Test Report

Product Name	ADSL2/2+ VoIP Wireless Router
Model No	AVS920WA+, AVS920WB+
FCC ID.	RK9-AVS920W

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

Date of Receipt	Jun. 30, 2009
Issue Date	Jul. 28, 2009
Report No.	097040R-RFUSP05V01
Report Version	V1.0

Test Report Certification

Issue Date: Jul. 28, 2009
Report No.: 097040R-RFUSP05V01

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

Product Name	ADSL2/2+ VoIP Wireless Router
Applicant	CastleNet Technology Inc.
Address	No.64, Chung-Shan Rd. Tu-Cheng City, Taipei 236 Taiwan
Manufacturer	CastleNet Technology Inc.
Model No.	AVS920WA+, AVS920WB+
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

NVLAP Lab Code: 200533-0

The test results relate only to the samples tested.
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Approved By :
(Manager / Vincent Lin)

Testing Laboratory
0914

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	ADSL2/2+ VoIP Wireless Router
Trade Name	CastleNet
Model No.	AVS920WA+, AVS920WB+
FCC ID.	RK9-AVS920W
Frequency Range	2412-2462MHz for 802.11b/g
Number of Channels	802.11b/g
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps
Type of Modulation	802.11b:DSSS DBPSK, DQPSK, CCK 802.11g:OFDM BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Dipole
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Power Adapter (1)	MFR: OEM, M/N: ADS18B-W 120150 Input: AC 100-240V, 50-60Hz 0.5A Output: DC 12V, 1.5A Cable out: Non-Shielded, 1.8m
Power Adapter (2)	MFR: UMEC, M/N: UP0181A-12PA Input: AC 100-240V, 50/60Hz 0.4A MAX Output: DC +12V, 1.5A, 18W MAX Cable out: Non-Shielded, 1.8m

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	KINSUN	6602113053-300	Dipole	2dBi in 2.4 GHz

802.11b/g 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		

Note:

1. The EUT is a ADSL2/2+ VoIP 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)
5. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/g 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

This ADSL2/2+ VoIP Wireless Router, compliant with IEEE 802.11b and IEEE 802.11g, is a high-efficiency Wireless LAN adapter. It allows your computer via this device to connect 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 ADSL2/2+ VoIP 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 network.

Test Mode:	Mode 1: Transmitter (802.11b 1Mbps)-Adapter 1
	Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1
	Mode 3: Transmitter (802.11b 1Mbps)-Adapter 2
	Mode 4: Transmitter (802.11g 6Mbps)-Adapter 2

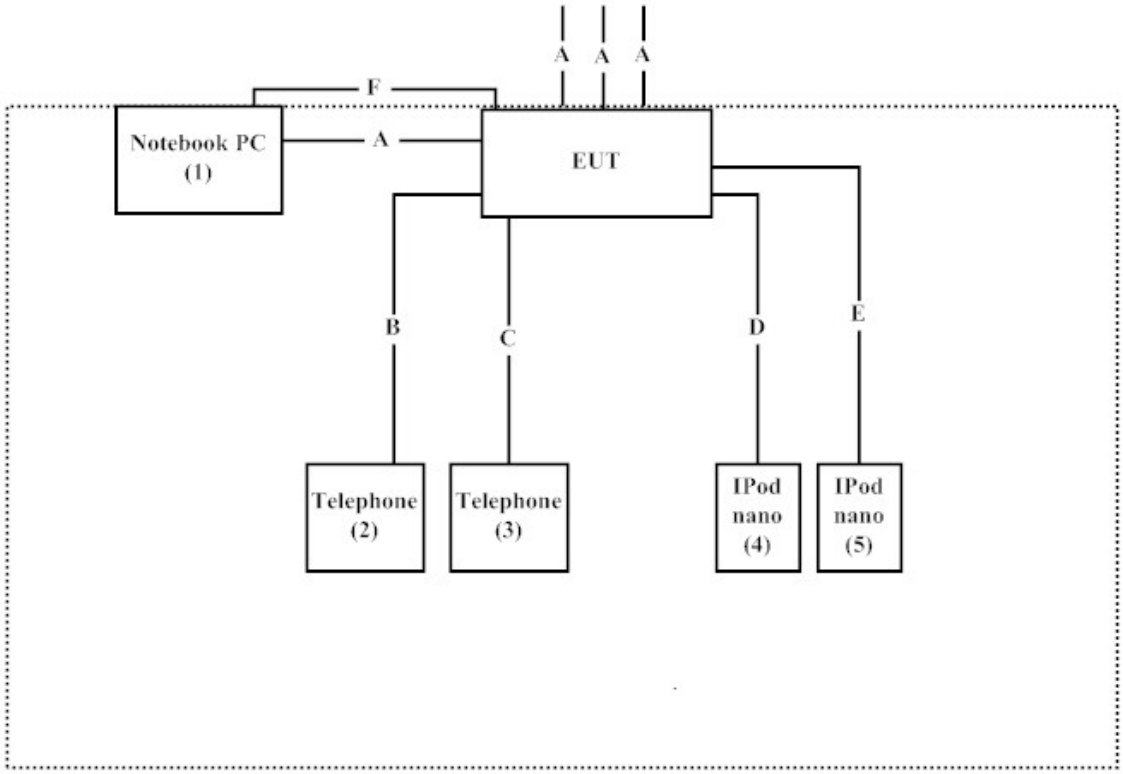
1.3. Tested System Details

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	Telephone	TENTEL	K-302	50721005000632	N/A
3	Telephone	TENTEL	K-302	50721005000634	N/A
4	IPod nano	Apple	A1199	YM709R1CVQ5	N/A
5	IPod nano	Apple	A1199	5U705F9HVQ5	N/A

Signal Cable Type		Signal cable Description
A	RJ-45 Cable	Non-Shielded, 0.8m, four PCS.
B	RJ-11 Cable	Non-Shielded, 1.2m
C	RJ-11 Cable	Non-Shielded, 1.2m
D	USB Cable	Non-Shielded, 0.8m
E	USB Cable	Non-Shielded, 0.8m
F	USB Cable	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/

Site Description: File on
Federal Communications Commission
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Registration Number: 92195

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

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E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

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2. Conducted Emission

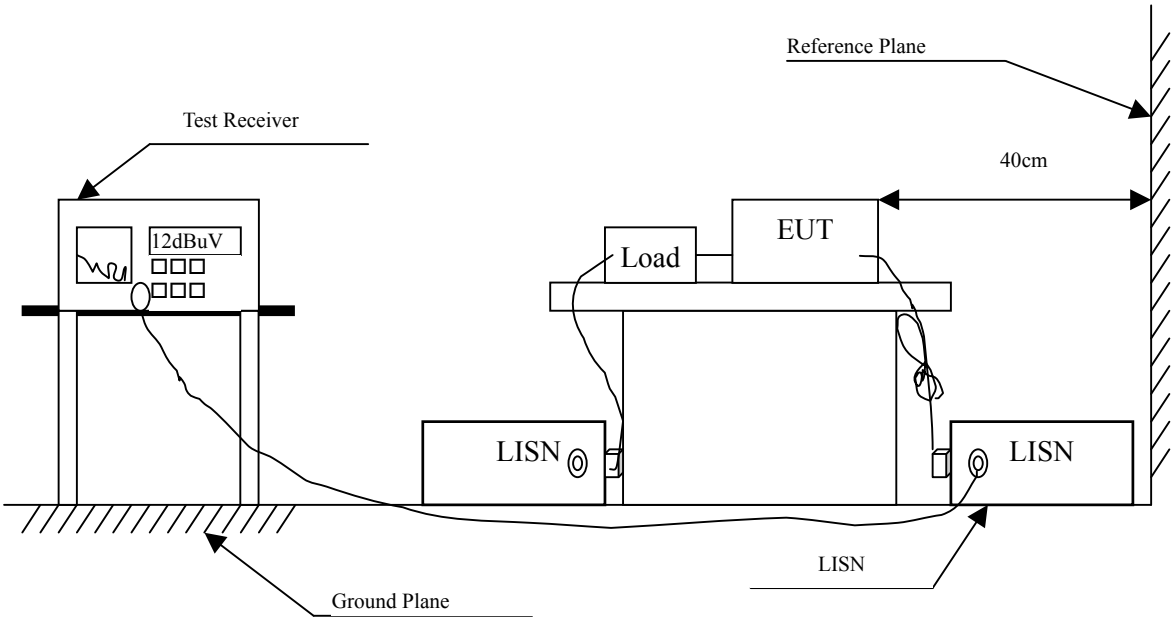
2.1. Test Equipment

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+ VoIP Wireless Router
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1 (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.166	9.746	45.540	55.285	-10.258	65.543
0.220	9.693	36.980	46.673	-17.327	64.000
0.330	9.650	27.970	37.620	-23.237	60.857
0.869	9.667	38.000	47.667	-8.333	56.000
1.459	9.670	16.140	25.810	-30.190	56.000
25.002	10.150	19.970	30.120	-29.880	60.000
Average					
0.166	9.746	37.120	46.865	-8.678	55.543
0.220	9.693	28.750	38.443	-15.557	54.000
0.330	9.650	22.250	31.900	-18.957	50.857
0.869	9.667	29.250	38.917	-7.083	46.000
1.459	9.670	10.440	20.110	-25.890	46.000
25.002	10.150	17.020	27.170	-22.830	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+ VoIP Wireless Router
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1 (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.170	9.743	41.230	50.973	-14.456	65.429
0.220	9.703	36.570	46.273	-17.727	64.000
0.330	9.660	25.230	34.890	-25.967	60.857
0.869	9.673	38.560	48.233	-7.767	56.000
1.529	9.680	15.910	25.590	-30.410	56.000
12.009	9.870	17.070	26.940	-33.060	60.000
Average					
0.170	9.743	32.330	42.073	-13.356	55.429
0.220	9.703	28.210	37.913	-16.087	54.000
0.330	9.660	20.570	30.230	-20.627	50.857
0.869	9.673	29.300	38.973	-7.027	46.000
1.529	9.680	10.560	20.240	-25.760	46.000
12.009	9.870	6.910	16.780	-33.220	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+ VoIP Wireless Router
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 4: Transmitter (802.11g 6Mbps)-Adapter 2 (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.166	9.746	41.030	50.775	-14.768	65.543
0.244	9.679	31.970	41.649	-21.665	63.314
0.412	9.646	26.420	36.066	-22.448	58.514
0.869	9.667	38.500	48.167	-7.833	56.000
3.310	9.690	22.670	32.360	-23.640	56.000
12.177	9.877	17.980	27.857	-32.143	60.000
Average					
0.166	9.746	32.190	41.935	-13.608	55.543
0.244	9.679	23.900	33.579	-19.735	53.314
0.412	9.646	21.330	30.976	-17.538	48.514
0.869	9.667	29.390	39.057	-6.943	46.000
3.310	9.690	12.850	22.540	-23.460	46.000
12.177	9.877	11.540	21.417	-28.583	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+ VoIP Wireless Router
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 4: Transmitter (802.11g 6Mbps)-Adapter 2 (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.170	9.743	39.240	48.983	-16.446	65.429
0.244	9.689	31.870	41.559	-21.755	63.314
0.841	9.672	34.420	44.092	-11.908	56.000
1.841	9.680	23.790	33.470	-22.530	56.000
3.642	9.700	21.820	31.520	-24.480	56.000
13.181	9.920	18.930	28.850	-31.150	60.000
Average					
0.170	9.743	25.050	34.793	-20.636	55.429
0.244	9.689	22.350	32.039	-21.275	53.314
0.841	9.672	23.840	33.512	-12.488	46.000
1.841	9.680	15.300	24.980	-21.020	46.000
3.642	9.700	11.860	21.560	-24.440	46.000
13.181	9.920	12.850	22.770	-27.230	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

3. Peak Power Output

3.1. Test Equipment

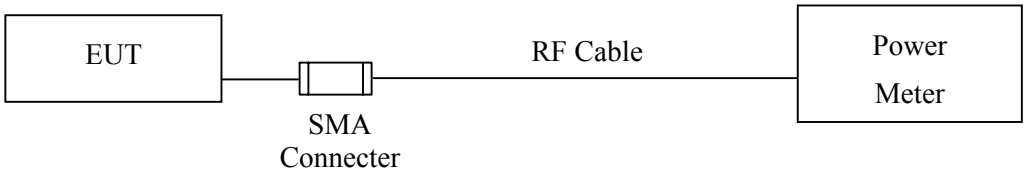
The following test equipments are used during the radiated emission tests:

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

Cable Loss=0.5dB		Peak Power Output				
Channel No.	Frequency (MHz)	Data Rate				Required Limit
		1	2	5.5	11	
1	2412.00	18.85	18.82	18.75	18.74	1Watt= 30 dBm
6	2437.00	18.96	--	--	--	1Watt= 30 dBm
11	2462.00	18.71	--	--	--	1Watt= 30 dBm

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

Product : ADSL2/2+ VoIP Wireless Router
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1

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	23.04	23.01	22.98	22.97	22.93	22.91	22.92	22.88	1Watt= 30 dBm
6	2437.00	22.84	--	--	--	--	--	--	--	1Watt= 30 dBm
11	2462.00	22.69	--	--	--	--	--	--	--	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:

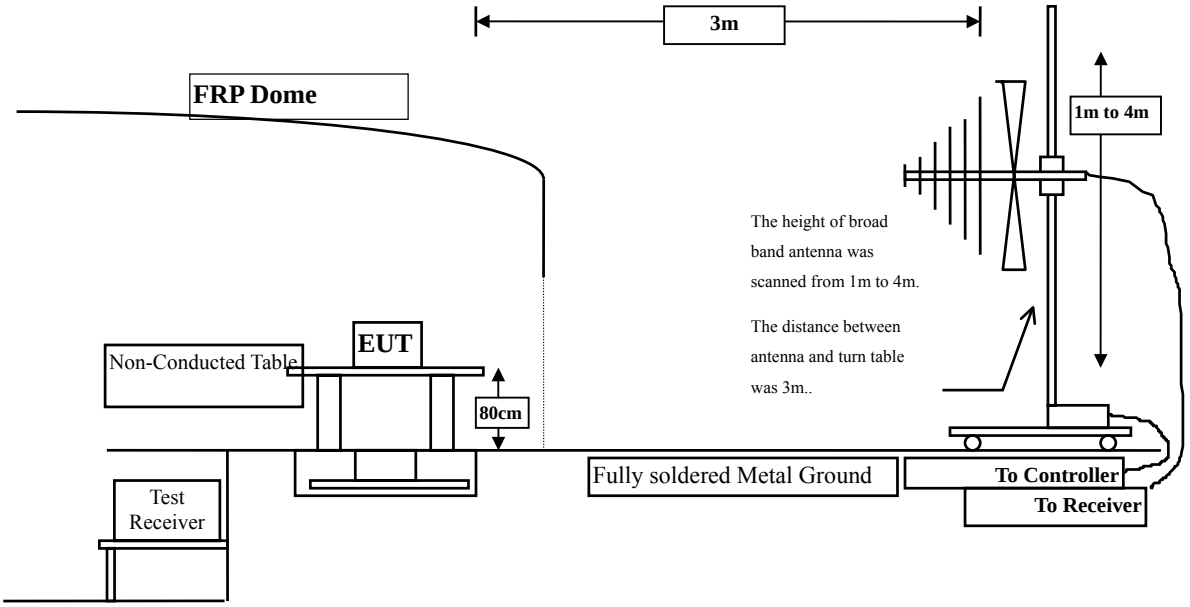
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2008
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2008
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2009
	X	Pre-Amplifier	AGILENT	8447D/2944A09549	Sep., 2008
	X	Test Receiver	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.

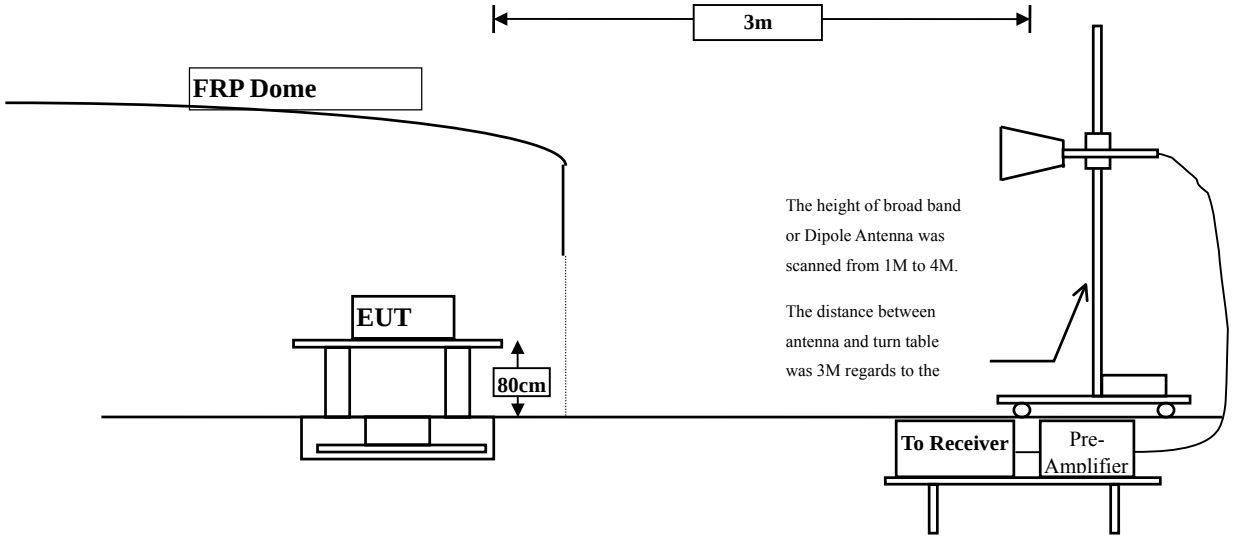
2. The test instruments marked with "X" are used to measure the final test results.

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

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.478	45.330	48.808	-25.192	74.000
7236.000	7.874	42.920	50.794	-23.206	74.000
9648.000	13.283	33.600	46.883	-27.117	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	3.570	47.970	51.540	-22.460	74.000
7236.000	8.819	43.280	52.099	-21.901	74.000
9648.000	13.761	33.700	47.460	-26.540	74.000
Average Detector:					
--					

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+ VoIP Wireless Router
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps)-Adapter 1 (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4874.000	3.100	43.980	47.080	-26.920	74.000
7311.000	7.417	40.030	47.447	-26.553	74.000
9748.000	13.322	33.900	47.222	-26.778	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4874.000	3.574	46.000	49.574	-24.426	74.000
7311.000	8.230	41.200	49.430	-24.570	74.000
9748.000	13.421	33.870	47.291	-26.709	74.000
Average Detector:					
--					

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+ VoIP Wireless Router
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps)-Adapter 1 (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4924.000	3.364	43.110	46.474	-27.526	74.000
7386.000	6.624	41.040	47.664	-26.336	74.000
9848.000	13.631	35.980	49.610	-24.390	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4924.000	4.221	45.460	49.681	-24.319	74.000
7386.000	7.305	41.260	48.565	-25.435	74.000
9848.000	13.600	35.190	48.790	-25.210	74.000
Average Detector:					
--					

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+ VoIP Wireless Router
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1 (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.478	42.870	46.348	-27.652	74.000
7236.000	7.874	41.500	49.374	-24.626	74.000
9648.000	13.283	33.450	46.733	-27.267	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	3.570	43.860	47.430	-26.570	74.000
7236.000	8.819	42.550	51.369	-22.631	74.000
9648.000	13.761	33.590	47.350	-26.650	74.000
Average Detector:					
--					

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+ VoIP Wireless Router
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1 (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4874.000	3.100	42.720	45.820	-28.180	74.000
7311.000	7.417	40.240	47.657	-26.343	74.000
9748.000	13.322	34.640	47.962	-26.038	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4874.000	3.574	43.250	46.824	-27.176	74.000
7311.000	8.230	41.460	49.690	-24.310	74.000
9748.000	13.421	34.030	47.451	-26.549	74.000
Average Detector:					
--					

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+ VoIP Wireless Router
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1 (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4924.000	3.364	42.500	45.864	-28.136	74.000
7386.000	6.624	40.760	47.384	-26.616	74.000
9848.000	13.631	33.660	47.290	-26.710	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4924.000	4.221	42.960	47.181	-26.819	74.000
7386.000	7.305	41.720	49.025	-24.975	74.000
9848.000	13.600	34.140	47.740	-26.260	74.000
Average Detector:					
--					

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+ VoIP Wireless Router
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps)-Adapter 1(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
400.540	0.780	41.669	42.449	-3.551	46.000
532.460	2.878	35.101	37.979	-8.021	46.000
666.320	1.761	39.472	41.233	-4.767	46.000
800.180	6.336	30.045	36.382	-9.618	46.000
934.040	6.716	34.068	40.784	-5.216	46.000
1000.000	9.421	29.338	38.759	-15.241	54.000
Vertical					
249.220	-5.171	43.889	38.718	-7.282	46.000
400.540	-3.030	43.814	40.784	-5.216	46.000
532.460	0.988	37.960	38.948	-7.052	46.000
666.320	-1.069	41.249	40.180	-5.820	46.000
749.740	1.841	30.401	32.242	-13.758	46.000
934.040	2.746	32.046	34.792	-11.208	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+ VoIP Wireless Router
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
400.540	0.780	40.710	41.490	-4.510	46.000
532.460	2.878	36.120	38.998	-7.002	46.000
666.320	1.761	34.236	35.997	-10.003	46.000
800.180	6.336	31.490	37.827	-8.173	46.000
934.040	6.716	34.656	41.372	-4.628	46.000
1000.000	9.421	28.404	37.825	-16.175	54.000
Vertical					
400.540	-3.030	44.165	41.135	-4.865	46.000
532.460	0.988	38.148	39.136	-6.864	46.000
666.320	-1.069	41.825	40.756	-5.244	46.000
749.740	1.841	31.773	33.614	-12.386	46.000
800.180	2.556	34.018	36.575	-9.425	46.000
934.040	2.746	31.726	34.472	-11.528	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+ VoIP Wireless Router
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11b 1Mbps)-Adapter 2(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
584.840	2.850	28.400	31.250	-14.750	46.000
691.540	3.235	26.965	30.200	-15.800	46.000
747.800	2.783	28.817	31.600	-14.400	46.000
829.280	6.015	25.285	31.300	-14.700	46.000
914.640	5.610	27.590	33.200	-12.800	46.000
943.740	5.984	27.516	33.500	-12.500	46.000
Vertical					
544.100	-1.208	29.573	28.365	-17.635	46.000
689.600	2.094	28.106	30.200	-15.800	46.000
771.080	2.656	28.270	30.926	-15.074	46.000
821.520	3.099	29.472	32.571	-13.429	46.000
920.460	5.040	28.794	33.834	-12.166	46.000
967.020	7.541	28.039	35.580	-18.420	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+ VoIP Wireless Router
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11g 6Mbps)-Adapter 2(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
547.980	2.736	28.627	31.363	-14.637	46.000
615.880	2.732	28.168	30.900	-15.100	46.000
677.960	2.449	26.151	28.600	-17.400	46.000
757.500	3.857	27.068	30.925	-15.075	46.000
856.440	5.990	26.860	32.850	-13.150	46.000
893.300	4.923	27.577	32.500	-13.500	46.000
Vertical					
509.180	-0.666	27.084	26.418	-19.582	46.000
540.220	-0.403	26.554	26.151	-19.849	46.000
693.480	1.721	28.529	30.250	-15.750	46.000
811.820	2.810	29.571	32.380	-13.620	46.000
842.860	2.683	27.435	30.118	-15.882	46.000
945.680	6.083	29.237	35.320	-10.680	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:

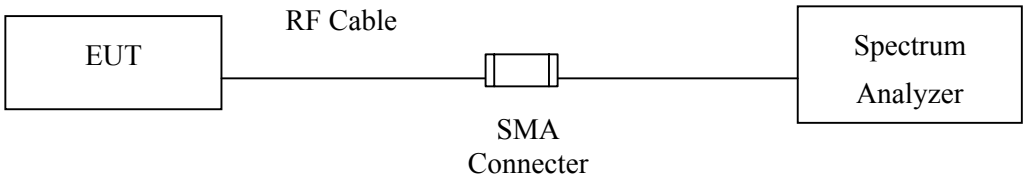
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R&S	FSP40 / 100170	Nov, 2008
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2009

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.

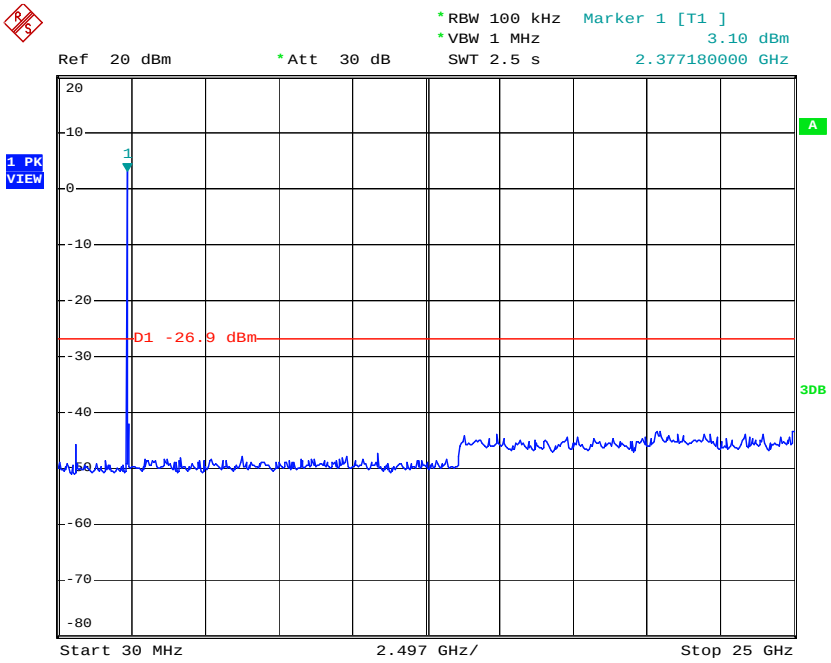
5.5. Uncertainty

The measurement uncertainty
Conducted is defined as ± 1.27dB

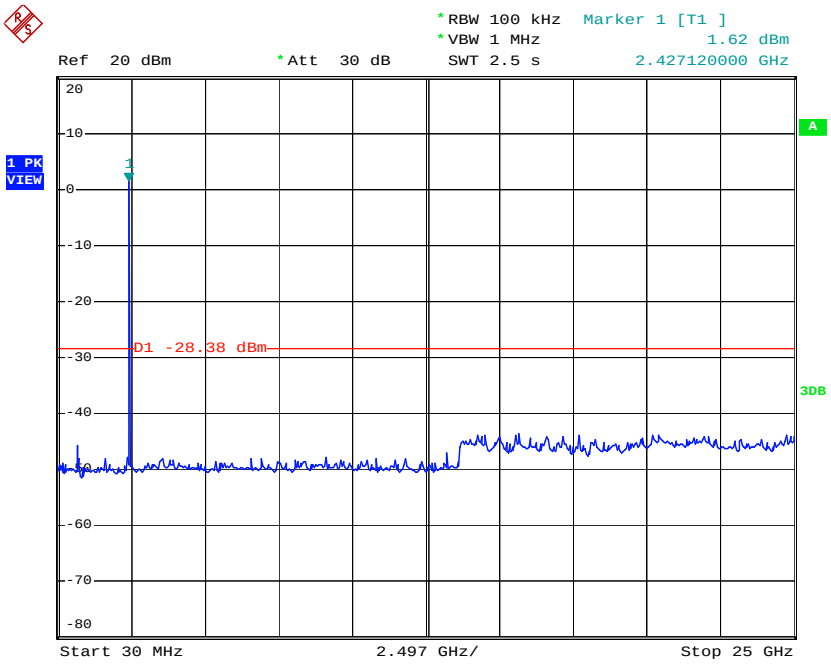
5.6. Test Result of RF antenna conducted test

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

Channel 01 (2412MHz) 30 MHz -25GHz

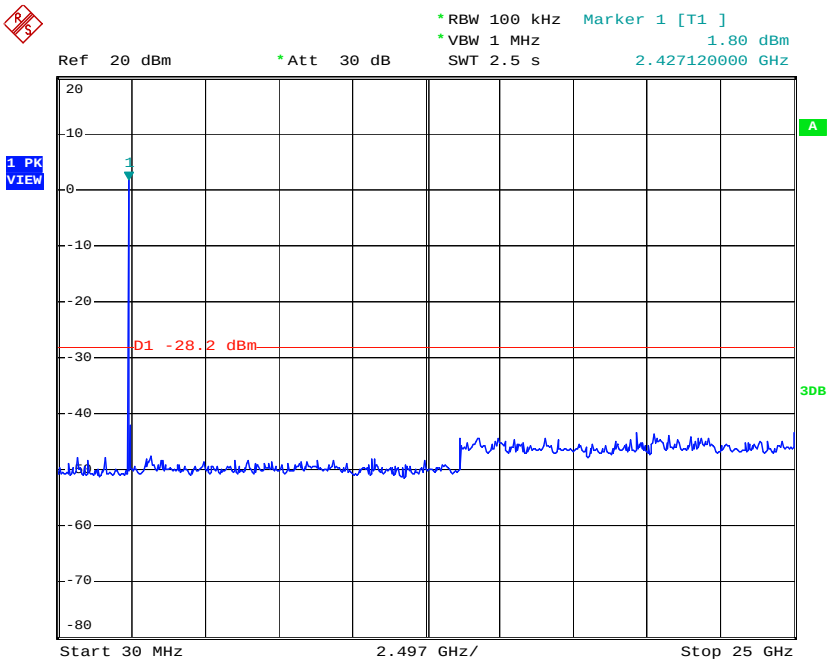


Channel 06 (2437MHz) 30 MHz -25GHz



Date: 22.JUL.2009 23:24:57

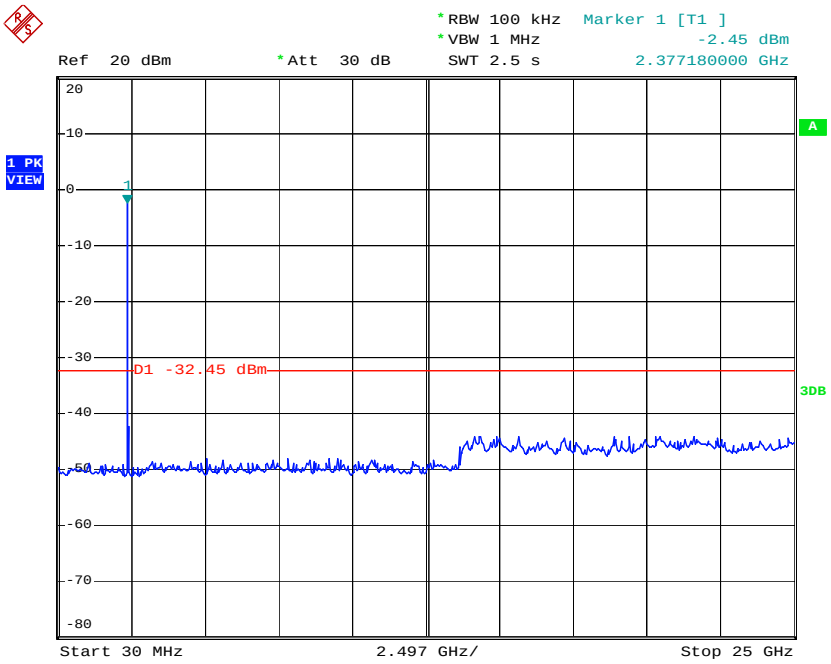
Channel 11 (2462MHz) 30 MHz -25GHz



Date: 22.JUL.2009 23:25:56

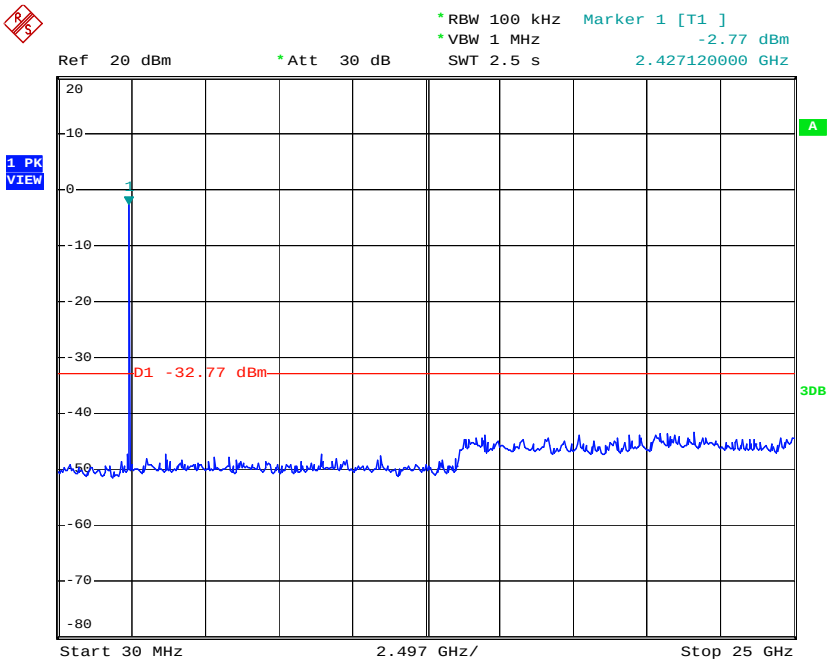
Product : ADSL2/2+ VoIP Wireless Router
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1

Channel 01 (2412MHz) 30 MHz -25GHz



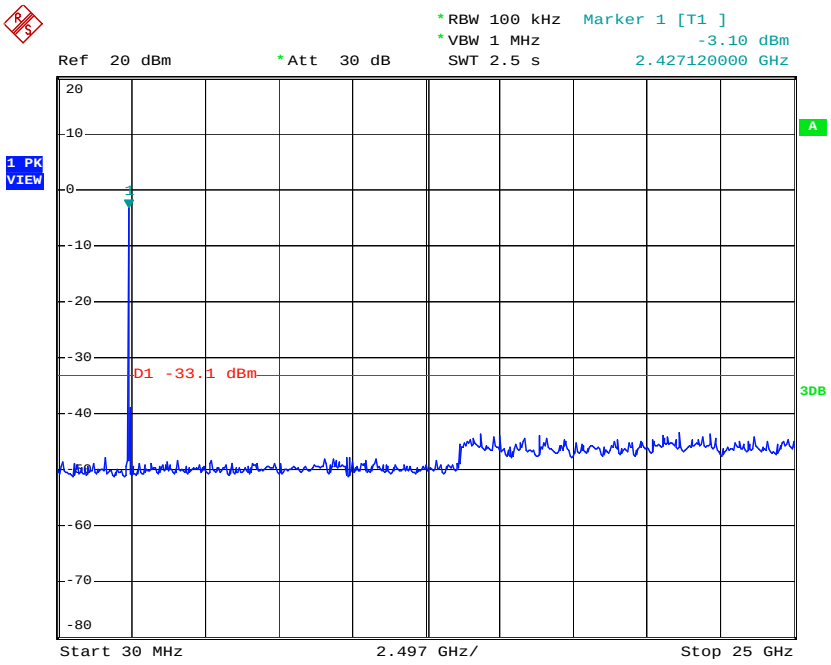
Date: 22.JUL.2009 23:26:44

Channel 06 (2437MHz) 30 MHz -25GHz



Date: 22.JUL.2009 23:27:43

Channel 11 (2462MHz) 30 MHz -25GHz



Date: 22.JUL.2009 23:28:32

6. Band Edge

6.1. Test Equipment

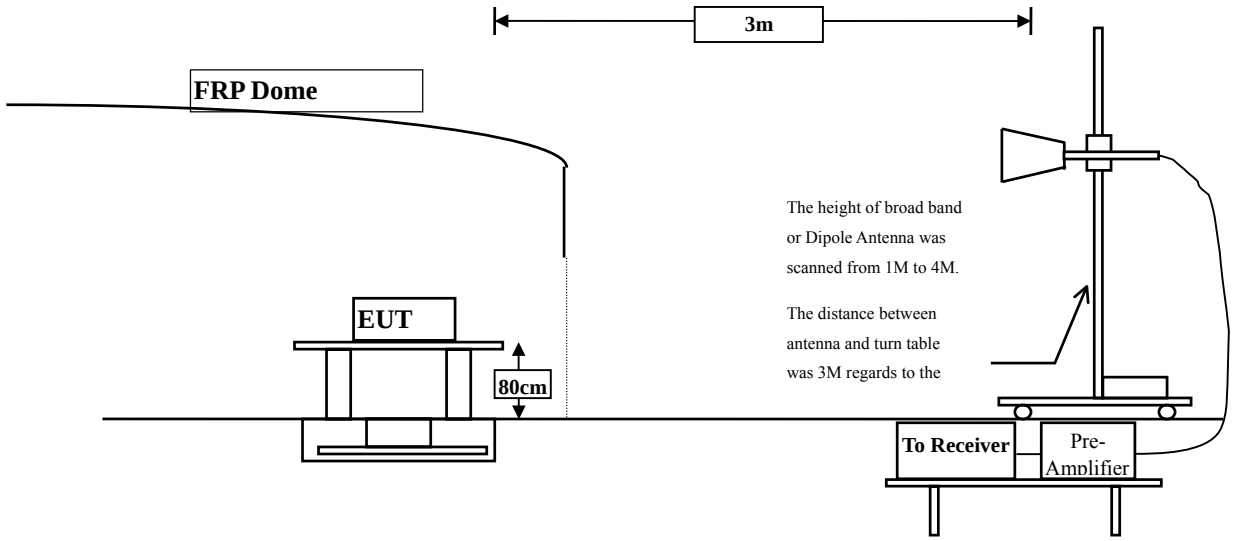
The following test equipments are used during the band edge tests:

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

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dBuV]	Correction Factor [dB/m]	Emission Level [dBuV/m]	Detector
Horizontal	2412	65.538	36.058	101.596	Peak
Horizontal	2412	62.453	36.060	98.512	Average
Vertical	2412	76.092	35.311	111.404	Peak
Vertical	2412	72.585	35.316	107.900	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2388.6	101.596	52.948	48.648	Peak
Horizontal	2389.3	98.512	60.250	38.262	Average
Vertical	2388.6	111.404	52.948	58.456	Peak
Vertical	2389.3	107.900	60.250	47.650	Average

Note:

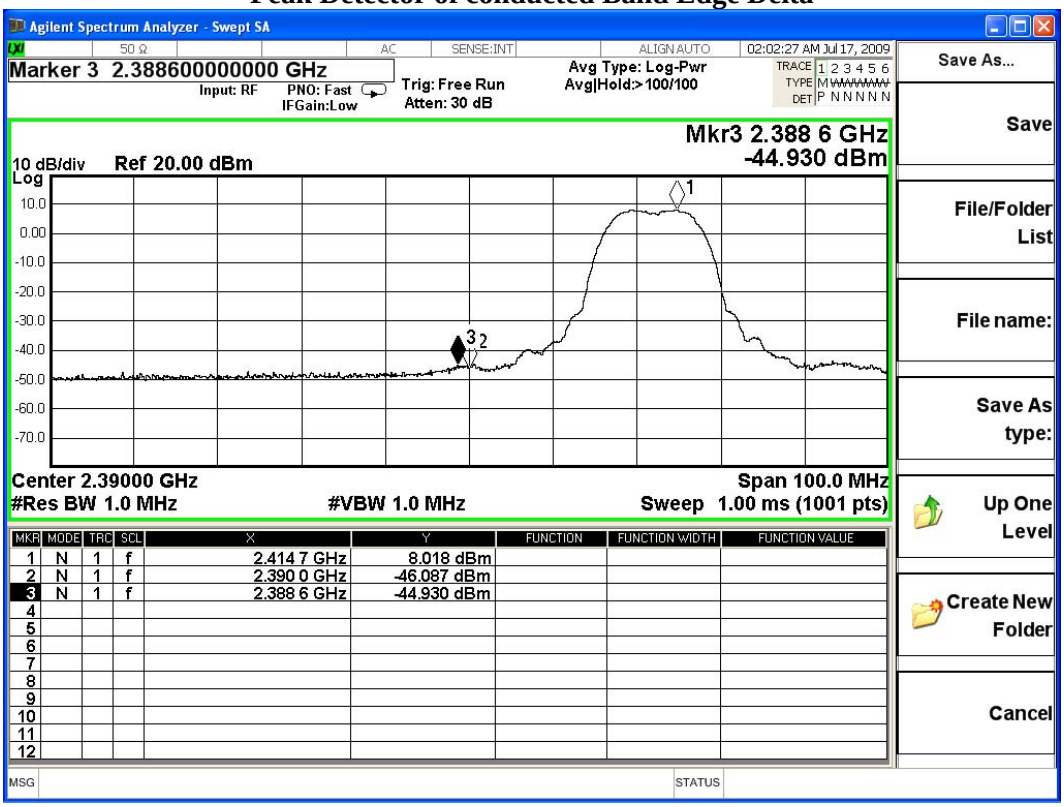
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

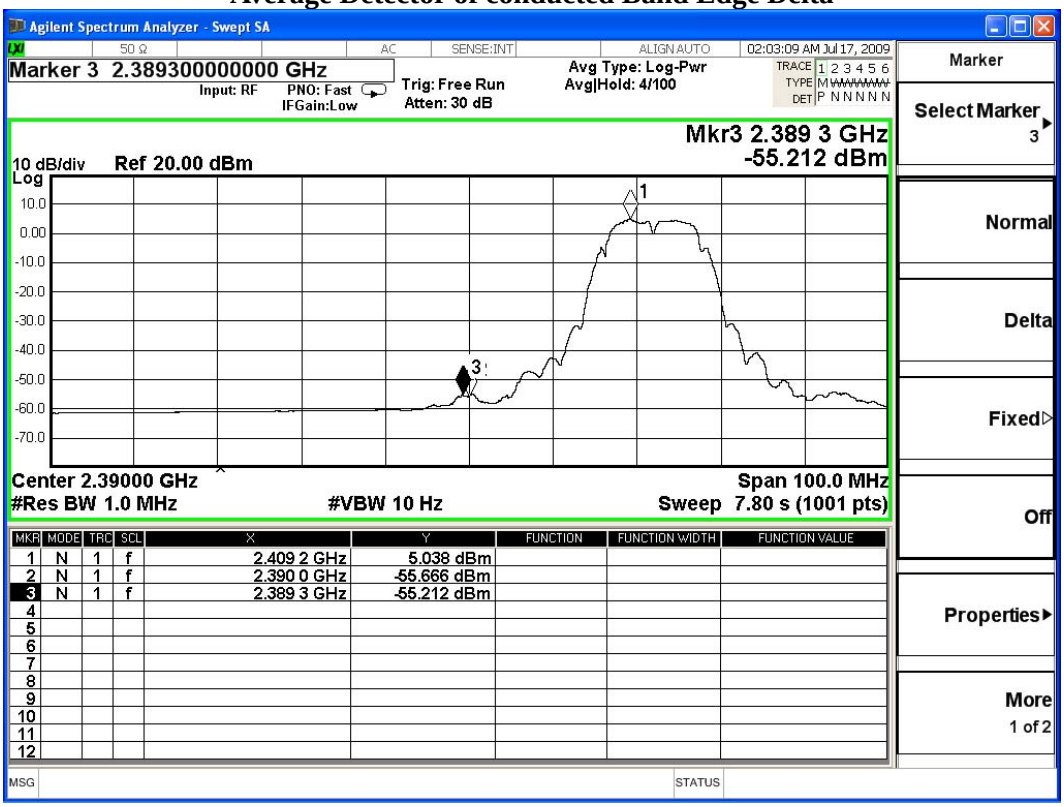
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



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

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dB(uV)]	Correction Factor [dB/m]	Emission Level [dB(uV/m)]	Detector
Horizontal	2462	66.928	36.331	103.260	Peak
Horizontal	2462	64.554	36.330	100.884	Average
Vertical	2462	75.935	35.885	111.820	Peak
Vertical	2462	72.952	35.882	108.834	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2483.5	103.260	52.194	51.066	Peak
Horizontal	2483.5	100.884	58.475	42.409	Average
Vertical	2483.5	111.820	52.194	59.626	Peak
Vertical	2483.5	108.834	58.475	50.359	Average

Note:

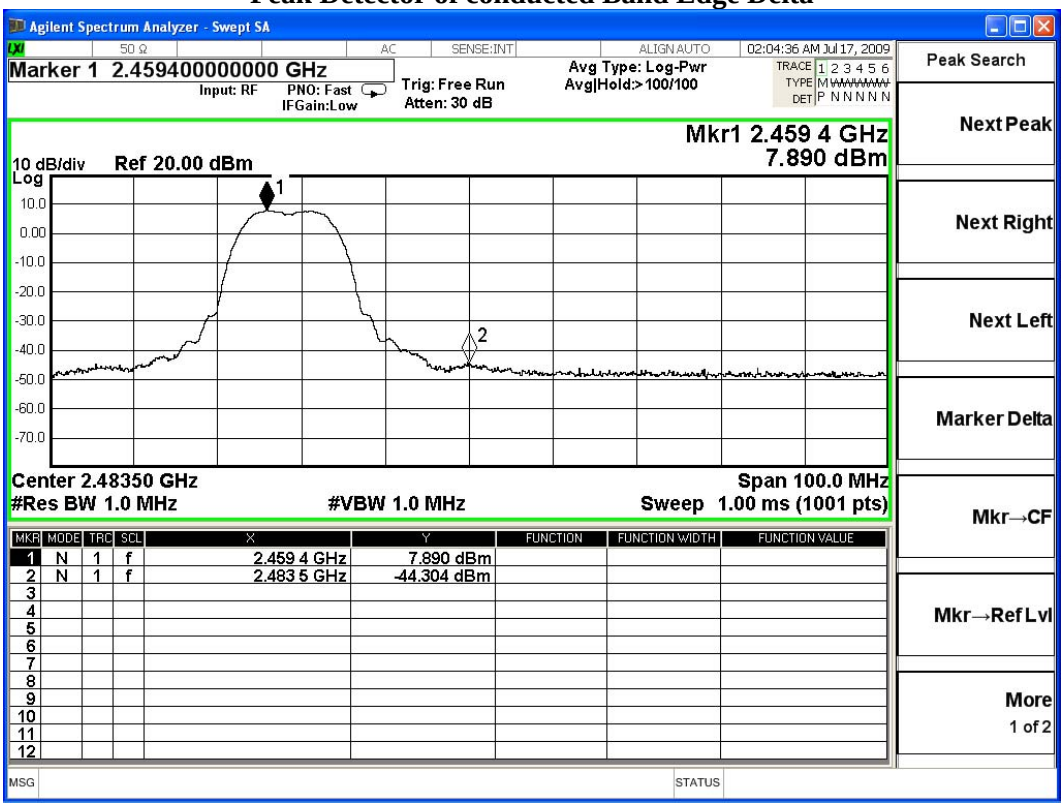
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

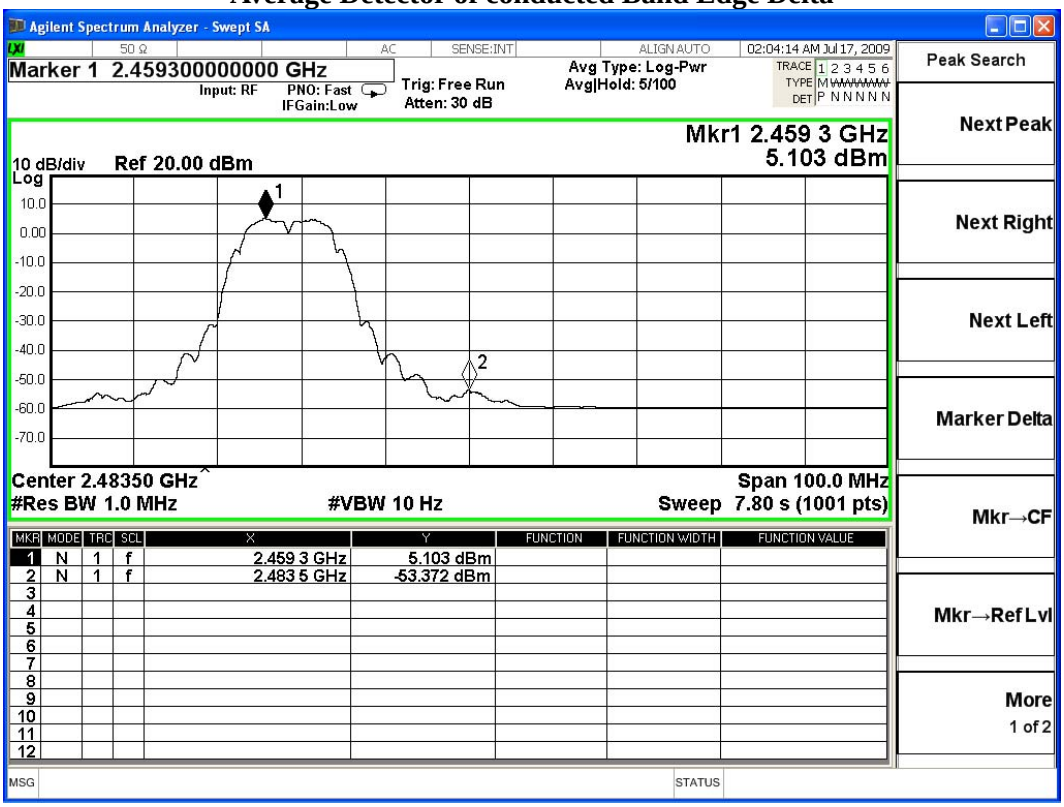
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : ADSL2/2+ VoIP Wireless Router
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1 -Channel 1

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dBuV]	Correction Factor [dB/m]	Emission Level [dBuV/m]	Detector
Horizontal	2412	66.000	36.068	102.068	Peak
Horizontal	2412	59.740	36.061	95.801	Average
Vertical	2412	76.791	32.999	109.789	Peak
Vertical	2412	71.175	32.991	104.167	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2389	102.068	44.249	57.819	Peak
Horizontal	2390.0	95.801	52.343	43.458	Average
Vertical	2389	109.789	44.249	65.540	Peak
Vertical	2390.0	104.167	52.343	51.824	Average

Note:

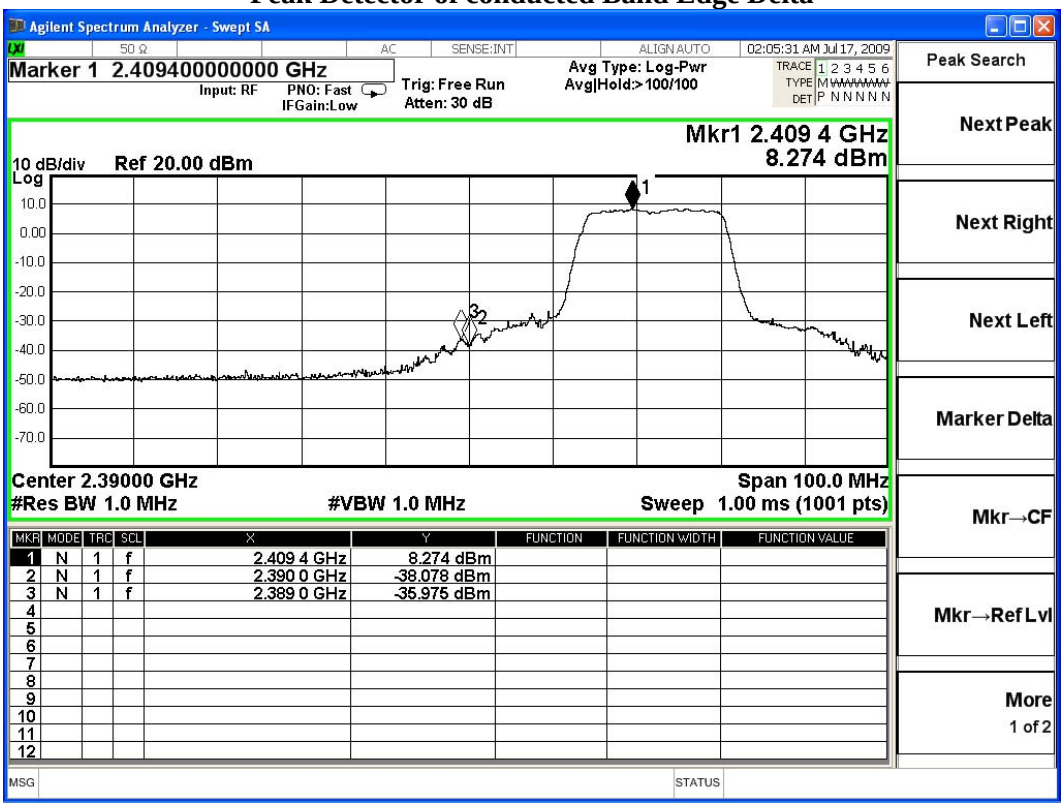
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

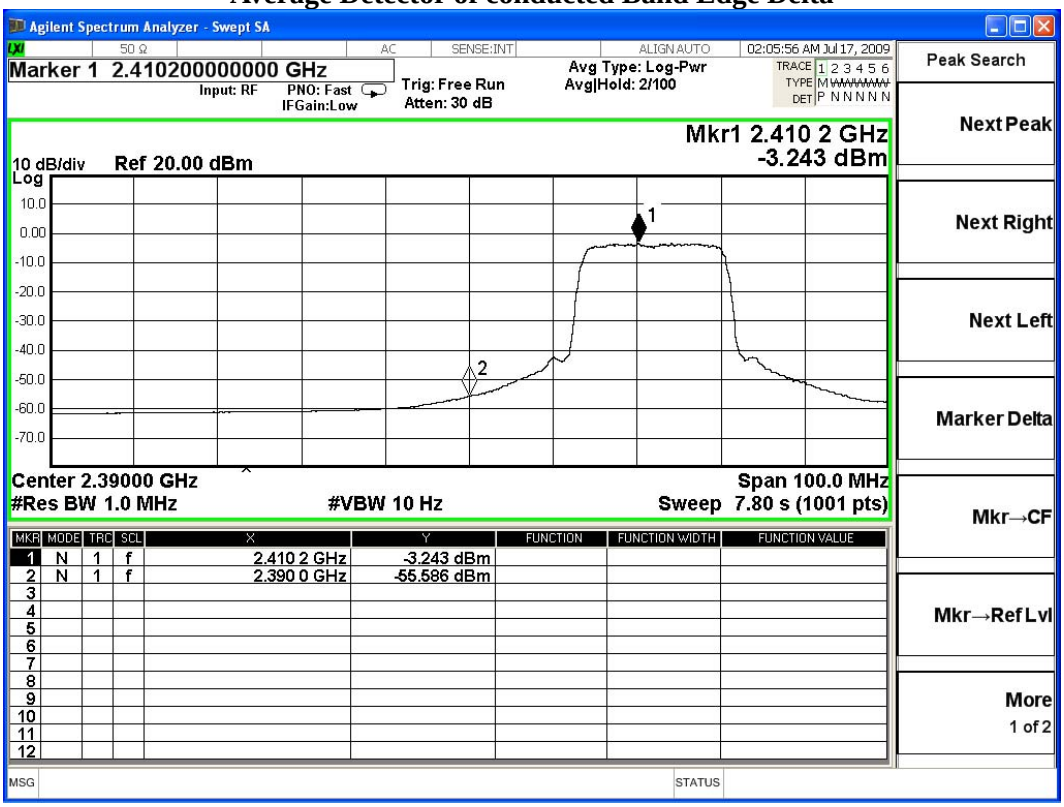
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : ADSL2/2+ VoIP Wireless Router
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1 -Channel 11

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dB(uV)]	Correction Factor [dB/m]	Emission Level [dB(uV/m)]	Detector
Horizontal	2462	67.194	36.317	103.512	Peak
Horizontal	2462	62.282	36.374	98.655	Average
Vertical	2462	76.617	32.995	109.612	Peak
Vertical	2462	71.513	32.967	104.480	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2483.5	103.512	44.402	59.110	Peak
Horizontal	2483.5	98.655	51.351	47.304	Average
Vertical	2483.5	109.612	44.402	65.210	Peak
Vertical	2483.5	104.480	51.351	53.129	Average

Note:

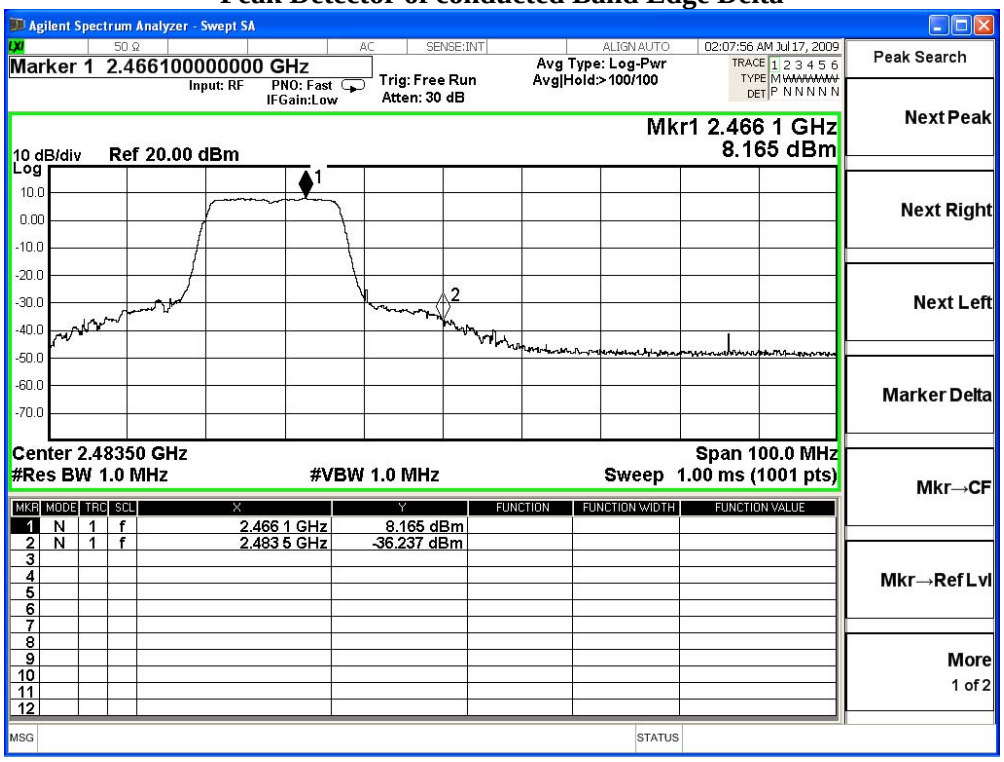
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

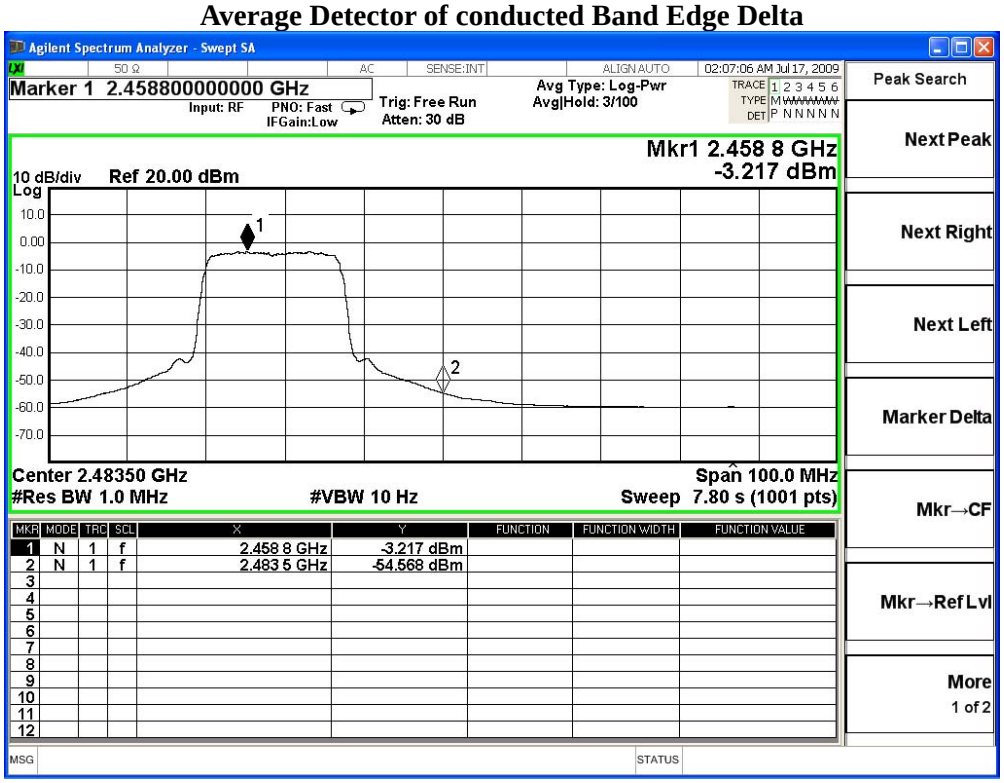
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



7. Occupied Bandwidth

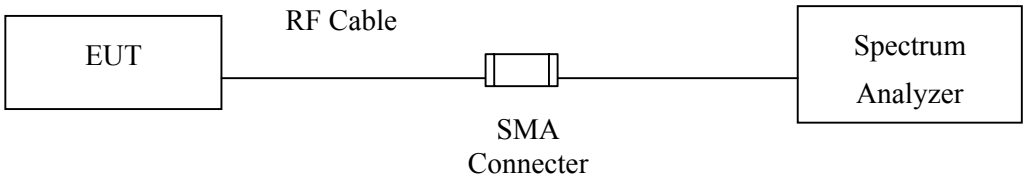
7.1. Test Equipment

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

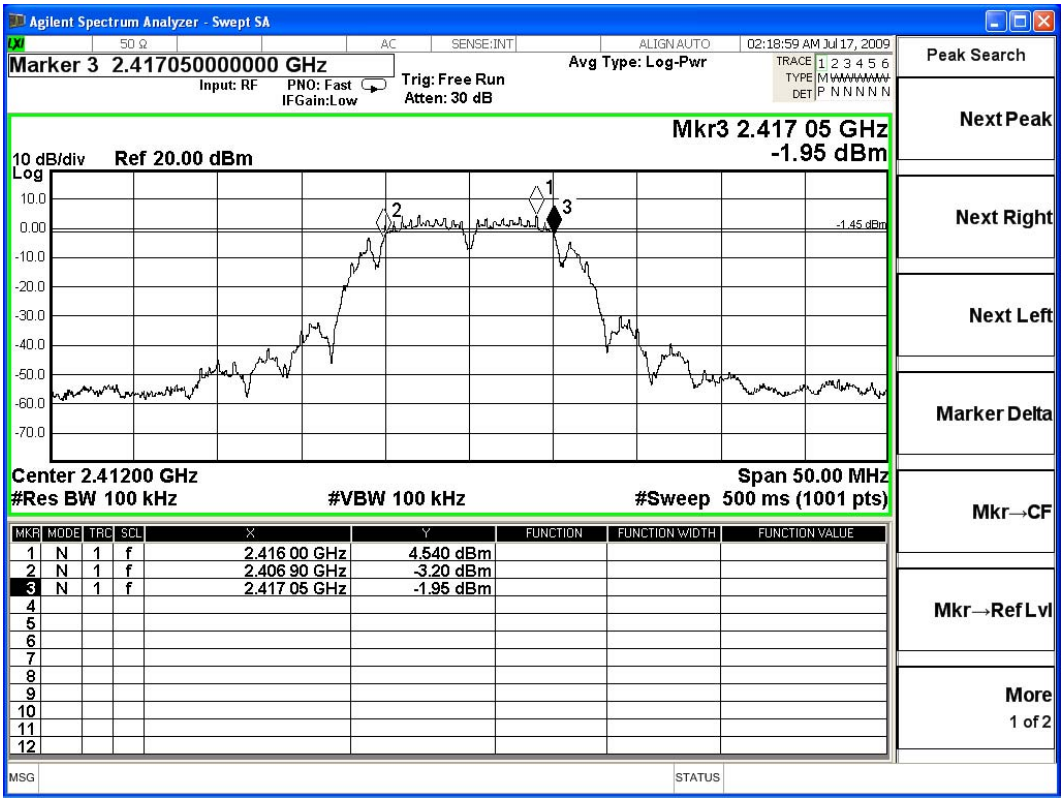
± 150Hz

7.6. Test Result of Occupied Bandwidth

Product : ADSL2/2+ VoIP Wireless Router
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps)-Adapter 1 (2412MHz)

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

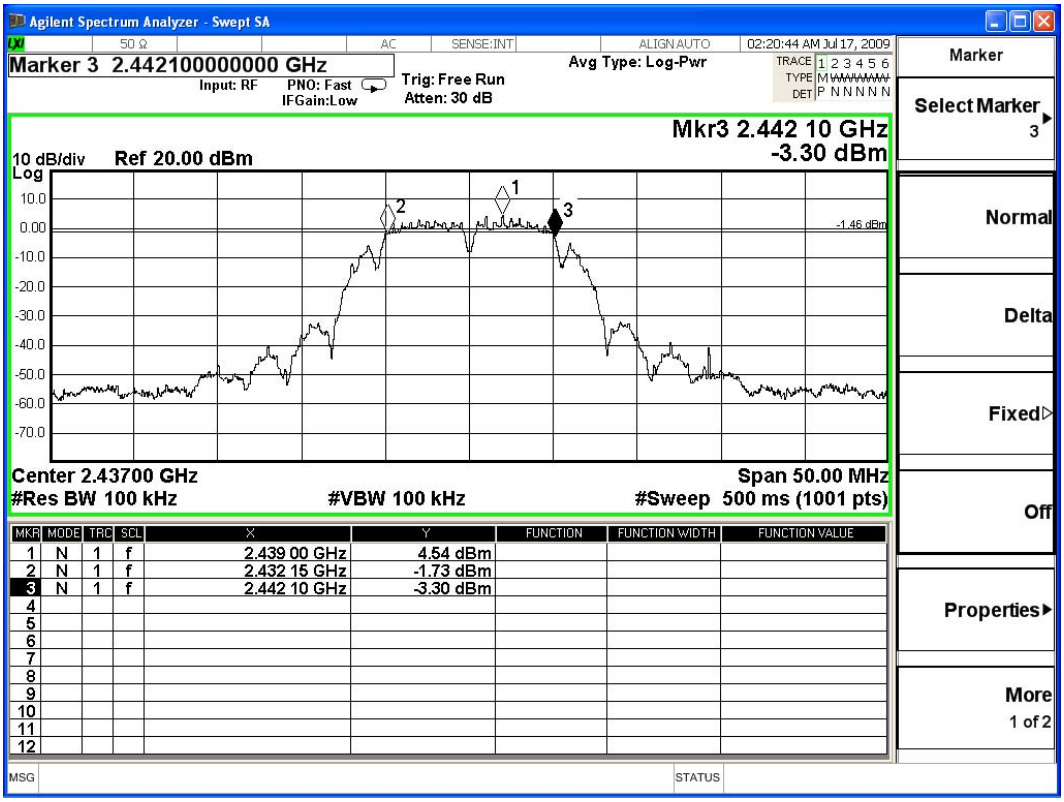
Figure Channel 1:



Product : ADSL2/2+ VoIP Wireless Router
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps)-Adapter 1 (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	9950	>500	Pass

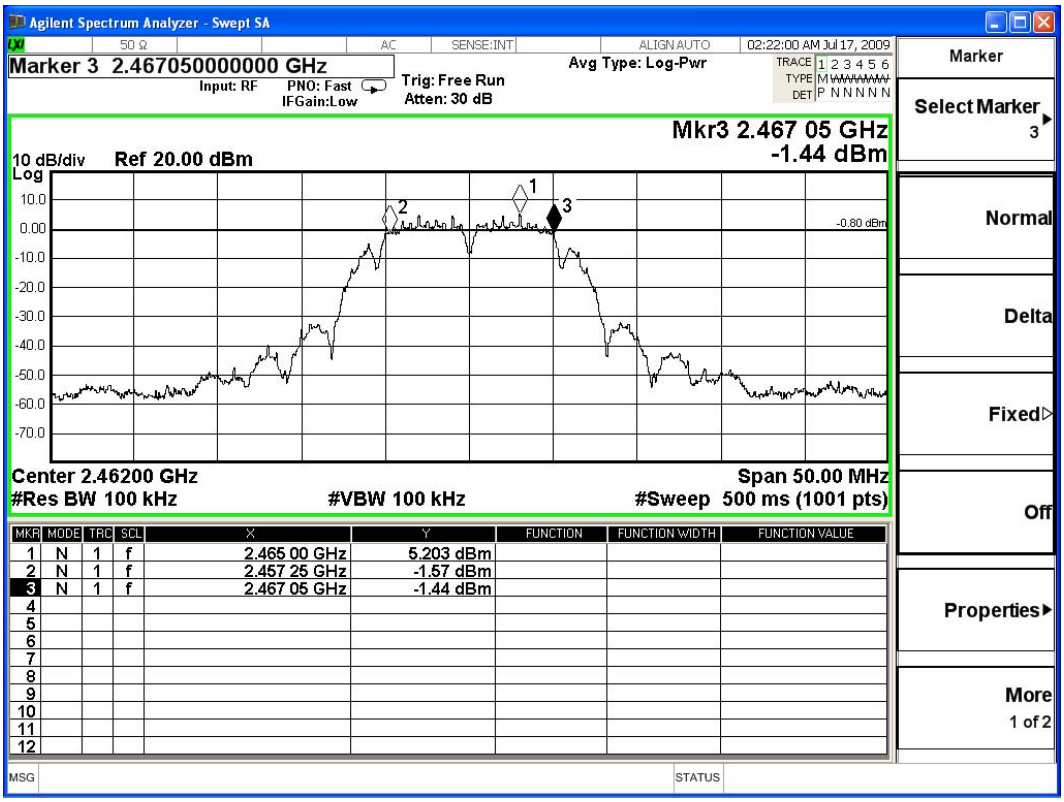
Figure Channel 6:



Product : ADSL2/2+ VoIP Wireless Router
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps)-Adapter 1 (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	9800	>500	Pass

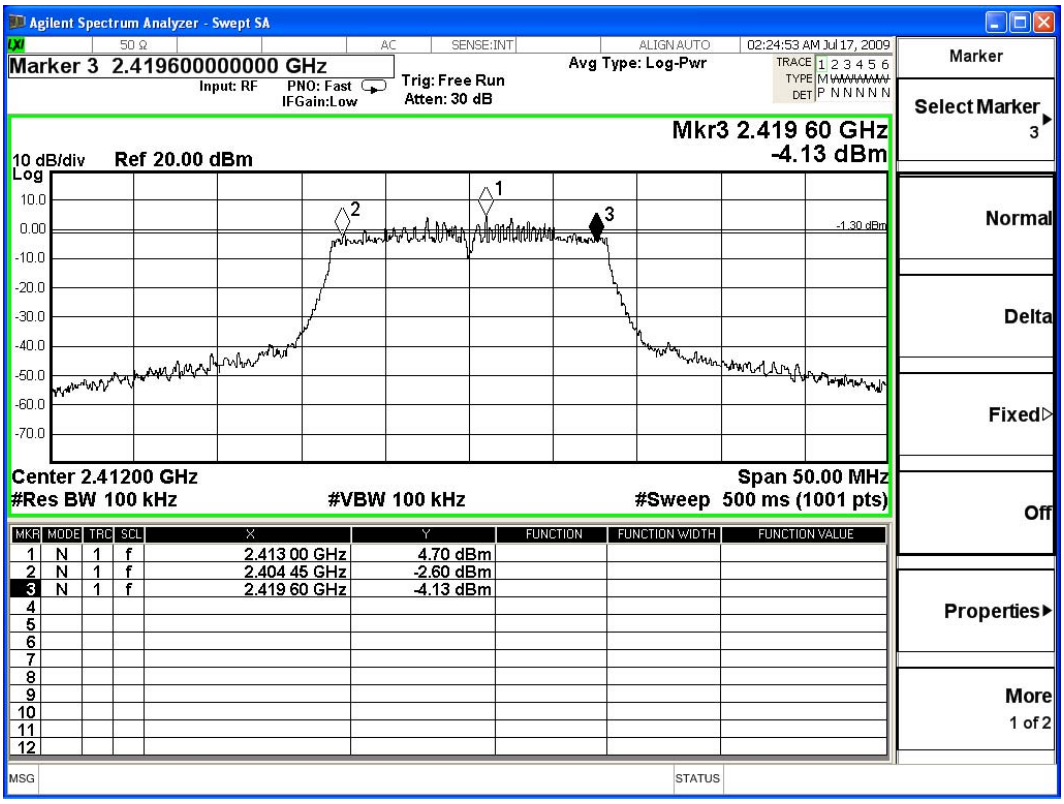
Figure Channel 11:



Product : ADSL2/2+ VoIP Wireless Router
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1 (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	15150	>500	Pass

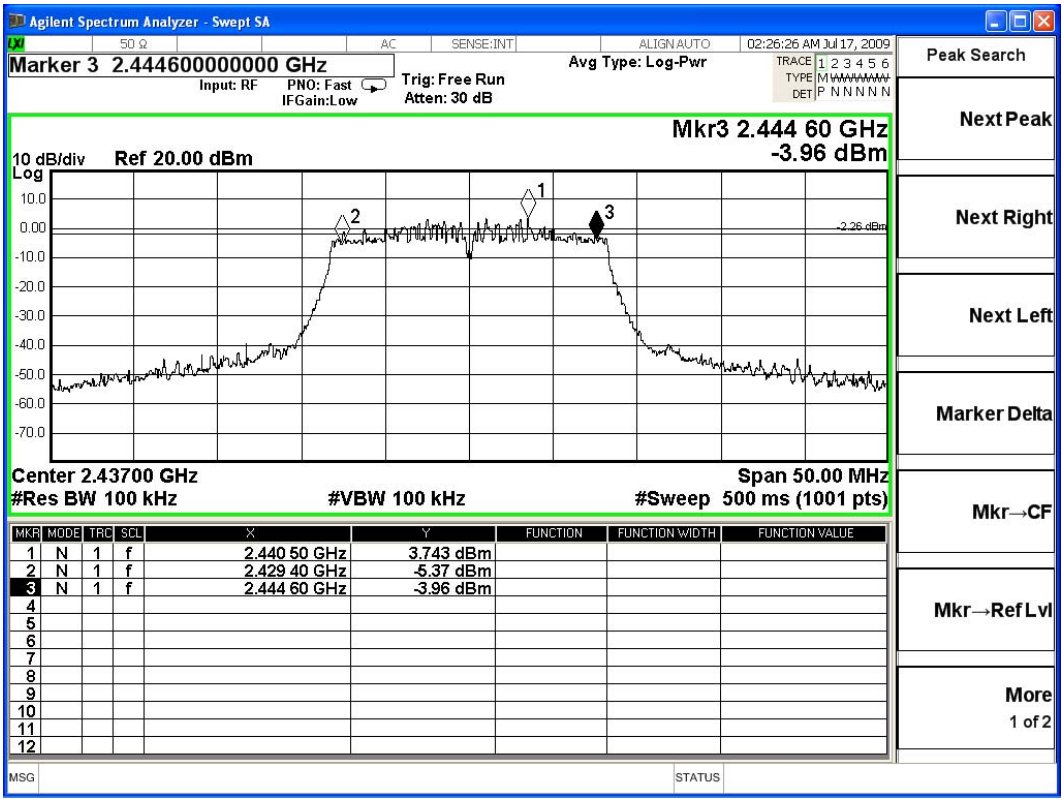
Figure Channel 1:



Product : ADSL2/2+ VoIP Wireless Router
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1 (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	15200	>500	Pass

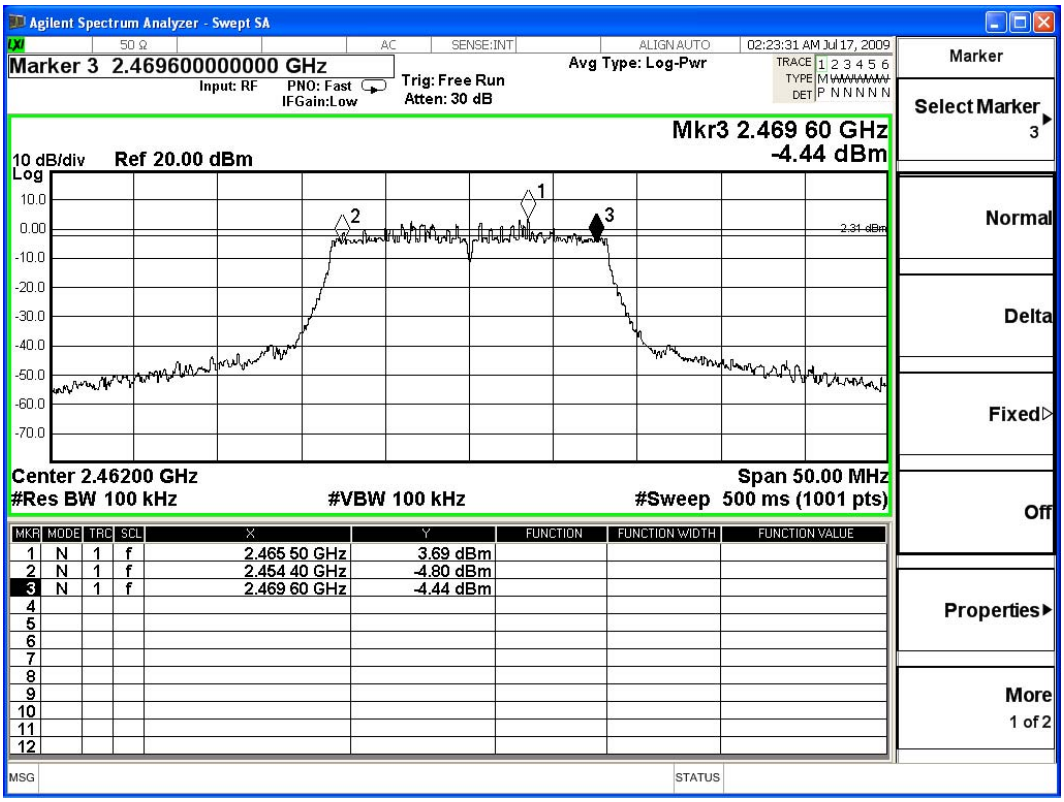
Figure Channel 6:



Product : ADSL2/2+ VoIP Wireless Router
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1 (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	15200	>500	Pass

Figure Channel 11:



8. Power Density

8.1. Test Equipment

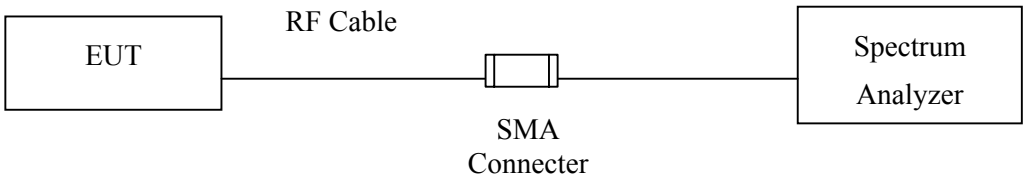
The following test equipments are used during the radiated emission tests:

	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

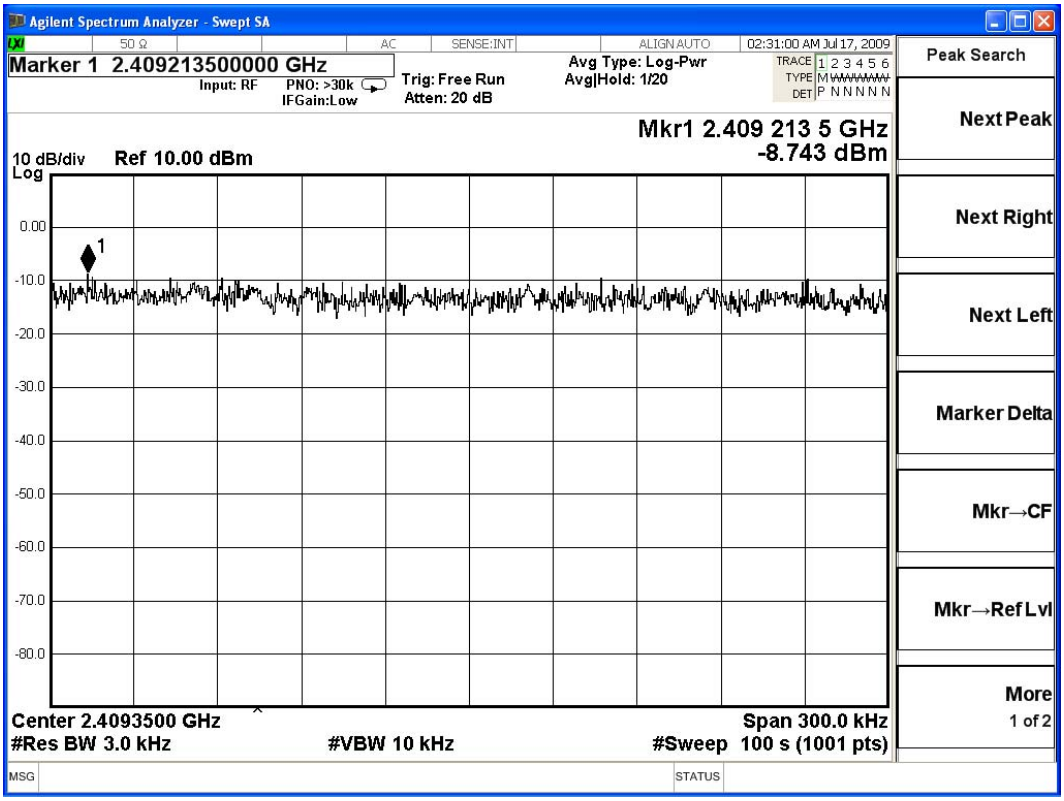
± 1.27 dB

8.6. Test Result of Power Density

Product : ADSL2/2+ VoIP Wireless Router
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps)-Adapter 1 (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412.00	-8.743	< 8dBm	Pass

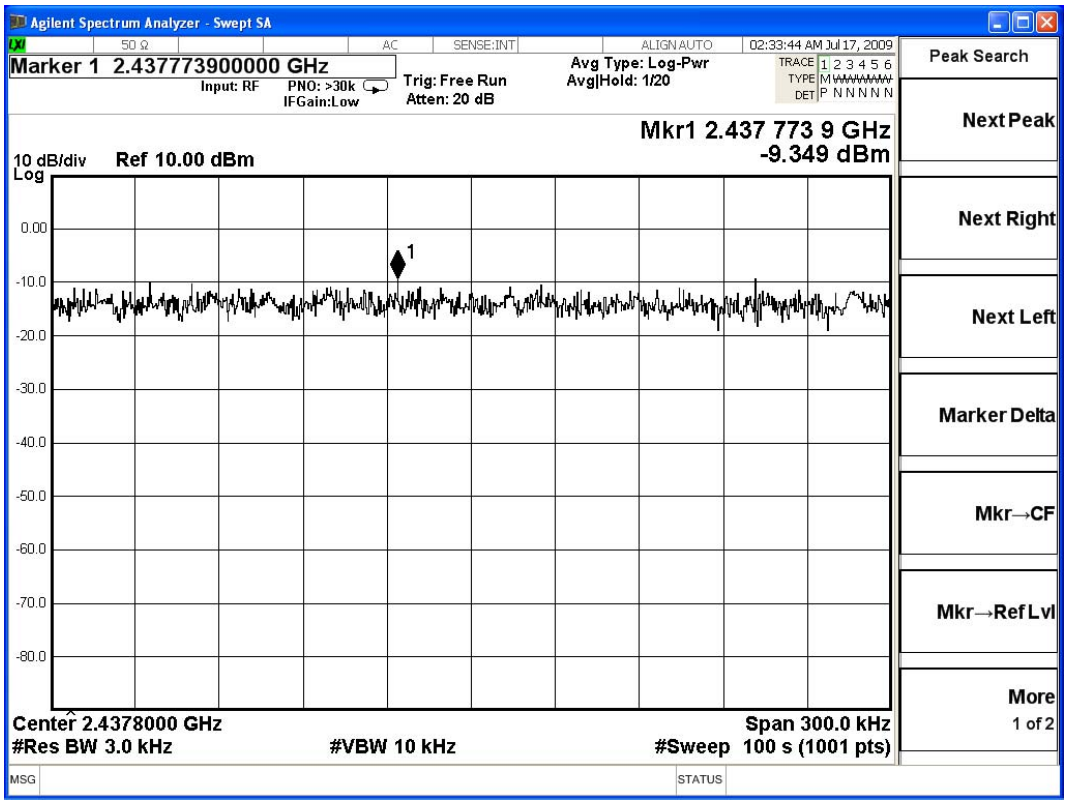
Figure Channel 1:



Product : ADSL2/2+ VoIP Wireless Router
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps)-Adapter 1 (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437.000	-9.349	< 8dBm	Pass

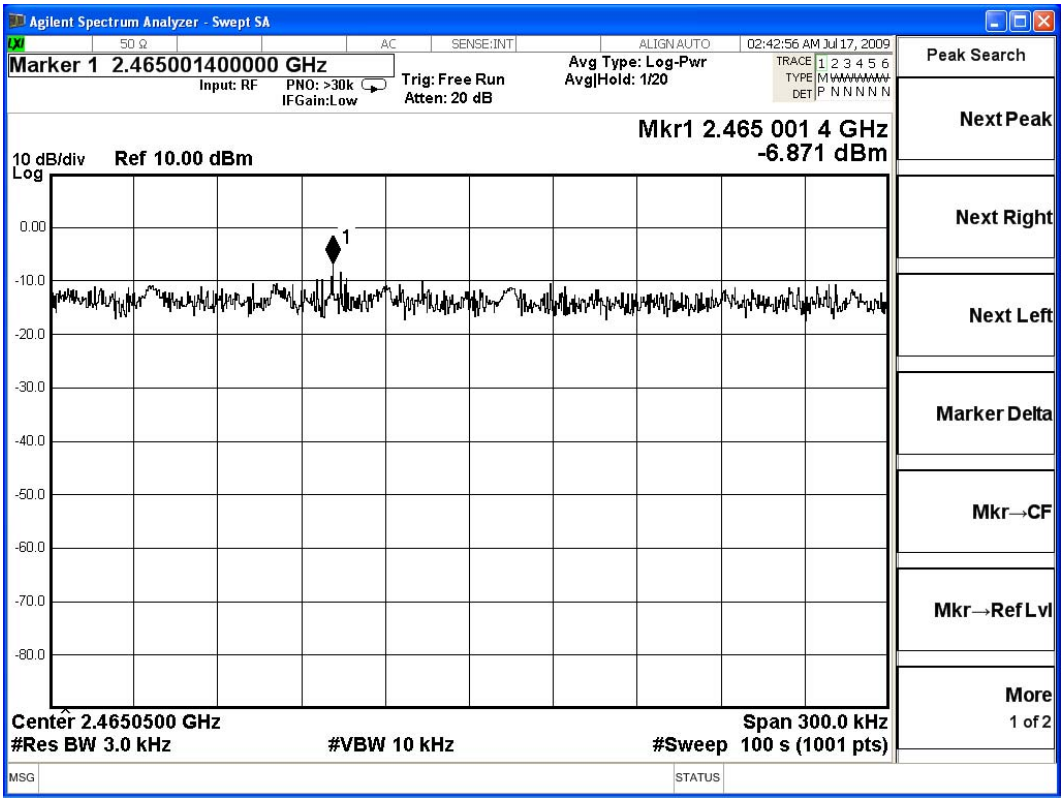
Figure Channel 6:



Product : ADSL2/2+ VoIP Wireless Router
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps)-Adapter 1 (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462.00	-6.871	< 8dBm	Pass

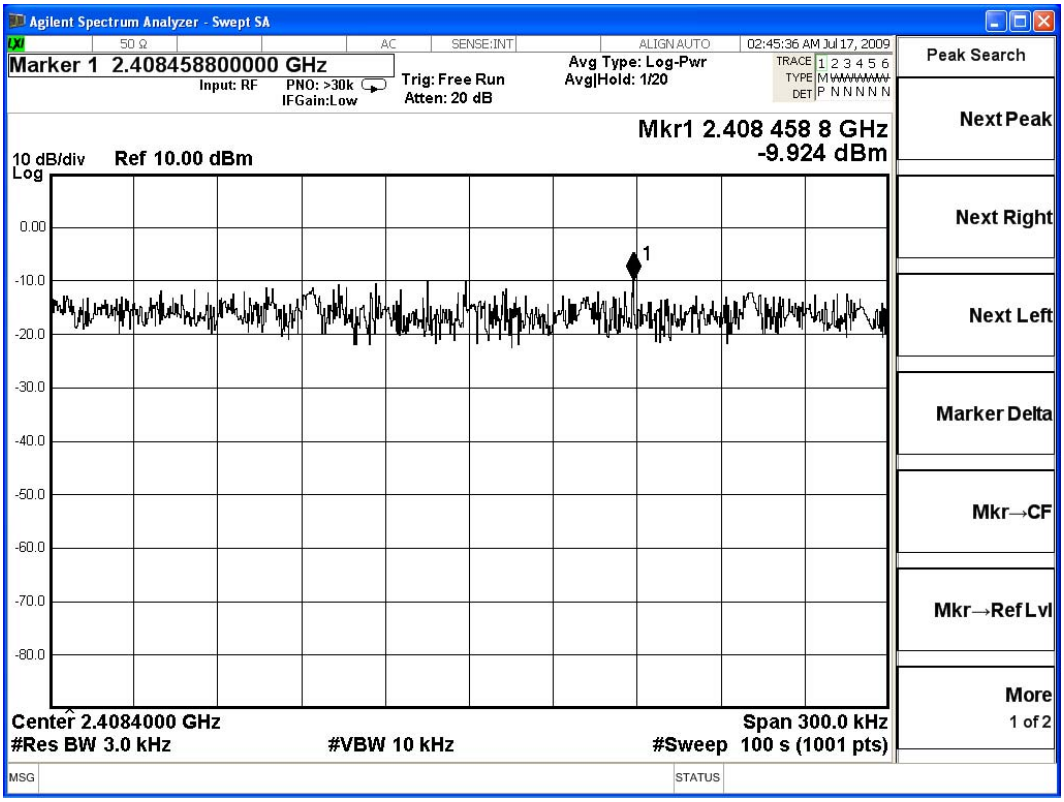
Figure Channel 11:



Product : ADSL2/2+ VoIP Wireless Router
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1 (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412.00	-9.924	< 8dBm	Pass

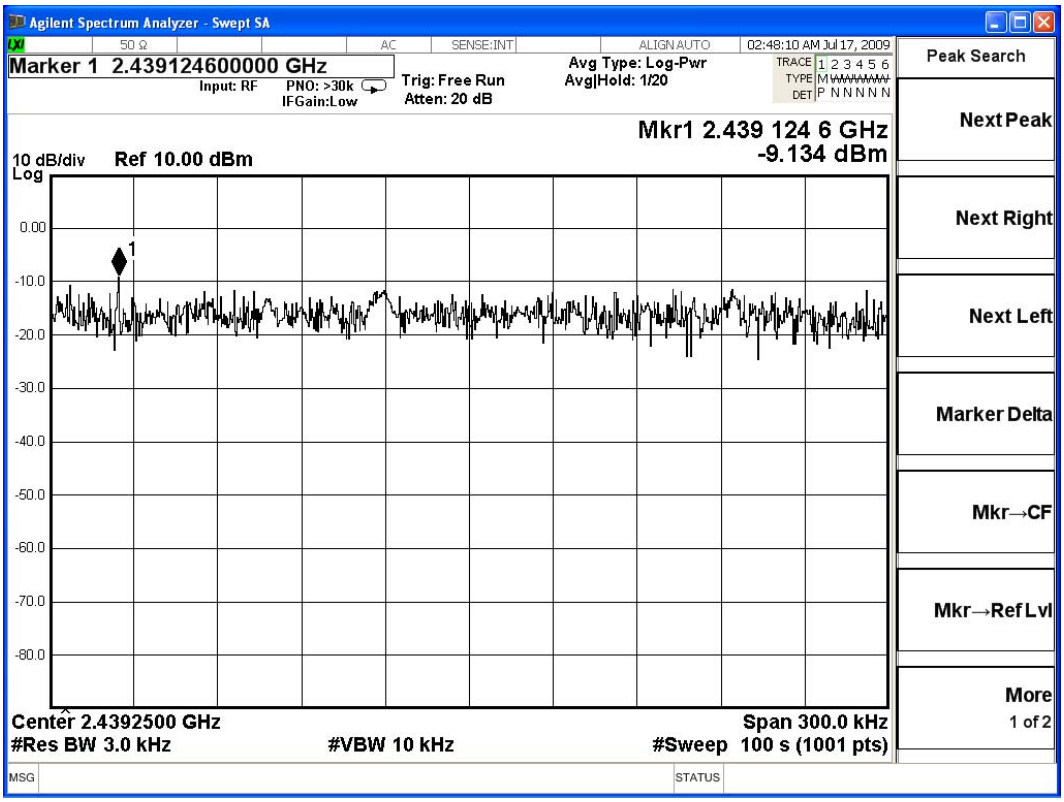
Figure Channel 1:



Product : ADSL2/2+ VoIP Wireless Router
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1 (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437.000	-9.134	< 8dBm	Pass

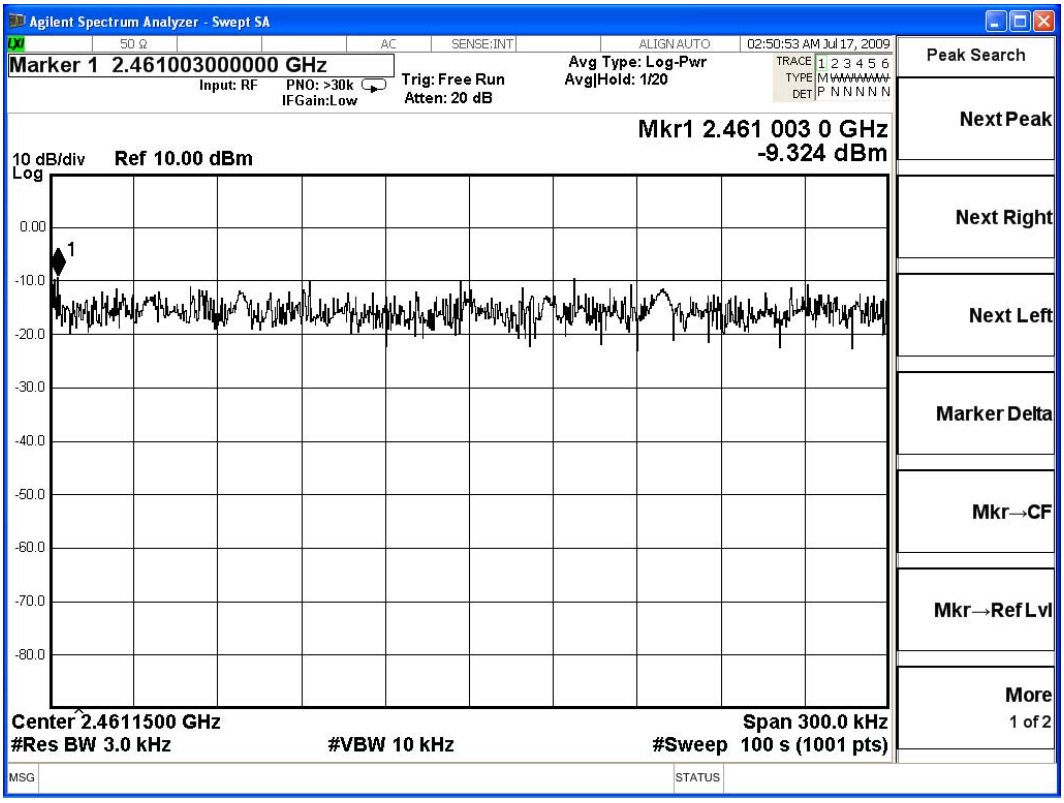
Figure Channel 6:



Product : ADSL2/2+ VoIP Wireless Router
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps)-Adapter 1 (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462.00	-9.324	< 8dBm	Pass

Figure Channel 11:



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.