



FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

Wireless-N ADSL2+ Gateway

Model: WAG325N V2

Trade Name: Linksys

Issued to

Cisco-Linksys LLC
121 Theory Drive
Irvine, CA 92617(USA)

Issued by

Compliance Certification Services Inc.
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1. TEST RESULT CERTIFICATION

Applicant: Cisco-Linksys LLC
121 Theory Drive
Irvine, CA 92617(USA)

Equipment Under Test: Wireless-N ADSL2+ Gateway

Trade Name: Linksys

Model: WAG325N V2

Date of Test: January 23 ~ March 24, 2007

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 15 Subpart C	No non-compliance noted

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2003 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

Approved by:

Johnny Liu
Section Manager
Compliance Certification Services Inc.

Reviewed by:

Amanda Wu
Section Manager
Compliance Certification Services Inc.



2. EUT DESCRIPTION

Product	Wireless-N ADSL2+ Gateway
Trade Name	Linksys
Model Number	WAG325N V2
Model Discrepancy	N/A
Power Supply	Power Adapter 1: Trade Name / Model: L.E.I. / MU12-2120100-A1 I/P: 100-240V, 50/60Hz, 0.5A O/P: 12V, 1.0A Power Adapter 2: Trade Name / Model: LINKSYS / DSA-12W-10 FEU 12012 I/P: 100-240V, 50/60Hz, 0.3A O/P: 12V, 1.0A
Frequency Range	2412 ~ 2462 MHz
Transmit Power	IEEE 802.11b mode: 21.80 dBm IEEE 802.11g mode: 18.14 dBm draft 802.11n Standard-20 MHz Channel mode: 24.82 dBm draft 802.11n Wide-40 MHz Channel mode: 19.55 dBm
Modulation Technique	IEEE 802.11b mode: DSSS (1, 2, 5.5 and 11 Mpbs) IEEE 802.11g mode: OFDM (6, 9, 12, 18, 24, 36, 48 and 54 Mpbs) draft 802.11n Standard-20 MHz Channel mode: OFDM (6.5, 7.2, 13, 14.4, 14.44, 19.5, 21.7, 26, 28.89, 28.9, 39, 43.3, 43.33, 52, 57.78, 57.8, 58.5, 65.0, 72.2, 78, 86.67, 104, 115.56, 117, 130, 144.44 Mbps) draft 802.11n Wide-40 MHz Channel mode: OFDM (13, 15, 27, 30, 40.5, 45, 54, 60, 81, 90, 108, 120, 121.5, 135, 150, 162, 180, 216, 240, 243, 270, 300 Mbps)
Number of Channels	IEEE 802.11b/g mode: 11 Channels draft 802.11n Standard-20 MHz Channel mode: 11 Channels draft 802.11n Wide-40 MHz Channel mode: 7 Channels
Antenna Specification	Dipole Antenna / Gain: 0.9dBi (including cable loss) Antenna Calculation for CDD Mode: 0.9dBi (including cable loss) + 10 log (2) = 3.91 dBi (Numeric gain: 2.46) PCB Antenna / Gain: 0.95dBi (including cable loss)

Remark:

1. The sample selected for test was production product and was provided by manufacturer.
2. This submittal(s) (test report) is intended for FCC ID: Q87-WAG325NV2 filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.



3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, 15.207, 15.209 and 15.247.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4.



3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	(²)
13.36 - 13.41	322 - 335.4		

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

² Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.



3.5 DESCRIPTION OF TEST MODES

The EUT (model: WAG325N V2) comes with two types of power adapter for sale. After the preliminary test, the EUT with power adapter (Model: MU12-2120100-A1) was found to emit the worst emissions and therefore had been tested under operating condition.

The EUT is a 2x3 configuration spatial MIMO (2Tx & 3Rx) without beam forming function but with cyclic delay diversity function that operate in double TX chains and triple RX chains. The 2x3 configuration is implemented with two outside TX & RX chains (Chain 0 and 2) and the middle RX chain (chain 1).

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

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

The worst case data rate is determined as the data rate with highest output power.

IEEE 802.11b mode:

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

IEEE 802.11g mode:

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

draft 802.11n Standard-20 MHz Channel mode:

Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 6.5Mbps data rate were chosen for full testing.

draft 802.11n Wide-40 MHz Channel mode:

Channel Low (2422MHz), Channel Mid (2437MHz) and Channel High (2452MHz) with 13.5Mbps data rate were chosen for full testing.



4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

Remark: Each piece of equipment is scheduled for calibration once a year.

Conducted Emissions Test Site				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY43360131	01/30/2008
Spectrum Analyzer	R&S	FSEK30	10026	03/21/2008

3M Semi Anechoic Chamber				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US42510252	08/02/2007
Test Receiver	Rohde&Schwarz	ESCI	100064	11/13/2007
Switch Controller	TRC	Switch Controller	SC94050010	05/05/2007
4 Port Switch	TRC	4 Port Switch	SC94050020	05/05/2007
Horn Antenna	EMCO	3115	9903-5761	01/12/2008
Bilog- Antenna	Sunol Sciences	JB3	A030205	03/09/2007
Turn Table	Max-Full	MFT-120S	T120S940302	N.C.R.
Antenna Tower	Max-Full	MFA-430	A440940302	N.C.R.
Controller	Max-Full	MF-CM886	CC-C-1F-13	N.C.R.
Site NSA	CCS	N/A	FCC: 965860 IC: IC 6106	09/25/2008
Test S/W	LABVIEW (V 6.1)			

Remark: The measurement uncertainty is less than +/- 2.0065dB (30MHz ~ 1GHz), +/- 3.0958dB (Above 1GHz) which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.

Powerline Conducted Emissions Test Site				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI TEST RECEIVER 9kHz-30MHz	ROHDE & SCHWARZ	ESHS30	828144/003	10/31/2007
TWO-LINE V-NETWORK 9kHz-30MHz	SCHAFFNER	NNB41	03/10013	06/14/2007
LISN 10kHz-100MHz	EMCO	3825/2	9106-1809	03/19/2008
Test S/W	LABVIEW (V 6.1)			

Remark: The measurement uncertainty is less than +/- 2.81dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.



5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

- No.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.
Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029
- No.11, Wugong 6th Rd., Wugu Industrial Park, Taipei Hsien 248, Taiwan
Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045
- No.81-1, Lane 210, Bade 2nd Rd., Luchu Hsiang, Taoyuan Hsien 338, Taiwan
Tel: 886-3-324-0332 / Fax: 886-3-324-5235

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

5.2 EQUIPMENT

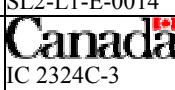
Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5.3 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	A2LA	EN 55011, EN 55014-1/2, CISPR 11, CISPR 14-1/2, EN 55022, EN 55015, CISPR 22, CISPR 15, AS/NZS 3548, VCCI V3 (2001), CFR 47, FCC Part 15/18, CNS 13783-1, CNS 13439, CNS 13438, CNS 13803, CNS 14115, EN 55024, IEC 801-2, IEC 801-3, IEC 801-4, IEC/EN 61000-3-2, EIC/EN 61000-3-3, IEC/EN 61000-4-2/3/4/5/6/8/11, EN 50081-1/ EN 61000-6-3, EN 50081-2/EN 61000-6-4, EN 50081-2/EN 61000-6-1: 2001	 0824-01
USA	FCC	3/10 meter Open Area Test Sites (93105, 90471) / 3M Semi Anechoic Chamber (965860) to perform FCC Part 15/18 measurements	 93105, 90471 965860
Japan	VCCI	3/10 meter Open Area Test Sites to perform conducted/radiated measurements	 R-393/1066/725/879 C-402/747/912
Norway	NEMKO	EN 50081-1/2, EN 50082-1/2, IEC 61000-6-1/2, EN 50091-2, EN 50130-4, EN 55011, EN 55013, EN 55014-1/2, EN 55015, EN 55022, EN 55024, EN 61000-3-2/3, EN 61326-1, IEC 61000-4-2/3/4/5/6/8/11, EN 60601-1-2, EN 300 328, EN 300 422-2, EN 301 419-1, EN 301 489-01/03/07/08/09/17, EN 301 419-2/3, EN 300 454-2, EN 301 357-2	 ELA 124a ELA 124b ELA 124c
Taiwan	TAF	EN 300 328, EN 300 220-1, EN 300 220-2, EN 300 220-3, 47 CFR FCC Part 15 Subpart C, EN 61000-3-2, EN 61000-3-3, CNS 13439, CNS 13783-1, CNS 14115, CNS 13438, AS/NZS CISPR 22, CNS 13022-1, IEC 61000-4-2/3/4/5/6/8/11, CNS 13022-2/3	 Testing Laboratory 0363
Taiwan	BSMI	CNS 13438, CNS 13783-1, CNS 13439, CNS 14115	 SL2-IS-E-0014 SL2-IN-E-0014 SL2-A1-E-0014 SL2-R1-E-0014 SL2-R2-E-0014 SL2-L1-E-0014
Canada	Industry Canada	3/10 meter Open Area Test Sites (IC 2324C-3, IC 2324C-5) / 3M Semi Anechoic Chamber (IC 6106) to perform RSS 212 Issue 1	 IC 2324C-3 IC 2324C-5 IC 6106

* No part of this report may be used to claim or imply product endorsement by A2LA or any agency of the US Government.



6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

6.2 SUPPORT EQUIPMENT

No	Equipment	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1.	Notebook PC (Remote)	Dell	PP05L	7T390 A03	E2K5HCKT	N/A	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core
2.	Notebook PC (Remote)	IBM	2672 (X31)	99PBTKB	WLAN: ANO20030400LEG Bluetooth: ANO20020100MTN	N/A	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core
3.	Wireless-N Notebook Adapter	LINKSYS	WPC300N	N/A	N/A	N/A	N/A

Remark:

1. *All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.*
2. *Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

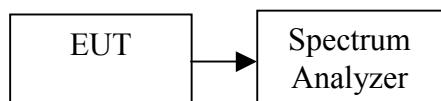
7. FCC PART 15.247 REQUIREMENTS

7.1 6DB BANDWIDTH

LIMIT

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

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 100 kHz, VBW = RBW, Span = 50 MHz, Sweep = auto.
4. Mark the peak frequency and -6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.



TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	11.50	>500	PASS
Mid	2437	11.58		PASS
High	2462	10.00		PASS

Test mode: IEEE 802.11b mode / Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	11.00	>500	PASS
Mid	2437	10.50		PASS
High	2462	11.25		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	15.83	>500	PASS
Mid	2437	13.83		PASS
High	2462	15.25		PASS

**Test mode: draft 802.11n Standard-20 MHz Channel mode / Chain 0**

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.50	>500	PASS
Mid	2437	17.67		PASS
High	2462	16.83		PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.00	>500	PASS
Mid	2437	17.67		PASS
High	2462	17.67		PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	33.67	>500	PASS
Mid	2437	27.53		PASS
High	2452	33.72		PASS

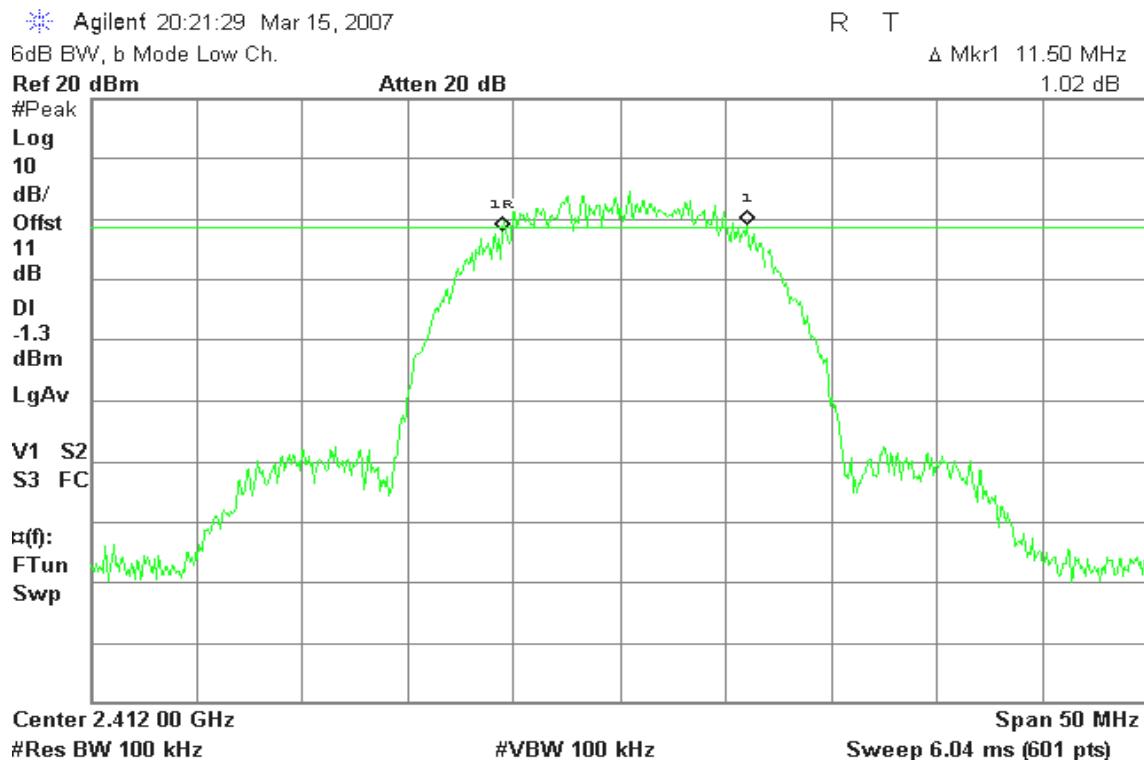
Test mode: draft 802.11n Wide-40 MHz Channel mode / Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	35.82	>500	PASS
Mid	2437	33.83		PASS
High	2452	36.40		PASS

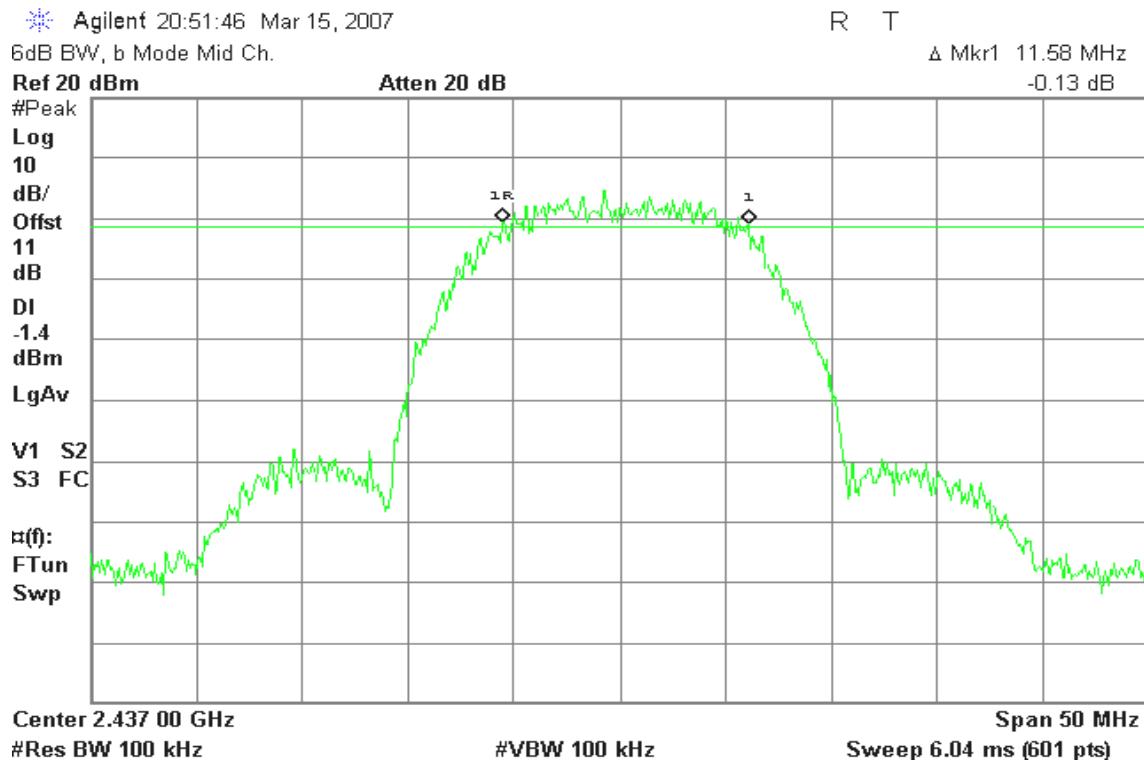
Test Plot

IEEE 802.11b mode / Chain 0

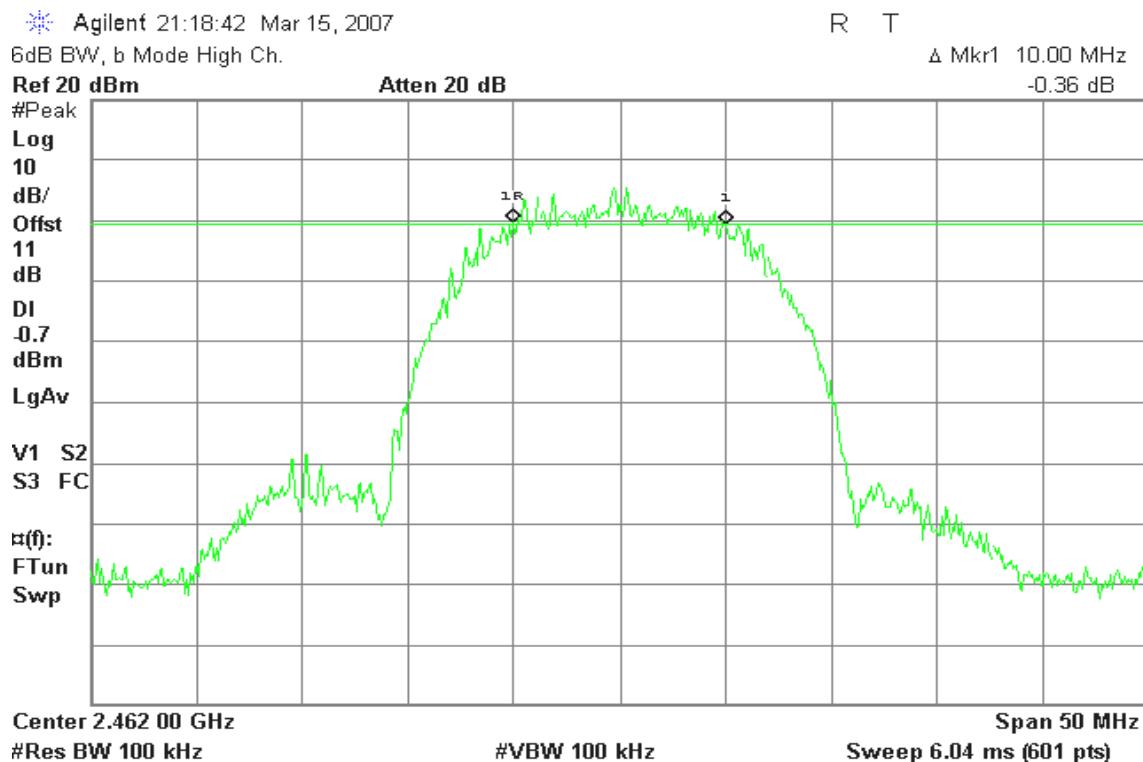
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

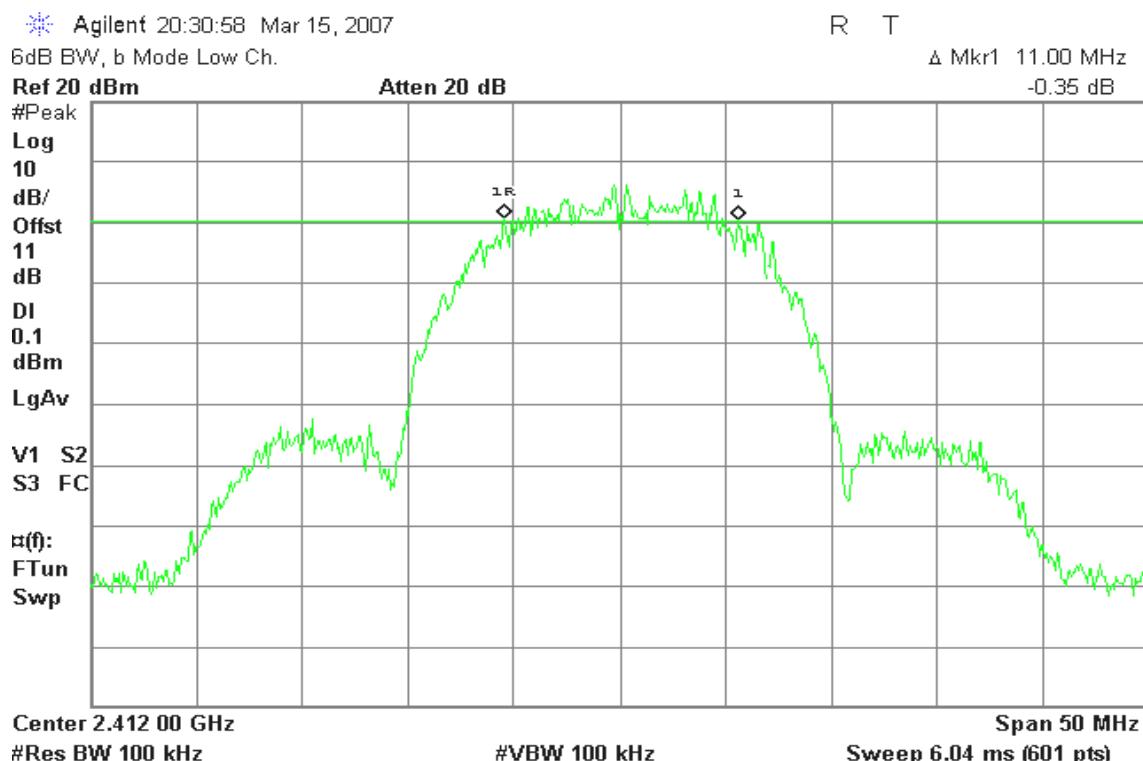


6dB Bandwidth (CH High)

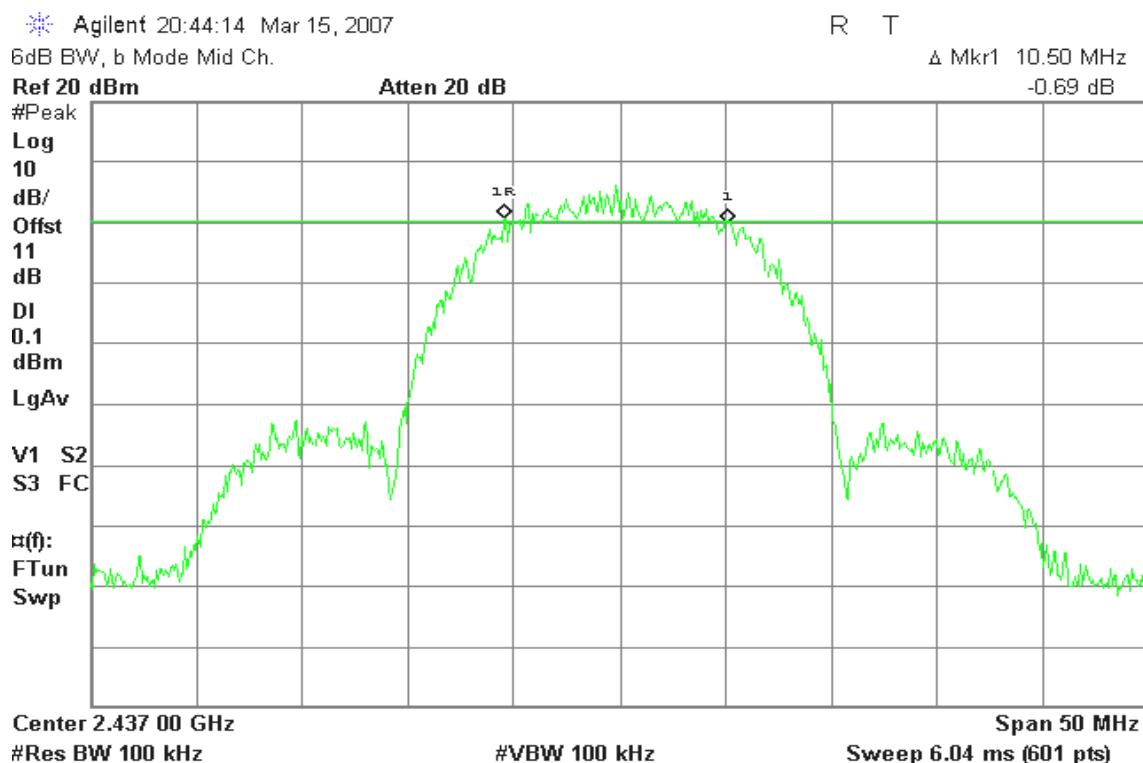


IEEE 802.11b mode / Chain 2

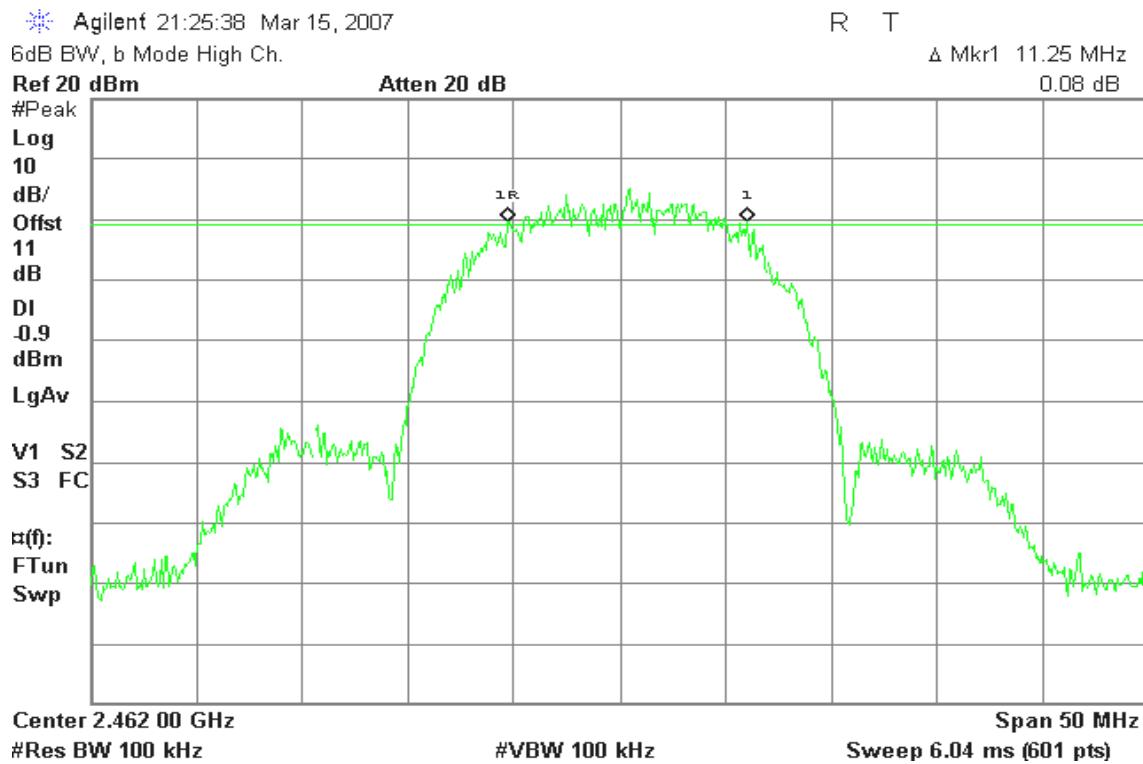
6dB Bandwidth (CH Low)

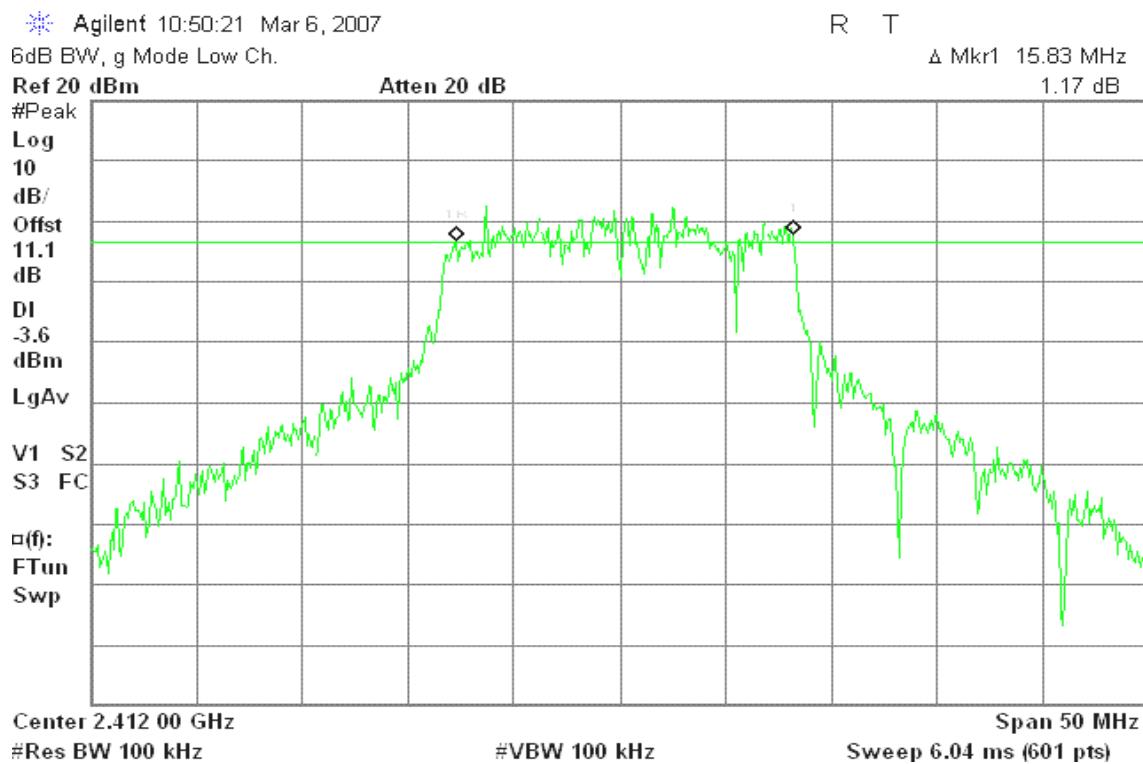


6dB Bandwidth (CH Mid)

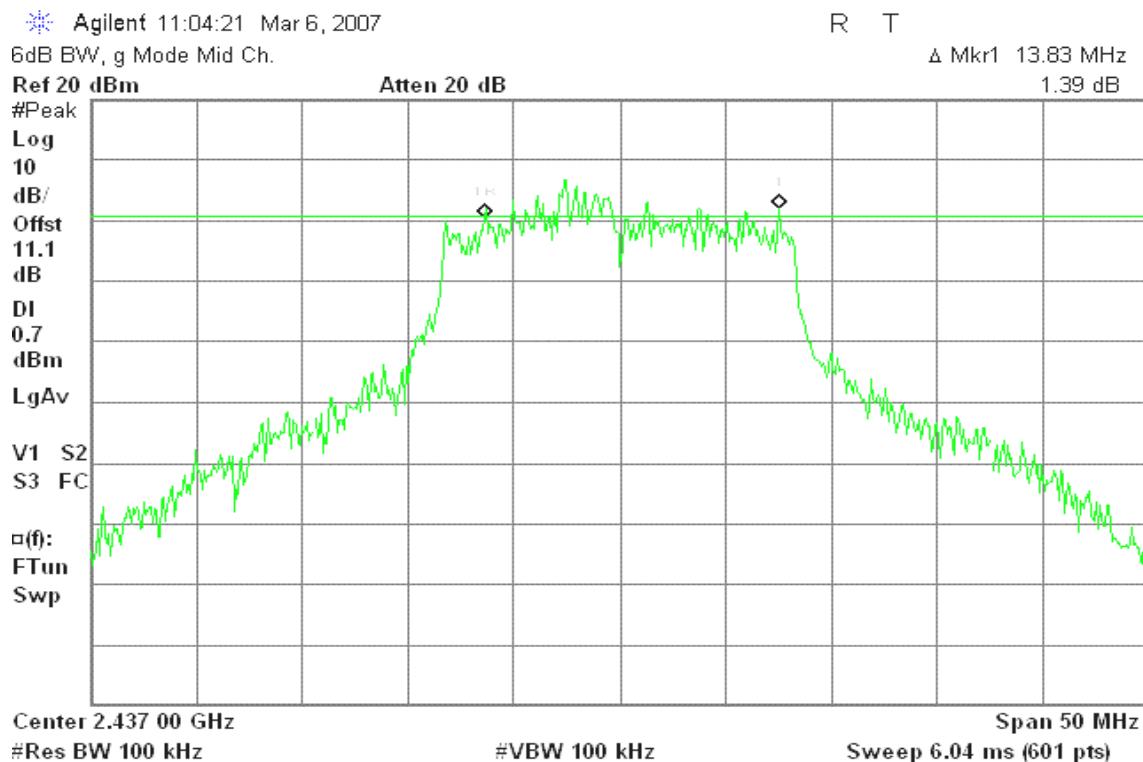


6dB Bandwidth (CH High)

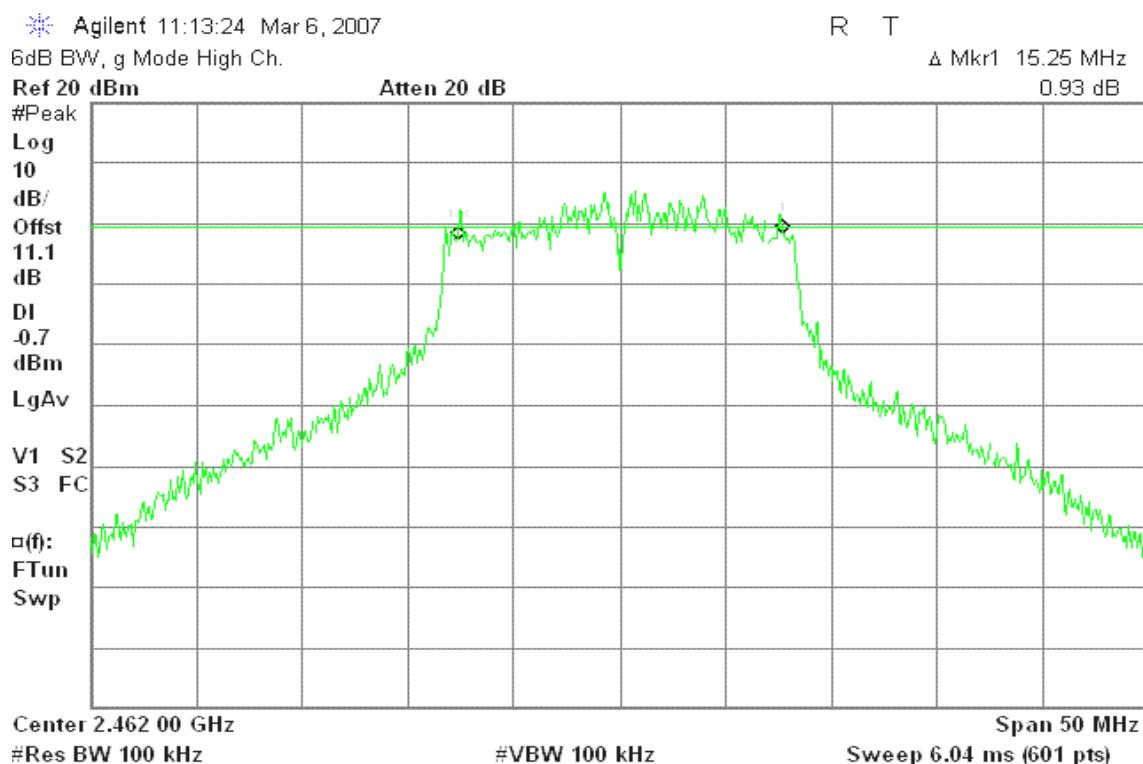


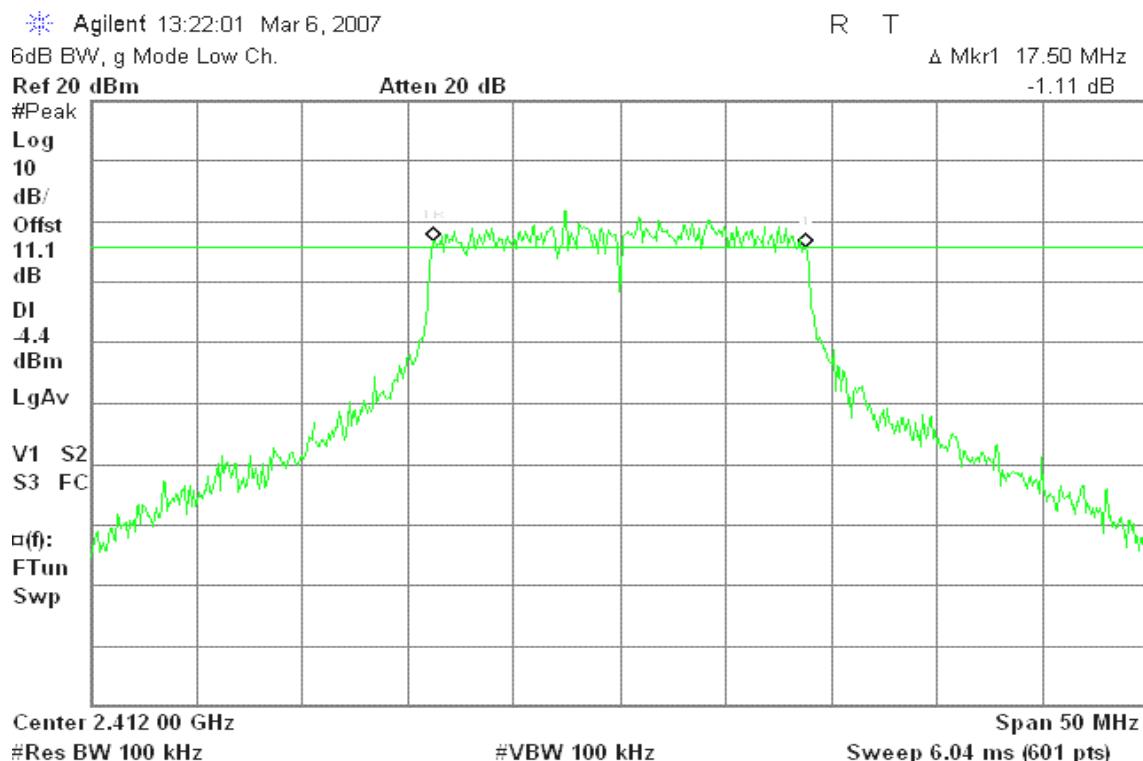
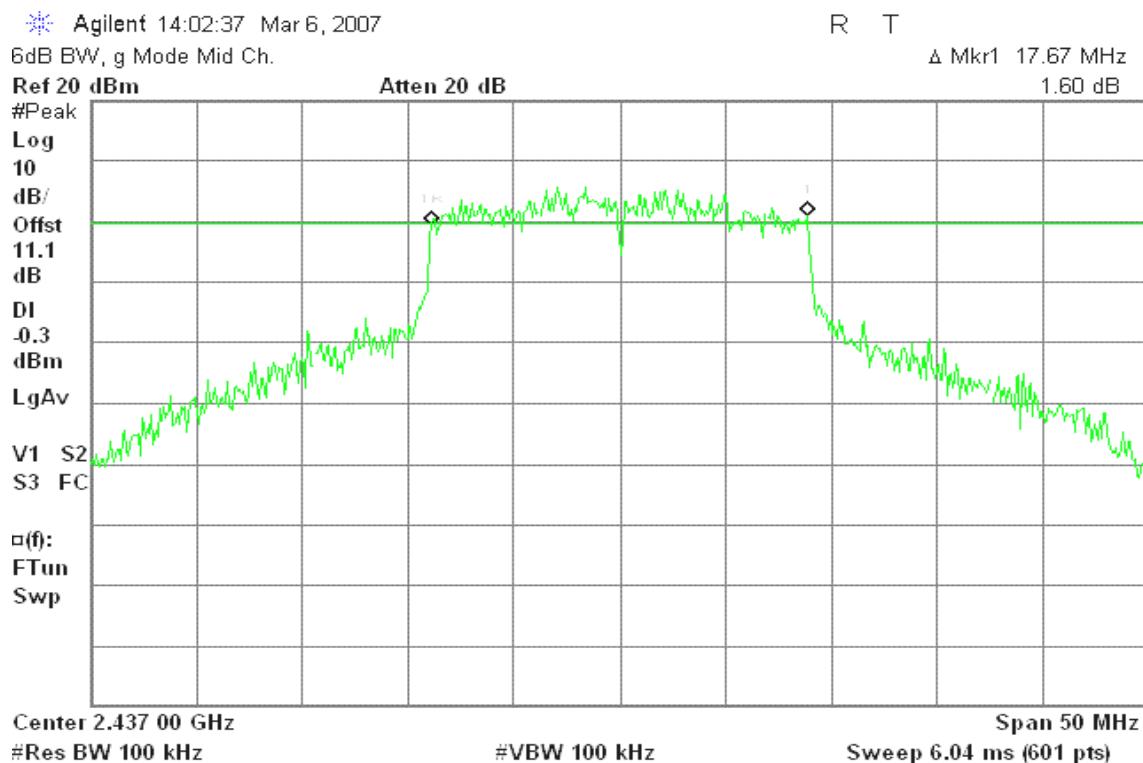
IEEE 802.11g**6dB Bandwidth (CH Low)**

6dB Bandwidth (CH Mid)

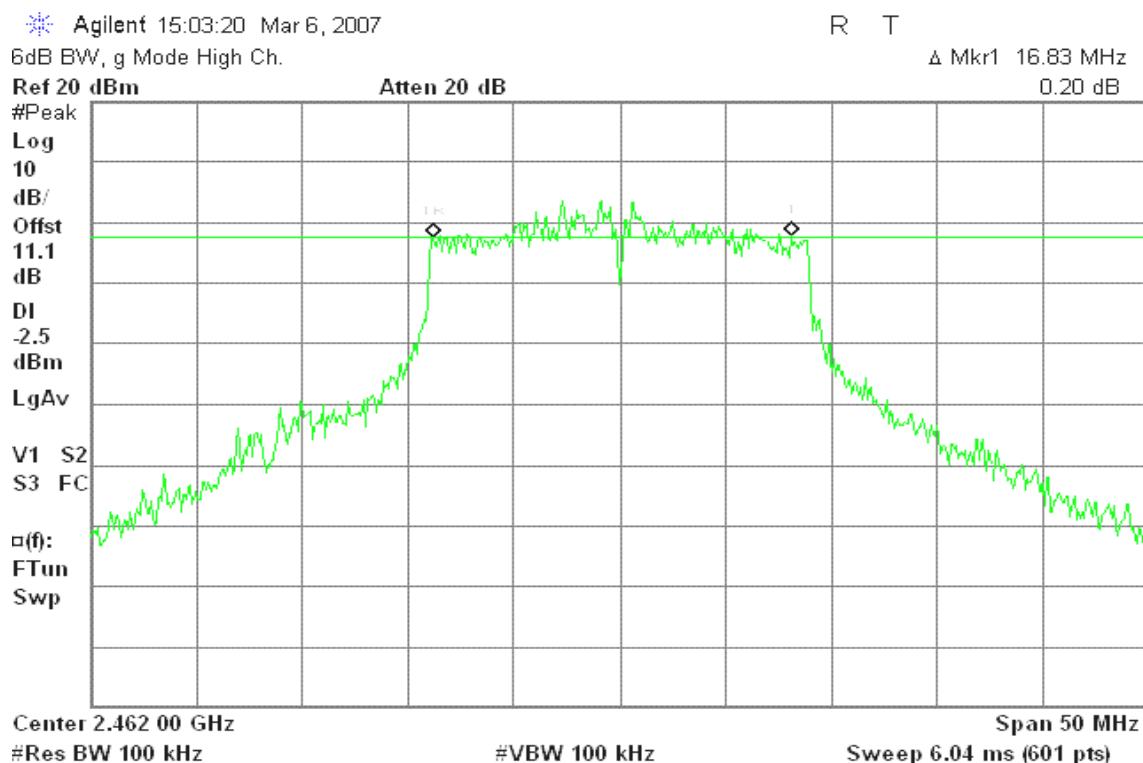


6dB Bandwidth (CH High)



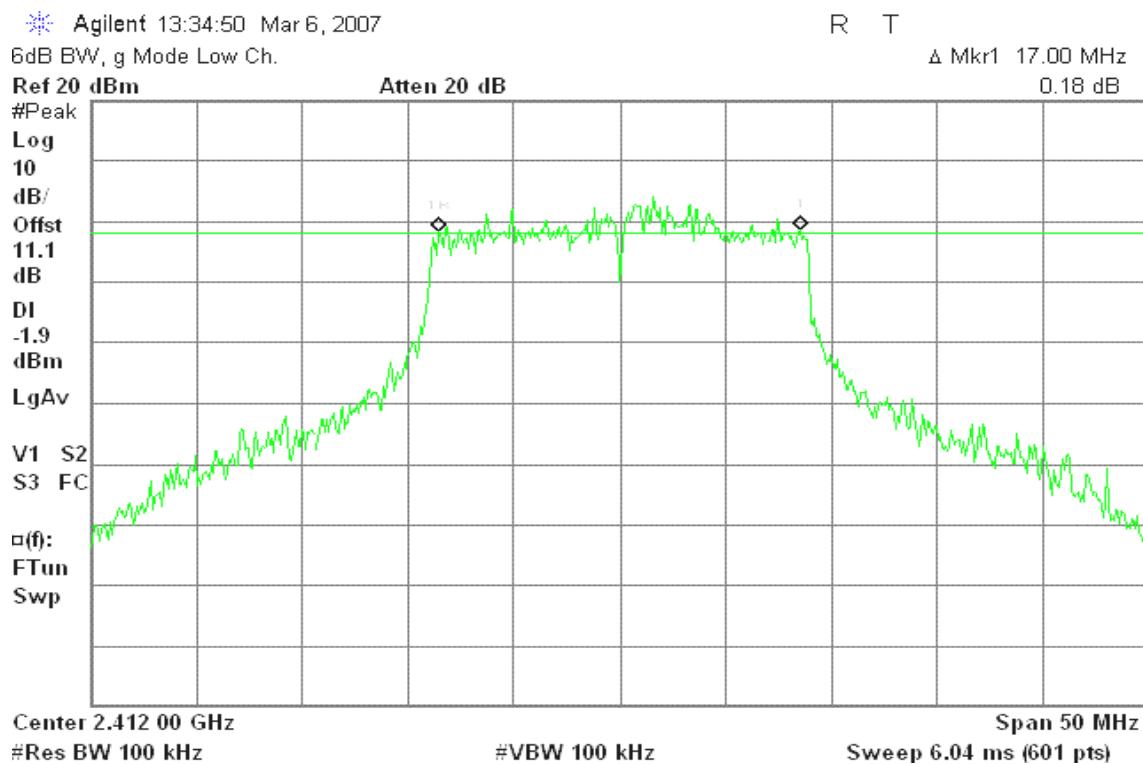
draft 802.11n Standard-20 MHz Channel mode / Chain 0**6dB Bandwidth (CH Low)****6dB Bandwidth (CH Mid)**

6dB Bandwidth (CH High)

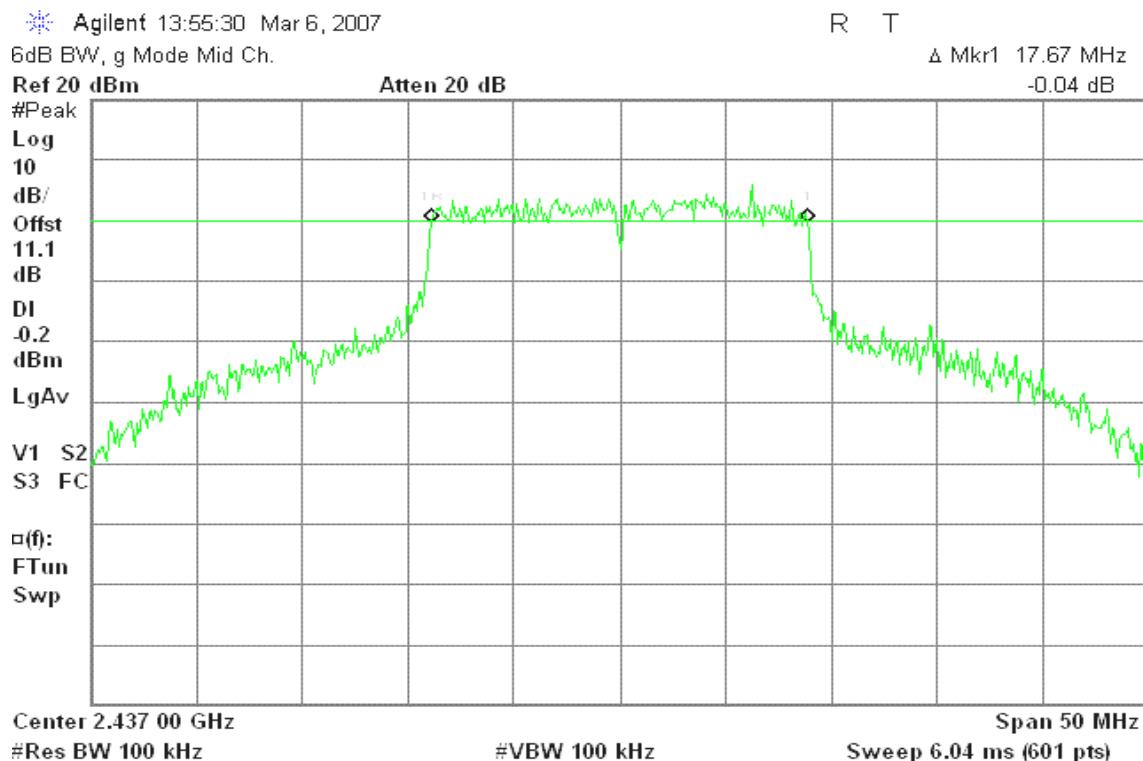


draft 802.11n Standard-20 MHz Channel mode / Chain 2

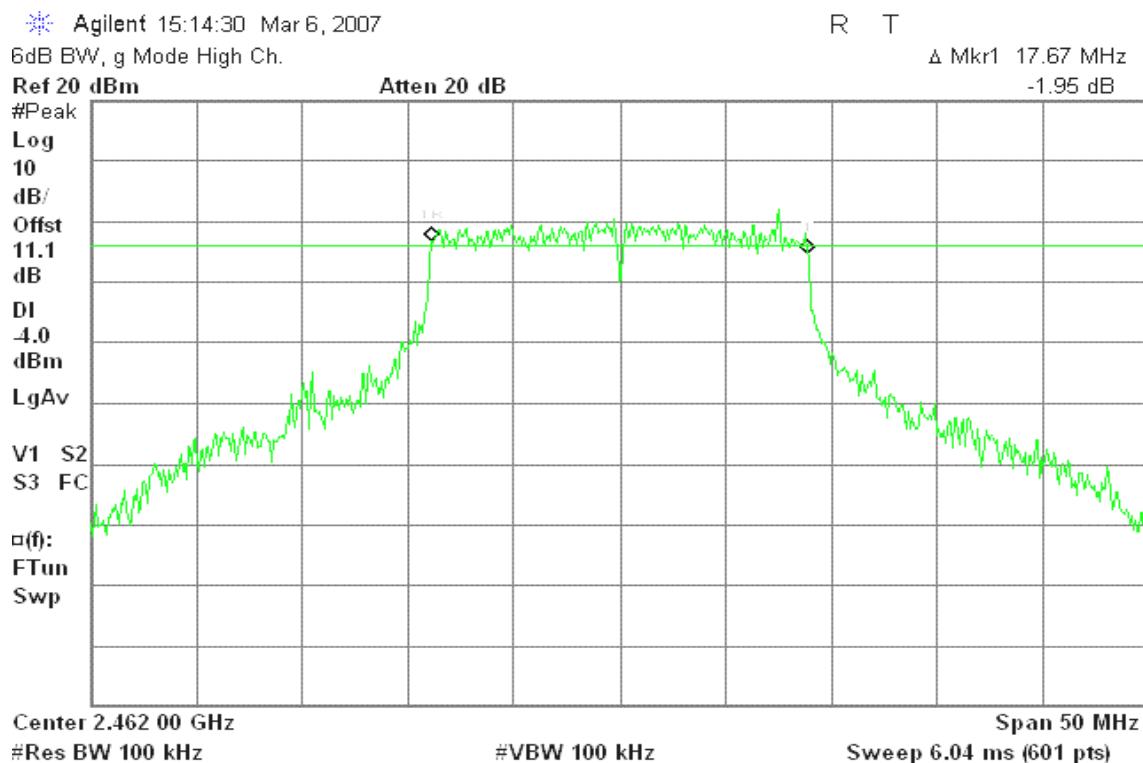
6dB Bandwidth (CH Low)

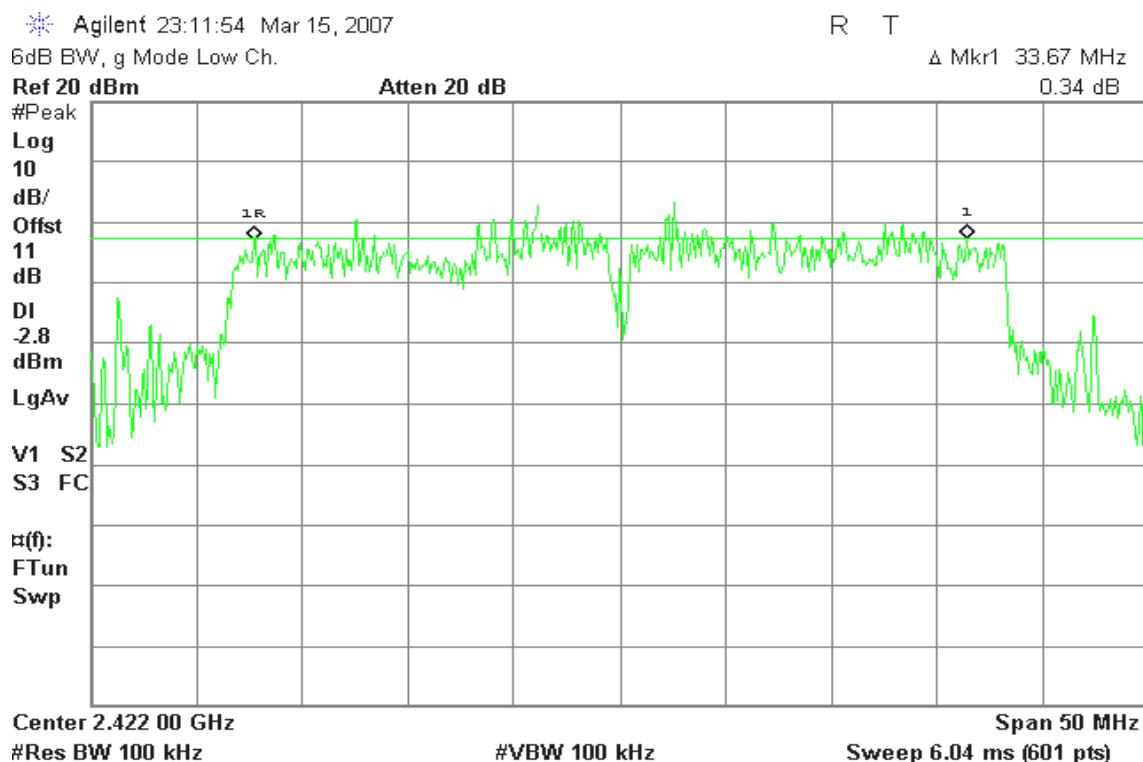
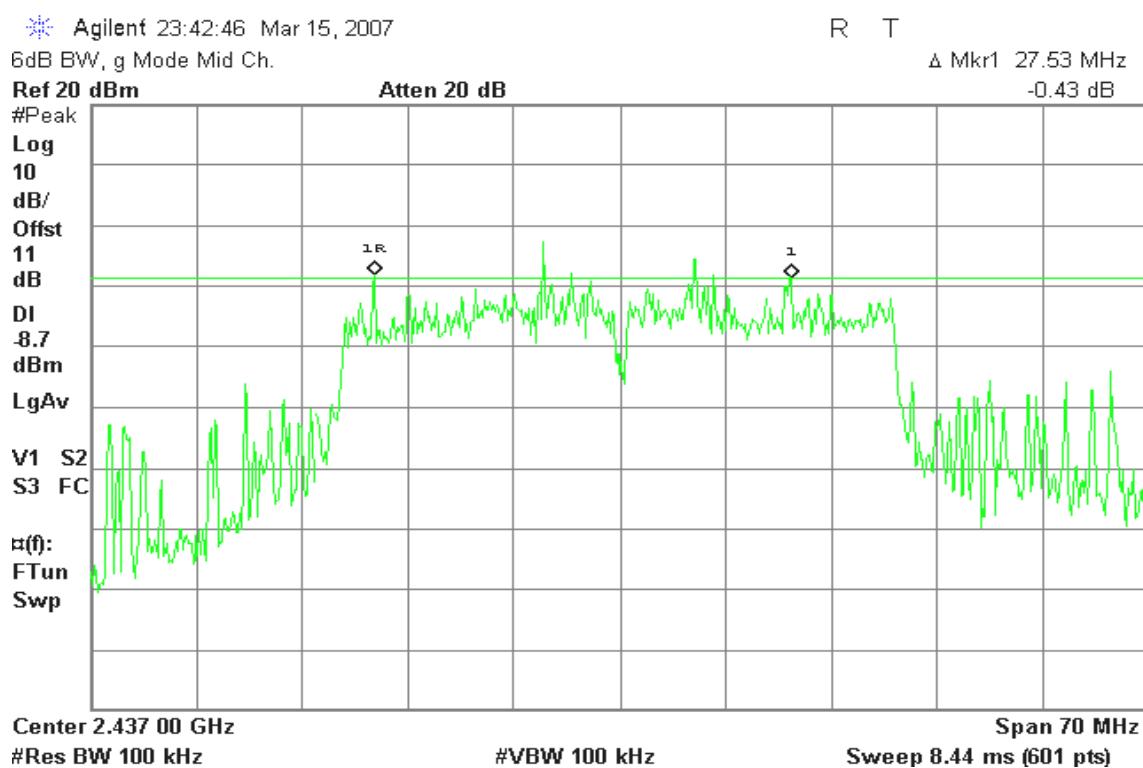


6dB Bandwidth (CH Mid)

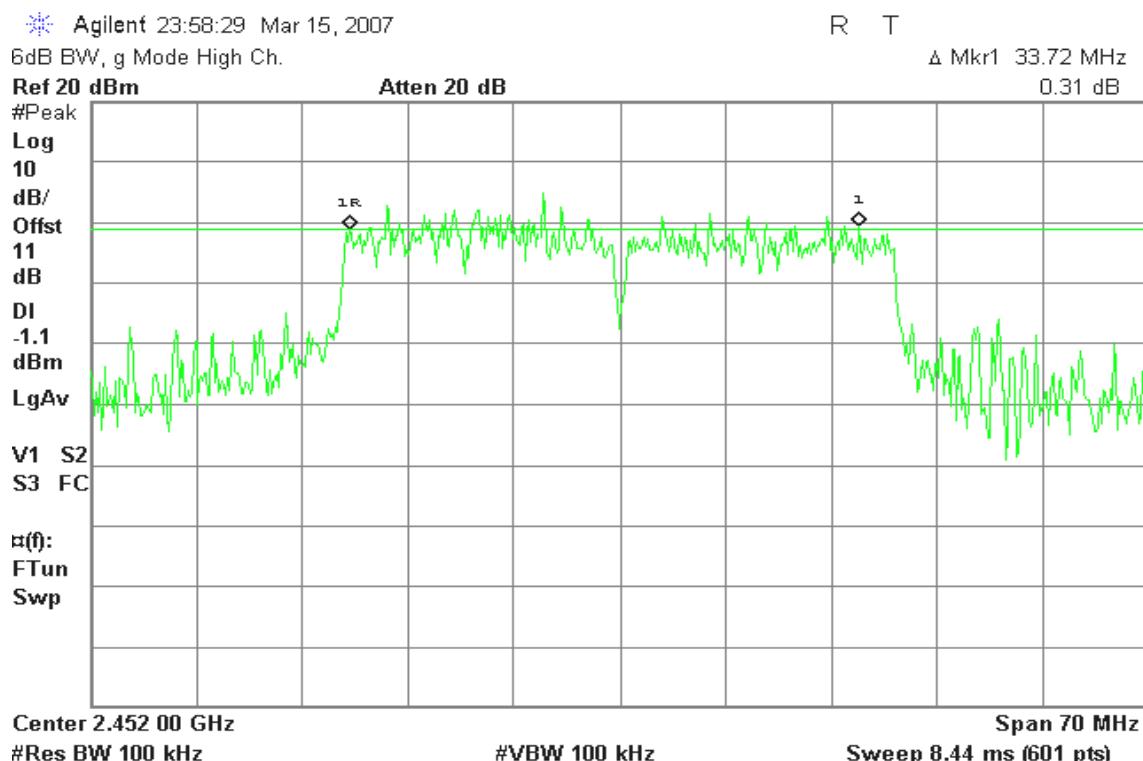


6dB Bandwidth (CH High)



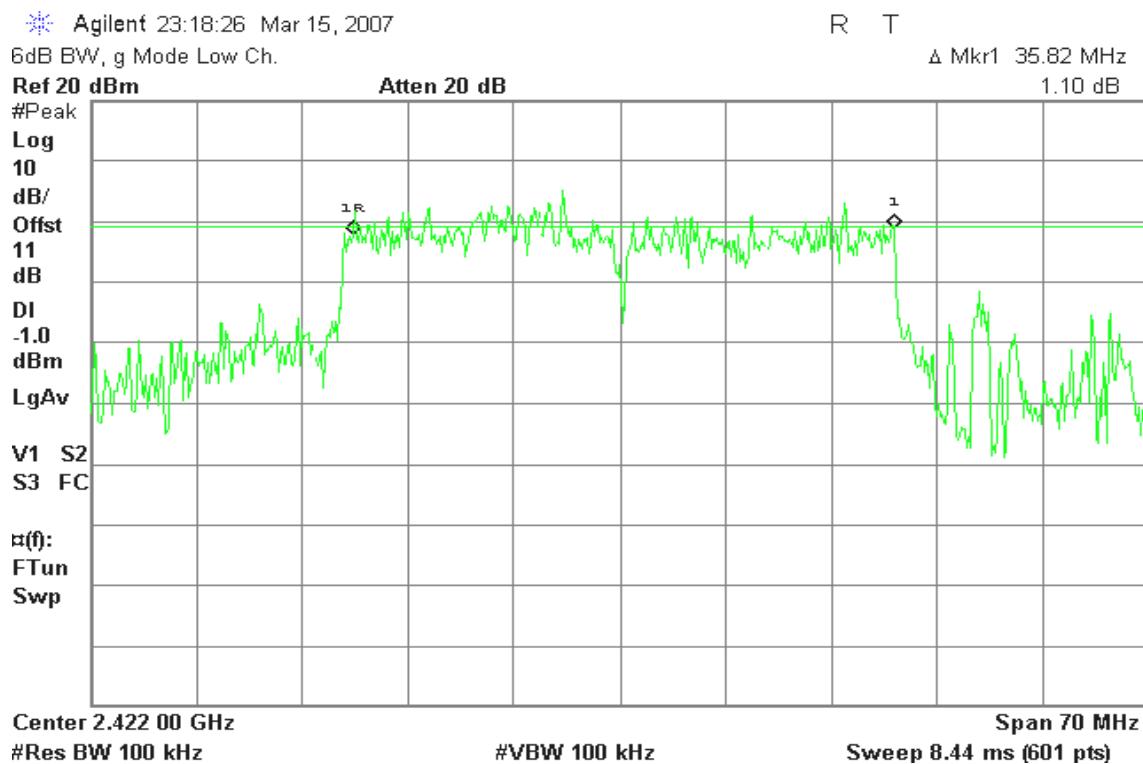
draft 802.11n Wide-40 MHz Channel mode / Chain 0**6dB Bandwidth (CH Low)****6dB Bandwidth (CH Mid)**

6dB Bandwidth (CH High)

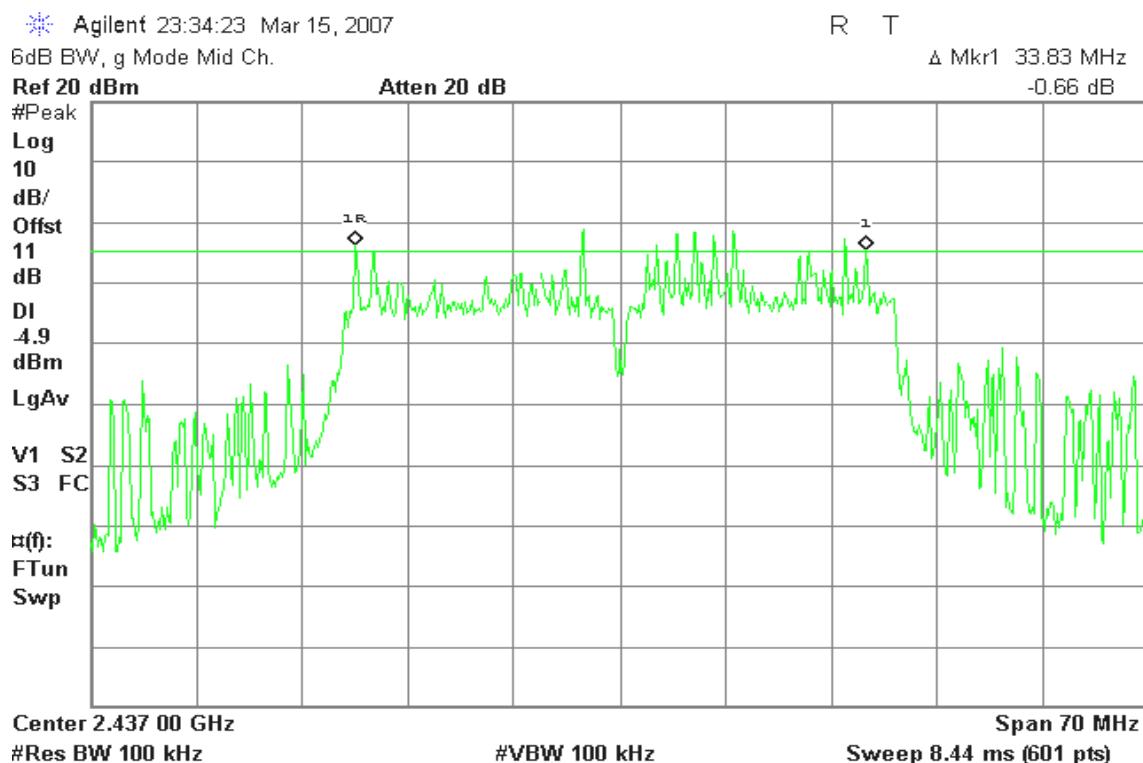


draft 802.11n Wide-40 MHz Channel mode / Chain 2

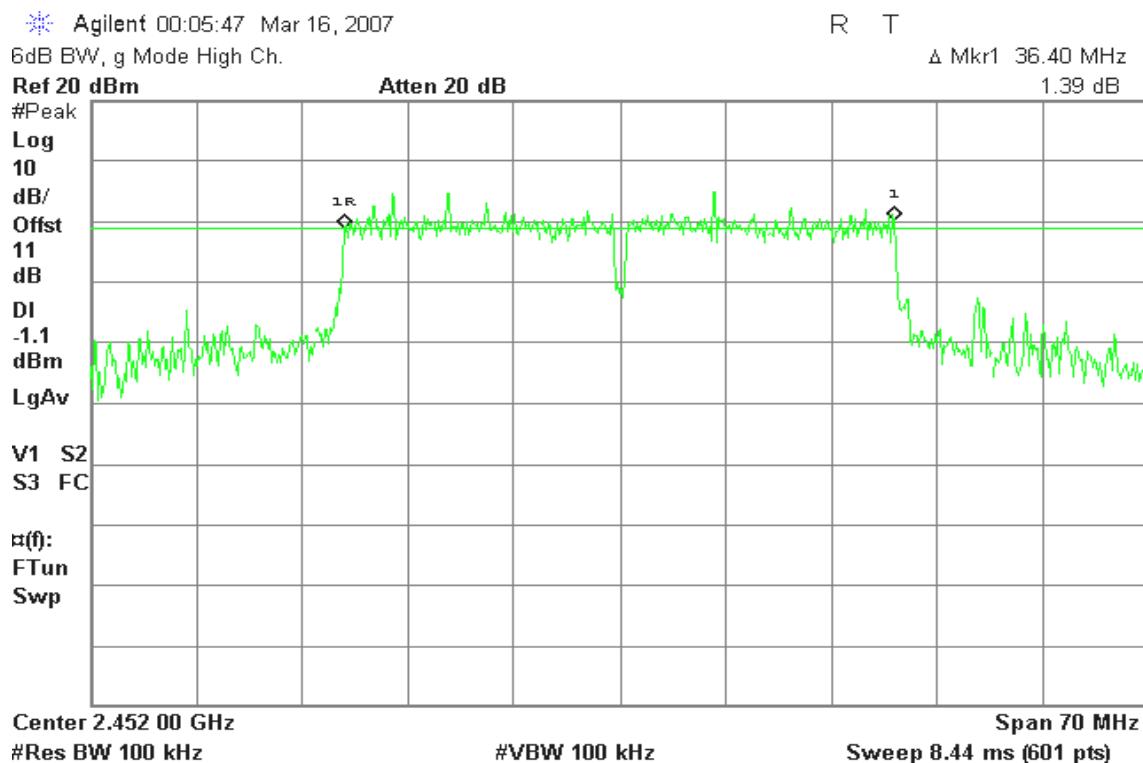
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High)



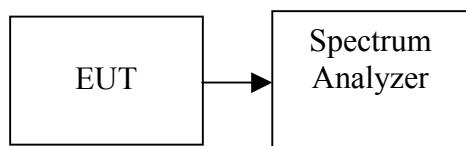
7.2 PEAK POWER

LIMIT

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
2. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 1 MHz, VBW >= 3 MHz. in “Channel Power ” measurement.
4. Record the max reading.
5. Repeat the above procedure until the measurements for all frequencies are completed.



TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	18.85	18.72	21.80	0.1512	1.00	PASS
Mid	2437	18.45	18.97	21.73	0.1489		PASS
High	2462	18.05	18.26	21.17	0.1308		PASS

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	18.14	0.0652	1.00	PASS
Mid	2437	17.25	0.0531		PASS
High	2462	16.82	0.0481		PASS

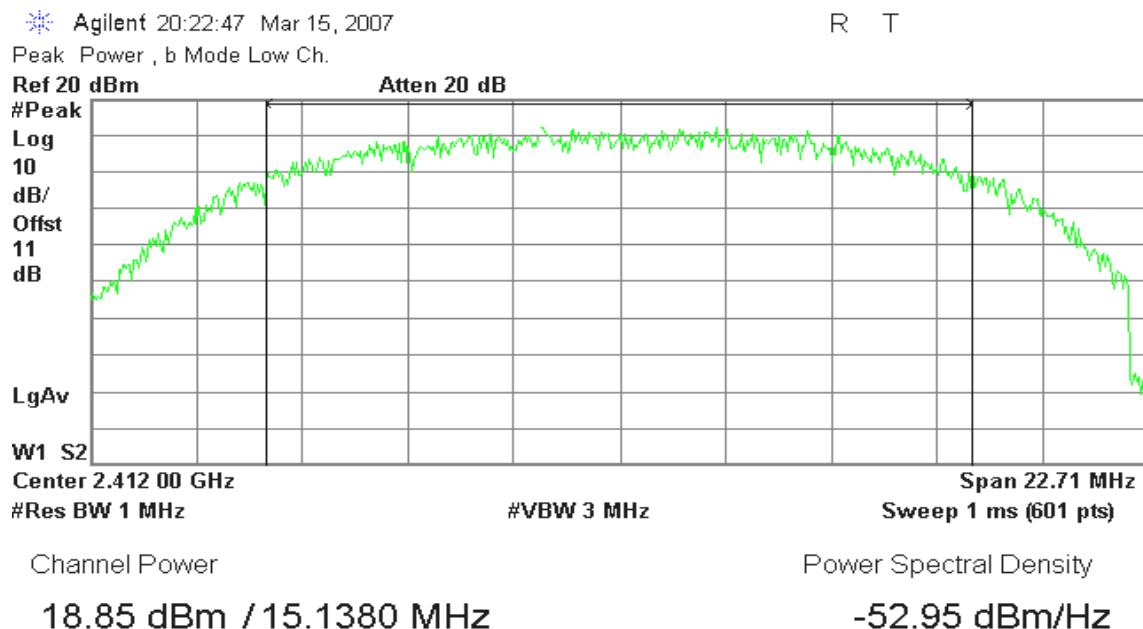
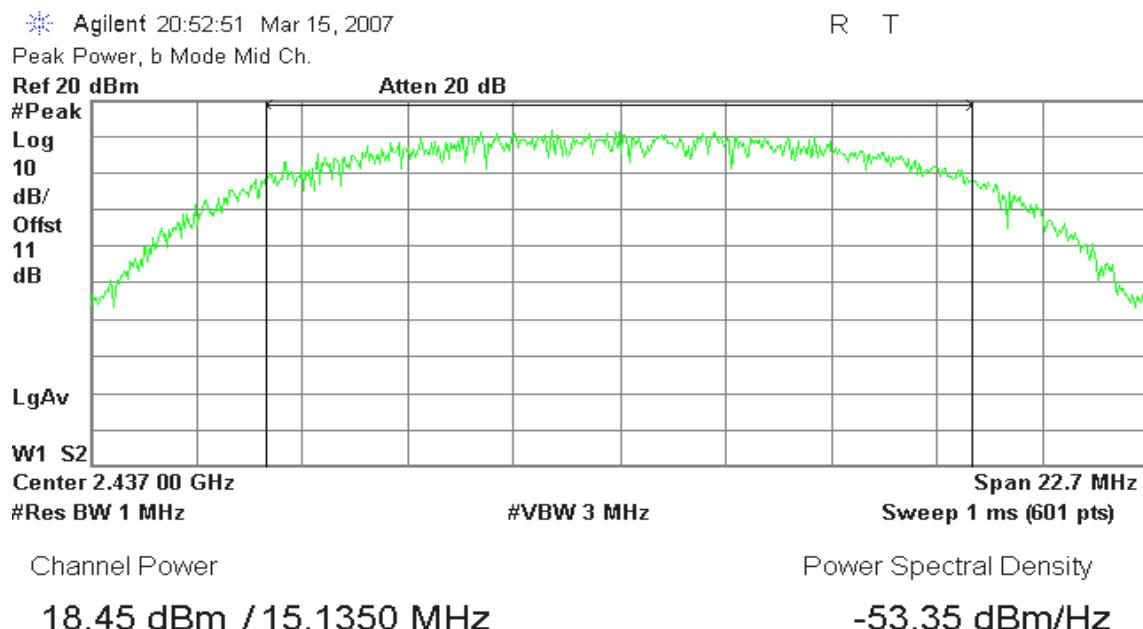
Test mode: draft 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	17.56	18.29	20.95	0.1245	1.00	PASS
Mid	2437	21.50	22.10	24.82	0.3034		PASS
High	2462	17.84	19.20	21.58	0.1440		PASS

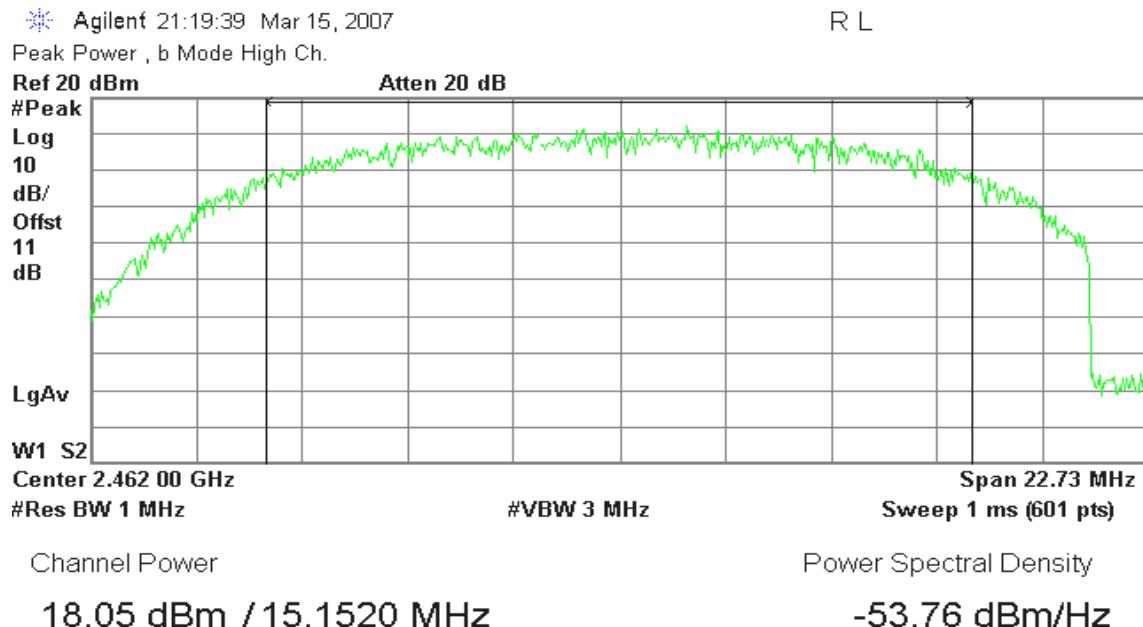
Test mode: draft 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2422	16.27	16.63	19.46	0.0884	1.00	PASS
Mid	2437	16.86	16.19	19.55	0.0901		PASS
High	2452	14.59	15.75	18.22	0.0664		PASS

Remark: Total Output Power (w) = Chain 0 (10^(Output Power /10)/1000)+ Chain 2 (10^(Output Power /10)/1000)

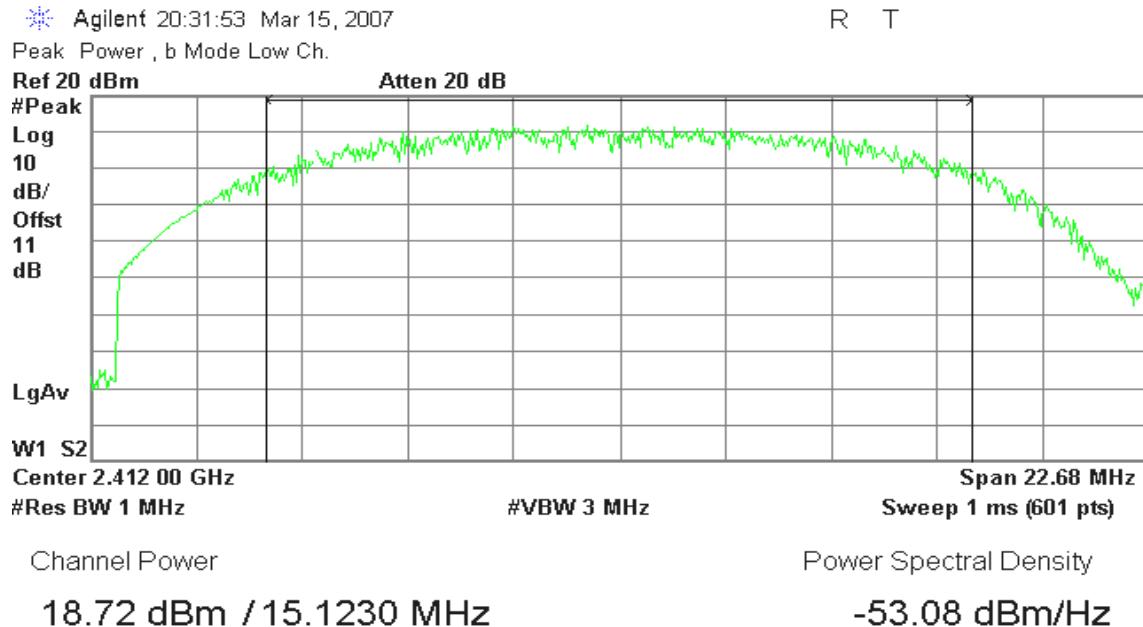
Test Plot**IEEE 802.11b mode / Chain 0****Peak Power (CH Low)****Peak Power (CH Mid)**

Peak Power (CH High)

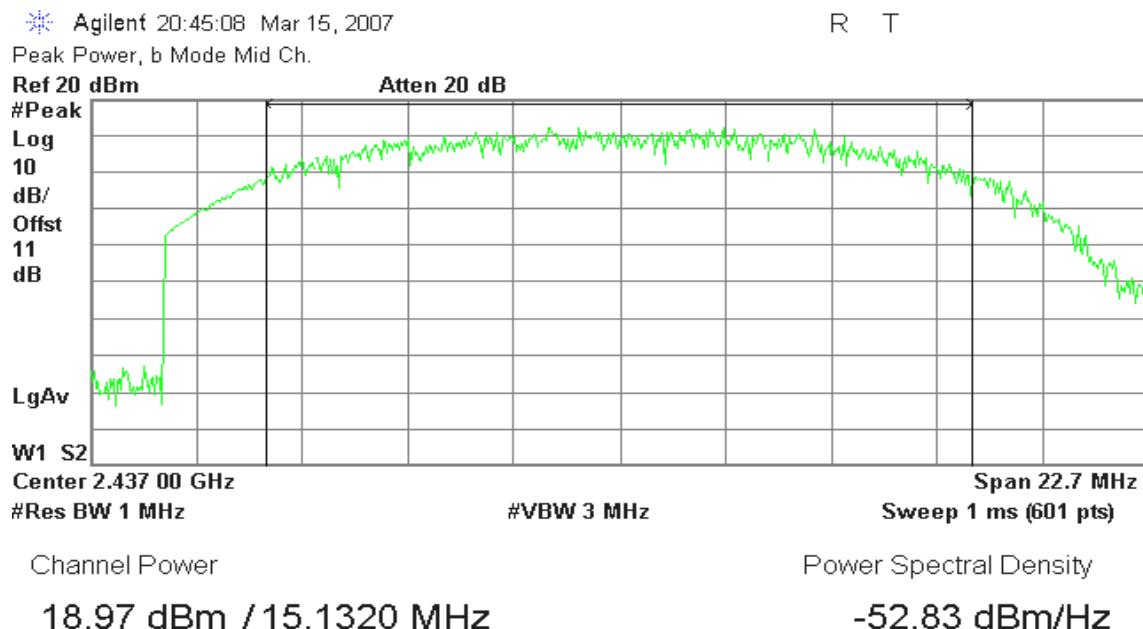


IEEE 802.11b mode / Chain 2

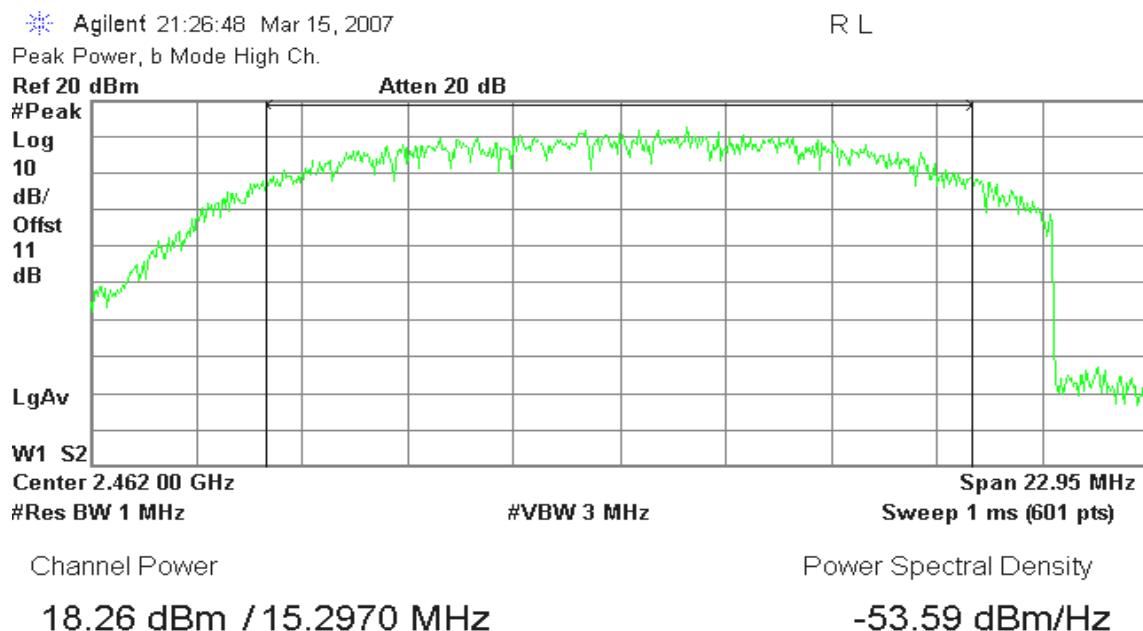
Peak Power (CH Low)

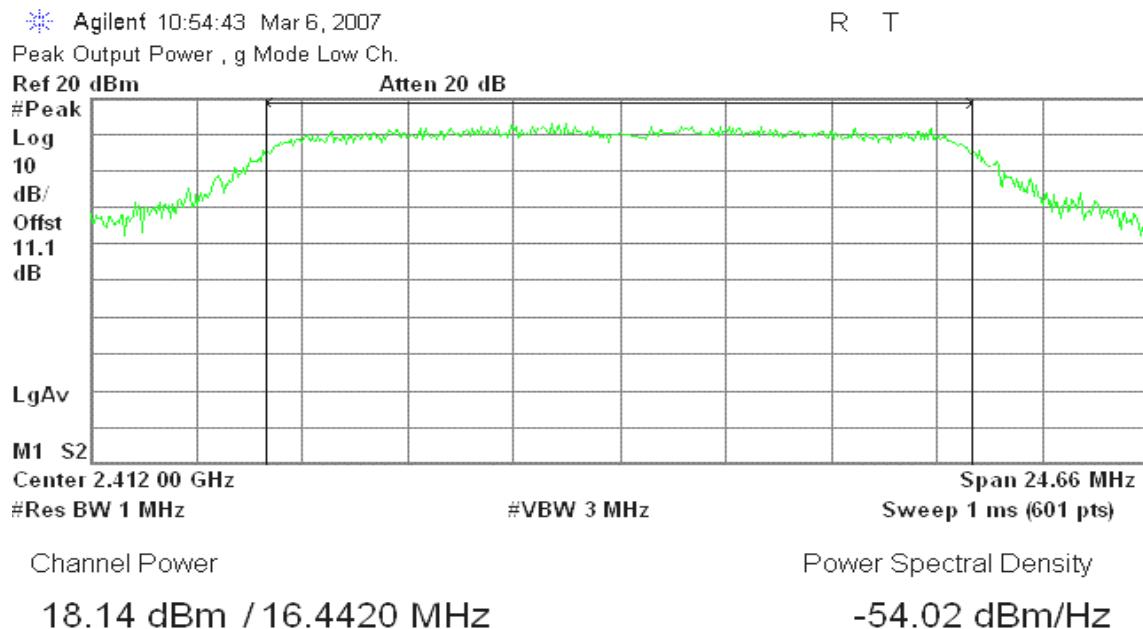


Peak Power (CH Mid)



Peak Power (CH High)



IEEE 802.11g**Peak Power (CH Low)**

Peak Power (CH Mid)

Agilent 11:05:52 Mar 6, 2007

R T

Peak Output Power , g Mode Mid Ch.

Ref 20 dBm

Atten 20 dB

#Peak

Log

10

dB/

Offst

11.1

dB

LgAv

M1 S2

Center 2.437 00 GHz

#Res BW 1 MHz

#VBW 3 MHz

Span 24.71 MHz

Sweep 1 ms (601 pts)

Channel Power

17.25 dBm / 16.4760 MHz

Power Spectral Density

-54.91 dBm/Hz

Peak Power (CH High)

Agilent 11:16:07 Mar 6, 2007

R T

Peak Output Power , g Mode High Ch.

Ref 20 dBm

Atten 20 dB

#Peak

Log

10

dB/

Offst

11.1

dB

LgAv

M1 S2

Center 2.462 00 GHz

#Res BW 1 MHz

#VBW 3 MHz

Span 24.62 MHz

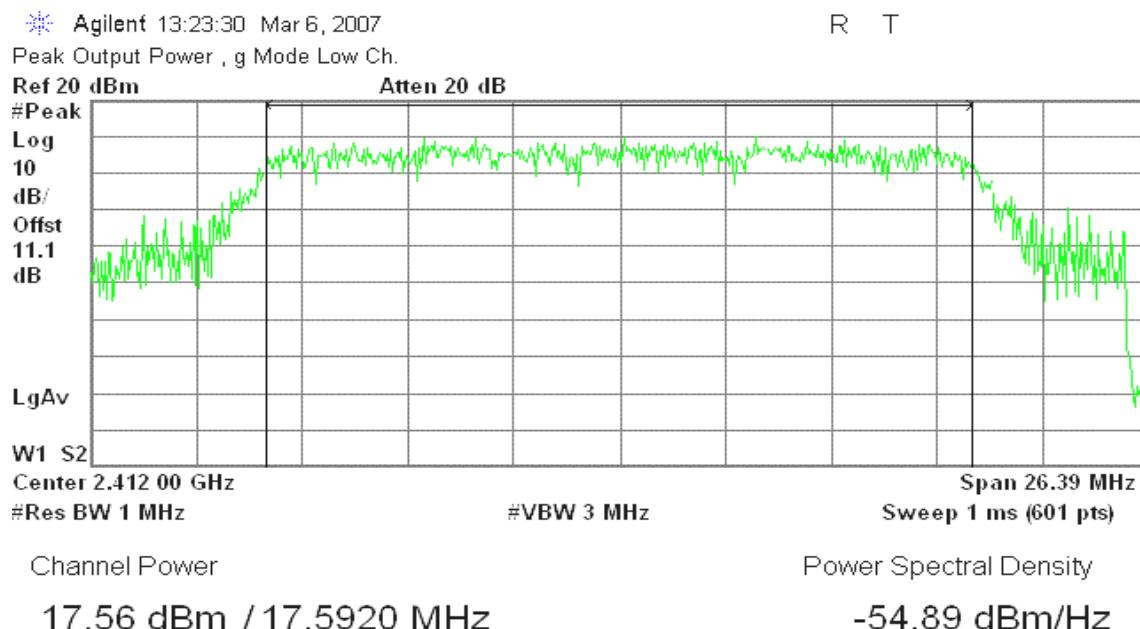
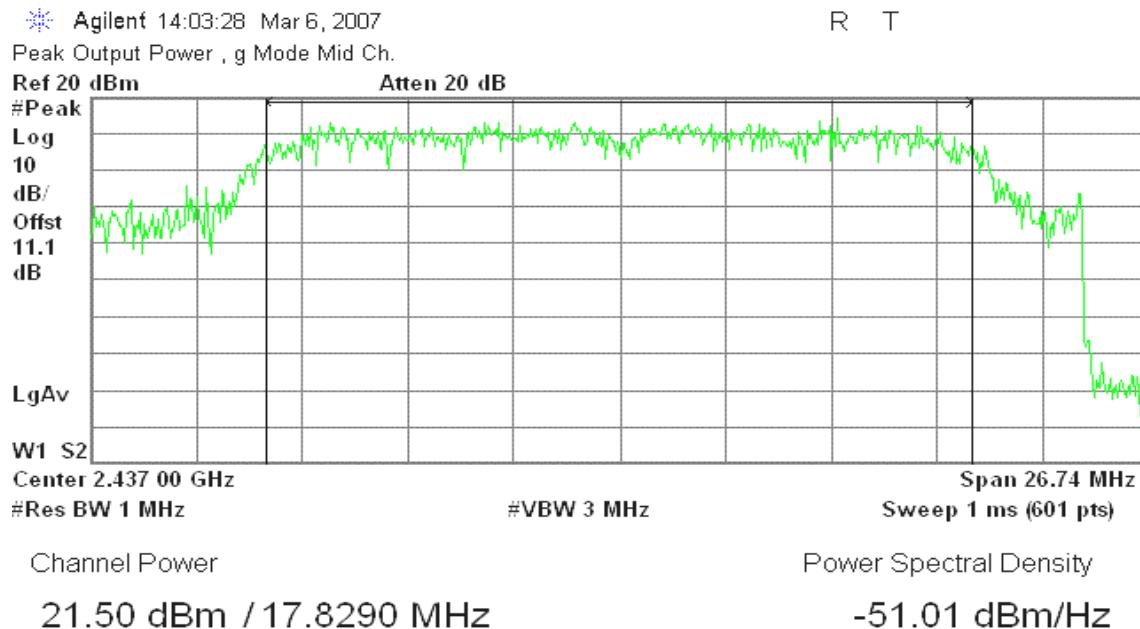
Sweep 1 ms (601 pts)

Channel Power

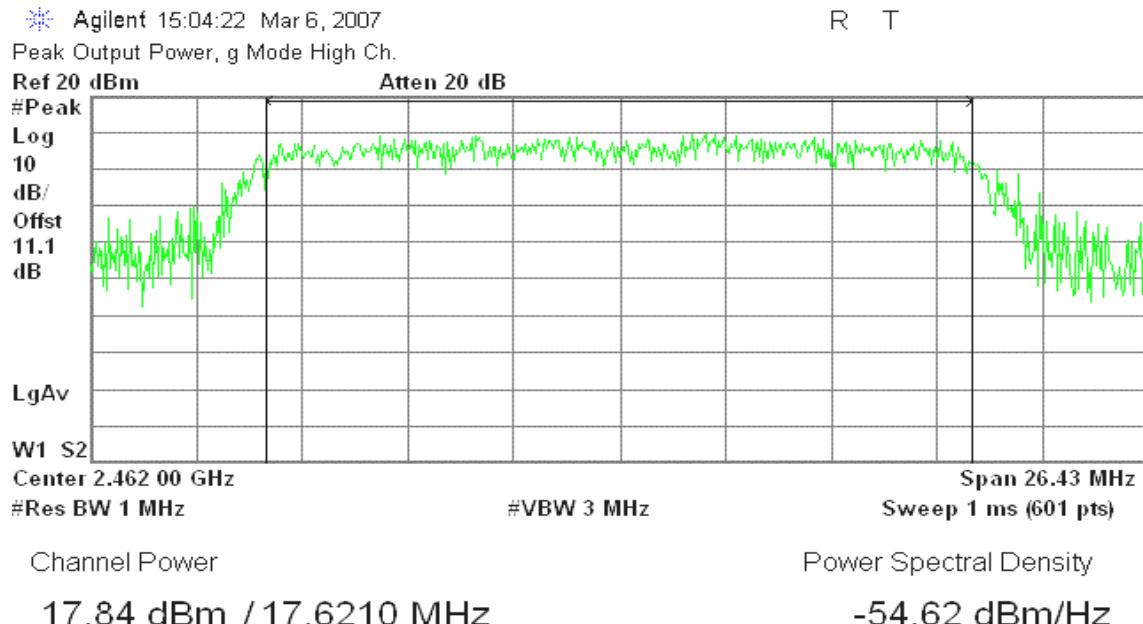
16.82 dBm / 16.4110 MHz

Power Spectral Density

-55.33 dBm/Hz

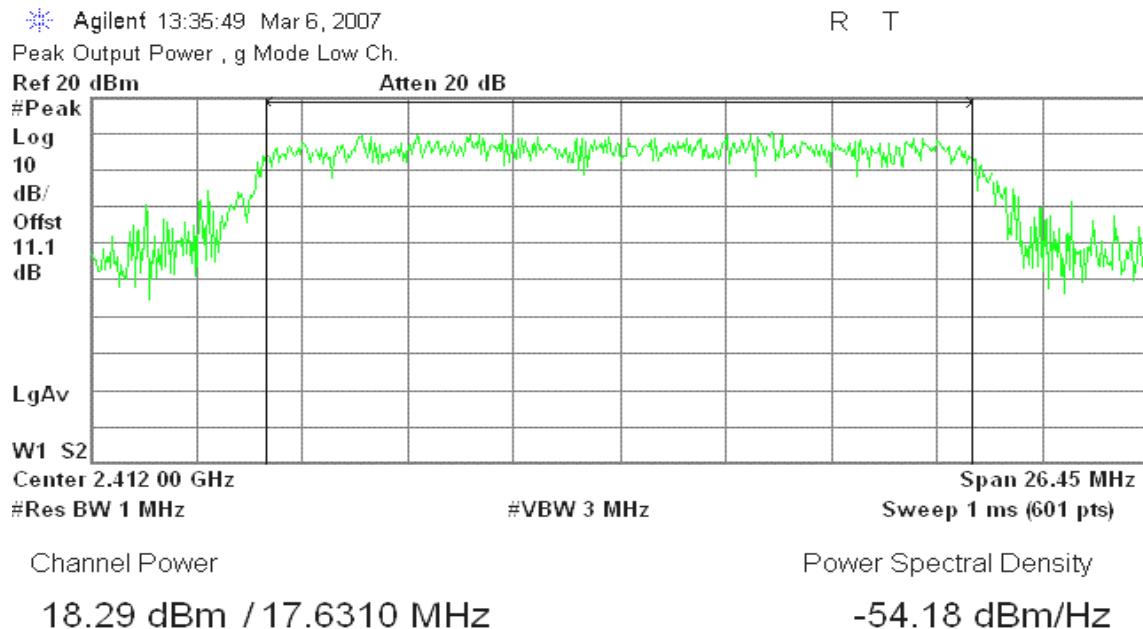
draft 802.11n Standard-20 MHz Channel mode / Chain 0**Peak Power (CH Low)****Peak Power (CH Mid)**

Peak Power (CH High)

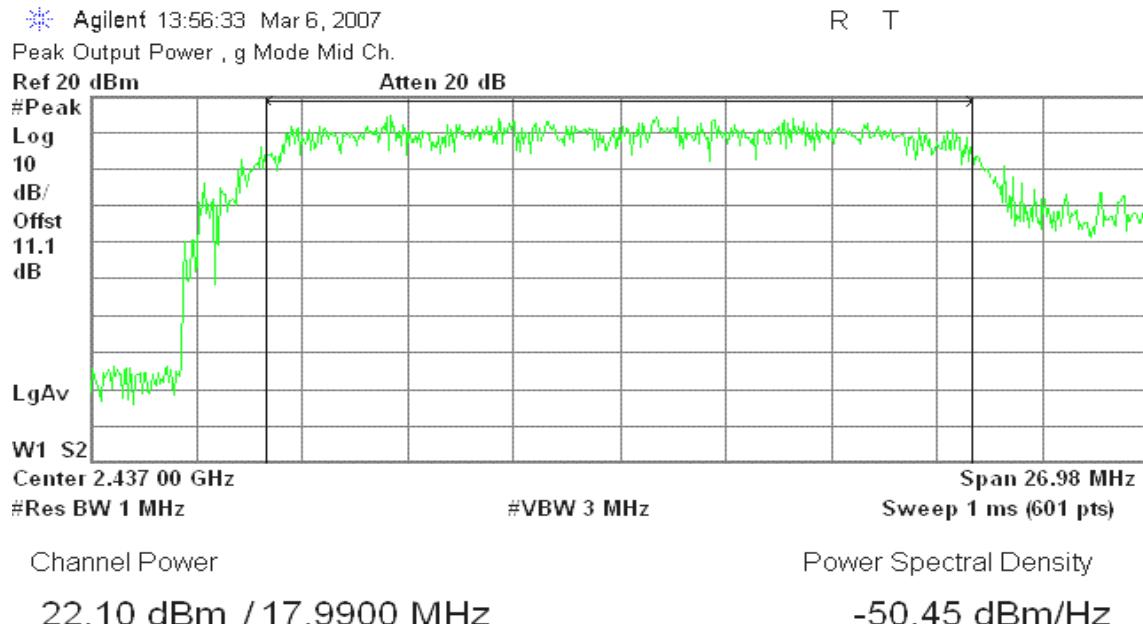


draft 802.11n Standard-20 MHz Channel mode / Chain 2

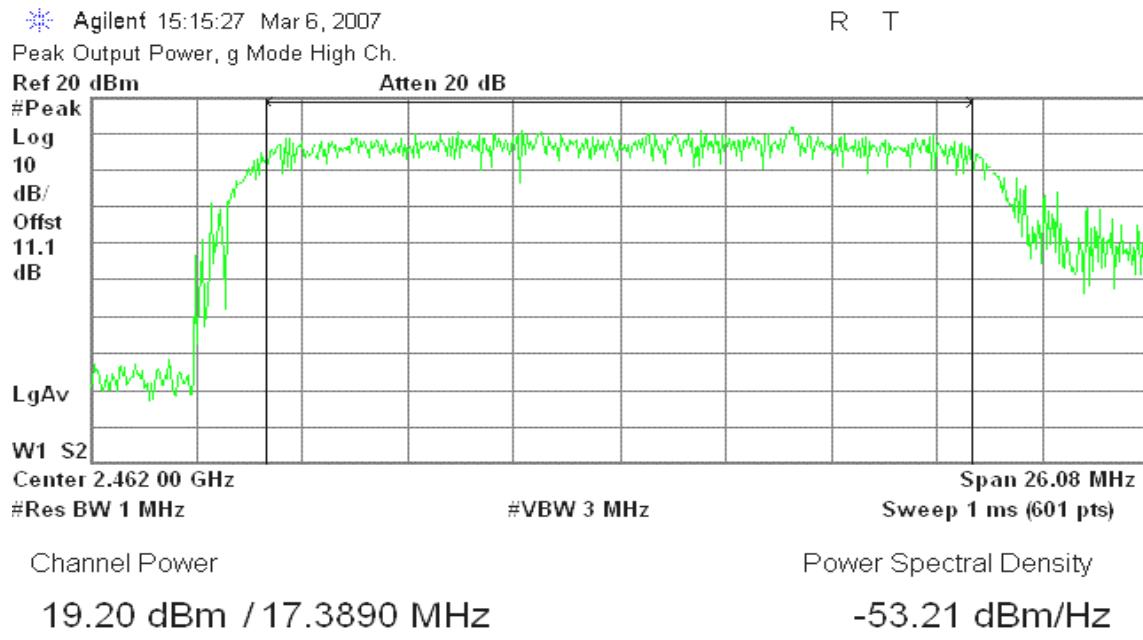
Peak Power (CH Low)

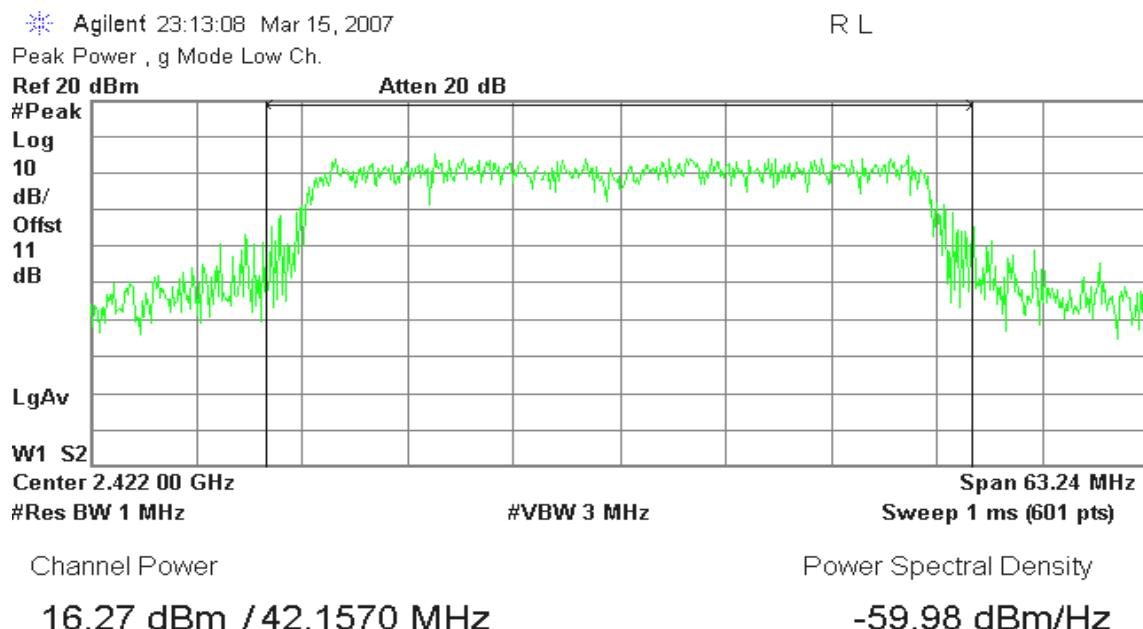
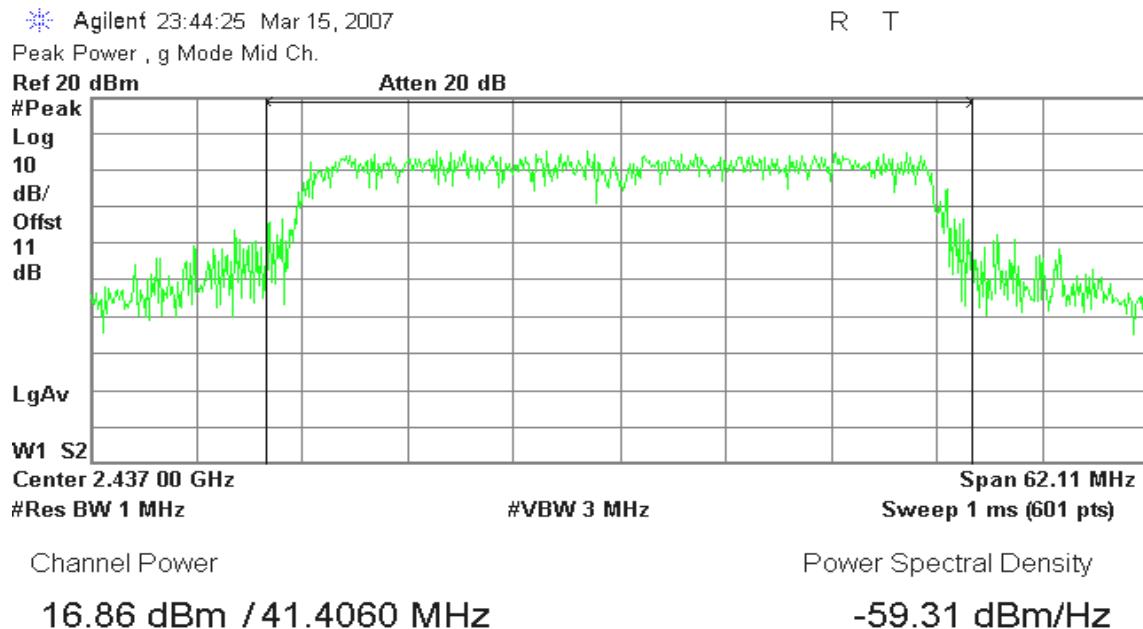


Peak Power (CH Mid)

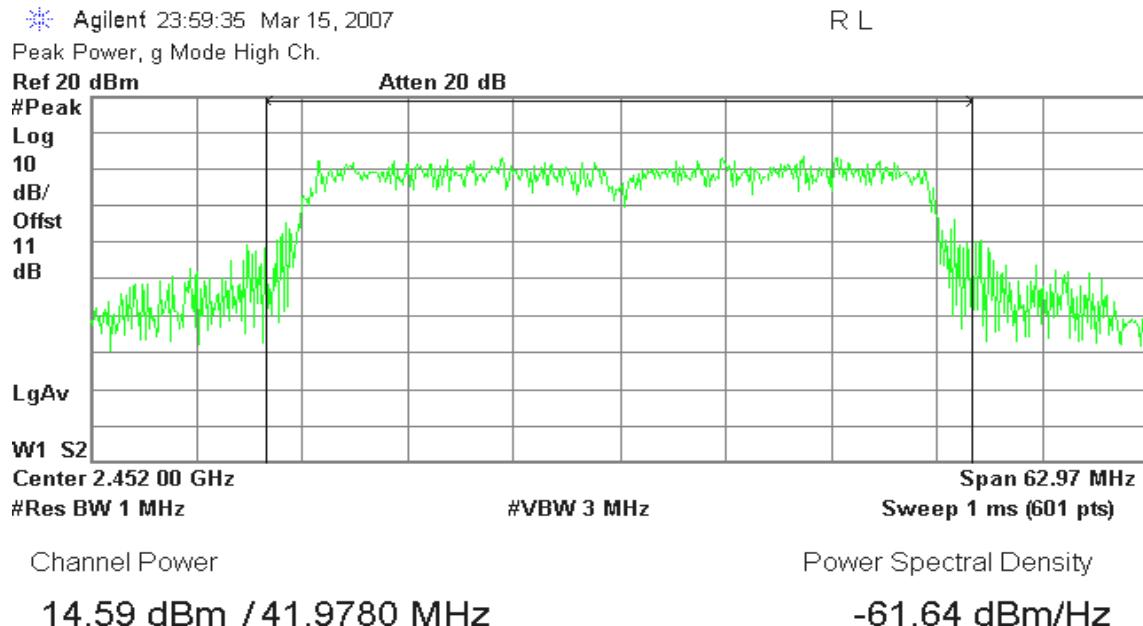


Peak Power (CH High)



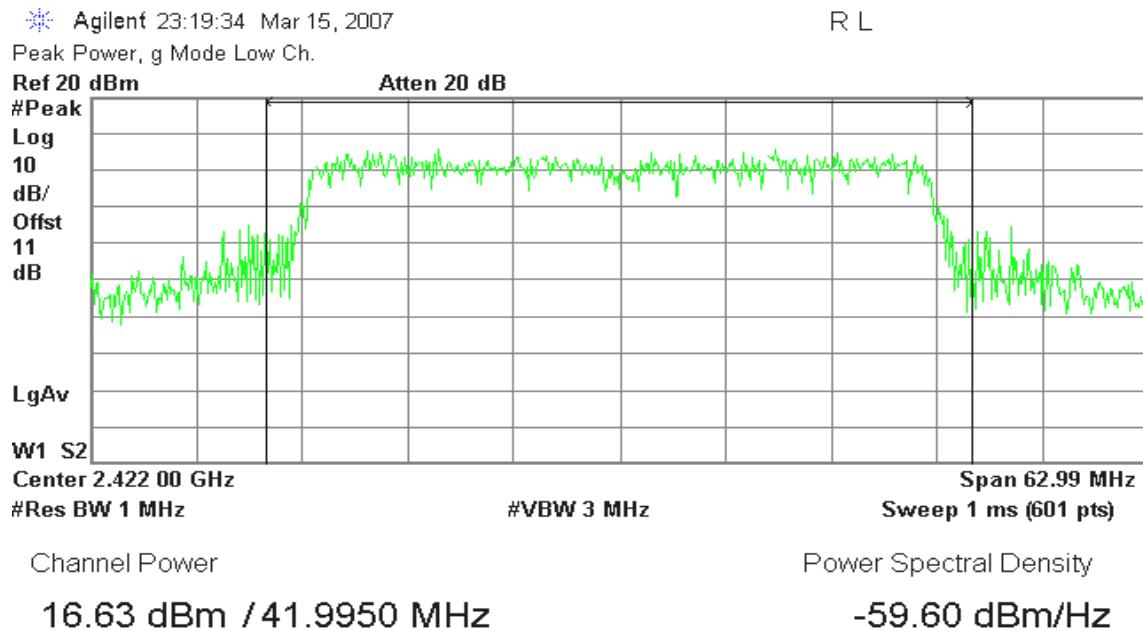
draft 802.11n Wide-40 MHz Channel mode / Chain 0**Peak Power (CH Low)****Peak Power (CH Mid)**

Peak Power (CH High)

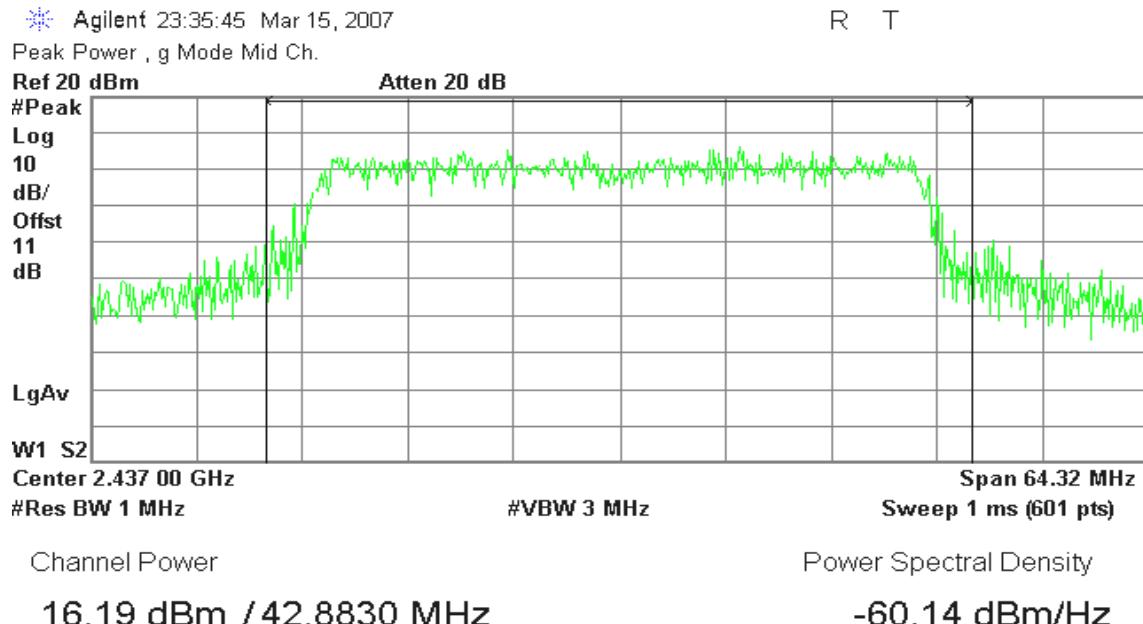


draft 802.11n Wide-40 MHz Channel mode / Chain 2

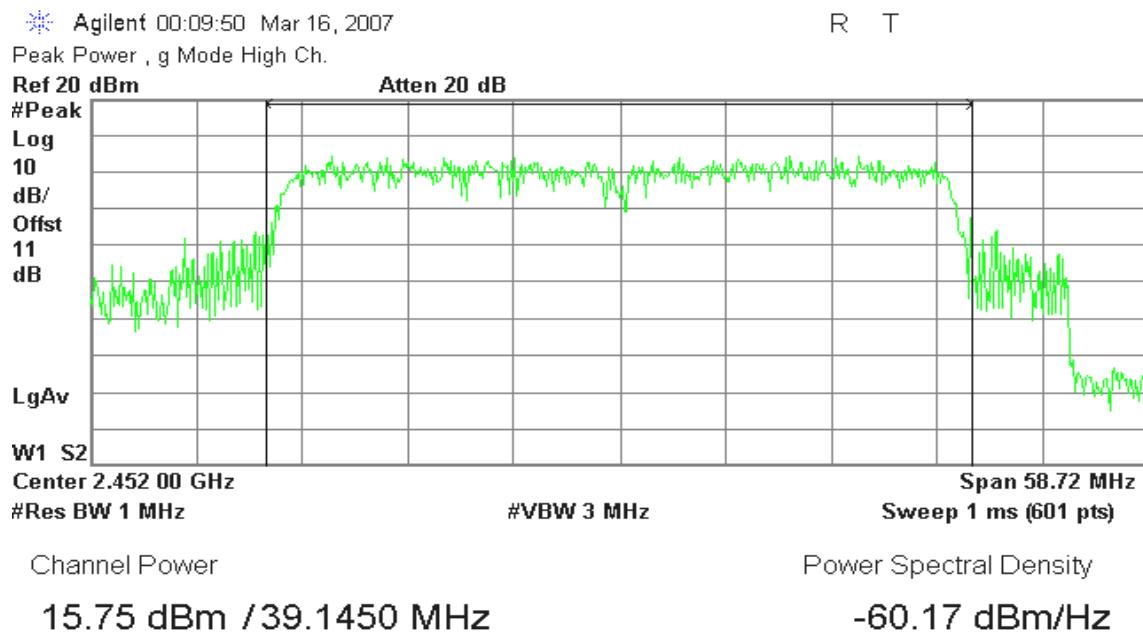
Peak Power (CH Low)



Peak Power (CH Mid)



Peak Power (CH High)

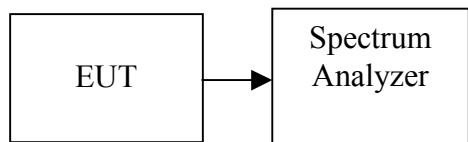


7.3 AVERAGE POWER

LIMIT

None; for reporting purposes only.

Test Configuration



TEST PROCEDURE

The transmitter output is connected to the Spectrum analyzer. The Spectrum analyzer is set to the average power detection.



TEST RESULTS

No non-compliance noted.

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 2 Output Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	15.65	15.61	18.64	0.0731	1.00	PASS
Mid	2437	12.66	15.49	17.31	0.0538		PASS
High	2462	14.85	15.70	18.31	0.0677		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Output Power (dBm)
Low	2412	12.42
Mid	2437	13.05
High	2462	12.36

Test mode: draft 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 2 Output Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	14.05	14.43	17.25	0.0531	1.00	PASS
Mid	2437	18.09	18.82	21.48	0.1406		PASS
High	2462	14.13	18.50	19.85	0.0967		PASS

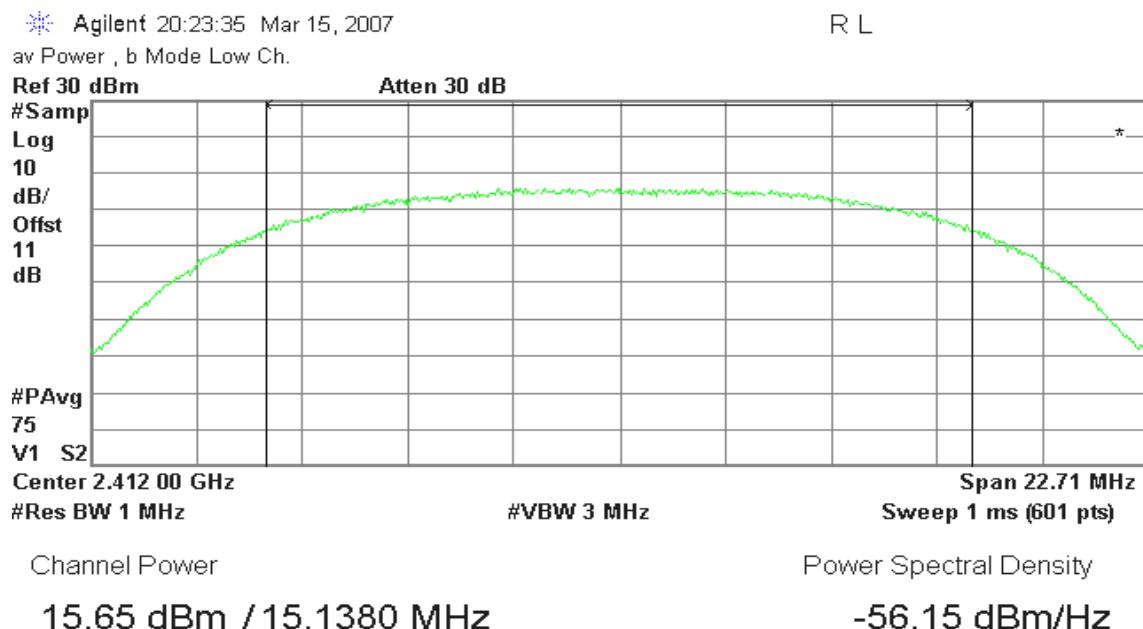
Test mode: draft 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 2 Output Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2422	18.67	11.95	19.51	0.0893	1.00	PASS
Mid	2437	12.53	1.80	12.88	0.0194		PASS
High	2452	10.74	12.93	14.98	0.0315		PASS

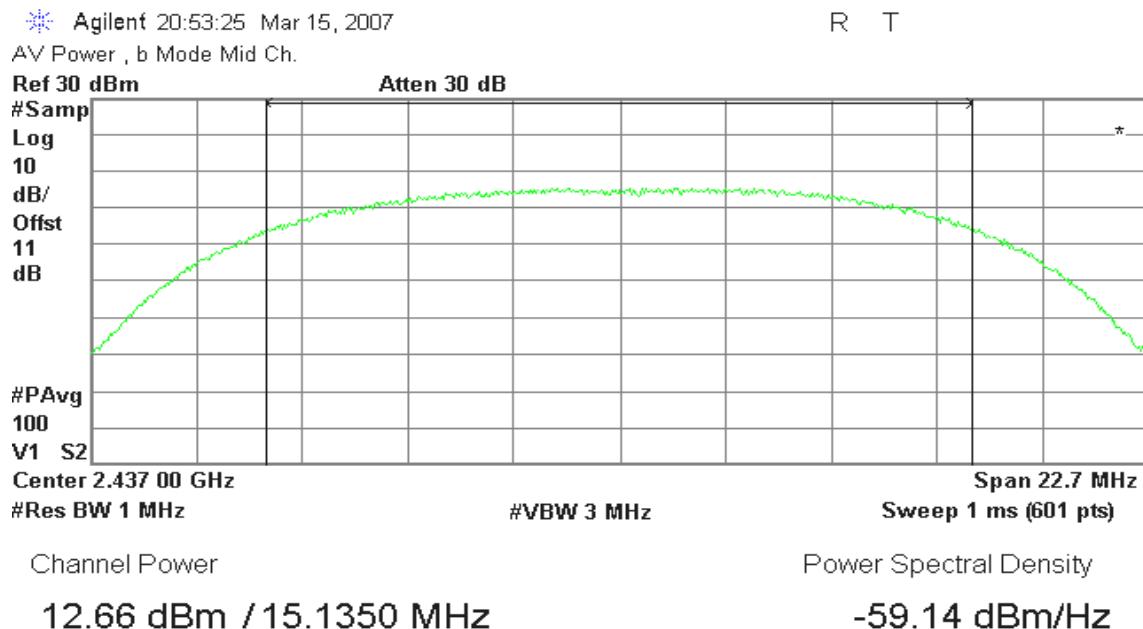
Test Plot

IEEE 802.11b mode / Chain 0

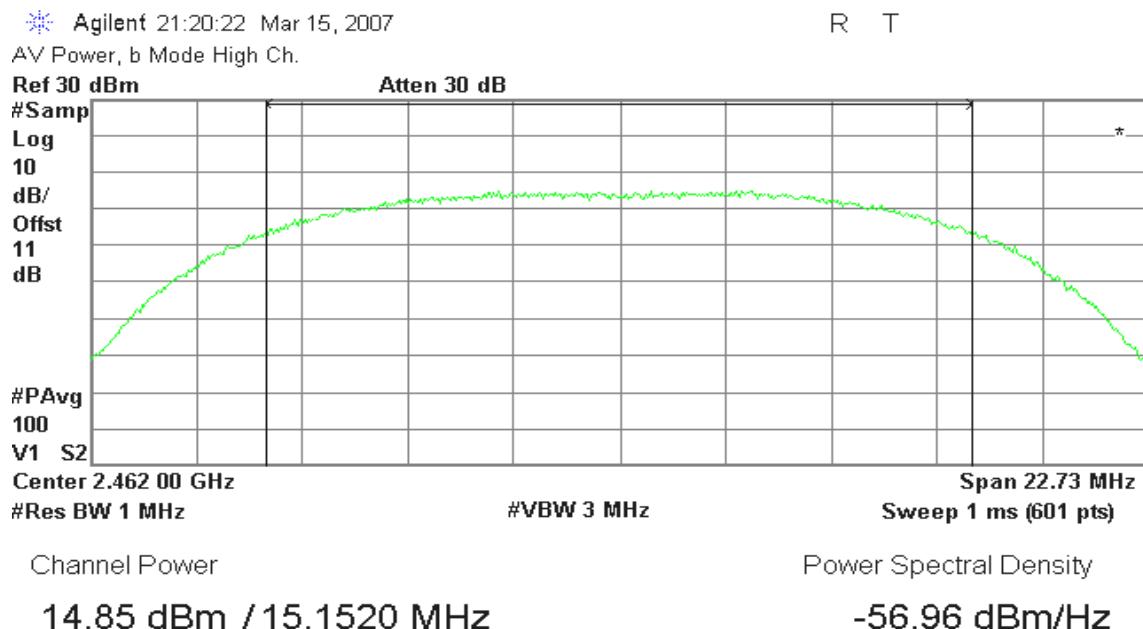
Average Power (CH Low)



Average Power (CH Mid)

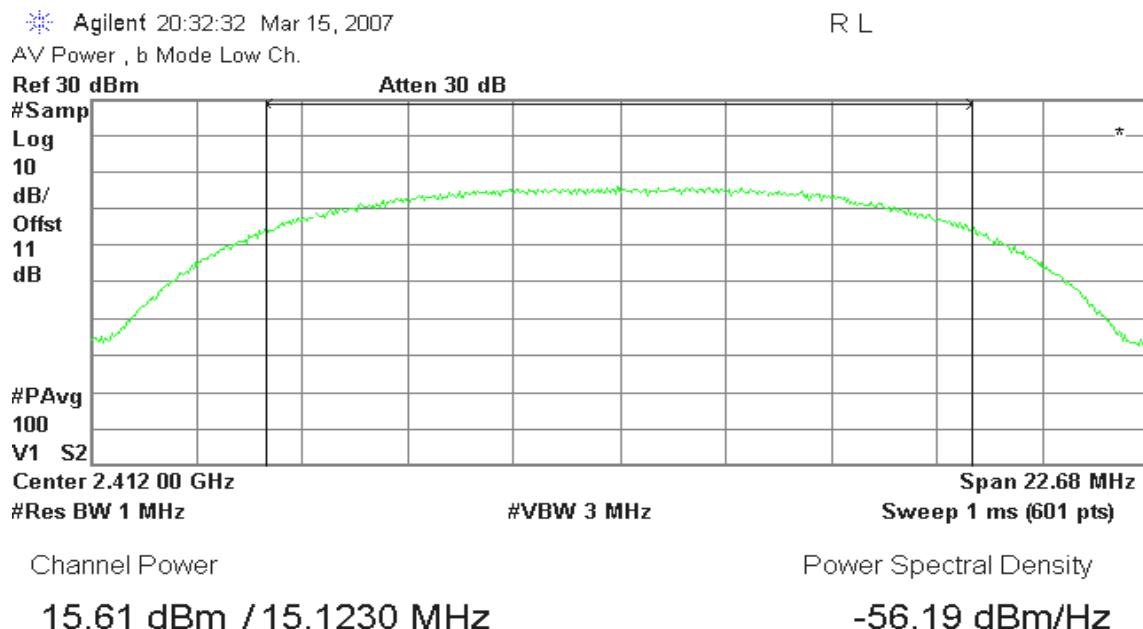


Average Power (CH High)

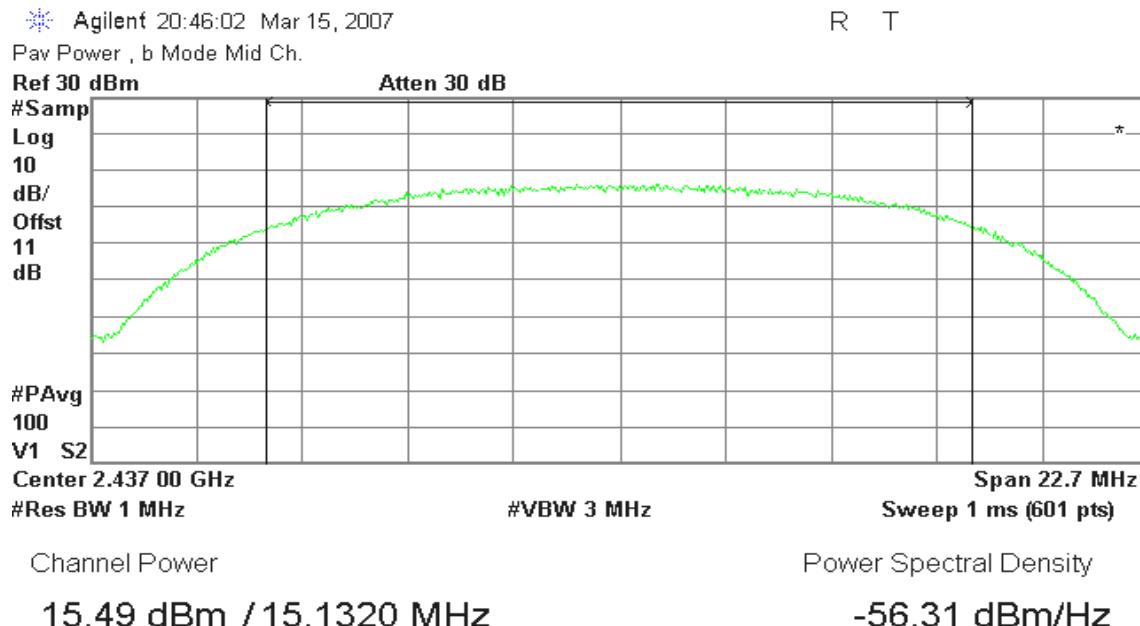


IEEE 802.11b mode / Chain 2

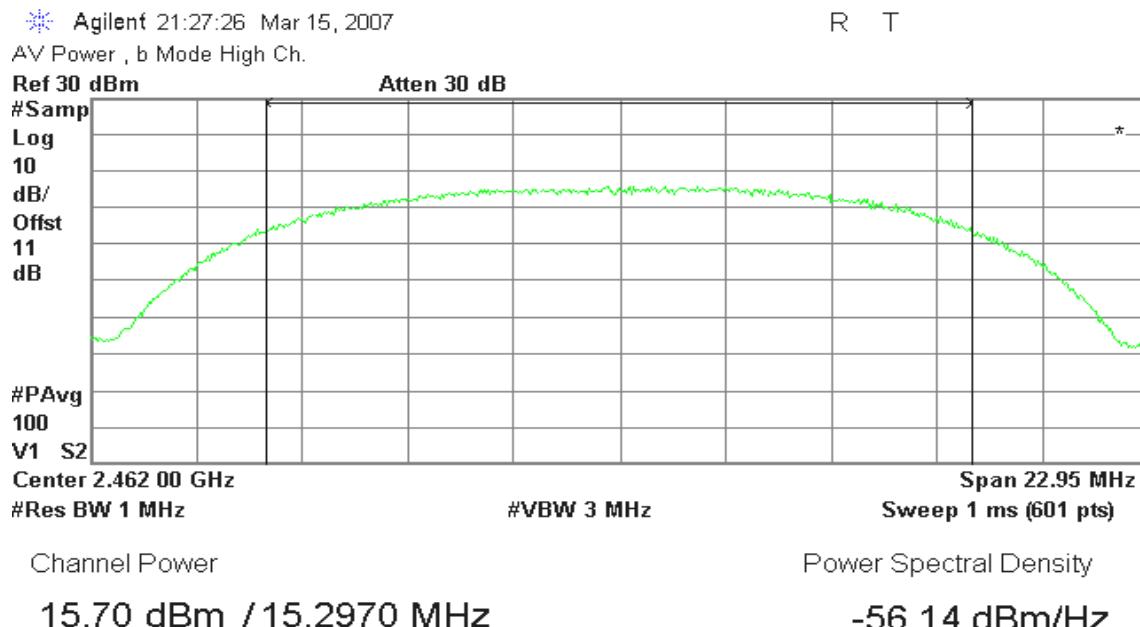
Average Power (CH Low)



Average Power (CH Mid)

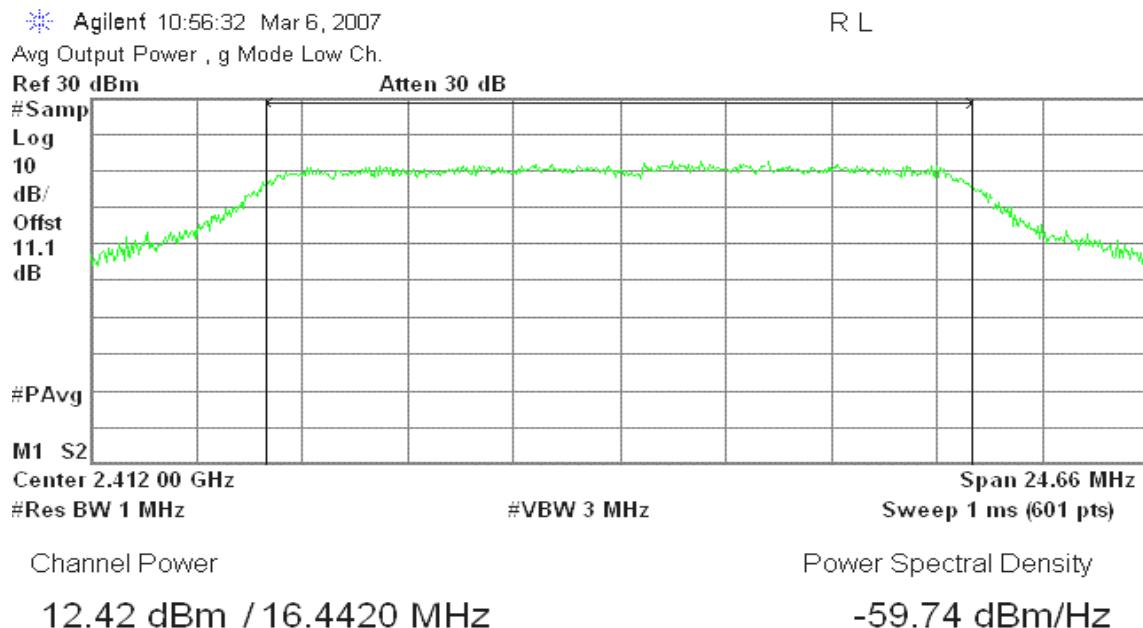


Average Power (CH High)



IEEE 802.11g

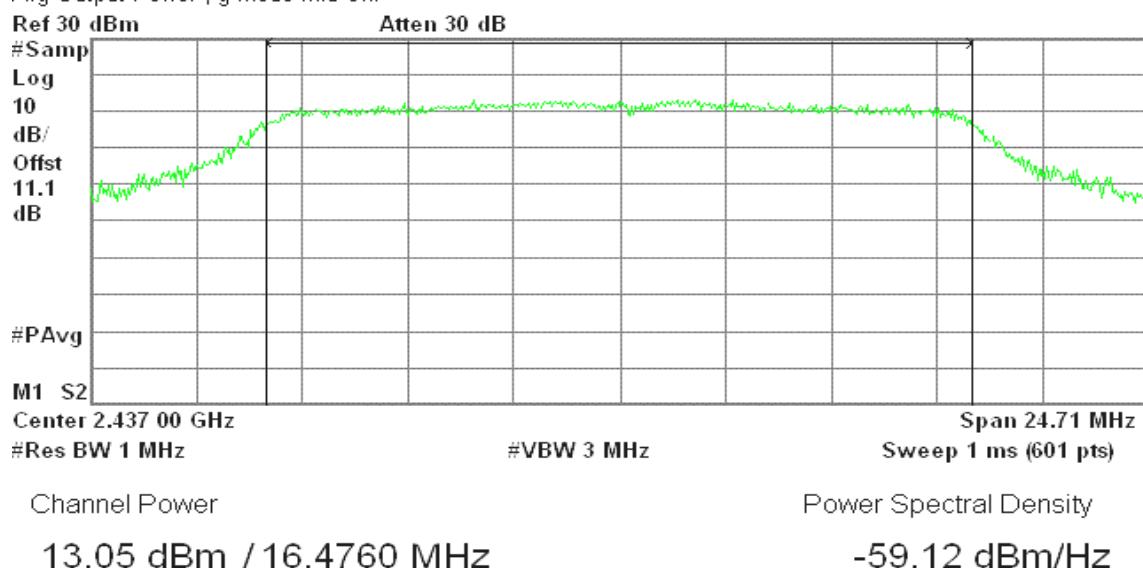
Average Power (CH Low)



Average Power (CH Mid)

Agilent 11:07:15 Mar 6, 2007
Avg Output Power , g Mode Mid Ch.

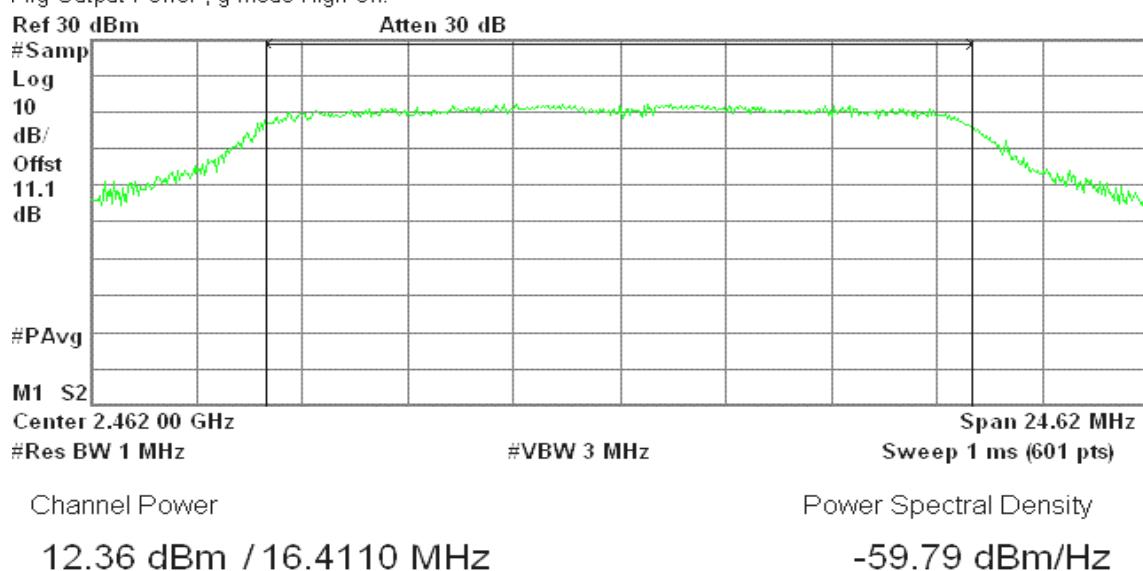
R T

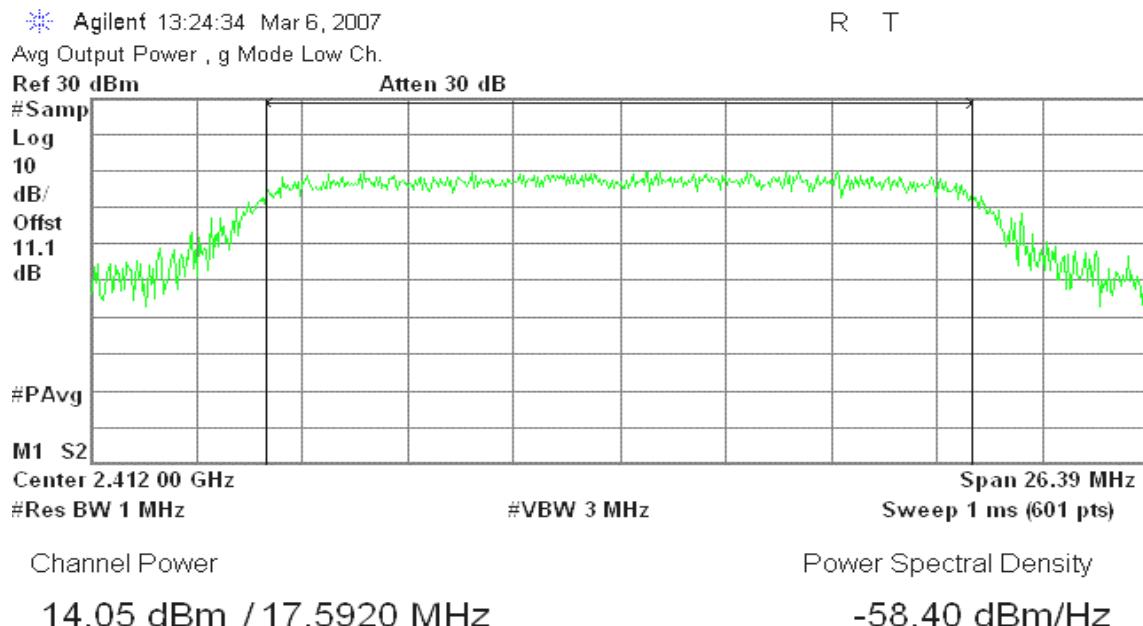
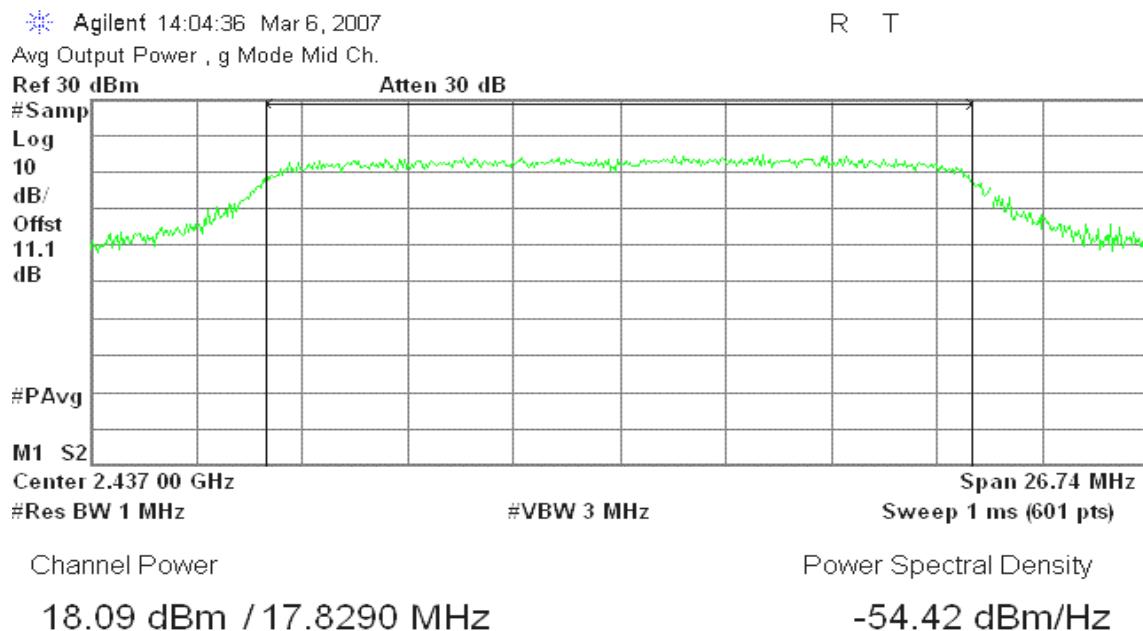


Average Power (CH High)

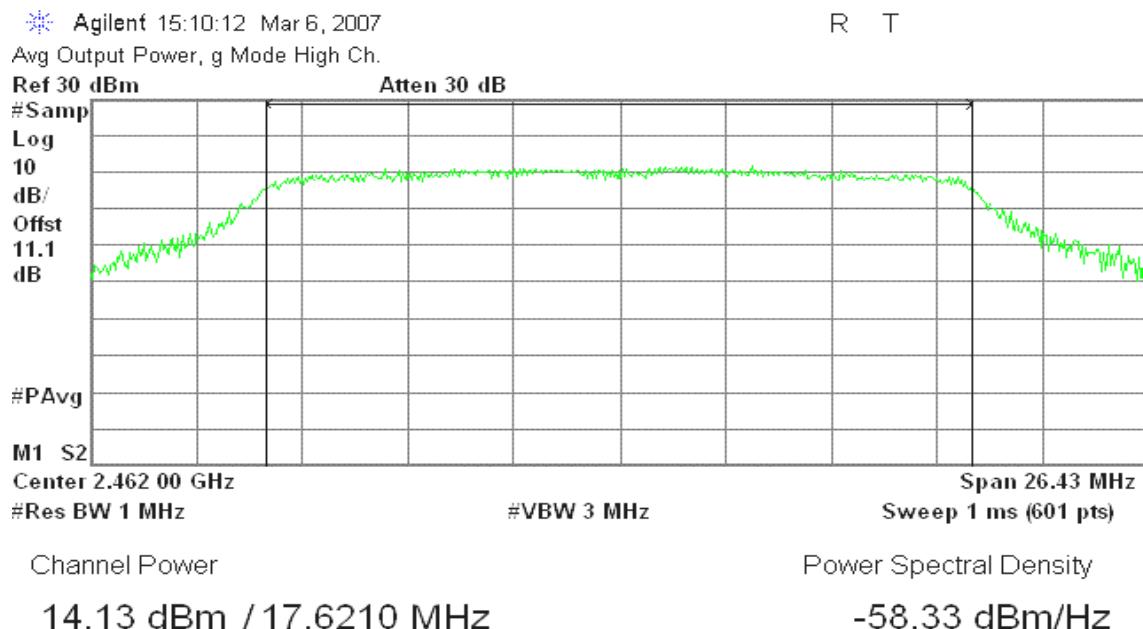
Agilent 11:17:53 Mar 6, 2007
Avg Output Power , g Mode High Ch.

R T



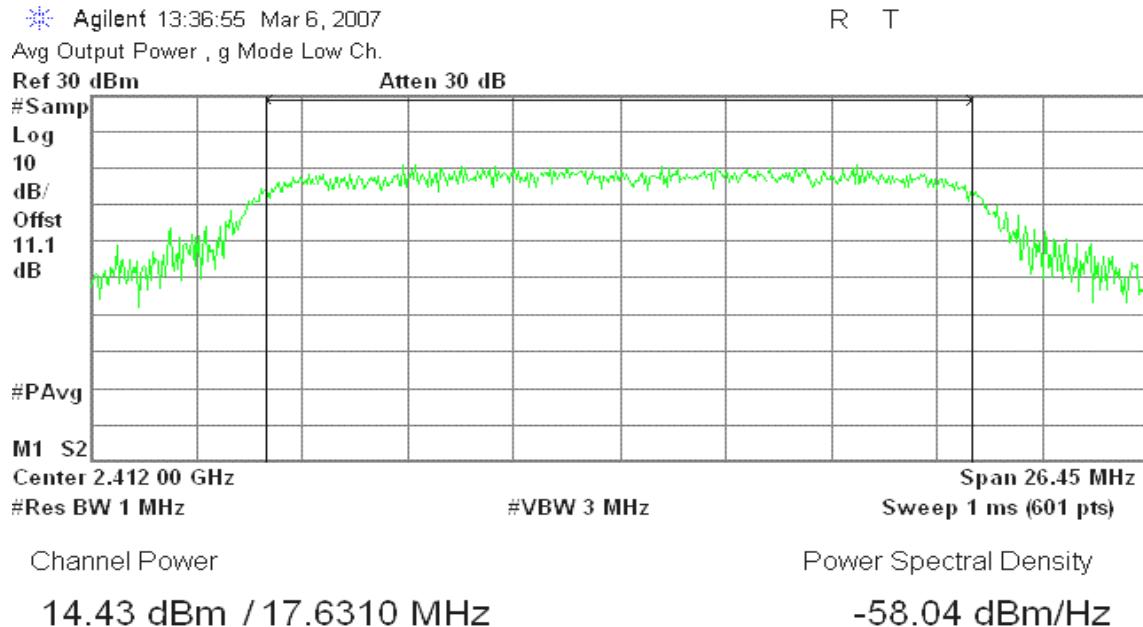
draft 802.11n Standard-20 MHz Channel mode / Chain 0**Average Power (CH Low)****Average Power (CH Mid)**

Average Power (CH High)

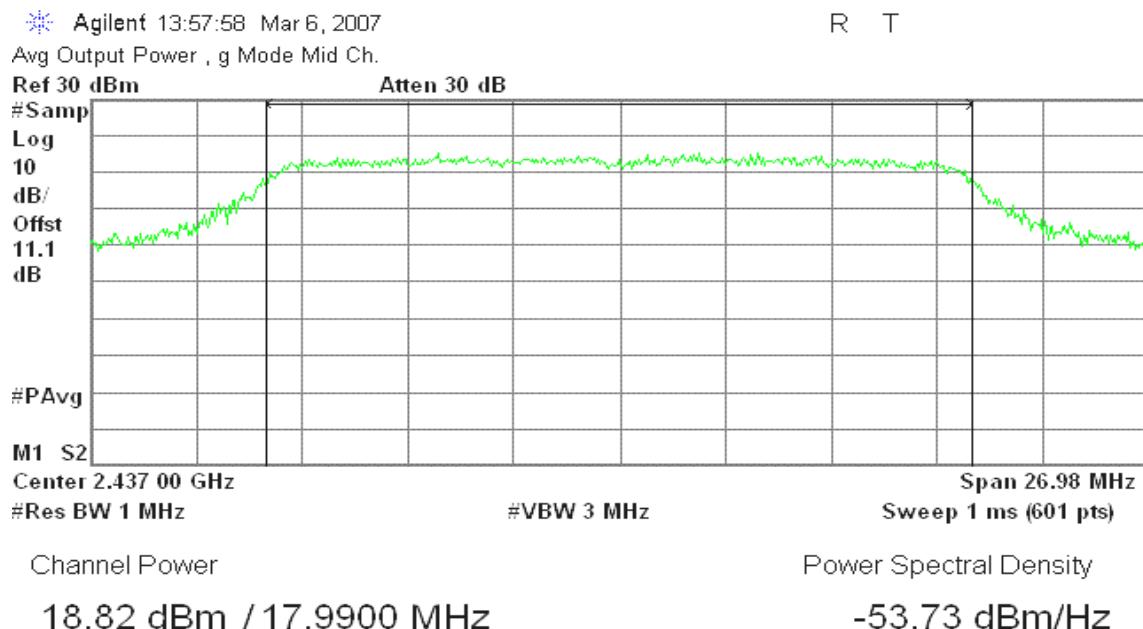


draft 802.11n Standard-20 MHz Channel mode / Chain 2

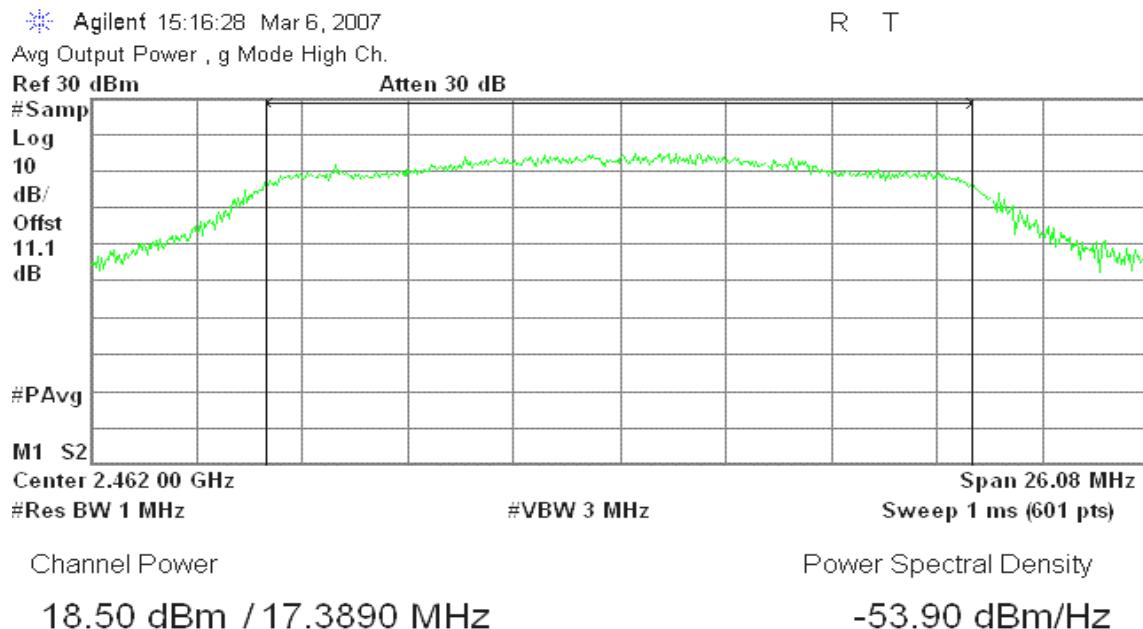
Average Power (CH Low)

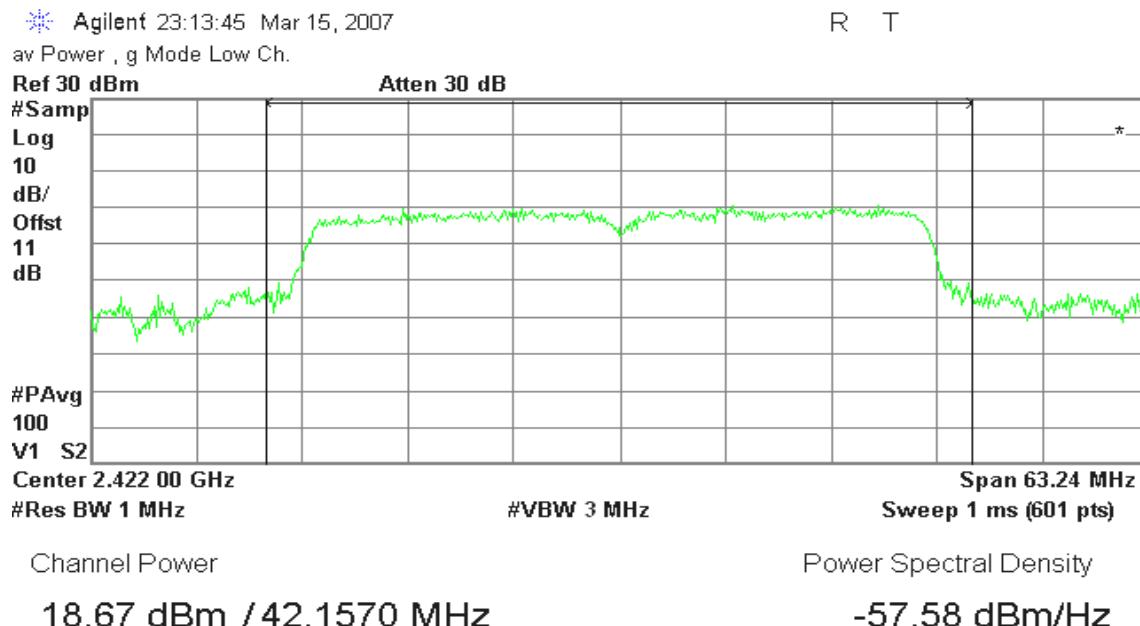
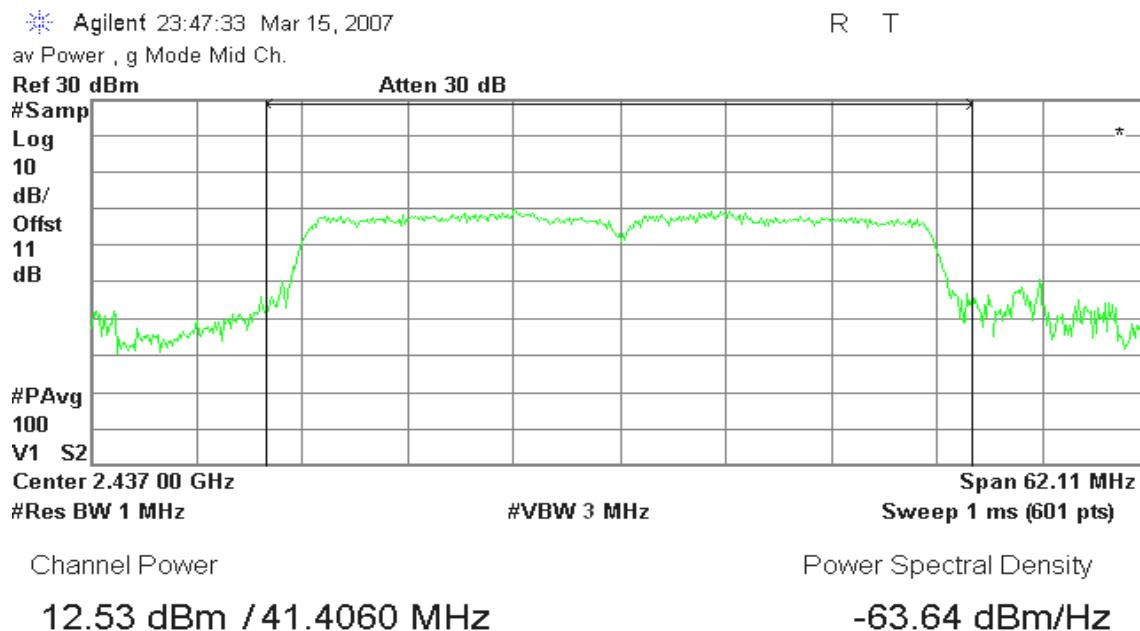


Average Power (CH Mid)

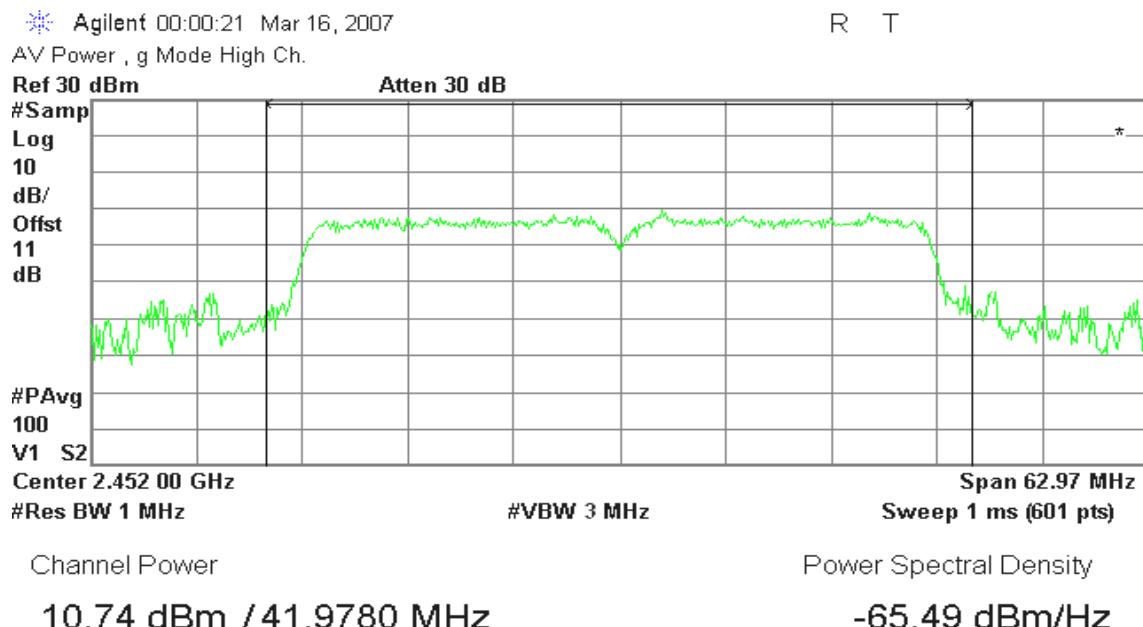


Average Power (CH High)



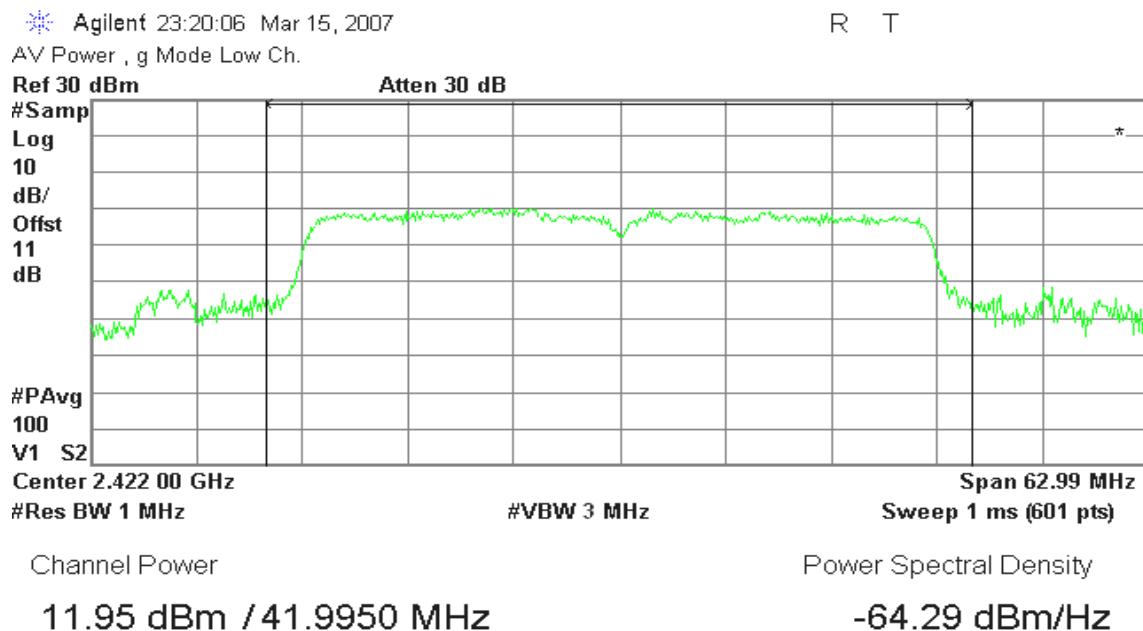
draft 802.11n Wide-40 MHz Channel mode / Chain 0**Average Power (CH Low)****Average Power (CH Mid)**

Average Power (CH High)

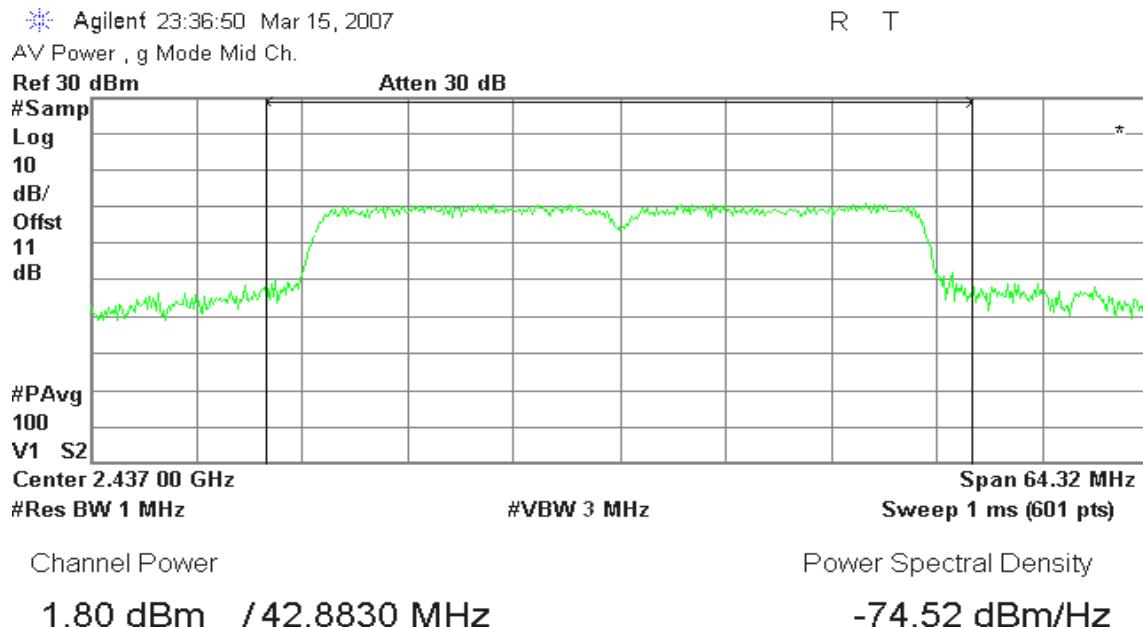


draft 802.11n Wide-40 MHz Channel mode / Chain 2

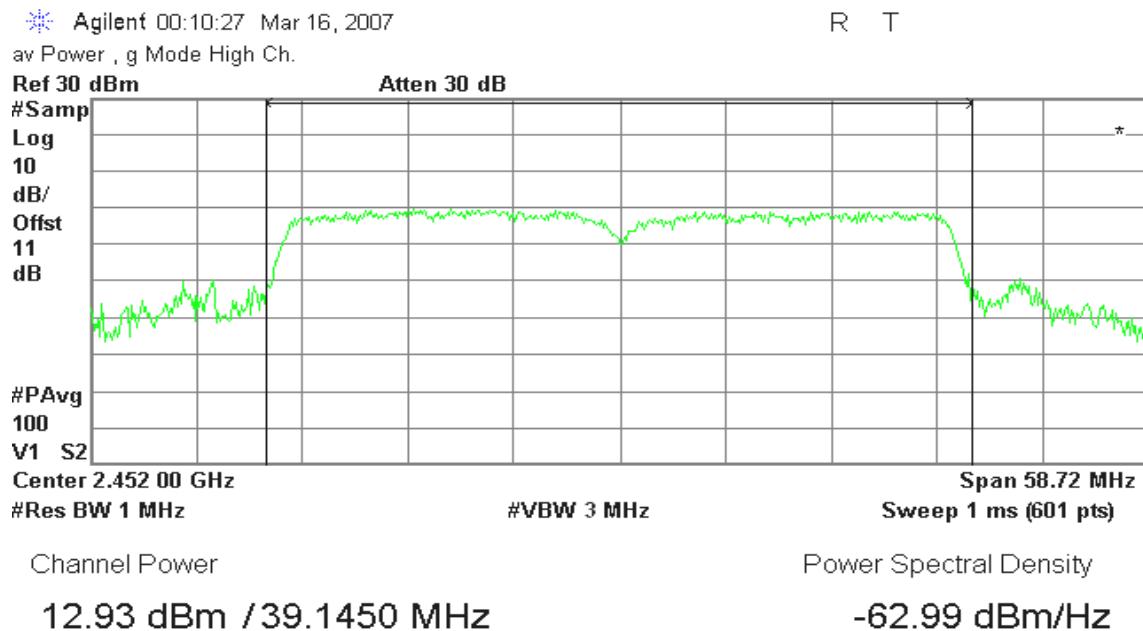
Average Power (CH Low)



Average Power (CH Mid)



Average Power (CH High)

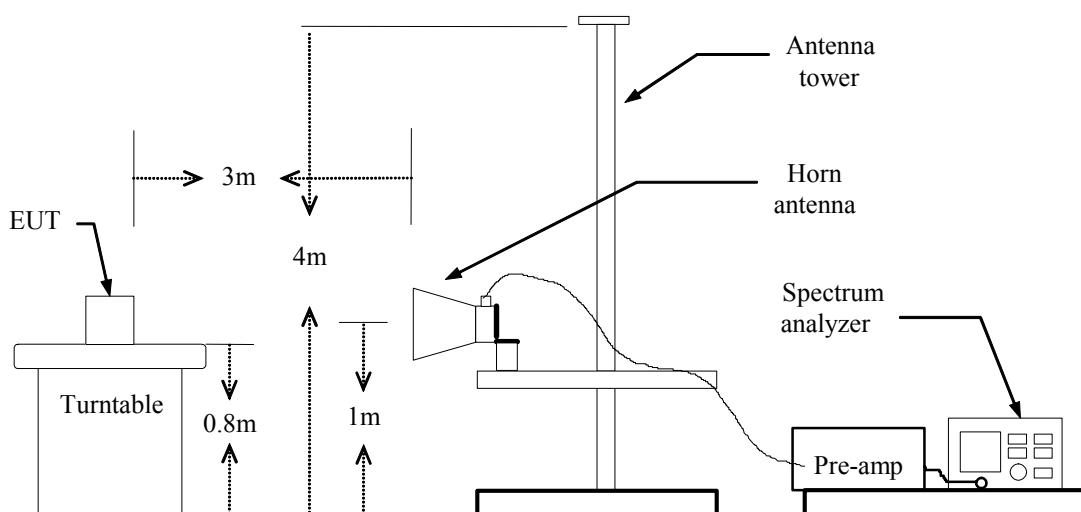


7.4 BAND EDGES MEASUREMENT

LIMIT

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands 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, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Test Configuration

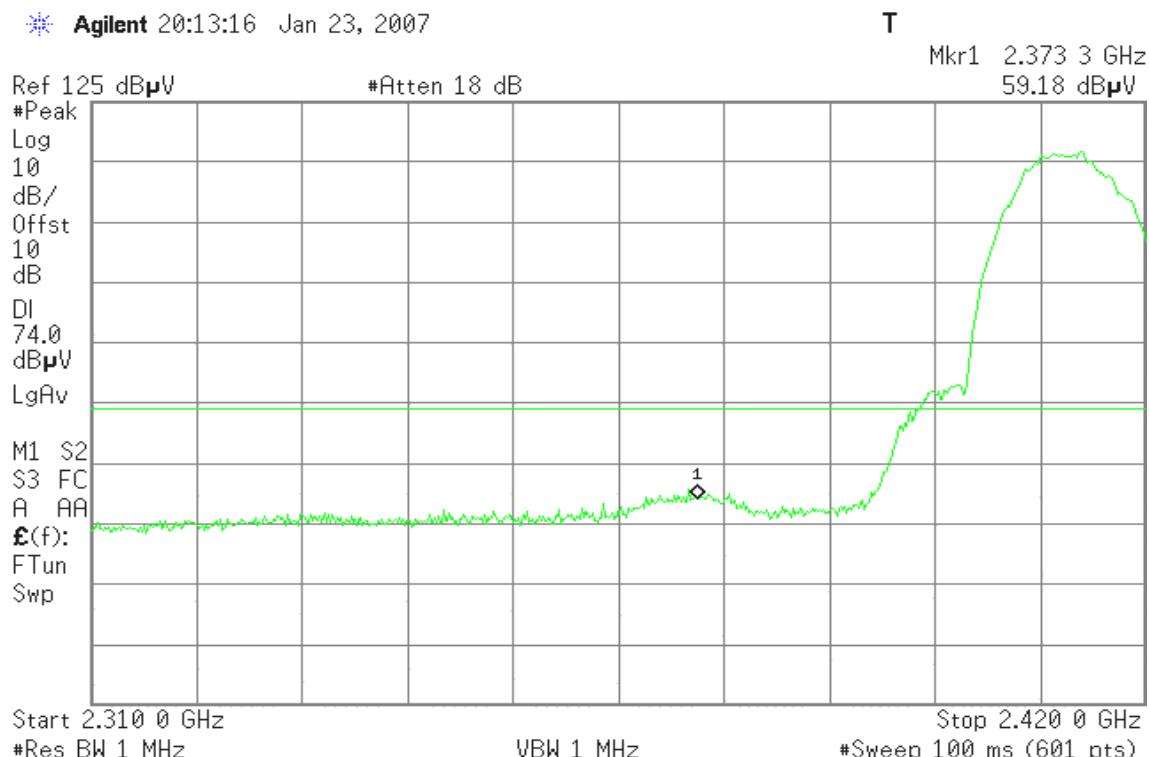
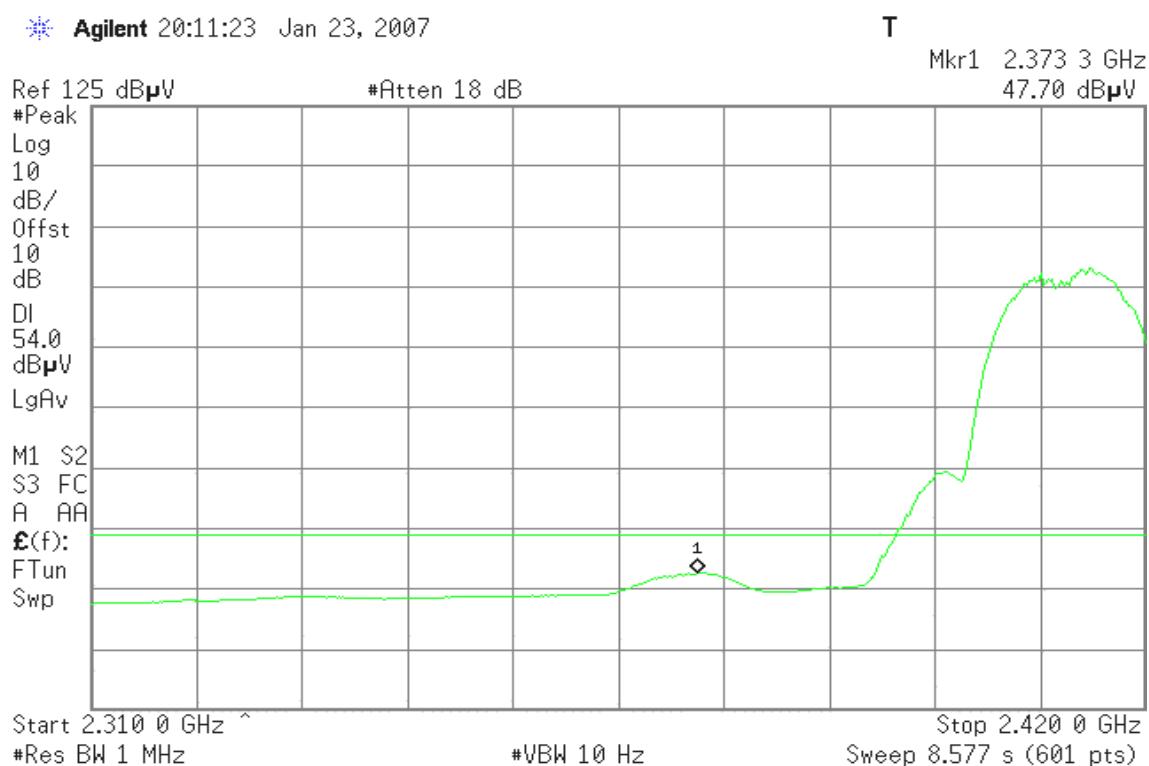


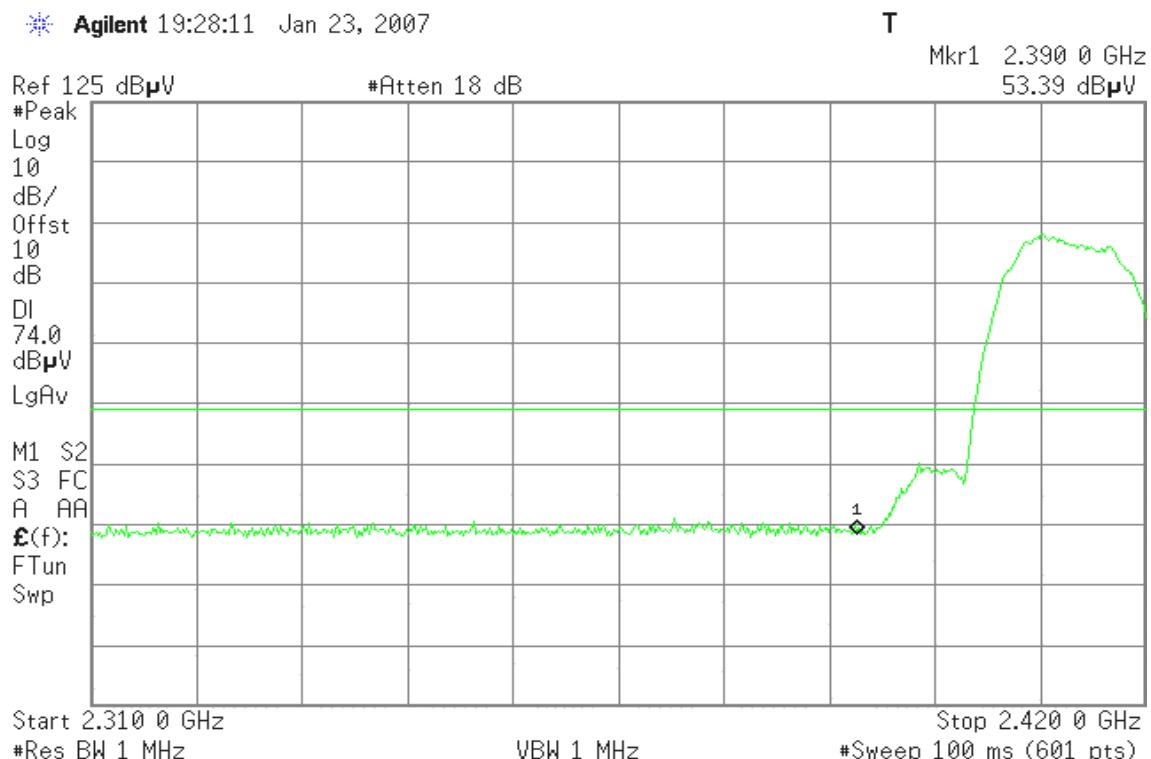
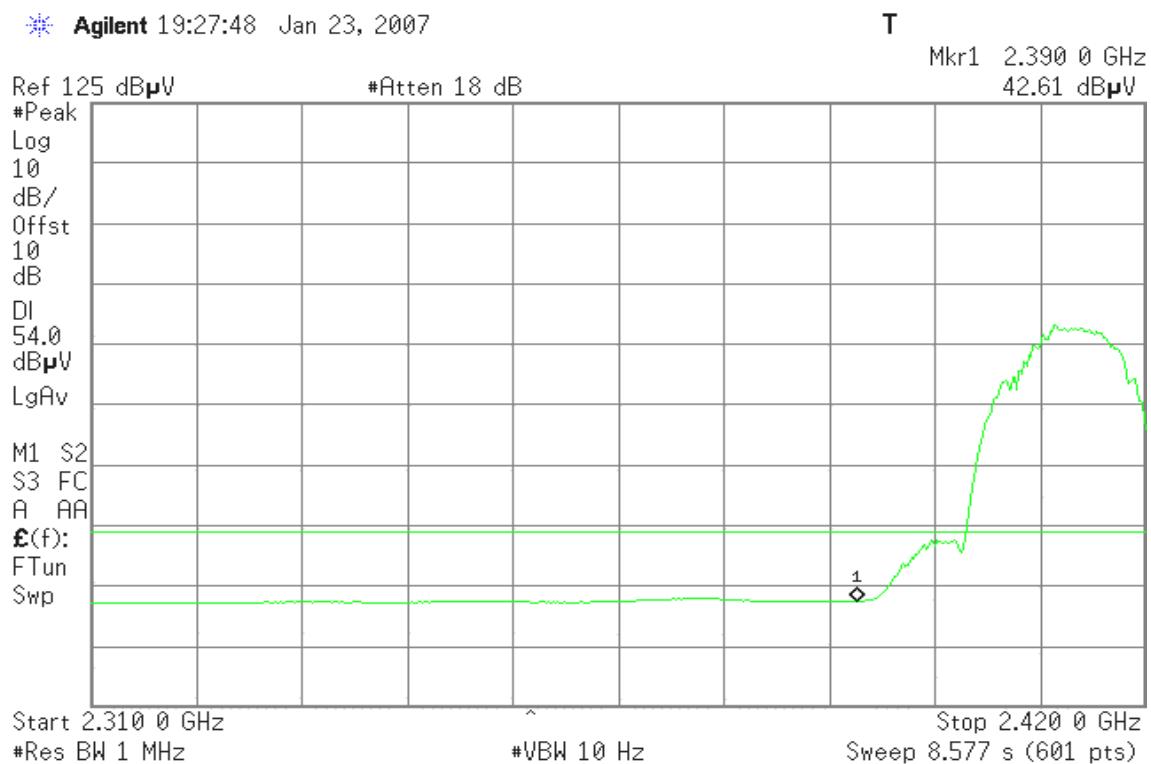
TEST PROCEDURE

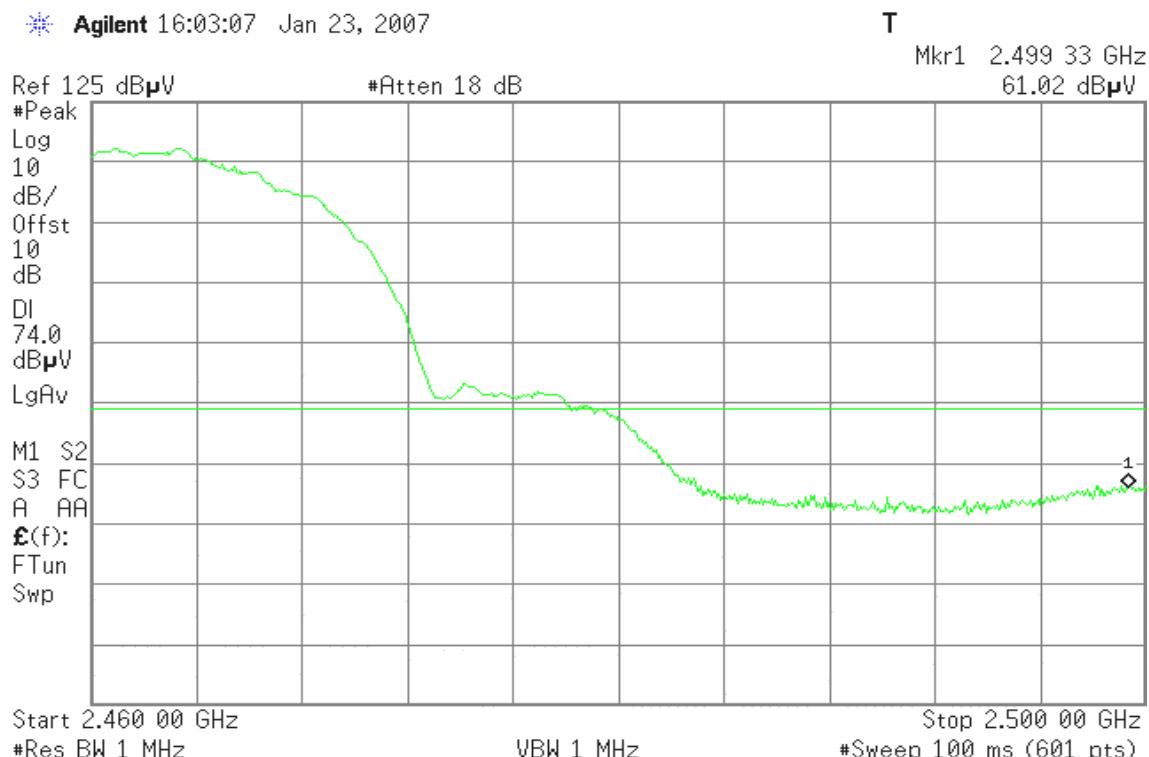
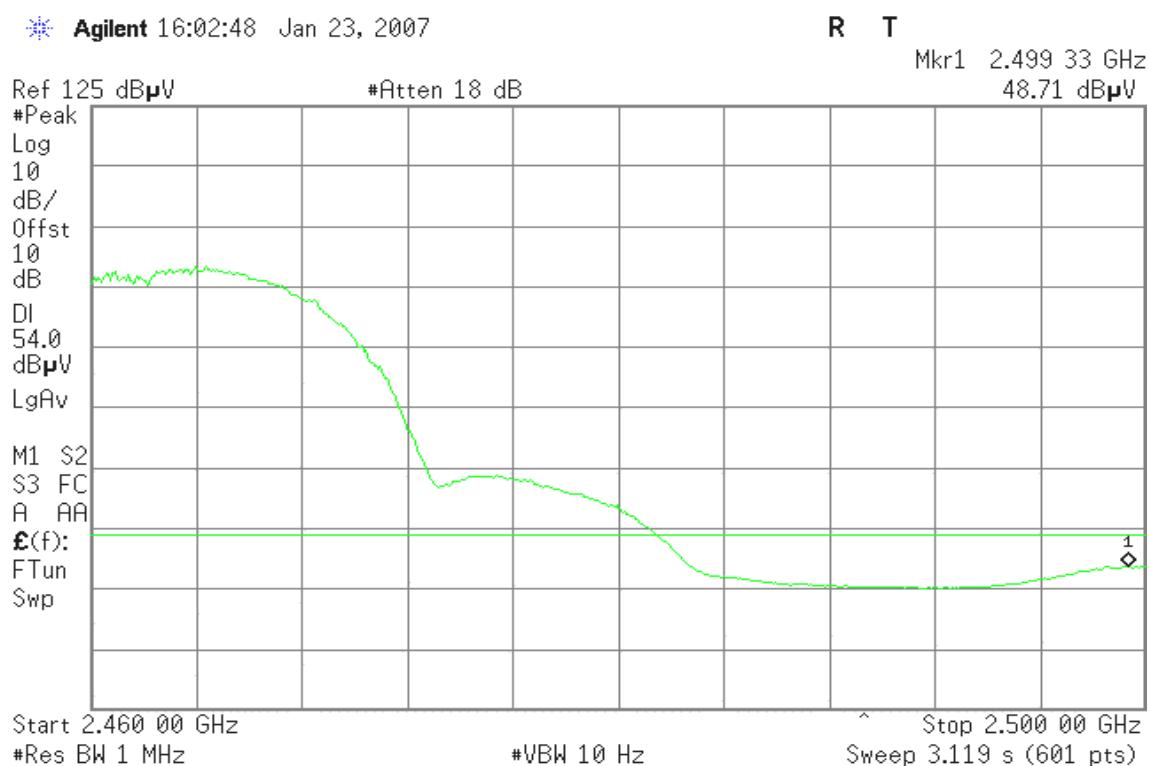
1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

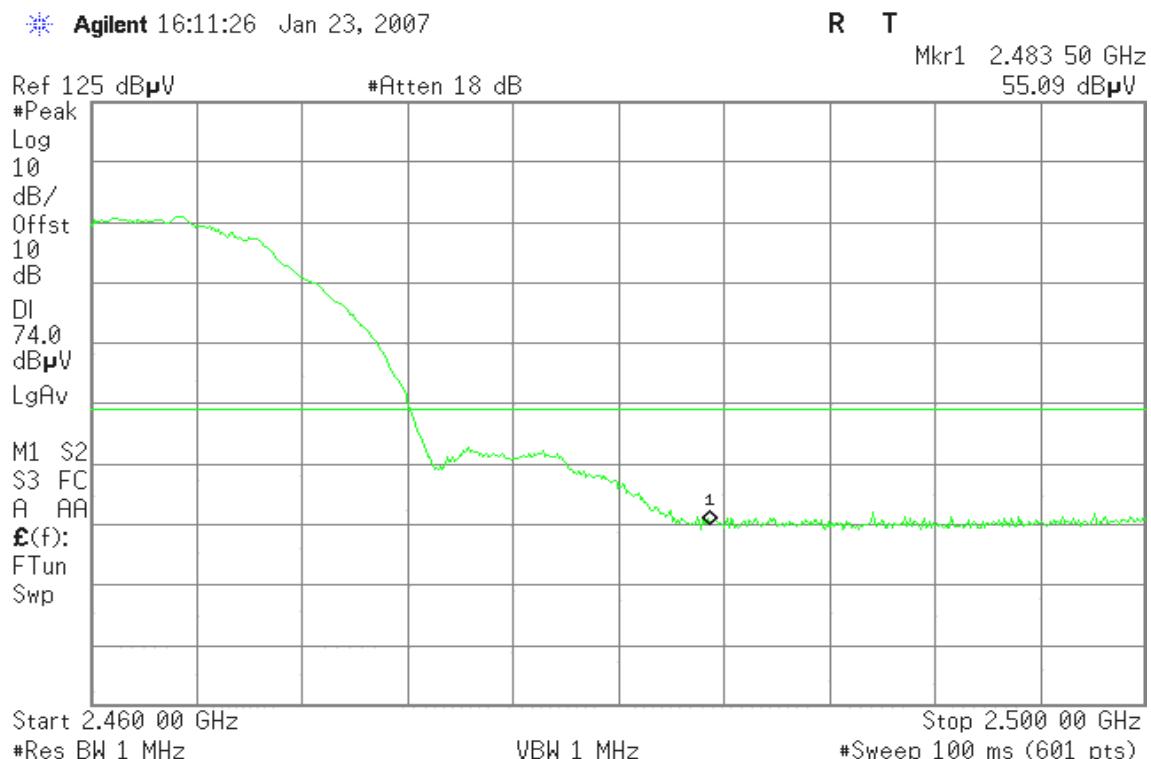
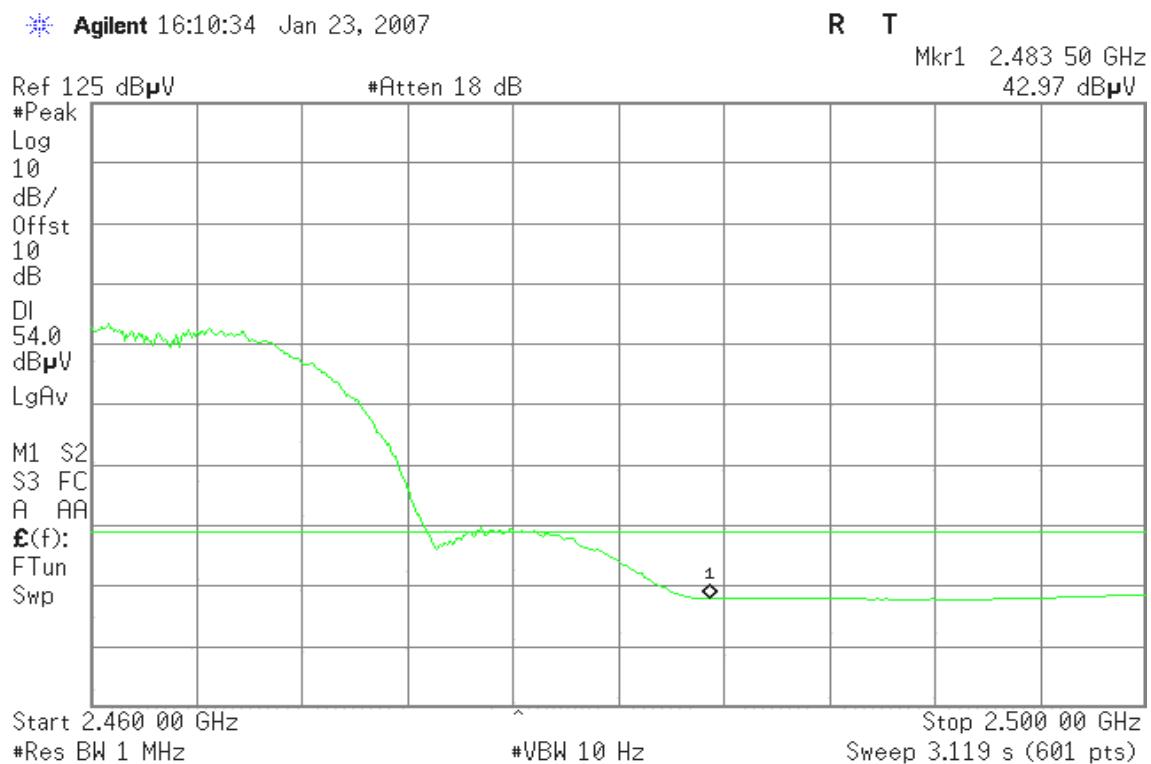
TEST RESULTS

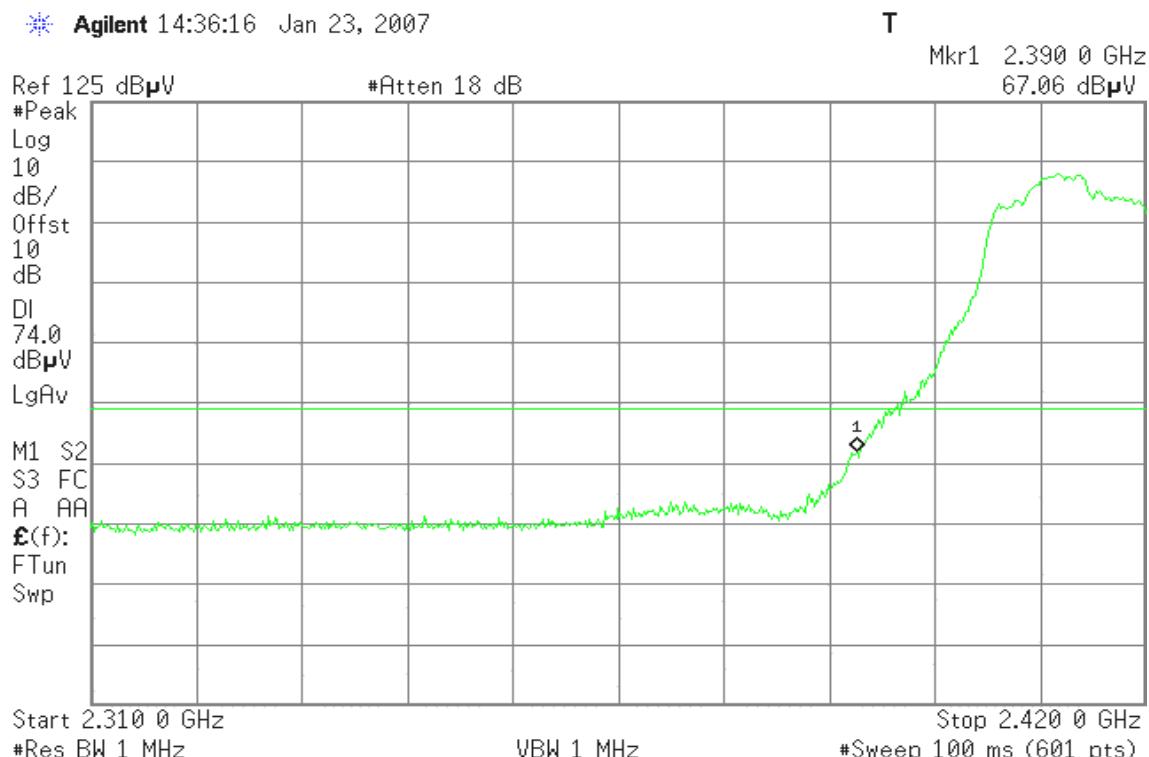
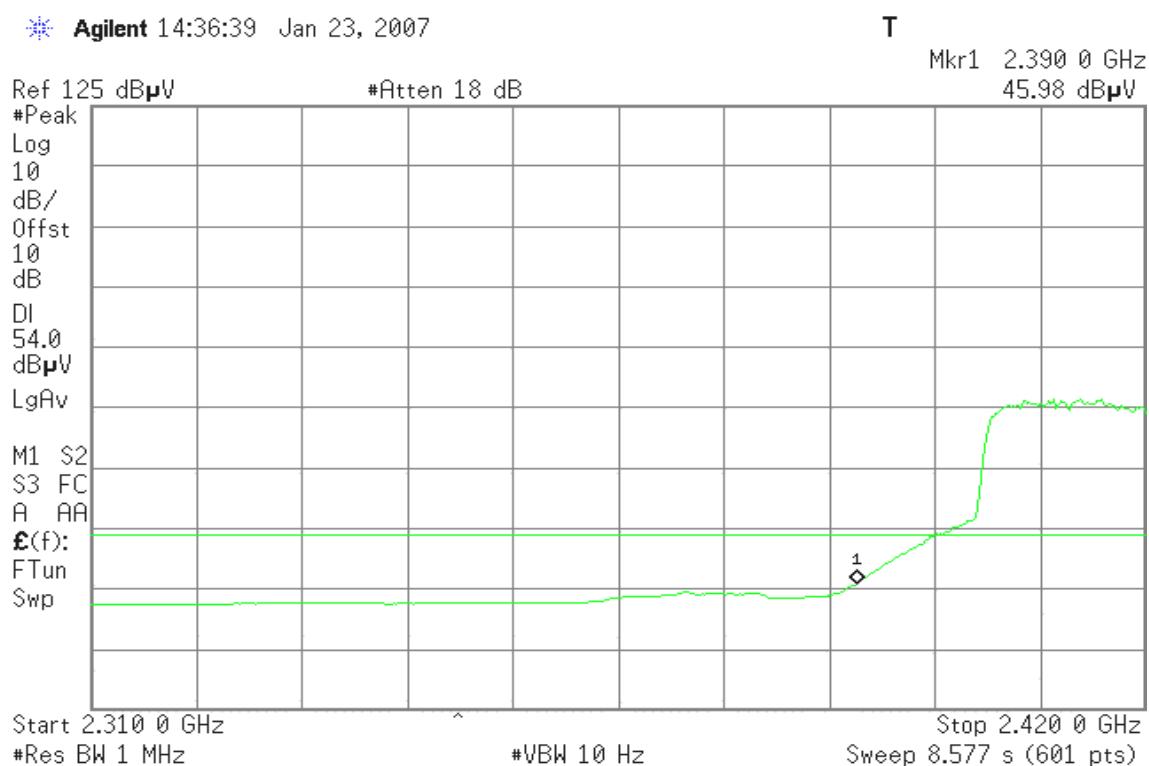
Refer to attach spectrum analyzer data chart.

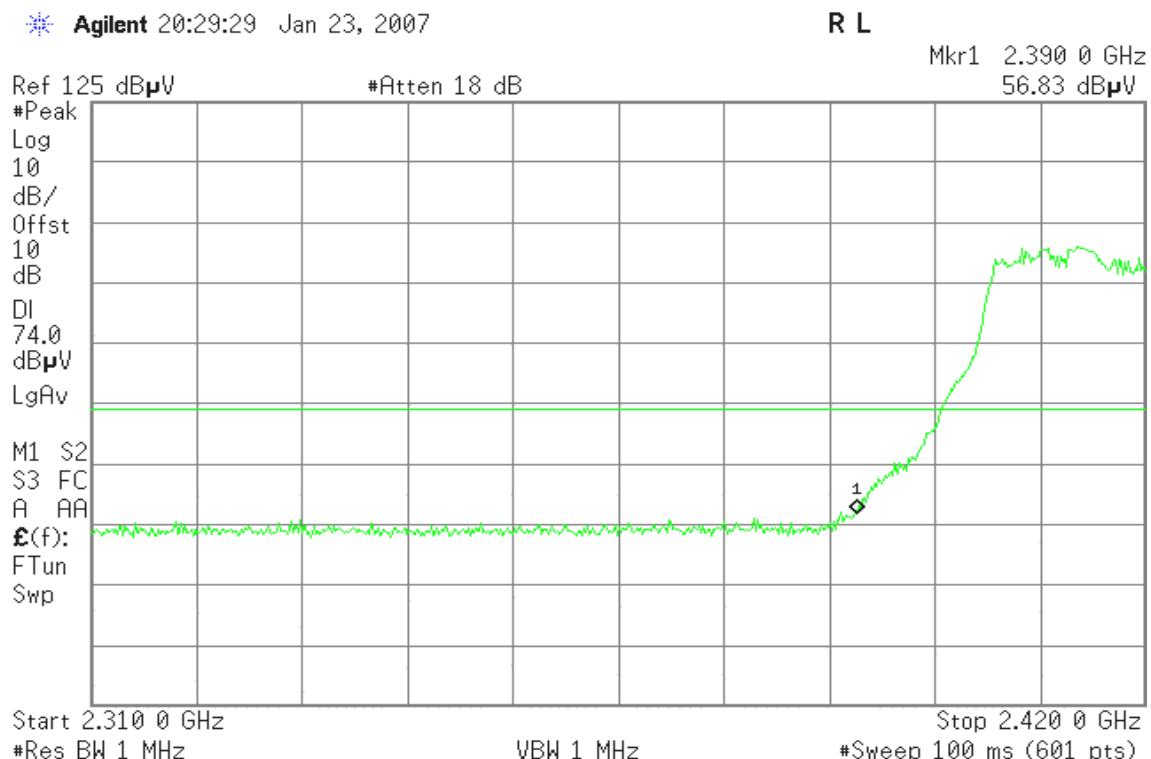
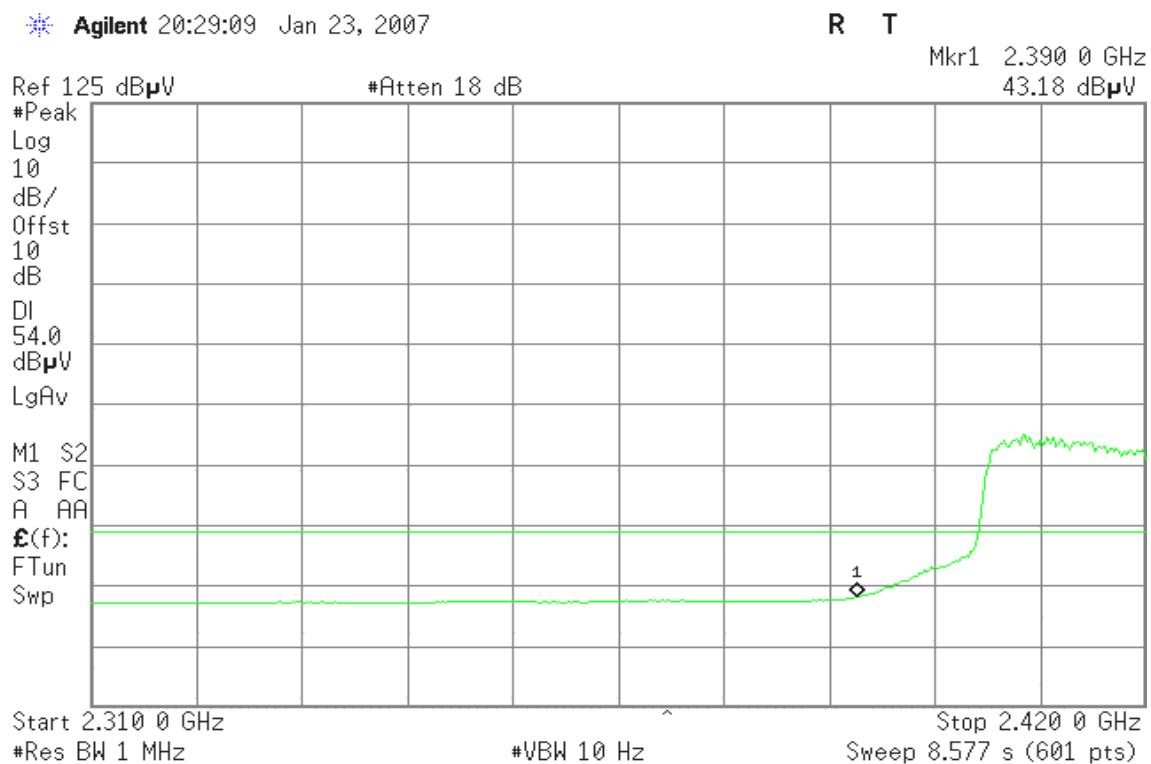
Band Edges (IEEE 802.11b mode / CH Low)**Detector mode: Peak****Polarity: Vertical****Detector mode: Average****Polarity: Vertical**

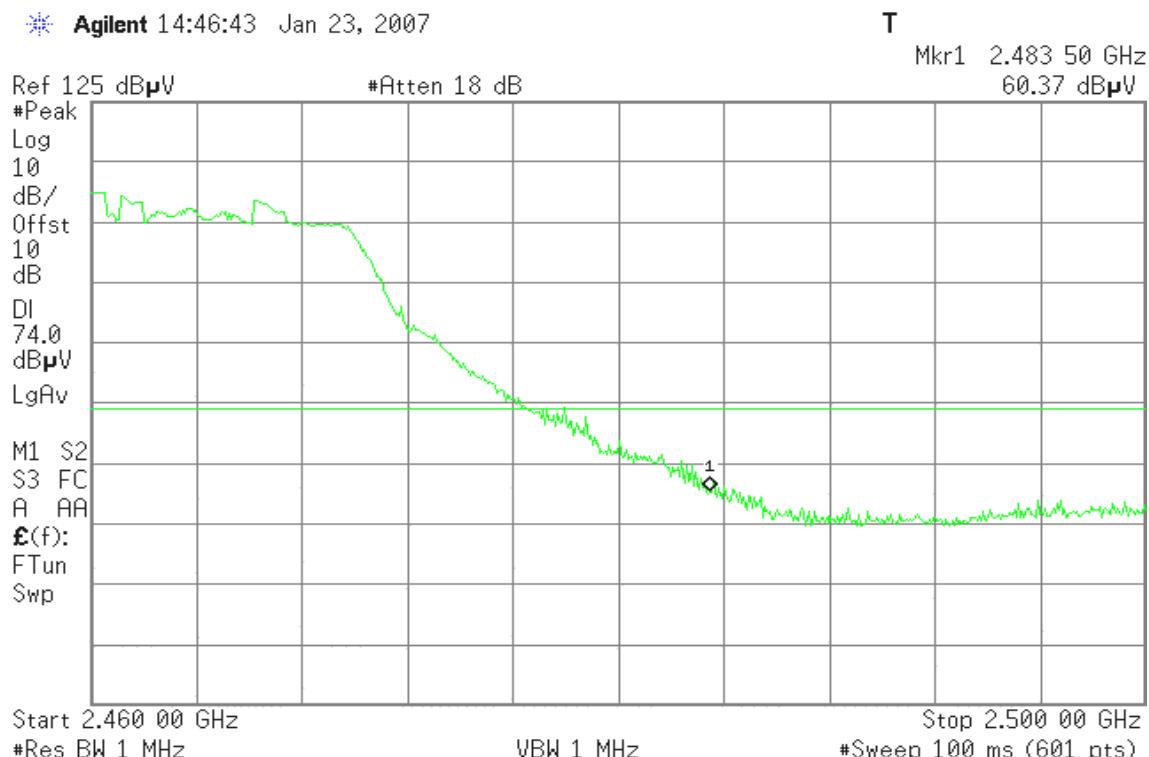
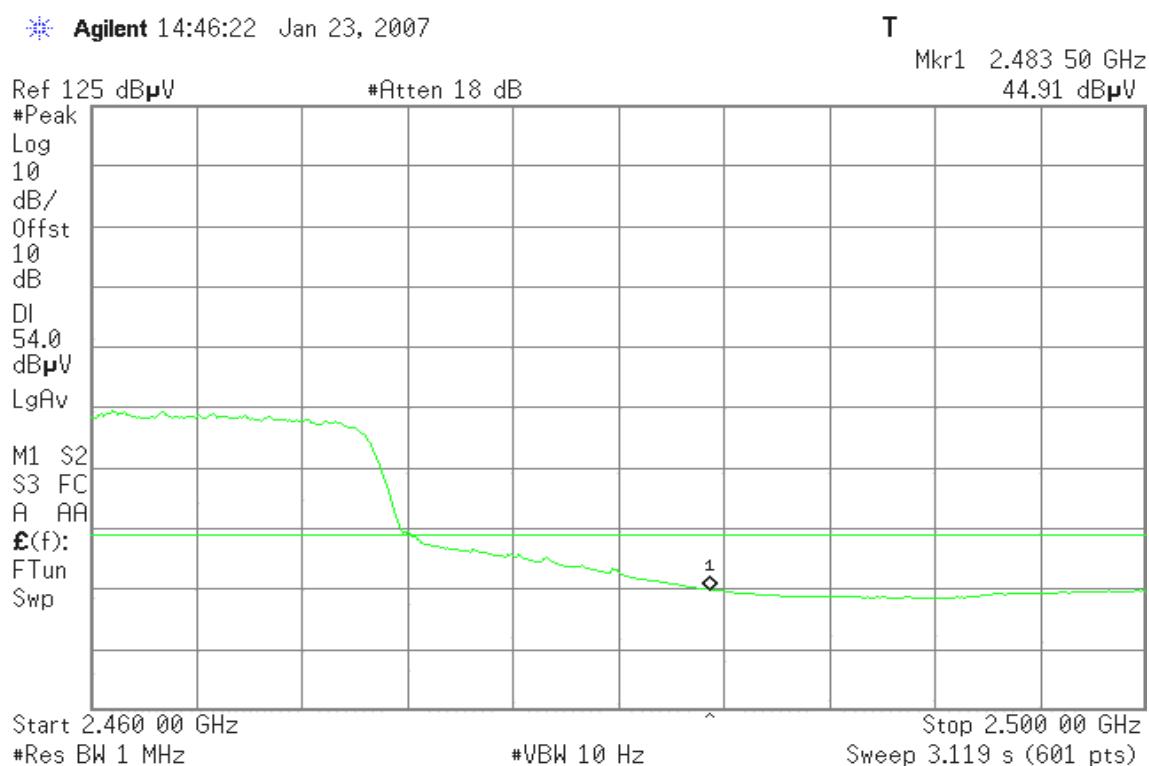
Detector mode: Peak**Polarity: Horizontal****Detector mode: Average****Polarity: Horizontal**

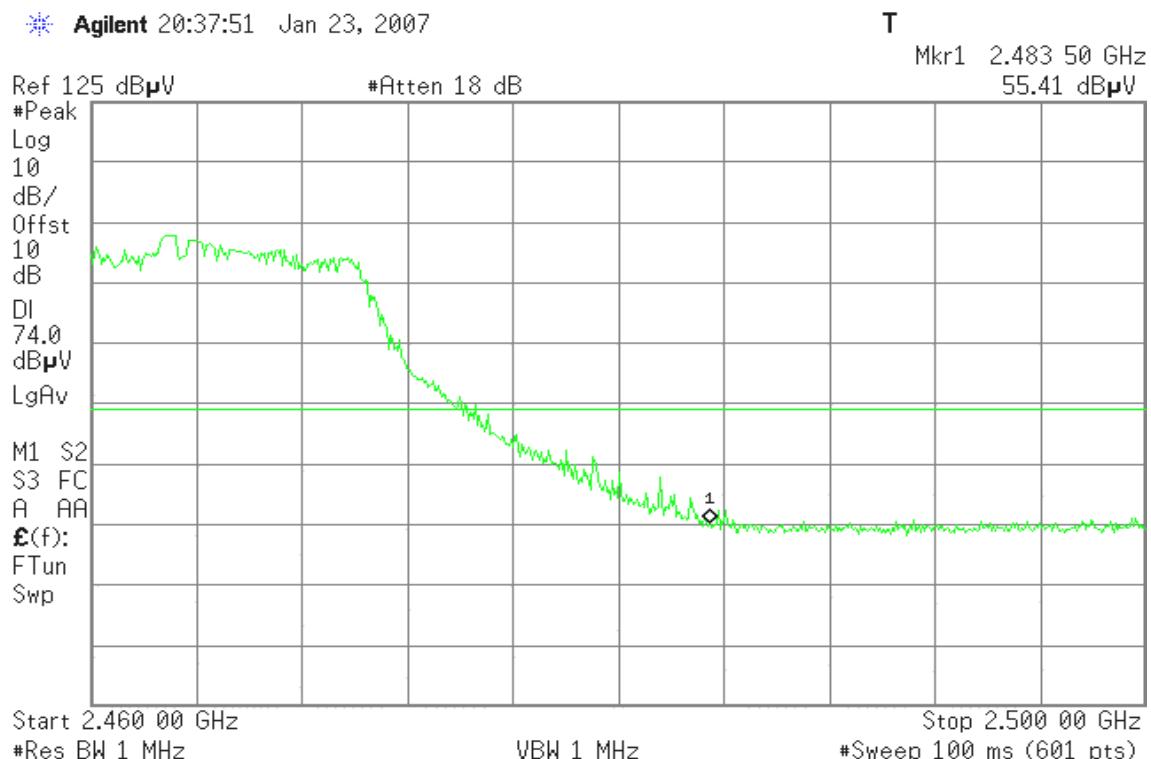
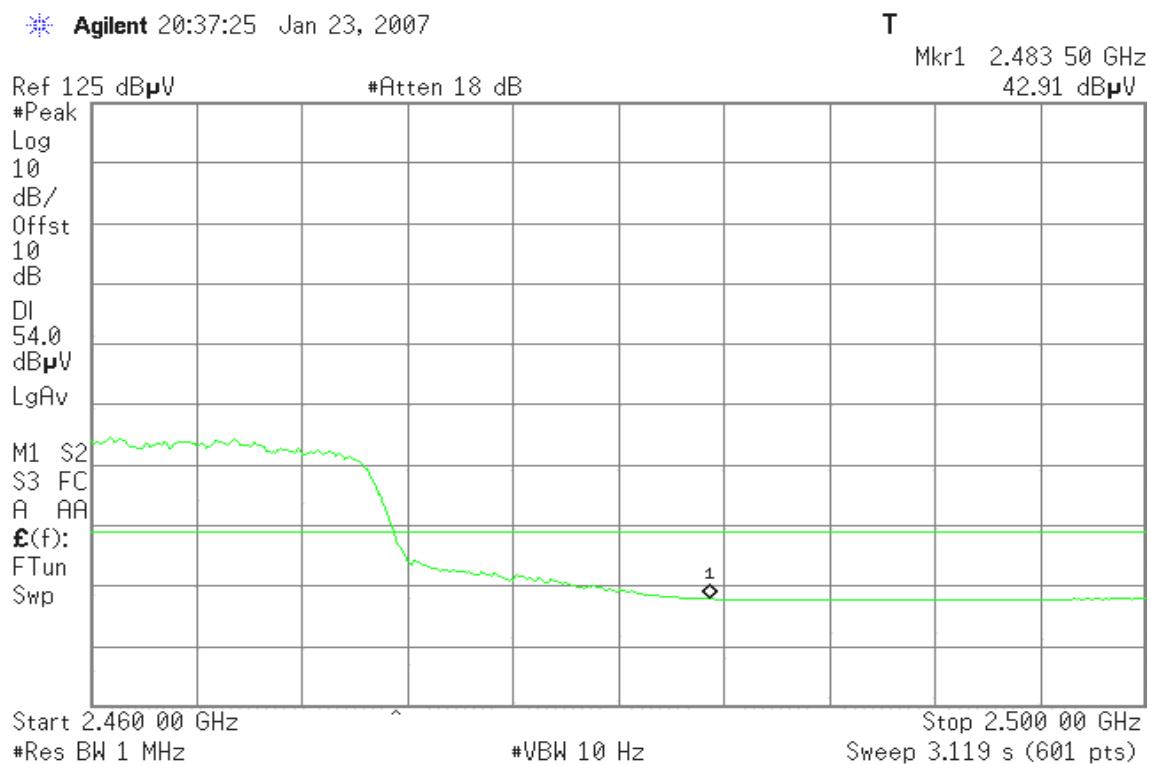
Band Edges (IEEE 802.11b mode / CH High)**Detector mode: Peak****Polarity: Vertical****Detector mode: Average****Polarity: Vertical**

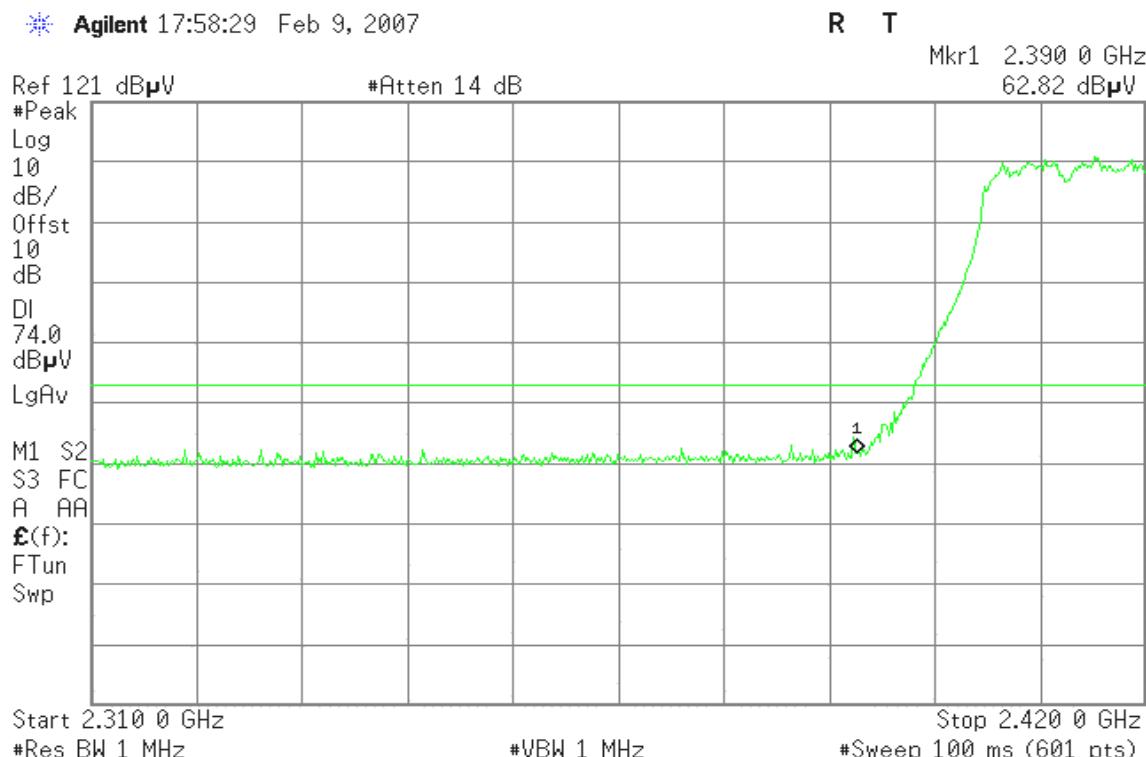
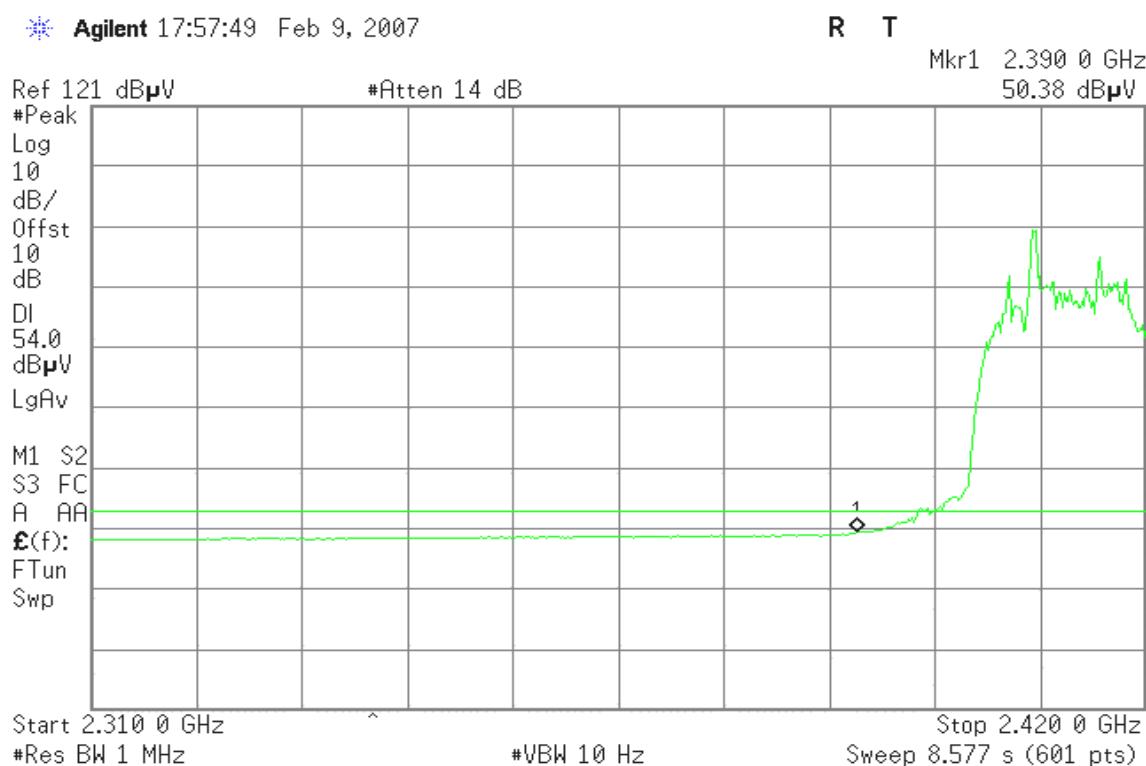
Detector mode: Peak**Polarity: Horizontal****Detector mode: Average****Polarity: Horizontal**

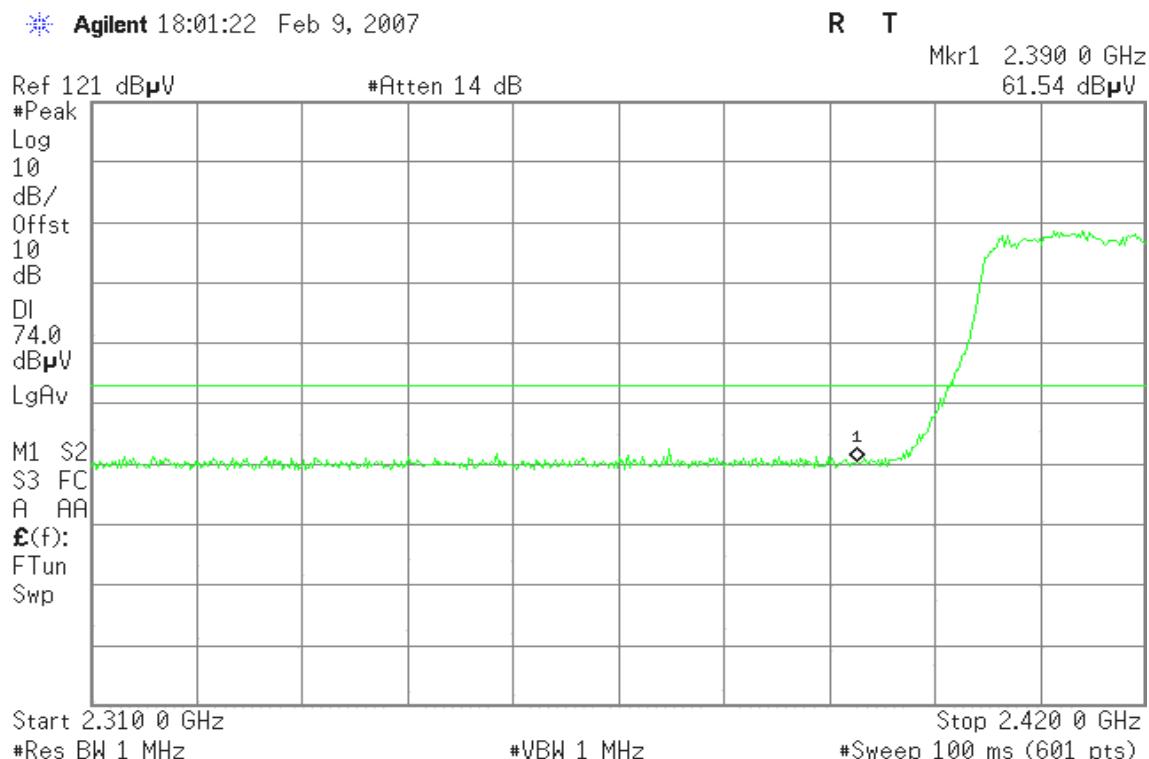
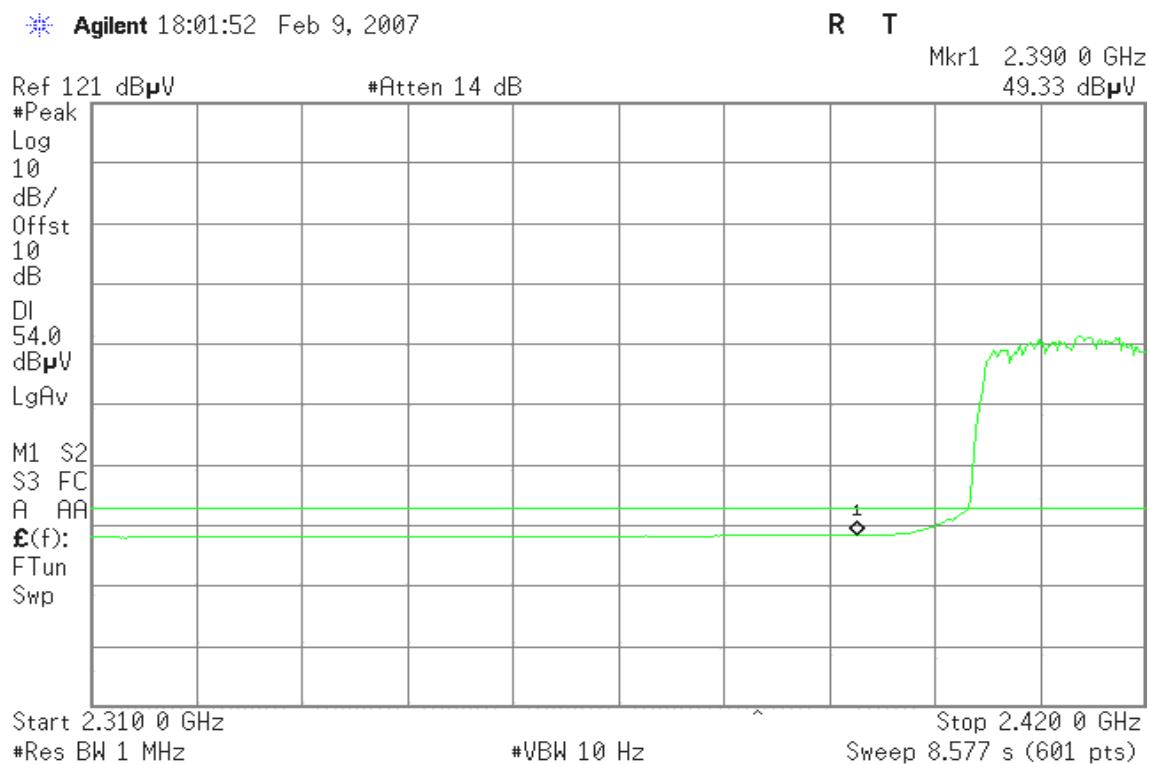
Band Edges (IEEE 802.11g mode / CH Low)**Detector mode: Peak****Polarity: Vertical****Detector mode: Average****Polarity: Vertical**

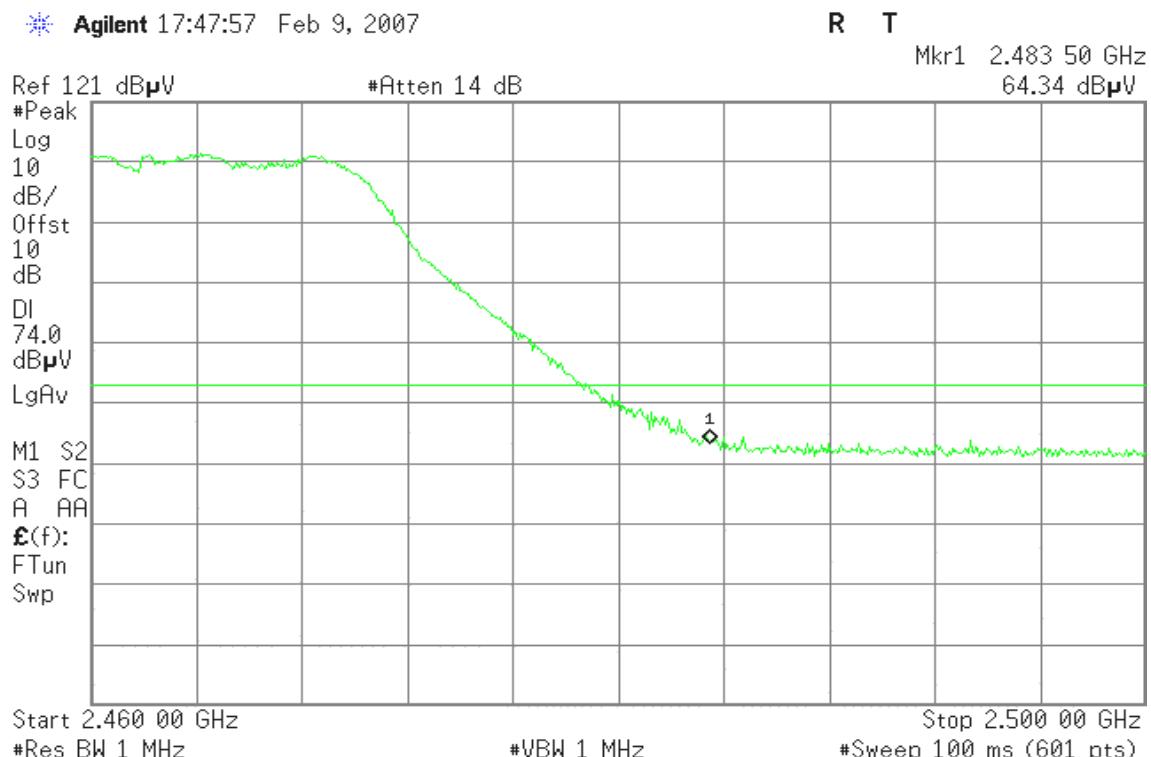
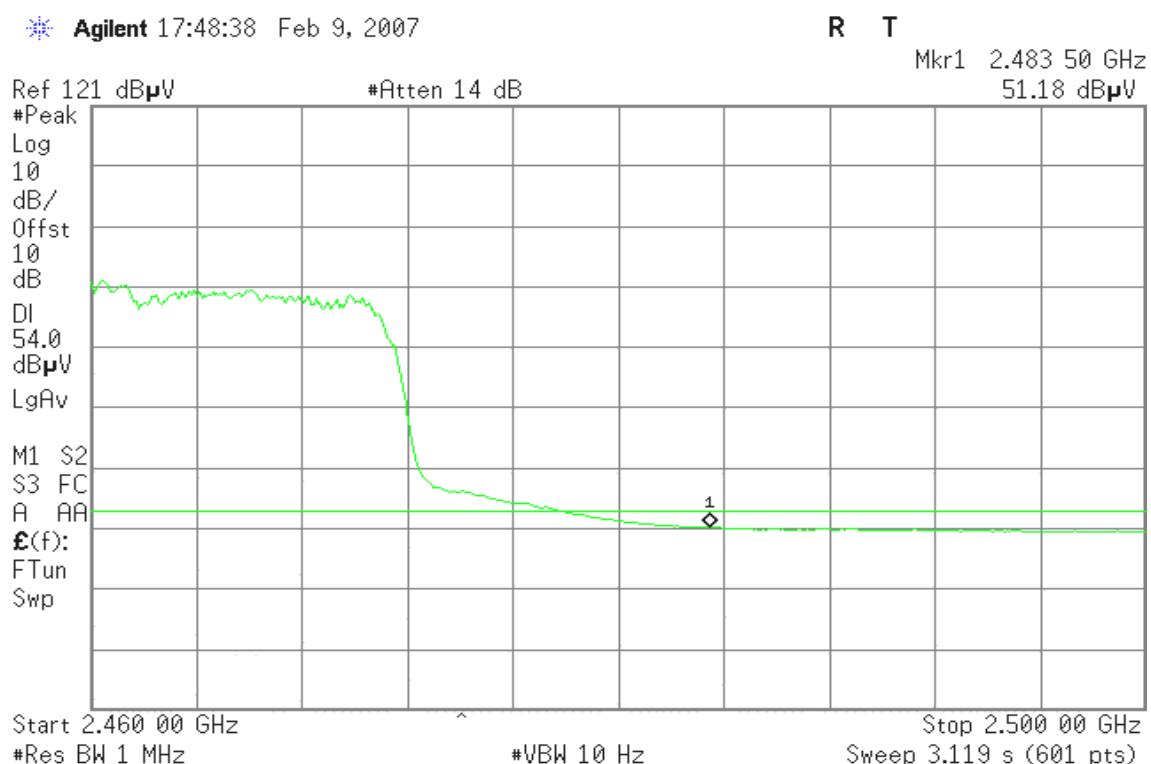
Detector mode: Peak**Polarity: Horizontal****Detector mode: Average****Polarity: Horizontal**

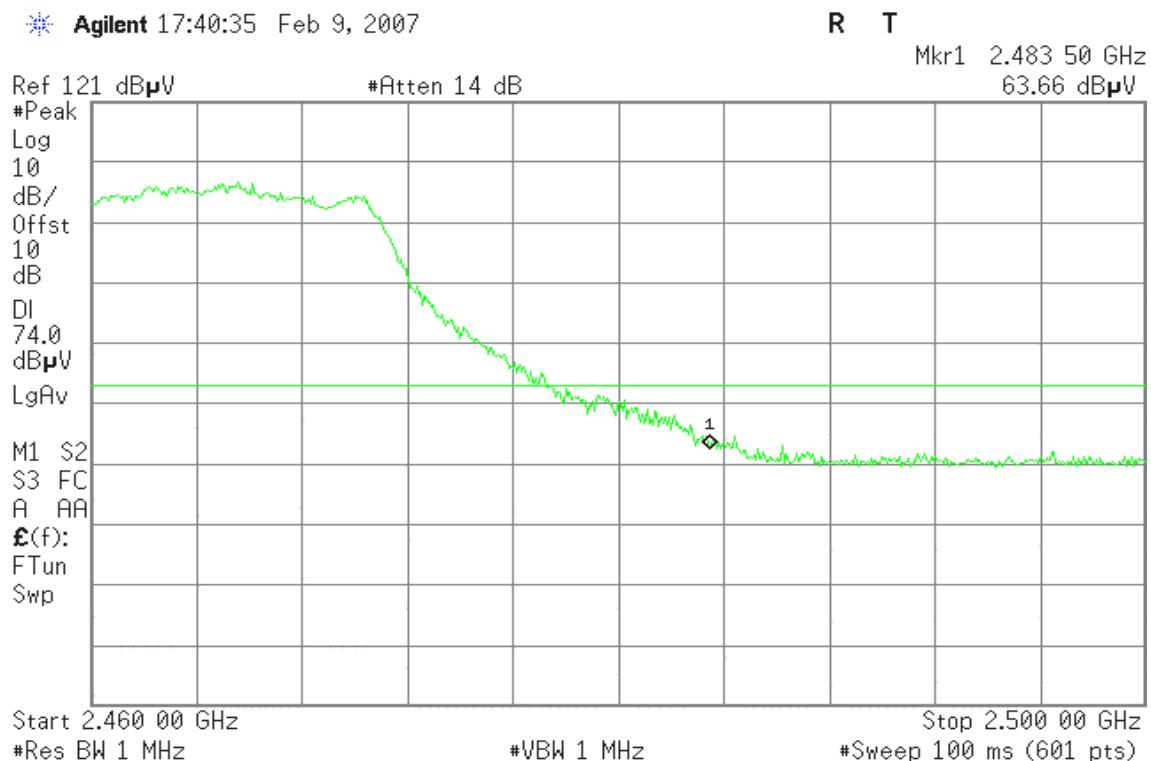
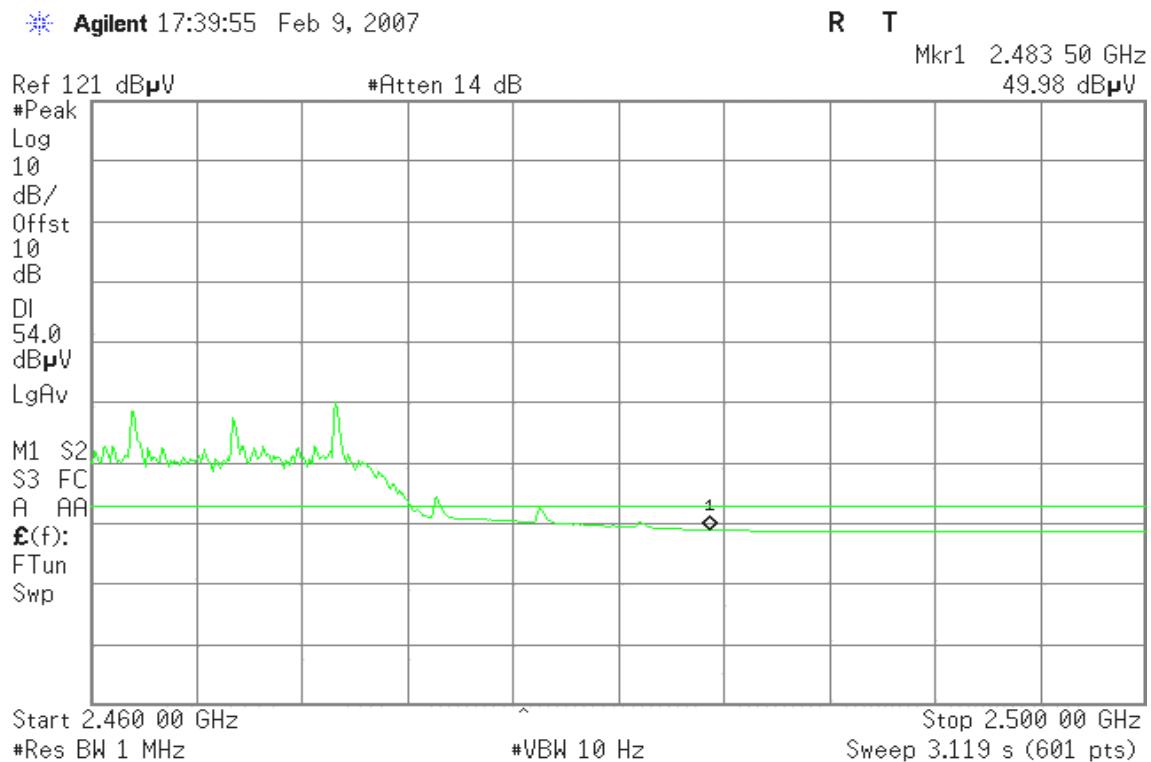
Band Edges (IEEE 802.11g mode / CH High)**Detector mode: Peak****Polarity: Vertical****Detector mode: Average****Polarity: Vertical**

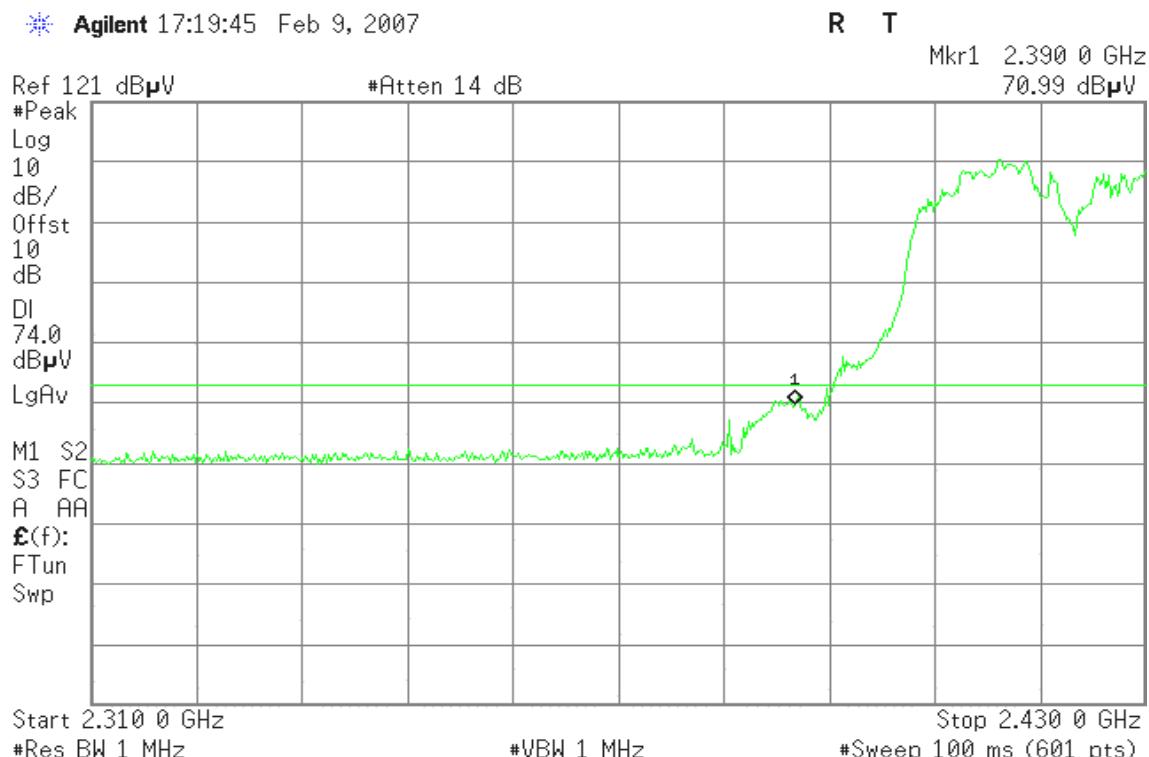
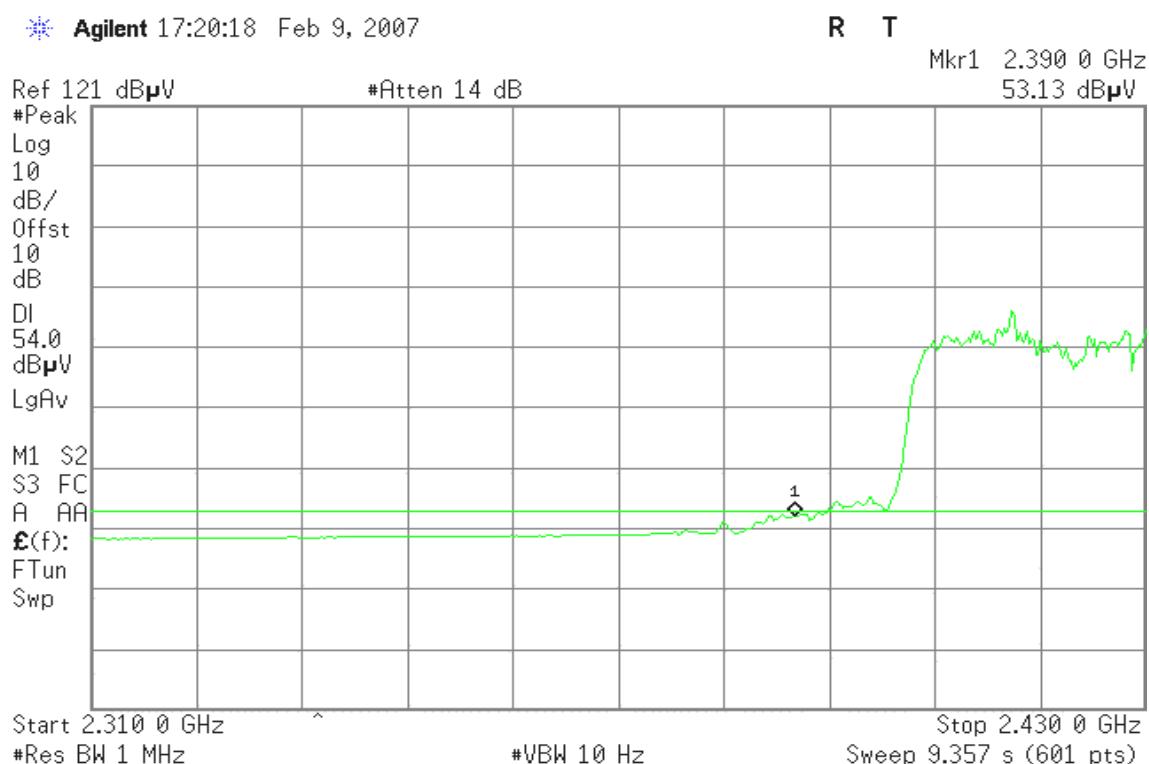
Detector mode: Peak**Polarity: Horizontal****Detector mode: Average****Polarity: Horizontal**

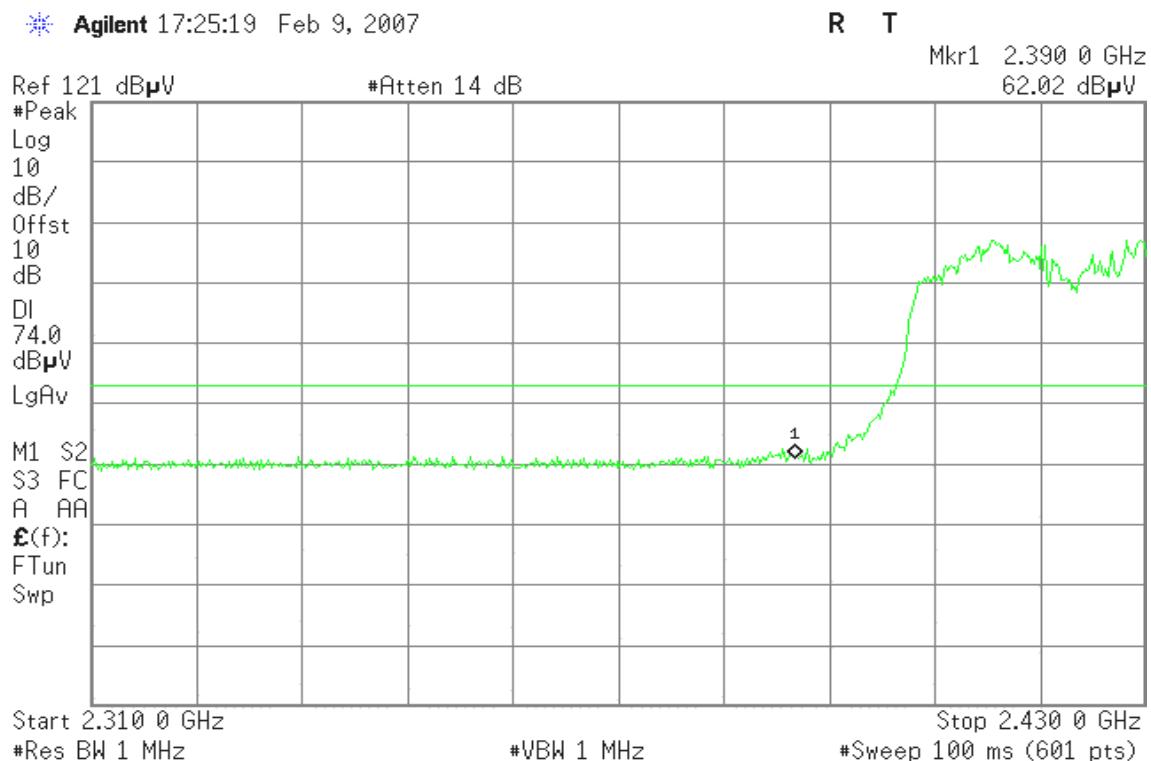
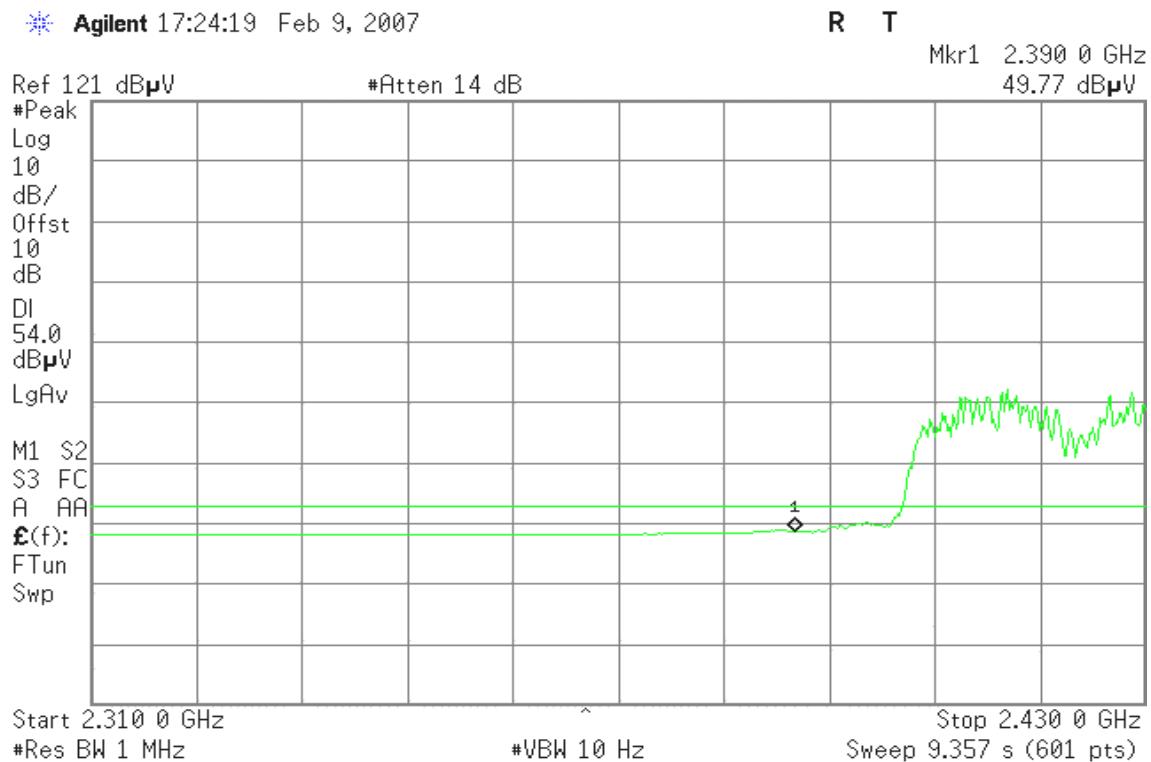
Band Edges (draft 802.11n Standard-20 MHz Channel mode / CH Low)**Detector mode: Peak****Polarity: Vertical****Detector mode: Average****Polarity: Vertical**

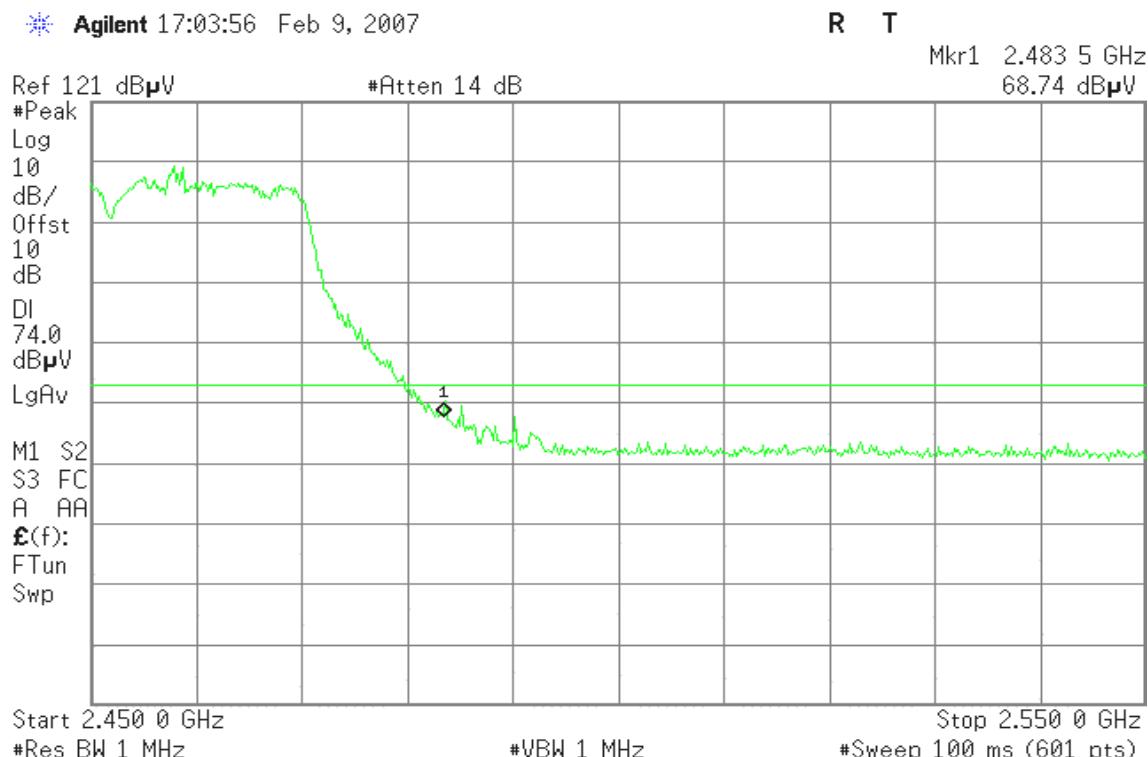
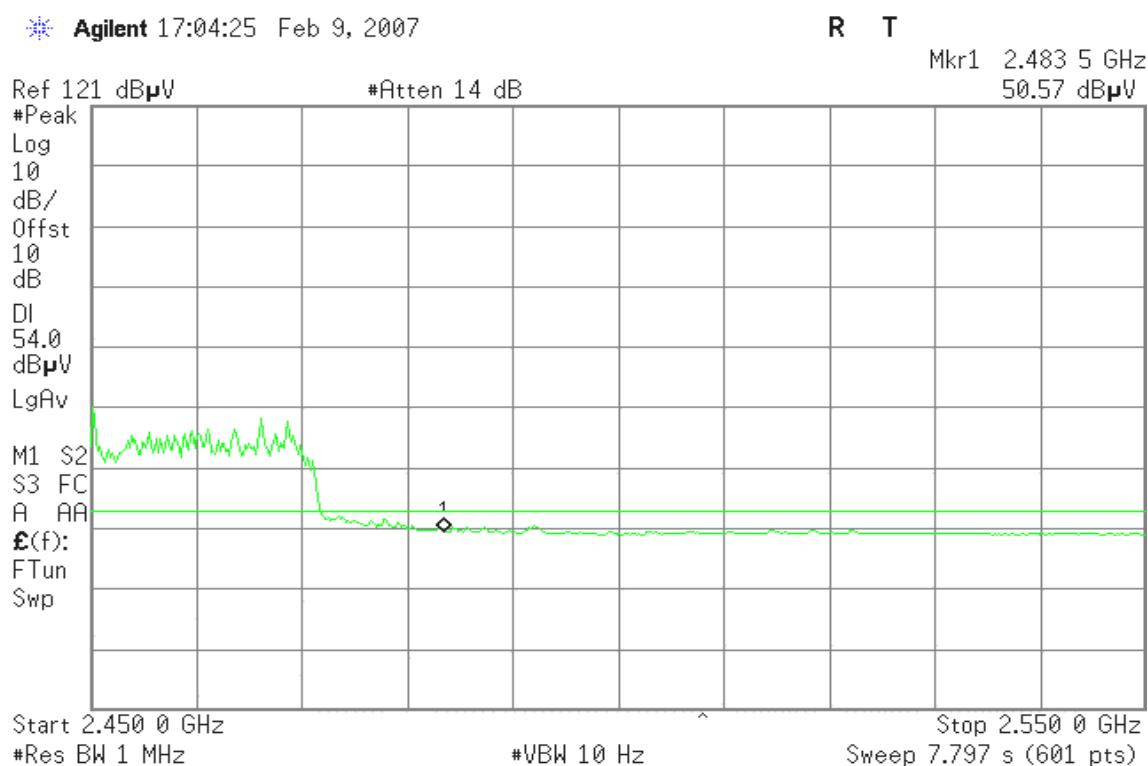
Detector mode: Peak**Polarity: Horizontal****Detector mode: Average****Polarity: Horizontal**

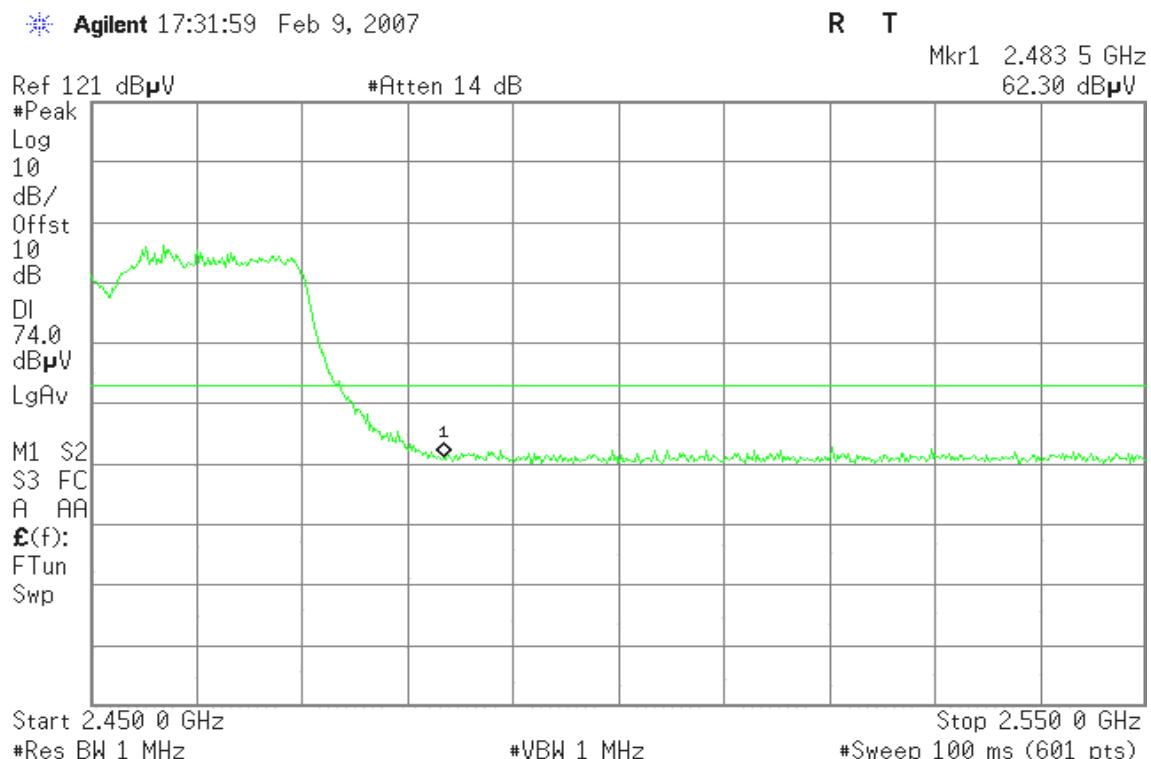
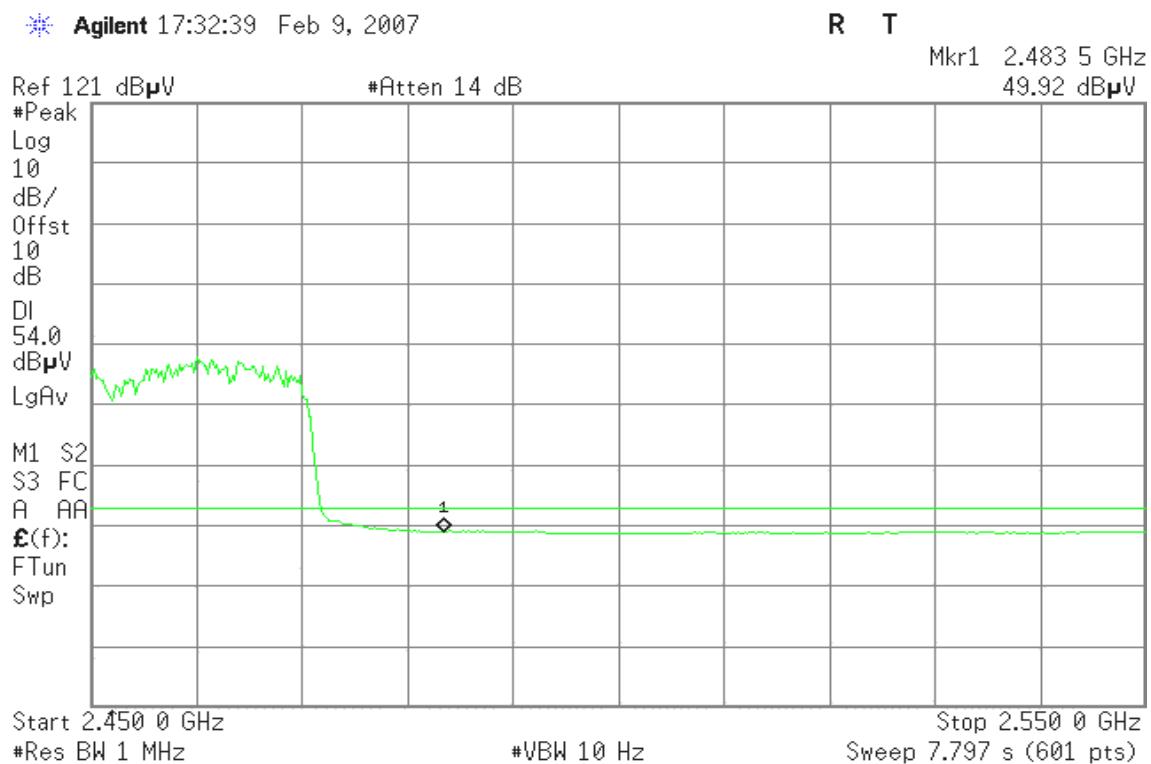
Band Edges (draft 802.11n Standard-20 MHz Channel mode / CH High)**Detector mode: Peak****Polarity: Vertical****Detector mode: Average****Polarity: Vertical**

Detector mode: Peak**Polarity: Horizontal****Detector mode: Average****Polarity: Horizontal**

Band Edges (draft 802.11n Wide-40 MHz Channel mode / CH Low)**Detector mode: Peak****Polarity: Vertical****Detector mode: Average****Polarity: Vertical**

Detector mode: Peak**Polarity: Horizontal****Detector mode: Average****Polarity: Horizontal**

Band Edges (draft 802.11n Wide-40 MHz Channel mode / CH High)**Detector mode: Peak****Polarity: Vertical****Detector mode: Average****Polarity: Vertical**

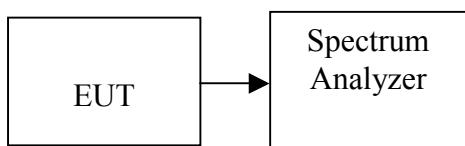
Detector mode: Peak**Polarity: Horizontal****Detector mode: Average****Polarity: Horizontal**

7.5 PEAK POWER SPECTRAL DENSITY

LIMIT

1. According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.
2. According to §15.247(f), the digital modulation operation of the hybrid system, with the frequency hopping turned off, shall comply with the power density requirements of paragraph (d) of this section.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW = 3 kHz, VBW = 10 kHz, Span = 300 kHz, Sweep = 100 s
3. Record the max reading.
4. Repeat the above procedure until the measurements for all frequencies are completed.



TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 2 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-7.91	-7.44	-4.66	8.00	PASS
Mid	2437	-7.96	-5.03	-3.24		PASS
High	2462	-8.68	-7.42	-4.99		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-8.49	8.00	PASS
Mid	2437	-4.60		PASS
High	2462	-6.36		PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 2 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-2.53	-1.61	0.96	8.00	PASS
Mid	2437	-4.34	-7.27	-2.55		PASS
High	2462	-6.07	-5.72	-2.88		PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 2 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	2422	-9.02	-7.65	-5.27	8.00	PASS
Mid	2437	-8.45	-10.34	-6.28		PASS
High	2452	-6.80	-8.45	-4.54		PASS

*Remark: Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 2 PPSD / 10))*

**Test mode: IEEE 802.11b mode with combiner**

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-1.39	8.00	PASS
Mid	2437	-1.16		PASS
High	2462	-1.67		PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode with combiner

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	2.85	8.00	PASS
Mid	2437	0.05		PASS
High	2462	-0.14		PASS

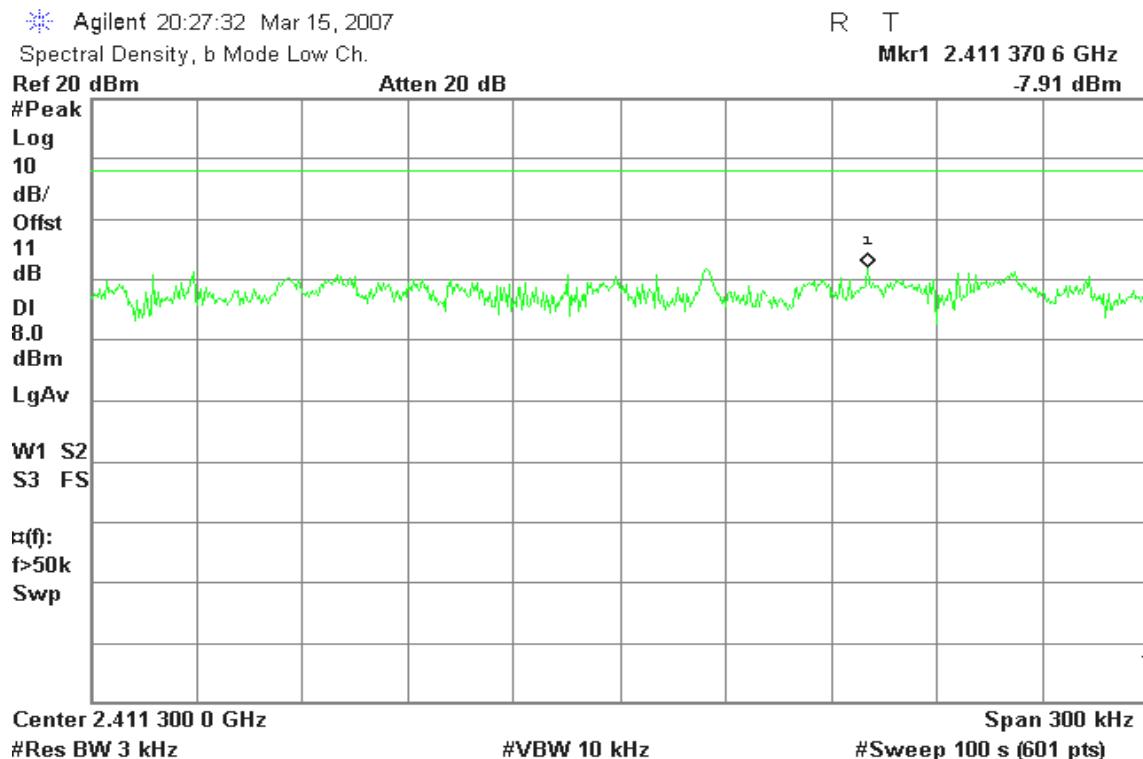
Test mode: draft 802.11n Wide-40 MHz Channel mode with combiner

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
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Mid	2437	-8.21		PASS
High	2462	-2.32		PASS

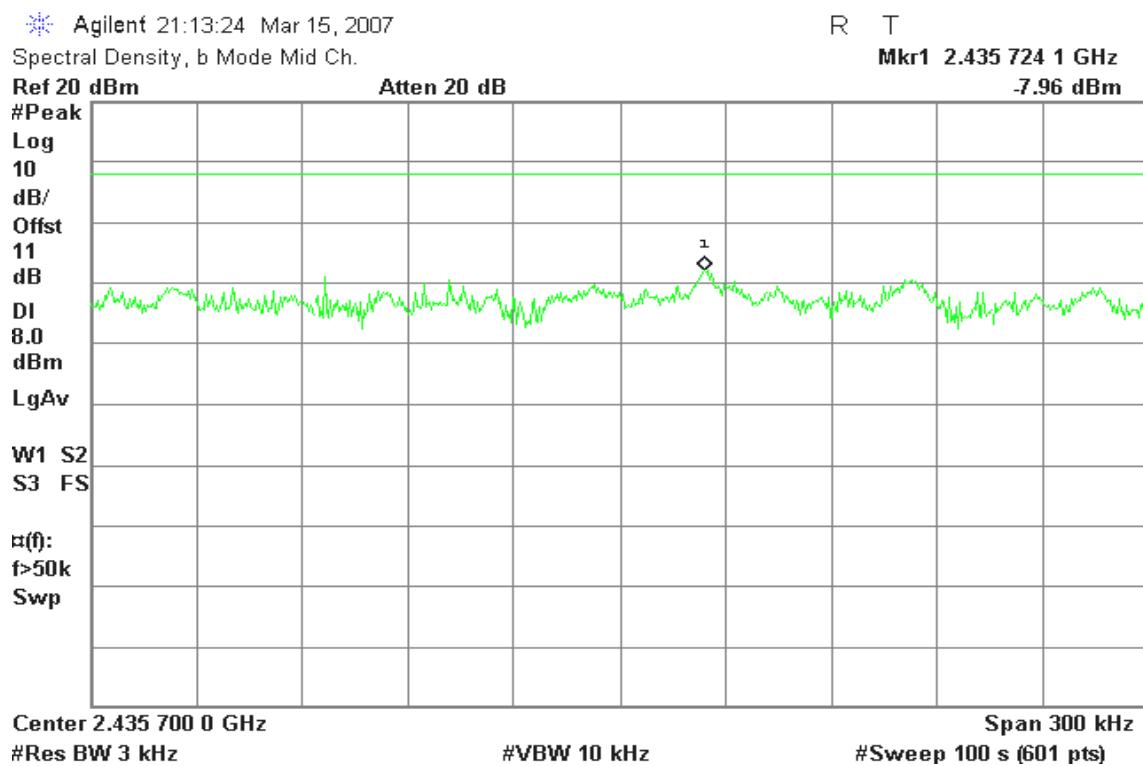
Test Plot

IEEE 802.11b mode / Chain 0

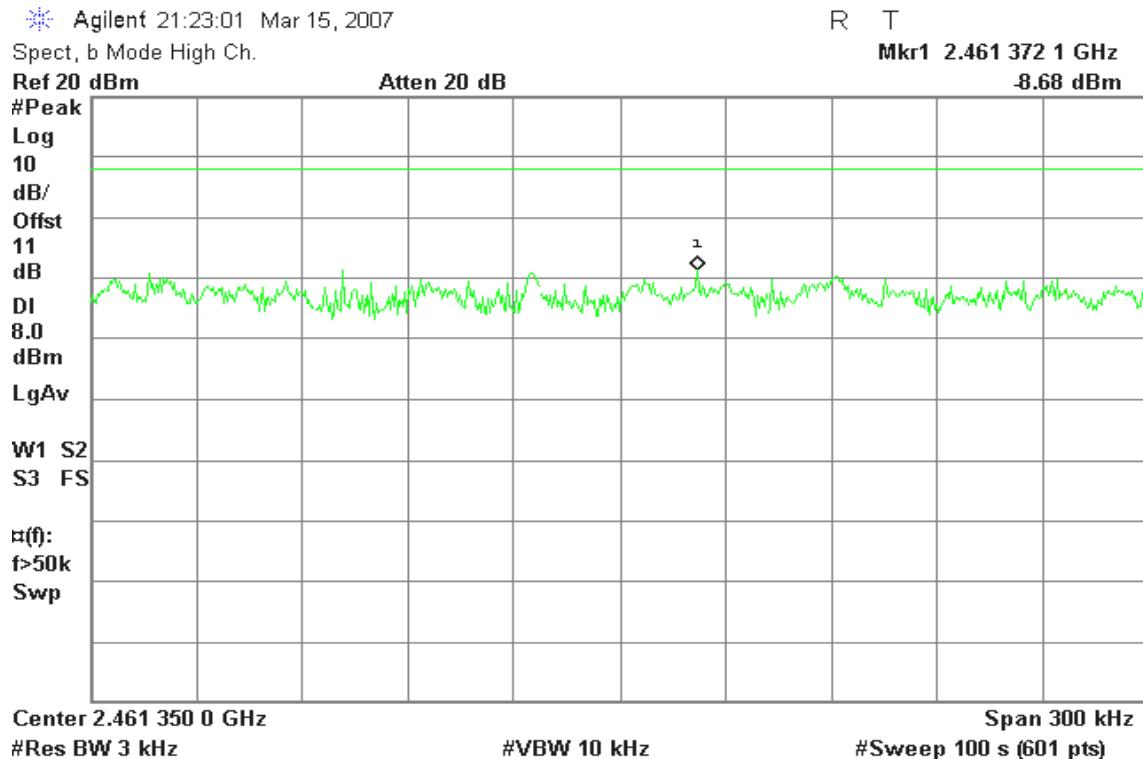
PPSD (CH Low)



PPSD (CH Mid)

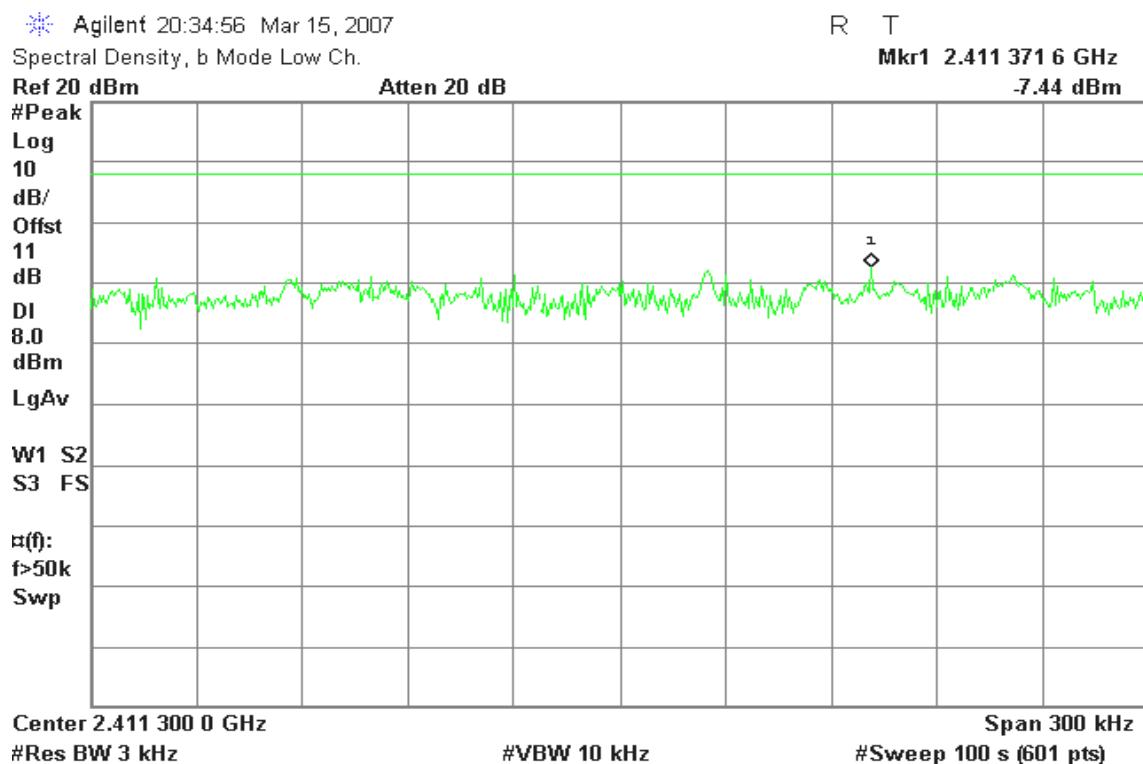


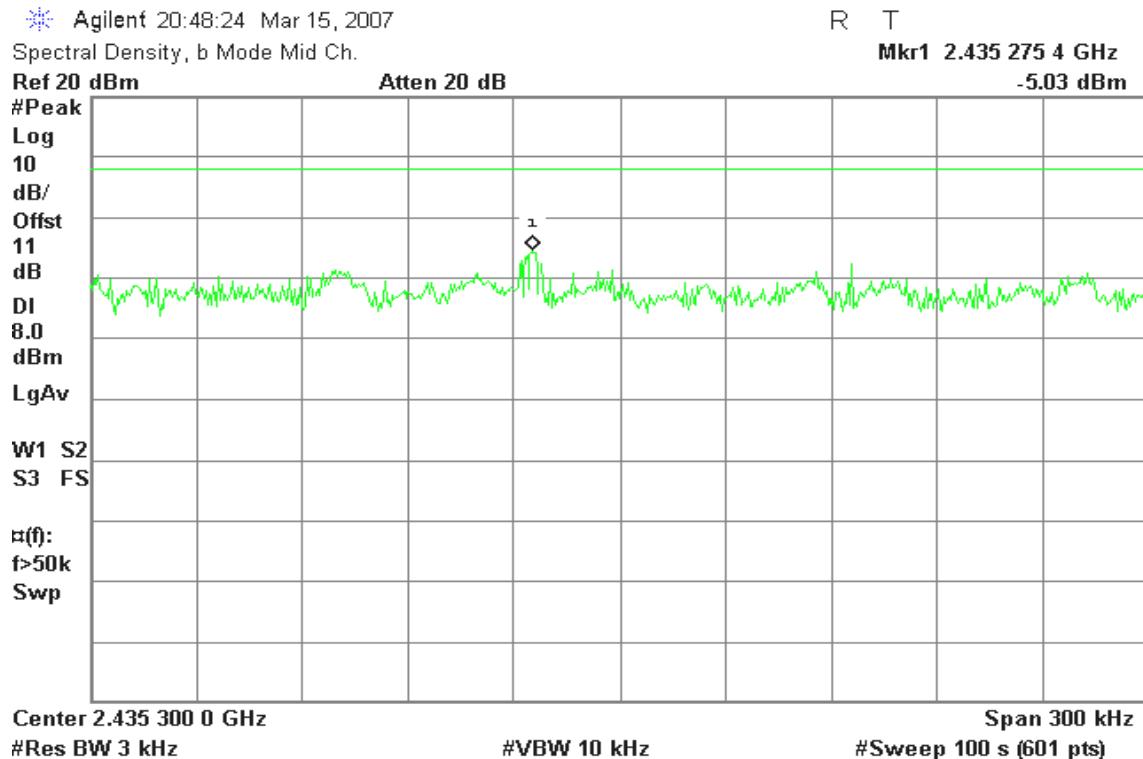
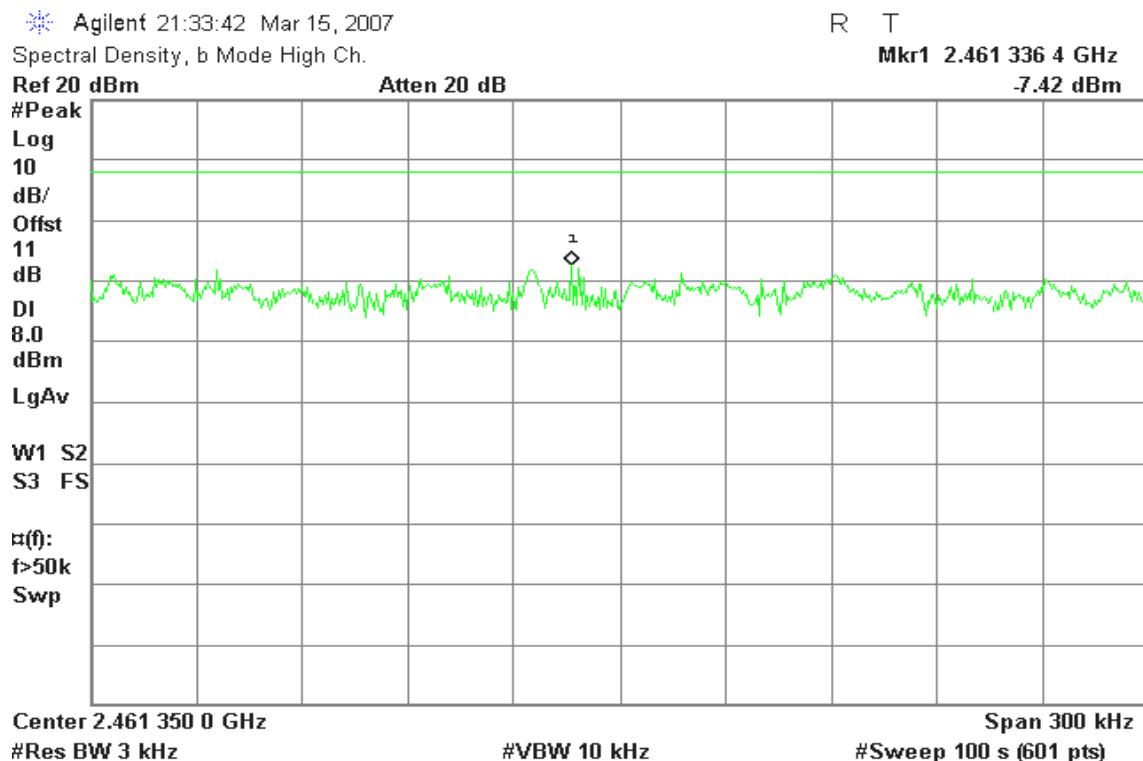
PPSD (CH High)



IEEE 802.11b mode / Chain 2

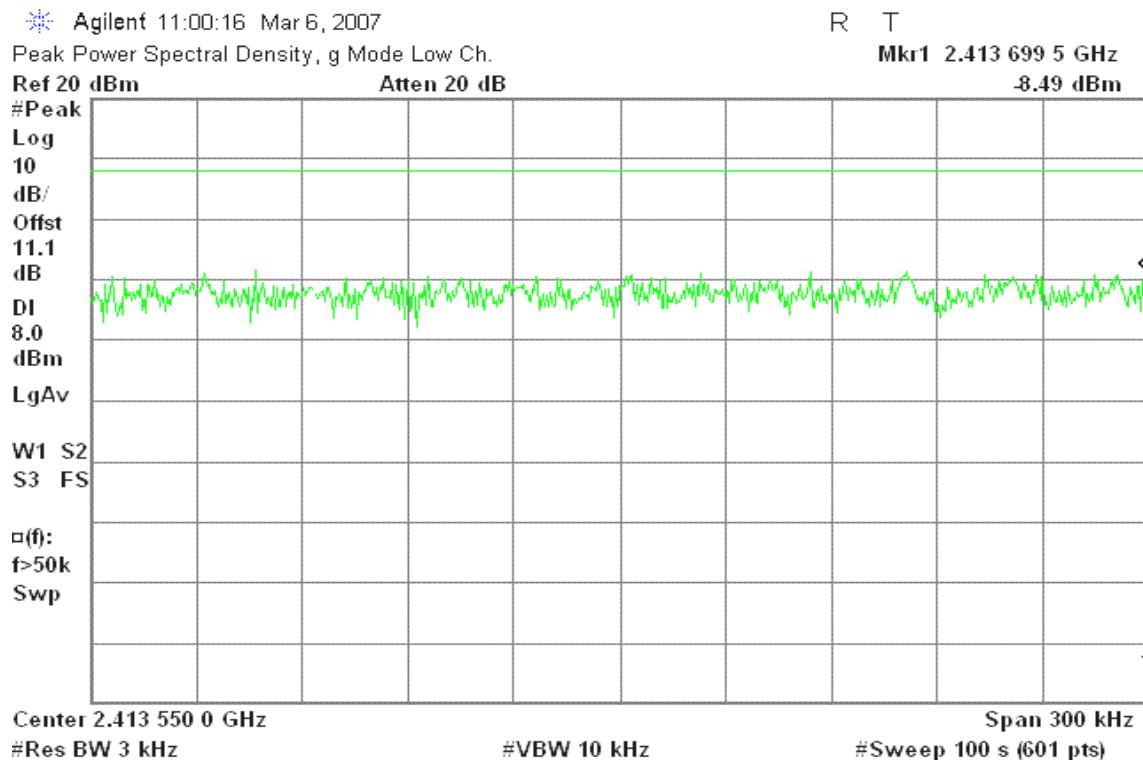
PPSD (CH Low)



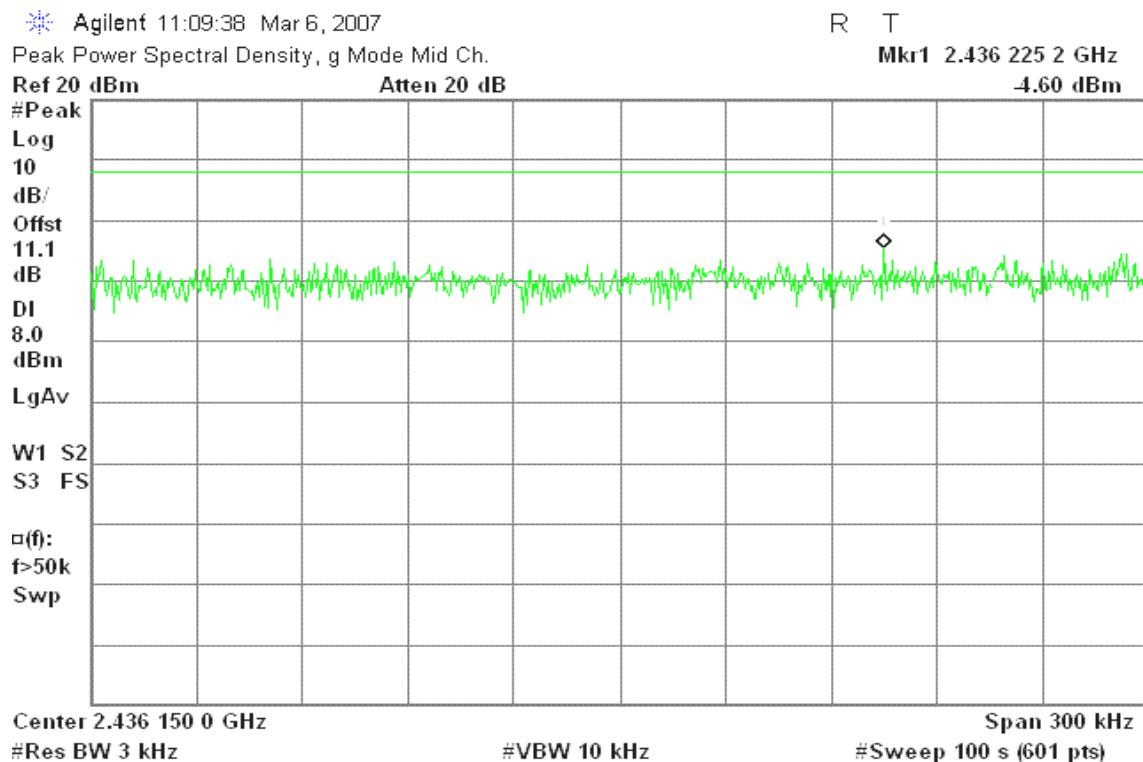
PPSD (CH Mid)**PPSD (CH High)**

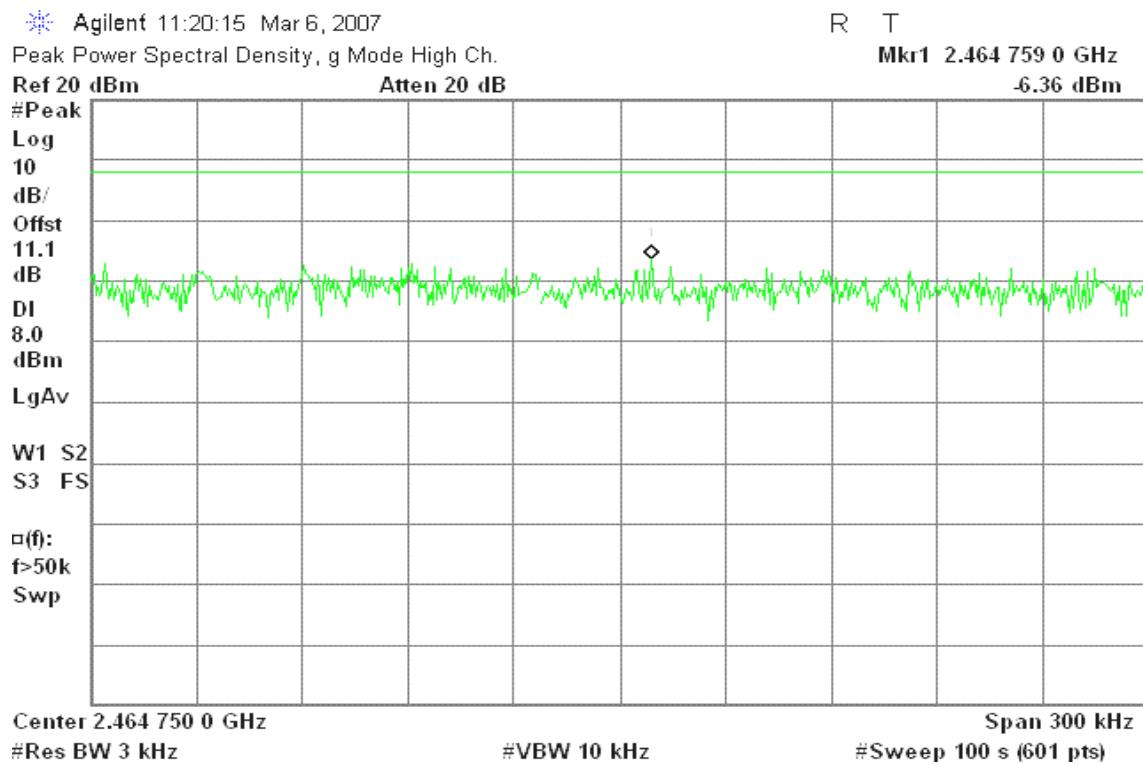
IEEE 802.11g mode

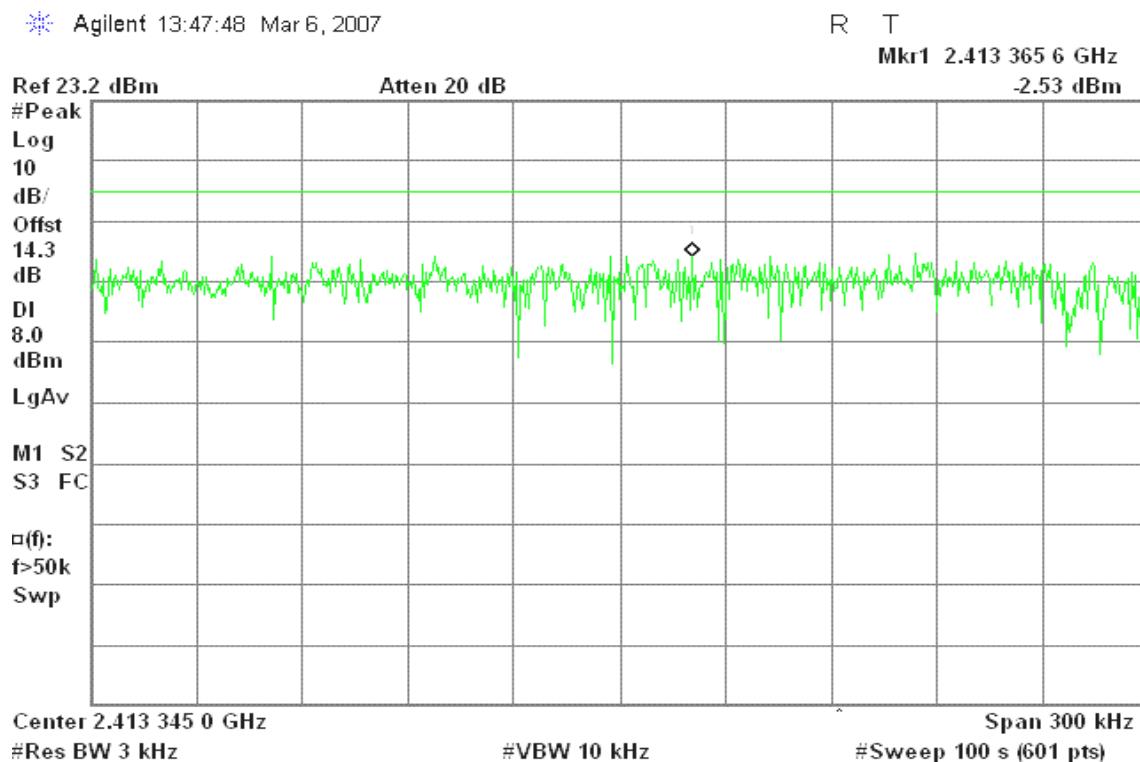
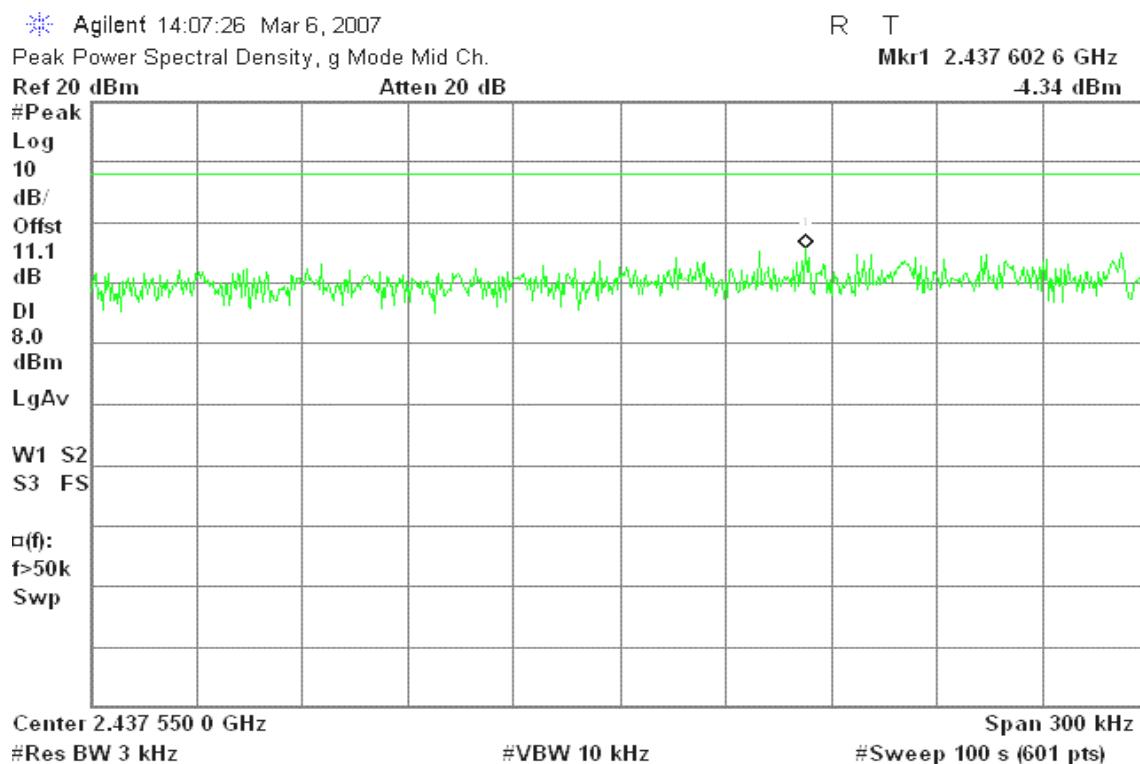
PPSD (CH Low)



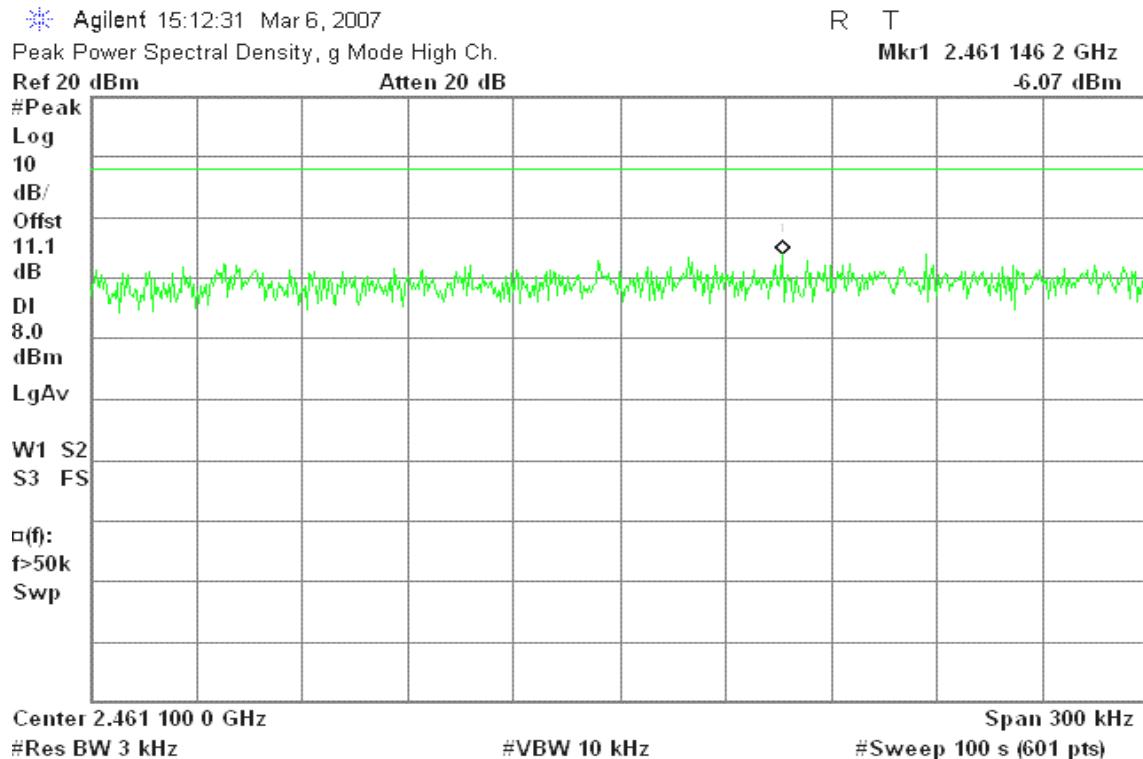
PPSD (CH Mid)



**PPSD (CH High)**

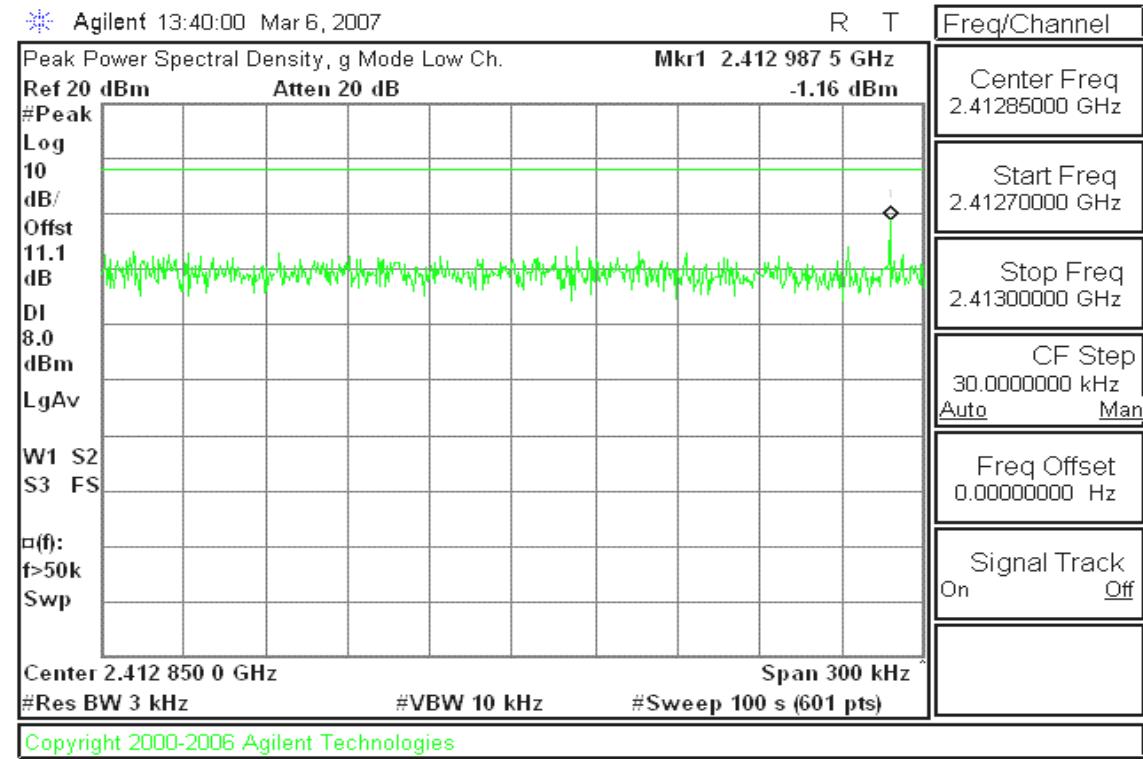
draft 802.11n Standard-20 MHz Channel mode / Chain 0**PPSD (CH Low)****PPSD (CH Mid)**

PPSD (CH High)

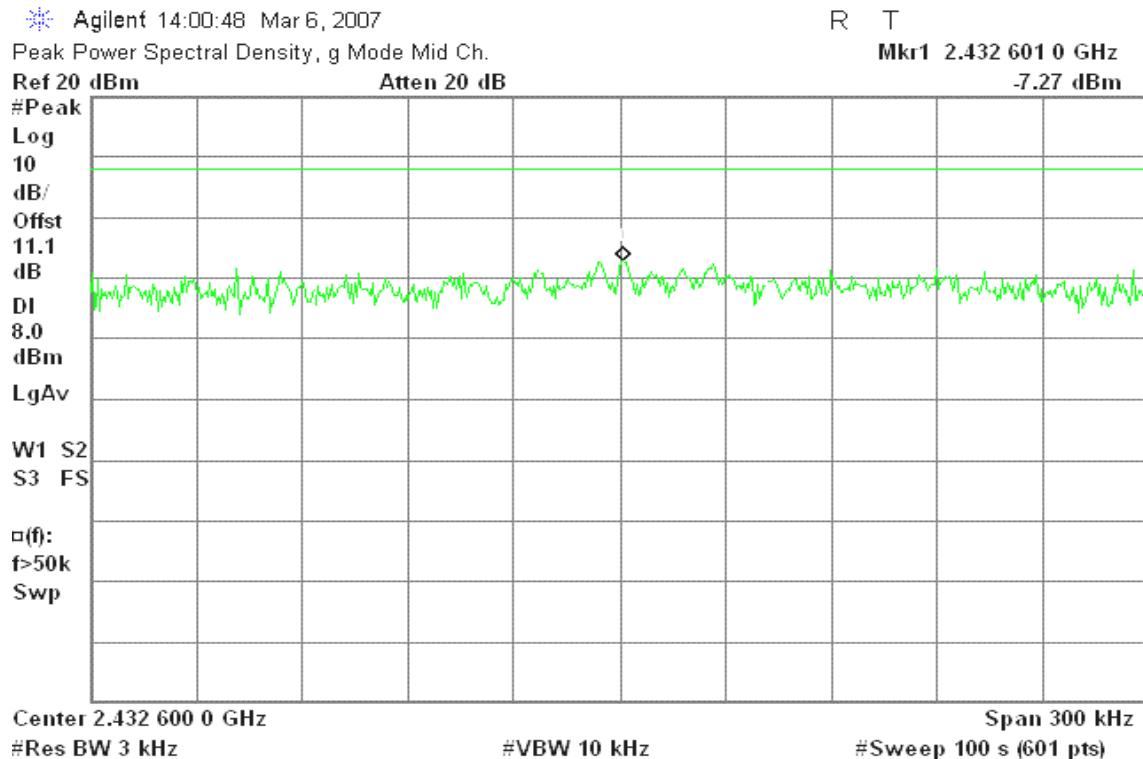


draft 802.11n Standard-20 MHz Channel mode / Chain 2

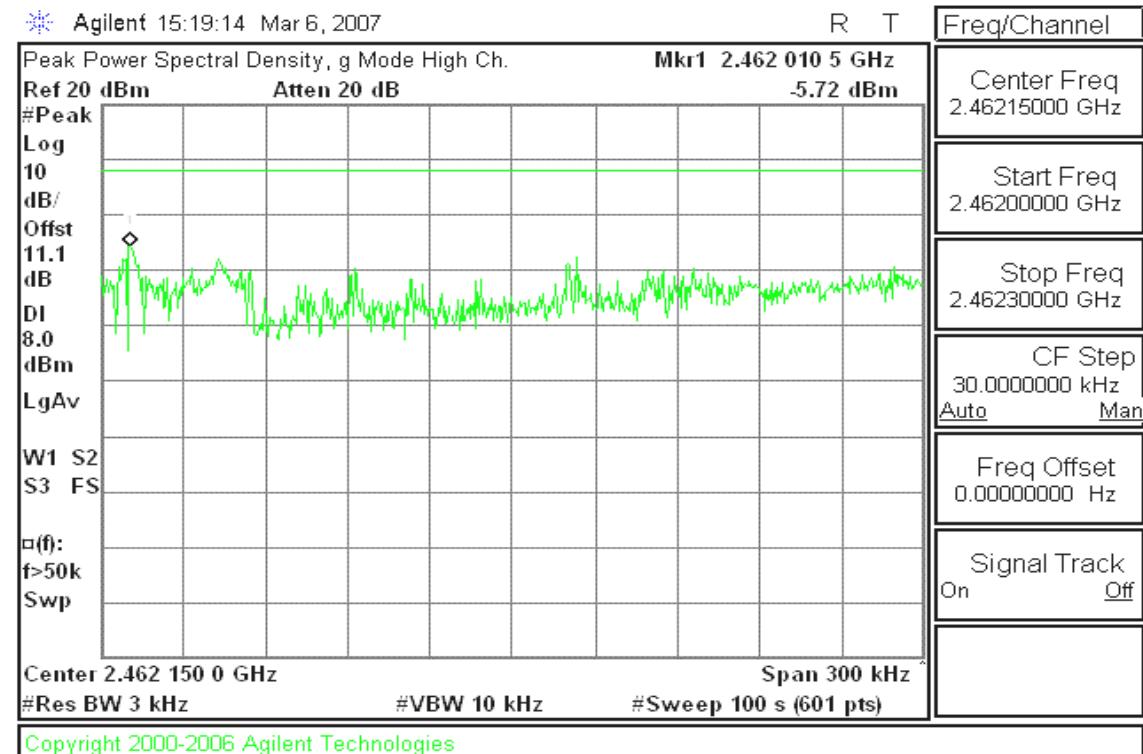
PPSD (CH Low)



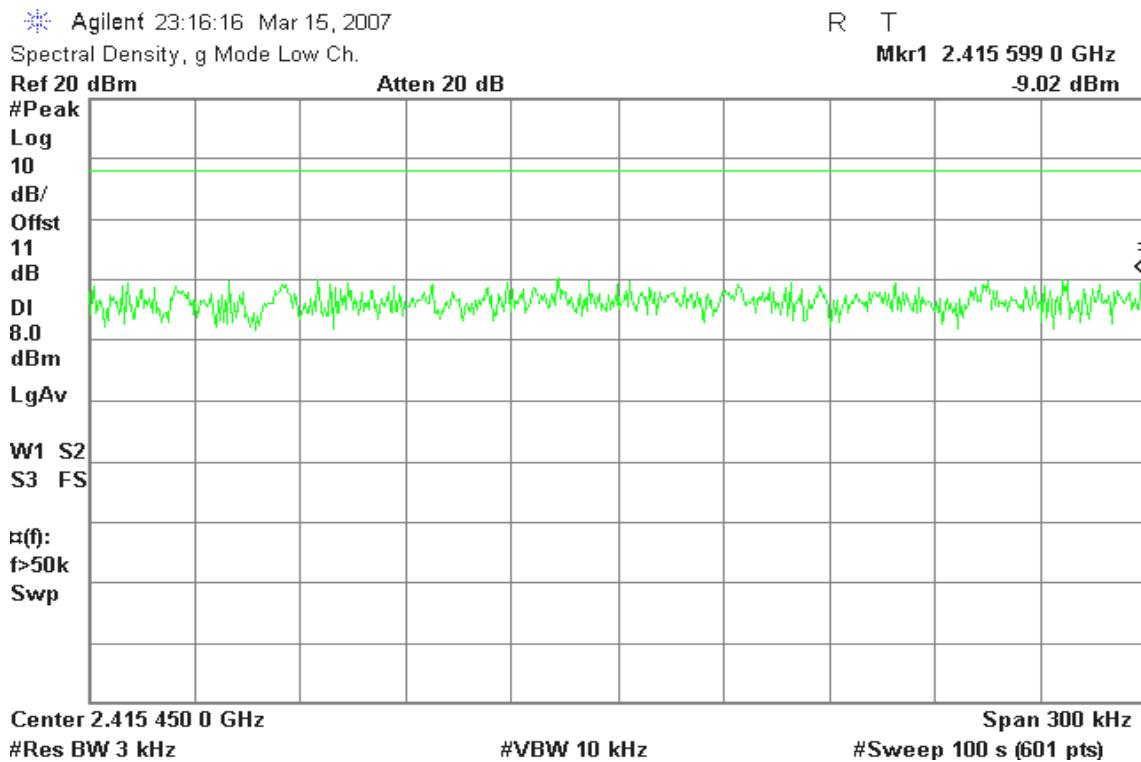
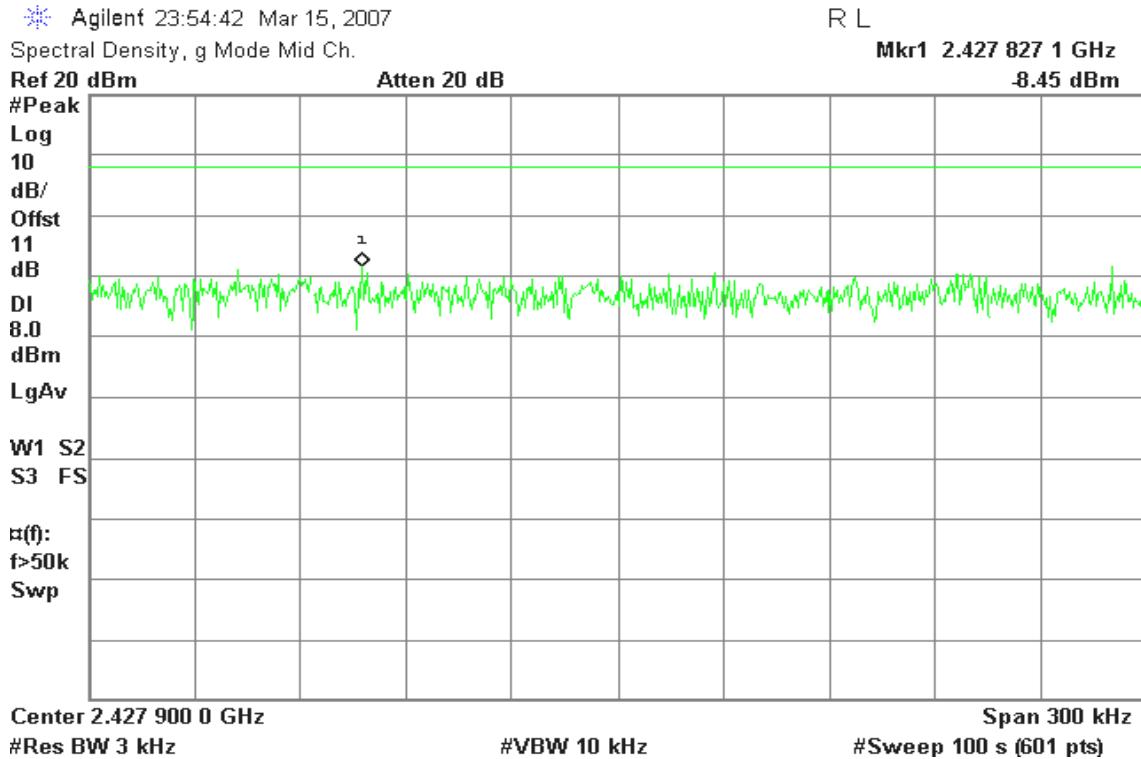
PPSD (CH Mid)



PPSD (CH High)

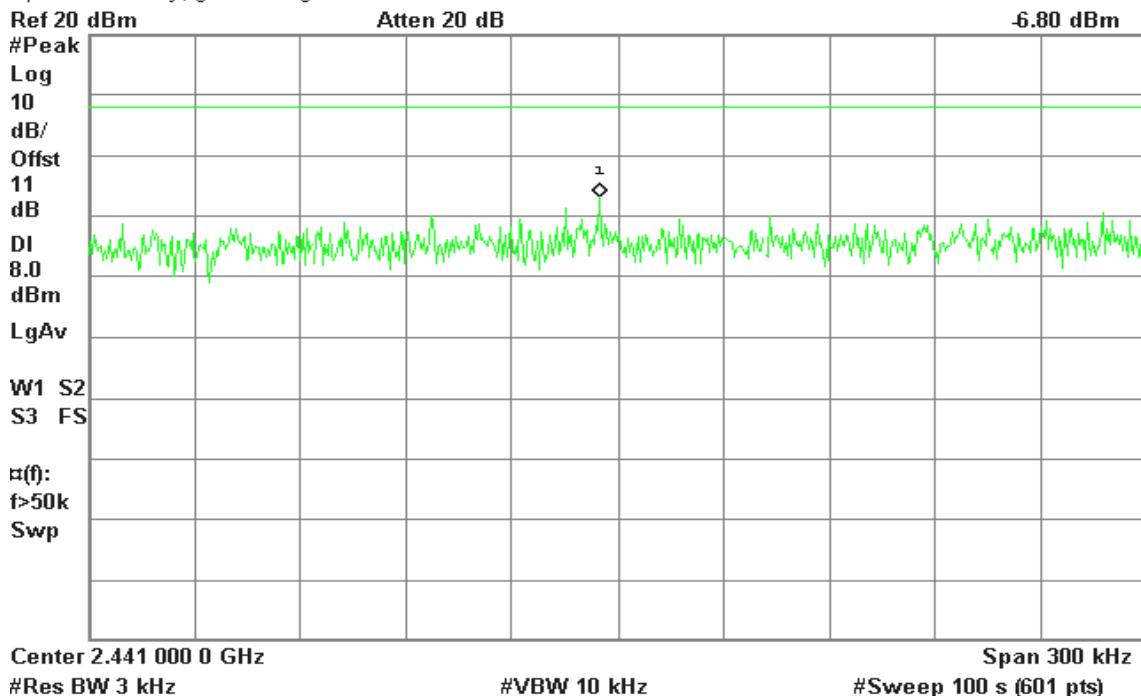


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draft 802.11n Wide-40 MHz Channel mode / Chain 0**PPSD (CH Low)****PPSD (CH Mid)**

* Agilent 00:02:45 Mar 16, 2007
Spectral Density, g Mode High Ch.

R T
Mkr1 2.440 994 5 GHz
-6.80 dBm

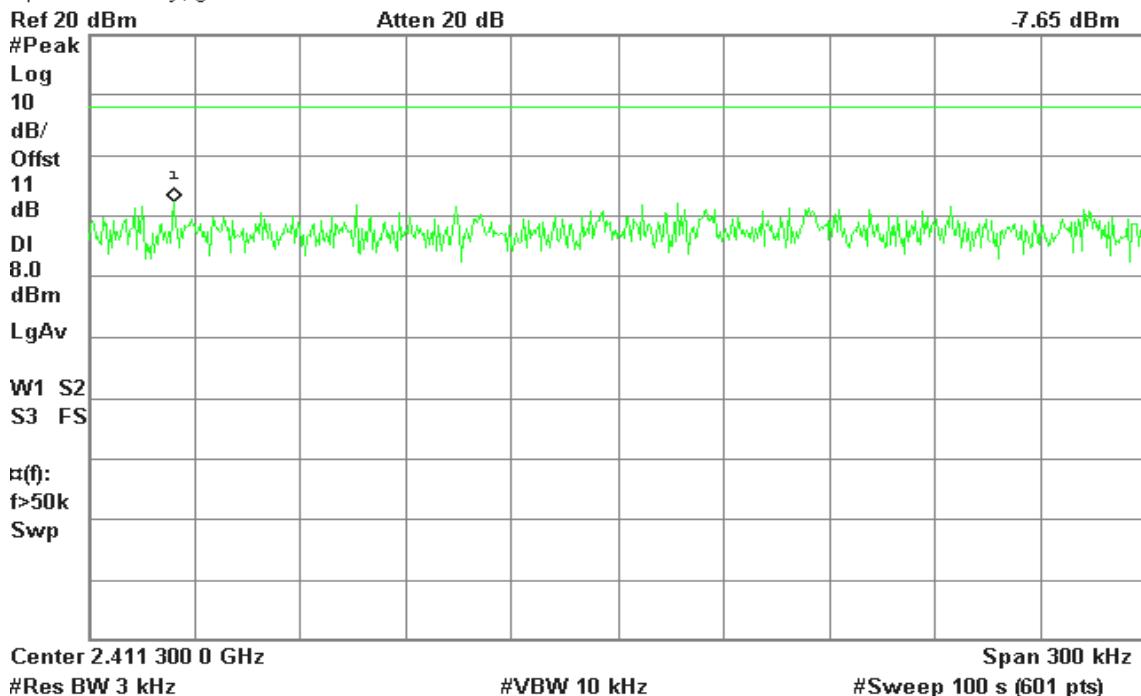


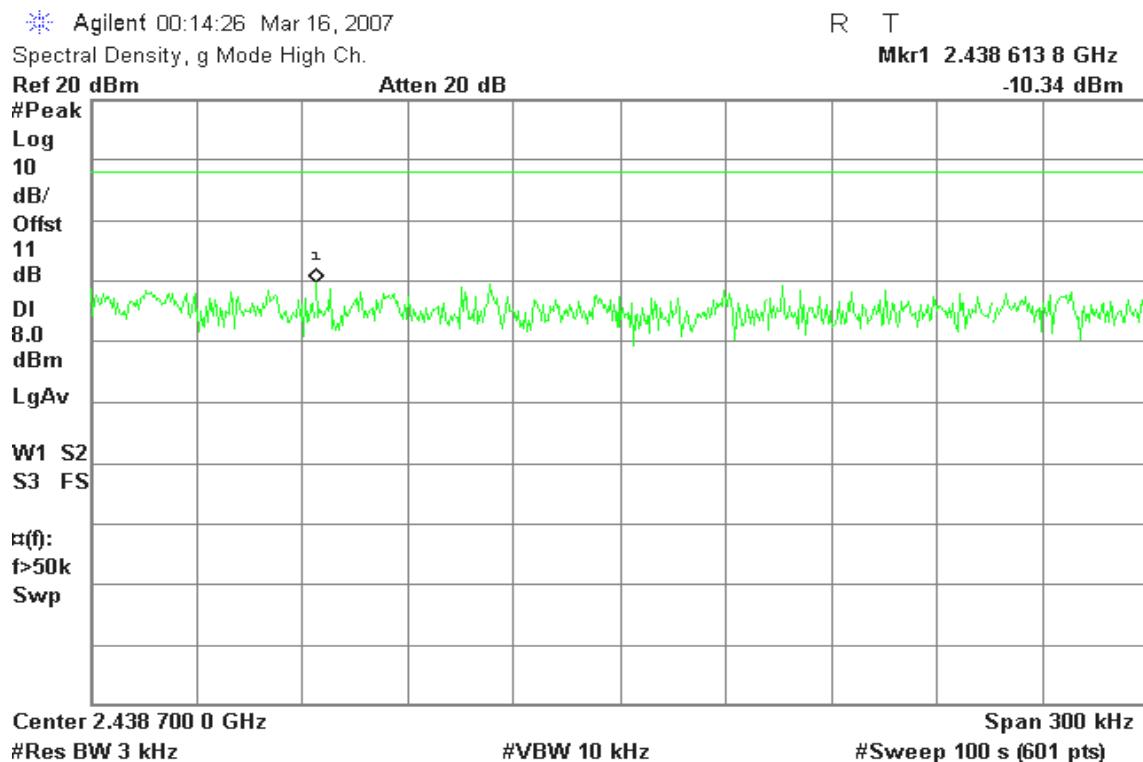
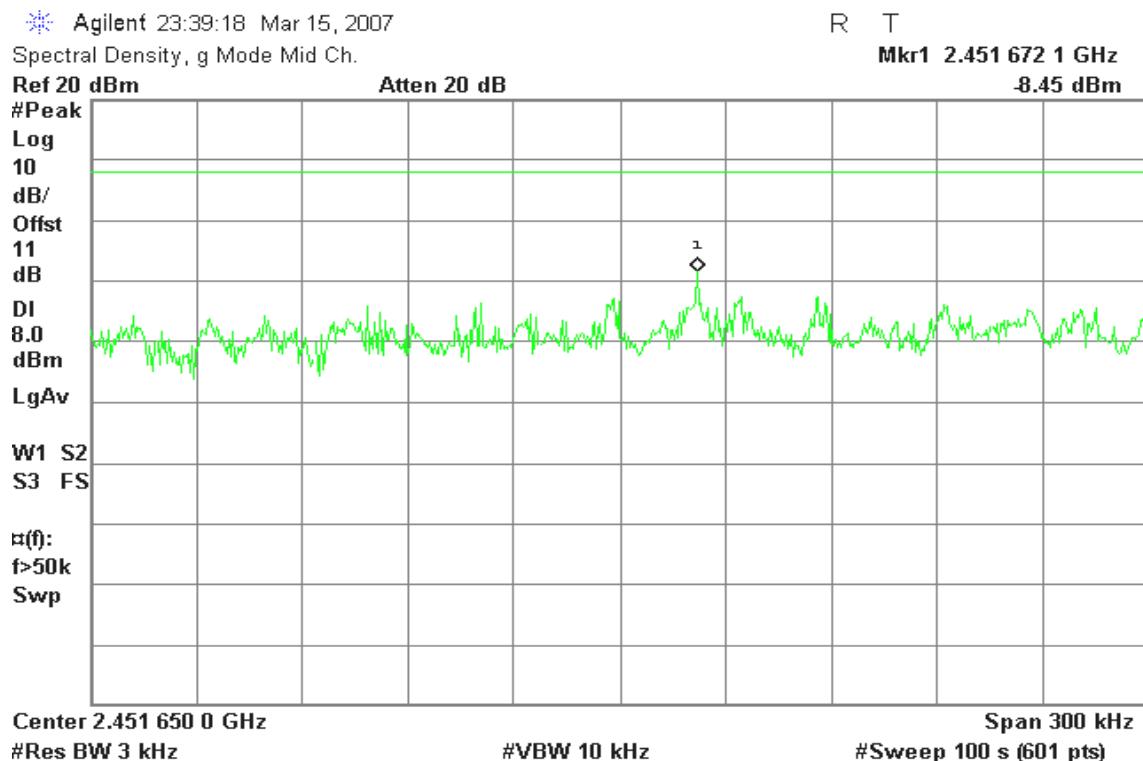
draft 802.11n Wide-40 MHz Channel mode / Chain 2

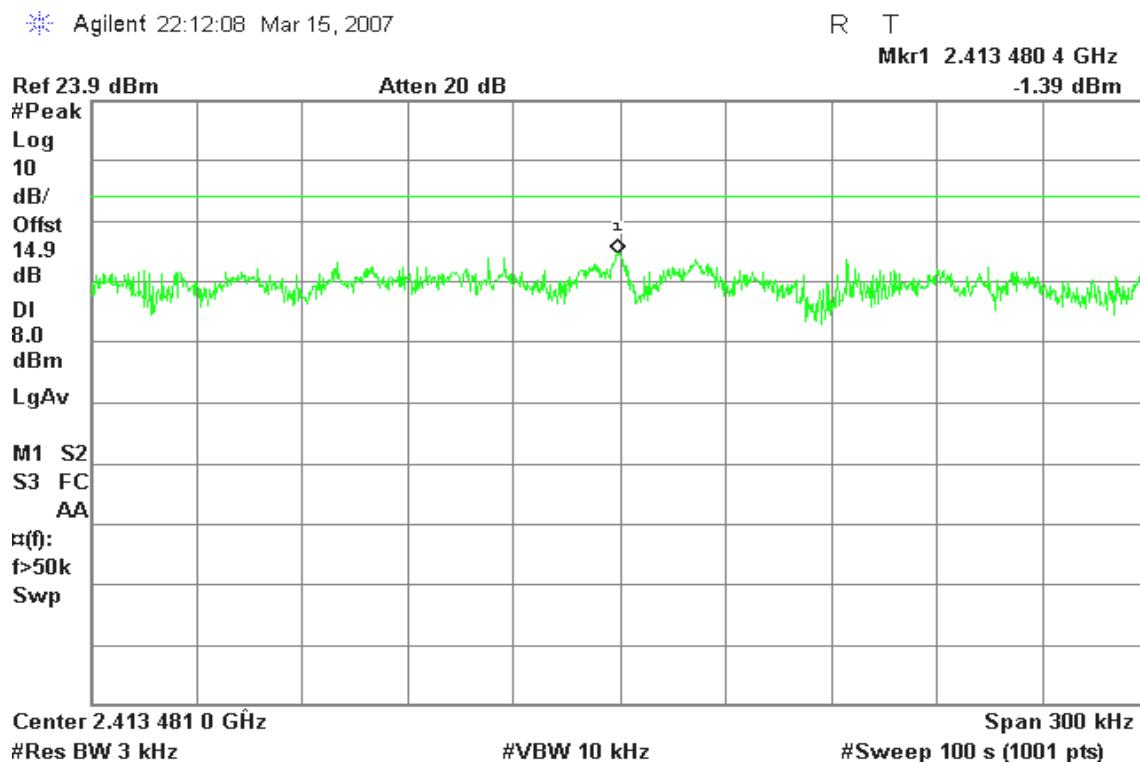
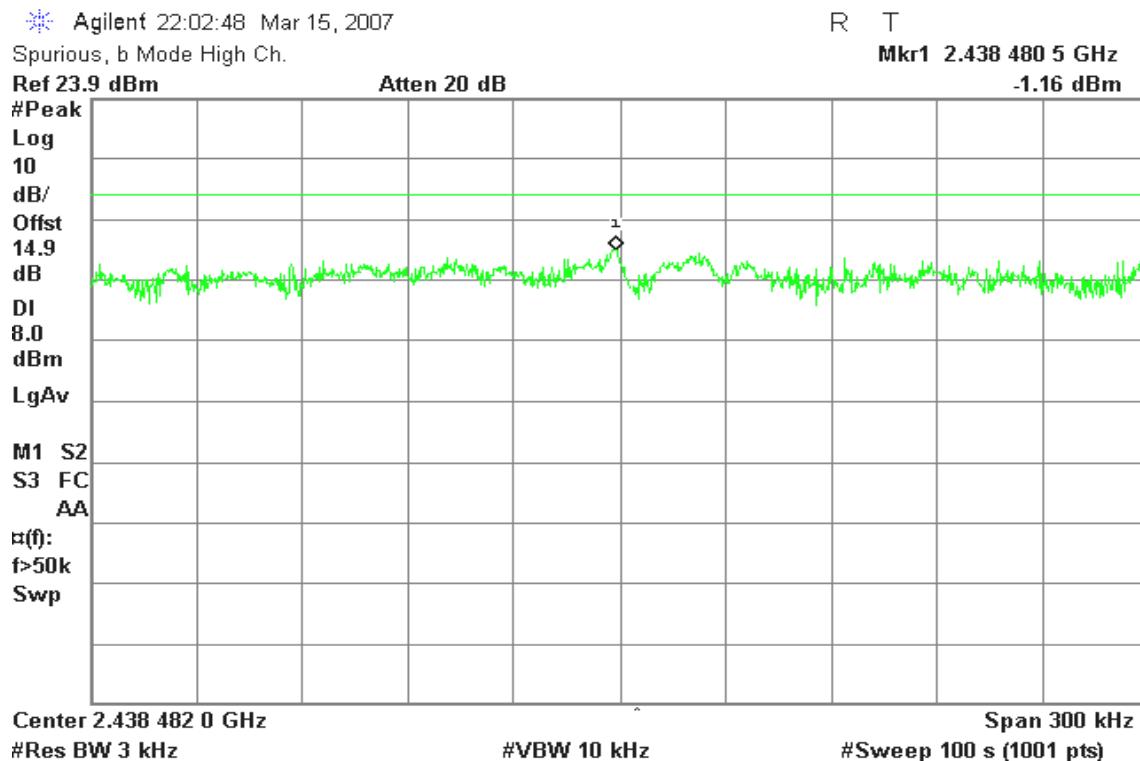
PPSD (CH Low)

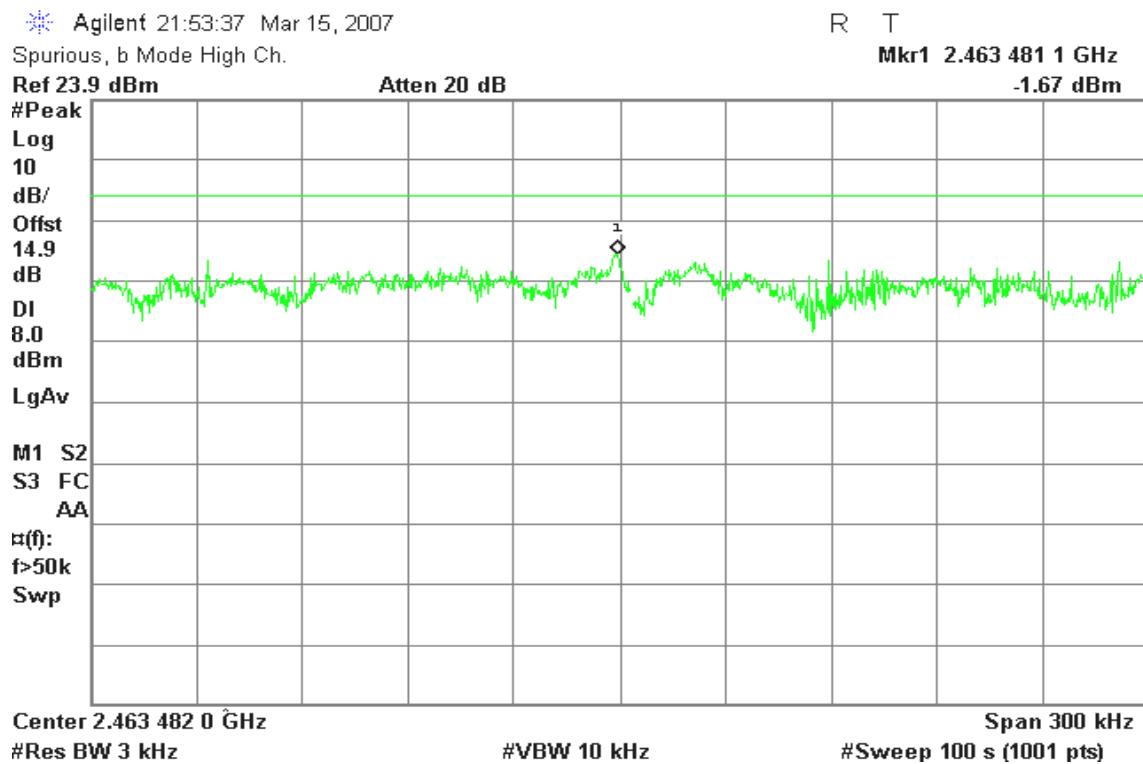
* Agilent 23:27:03 Mar 15, 2007
Spectral Density, g Mode Low Ch.

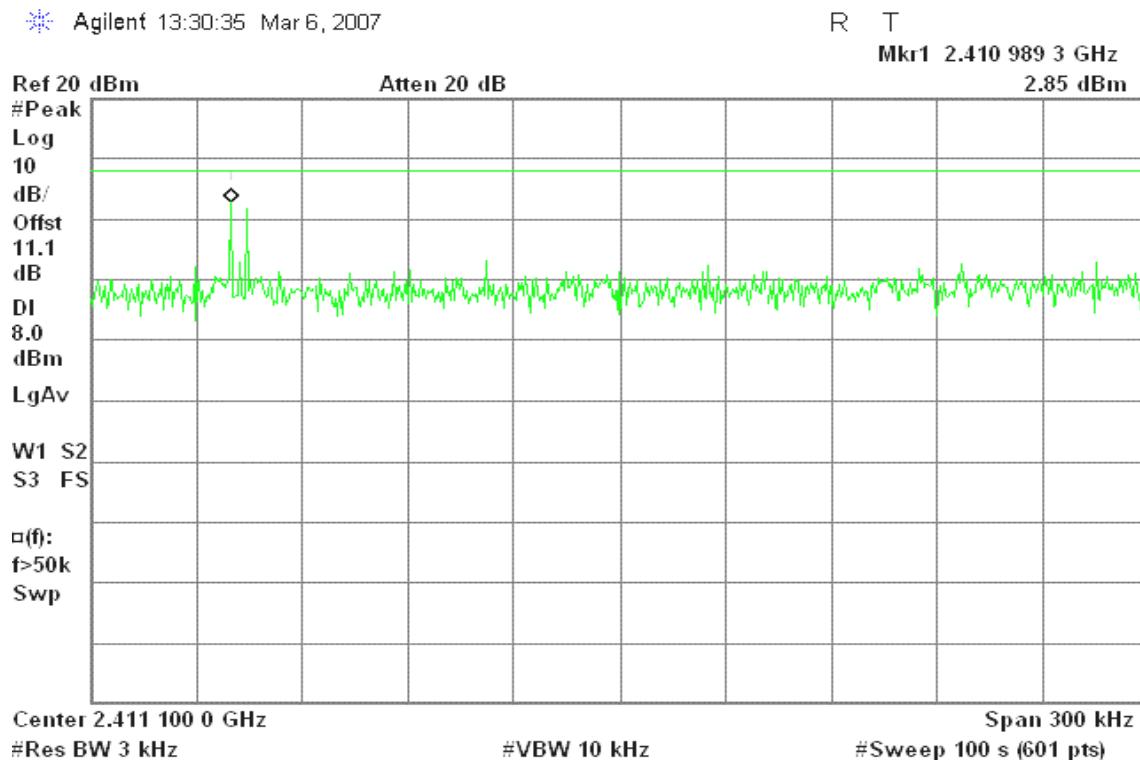
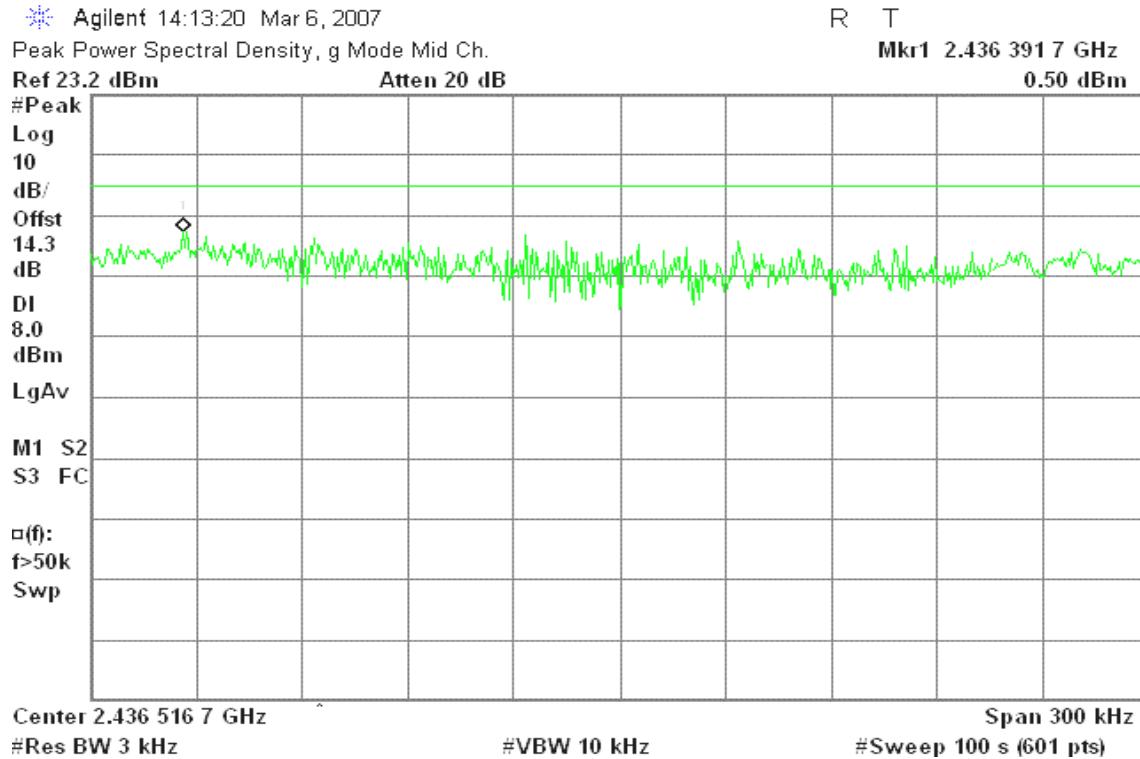
R L
Mkr1 2.411 173 1 GHz
-7.65 dBm



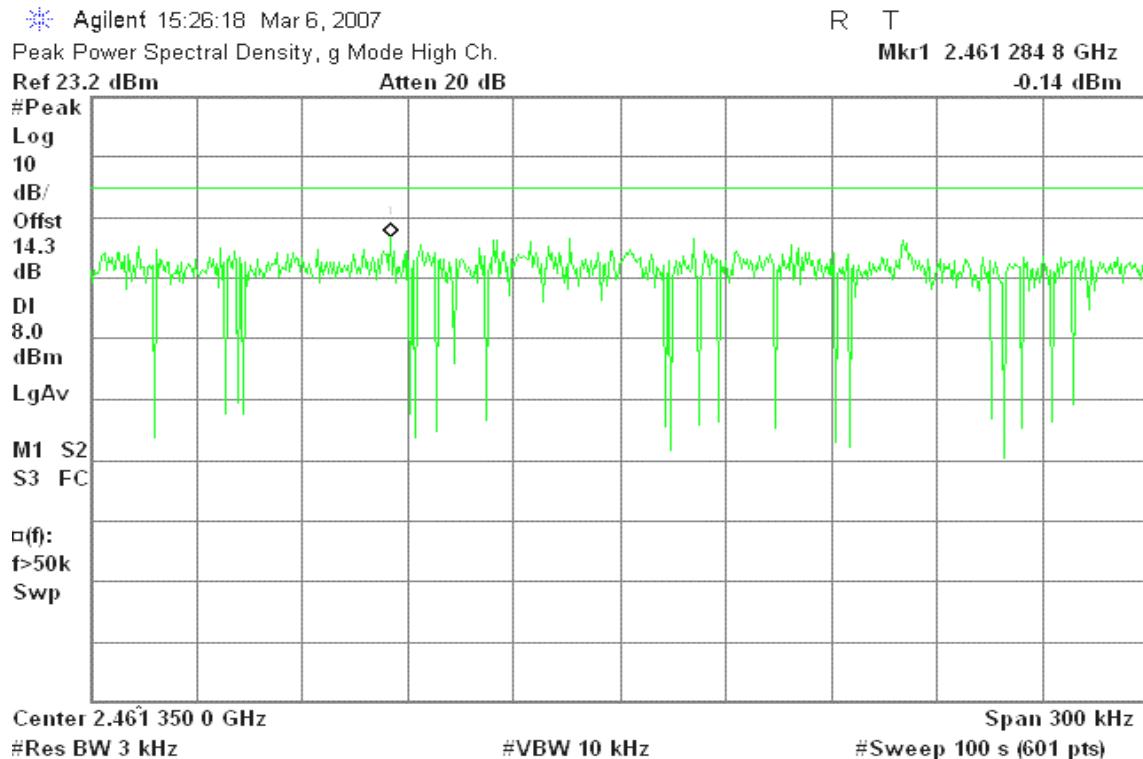
PPSD (CH Mid)**PPSD (CH High)**

IEEE 802.11b mode with combiner**PPSD (CH Low)****PPSD (CH Mid)**

PPSD (CH High)

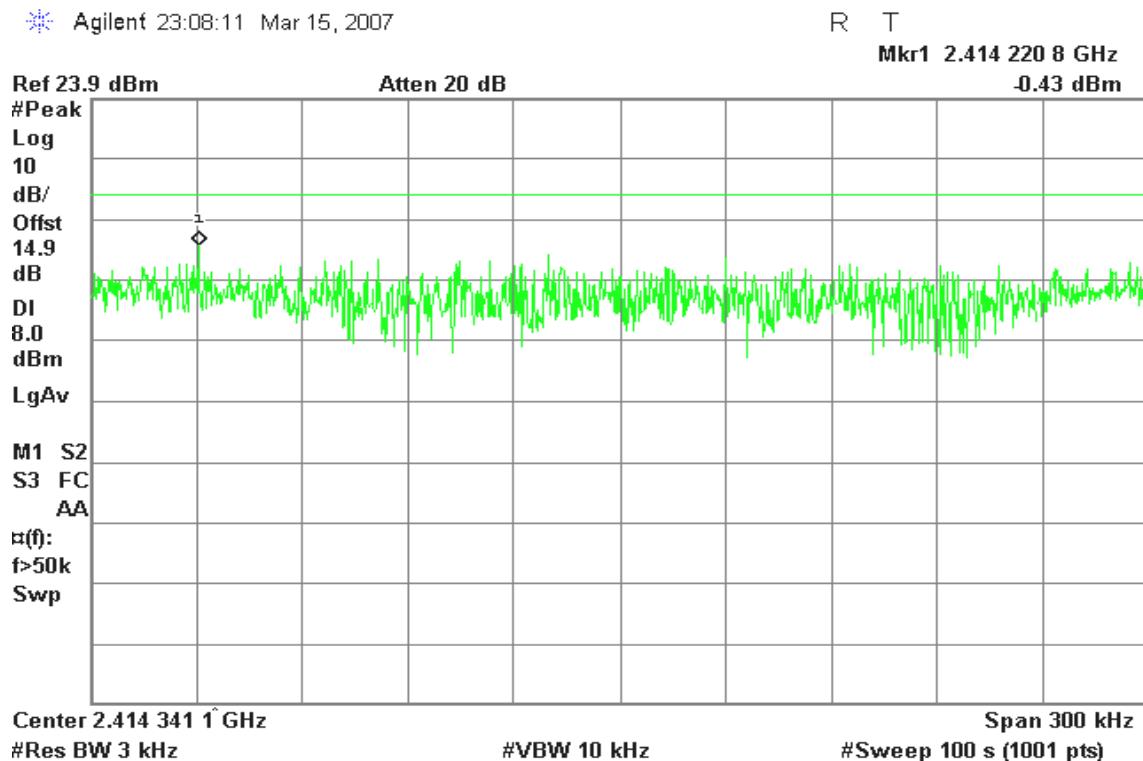
draft 802.11n Standard-20 MHz Channel mode with combiner**PPSD (CH Low)****PPSD (CH Mid)**

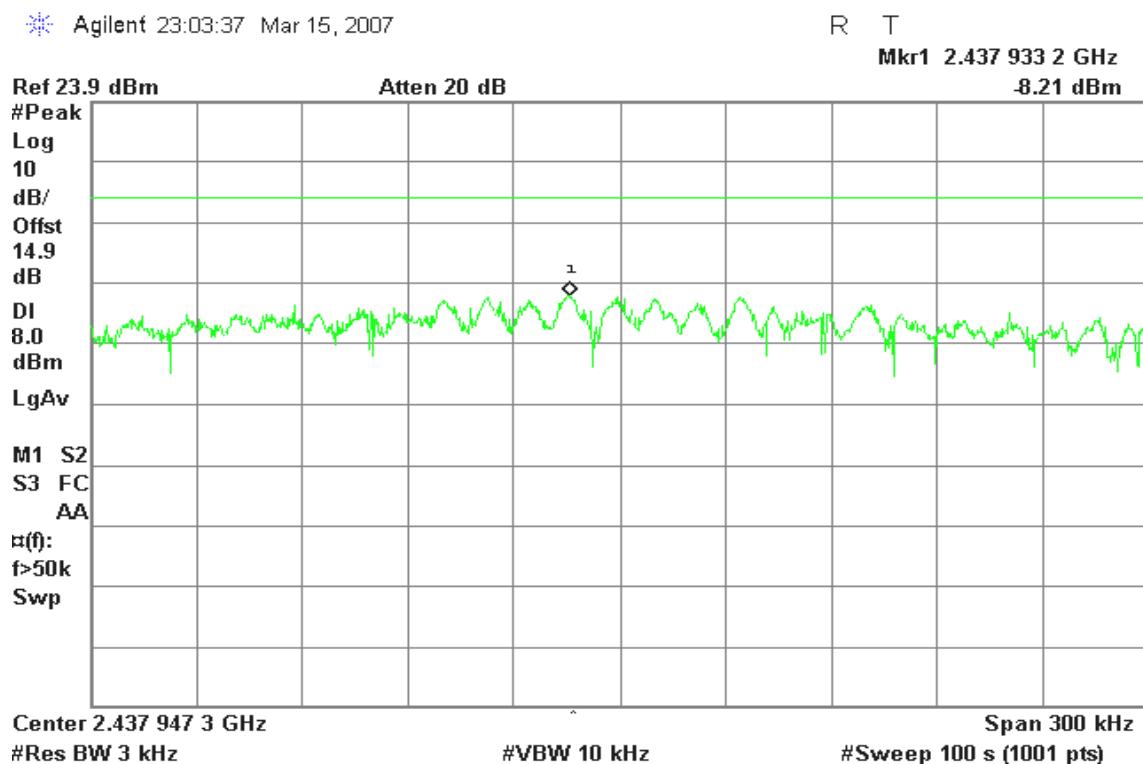
PPSD (CH High)



draft 802.11n Wide-40 MHz Channel mode with combiner

PPSD (CH Low)



PPSD (CH Mid)**PPSD (CH High)**

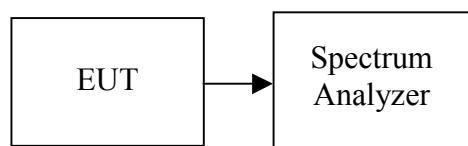
7.6 SPURIOUS EMISSIONS

7.6.1 Conducted Measurement

LIMIT

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands 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, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Test Configuration



TEST PROCEDURE

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

Measurements are made over the 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

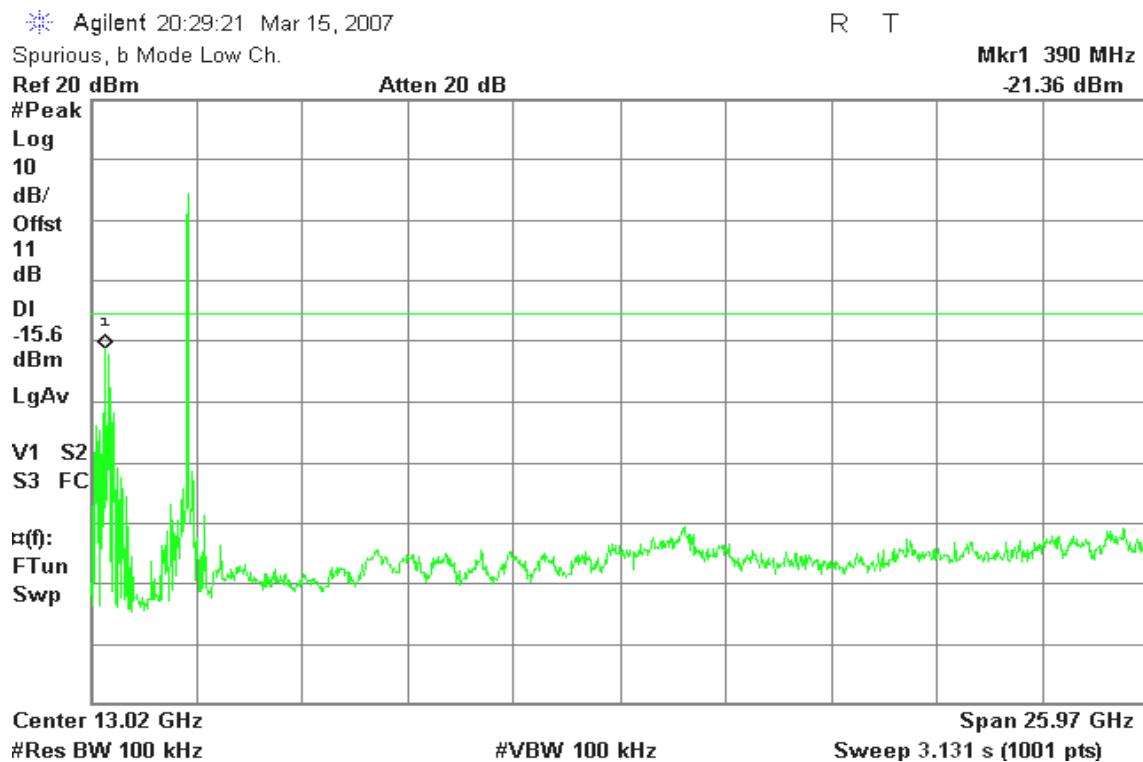
TEST RESULTS

No non-compliance noted

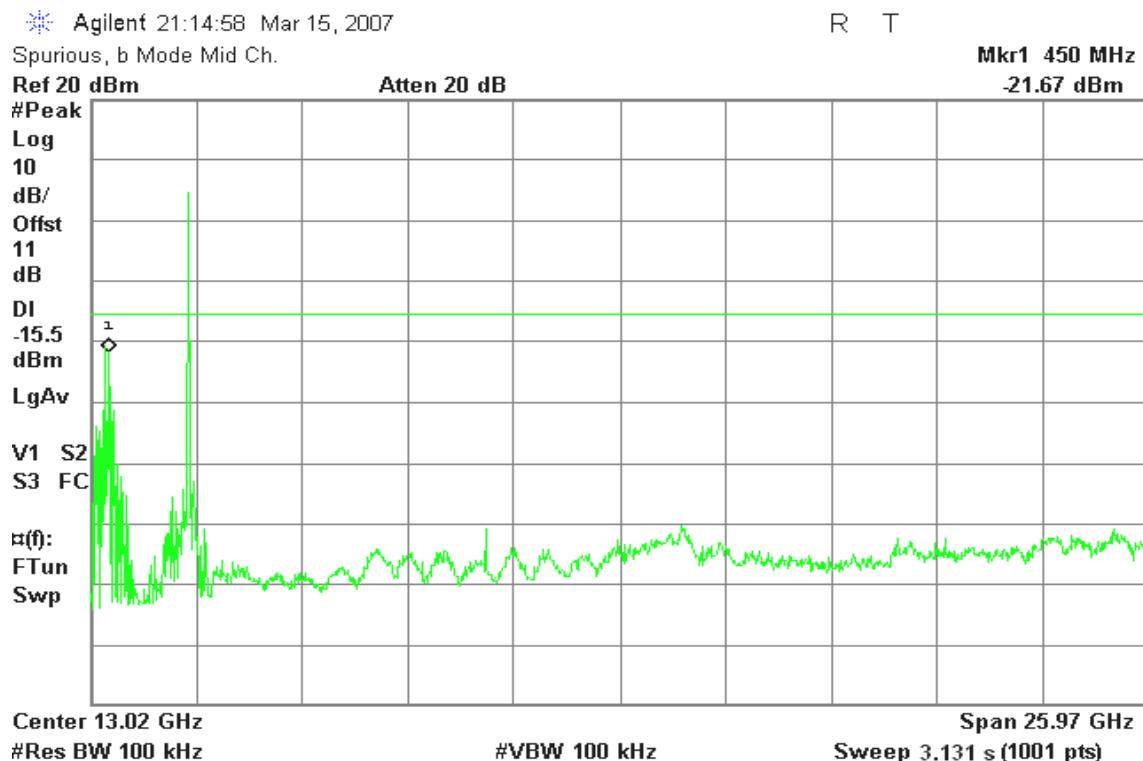
Test Plot

IEEE 802.11b mode / Chain 0

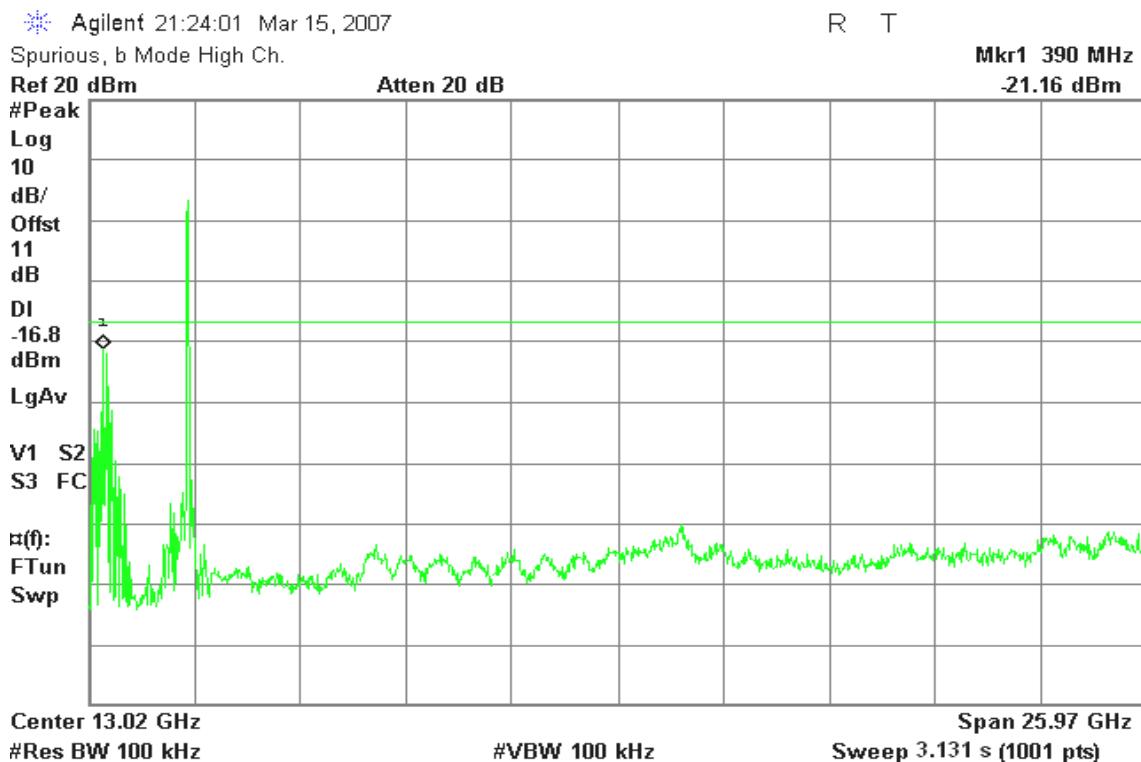
CH Low



CH Mid



CH High

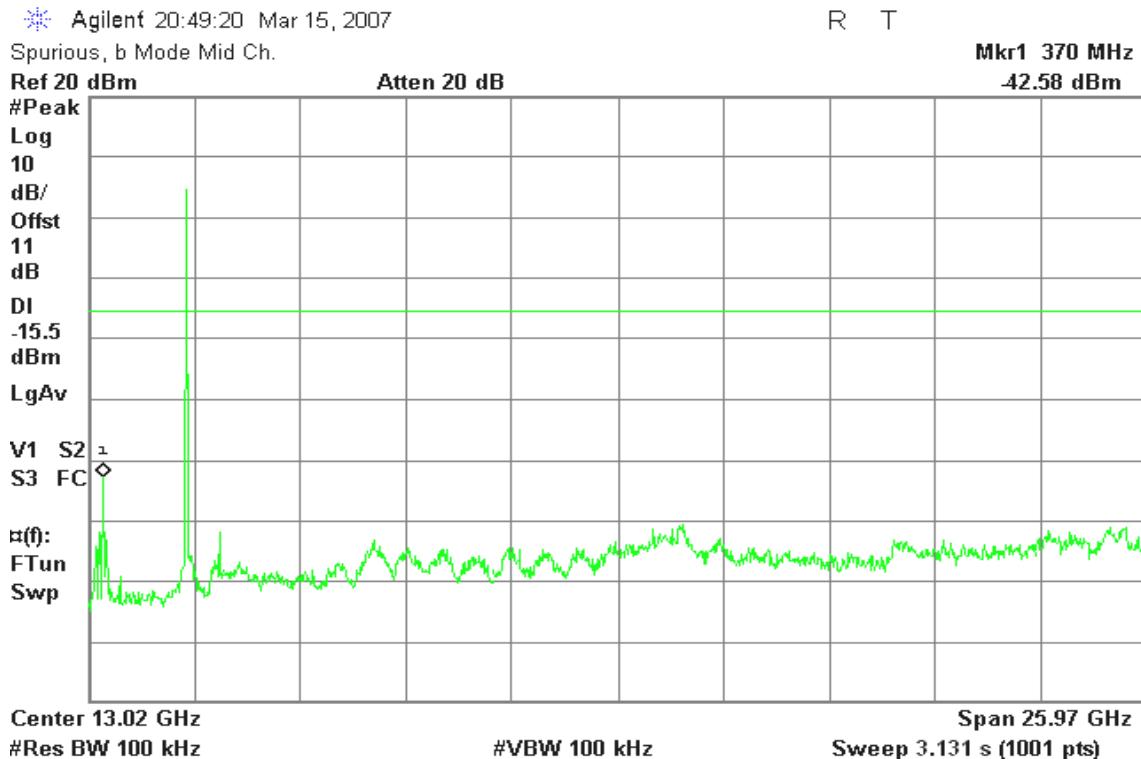


IEEE 802.11b mode / Chain 2

CH Low

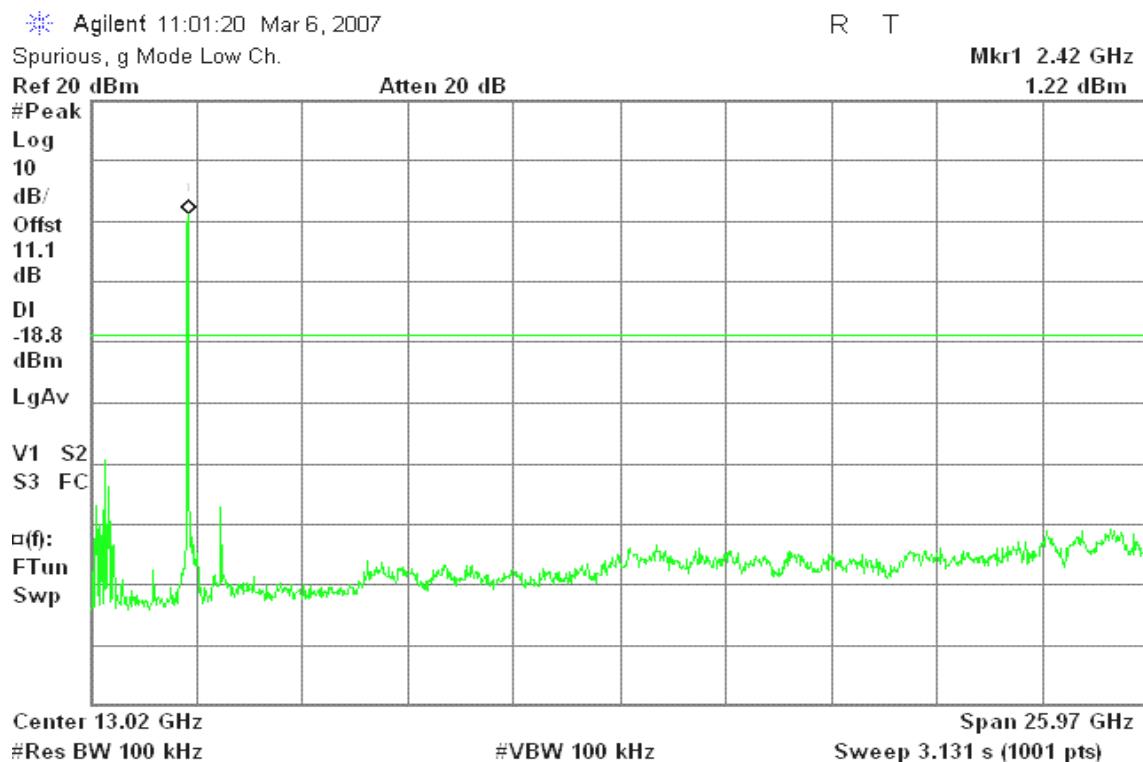
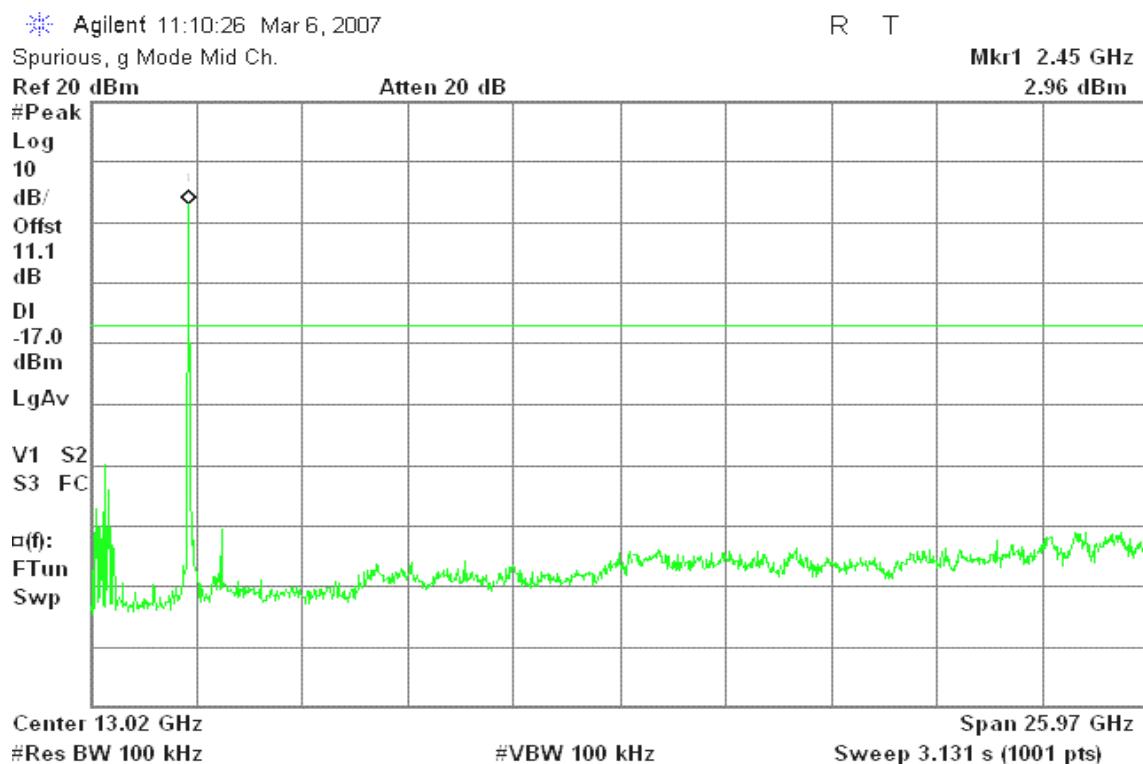


CH Mid

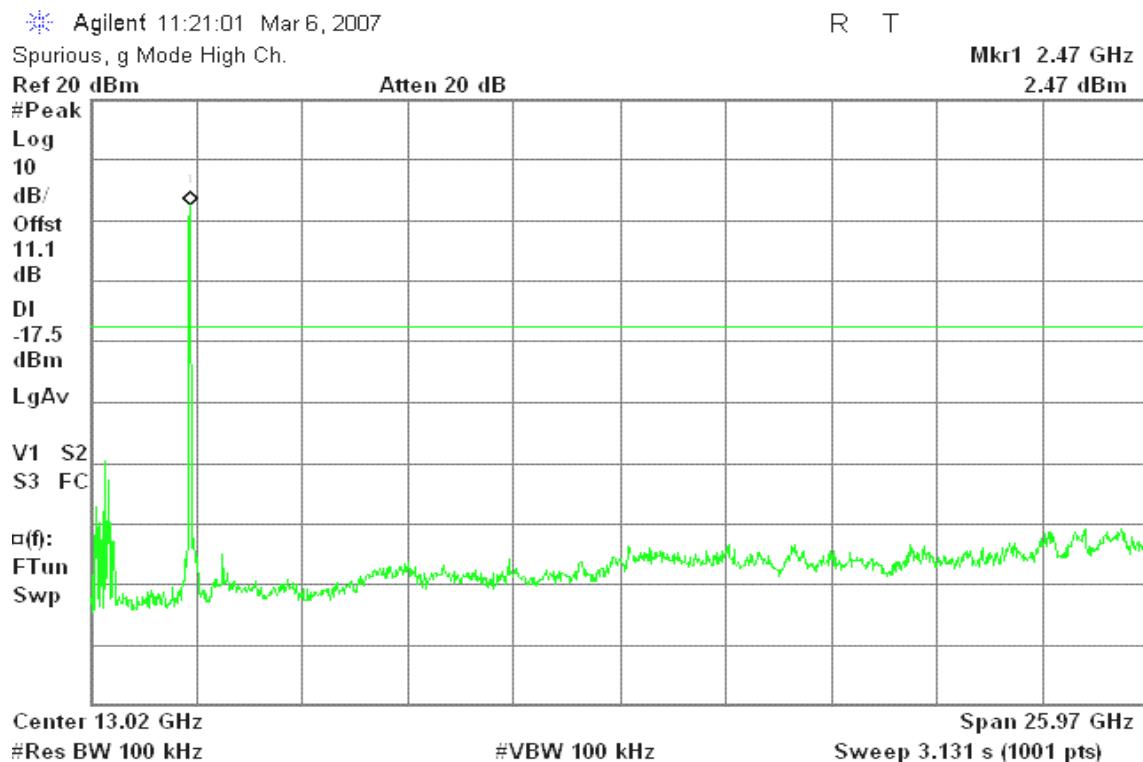


CH High



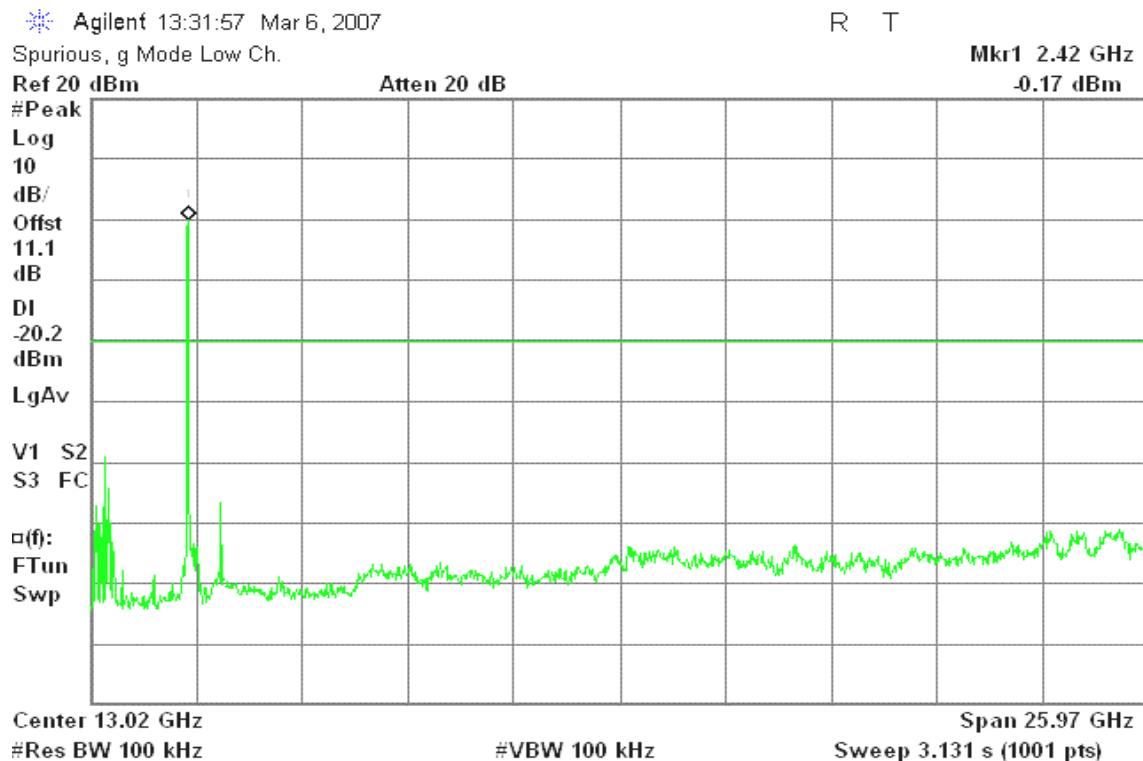
IEEE 802.11g**CH Low****CH Mid**

CH High

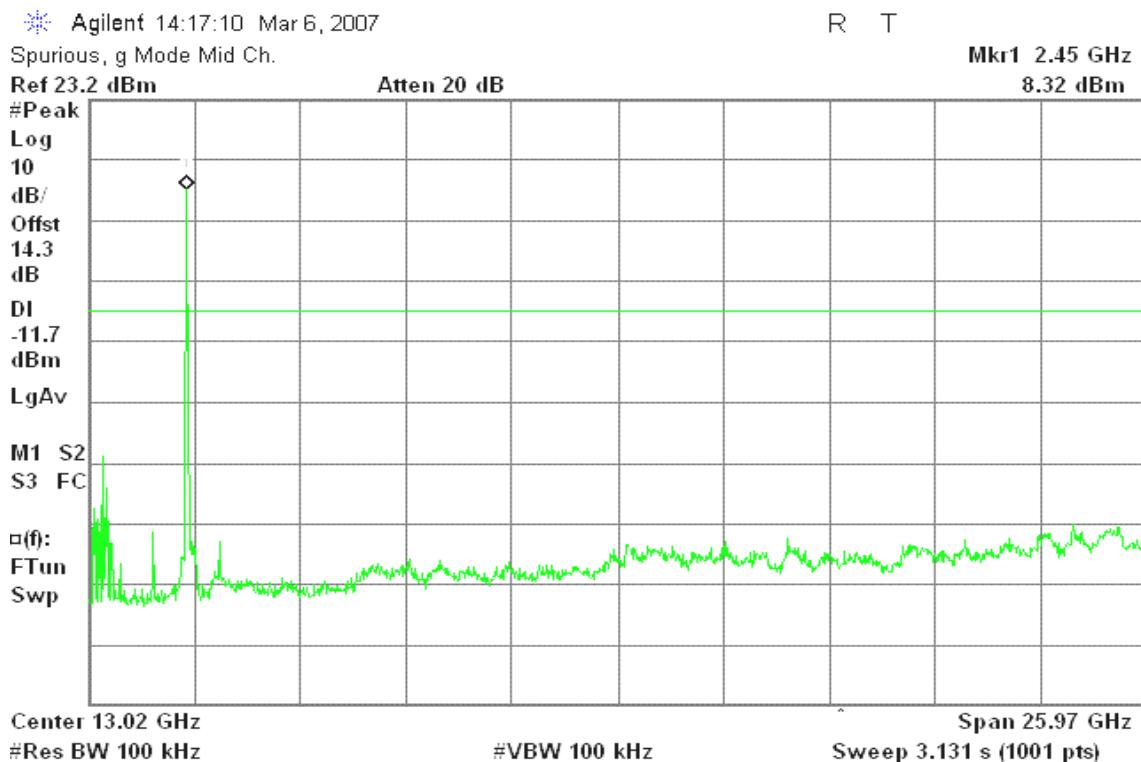


draft 802.11n Standard-20 MHz Channel mode / Chain 0

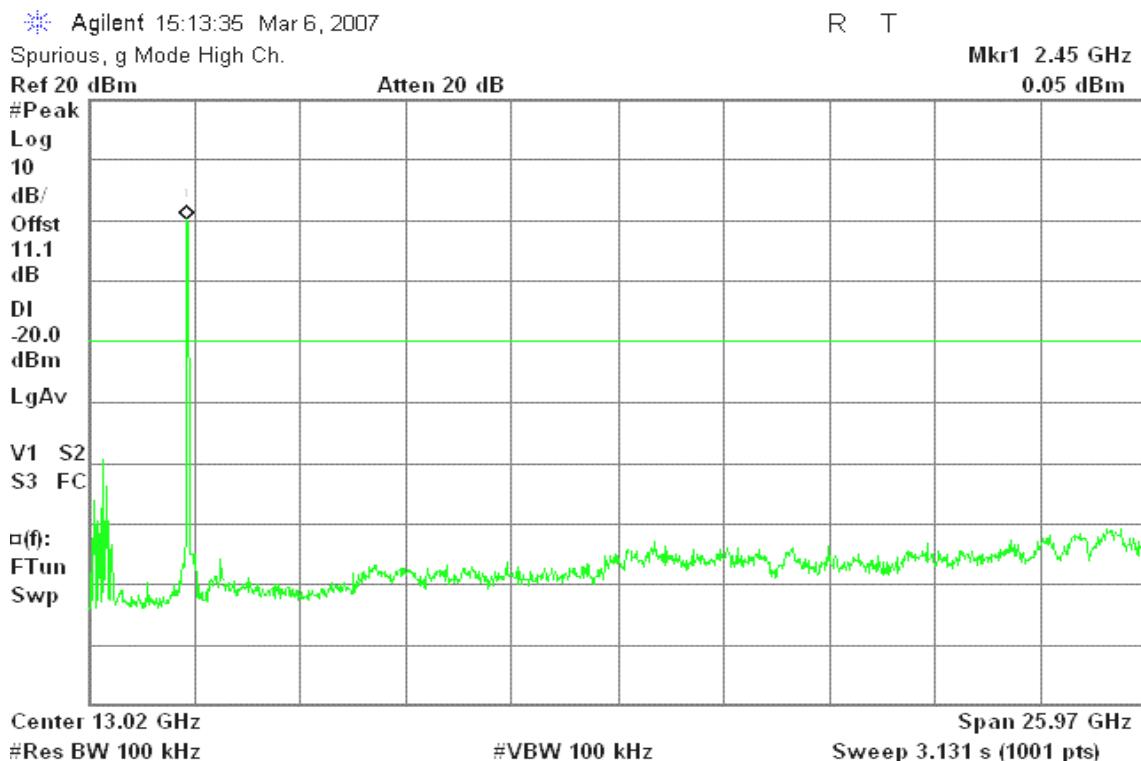
CH Low

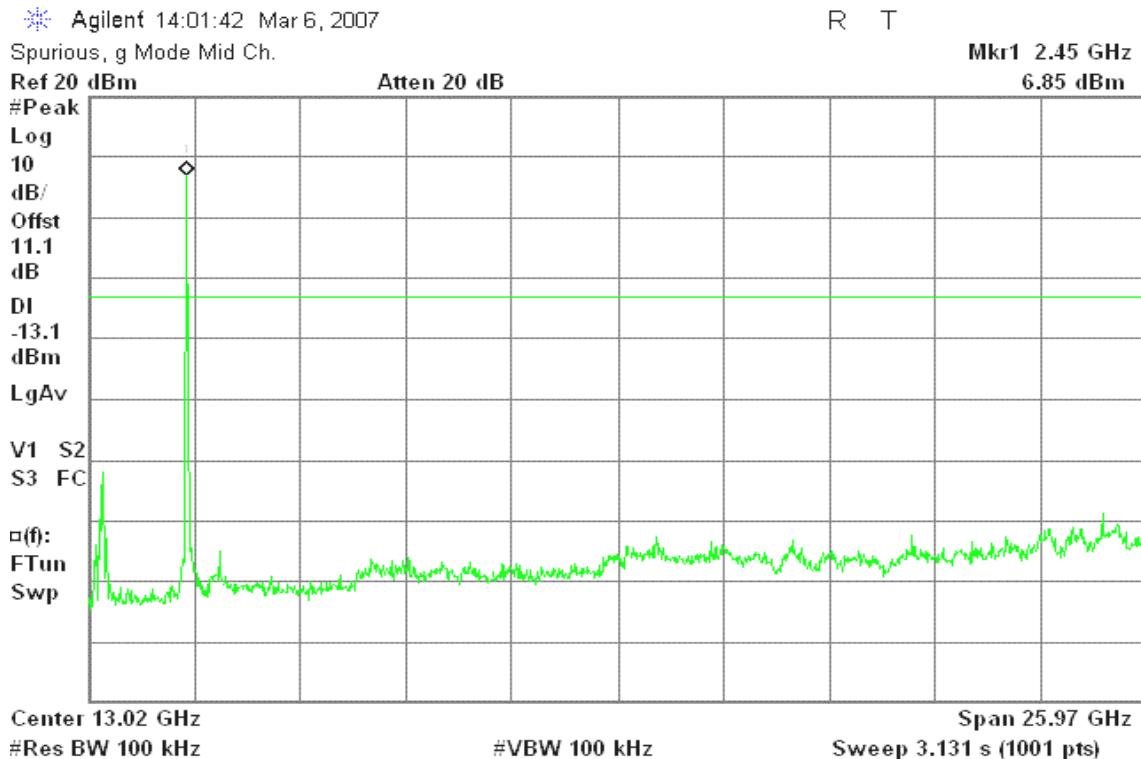


CH Mid

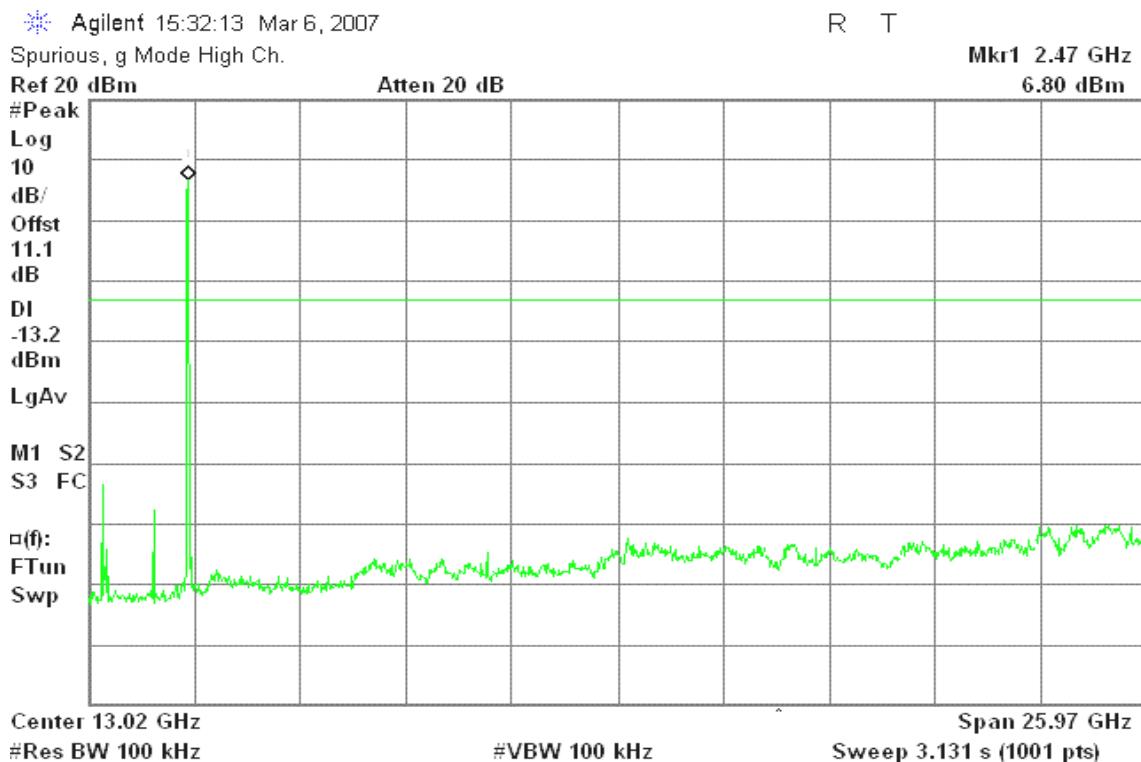


CH High



draft 802.11n Standard-20 MHz Channel mode / Chain 2**CH Low****CH Mid**

CH High



draft 802.11n Wide-40 MHz Channel mode / Chain 0

CH Low

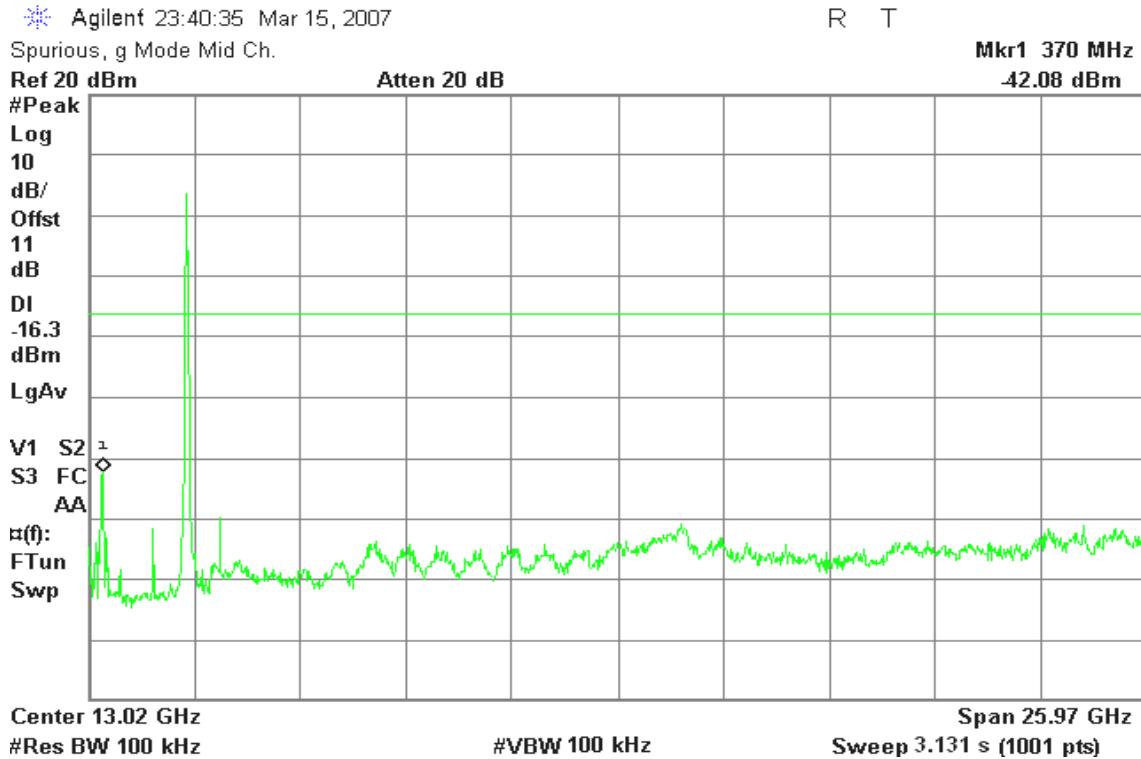


CH Mid



CH High



draft 802.11n Wide-40 MHz Channel mode / Chain 2**CH Low****CH Mid**

CH High

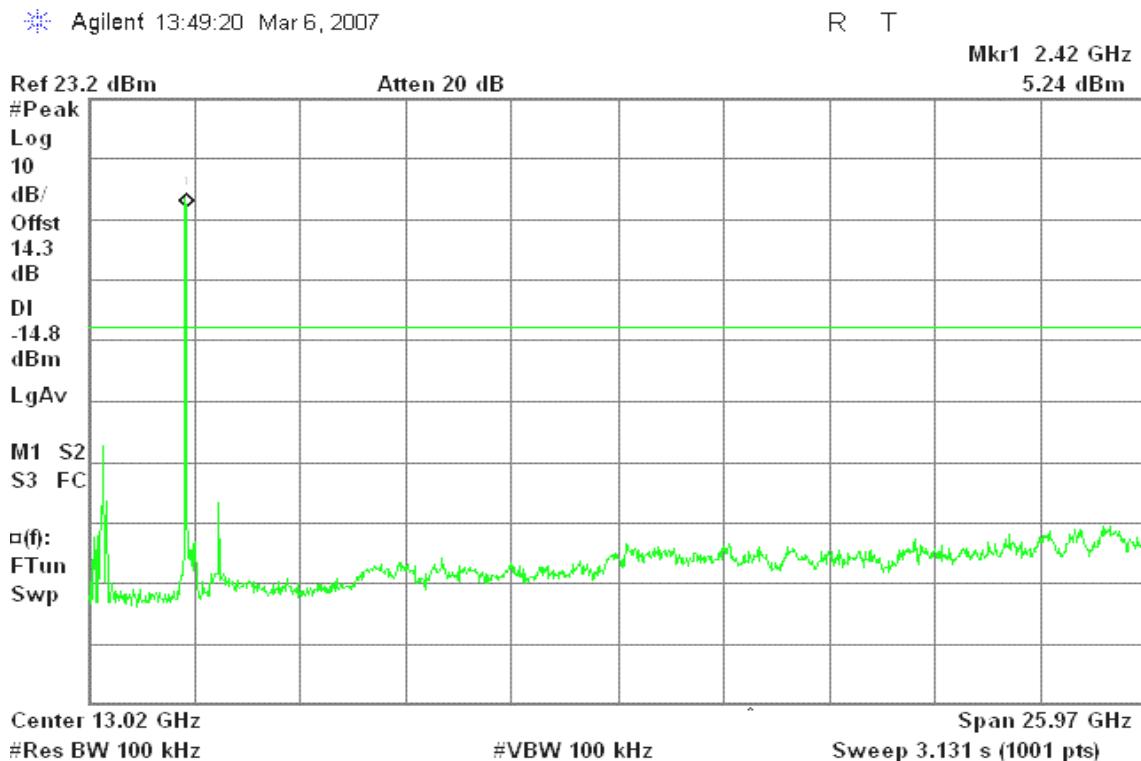
IEEE 802.11b mode with combinerCH LowCH Mid

CH High



draft 802.11n Standard-20 MHz Channel mode with combiner

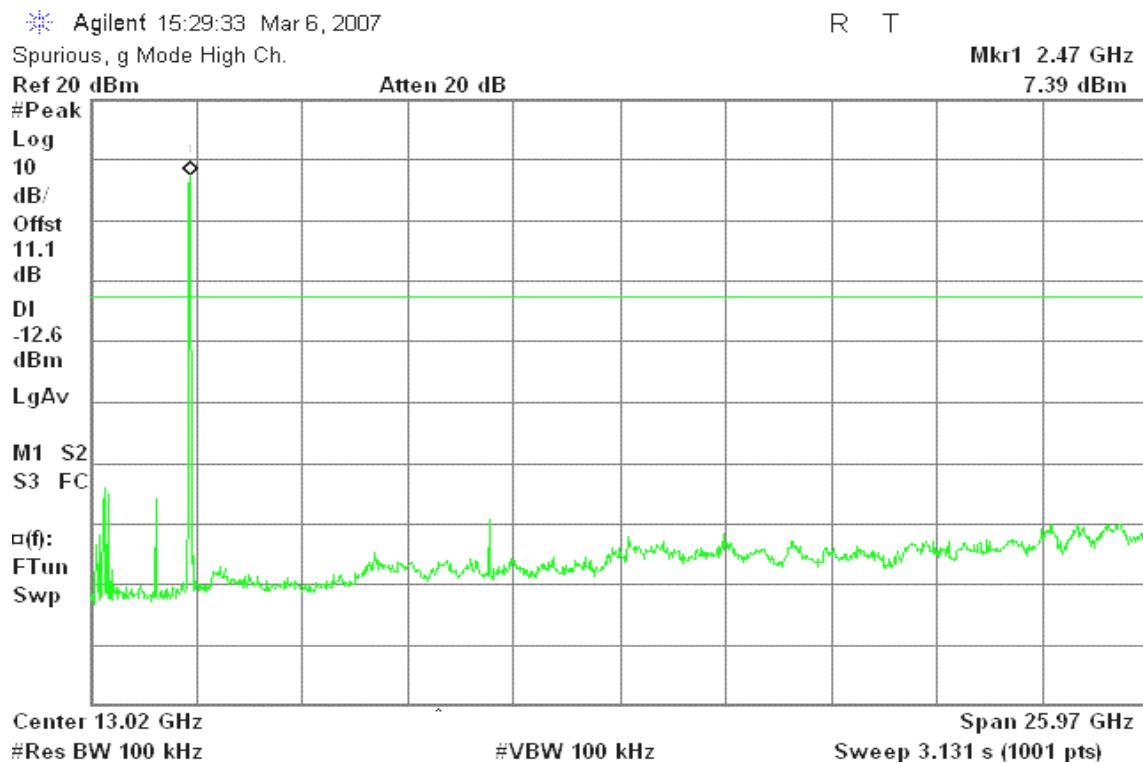
CH Low

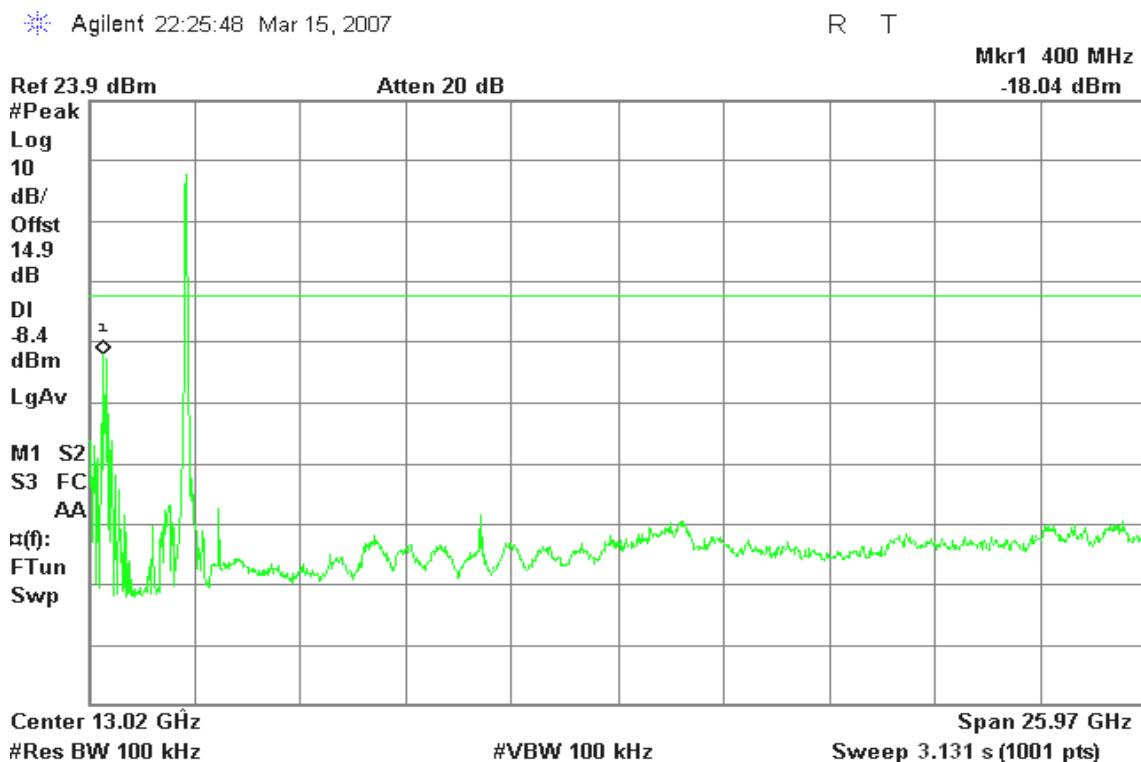


CH Mid



CH High

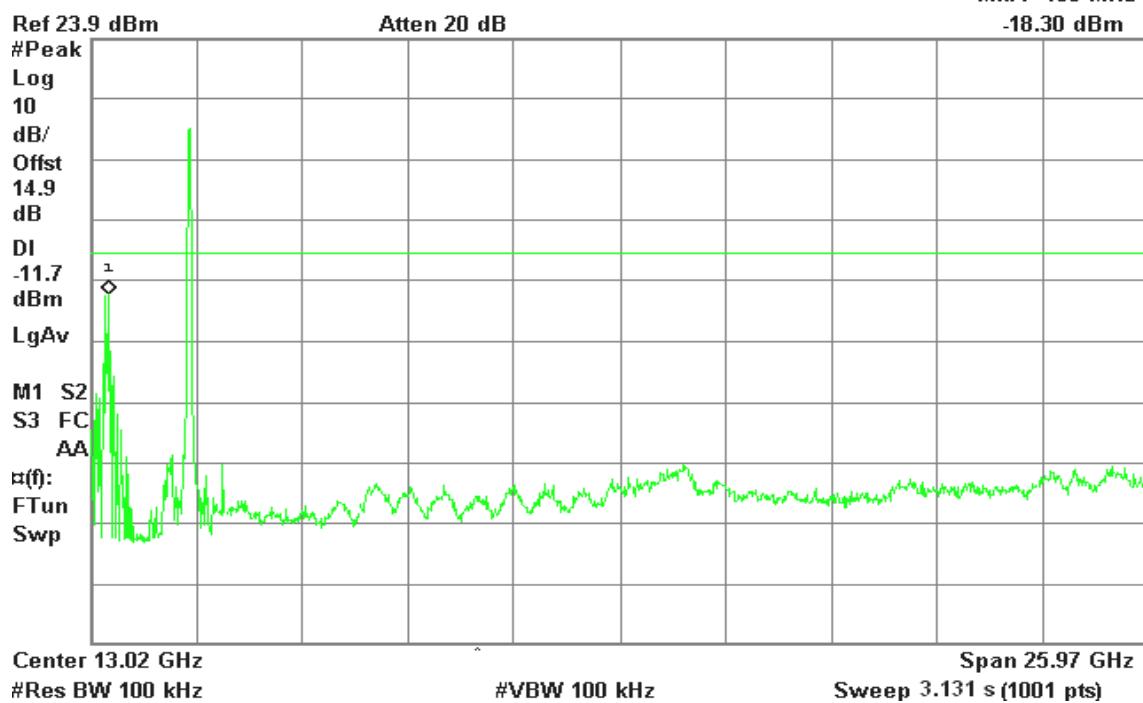


draft 802.11n Wide-40 MHz Channel mode with combiner**CH Low****CH Mid**

CH High

Agilent 22:36:16 Mar 15, 2007

R T

Mkr1 450 MHz
-18.30 dBm



7.6.2 RADIATED EMISSIONS

LIMIT

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

Frequency (MHz)	Field Strength (μ V/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

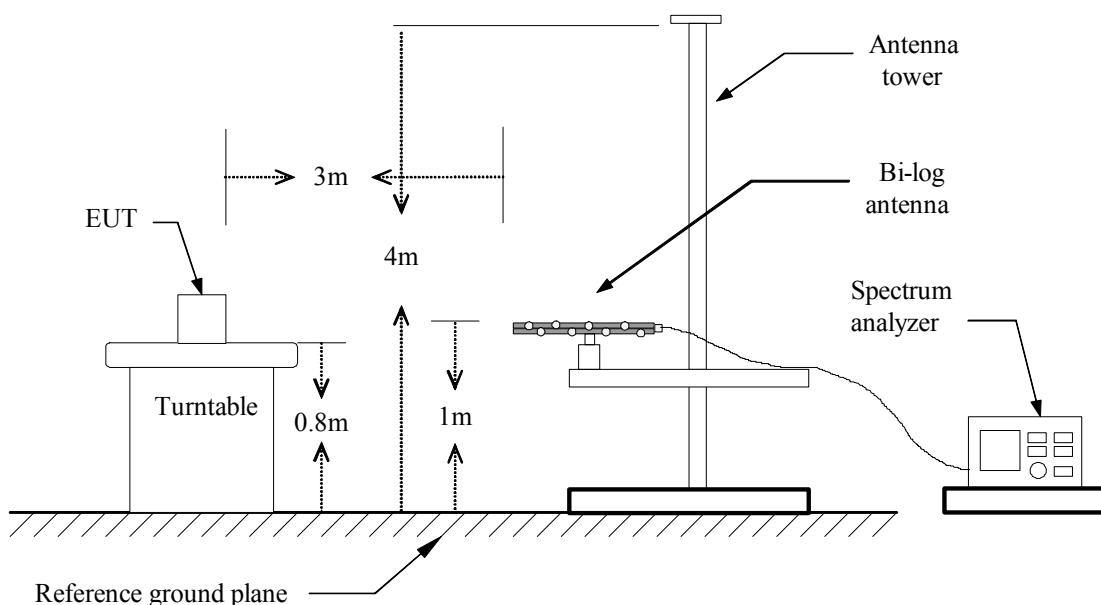
Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of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

- In the emission table above, the tighter limit applies at the band edges.

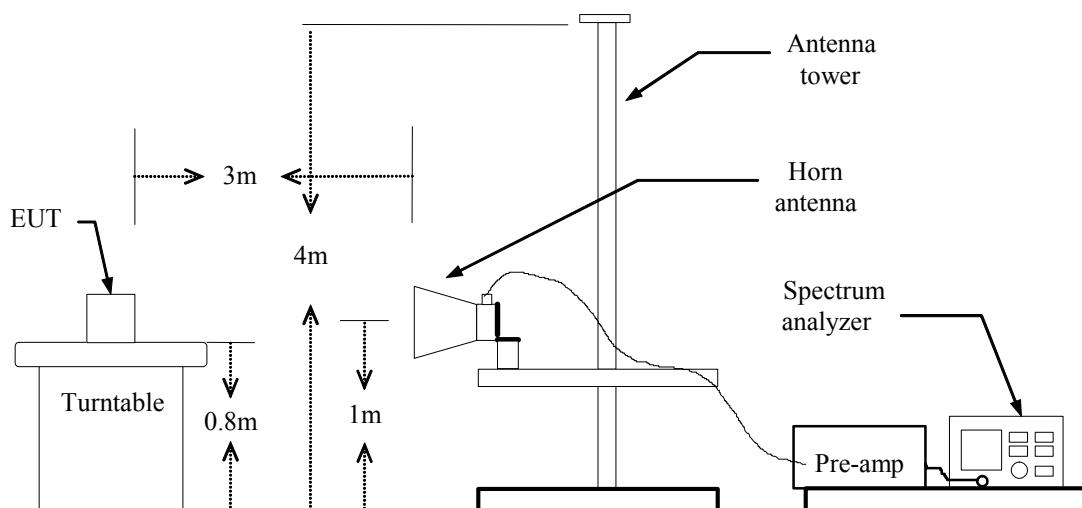
Frequency (MHz)	Field Strength (μ V/m at 3-meter)	Field Strength (dB μ V/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

Below 1 GHz



Above 1 GHz





TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

Below 1GHz:

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz:

(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

7. Repeat above procedures until the measurements for all frequencies are complete.



TEST RESULTS

No non-compliance noted

Below 1GHz

Operation Mode: Normal Link

Test Date: March 24, 2007

Temperature: 20°C

Tested by: Nan Tsai

Humidity: 50% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
49.40	V	49.82	-18.12	31.70	40.00	-8.30	QP
167.42	V	47.58	-14.59	32.99	43.50	-10.51	QP
299.98	V	38.04	-12.43	25.61	46.00	-20.39	QP
600.68	V	35.48	-6.19	29.29	46.00	-16.71	QP
749.42	V	34.29	-4.15	30.14	46.00	-15.86	QP
1000.00	V	29.67	-0.61	29.06	54.00	-24.94	QP
30.00	H	25.59	-4.65	20.94	40.00	-19.06	QP
167.42	H	42.30	-14.59	27.71	43.50	-15.79	QP
225.62	H	43.63	-14.90	28.73	46.00	-17.27	QP
400.22	H	38.12	-10.00	28.12	46.00	-17.88	QP
799.53	H	38.77	-3.16	35.61	46.00	-10.39	QP
1000.00	H	35.40	-0.61	34.79	54.00	-19.21	QP

Remark:

1. Measuring frequencies from 30 MHz to the 1GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.
3. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).

**Above 1 GHz****Operation Mode:** TX / IEEE 802.11b / CH Low**Test Date:** January 24, 2007**Temperature:** 20°C**Tested by:** James Yu**Humidity:** 52 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1540.00	V	53.82	---	-9.58	44.24	---	74.00	54.00	-9.76	Peak
3216.67	V	55.17	---	-2.17	53.00	---	74.00	54.00	-1.00	Peak
4825.00	V	59.74	44.33	0.55	60.29	44.88	74.00	54.00	-9.12	AVG
6433.33	V	45.90	---	2.87	48.77	---	74.00	54.00	-5.23	Peak
7233.33	V	57.58	45.49	3.55	61.13	49.04	74.00	54.00	-4.96	AVG
9650.00	V	40.06	---	11.54	51.60	---	74.00	54.00	-2.40	Peak
2860.00	H	54.63	---	-2.81	51.82	---	74.00	54.00	-2.18	Peak
3216.67	H	49.89	---	-2.17	47.72	---	74.00	54.00	-6.28	Peak
4825.00	H	61.32	44.45	0.55	61.87	45.00	74.00	54.00	-9.00	AVG
7233.33	H	56.54	42.70	3.55	60.09	46.25	74.00	54.00	-7.75	AVG
9650.00	H	40.21	---	11.54	51.75	---	74.00	54.00	-2.25	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “N/A” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

**Operation Mode:** TX / IEEE 802.11b / CH Mid**Test Date:** January 24, 2007**Temperature:** 20°C**Tested by:** James Yu**Humidity:** 52 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
2080.00	V	54.05	---	-4.80	49.25	---	74.00	54.00	-4.75	Peak
2600.00	V	55.91	---	-3.49	52.41	---	74.00	54.00	-1.59	Peak
3250.00	V	52.65	---	-2.13	50.52	---	74.00	54.00	-3.48	Peak
4875.00	V	63.16	46.85	0.60	63.76	47.45	74.00	54.00	-6.55	AVG
6500.00	V	47.96	---	2.99	50.94	---	74.00	54.00	-3.06	Peak
7308.33	V	59.82	45.33	3.41	63.23	48.74	74.00	54.00	-5.26	AVG
2000.00	H	54.29	---	-5.01	49.28	---	74.00	54.00	-4.72	Peak
3250.00	H	49.26	---	-2.13	47.13	---	74.00	54.00	-6.87	Peak
4875.00	H	59.84	44.48	0.60	60.44	45.08	74.00	54.00	-8.92	AVG
7308.33	H	59.69	45.93	3.41	63.10	49.34	74.00	54.00	-4.66	AVG
9750.00	H	41.55	---	11.75	53.31	---	74.00	54.00	-0.69	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “N/A” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

**Operation Mode:** TX / IEEE 802.11b / CH High**Test Date:** January 24, 2007**Temperature:** 20°C**Tested by:** James Yu**Humidity:** 52 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1620.00	V	54.96	---	-8.78	46.17	---	74.00	54.00	-7.83	Peak
3283.33	V	51.55	---	-2.09	49.46	---	74.00	54.00	-4.54	Peak
4925.00	V	60.18	44.38	0.65	60.83	45.03	74.00	54.00	-8.97	AVG
6566.67	V	46.60	---	3.12	49.72	---	74.00	54.00	-4.28	Peak
7383.33	V	57.76	44.38	3.27	61.03	47.65	74.00	54.00	-6.35	AVG
9850.00	V	48.88	38.98	11.97	60.85	50.95	74.00	54.00	-3.05	AVG
1926.67	H	54.28	---	-5.73	48.55	---	74.00	54.00	-5.45	Peak
3283.33	H	45.59	---	-2.09	43.50	---	74.00	54.00	-10.50	Peak
4925.00	H	57.85	42.31	0.65	58.50	42.96	74.00	54.00	-11.04	AVG
7383.33	H	55.18	42.06	3.27	58.45	45.33	74.00	54.00	-8.67	AVG
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “N/A” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

**Operation Mode:** TX / IEEE 802.11g / CH Low**Test Date:** January 24, 2007**Temperature:** 20°C**Tested by:** James Yu**Humidity:** 52 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1886.67	V	54.03	---	-6.13	47.89	---	74.00	54.00	-6.11	Peak
3216.67	V	52.05	---	-2.17	49.88	---	74.00	54.00	-4.12	Peak
4825.00	V	58.49	39.01	0.55	59.04	39.56	74.00	54.00	-14.44	AVG
6433.33	V	45.85	---	2.87	48.72	---	74.00	54.00	-5.28	Peak
7241.67	V	48.97	---	3.54	52.51	---	74.00	54.00	-1.49	Peak
9650.00	V	40.36	---	11.54	51.90	---	74.00	54.00	-2.10	Peak
2256.67	H	54.60	---	-4.36	50.24	---	74.00	54.00	-3.76	Peak
3216.67	H	47.45	---	-2.17	45.28	---	74.00	54.00	-8.72	Peak
4825.00	H	52.93	---	0.55	53.49	---	74.00	54.00	-0.51	Peak
7241.67	H	46.12	---	3.54	49.65	---	74.00	54.00	-4.35	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “N/A” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

**Operation Mode:** TX / IEEE 802.11g / CH Mid**Test Date:** January 24, 2007**Temperature:** 20°C**Tested by:** James Yu**Humidity:** 52 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1660.00	V	53.91	---	-8.38	45.53	---	74.00	54.00	-8.47	Peak
3250.00	V	52.21	---	-2.13	50.08	---	74.00	54.00	-3.92	Peak
4875.00	V	62.78	40.42	0.60	63.38	41.02	74.00	54.00	-12.98	AVG
6500.00	V	45.64	---	2.99	48.62	---	74.00	54.00	-5.38	Peak
7316.67	V	54.65	37.14	3.39	58.04	40.53	74.00	54.00	-13.47	AVG
9750.00	V	39.61	---	11.75	51.36	---	74.00	54.00	-2.64	Peak
1636.67	H	54.61	---	-8.62	45.99	---	74.00	54.00	-8.01	Peak
3250.00	H	45.45	---	-2.13	43.32	---	74.00	54.00	-10.68	Peak
4875.00	H	59.11	37.87	0.60	59.71	38.47	74.00	54.00	-15.53	AVG
7316.67	H	54.16	36.71	3.39	57.55	40.10	74.00	54.00	-13.90	AVG
9750.00	H	40.09	---	11.75	51.84	---	74.00	54.00	-2.16	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “N/A” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

**Operation Mode:** TX / IEEE 802.11g / CH High**Test Date:** January 24, 2007**Temperature:** 20°C**Tested by:** James Yu**Humidity:** 52 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1620.00	V	55.18	---	-8.78	46.40	---	74.00	54.00	-7.60	Peak
3283.33	V	50.26	---	-2.09	48.17	---	74.00	54.00	-5.83	Peak
4925.00	V	60.20	39.78	0.65	60.85	40.43	74.00	54.00	-13.57	AVG
7383.33	V	56.54	38.41	3.27	59.81	41.68	74.00	54.00	-12.32	AVG
9850.00	V	47.23	31.64	11.97	59.20	43.61	74.00	54.00	-10.39	AVG
N/A										
1363.33	H	54.27	---	-10.20	44.08	---	74.00	54.00	-9.92	Peak
3283.33	H	45.35	---	-2.09	43.26	---	74.00	54.00	-10.74	Peak
4925.00	H	56.04	36.94	0.65	56.69	37.59	74.00	54.00	-16.41	AVG
7383.33	H	44.67	---	3.27	47.94	---	74.00	54.00	-6.06	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “N/A” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Standard-20 MHz Channel mode / CH Low

Test Date: February 9, 2007

Temperature: 25°C

Tested by: Nan Tsai

Humidity: 50 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
3216.67	V	58.20	39.23	-2.17	56.03	37.06	74.00	54.00	-16.94	AVG
4825.00	V	51.42	---	0.55	51.98	---	74.00	54.00	-2.02	Peak
7250.00	V	58.96	34.82	3.52	62.48	38.34	74.00	54.00	-15.66	AVG
N/A										
3216.67	H	49.03	---	-2.17	46.86	---	74.00	54.00	-7.14	Peak
4825.00	H	47.22	---	0.55	47.77	---	74.00	54.00	-6.23	Peak
7241.67	H	56.19	34.76	3.54	59.73	38.30	74.00	54.00	-15.70	AVG
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “N/A” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Standard-20 MHz Channel mode / CH Mid

Test Date: February 9, 2007

Temperature: 25°C

Tested by: Nan Tsai

Humidity: 50 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
3250.00	V	52.49	---	-2.13	50.36	---	74.00	54.00	-3.64	Peak
4883.33	V	51.42	---	0.61	52.03	---	74.00	54.00	-1.97	Peak
6500.00	V	45.42	---	2.99	48.41	---	74.00	54.00	-5.59	Peak
7316.67	V	62.48	34.83	3.39	65.87	38.22	74.00	54.00	-15.78	AVG
N/A										
3250.00	H	46.32	---	-2.13	44.19	---	74.00	54.00	-9.81	Peak
4875.00	H	48.75	---	0.60	49.36	---	74.00	54.00	-4.64	Peak
7308.33	H	49.41	---	3.41	52.82	---	74.00	54.00	-1.18	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “N/A” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Standard-20 MHz Channel mode / CH High

Test Date: February 9, 2007

Temperature: 25°C

Tested by: Nan Tsai

Humidity: 50 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
3283.33	V	51.70	---	-2.09	49.61	---	74.00	54.00	-4.39	Peak
4000.00	V	44.49	---	-0.62	43.88	---	74.00	54.00	-10.12	Peak
4925.00	V	56.68	36.69	0.65	57.33	37.34	74.00	54.00	-16.66	AVG
6566.67	V	45.09	---	3.12	48.21	---	74.00	54.00	-5.79	Peak
7400.00	V	62.75	35.54	3.24	65.99	38.78	74.00	54.00	-15.22	AVG
N/A										
3283.33	H	44.98	---	-2.09	42.89	---	74.00	54.00	-11.11	Peak
4925.00	H	54.42	36.38	0.65	55.07	37.03	74.00	54.00	-16.97	AVG
7391.67	H	57.73	35.67	3.25	60.98	38.92	74.00	54.00	-15.08	AVG
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Wide-40 MHz Channel mode / CH Low

Test Date: February 9, 2007

Temperature: 25°C

Tested by: Nan Tsai

Humidity: 50 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
3233.33	V	53.27	---	-2.15	51.11	---	74.00	54.00	-2.89	Peak
6458.33	V	44.33	---	2.91	47.25	---	74.00	54.00	-6.75	Peak
7275.00	V	48.28	---	3.47	51.75	---	74.00	54.00	-2.25	Peak
N/A										
3233.33	H	48.82	---	-2.15	46.67	---	74.00	54.00	-7.33	Peak
4841.67	H	44.71	---	0.57	45.28	---	74.00	54.00	-8.72	Peak
7266.67	H	44.15	---	3.49	47.64	---	74.00	54.00	-6.36	Peak
9366.67	H	41.12	---	10.62	51.75	---	74.00	54.00	-2.25	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “N/A” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Wide-40 MHz Channel mode / CH Mid

Test Date: February 9, 2007

Temperature: 25°C

Tested by: Nan Tsai

Humidity: 50 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
3250.00	V	51.57	---	-2.13	49.44	---	74.00	54.00	-4.56	Peak
4883.33	V	51.75	---	0.61	52.37	---	74.00	54.00	-1.63	Peak
6500.00	V	49.16	---	2.99	52.15	---	74.00	54.00	-1.85	Peak
7300.00	V	61.31	35.13	3.43	64.74	38.56	74.00	54.00	-15.44	AVG
N/A										
3250.00	H	45.40	---	-2.13	43.27	---	74.00	54.00	-10.73	Peak
4875.00	H	48.18	---	0.60	48.78	---	74.00	54.00	-5.22	Peak
6550.00	H	45.06	---	3.09	48.15	---	74.00	54.00	-5.85	Peak
7316.67	H	52.86	34.05	3.39	56.25	37.44	74.00	54.00	-16.56	AVG
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “N/A” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Wide-40 MHz Channel mode / CH High

Test Date: February 9, 2007

Temperature: 25°C

Tested by: Nan Tsai

Humidity: 50 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
3266.67	V	52.13	---	-2.11	50.02	---	74.00	54.00	-3.98	Peak
6541.67	V	47.76	---	3.07	50.83	---	74.00	54.00	-3.17	Peak
7375.00	V	58.95	35.00	3.28	62.23	38.28	74.00	54.00	-15.72	AVG
N/A										
3266.67	H	44.65	---	-2.11	42.54	---	74.00	54.00	-11.46	Peak
5325.00	H	44.54	---	1.17	45.70	---	74.00	54.00	-8.30	Peak
7358.33	H	45.20	---	3.32	48.51	---	74.00	54.00	-5.49	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “N/A” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



7.7 POWERLINE CONDUCTED EMISSIONS

LIMIT

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

* Decreases with the logarithm of the frequency.

Test Configuration

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.



TEST RESULTS

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Test Data

Operation Mode:	Normal Link	Test Date:	March 10, 2007
Temperature:	25°C	Tested by:	Ming Chen
Humidity:	55% RH		

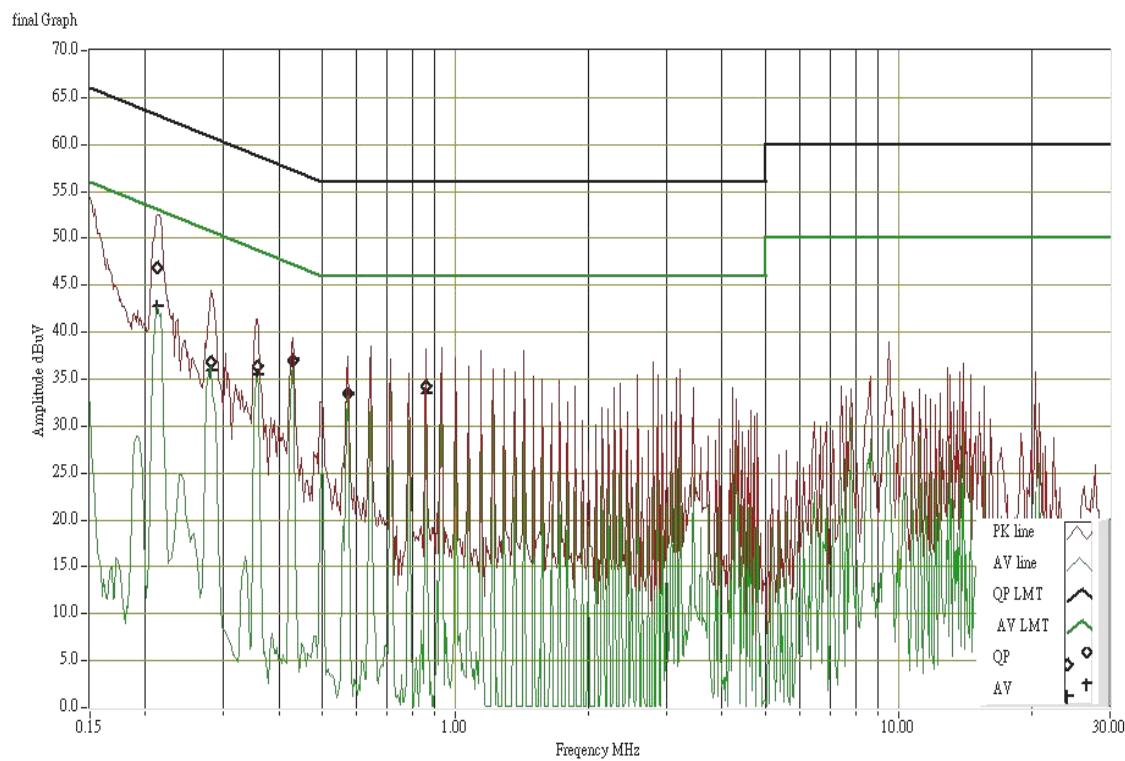
Freq. (MHz)	QP Reading (dBuV)	AV Reading (dBuV)	Corr. factor (dB)	QP Result (dBuV)	AV Result (dBuV)	QP Limit (dBuV)	AV Limit (dBuV)	QP Margin (dB)	AV Margin (dB)	Note
0.213	46.940	42.730	0.100	47.040	42.830	63.088	53.088	-16.048	-10.258	L1
0.281	36.820	35.900	0.100	36.920	36.000	60.786	50.786	-23.866	-14.786	L1
0.358	36.340	35.520	0.100	36.440	35.620	58.775	48.775	-22.335	-13.155	L1
0.429	37.540	37.110	0.100	37.640	37.210	57.272	47.272	-19.632	-10.062	L1
0.572	33.480	33.290	0.100	33.580	33.390	56.000	46.000	-22.420	-12.610	L1
0.859	34.230	33.450	0.100	34.330	33.550	56.000	46.000	-21.670	-12.450	L1
0.213	46.170	39.000	0.100	46.270	39.100	63.088	53.088	-16.818	-13.988	L2
0.281	35.490	33.280	0.100	35.590	33.380	60.786	50.786	-25.196	-17.406	L2
0.355	32.210	31.470	0.100	32.310	31.570	58.845	48.845	-26.535	-17.275	L2
0.429	35.640	35.280	0.100	35.740	35.380	57.272	47.272	-21.532	-11.892	L2
6.301	35.730	35.610	0.330	36.060	35.940	60.000	50.000	-23.940	-14.060	L2
6.878	36.540	36.300	0.388	36.928	36.688	60.000	50.000	-23.072	-13.312	L2

Remark:

1. Measuring frequencies from 0.15 MHz to 30MHz.
2. The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Quasi-peak detector and average detector.
3. The IF bandwidth of SPA between 0.15MHz and 30MHz was 10 kHz; the IF bandwidth of Test Receiver between 0.15MHz and 30MHz was 9 kHz;
4. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line)

Test Plots

Conducted emissions (Line 1)



Conducted emissions (Line 2)

