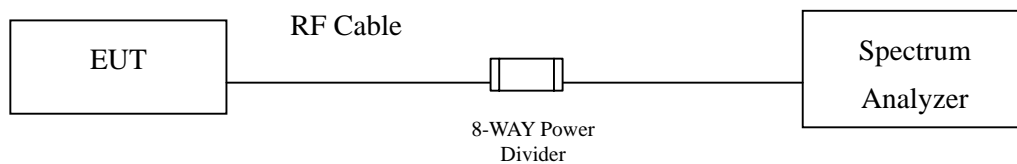
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Nov, 2008
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2009
X	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	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.
3. The power combiner is used for measure 11n mode.

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