FCC 47 CFR PART 15 SUBPART E

TEST REPORT

For

Conductor-Wireless-N Digital Music Center

Model:
DMC350xxx, where x can be 0-9, A-Z, hyphen or blank

Trade Name: LINKSYS by Cisco

Issued to

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

Issued by

Compliance Certification Services Inc.
No. 11, Wu-Gong 6th Rd., Wugu Industrial Park,
Taipei Hsien 248, Taiwan (R.O.C.)
http://www.ccsemc.com.tw
service@ccsrf.com

Testing Laboratory
1309

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1. TEST RESULT CERTIFICATION

Applicant:	Cisco-Linksys LLC 121 Theory Drive Irvine, CA 92617 (USA)
Equipment Under Test:	Conductor-Wireless-N Digital Music Center
Trade Name:	LINKSYS by Cisco
Model:	DMC350xxx, where x can be 0-9, A-Z, hyphen or blank
Date of Test:	January 6 ~ April 22, 2009

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

We hereby certify that:

Compliance Certification Services Inc. tested the above equipment. 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 conducted and radiated emission limits of FCC Rules Part 15.407.

The test results of this report relate only to the tested sample 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

<table>
<tr><td>Product</td><td>Conductor-Wireless-N Digital Music Center</td></tr>
<tr><td>Trade Name</td><td>LINKSYS by Cisco</td></tr>
<tr><td>Model Number</td><td>DMC350xxx, where x can be 0-9, A-Z, hyphen or blank</td></tr>
<tr><td>Model Discrepancy</td><td>All the specification and layout are identical except they come with different model numbers for marketing purposes.</td></tr>
<tr><td>Power Supply</td><td>Powered from host device (AC 110V / 60 Hz)</td></tr>
<tr><td>Operating Frequency Range & Number of Channels</td><td>
<table>
<tr><th></th><th>Mode</th><th>Frequency Range (MHz)</th><th>Number of Channels</th></tr>
<tr><td rowspan="3">UNII Band I</td><td>IEEE 802.11a</td><td>5180 – 5240</td><td>4 Channels</td></tr>
<tr><td>draft 802.11n Standard-20 MHz</td><td>5180 – 5240</td><td>4 Channels</td></tr>
<tr><td>draft 802.11n Wide-40 MHz</td><td>5190 ~ 5230</td><td>2 Channels</td></tr>
<tr><td rowspan="3">UNII Band II</td><td>IEEE 802.11a</td><td>5260 - 5320</td><td>4 Channels</td></tr>
<tr><td>draft 802.11n Standard-20 MHz</td><td>5260 - 5320</td><td>4 Channels</td></tr>
<tr><td>draft 802.11n Wide-40 MHz</td><td>5270 - 5310</td><td>2 Channels</td></tr>
<tr><td rowspan="3">UNII Band III</td><td>IEEE 802.11a</td><td>5500 - 5700</td><td>11 Channels</td></tr>
<tr><td>draft 802.11n Standard-20 MHz</td><td>5500 – 5700</td><td>11 Channels</td></tr>
<tr><td>draft 802.11n Wide-40 MHz</td><td>5510 - 5670</td><td>7 Channels</td></tr>
</table>
</td></tr>
<tr><td>Transmit Power</td><td>IEEE 802.11a mode / 5180 ~ 5240MHz: 10.63 dBm
draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz: 11.65 dBm
draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz: 11.83 dBm
IEEE 802.11a mode / 5260 ~ 5320MHz: 11.29 dBm
draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz: 11.91 dBm
draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz: 11.90 dBm
IEEE 802.11a mode / 5500 ~ 5700MHz: 9.78 dBm
draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz: 12.78 dBm
draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz: 11.52 dBm</td></tr>
<tr><td>Modulation Technique</td><td>OFDM (QPSK, BPSK, 16-QAM, 64-QAM)</td></tr>
<tr><td>Transmit Data Rate</td><td>IEEE 802.11a mode: 54, 48, 36, 24, 18, 12, 9, 6 Mbps
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)</td></tr>
<tr><td>Antenna Specification</td><td>Antenna Gain: 5.5 dBi</td></tr>
<tr><td>Antenna Designation</td><td>PIFA Antenna</td></tr>
</table>

Operation Frequency:

UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII)	
CHANNEL	**MHz**
36	5180
38	5190
40	5200
46	5230
48	5240
52	5260
54	5270
62	5310
64	5350
100	5500
102	5510
118	5590
134	5670
120	5600
140	5700

Remark:

1. *The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*
2. *This submittal(s) (test report) is intended for FCC ID: **Q87-DMC350** filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules.*

3. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4 Radiated testing was performed at an antenna to EUT distance 3 meters.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed for RF field strength measurement to meet the Commissions requirement, and is operated in a manner intended to generate the maximum emission in a continuous normal application.

3.2 EUT EXERCISE

The EUT is operated in the engineering mode to fix the Tx frequency for the purposes of measurement.

According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is positioned at 0.8 m above the ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4, the conducted emission from the EUT is measured in the frequency range between 0.15 MHz and 30MHz, using the CISPR Quasi-Peak detector mode.

Radiated Emissions

The EUT is placed on the turntable, which is 0.8 m above the ground plane. The turntable is then rotated for 360 degrees to determine the proper orientation for the maximum emission level. The EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission level. And, each emission is to be maximized by changing the horizontal and vertical polarization of the receiving antenna. 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: DMC350) had been tested under operating condition.

The EUT is a 2x2 configuration spatial MIMO (2Tx & 2Rx) without beam forming function that operate in double TX chains and double RX chains. The 2x2 configuration is implemented with two outside TX & RX chains (Chain 0 and 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.

IEEE 802.11a mode / 5180 ~ 5240MHz:

Channel Low (5180MHz), Channel Mid (5220MHz) and Channel High (5240MHz) with 6Mbps data rate were chosen for full testing.

draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz:

Channel Low (5180MHz), Channel Mid (5220MHz) and Channel High (5240MHz) with 6Mbps data rate were chosen for full testing.

draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz:

Channel Low (5190MHz) and Channel High (5230MHz) with 13.5Mbps data rate were chosen for full testing.

IEEE 802.11a mode / 5260 ~ 5320MHz:

Channel Low (5260MHz), Channel Mid (5280MHz) and Channel High (5320MHz) with 6Mbps data rate were chosen for full testing.

draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz:

Channel Low (5260MHz), Channel Mid (5280MHz) and Channel High (5320MHz) with 6Mbps data rate were chosen for full testing.

draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz:

Channel Low (5270MHz) and Channel High (5310MHz) with 13.5Mbps data rate were chosen for full testing.

IEEE 802.11a mode / 5500 ~ 5700MHz:

Channel Low (5500MHz), Channel Mid (5600MHz) and Channel High (5700MHz) with 6Mbps data rate were chosen for full testing.

draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz:

Channel Low (5500MHz), Channel Mid (5600MHz) and Channel High (5700MHz) with 6Mbps data rate were chosen for full testing.

draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz:

Channel Low (5510MHz), Channel Mid (5590MHz) and Channel High (5670MHz) 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	03/05/2010

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	11/29/2009
Switch Controller	TRC	Switch Controller	SC94050010	05/03/2009
4 Port Switch	TRC	4 Port Switch	SC94050020	05/03/2009
Loop Antenna	EMCO	6502	8905/2356	05/29/2009
Horn-Antenna	TRC	HA-0502	06	06/04/2009
Horn-Antenna	TRC	HA-0801	04	06/18/2009
Horn-Antenna	TRC	HA-1201A	01	08/11/2009
Horn-Antenna	TRC	HA-1301A	01	08/11/2009
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 MRA: TW1039 IC: 2324G-1/-2	10/17/2010 11/04/2010
Test S/W	LABVIEW (V 6.1)			

Conducted Emission Room # 3				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	R&S	ESCS30	847793/012	03/08/2010
LISN	R&S	ENV216	100066	05/11/2009
LISN	R&S	ENV 4200	830326/016	04/09/2010
Test S/W	LabVIEW 6.1 (CCS Conduction Test SW Version_01)			

Dynamic Frequency Selection				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Rohde&Schwarz	FSEK 30	100264	04/14/2010
Signal Generator	Agilent	E8267C	US42340162	04/11/2010

4.3 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
Powerline Conducted Emission	+/- 1.7806
3M Semi Anechoic Chamber / 30MHz ~ 1GHz	+/-3.7046
3M Semi Anechoic Chamber / Above 1GHz	+/-3.0958

***Remark**: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.*

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

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

☒ 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

***Remark**: The powerline conducted emission test items was tested at Compliance Certification Services Inc. (Linkou Lab.) The test equipments were listed in page 9 and the test data, please refer page 197-198.*

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	FCC	3M Semi Anechoic Chamber (FCC MRA: TW1039) to perform FCC Part 15 measurements	FCC MRA: TW1039
Taiwan	TAF	LP0002, RTTE01, FCC Method-47 CFR Part 15 Subpart C, D, E, RSS-210, RSS-310 IDA TS SRD, AS/NZS 4268, AS/NZS 4771, TS 12.1 & 12,2, ETSI EN 300 440-1, ETSI EN 300 440-2, ETSI EN 300 328, ETSI EN 300 220-1, ETSI EN 300 220-2, ETSI EN 301 893, ETSI EN 301 489-1/3/7/17 FCC OET Bulletin 65 + Supplement C, EN 50360, EN 50361, EN 50371, RSS 102, EN 50383, EN 50385, EN 50392, IEC 62209, CNS 14958-1, CNS 14959 FCC Method –47 CFR Part 15 Subpart B IEC / EN 61000-3-2, IEC / EN 61000-3-3, IEC / EN 61000-4-2/3/4/5/6/8/11	TAF Testing Laboratory 1309
Canada	Industry Canada	3M Semi Anechoic Chamber (IC 2324G-1 / IC 2324G-2) to perform	Canada IC 2324G-1 IC 2324G-2

** 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 I for the actual connections between EUT and support equipment.

6.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1.	I-Pod	Apple	A1051	YM52008AS45	FCC DoC	N/A	N/A
2.	I-Pod Docking	LINKSYS by Cisco	MCCI40	N/A	FCC DoC	Shielded, 0.3m	N/A
3.	Multimedia Headset	CJC	CJC-5258MV	0507106372	FCC DoC	Unshielded, 1.8m	N/A
4.	Walkman	Panasonic	RQ-L10	HB004468	FCC DoC	Unshielded, 1.8m	N/A
5.	USB 2.0 External HDD	TeraSyS	F12-U	A0100214-43b0007	FCC DoC	Shielded, 1.8m	N/A
6.	USB 2.0 External HDD	TeraSyS	F12-U	A0100214-43b0012	FCC DoC	Shielded, 1.8m	N/A
7.	Notebook PC	IBM	2672 (X31)	9985H9M	WLAN: ANO20030400LEG Bluetooth: ANO20020100MTN	LAN Cable: Unshielded, 10m Line Cable: Unshielded, 10m	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core
8.	Notebook PC	TOSHIBA	Satellite 1110	Y2382109	FCC DoC	LAN Cable: Unshielded, 10m Line Cable: Unshielded, 10m	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core
9.	Notebook PC (Remote)	Fujitsu	S7110	DU4A00EG0944P010	FCC DoC	LAN Cable: Unshielded, 10m	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with two core
10.	Notebook PC (Remote)	DELL	PP19L	GK102 A00	QDS-BRCM1021	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.*

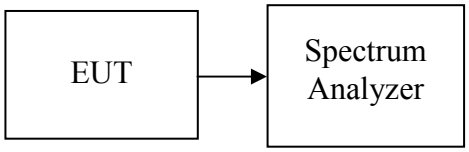
7. FCC PART 15 REQUIREMENTS

7.1 26 DB EMISSION BANDWIDTH

LIMIT

According to §15.303(c), for purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Compliance with the emissions limits is based on the use of measurement instrumentation employing a peak detector function with an instrument resolutions bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

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 > 1%EBW, VBW > RBW, Span >26dB bandwidth, and Sweep = auto.
4. Mark the peak frequency and –26dB (upper and lower) frequency.
5. Repeat until all the rest channels were investigated.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	19.948
Mid	5220	20.111
High	5240	19.598

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	20.480
Mid	5220	20.104
High	5240	20.096

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	20.363
Mid	5220	20.122
High	5240	20.032

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5190	40.388
High	5230	40.479

Test mode: draft 802.11n Wide-40 MHz Channel mode/ 5190 ~ 5230MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5190	40.034
High	5230	40.675

Test mode: IEEE 802.11a mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	19.489
Mid	5280	19.233
High	5320	19.515

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	19.987
Mid	5280	19.924
High	5320	20.089

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	20.027
Mid	5280	20.152
High	5320	20.258

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	39.742
High	5310	40.174

Test mode: draft 802.11n Wide-40 MHz Channel mode/ 5270 ~ 5310MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	40.175
High	5310	40.775

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	19.550
Mid	5600	20.066
High	5700	19.749

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	20.224
Mid	5600	20.189
High	5700	20.109

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	20.214
Mid	5600	19.974
High	5700	20.385

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	39.709
Mid	5590	39.803
High	5670	40.281

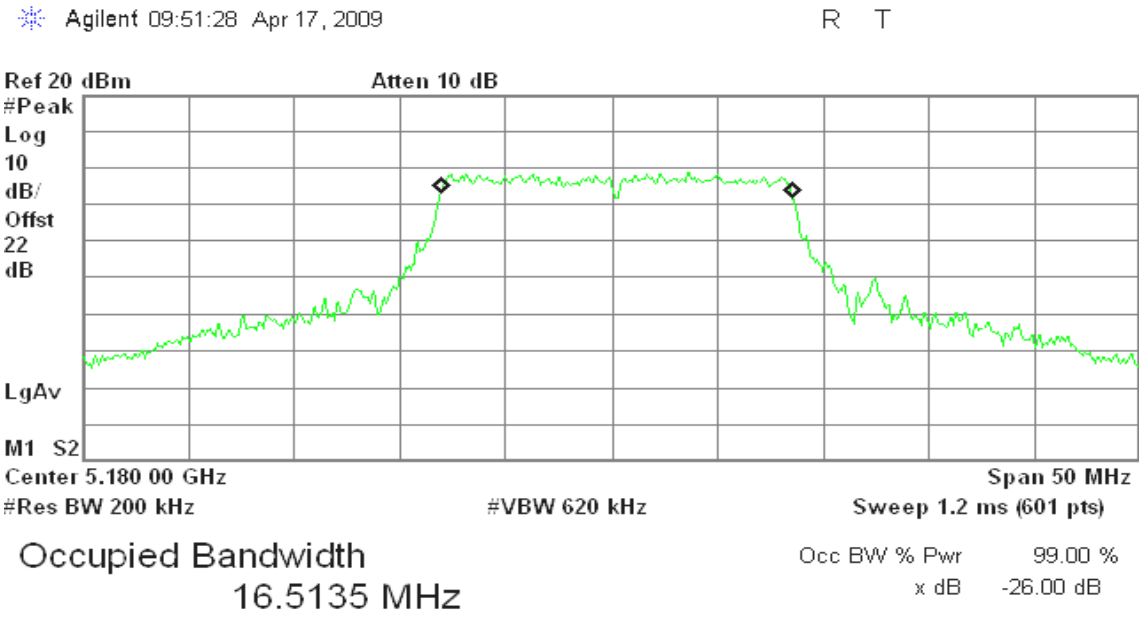
Test mode: draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	40.730
Mid	5590	40.525
High	5670	40.518

Test Plot

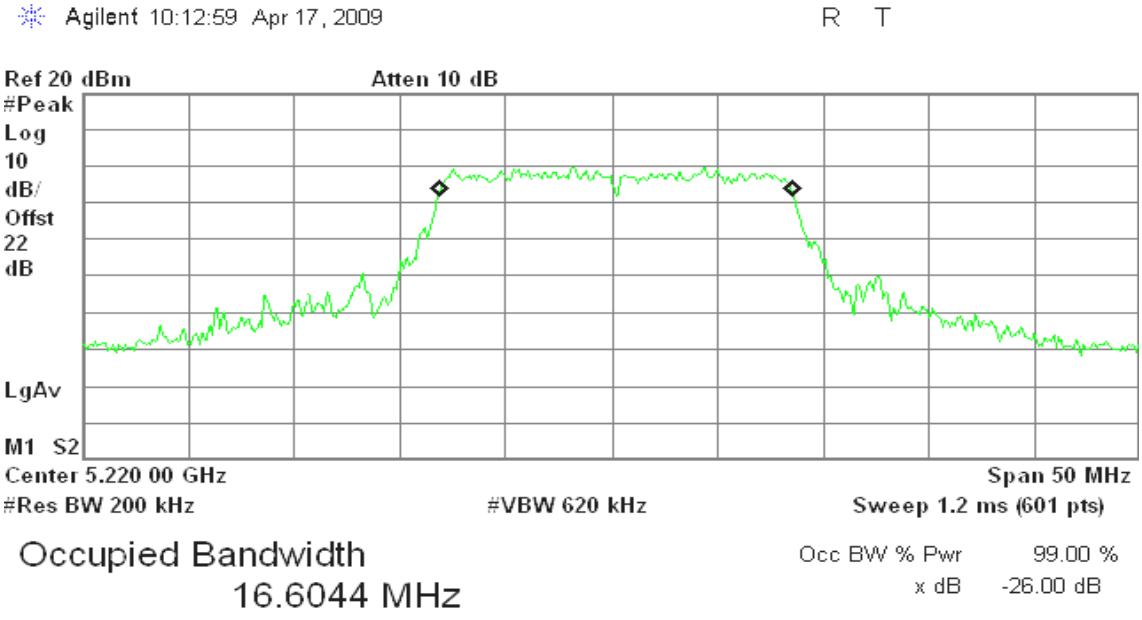
IEEE 802.11a mode / 5180 ~ 5240MHz

CH Low



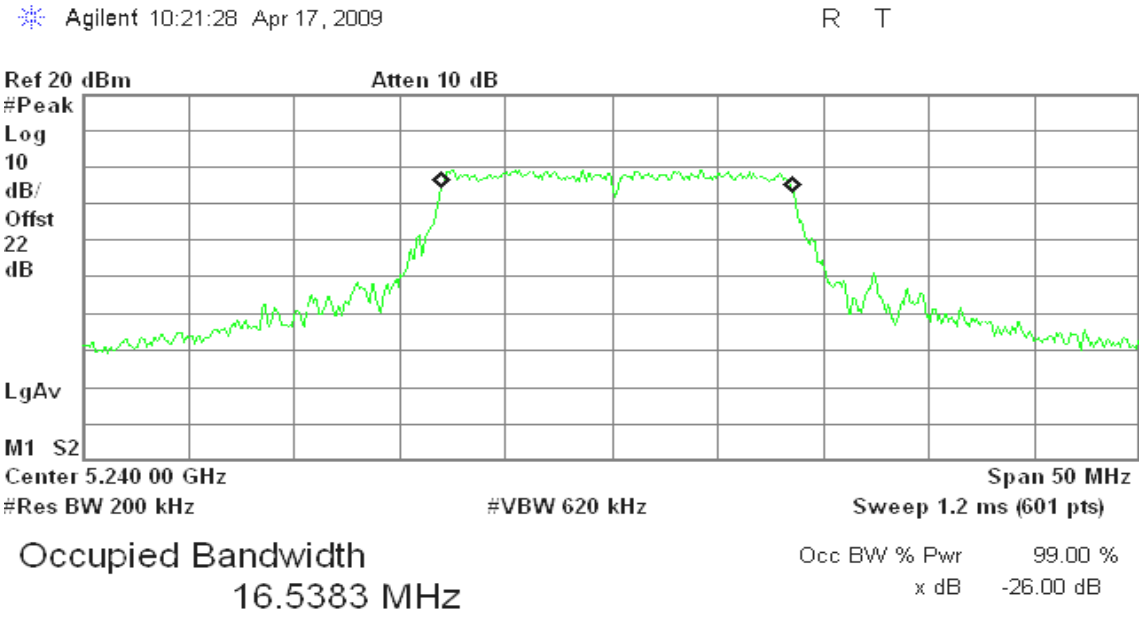
Transmit Freq Error	233.601 kHz
x dB Bandwidth	19.948 MHz

CH Mid



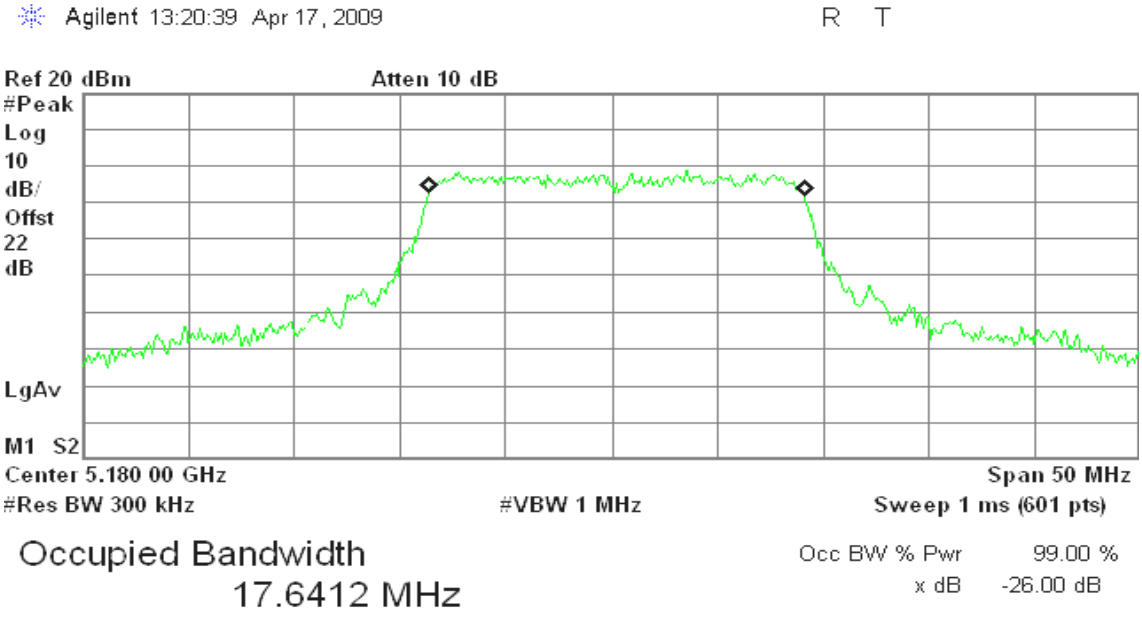
Transmit Freq Error	216.789 kHz
x dB Bandwidth	20.111 MHz

CH High

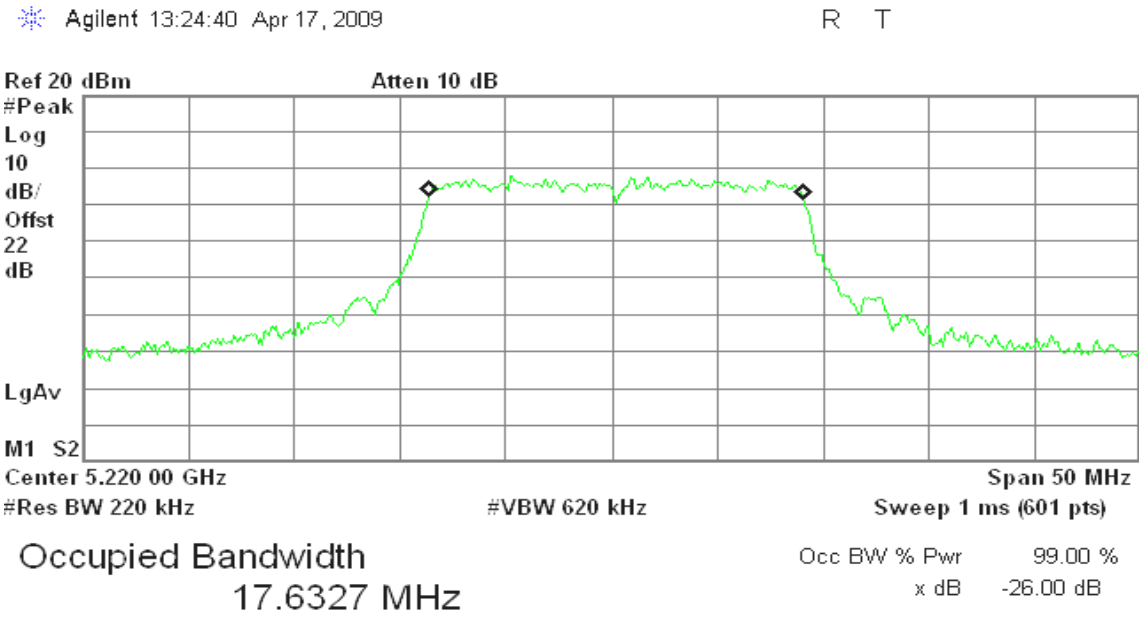


draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

CH Low

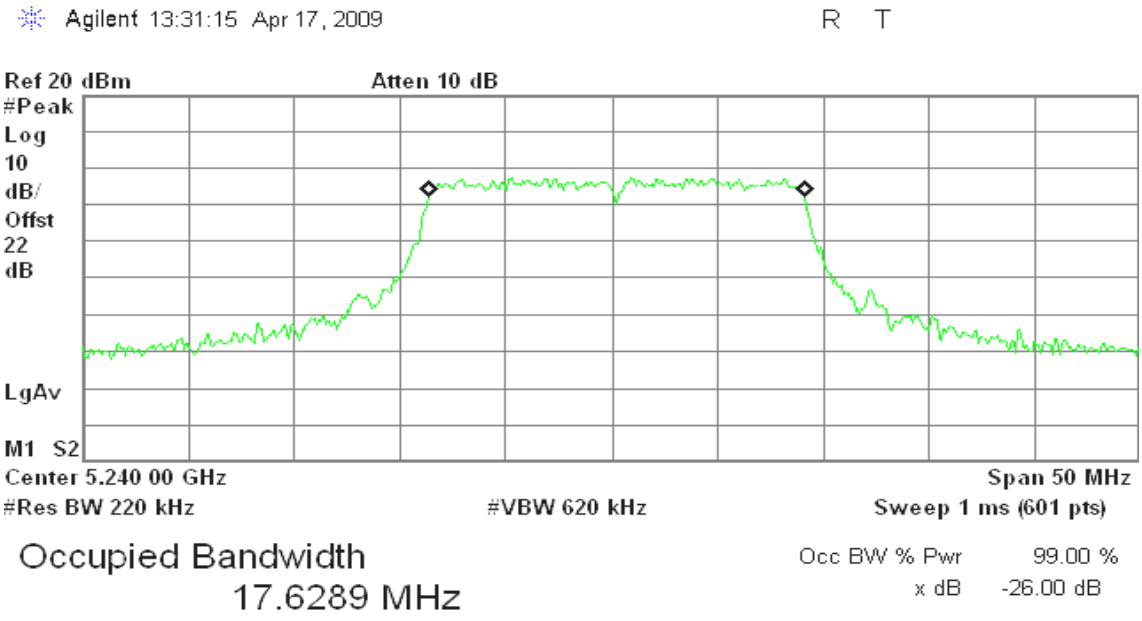


CH Mid



Transmit Freq Error	222.817 kHz
x dB Bandwidth	20.104 MHz

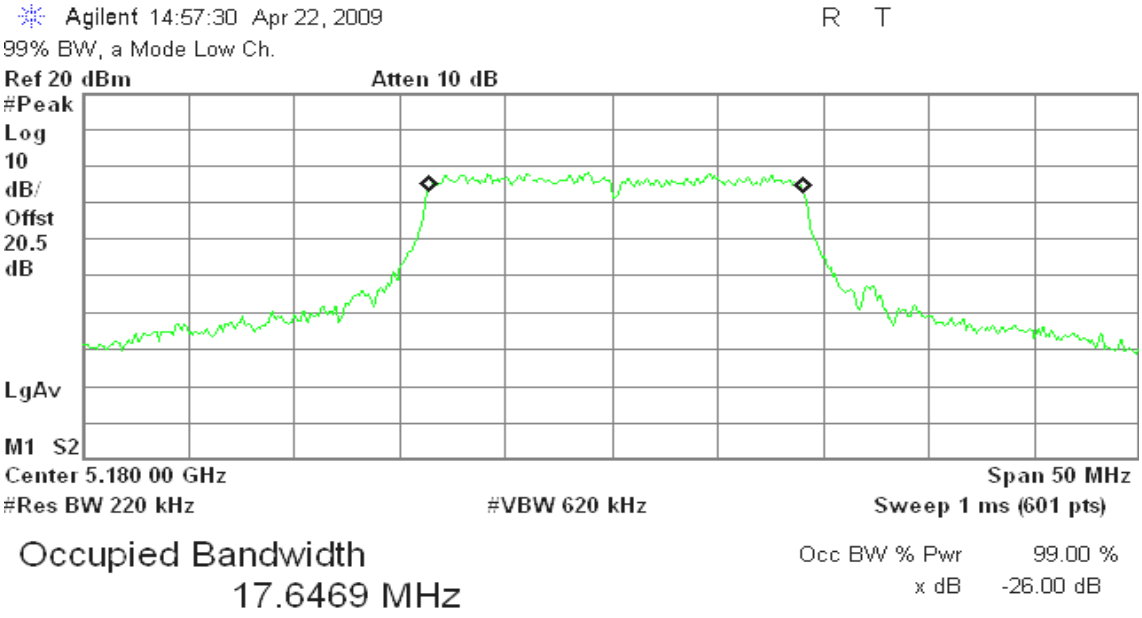
CH High



Transmit Freq Error	234.831 kHz
x dB Bandwidth	20.096 MHz

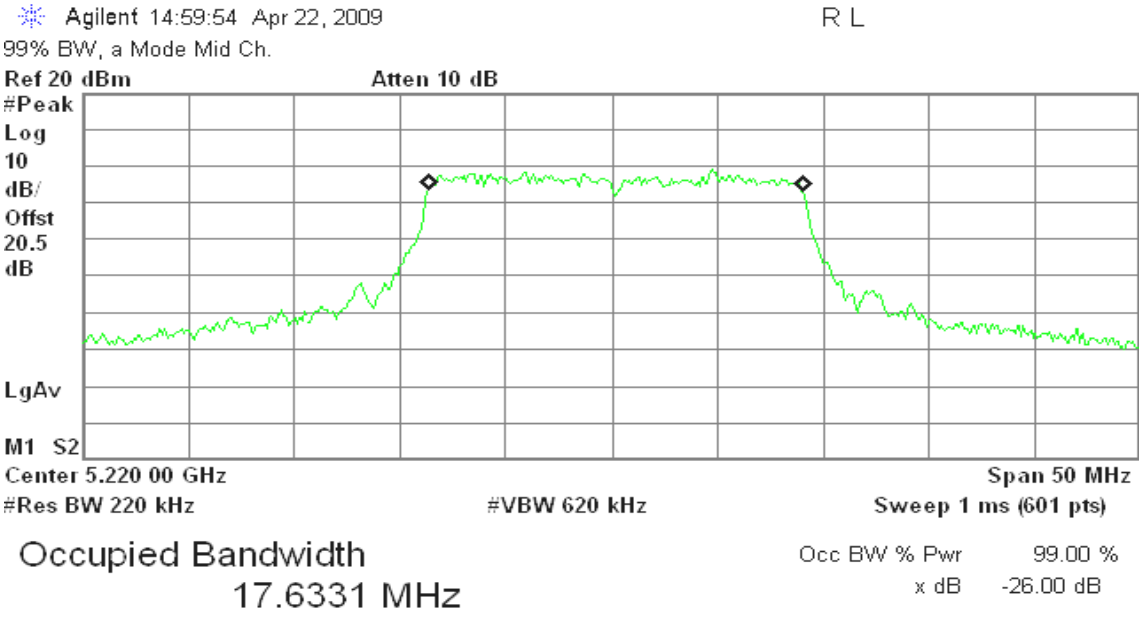
draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

CH Low



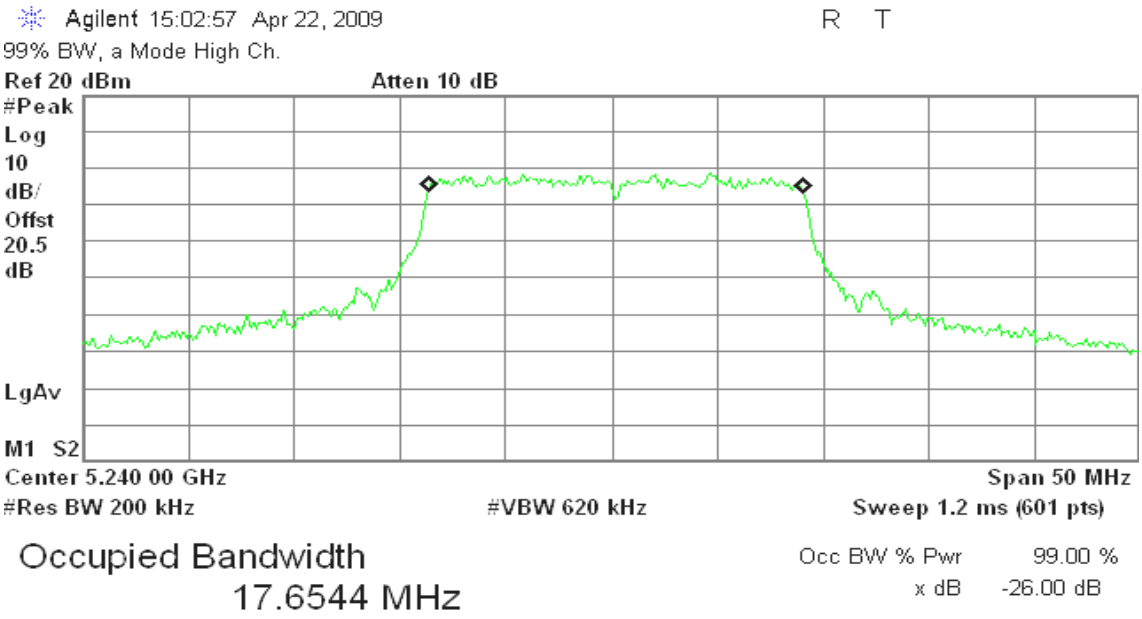
Transmit Freq Error	207.532 kHz
x dB Bandwidth	20.363 MHz

CH Mid



Transmit Freq Error	195.409 kHz
x dB Bandwidth	20.122 MHz

CH High



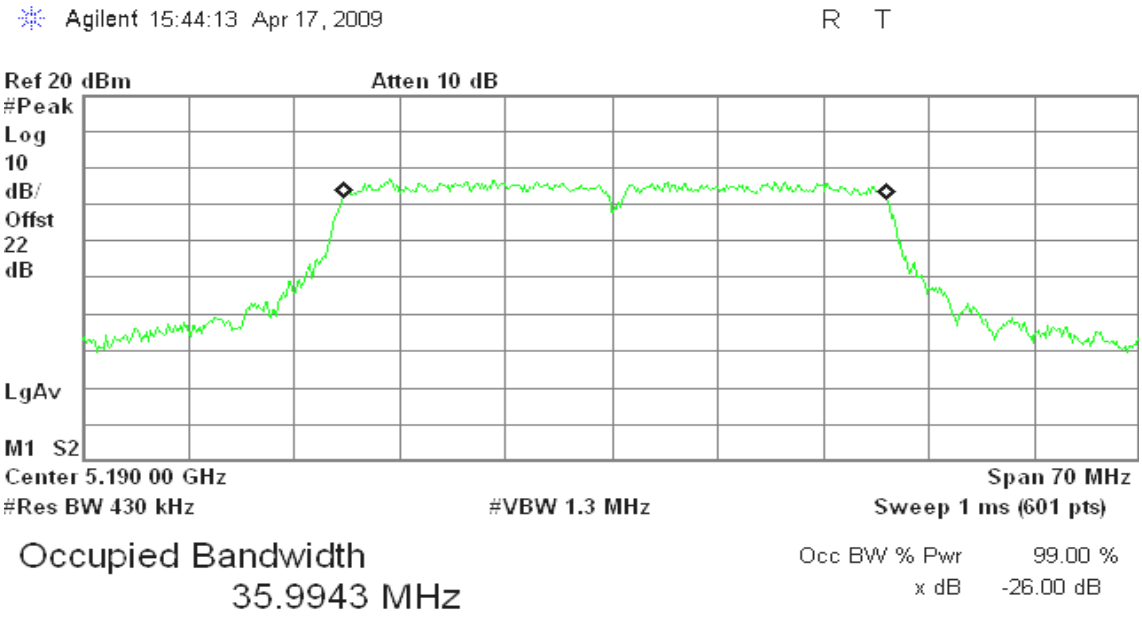
Occupied Bandwidth
17.6544 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 210.458 kHz
x dB Bandwidth 20.032 MHz

draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 0

CH Low

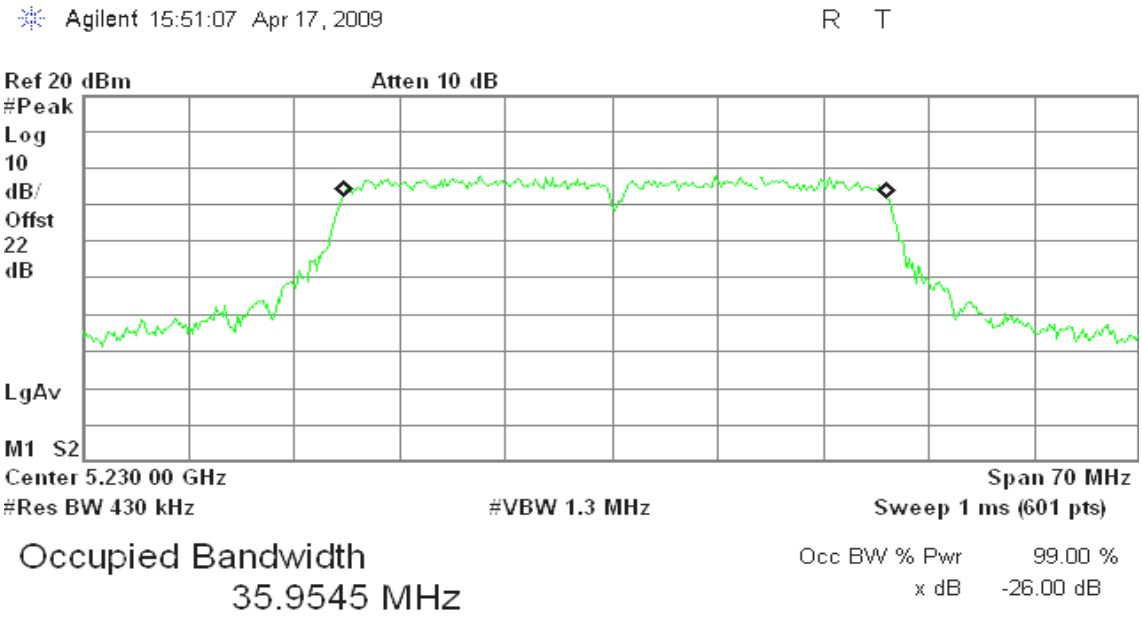


Occupied Bandwidth
35.9943 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

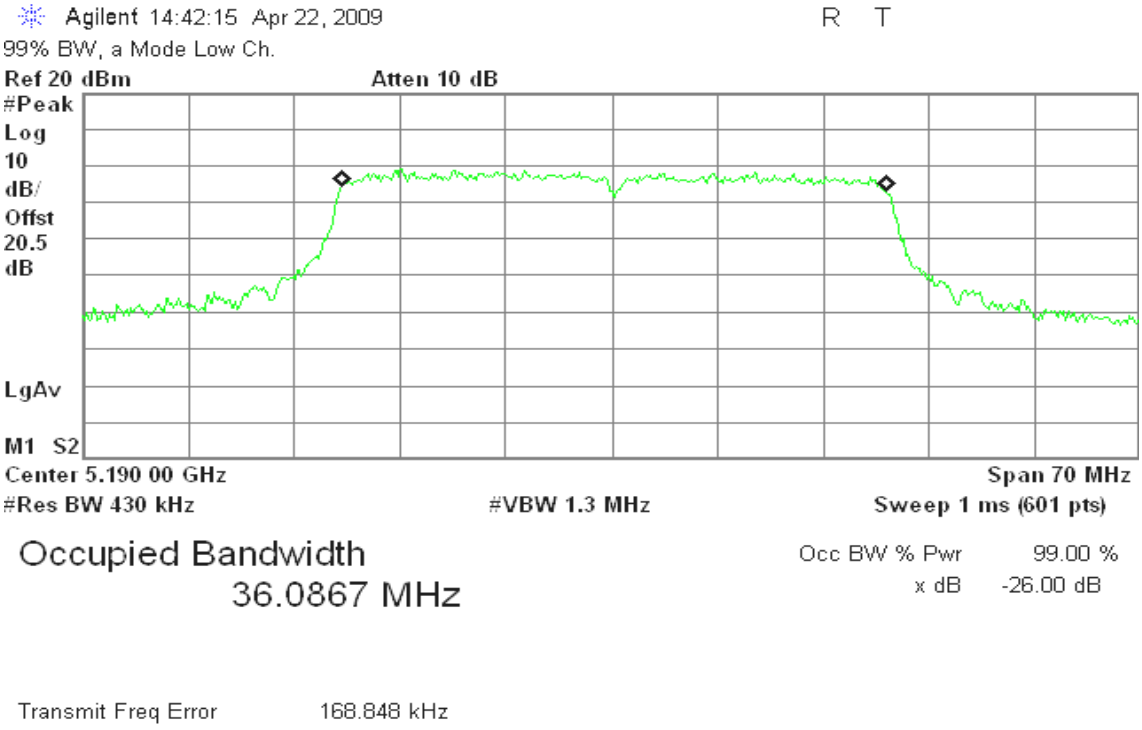
Transmit Freq Error 214.251 kHz
x dB Bandwidth 40.388 MHz

CH High

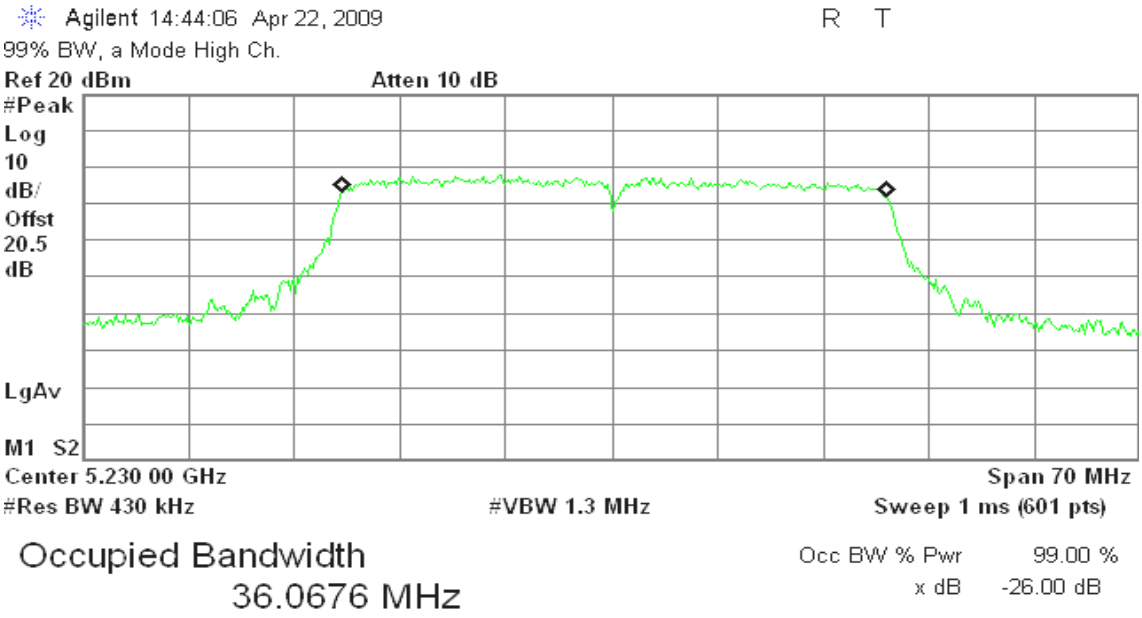


draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 1

CH Low



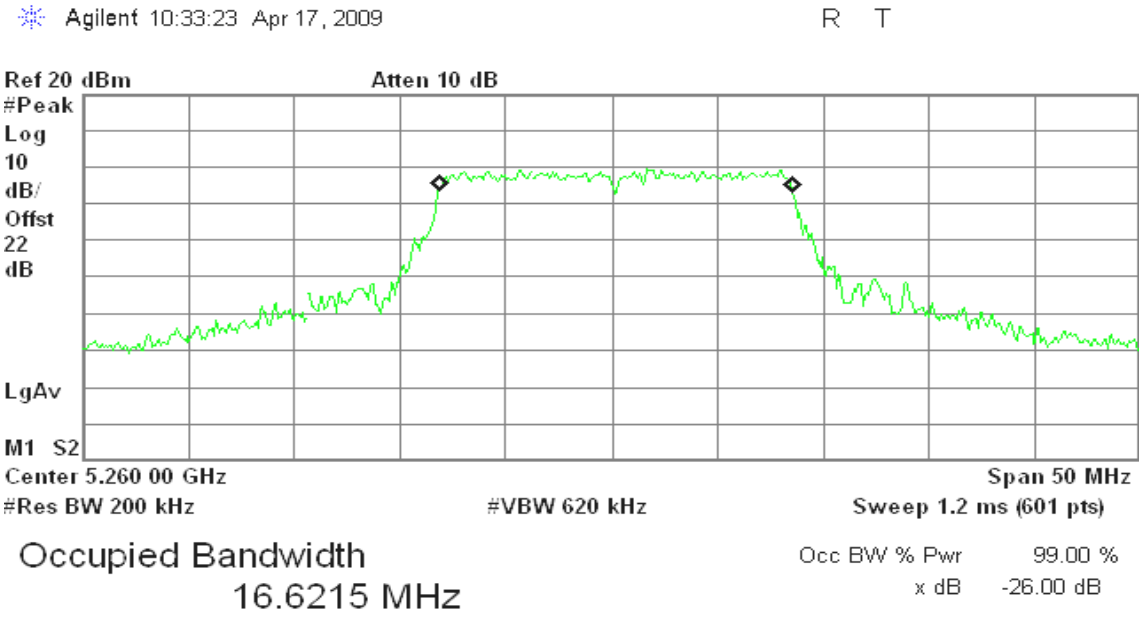
CH High



Transmit Freq Error	161.193 kHz
x dB Bandwidth	40.675 MHz

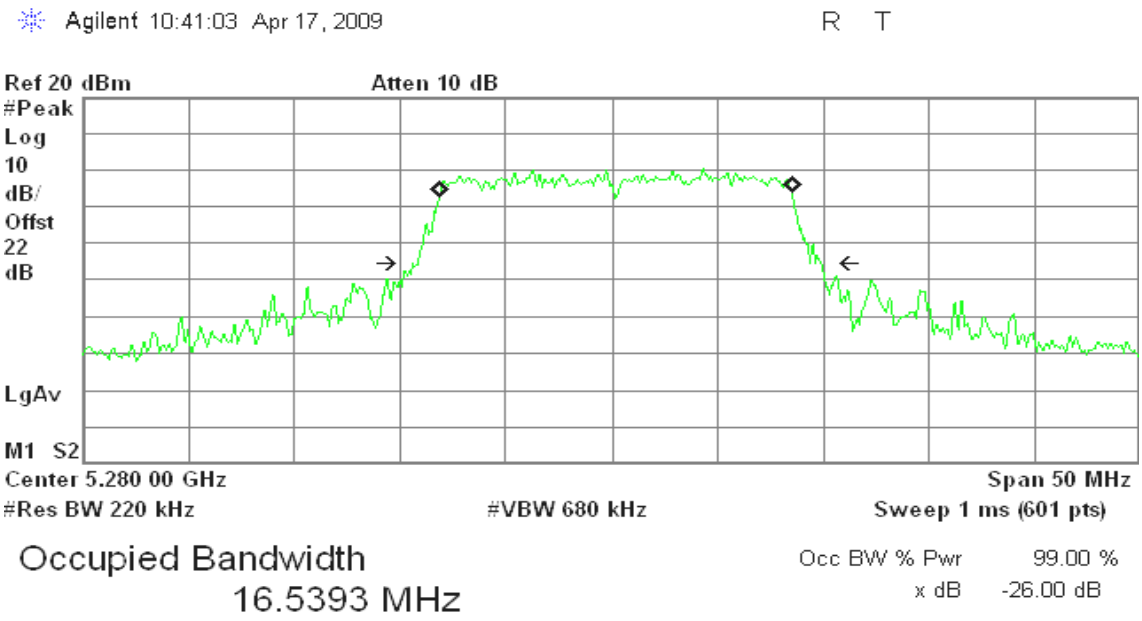
IEEE 802.11a mode / 5260 ~ 5320MHz

CH Low



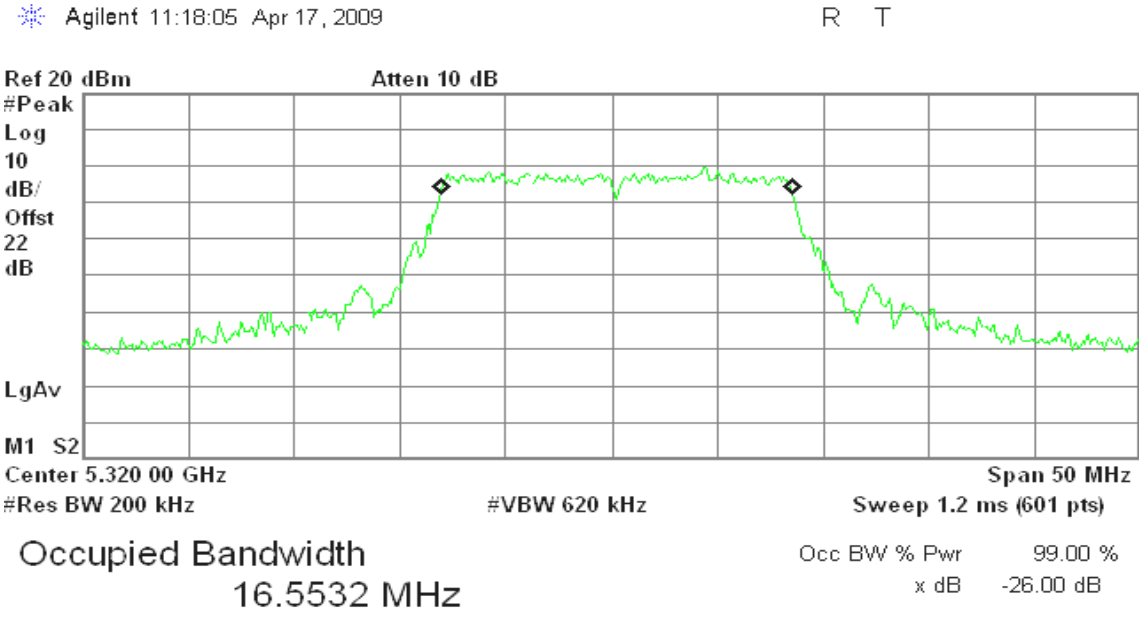
Transmit Freq Error	215.659 kHz
x dB Bandwidth	19.489 MHz

CH Mid



Transmit Freq Error	200.271 kHz
Occupied Bandwidth	19.233 MHz

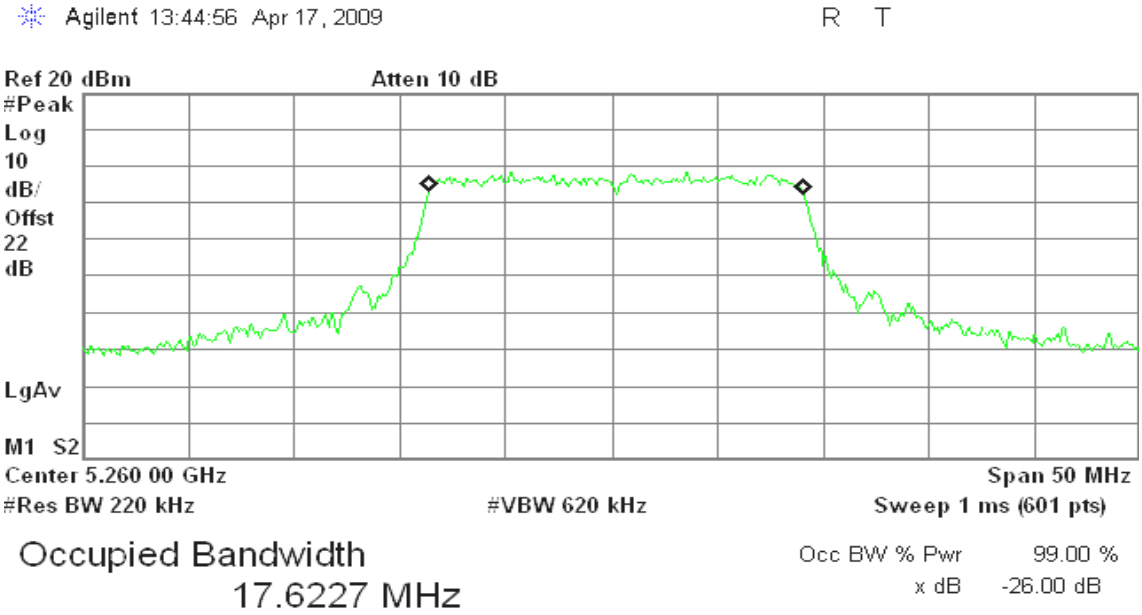
CH High



Transmit Freq Error	238.831 kHz
x dB Bandwidth	19.515 MHz

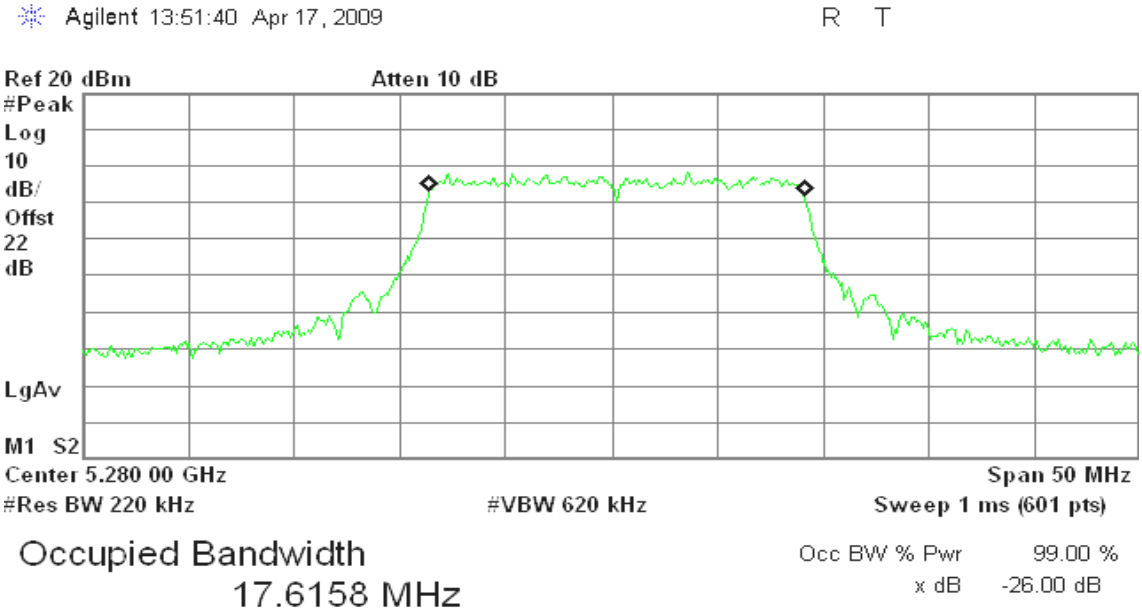
draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

CH Low



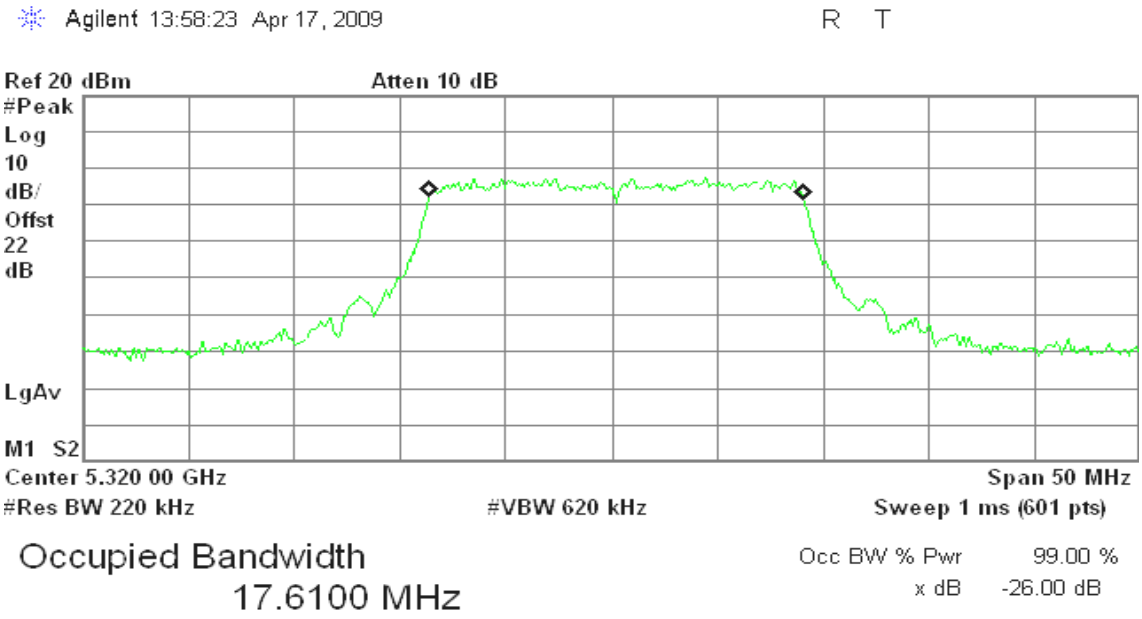
Transmit Freq Error	229.296 kHz
x dB Bandwidth	19.987 MHz

CH Mid



Transmit Freq Error	235.002 kHz
x dB Bandwidth	19.924 MHz

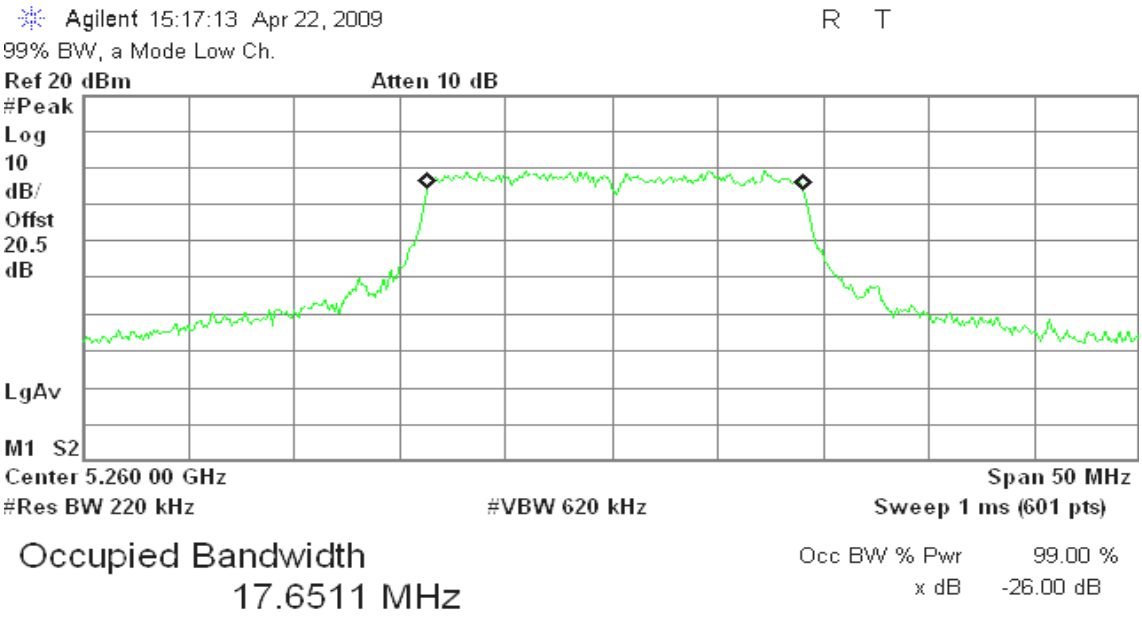
CH High



Transmit Freq Error	233.118 kHz
x dB Bandwidth	20.089 MHz

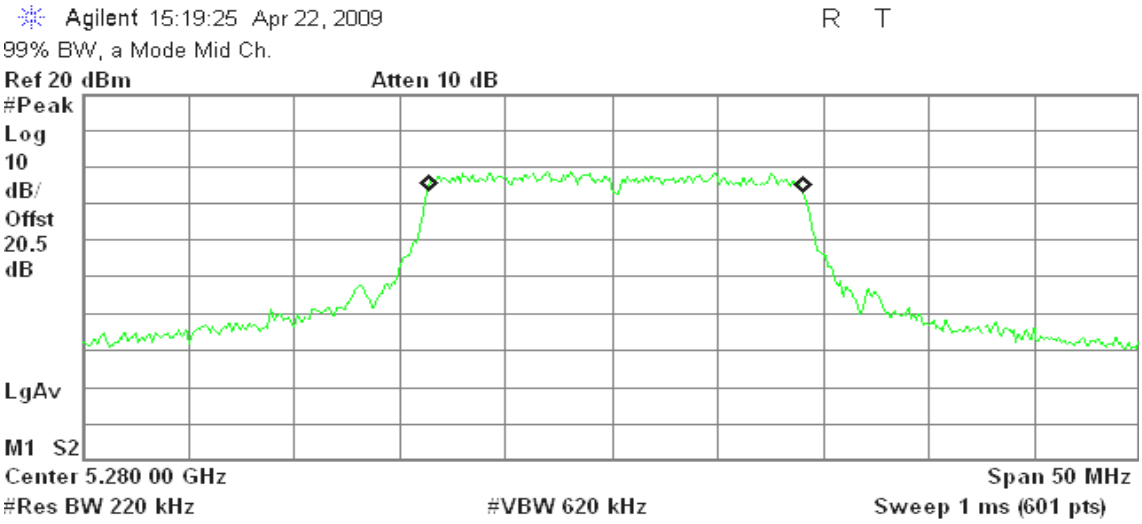
draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

CH Low



Transmit Freq Error	193.614 kHz
x dB Bandwidth	20.027 MHz

CH Mid

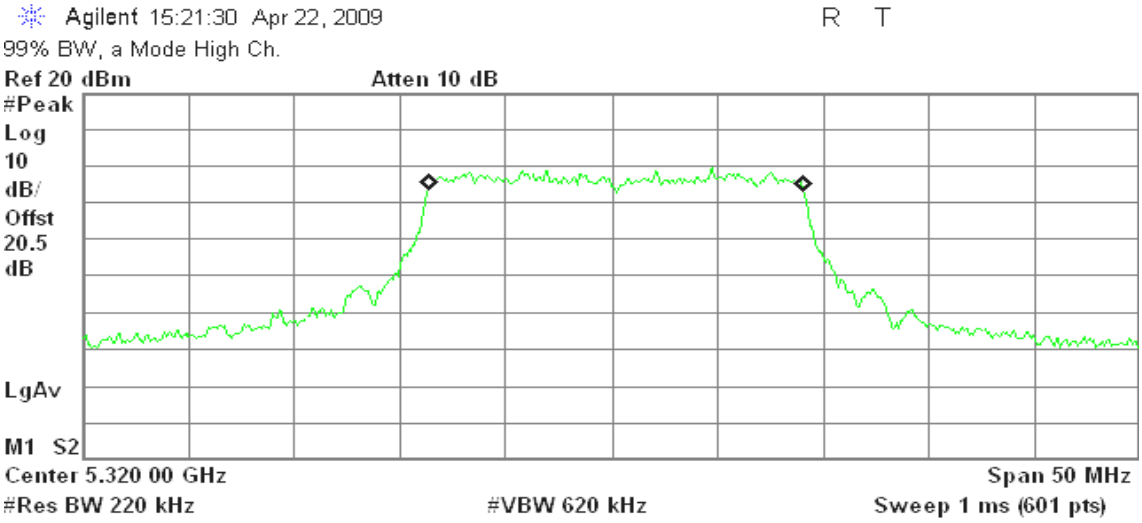


Occupied Bandwidth
17.6471 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error	203.221 kHz
x dB Bandwidth	20.152 MHz

CH High



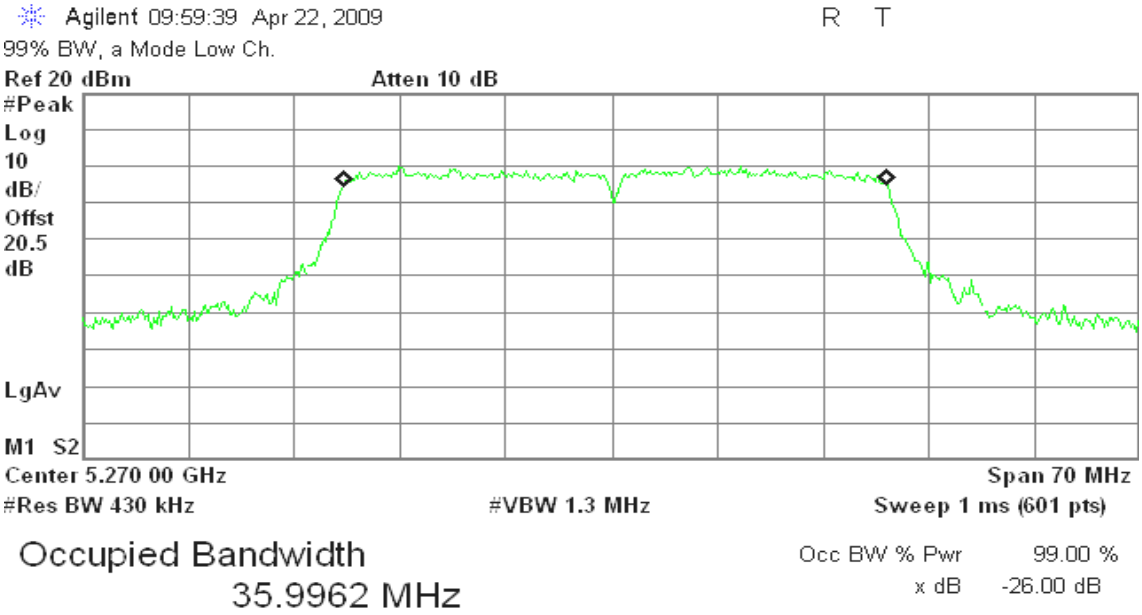
Occupied Bandwidth
17.6359 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error	204.189 kHz
x dB Bandwidth	20.258 MHz

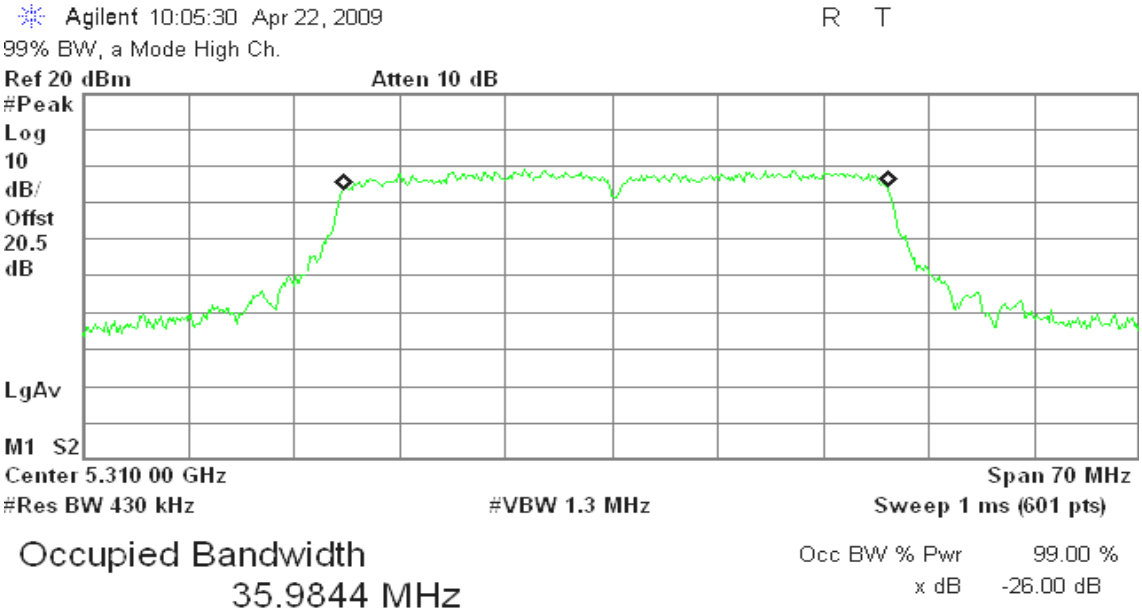
draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 0

CH Low



Transmit Freq Error	248.215 kHz
x dB Bandwidth	39.742 MHz

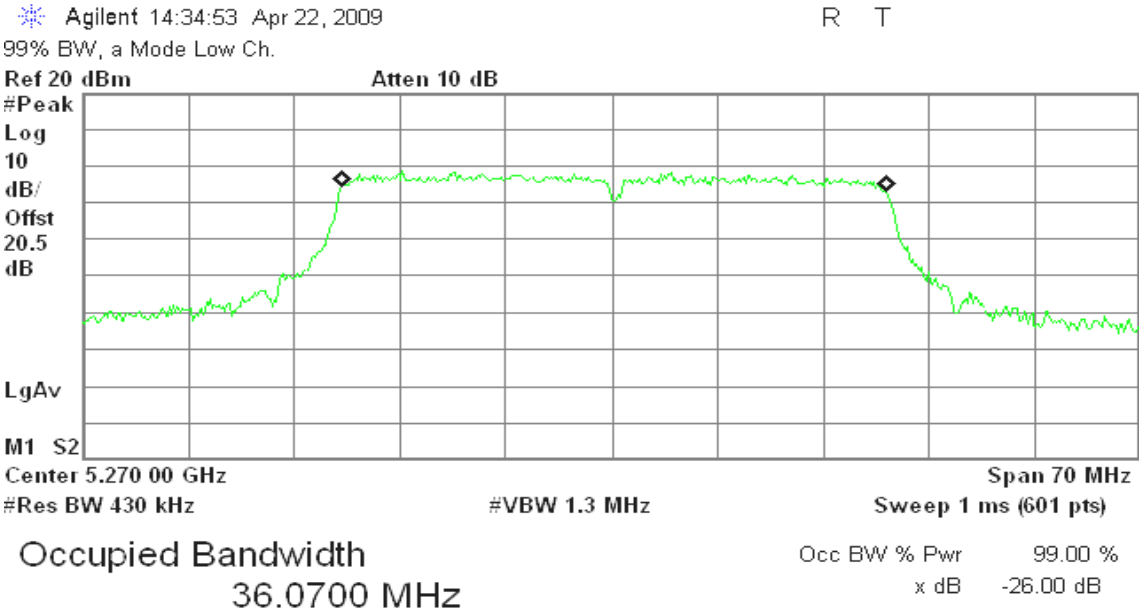
CH High



Transmit Freq Error	271.002 kHz
x dB Bandwidth	40.174 MHz

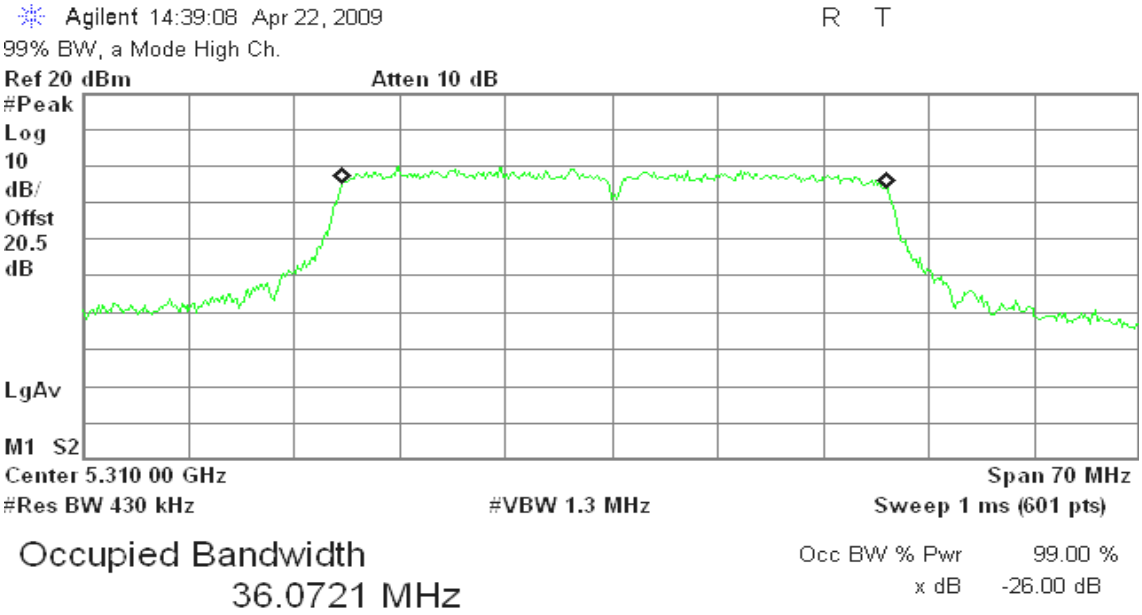
draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 1

CH Low



Transmit Freq Error	142.237 kHz
x dB Bandwidth	40.175 MHz

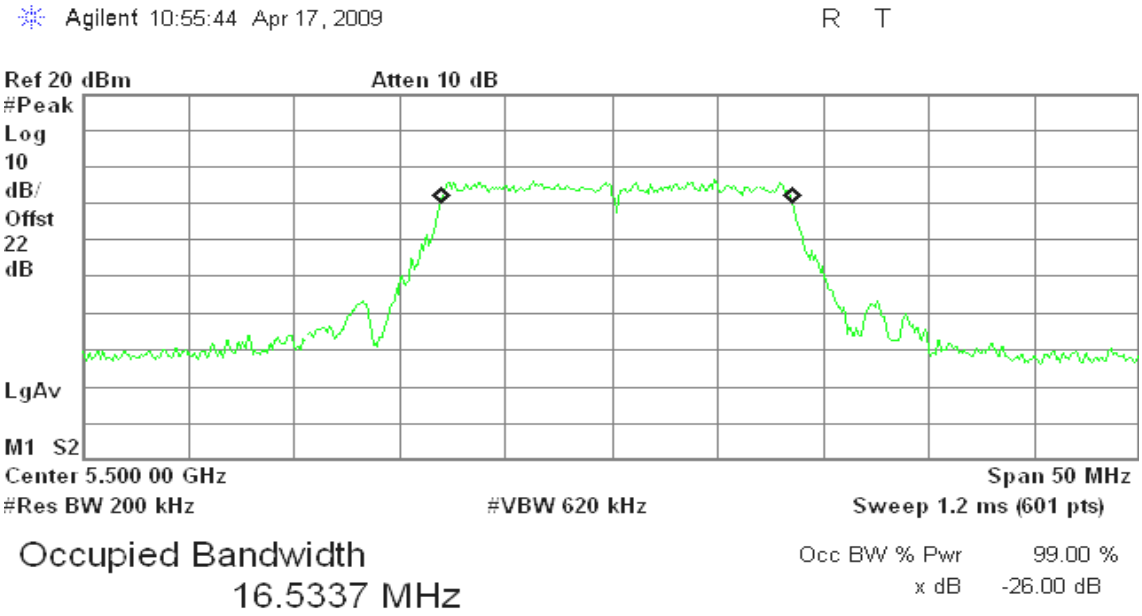
CH High



Transmit Freq Error	169.572 kHz
x dB Bandwidth	40.775 MHz

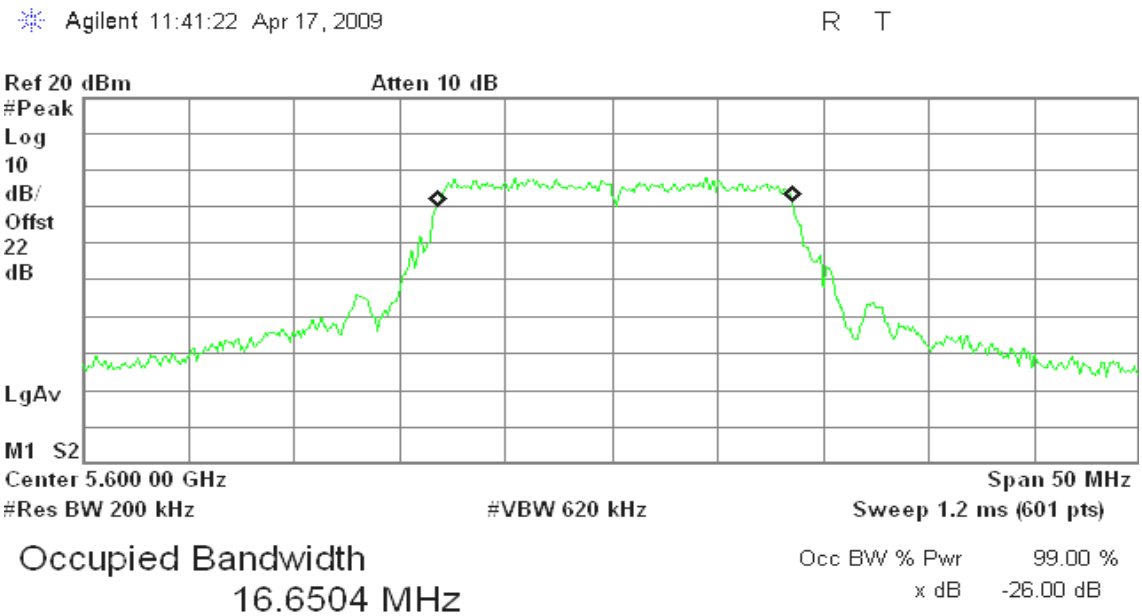
Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

CH Low



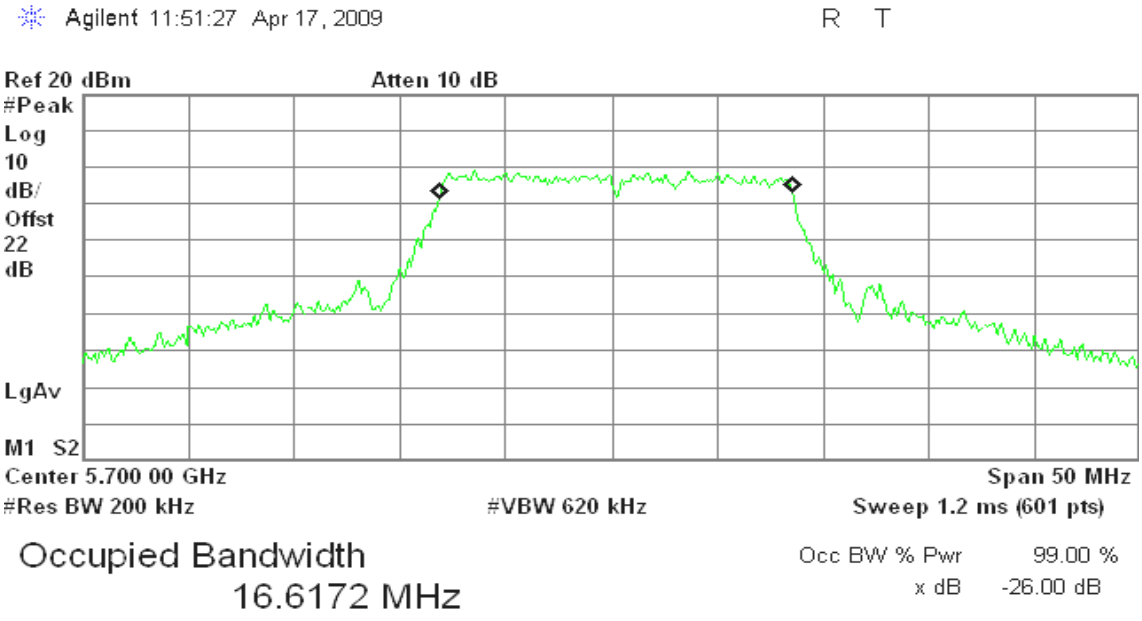
Transmit Freq Error	236.030 kHz
x dB Bandwidth	19.550 MHz

CH Mid



Transmit Freq Error	165.244 kHz
x dB Bandwidth	20.066 MHz

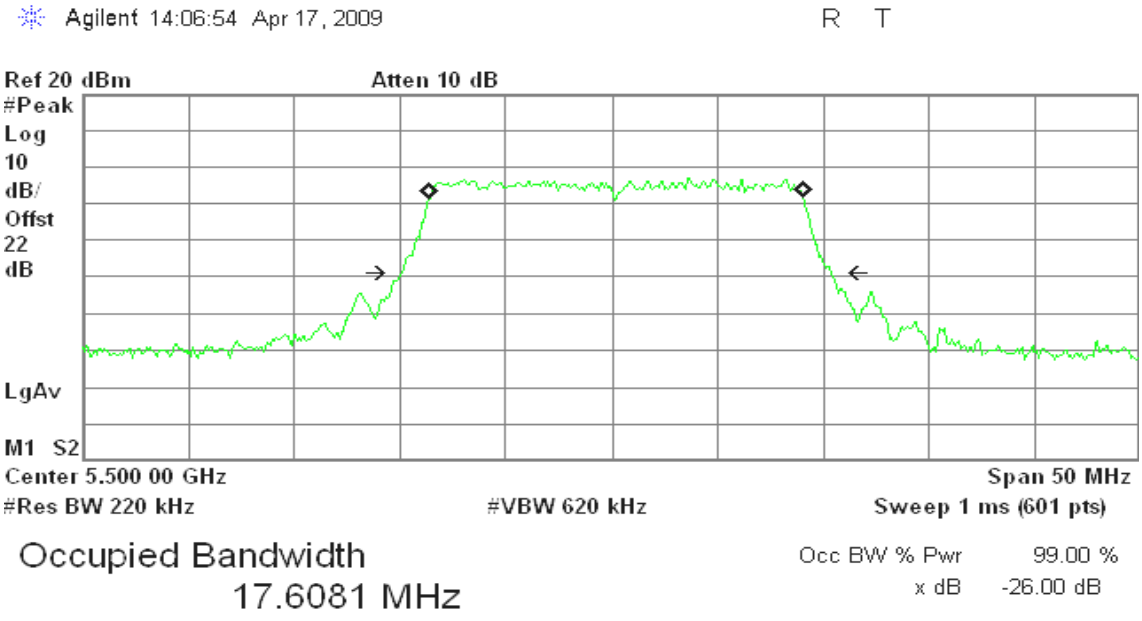
CH High



Transmit Freq Error	203.972 kHz
x dB Bandwidth	19.749 MHz

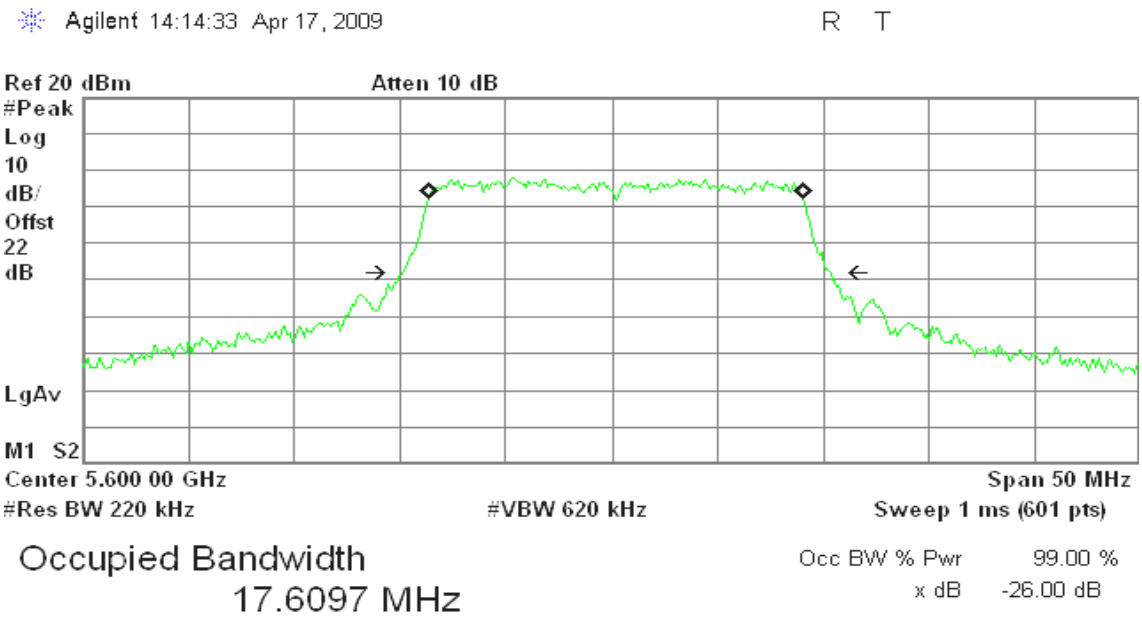
draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

CH Low



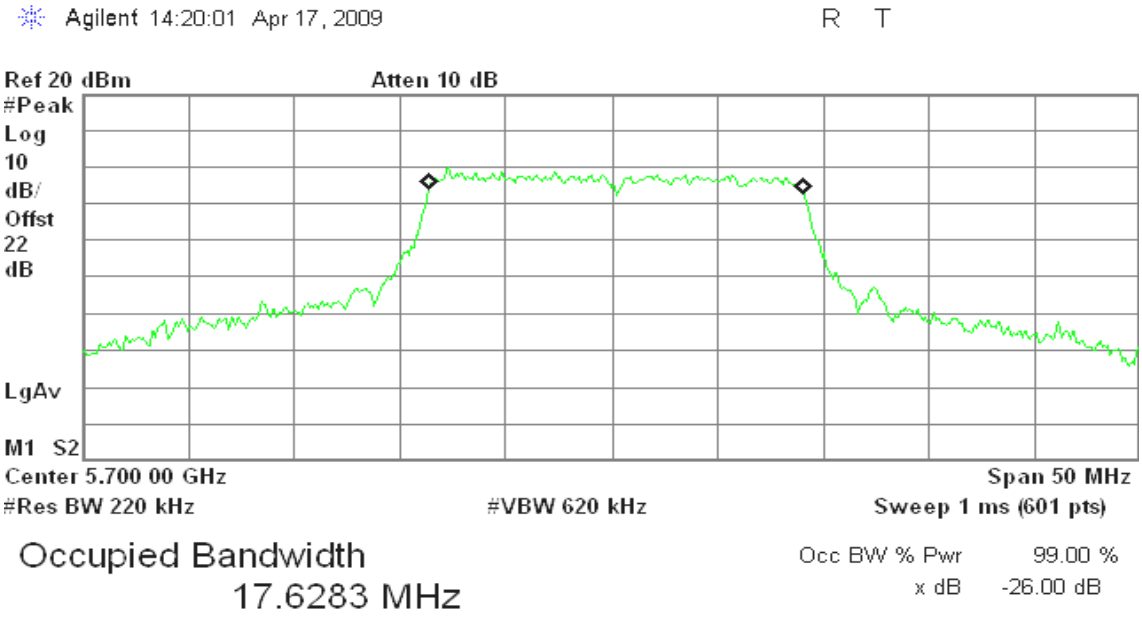
Transmit Freq Error	227.024 kHz
Occupied Bandwidth	20.224 MHz

CH Mid



Transmit Freq Error	217.170 kHz
Occupied Bandwidth	20.189 MHz

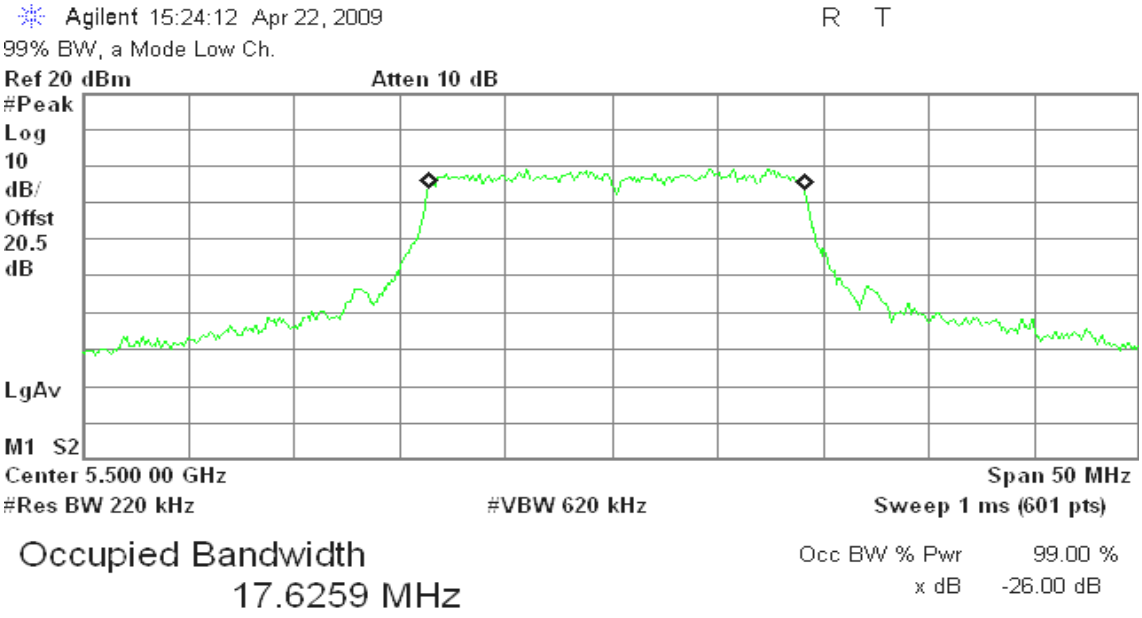
CH High



Transmit Freq Error	223.978 kHz
x dB Bandwidth	20.109 MHz

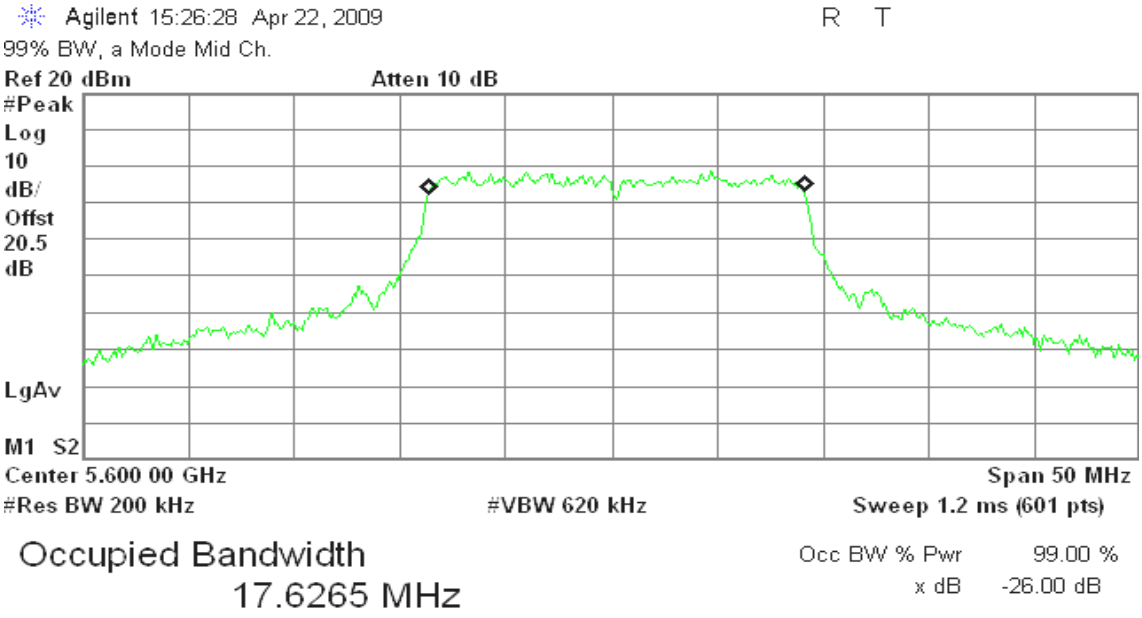
draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

CH Low



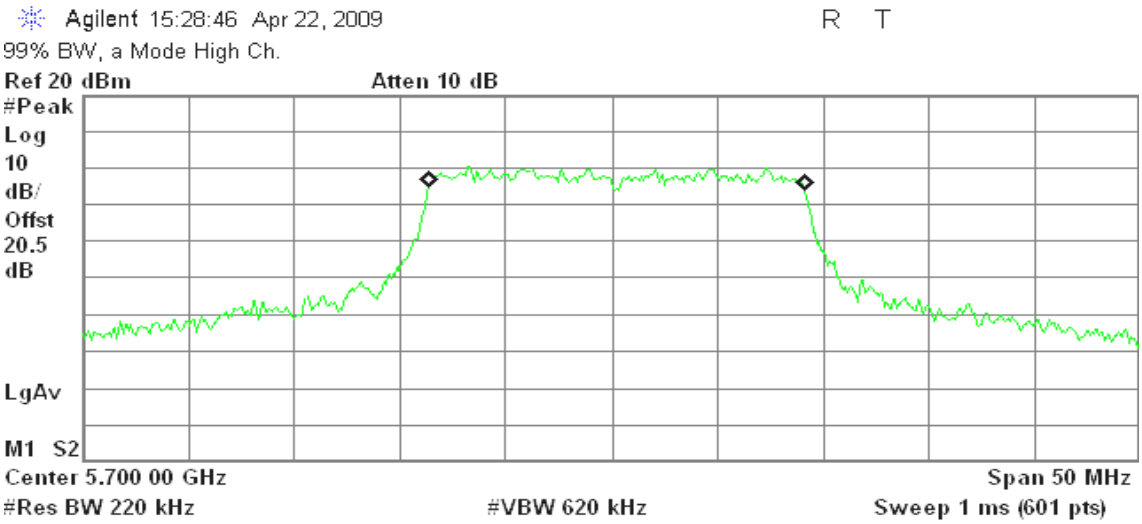
Transmit Freq Error	230.720 kHz
x dB Bandwidth	20.214 MHz

CH Mid



Transmit Freq Error	244.247 kHz
x dB Bandwidth	19.974 MHz

CH High



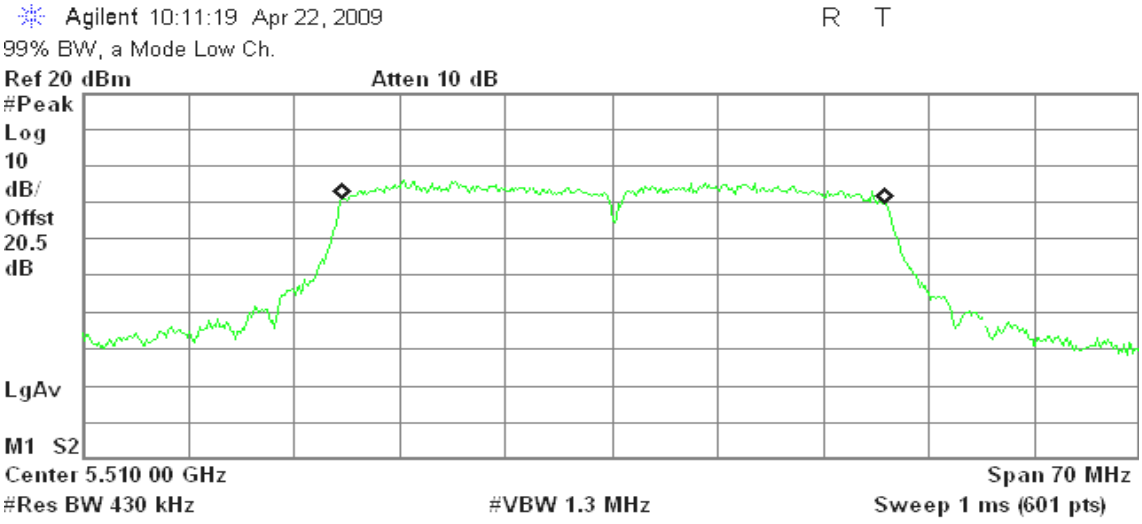
Occupied Bandwidth
17.6376 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 242.065 kHz
x dB Bandwidth 20.385 MHz

draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 0

CH Low

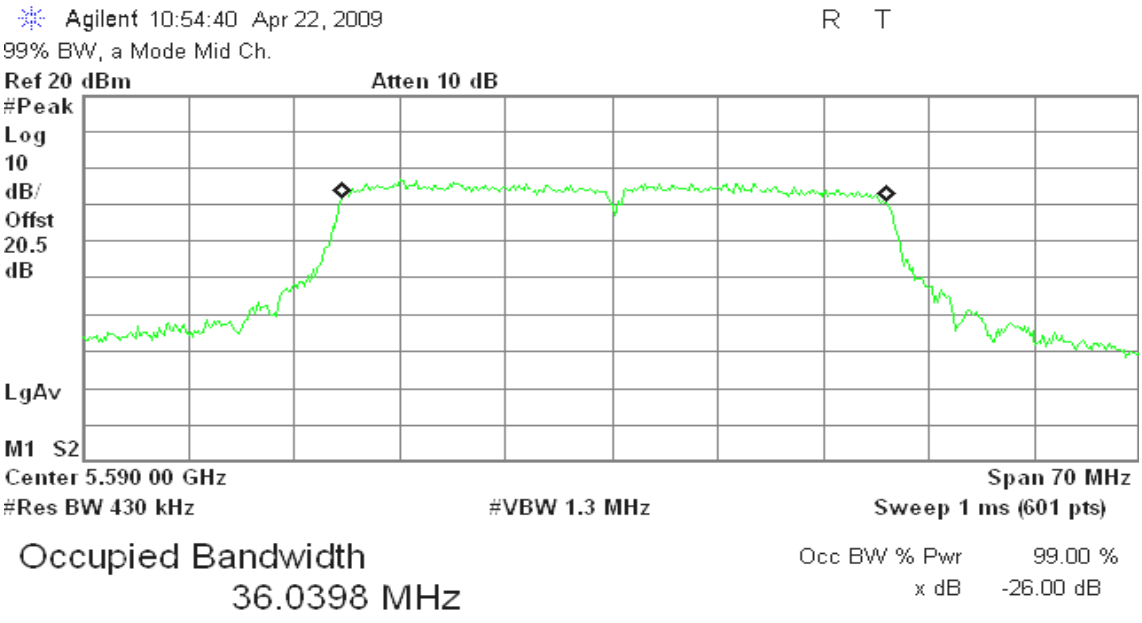


Occupied Bandwidth
35.9276 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 149.610 kHz
x dB Bandwidth 39.709 MHz

CH Mid

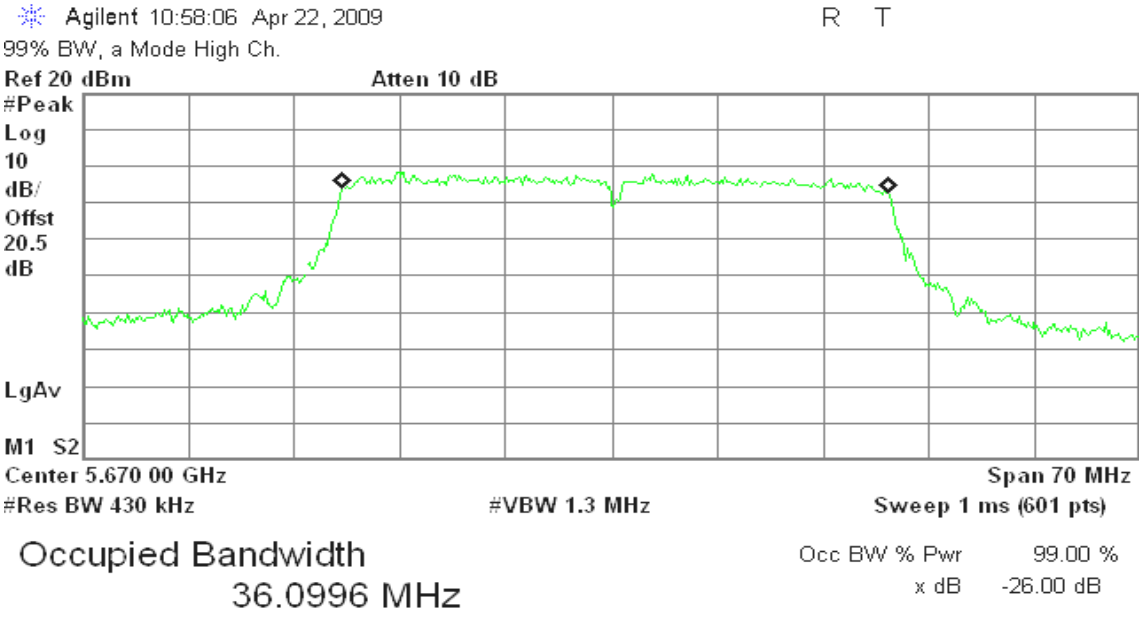


Occupied Bandwidth
36.0398 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error	184.259 kHz
x dB Bandwidth	39.803 MHz

CH High



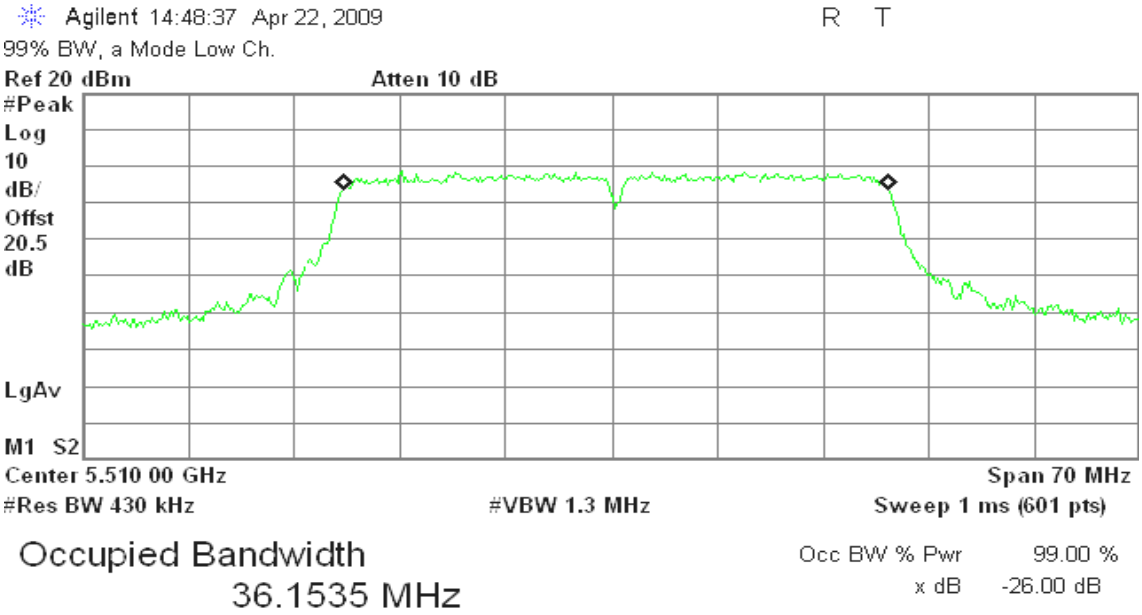
Occupied Bandwidth
36.0996 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error	224.818 kHz
x dB Bandwidth	40.281 MHz

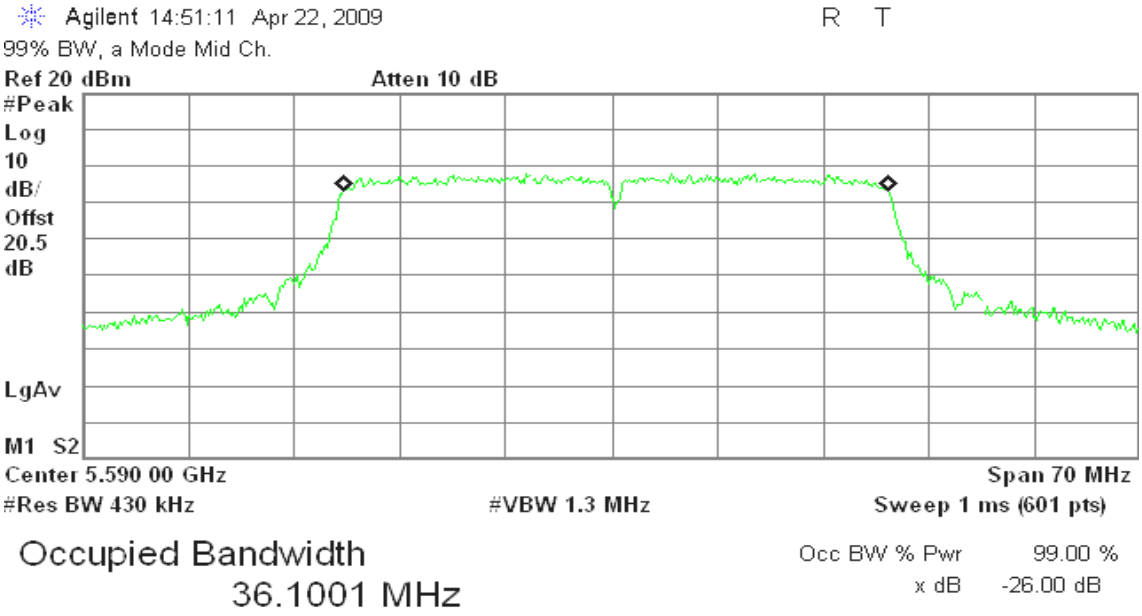
draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 1

CH Low



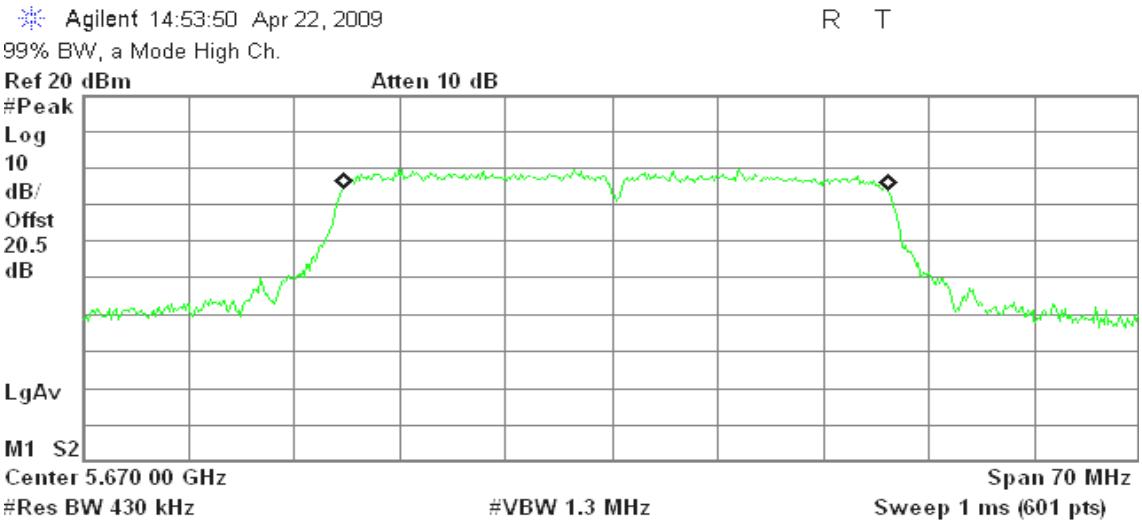
Transmit Freq Error	286.690 kHz
x dB Bandwidth	40.730 MHz

CH Mid



Transmit Freq Error	275.670 kHz
x dB Bandwidth	40.525 MHz

CH High



Occupied Bandwidth
36.0689 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error	243.033 kHz
x dB Bandwidth	40.518 MHz

7.2 MAXIMUM CONDUCTED OUTPUT POWER

LIMIT

According to §15.407(a),

(1) For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10log B, where B is the 26 dB emission bandwidth in MHz.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, where B is the 26 dB emission bandwidth in MHz.

If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

The peak power shall not exceed the limit as follow:

Specified Limit of the Peak Power

Test mode: IEEE 802.11a mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5180	19.948	12.99	16.99	17.00
Mid	5220	20.111	13.04	17.04	17.00
High	5240	19.598	13.00	17.00	17.00

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5180	20.480	20.363	23.43	13.69	17.69	17.00
Mid	5220	20.104	20.122	23.12	13.63	17.63	17.00
High	5240	20.096	20.032	23.07	13.63	17.63	17.00

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5190	40.388	40.034	43.22	16.36	20.36	17.00
High	5230	40.479	40.675	43.59	16.39	20.39	17.00

Test mode: IEEE 802.11a mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5260	19.489	12.89	23.89	24.00
Mid	5280	19.233	12.84	23.84	24.00
High	5320	19.515	12.90	23.90	24.00

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5260	19.987	20.027	23.02	13.62	24.62	24.00
Mid	5280	19.924	20.152	23.05	13.62	24.62	24.00
High	5320	20.089	20.258	23.18	13.65	24.65	24.00

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5270	39.742	40.175	42.97	16.33	27.33	24.00
High	5310	40.174	40.775	43.50	16.38	27.38	24.00

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5500	19.550	12.91	23.91	24.00
Mid	5600	20.066	13.02	24.02	24.00
High	5700	19.749	12.95	24.95	24.00

Test mode: draft 802.11n Standard-20 MHz Channel mode/ 5500 ~ 5700MHz

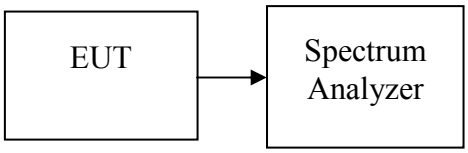
Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5500	20.224	20.214	23.23	13.66	24.66	24.00
Mid	5600	20.189	19.974	23.09	13.63	24.63	24.00
High	5700	20.109	20.385	23.26	13.66	24.66	24.00

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	Total 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5510	39.709	40.730	43.26	16.36	27.36	24.00
Mid	5590	39.803	40.525	43.19	16.35	27.35	24.00
High	5670	40.281	40.518	43.41	16.37	27.37	24.00

Test Configuration

The EUT was connected to a spectrum analyzer through a 50Ω RF cable.



TEST PROCEDURE

Set span to encompass the entire emission bandwidth (EBW) of the signal.

Set RBW = 1 MHz / Set VBW = 3 MHz.

Use sample detector mode if bin width (i.e., span/number of points in spectrum display) < 0.5 RBW. Otherwise use peak detector mode. Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power intervals, the trigger may be set to "free run".·Trace average 100 traces in power averaging mode. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5180	10.08	17.00
Mid	5220	10.34	17.00
High	5240	10.63	17.00

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5180	8.26	7.70	11.00	17.00
Mid	5220	8.31	8.13	11.23	17.00
High	5240	8.69	8.59	11.65	17.00

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5190	8.56	9.07	11.83	17.00
High	5230	8.77	7.79	11.32	17.00

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

Test mode: IEEE 802.11a mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5260	10.57	24.00
Mid	5280	11.29	24.00
High	5320	10.12	24.00

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5260	8.92	8.88	11.91	24.00
Mid	5280	9.03	8.35	11.71	24.00
High	5320	8.32	7.97	11.16	24.00

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5270	9.46	8.24	11.90	24.00
High	5310	9.41	9.43	12.43	24.00

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

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5500	7.42	24.00
Mid	5600	8.97	24.00
High	5700	9.78	24.00

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5500	8.14	9.36	11.80	24.00
Mid	5600	8.40	8.55	11.49	24.00
High	5700	9.85	9.69	12.78	24.00

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz

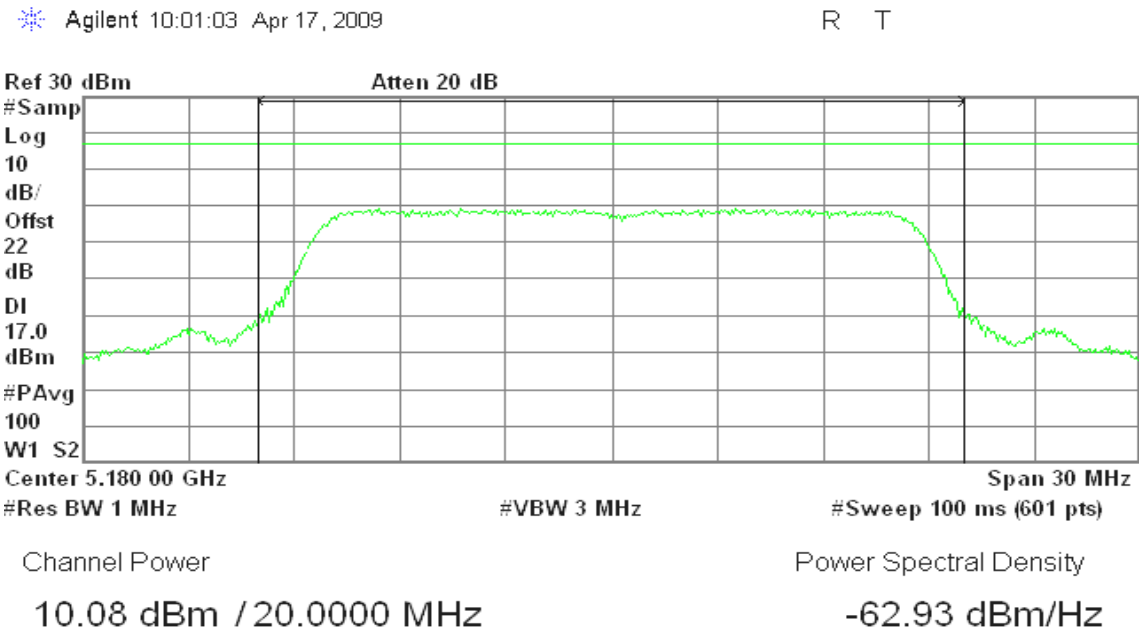
Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5510	5.59	8.80	10.50	24.00
Mid	5590	6.23	7.64	10.00	24.00
High	5670	7.63	9.24	11.52	24.00

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

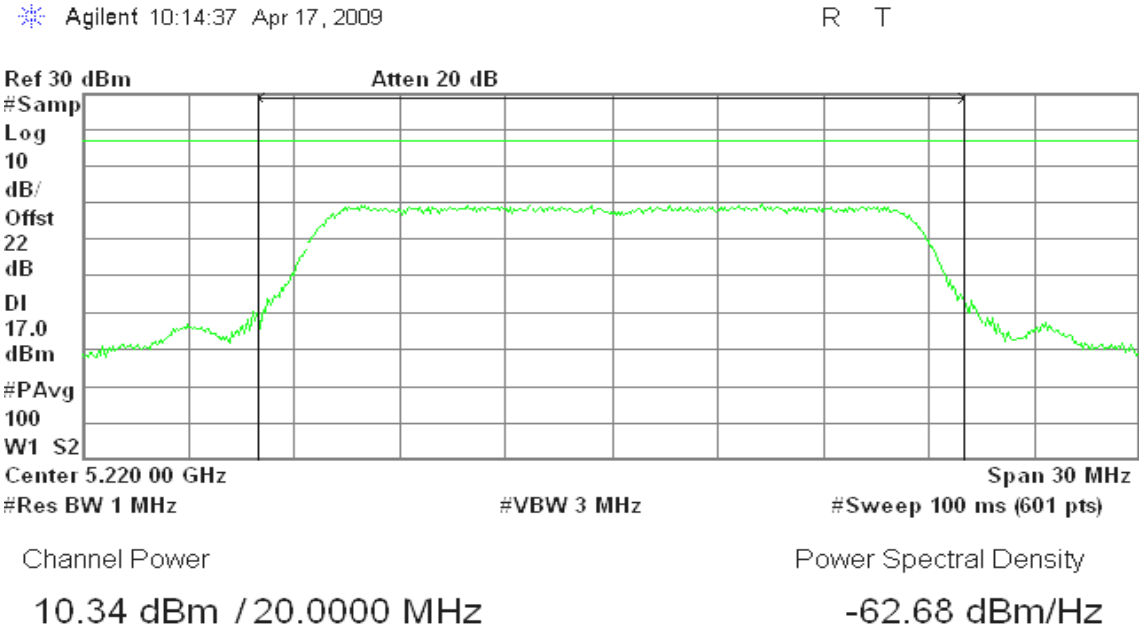
Test Plot

IEEE 802.11a mode / 5180 ~ 5240MHz

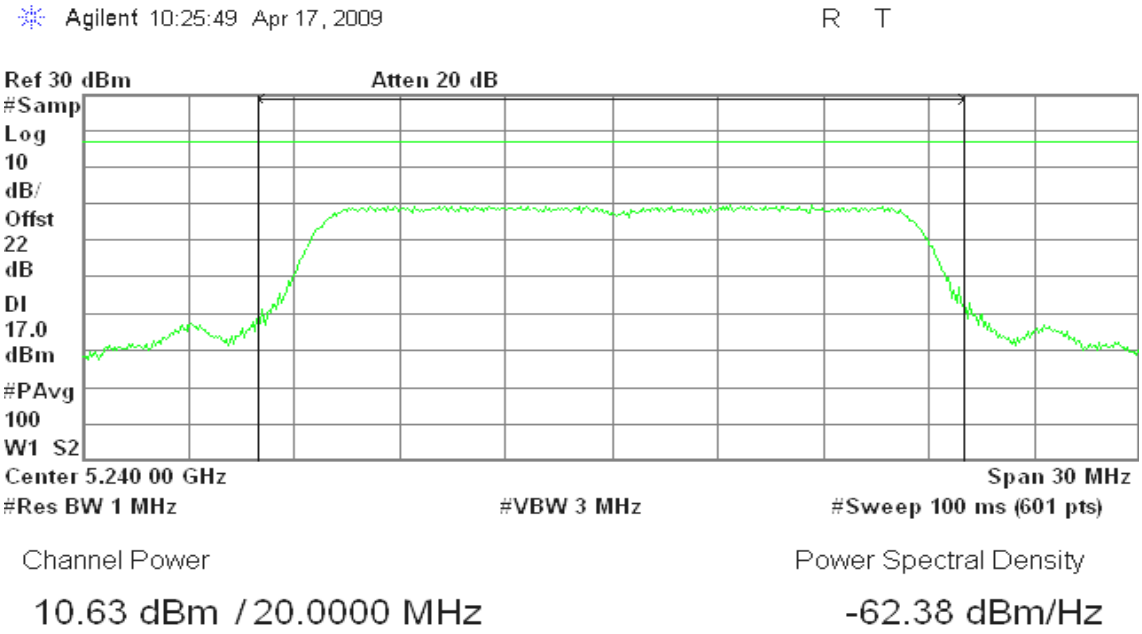
CH Low



CH Mid

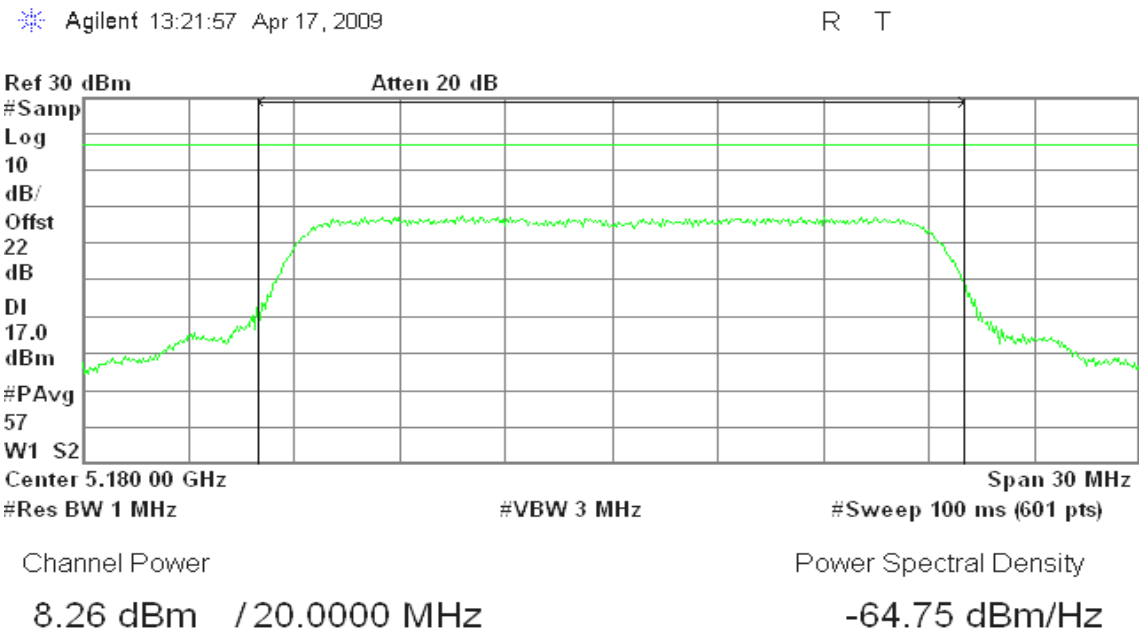


CH High

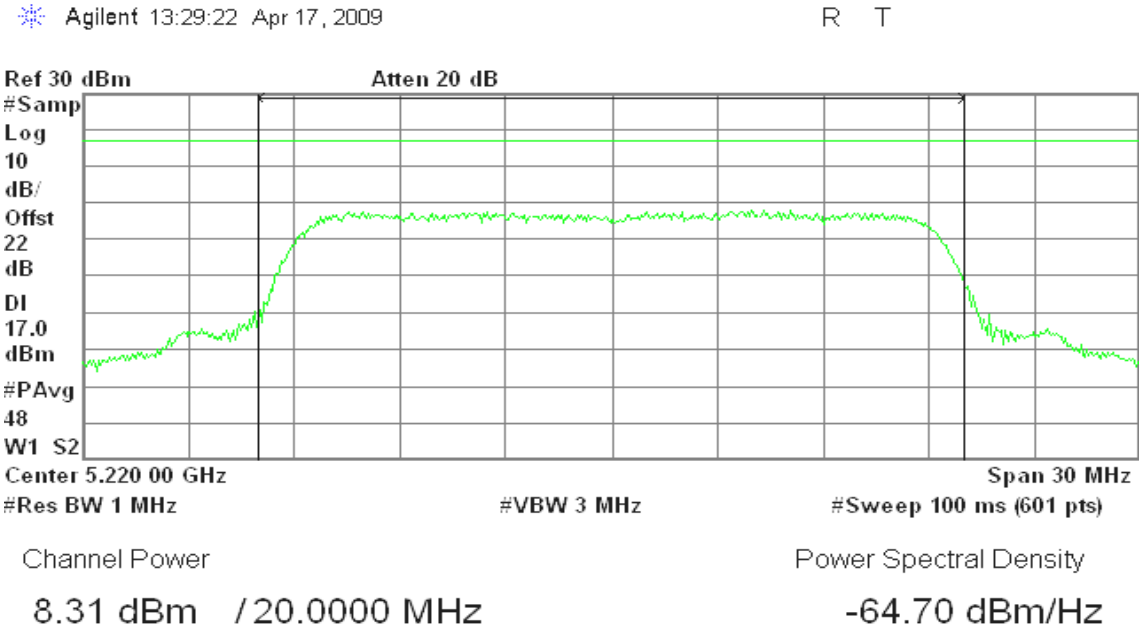


draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

CH Low



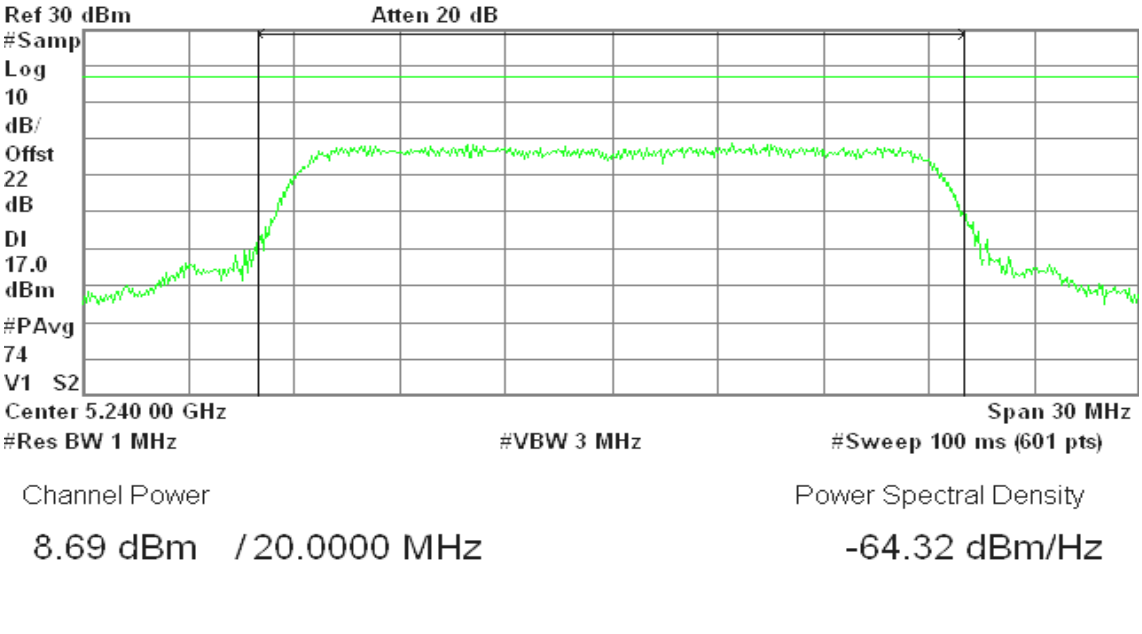
CH Mid



Channel Power
8.31 dBm /20.0000 MHz

Power Spectral Density
-64.70 dBm/Hz

CH High

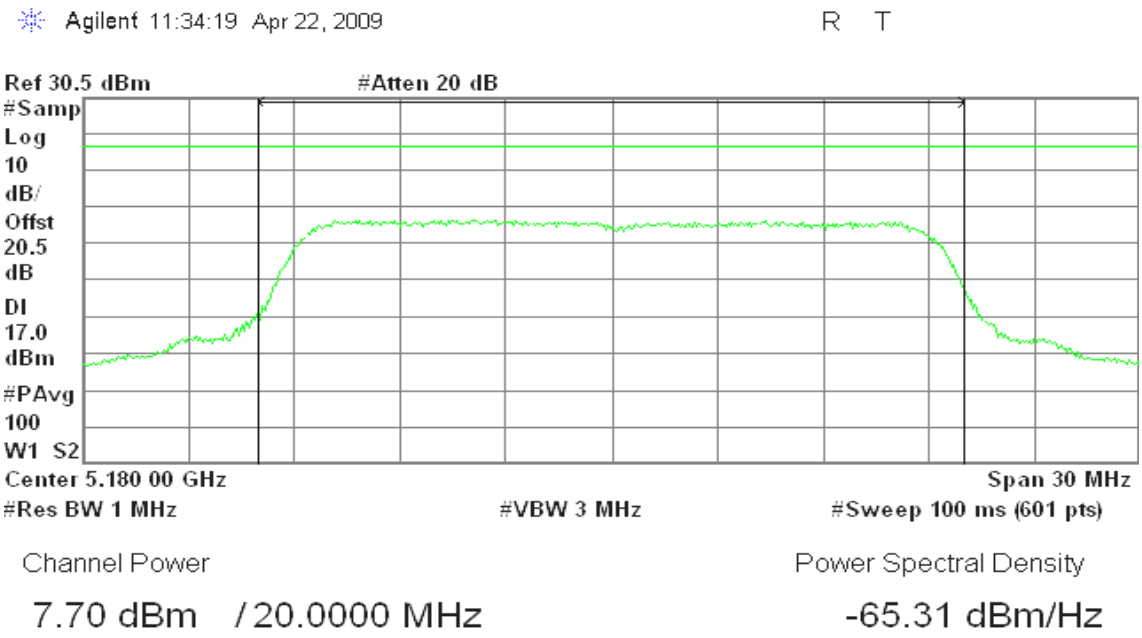


Channel Power
8.69 dBm /20.0000 MHz

Power Spectral Density
-64.32 dBm/Hz

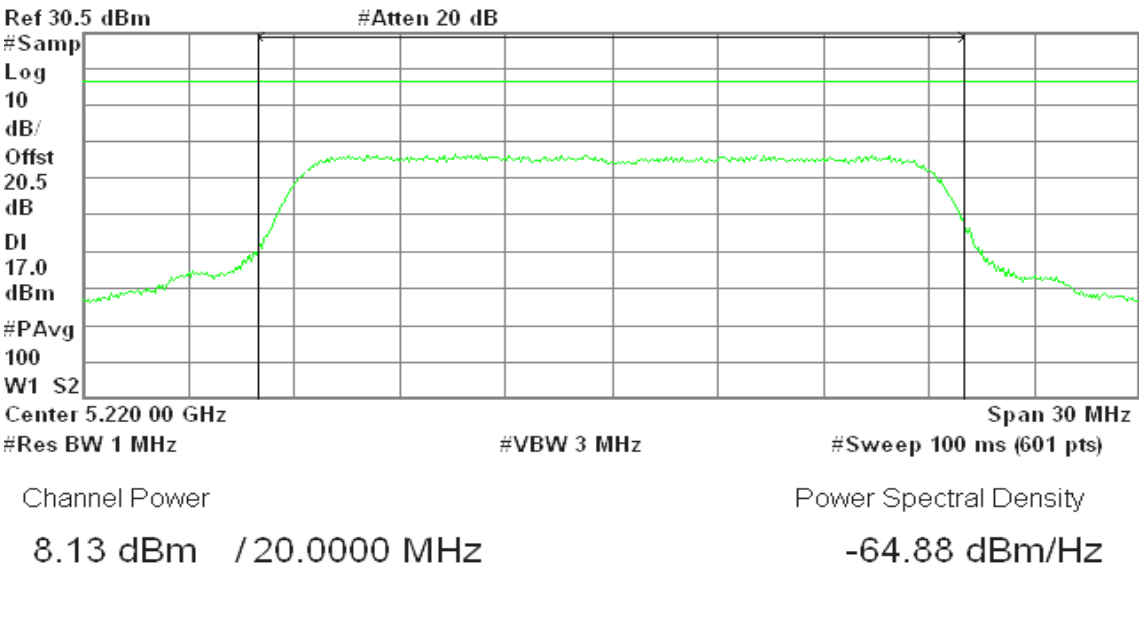
draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

CH Low



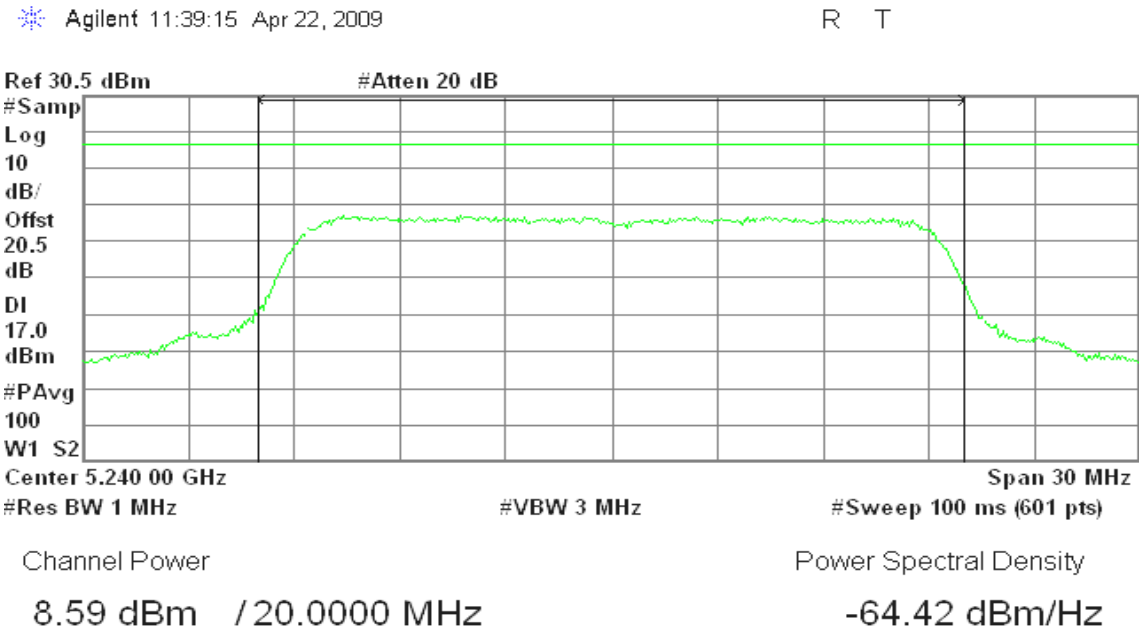
Channel Power	Power Spectral Density
7.70 dBm / 20.0000 MHz	-65.31 dBm/Hz

CH Mid



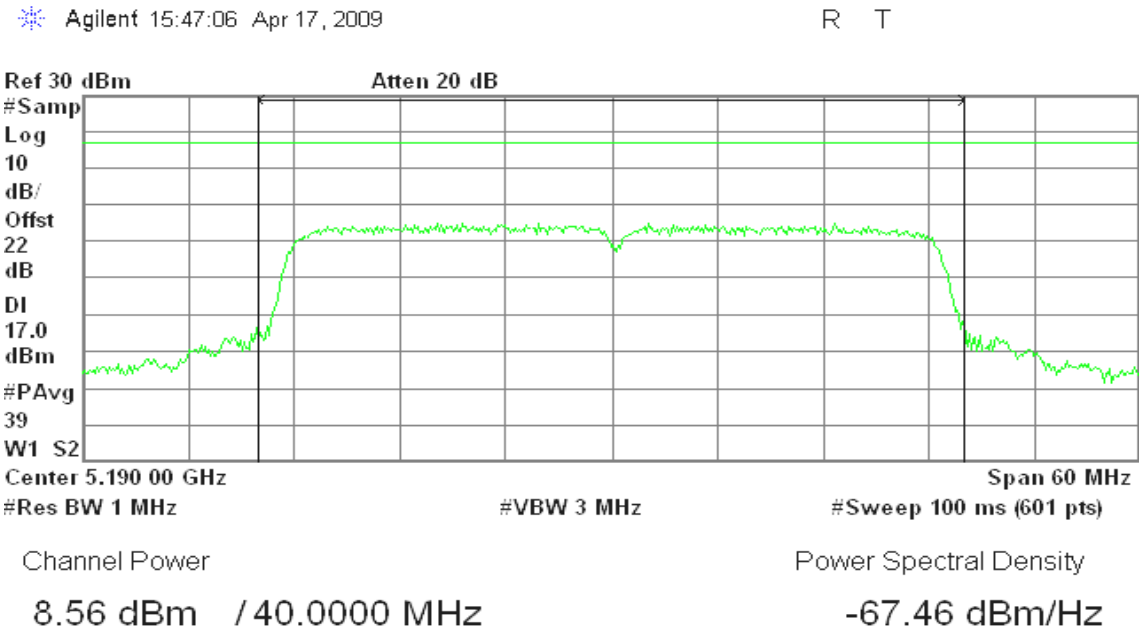
Channel Power	Power Spectral Density
8.13 dBm / 20.0000 MHz	-64.88 dBm/Hz

CH High

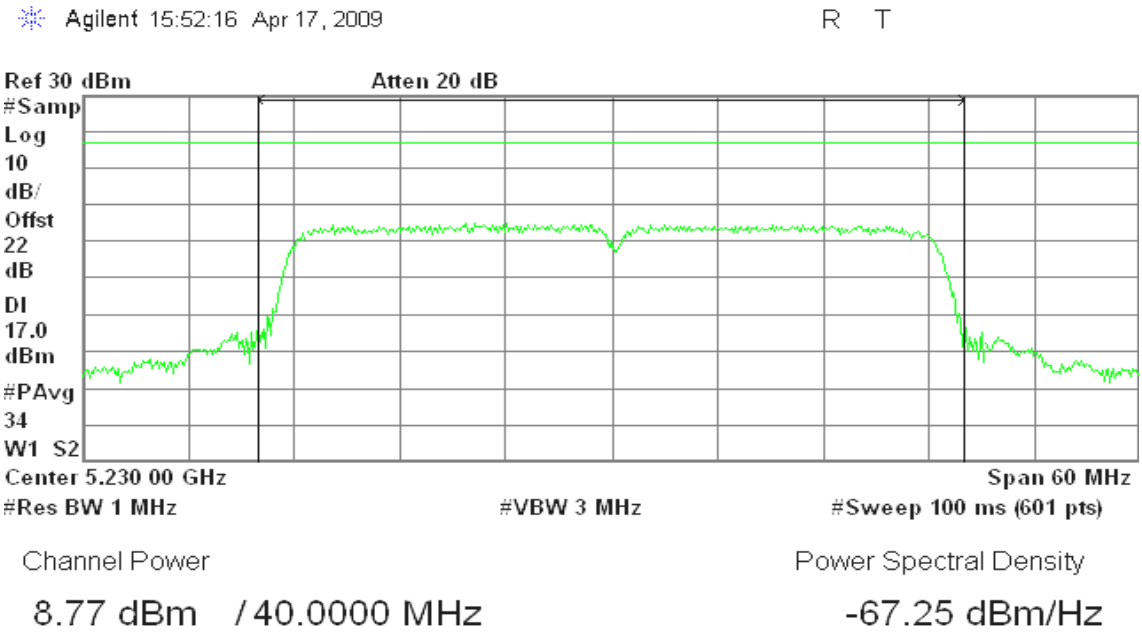


draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 0

CH Low

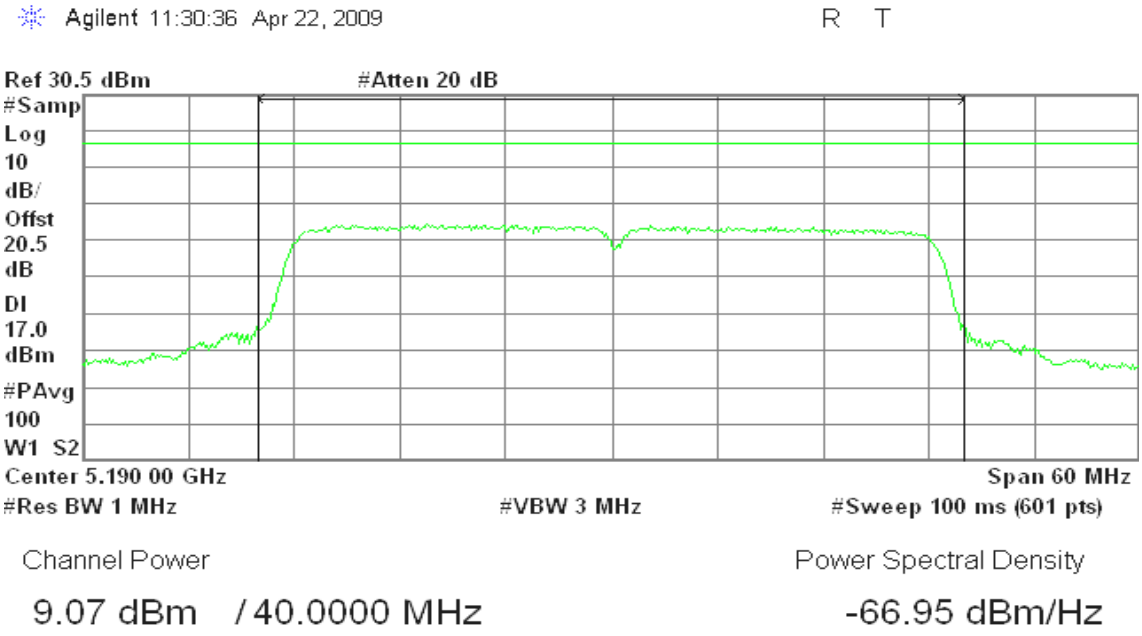


CH High

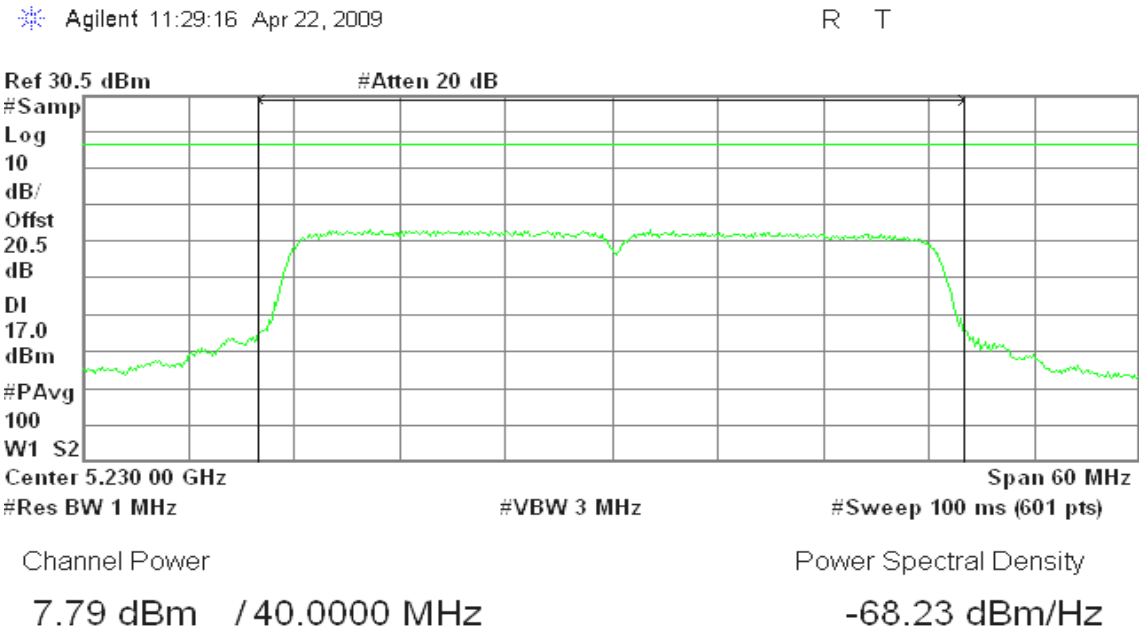


draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 1

CH Low



CH High

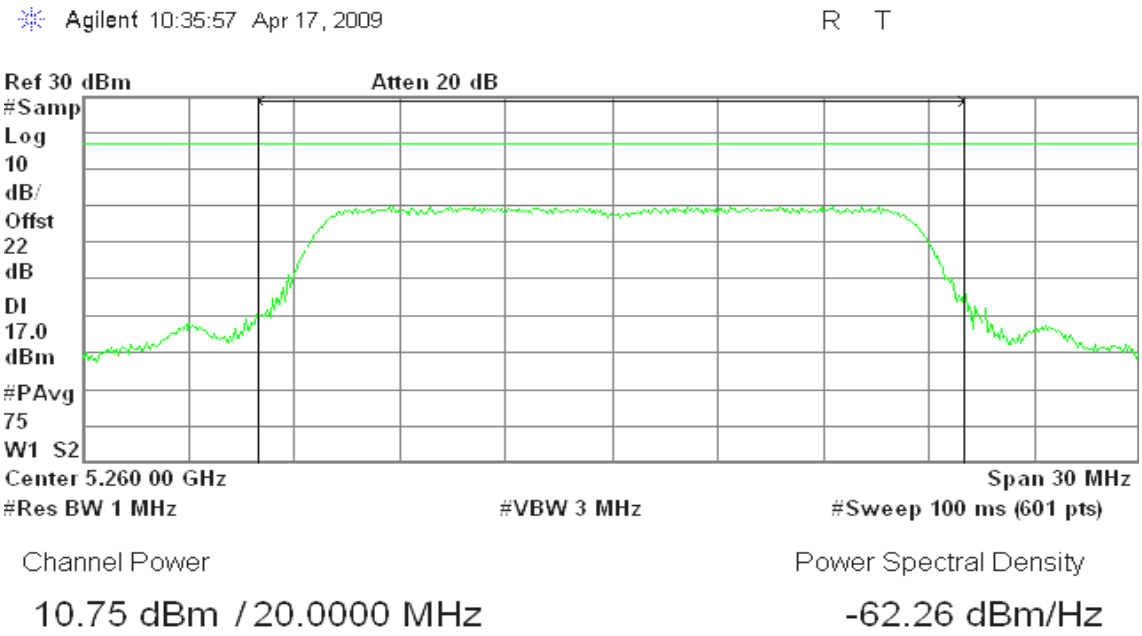


Channel Power
7.79 dBm / 40.0000 MHz

Power Spectral Density
-68.23 dBm/Hz

IEEE 802.11a mode / 5260 ~ 5320MHz

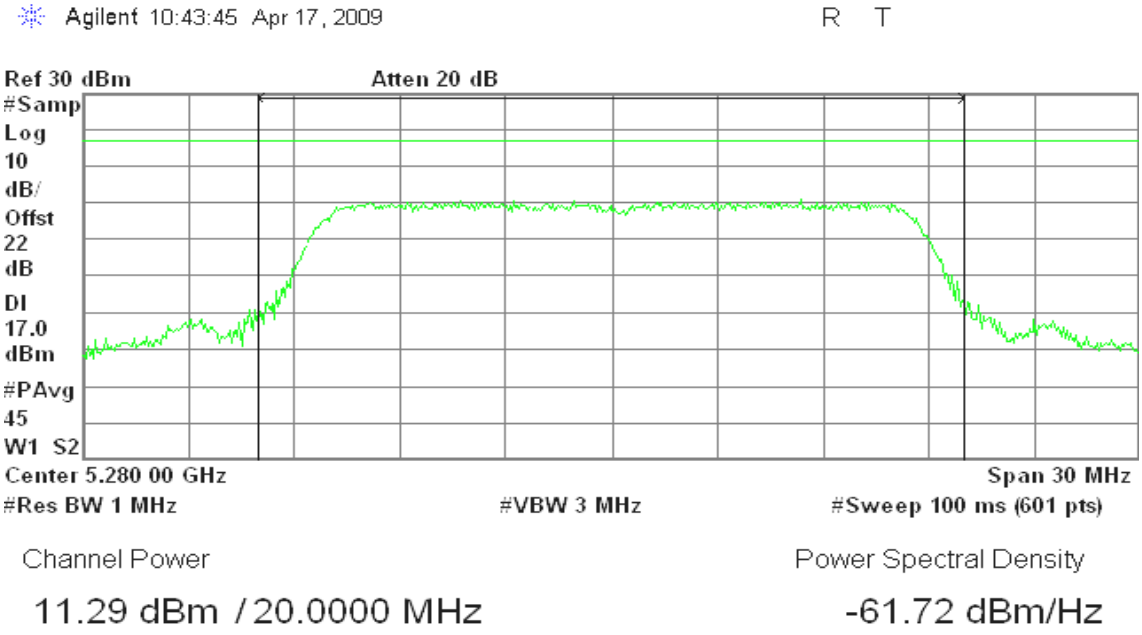
CH Low



Channel Power
10.75 dBm / 20.0000 MHz

Power Spectral Density
-62.26 dBm/Hz

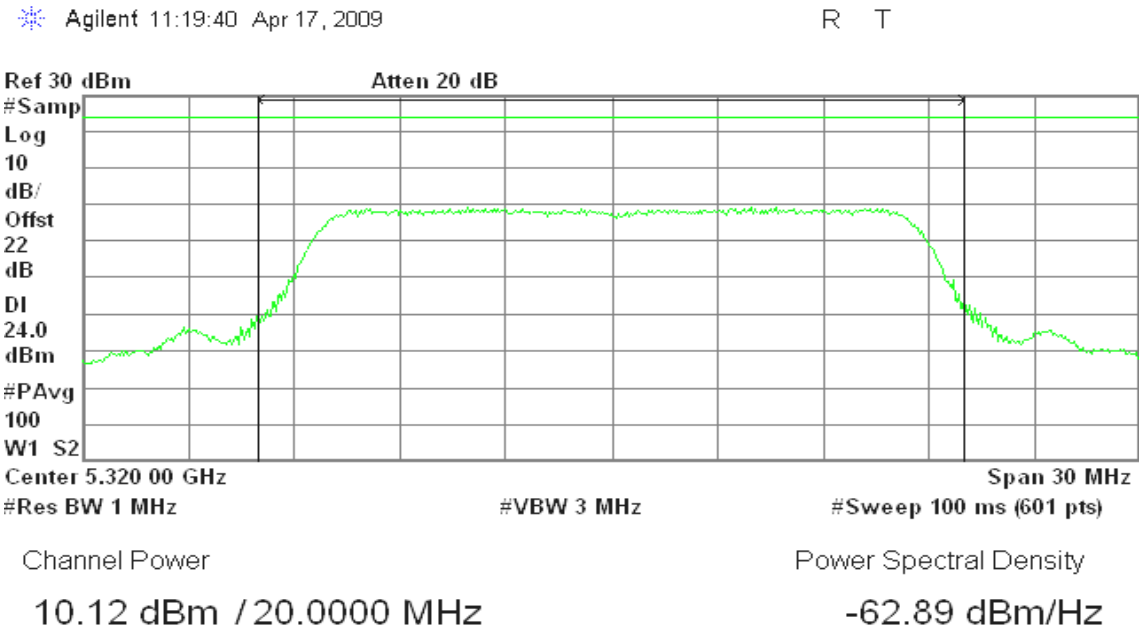
CH Mid



Channel Power
11.29 dBm / 20.0000 MHz

Power Spectral Density
-61.72 dBm/Hz

CH High

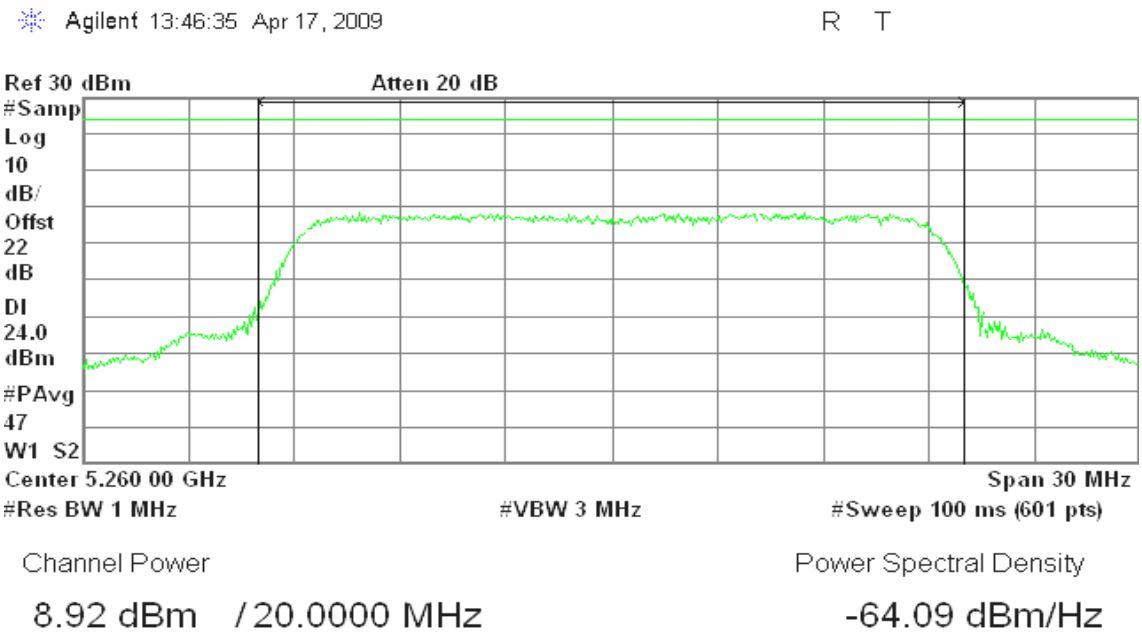


Channel Power
10.12 dBm / 20.0000 MHz

Power Spectral Density
-62.89 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

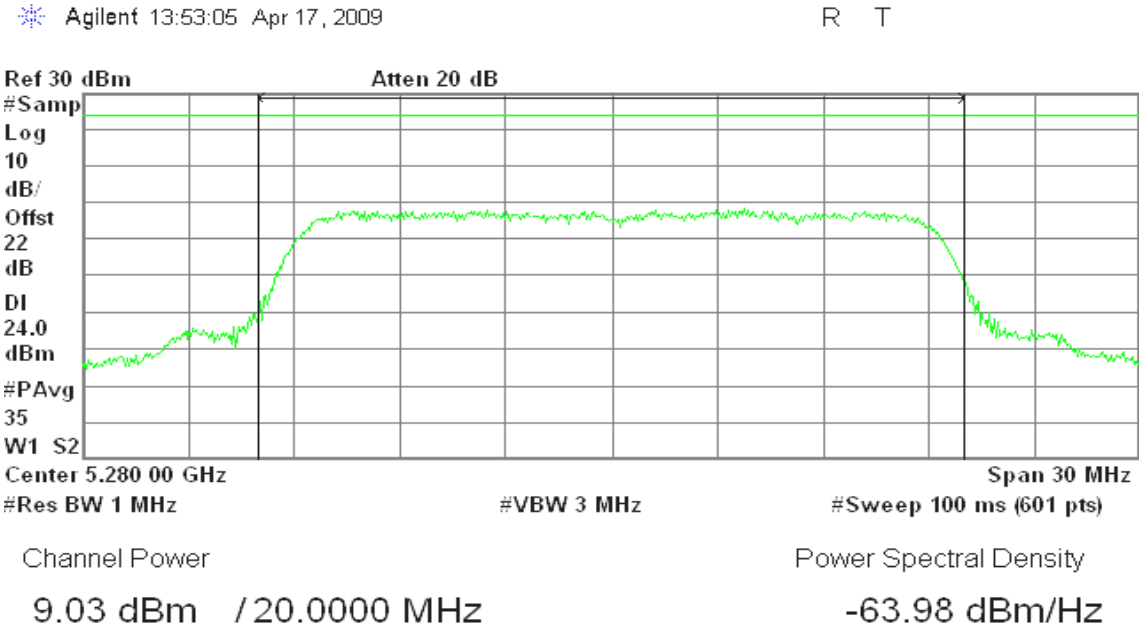
CH Low



Channel Power
8.92 dBm / 20.0000 MHz

Power Spectral Density
-64.09 dBm/Hz

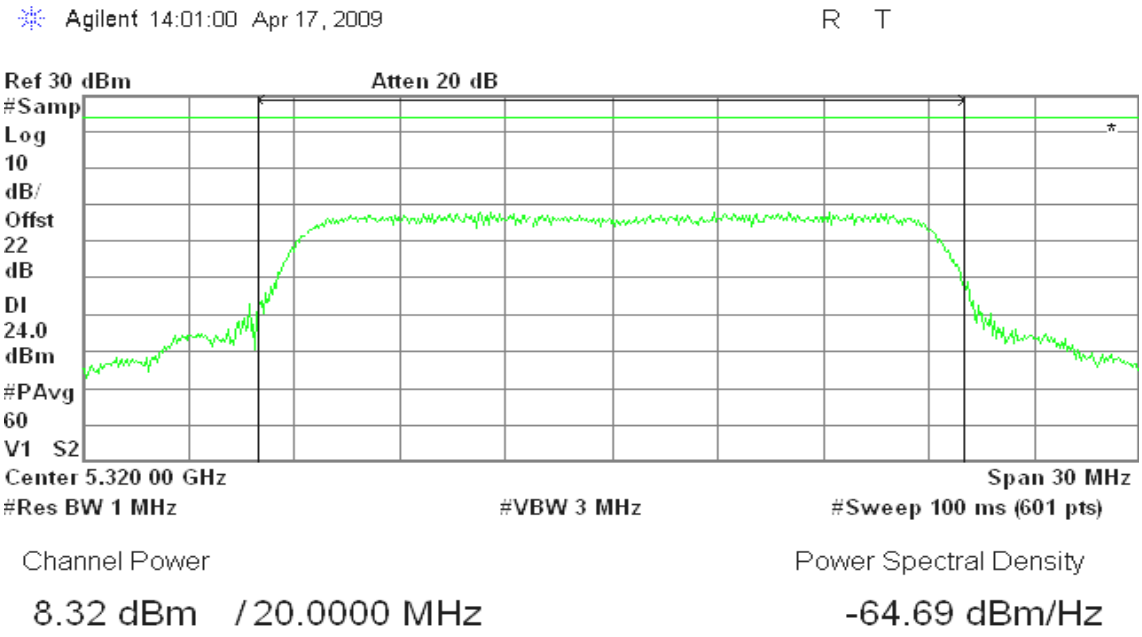
CH Mid



Channel Power
9.03 dBm / 20.0000 MHz

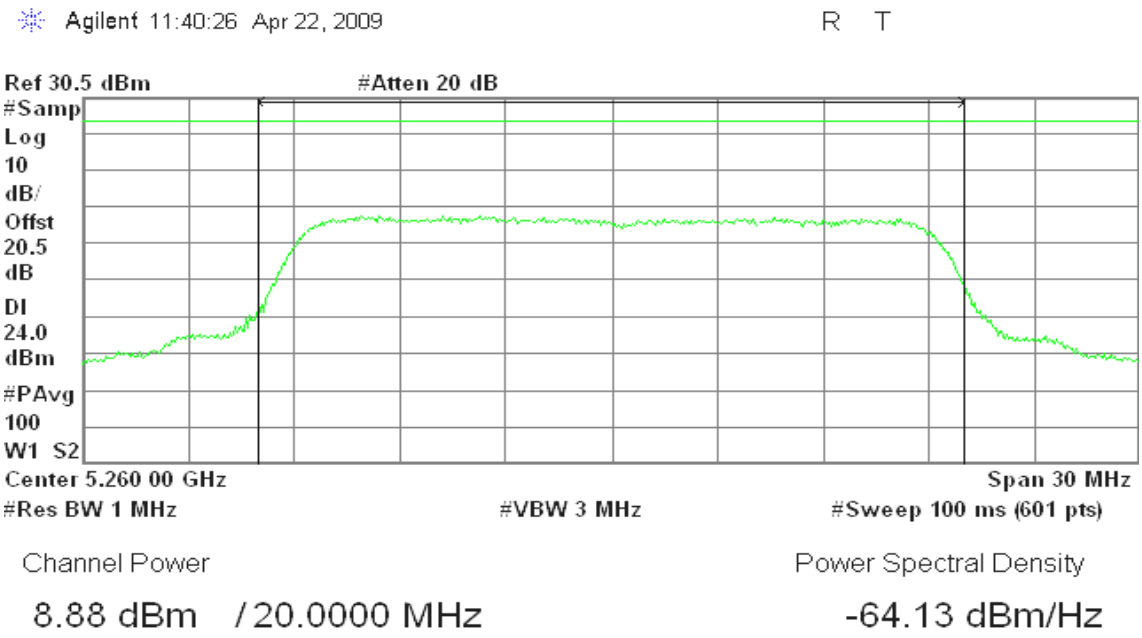
Power Spectral Density
-63.98 dBm/Hz

CH High

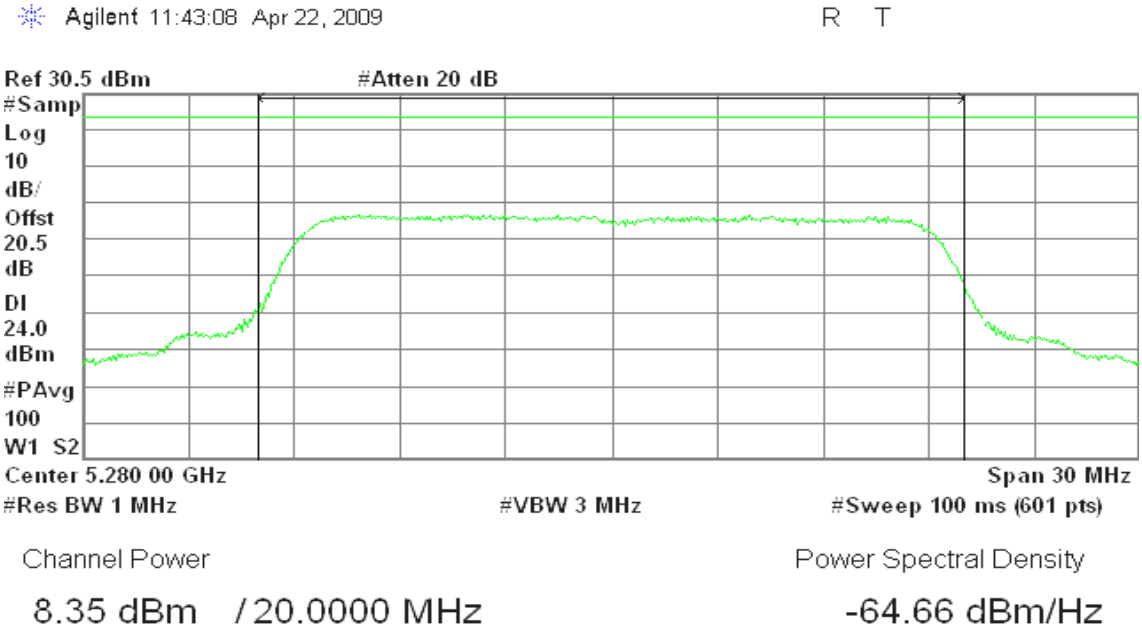


draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

CH Low



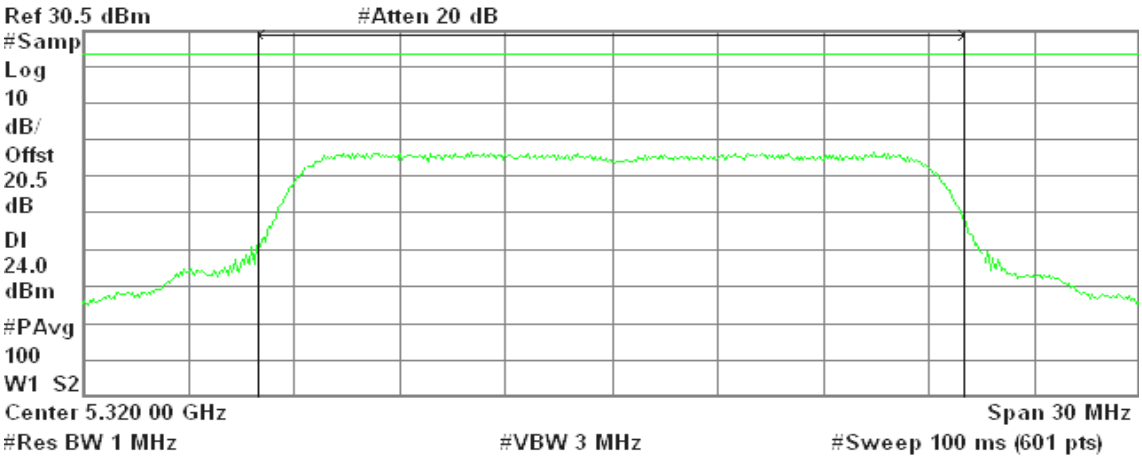
CH Mid



Channel Power
8.35 dBm /20.0000 MHz

Power Spectral Density
-64.66 dBm/Hz

CH High

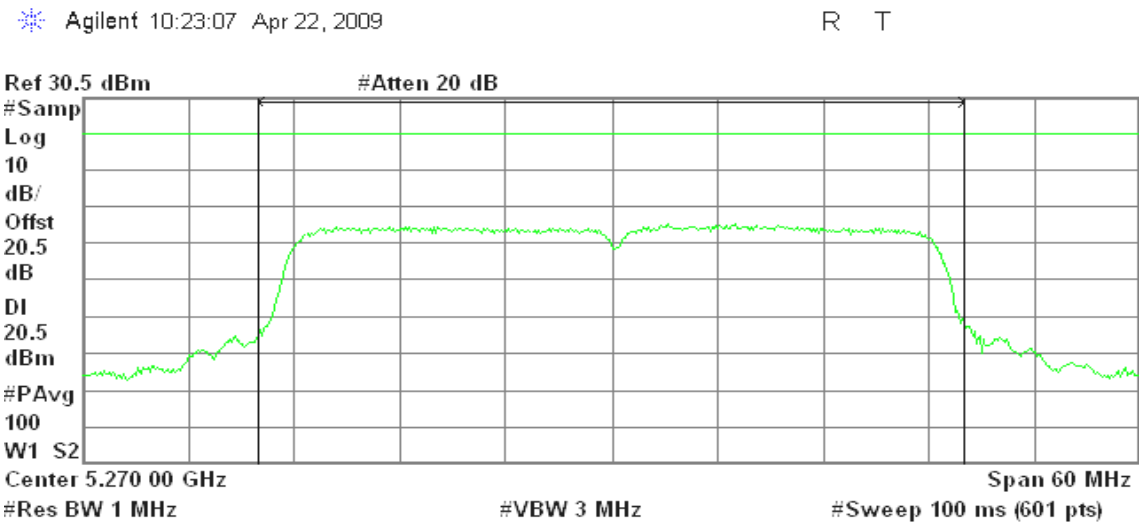


Channel Power
7.97 dBm /20.0000 MHz

Power Spectral Density
-65.04 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 0

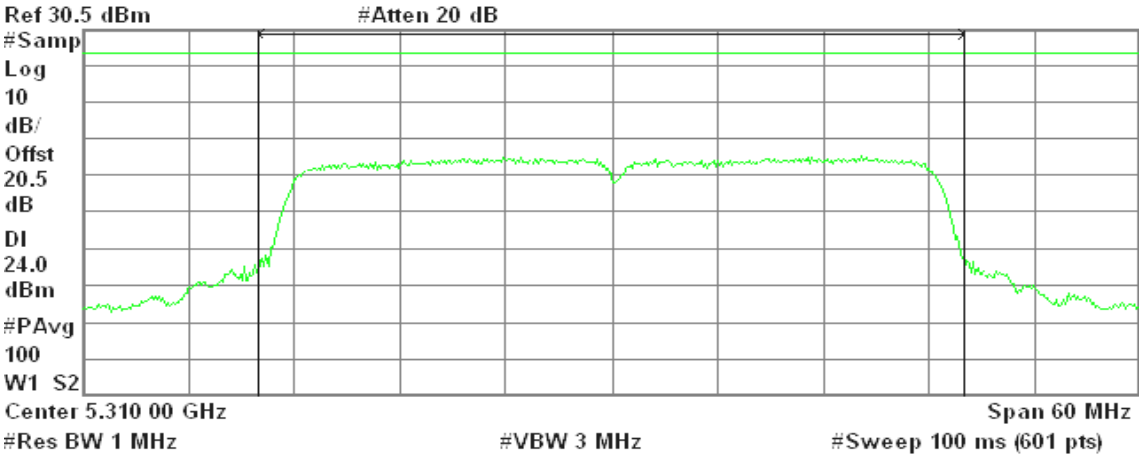
CH Low



Channel Power
9.46 dBm / 40.0000 MHz

Power Spectral Density
-66.56 dBm/Hz

CH High

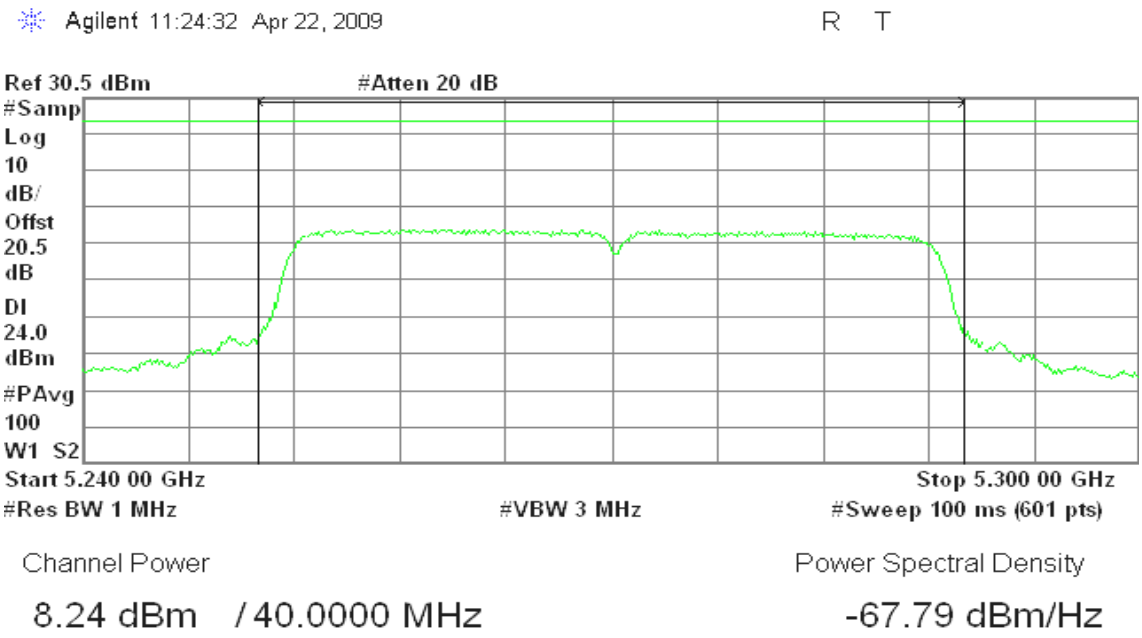


Channel Power
9.41 dBm / 40.0000 MHz

Power Spectral Density
-66.61 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 1

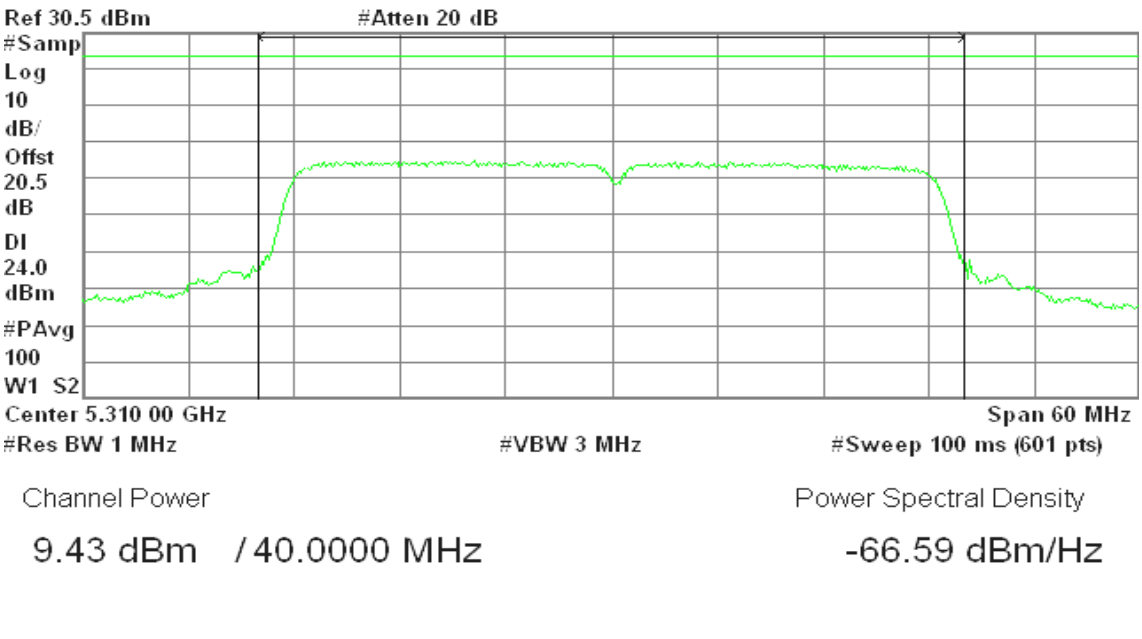
CH Low



Channel Power
8.24 dBm / 40.0000 MHz

Power Spectral Density
-67.79 dBm/Hz

CH High

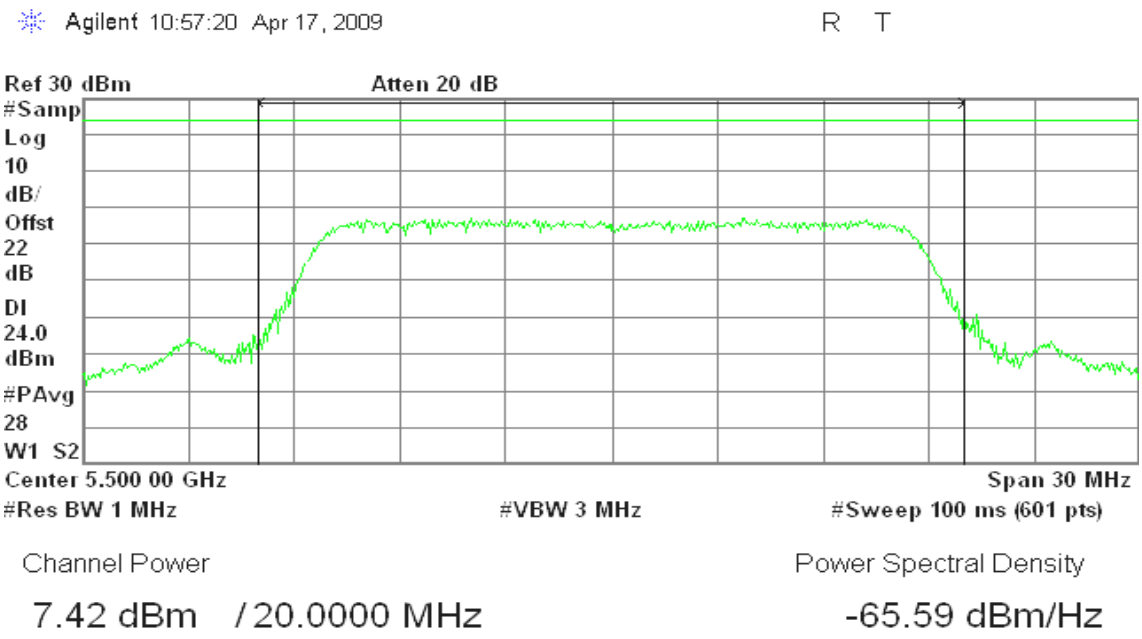


Channel Power
9.43 dBm / 40.0000 MHz

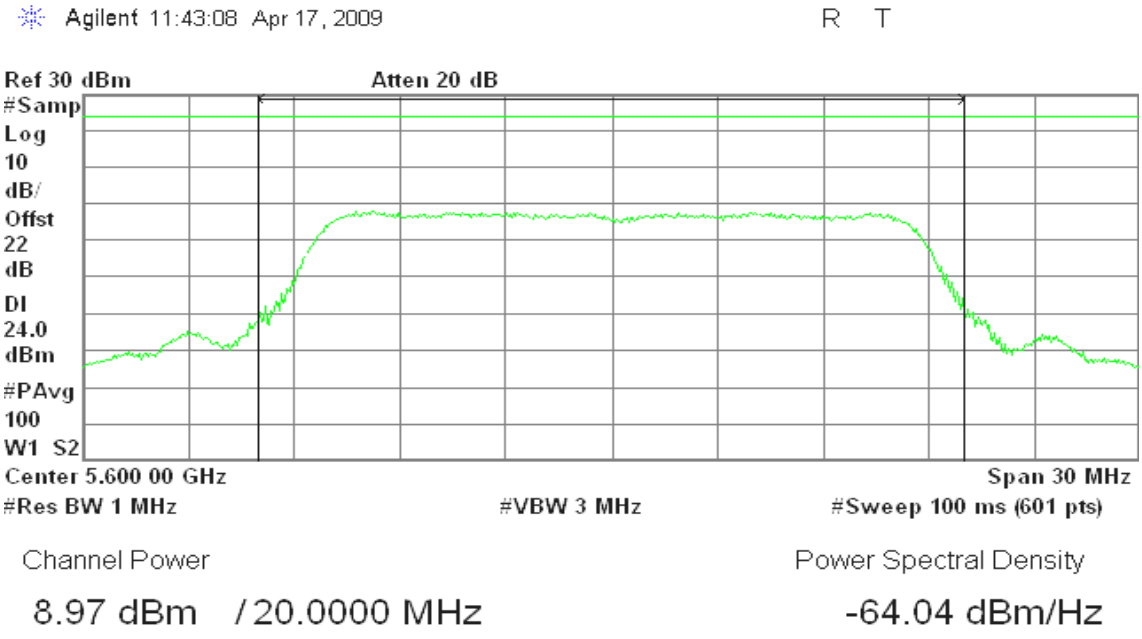
Power Spectral Density
-66.59 dBm/Hz

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

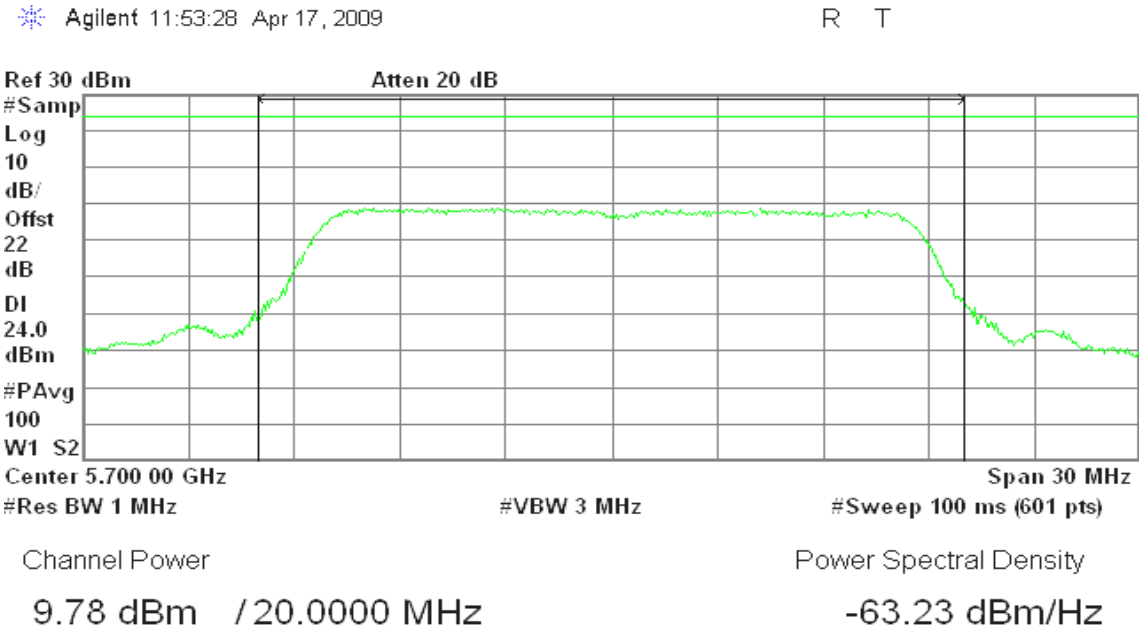
CH Low



CH Mid

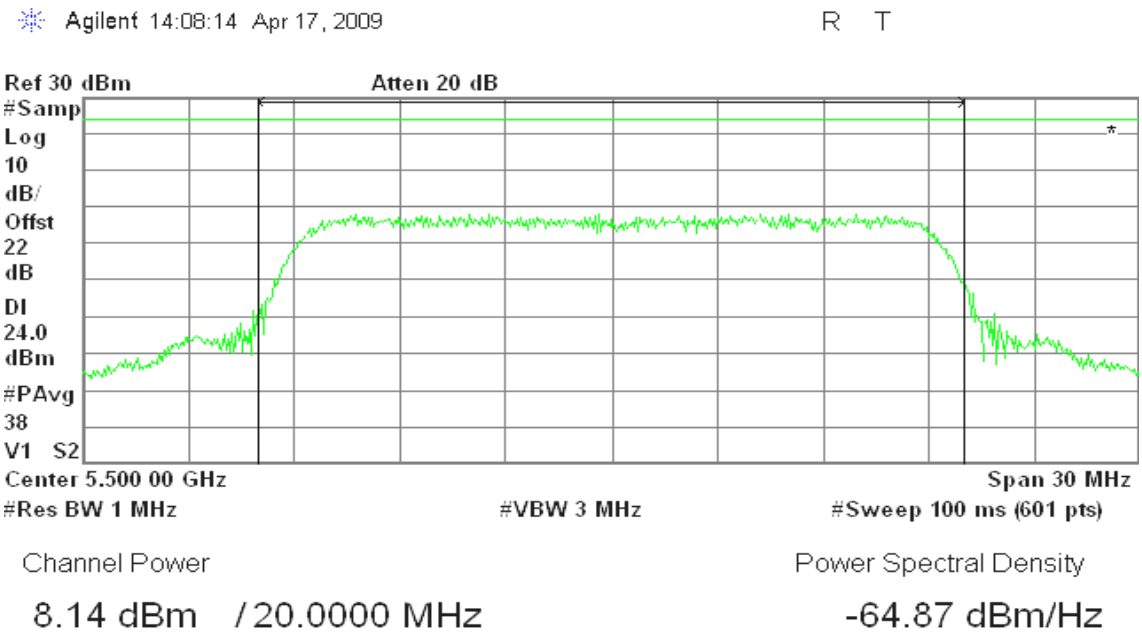


CH High

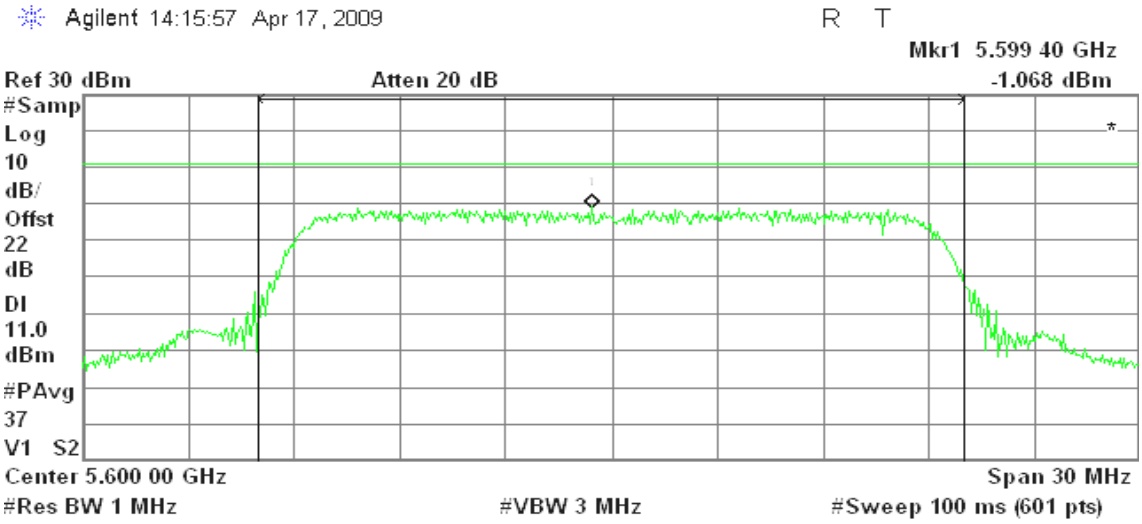


draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

CH Low



CH Mid



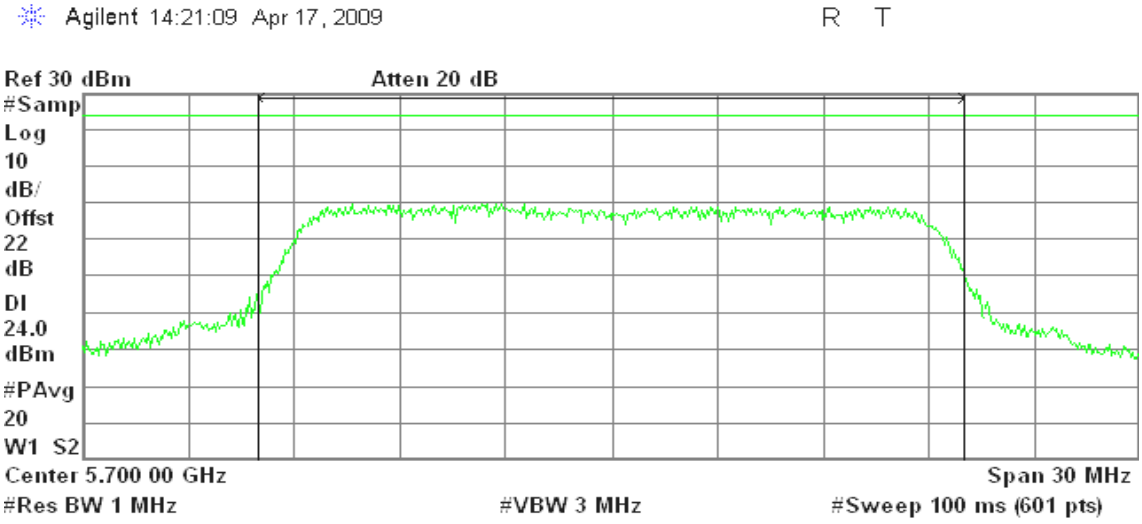
Channel Power

8.40 dBm / 20.0000 MHz

Power Spectral Density

-64.61 dBm/Hz

CH High



Channel Power

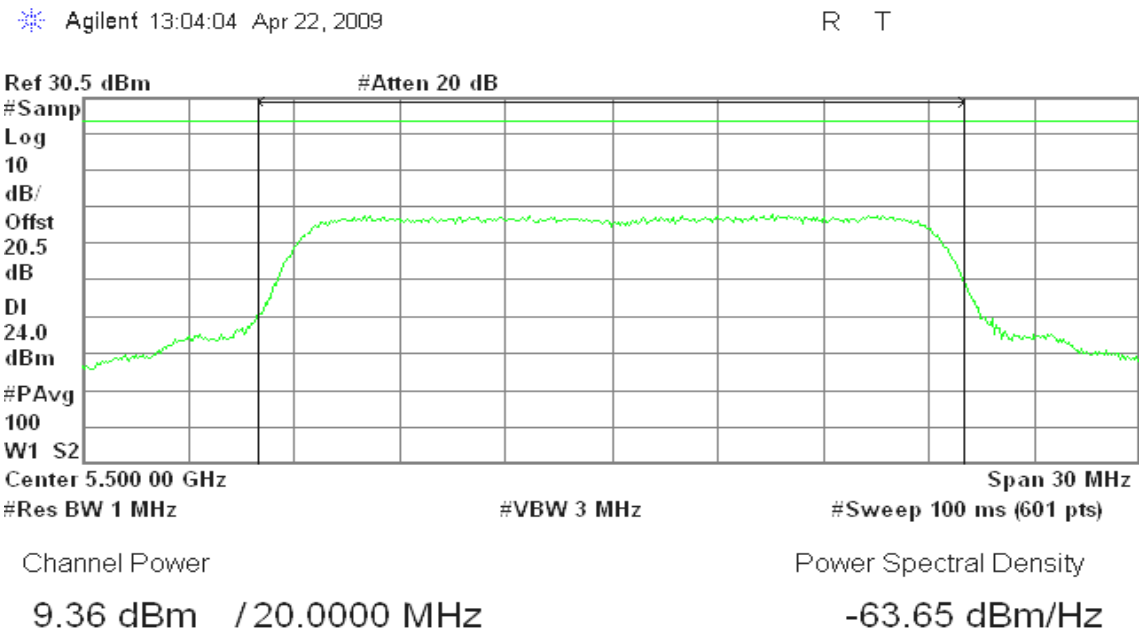
9.85 dBm / 20.0000 MHz

Power Spectral Density

-63.16 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

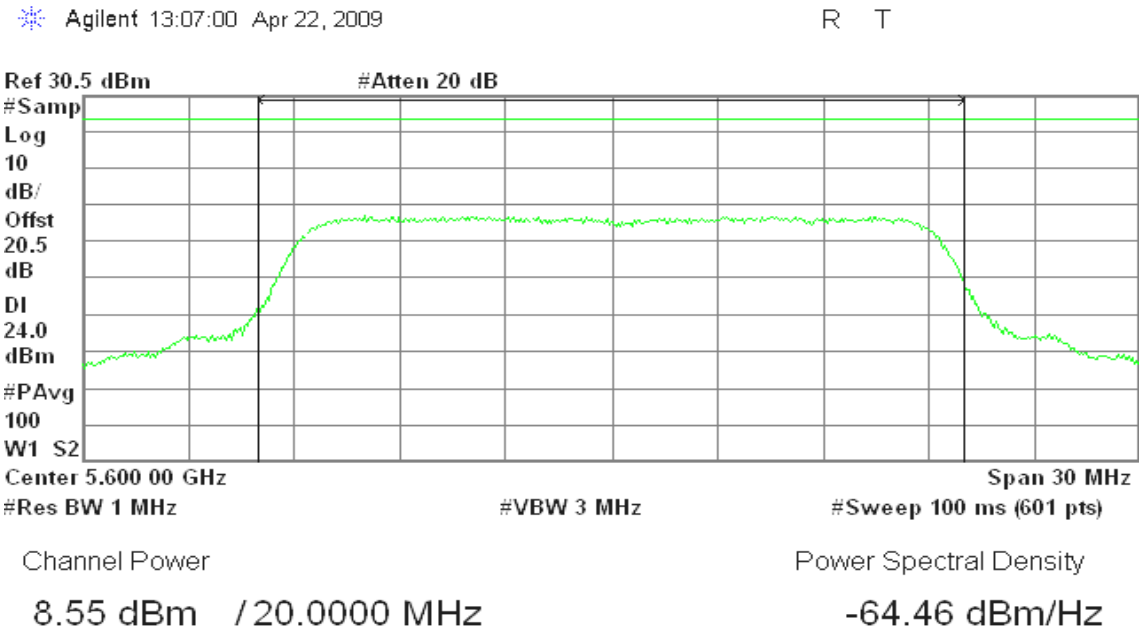
CH Low



Channel Power
9.36 dBm / 20.0000 MHz

Power Spectral Density
-63.65 dBm/Hz

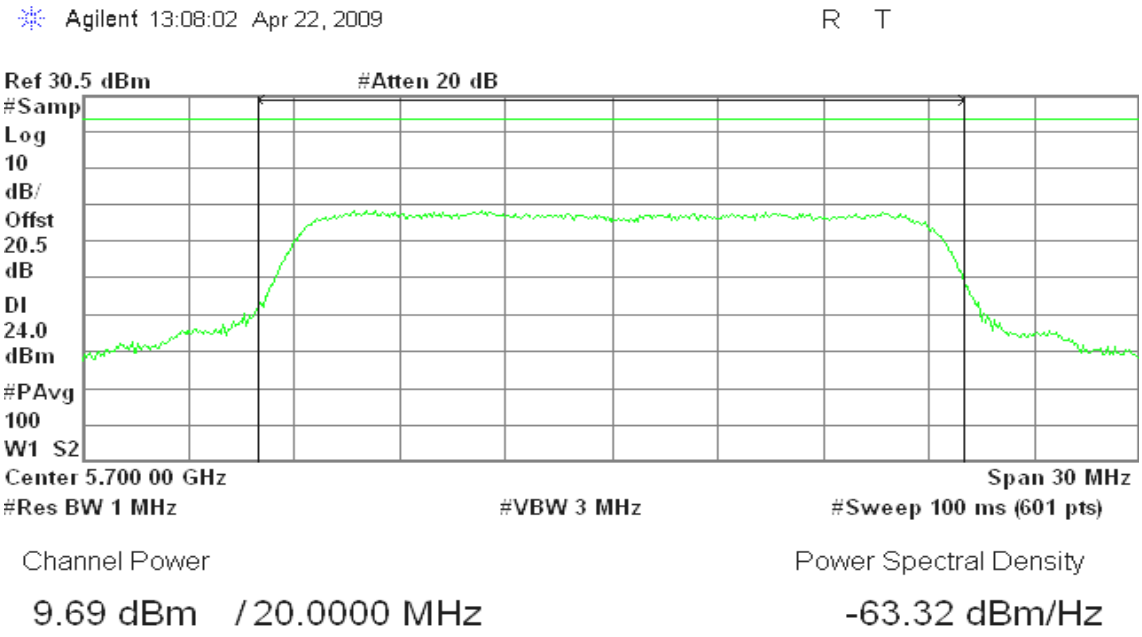
CH Mid



Channel Power
8.55 dBm / 20.0000 MHz

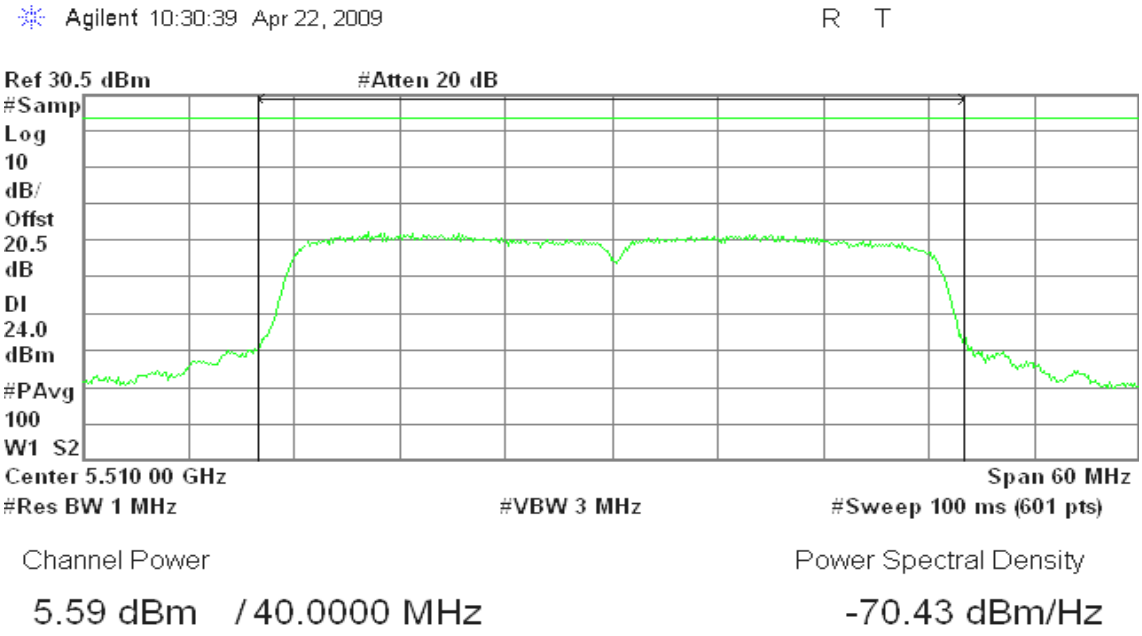
Power Spectral Density
-64.46 dBm/Hz

CH High

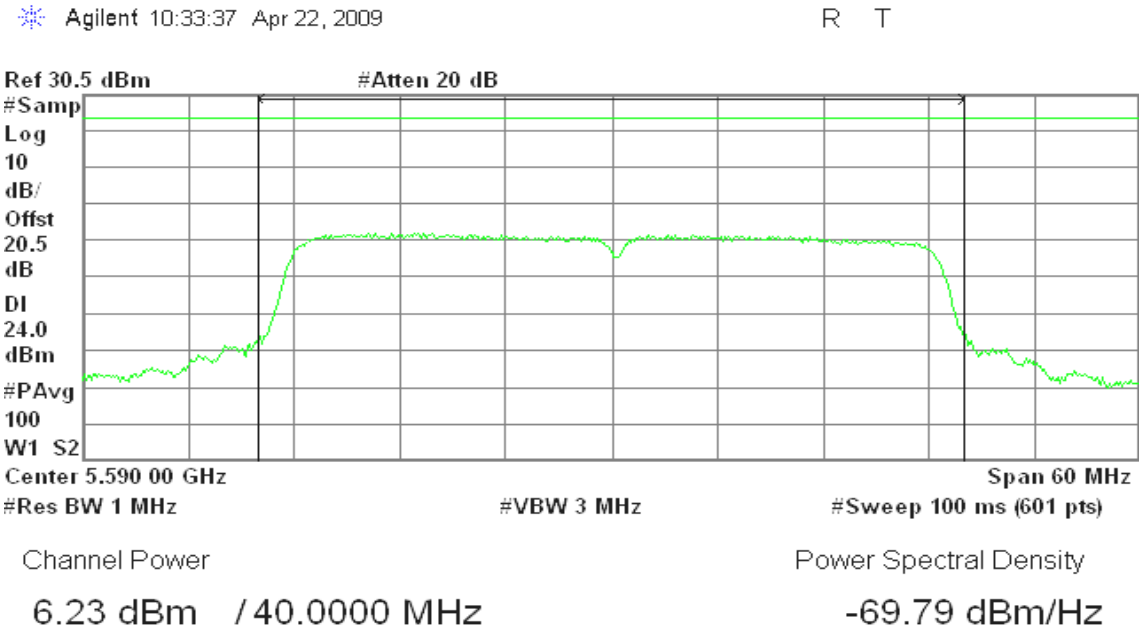


draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 0

CH Low



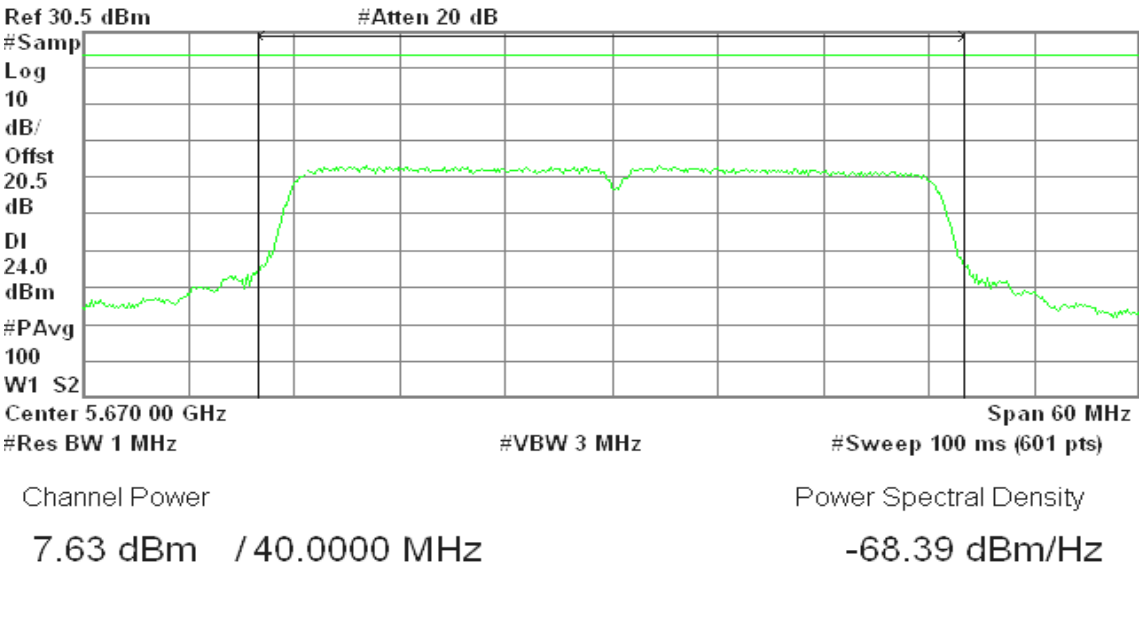
CH Mid



Channel Power
6.23 dBm /40.0000 MHz

Power Spectral Density
-69.79 dBm/Hz

CH High

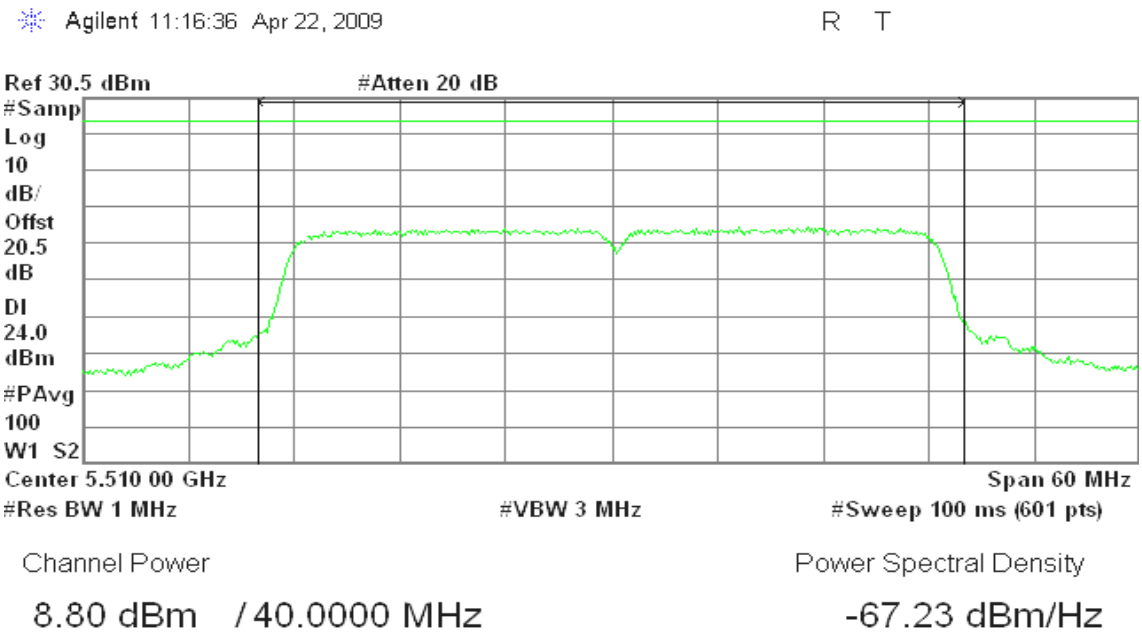


Channel Power
7.63 dBm /40.0000 MHz

Power Spectral Density
-68.39 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 1

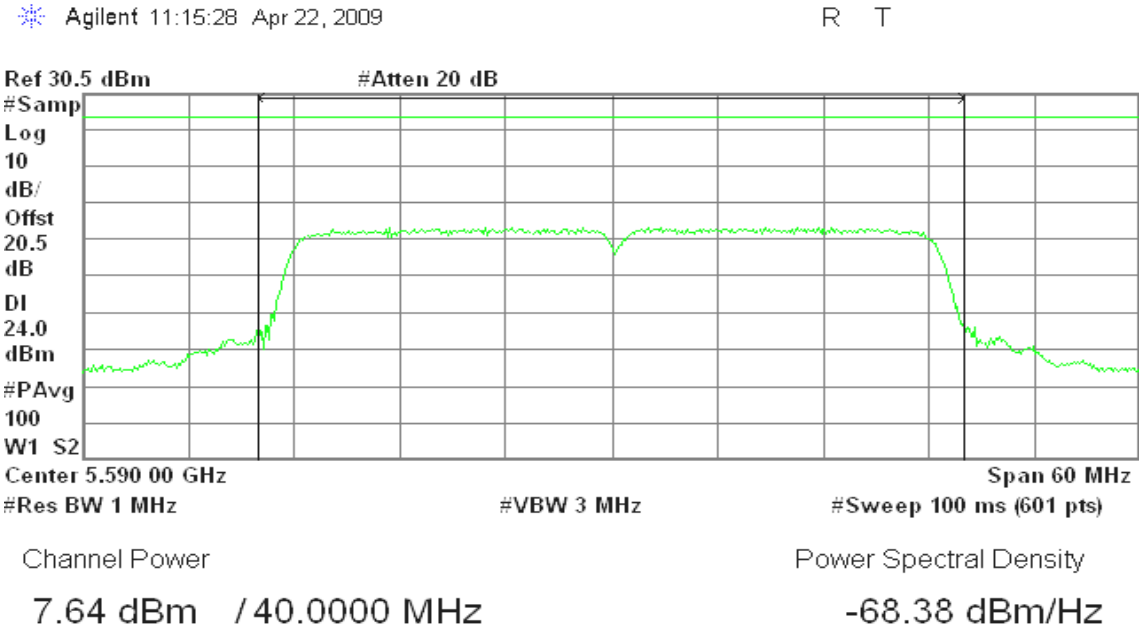
CH Low



Channel Power
8.80 dBm /40.0000 MHz

Power Spectral Density
-67.23 dBm/Hz

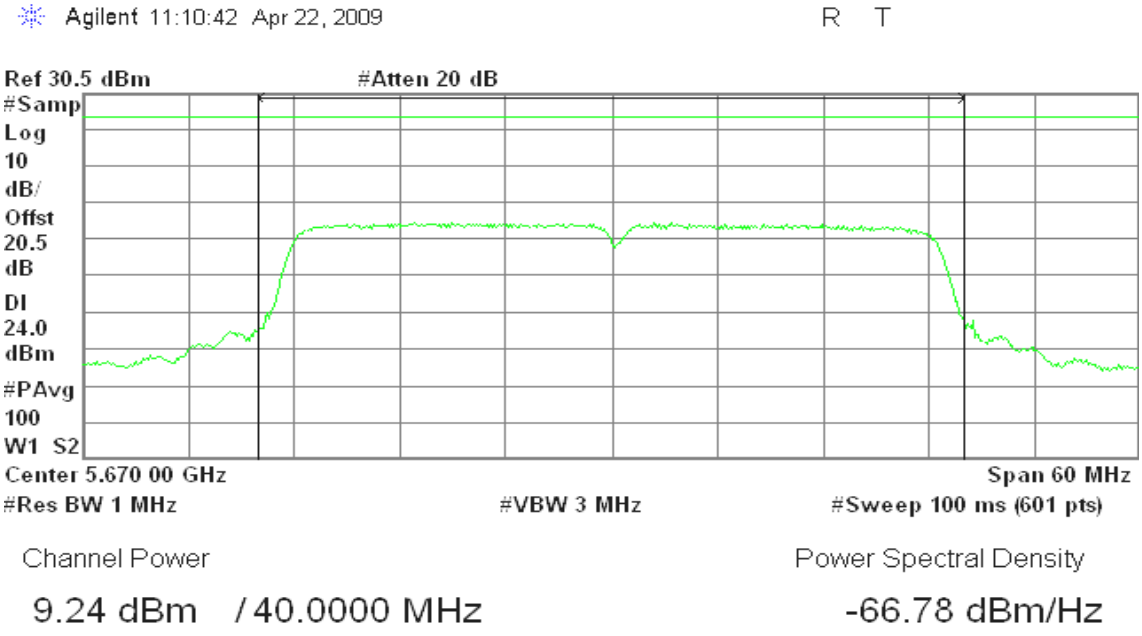
CH Mid



Channel Power
7.64 dBm /40.0000 MHz

Power Spectral Density
-68.38 dBm/Hz

CH High

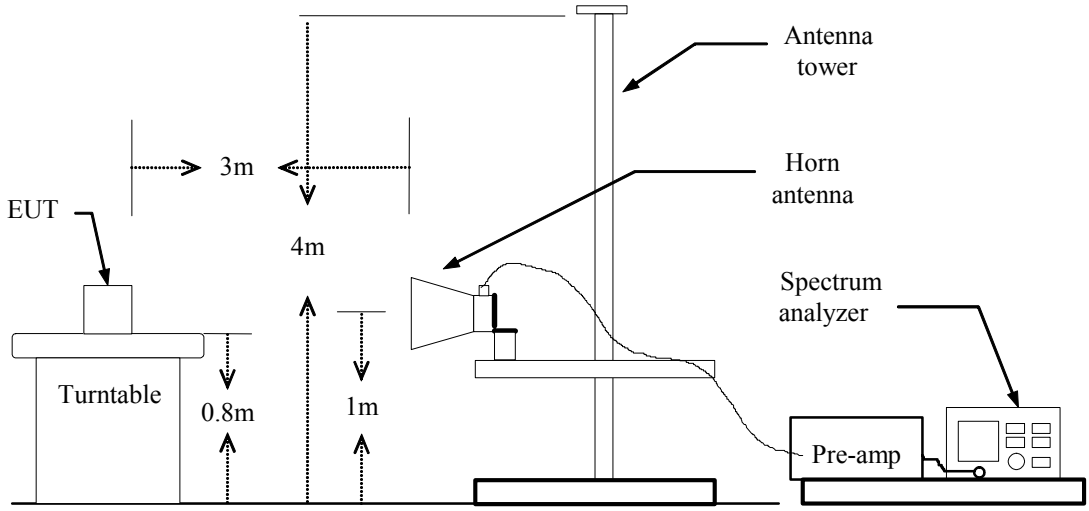

Agilent 11:10:42 Apr 22, 2009
R T
Ref 30.5 dBm
#Atten 20 dB
#Samp
Log
10
dB/
Offst
20.5
dB
Dl
24.0
dBm
#PAvg
100
W1 S2
Center 5.670 00 GHz
Span 60 MHz
#Res BW 1 MHz
#VBW 3 MHz
#Sweep 100 ms (601 pts)
Channel Power
9.24 dBm /40.0000 MHz
Power Spectral Density
-66.78 dBm/Hz

7.3 BAND EDGES MEASUREMENT

LIMIT

According to §15.407(b),
(1) The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.
(2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency block edges as the design of the equipment permits.

Test Configuration



TEST PROCEDURE

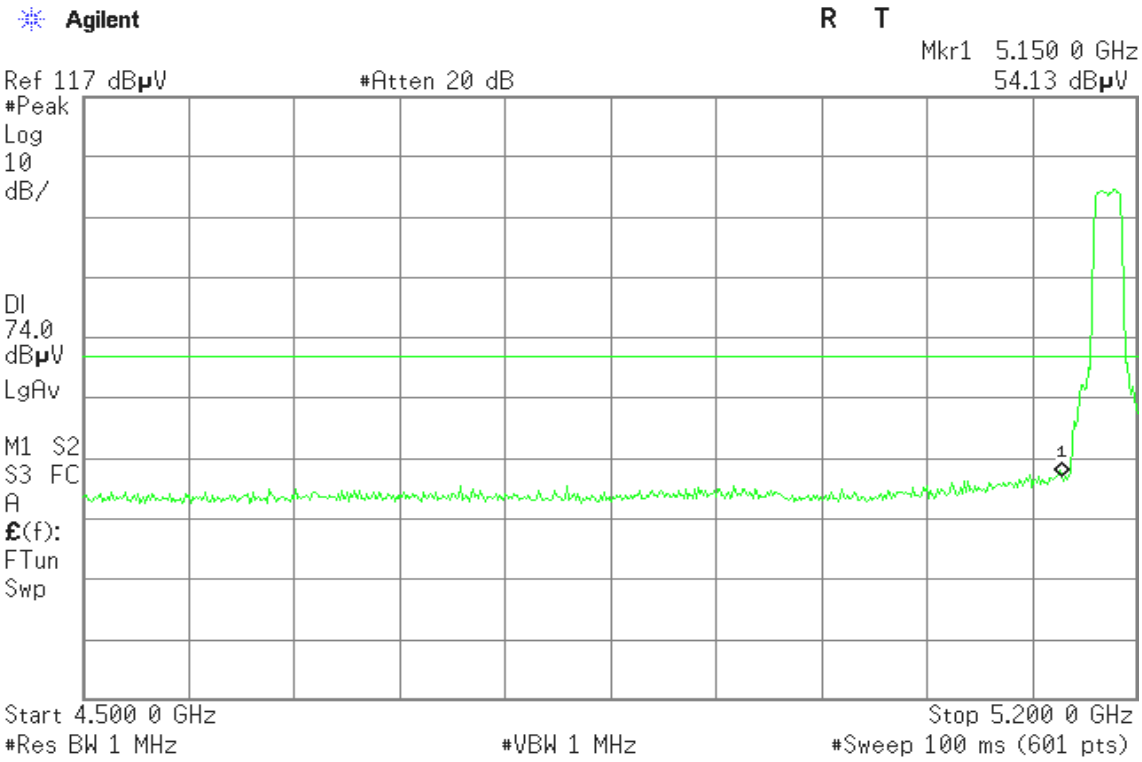
1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the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

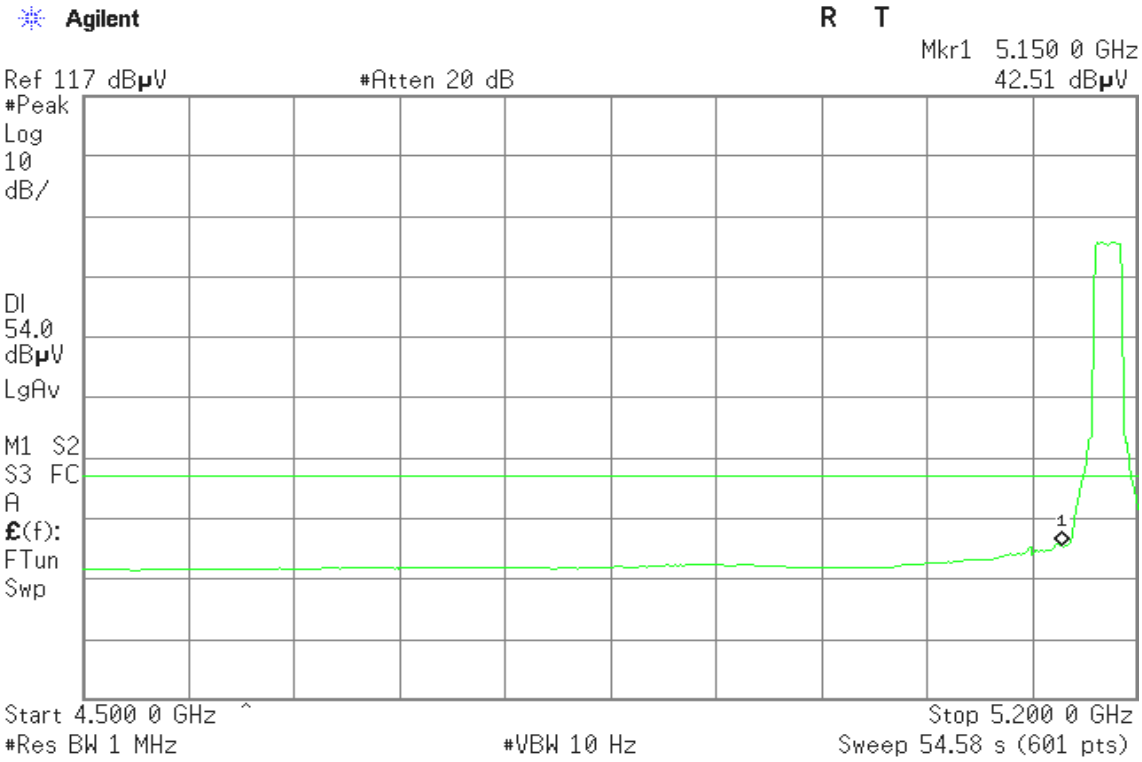
Refer to attach spectrum analyzer data chart.

Band Edges (IEEE 802.11a mode / 5180 MHz)

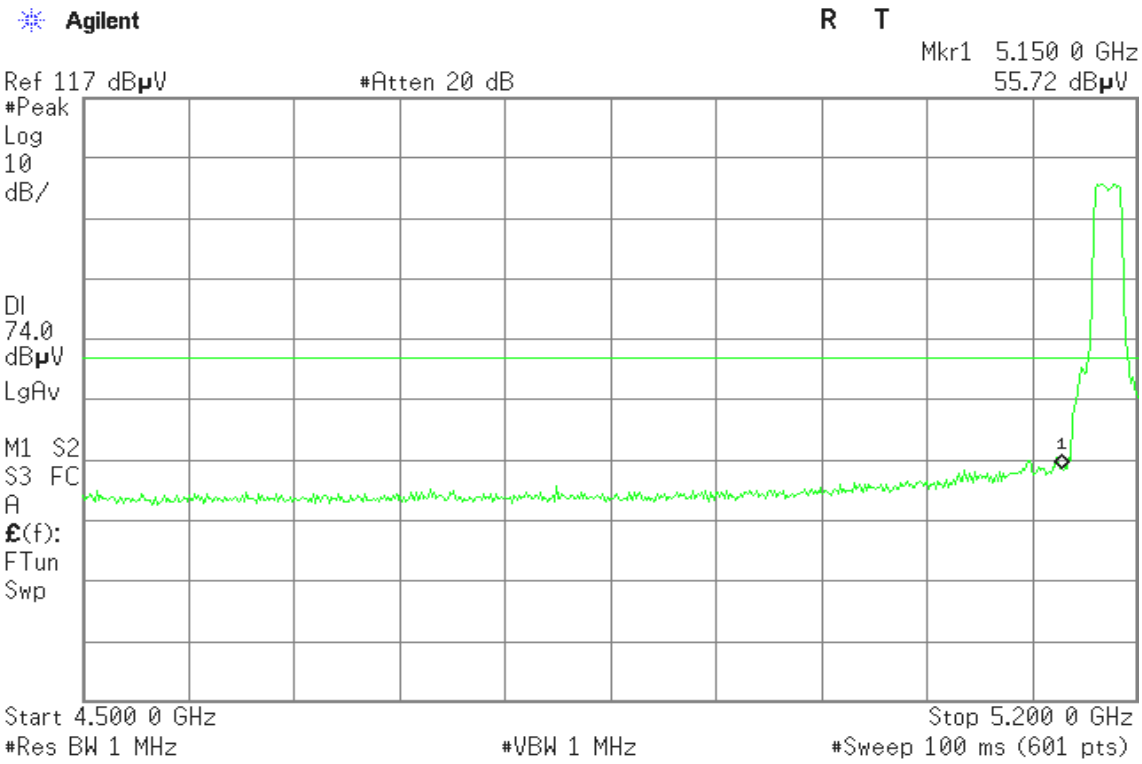
Detector mode: Peak **Polarity: Vertical**



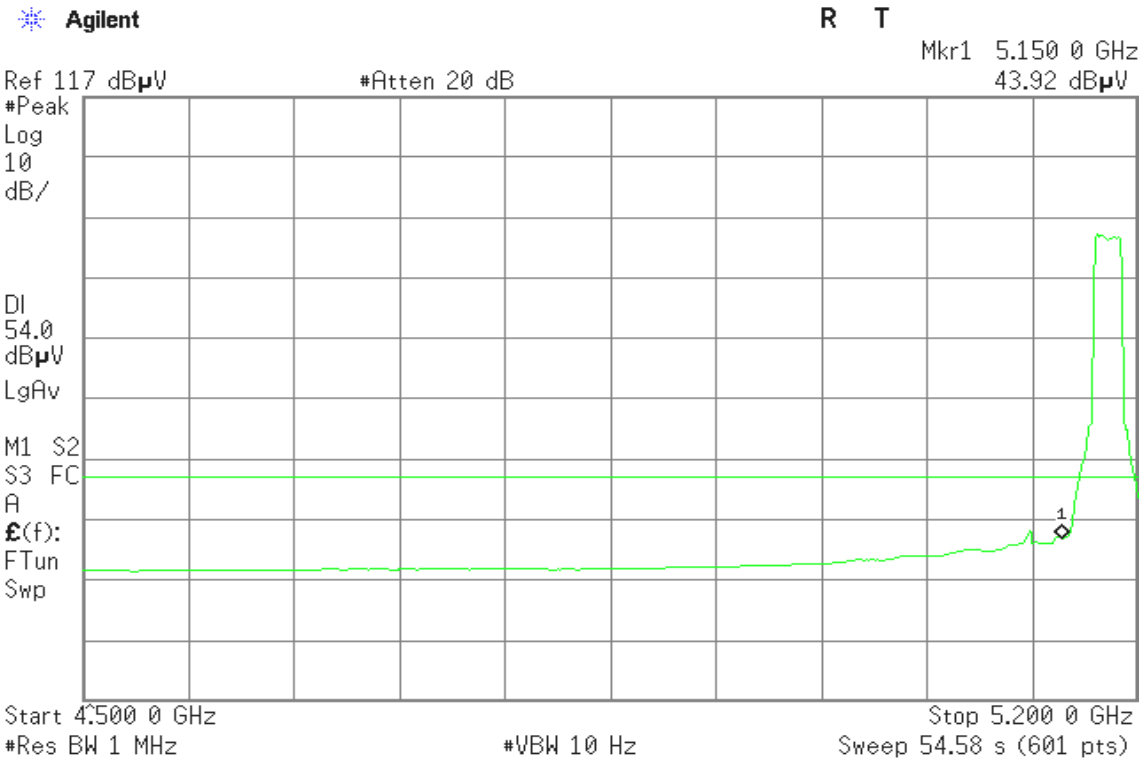
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

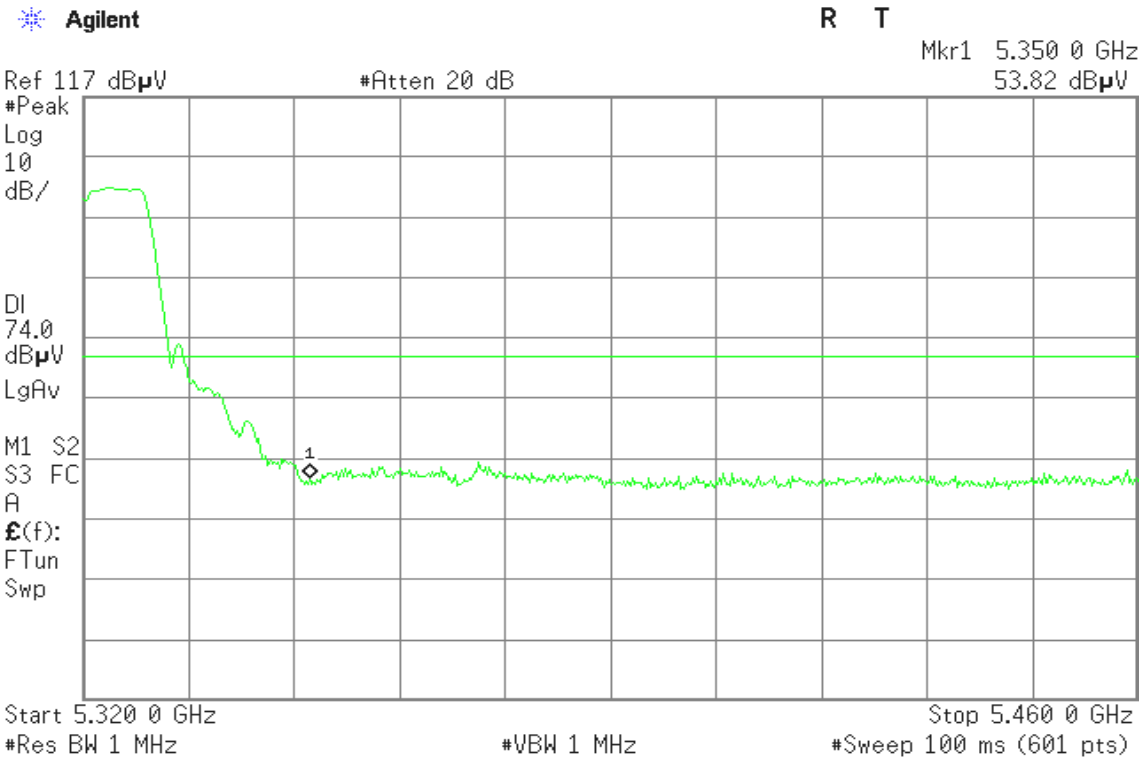


Detector mode: Average **Polarity: Horizontal**

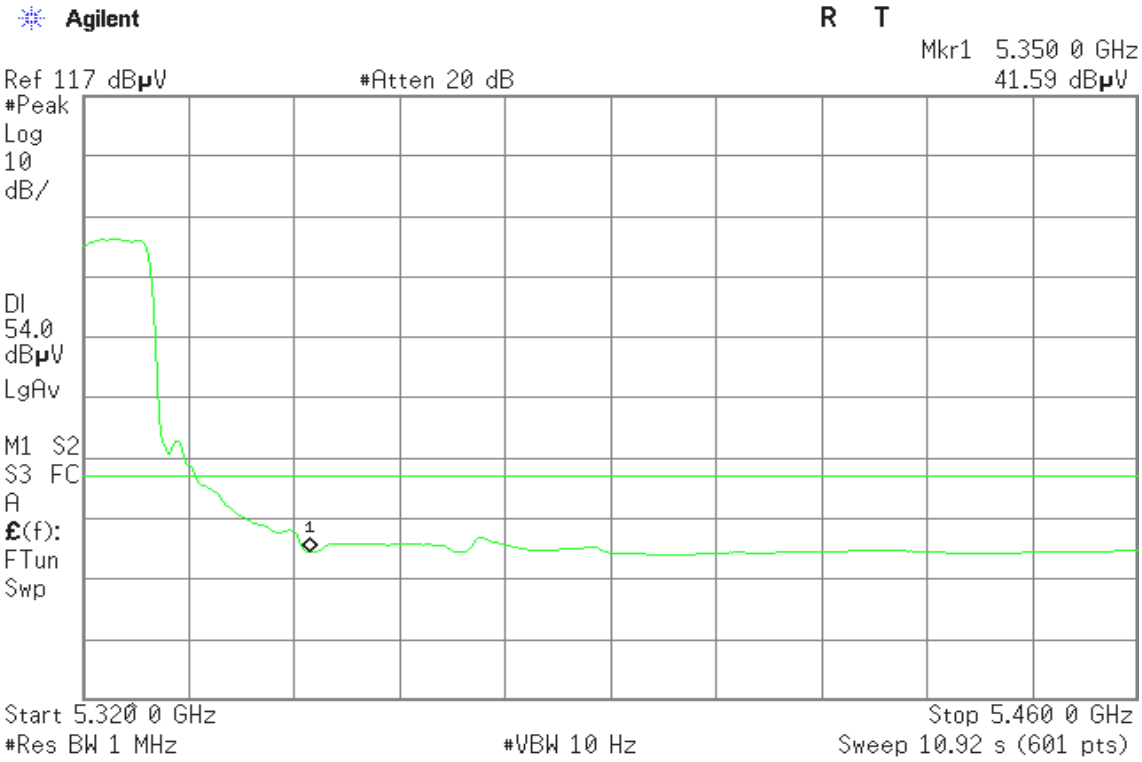


Band Edges (IEEE 802.11a mode / 5320 MHz)

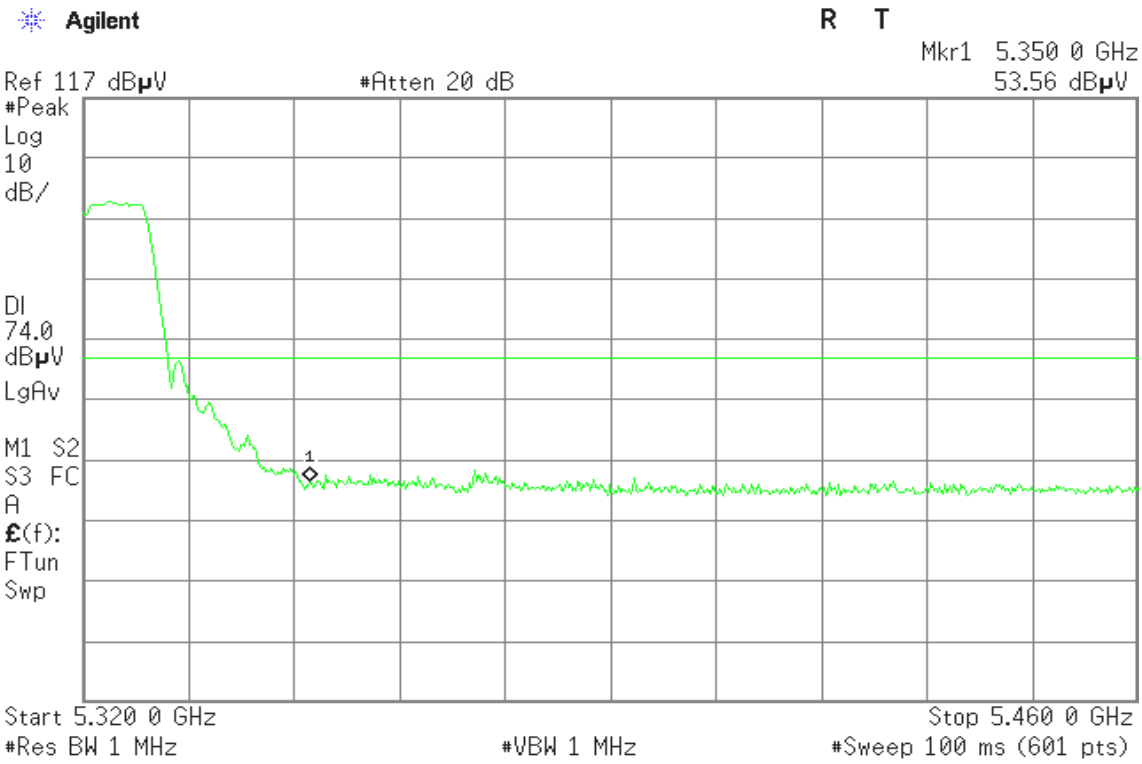
Detector mode: Peak **Polarity: Vertical**



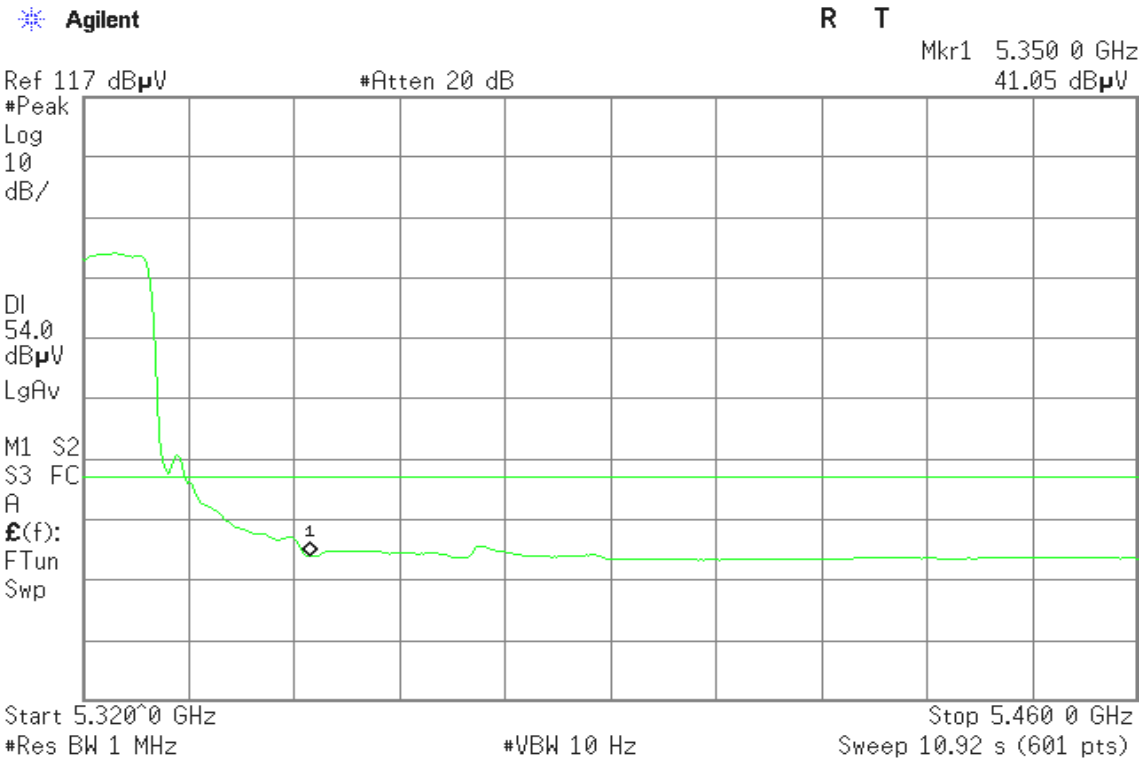
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

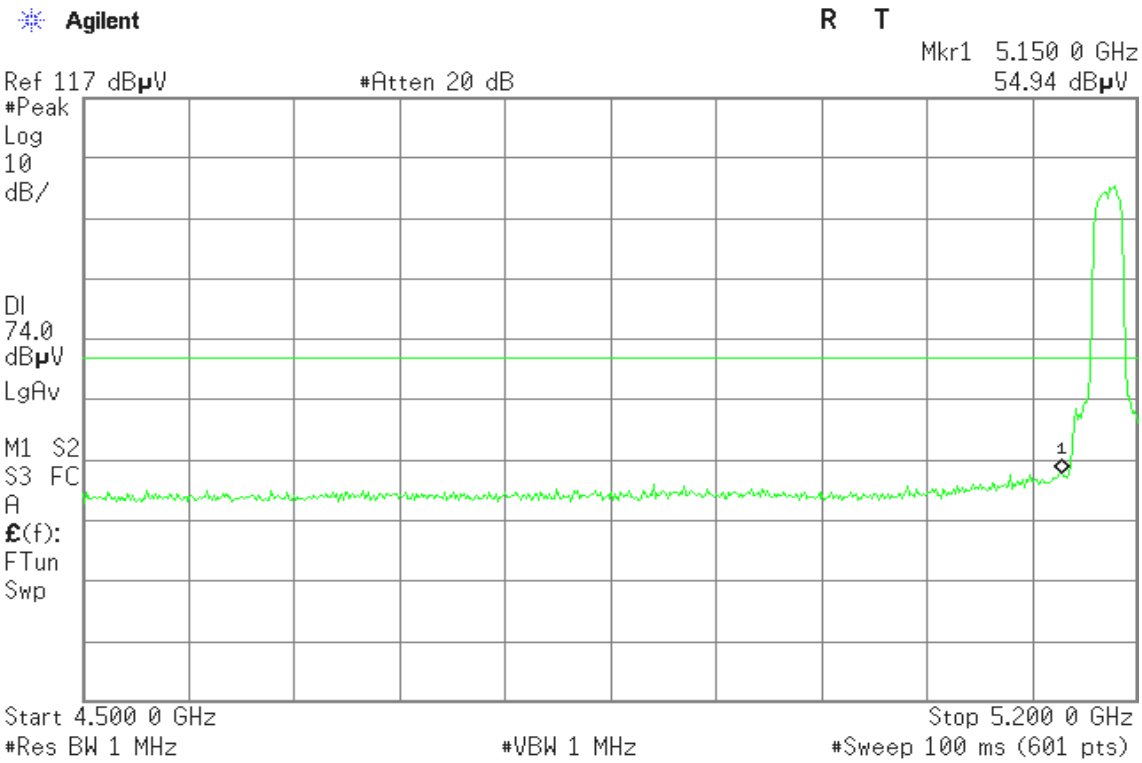


Detector mode: Average **Polarity: Horizontal**

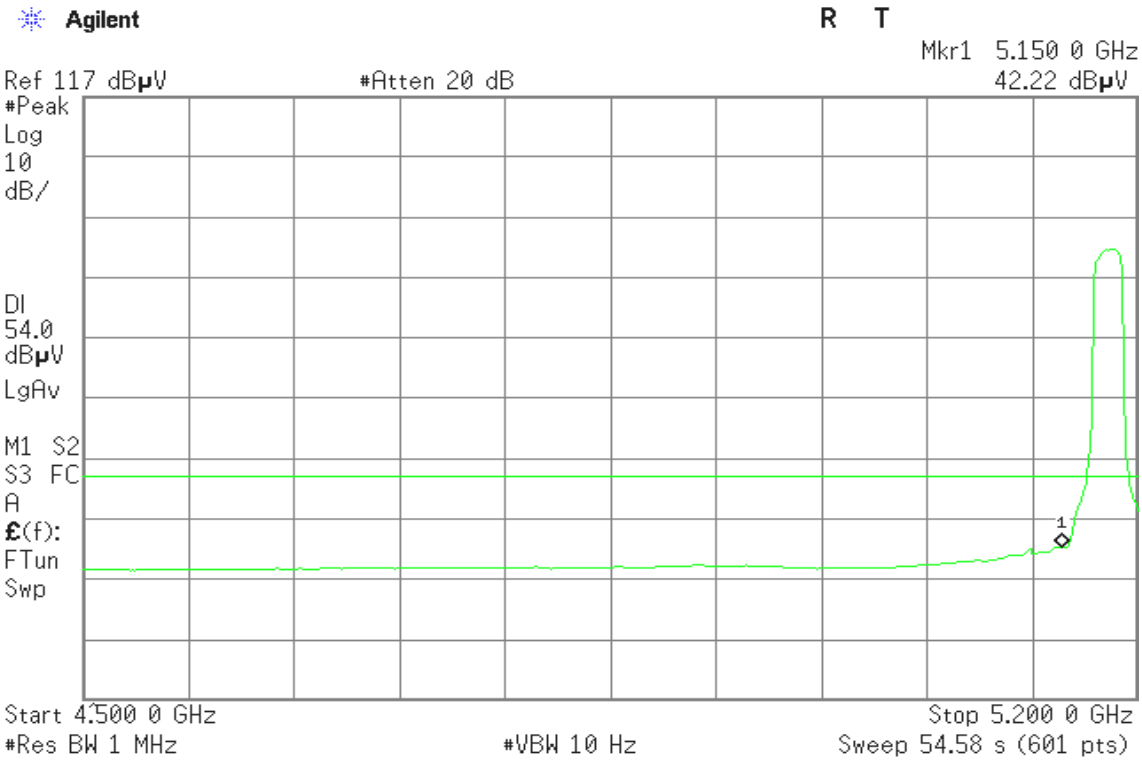


Band Edges (draft 802.11n Standard-20 MHz Channel mode / 5180 MHz)

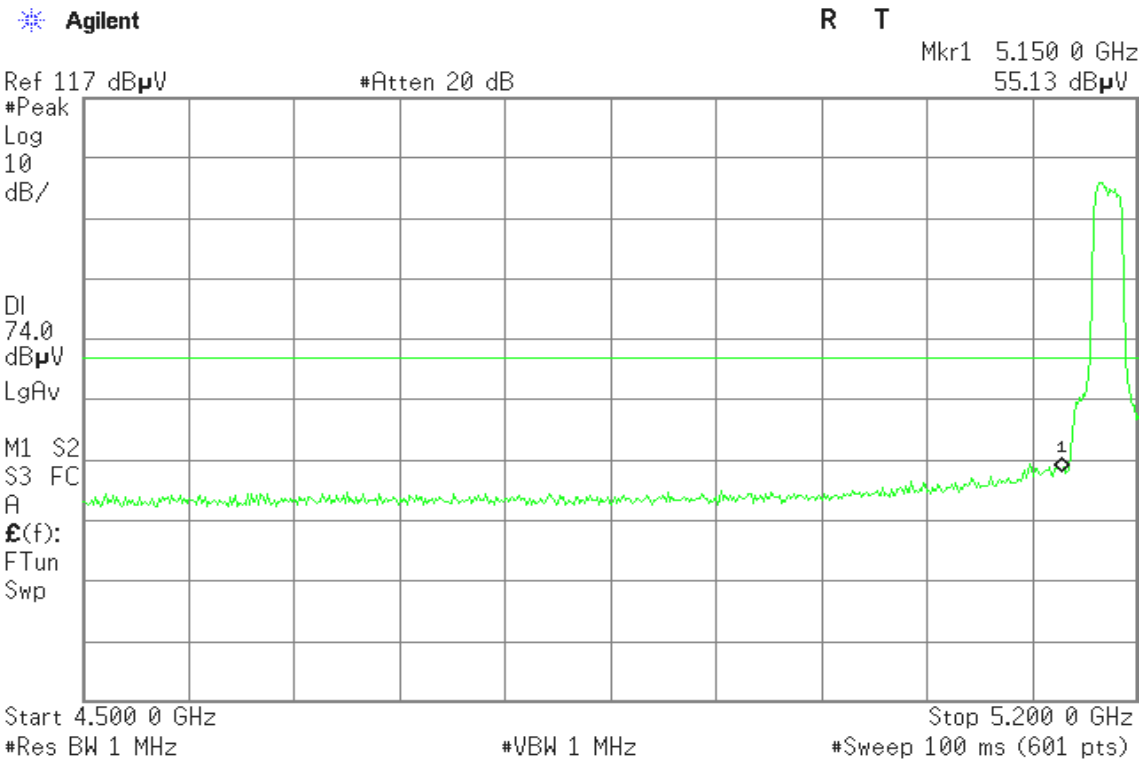
Detector mode: Peak **Polarity: Vertical**



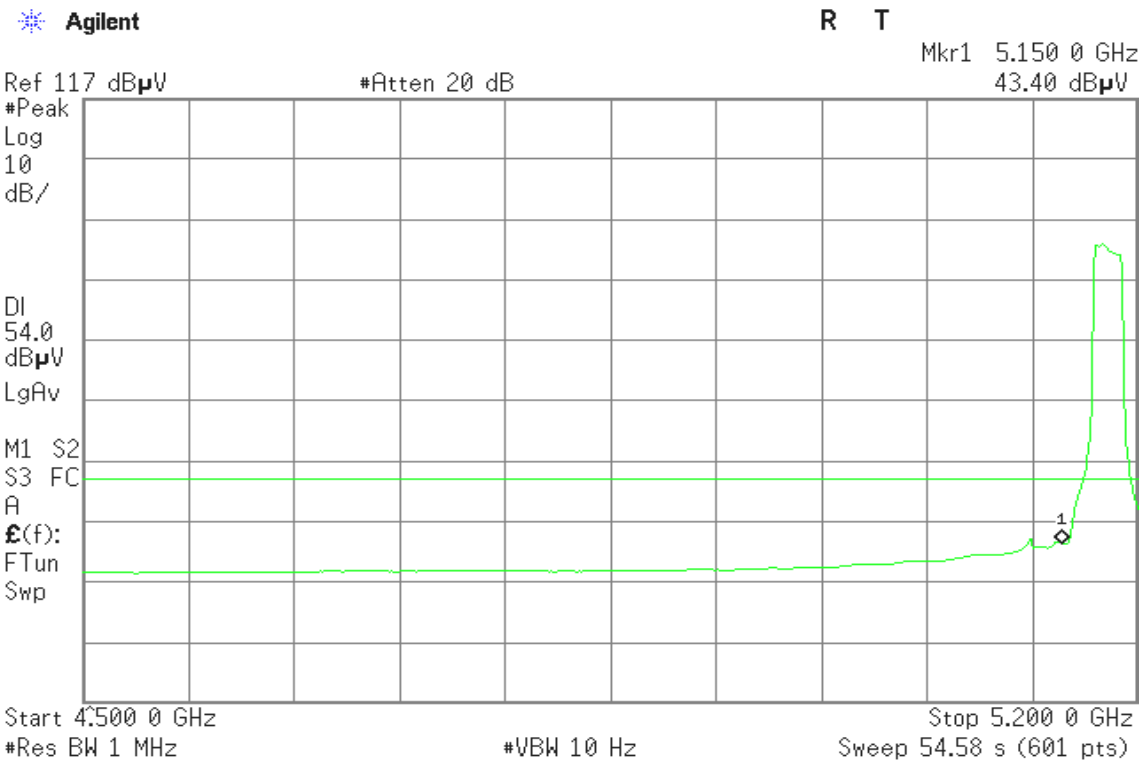
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

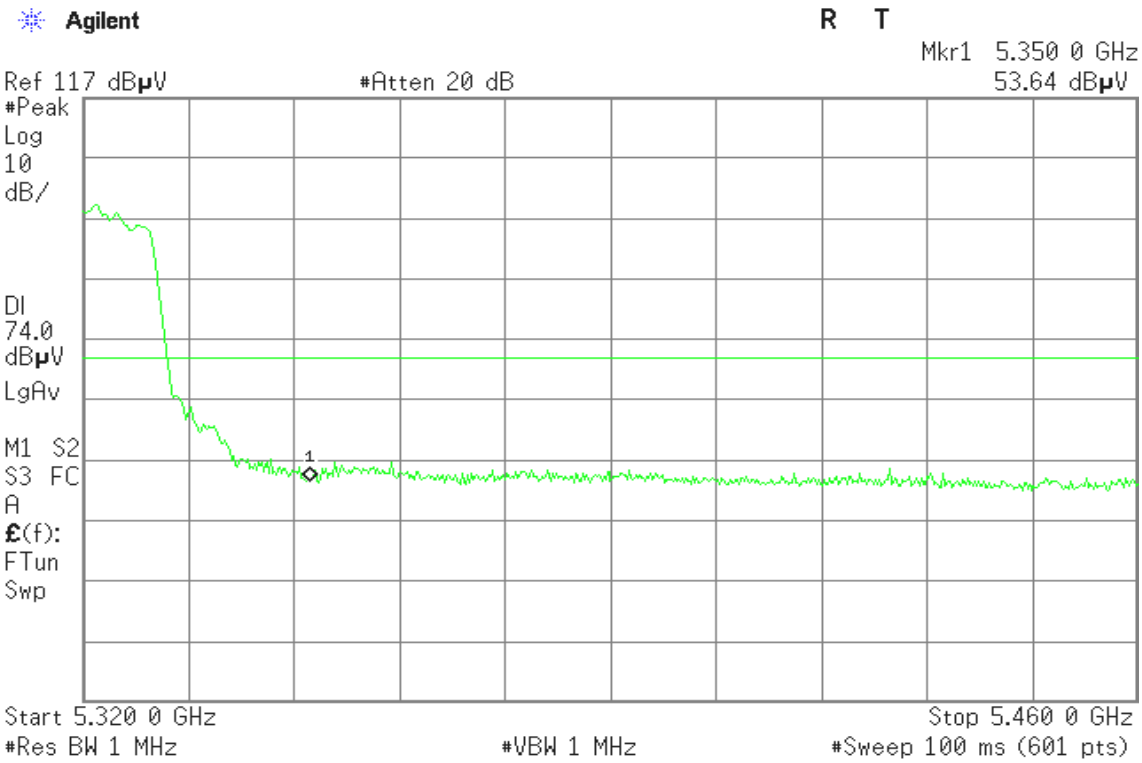


Detector mode: Average **Polarity: Horizontal**

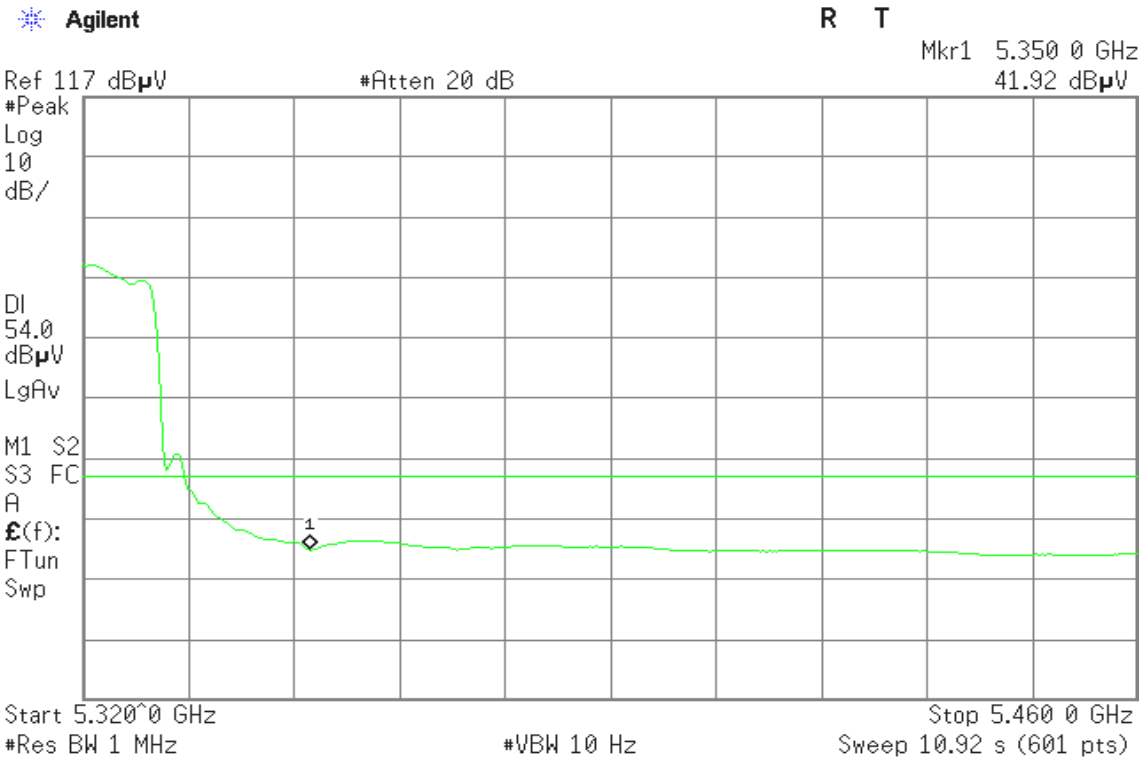


Band Edges (draft 802.11n Standard-20 MHz Channel mode / 5320 MHz)

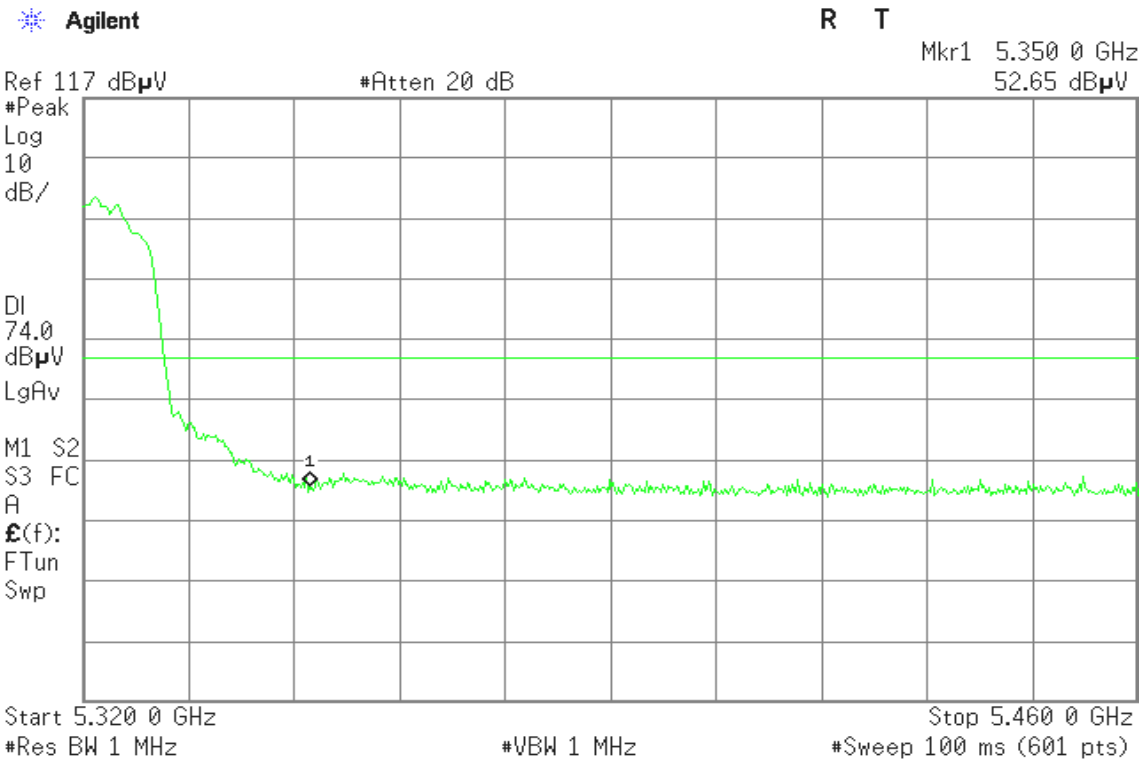
Detector mode: Peak **Polarity: Vertical**



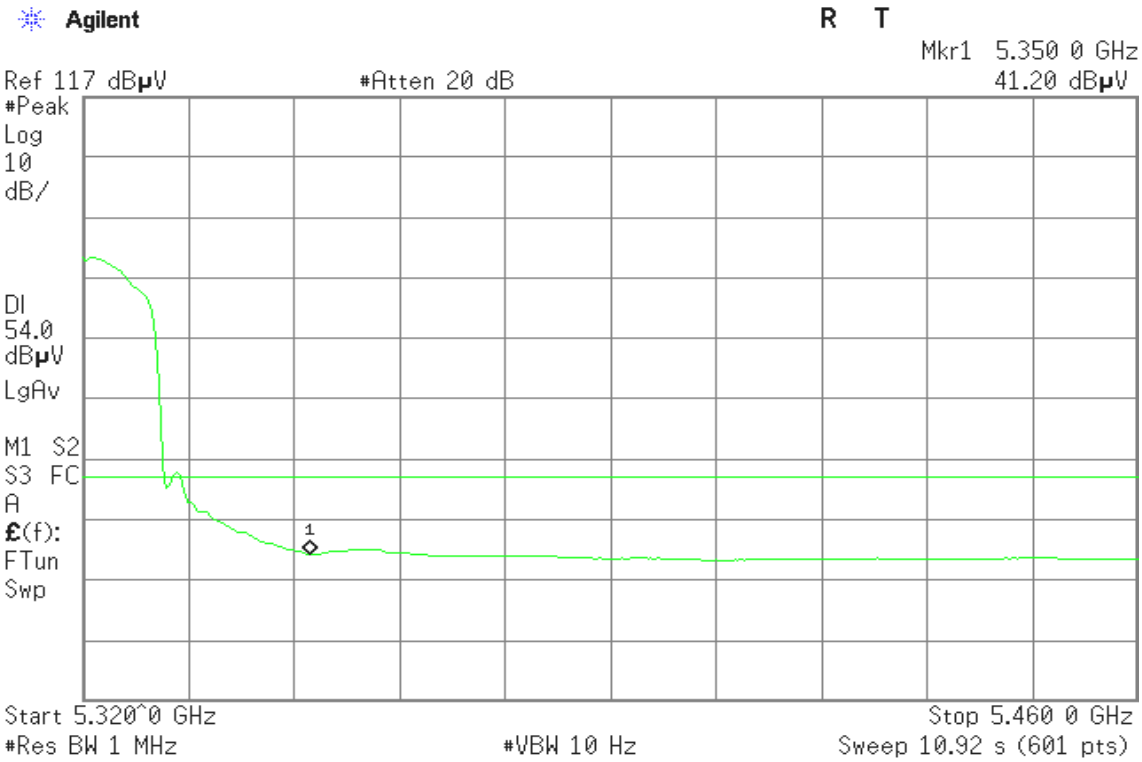
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

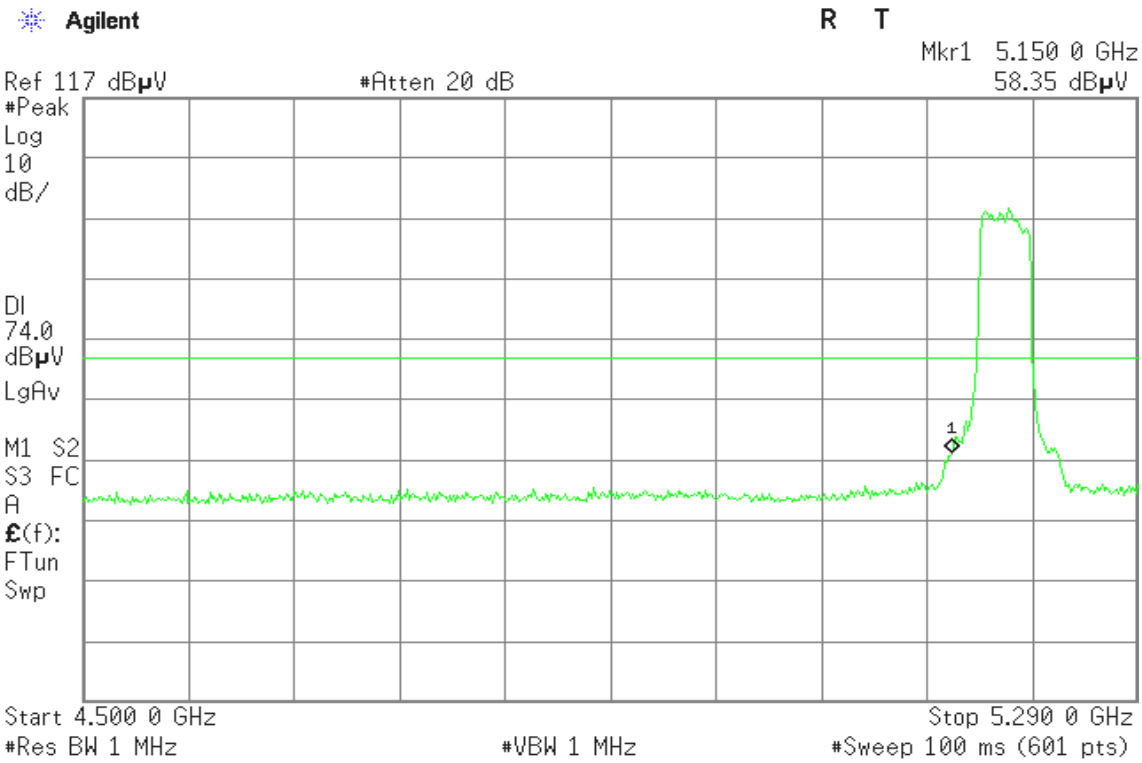


Detector mode: Average **Polarity: Horizontal**

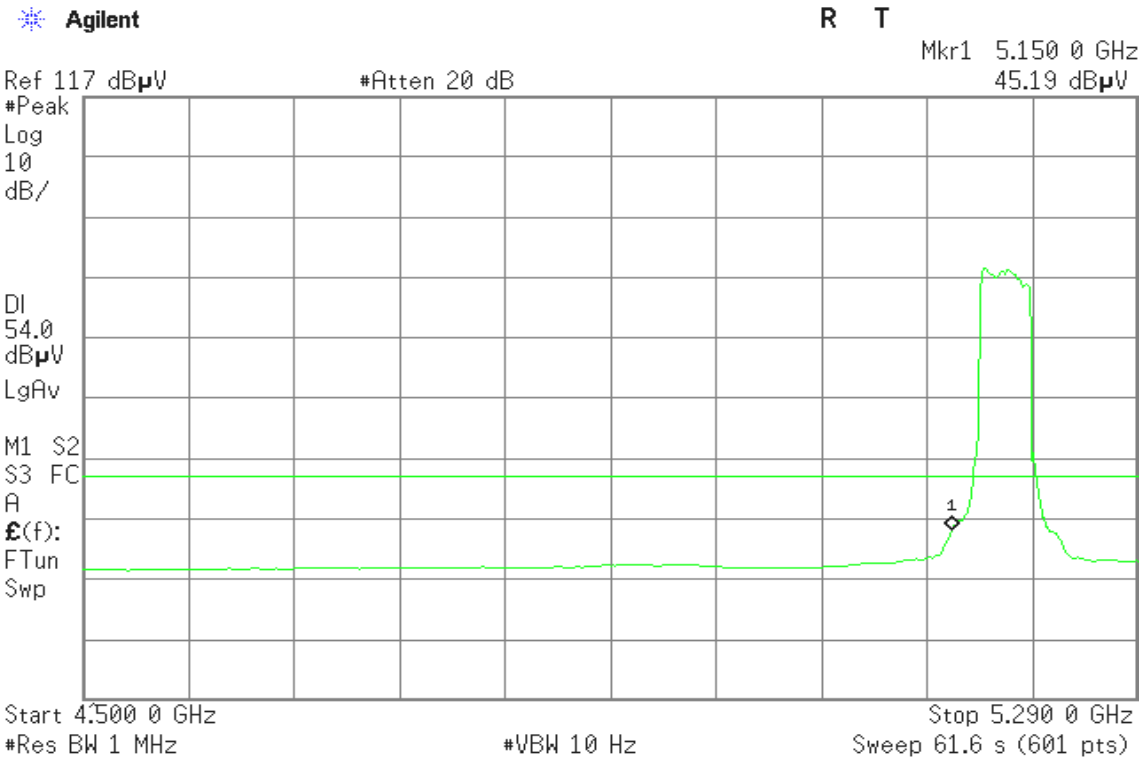


Band Edges (draft 802.11n Wide-40 MHz Channel mode / 5190 MHz)

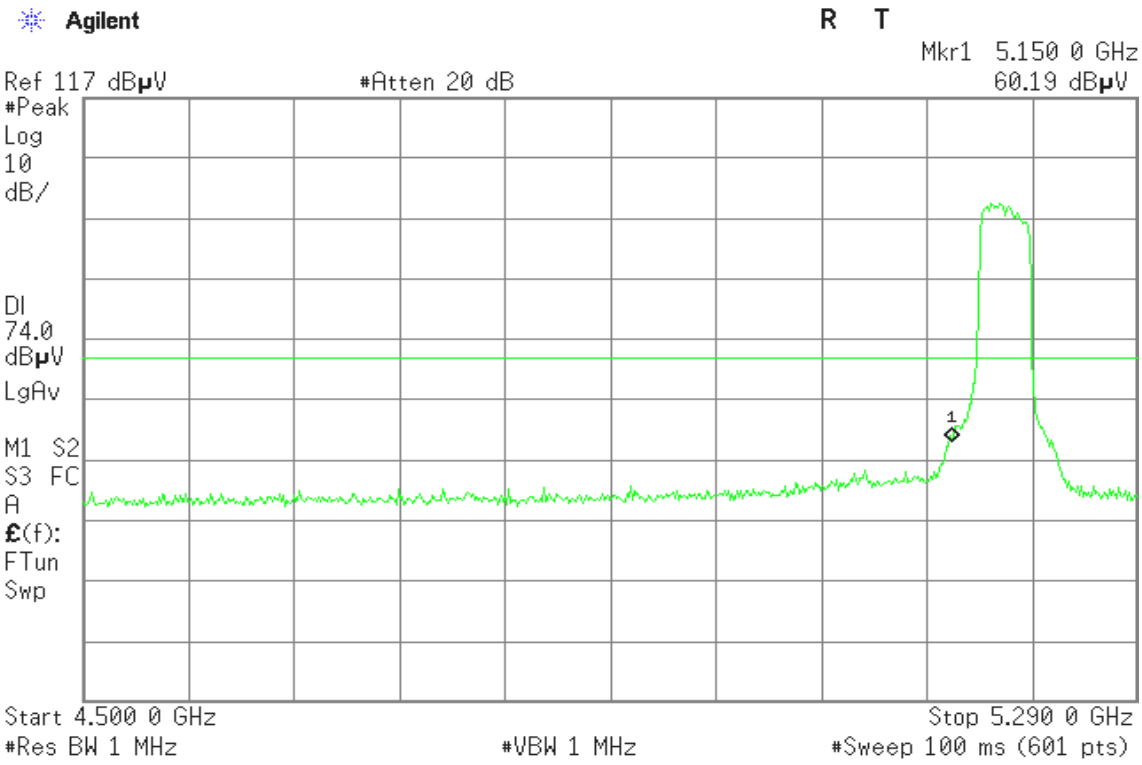
Detector mode: Peak **Polarity: Vertical**



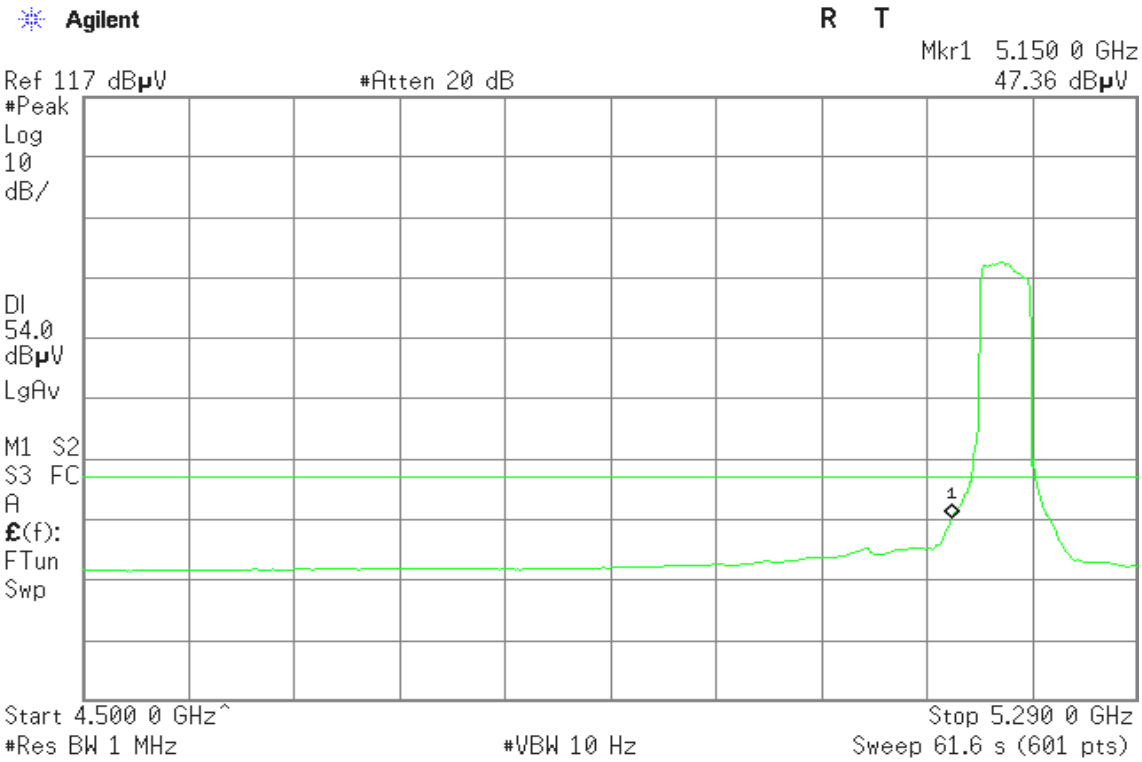
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

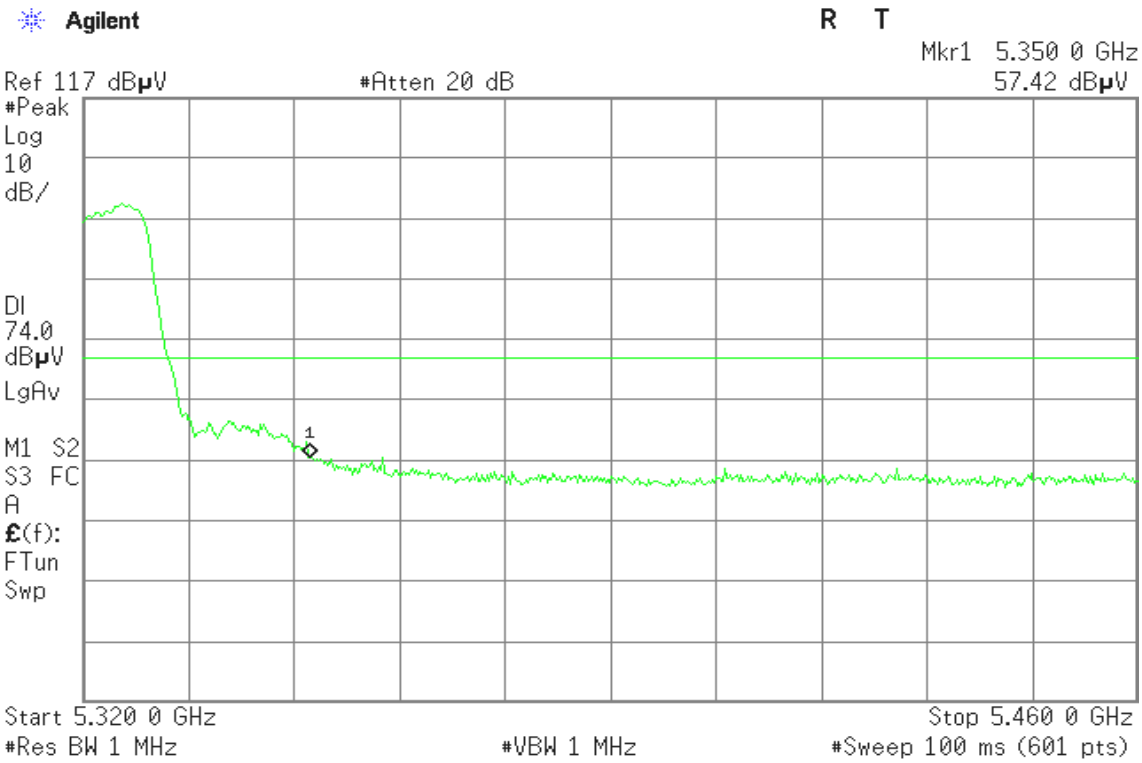


Detector mode: Average **Polarity: Horizontal**

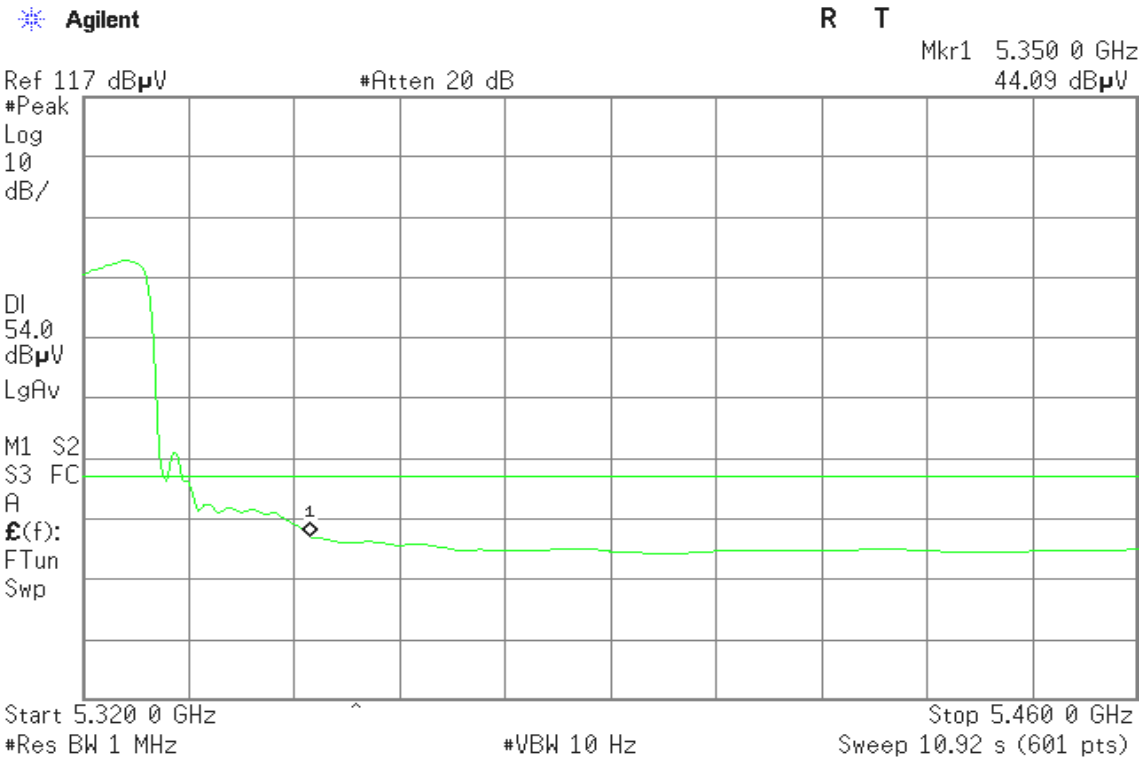


Band Edges (draft 802.11n Wide-40 MHz Channel mode / CH 5310 MHz)

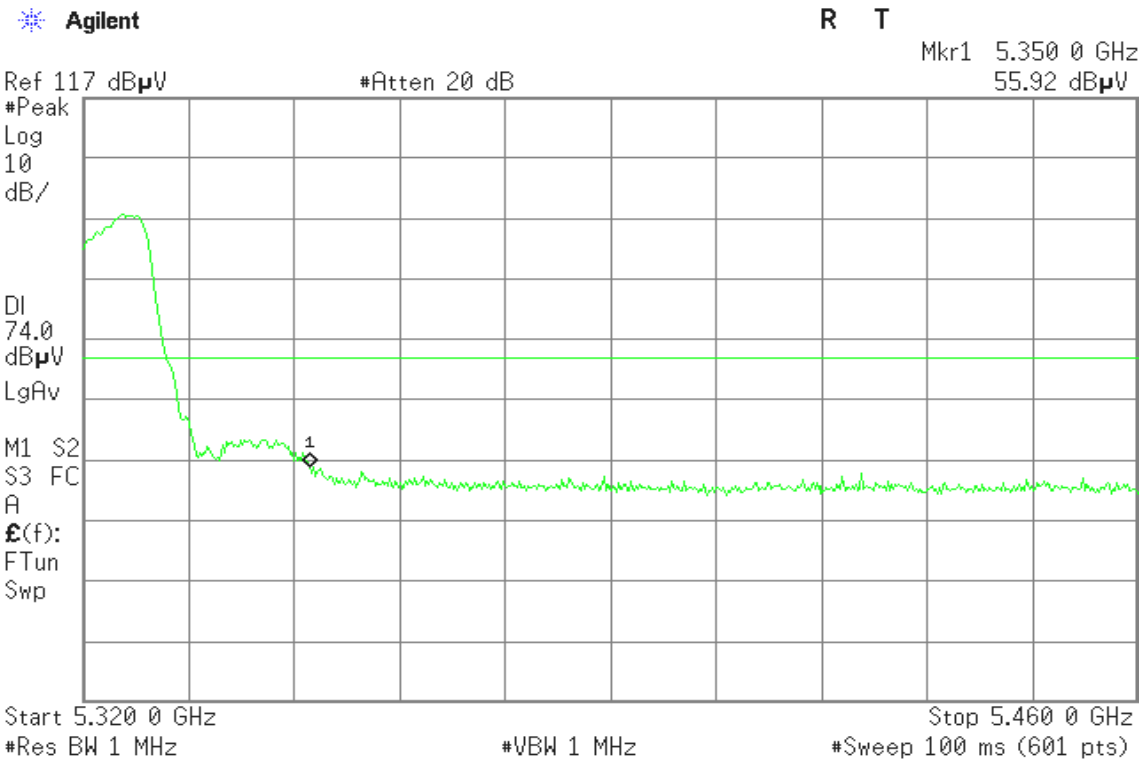
Detector mode: Peak **Polarity: Vertical**



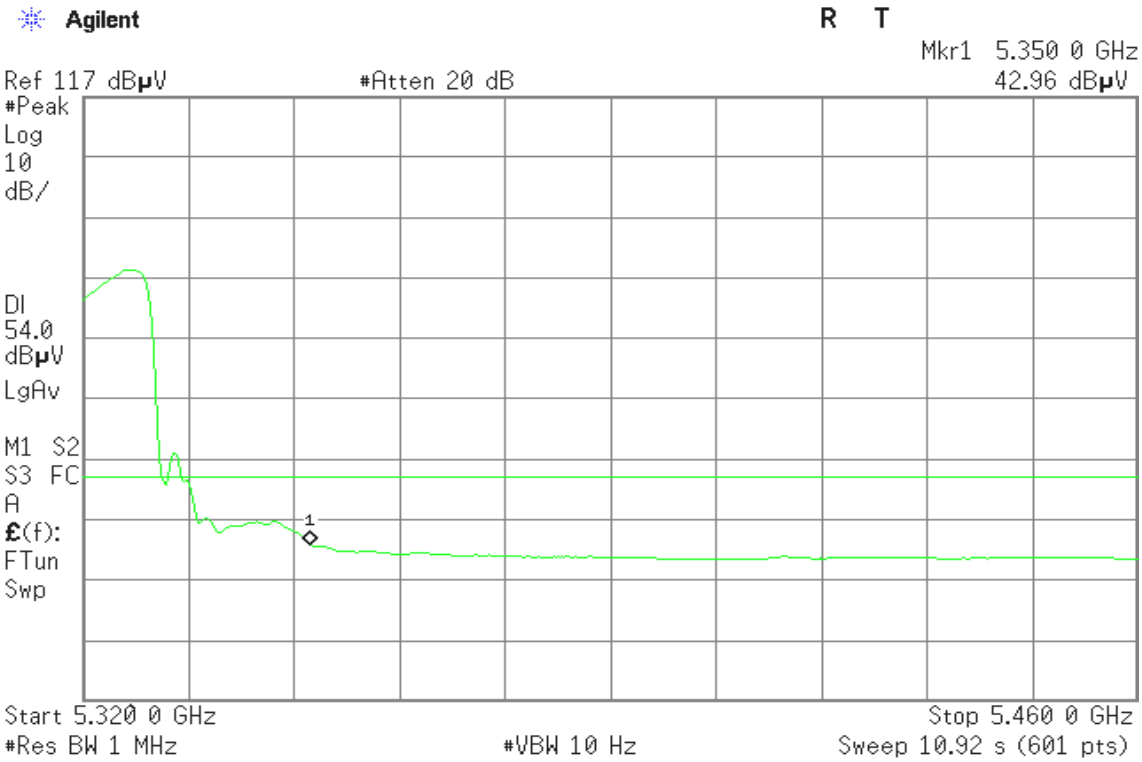
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



7.4 PEAK POWER SPECTRAL DENSITY

LIMIT

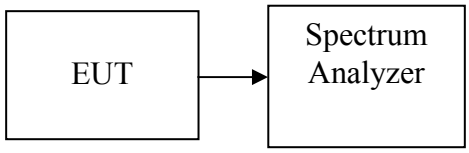
According to §15.407(a),

(1) For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4dBm in any 1MHz band.

(2) For the band 5.25-5.35 GHz, the peak power spectral density shall not exceed 11dBm in any 1MHz band.

If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

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 = 1MHz, VBW = 3MHz, Span = Sweep= AUTO
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 802.11a mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5180	-1.912	4.00	-5.91	PASS
Mid	5220	-1.417	4.00	-5.42	PASS
High	5240	-1.046	4.00	-5.05	PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5180	-3.168	-2.967	-0.06	4.00	-4.06	PASS
Mid	5220	-3.699	-3.090	-0.37	4.00	-4.37	PASS
High	5240	-3.697	-2.568	-0.09	4.00	-4.09	PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5190	-6.311	-5.118	-2.66	4.00	-6.66	PASS
High	5230	-6.244	-6.356	-3.29	4.00	-7.29	PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz with combiner

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5180	-0.614	4.00	-4.61	PASS
Mid	5220	-0.765	4.00	-4.77	PASS
High	5240	0.010	4.00	-3.99	PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz with combiner

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5190	-0.614	4.00	-4.61	PASS
High	5230	-3.629	4.00	-7.63	PASS

Remark: *Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 1 PPSD /10))*

Test mode: IEEE 802.11a mode/ 5260 ~ 5320MHz

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5260	0.041	11.00	-10.96	PASS
Mid	5280	-0.532	11.00	-11.53	PASS
High	5320	-1.689	11.00	-12.69	PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5260	-3.587	-1.990	0.29	11.00	-10.71	PASS
Mid	5280	-2.780	-2.449	0.40	11.00	-10.60	PASS
High	5320	-2.004	-3.319	0.40	11.00	-10.60	PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5270	-4.306	-5.366	-1.79	11.00	-12.79	PASS
High	5310	-4.688	-4.691	-1.68	11.00	-12.68	PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz MHz with combiner

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5260	0.438	11.00	-10.56	PASS
Mid	5280	-0.065	11.00	-11.07	PASS
High	5320	-0.075	11.00	-11.08	PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz with combiner

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5270	-2.835	11.00	-13.84	PASS
High	5310	-3.062	11.00	-14.06	PASS

Remark: *Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 1 PPSD /10))*

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5500	-4.153	11.00	-15.15	PASS
Mid	5600	-2.658	11.00	-13.66	PASS
High	5700	-2.008	11.00	-13.01	PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5500	-1.915	-2.042	1.03	11.00	-9.97	PASS
Mid	5600	-3.124	-2.302	0.32	11.00	-10.68	PASS
High	5700	-1.925	-2.088	1.00	11.00	-10.00	PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5510	-7.567	-5.369	-3.32	11.00	-14.32	PASS
Mid	5590	-7.460	-6.289	-3.82	11.00	-14.82	PASS
High	5670	-6.364	-4.851	-2.53	11.00	-13.53	PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz MHz with combiner

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5500	-1.632	11.00	-12.63	PASS
Mid	5600	0.109	11.00	-10.89	PASS
High	5700	1.437	11.00	-9.56	PASS

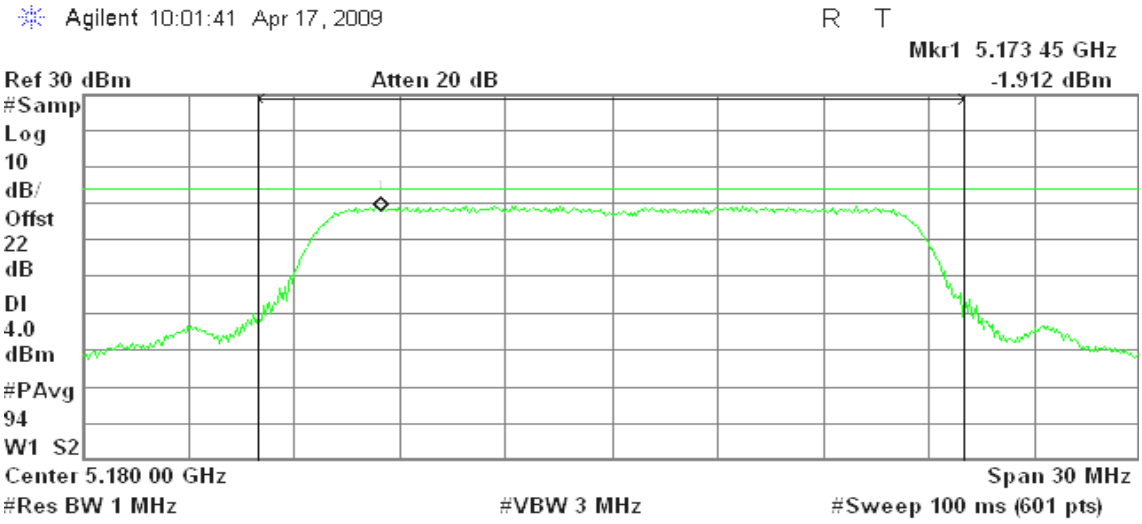
Test mode: draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz with combiner

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5510	-6.468	11.00	-17.47	PASS
Mid	5590	-4.409	11.00	-15.41	PASS
High	5670	-2.720	11.00	-13.72	PASS

Remark: *Total PPSD (dBm) = 10*LOG(10^(Chain 0 PPSD / 10)+10^(Chain 1 PPSD /10))*

Test Plot
IEEE 802.11a mode / 5180 ~ 5240MHz

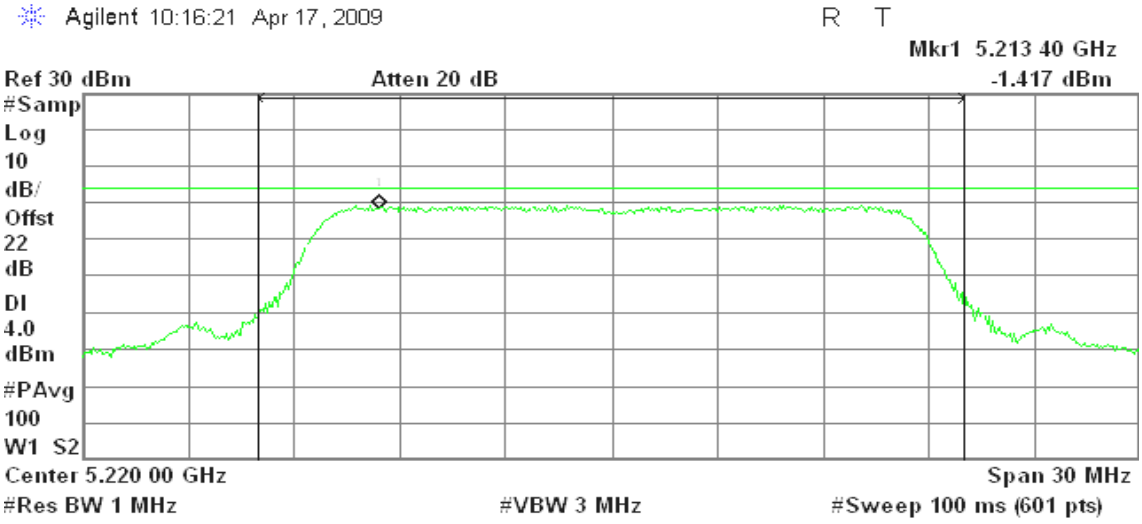
CH Low



Channel Power
10.27 dBm / 20.0000 MHz

Power Spectral Density
-62.74 dBm/Hz

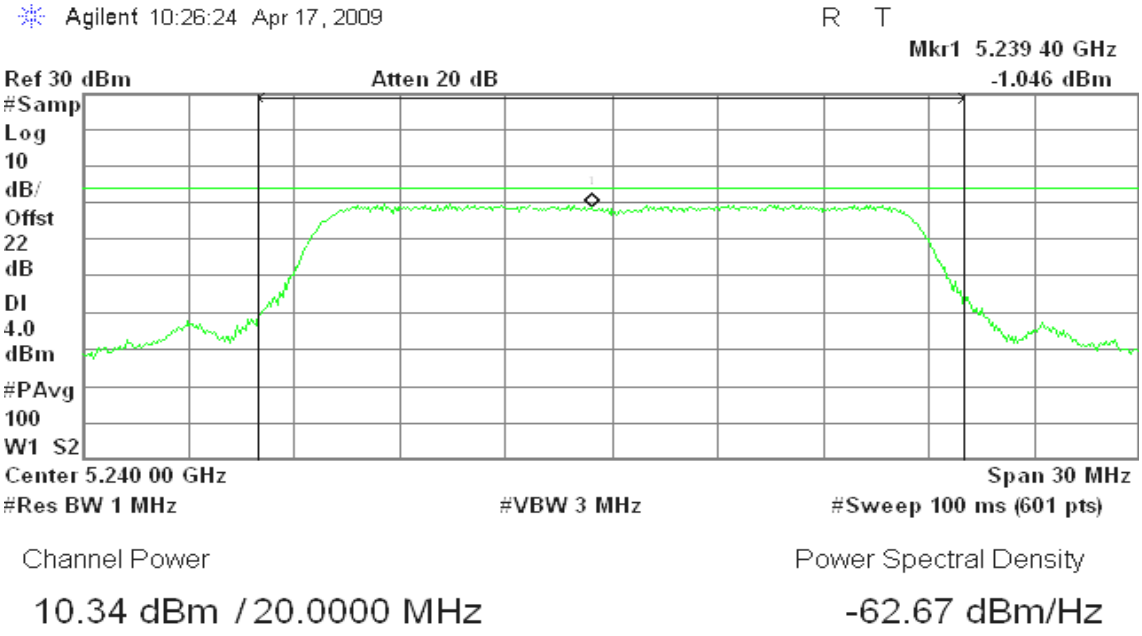
CH Mid



Channel Power
10.24 dBm / 20.0000 MHz

Power Spectral Density
-62.77 dBm/Hz

CH High

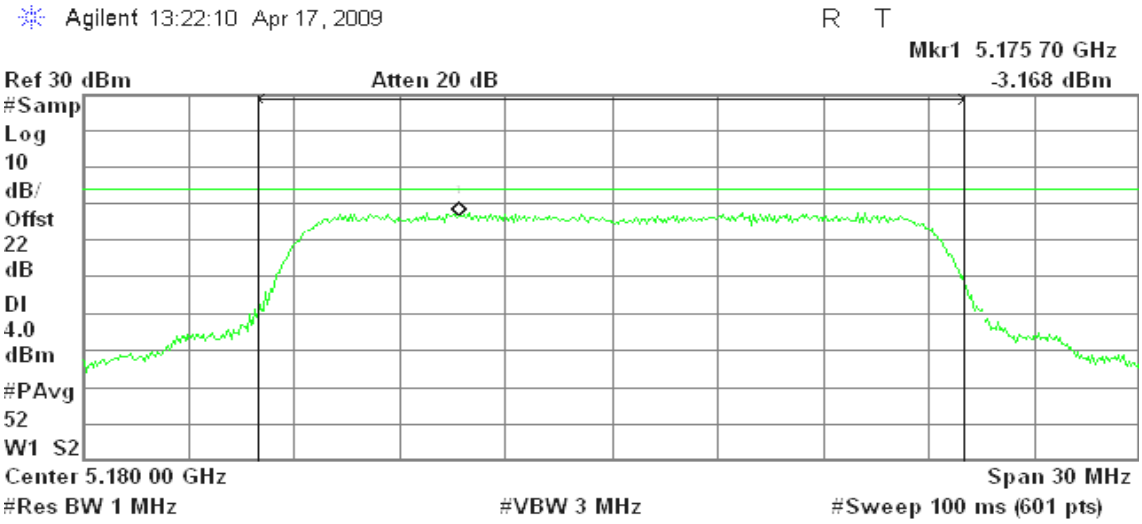


Channel Power
10.34 dBm / 20.0000 MHz

Power Spectral Density
-62.67 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

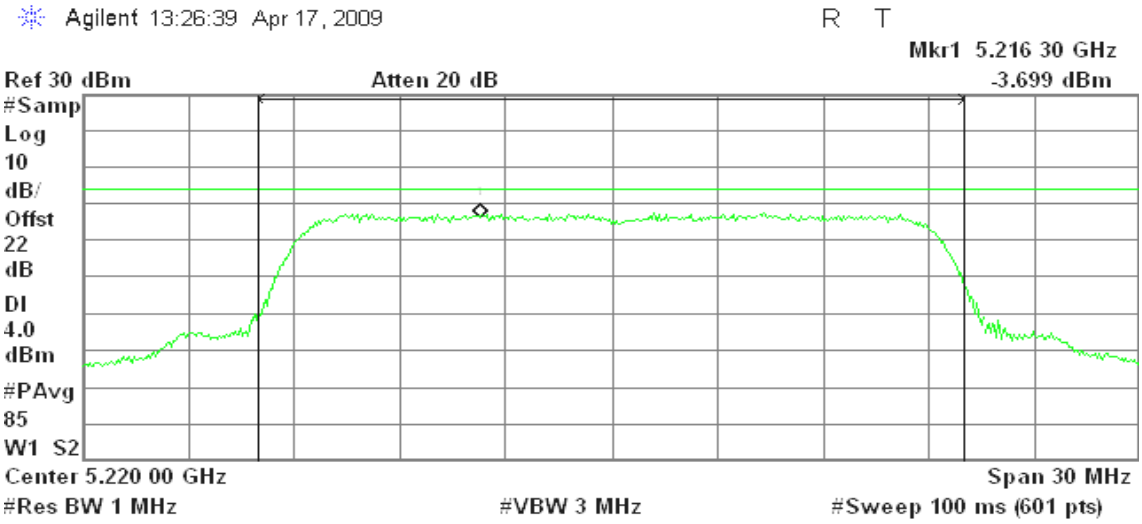
CH Low



Channel Power
8.30 dBm / 20.0000 MHz

Power Spectral Density
-64.71 dBm/Hz

CH Mid



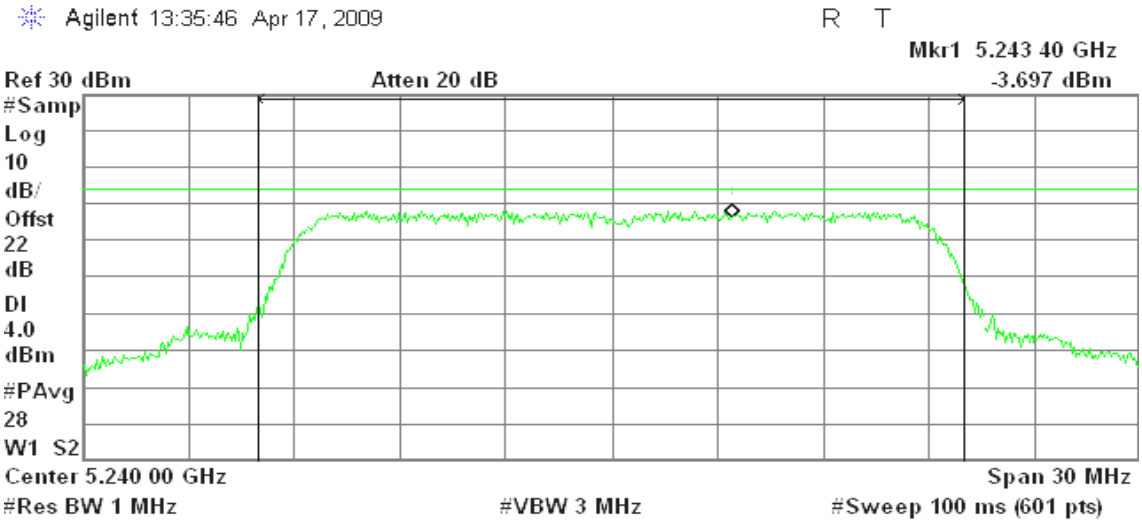
Channel Power

8.56 dBm /20.0000 MHz

Power Spectral Density

-64.45 dBm/Hz

CH High



Channel Power

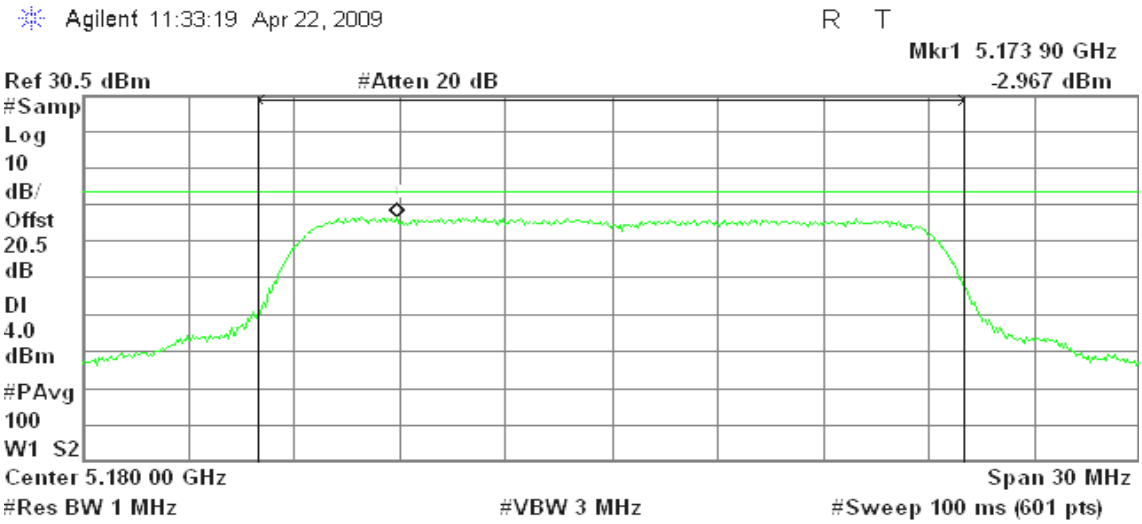
8.71 dBm /20.0000 MHz

Power Spectral Density

-64.30 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

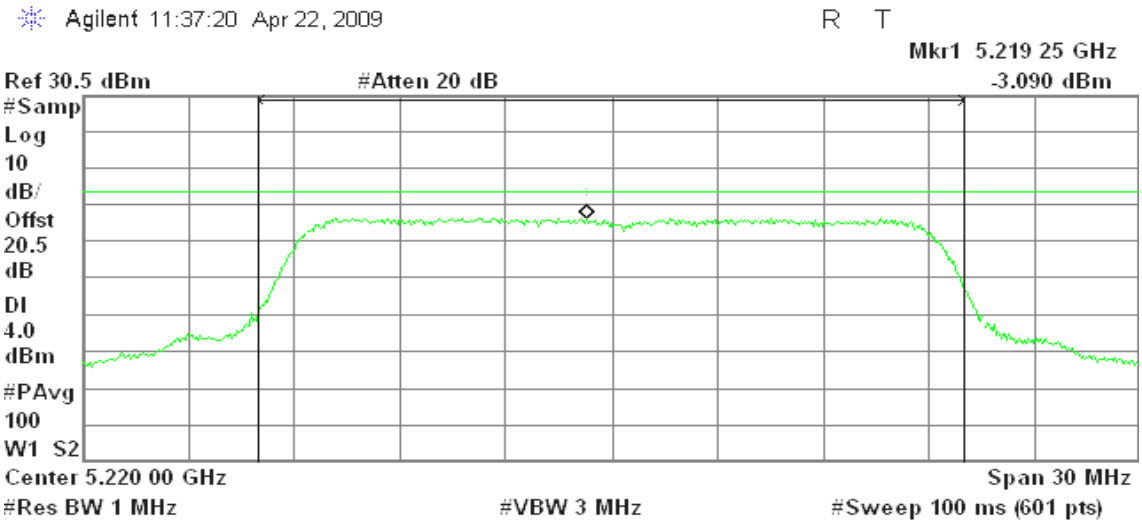
CH Low



Channel Power
8.32 dBm / 20.0000 MHz

Power Spectral Density
-64.69 dBm/Hz

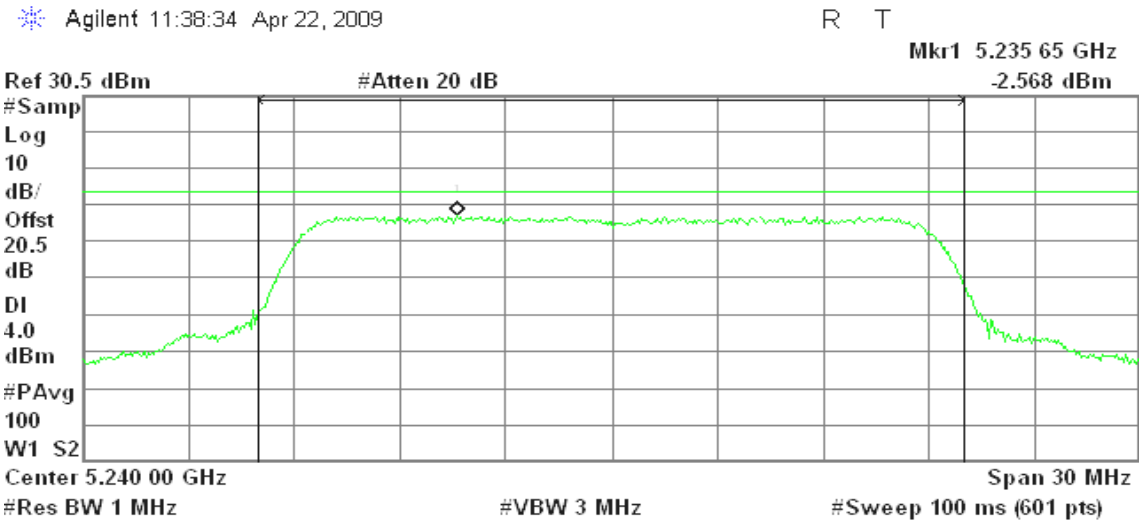
CH Mid



Channel Power
8.01 dBm / 20.0000 MHz

Power Spectral Density
-65.00 dBm/Hz

CH High

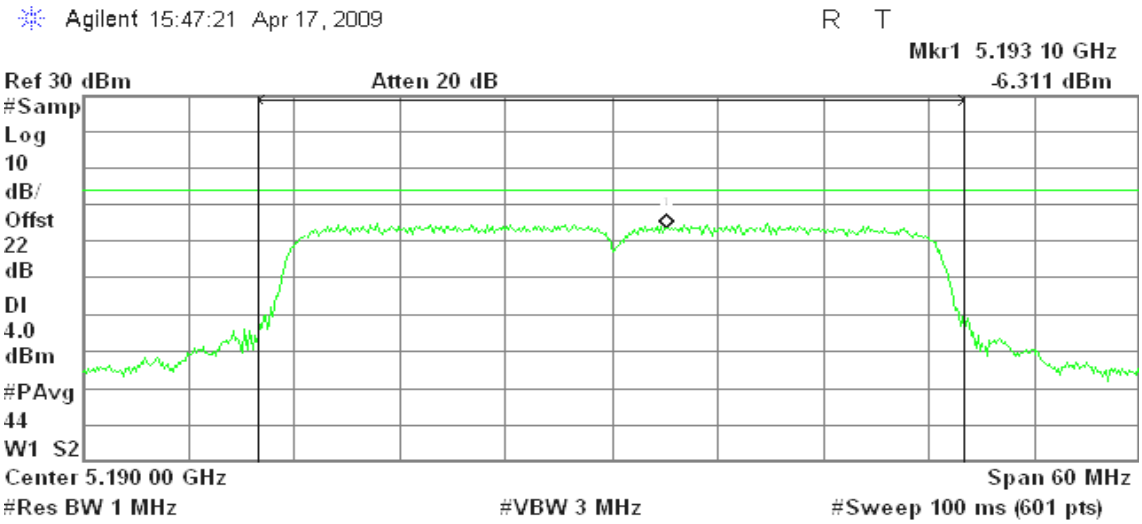


Channel Power
8.35 dBm / 20.0000 MHz

Power Spectral Density
-64.66 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 0

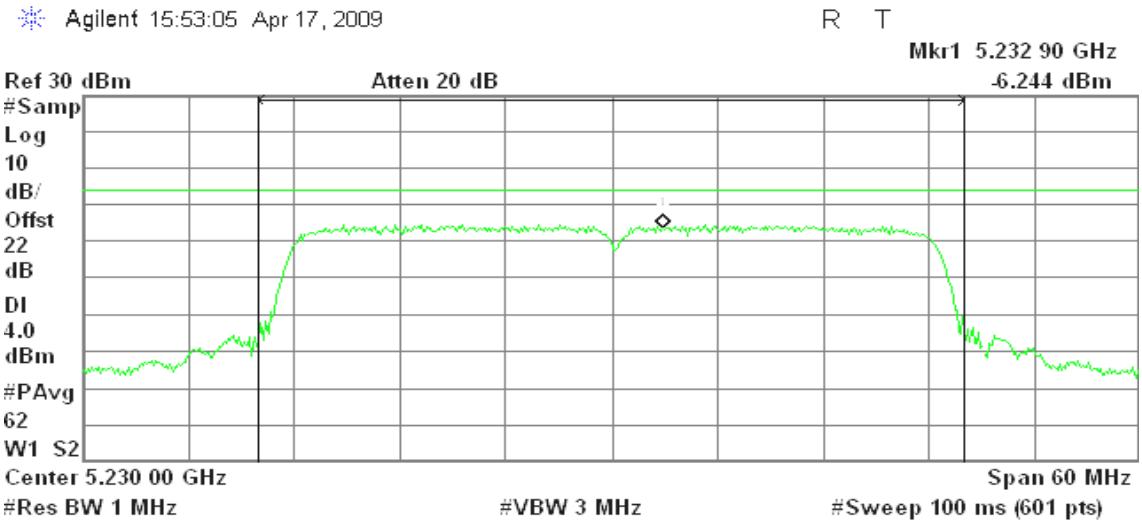
CH Low



Channel Power
8.40 dBm / 40.0000 MHz

Power Spectral Density
-67.62 dBm/Hz

CH High

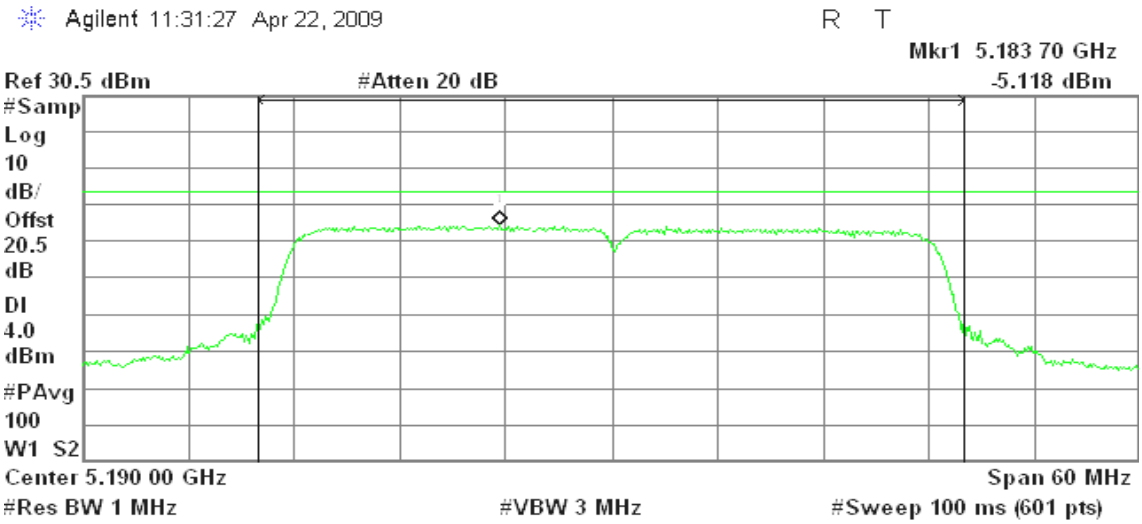


Channel Power
8.64 dBm / 40.0000 MHz

Power Spectral Density
-67.38 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 1

CH Low



Channel Power
8.79 dBm / 40.0000 MHz

Power Spectral Density
-67.23 dBm/Hz

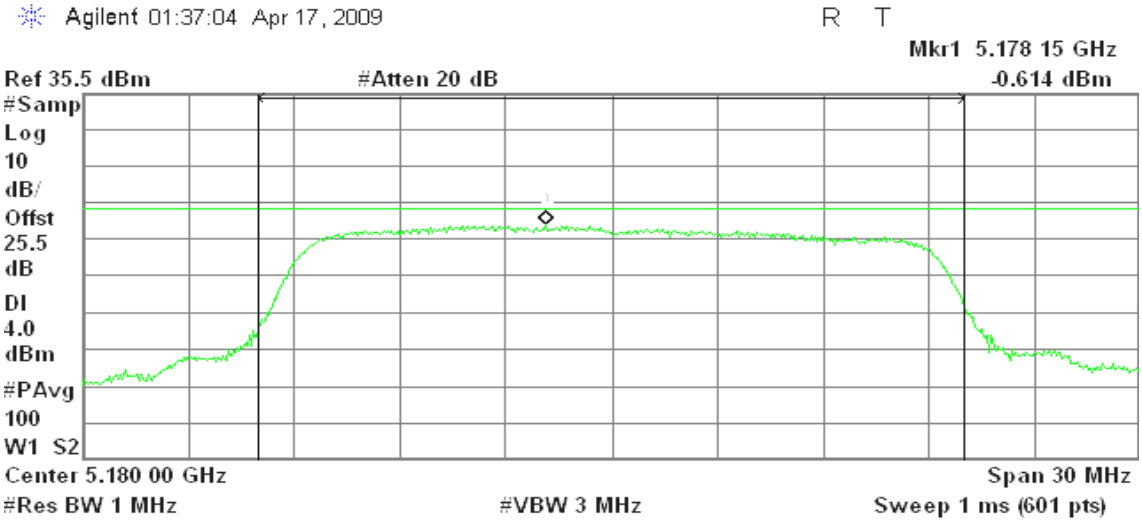
CH High

Channel Power
7.93 dBm /40.0000 MHz

Power Spectral Density
-68.09 dBm/Hz

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz with combiner:

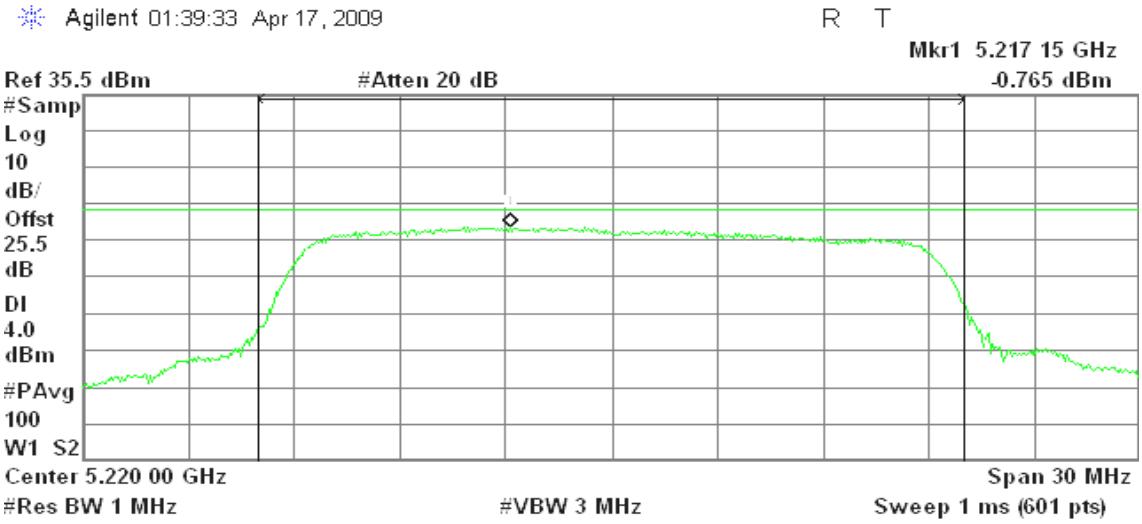
CH Low



Channel Power
9.71 dBm /20.0000 MHz

Power Spectral Density
-63.31 dBm/Hz

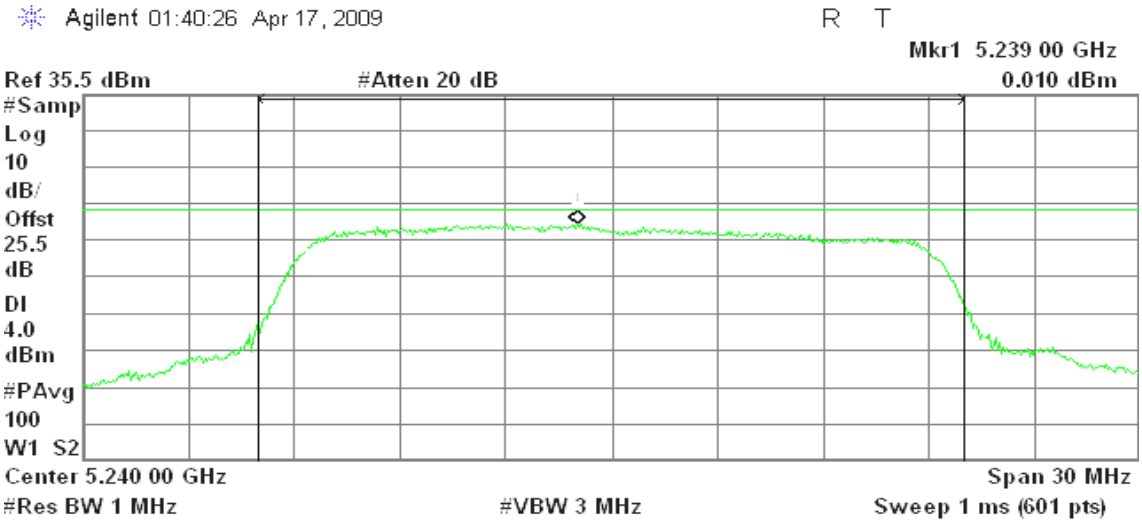
CH Mid



Channel Power
9.62 dBm / 20.0000 MHz

Power Spectral Density
-63.39 dBm/Hz

CH High

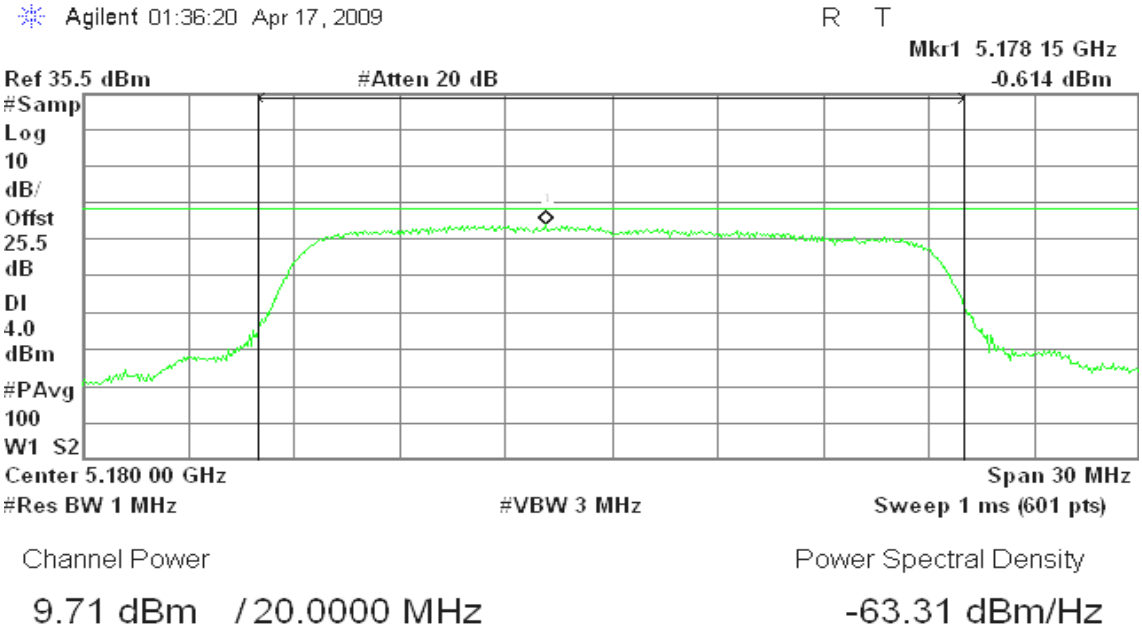


Channel Power
9.73 dBm / 20.0000 MHz

Power Spectral Density
-63.28 dBm/Hz

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz with combiner:

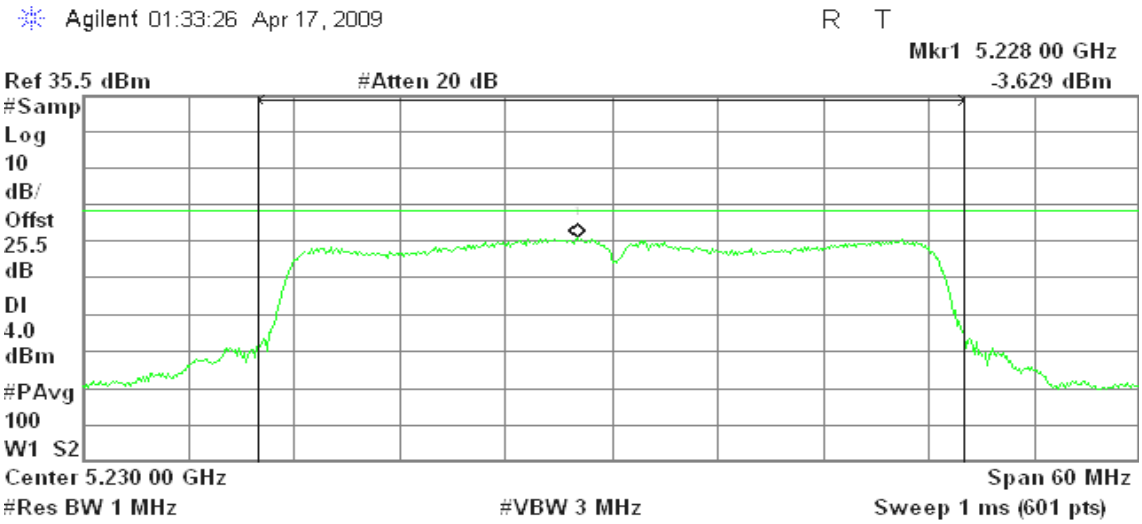
CH Low



Channel Power
9.71 dBm / 20.0000 MHz

Power Spectral Density
-63.31 dBm/Hz

CH High

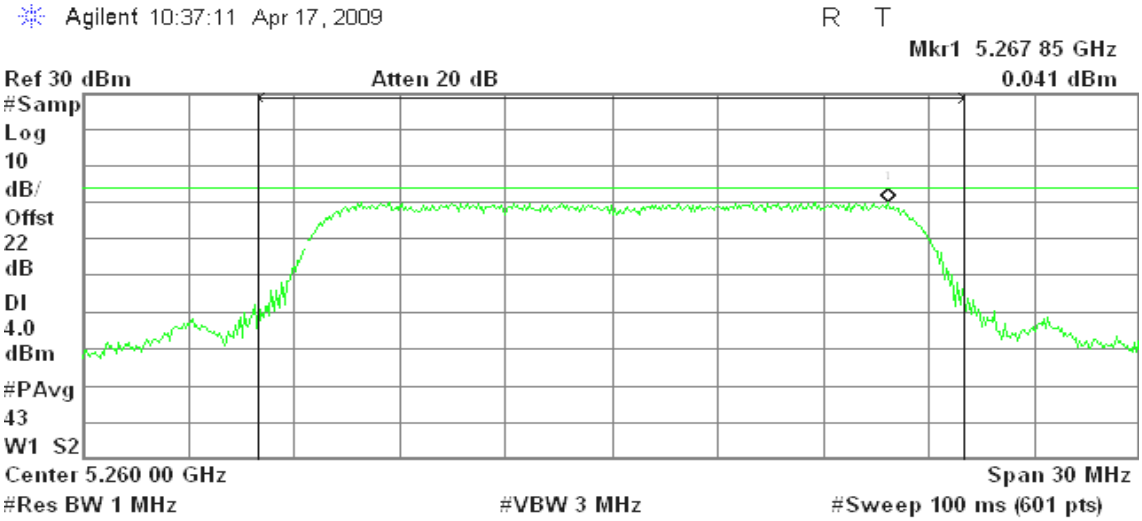


Channel Power
9.43 dBm / 40.0000 MHz

Power Spectral Density
-66.59 dBm/Hz

IEEE 802.11a mode / 5260 ~ 5320MHz

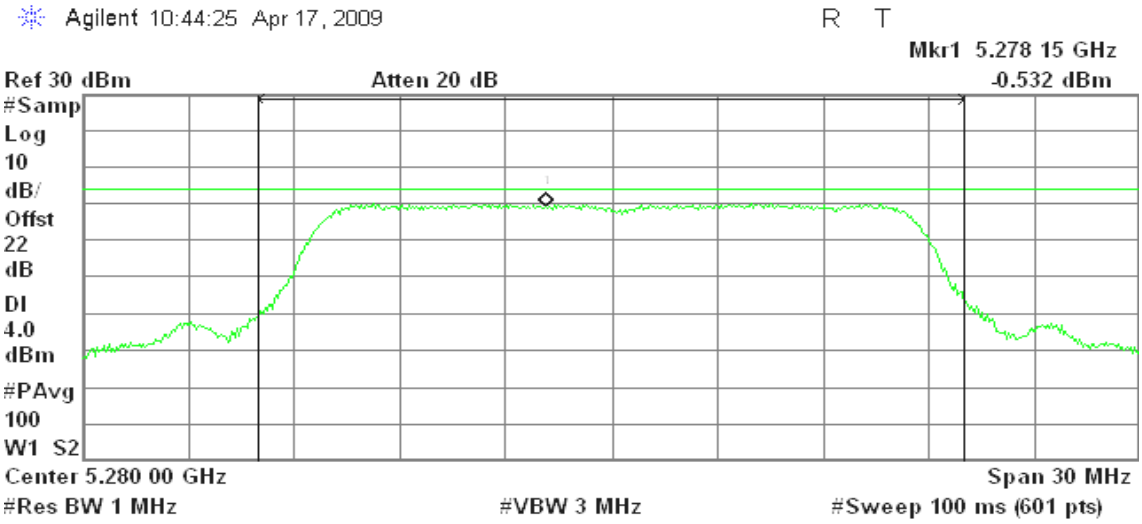
CH Low



Channel Power
10.75 dBm / 20.0000 MHz

Power Spectral Density
-62.26 dBm/Hz

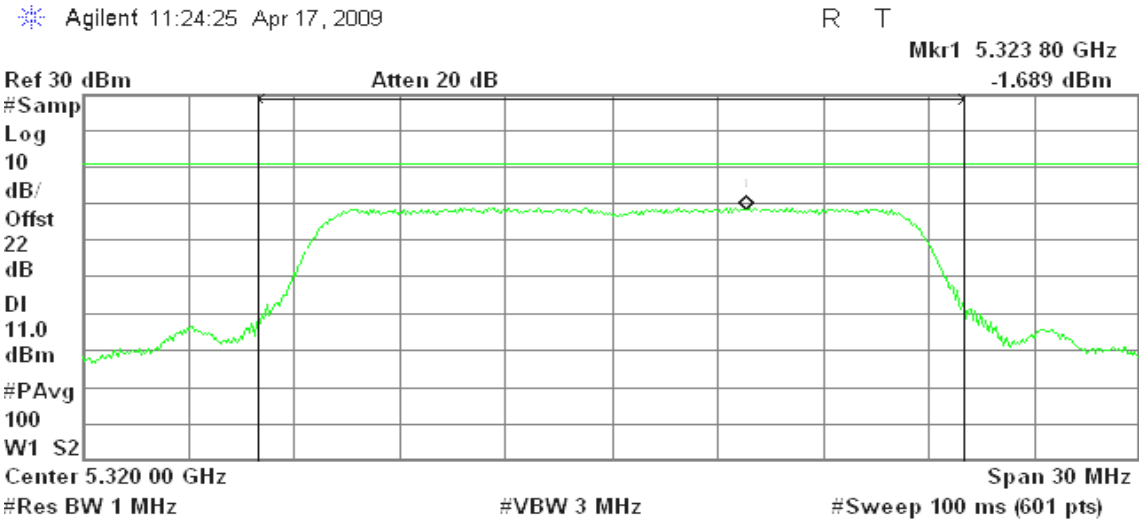
CH Mid



Channel Power
10.99 dBm / 20.0000 MHz

Power Spectral Density
-62.02 dBm/Hz

CH High

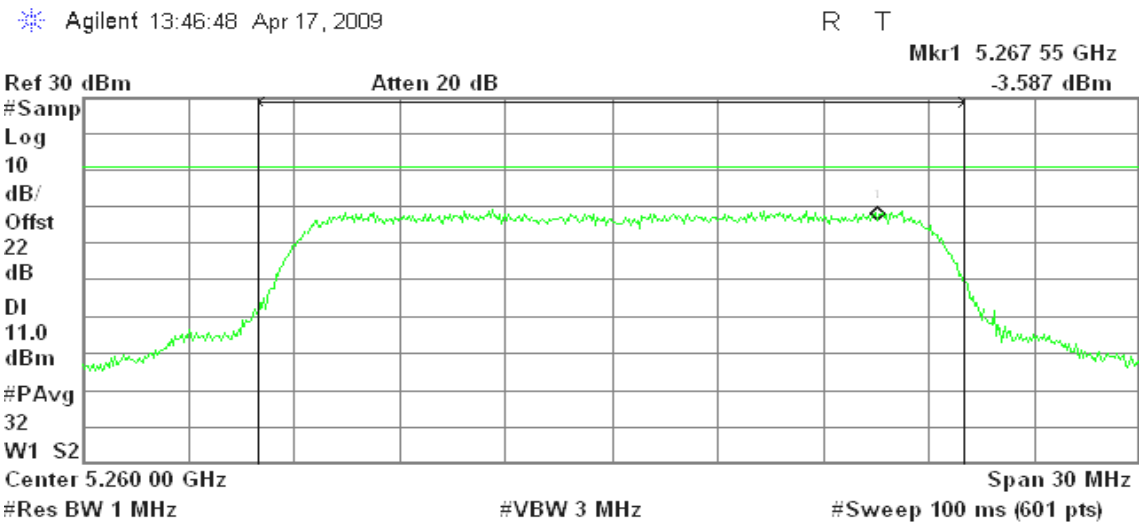


Channel Power
10.24 dBm / 20.0000 MHz

Power Spectral Density
-62.77 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

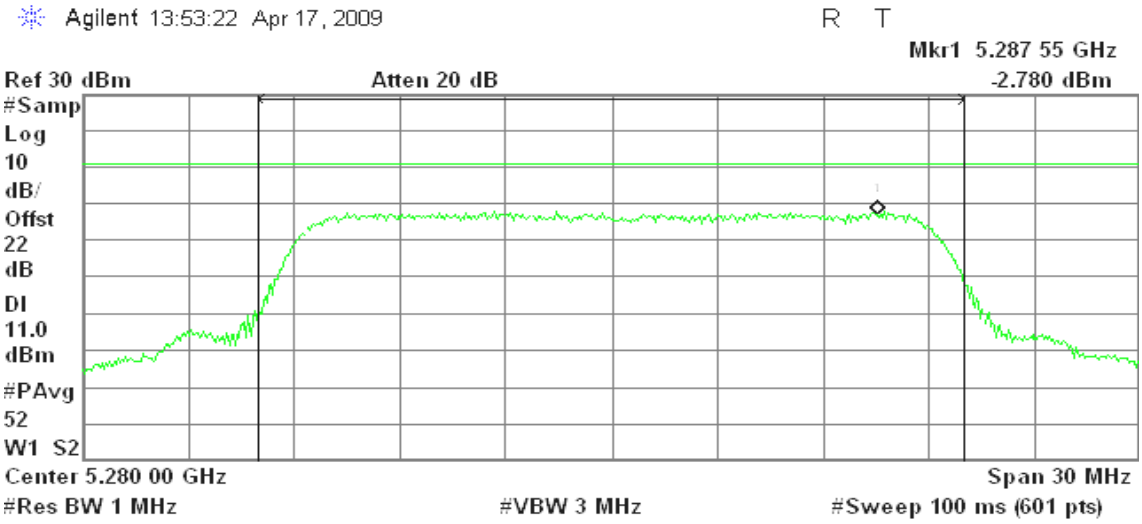
CH Low



Channel Power
9.04 dBm / 20.0000 MHz

Power Spectral Density
-63.97 dBm/Hz

CH Mid



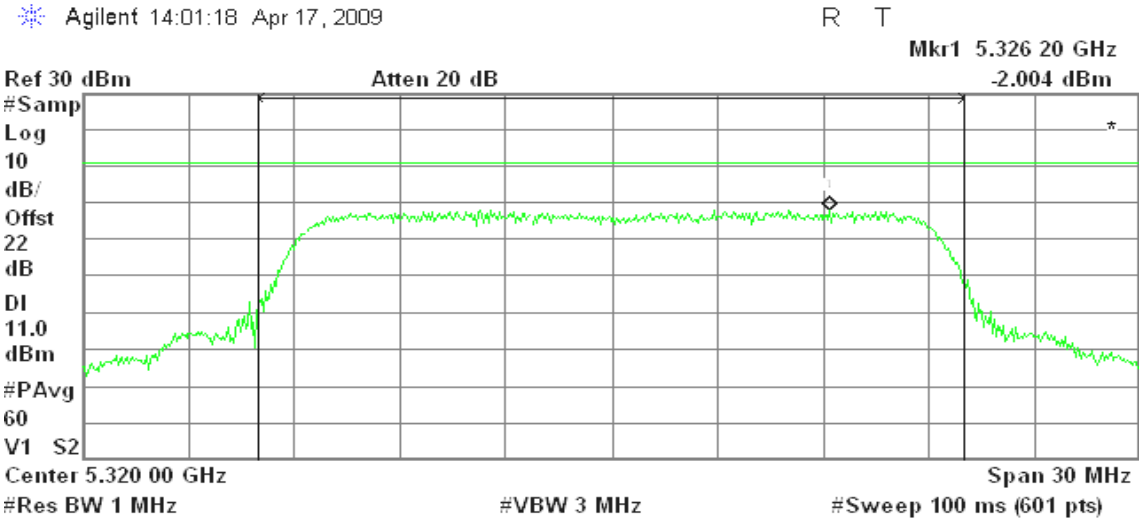
Channel Power

8.77 dBm / 20.0000 MHz

Power Spectral Density

-64.24 dBm/Hz

CH High



Channel Power

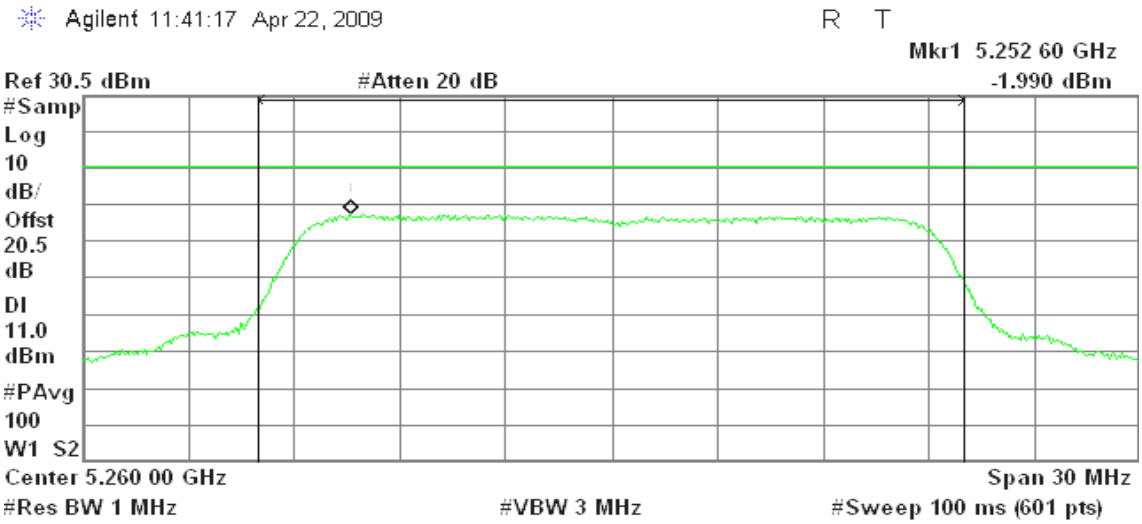
8.26 dBm / 20.0000 MHz

Power Spectral Density

-64.75 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

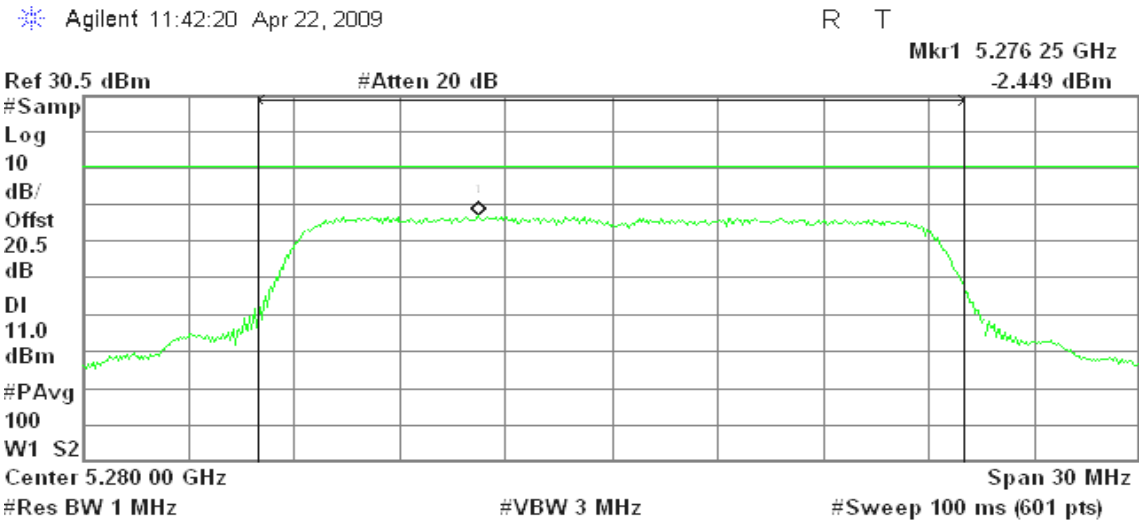
CH Low



Channel Power
9.24 dBm / 20.0000 MHz

Power Spectral Density
-63.77 dBm/Hz

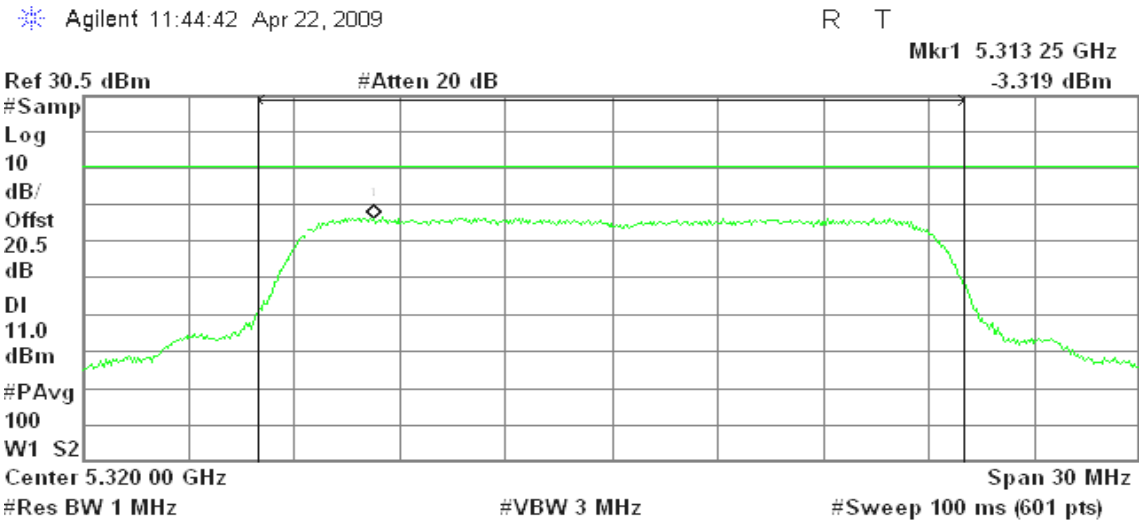
CH Mid



Channel Power
8.21 dBm / 20.0000 MHz

Power Spectral Density
-64.80 dBm/Hz

CH High

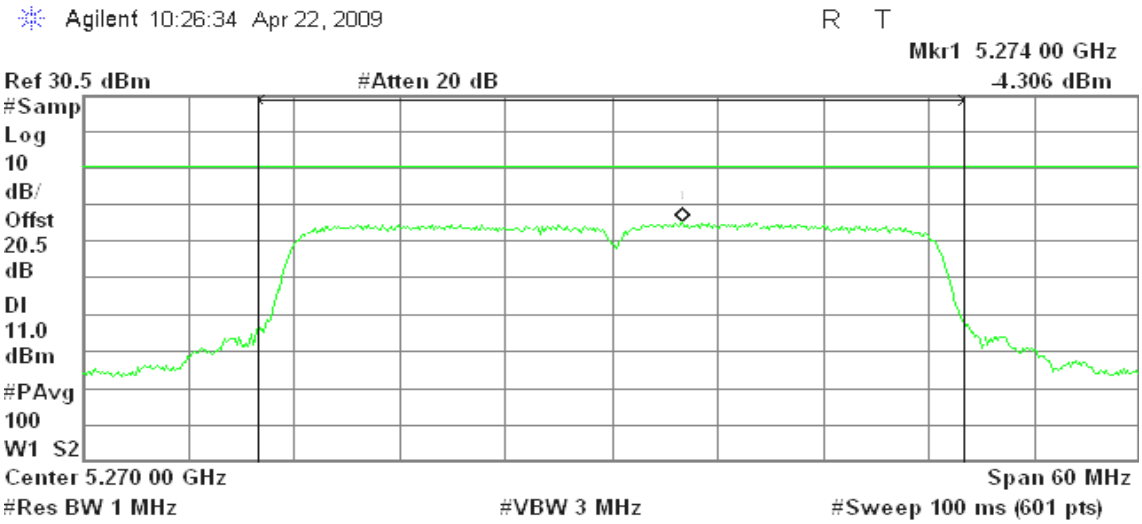


Channel Power
8.21 dBm / 20.0000 MHz

Power Spectral Density
-64.80 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 0

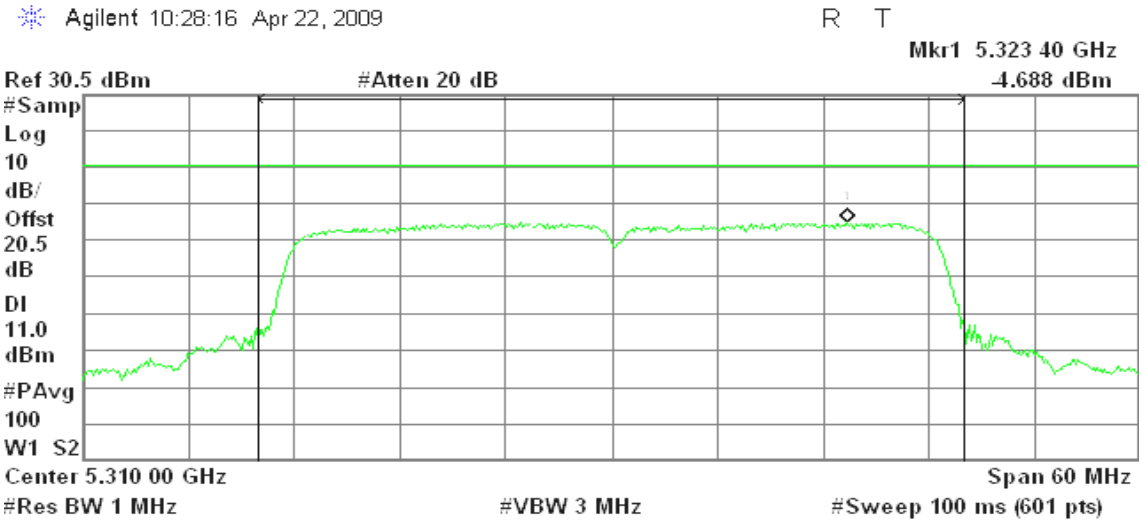
CH Low



Channel Power
9.39 dBm / 40.0000 MHz

Power Spectral Density
-66.63 dBm/Hz

CH High

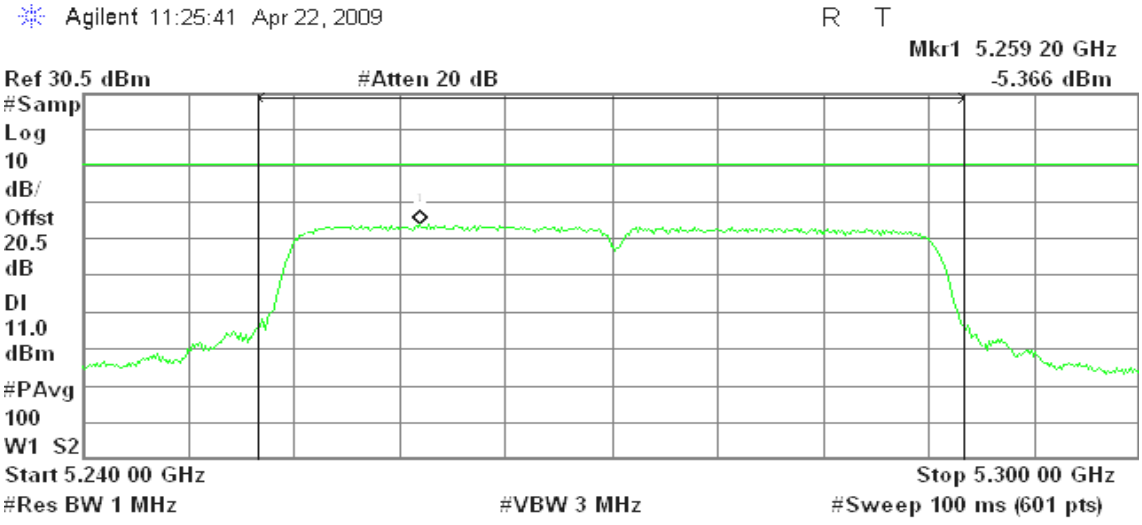


Channel Power
9.78 dBm / 40.0000 MHz

Power Spectral Density
-66.24 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 1

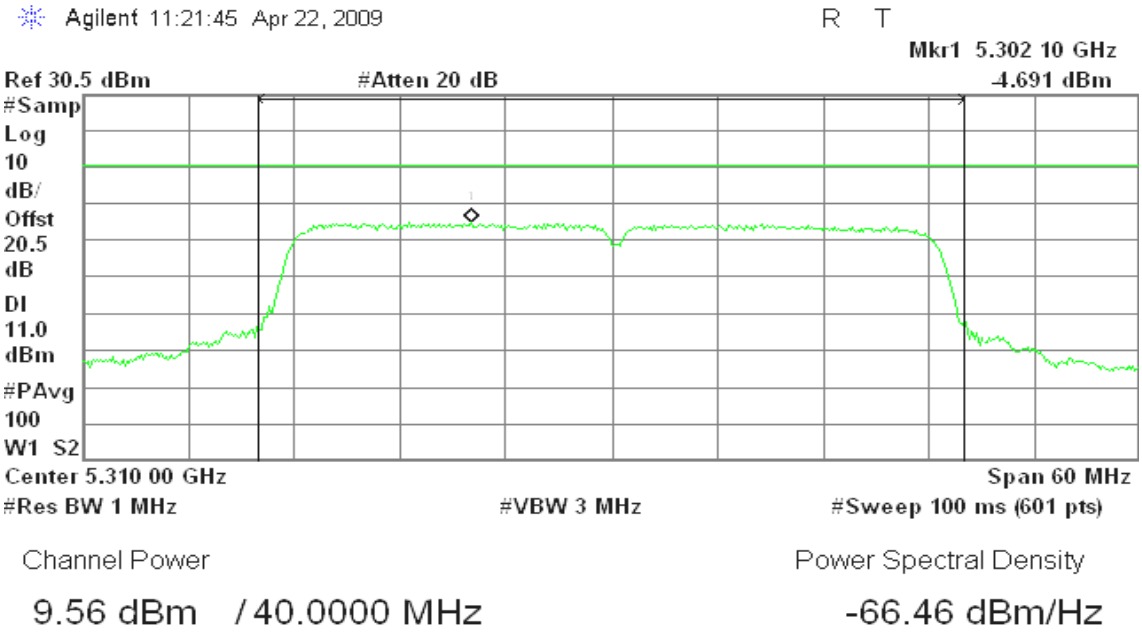
CH Low



Channel Power
8.25 dBm / 40.0000 MHz

Power Spectral Density
-67.78 dBm/Hz

CH High

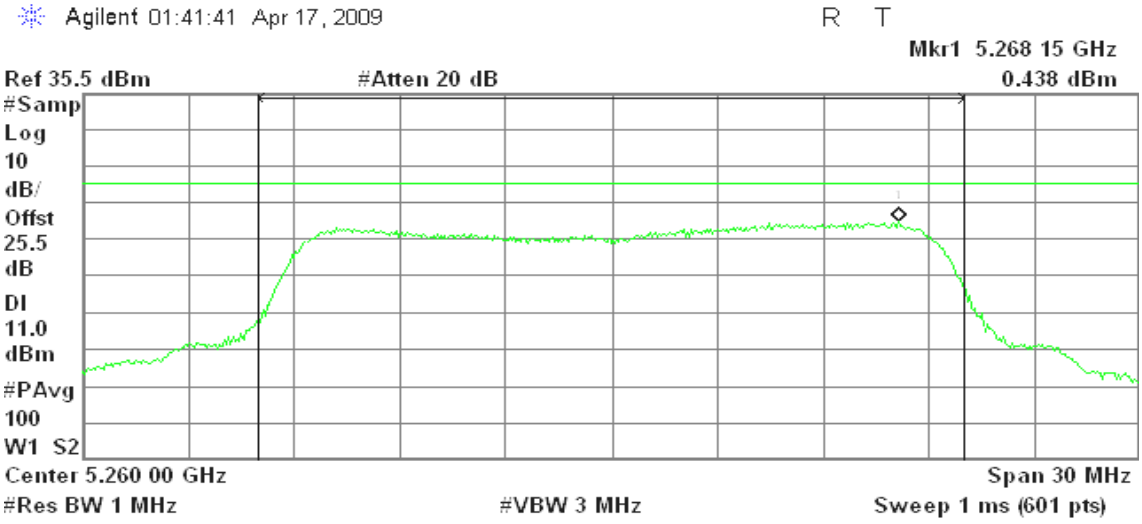


Channel Power
9.56 dBm / 40.0000 MHz

Power Spectral Density
-66.46 dBm/Hz

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz with combiner:

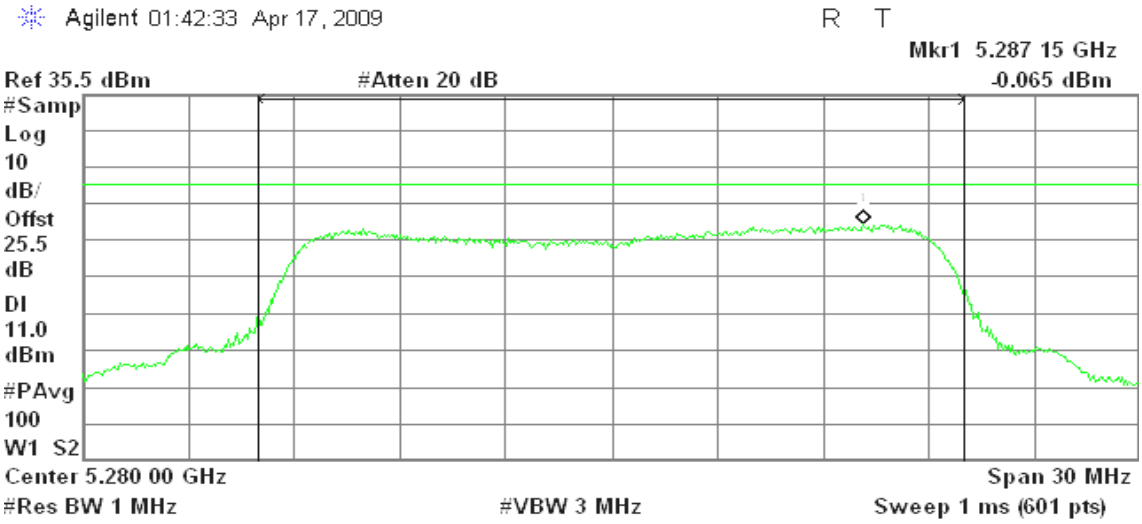
CH Low



Channel Power
9.84 dBm / 20.0000 MHz

Power Spectral Density
-63.17 dBm/Hz

CH Mid



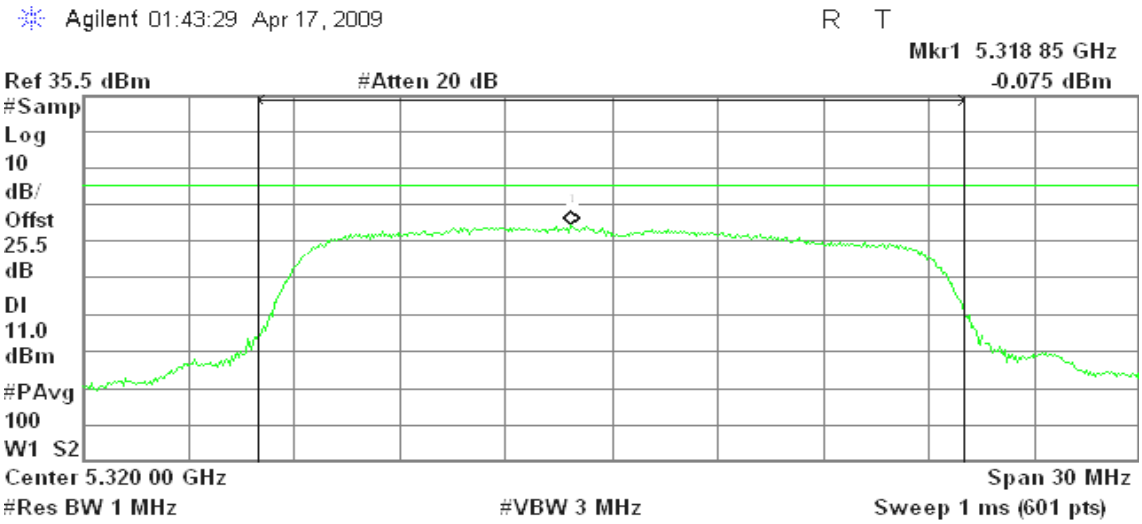
Channel Power

9.66 dBm / 20.0000 MHz

Power Spectral Density

-63.35 dBm/Hz

CH High



Channel Power

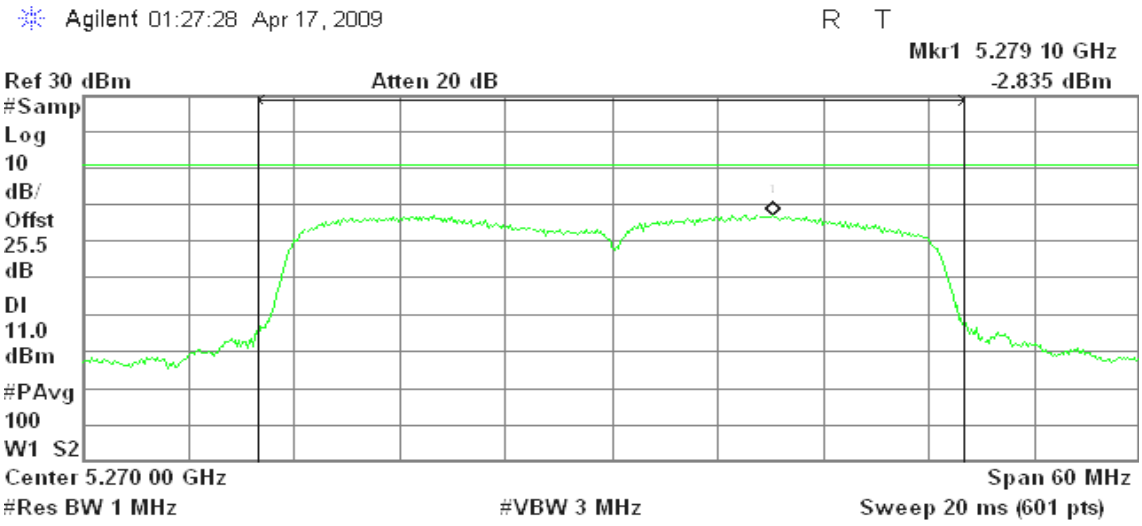
9.38 dBm / 20.0000 MHz

Power Spectral Density

-63.63 dBm/Hz

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

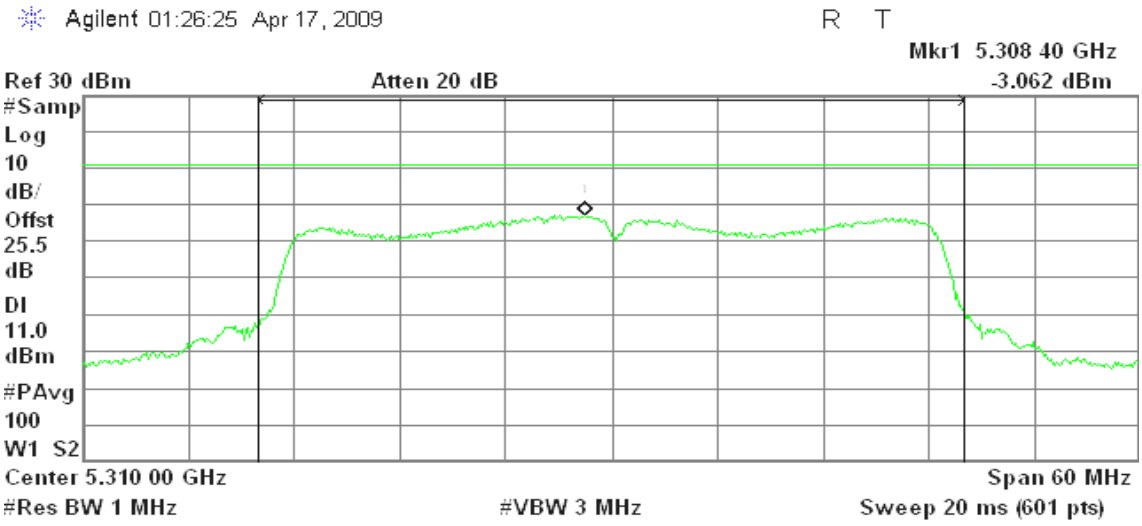
CH Low



Channel Power
10.30 dBm / 40.0000 MHz

Power Spectral Density
-65.72 dBm/Hz

CH High

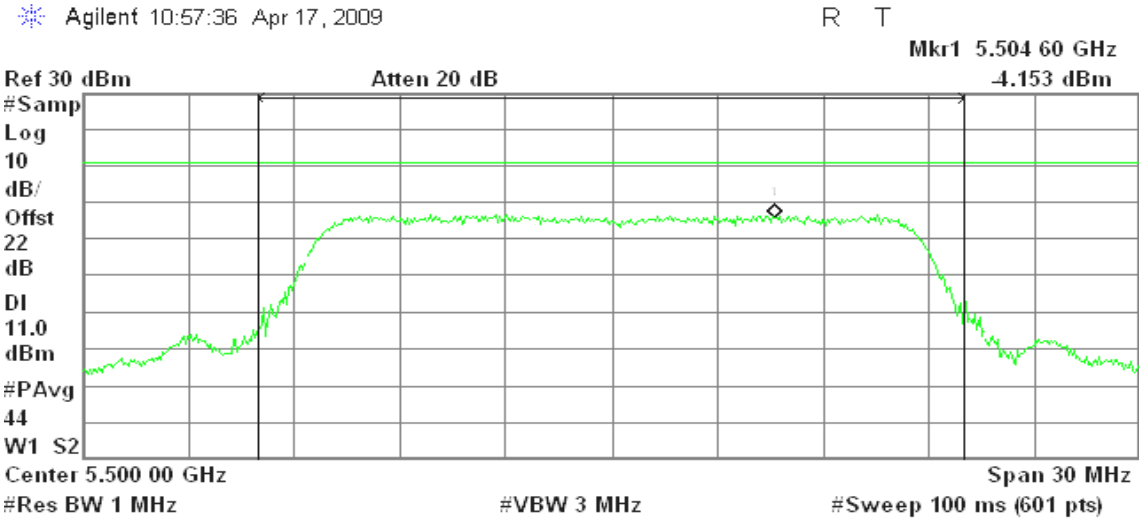


Channel Power
9.42 dBm / 40.0000 MHz

Power Spectral Density
-66.60 dBm/Hz

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

CH Low



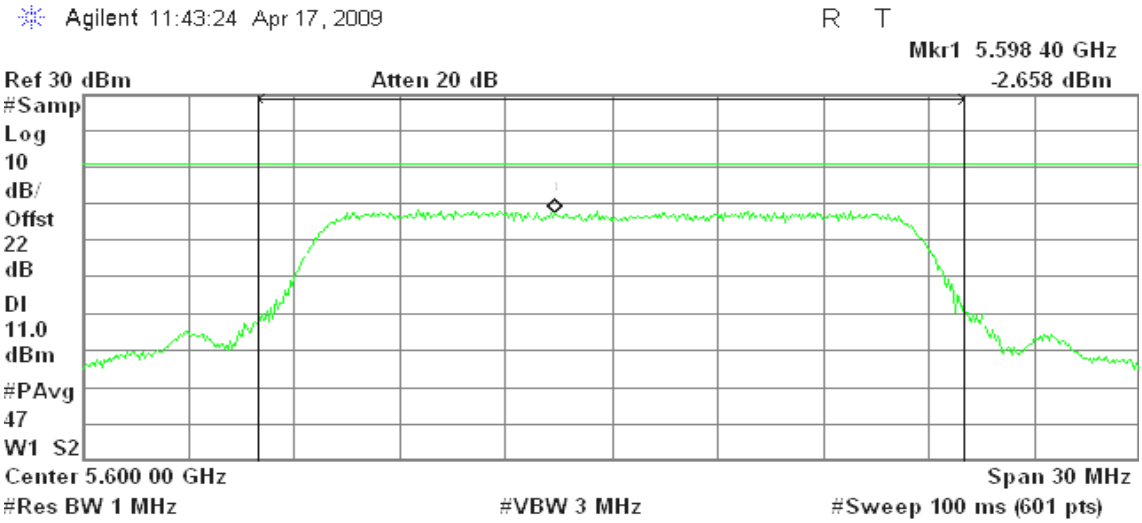
Channel Power

7.40 dBm / 20.0000 MHz

Power Spectral Density

-65.61 dBm/Hz

CH Mid



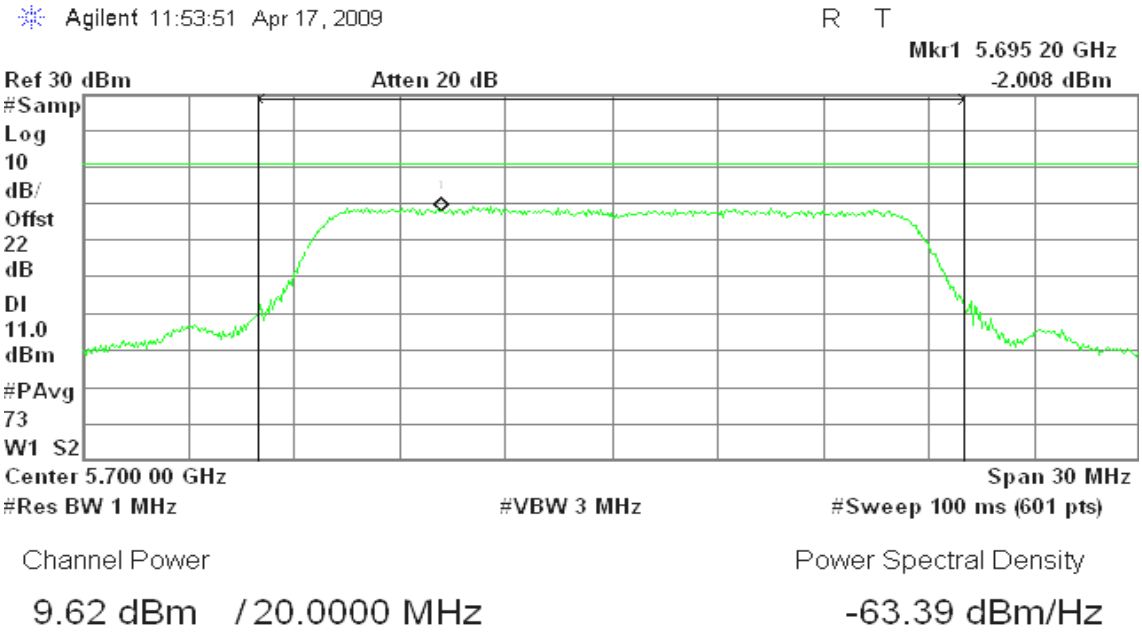
Channel Power

8.34 dBm / 20.0000 MHz

Power Spectral Density

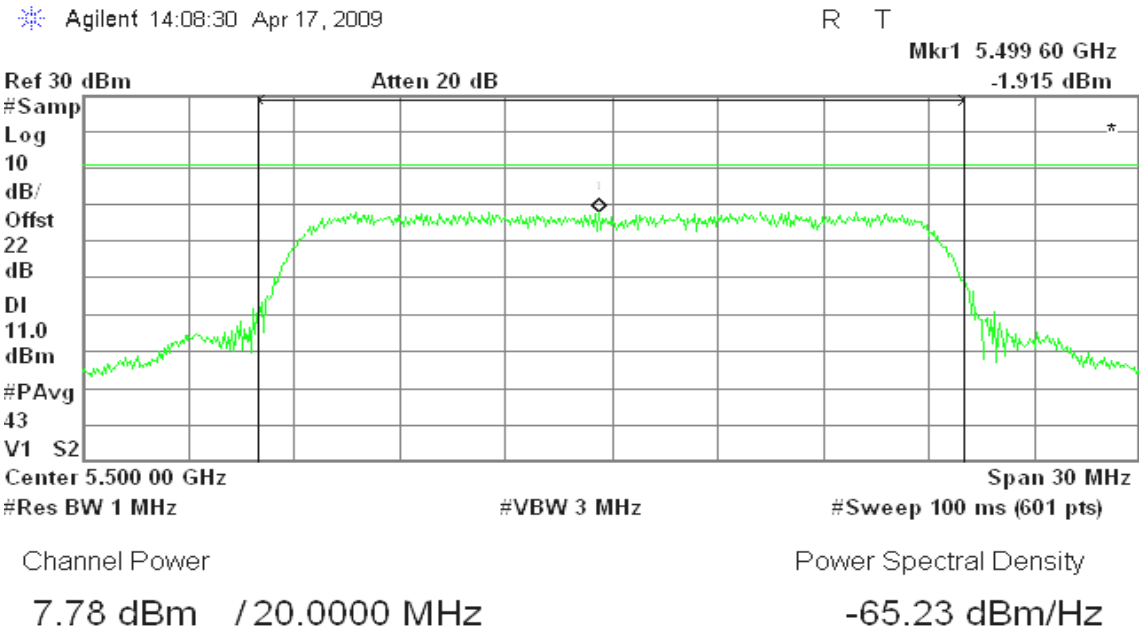
-64.67 dBm/Hz

CH High

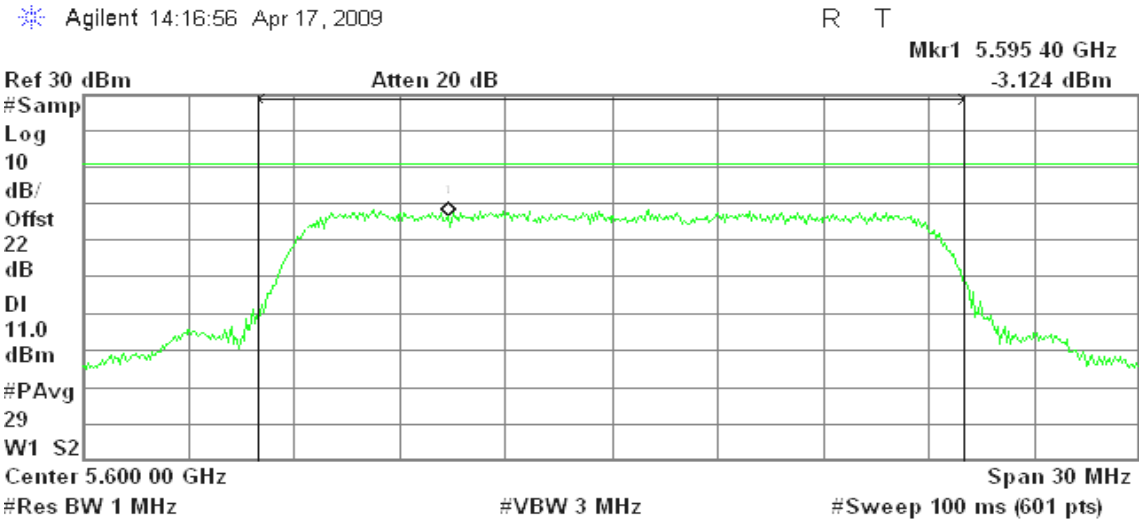


draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

CH Low



CH Mid



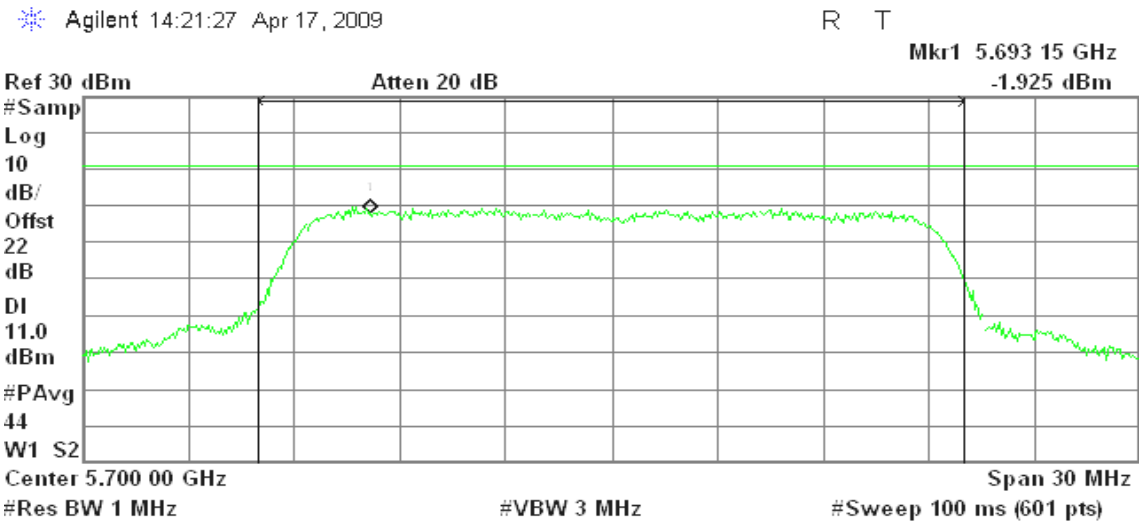
Channel Power

8.49 dBm / 20.0000 MHz

Power Spectral Density

-64.52 dBm/Hz

CH High



Channel Power

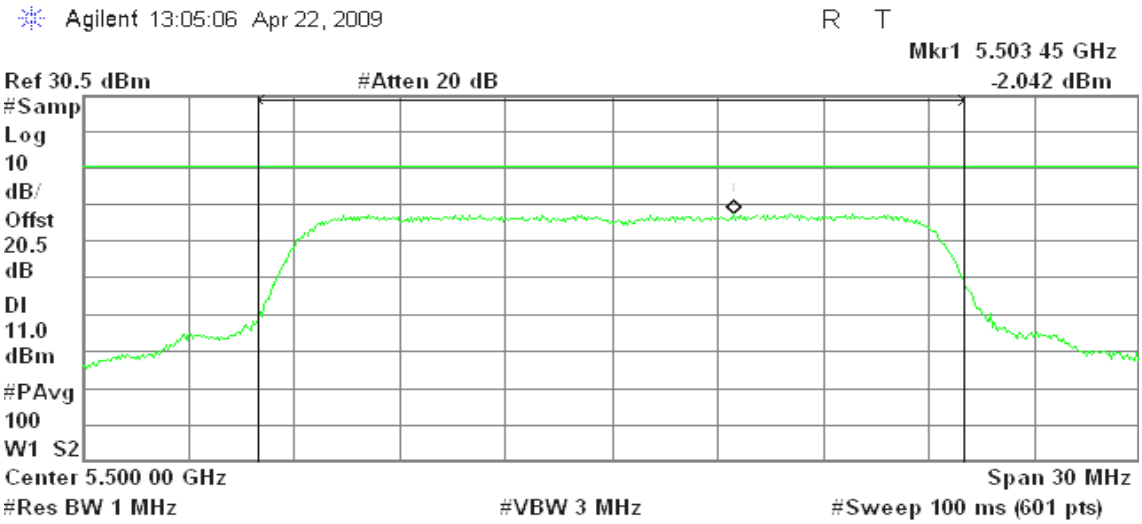
9.72 dBm / 20.0000 MHz

Power Spectral Density

-63.29 dBm/Hz

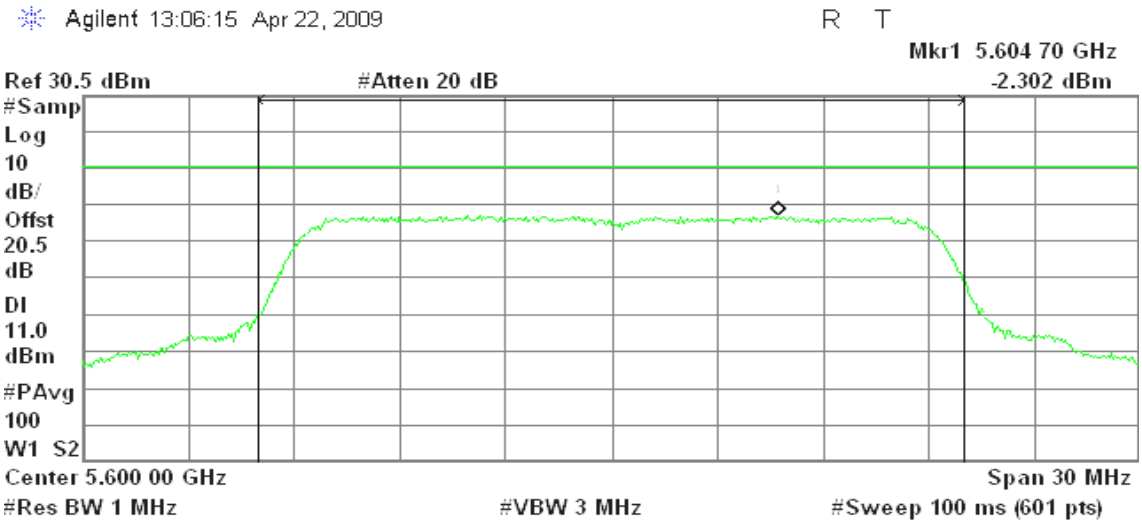
draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

CH Low



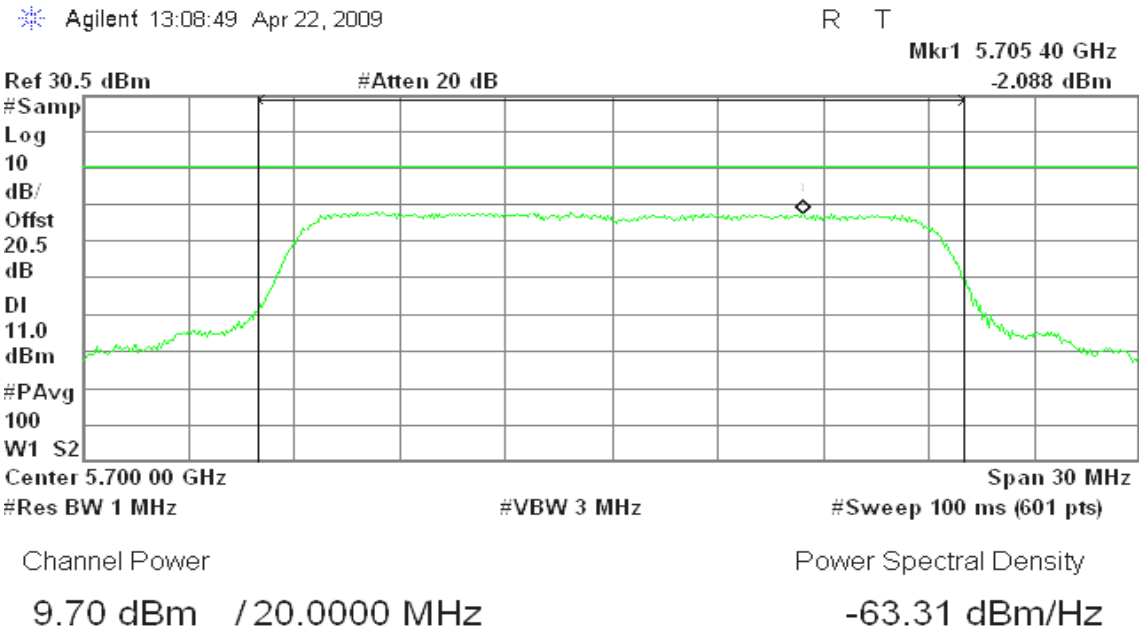
Channel Power	Power Spectral Density
8.97 dBm / 20.0000 MHz	-64.04 dBm/Hz

CH Mid



Channel Power	Power Spectral Density
8.53 dBm / 20.0000 MHz	-64.48 dBm/Hz

CH High

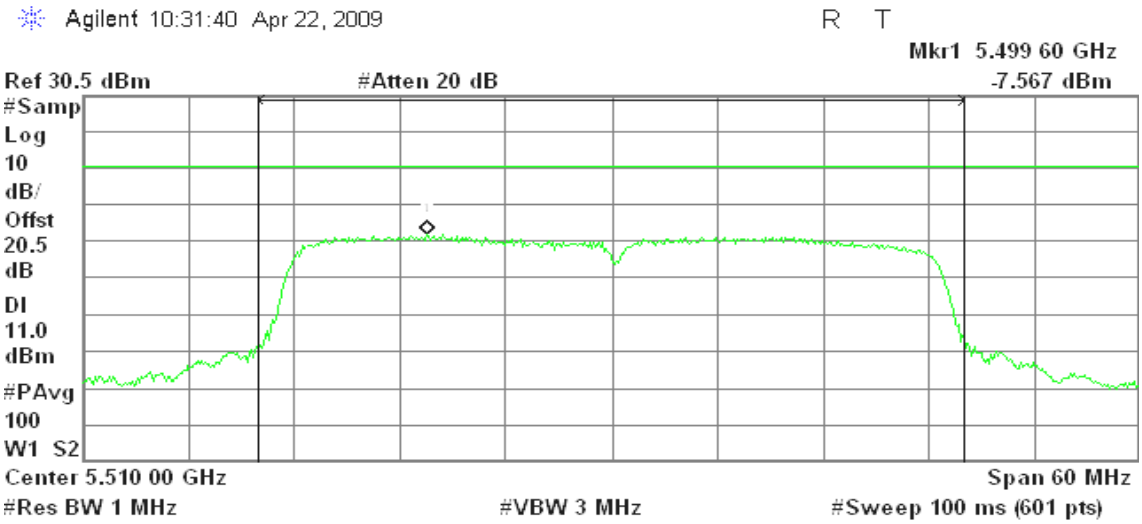


Channel Power
9.70 dBm / 20.0000 MHz

Power Spectral Density
-63.31 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 0

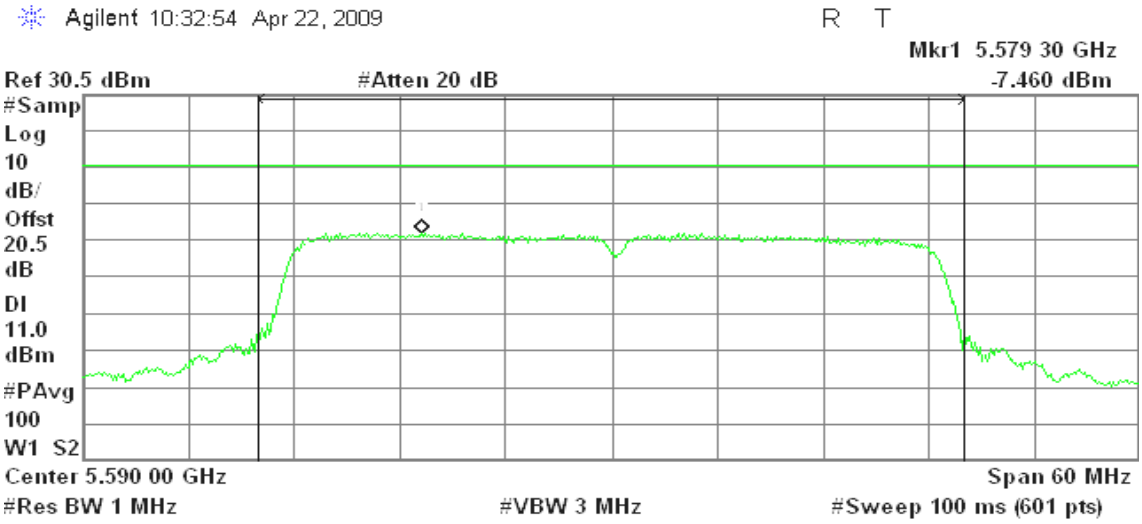
CH Low



Channel Power
5.42 dBm / 40.0000 MHz

Power Spectral Density
-70.60 dBm/Hz

CH Mid



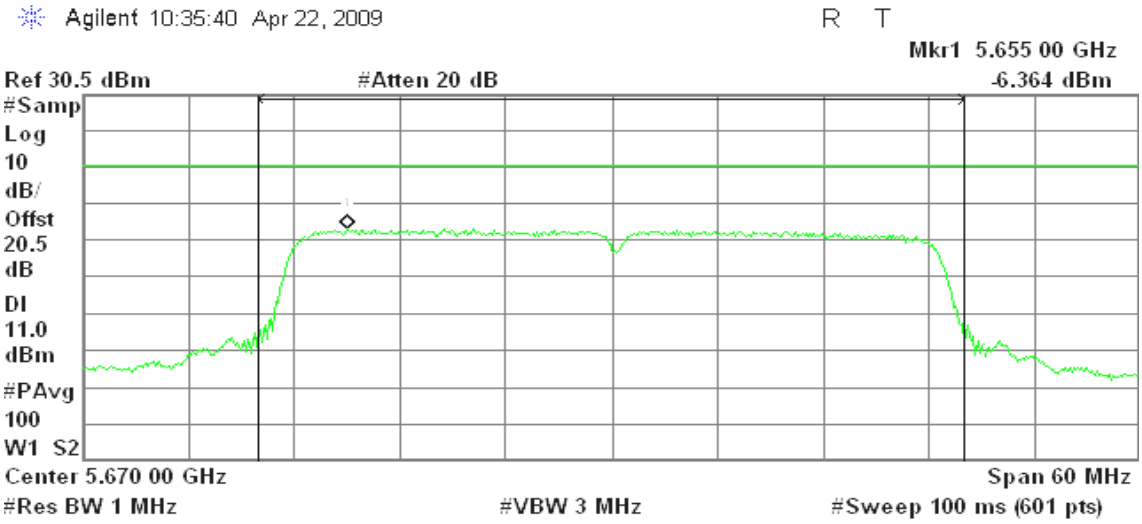
Channel Power

6.20 dBm /40.0000 MHz

Power Spectral Density

-69.82 dBm/Hz

CH High



Channel Power

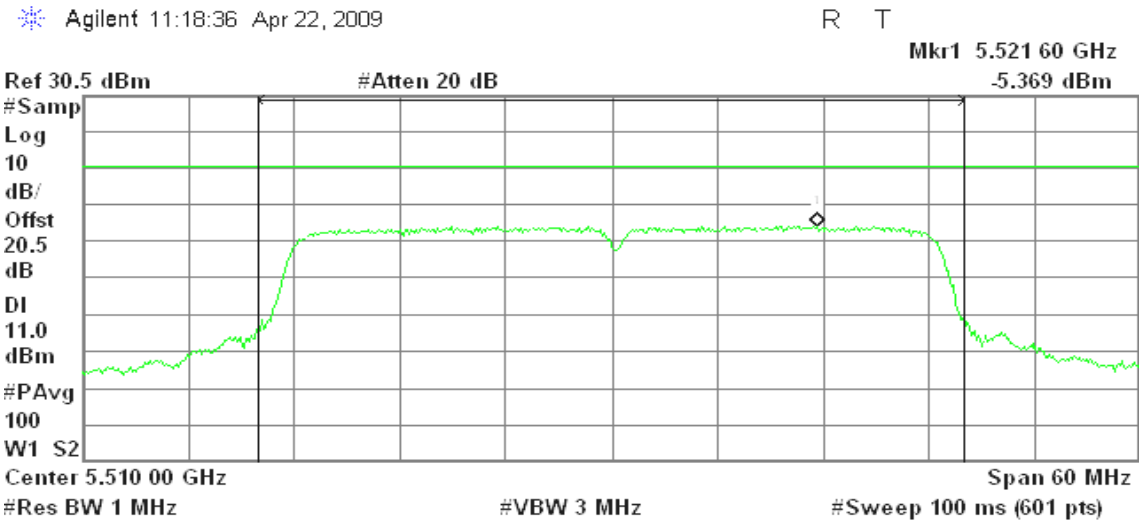
7.85 dBm /40.0000 MHz

Power Spectral Density

-68.17 dBm/Hz

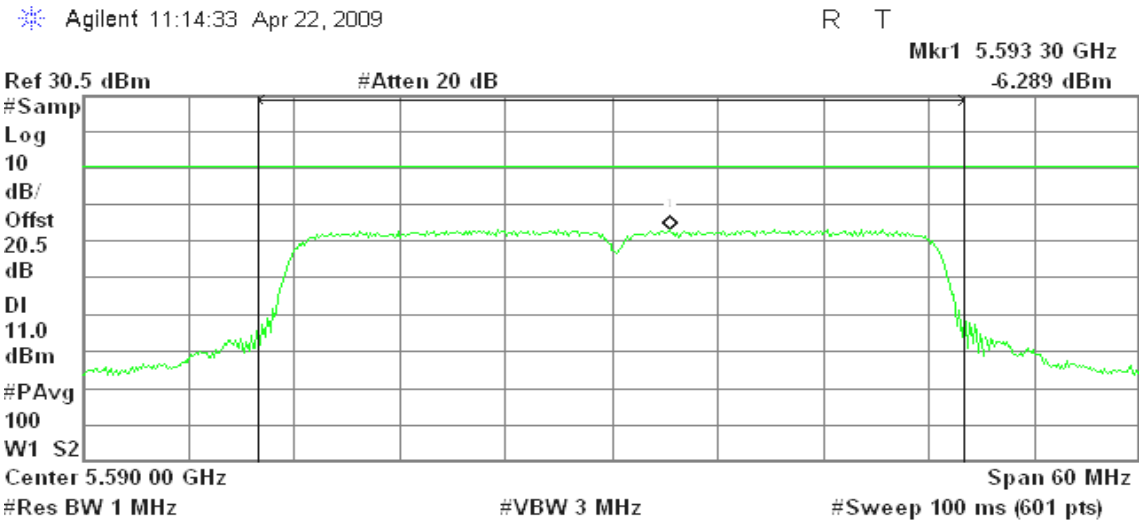
draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 1

CH Low



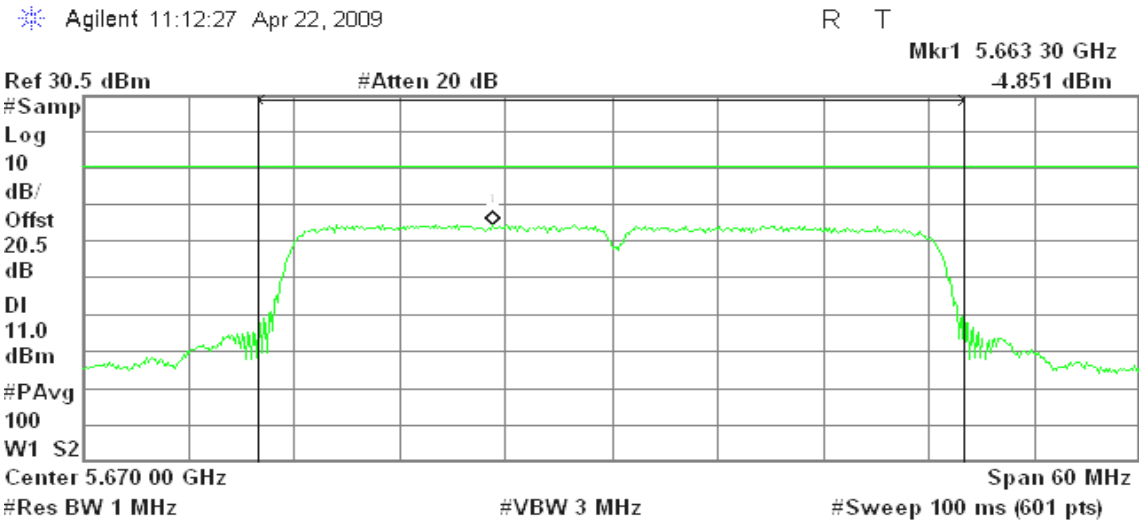
Channel Power	Power Spectral Density
8.74 dBm / 40.0000 MHz	-67.28 dBm/Hz

CH Mid



Channel Power	Power Spectral Density
7.69 dBm / 40.0000 MHz	-68.33 dBm/Hz

CH High

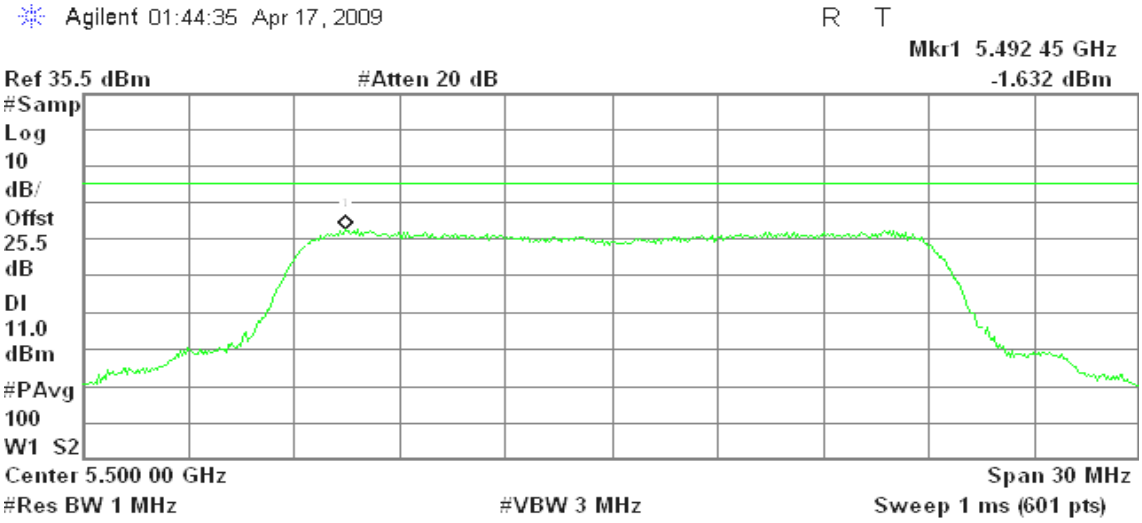


Channel Power
9.16 dBm / 40.0000 MHz

Power Spectral Density
-66.86 dBm/Hz

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz with combiner:

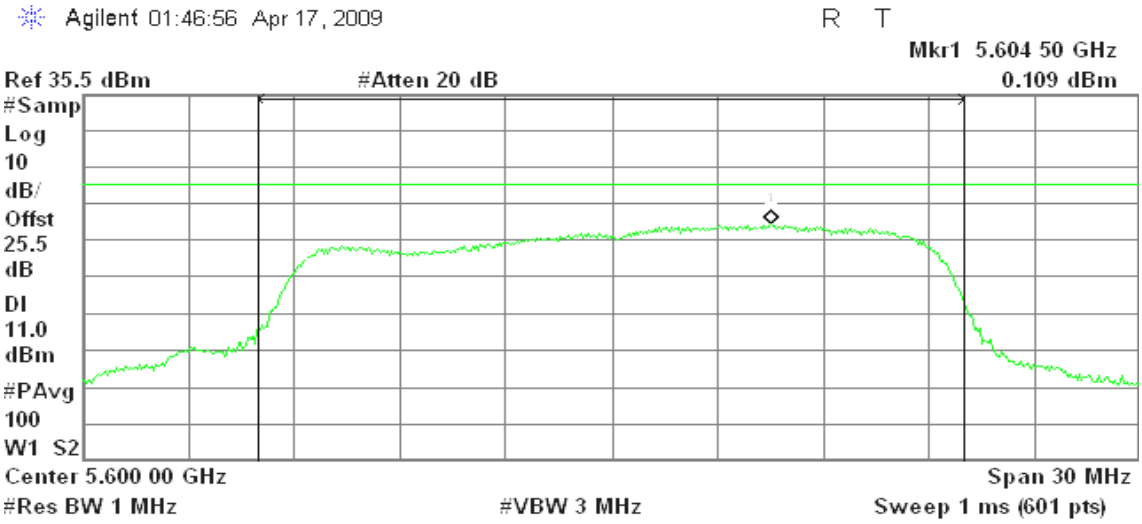
CH Low



Channel Power
8.70 dBm / 20.0000 MHz

Power Spectral Density
-64.31 dBm/Hz

CH Mid



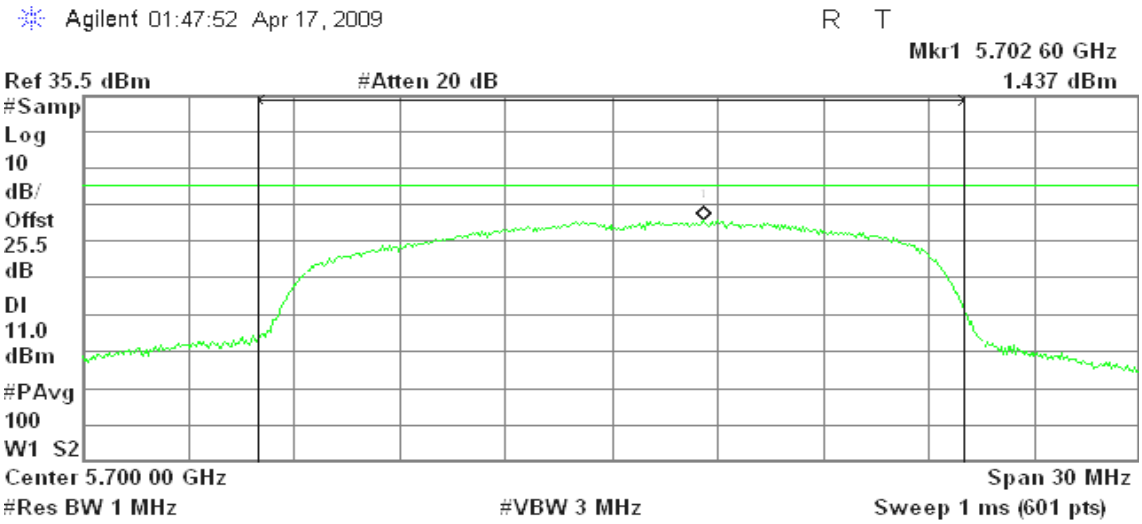
Channel Power

8.77 dBm /20.0000 MHz

Power Spectral Density

-64.24 dBm/Hz

CH High



Channel Power

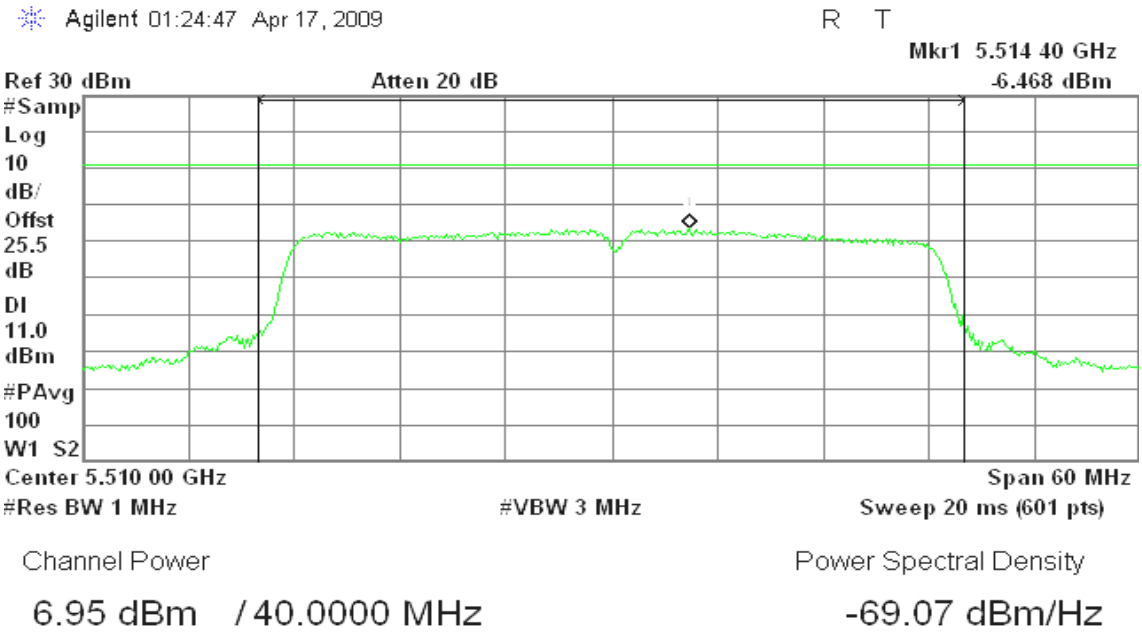
10.17 dBm /20.0000 MHz

Power Spectral Density

-62.84 dBm/Hz

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz with combiner:

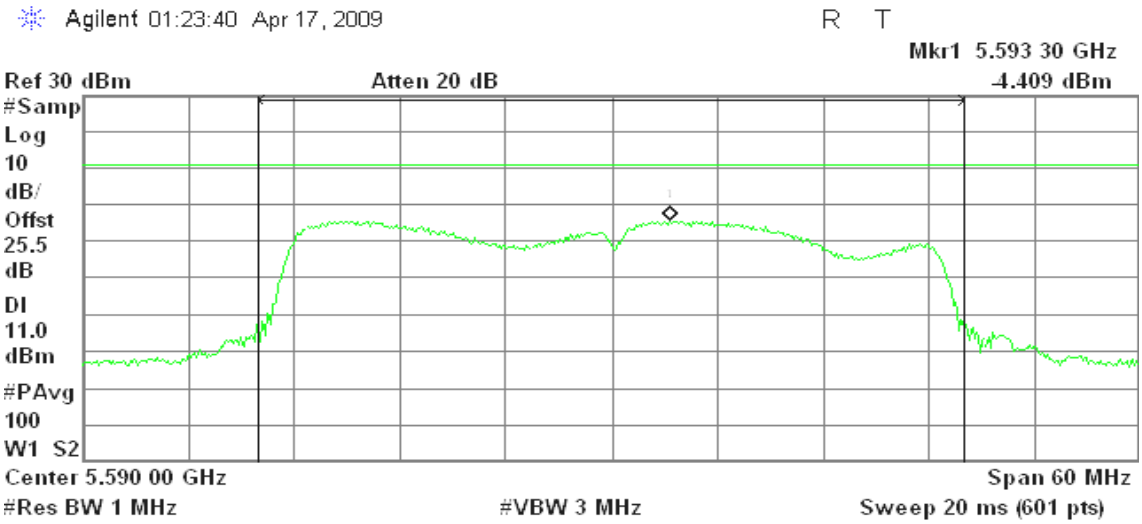
CH Low



Channel Power
6.95 dBm / 40.0000 MHz

Power Spectral Density
-69.07 dBm/Hz

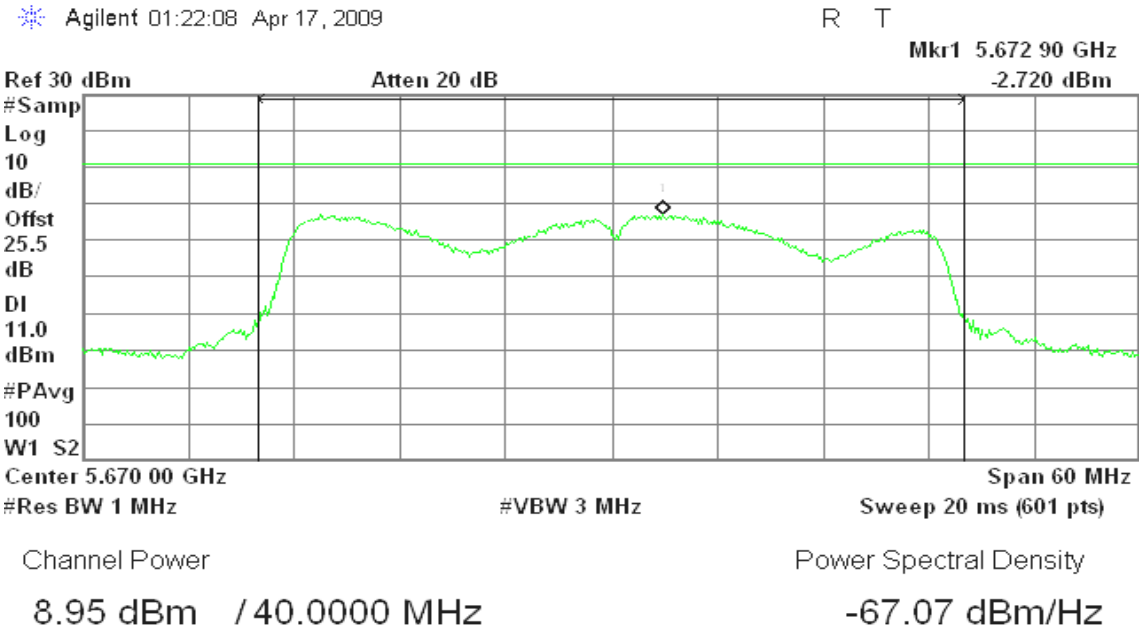
CH Mid



Channel Power
7.86 dBm / 40.0000 MHz

Power Spectral Density
-68.16 dBm/Hz

CH High



Channel Power

8.95 dBm /40.0000 MHz

Power Spectral Density

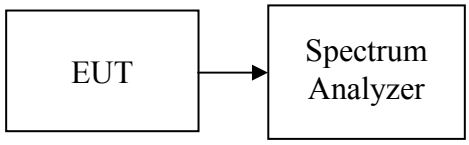
-67.07 dBm/Hz

7.5 PEAK EXCURSION

LIMIT

According to §15.407(a)(6), the ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

Test Configuration



TEST PROCEDURE

The test is performed in accordance with <FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices> – Part 15, Subpart E, August 2002.

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 spectrum.
3. Trace A, Set RBW =1MHz, VBW = 3MHz, Span >26dB bandwidth, Max. hold.
4. Delta Mark trace A Maximum frequency and trace B same frequency.
5. Repeat the above procedure until measurements for all frequencies were complete.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11a mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5180	7.80	13.00	-5.20	PASS
Mid	5220	7.72	13.00	-5.28	PASS
High	5240	7.19	13.00	-5.81	PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5180	9.50	13.00	-3.50	PASS
Mid	5220	8.99	13.00	-4.01	PASS
High	5240	9.06	13.00	-3.94	PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5180	8.57	13.00	-4.43	PASS
Mid	5220	8.59	13.00	-4.41	PASS
High	5240	11.14	13.00	-1.86	PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 0

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5190	9.27	13.00	-3.73	PASS
High	5230	11.45	13.00	-1.55	PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 1

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5190	9.38	13.00	-3.62	PASS
High	5230	9.84	13.00	-3.16	PASS

Test mode: IEEE 802.11a mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5260	9.30	13.00	-3.70	PASS
Mid	5280	8.29	13.00	-4.71	PASS
High	5320	8.44	13.00	-4.56	PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5260	9.95	13.00	-3.05	PASS
Mid	5280	8.84	13.00	-4.16	PASS
High	5320	10.09	13.00	-2.91	PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5260	8.24	13.00	-4.76	PASS
Mid	5280	9.71	13.00	-3.29	PASS
High	5320	9.55	13.00	-3.45	PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 0

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5270	8.11	13.00	-4.89	PASS
High	5310	10.54	13.00	-2.46	PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 1

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5270	9.41	13.00	-3.59	PASS
High	5310	10.06	13.00	-2.94	PASS

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5500	7.48	13.00	-5.52	PASS
Mid	5600	8.03	13.00	-4.97	PASS
High	5700	7.83	13.00	-5.17	PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5500	8.79	13.00	-4.21	PASS
Mid	5600	9.40	13.00	-3.60	PASS
High	5700	8.53	13.00	-4.47	PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5500	8.37	13.00	-4.63	PASS
Mid	5600	9.04	13.00	-3.96	PASS
High	5700	8.55	13.00	-4.45	PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 0

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5510	3.08	13.00	-9.92	PASS
Mid	5590	4.19	13.00	-8.81	PASS
High	5670	3.29	13.00	-9.71	PASS

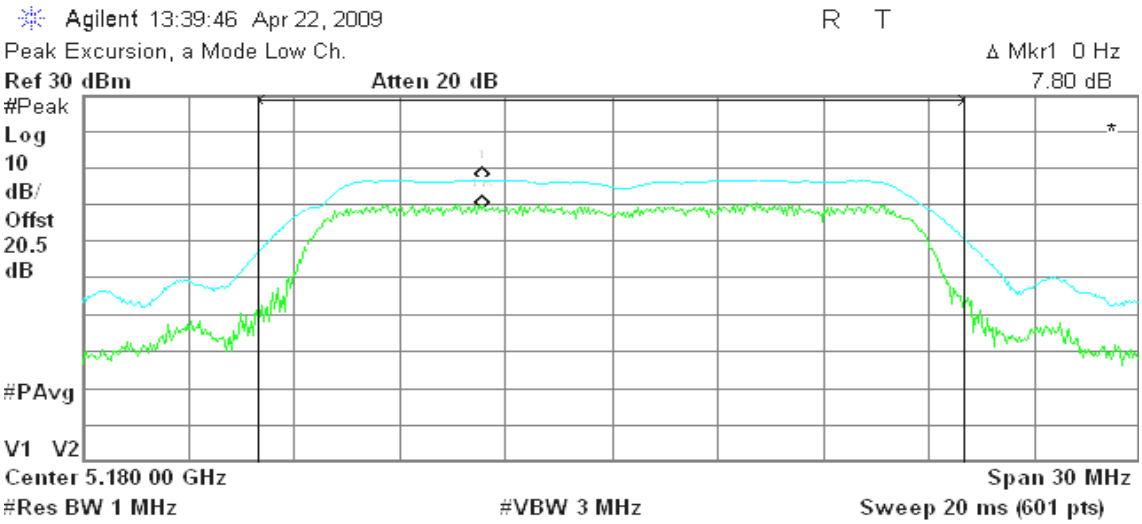
Test mode: draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 1

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5510	10.95	13.00	-2.05	PASS
Mid	5590	10.52	13.00	-2.48	PASS
High	5670	9.76	13.00	-3.24	PASS

Test Plot

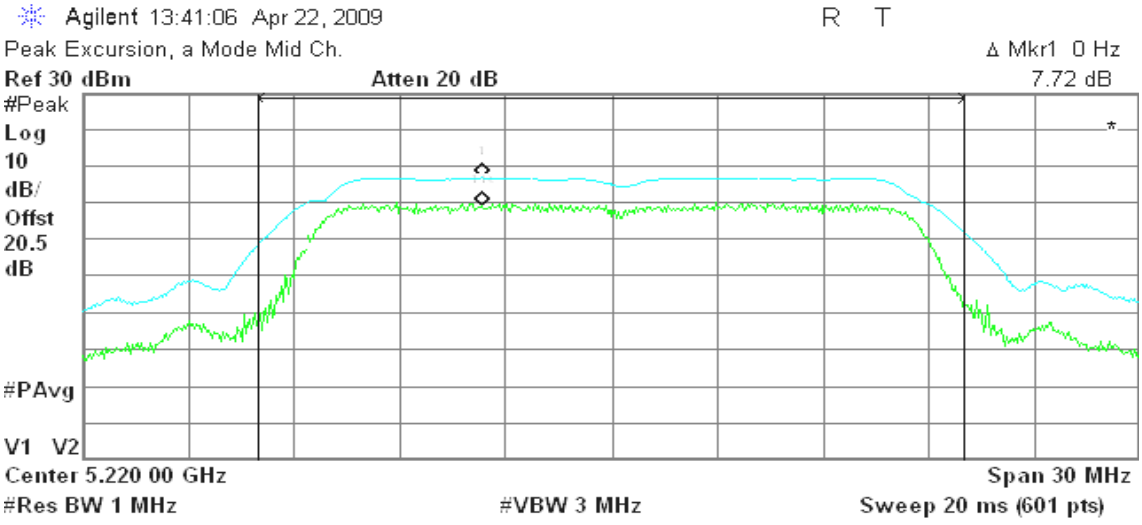
IEEE 802.11a mode / 5180 ~ 5240MHz

CH Low



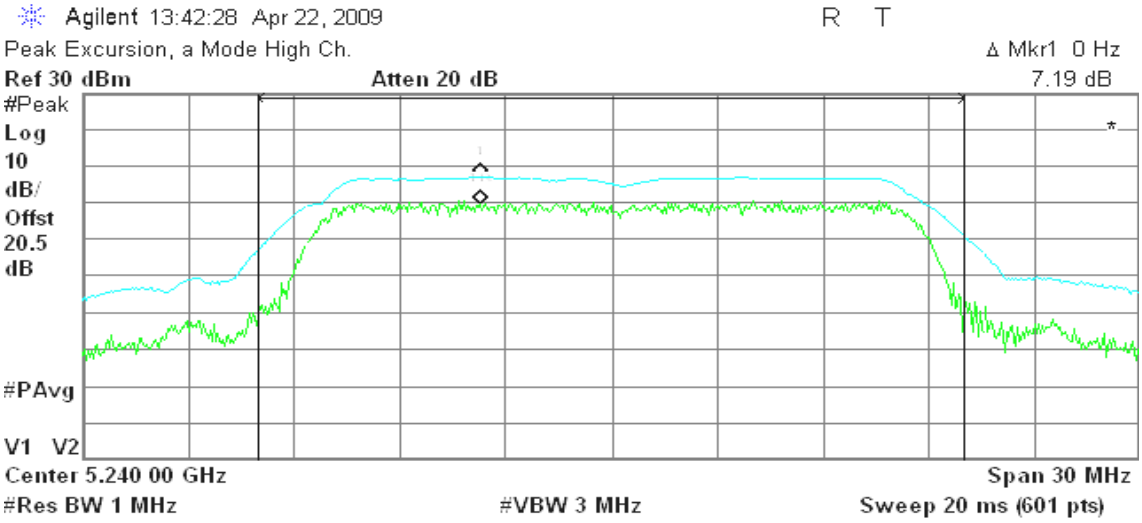
Channel Power	Power Spectral Density
16.83 dBm / 20.0000 MHz	-56.18 dBm/Hz

CH Mid



Channel Power	Power Spectral Density
16.95 dBm / 20.0000 MHz	-56.06 dBm/Hz

CH High

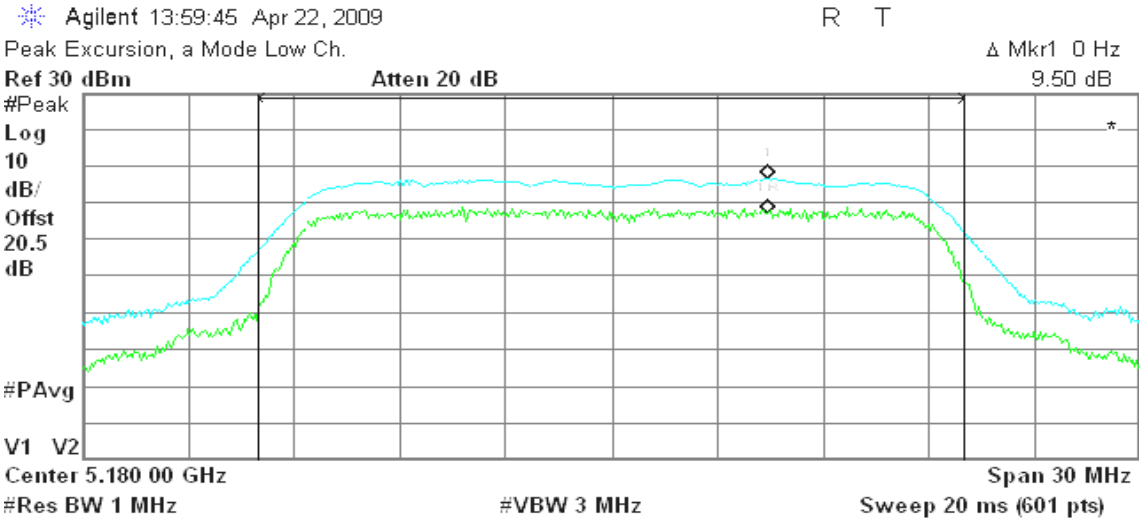


Channel Power
17.10 dBm / 20.0000 MHz

Power Spectral Density
-55.91 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

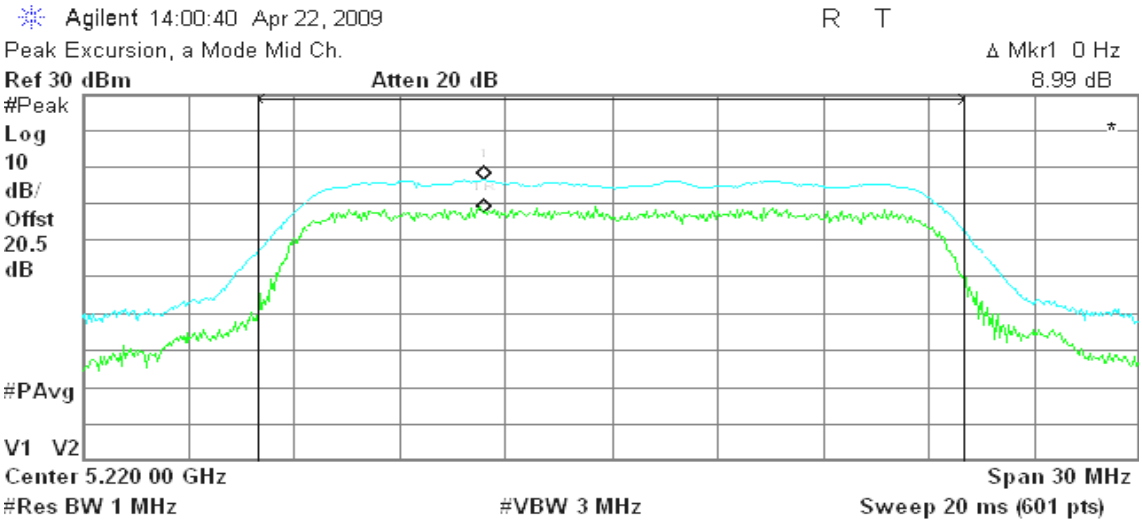
CH Low



Channel Power
15.84 dBm / 20.0000 MHz

Power Spectral Density
-57.17 dBm/Hz

CH Mid



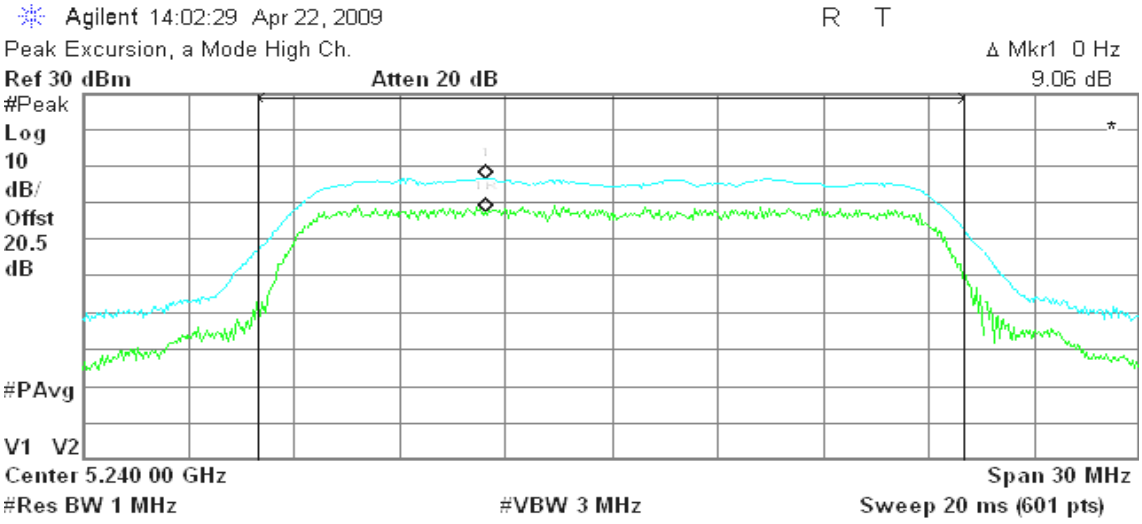
Channel Power

15.85 dBm / 20.0000 MHz

Power Spectral Density

-57.16 dBm/Hz

CH High



Channel Power

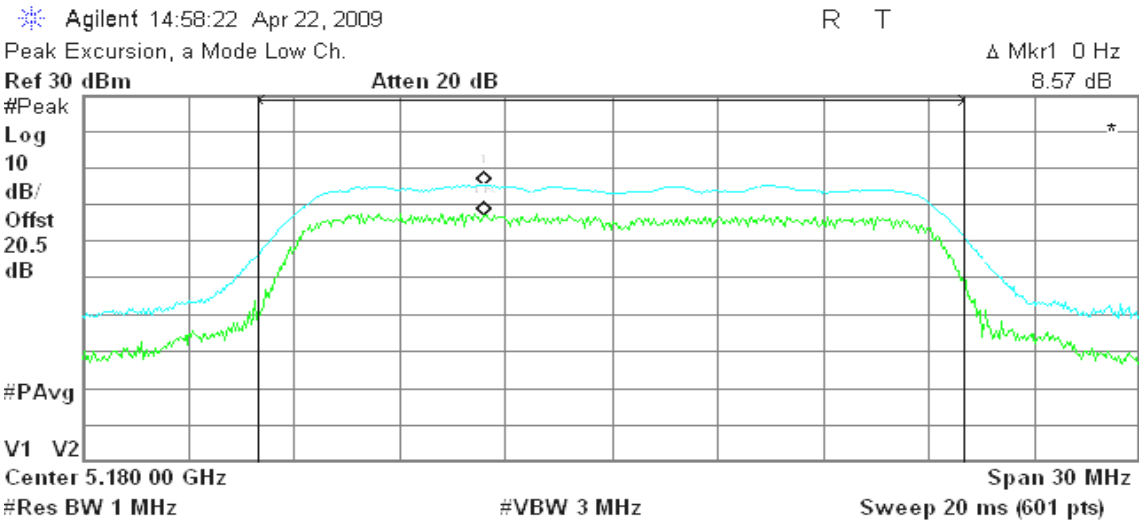
16.01 dBm / 20.0000 MHz

Power Spectral Density

-57.00 dBm/Hz

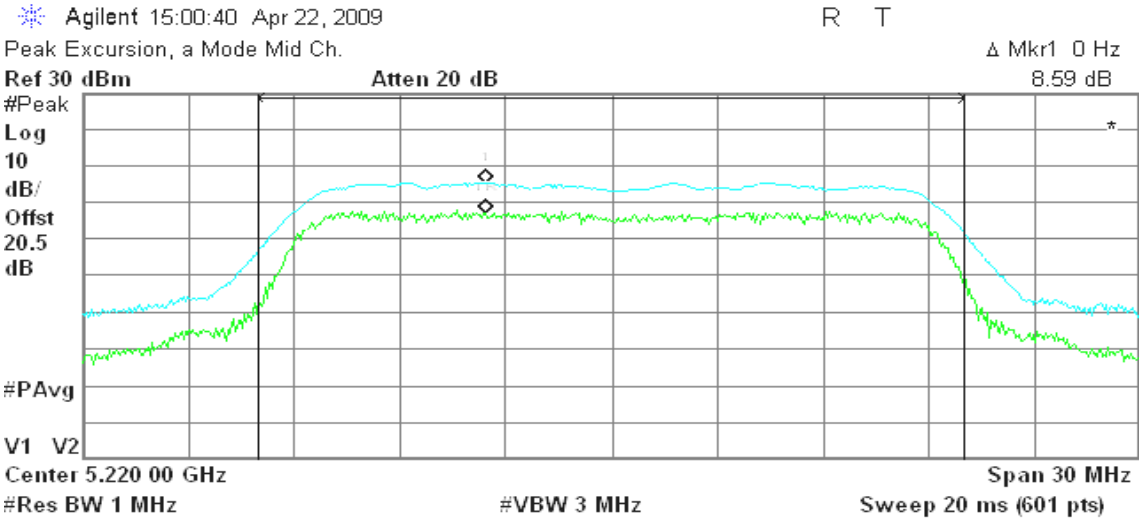
draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

CH Low



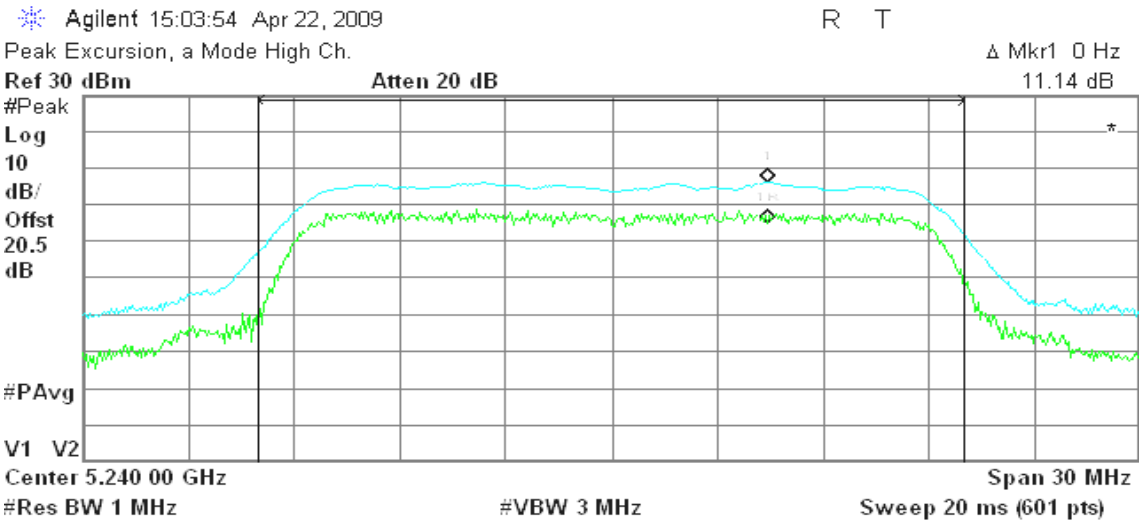
Channel Power	Power Spectral Density
14.84 dBm / 20.0000 MHz	-58.17 dBm/Hz

CH Mid



Channel Power	Power Spectral Density
14.94 dBm / 20.0000 MHz	-58.07 dBm/Hz

CH High

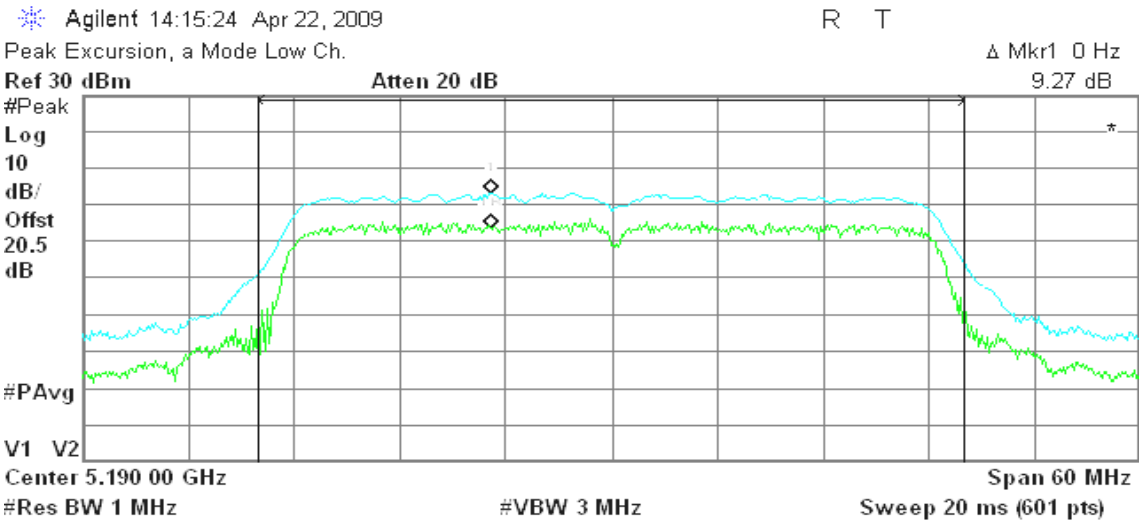


Channel Power
15.43 dBm / 20.0000 MHz

Power Spectral Density
-57.58 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 0

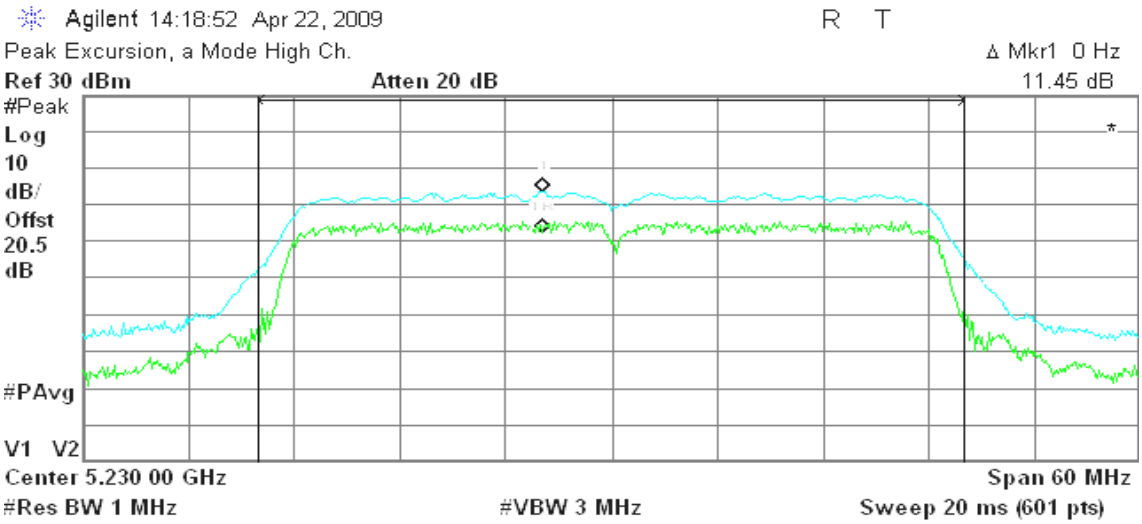
CH Low



Channel Power
15.39 dBm / 40.0000 MHz

Power Spectral Density
-60.63 dBm/Hz

CH High

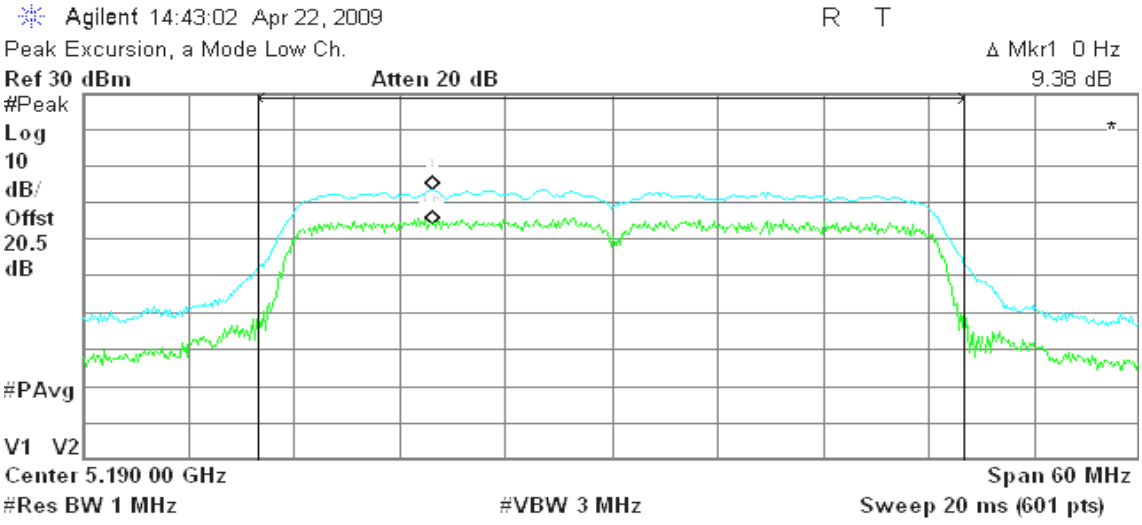


Channel Power
15.58 dBm / 40.0000 MHz

Power Spectral Density
-60.44 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 1

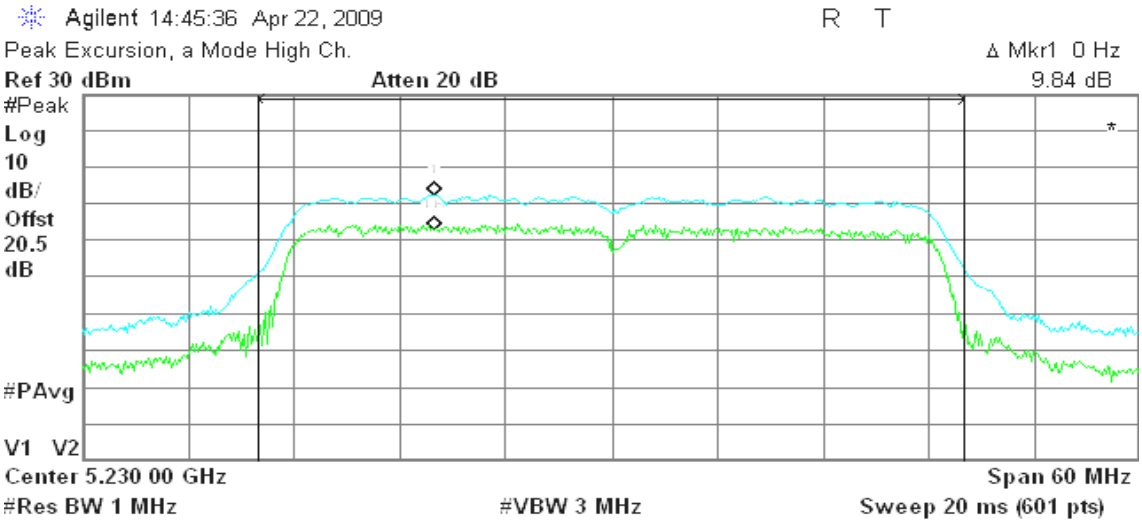
CH Low



Channel Power
15.52 dBm / 40.0000 MHz

Power Spectral Density
-60.50 dBm/Hz

CH High

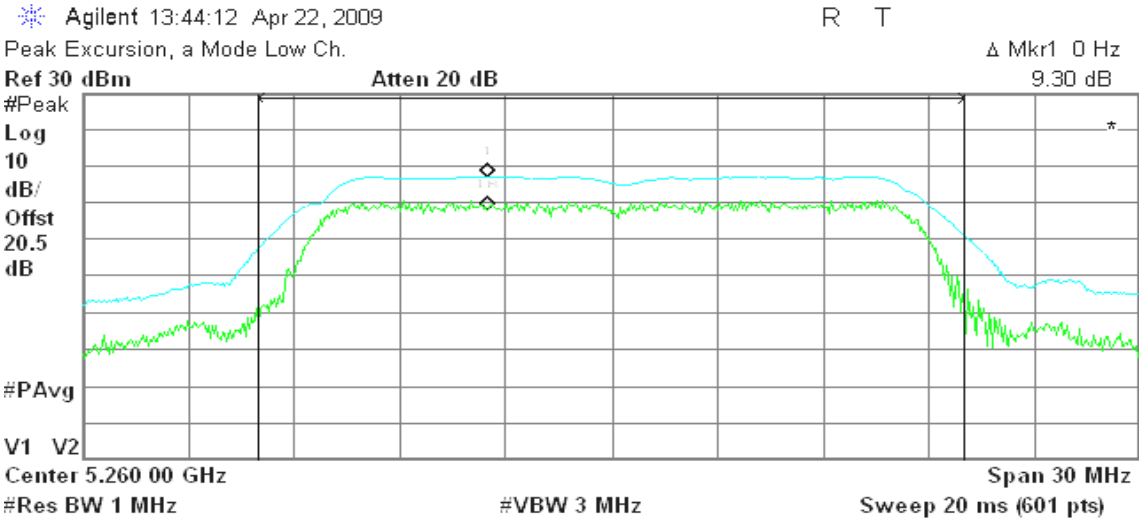


Channel Power
14.40 dBm / 40.0000 MHz

Power Spectral Density
-61.62 dBm/Hz

IEEE 802.11a mode / 5260 ~ 5320MHz

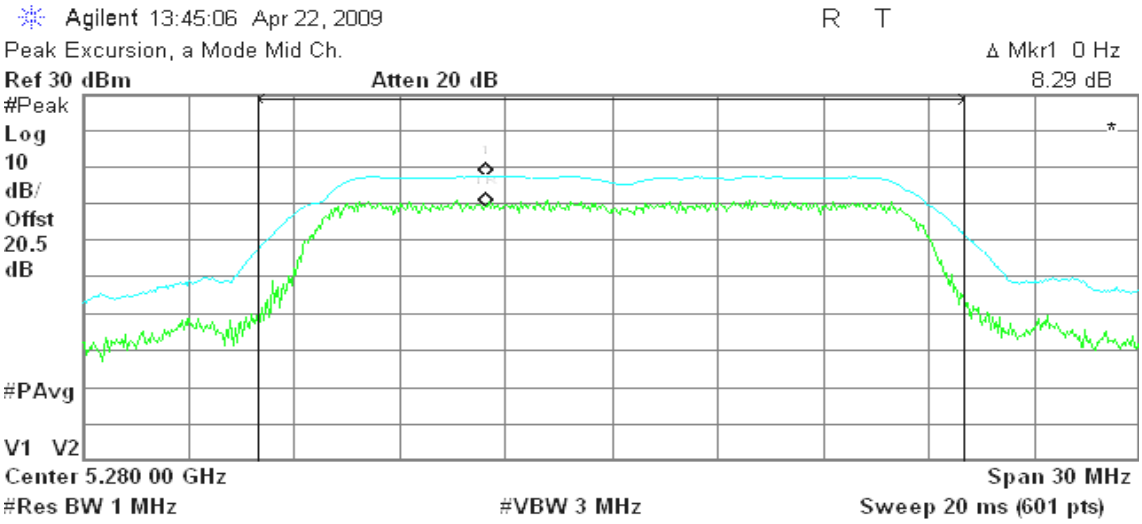
CH Low



Channel Power
17.25 dBm / 20.0000 MHz

Power Spectral Density
-55.76 dBm/Hz

CH Mid



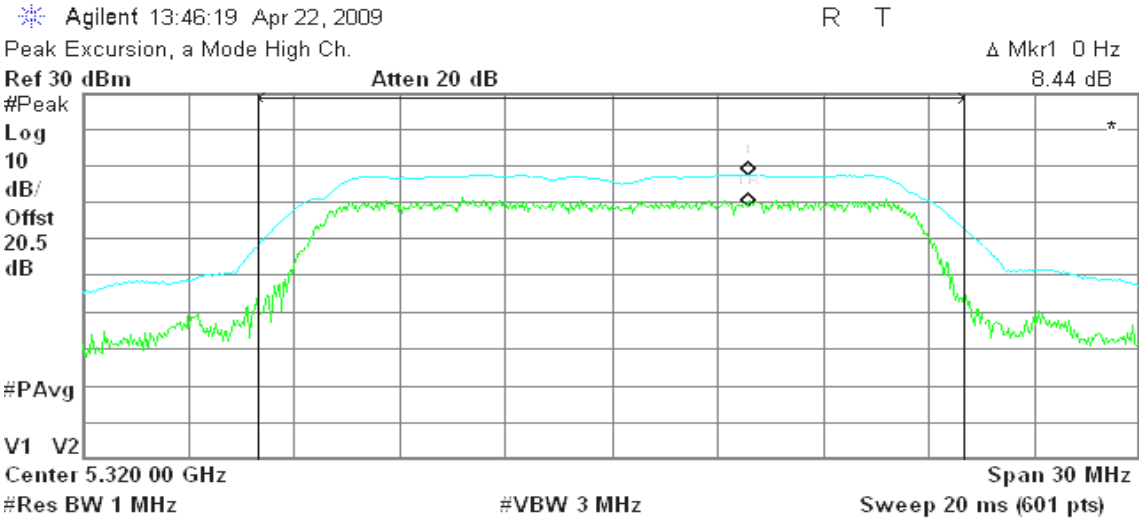
Channel Power

17.56 dBm / 20.0000 MHz

Power Spectral Density

-55.45 dBm/Hz

CH High



Channel Power

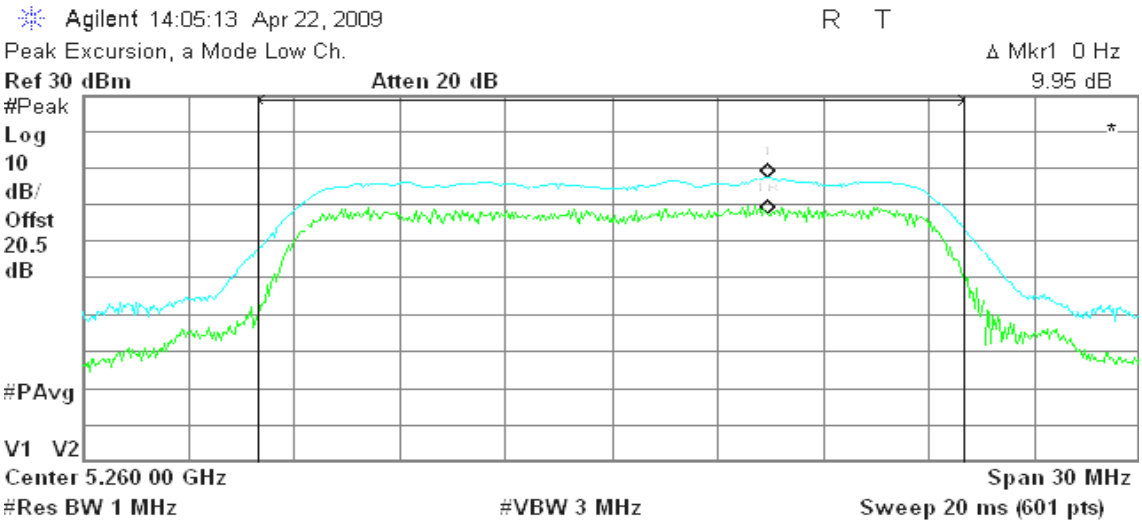
17.55 dBm / 20.0000 MHz

Power Spectral Density

-55.46 dBm/Hz

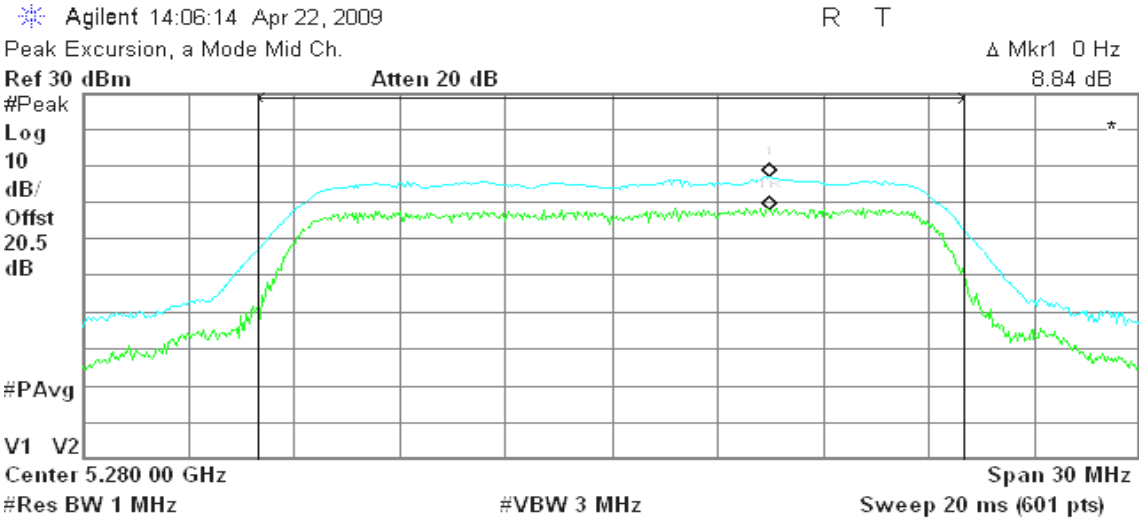
draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

CH Low



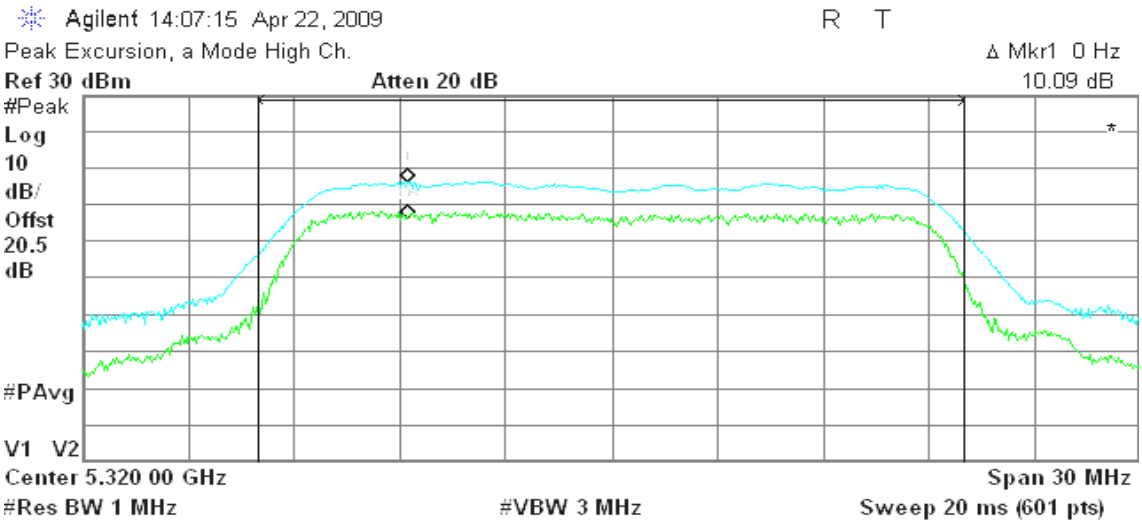
Channel Power	Power Spectral Density
16.26 dBm / 20.0000 MHz	-56.75 dBm/Hz

CH Mid



Channel Power	Power Spectral Density
15.66 dBm / 20.0000 MHz	-57.35 dBm/Hz

CH High

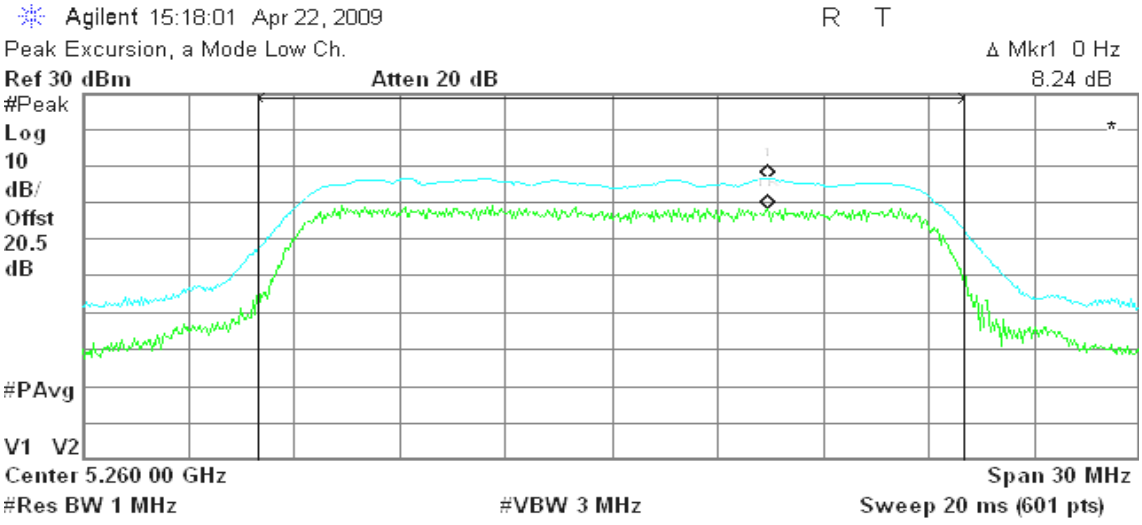


Channel Power
15.53 dBm / 20.0000 MHz

Power Spectral Density
-57.48 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

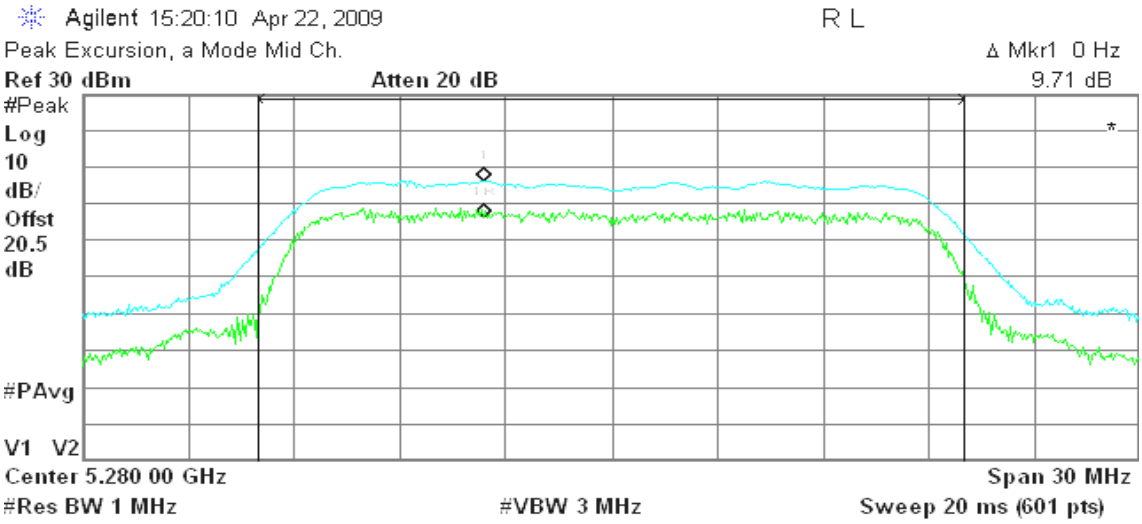
CH Low



Channel Power
16.05 dBm / 20.0000 MHz

Power Spectral Density
-56.96 dBm/Hz

CH Mid



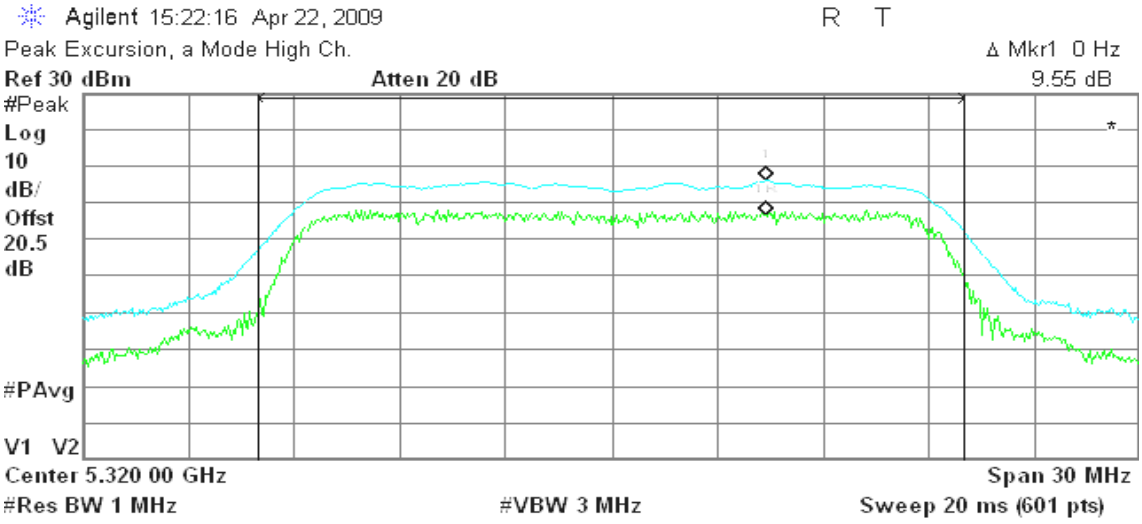
Channel Power

15.49 dBm / 20.0000 MHz

Power Spectral Density

-57.52 dBm/Hz

CH High



Channel Power

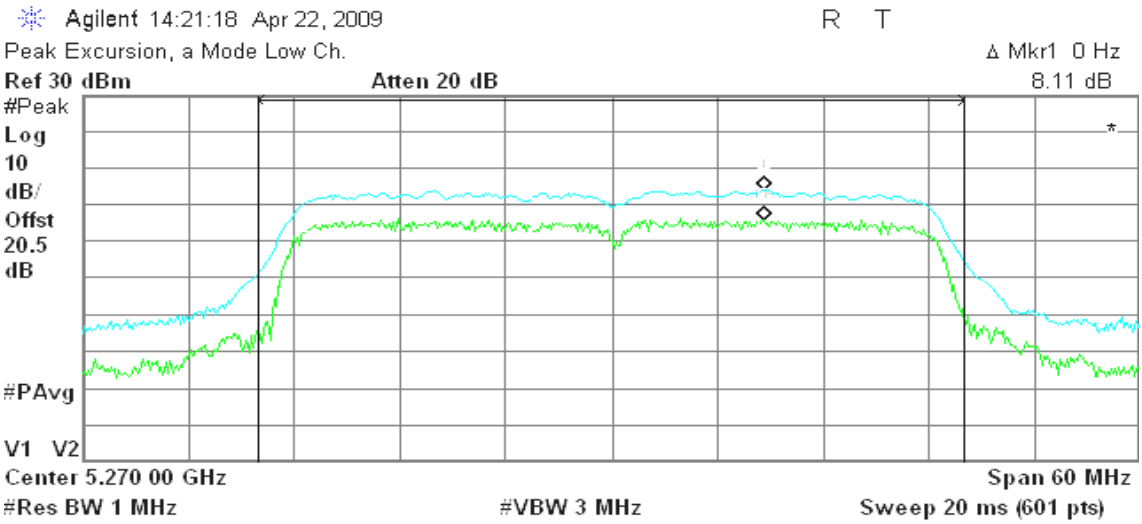
15.21 dBm / 20.0000 MHz

Power Spectral Density

-57.80 dBm/Hz

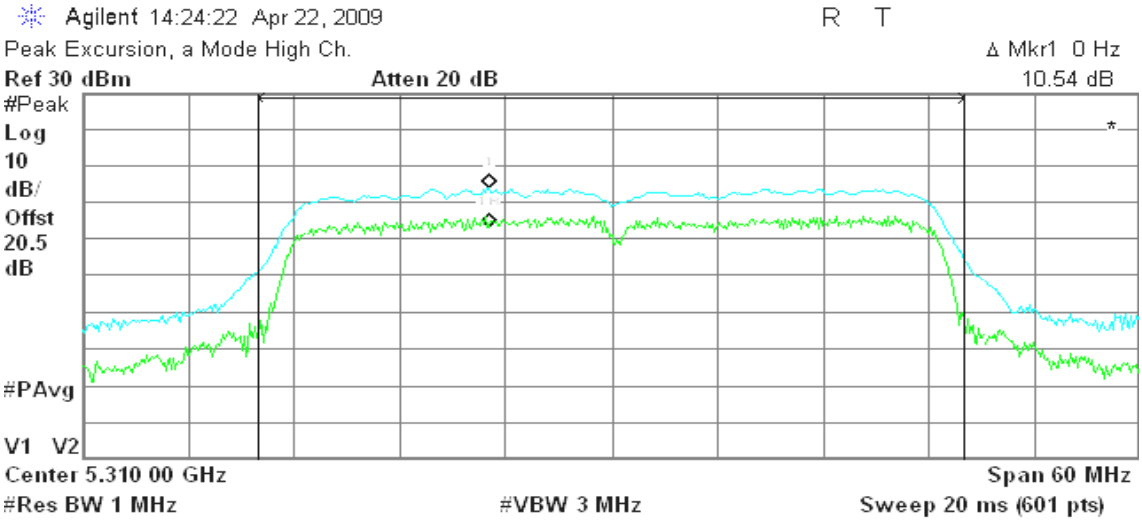
draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 0

CH Low



Channel Power	Power Spectral Density
16.16 dBm / 40.0000 MHz	-59.86 dBm/Hz

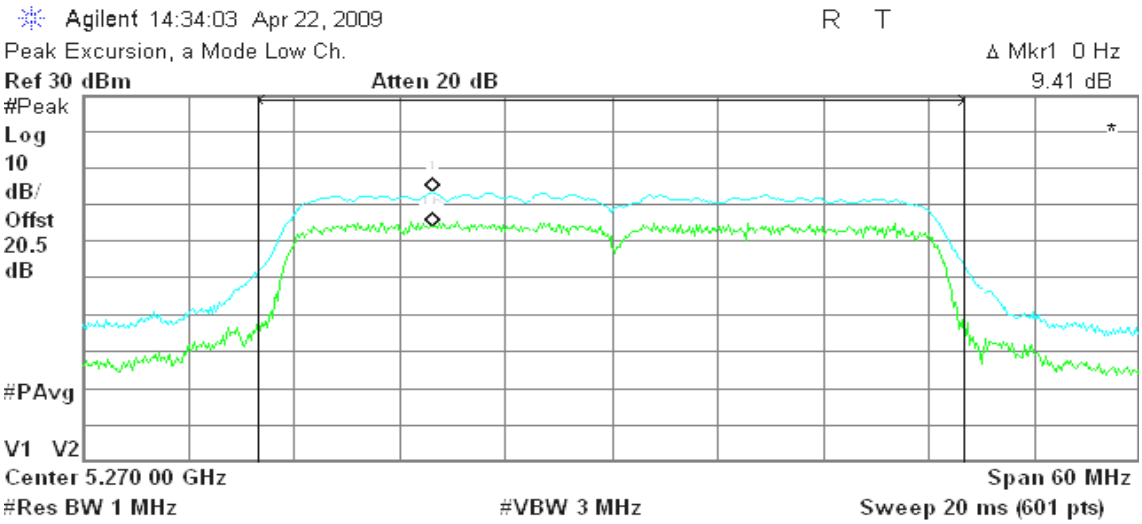
CH High



Channel Power	Power Spectral Density
16.00 dBm / 40.0000 MHz	-60.02 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 1

CH Low



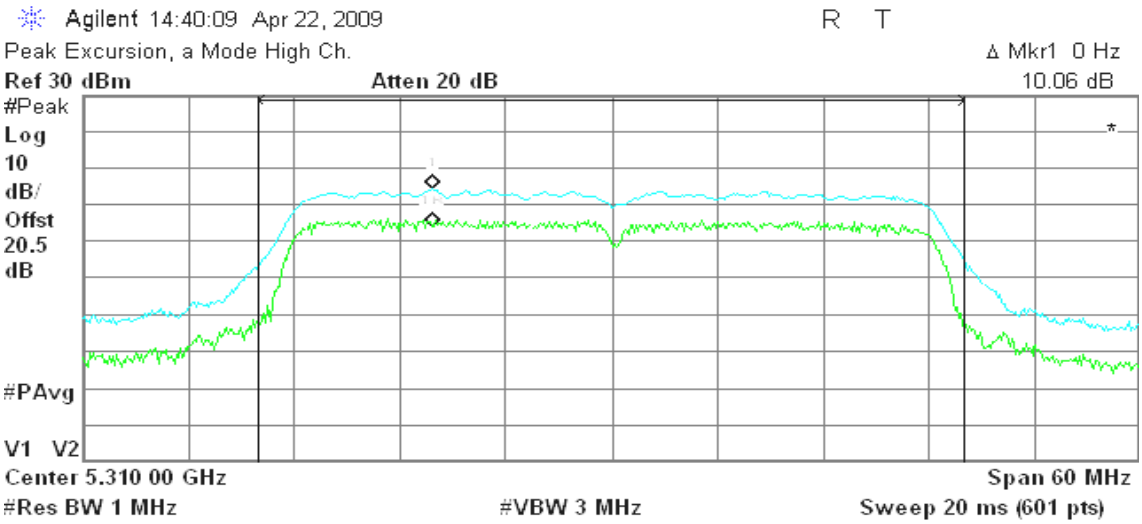
Channel Power

15.30 dBm / 40.0000 MHz

Power Spectral Density

-60.72 dBm/Hz

CH High



Channel Power

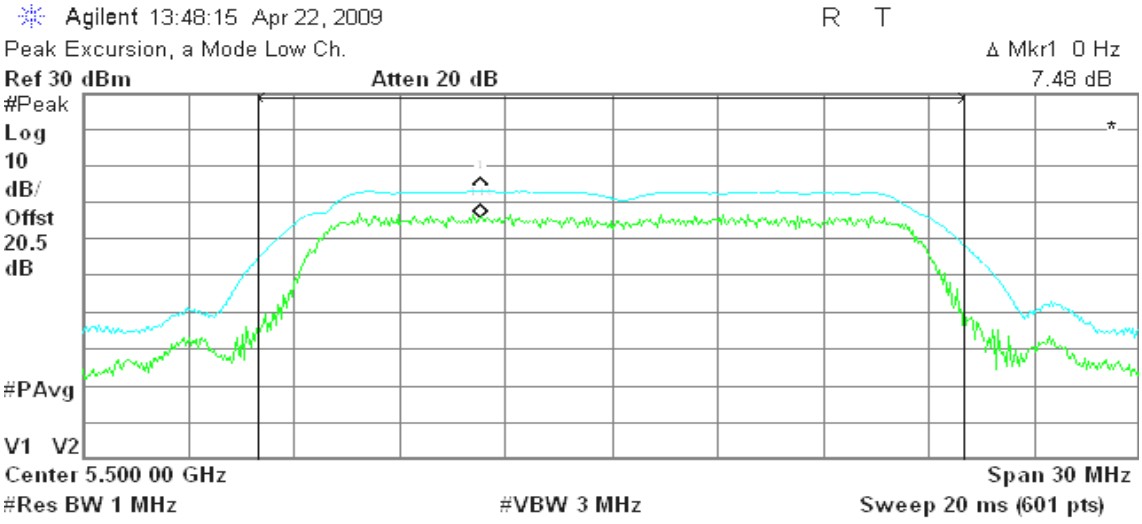
16.25 dBm / 40.0000 MHz

Power Spectral Density

-59.77 dBm/Hz

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

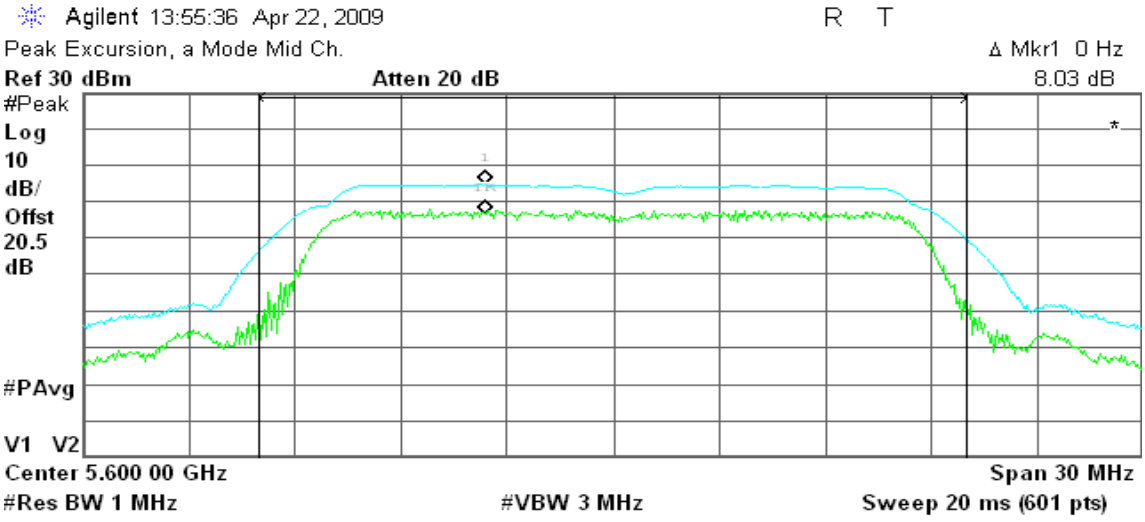
CH Low



Channel Power
13.14 dBm / 20.0000 MHz

Power Spectral Density
-59.87 dBm/Hz

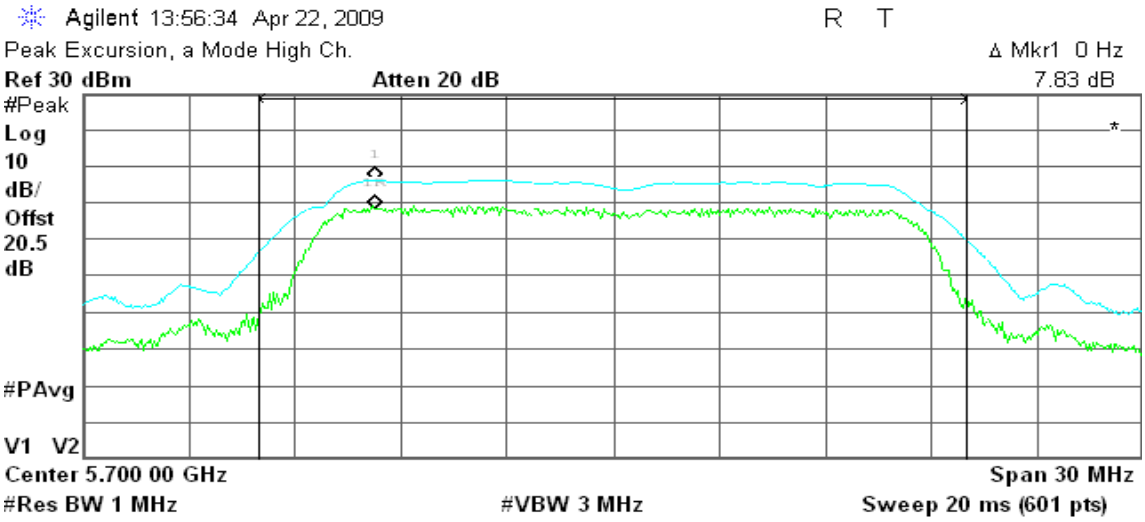
CH Mid



Channel Power
14.44 dBm / 20.0000 MHz

Power Spectral Density
-58.58 dBm/Hz

CH High

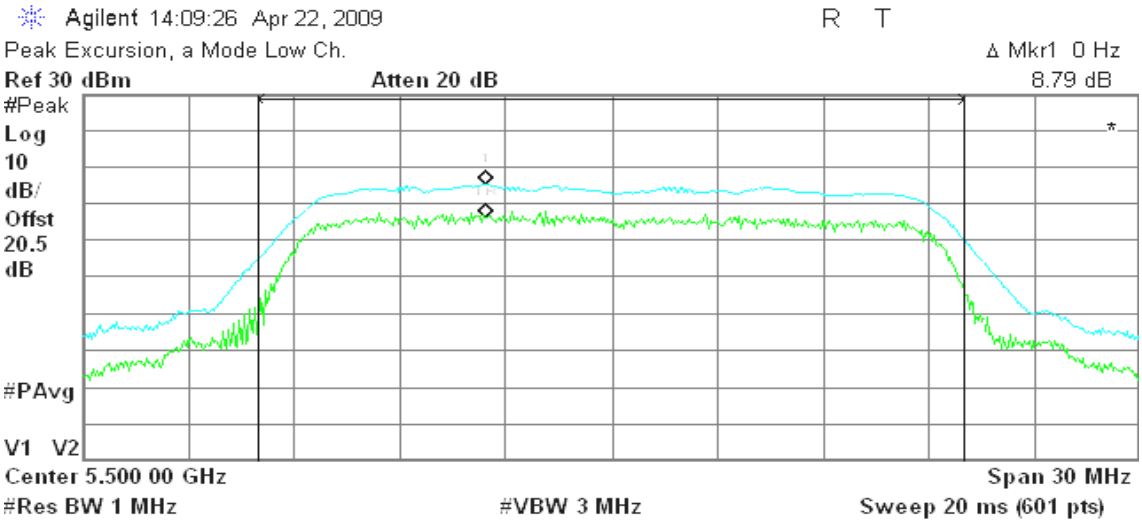


Channel Power
15.92 dBm / 20.0000 MHz

Power Spectral Density
-57.09 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

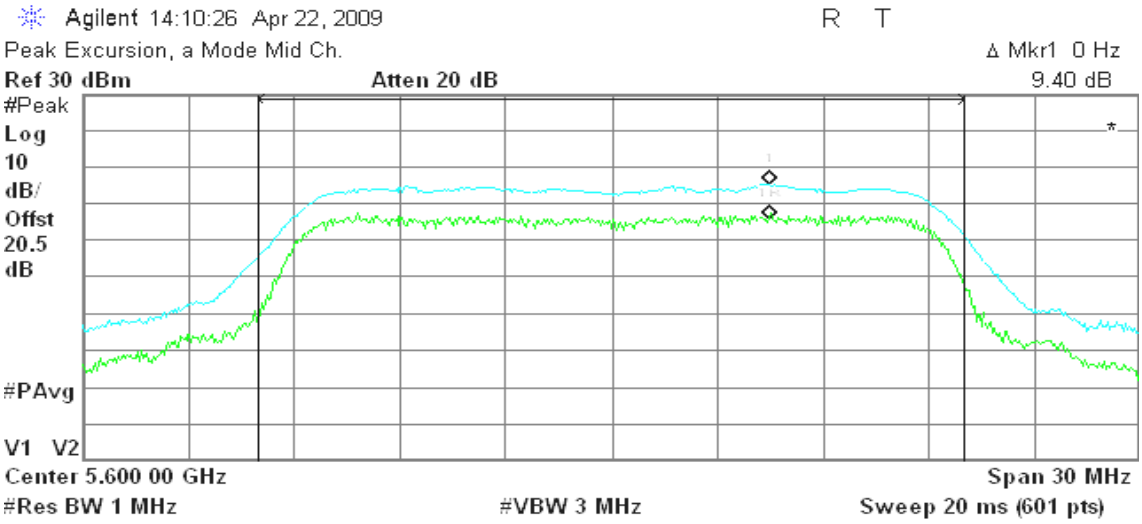
CH Low



Channel Power
14.15 dBm / 20.0000 MHz

Power Spectral Density
-58.86 dBm/Hz

CH Mid



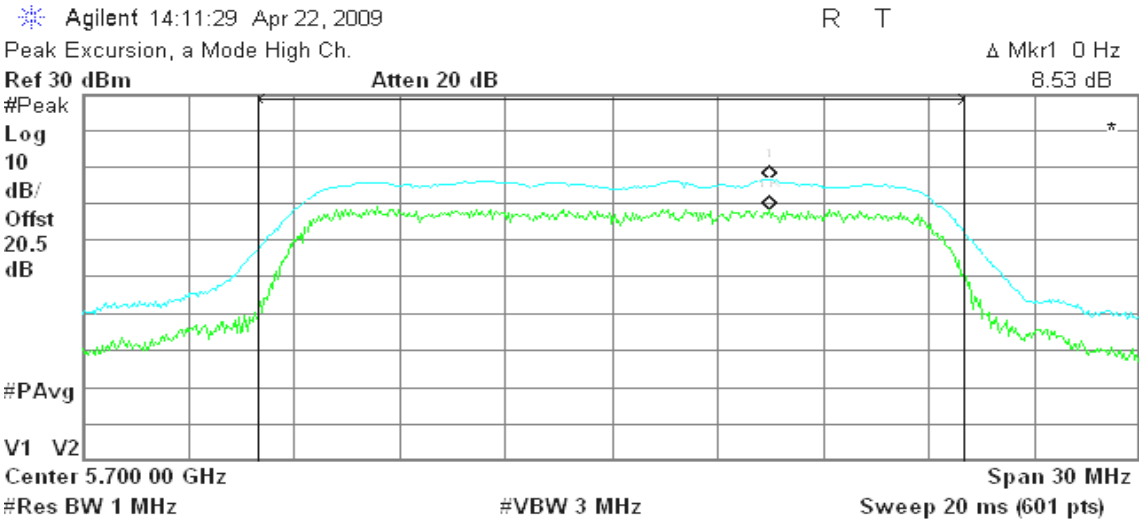
Channel Power

14.32 dBm / 20.0000 MHz

Power Spectral Density

-58.69 dBm/Hz

CH High



Channel Power

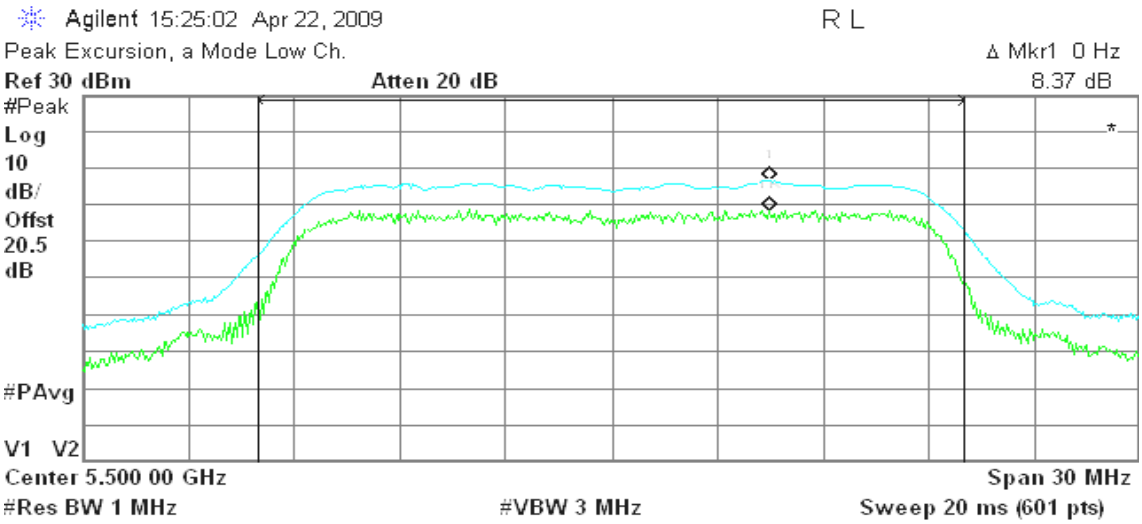
15.79 dBm / 20.0000 MHz

Power Spectral Density

-57.22 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

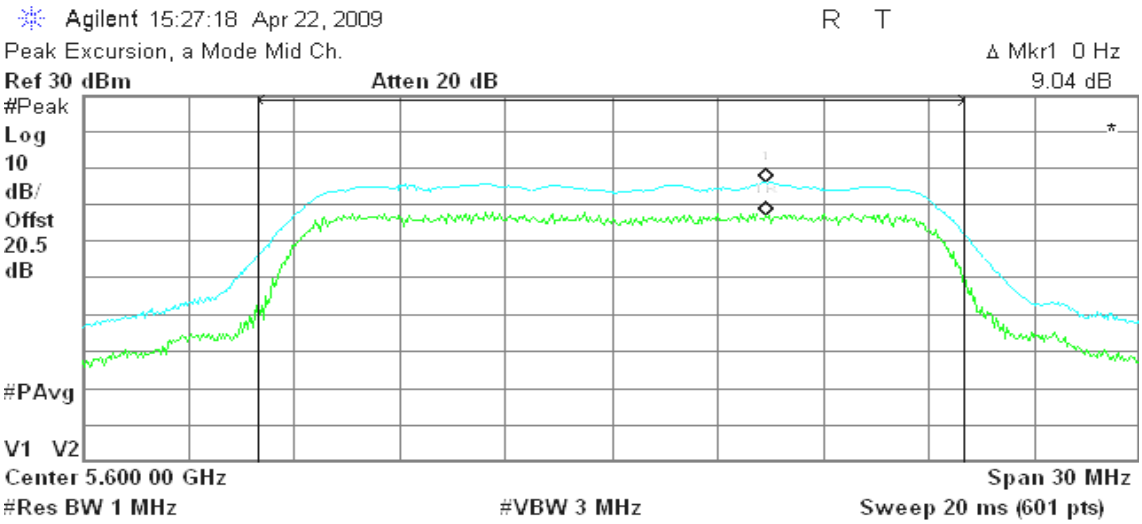
CH Low



Channel Power
15.58 dBm / 20.0000 MHz

Power Spectral Density
-57.43 dBm/Hz

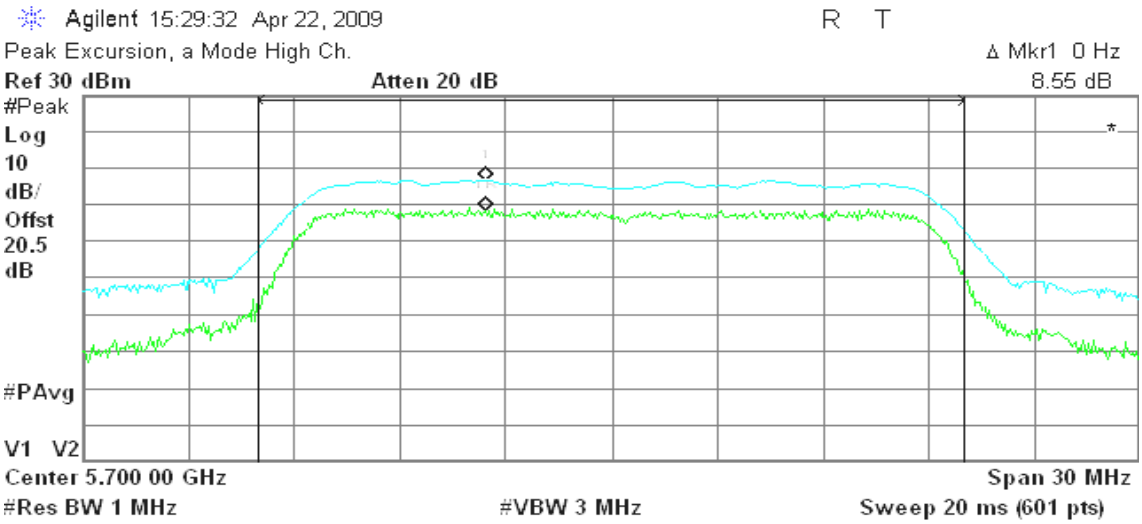
CH Mid



Channel Power
15.16 dBm / 20.0000 MHz

Power Spectral Density
-57.85 dBm/Hz

CH High

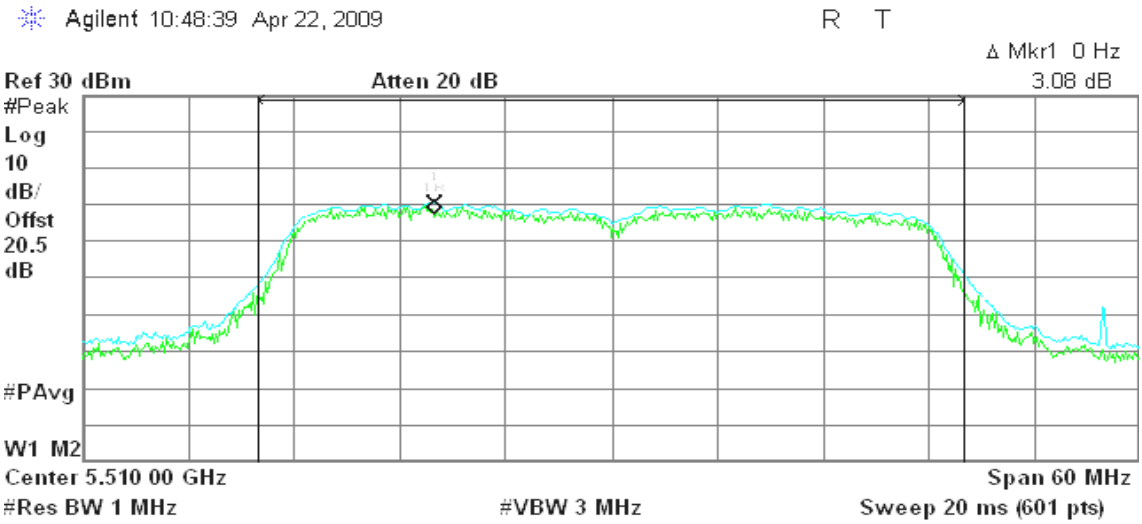


Channel Power
16.19 dBm / 20.0000 MHz

Power Spectral Density
-56.82 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 0

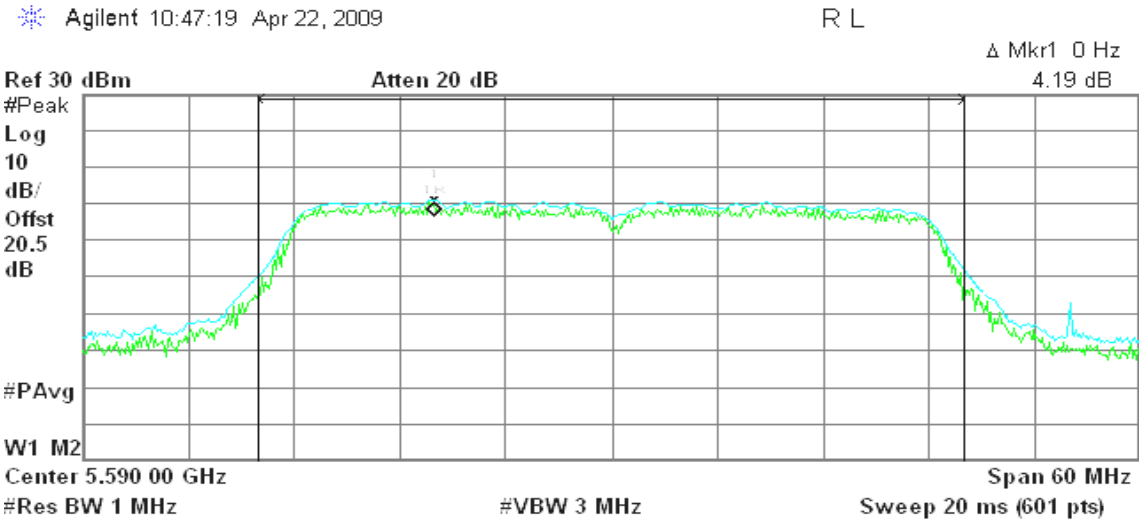
CH Low



Channel Power
12.22 dBm / 40.0000 MHz

Power Spectral Density
-63.80 dBm/Hz

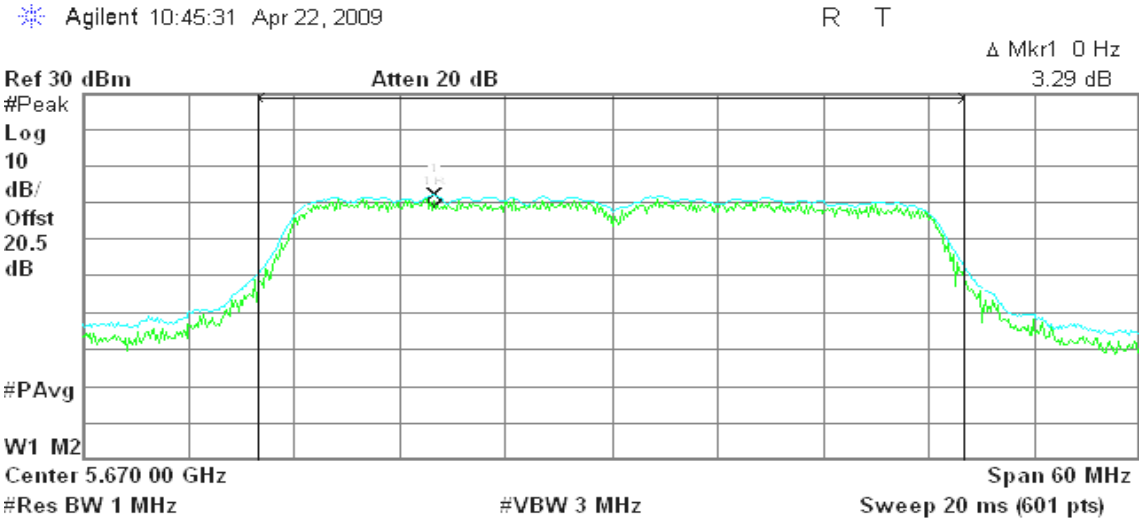
CH Mid



Channel Power
12.92 dBm / 40.0000 MHz

Power Spectral Density
-63.10 dBm/Hz

CH High

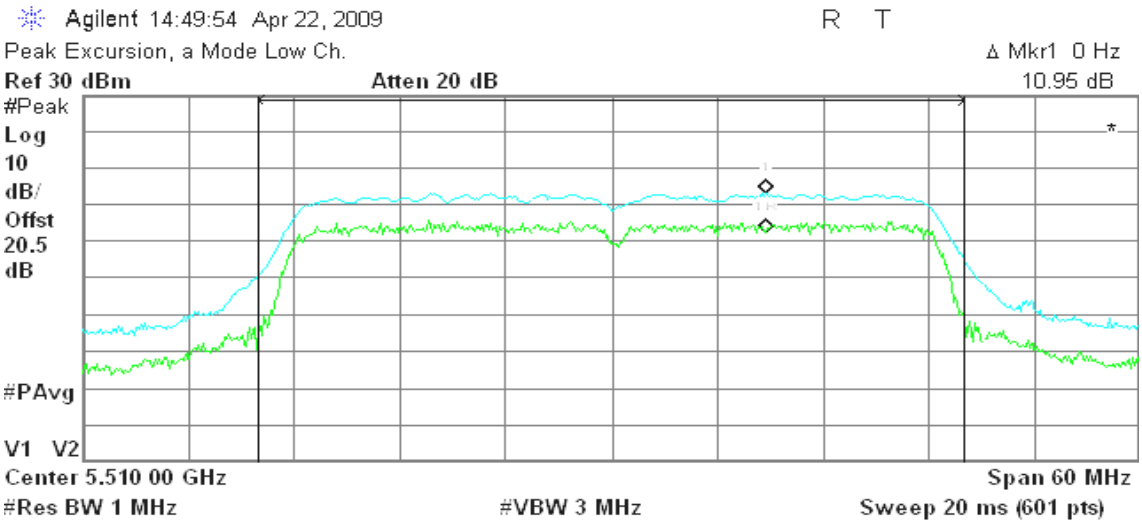


Channel Power
14.15 dBm / 40.0000 MHz

Power Spectral Density
-61.87 dBm/Hz

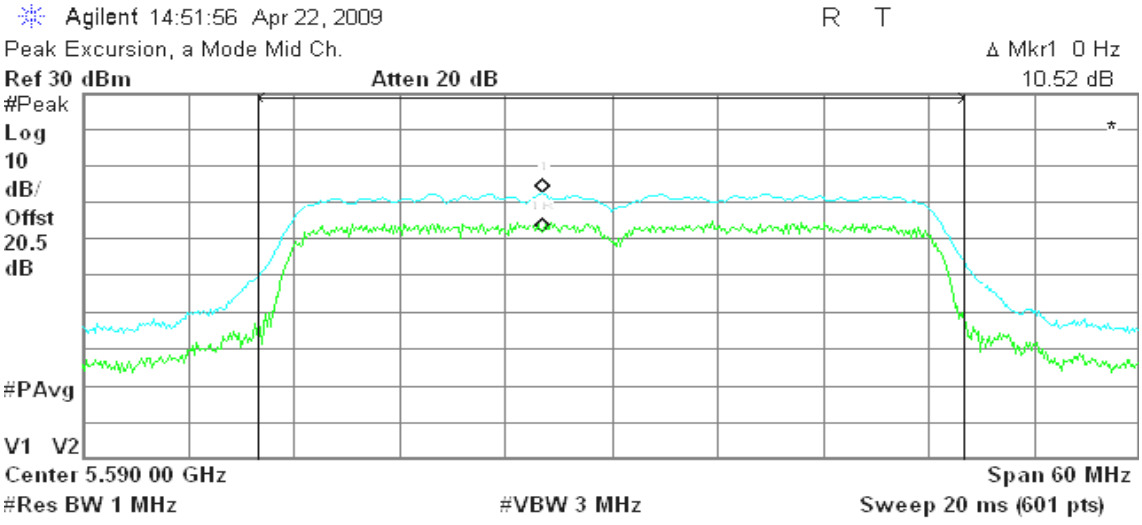
draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 1

CH Low



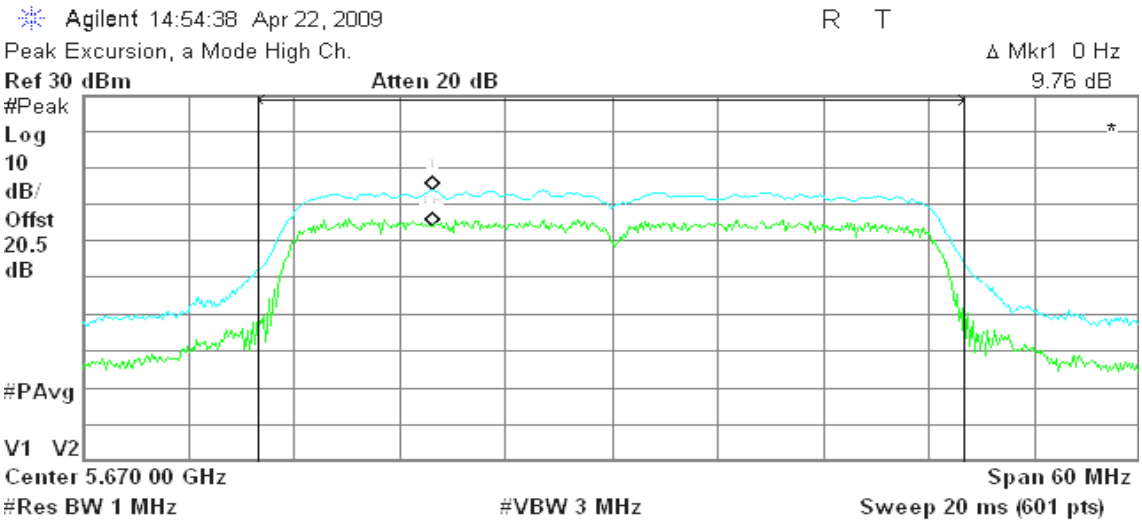
Channel Power	Power Spectral Density
15.47 dBm / 40.0000 MHz	-60.56 dBm/Hz

CH Mid



Channel Power	Power Spectral Density
14.71 dBm / 40.0000 MHz	-61.31 dBm/Hz

CH High



Channel Power

15.87 dBm / 40.0000 MHz

Power Spectral Density

-60.15 dBm/Hz

7.6 RADIATED UNDESIRABLE EMISSION

1. 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 (μV/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

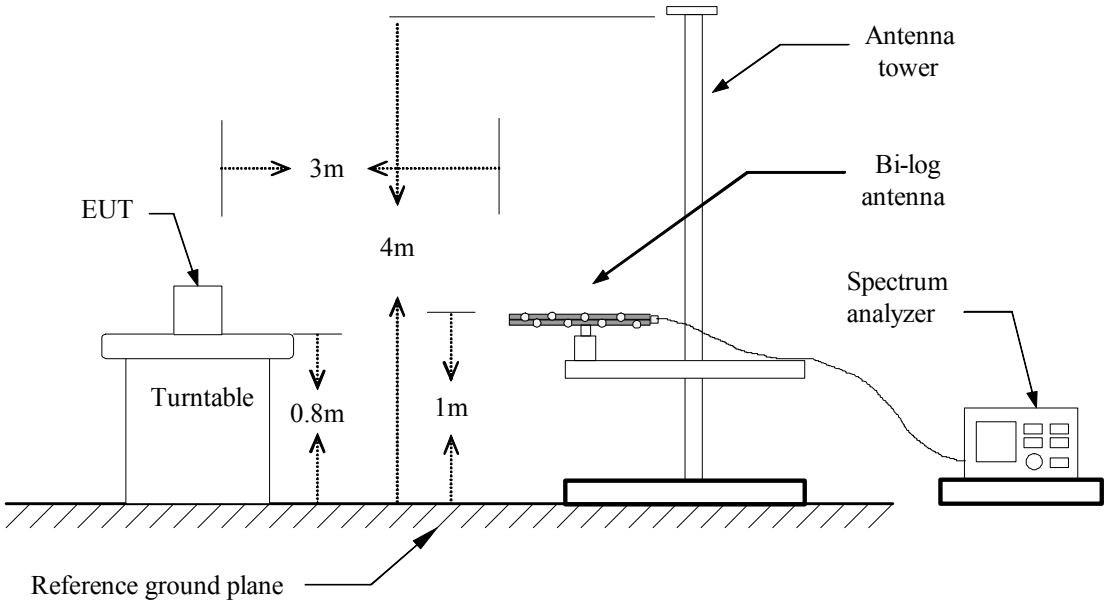
Remark: *Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of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

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

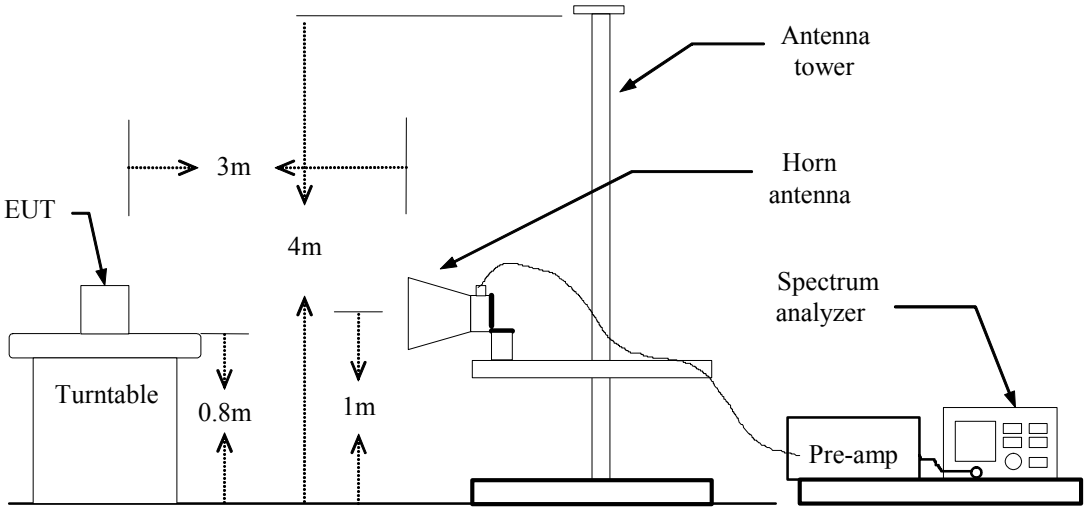
Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

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

Below 1 GHz

Operation Mode: Normal Link **Test Date:** March 19, 2009

Temperature: 23°C **Tested by:** Nan Tsai

Humidity: 53% 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
47.78	V	44.91	-12.48	32.43	40.00	-7.57	QP
214.30	V	46.92	-9.85	37.07	43.50	-6.43	Peak
463.27	V	43.22	-5.26	37.96	46.00	-8.04	Peak
671.82	V	37.70	-2.18	35.52	46.00	-10.48	Peak
746.18	V	38.62	-0.44	38.18	46.00	-7.82	Peak
773.67	V	37.63	-0.06	37.57	46.00	-8.43	Peak
143.17	H	45.60	-9.28	36.32	43.50	-7.18	Peak
214.30	H	45.36	-9.85	35.51	43.50	-7.99	Peak
463.27	H	42.75	-5.26	37.49	46.00	-8.51	Peak
671.82	H	39.43	-2.18	37.25	46.00	-8.75	Peak
746.18	H	39.13	-0.44	38.69	46.00	-7.31	QP
773.67	H	40.71	-0.06	40.65	46.00	-5.35	Peak

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 802.11a mode / 5180 ~ 5240MHz / CH Low **Test Date:** April 14, 2009

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
5183.33	V	98.99	90.71	1.20	100.20	91.91	Fundamental			
1060.00	V	54.09	---	-7.85	46.25	---	74.00	54.00	-7.75	Peak
1496.67	V	55.08	---	-7.04	48.04	---	74.00	54.00	-5.96	Peak
6216.67	V	60.56	56.69	2.51	63.07	59.20	80.20	71.91	-12.71	20dBc AVG Fundamental
N/A										
1496.67	H	58.68	---	-7.04	51.64	---	74.00	54.00	-2.36	Peak
2240.00	H	51.34	---	-1.85	49.49	---	74.00	54.00	-4.51	Peak
5550.00	H	54.54	41.08	1.64	56.18	42.72	74.00	54.00	-11.28	AVG
6216.67	H	56.65	48.85	2.51	59.16	51.36	74.00	54.00	-2.64	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.*
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. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*

Operation Mode:	Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Mid	**Test Date:**	April 14, 2009
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
5216.67	V	97.71	90.41	1.24	98.95	91.65	Fundamental			
1493.33	V	55.89	---	-7.04	48.85	---	74.00	54.00	-5.15	Peak
6266.67	V	57.84	55.86	2.57	60.41	58.43	78.95	71.65	-13.22	20dBc AVG Fundamental
N/A										
1496.67	H	58.89	---	-7.04	51.86	---	74.00	54.00	-2.14	Peak
2243.33	H	50.78	---	-1.85	48.93	---	74.00	54.00	-5.07	Peak
6266.67	H	56.16	49.34	2.57	58.73	51.91	74.00	54.00	-2.09	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.*
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. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*

Operation Mode:	Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH High	**Test Date:**	April 14, 2009
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
1496.67	V	55.32	---	-7.04	48.29	---	74.00	54.00	-5.71	Peak
5525.00	V	54.50	41.09	1.60	56.11	42.69	74.00	54.00	-11.31	AVG
6283.33	V	58.23	50.36	2.59	60.82	52.95	74.00	54.00	-1.05	AVG
N/A										
1500.00	H	58.78	---	-7.03	51.75	---	74.00	54.00	-2.25	Peak
2243.33	H	50.97	---	-1.85	49.12	---	74.00	54.00	-4.88	Peak
6291.67	H	54.22	49.21	2.60	56.82	51.81	74.00	54.00	-2.19	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.*
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 / 5180 ~ 5240MHz / CH Low	**Test Date:**	April 14, 2009
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
5183.33	V	99.21	86.09	1.20	100.41	87.29	Fundamental			
1493.33	V	54.73	---	-7.04	47.68	---	74.00	54.00	-6.32	Peak
2256.67	V	50.27	---	-1.82	48.44	---	74.00	54.00	-5.56	Peak
6216.67	V	60.26	55.83	2.51	62.77	58.34	80.41	67.29	-8.95	20dBc AVG Fundamental
N/A										
1500.00	H	58.75	---	-7.03	51.72	---	74.00	54.00	-2.28	Peak
6216.67	H	57.00	50.38	2.51	59.51	52.89	74.00	54.00	-1.11	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.*
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. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*

Operation Mode:	Tx / draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / CH Mid	**Test Date:**	April 14, 2009
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
5216.67	V	97.51	89.40	1.24	98.75	90.64	Fundamental			
1070.00	V	53.39	---	-7.83	45.56	---	74.00	54.00	-8.44	Peak
1493.33	V	55.66	---	-7.04	48.62	---	74.00	54.00	-5.38	Peak
6266.67	V	59.44	52.62	2.57	62.01	55.19	78.75	70.64	-15.45	20dBc AVG Fundamental
N/A										
1496.67	H	58.92	---	-7.04	51.88	---	74.00	54.00	-2.12	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.*
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. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*

Operation Mode:	Tx / draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / CH High	**Test Date:**	April 14, 2009
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
1496.67	V	55.63	---	-7.04	48.60	---	74.00	54.00	-5.40	Peak
N/A										
1500.00	H	59.15	53.80	-7.03	52.12	46.77	74.00	54.00	-7.23	AVG
2243.33	H	51.14	---	-1.85	49.29	---	74.00	54.00	-4.71	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.*
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 / 5190 ~ 5230MHz / CH Low	**Test Date:**	April 14, 2009
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
5191.67	V	95.52	87.74	1.21	96.73	88.95	Fundamental			
1493.33	V	55.65	---	-7.04	48.61	---	74.00	54.00	-5.39	Peak
6225.00	V	58.68	54.78	2.52	61.20	57.30	76.73	68.95	-11.65	20dBc AVG Fundamental
N/A										
1493.33	H	58.31	---	-7.04	51.26	---	74.00	54.00	-2.74	Peak
2243.33	H	50.38	---	-1.85	48.54	---	74.00	54.00	-5.46	Peak
6225.00	H	57.23	50.40	2.52	59.75	52.92	74.00	54.00	-1.08	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.*
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. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*

Operation Mode: Tx / draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / CH High **Test Date:** April 14, 2009

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
5233.33	V	95.34	84.53	1.26	96.60	85.79	Fundamental			
1060.00	V	54.38	---	-7.85	46.54	---	74.00	54.00	-7.46	Peak
1496.67	V	55.45	---	-7.04	48.42	---	74.00	54.00	-5.58	Peak
6275.00	V	57.71	53.20	2.58	60.29	55.78	76.60	85.79	-30.01	20dBc AVG Fundamental
N/A										
1496.67	H	58.91	---	-7.04	51.87	---	74.00	54.00	-2.13	Peak
2240.00	H	50.62	---	-1.85	48.76	---	74.00	54.00	-5.24	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.*
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. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*

Operation Mode:	Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH Low	**Test Date:**	April 14, 2009
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
1060.00	V	54.51	---	-7.85	46.66	---	74.00	54.00	-7.34	Peak
1496.67	V	55.41	---	-7.04	48.37	---	74.00	54.00	-5.63	Peak
2256.67	V	50.34	---	-1.82	48.51	---	74.00	54.00	-5.49	Peak
6308.33	V	56.82	49.62	2.62	59.44	52.24	74.00	54.00	-1.76	AVG
N/A										
1496.67	H	59.09	53.83	-7.04	52.06	46.79	74.00	54.00	-7.21	AVG
6308.33	H	54.99	48.01	2.62	57.61	50.63	74.00	54.00	-3.37	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.*
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 802.11a mode / 5260 ~ 5320MHz / CH Mid	**Test Date:**	April 14, 2009
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
1056.67	V	53.86	---	-7.85	46.01	---	74.00	54.00	-7.99	Peak
1496.67	V	54.73	---	-7.04	47.69	---	74.00	54.00	-6.31	Peak
6333.33	V	52.42	46.84	2.65	55.07	49.49	74.00	54.00	-4.51	AVG
N/A										
1496.67	H	58.68	---	-7.04	51.64	---	74.00	54.00	-2.36	Peak
2240.00	H	51.15	---	-1.85	49.30	---	74.00	54.00	-4.70	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.*
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 802.11a mode / 5260 ~ 5320MHz / CH High **Test Date:** April 14, 2009

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
1496.67	V	55.83	---	-7.04	48.79	---	74.00	54.00	-5.21	Peak
2080.00	V	49.66	---	-2.12	47.54	---	74.00	54.00	-6.46	Peak
N/A										
1496.67	H	58.78	---	-7.04	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.*
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 / 5260 ~ 5320MHz / CH Low	**Test Date:**	April 14, 2009
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
1496.67	V	55.67	---	-7.04	48.64	---	74.00	54.00	-5.36	Peak
N/A										
1496.67	H	58.84	---	-7.04	51.80	---	74.00	54.00	-2.20	Peak
2240.00	H	50.59	---	-1.85	48.74	---	74.00	54.00	-5.26	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.*
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 / 5260 ~ 5320MHz / CH Mid	**Test Date:**	April 14, 2009
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
1493.33	V	55.48	---	-7.04	48.44	---	74.00	54.00	-5.56	Peak
2240.00	V	49.90	---	-1.85	48.05	---	74.00	54.00	-5.95	Peak
N/A										
1500.00	H	59.20	53.81	-7.03	52.17	46.78	74.00	54.00	-7.22	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.*
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 / 5260 ~ 5320MHz / CH High **Test Date:** April 14, 2009

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
1070.00	V	53.65	---	-7.83	45.82	---	74.00	54.00	-8.18	Peak
1496.67	V	55.28	---	-7.04	48.25	---	74.00	54.00	-5.75	Peak
N/A										
1493.33	H	58.81	---	-7.04	51.77	---	74.00	54.00	-2.23	Peak
2240.00	H	49.96	---	-1.85	48.11	---	74.00	54.00	-5.89	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.*
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 / 5270 ~ 5310MHz / CH Low	**Test Date:**	April 14, 2009
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
1063.33	V	53.22	---	-7.84	45.38	---	74.00	54.00	-8.62	Peak
1493.33	V	55.17	---	-7.04	48.13	---	74.00	54.00	-5.87	Peak
N/A										
1496.67	H	59.21	53.79	-7.04	52.18	46.75	74.00	54.00	-7.25	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.*
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 / 5270 ~ 5310MHz / CH High **Test Date:** April 14, 2009

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
1496.67	V	55.77	---	-7.04	48.73	---	74.00	54.00	-5.27	Peak
N/A										
1496.67	H	59.13	53.78	-7.04	52.09	46.74	74.00	54.00	-7.26	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.*
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 802.11a mode / 5500 ~ 5700MHz / CH Low	**Test Date:**	April 14, 2009
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
1493.33	V	54.91	---	-7.04	47.87	---	74.00	54.00	-6.13	Peak
1836.67	V	54.14	---	-3.81	50.33	---	74.00	54.00	-3.67	Peak
N/A										
1496.67	H	58.68	---	-7.04	51.65	---	74.00	54.00	-2.35	Peak
1830.00	H	53.67	---	-3.88	49.79	---	74.00	54.00	-4.21	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 802.11a mode / 5500 ~ 5700MHz /CH Mid	**Test Date:**	April 14, 2009
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
1496.67	V	55.91	---	-7.04	48.87	---	74.00	54.00	-5.13	Peak
1846.67	V	53.05	---	-3.72	49.34	---	74.00	54.00	-4.66	Peak
N/A										
1496.67	H	58.25	---	-7.04	51.22	---	74.00	54.00	-2.78	Peak
1833.33	H	53.93	---	-3.84	50.08	---	74.00	54.00	-3.92	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 802.11a mode / 5500 ~ 5700MHz / CH High	**Test Date:**	April 14, 2009
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
1063.33	V	54.63	---	-7.84	46.79	---	74.00	54.00	-7.21	Peak
1496.67	V	55.77	---	-7.04	48.74	---	74.00	54.00	-5.26	Peak
1836.67	V	54.02	---	-3.81	50.21	---	74.00	54.00	-3.79	Peak
N/A										
1500.00	H	58.95	---	-7.03	51.92	---	74.00	54.00	-2.08	Peak
1830.00	H	54.72	---	-3.88	50.84	---	74.00	54.00	-3.16	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 / draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / CH Low	**Test Date:**	April 14, 2009
Temperature:	23°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
1063.33	V	53.89	---	-7.84	46.05	---	74.00	54.00	-7.95	Peak
1493.33	V	55.66	---	-7.04	48.62	---	74.00	54.00	-5.38	Peak
1836.67	V	53.66	---	-3.81	49.85	---	74.00	54.00	-4.15	Peak
N/A										
1493.33	H	58.90	---	-7.04	51.86	---	74.00	54.00	-2.14	Peak
1846.67	H	54.03	---	-3.72	50.31	---	74.00	54.00	-3.69	Peak
2240.00	H	51.65	---	-1.85	49.80	---	74.00	54.00	-4.20	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 / 5500 ~ 5700MHz / CH Mid	**Test Date:**	April 14, 2009
Temperature:	23°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
1063.33	V	53.86	---	-7.84	46.02	---	74.00	54.00	-7.98	Peak
1496.67	V	55.19	---	-7.04	48.16	---	74.00	54.00	-5.84	Peak
1836.67	V	55.06	---	-3.81	51.25	---	74.00	54.00	-2.75	Peak
11200.00	V	44.10	33.82	14.20	58.31	48.02	74.00	54.00	-5.98	AVG
N/A										
1500.00	H	59.56	53.72	-7.03	52.53	46.69	74.00	54.00	-7.31	AVG
1830.00	H	53.16	---	-3.88	49.29	---	74.00	54.00	-4.71	Peak
2240.00	H	50.67	---	-1.85	48.82	---	74.00	54.00	-5.18	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 / 5500 ~ 5700MHz / CH High	**Test Date:**	April 14, 2009
Temperature:	23°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
1496.67	V	55.52	---	-7.04	48.48	---	74.00	54.00	-5.52	Peak
1833.33	V	54.19	---	-3.84	50.35	---	74.00	54.00	-3.65	Peak
11400.00	V	44.20	33.71	14.11	58.30	47.82	74.00	54.00	-6.18	AVG
N/A										
1496.67	H	58.87	---	-7.04	51.83	---	74.00	54.00	-2.17	Peak
1830.00	H	54.88	---	-3.88	51.01	---	74.00	54.00	-2.99	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 / 5510 ~ 5670MHz / CH Low	**Test Date:**	April 14, 2009
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
1493.33	V	55.34	---	-7.04	48.30	---	74.00	54.00	-5.70	Peak
1836.67	V	54.51	---	-3.81	50.70	---	74.00	54.00	-3.30	Peak
N/A										
1496.67	H	58.91	---	-7.04	51.87	---	74.00	54.00	-2.13	Peak
1830.00	H	54.15	---	-3.88	50.28	---	74.00	54.00	-3.72	Peak
2243.33	H	50.38	---	-1.85	48.53	---	74.00	54.00	-5.47	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 / 5510 ~ 5670MHz / CH Mid	**Test Date:**	April 14, 2009
Temperature:	23°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
1493.33	V	55.27	---	-7.04	48.23	---	74.00	54.00	-5.77	Peak
1836.67	V	53.80	---	-3.81	49.99	---	74.00	54.00	-4.01	Peak
N/A										
1496.67	H	58.99	---	-7.04	51.95	---	74.00	54.00	-2.05	Peak
1830.00	H	54.67	---	-3.88	50.80	---	74.00	54.00	-3.20	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 / 5510 ~ 5670MHz / CH High	**Test Date:**	April 14, 2009
Temperature:	23°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
1496.67	V	55.00	---	-7.04	47.97	---	74.00	54.00	-6.03	Peak
1836.67	V	53.74	---	-3.81	49.93	---	74.00	54.00	-4.07	Peak
N/A										
1496.67	H	58.84	---	-7.04	51.81	---	74.00	54.00	-2.19	Peak
1830.00	H	54.93	---	-3.88	51.05	---	74.00	54.00	-2.95	Peak
2243.33	H	51.03	---	-1.85	49.19	---	74.00	54.00	-4.81	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 CONDUCTED UNDESIRABLE EMISSION

LIMIT

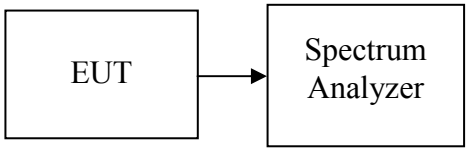
According to 15.407(b),

(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.

The provisions of §15.205 apply to intentional radiators operating under this section.

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 1 MHz. The video bandwidth is set to 1 MHz. Peak detection measurements are compared to the average EIRP limit, adjusted for the maximum antenna gain. If necessary, additional average detection measurements are made.

Measurements are made over the 30 MHz to 40 GHz range with the transmitter set to the lowest, middle, and highest channels.

TEST RESULTS

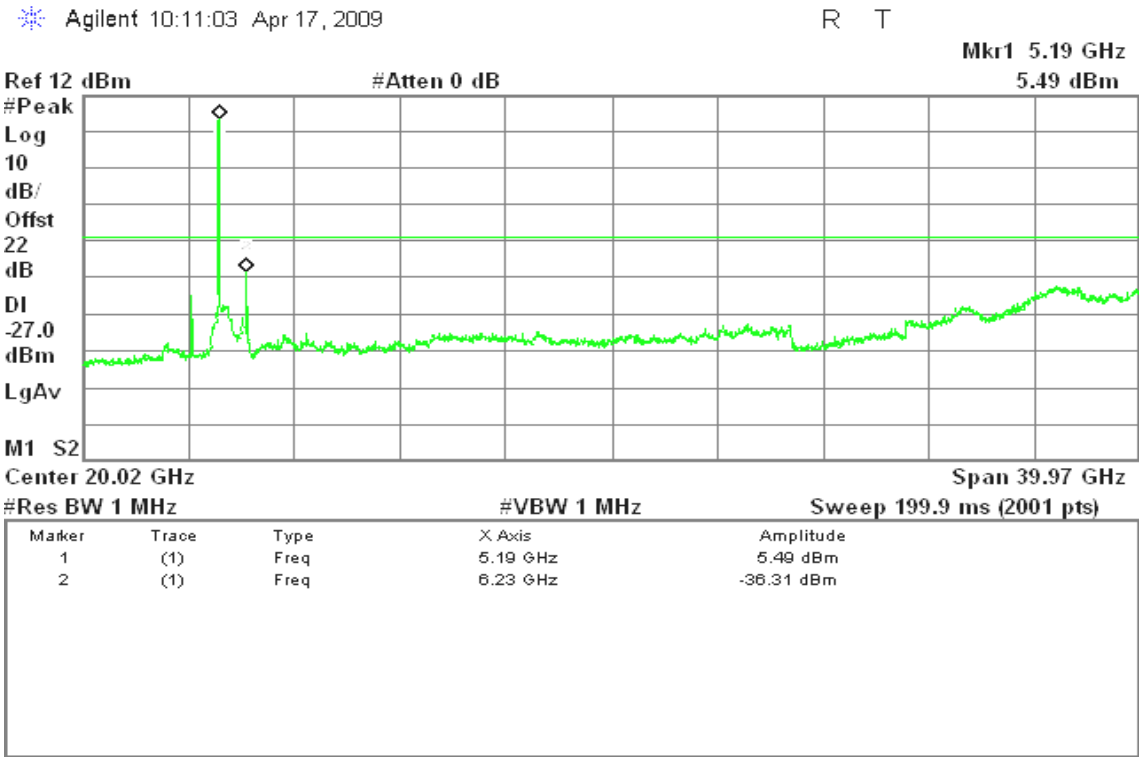
No non-compliance noted

Test Plot

IEEE 802.11a mode / 5180 ~ 5240MHz

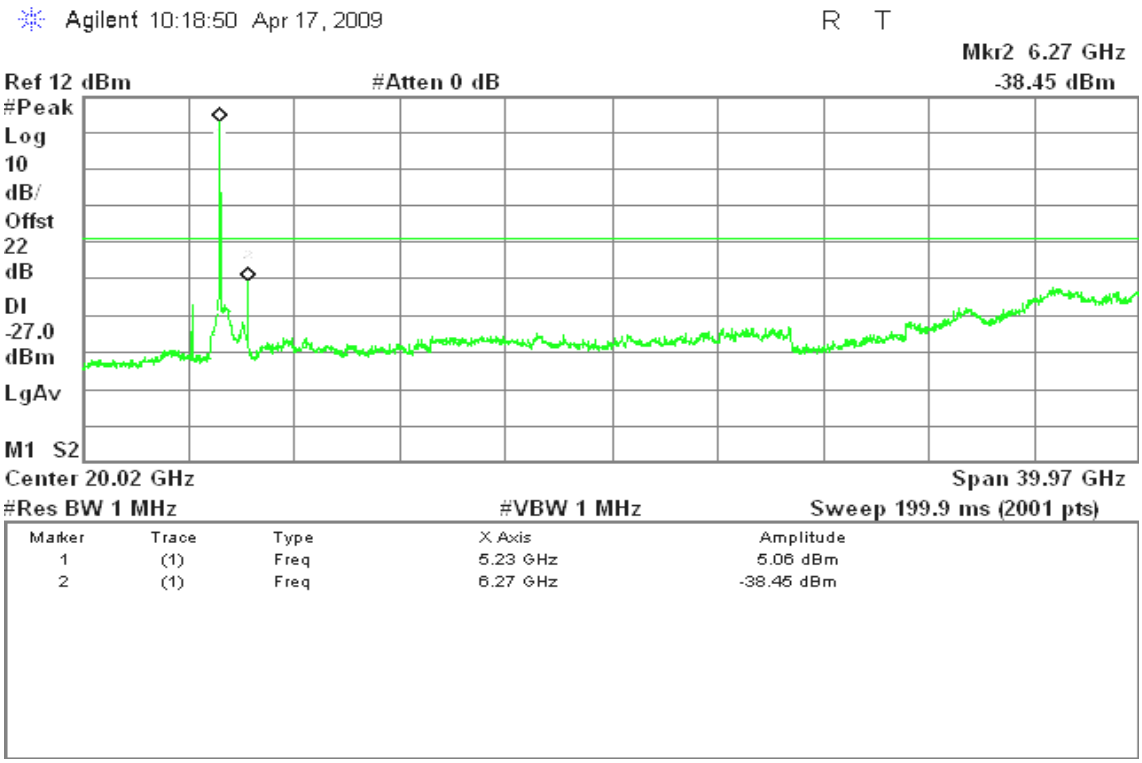
CH Low

30MHz ~ 40GHz



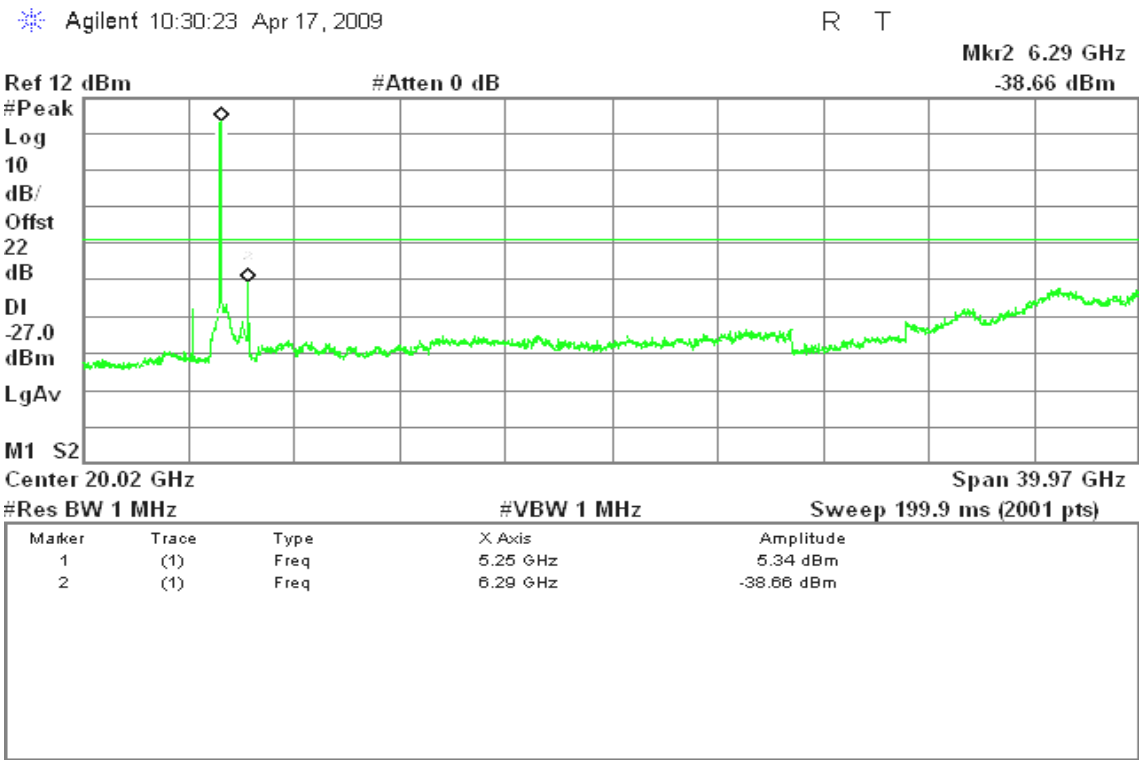
CH Mid

30MHz ~ 40GHz



CH High

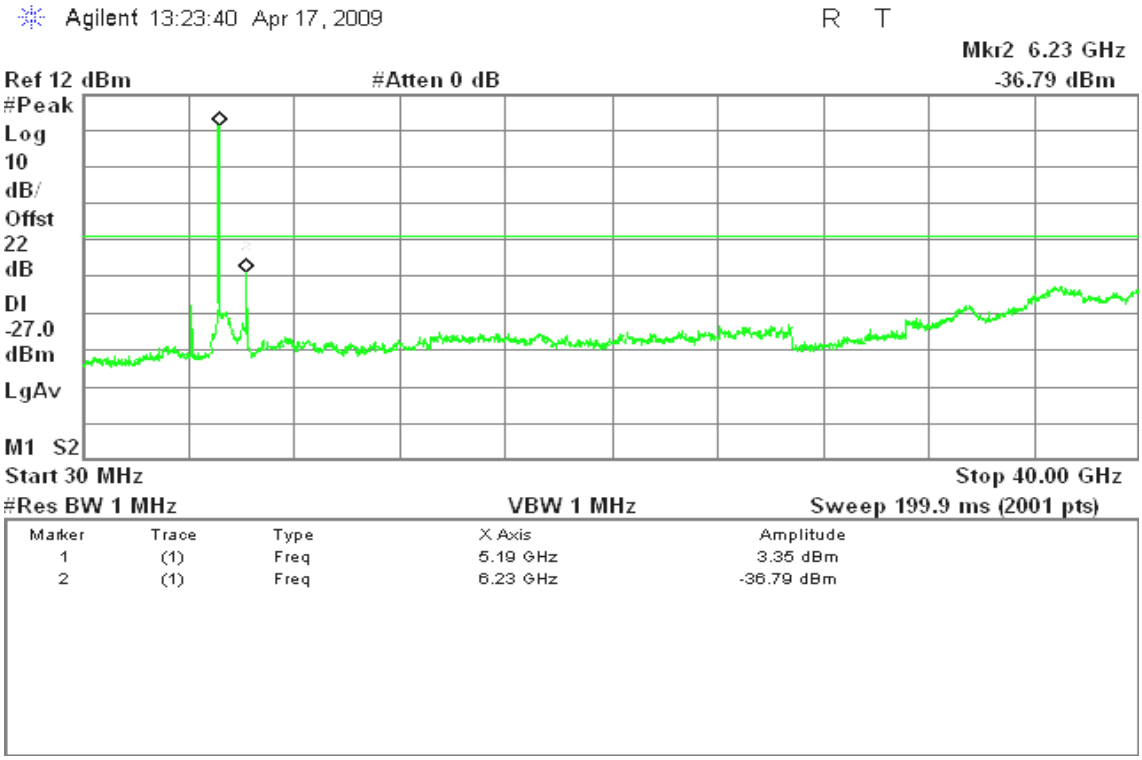
30MHz ~ 40GHz



draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

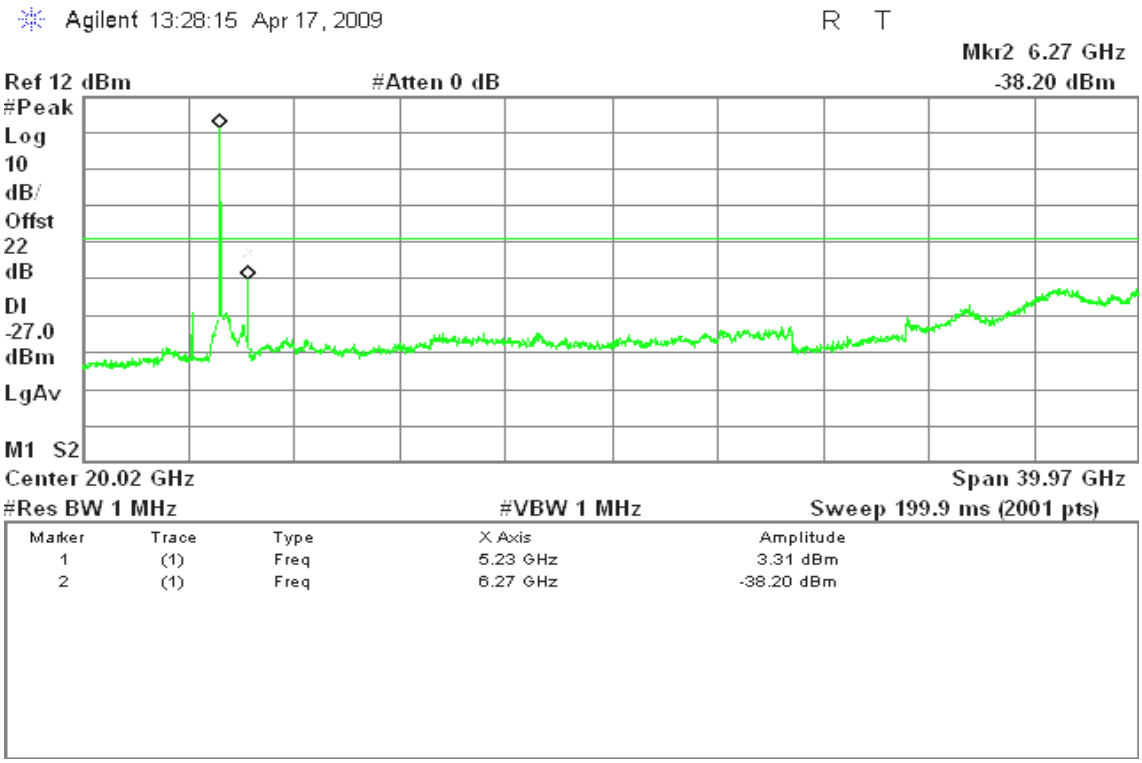
CH Low

30MHz ~ 40GHz



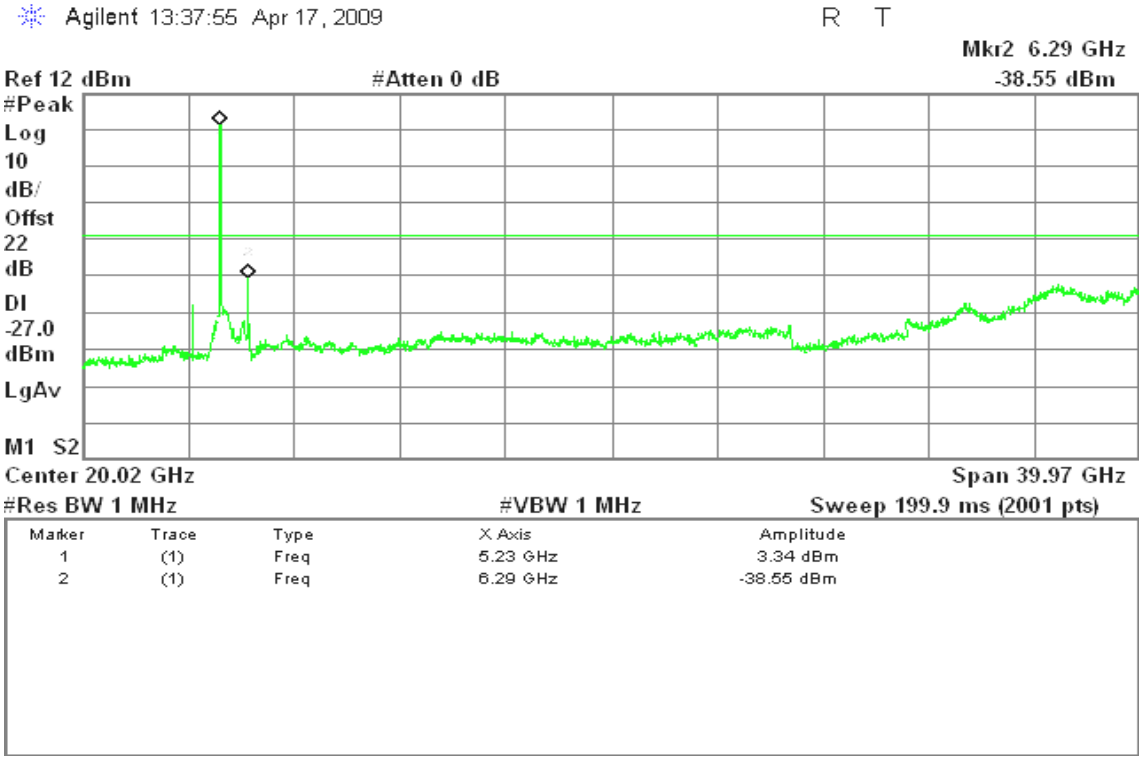
CH Mid

30MHz ~ 40GHz



CH High

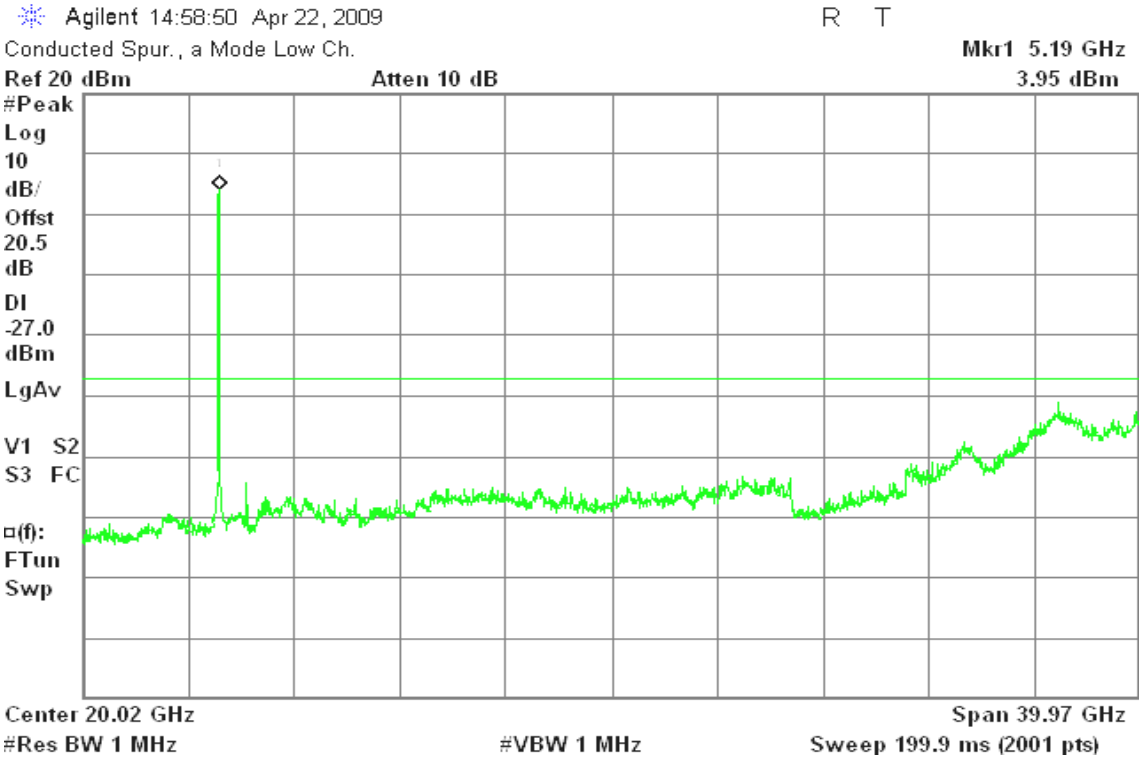
30MHz ~ 40GHz



draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

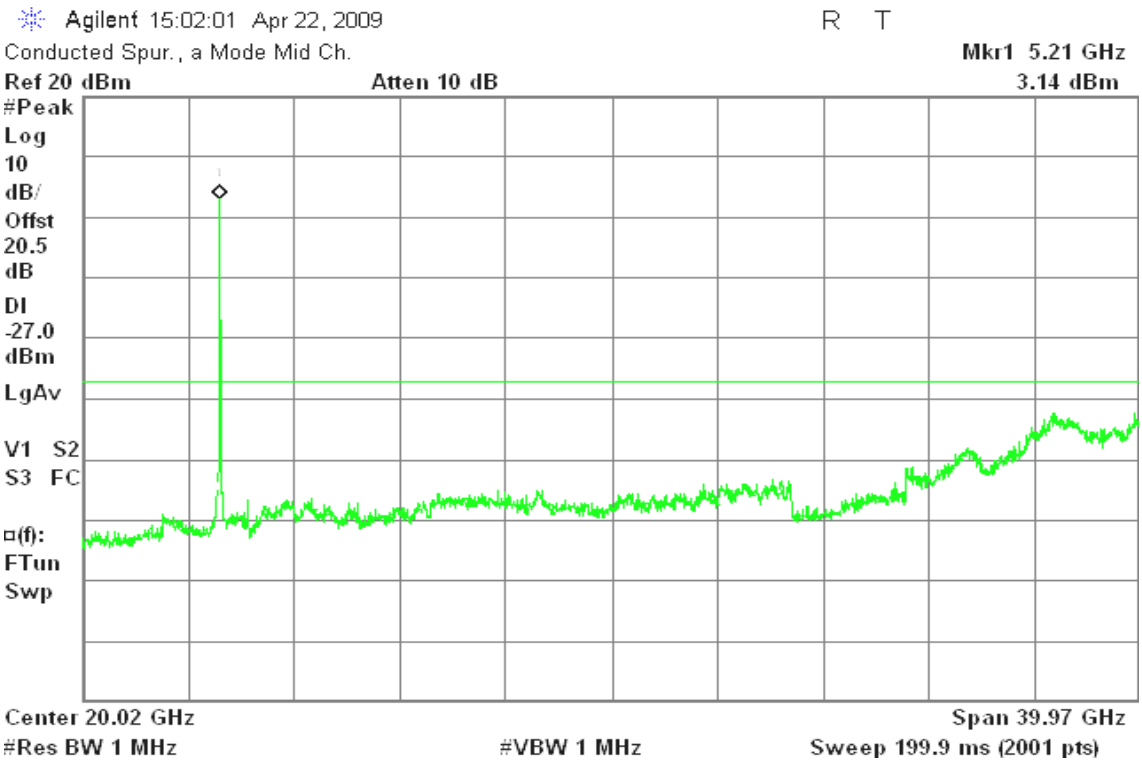
CH Low

30MHz ~ 40GHz



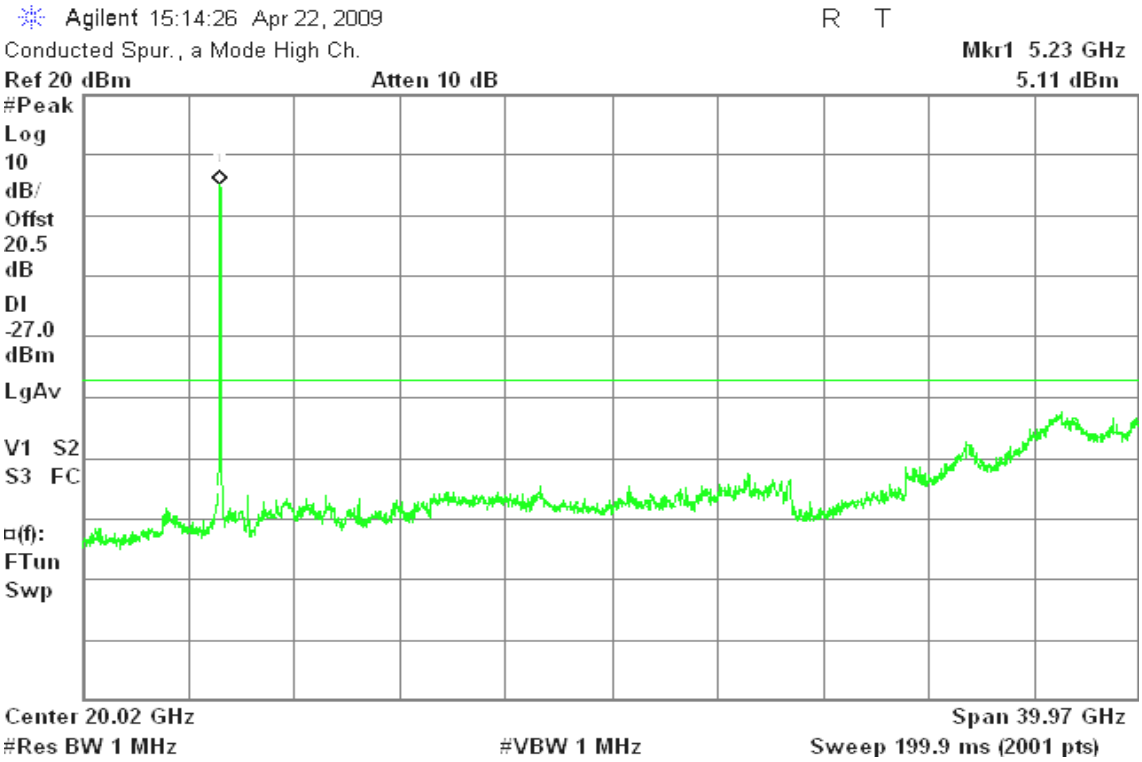
CH Mid

30MHz ~ 40GHz



CH High

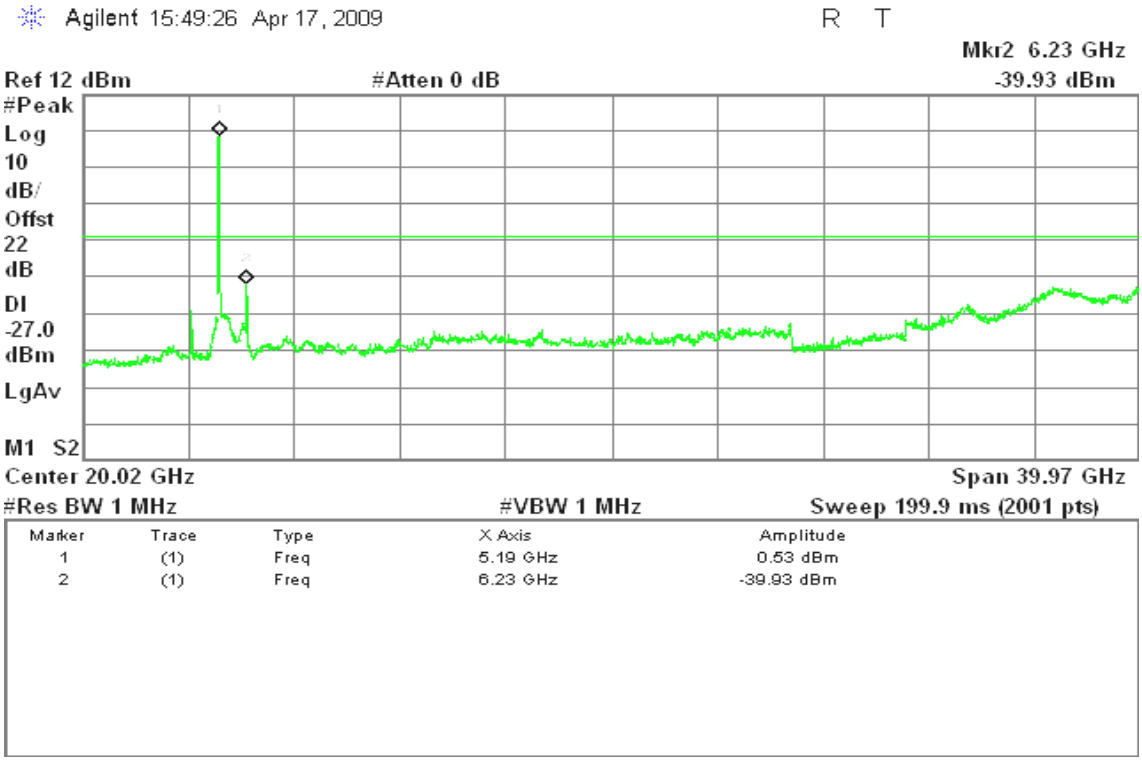
30MHz ~ 40GHz



draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 0

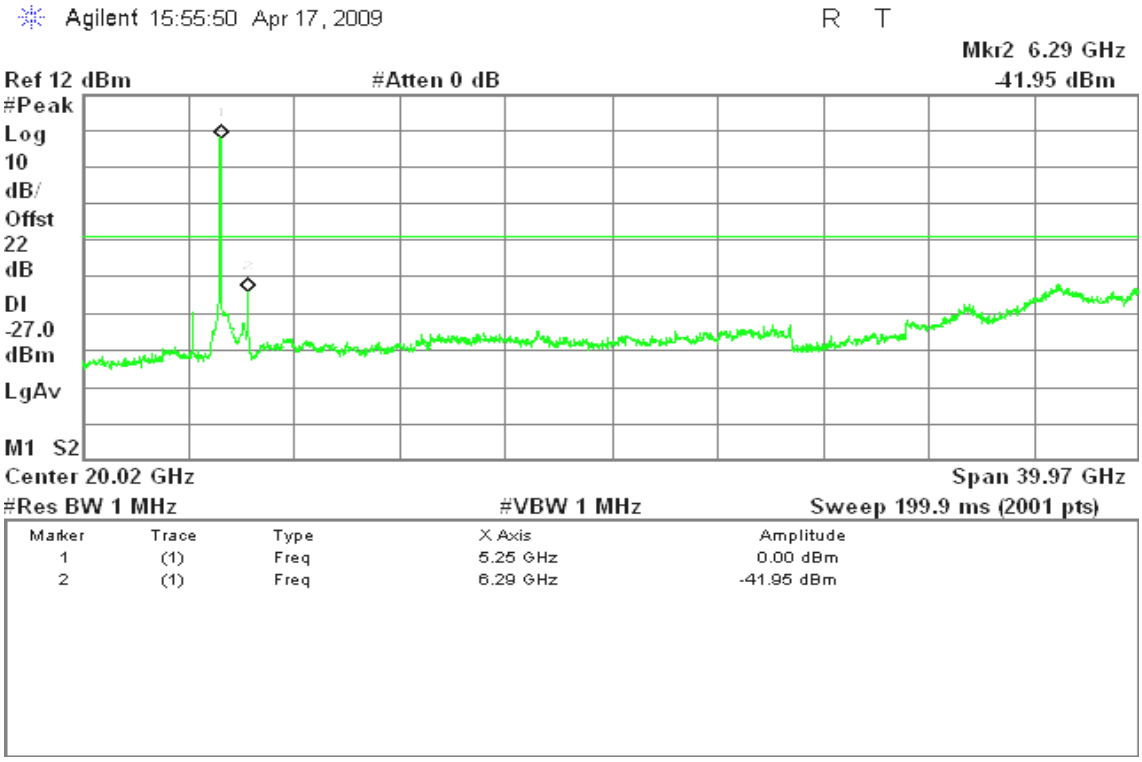
CH Low

30MHz ~ 40GHz



CH High

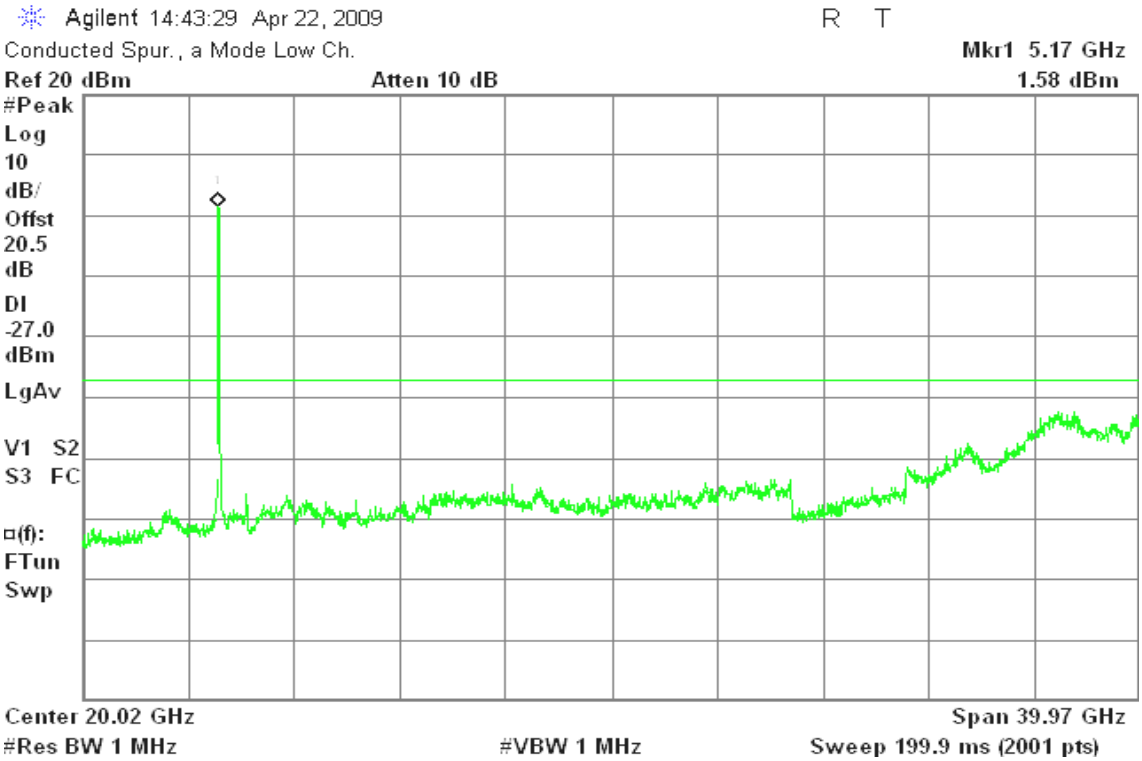
30MHz ~ 40GHz



draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / Chain 1

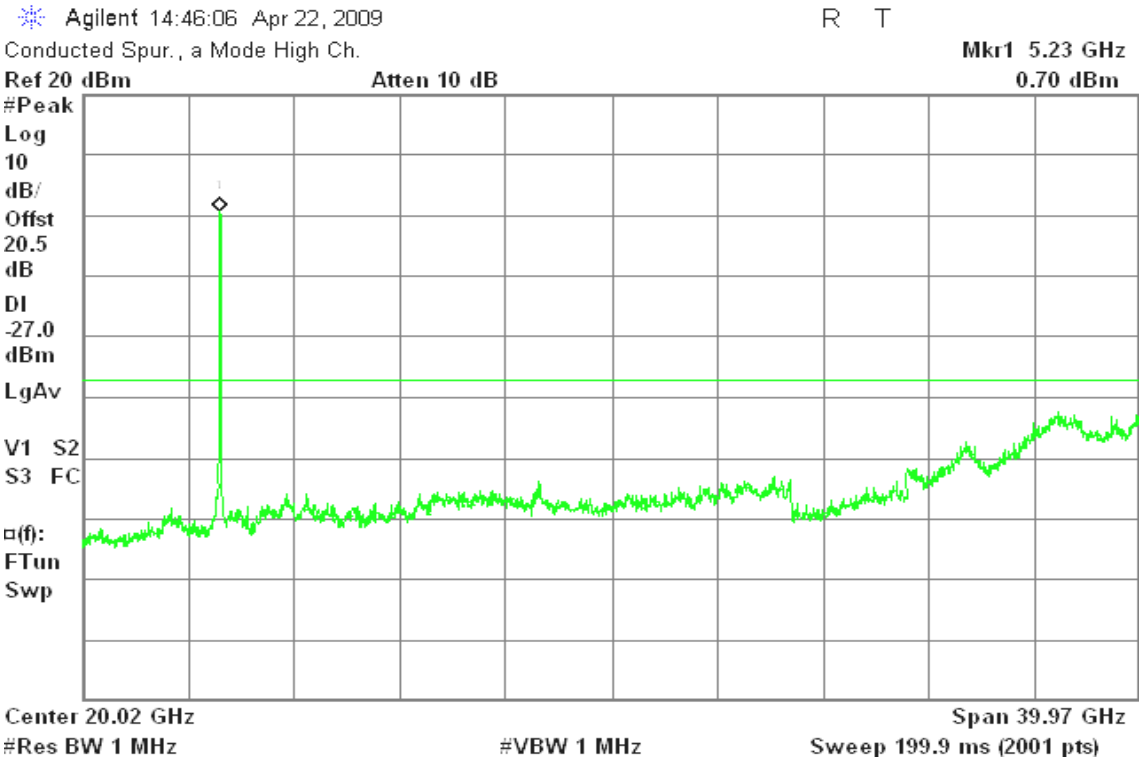
CH Low

30MHz ~ 40GHz



CH High

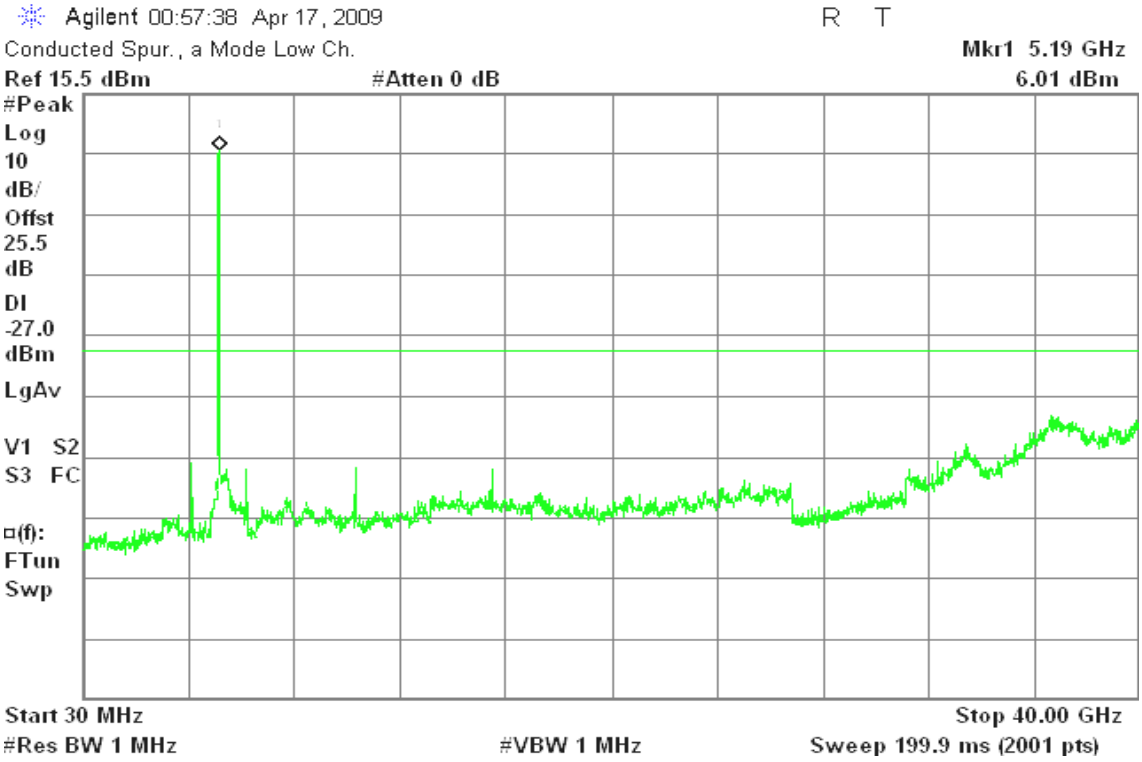
30MHz ~ 40GHz



draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / with combiner

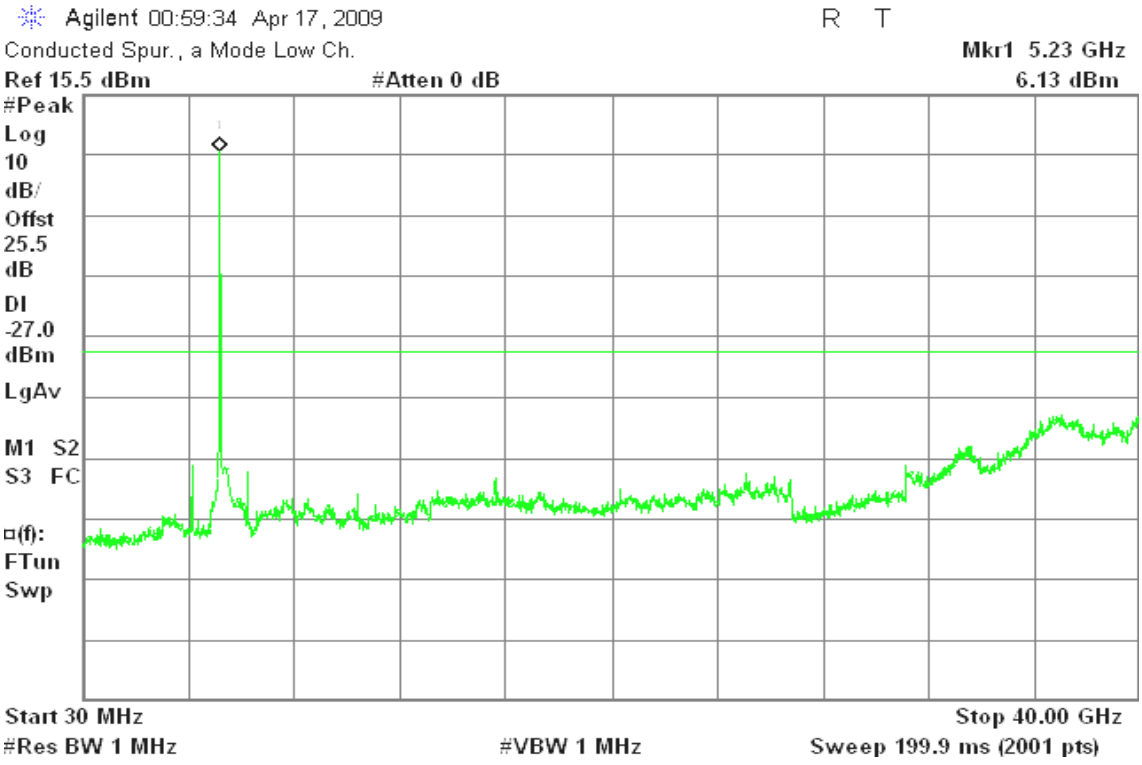
CH Low

30MHz ~ 40GHz



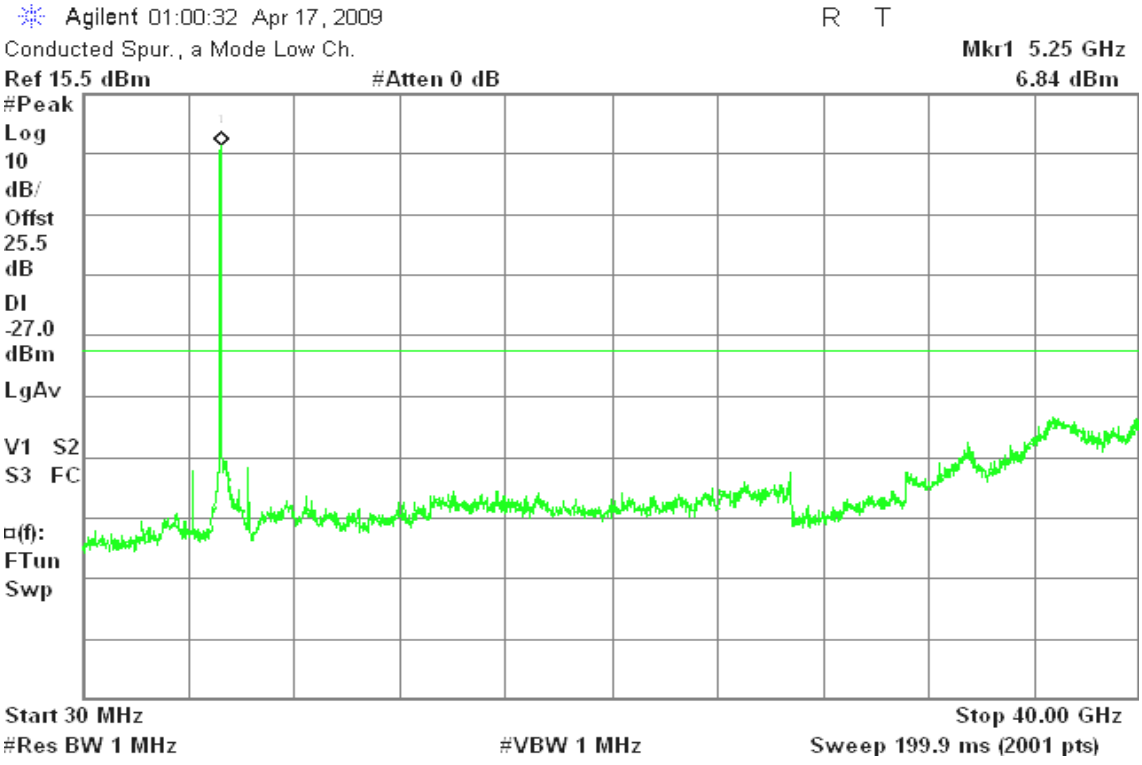
CH Mid

30MHz ~ 40GHz



CH High

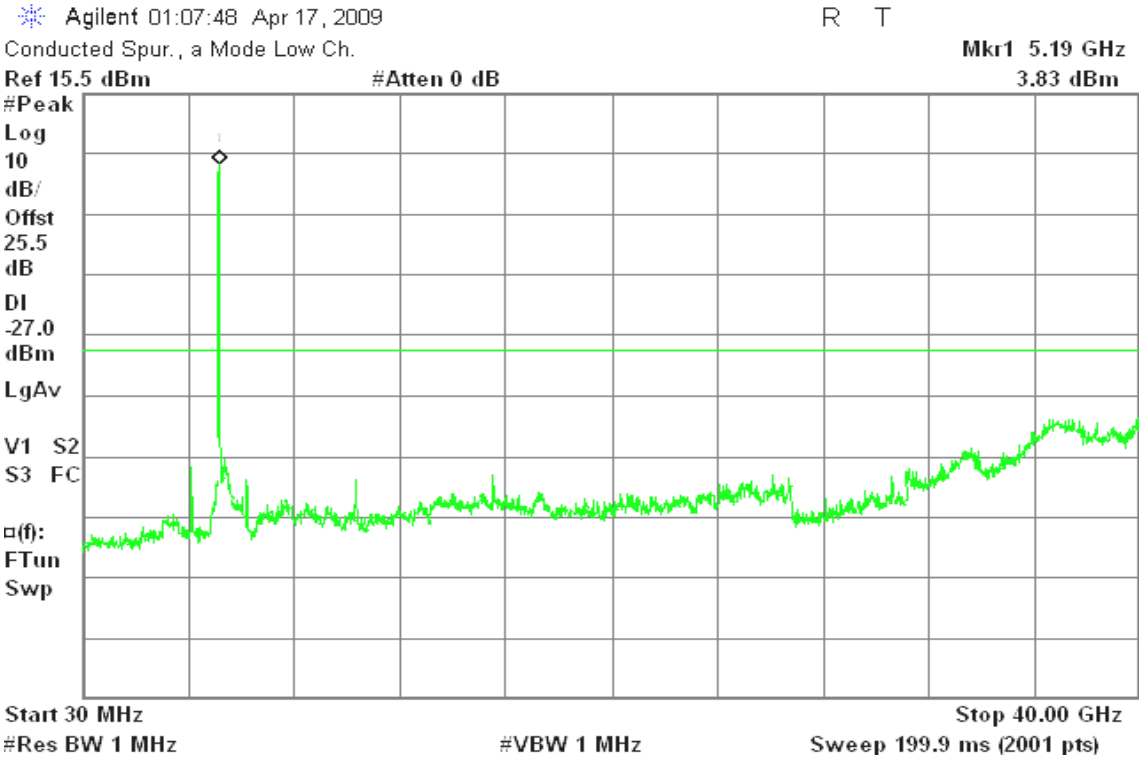
30MHz ~ 40GHz



draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / with combiner

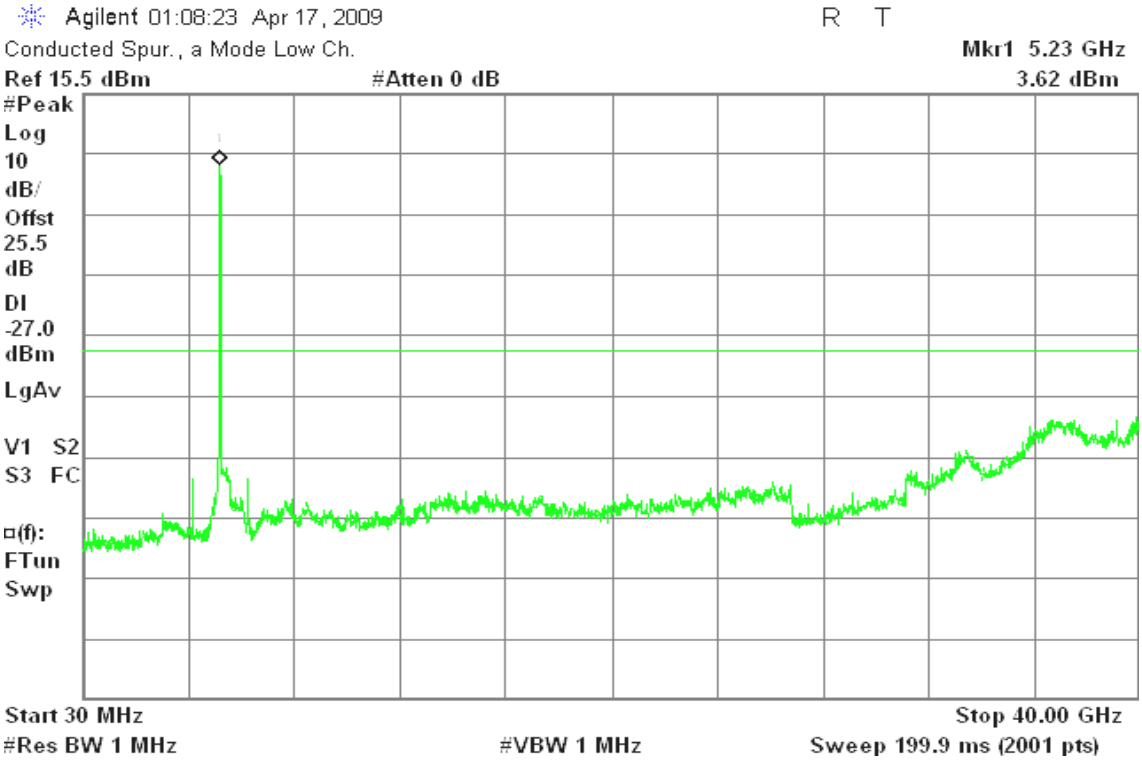
CH Low

30MHz ~ 40GHz



CH High

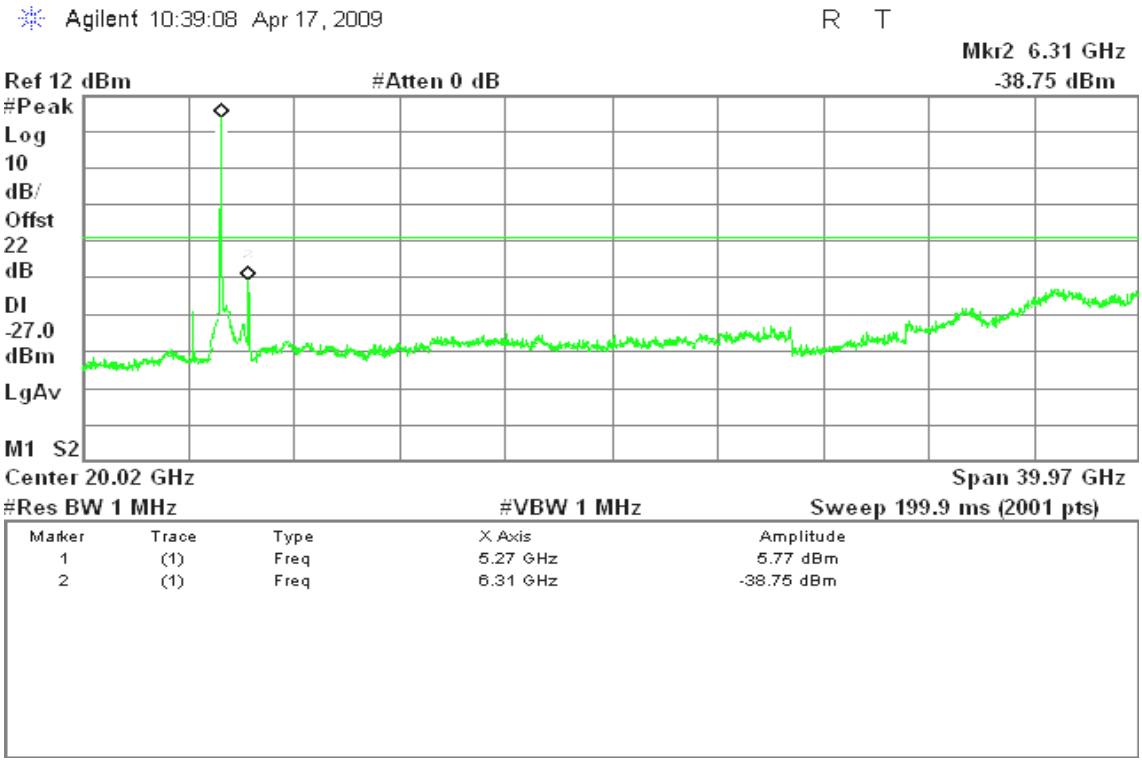
30MHz ~ 40GHz



IEEE 802.11a mode / 5260 ~ 5320MHz

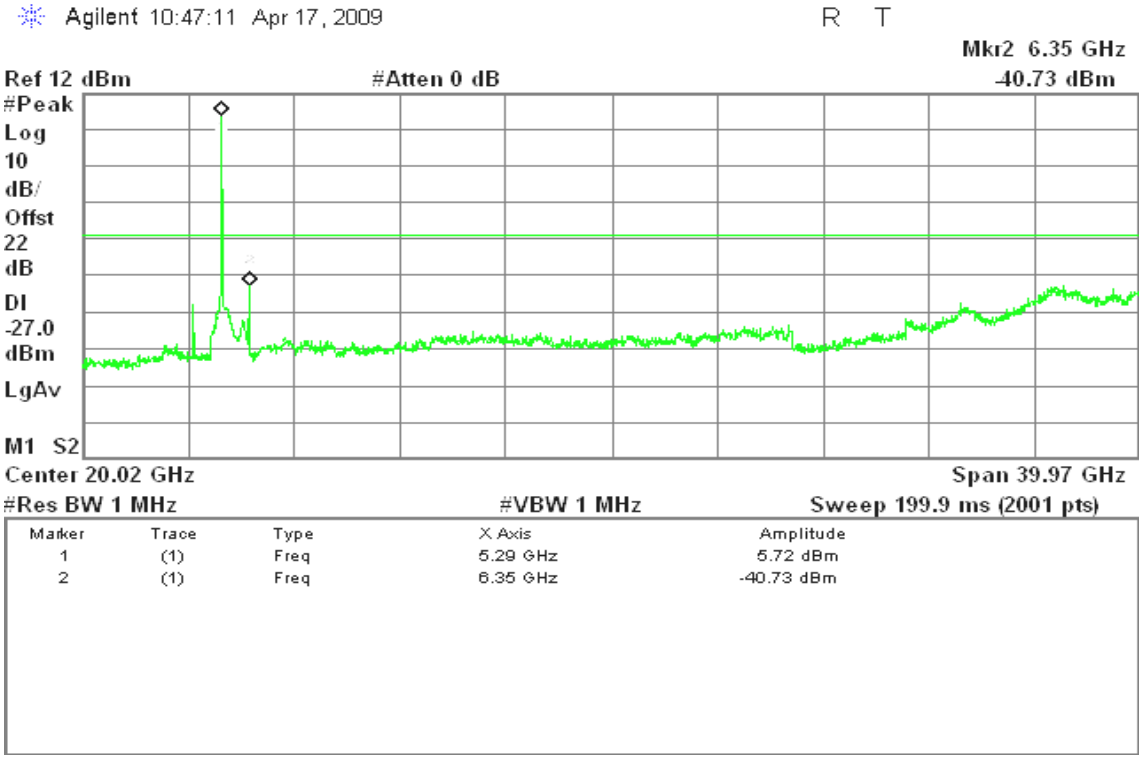
CH Low

30MHz ~ 40GHz



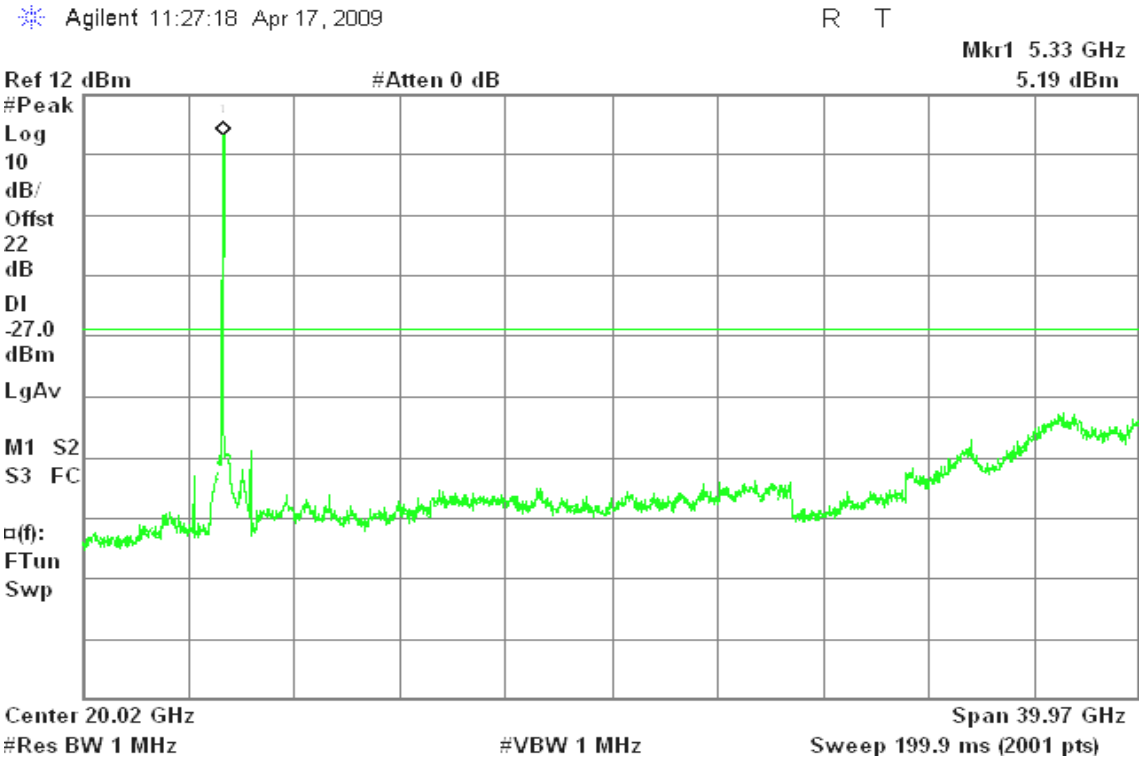
CH Mid

30MHz ~ 40GHz



CH High

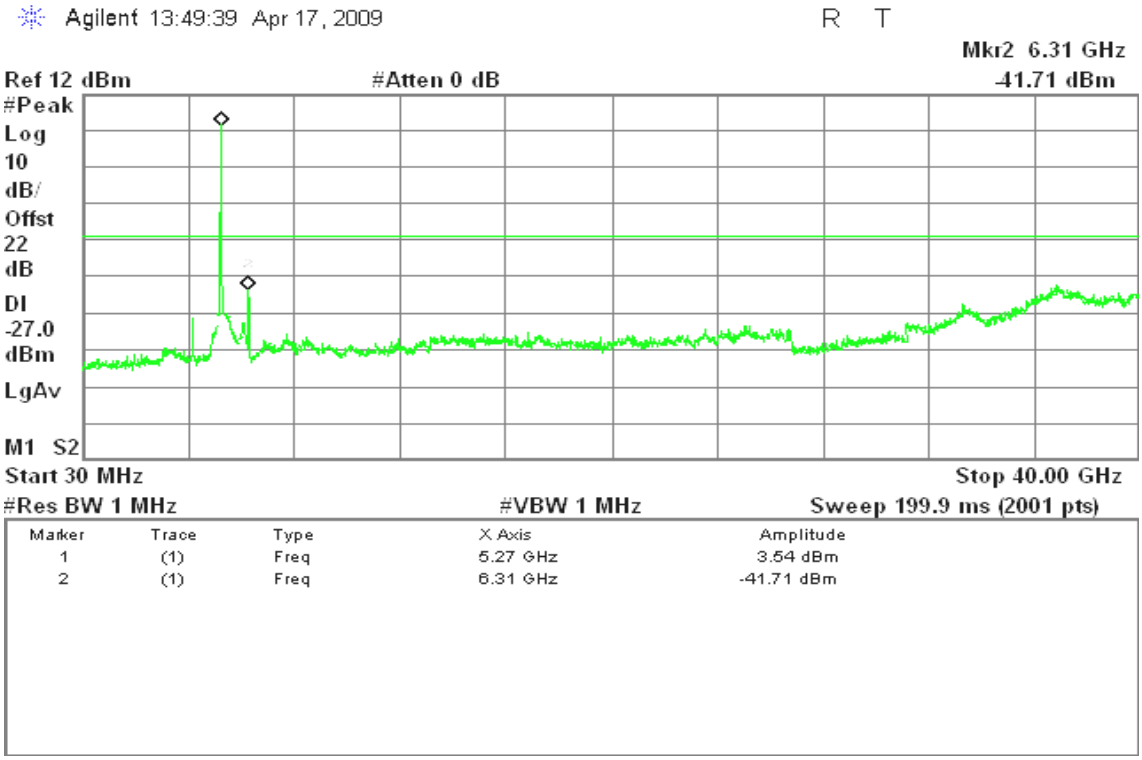
30MHz ~ 40GHz



draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

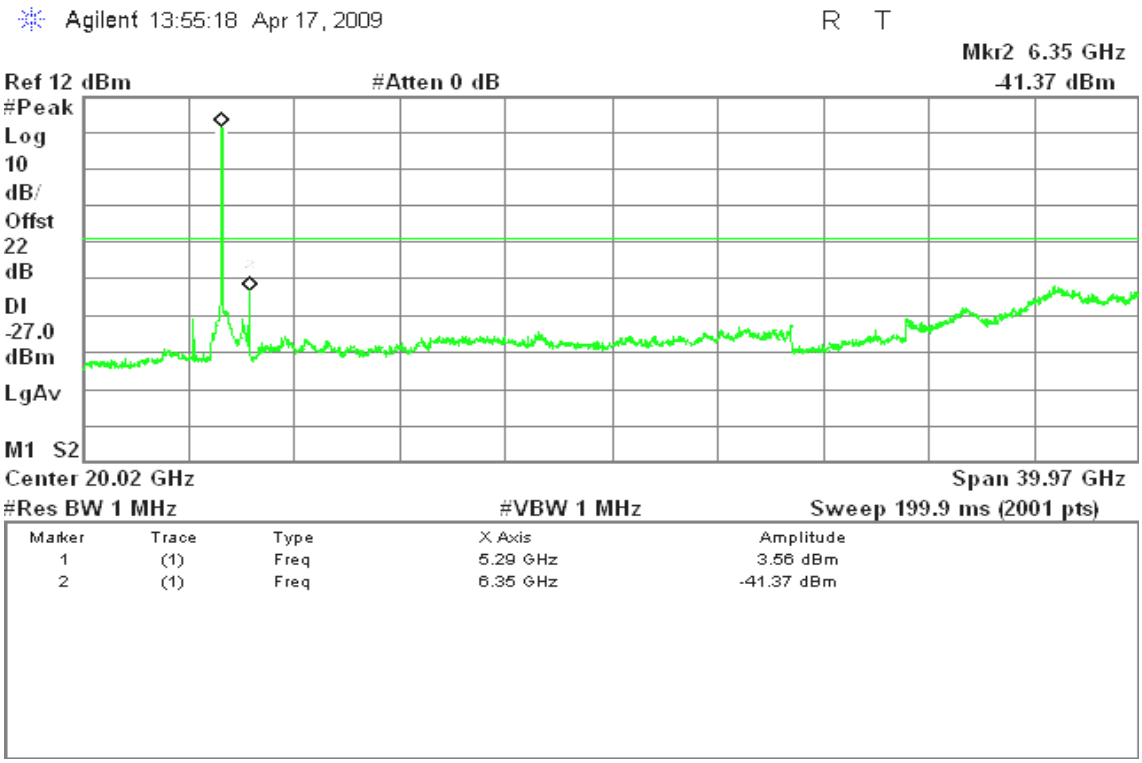
CH Low

30MHz ~ 40GHz



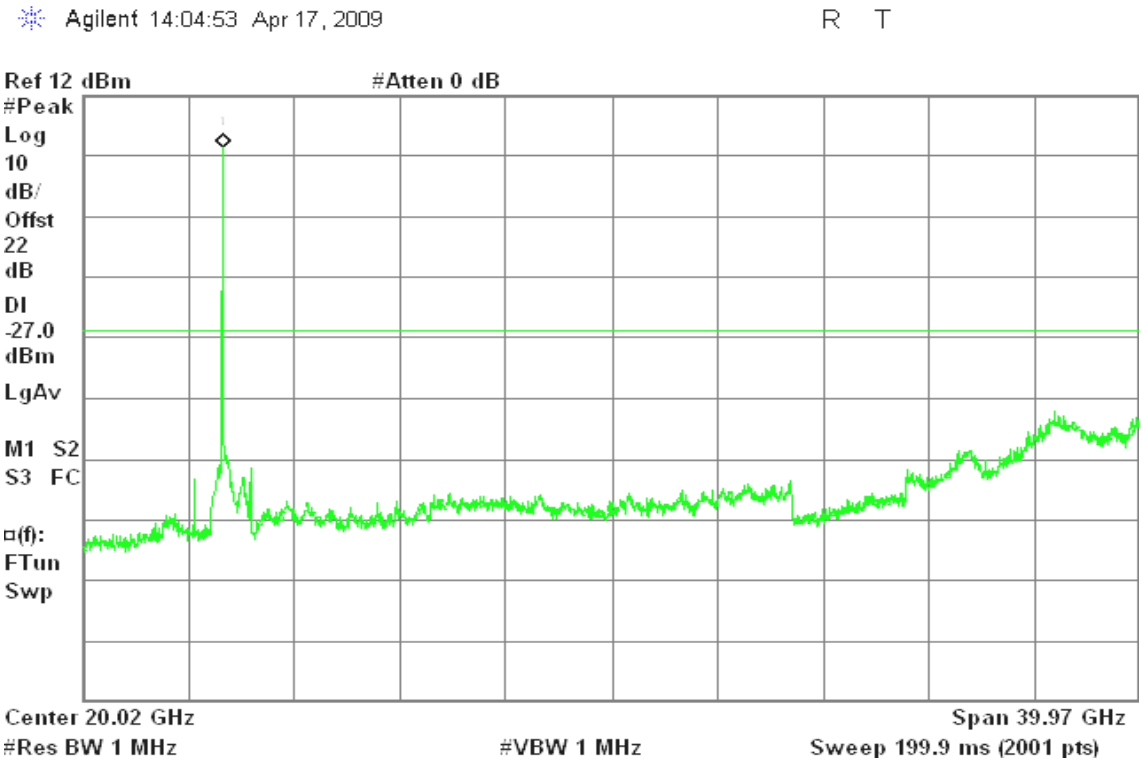
CH Mid

30MHz ~ 40GHz



CH High

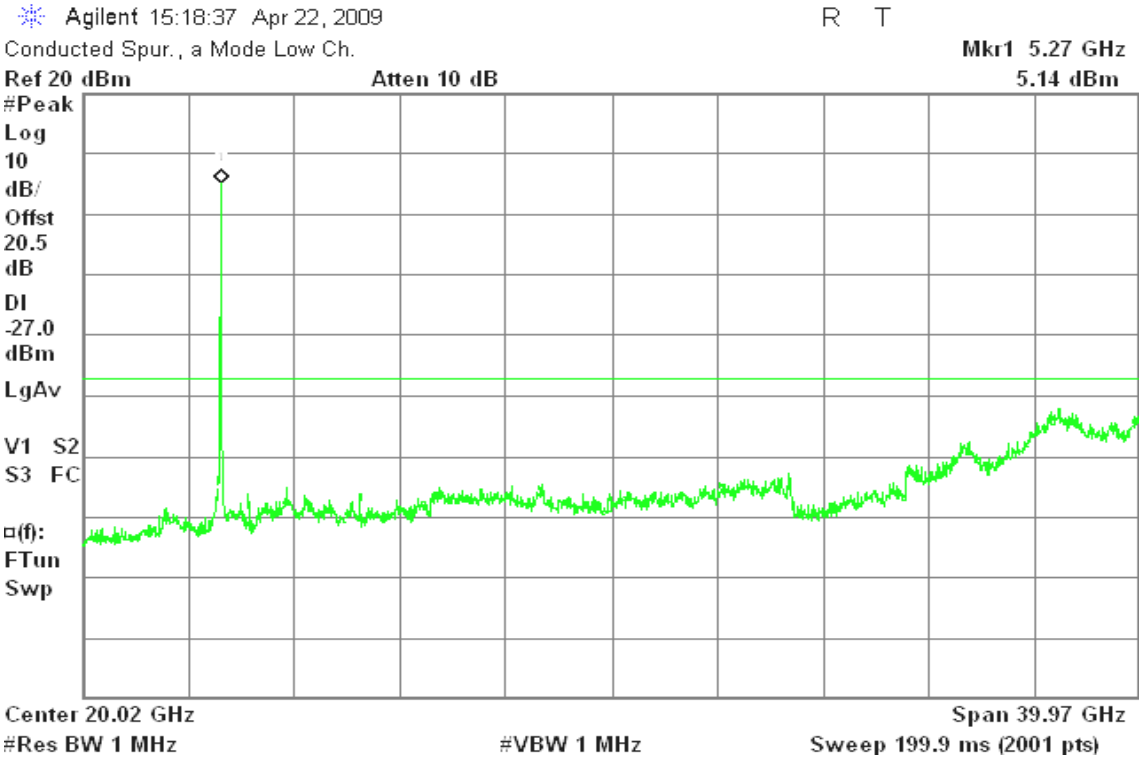
30MHz ~ 40GHz



draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

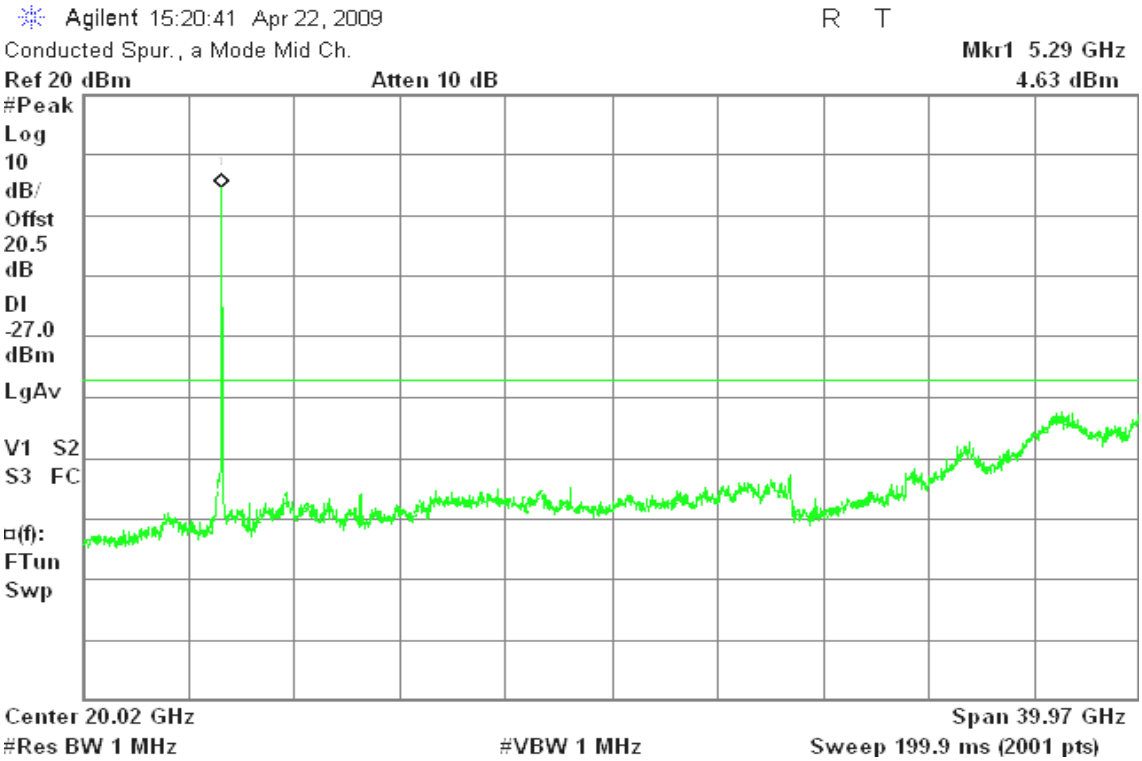
CH Low

30MHz ~ 40GHz



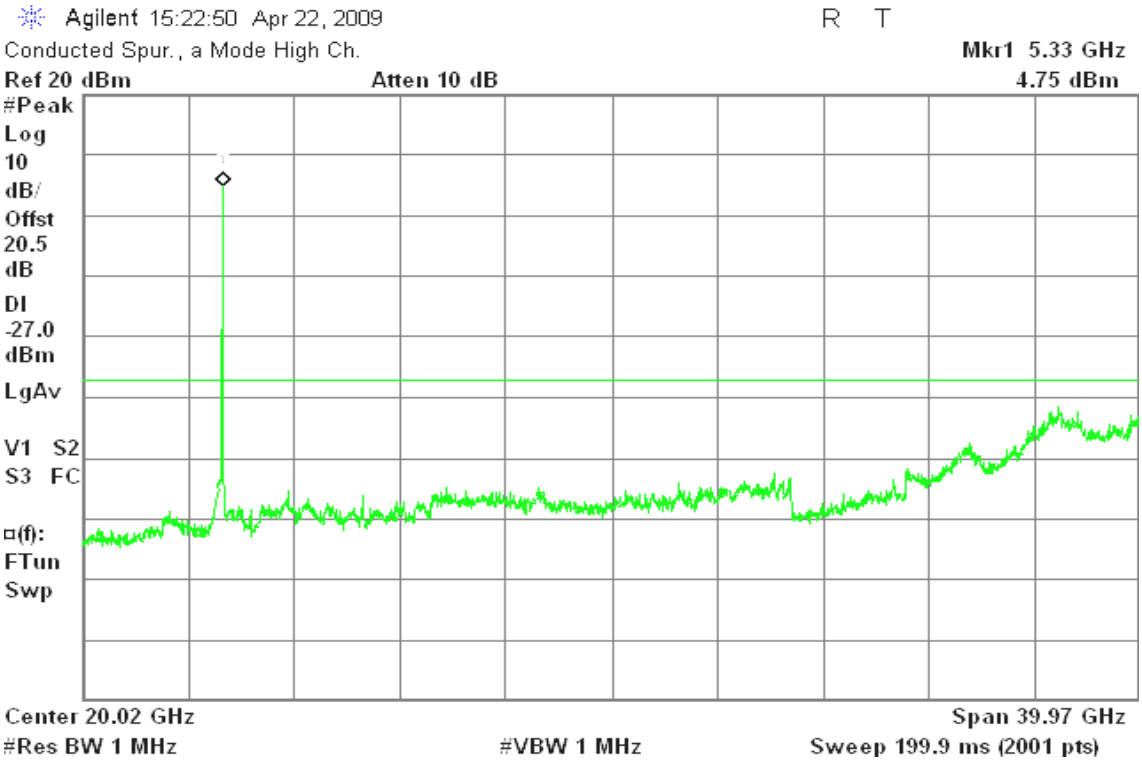
CH Mid

30MHz ~ 40GHz



CH High

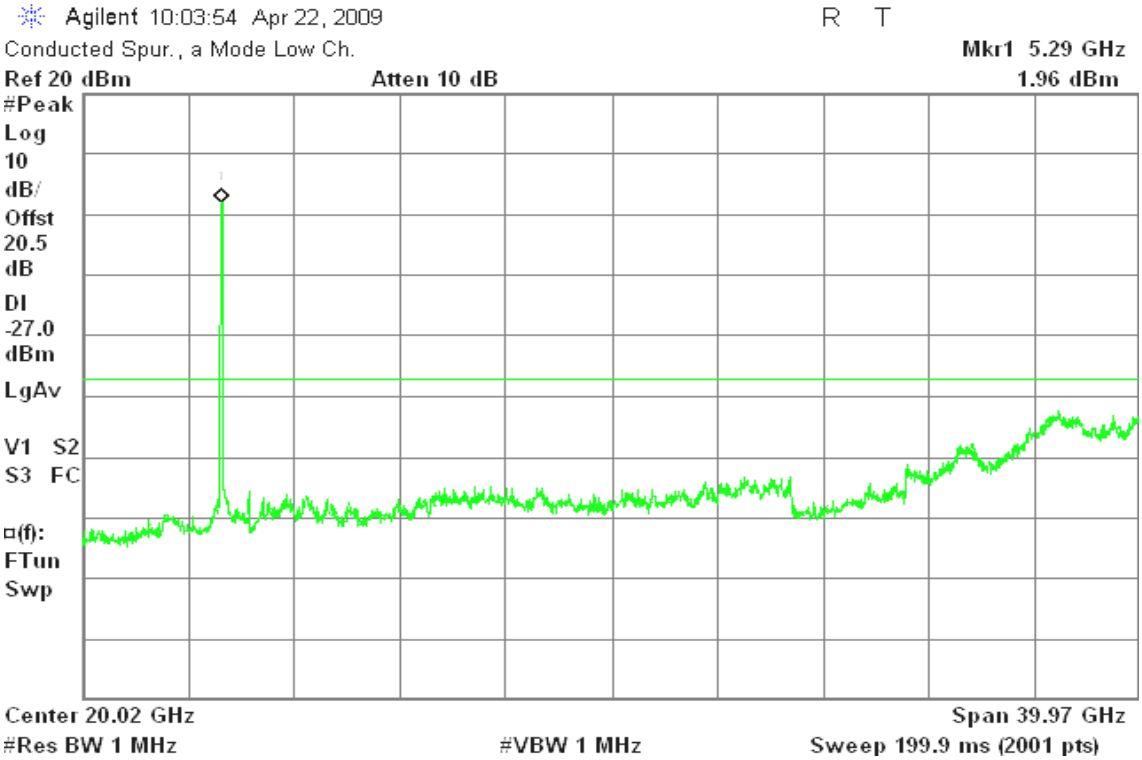
30MHz ~ 40GHz



draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 0

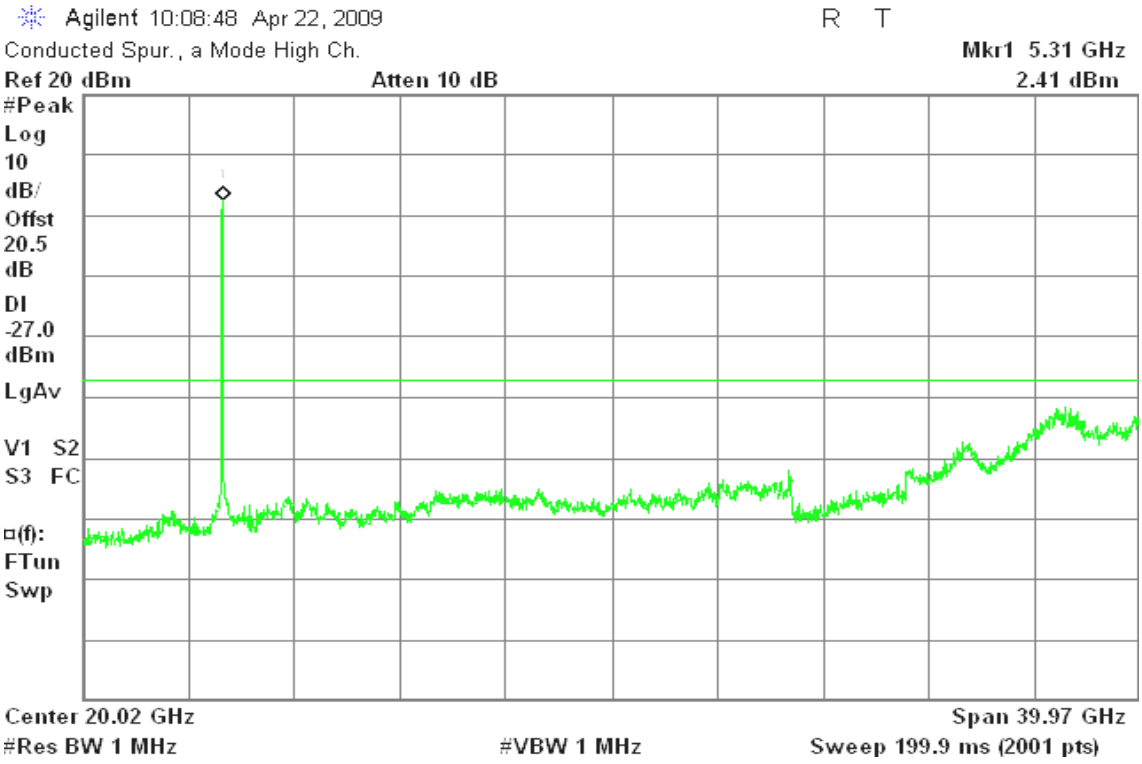
CH Low

30MHz ~ 40GHz



CH High

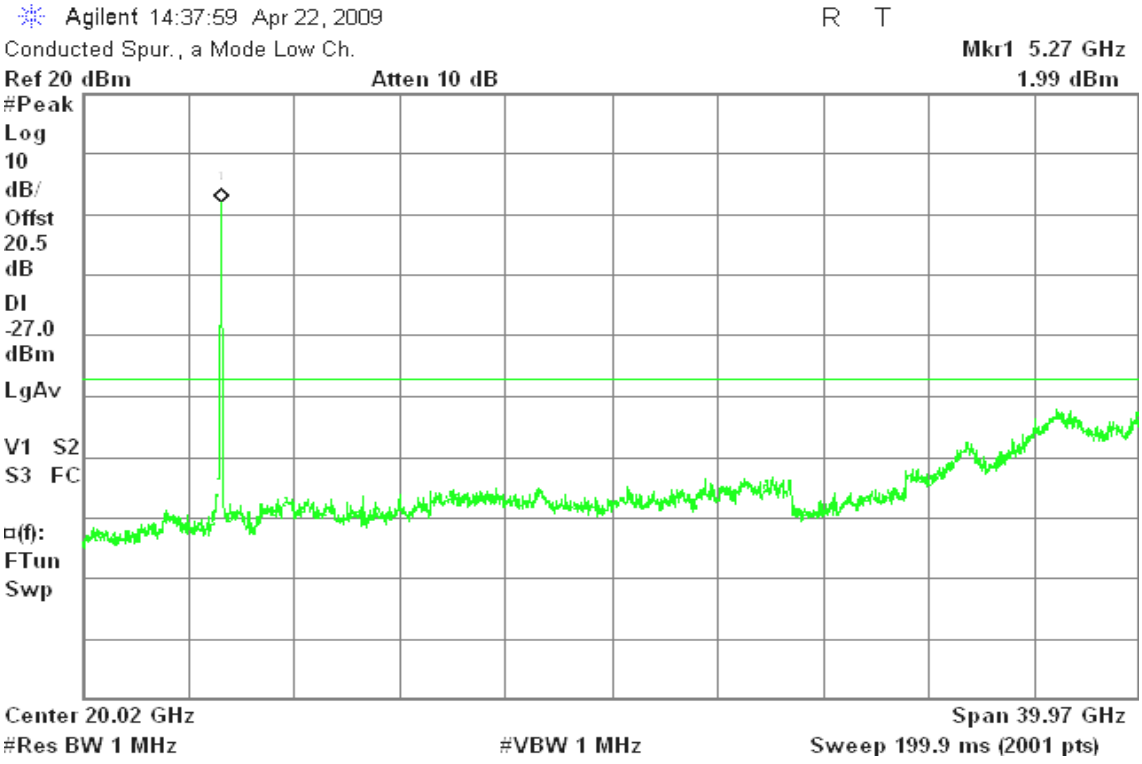
30MHz ~ 40GHz



draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 1

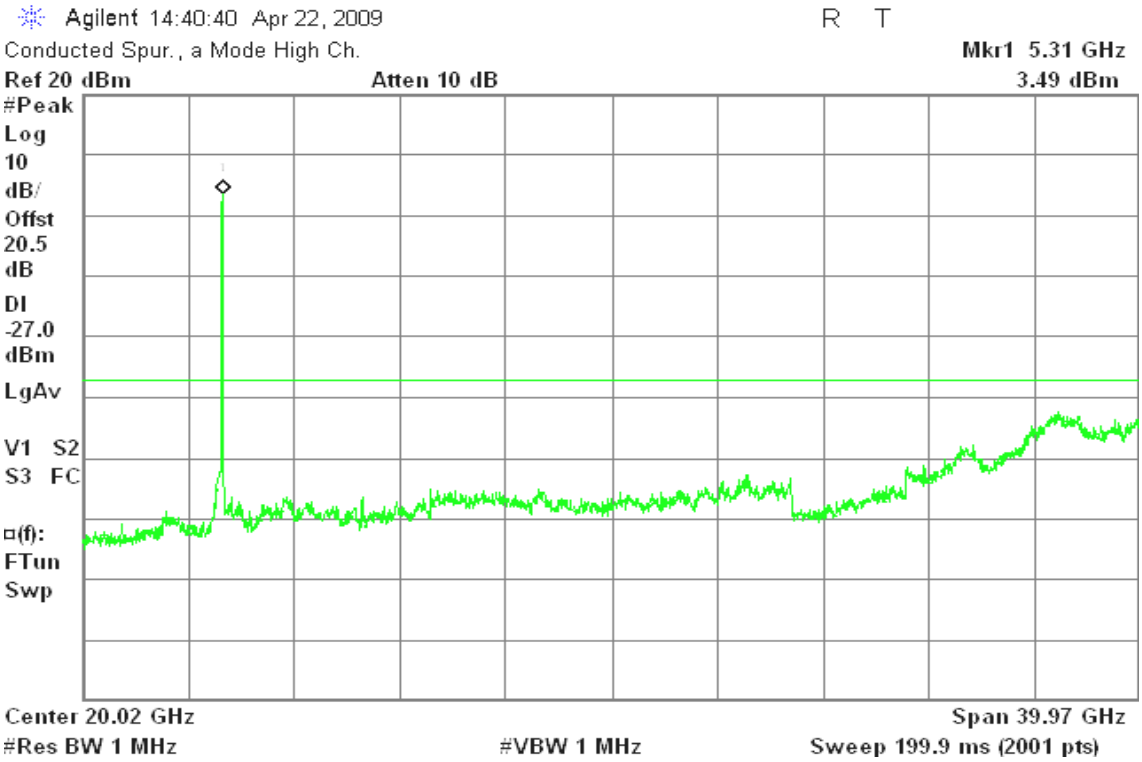
CH Low

30MHz ~ 40GHz



CH High

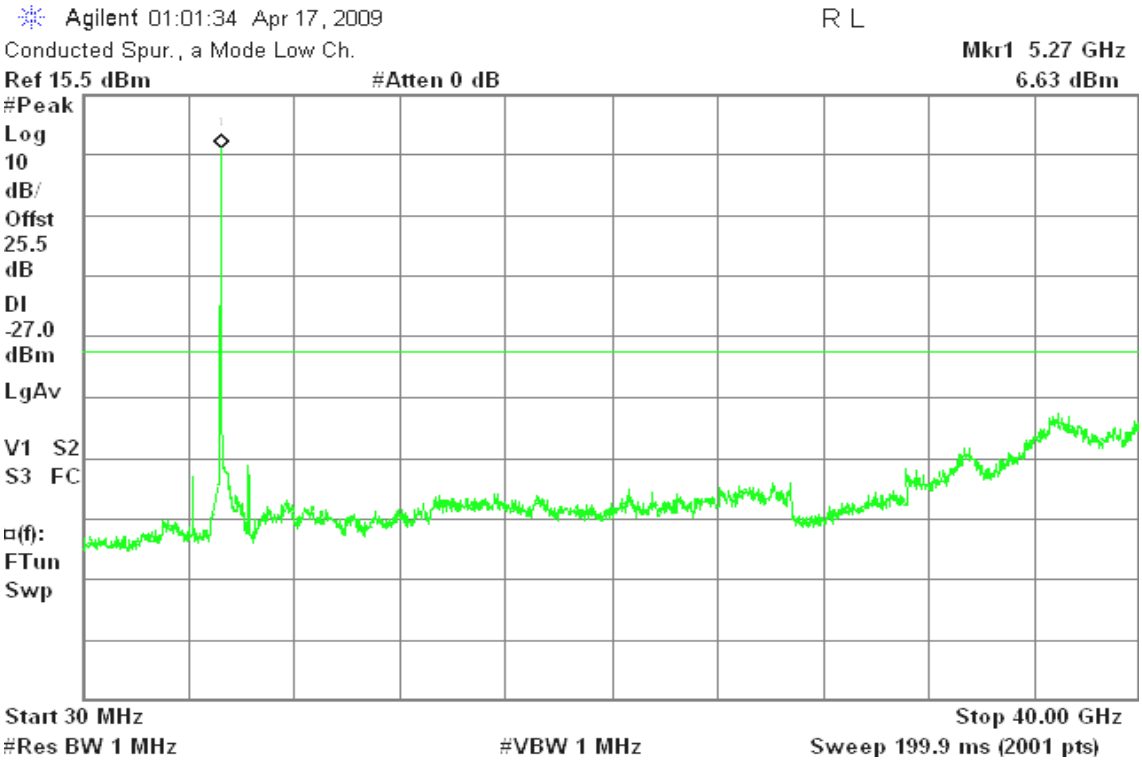
30MHz ~ 40GHz



draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / with combiner

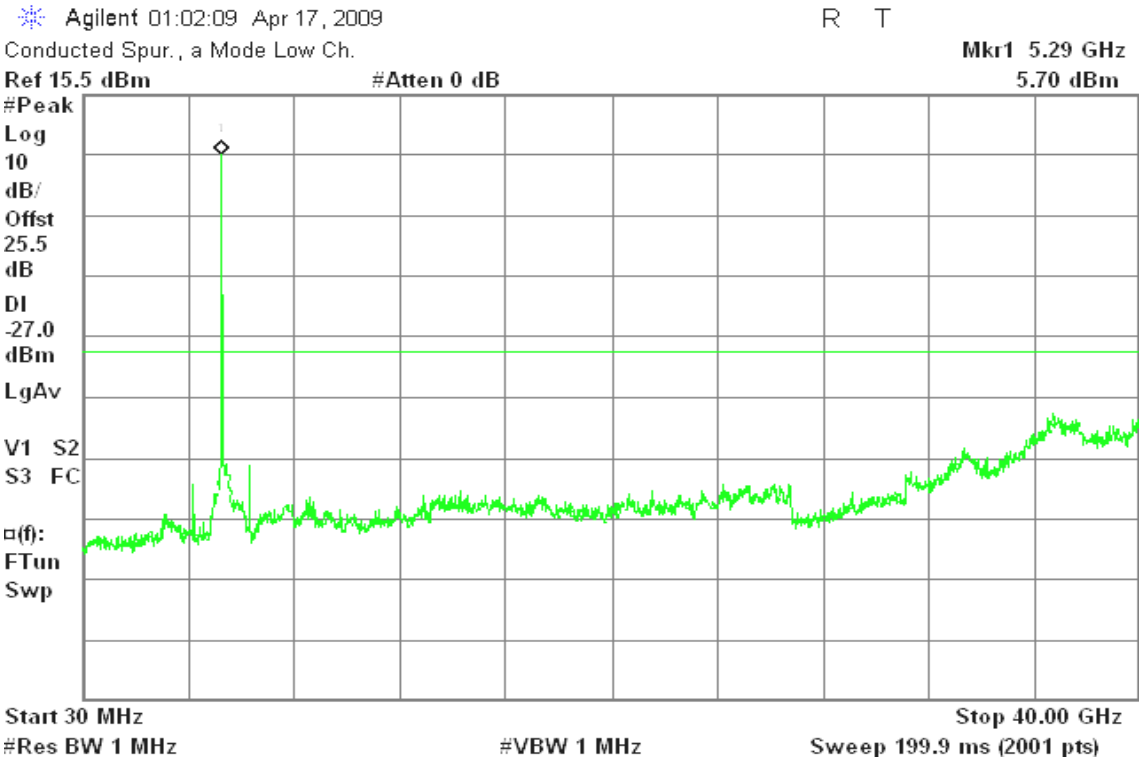
CH Low

30MHz ~ 40GHz



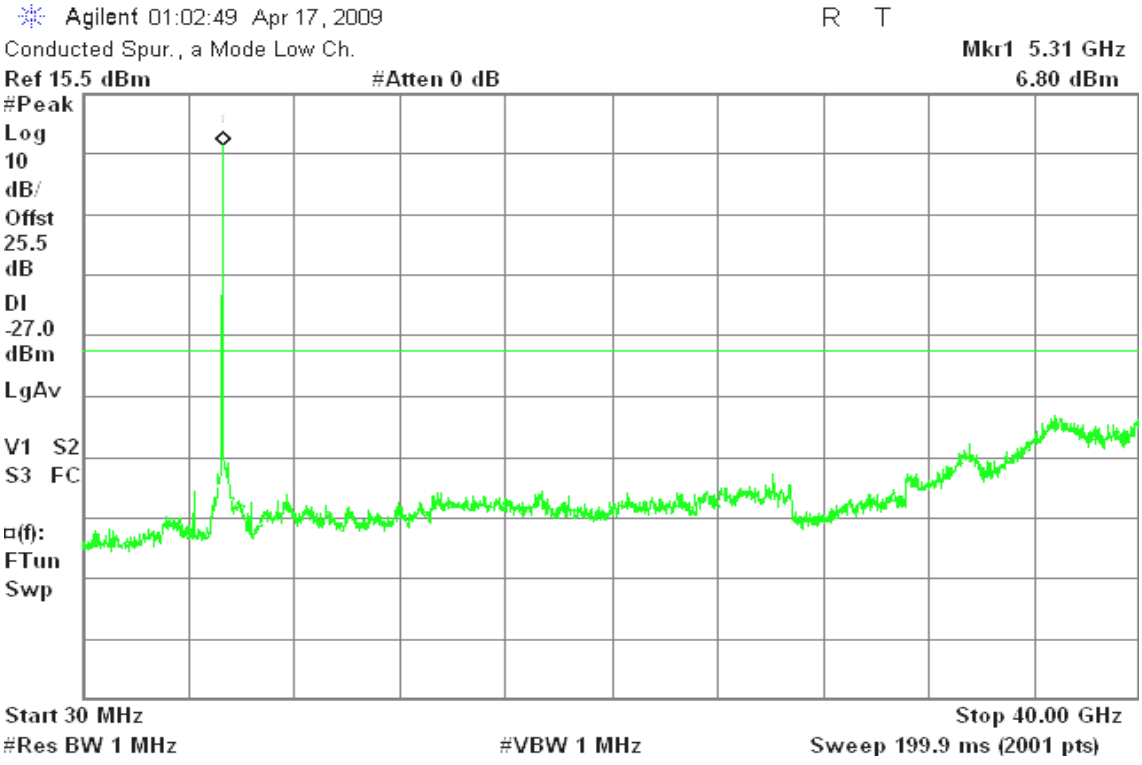
CH Mid

30MHz ~ 40GHz



CH High

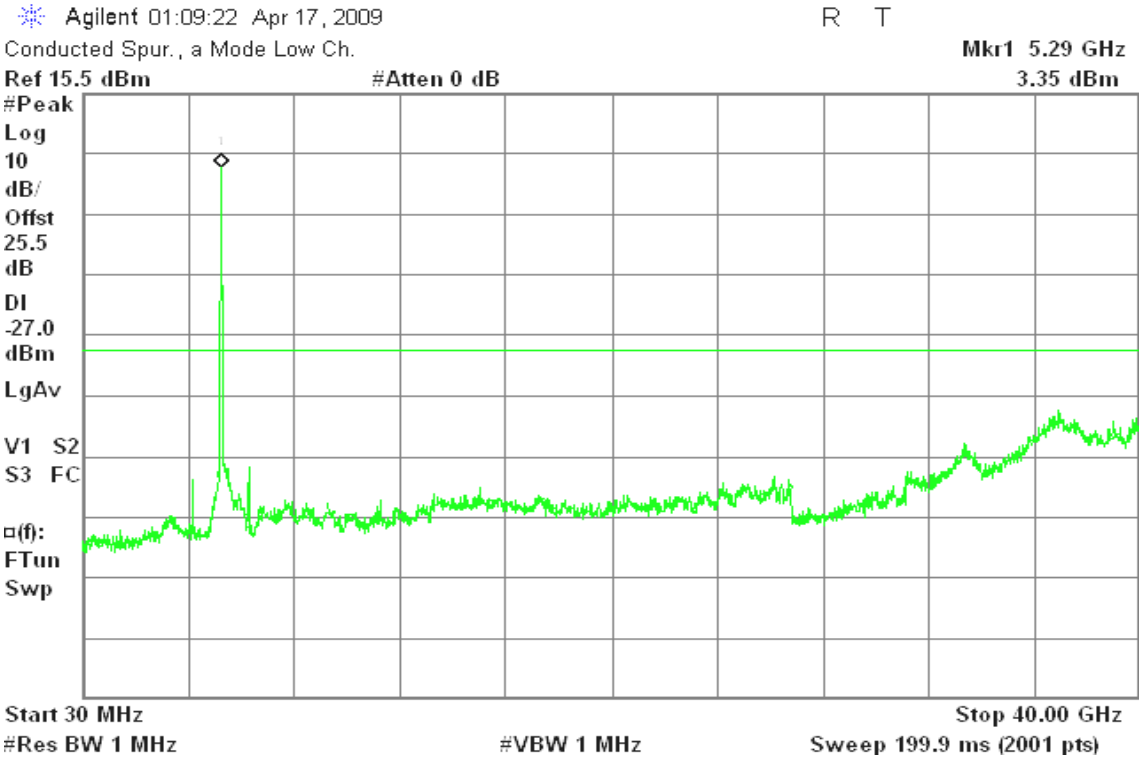
30MHz ~ 40GHz



draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / with combiner

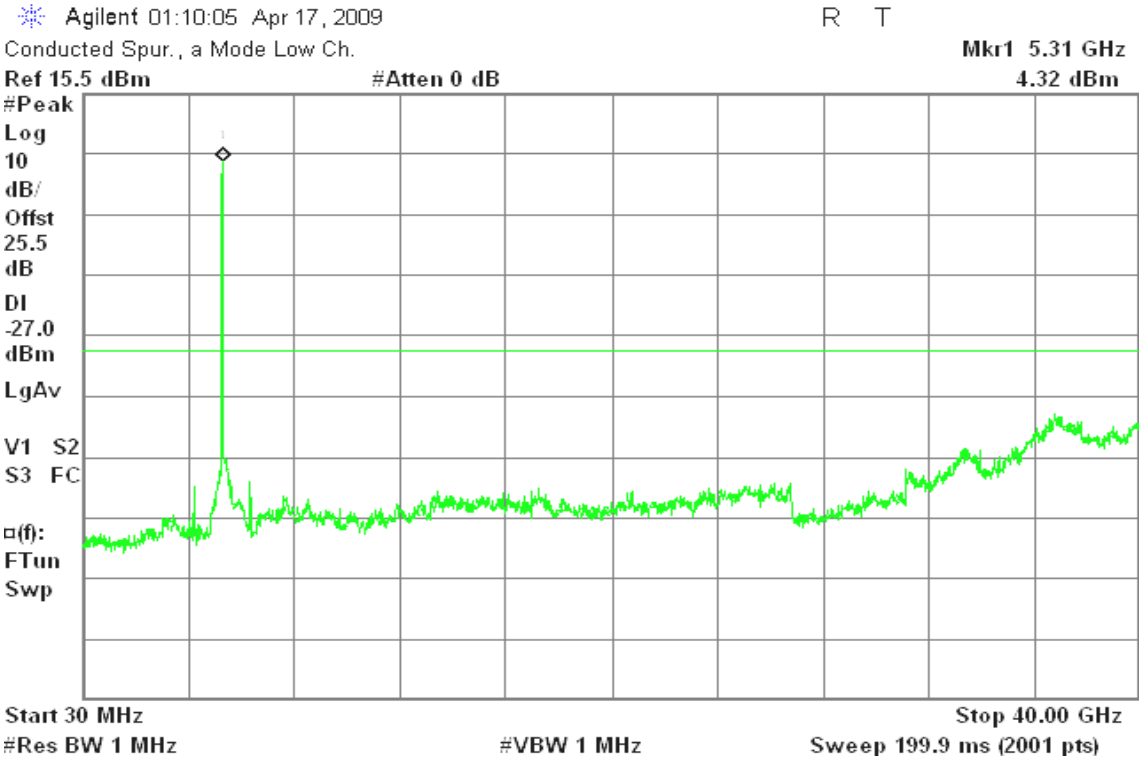
CH Low

30MHz ~ 40GHz



CH High

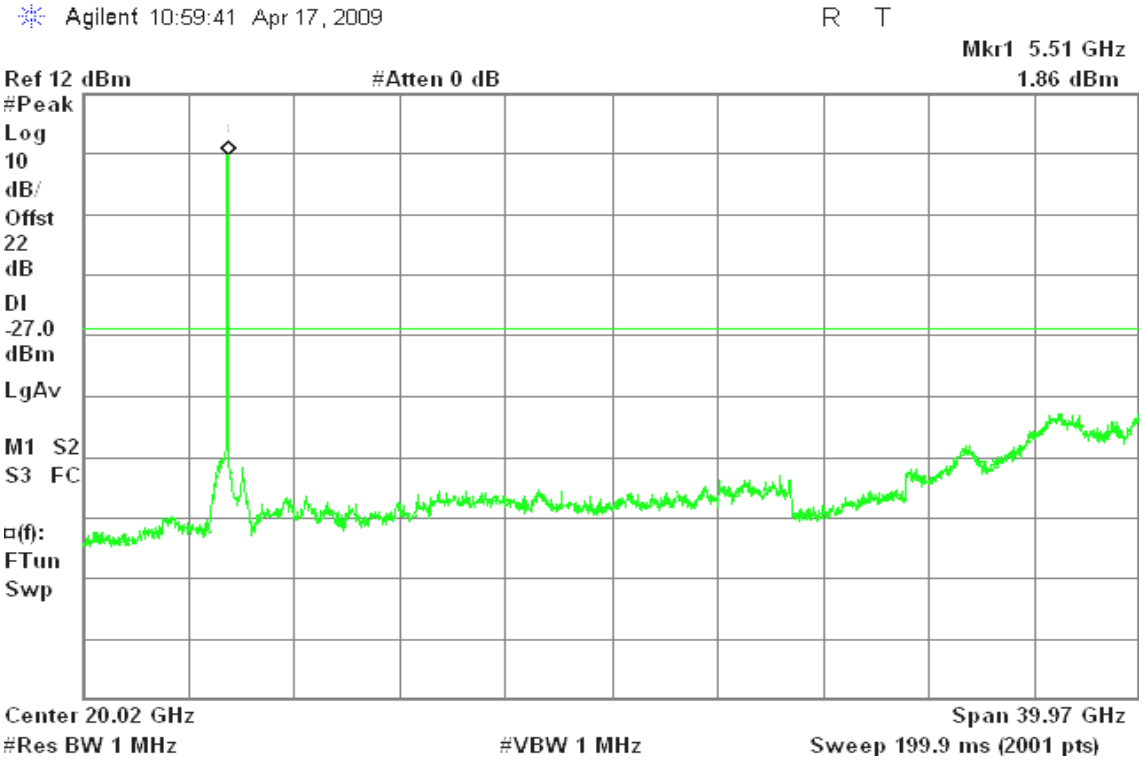
30MHz ~ 40GHz



Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

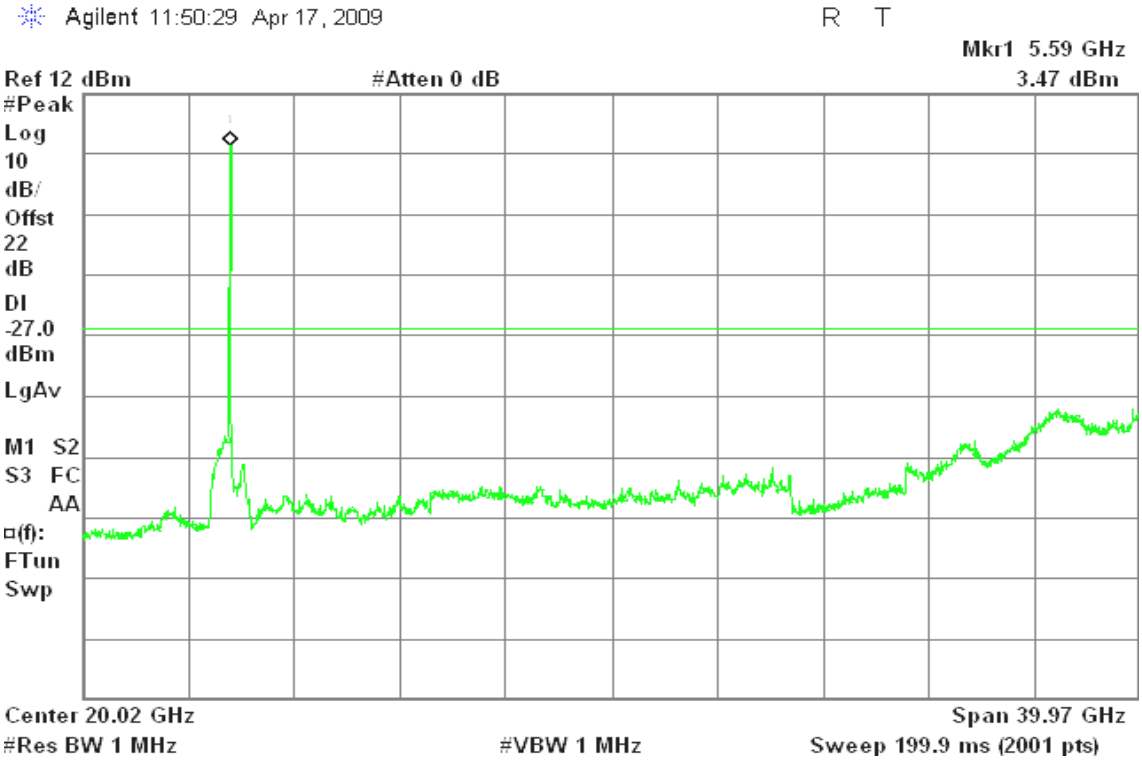
CH Low

30MHz ~ 40GHz



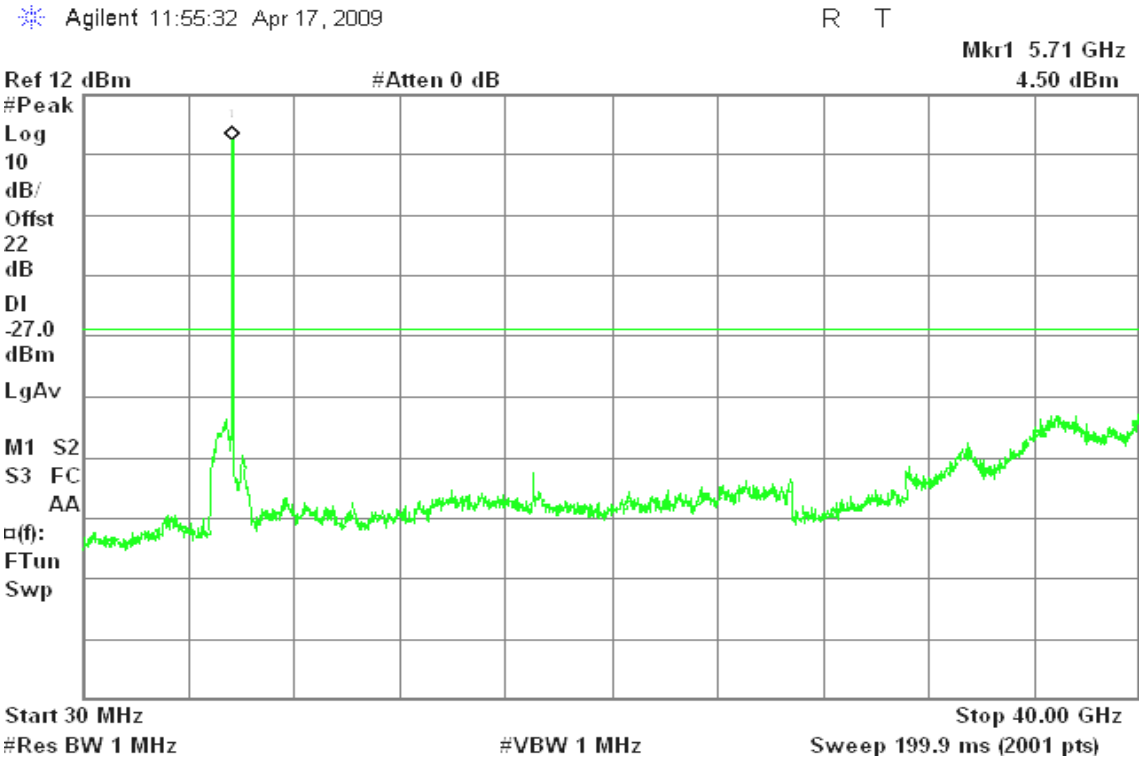
CH Mid

30MHz ~ 40GHz



CH High

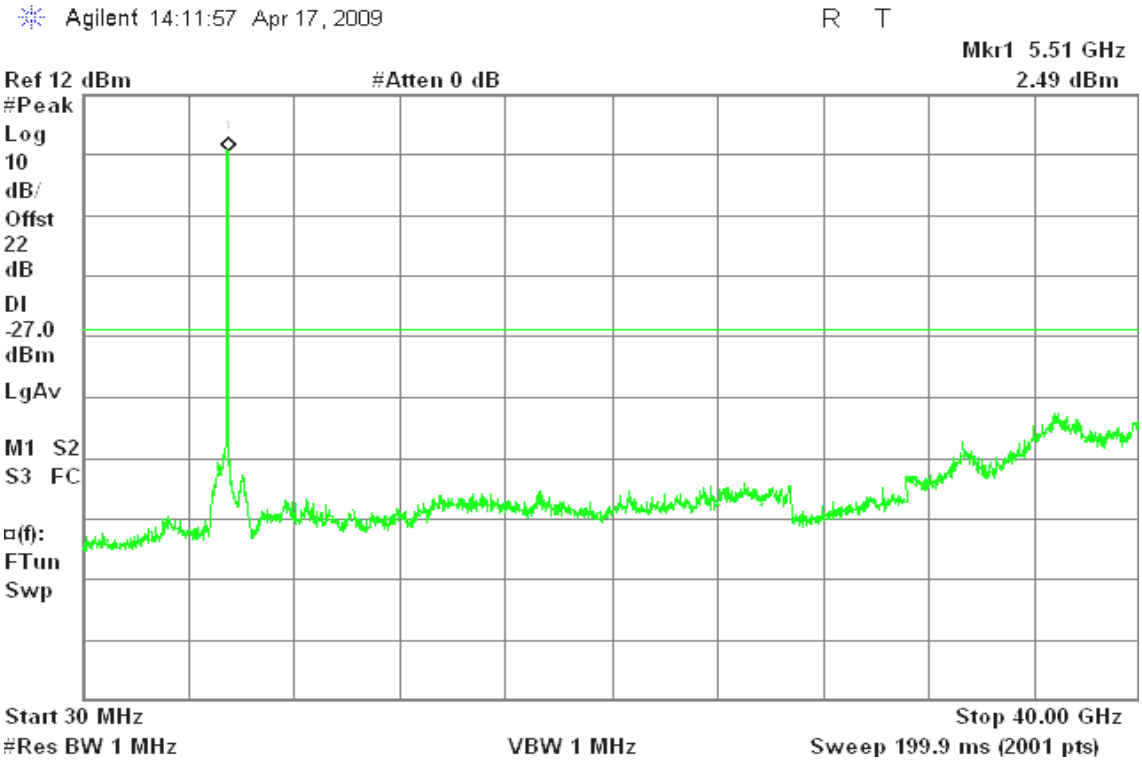
30MHz ~ 40GHz



draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

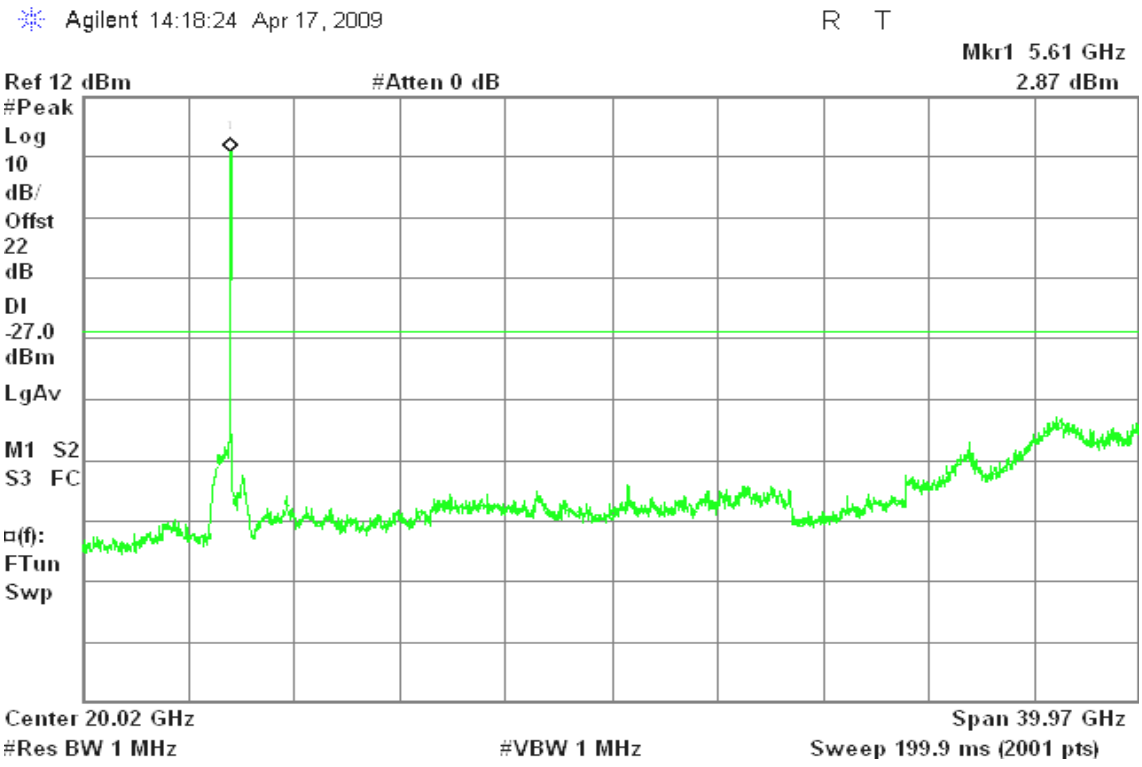
CH Low

30MHz ~ 40GHz



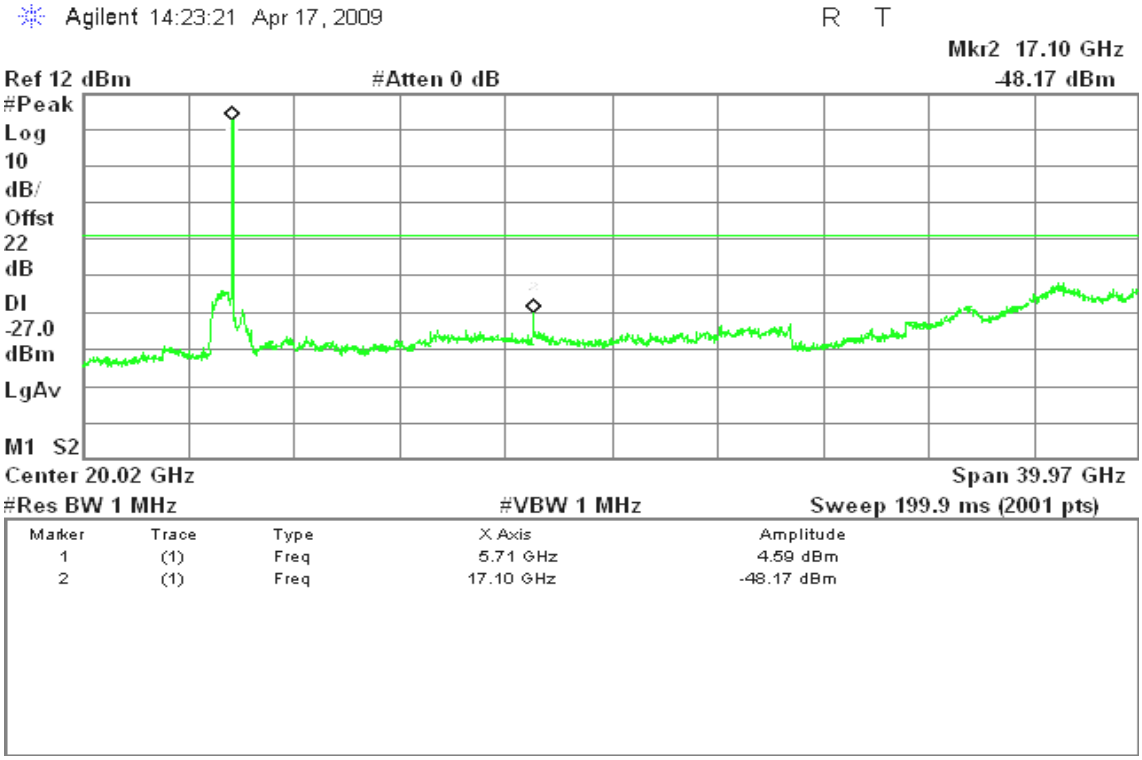
CH Mid

30MHz ~ 40GHz



CH High

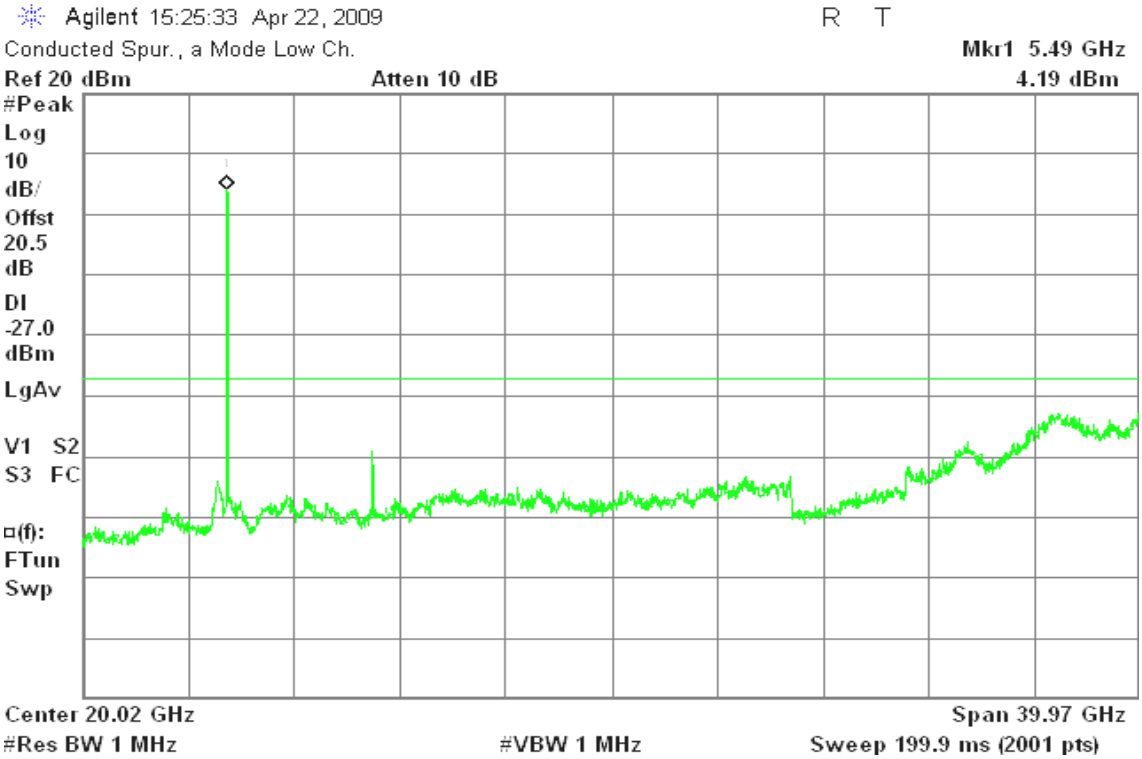
30MHz ~ 40GHz



draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

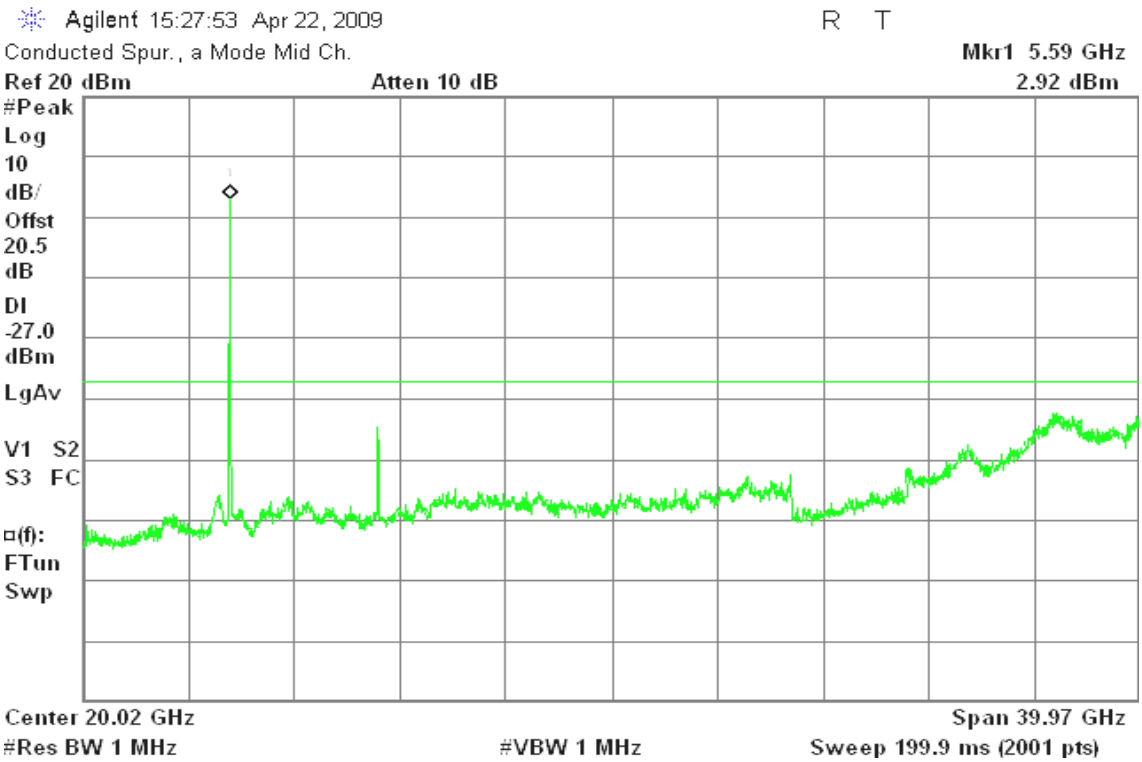
CH Low

30MHz ~ 40GHz



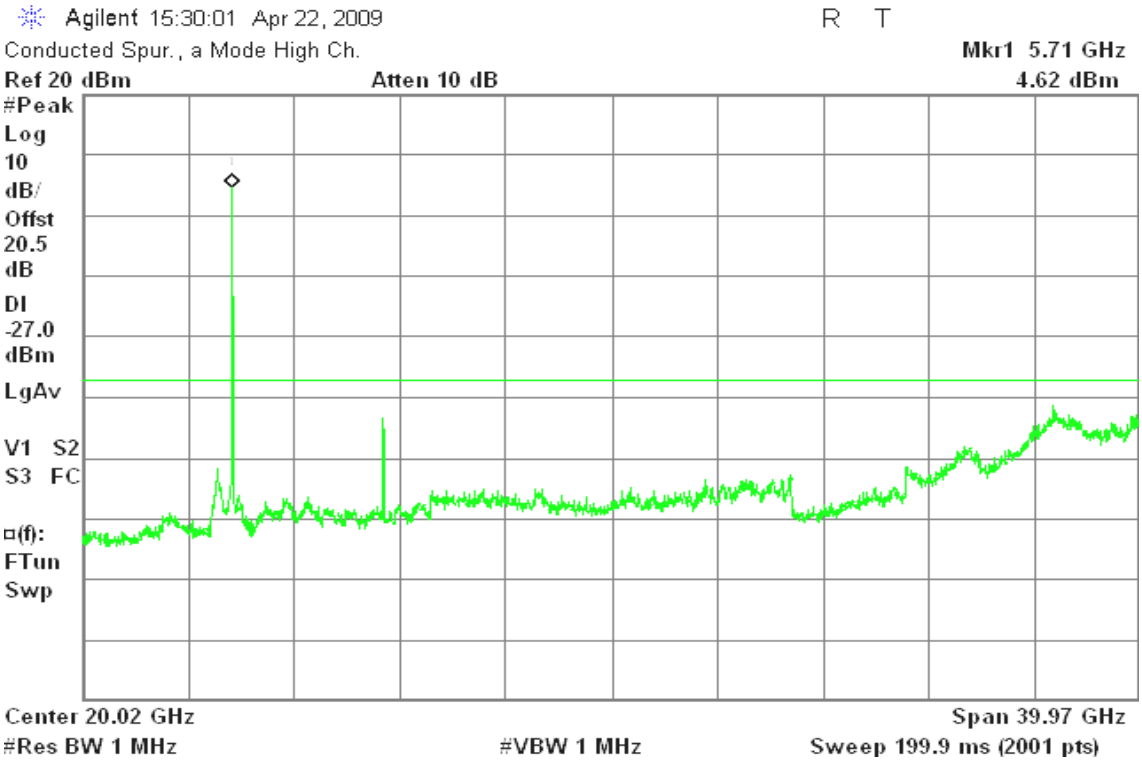
CH Mid

30MHz ~ 40GHz



CH High

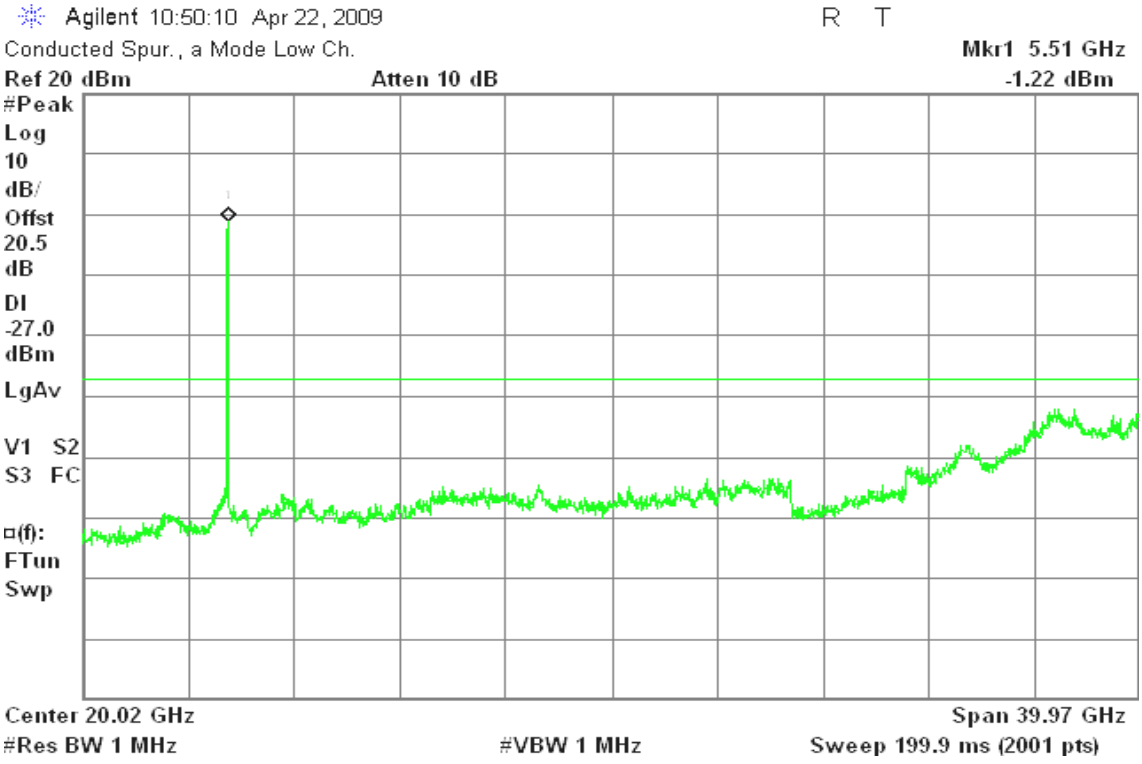
30MHz ~ 40GHz



draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 0

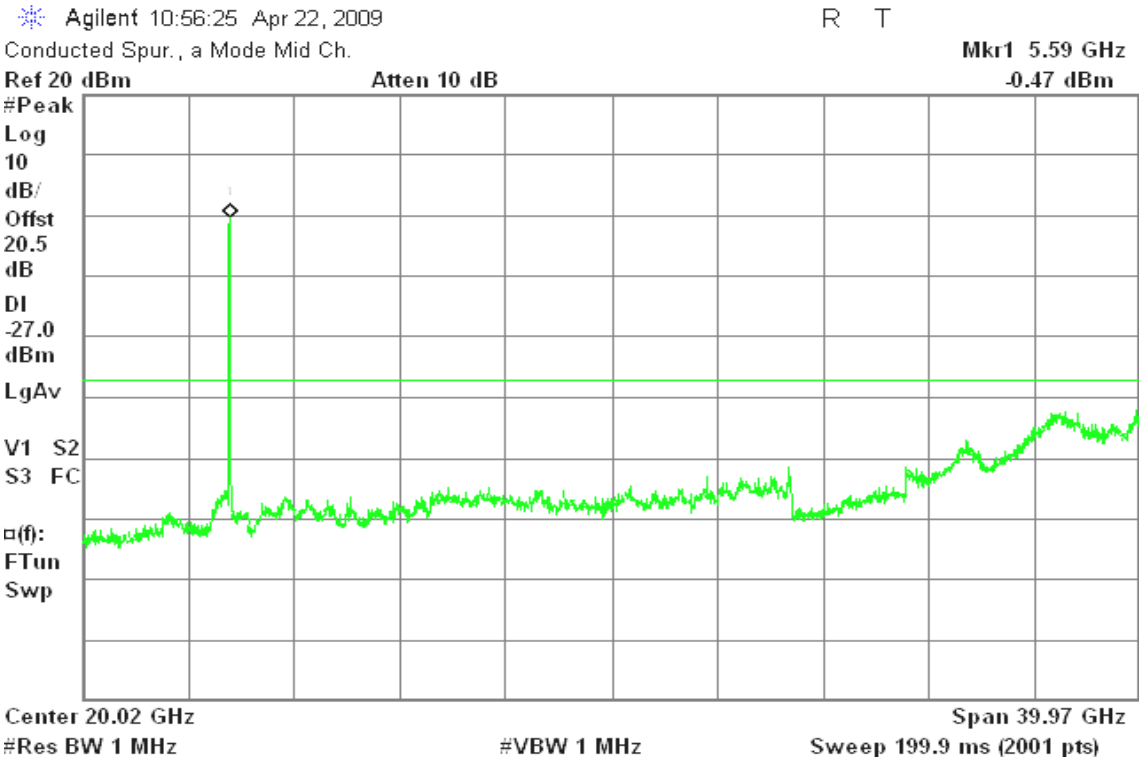
CH Low

30MHz ~ 40GHz



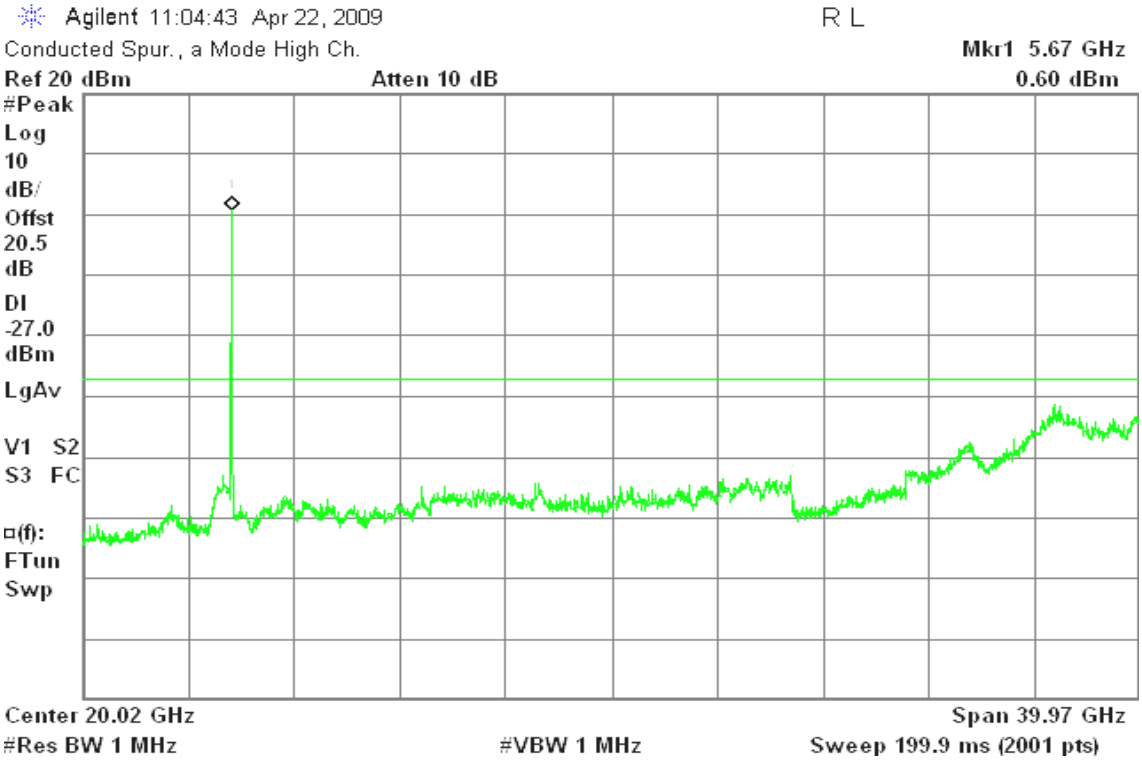
CH Mid

30MHz ~ 40GHz



CH High

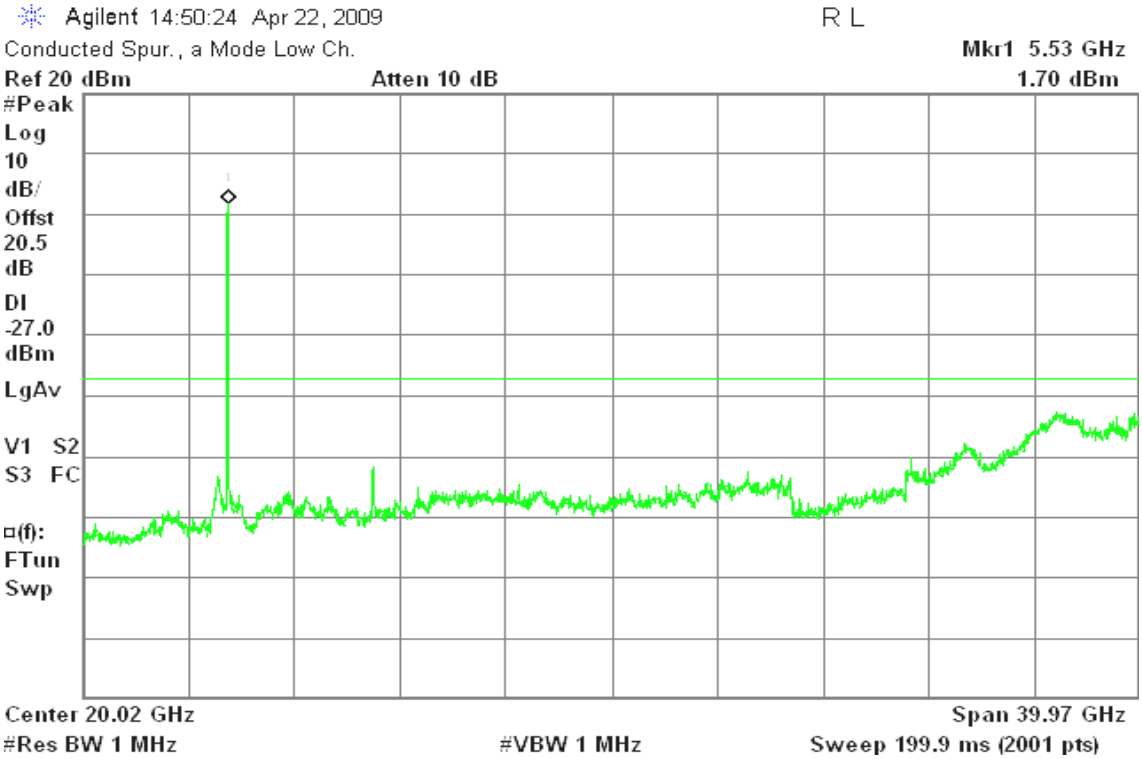
30MHz ~ 40GHz



draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 1

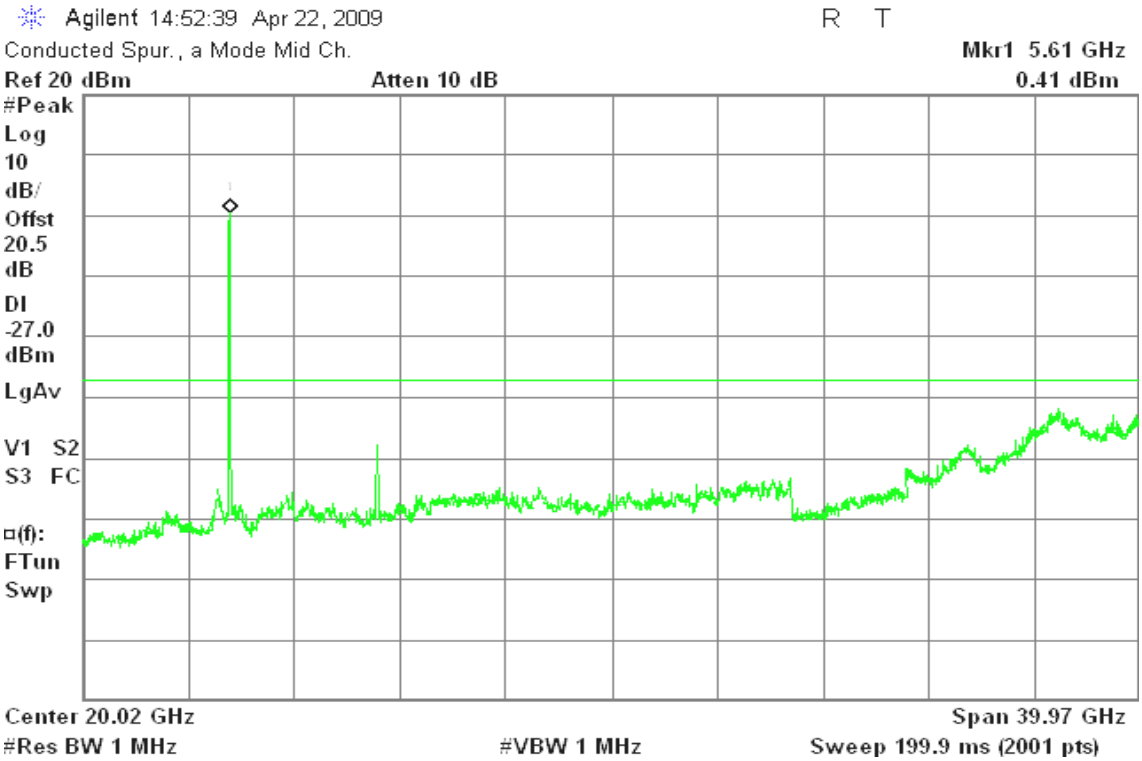
CH Low

30MHz ~ 40GHz



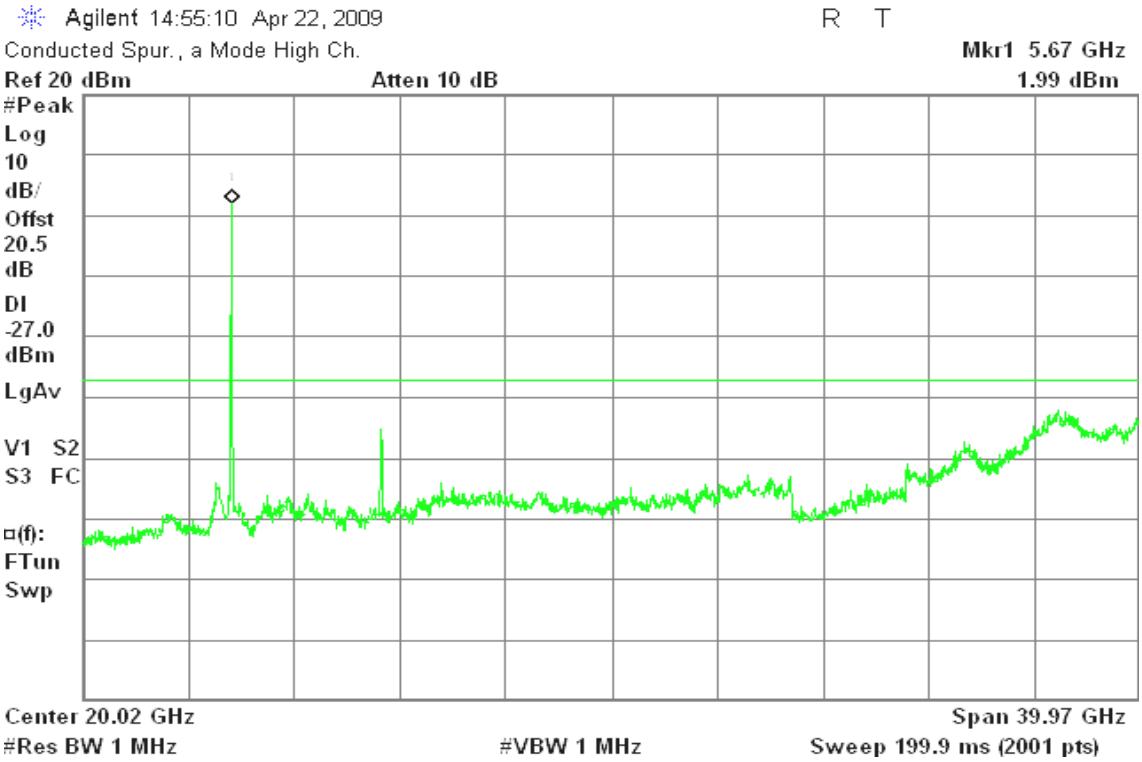
CH Mid

30MHz ~ 40GHz



CH High

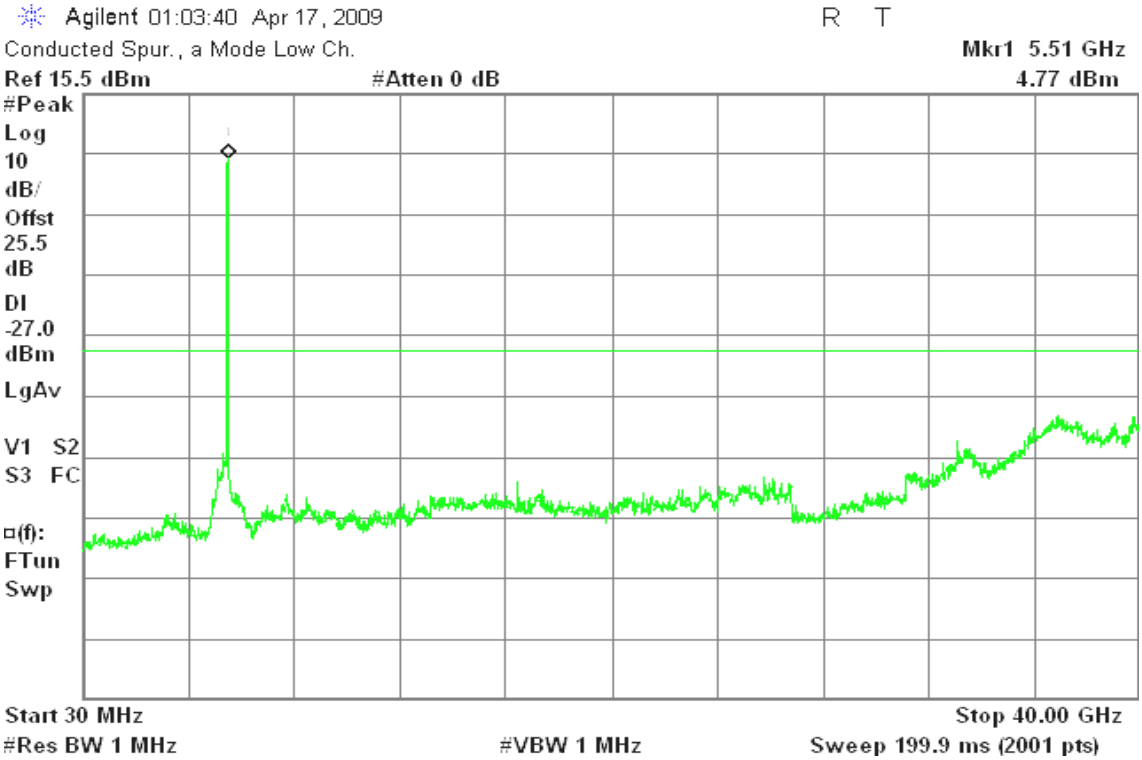
30MHz ~ 40GHz



draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / with combiner

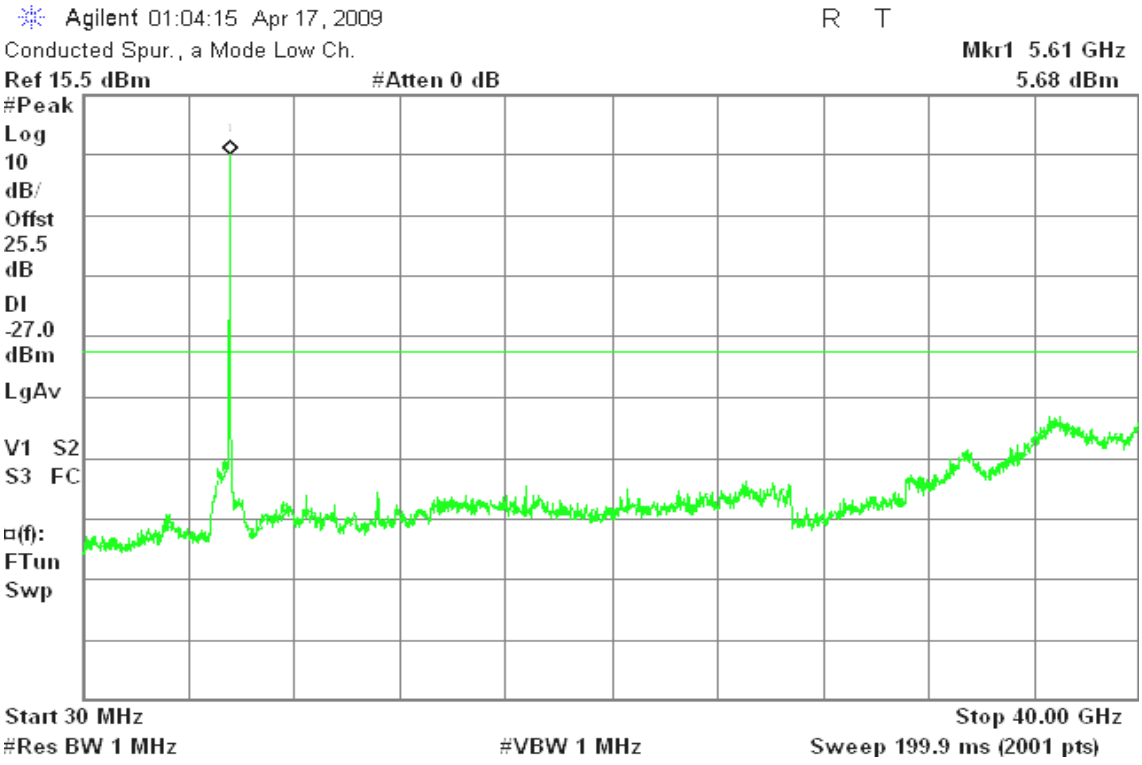
CH Low

30MHz ~ 40GHz



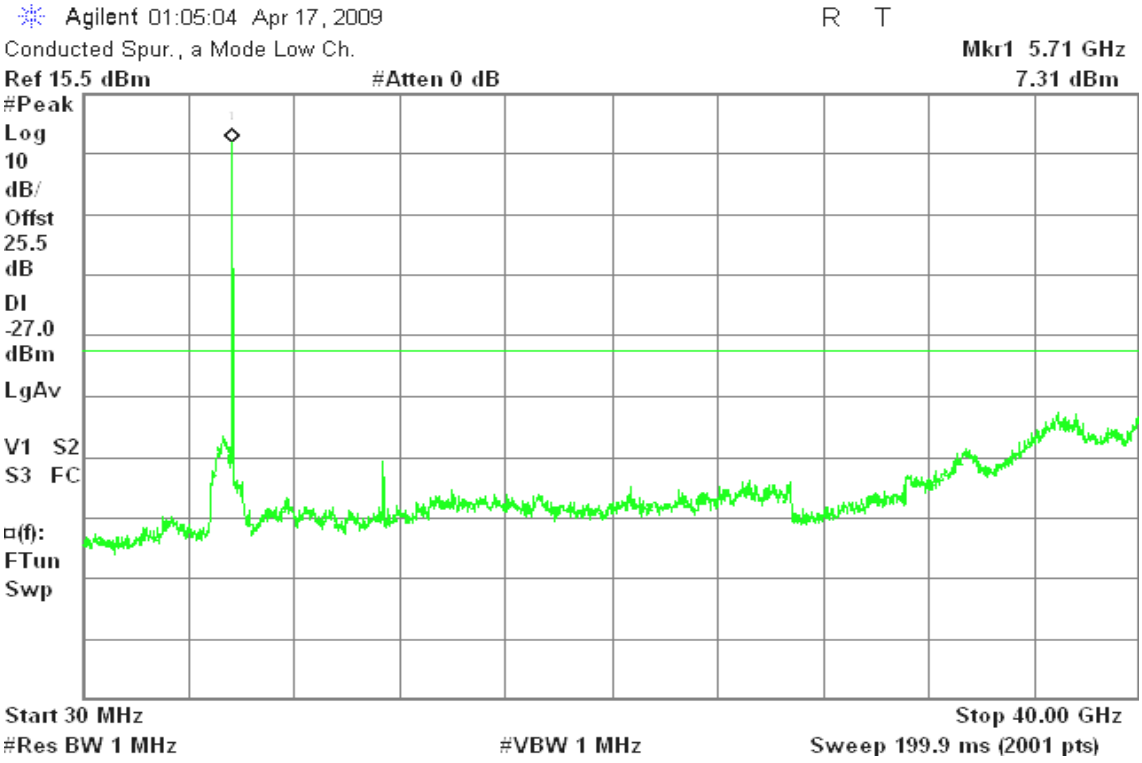
CH Mid

30MHz ~ 40GHz



CH High

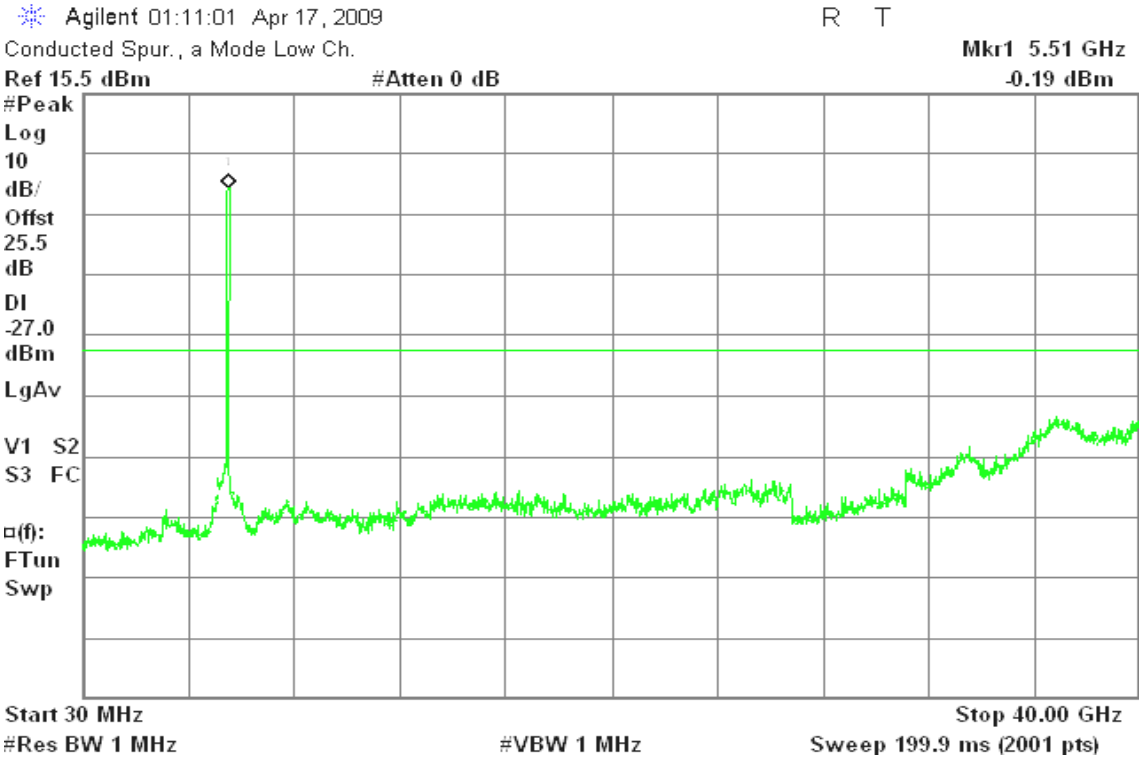
30MHz ~ 40GHz



draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / with combiner

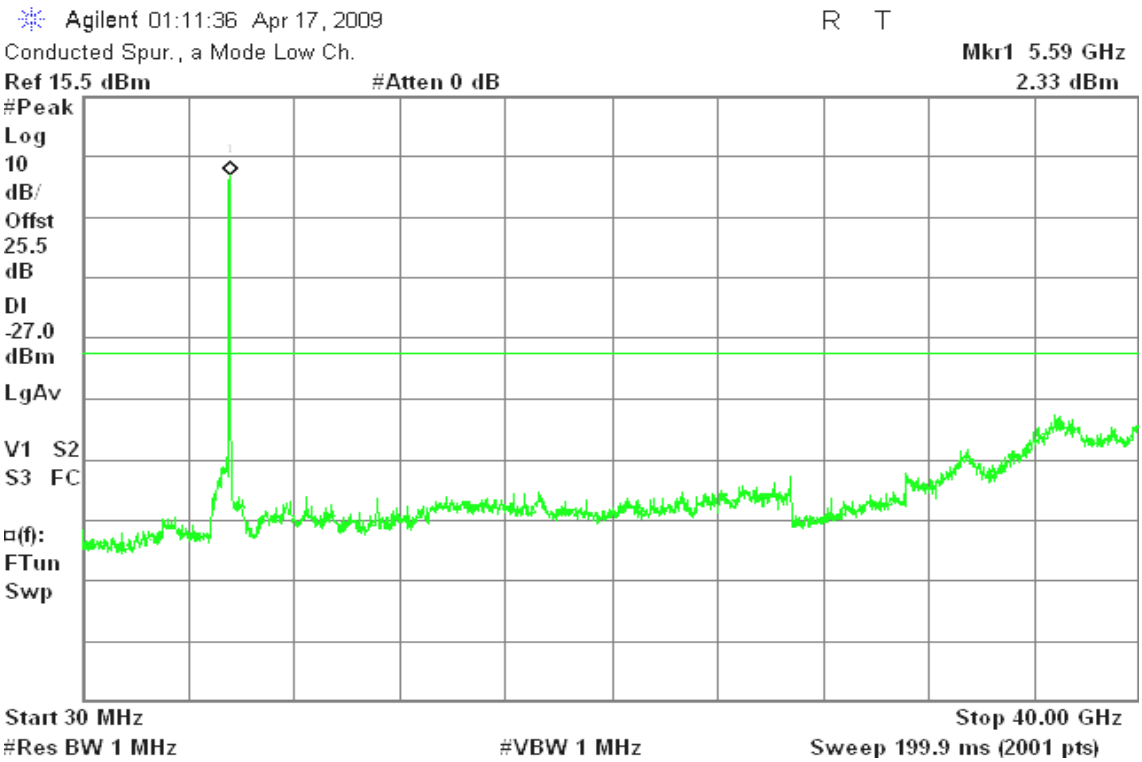
CH Low

30MHz ~ 40GHz



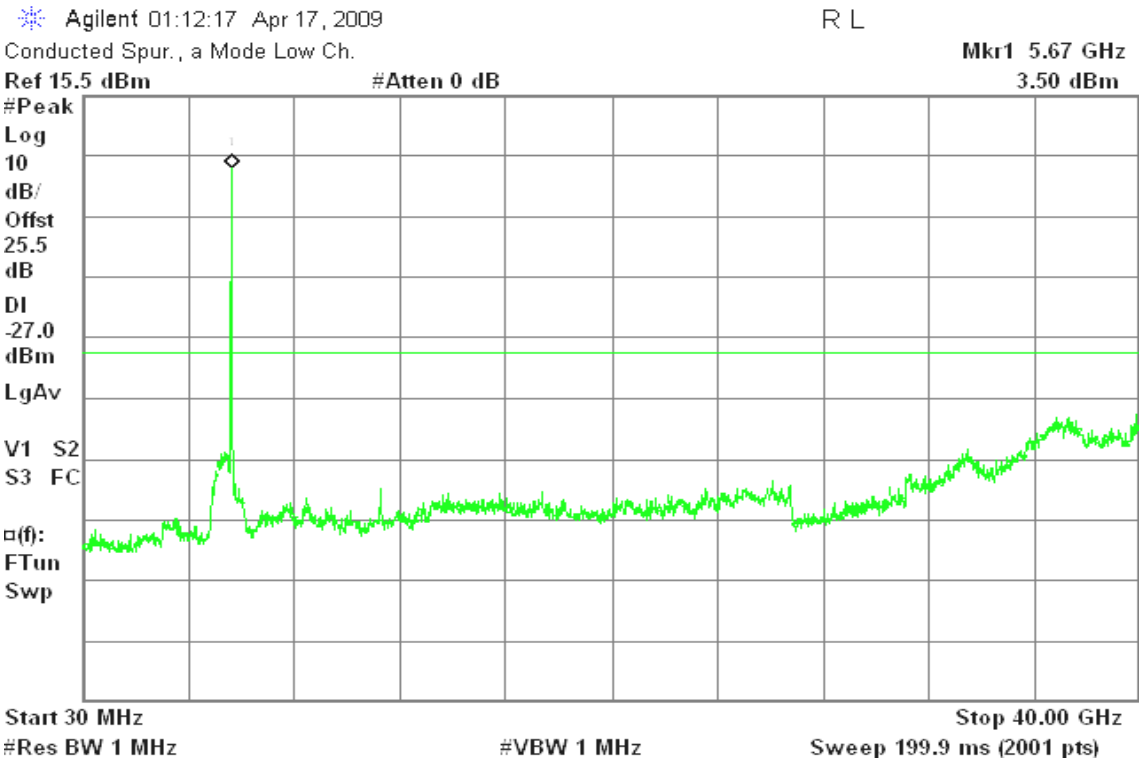
CH Mid

30MHz ~ 40GHz



CH High

30MHz ~ 40GHz



7.8 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 μH/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 (dBμV)	
	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 1 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:**	January 6, 2009
Temperature:	20°C	**Tested by:**	Harry Wang
Humidity:	58% RH		

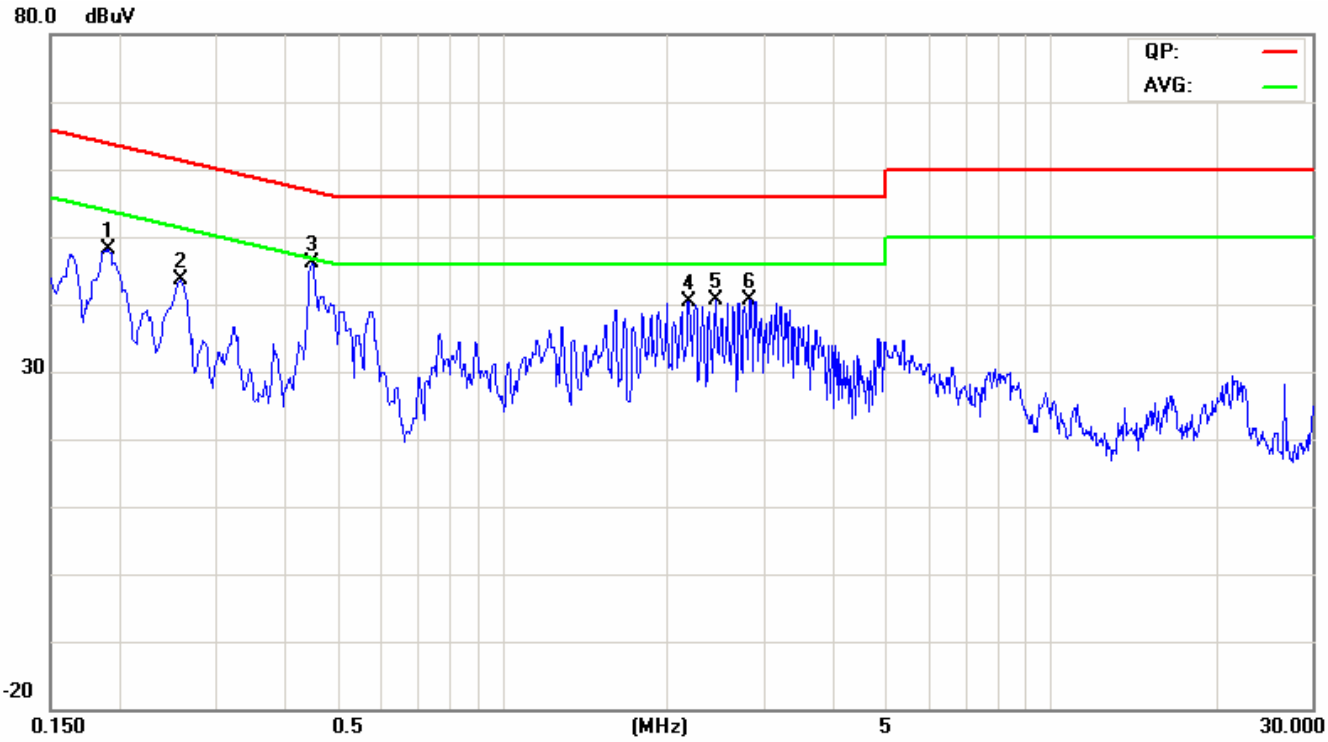
Freq. (MHz)	QP Reading (dBuV)	AV Reading (dBuV)	Corr. factor (dB)	QP Result (dBuV)	AV Result (dBuV)	QP Limit (dBuV)	AV Limit (dBuV)	QP Margin (dB)	AV Margin (dB)	Note
0.1908	34.75	32.80	9.61	44.36	42.41	64.00	54.00	-19.64	-11.59	L1
0.2588	29.93	28.16	9.60	39.53	37.76	61.47	51.47	-21.94	-13.71	L1
0.4492	35.22	30.93	9.56	44.78	40.49	56.89	46.89	-12.11	-6.40	L1
2.1812	27.35	25.68	9.70	37.05	35.38	56.00	46.00	-18.95	-10.62	L1
2.4379	29.00	25.64	9.70	38.70	35.34	56.00	46.00	-17.30	-10.66	L1
2.8223	29.07	25.32	9.70	38.77	35.02	56.00	46.00	-17.23	-10.98	L1
0.1878	29.18	23.23	9.61	38.79	32.84	64.13	54.13	-25.34	-21.29	L2
0.4493	33.89	29.90	9.56	43.45	39.46	56.89	46.89	-13.44	-7.43	L2
1.2183	30.69	28.47	9.62	40.31	38.09	56.00	46.00	-15.69	-7.91	L2
1.5412	28.92	27.25	9.65	38.57	36.90	56.00	46.00	-17.43	-9.10	L2
1.8600	28.69	27.75	9.69	38.38	37.44	56.00	46.00	-17.62	-8.56	L2
2.4987	29.35	25.37	9.70	39.05	35.07	56.00	46.00	-16.95	-10.93	L2

Remark:

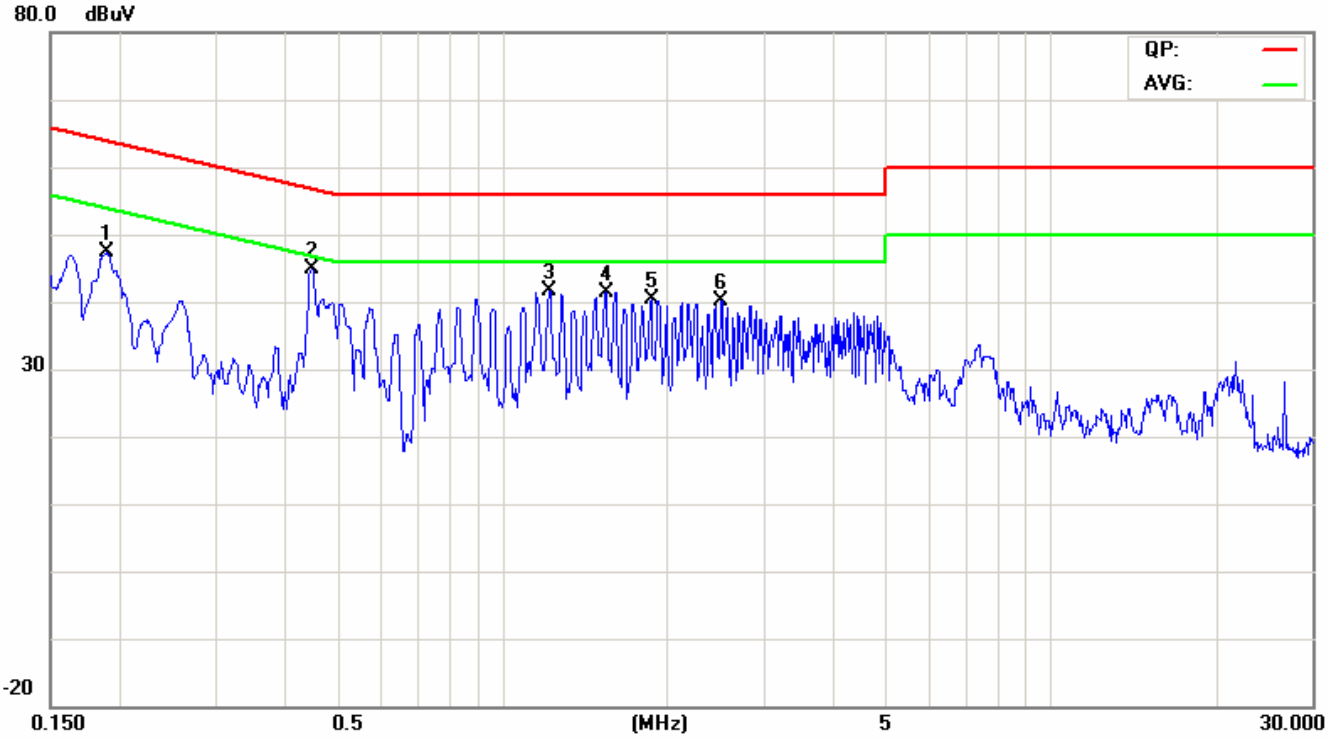
1. *Measuring frequencies from 0.15 MHz to 30MHz.*
2. *The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Quasi-peak detector and average detector.*
3. *The IF bandwidth of SPA between 0.15MHz to 30MHz was 10kHz; the IF bandwidth of Test Receiver between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

Test Plots

Conducted emissions (Line 1)



Conducted emissions (Line 2)

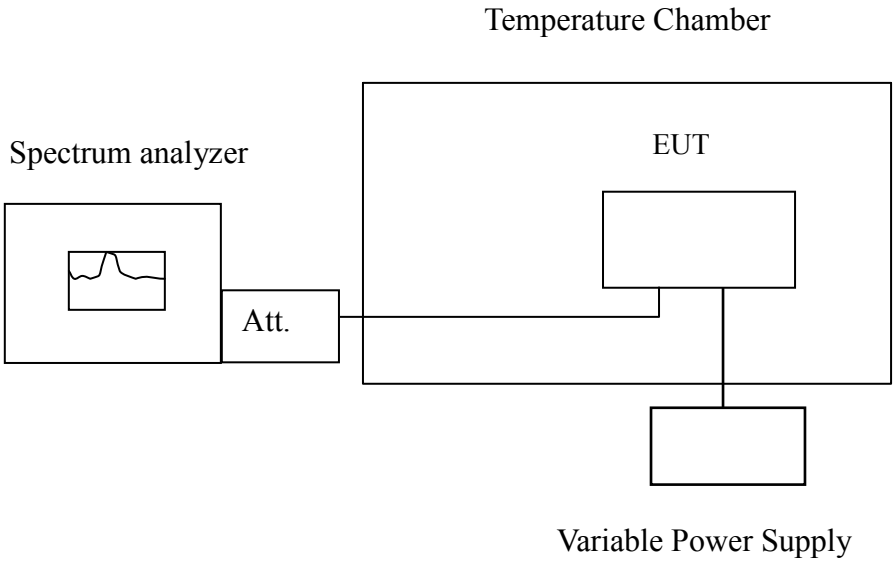


7.9 FREQUENCY STABILITY

LIMIT

According to §15.407(g), manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

Test Configuration



Remark: *Measurement setup for testing on Antenna connector*

TEST PROCEDURE

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to –20°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

TEST RESULTS

No non-compliance noted.

IEEE 802.11a mode / 5180 ~ 5240 MHz:

CH Low

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5180.012566	5150~5250	Pass
40	110	5179.994562	5150~5250	Pass
30	110	5180.010365	5150~5250	Pass
20	110	5179.995689	5150~5250	Pass
10	110	5180.020118	5150~5250	Pass
0	110	5179.981755	5150~5250	Pass
-10	110	5179.991125	5150~5250	Pass
-20	110	5180.001056	5150~5250	Pass

Operating Frequency: 5180 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5180.014568	5150~5250	Pass
	110	5180.992546	5150~5250	Pass
	121	5180.012541	5150~5250	Pass

CH High

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5240.002541	5150~5250	Pass
40	110	5240.012441	5150~5250	Pass
30	110	5239.994254	5150~5250	Pass
20	110	5240.001459	5150~5250	Pass
10	110	5239.973321	5150~5250	Pass
0	110	5239.994225	5150~5250	Pass
-10	110	5240.001325	5150~5250	Pass
-20	110	5239.988457	5150~5250	Pass

Operating Frequency: 5240 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5239.98512	5150~5250	Pass
	110	5239.984576	5150~5250	Pass
	121	5240.034457	5150~5250	Pass

draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240 MHz:

CH Low

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5180.054123	5150~5250	Pass
40	110	5180.003546	5150~5250	Pass
30	110	5180.005489	5150~5250	Pass
20	110	5180.015412	5150~5250	Pass
10	110	5179.997301	5150~5250	Pass
0	110	5180.023541	5150~5250	Pass
-10	110	5179.014554	5150~5250	Pass
-20	110	5180.021456	5150~5250	Pass

Operating Frequency: 5180 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5180.036956	5150~5250	Pass
	110	5179.96589	5150~5250	Pass
	121	5179.988741	5150~5250	Pass

CH High

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5240.006541	5150~5250	Pass
40	110	5239.998776	5150~5250	Pass
30	110	5240.001654	5150~5250	Pass
20	110	5239.980325	5150~5250	Pass
10	110	5239.99841	5150~5250	Pass
0	110	5239.984763	5150~5250	Pass
-10	110	5240.008954	5150~5250	Pass
-20	110	5239.976489	5150~5250	Pass

Operating Frequency: 5240 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5239.998745	5150~5250	Pass
	110	5239.973698	5150~5250	Pass
	121	5240.029855	5150~5250	Pass

draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230 MHz:

CH Low

Operating Frequency: 5190 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5190.016986	5150~5250	Pass
40	110	5189.984369	5150~5250	Pass
30	110	5190.021513	5150~5250	Pass
20	110	5190.016354	5150~5250	Pass
10	110	5190.006691	5150~5250	Pass
0	110	5189.014719	5150~5250	Pass
-10	110	5189.036915	5150~5250	Pass
-20	110	5190.040021	5150~5250	Pass

Operating Frequency: 5190 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5189.854325	5150~5250	Pass
	110	5190.001436	5150~5250	Pass
	121	5189.018987	5150~5250	Pass

CH High

Operating Frequency: 5230 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5230.009898	5150~5250	Pass
40	110	5230.001455	5150~5250	Pass
30	110	5229.917843	5150~5250	Pass
20	110	5229.983254	5150~5250	Pass
10	110	5230.045533	5150~5250	Pass
0	110	5230.006988	5150~5250	Pass
-10	110	5229.897414	5150~5250	Pass
-20	110	5230.005756	5150~5250	Pass

Operating Frequency: 5230 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5229.878882	5150~5250	Pass
	110	5230.004488	5150~5250	Pass
	121	5229.871552	5150~5250	Pass

IEEE 802.11a mode / 5260 ~ 5320 MHz:

CH Low

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5260.021984	5250~5350	Pass
40	110	5259.980679	5250~5350	Pass
30	110	5259.993341	5250~5350	Pass
20	110	5260.979814	5250~5350	Pass
10	110	5260.018348	5250~5350	Pass
0	110	5259.996789	5250~5350	Pass
-10	110	5260.019861	5250~5350	Pass
-20	110	5260.024176	5250~5350	Pass

Operating Frequency: 5260 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5260.014741	5250~5350	Pass
	110	5259.974433	5250~5350	Pass
	121	5259.968973	5250~5350	Pass

CH High

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5320.002546	5250~5350	Pass
40	110	5320.016982	5250~5350	Pass
30	110	5320.026158	5250~5350	Pass
20	110	5319.983215	5250~5350	Pass
10	110	5320.011165	5250~5350	Pass
0	110	5319.994578	5250~5350	Pass
-10	110	5320.016741	5250~5350	Pass
-20	110	5320.021159	5250~5350	Pass

Operating Frequency: 5320 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5319.991139	5250~5350	Pass
	110	5319.995369	5250~5350	Pass
	121	5320.021187	5250~5350	Pass

draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320 MHz:

CH Low

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5260.012547	5250~5350	Pass
40	110	5260.020001	5250~5350	Pass
30	110	5260.023654	5250~5350	Pass
20	110	5259.987211	5250~5350	Pass
10	110	5260.004511	5250~5350	Pass
0	110	5259.998211	5250~5350	Pass
-10	110	5259.982242	5250~5350	Pass
-20	110	5260.011254	5250~5350	Pass

Operating Frequency: 5260 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5260.010549	5250~5350	Pass
	110	5260.024546	5250~5350	Pass
	121	5259.995872	5250~5350	Pass

CH High

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5319.897877	5250~5350	Pass
40	110	5319.992145	5250~5350	Pass
30	110	5320.025584	5250~5350	Pass
20	110	5320.014598	5250~5350	Pass
10	110	5320.011165	5250~5350	Pass
0	110	5320.002546	5250~5350	Pass
-10	110	5319.989875	5250~5350	Pass
-20	110	5319.998112	5250~5350	Pass

Operating Frequency: 5320 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5319.981452	5250~5350	Pass
	110	5319.991459	5250~5350	Pass
	121	5320.005444	5250~5350	Pass

draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310 MHz:

CH Low

Operating Frequency: 5270 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5270.009464	5250~5350	Pass
40	110	5269.928773	5250~5350	Pass
30	110	5270.005411	5250~5350	Pass
20	110	5269.989125	5250~5350	Pass
10	110	5270.009844	5250~5350	Pass
0	110	5269.852995	5250~5350	Pass
-10	110	5270.008844	5250~5350	Pass
-20	110	5270.014221	5250~5350	Pass

Operating Frequency: 5270 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5269.991475	5250~5350	Pass
	110	5270.144511	5250~5350	Pass
	121	5269.859954	5250~5350	Pass

CH High

Operating Frequency: 5310 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5310.007445	5250~5350	Pass
40	110	5309.925442	5250~5350	Pass
30	110	5310.028842	5250~5350	Pass
20	110	5310.014888	5250~5350	Pass
10	110	5310.014788	5250~5350	Pass
0	110	5309.784789	5250~5350	Pass
-10	110	5309.988212	5250~5350	Pass
-20	110	5309.897741	5250~5350	Pass

Operating Frequency: 5310 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5309.955887	5250~5350	Pass
	110	5310.012356	5250~5350	Pass
	121	5310.021669	5250~5350	Pass

IEEE 802.11a mode / 5500 ~ 5700 MHz:

CH Low

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5500.011439	5470~5725	Pass
40	110	5500.018974	5470~5725	Pass
30	110	5499.995678	5470~5725	Pass
20	110	5500.017684	5470~5725	Pass
10	110	5499.987146	5470~5725	Pass
0	110	5499.986111	5470~5725	Pass
-10	110	5499.991246	5470~5725	Pass
-20	110	5500.011983	5470~5725	Pass

Operating Frequency: 5500 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5500.009848	5470~5725	Pass
	110	5500.015845	5470~5725	Pass
	121	5499.981478	5470~5725	Pass

CH High

Operating Frequency: 5700 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5699.991652	5470~5725	Pass
40	110	5700.019879	5470~5725	Pass
30	110	5700.019987	5470~5725	Pass
20	110	5700.020098	5470~5725	Pass
10	110	5699.991254	5470~5725	Pass
0	110	5699.985784	5470~5725	Pass
-10	110	5699.991472	5470~5725	Pass
-20	110	5700.012598	5470~5725	Pass

Operating Frequency: 5700 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5700.991143	5470~5725	Pass
	110	5699.898784	5470~5725	Pass
	121	5700.023654	5470~5725	Pass

draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700 MHz:

CH Low

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5500.003698	5470~5725	Pass
40	110	5500.003214	5470~5725	Pass
30	110	5500.021454	5470~5725	Pass
20	110	5499.985412	5470~5725	Pass
10	110	5499.998211	5470~5725	Pass
0	110	5500.031144	5470~5725	Pass
-10	110	5500.001457	5470~5725	Pass
-20	110	5500.004577	5470~5725	Pass

Operating Frequency: 5500 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5499.898887	5470~5725	Pass
	110	5499.975485	5470~5725	Pass
	121	5500.002577	5470~5725	Pass

CH High

Operating Frequency: 5700 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5700.002546	5470~5725	Pass
40	110	5699.968751	5470~5725	Pass
30	110	5699.897112	5470~5725	Pass
20	110	5700.005898	5470~5725	Pass
10	110	5699.902583	5470~5725	Pass
0	110	5700.009874	5470~5725	Pass
-10	110	5699.925412	5470~5725	Pass
-20	110	5700.015477	5470~5725	Pass

Operating Frequency: 5700 MHz,				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5700.025886	5470~5725	Pass
	110	5699.996852	5470~5725	Pass
	121	5699.923698	5470~5725	Pass

draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670 MHz:

CH Low

Operating Frequency: 5510 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5510.008977	5470~5725	Pass
40	110	5510.012411	5470~5725	Pass
30	110	5509.987442	5470~5725	Pass
20	110	5509.891123	5470~5725	Pass
10	110	5510.021553	5470~5725	Pass
0	110	5509.97455	5470~5725	Pass
-10	110	5509.894255	5470~5725	Pass
-20	110	5510.006588	5470~5725	Pass

Operating Frequency: 5510 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5509.799855	5470~5725	Pass
	110	5510.014523	5470~5725	Pass
	121	5509.985889	5470~5725	Pass

CH High

Operating Frequency: 5670 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5670.004589	5470~5725	Pass
40	110	5669.897813	5470~5725	Pass
30	110	5670.009877	5470~5725	Pass
20	110	5670.012442	5470~5725	Pass
10	110	5670.036555	5470~5725	Pass
0	110	5670.001478	5470~5725	Pass
-10	110	5669.891144	5470~5725	Pass
-20	110	5669.914773	5470~5725	Pass

Operating Frequency: 5670 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5670.002446	5470~5725	Pass
	110	5670.024586	5470~5725	Pass
	121	5669.951472	5470~5725	Pass