FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

802.11n Wireless Access Point

Model: AP101nA, WNAP-3000PE

Trade Name: SerComm

Issued to

SerComm Corporation
8F, No. 3-1, YuanQu St., NanKang,
Taipei 115, Taiwan, R.O.C.

Issued by

Compliance Certification Services Inc.
No. 81-1, Lane 210, Bade Rd. 2, Luchu Hsiang,
Taoyuan Hsien, (338) Taiwan, R.O.C.
http://www.ccsemc.com.tw
service@tw.ccsemc.com

ACCREDITED
TESTING CERT #0824.01

TAF
Testing Laboratory
0363

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1. TEST RESULT CERTIFICATION

Applicant: SerComm Corporation
8F, No. 3-1, YuanQu St., NanKang,
Taipei 115, Taiwan, R.O.C.

Equipment Under Test: 802.11n Wireless Access Point

Trade Name: SerComm

Model Number: AP101nA, WNAP-3000PE

Date of Test: March 27 ~ July 8, 2008

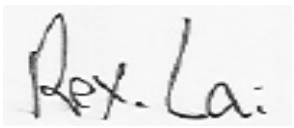
APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC 47 CFR Part 15 Subpart C	No non-compliance noted
Deviation from Applicable Standard	
The Powerline Conducted Emissions was tested at Compliance Certification Services. (Hsintien Lab.) The test equipments were listed in page 8 and the test data were recorded in page 169~170.	

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.

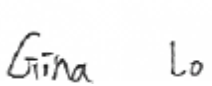
The test results of this report relate only to the tested sample EUT identified in this report.

Approved by:



Rex Lai
Section Manager
Compliance Certification Services Inc.

Reviewed by:



Gina Lo
Section Manager
Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	802.11n Wireless Access Point
Trade Name	SerComm
Model Number	AP101nA, WNAP-3000PE
Model Discrepancy	All the specification and layout are identical except they come with different model numbers for marketing purposes.
Power Supply	**Power Adapter** LEADER / MT12-Y120100-A1 I/P: 100-120V, 60Hz, 0.3A O/P: 12V, 1A **POE** Model: IWE500-INJ I/P: 100-240V, 2A, 50/60Hz O/P: 48V, 1A
Frequency Range	2412 ~ 2462 MHz
Transmit Power	EEE 802.11b mode: 20.69 dBm IEEE 802.11g mode: 19.61 dBm draft 802.11n Standard-20 MHz Channel mode: 19.68 dBm draft 802.11n Wide-40 MHz Channel mode: 16.79 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 (13.5, 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: 2 dBi Antenna Calculation for CDD Mode: 2 dBi + 10 log (3) = 6.8 dBi (Numeric gain: 4.79)

Remark:

1. *The sample selected for test was production product and was provided by manufacturer.*

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.

3.1EUT 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.

3.2EUT 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.

3.3GENERAL 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.

3.4FCC 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.

3.5DESCRIPTION OF TEST MODES

The EUT (model: AP101nA) comes with one type of power adapter and one type of POE for sale. After the preliminary test, the EUT with power adapter was found to emit the worst emissions and therefore had been tested under operating condition.

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

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 and power line conducted emissions below 30MHz, which worst case was in normal link mode only.

IEEE 802.11b mode:
Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 1Mbps data rate and cyclic delay diversity were chosen for full testing.

IEEE 802.11g mode:
Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 6Mbps data rate and cyclic delay diversity 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

4.1MEASURING 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.

4.2MEASUREMENT 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	02/23/2010

3M Semi Anechoic Chamber				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	E4446A	US42510252	09/10/2009
Test Receiver	Rohde&Schwarz	ESCI	100064	11/12/2009
Switch Controller	TRC	Switch Controller	SC94050010	05/02/2010
4 Port Switch	TRC	4 Port Switch	SC94050020	05/02/2010
Horn Antenna	EMCO	3115	9903-5761	01/09/2010
Bilog- Antenna	Sunol Sciences	JB3	A030205	03/27/2010
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	09/24/2009
Test S/W	LABVIEW (V 6.1)			

Remark: *The measurement uncertainty is less than +/-3.7046dB (30MHz ~ 1GHz), +/-3.0958dB (Above 1GHz) which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.*

Conducted Emission room # A				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
TEST RECEIVER	R&S	ESHS20	840455/006	02/17/2010
LISN (EUT)	SCHWARZBECK	NSLK 8127	8127382	12/02/2009
LISN	SOLAR	8012-50-R-24-BNC	8305114	12/02/2009
BNC CABLE	Huber+Suhner	RG-223/U	BNC A2	05/11/2010
THERMO- HYGRO METER	TECPEL	DTM-303	No.7	11/14/2009
Test S/W	EMI 32.exe			

Remark: *The measurement uncertainty is less than +/- 1.7376dB, 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.”

5.3TABLE 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, IEC/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	ACCREDITED TESTING CERT #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)	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 II 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)	IBM	2672 (X31)	99KPZYN	WLAN: ANO20030400LEG Bluetooth: ANO20020100MTN	N/A	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core

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.*

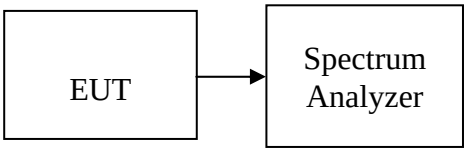
7 FCC PART 15.247 REQUIREMENTS

7.16DB 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	12.33	>500	PASS
Mid	2437	11.08		PASS
High	2462	10.08		PASS

Test mode: IEEE 802.11b mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	9.75	>500	PASS
Mid	2437	11.17		PASS
High	2462	10.17		PASS

Test mode: IEEE 802.11b mode / Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	10.00	>500	PASS
Mid	2437	11.08		PASS
High	2462	10.17		PASS

Test mode: IEEE 802.11g mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.50	>500	PASS
Mid	2437	16.50		PASS
High	2462	16.50		PASS

Test mode: IEEE 802.11g mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.50	>500	PASS
Mid	2437	16.50		PASS
High	2462	16.50		PASS

Test mode: IEEE 802.11g mode / Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.42	>500	PASS
Mid	2437	16.33		PASS
High	2462	16.42		PASS

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

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.67	>500	PASS
Mid	2437	17.67		PASS
High	2462	17.75		PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.42	>500	PASS
Mid	2437	17.67		PASS
High	2462	17.75		PASS

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

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.25	>500	PASS
Mid	2437	17.67		PASS
High	2462	16.00		PASS

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

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	36.42	>500	PASS
Mid	2437	36.33		PASS
High	2452	36.50		PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	36.33	>500	PASS
Mid	2437	36.50		PASS
High	2452	36.42		PASS

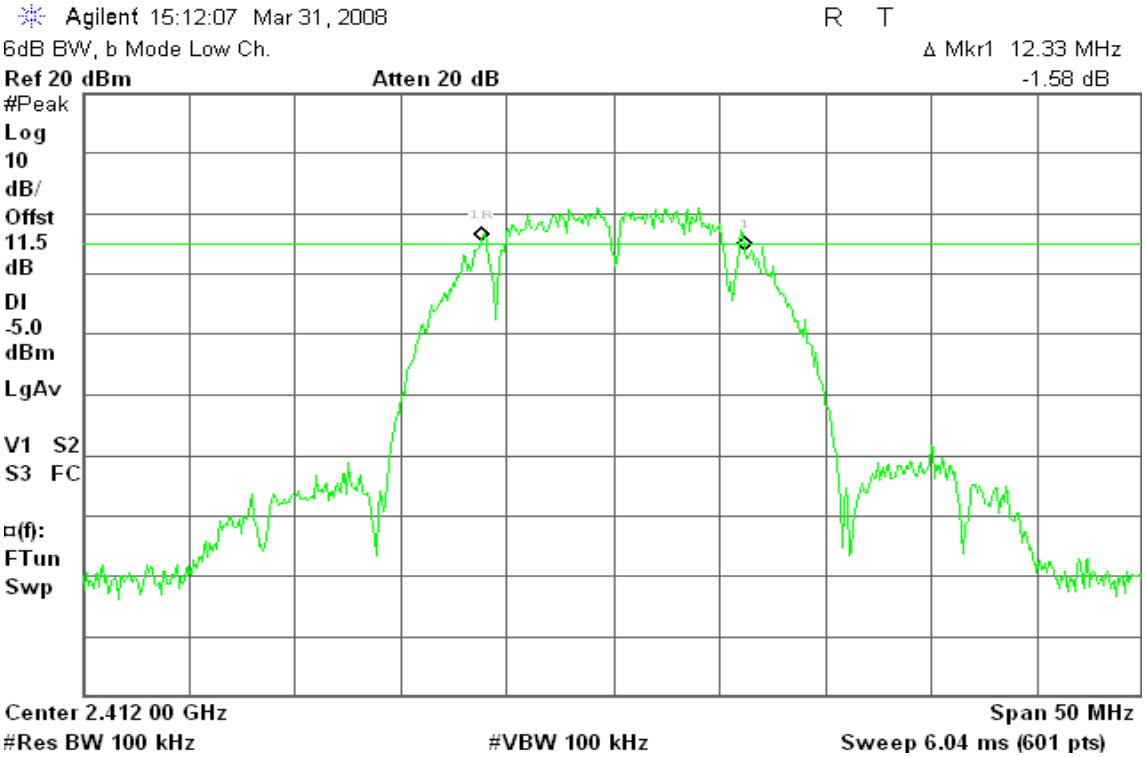
Test mode: draft 802.11n Wide-40 MHz Channel mode / Chain 2

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	36.42	>500	PASS
Mid	2437	36.33		PASS
High	2452	36.42		PASS

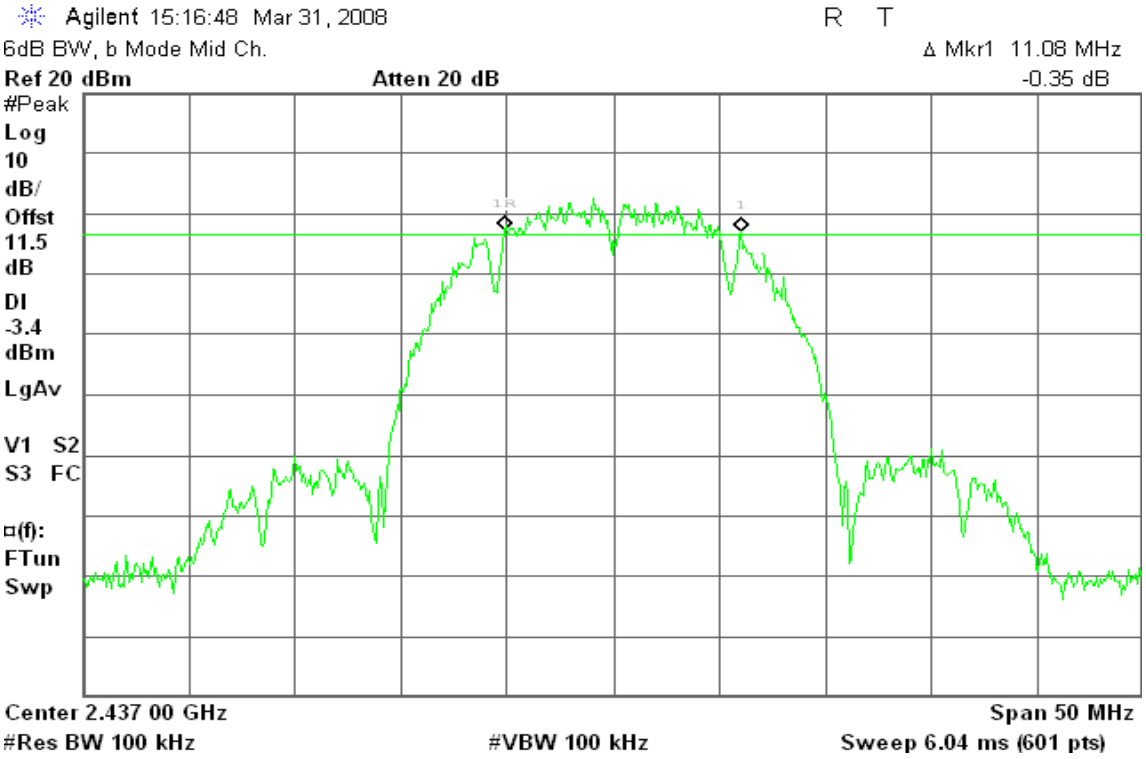
Test Plot

IEEE 802.11b mode / Chain 0

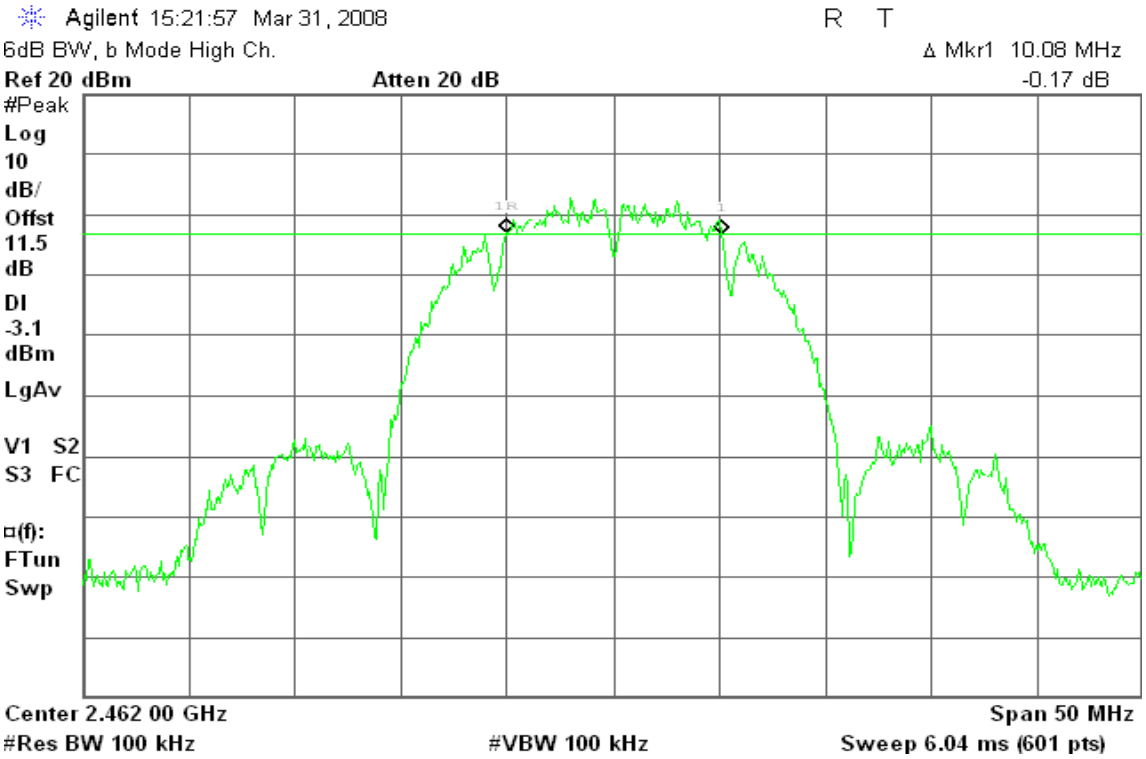
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

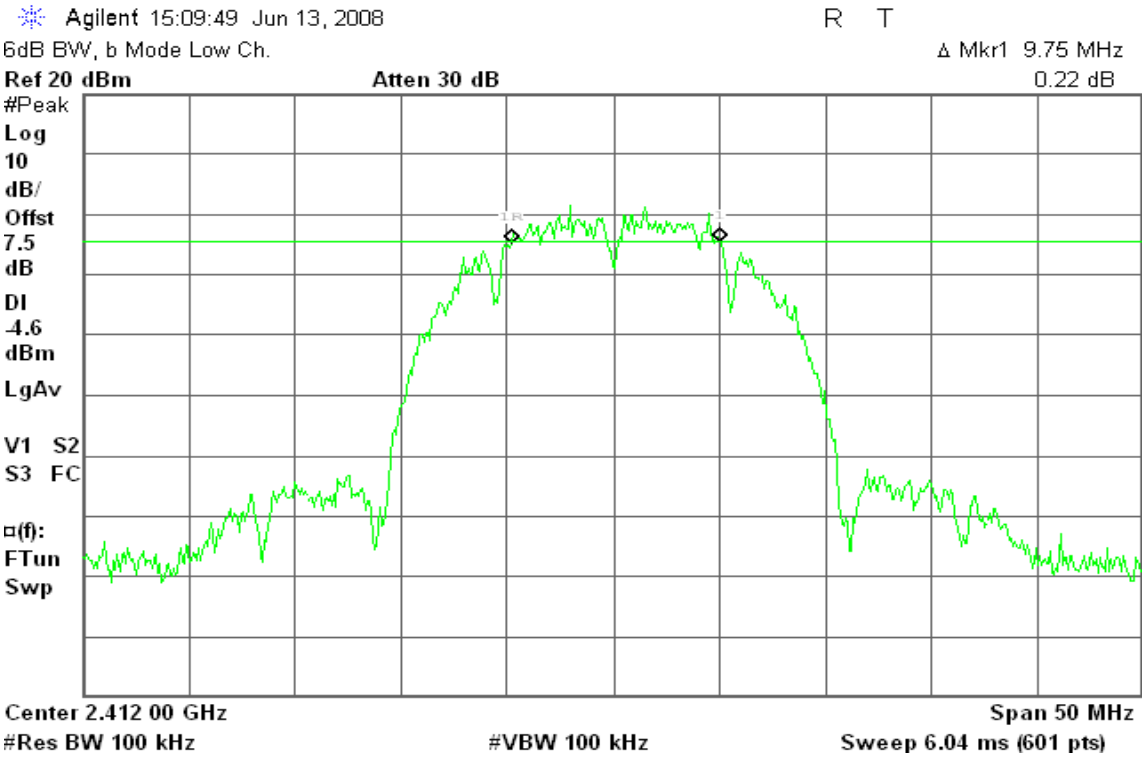


6dB Bandwidth (CH High)

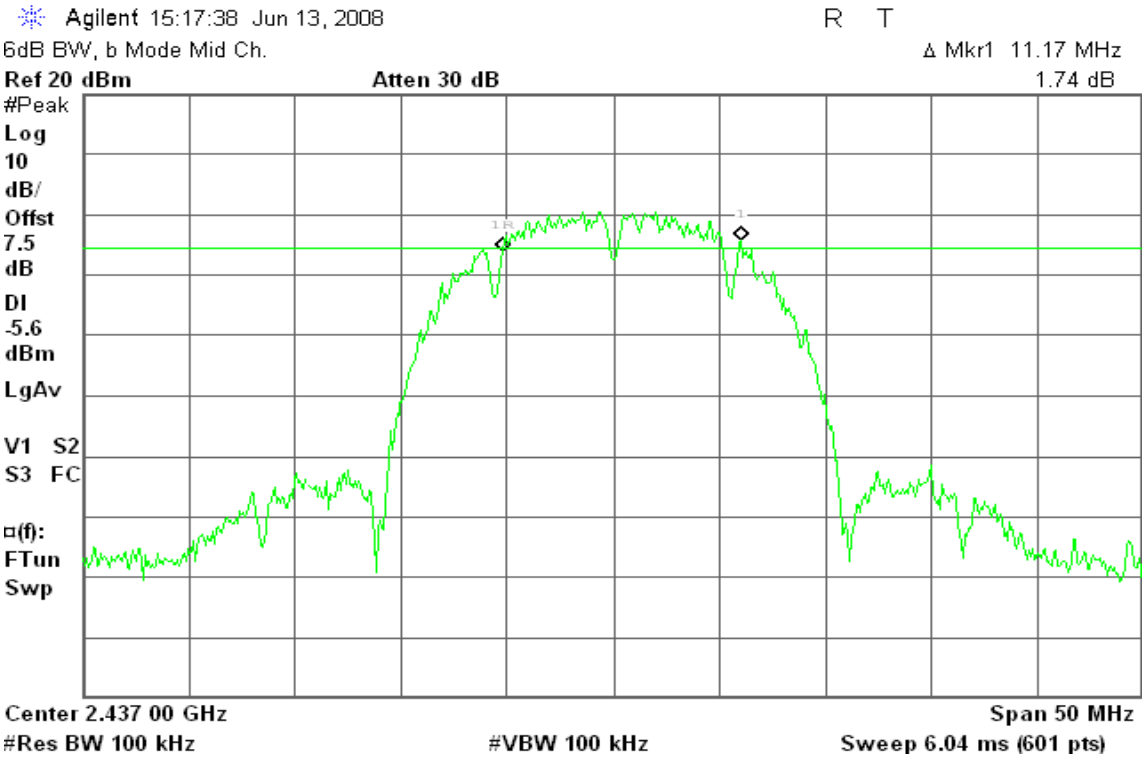


IEEE 802.11b mode / Chain 1

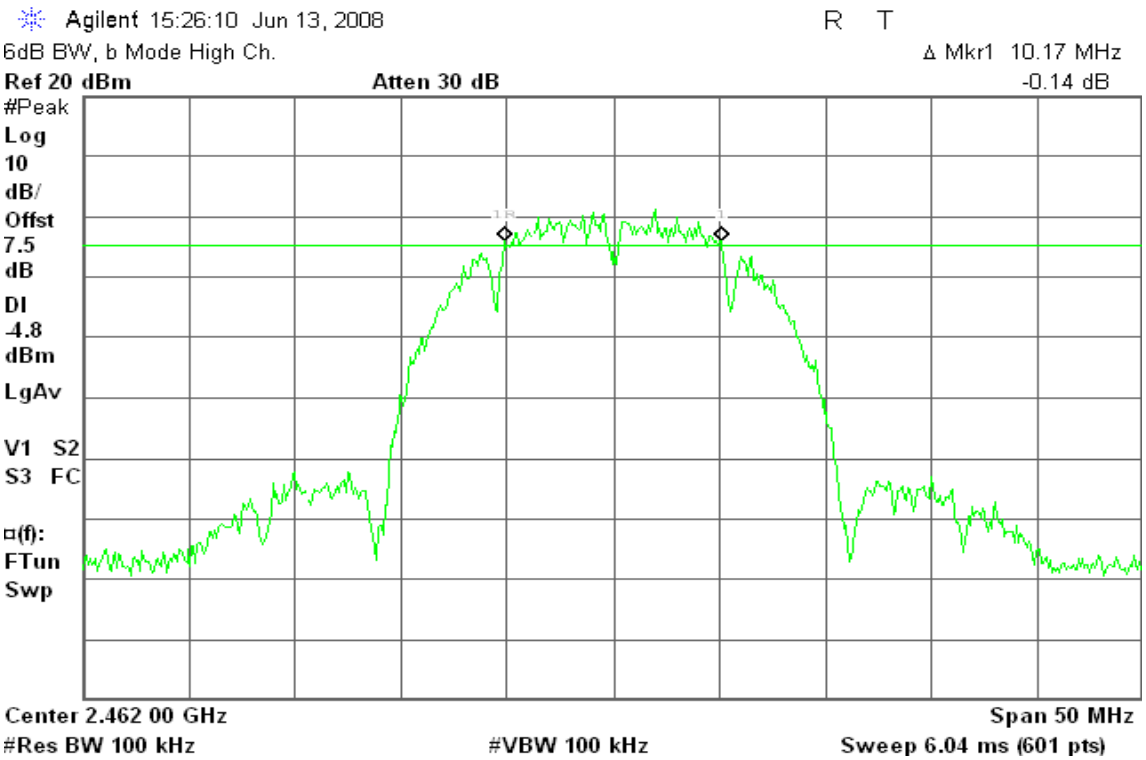
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

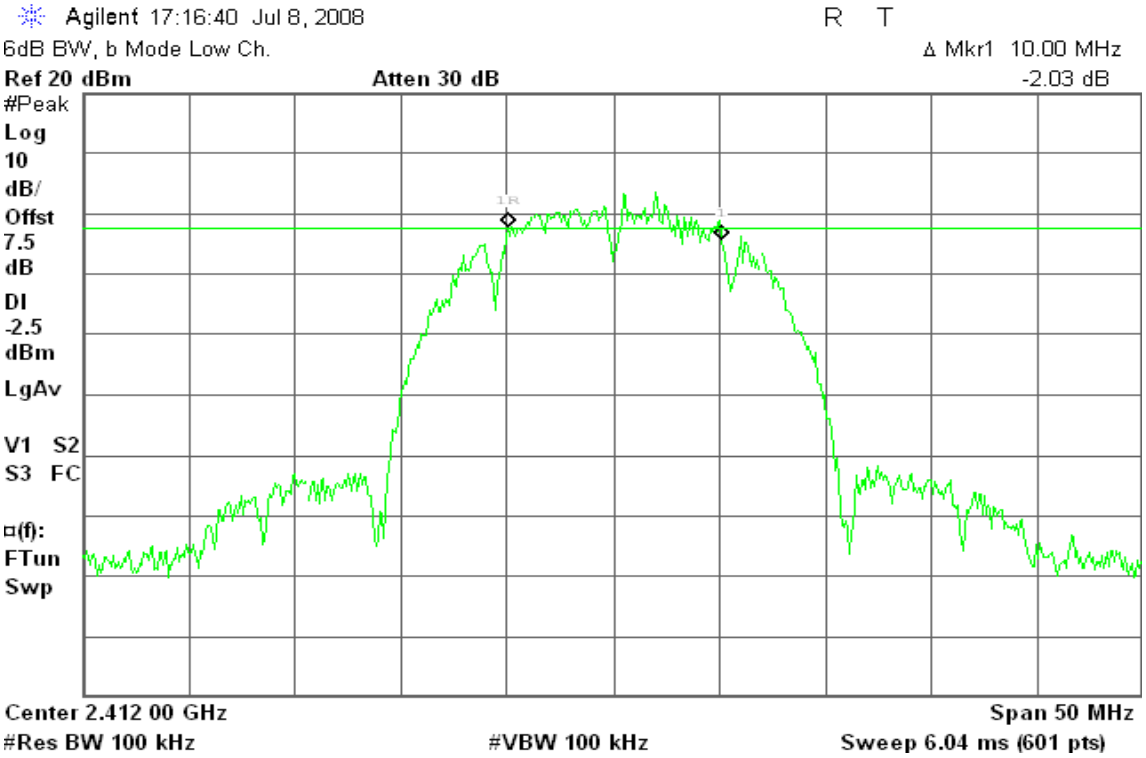


6dB Bandwidth (CH High)

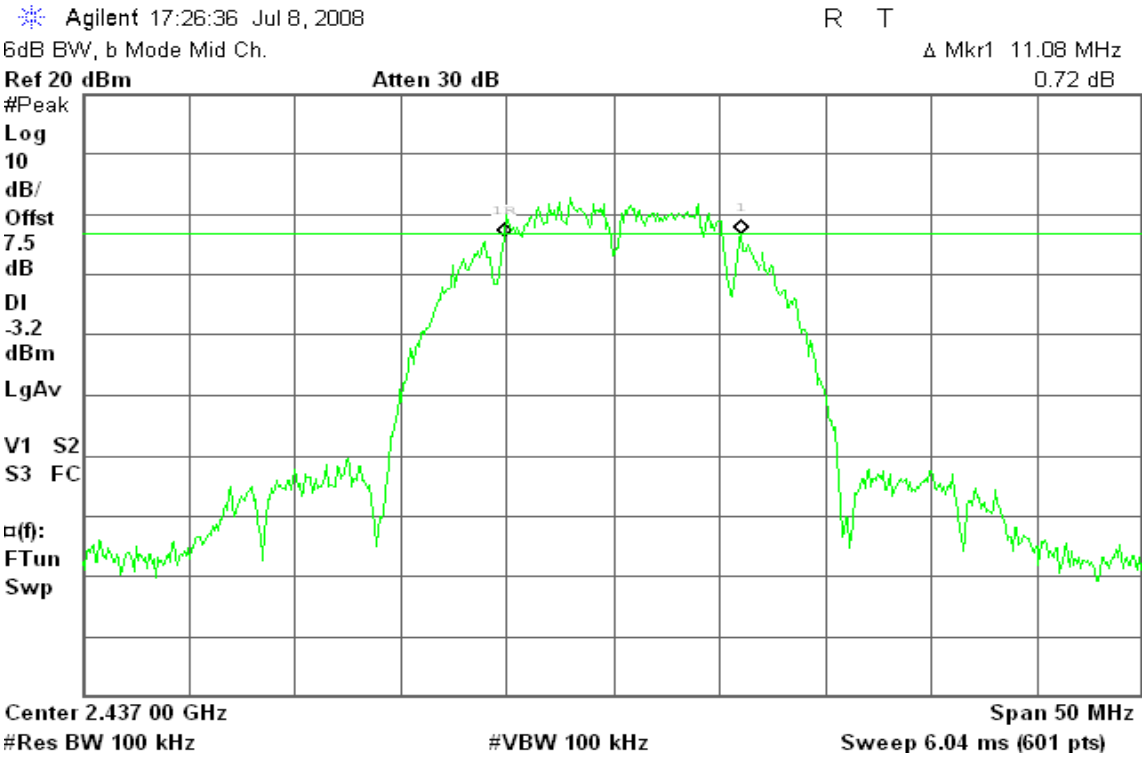


IEEE 802.11b mode / Chain 2

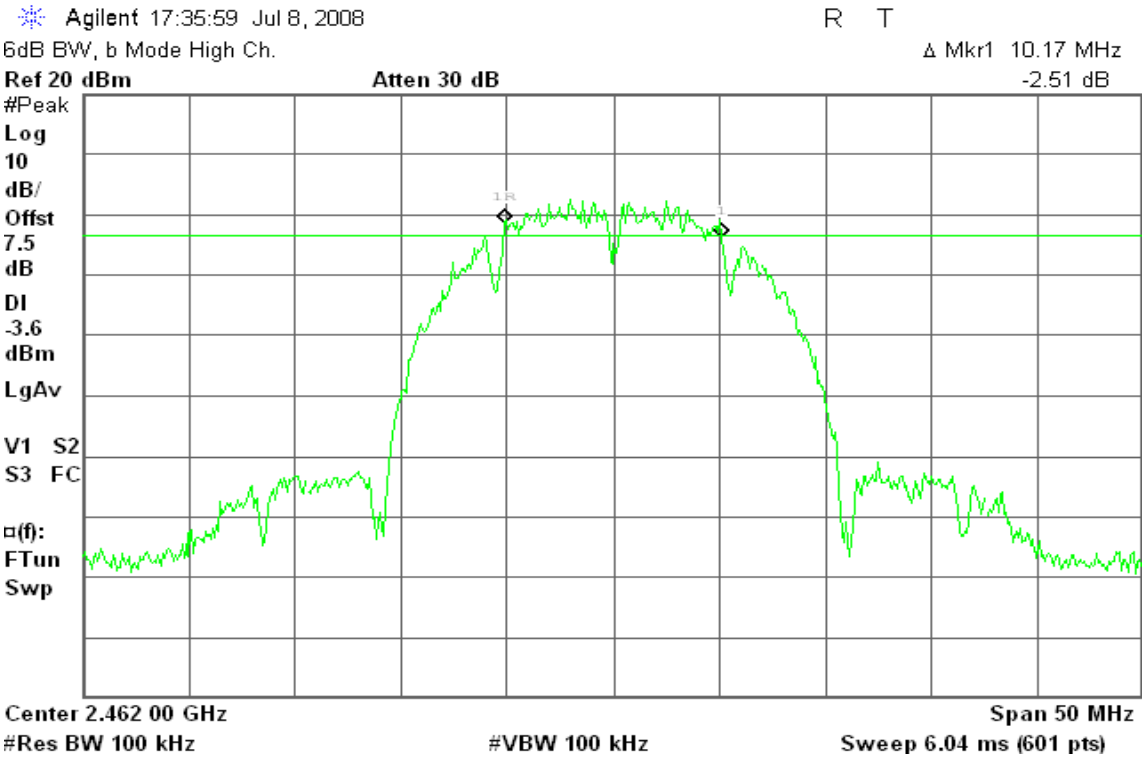
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

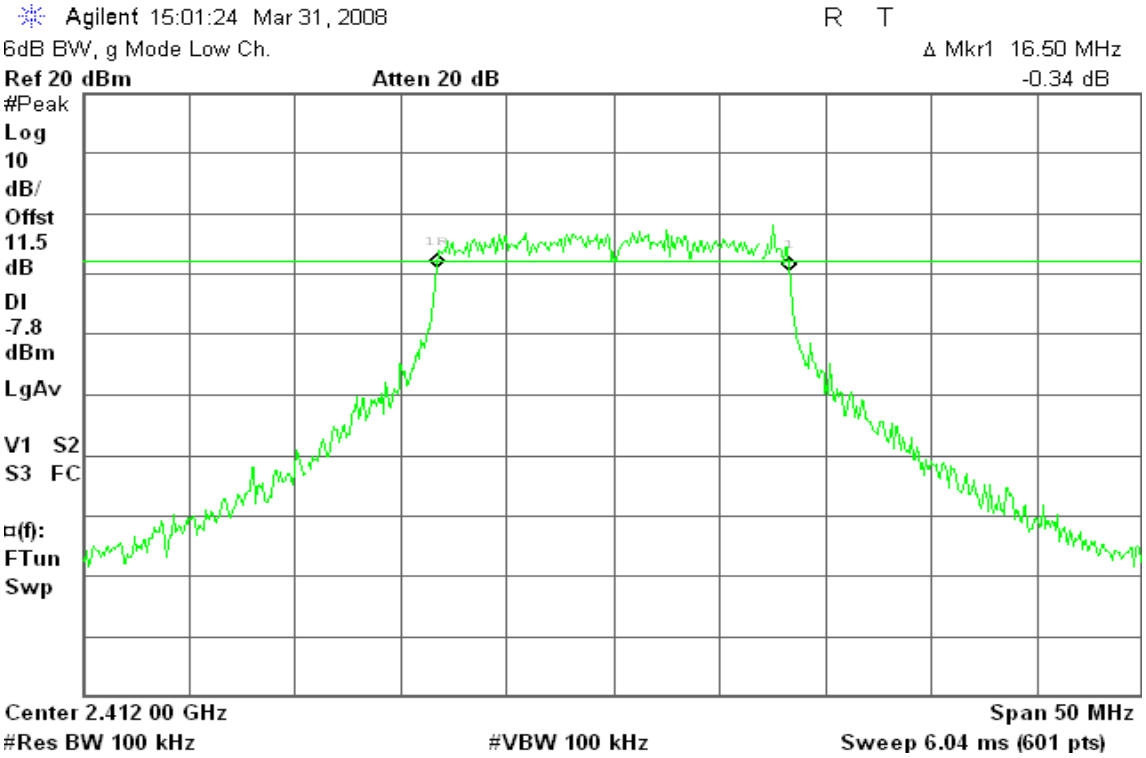


6dB Bandwidth (CH High)

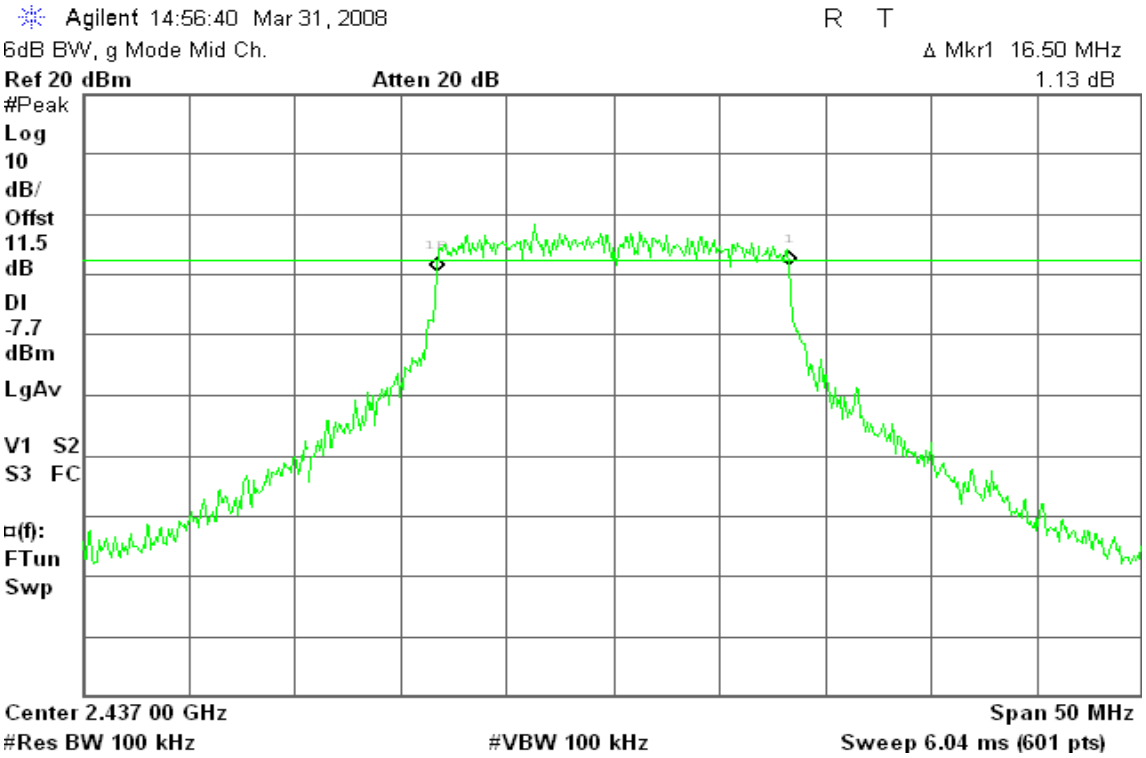


IEEE 802.11g mode / Chain 0

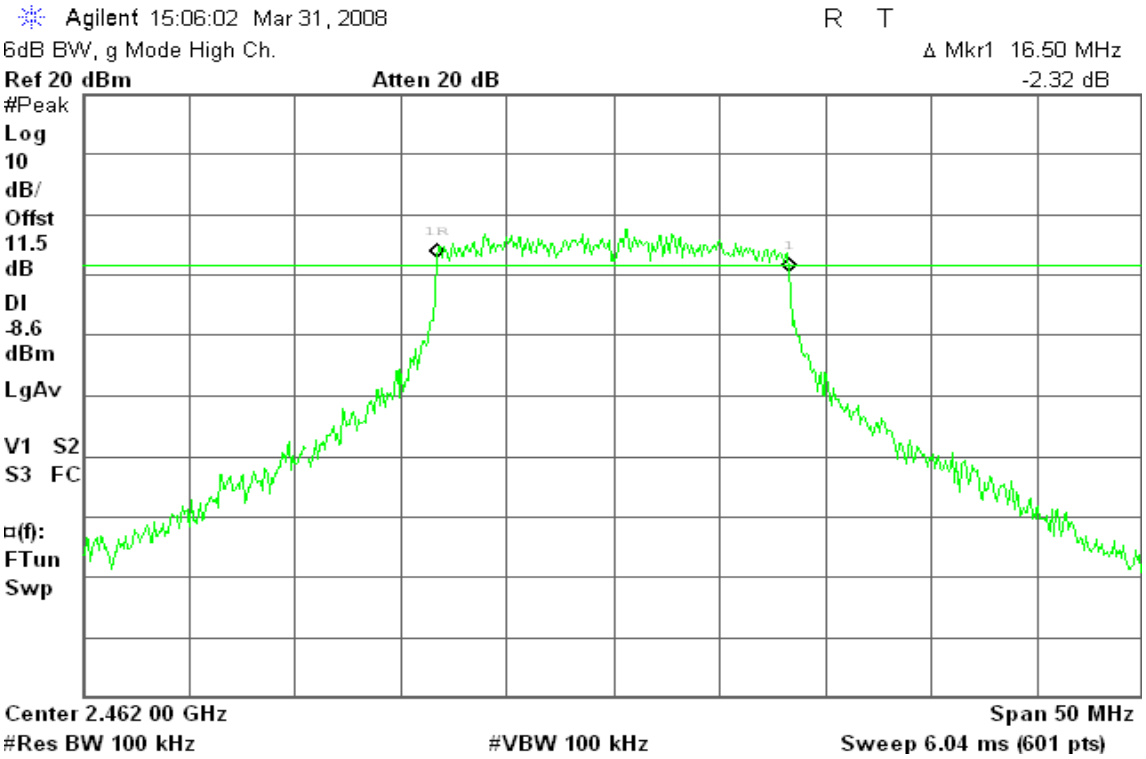
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

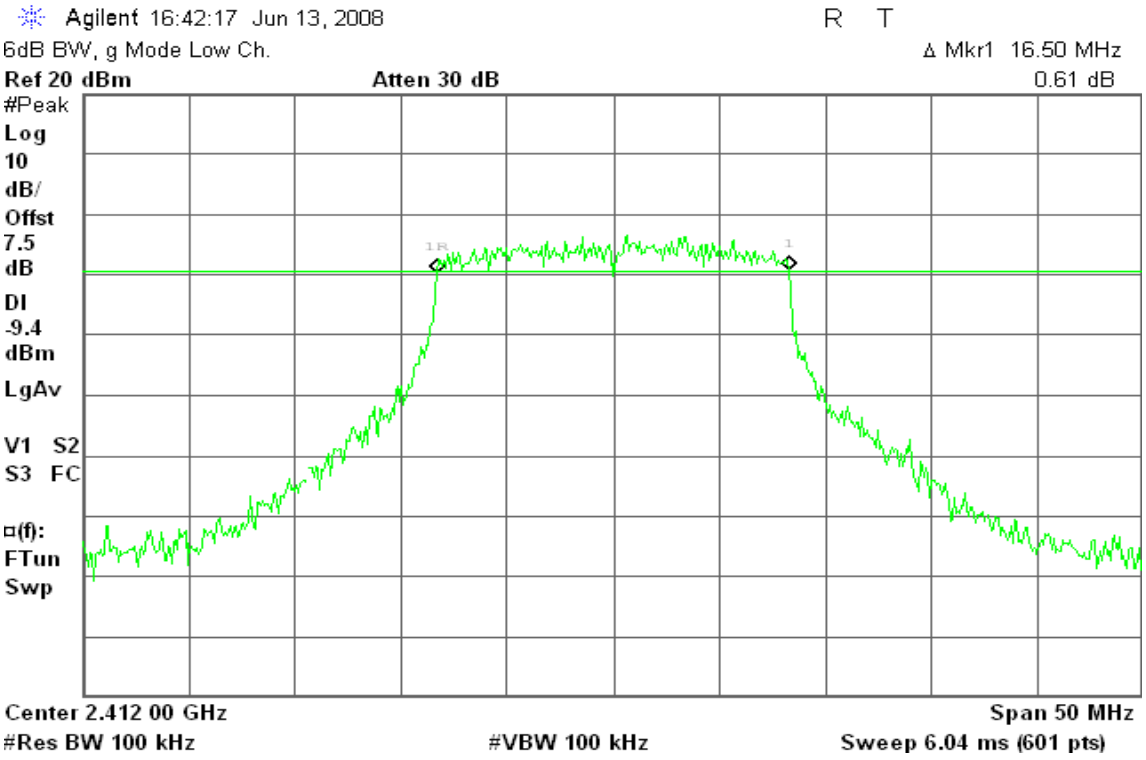


6dB Bandwidth (CH High)

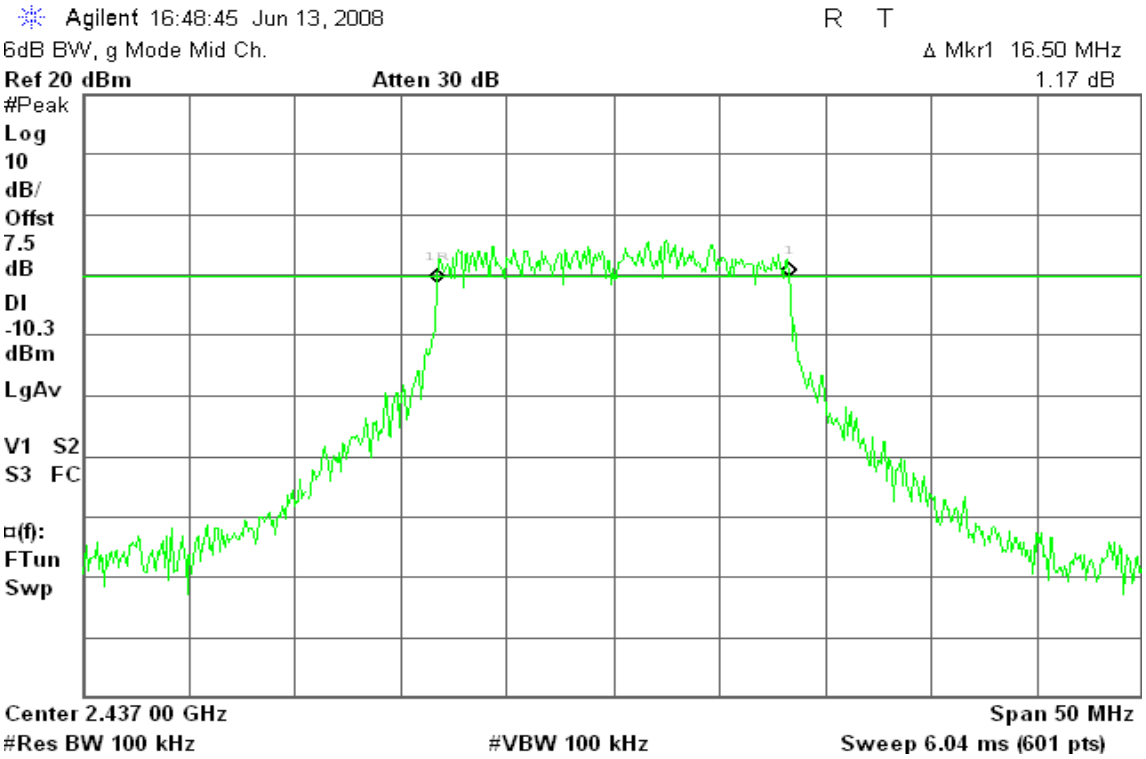


IEEE 802.11g mode / Chain 1

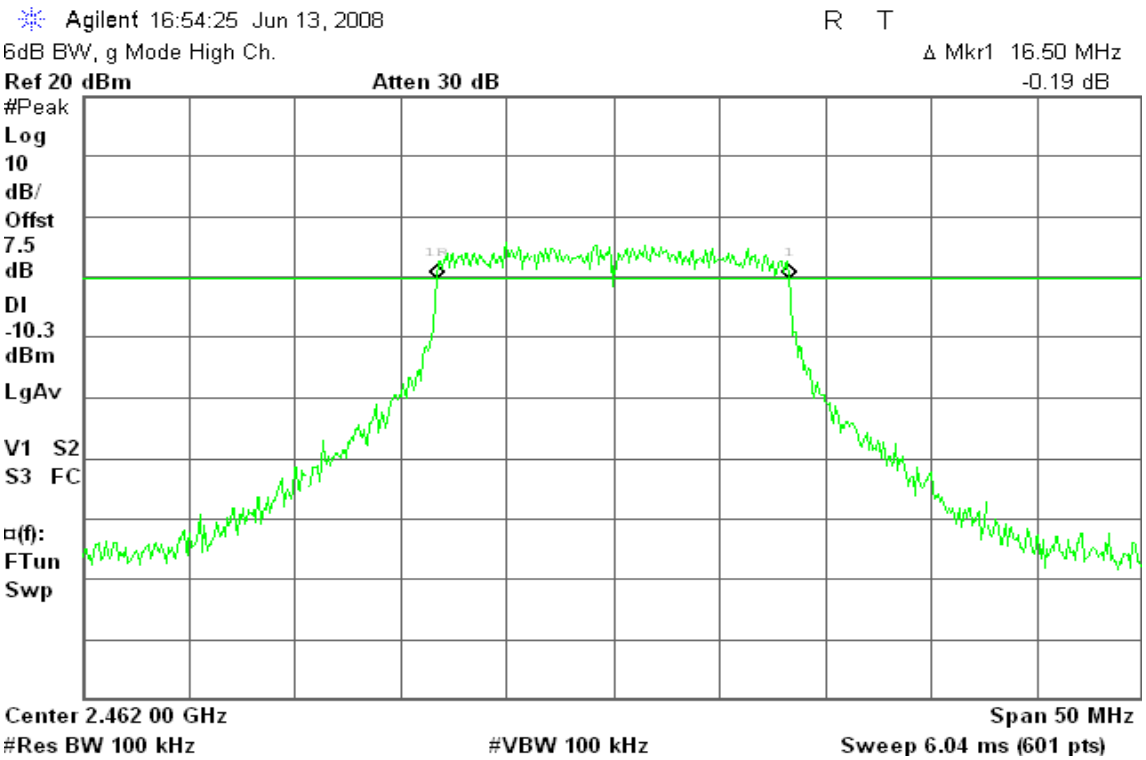
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

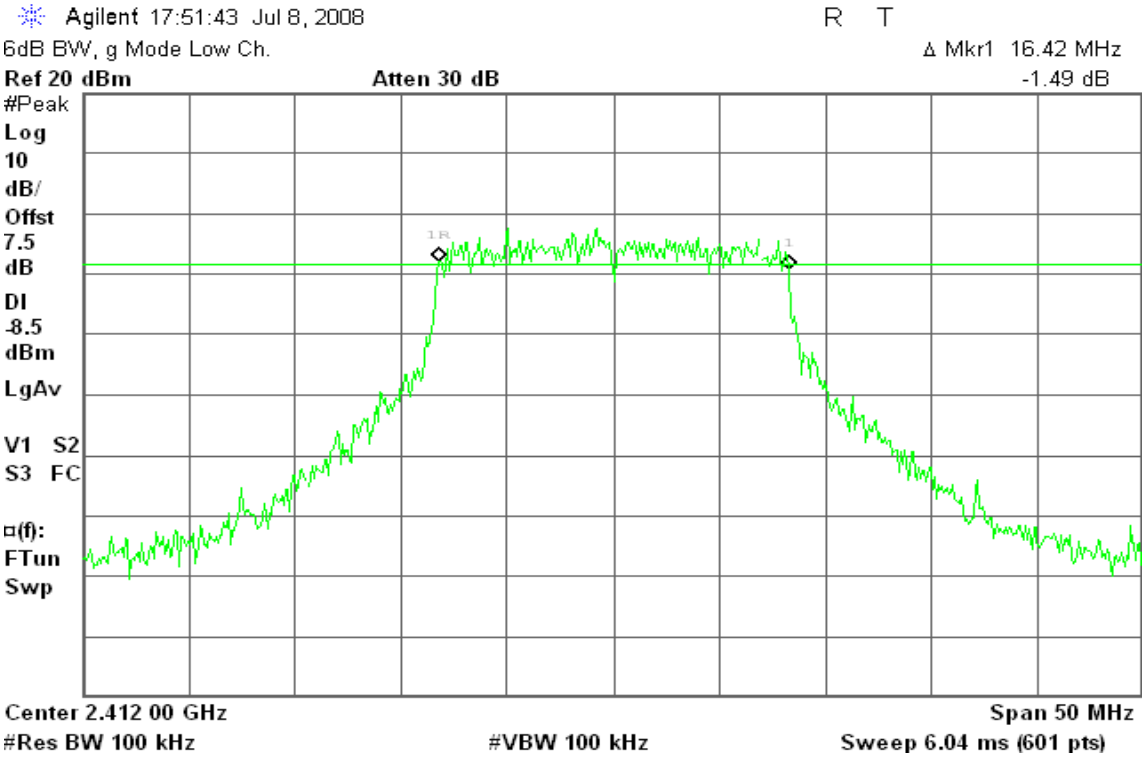


6dB Bandwidth (CH High)

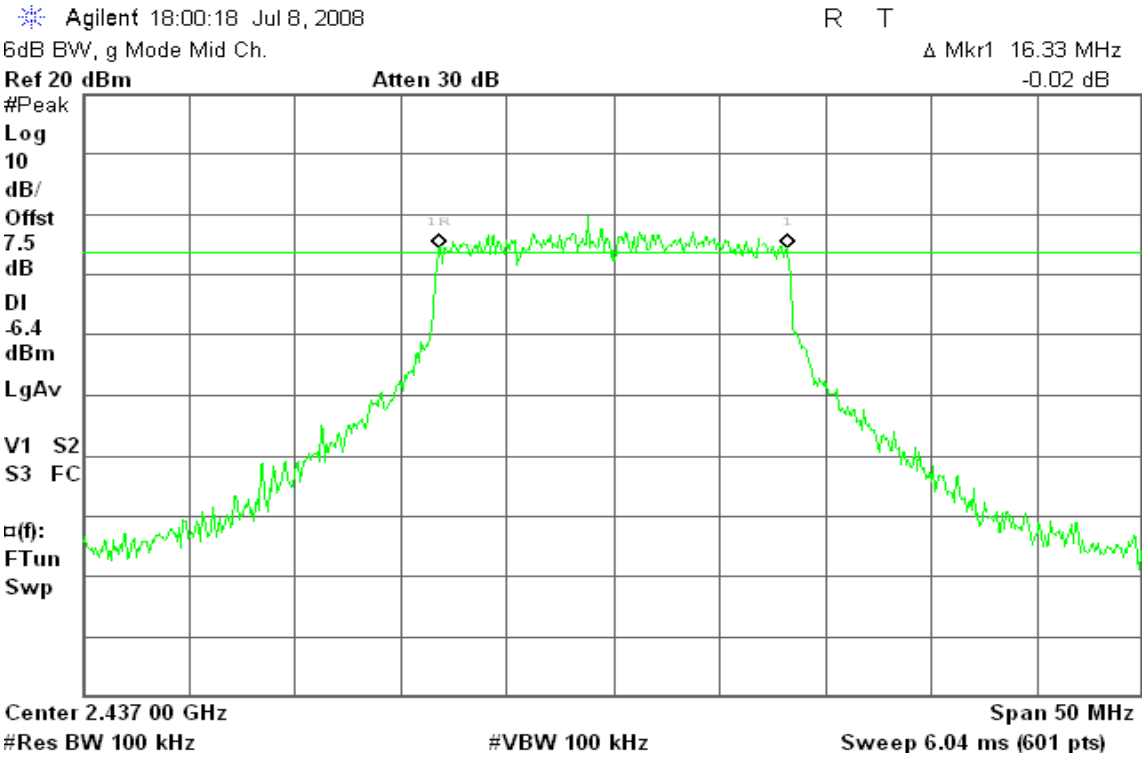


IEEE 802.11g mode / Chain 2

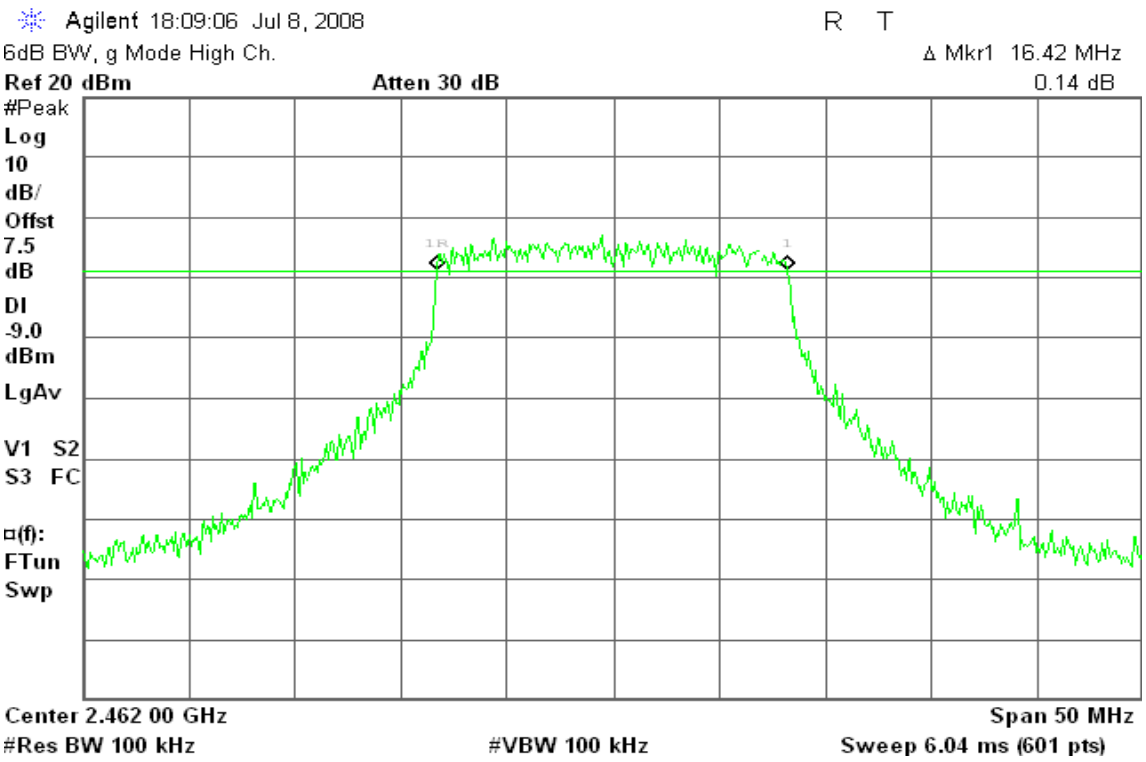
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

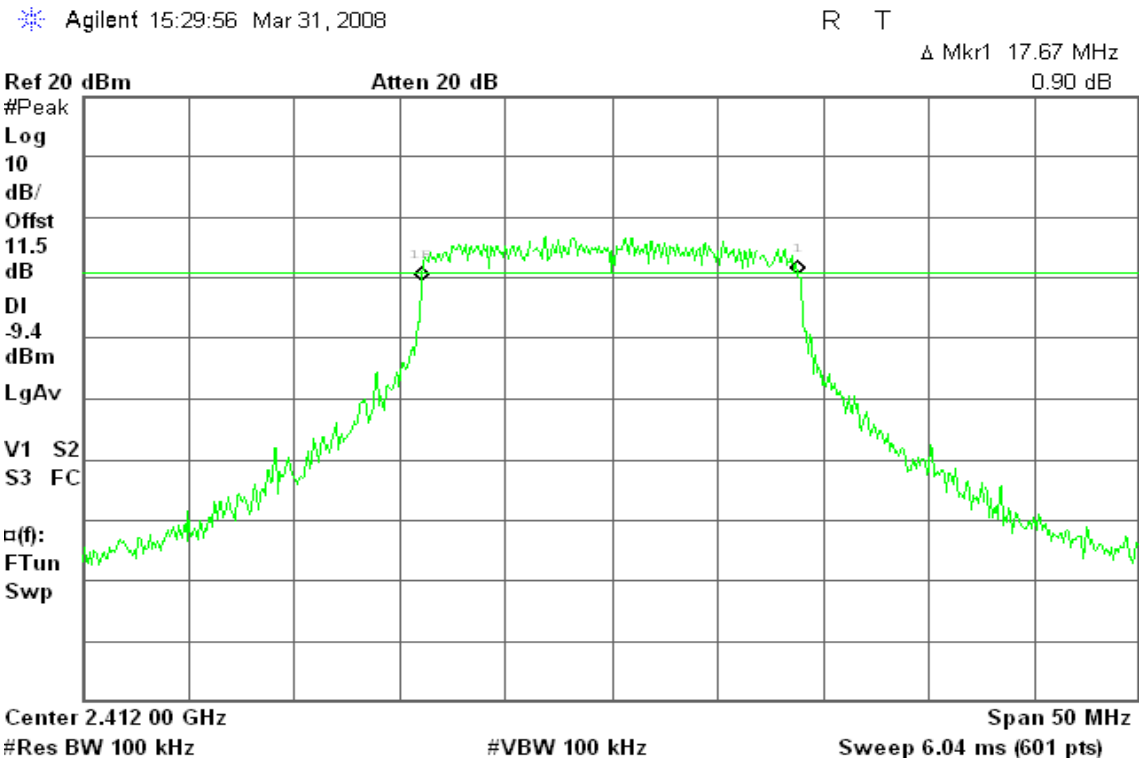


6dB Bandwidth (CH High)

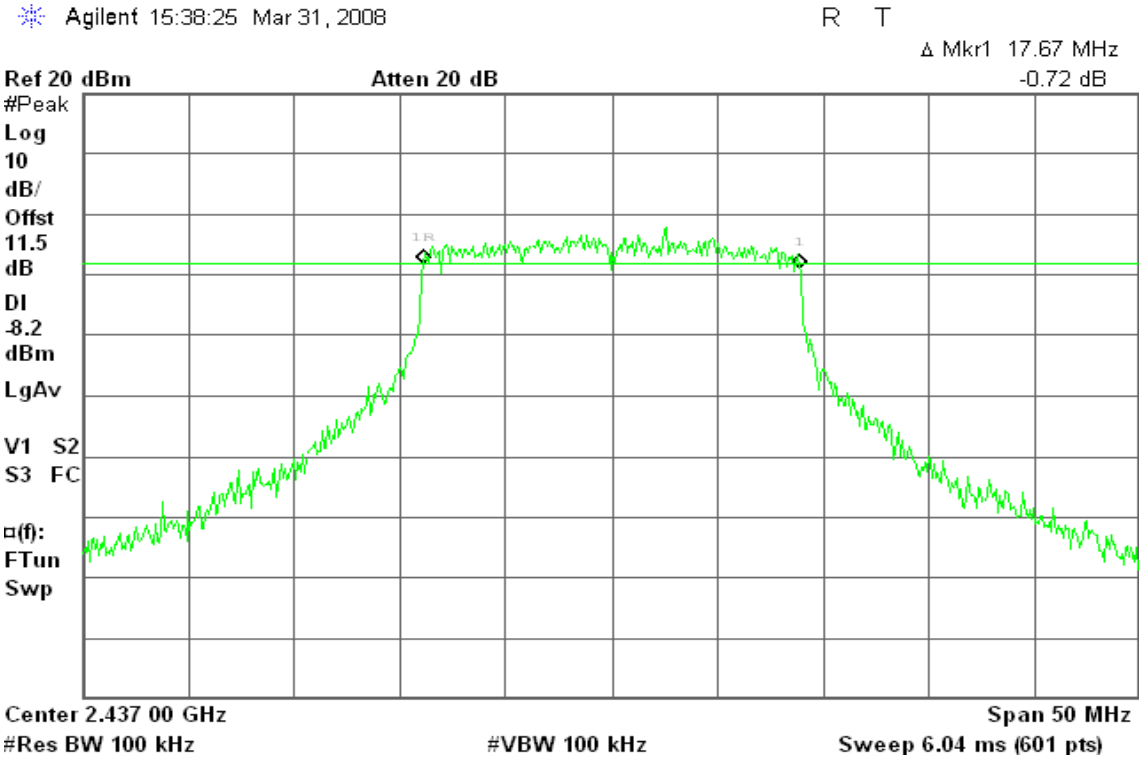


draft 802.11n Standard-20 MHz Channel mode / Chain 0

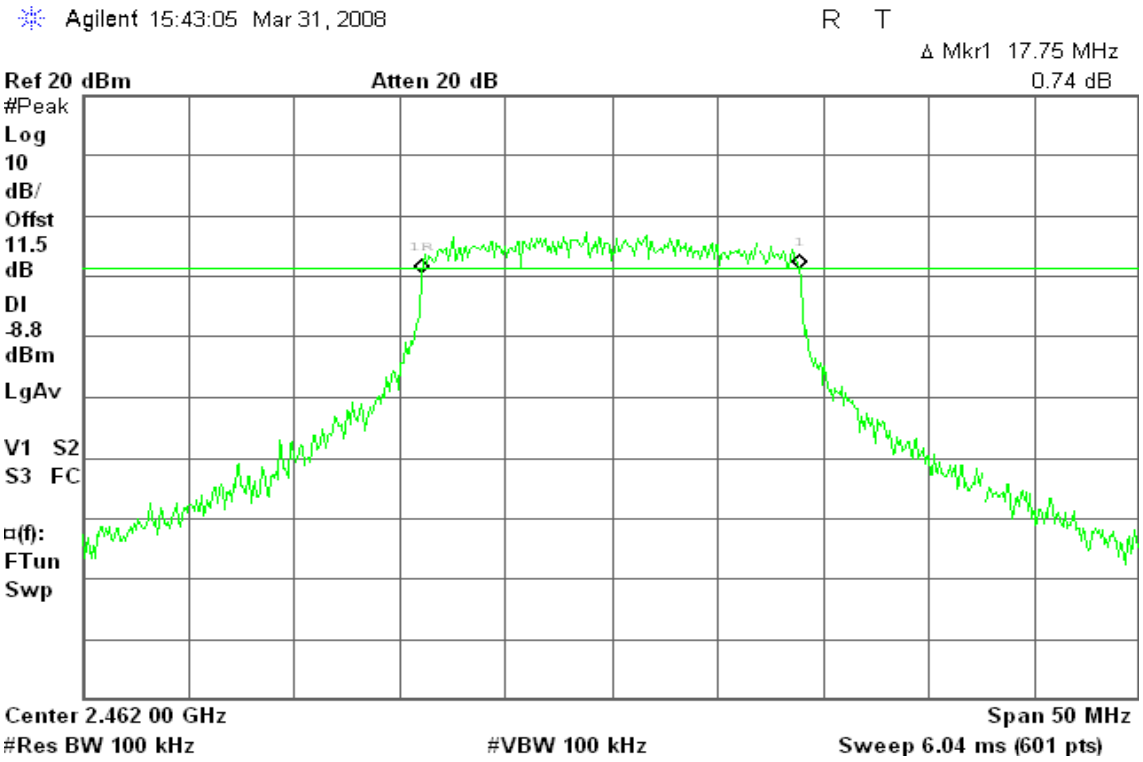
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

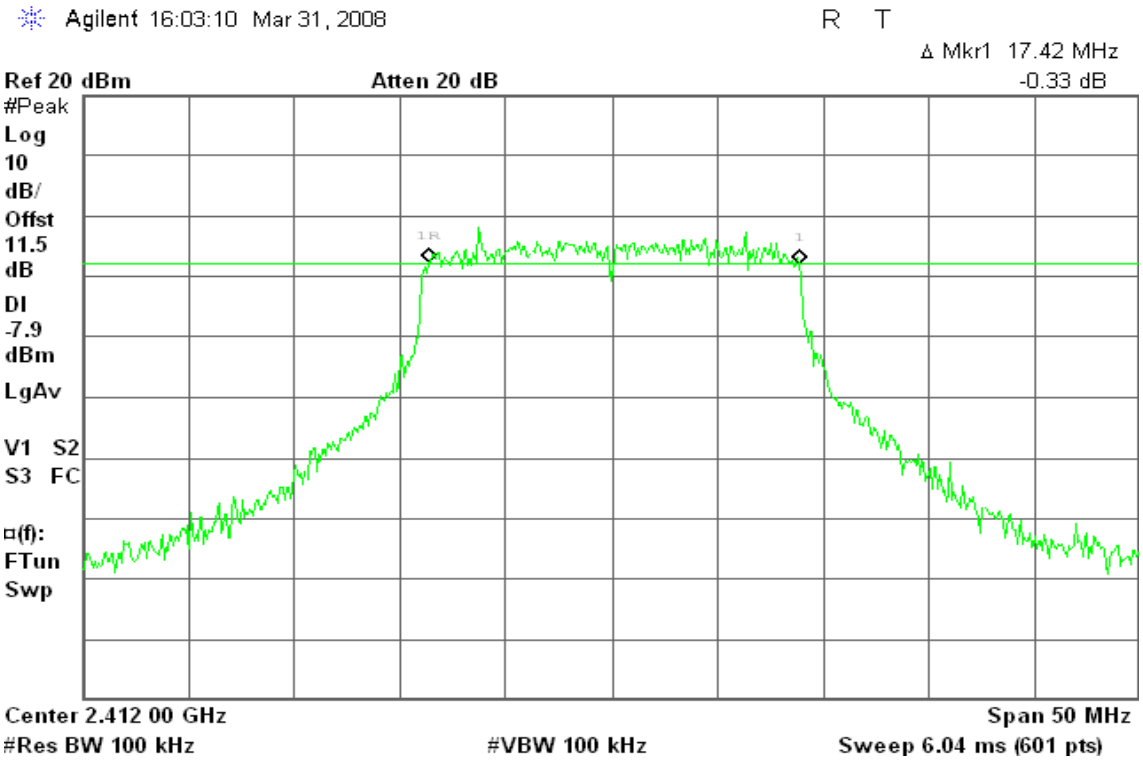


6dB Bandwidth (CH High)

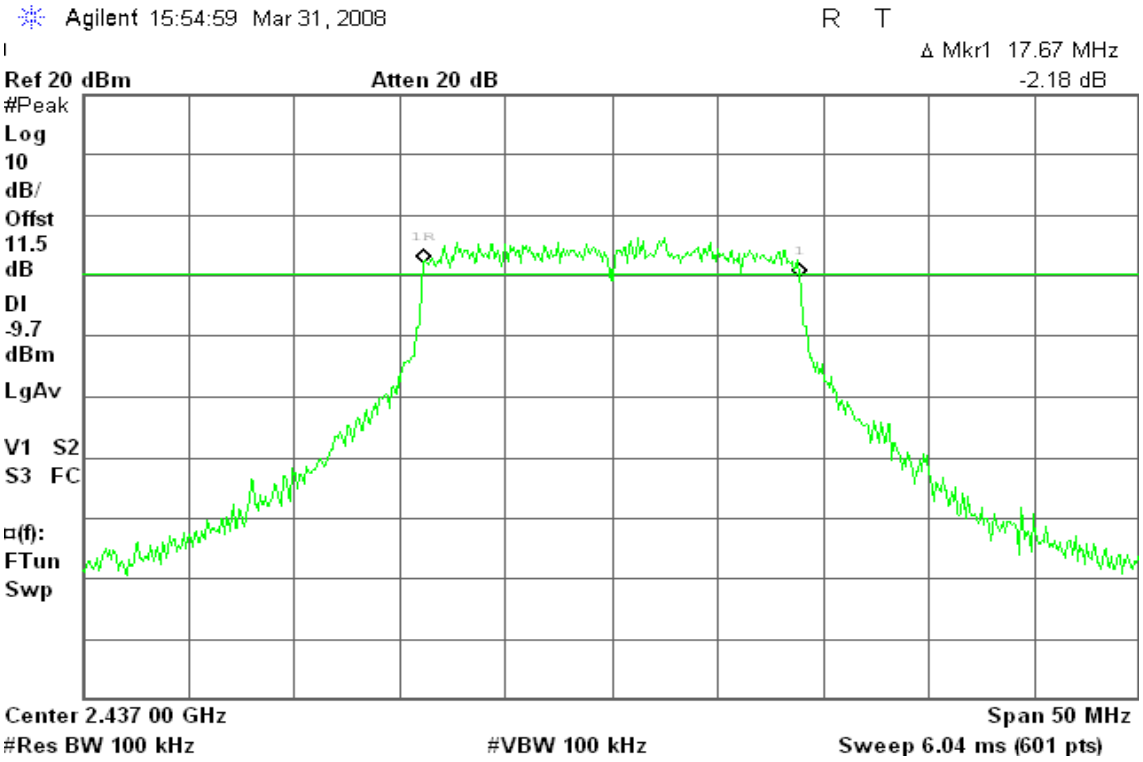


draft 802.11n Standard-20 MHz Channel mode / Chain 1

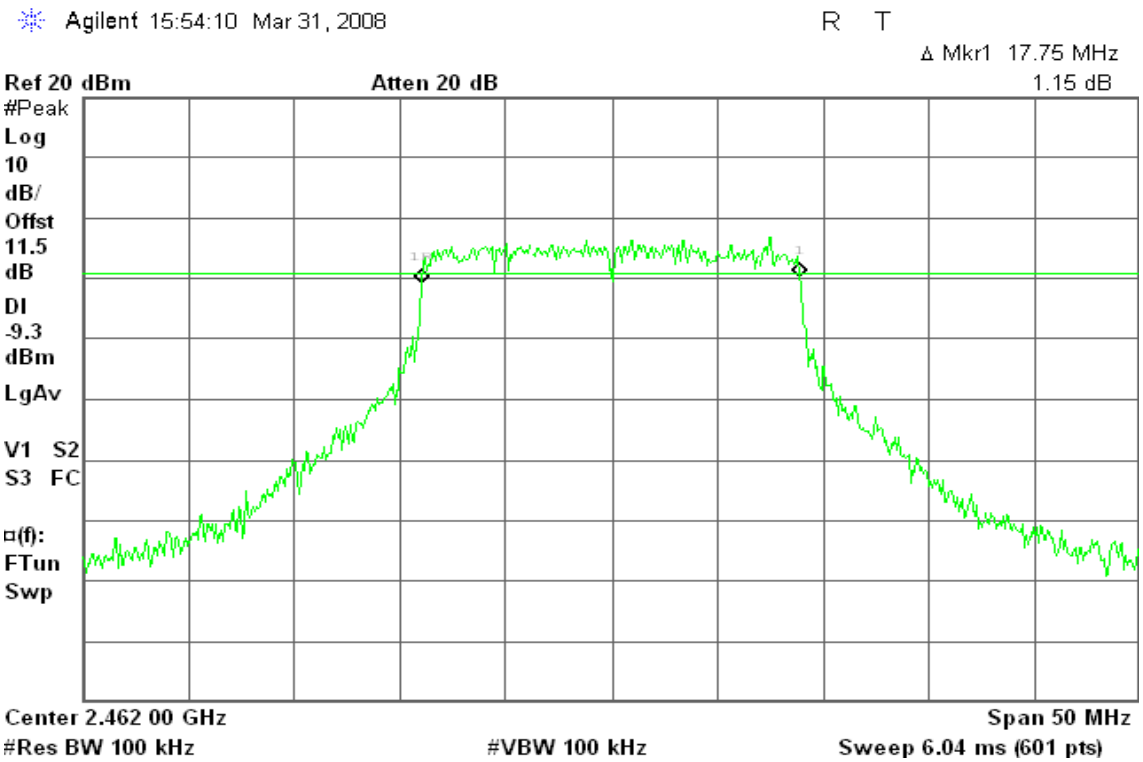
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

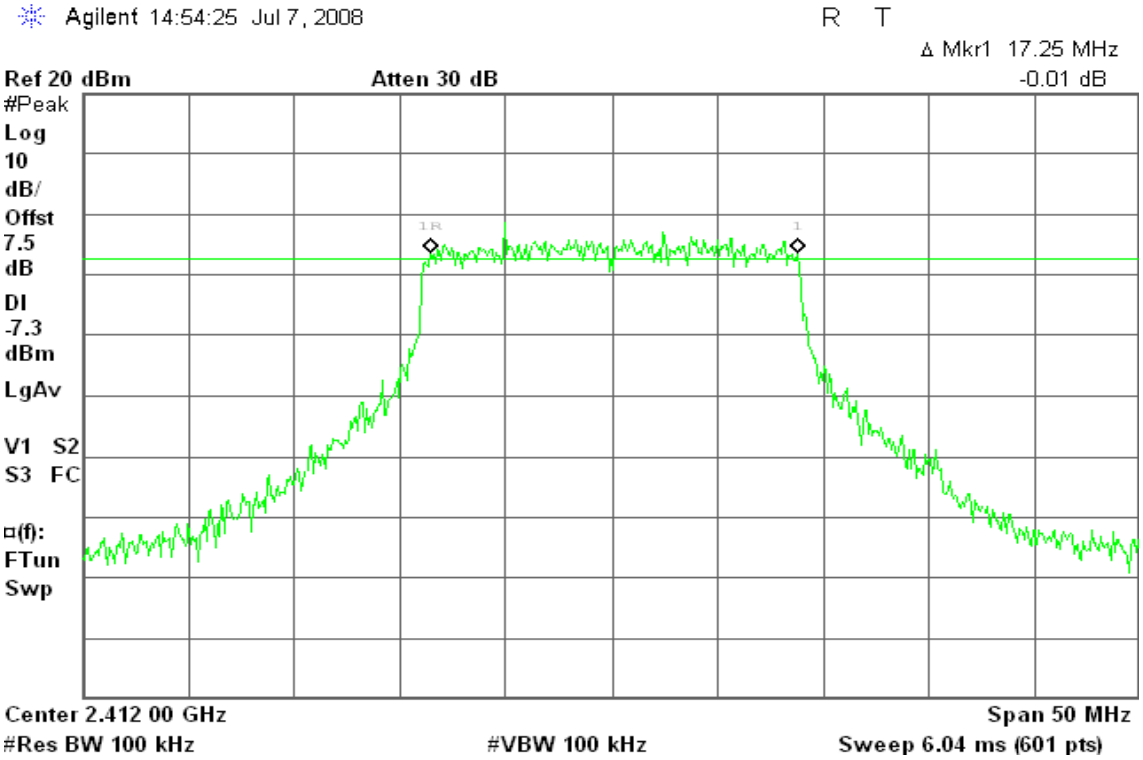


6dB Bandwidth (CH High)

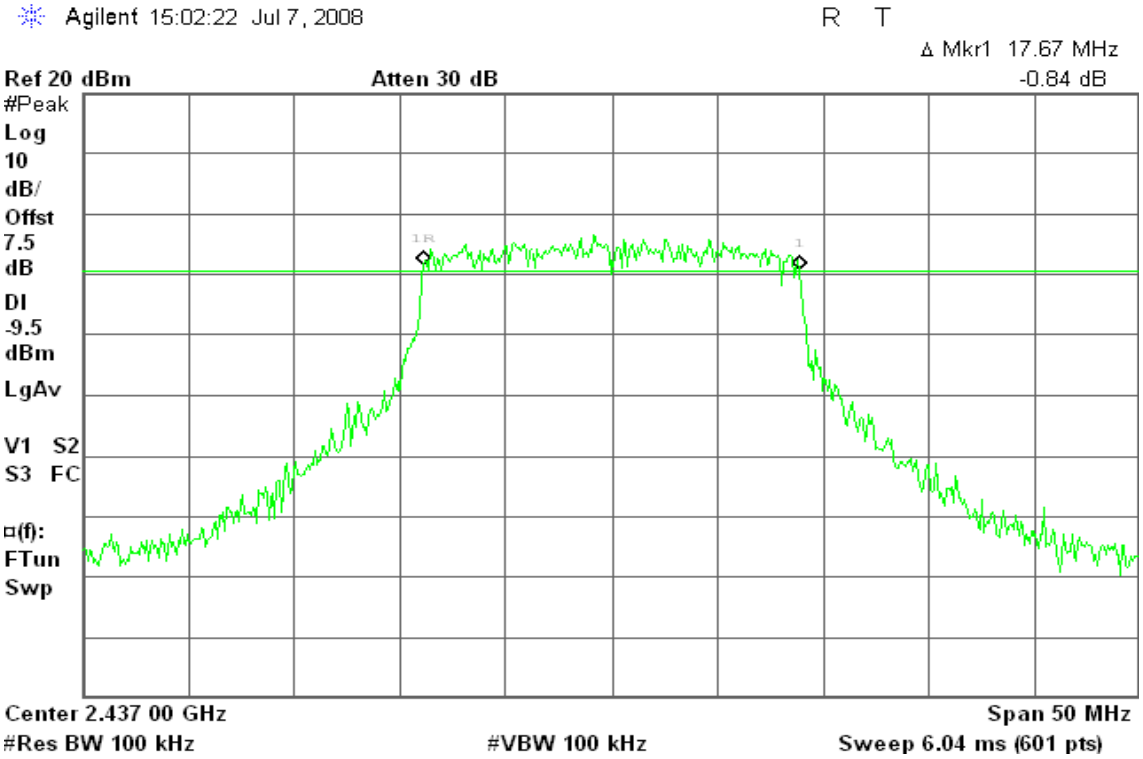


draft 802.11n Standard-20 MHz Channel mode / Chain 2

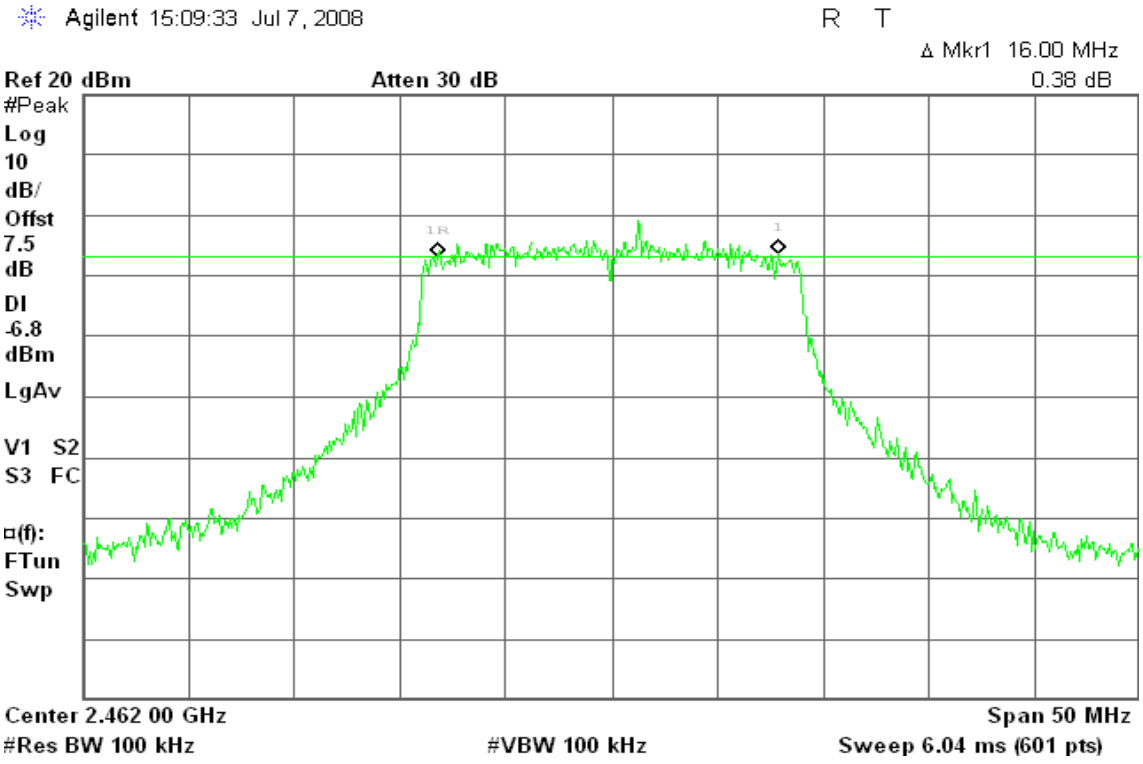
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

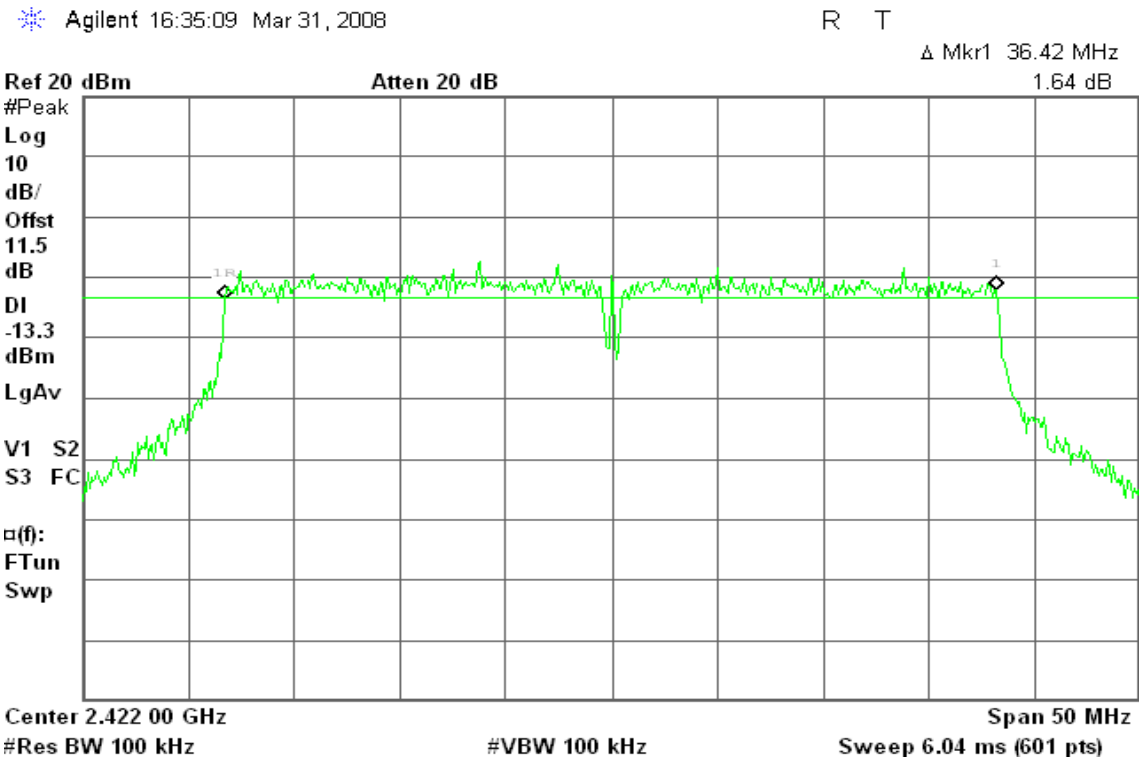


6dB Bandwidth (CH High)

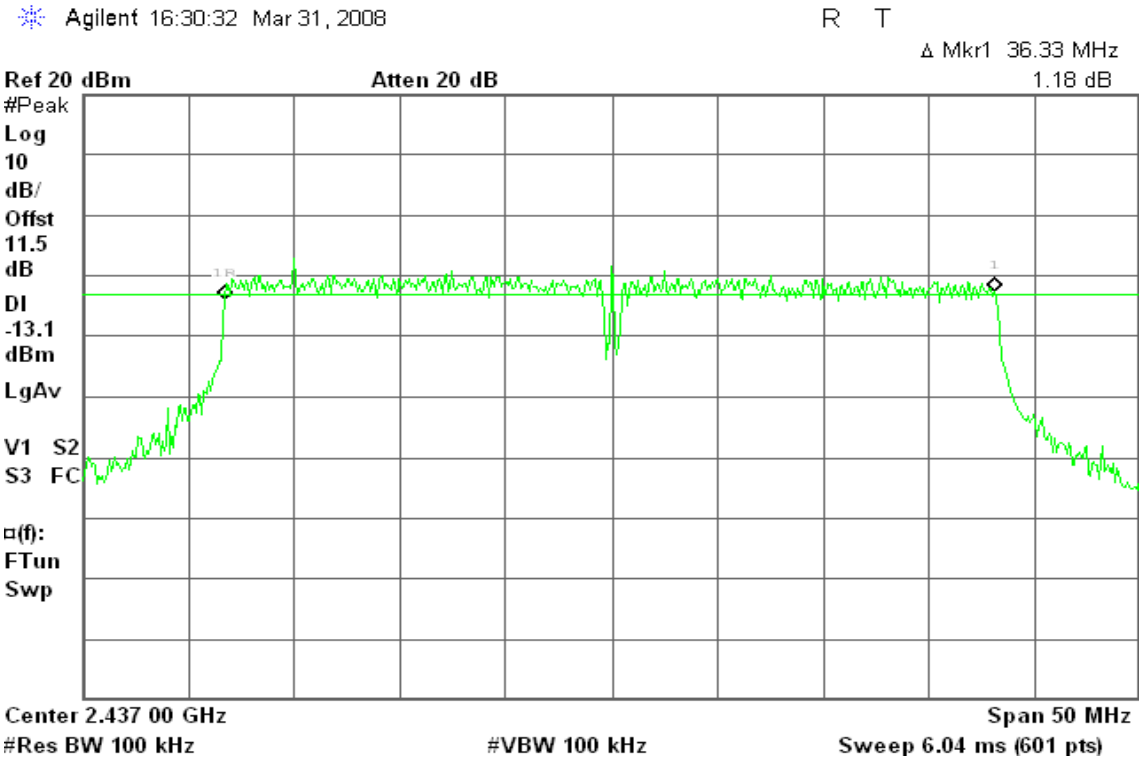


draft 802.11n Wide-40 MHz Channel mode / Chain 0

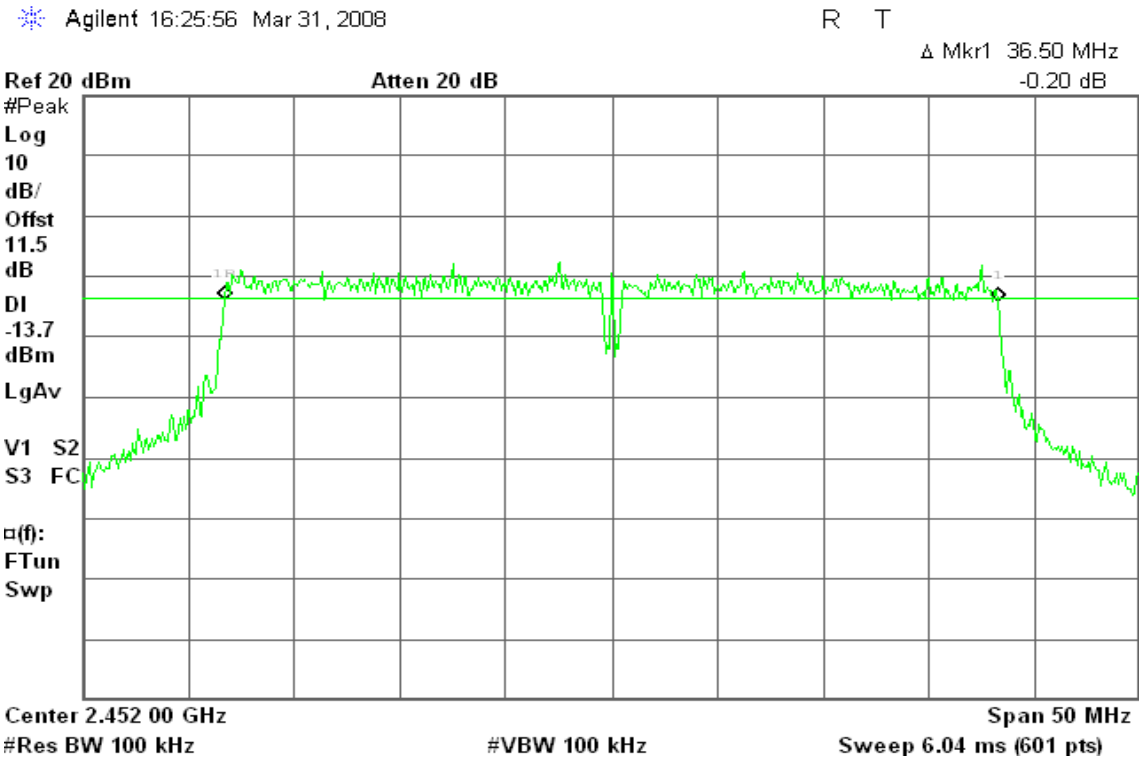
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

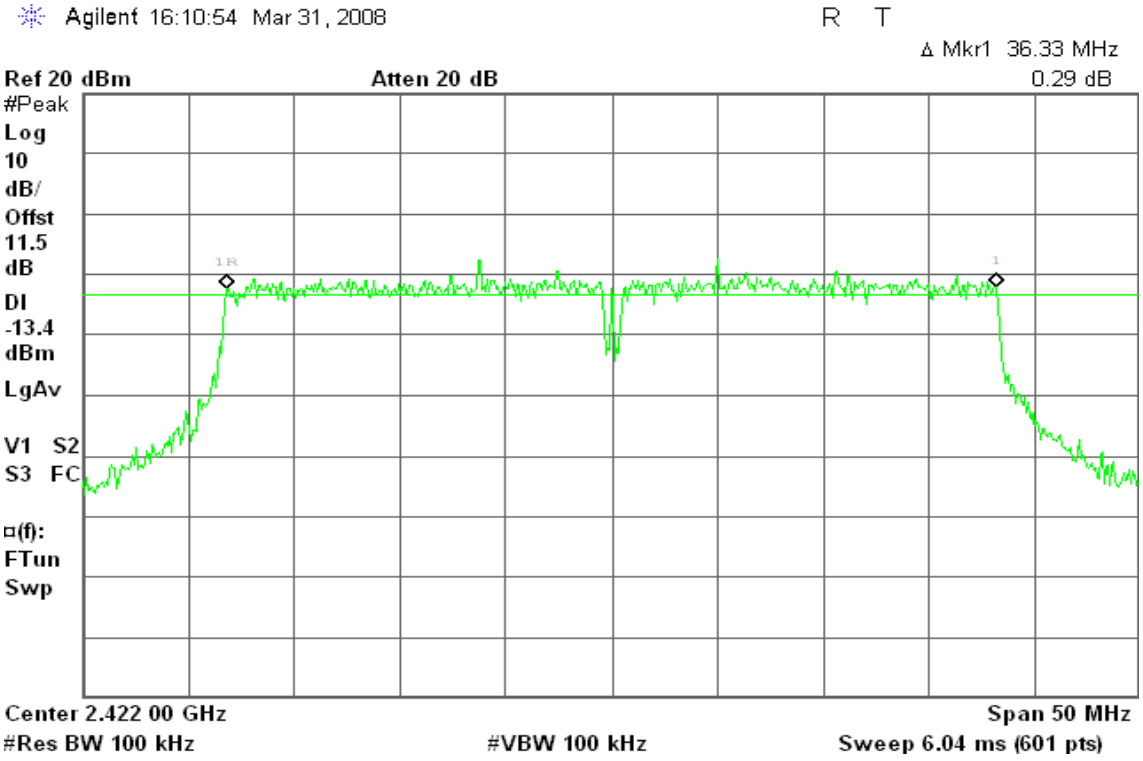


6dB Bandwidth (CH High)

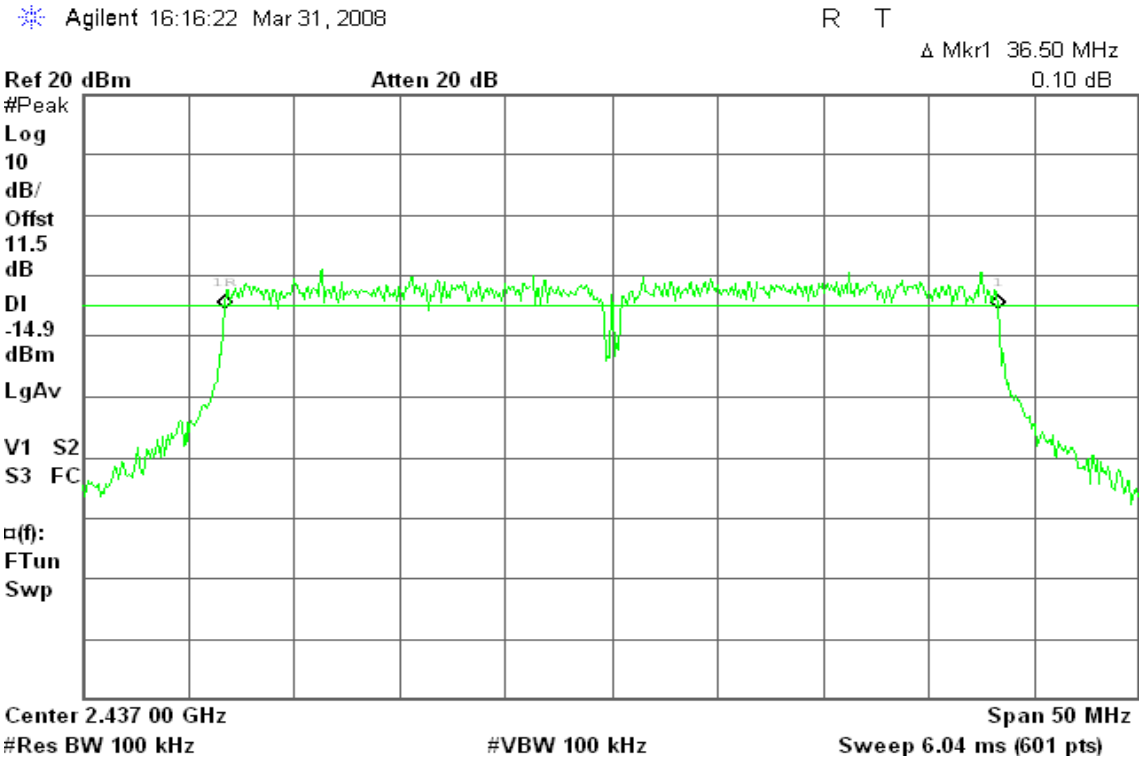


draft 802.11n Wide-40 MHz Channel mode / Chain 1

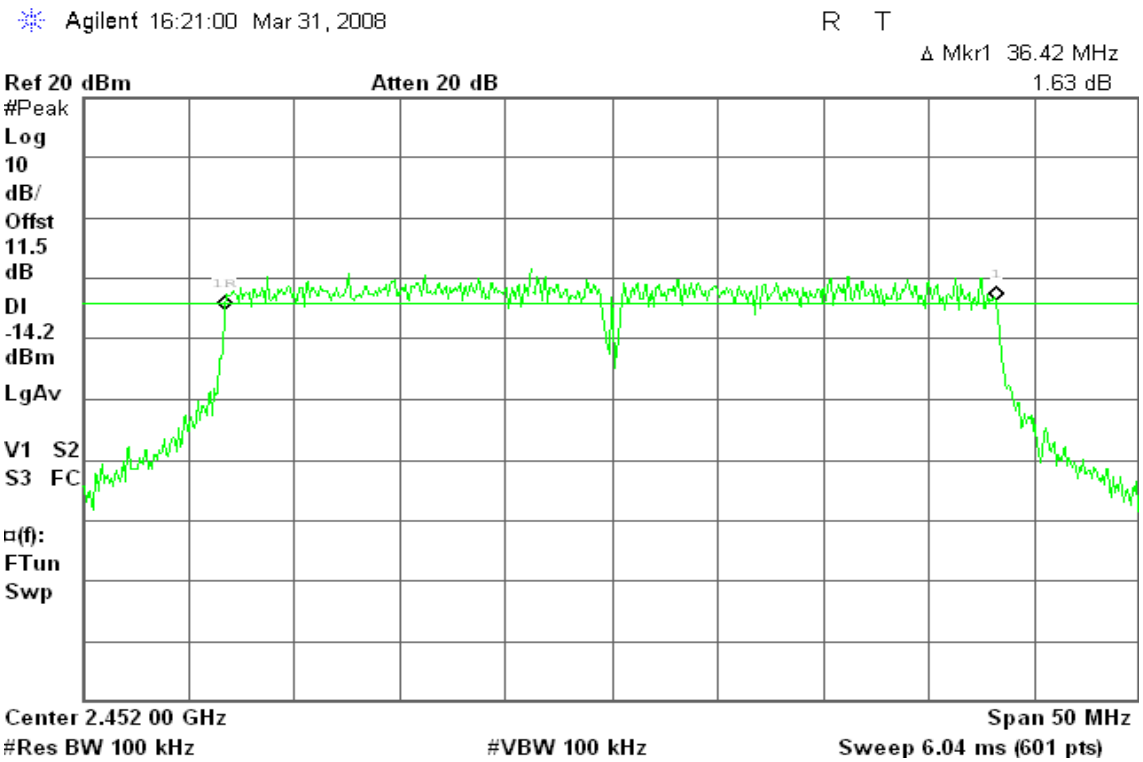
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

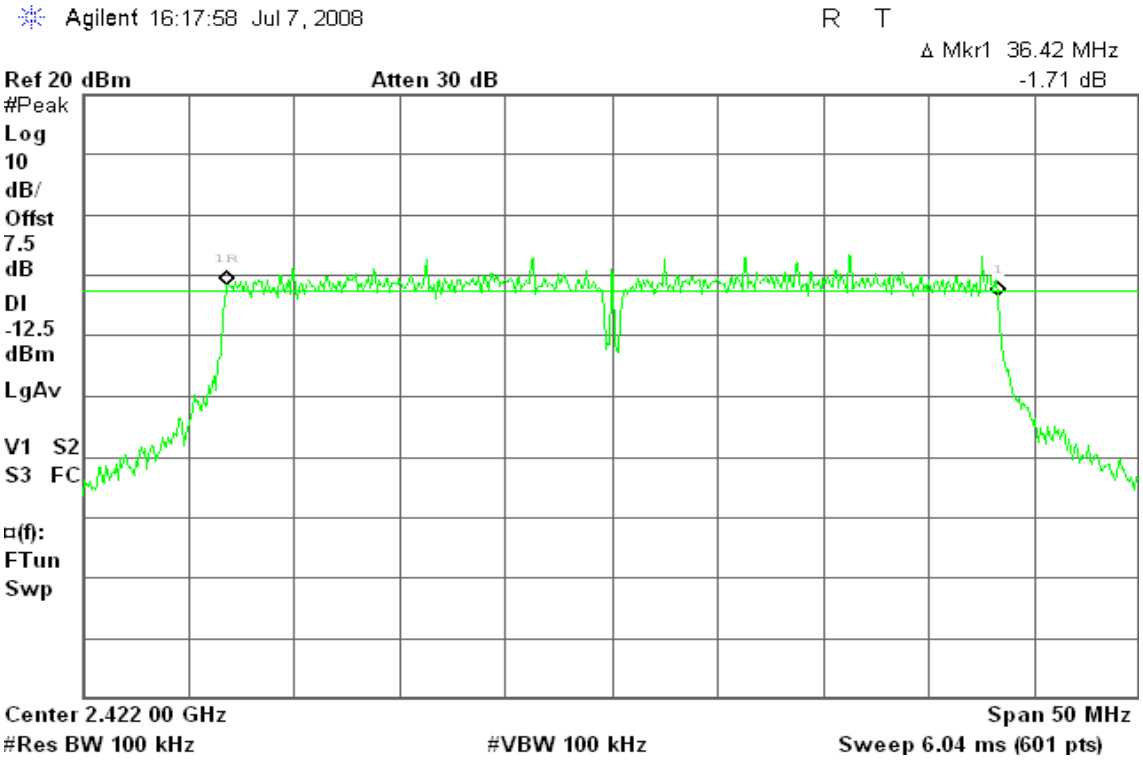


6dB Bandwidth (CH High)

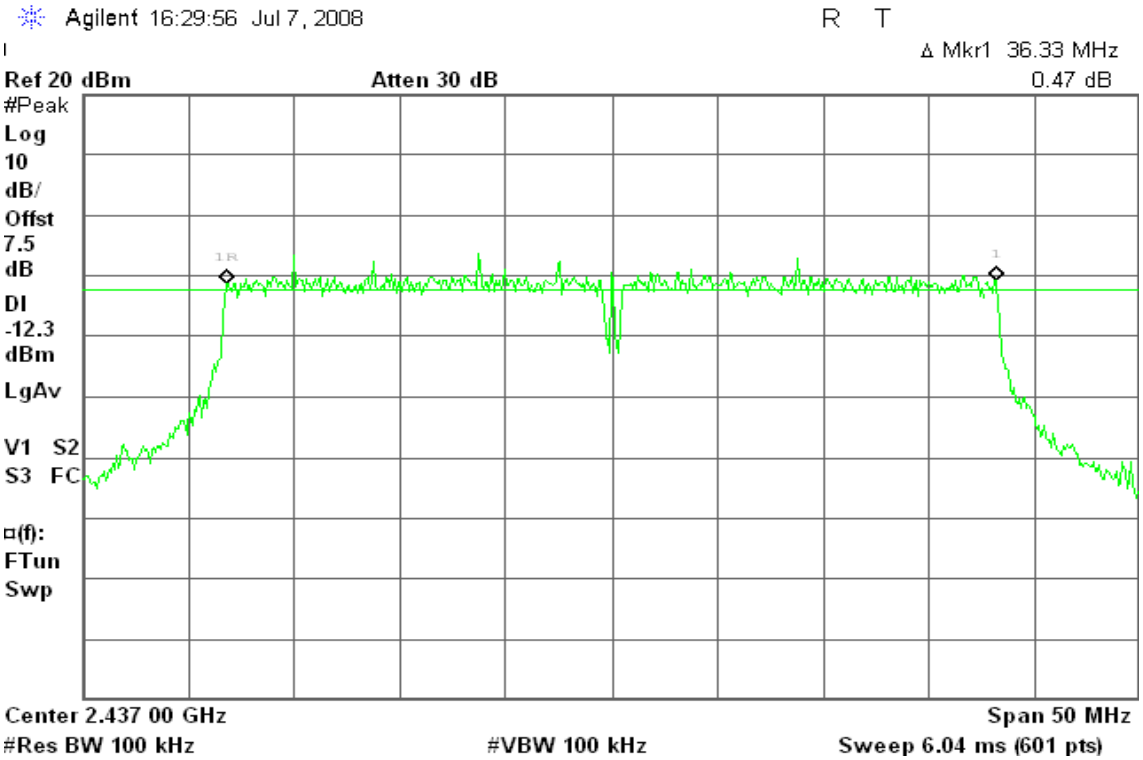


draft 802.11n Wide-40 MHz Channel mode / Chain 2

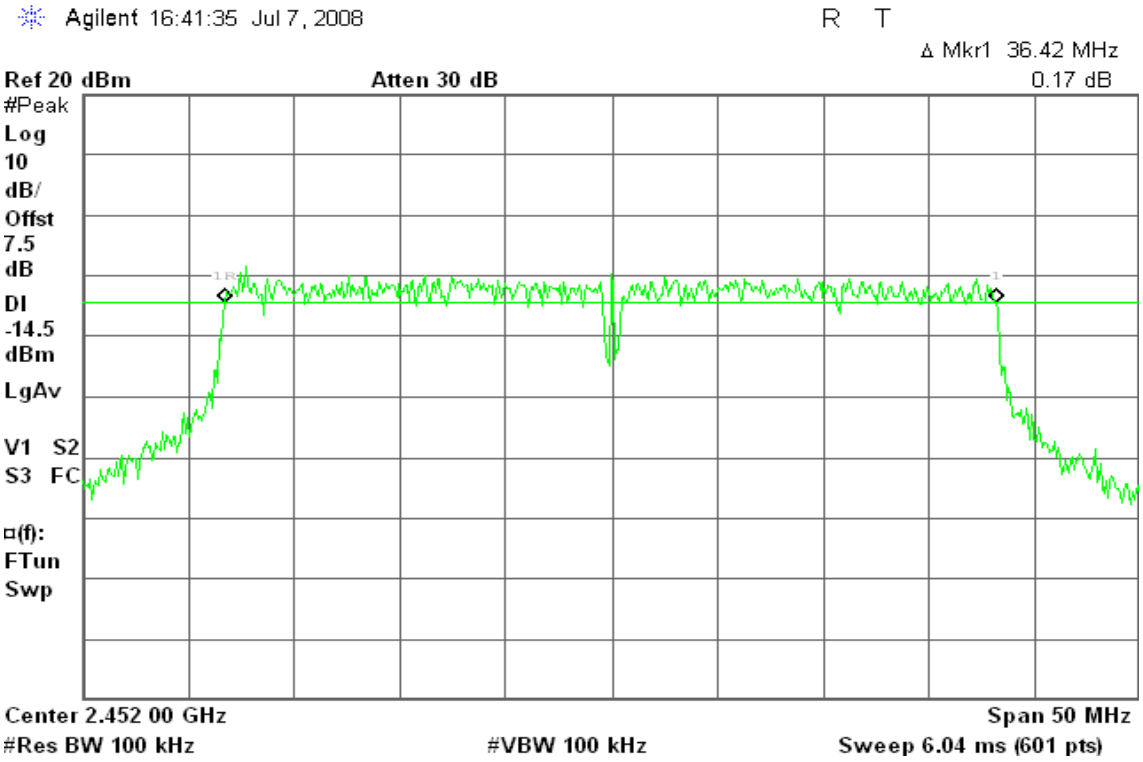
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High)



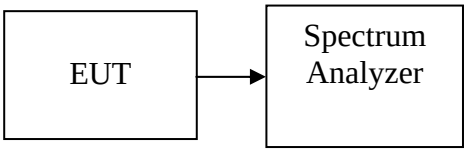
7.2PEAK POWER

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. Peak power is measured using the spectrum analyzer’ s internal channel power integration function.
2. Power is integrated over a bandwidth greater than or equal to the 99% bandwidth.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	15.84	15.01	16.35	20.54	0.1132	0.832	PASS
Mid	2437	16.06	14.93	16.55	20.67	0.1167		PASS
High	2462	16.59	14.77	16.19	20.69	0.1172		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	15.07	14.08	14.88	19.47	0.0885	0.832	PASS
Mid	2437	15.07	14.23	15.16	19.61	0.0914		PASS
High	2462	14.99	13.50	14.86	19.27	0.0846		PASS

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	15.27	14.61	14.82	19.68	0.0929	0.832	PASS
Mid	2437	14.28	14.16	14.77	19.18	0.0828		PASS
High	2462	14.88	14.87	14.08	19.40	0.0870		PASS

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

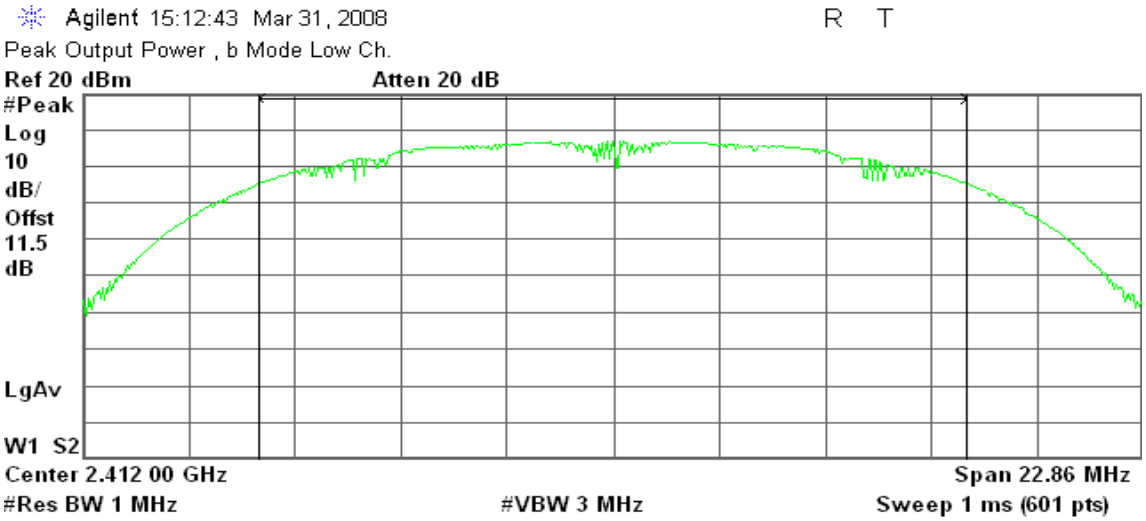
Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2422	11.96	10.98	12.14	16.49	0.0446	0.832	PASS
Mid	2437	12.04	11.23	11.99	16.54	0.0451		PASS
High	2452	12.23	11.82	12.01	16.79	0.0478		PASS

Remark: *1. Total Output Power (w) = Chain 0 (10^(Output Power /10)/1000) + Chain 1 (10^(Output Power /10)/1000) + Chain 2 (10^(Output Power /10)/1000)*
2. The maximum antenna gain is 6.8dBi; therefore the reduction due to antenna gain is 0.8dBi, so the limit is 29.2dBm.

Test Plot

IEEE 802.11b mode / Chain 0

Peak Power (CH Low)



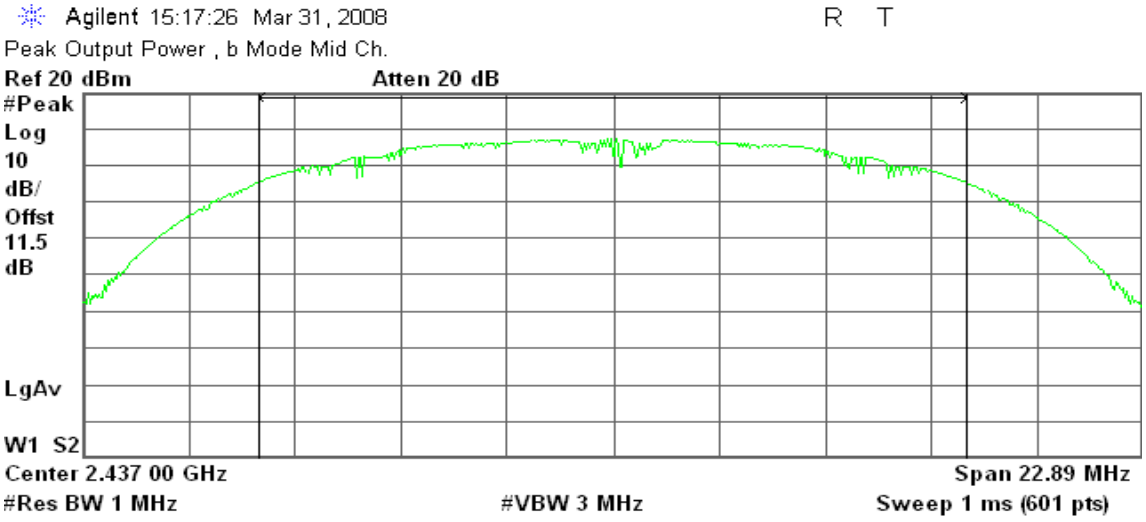
Channel Power

15.84 dBm / 15.2390 MHz

Power Spectral Density

-55.99 dBm/Hz

Peak Power (CH Mid)



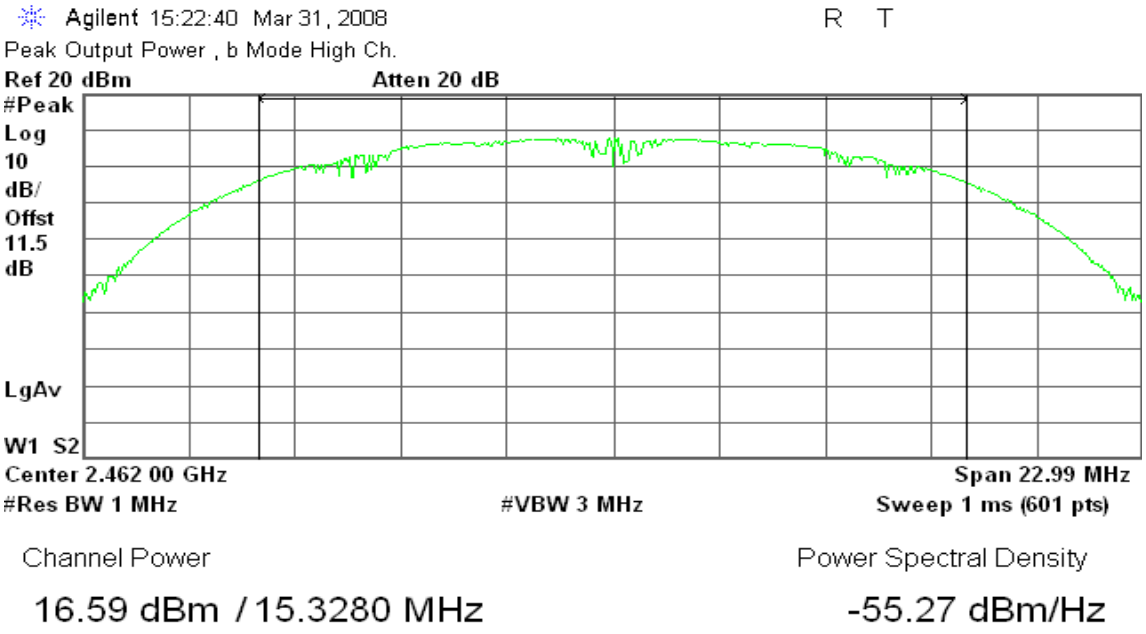
Channel Power

16.06 dBm / 15.2630 MHz

Power Spectral Density

-55.78 dBm/Hz

Peak Power (CH High)

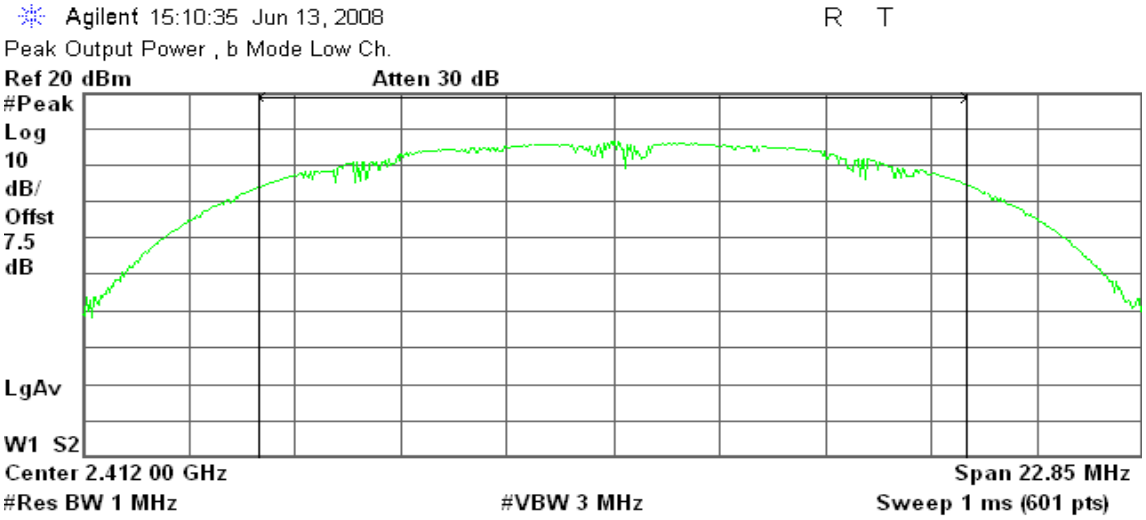


Channel Power
16.59 dBm / 15.3280 MHz

Power Spectral Density
-55.27 dBm/Hz

IEEE 802.11b mode / Chain 1

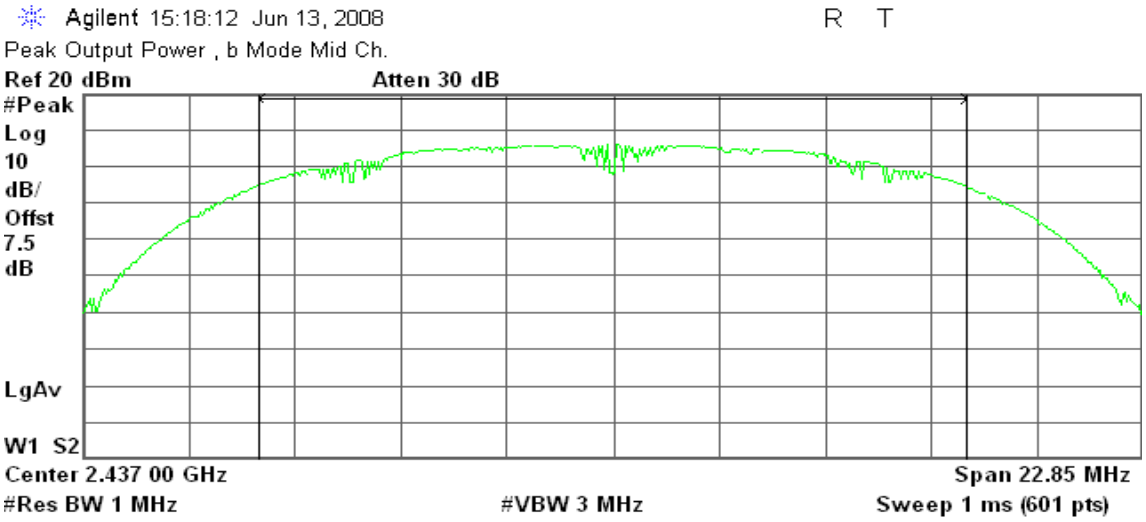
Peak Power (CH Low)



Channel Power
15.01 dBm / 15.2360 MHz

Power Spectral Density
-56.81 dBm/Hz

Peak Power (CH Mid)



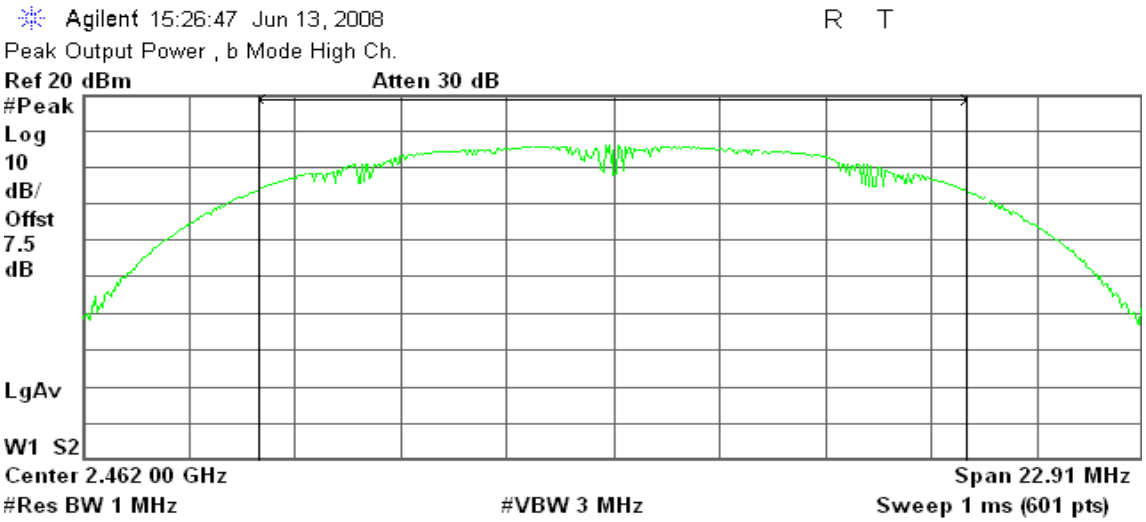
Channel Power

14.93 dBm / 15.2360 MHz

Power Spectral Density

-56.90 dBm/Hz

Peak Power (CH High)



Channel Power

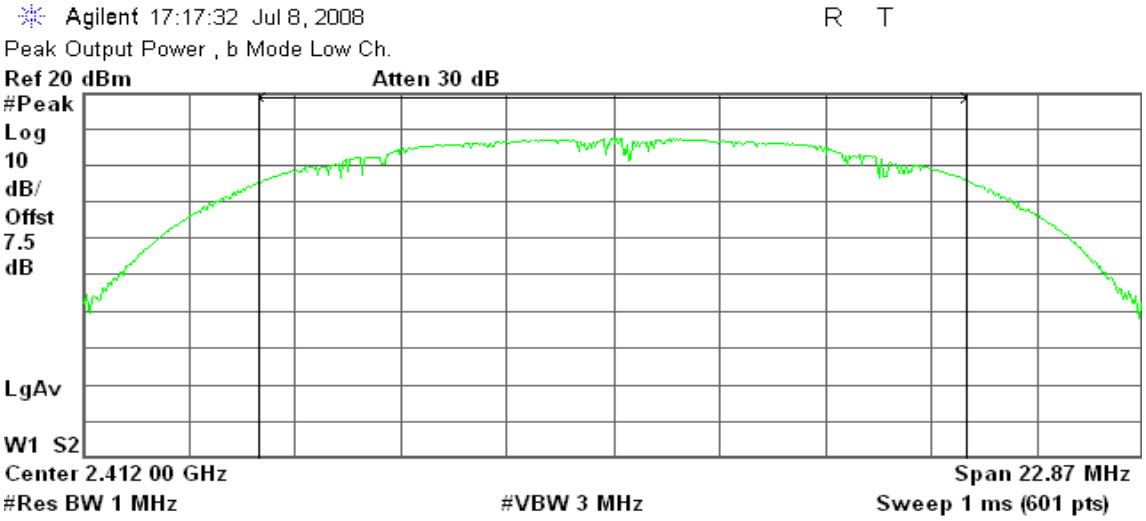
14.77 dBm / 15.2700 MHz

Power Spectral Density

-57.07 dBm/Hz

IEEE 802.11b mode / Chain 2

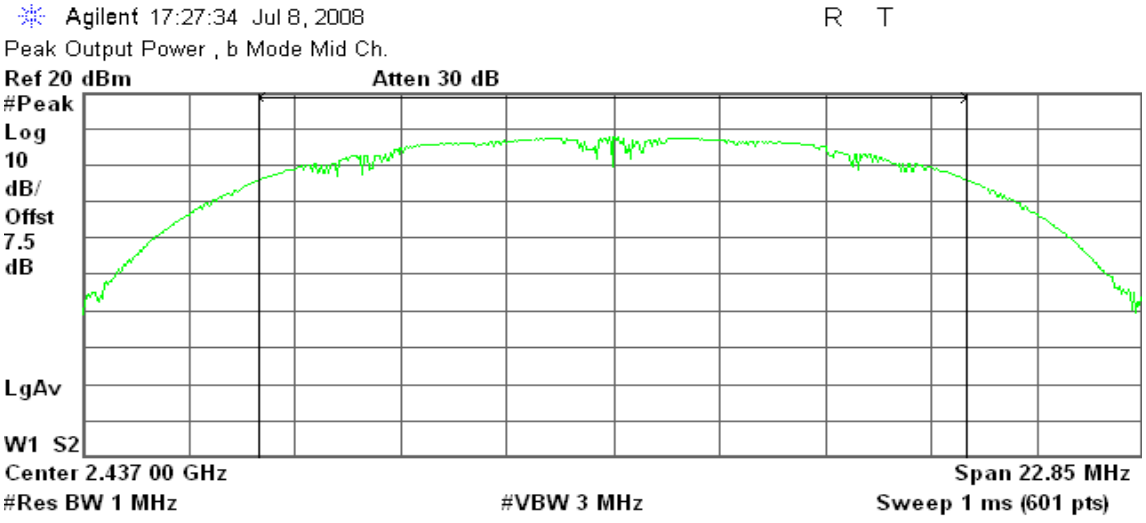
Peak Power (CH Low)



Channel Power
16.35 dBm / 15.2490 MHz

Power Spectral Density
-55.48 dBm/Hz

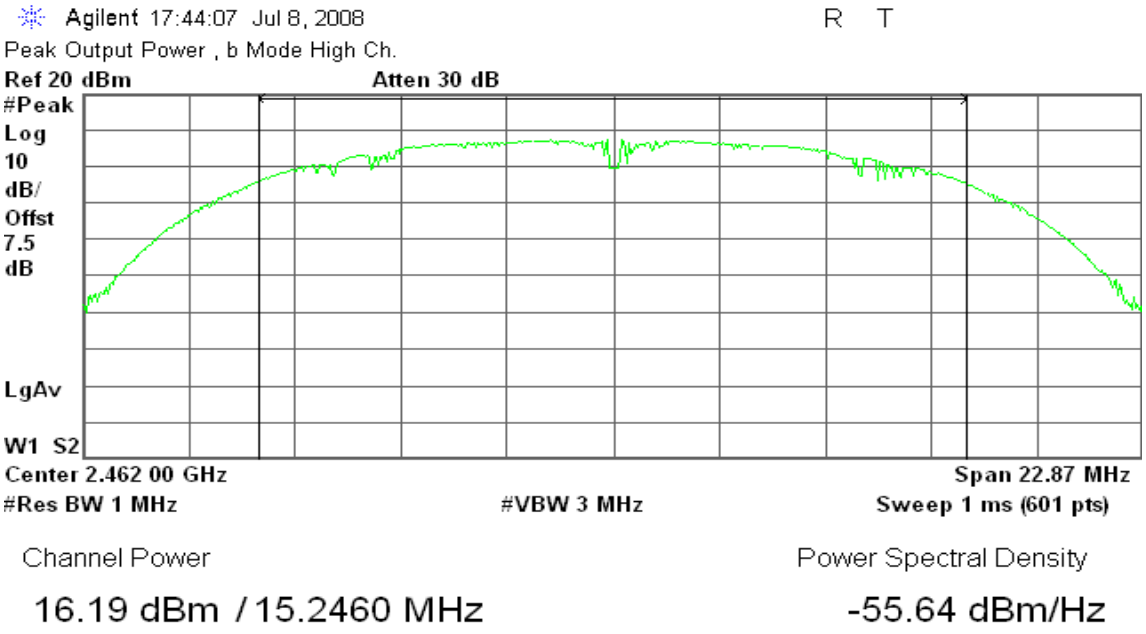
Peak Power (CH Mid)



Channel Power
16.55 dBm / 15.2350 MHz

Power Spectral Density
-55.28 dBm/Hz

Peak Power (CH High)



Channel Power

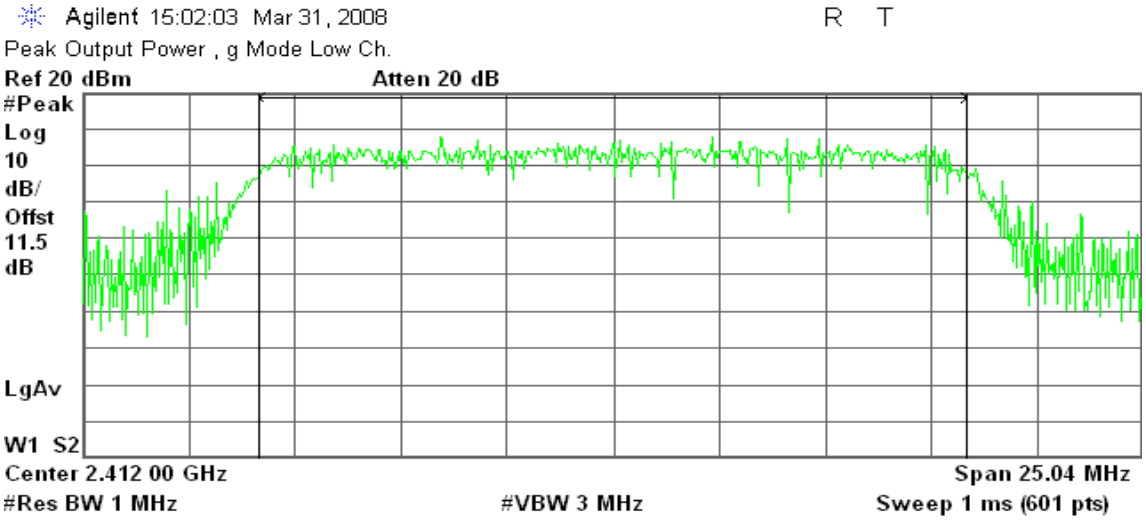
16.19 dBm / 15.2460 MHz

Power Spectral Density

-55.64 dBm/Hz

IEEE 802.11g mode / Chain 0

Peak Power (CH Low)



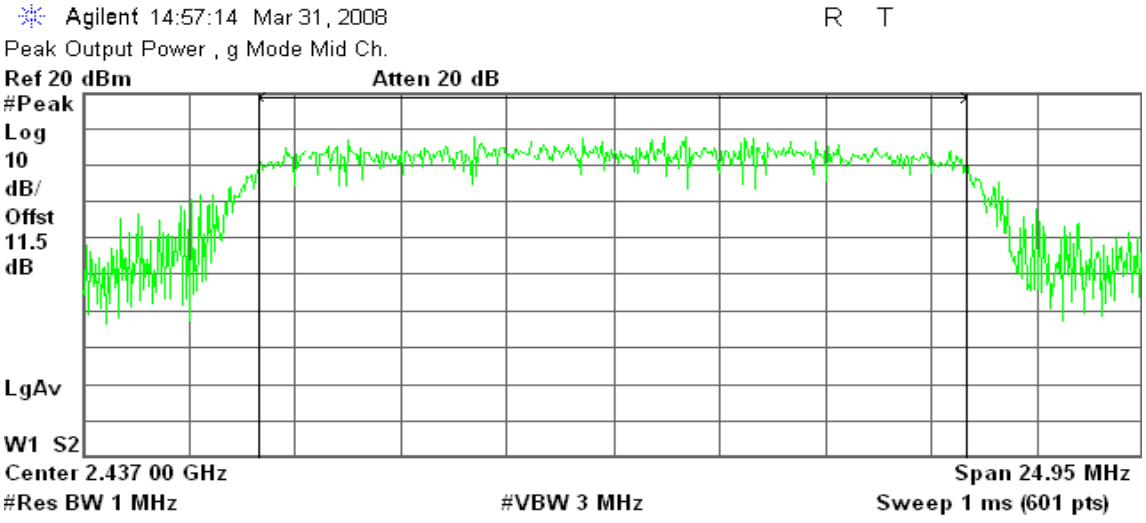
Channel Power

15.07 dBm / 16.6950 MHz

Power Spectral Density

-57.16 dBm/Hz

Peak Power (CH Mid)



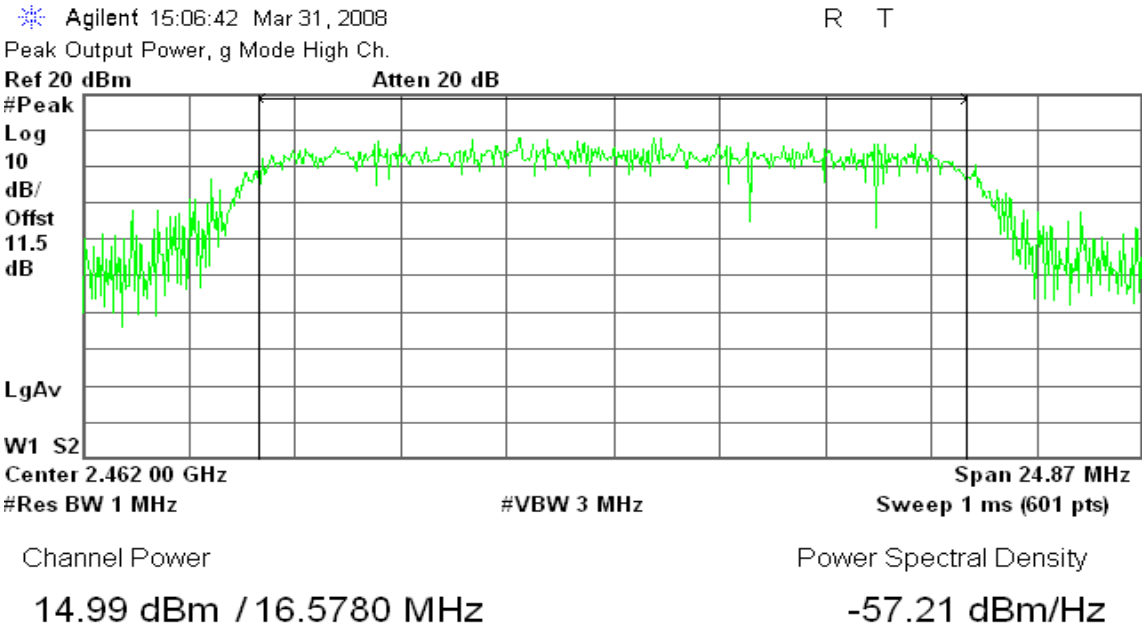
Channel Power

15.07 dBm / 16.6330 MHz

Power Spectral Density

-57.14 dBm/Hz

Peak Power (CH High)

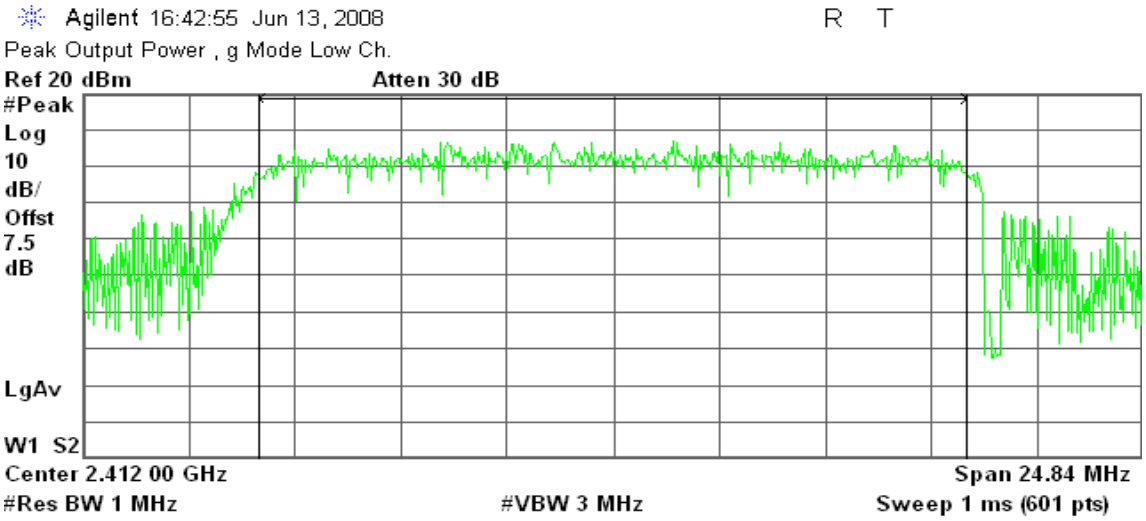


Channel Power
14.99 dBm / 16.5780 MHz

Power Spectral Density
-57.21 dBm/Hz

IEEE 802.11g mode / Chain 1

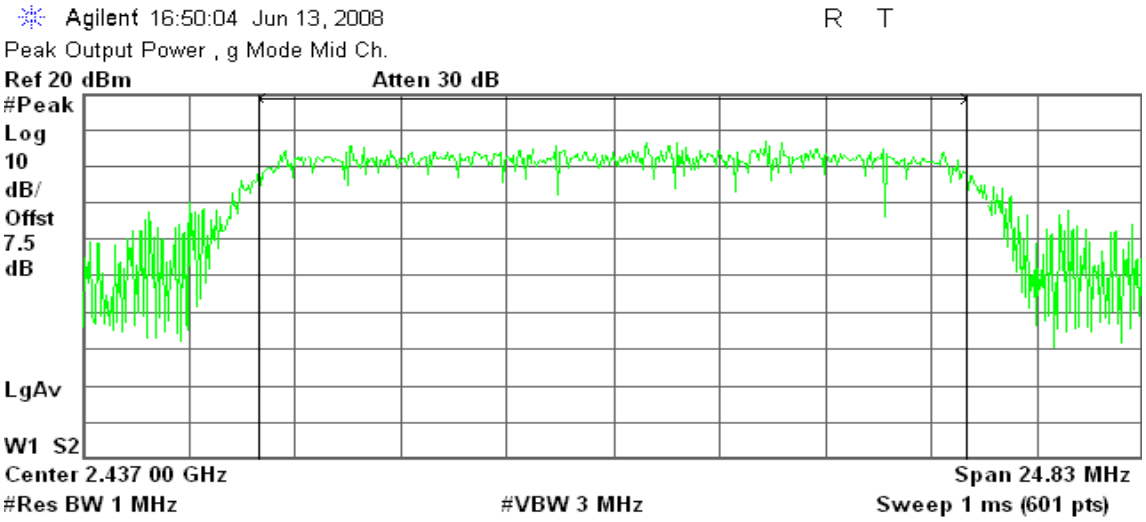
Peak Power (CH Low)



Channel Power
14.08 dBm / 16.5600 MHz

Power Spectral Density
-58.11 dBm/Hz

Peak Power (CH Mid)



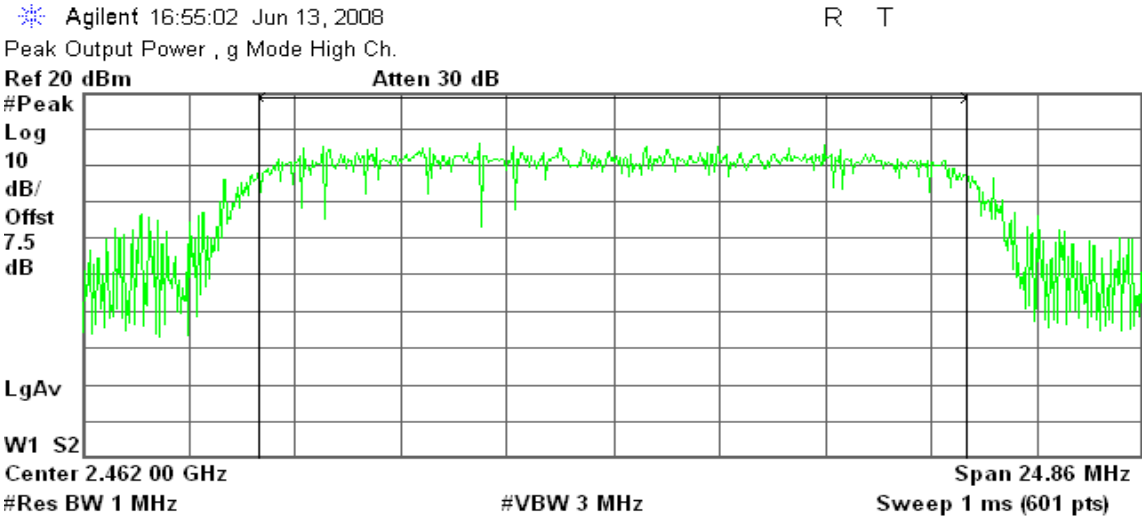
Channel Power

14.23 dBm / 16.5550 MHz

Power Spectral Density

-57.96 dBm/Hz

Peak Power (CH High)



Channel Power

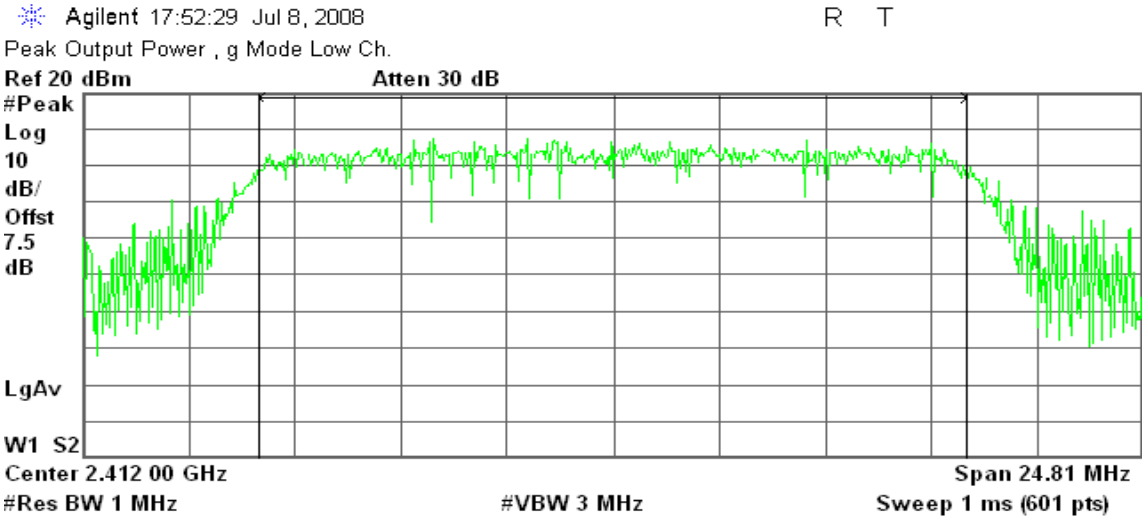
13.50 dBm / 16.5700 MHz

Power Spectral Density

-58.69 dBm/Hz

IEEE 802.11g mode / Chain 2

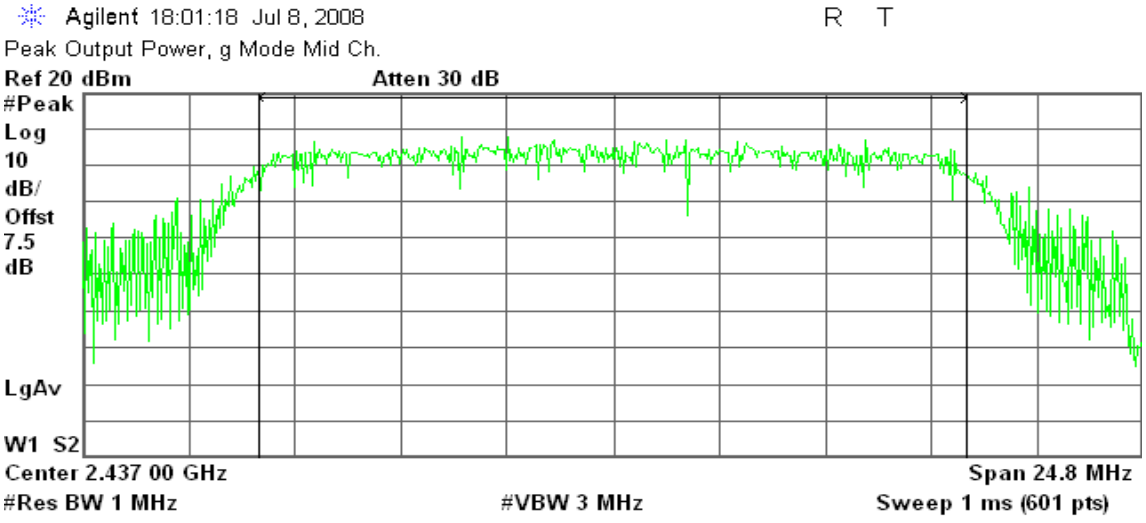
Peak Power (CH Low)



Channel Power
14.88 dBm / 16.5410 MHz

Power Spectral Density
-57.30 dBm/Hz

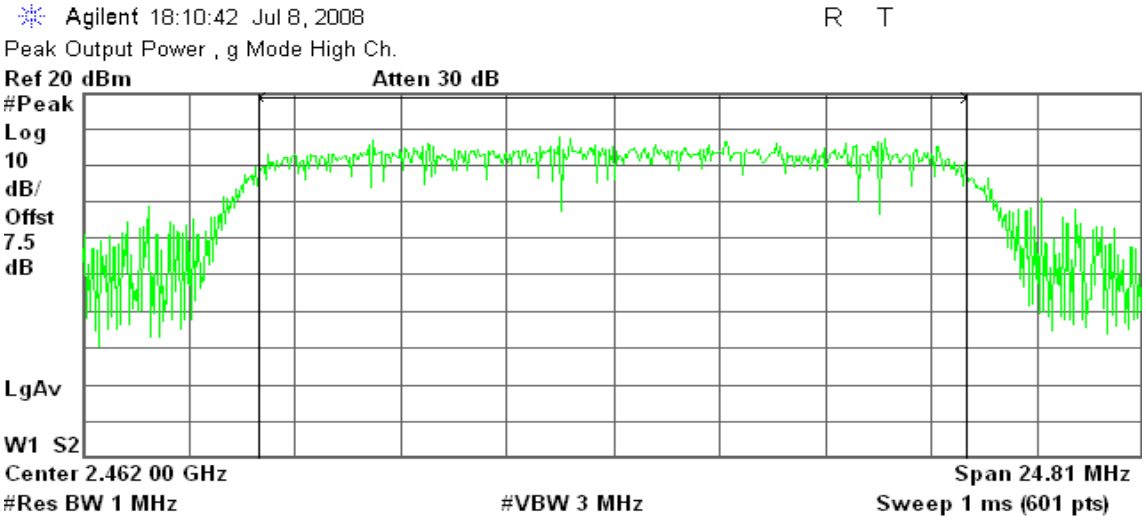
Peak Power (CH Mid)



Channel Power
15.16 dBm / 16.5350 MHz

Power Spectral Density
-57.02 dBm/Hz

Peak Power (CH High)



Channel Power

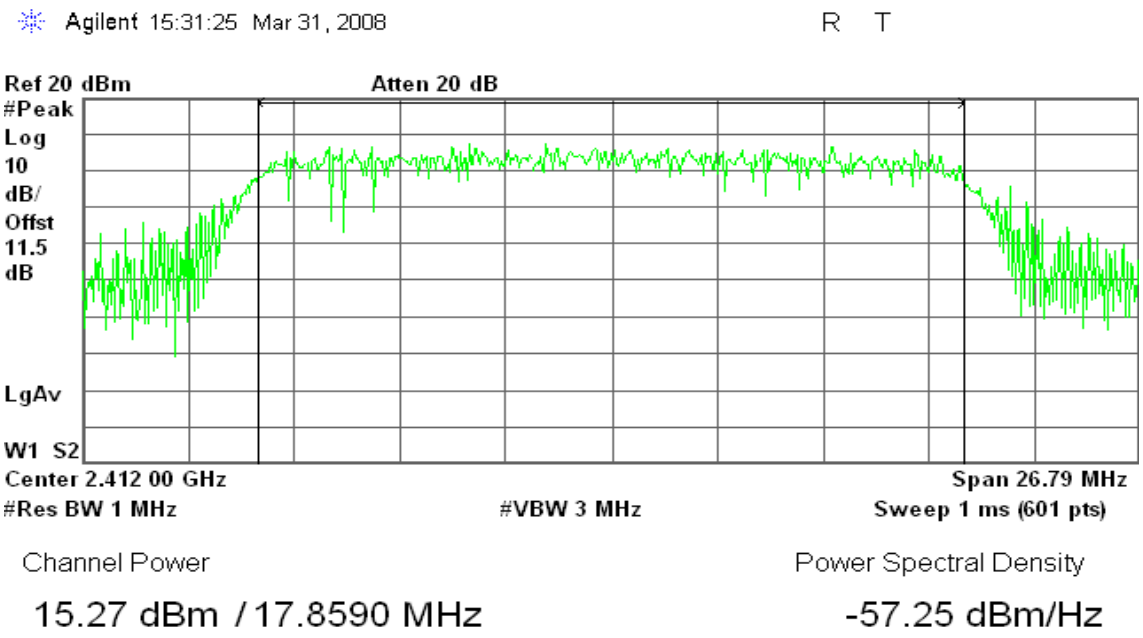
14.86 dBm / 16.5420 MHz

Power Spectral Density

-57.33 dBm/Hz

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

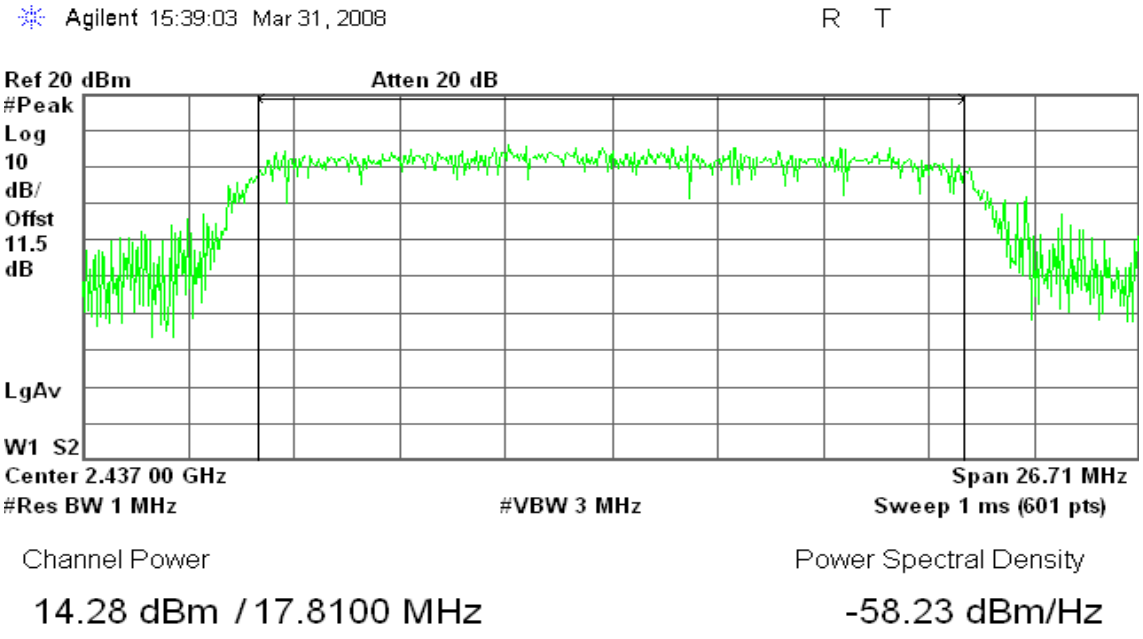
Peak Power (CH Low)



Channel Power
15.27 dBm / 17.8590 MHz

Power Spectral Density
-57.25 dBm/Hz

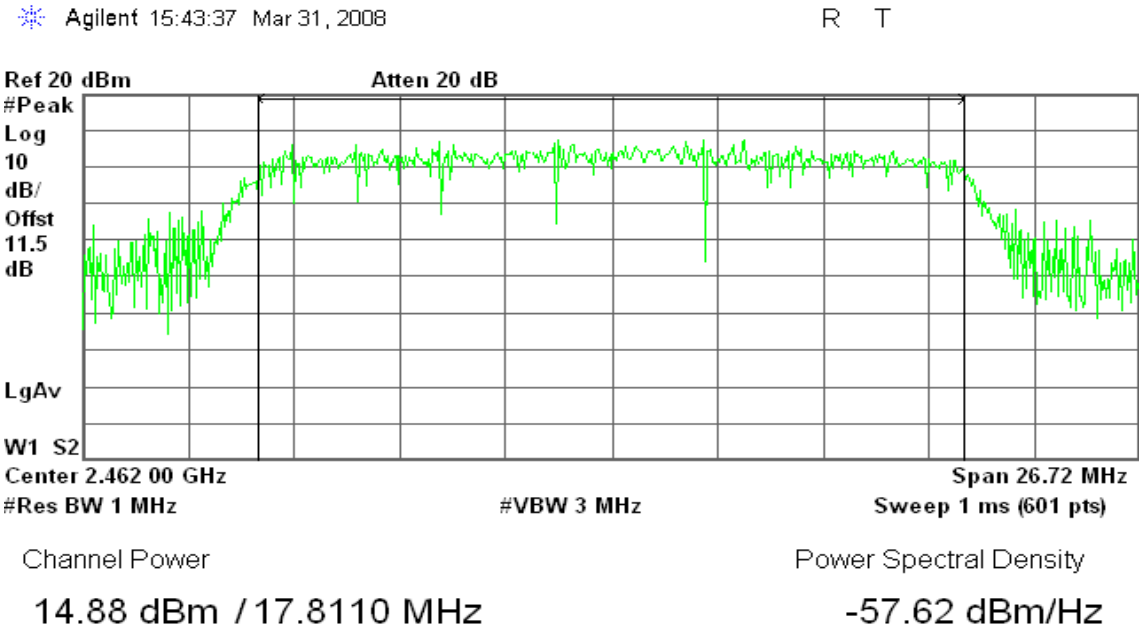
Peak Power (CH Mid)



Channel Power
14.28 dBm / 17.8100 MHz

Power Spectral Density
-58.23 dBm/Hz

Peak Power (CH High)

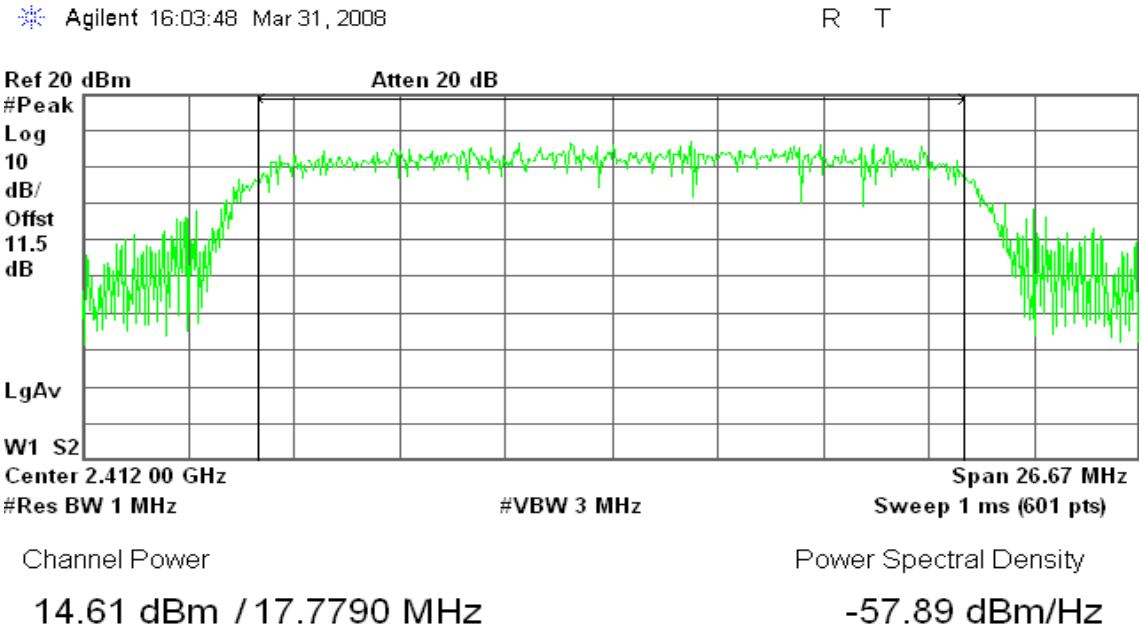


Channel Power
14.88 dBm / 17.8110 MHz

Power Spectral Density
-57.62 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / Chain 1

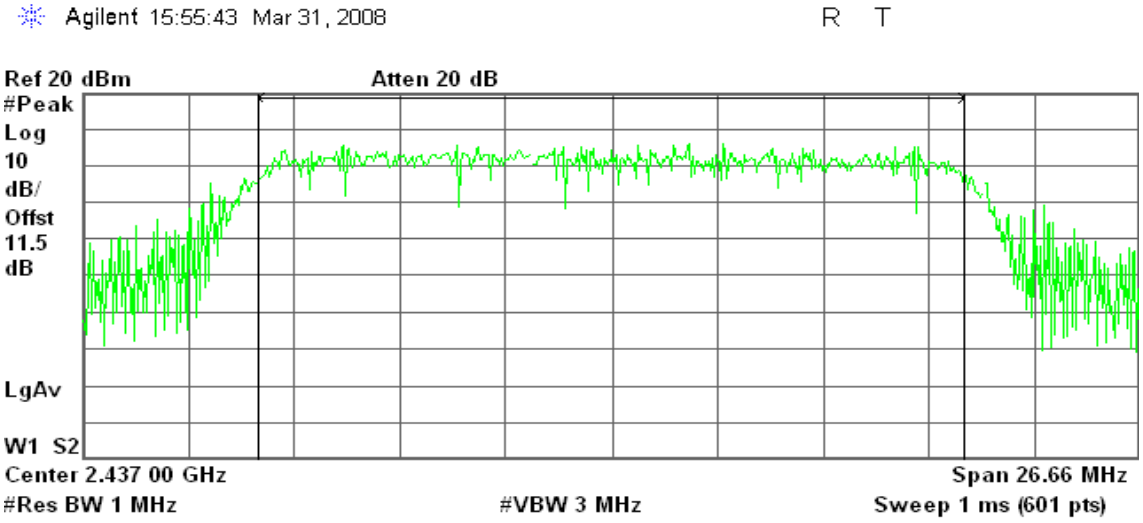
Peak Power (CH Low)



Channel Power
14.61 dBm / 17.7790 MHz

Power Spectral Density
-57.89 dBm/Hz

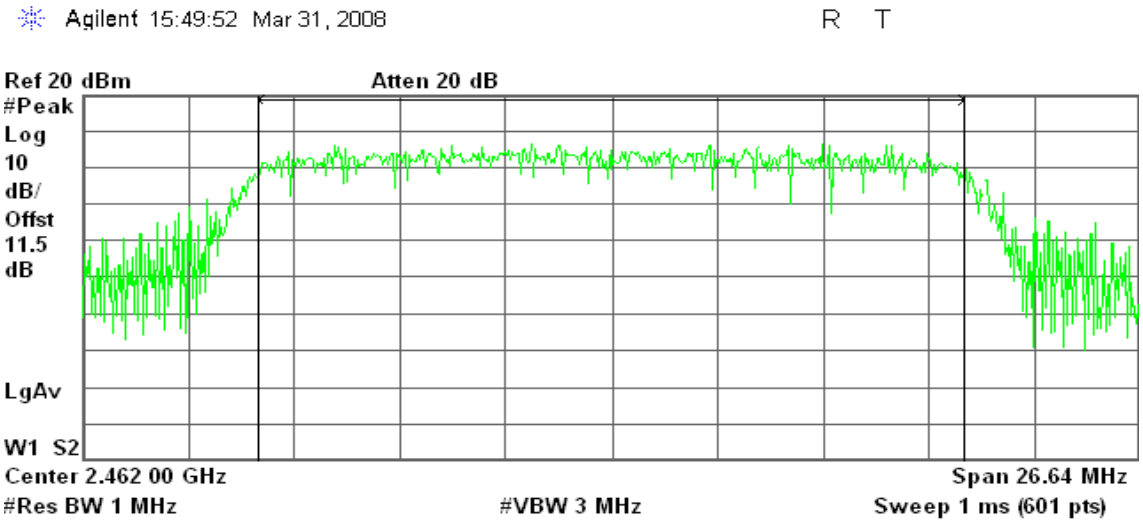
Peak Power (CH Mid)



Channel Power
14.16 dBm / 17.7750 MHz

Power Spectral Density
-58.34 dBm/Hz

Peak Power (CH High)

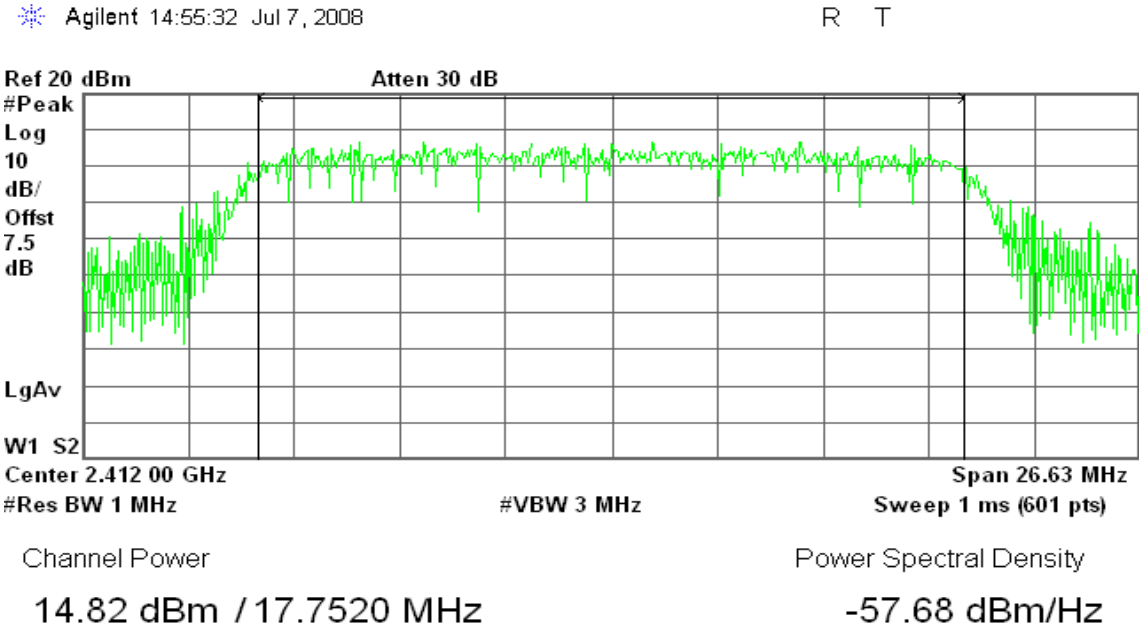


Channel Power
14.87 dBm / 17.7590 MHz

Power Spectral Density
-57.62 dBm/Hz

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

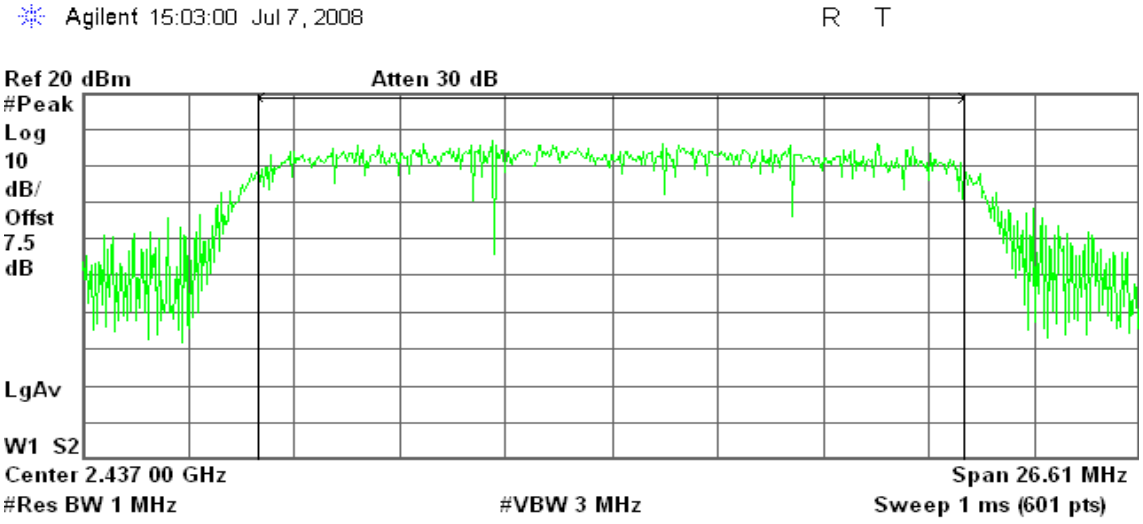
Peak Power (CH Low)



Channel Power
14.82 dBm / 17.7520 MHz

Power Spectral Density
-57.68 dBm/Hz

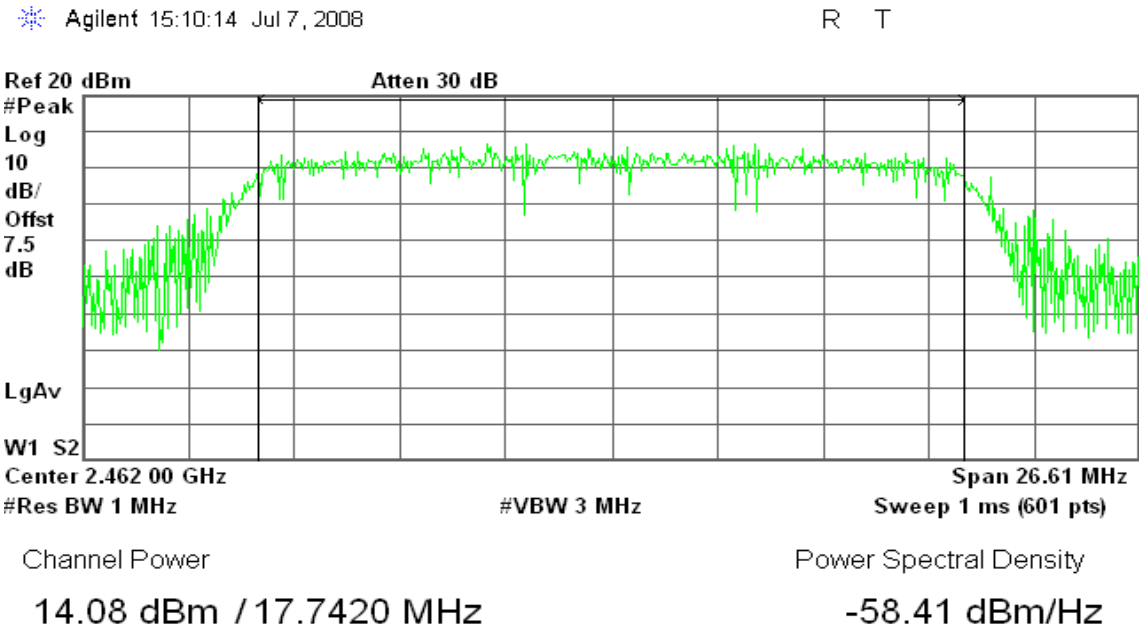
Peak Power (CH Mid)



Channel Power
14.77 dBm / 17.7390 MHz

Power Spectral Density
-57.72 dBm/Hz

Peak Power (CH High)



Channel Power

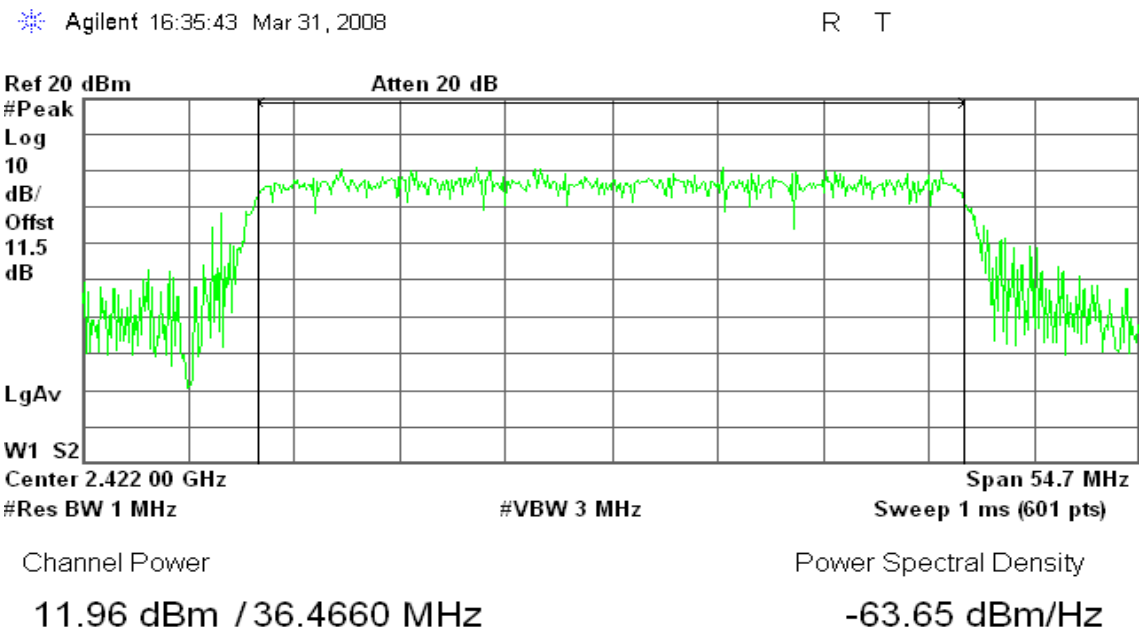
14.08 dBm / 17.7420 MHz

Power Spectral Density

-58.41 dBm/Hz

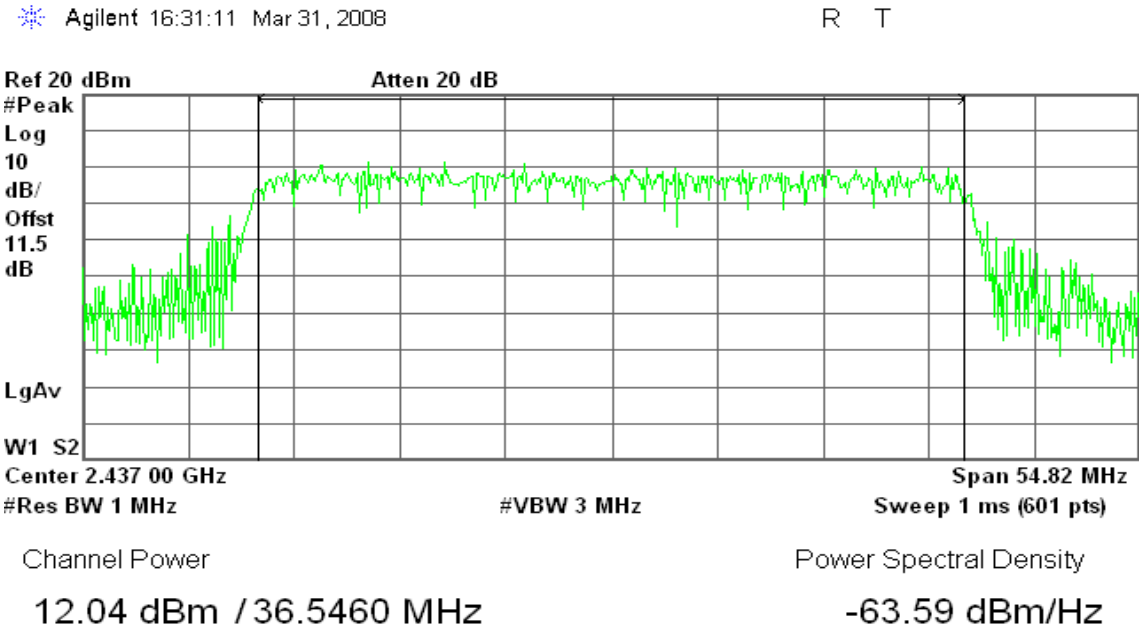
draft 802.11n Wide-40 MHz Channel mode / Chain 0

Peak Power (CH Low)



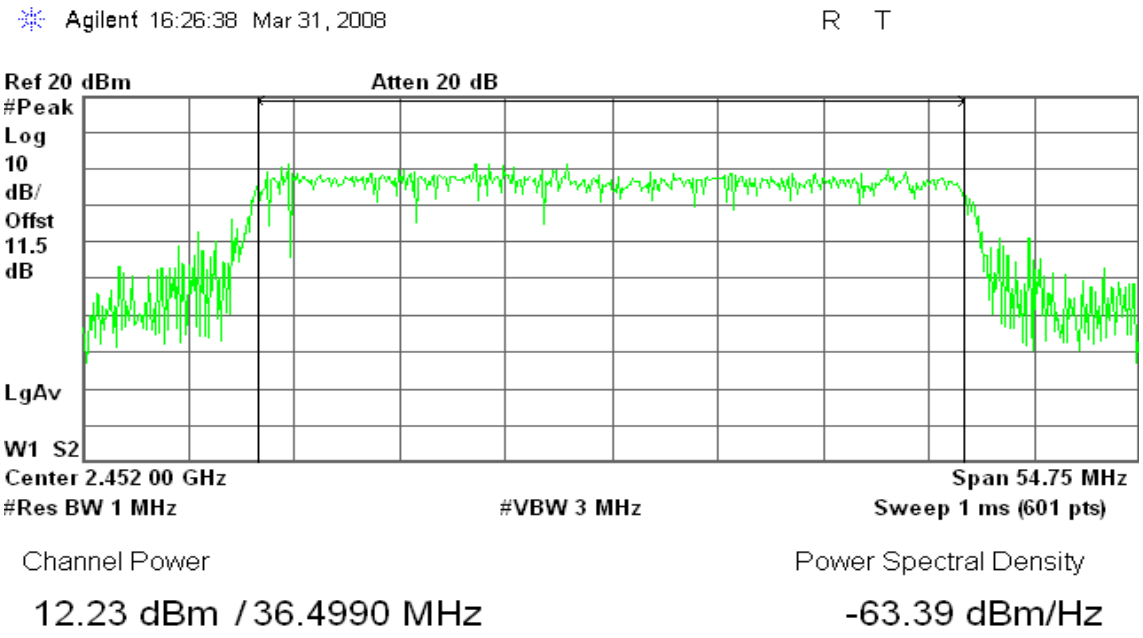
Channel Power	Power Spectral Density
11.96 dBm / 36.4660 MHz	-63.65 dBm/Hz

Peak Power (CH Mid)



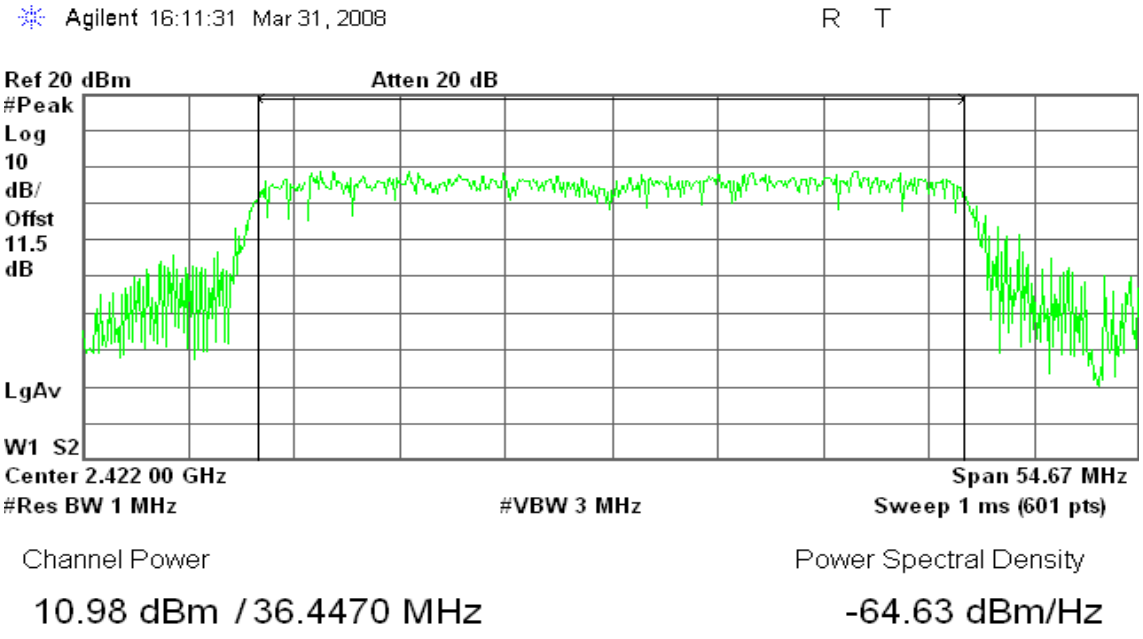
Channel Power	Power Spectral Density
12.04 dBm / 36.5460 MHz	-63.59 dBm/Hz

Peak Power (CH High)

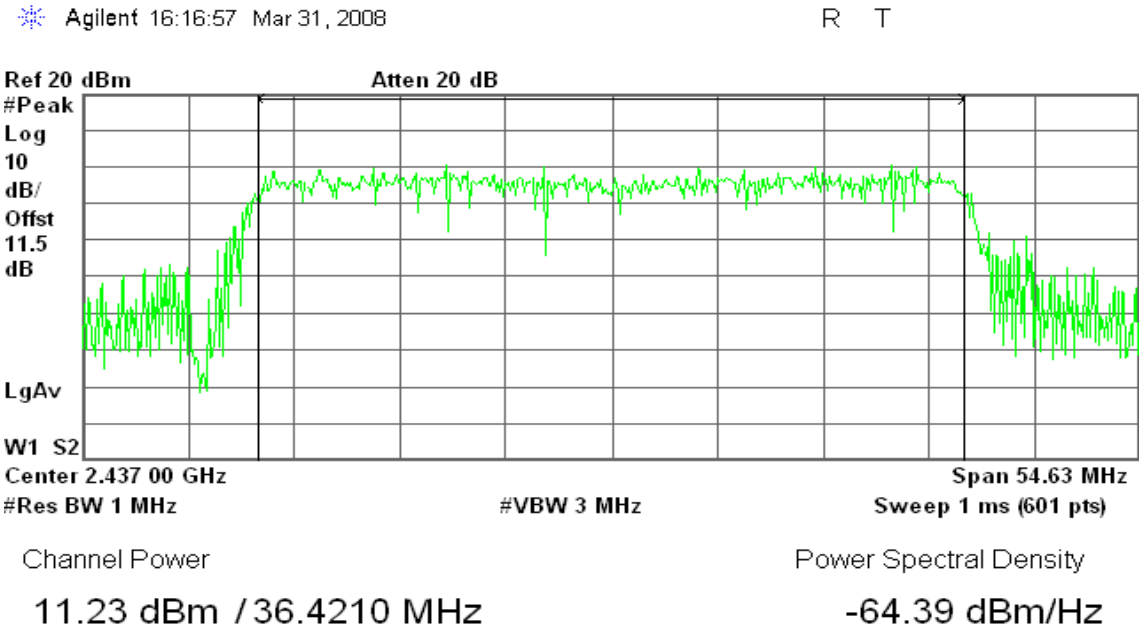


draft 802.11n Wide-40 MHz Channel mode / Chain 1

Peak Power (CH Low)



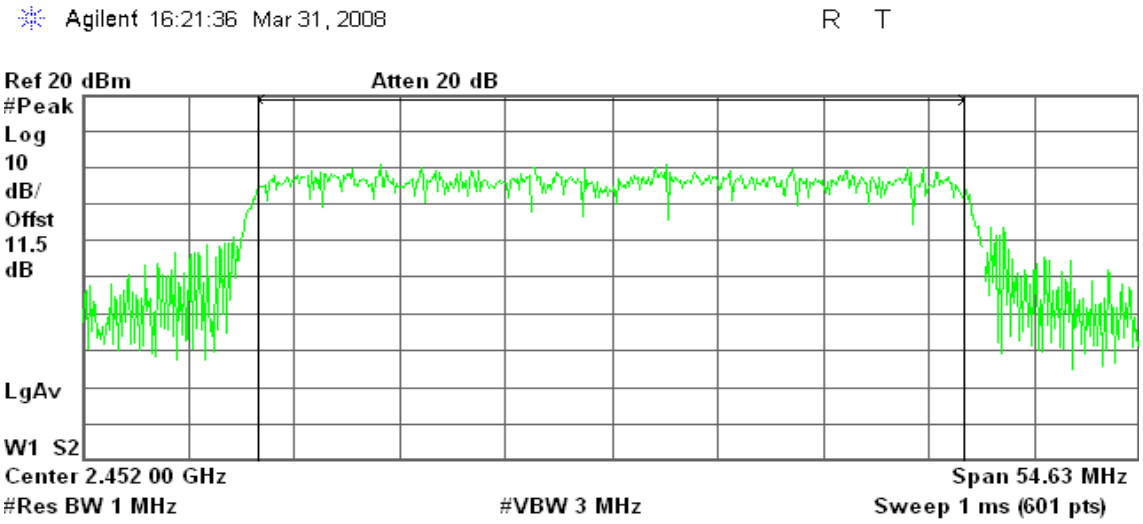
Peak Power (CH Mid)



Channel Power
11.23 dBm / 36.4210 MHz

Power Spectral Density
-64.39 dBm/Hz

Peak Power (CH High)

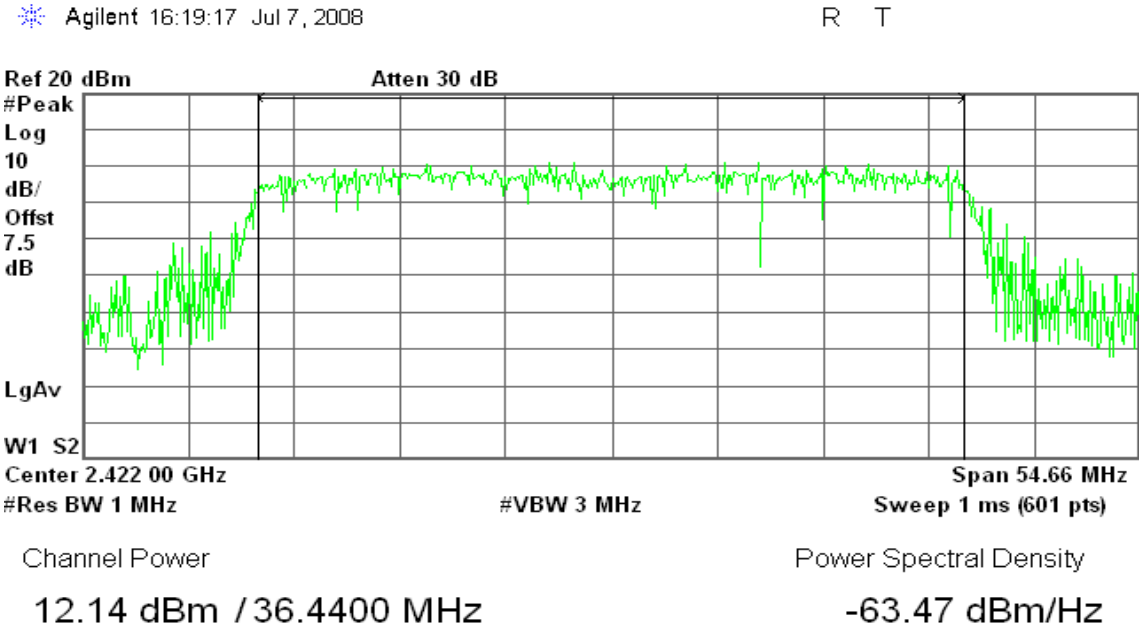


Channel Power
11.82 dBm / 36.4180 MHz

Power Spectral Density
-63.79 dBm/Hz

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

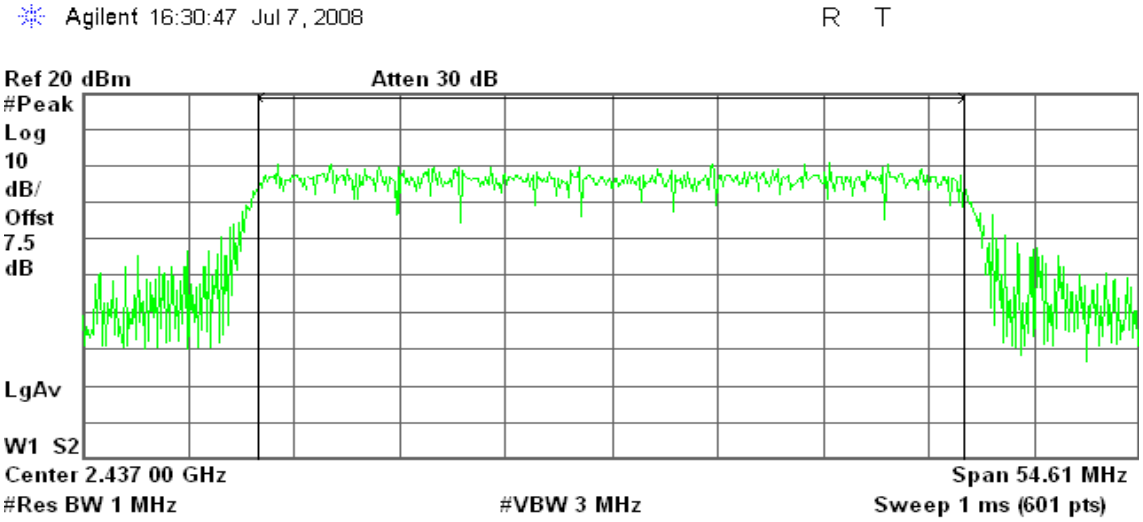
Peak Power (CH Low)



Channel Power
12.14 dBm / 36.4400 MHz

Power Spectral Density
-63.47 dBm/Hz

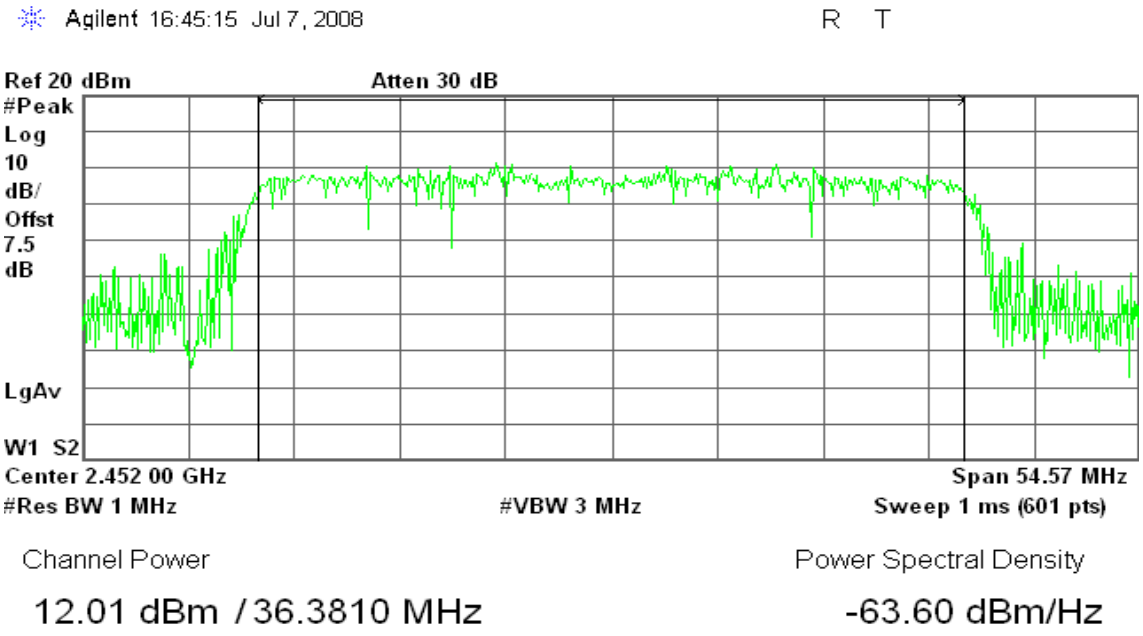
Peak Power (CH Mid)



Channel Power
11.99 dBm / 36.4080 MHz

Power Spectral Density
-63.62 dBm/Hz

Peak Power (CH High)

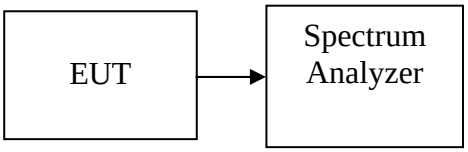


7.3AVERAGE POWER

LIMIT

None; for reporting purposes only.

Test Configuration



TEST PROCEDURE

1. Average power is measured using the spectrum analyzer’ s internal channel power integration

   function.
2. Power is integrated over a bandwidth greater than or equal to the 99% bandwidth.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)
Low	2412	13.84	12.37	13.64	18.10	0.0646
Mid	2437	13.51	12.73	13.94	18.19	0.0660
High	2462	13.97	12.33	13.60	18.13	0.0650

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)
Low	2412	11.38	10.45	11.21	15.80	0.0380
Mid	2437	11.08	10.56	11.53	15.85	0.0384
High	2462	11.69	10.04	11.60	15.94	0.0393

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)
Low	2412	11.58	11.00	11.06	15.99	0.0397
Mid	2437	10.99	10.67	10.74	15.57	0.0361
High	2462	11.15	11.25	10.73	15.82	0.0382

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

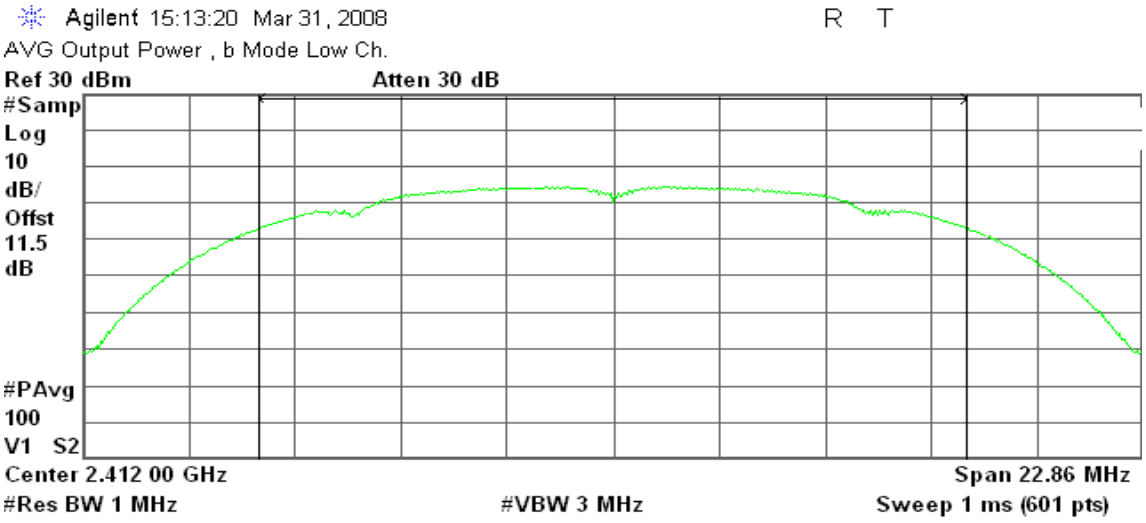
Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Chain 2 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)
Low	2422	8.57	7.81	8.20	12.98	0.0198
Mid	2437	8.33	7.67	8.27	12.87	0.0194
High	2452	8.41	8.12	8.05	12.97	0.0198

Remark: *Total Output Power (w) = Chain 0 (10^(Output Power /10)/1000) + Chain 1 (10^(Output Power /10)/1000) + Chain 2 (10^(Output Power /10)/1000)*

Test Plot

IEEE 802.11b mode / Chain 0

Average Power (CH Low)



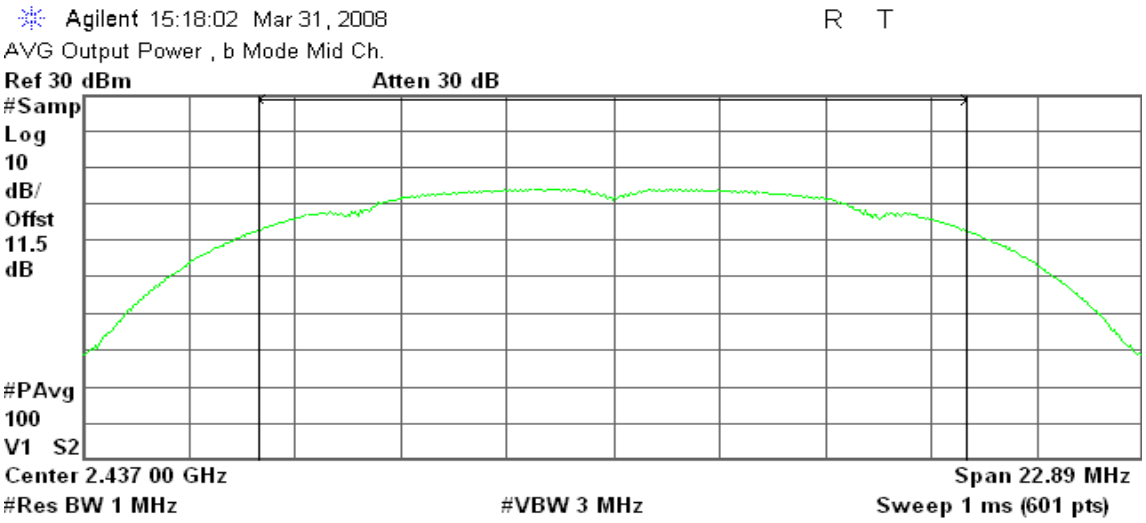
Channel Power

13.84 dBm / 15.2390 MHz

Power Spectral Density

-57.99 dBm/Hz

Average Power (CH Mid)



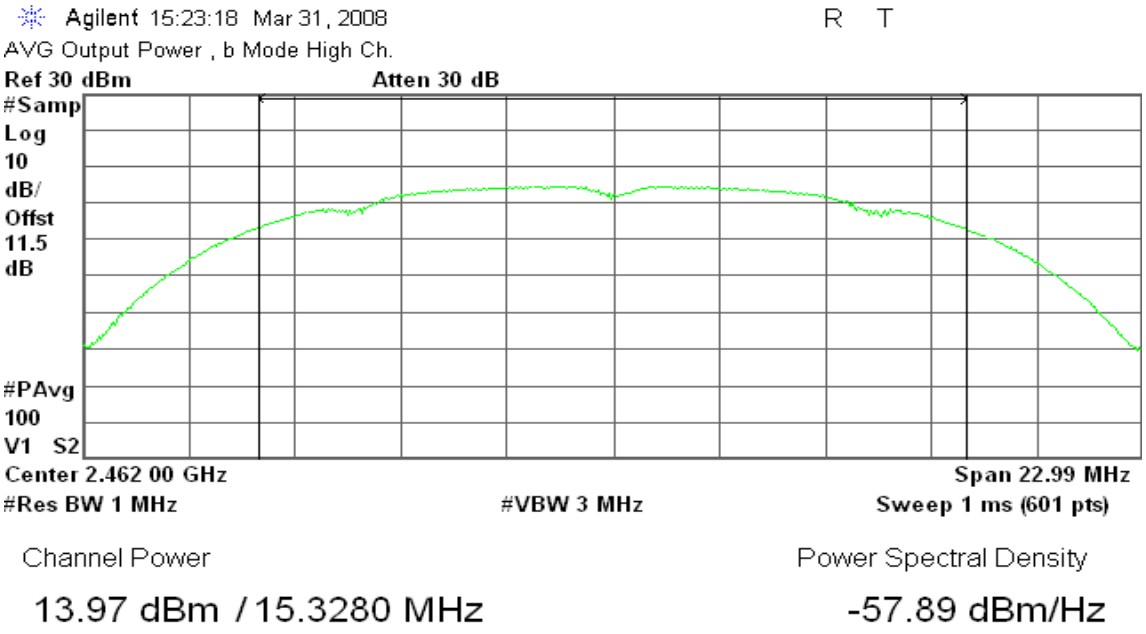
Channel Power

13.51 dBm / 15.2630 MHz

Power Spectral Density

-58.32 dBm/Hz

Average Power (CH High)

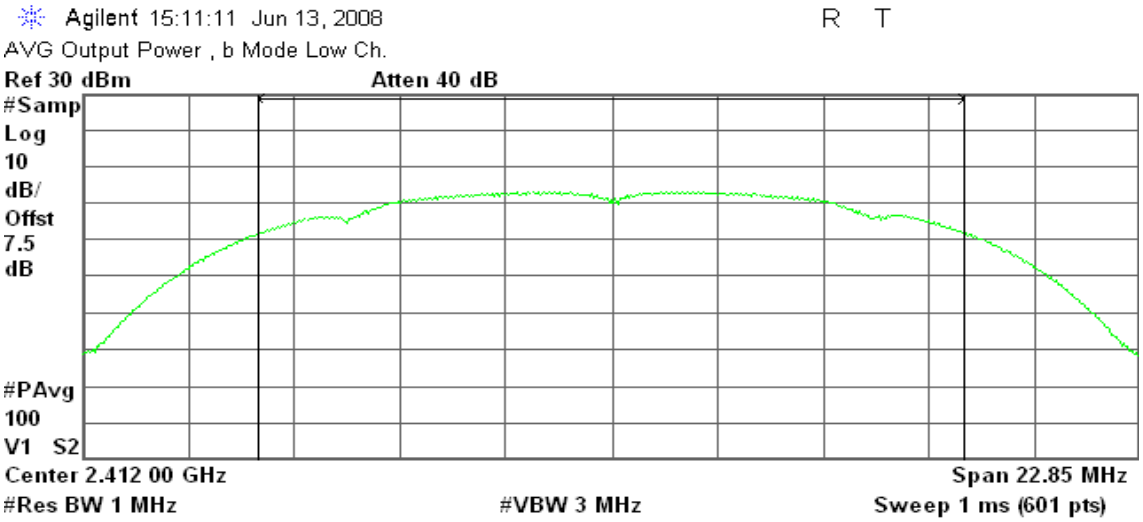


Channel Power
13.97 dBm / 15.3280 MHz

Power Spectral Density
-57.89 dBm/Hz

IEEE 802.11b mode / Chain 1

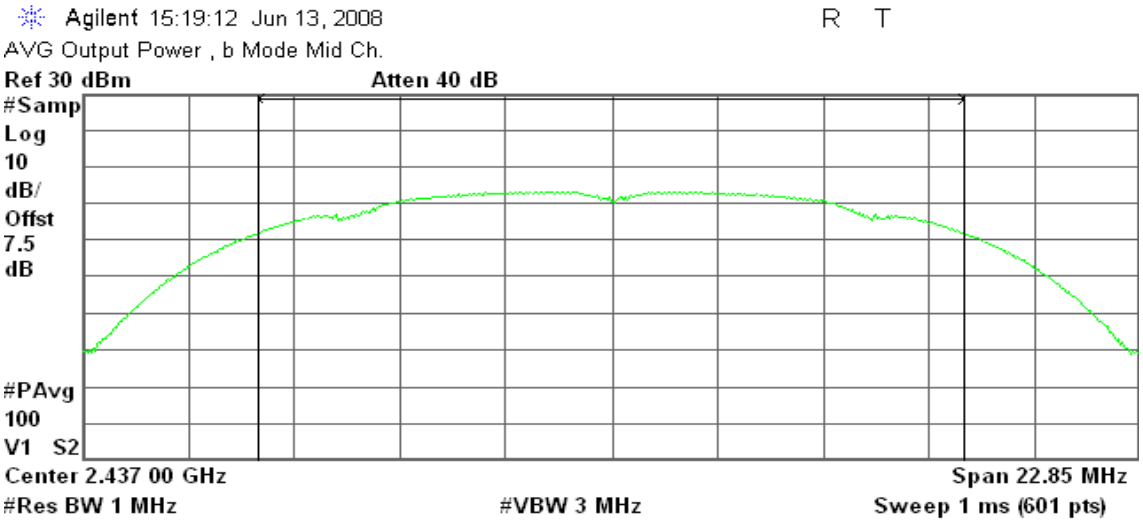
Average Power (CH Low)



Channel Power
12.37 dBm / 15.2360 MHz

Power Spectral Density
-59.46 dBm/Hz

Average Power (CH Mid)



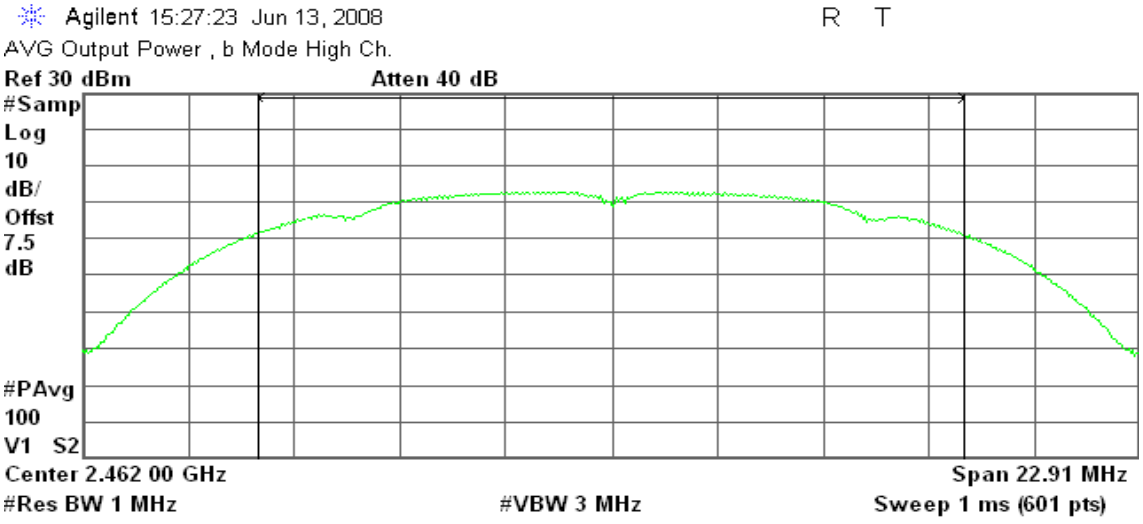
Channel Power

12.73 dBm / 15.2360 MHz

Power Spectral Density

-59.10 dBm/Hz

Average Power (CH High)



Channel Power

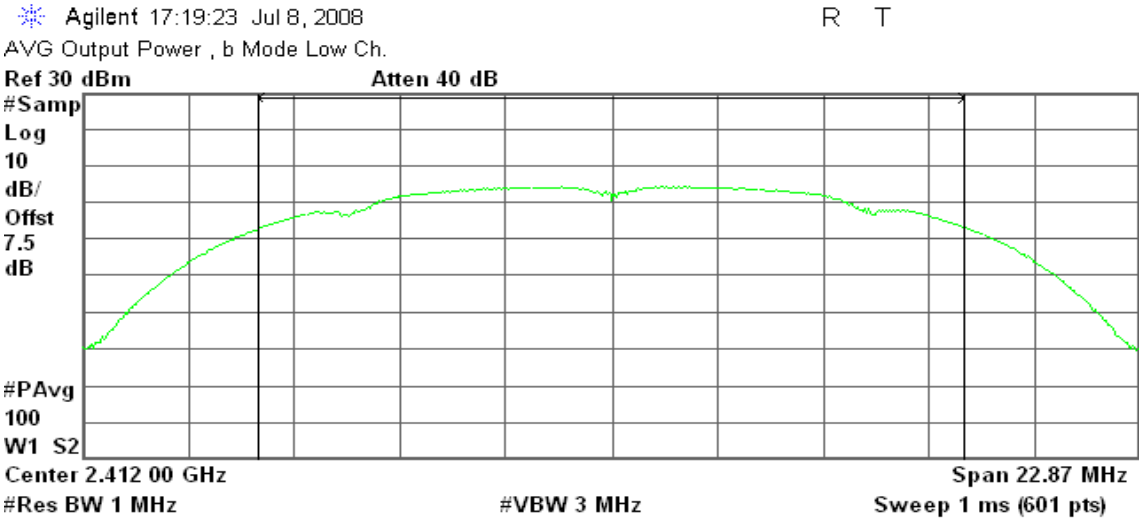
12.33 dBm / 15.2700 MHz

Power Spectral Density

-59.51 dBm/Hz

IEEE 802.11b mode / Chain 2

Average Power (CH Low)



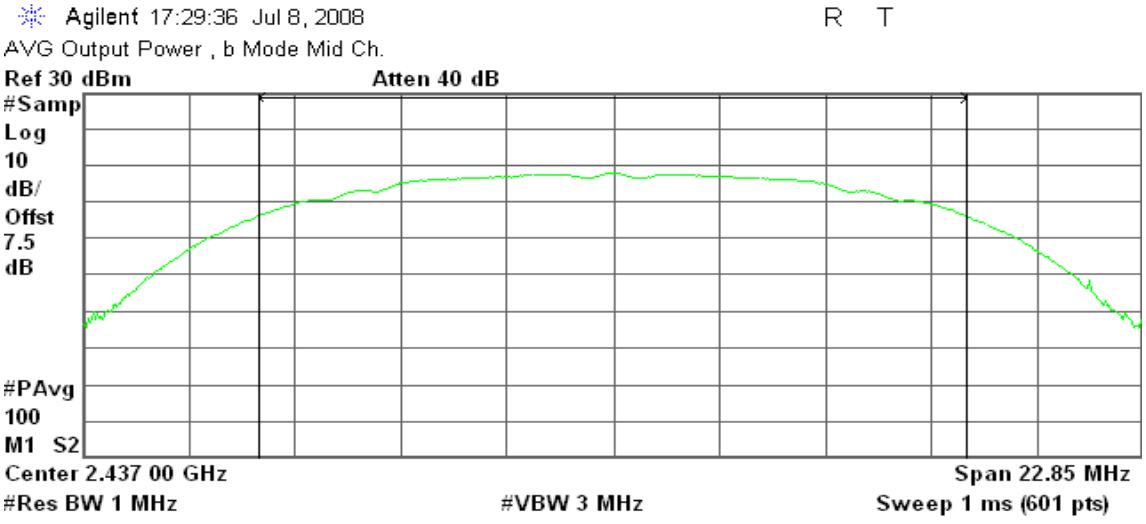
Channel Power

13.64 dBm / 15.2490 MHz

Power Spectral Density

-58.19 dBm/Hz

Average Power (CH Mid)



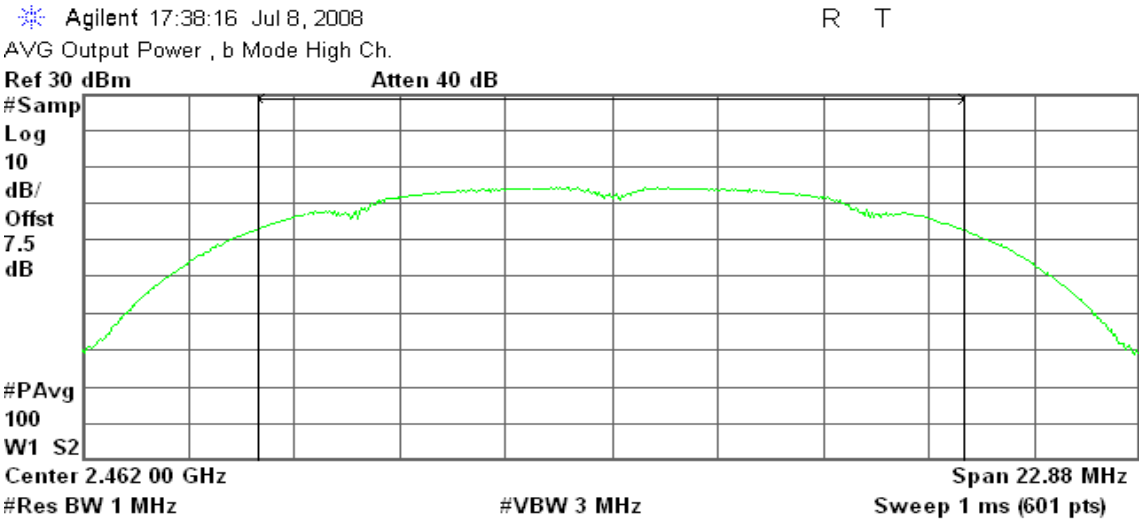
Channel Power

13.94 dBm / 15.2350 MHz

Power Spectral Density

-57.89 dBm/Hz

Average Power (CH High)



Channel Power

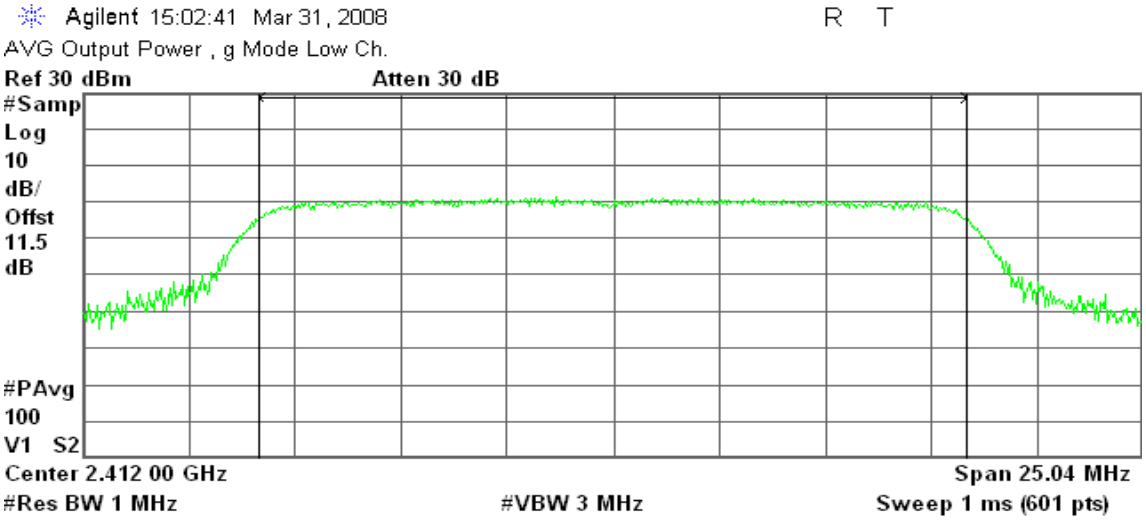
13.60 dBm / 15.2560 MHz

Power Spectral Density

-58.24 dBm/Hz

IEEE 802.11g mode / Chain 0

Average Power (CH Low)



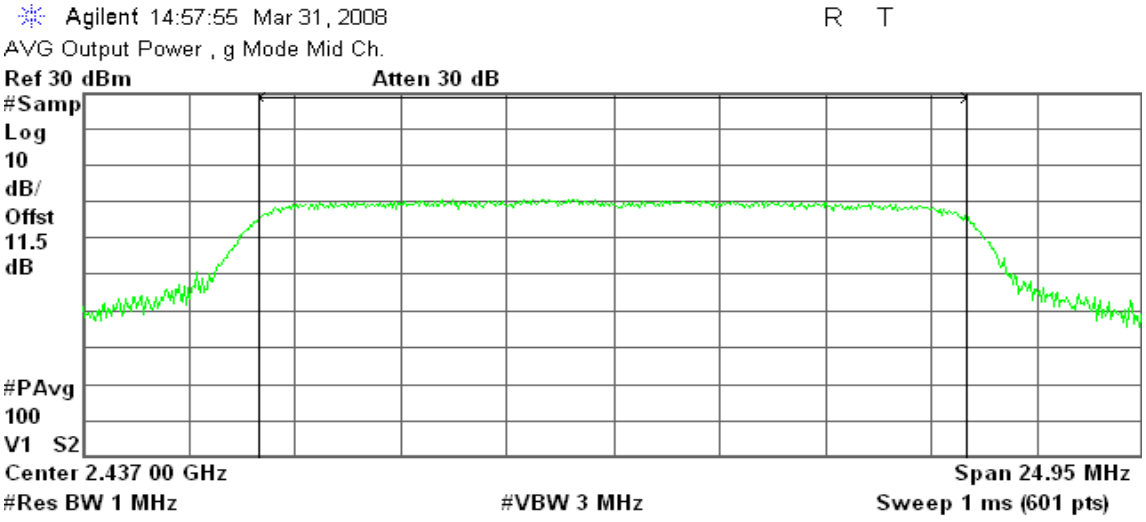
Channel Power

11.38 dBm / 16.6950 MHz

Power Spectral Density

-60.85 dBm/Hz

Average Power (CH Mid)



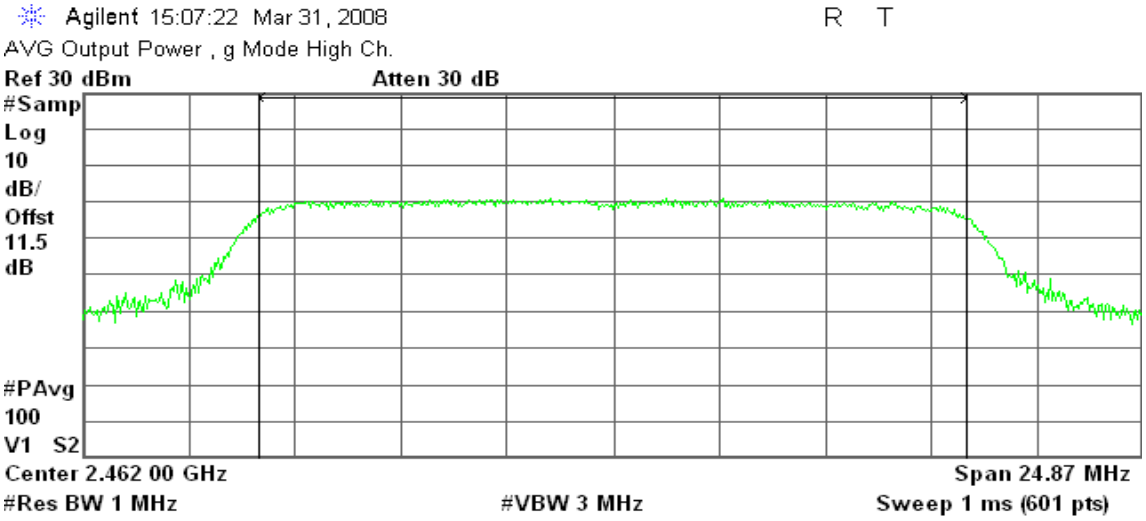
Channel Power

11.08 dBm / 16.6330 MHz

Power Spectral Density

-61.13 dBm/Hz

Average Power (CH High)



Channel Power

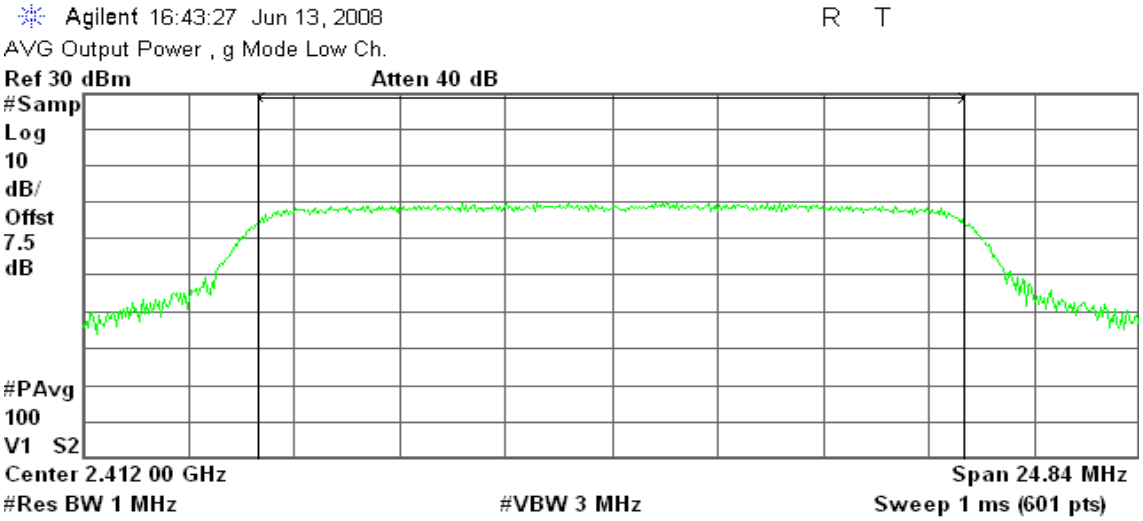
11.69 dBm / 16.5780 MHz

Power Spectral Density

-60.51 dBm/Hz

IEEE 802.11g mode / Chain 1

Average Power (CH Low)



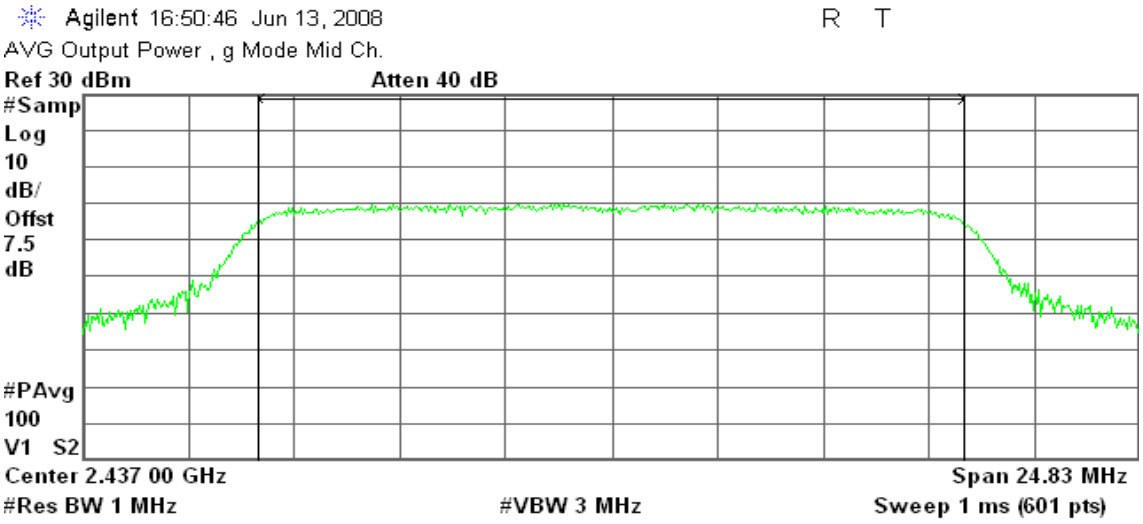
Channel Power

10.45 dBm / 16.5600 MHz

Power Spectral Density

-61.74 dBm/Hz

Average Power (CH Mid)



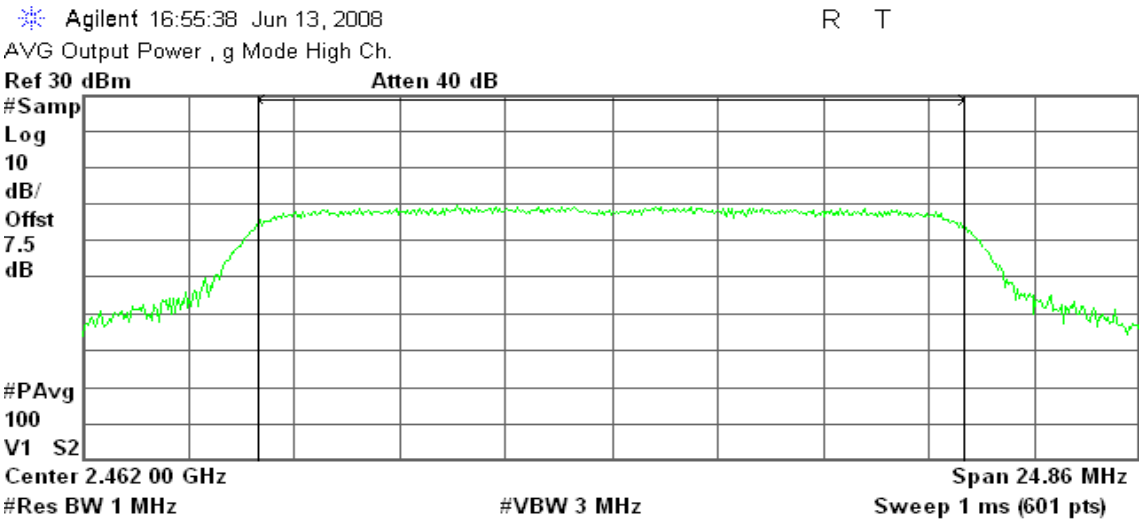
Channel Power

10.56 dBm / 16.5550 MHz

Power Spectral Density

-61.63 dBm/Hz

Average Power (CH High)



Channel Power

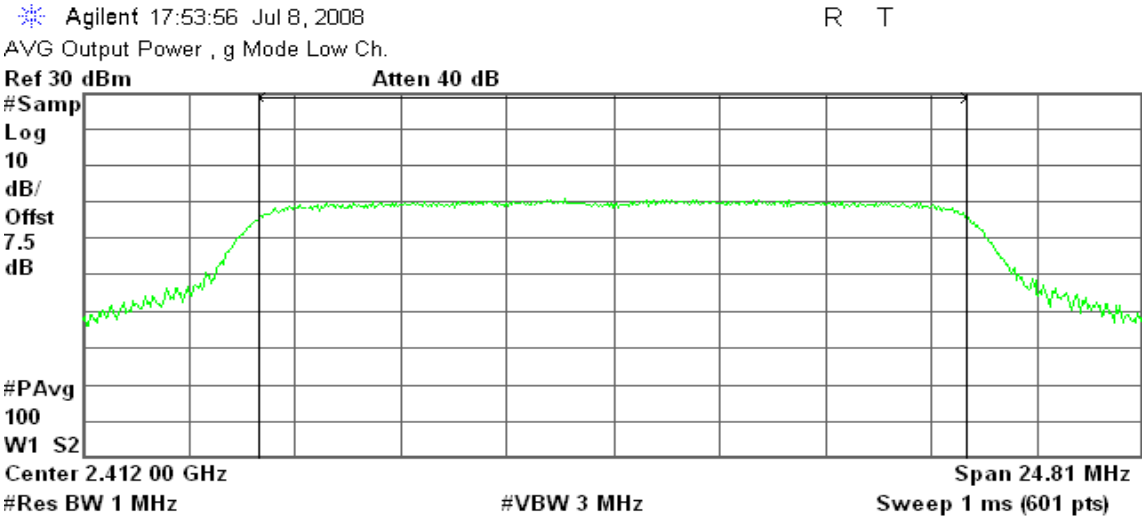
10.04 dBm / 16.5700 MHz

Power Spectral Density

-62.16 dBm/Hz

IEEE 802.11g mode / Chain 2

Average Power (CH Low)



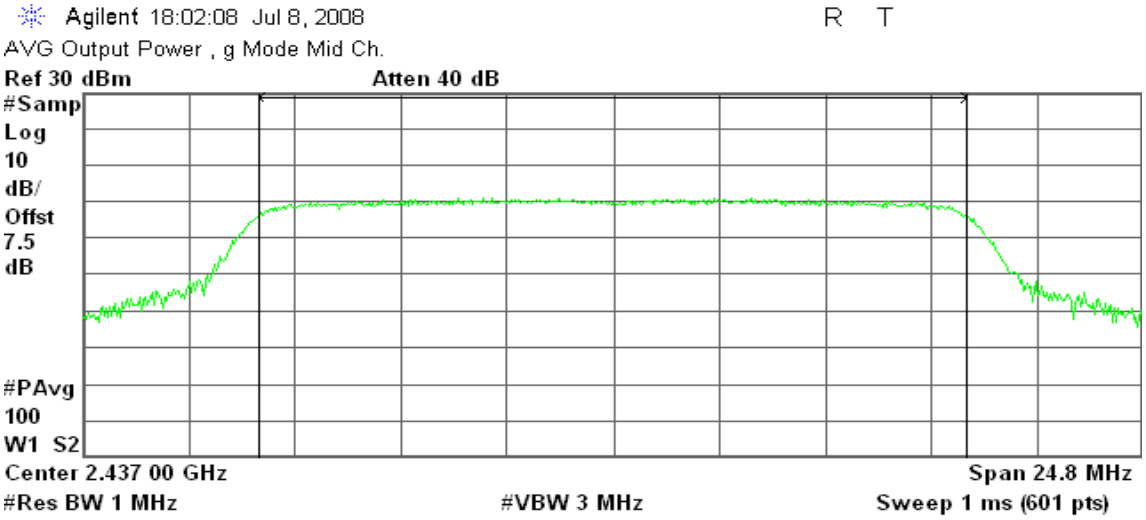
Channel Power

11.21 dBm / 16.5410 MHz

Power Spectral Density

-60.98 dBm/Hz

Average Power (CH Mid)



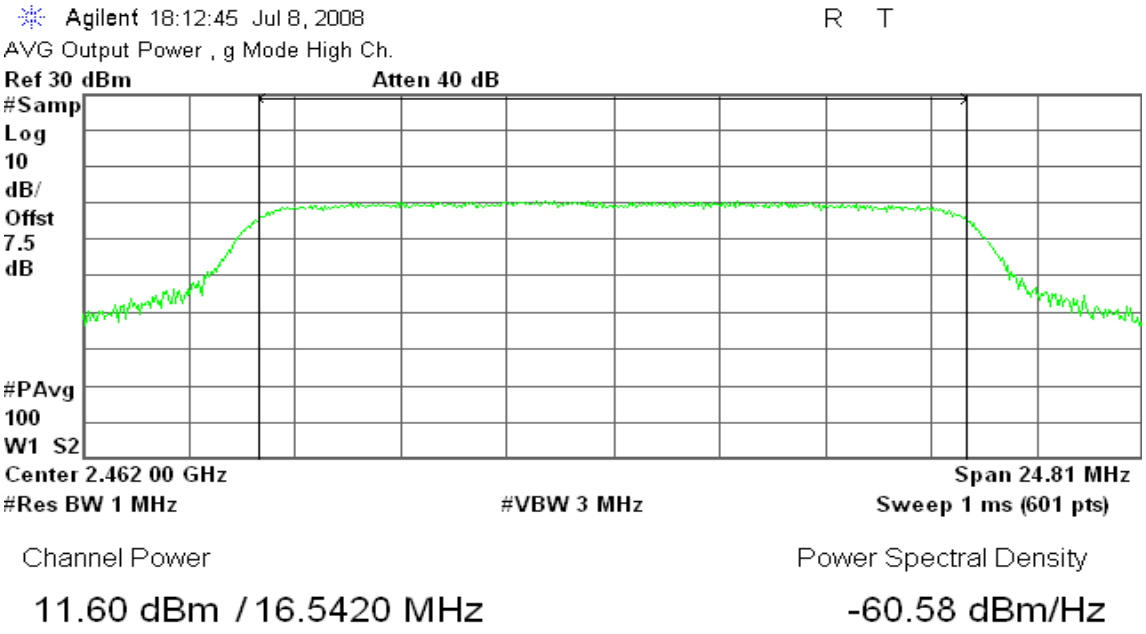
Channel Power

11.53 dBm / 16.5350 MHz

Power Spectral Density

-60.66 dBm/Hz

Average Power (CH High)



Channel Power

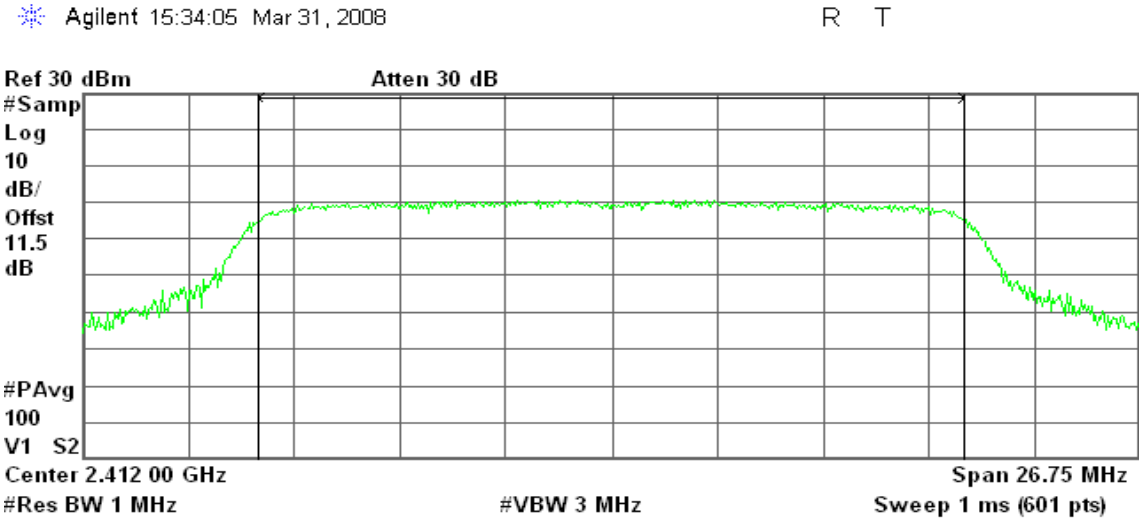
11.60 dBm / 16.5420 MHz

Power Spectral Density

-60.58 dBm/Hz

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

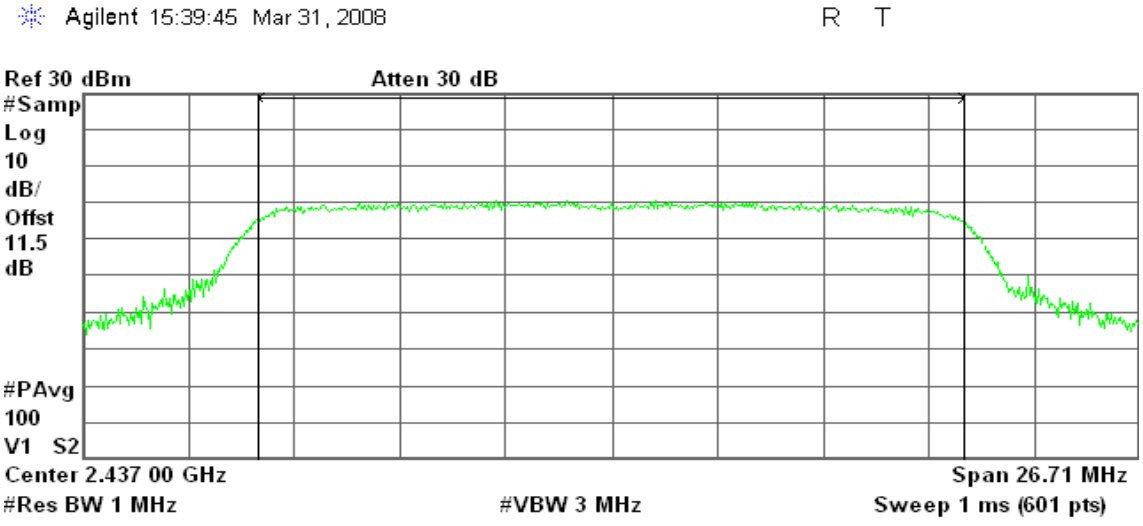
Average Power (CH Low)



Channel Power
11.58 dBm / 17.8310 MHz

Power Spectral Density
-60.93 dBm/Hz

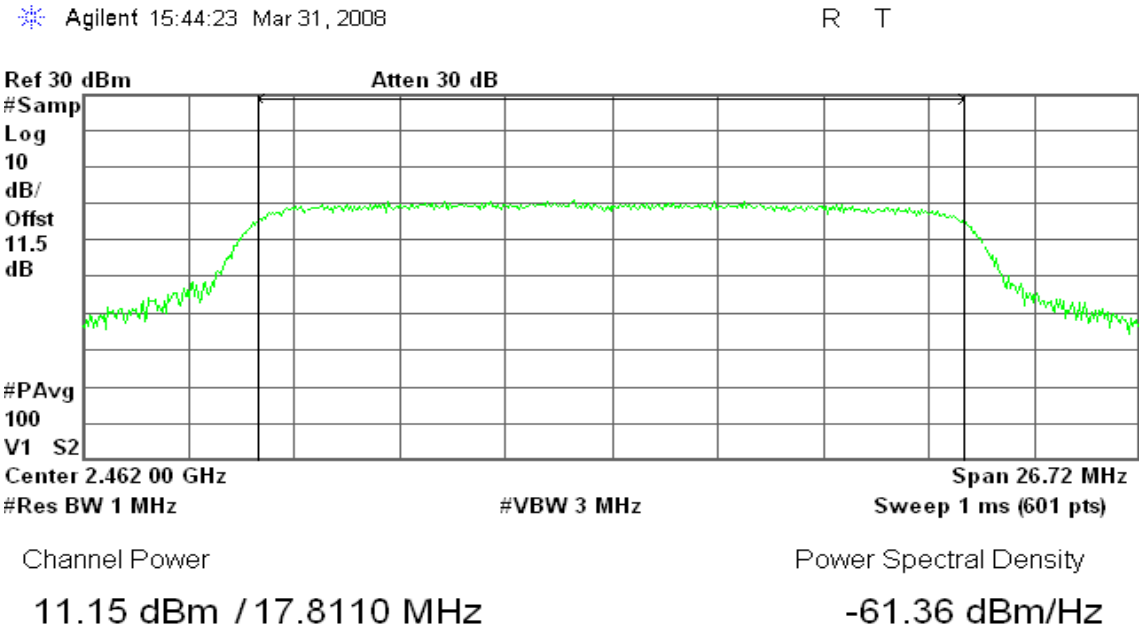
Average Power (CH Mid)



Channel Power
10.99 dBm / 17.8100 MHz

Power Spectral Density
-61.52 dBm/Hz

Average Power (CH High)

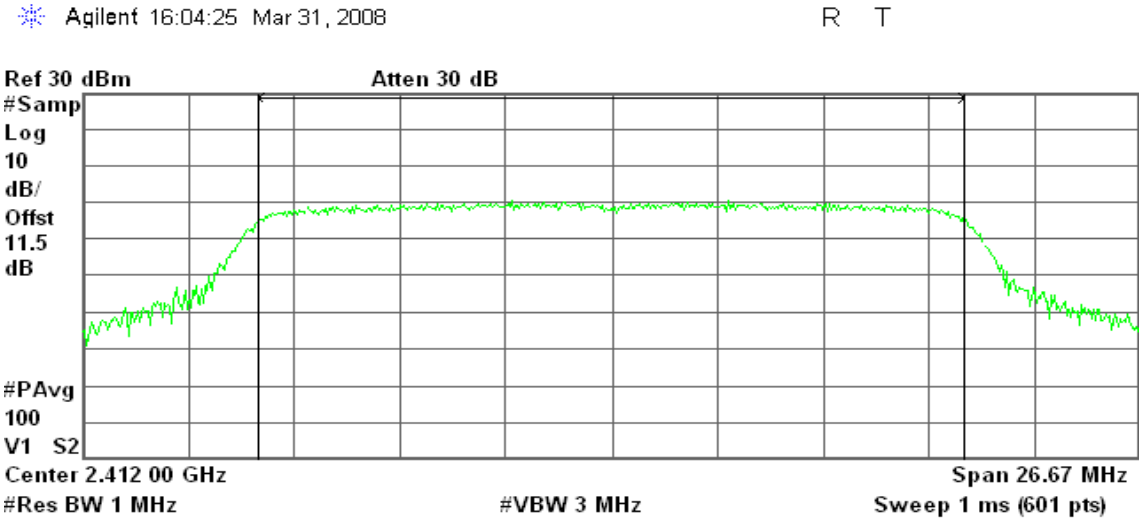


Channel Power
11.15 dBm / 17.8110 MHz

Power Spectral Density
-61.36 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / Chain 1

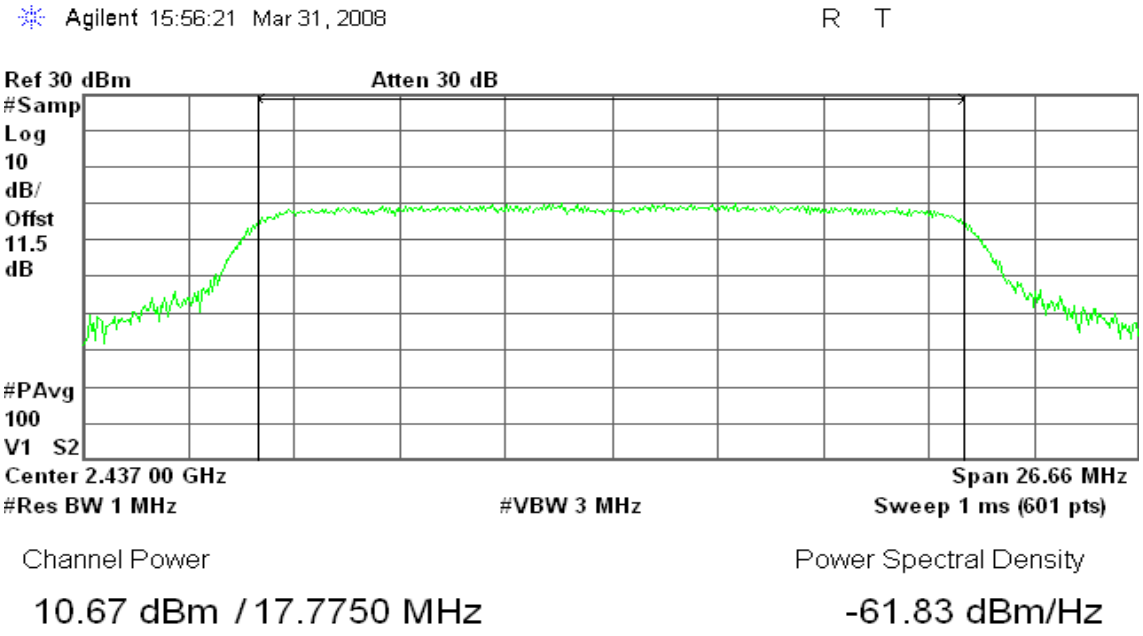
Average Power (CH Low)



Channel Power
11.00 dBm / 17.7790 MHz

Power Spectral Density
-61.50 dBm/Hz

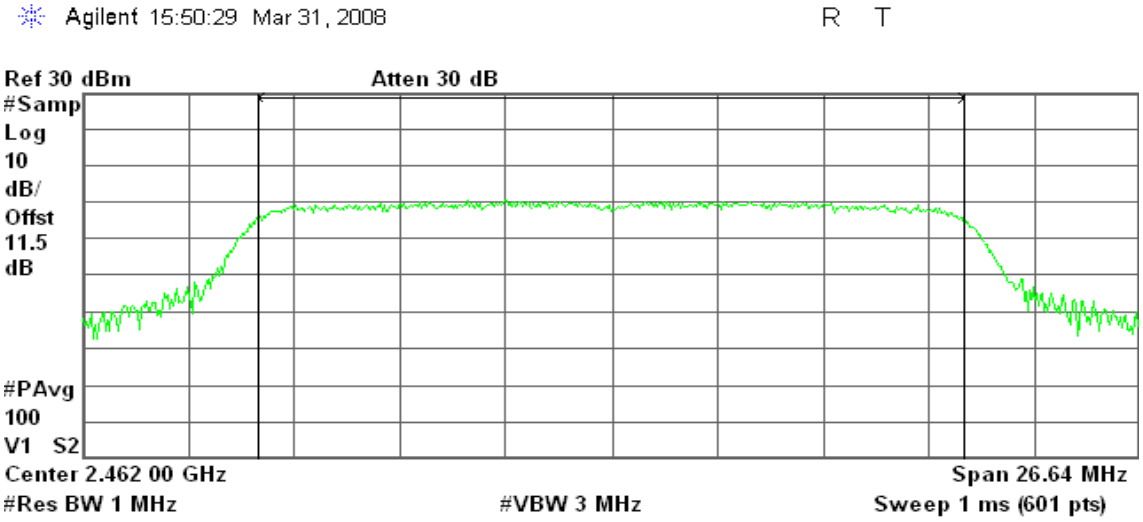
Average Power (CH Mid)



Channel Power
10.67 dBm / 17.7750 MHz

Power Spectral Density
-61.83 dBm/Hz

Average Power (CH High)

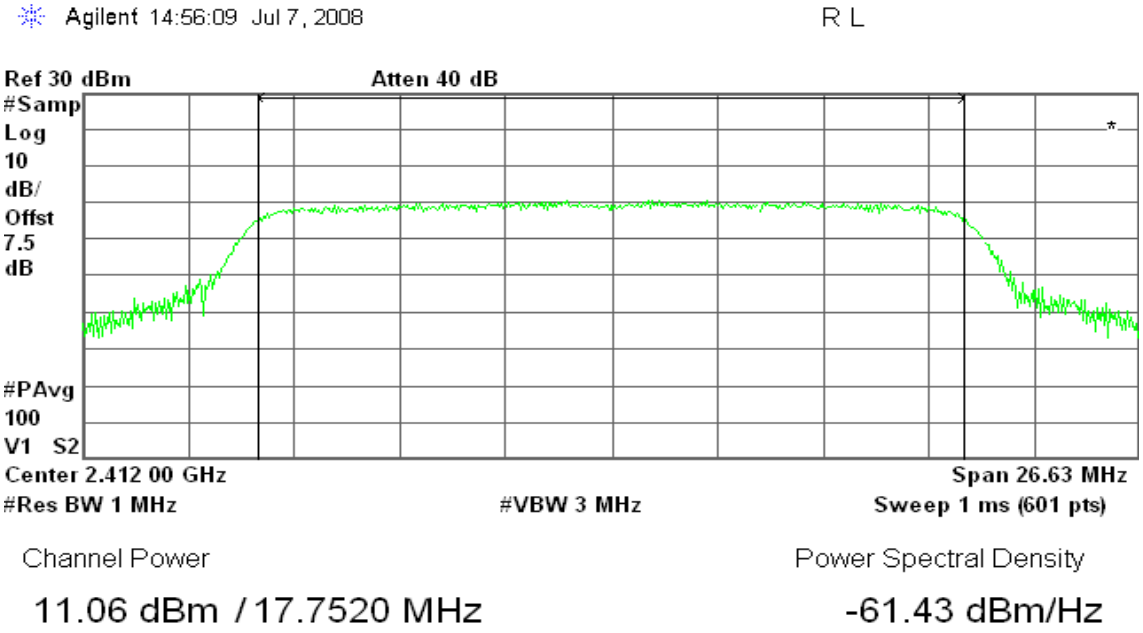


Channel Power
11.25 dBm / 17.7590 MHz

Power Spectral Density
-61.24 dBm/Hz

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

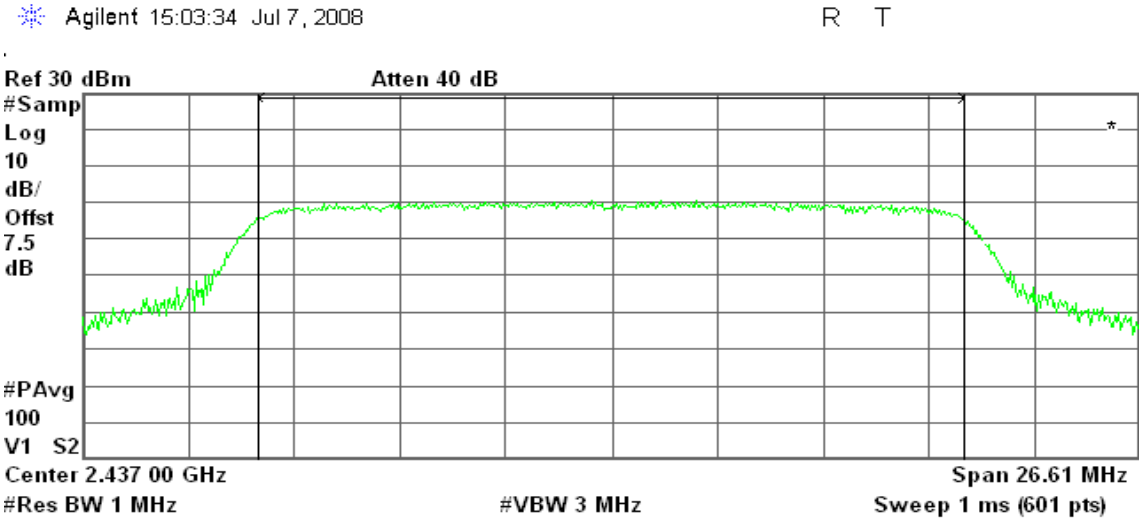
Average Power (CH Low)



Channel Power
11.06 dBm / 17.7520 MHz

Power Spectral Density
-61.43 dBm/Hz

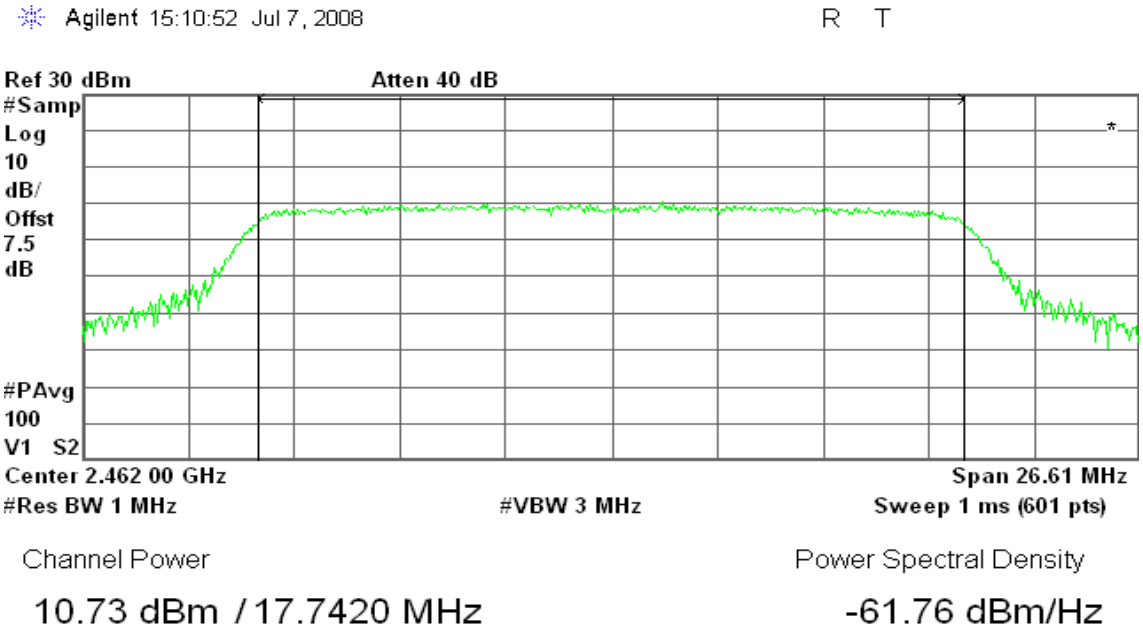
Average Power (CH Mid)



Channel Power
10.74 dBm / 17.7390 MHz

Power Spectral Density
-61.75 dBm/Hz

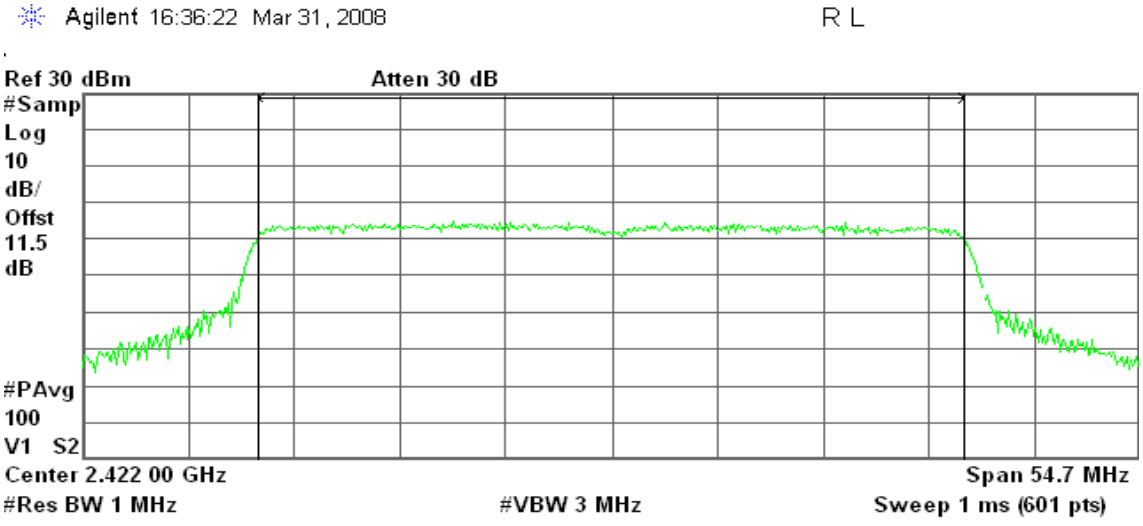
Average Power (CH High)



Channel Power	Power Spectral Density
10.73 dBm / 17.7420 MHz	-61.76 dBm/Hz

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

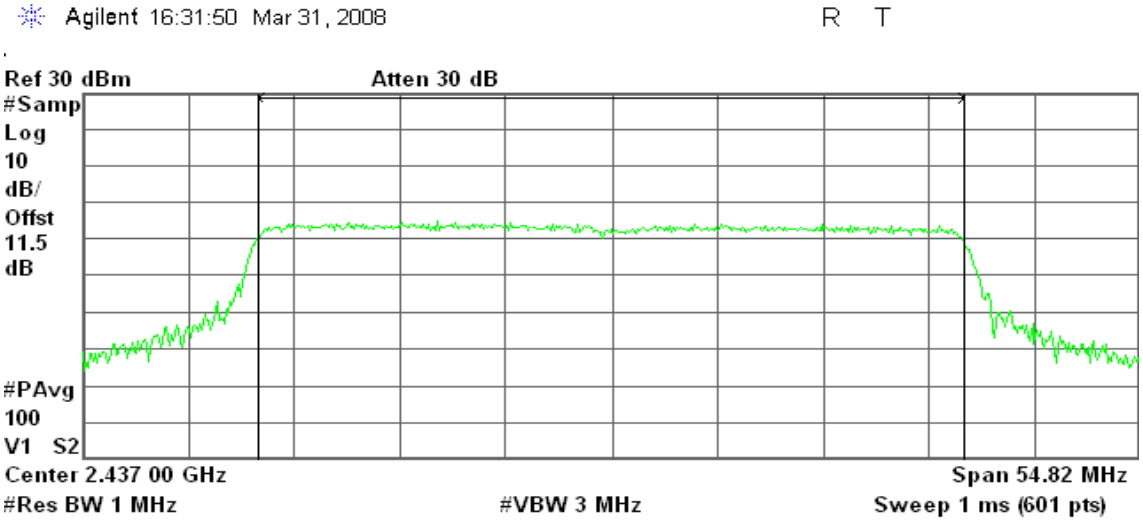
Average Power (CH Low)



Channel Power
8.57 dBm / 36.4660 MHz

Power Spectral Density
-67.05 dBm/Hz

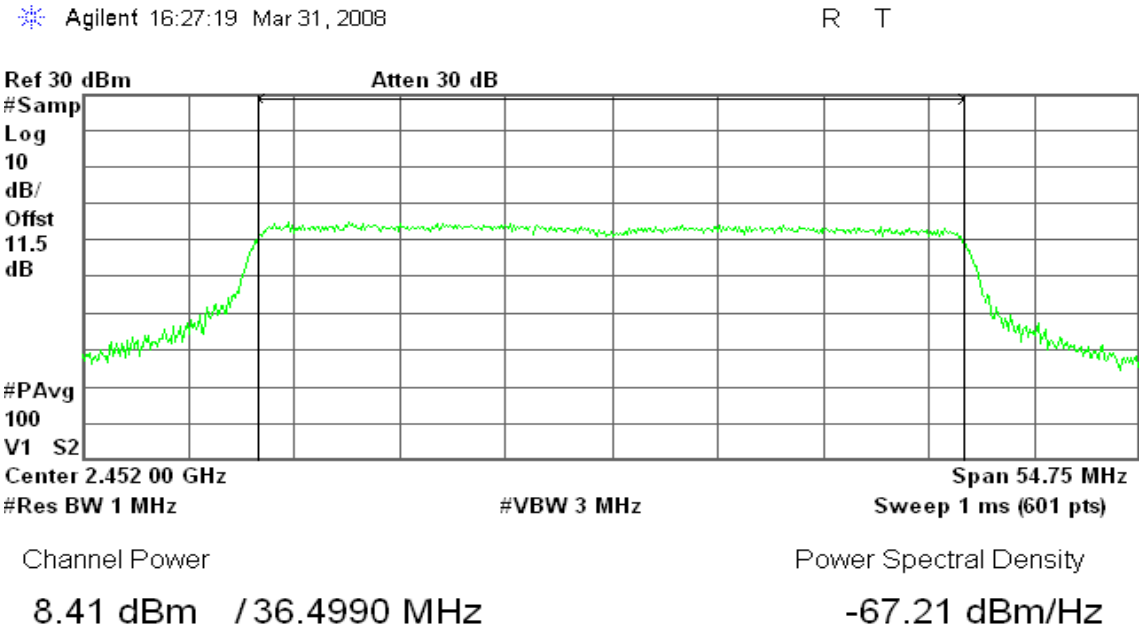
Average Power (CH Mid)



Channel Power
8.33 dBm / 36.5460 MHz

Power Spectral Density
-67.30 dBm/Hz

Average Power (CH High)

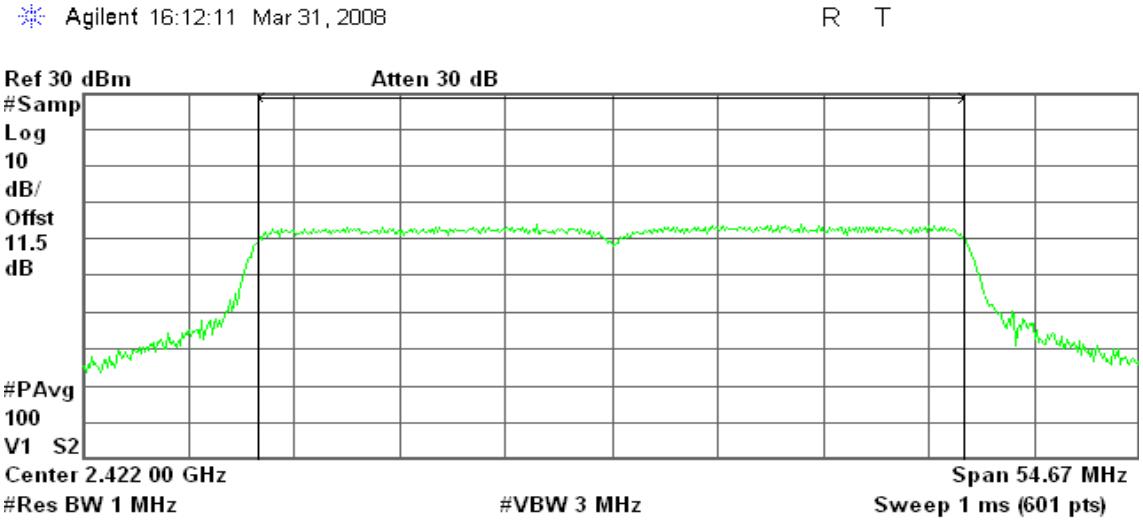


Channel Power
8.41 dBm /36.4990 MHz

Power Spectral Density
-67.21 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / Chain 1

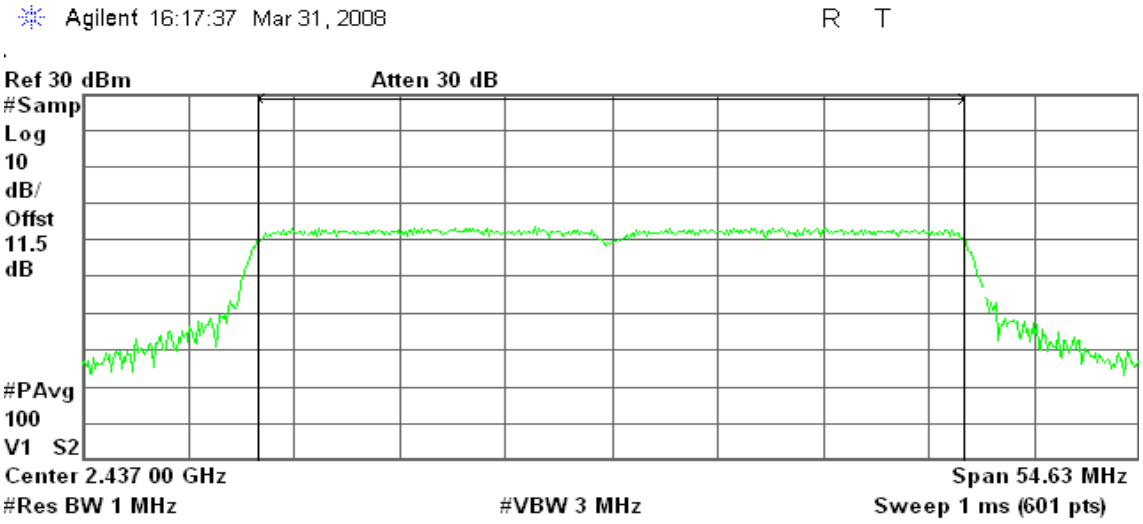
Average Power (CH Low)



Channel Power
7.81 dBm /36.4470 MHz

Power Spectral Density
-67.80 dBm/Hz

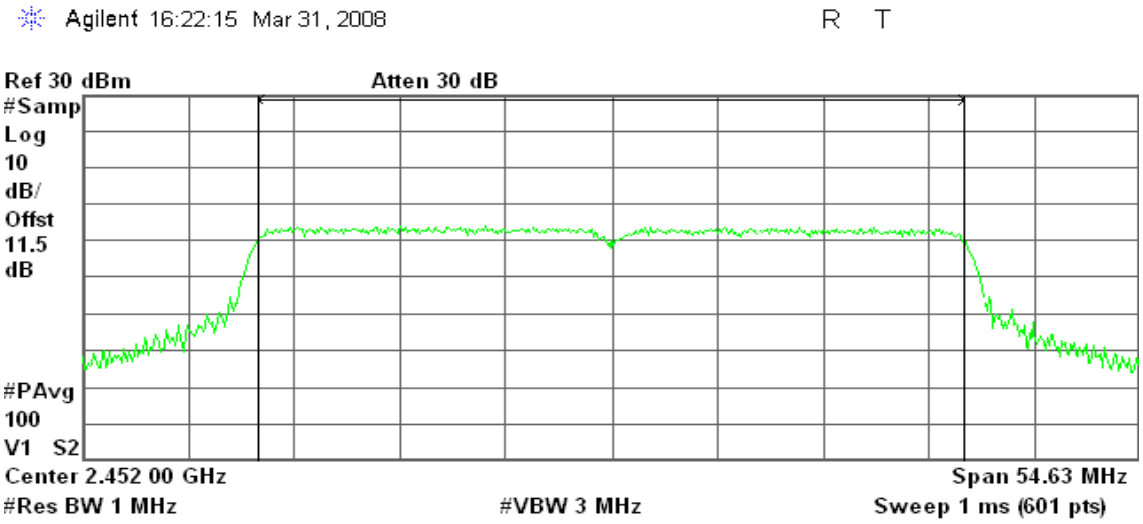
Average Power (CH Mid)



Channel Power
7.67 dBm /36.4210 MHz

Power Spectral Density
-67.94 dBm/Hz

Average Power (CH High)

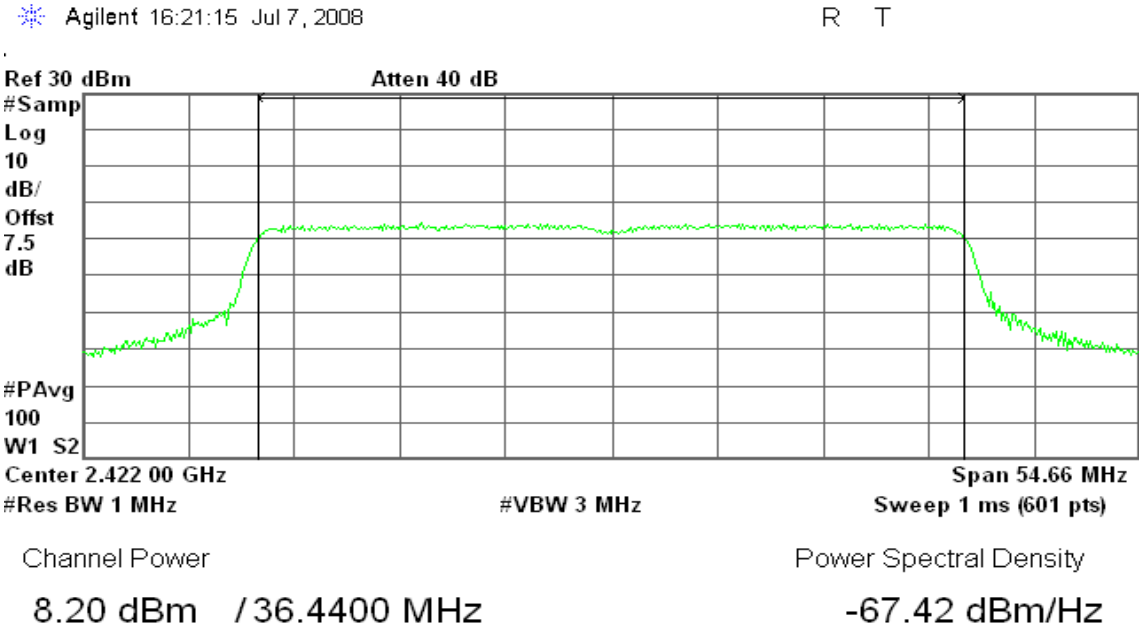


Channel Power
8.12 dBm /36.4180 MHz

Power Spectral Density
-67.49 dBm/Hz

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

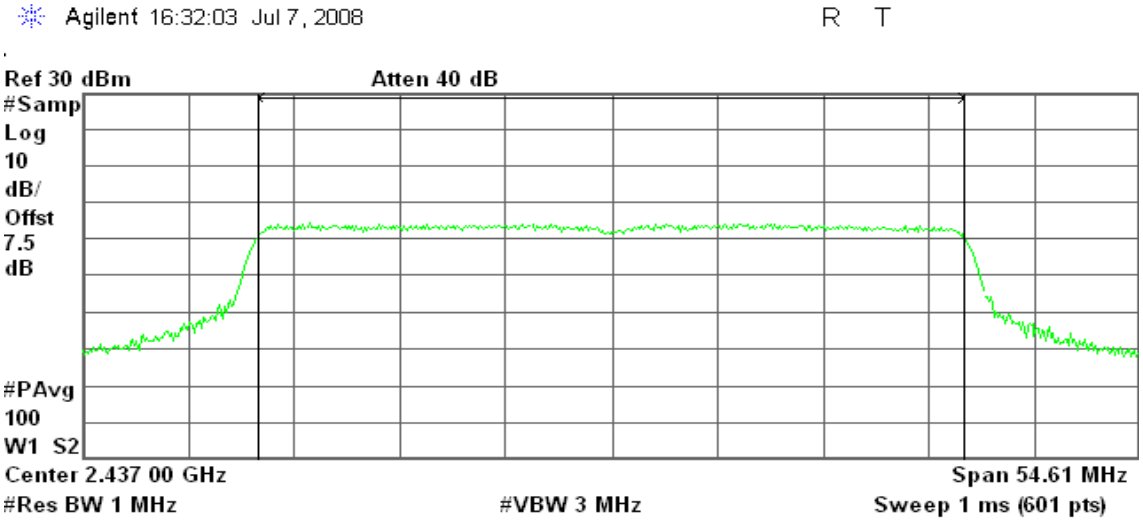
Average Power (CH Low)



Channel Power
8.20 dBm / 36.4400 MHz

Power Spectral Density
-67.42 dBm/Hz

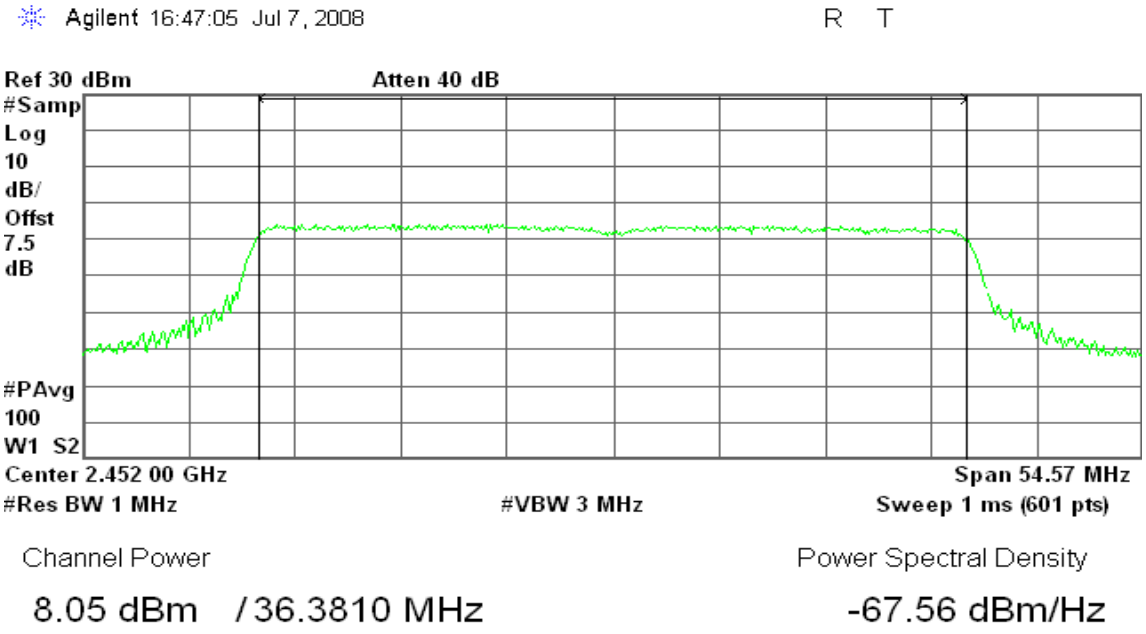
Average Power (CH Mid)



Channel Power
8.27 dBm / 36.4080 MHz

Power Spectral Density
-67.34 dBm/Hz

Average Power (CH High)

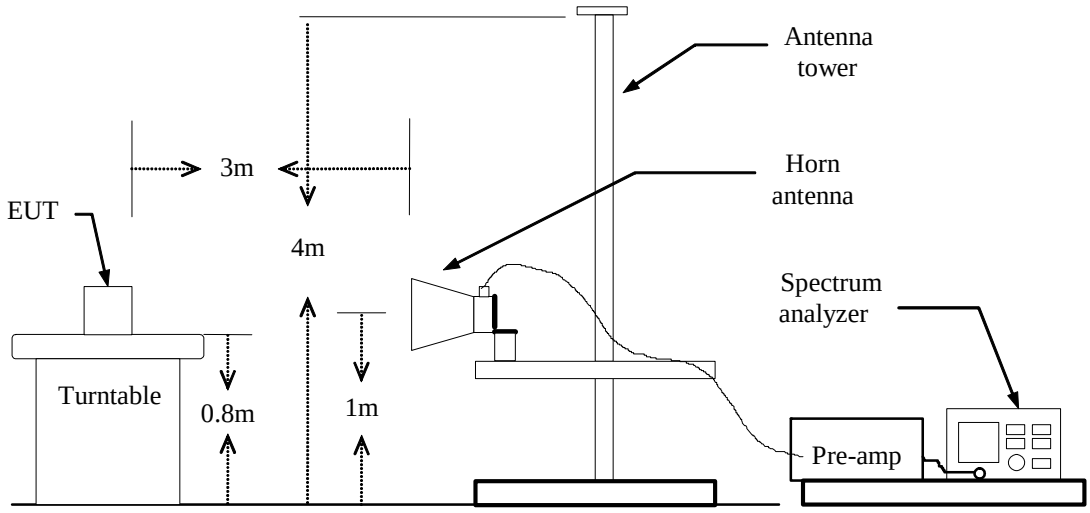


7.4BAND EDGES MEASUREMENT

LIMIT

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in 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

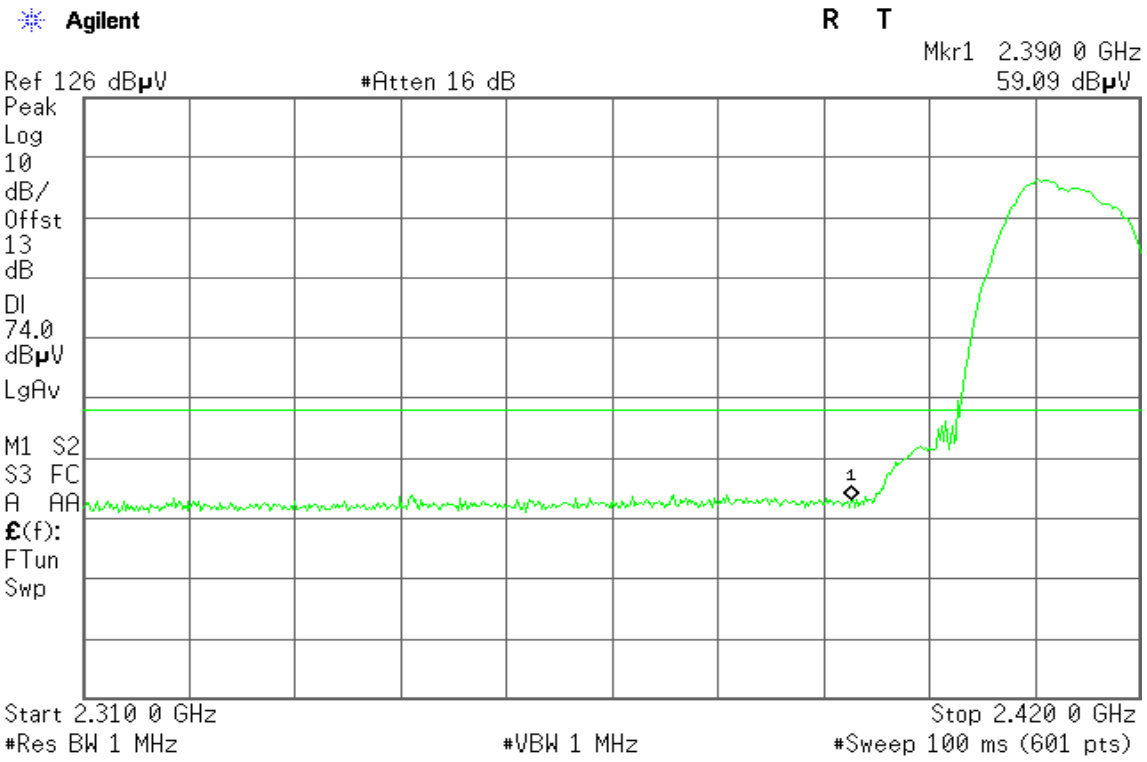
1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the 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

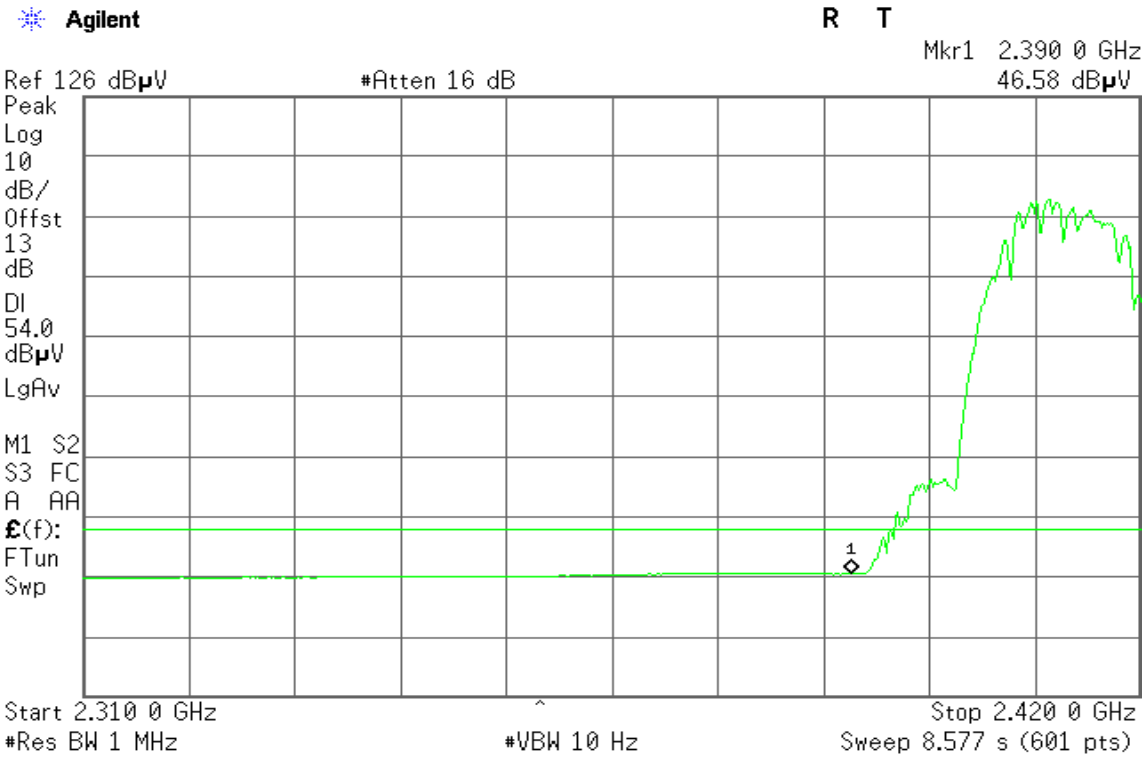
Refer to attach spectrum analyzer data chart.

Band Edges (IEEE 802.11b mode / CH Low)

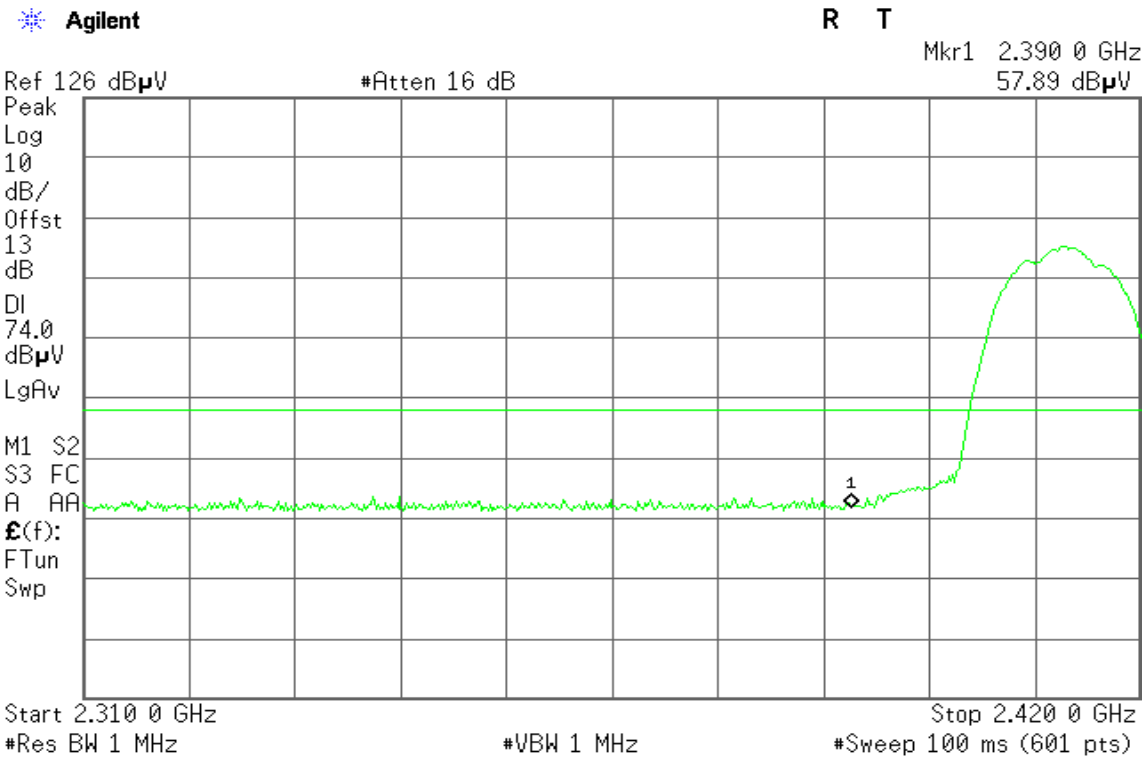
Detector mode: Peak Polarity: Vertical



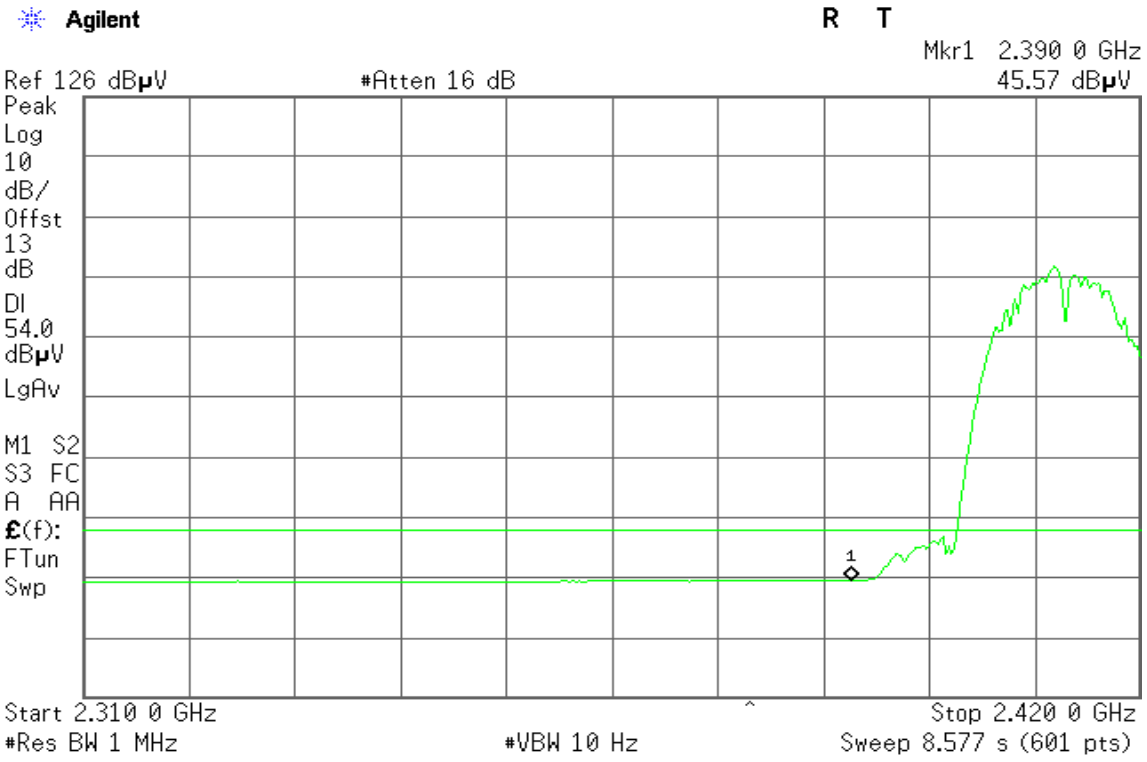
Detector mode: Average Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**

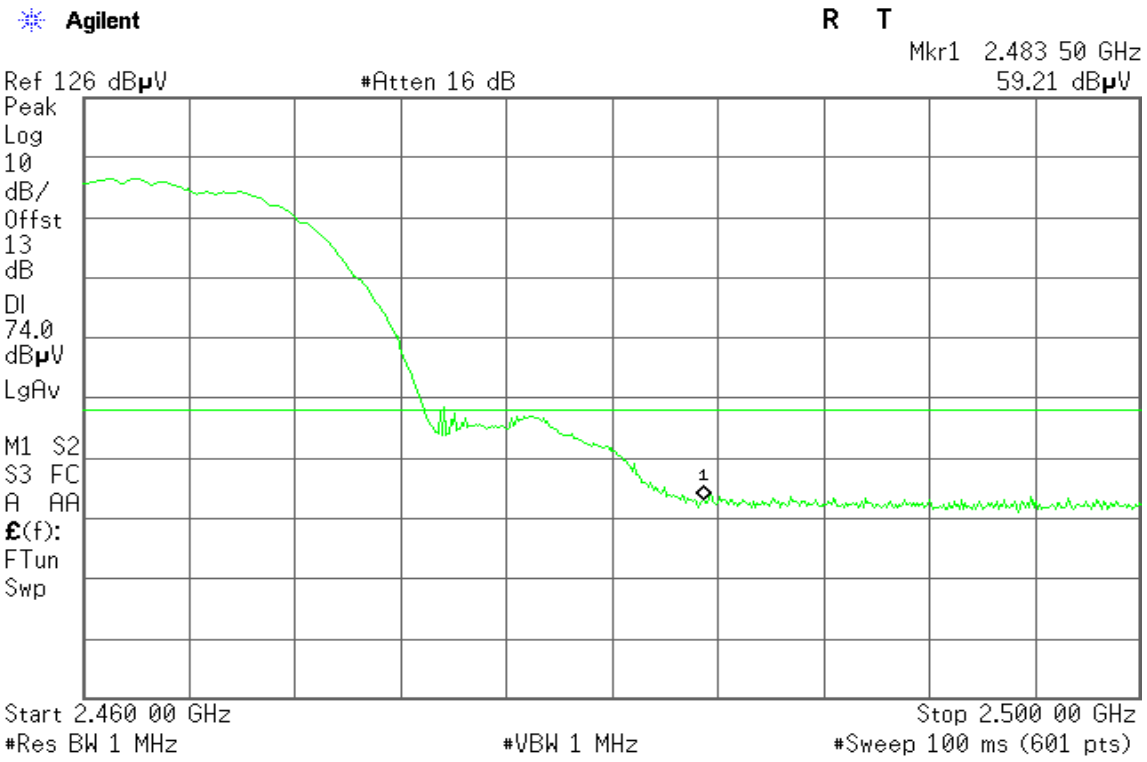


Detector mode: Average **Polarity: Horizontal**



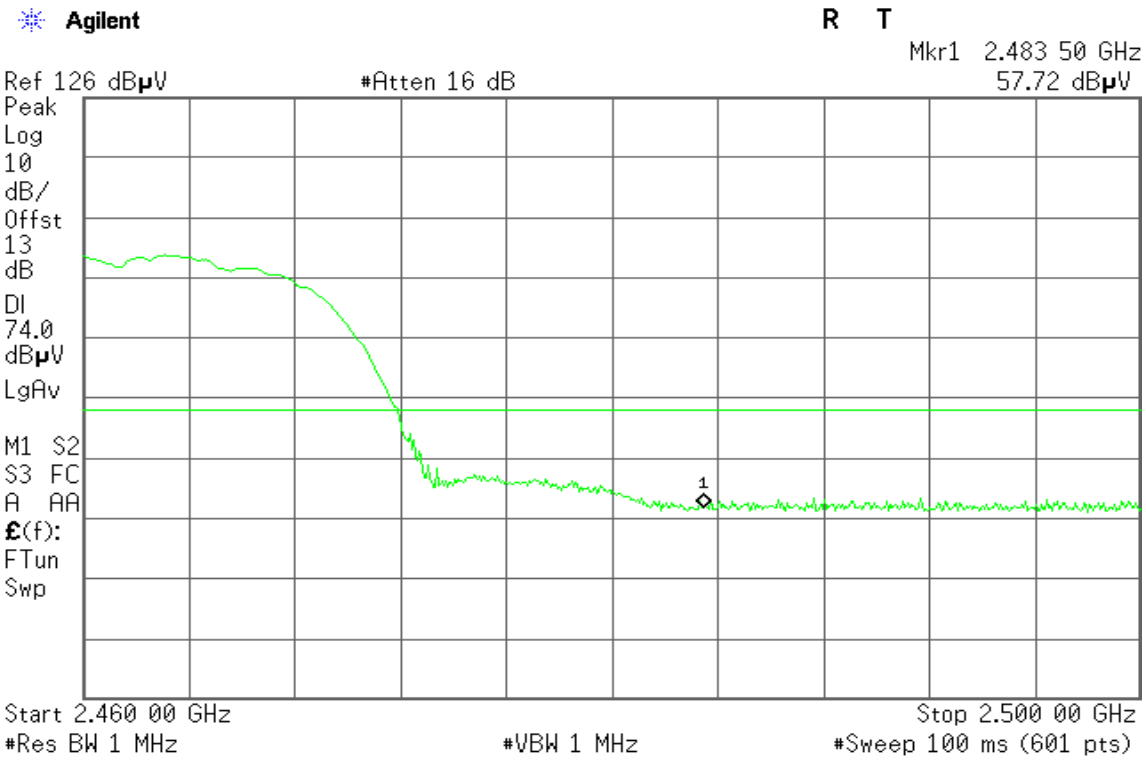
Band Edges (IEEE 802.11b mode / CH High)

Detector mode: Peak Polarity: Vertical

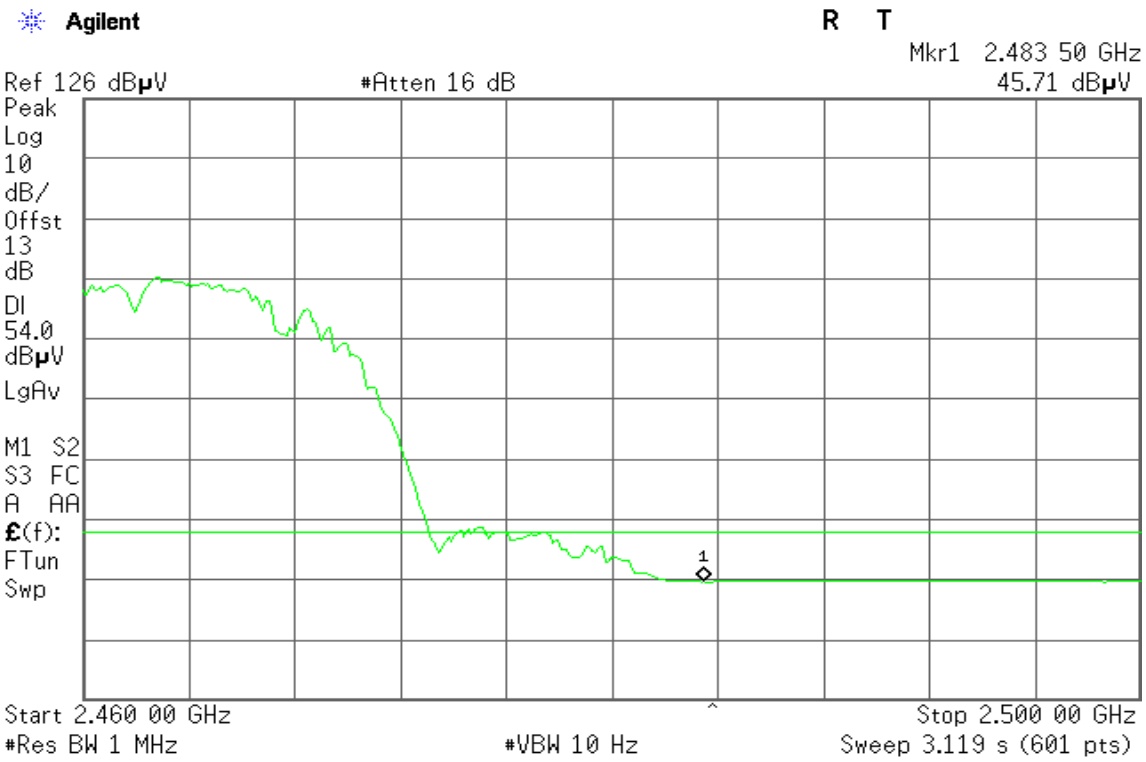


Detector mode: Average Polarity: Vertical

Detector mode: Peak **Polarity: Horizontal**

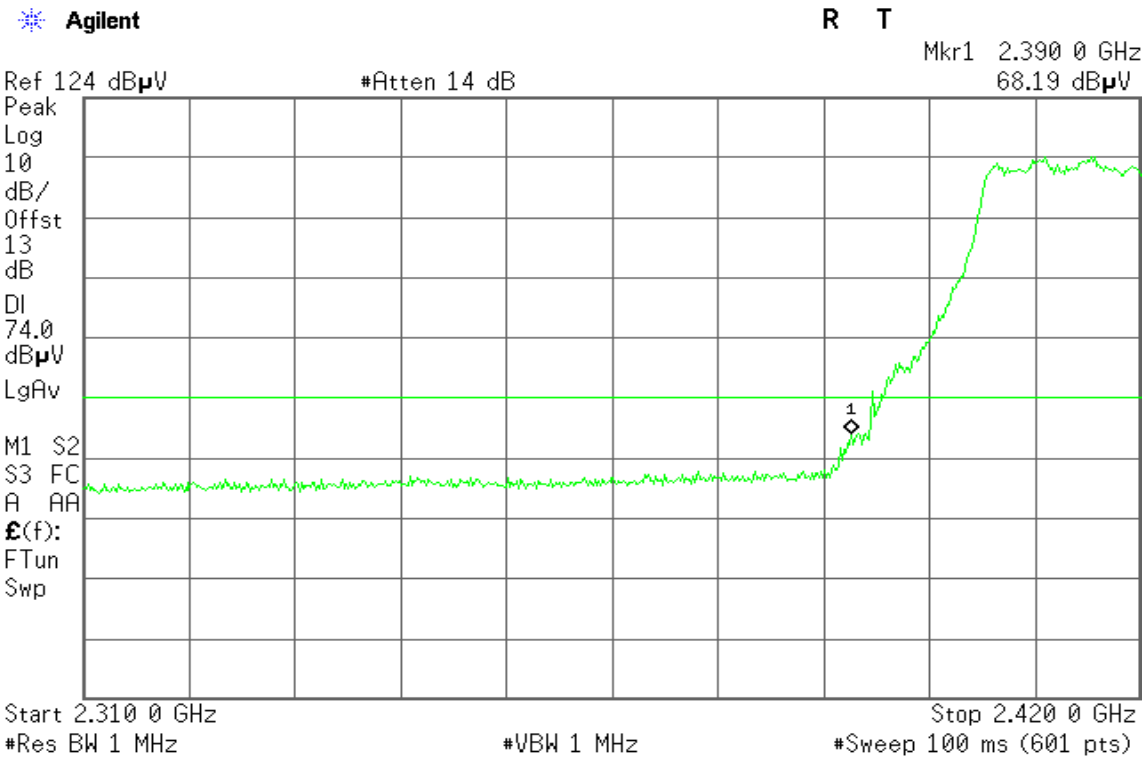


Detector mode: Average **Polarity: Horizontal**

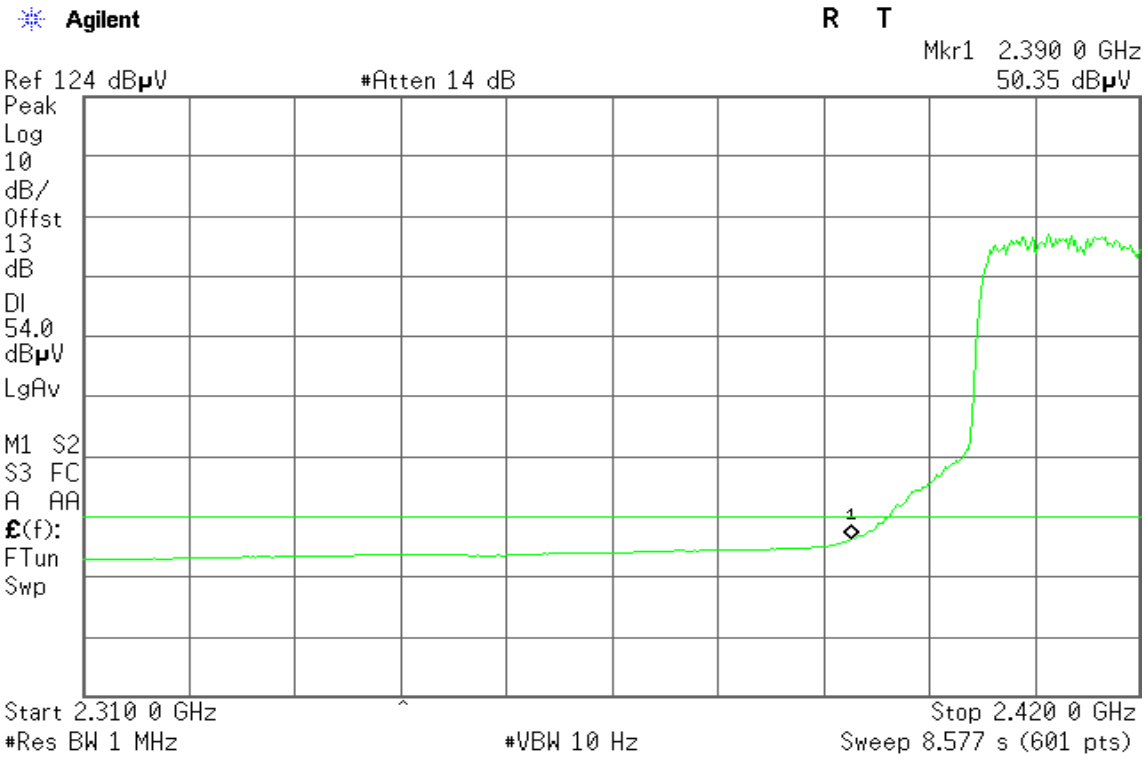


Band Edges (IEEE 802.11g mode / CH Low)

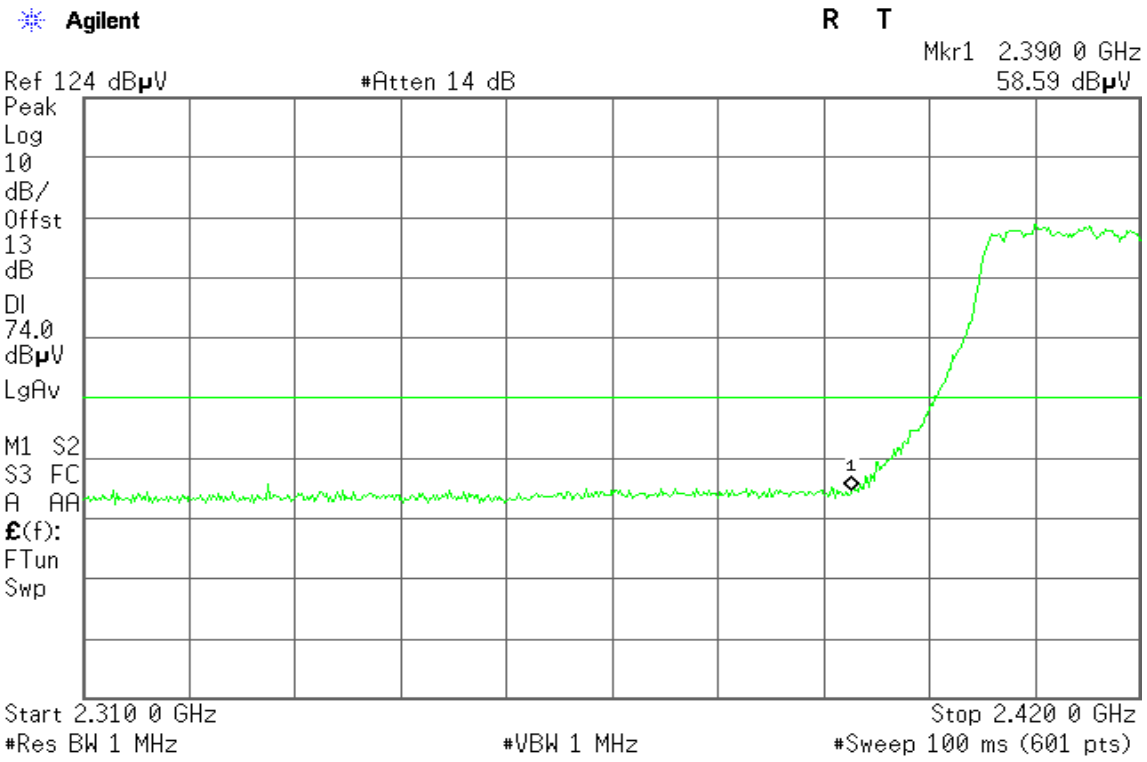
Detector mode: Peak Polarity: Vertical



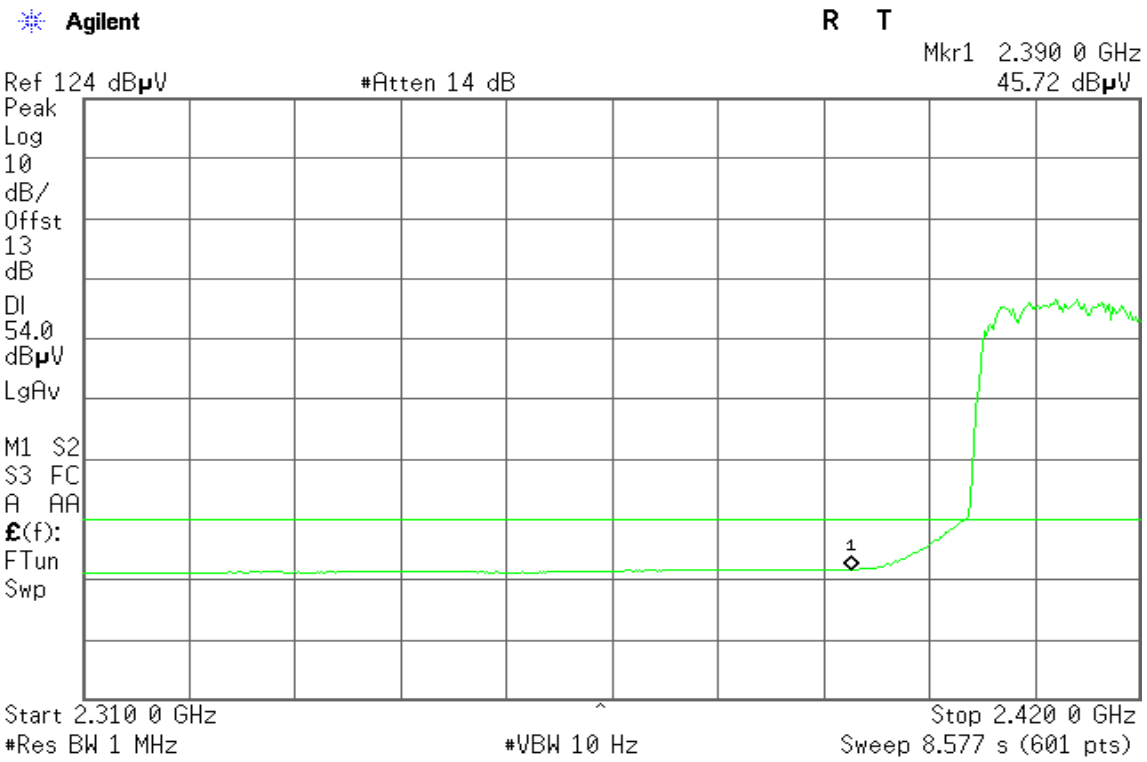
Detector mode: Average Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**

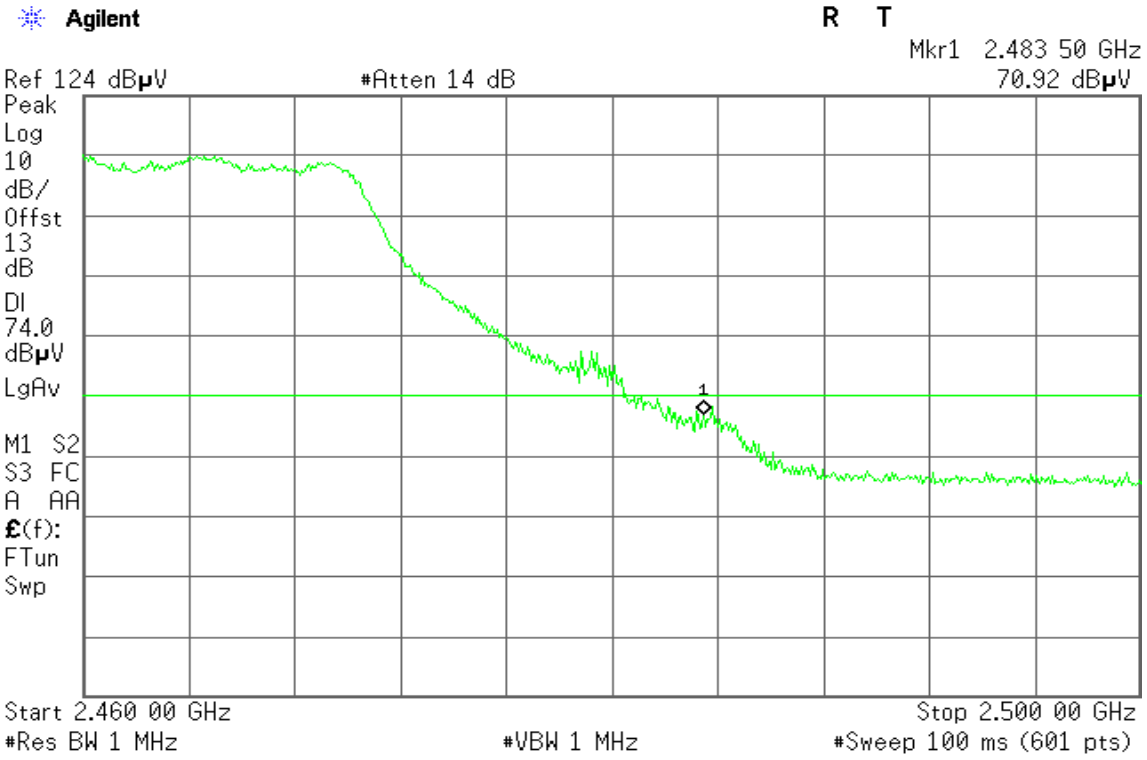


Detector mode: Average **Polarity: Horizontal**

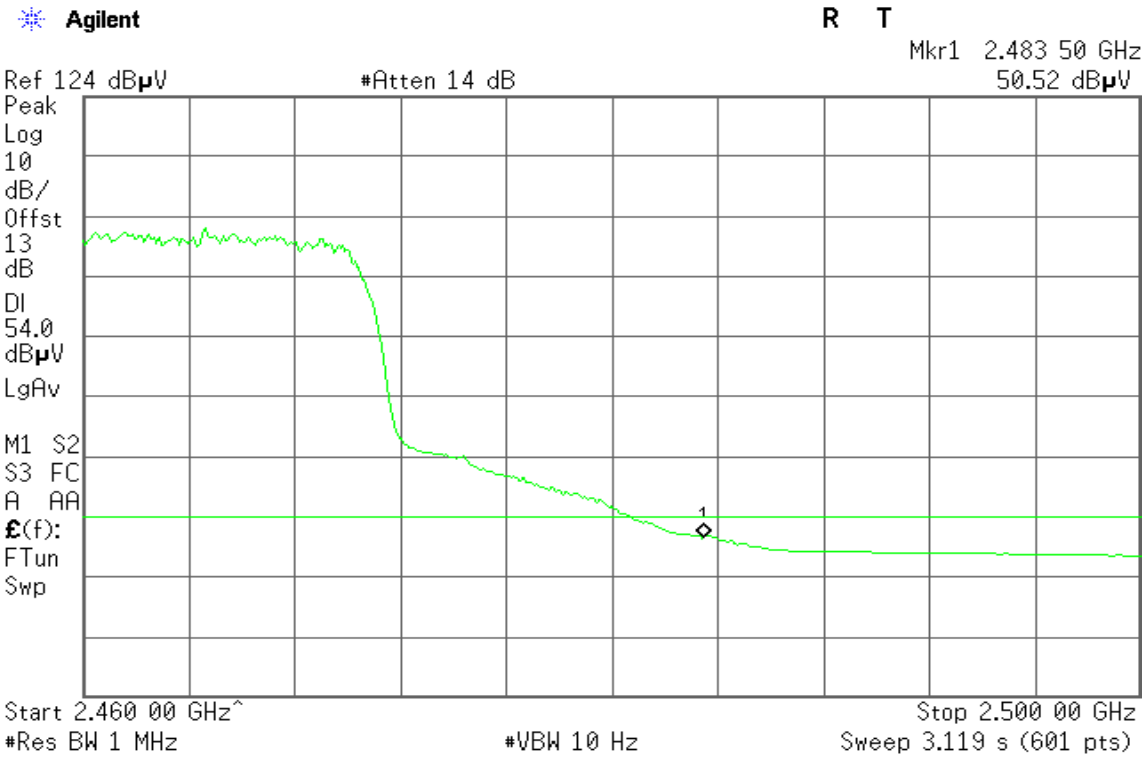


Band Edges (IEEE 802.11g mode / CH High)

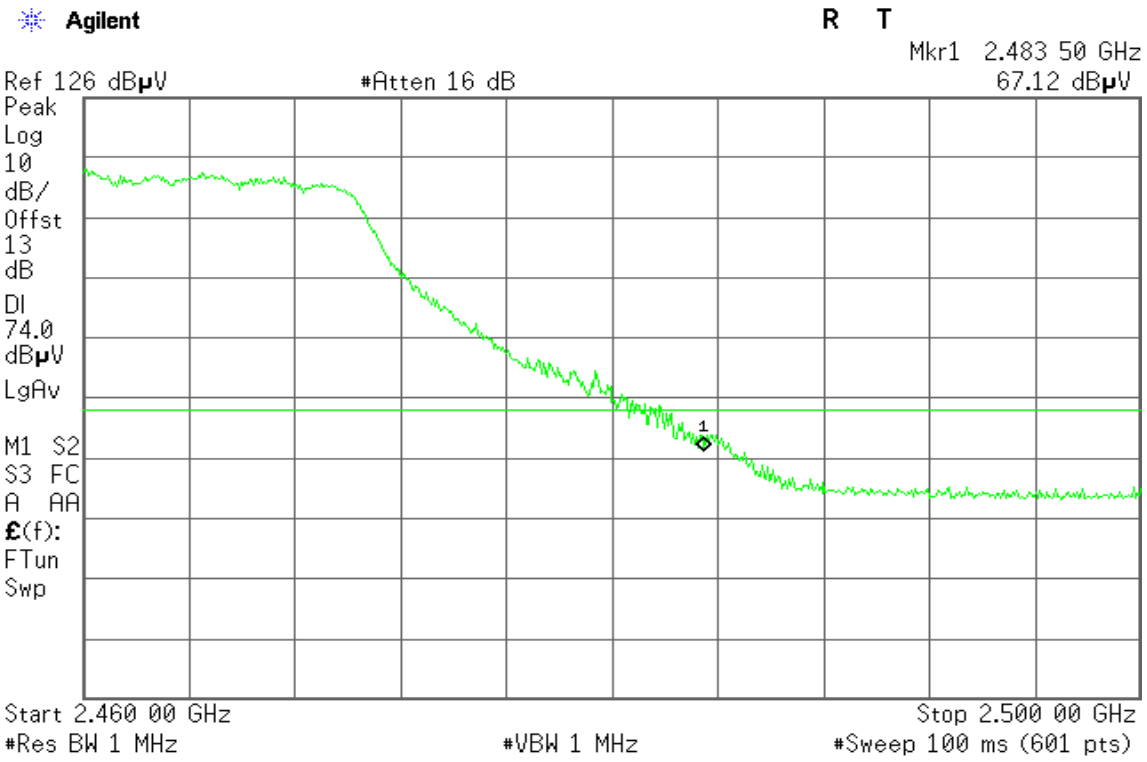
Detector mode: Peak Polarity: Vertical



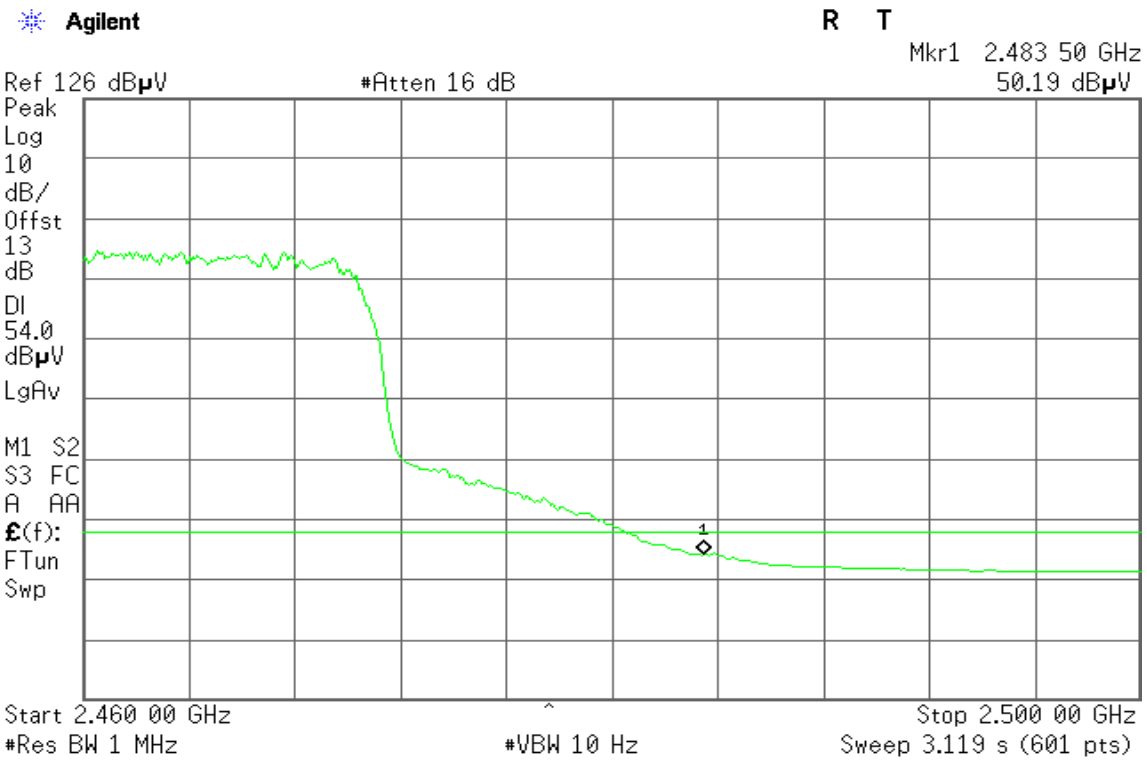
Detector mode: Average Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**

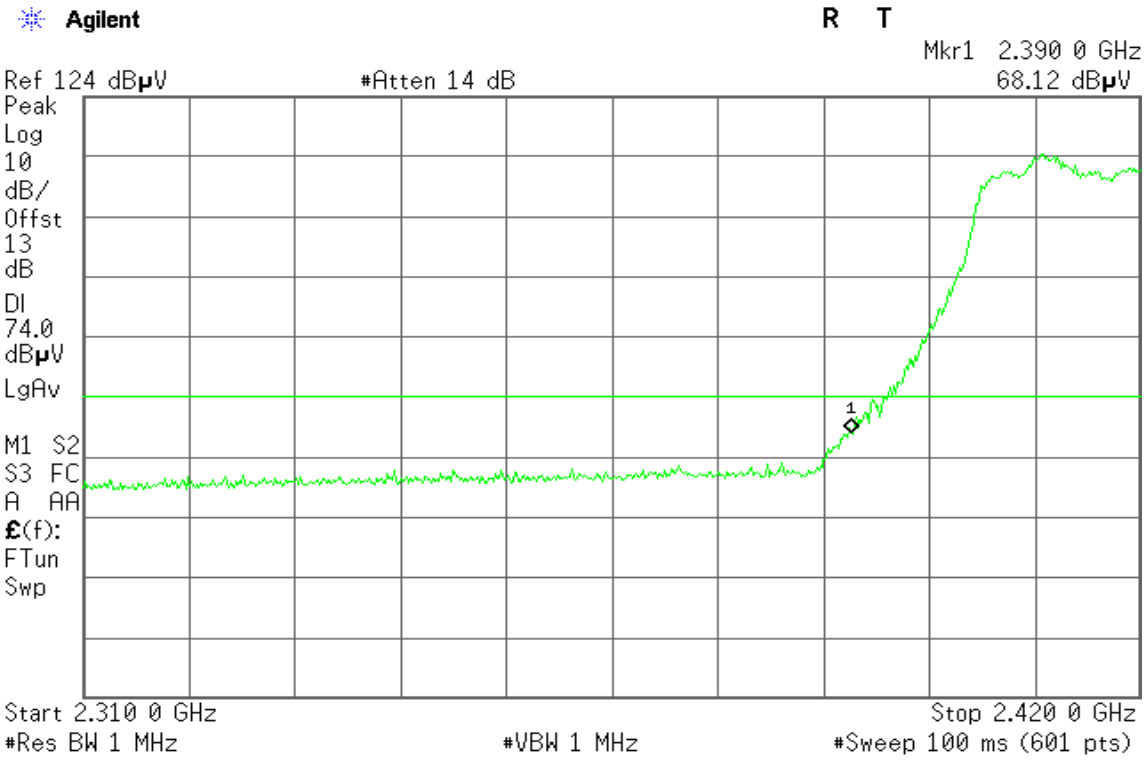


Detector mode: Average **Polarity: Horizontal**

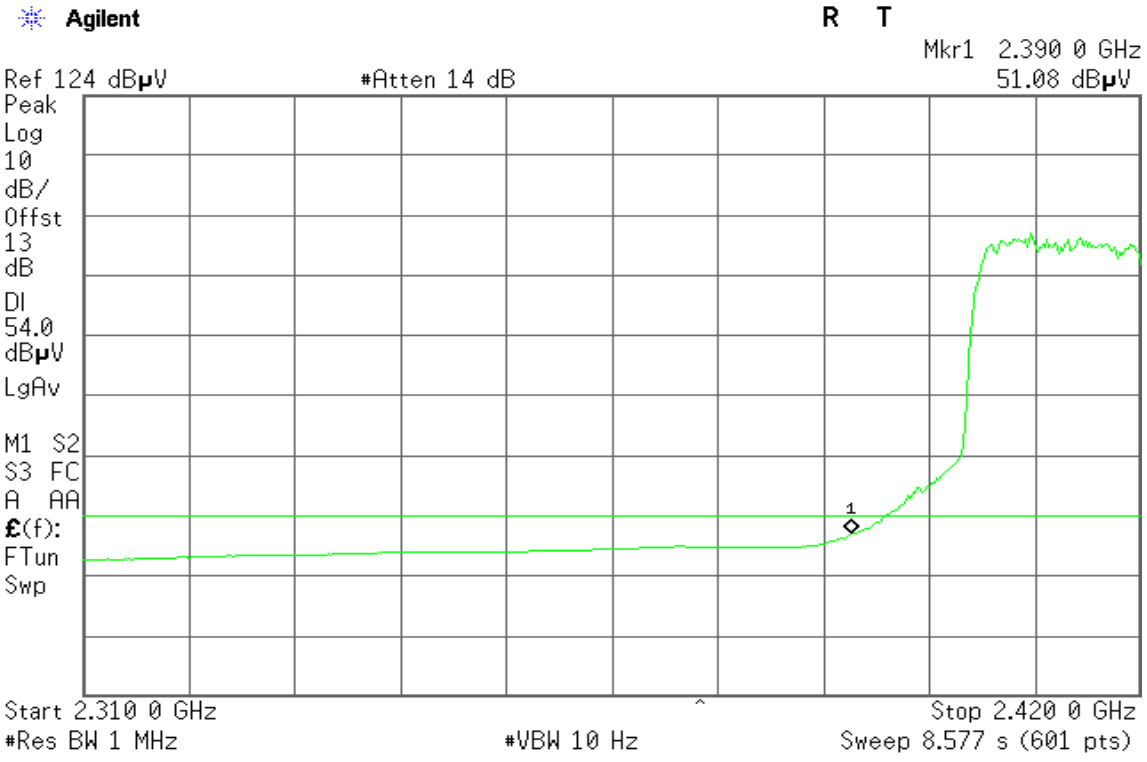


Band Edges (draft 802.11n Standard-20 MHz Channel mode / CH Low)

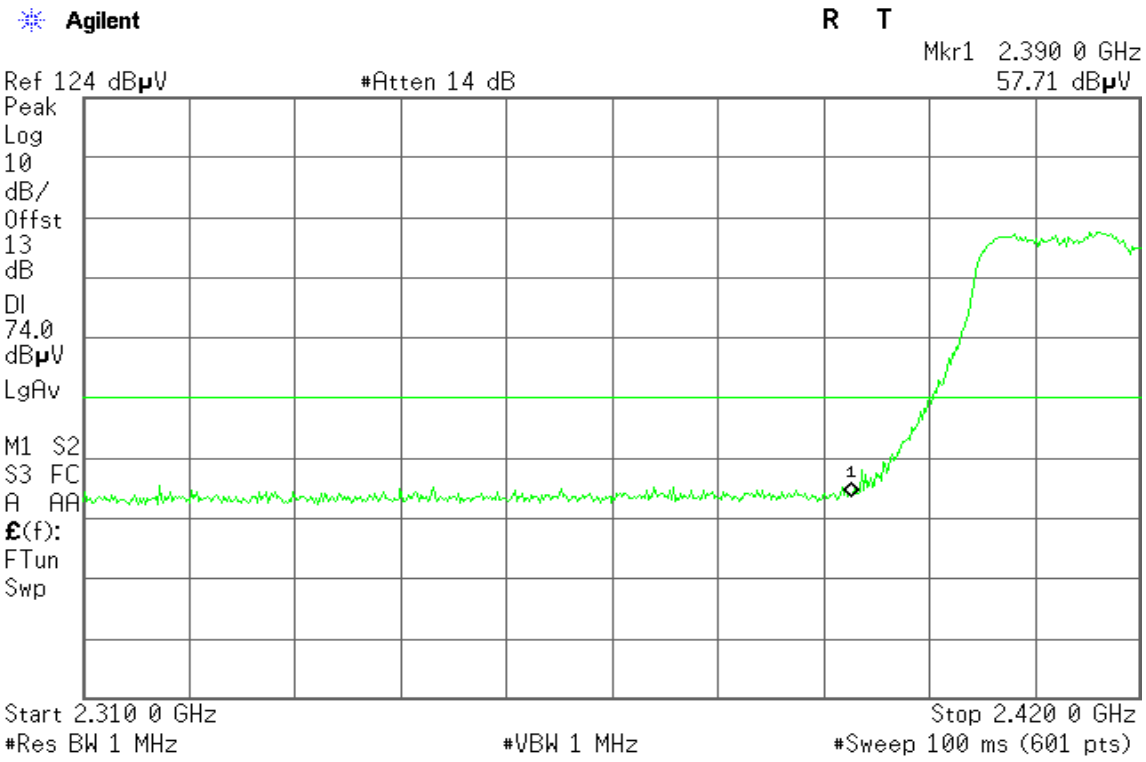
Detector mode: Peak **Polarity: Vertical**



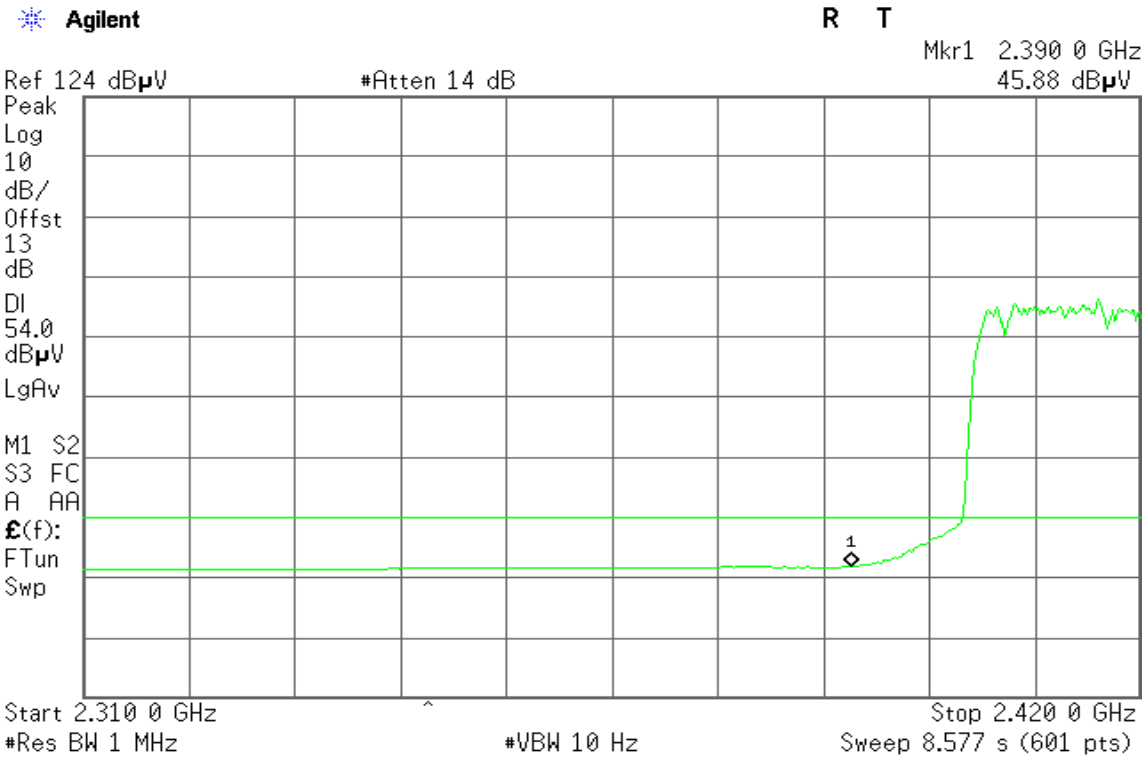
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

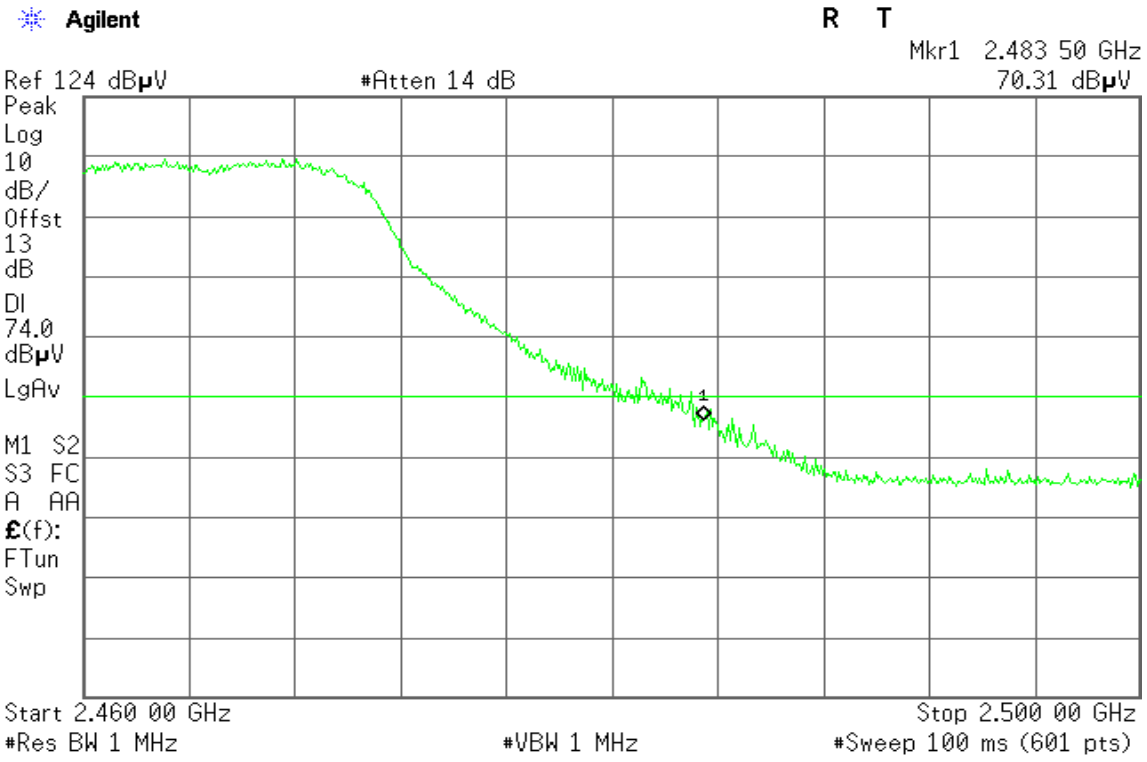


Detector mode: Average **Polarity: Horizontal**

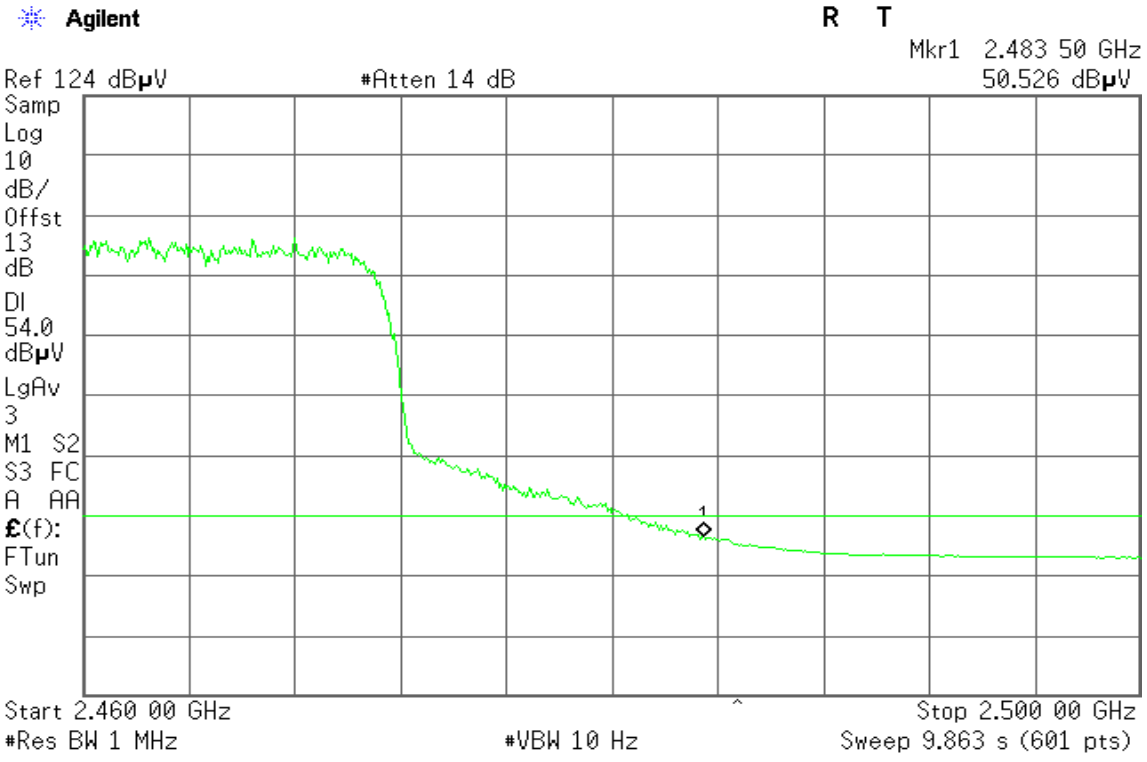


Band Edges (draft 802.11n Standard-20 MHz Channel mode / CH High)

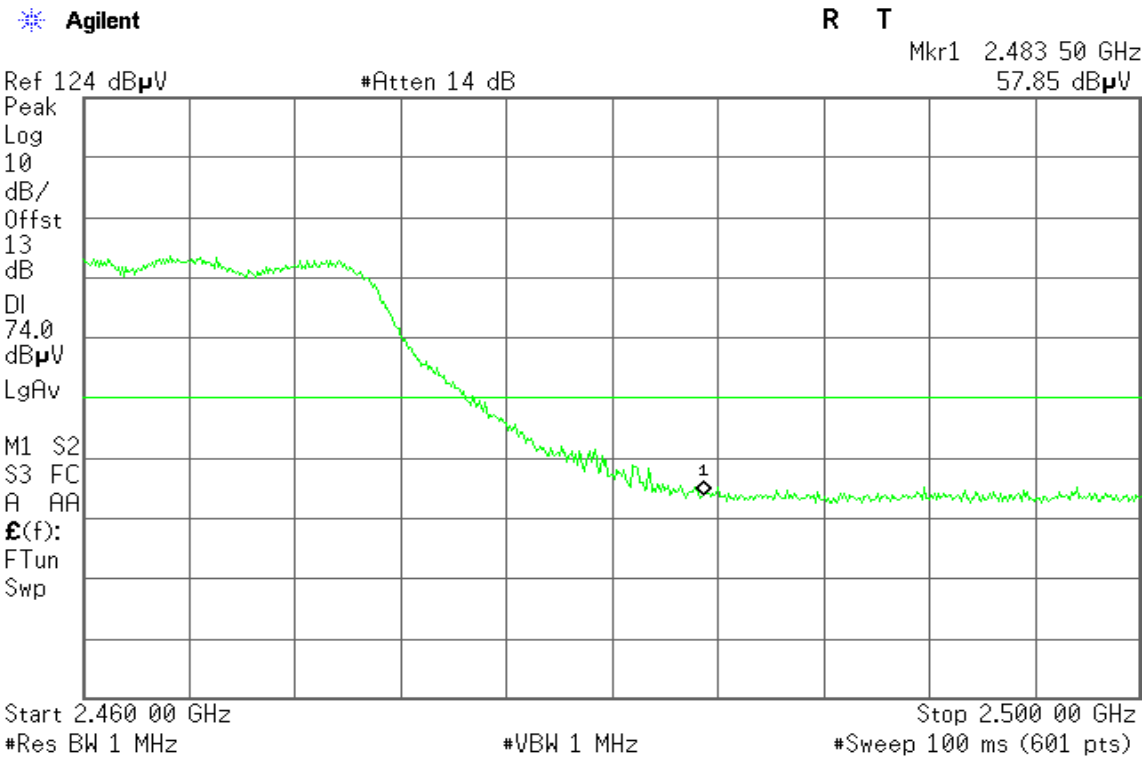
Detector mode: Peak **Polarity: Vertical**



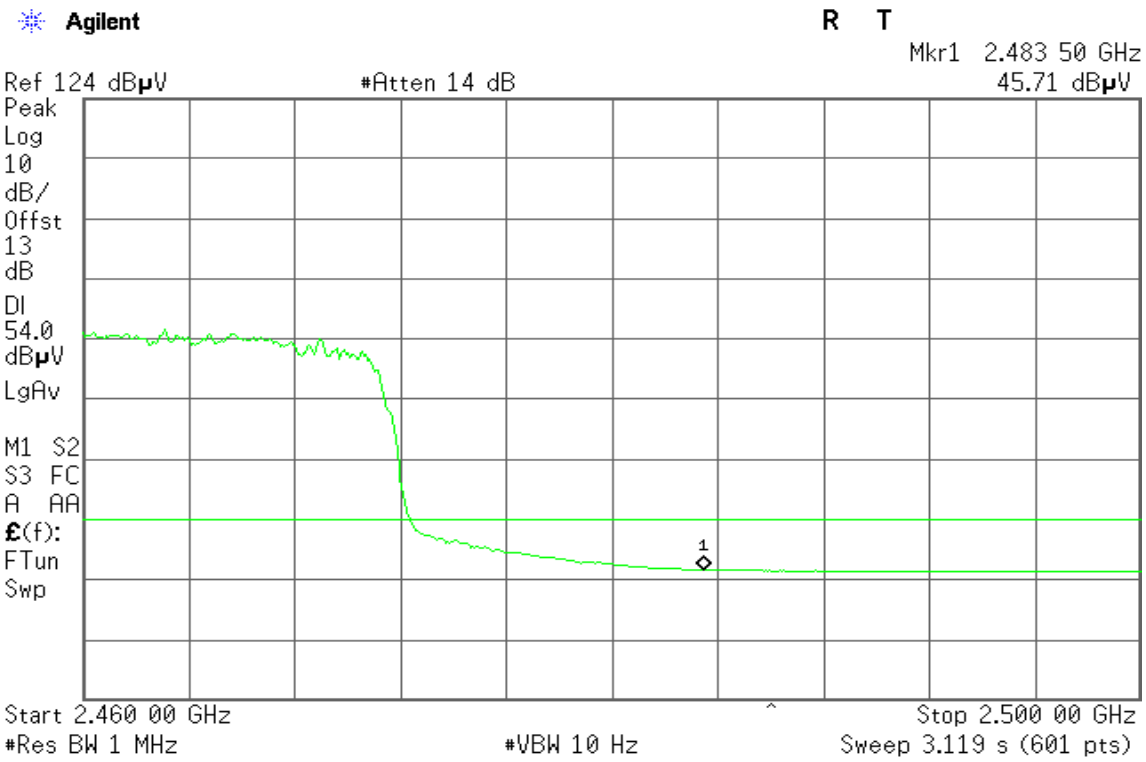
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

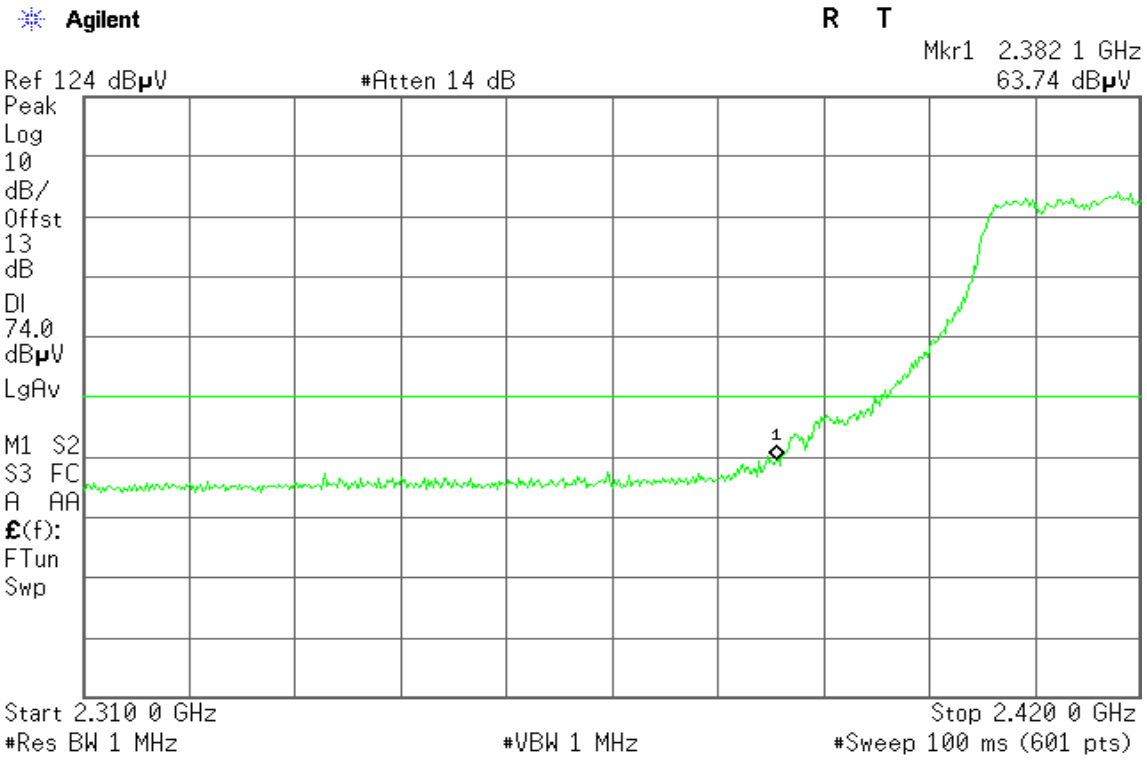


Detector mode: Average **Polarity: Horizontal**

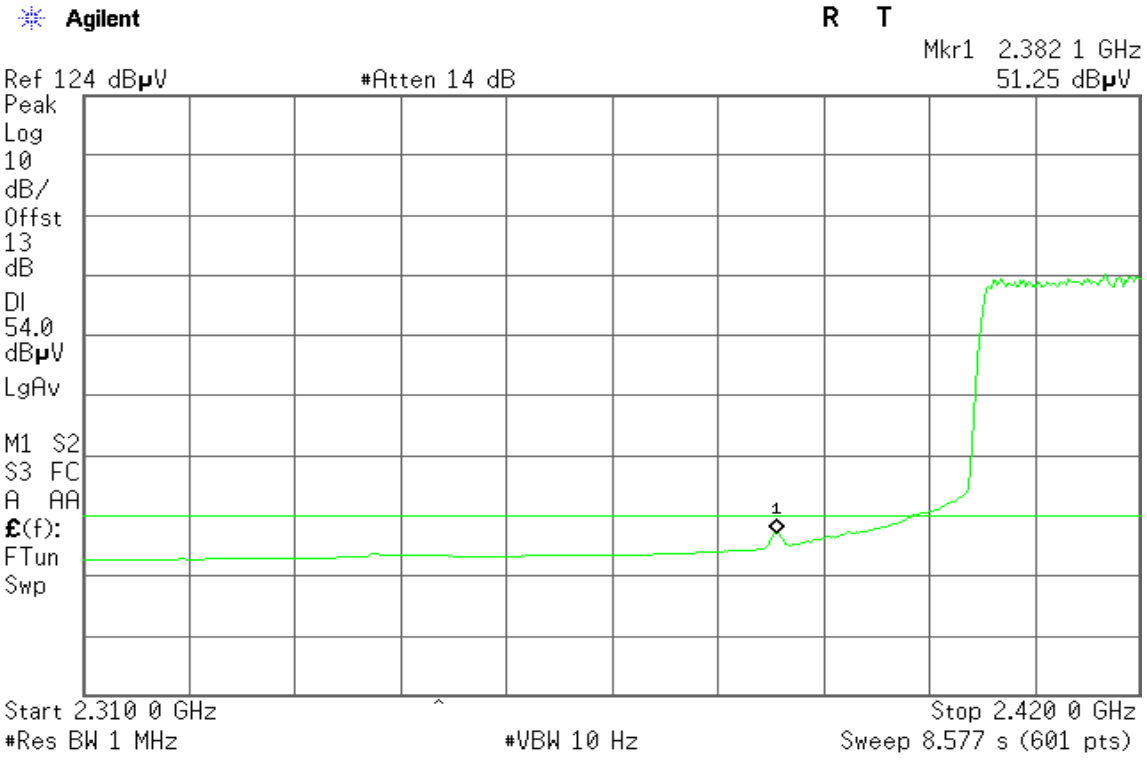


Band Edges (draft 802.11n Wide-40 MHz Channel mode / CH Low)

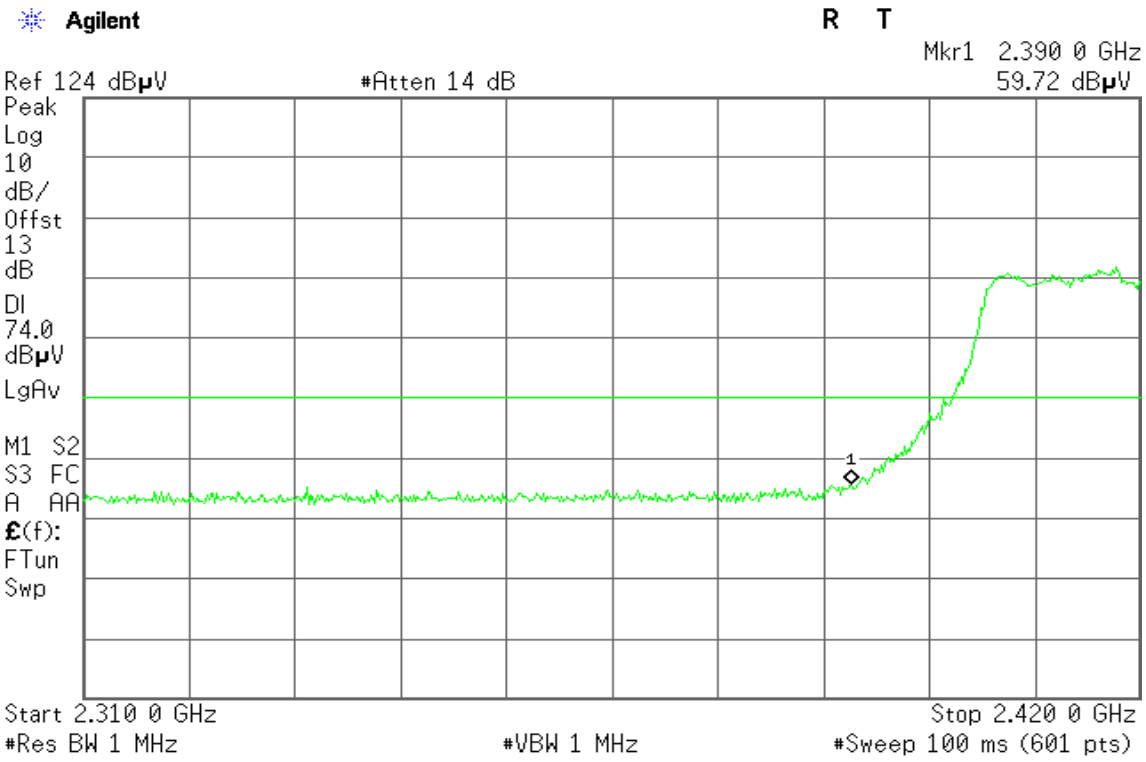
Detector mode: Peak **Polarity: Vertical**



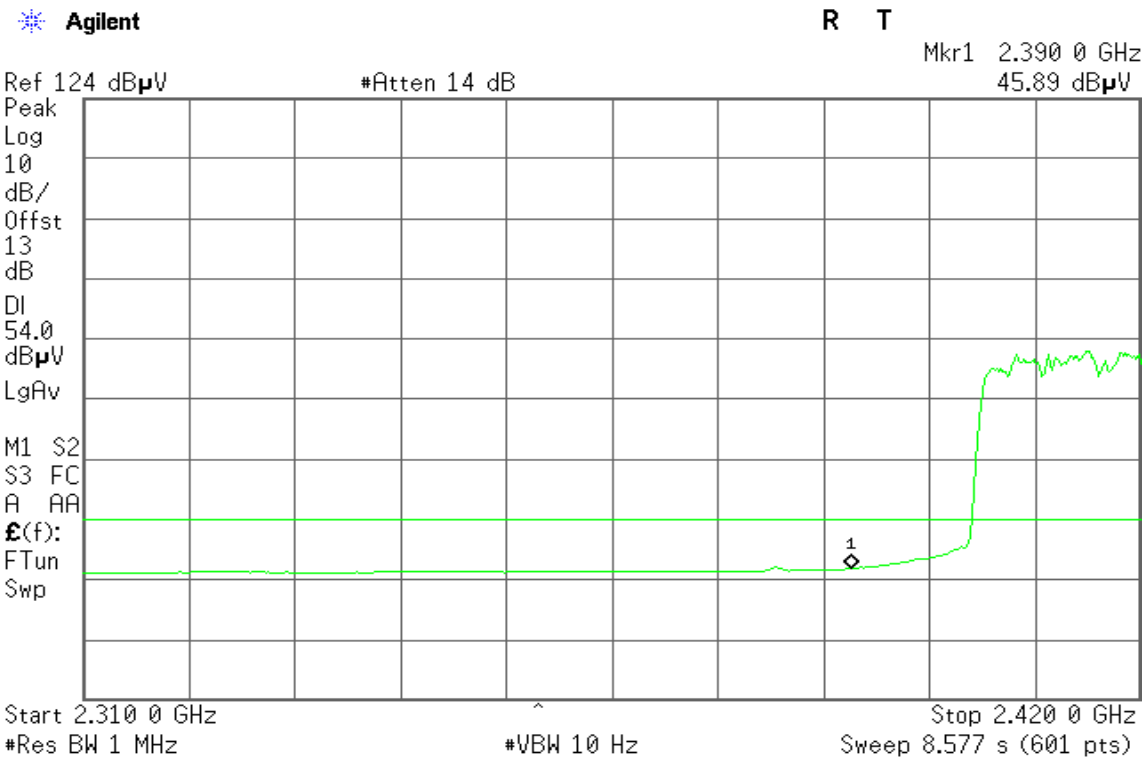
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

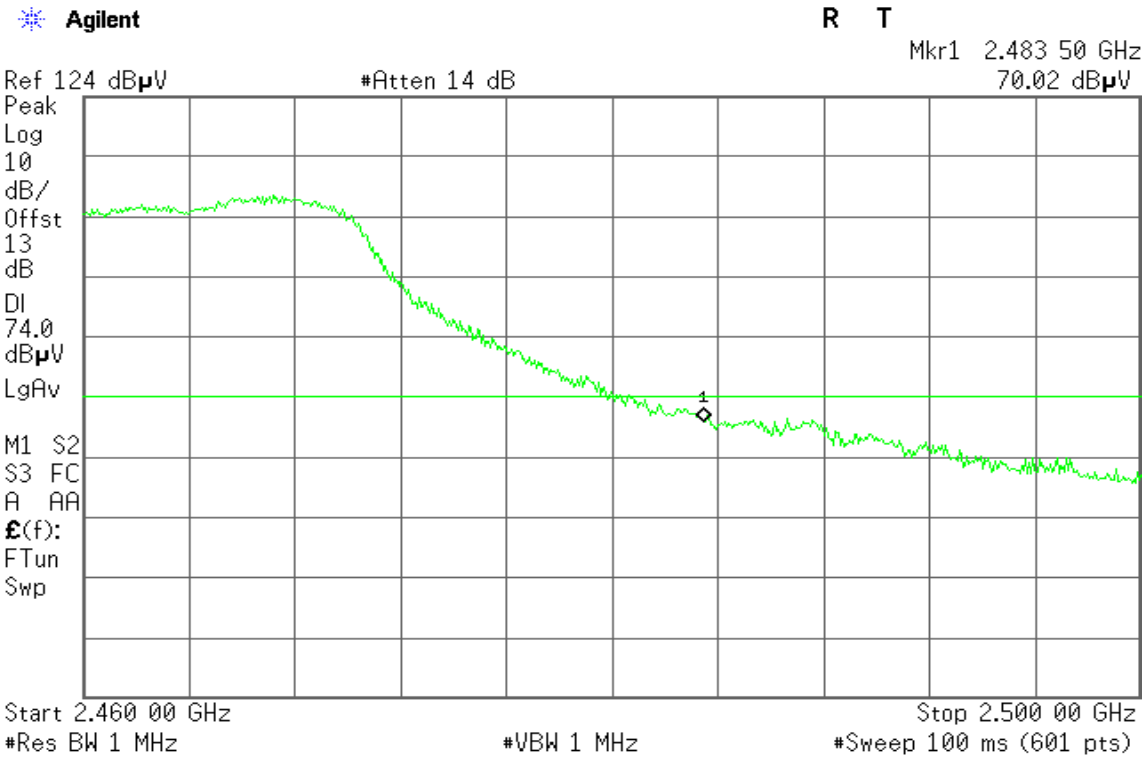


Detector mode: Average **Polarity: Horizontal**

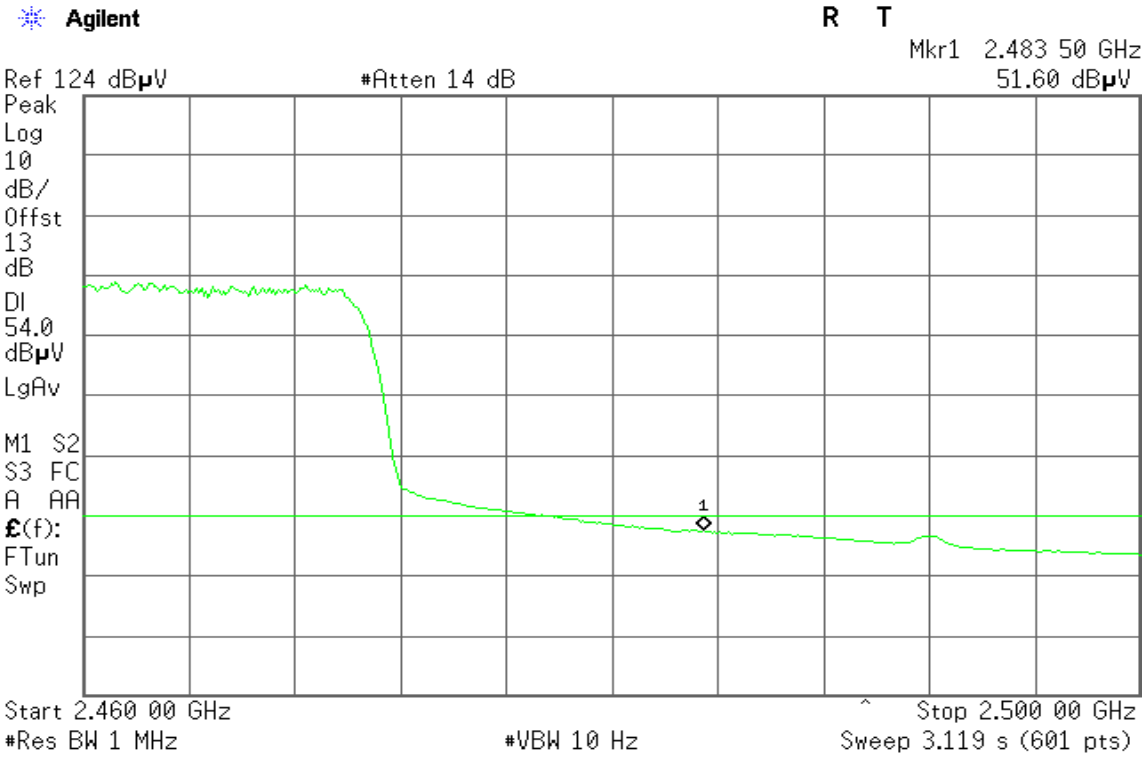


Band Edges (draft 802.11n Wide-40 MHz Channel mode / CH High)

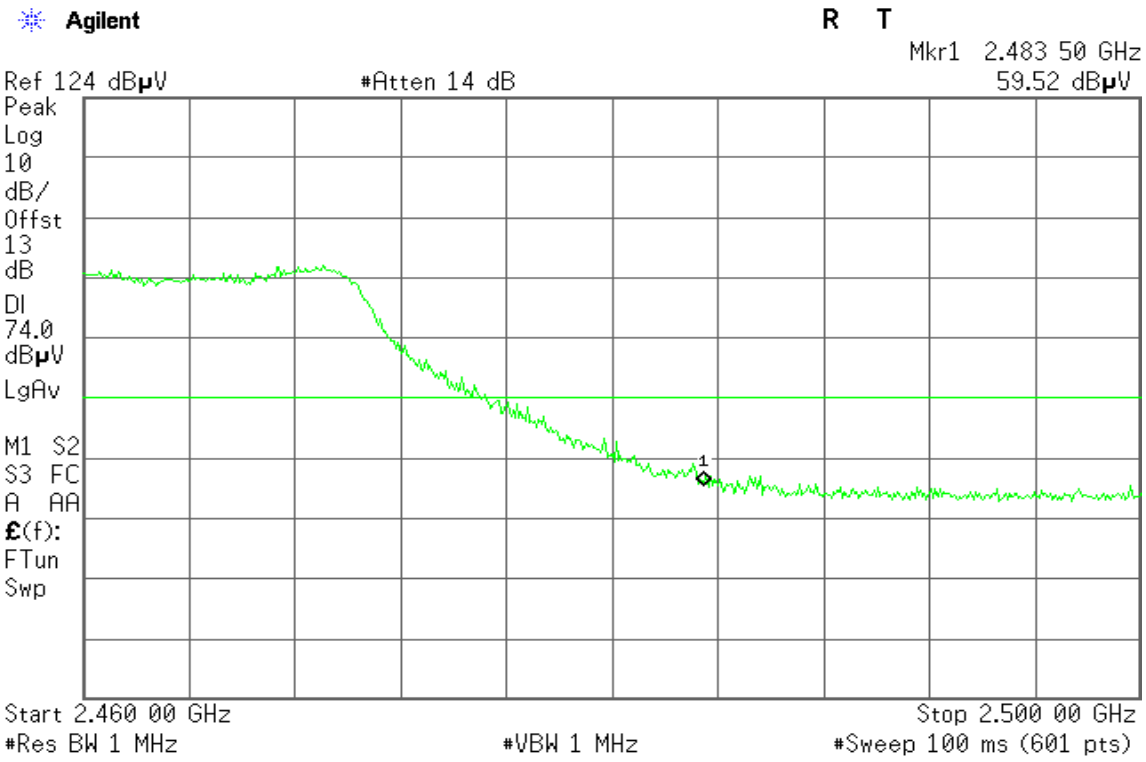
Detector mode: Peak **Polarity: Vertical**



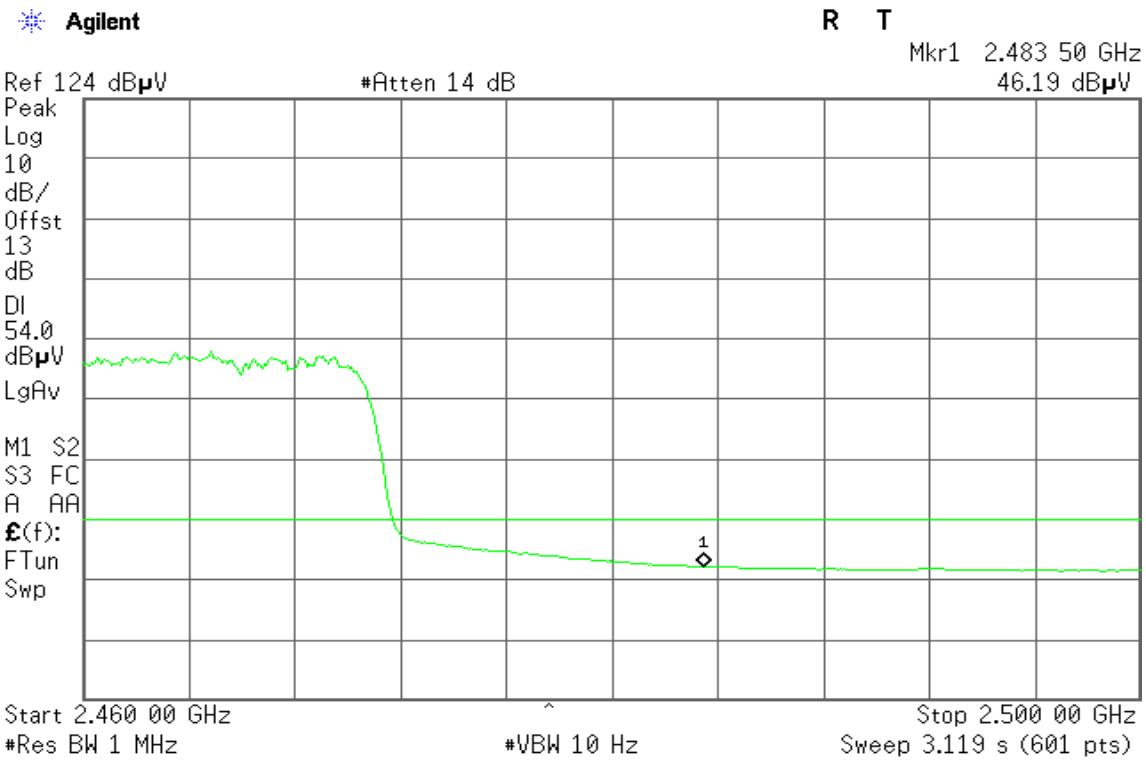
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**

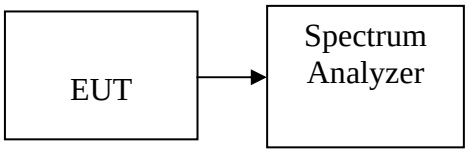


7.5PEAK POWER SPECTRAL DENSITY

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 time = 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 1 PPSD (dBm)	Chain 2 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-9.82	-10.39	-9.01	-4.93	7.20	PASS
Mid	2437	-11.08	-11.27	-9.28	-5.68		PASS
High	2462	-10.70	-10.70	-9.37	-5.44		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 2 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-8.50	-10.04	-9.08	-4.39	7.20	PASS
Mid	2437	-7.24	-9.95	-8.66	-3.70		PASS
High	2462	-8.06	-10.35	-8.87	-4.22		PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 2 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-7.70	-11.60	-9.21	-4.45	7.20	PASS
Mid	2437	-8.40	-13.11	-9.35	-5.09		PASS
High	2462	-8.02	-11.79	-9.92	-4.87		PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 2 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	2422	-10.20	-14.03	-9.69	-6.15	7.20	PASS
Mid	2437	-9.15	-13.98	-9.82	-5.75		PASS
High	2452	-9.70	-13.88	-10.07	-6.08		PASS

Remark: *1. Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 1 PPSD /10)+10^(Chain 2 PPSD /10))*
2. The maximum antenna gain is 6.8dBi; therefore the reduction due to antenna gain is 0.8dBi, so the limit is 7.2dBm.

Test mode: IEEE 802.11b mode with combiner

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-0.39	7.20	PASS
Mid	2437	-0.23		PASS
High	2462	-2.07		PASS

Test mode: IEEE 802.11g mode with combiner

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-0.22	7.20	PASS
Mid	2437	-0.16		PASS
High	2462	-1.23		PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-6.77	7.20	PASS
Mid	2437	-2.25		PASS
High	2462	-2.29		PASS

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

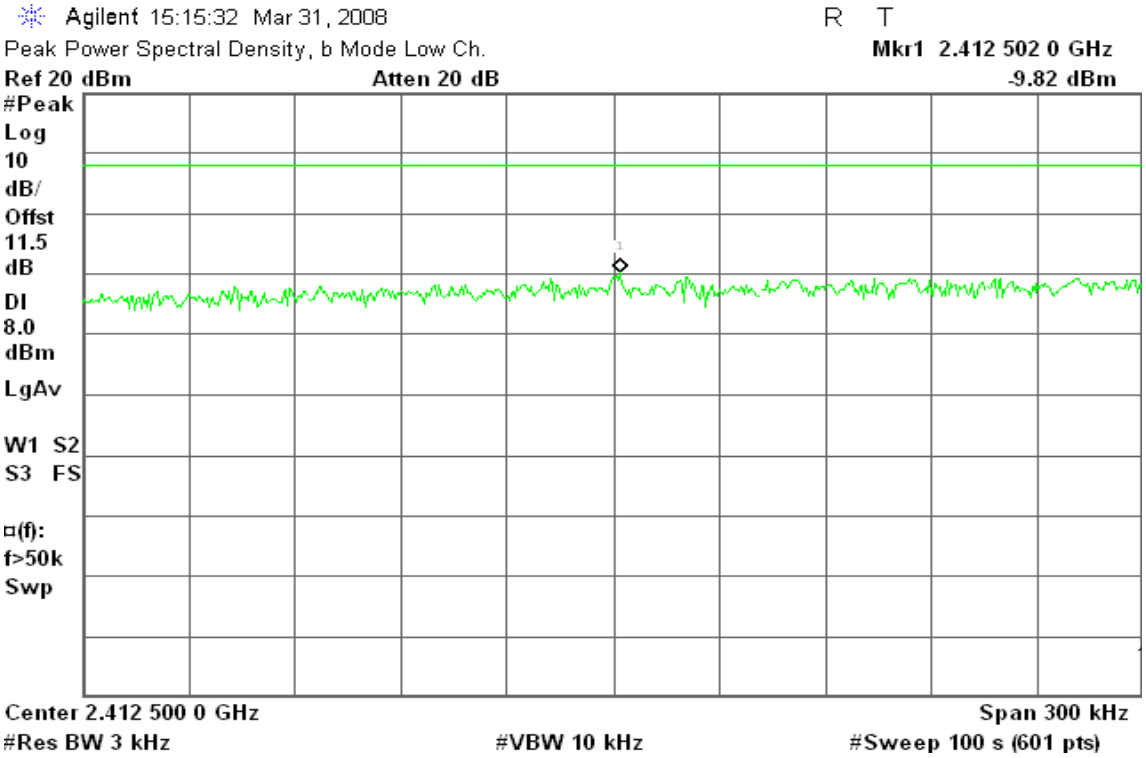
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2422	-3.23	7.20	PASS
Mid	2437	-2.97		PASS
High	2452	-3.21		PASS

***Remark**: The maximum antenna gain is 6.8dBi; therefore the reduction due to antenna gain is 0.8dBi, so the limit is 7.2dBm.*

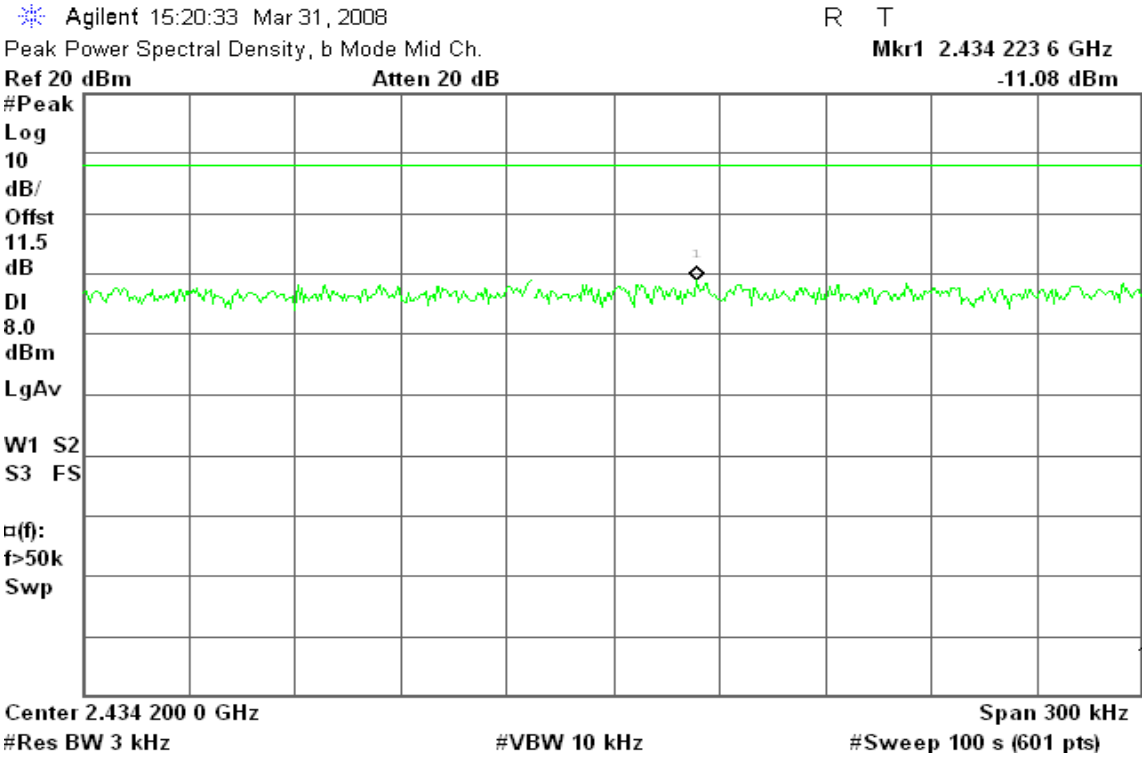
Test Plot

IEEE 802.11b mode / Chain 0

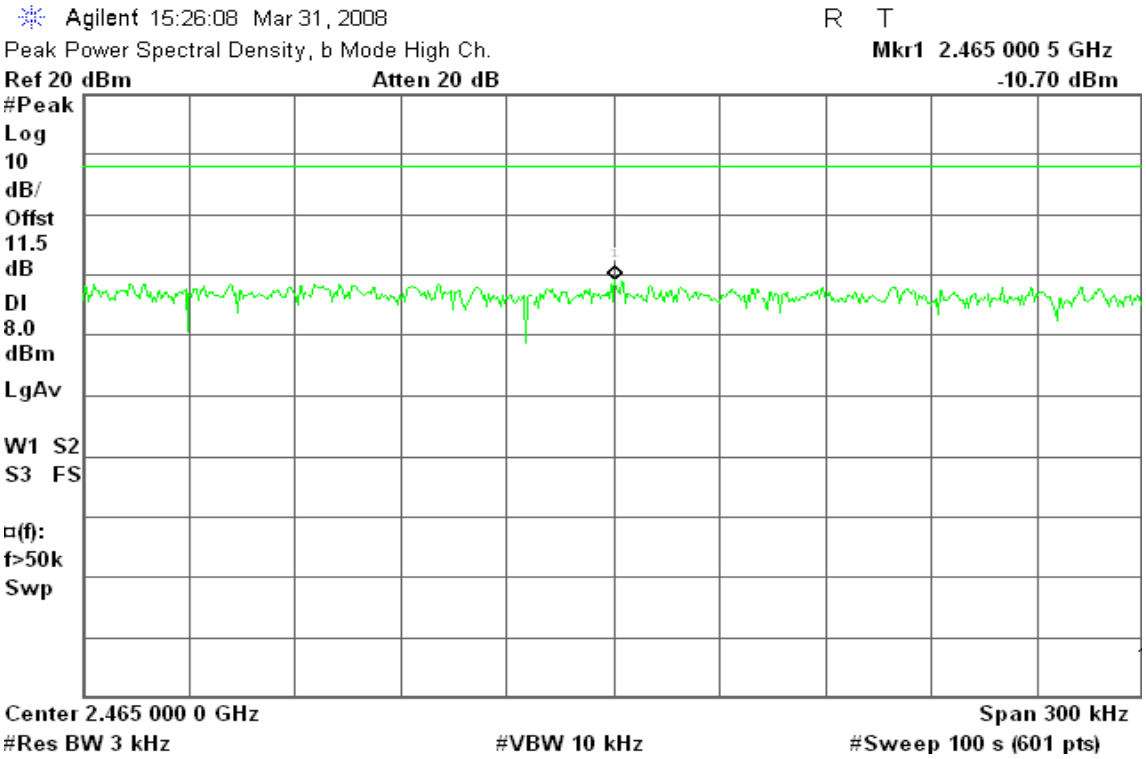
PPSD (CH Low)



PPSD (CH Mid)



PPSD (CH High)



IEEE 802.11b mode / Chain 1

PPSD (CH Low)