



FCC 47 CFR PART 15 SUBPART E

TEST REPORT

For

7" UMPc

**Trade Name / Model:
eo / TK71
VANTAGE / TPT700-1**

Issued to

**Tabletkiosk
2832 Columbia Street Torrance, California 90503**

Issued by

**Compliance Certification Services Inc.
No. 11, Wu-Gong 6th Rd., Wugu Industrial Park,
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Testing Laboratory
1309

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1. TEST RESULT CERTIFICATION

Applicant: Tabletkiosk
2832 Columbia Street Torrance, California 90503

Equipment Under Test: 7" UMPC

Trade Name / Model: eo / TK71
VANTAGE / TPT700-1

Date of Test: April 28 ~ August 12, 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

Product	7" UMPC			
Trade Name / Model	eo / TK71 VANTAGE / TPT700-1			
Model Discrepancy	All the specification and layout are identical except they come with different model numbers for marketing purposes.			
Power Supply	1. VDC from Power Adapter 2. VDC from Battery			
Power Adapter Manufacturer	HIPRO	Model	HP- A0502R3D	
Power Adapter Power Rating	For HP- A0502R3D I/P: 100-240V, 2.4A, 50-60Hz O/P: 12V, 4.16A			
AC Power Cord Type	1.5m (Detachable) to Power Adapter			
Accessories	Battery: a) Model: TK71-2CEL-P Rating: 7.4V, 3200mAh / 23.68Wh b) Model: TK71-4CEL-L Rating: 7.4V, 5200mAh / 38.48W			
Operating Frequency Range & Number of Channels		Mode	Frequency Range (MHz)	Number of Channels
	UNII Band I	IEEE 802.11a	5180 – 5240	4 Channels
		draft 802.11n Standard-20 MHz	5180 – 5240	4 Channels
		draft 802.11n Wide-40 MHz	5190 ~ 5230	2 Channels
	UNII Band II	IEEE 802.11a	5260 - 5320	4 Channels
		draft 802.11n Standard-20 MHz	5260 - 5320	4 Channels
		draft 802.11n Wide-40 MHz	5270 - 5310	2 Channels
	UNII Band III	IEEE 802.11a	5500 - 5700	11 Channels
		draft 802.11n Standard-20 MHz	5500 - 5700	11 Channels
		draft 802.11n Wide-40 MHz	5510 - 5670	7 Channels
Transmit Power	IEEE 802.11a mode / 5180 ~ 5240MHz: 14.27 dBm draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz: 14.16 dBm draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz: 13.62 dBm IEEE 802.11a mode / 5260 ~ 5320MHz: 14.50 dBm draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz: 14.42 dBm draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz: 14.33 dBm IEEE 802.11a mode / 5500 ~ 5700MHz: 14.94 dBm draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz: 14.58 dBm draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz: 14.62 dBm			
Modulation Technique	OFDM (QPSK, BPSK, 16-QAM, 64-QAM)			
Transmit Data Rate	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)			
Antenna Specification	3.53 dBi			
Antenna Designation	PIFA Antenna			

**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: XHF-A7300TK71 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: TK71) had been tested under operating condition.

The EUT is a 1x2 configuration spatial MIMO (1Tx & 2Rx) without beam forming function.

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 6.5Mbps 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 6.5Mbps 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 6.5Mbps 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.

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis) and docking mode. The worst emission was found in docking mode for powerline conducted emissions, lie-down position (X axis) for radiation emissions and the worst case was recorded.



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	05/02/2010
4 Port Switch	TRC	4 Port Switch	SC94050020	05/02/2010
Loop Antenna	EMCO	6502	8905/2356	05/28/2010
Horn-Antenna	TRC	HA-0502	06	06/03/2010
Horn-Antenna	TRC	HA-0801	04	06/17/2010
Horn-Antenna	TRC	HA-1201A	01	08/10/2010
Horn-Antenna	TRC	HA-1301A	01	08/10/2010
Bilog- Antenna	Sunol Sciences	JB3	A030205	03/27/2010
Turn Table	Max-Full	MFT-120S	T120S940302	N.C.R.
Antenna Tower	Max-Full	MFA-430	A440940302	N.C.R.
Controller	Max-Full	MF-CM886	CC-C-1F-13	N.C.R.
Site NSA	CCS	N/A	FCC MRA: TW1039 IC: 2324G-1/-2	10/17/2010 11/04/2010
Test S/W	LABVIEW (V 6.1)			

Powerline Conducted Emissions Test Site				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver 9kHz-30MHz	Rohde & Schwarz	ESHS30	828144/003	11/25/2009
Two-Line V-Network 9kHz-30MHz	Schaffner	NNB41	03/10013	06/10/2010
LISN 10kHz-100MHz	EMCO	3825/2	9106-1809	04/08/2010
Test S/W	LABVIEW (V 6.1)			

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	+/- 2.81
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

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 IDATE 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	 Testing Laboratory 1309
Canada	Industry Canada	3M Semi Anechoic Chamber (IC 2324G-1 / IC 2324G-2) to perform	 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.	LCD Monitor	DELL	2407WFPb	CN-0FC255-46633-67 5-22TJS	FCC DoC	Shielded, 1.8m with 2 cores	Unshielded, 1.8m
2.	USB Keyboard	DELL	Sk-8115	N/A	FCC DoC	Shielded, 1.8m	N/A
3.	USB Keyboard	Compaq	KU-9978	B463AOAGALT097	FCC DoC	Shielded, 1.8m	N/A
4.	USB Mouse	HP	MO19UCA	20440964	FCC DoC	Shielded, 1.8m	N/A
5.	USB Mouse	Logitech	M-UB48	DZL211137	FCC DoC	Shielded, 1.8m	N/A
6.	USB Mouse	Logitech	M-CAA43	LZE03262922	FCC DoC	Shielded, 1.8m	N/A
7.	Modem	ACEEX	DM-1414	304012269	IFAXDM1414	Shielded, 1.8m	Unshielded, 1.8m
8.	USB 2.0 External HDD	TeraSyS	F12-U	A0100214-2Bq0039	FCC DoC	Shielded, 1.8m	N/A
9.	USB 2.0 External HDD	TeraSyS	F12-U	A0100214-31d0014	FCC DoC	Shielded, 1.8m	N/A
10.	USB 2.0 External HDD	TeraSyS	F12-U	A0100214-31d0028	FCC DoC	Shielded, 1.8m	N/A
11.	USB 2.0 External HDD	TeraSyS	F12-UF(COMBO)	A0100215-42O012	FCC DoC	Shielded, 1.8m	N/A
12.	Multimedia Earphone	Labtec	Axis-301	N/A	FCC DoC	Unshielded, 1.8m*2	N/A

Remark:

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

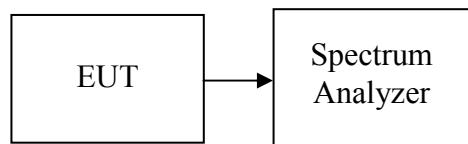
7. FCC PART 15 REQUIREMENTS

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	19.775
Mid	5220	20.637
High	5240	20.243

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	21.341
Mid	5220	21.171
High	5240	21.181

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5190	39.183
High	5230	39.490

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	20.248
Mid	5280	20.689
High	5320	20.473

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	21.337
Mid	5280	20.910
High	5320	21.141

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	39.233
High	5310	39.434

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

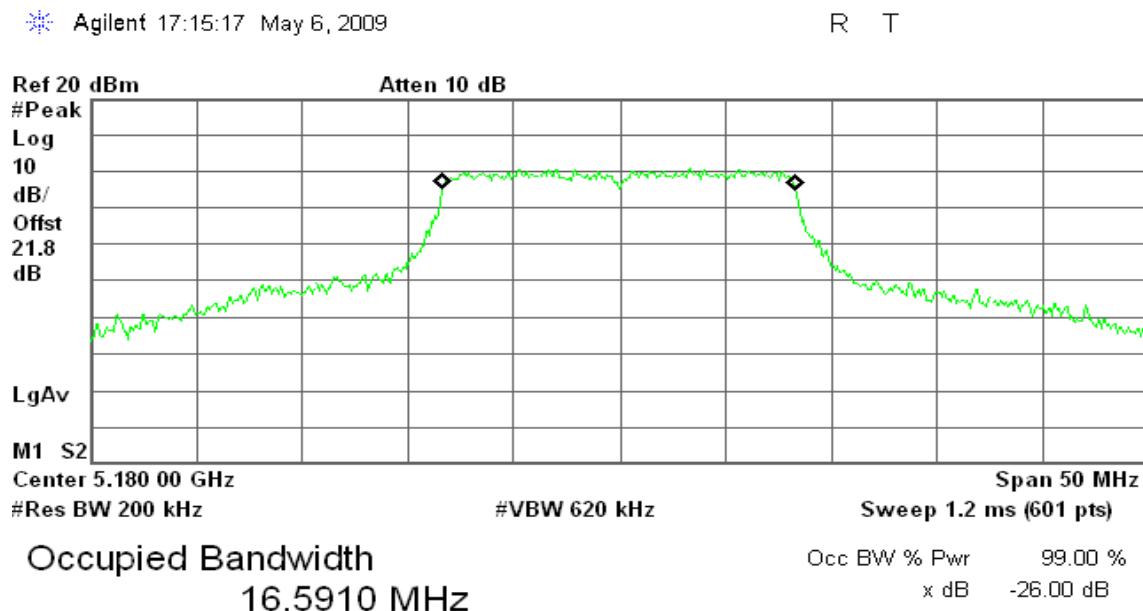
Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	20.041
Mid	5600	20.014
High	5700	19.667

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

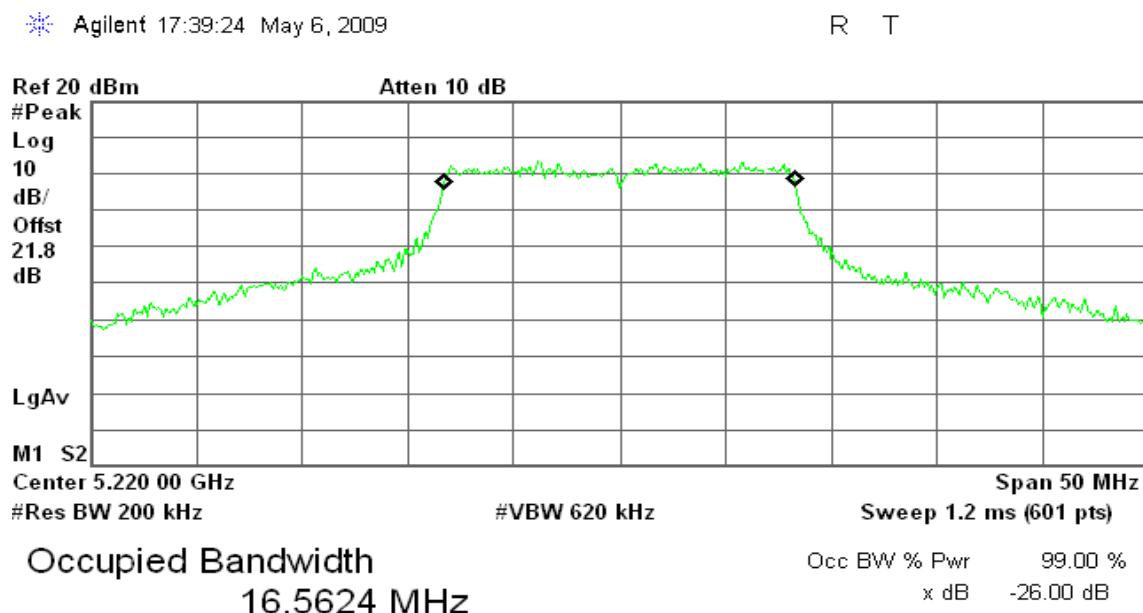
Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	20.922
Mid	5600	21.148
High	5700	20.948

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	38.946
Mid	5590	39.467
High	5670	39.310

Test Plot**IEEE 802.11a mode / 5180 ~ 5240MHz****CH Low**

Transmit Freq Error -17.618 kHz
x dB Bandwidth 19.775 MHz

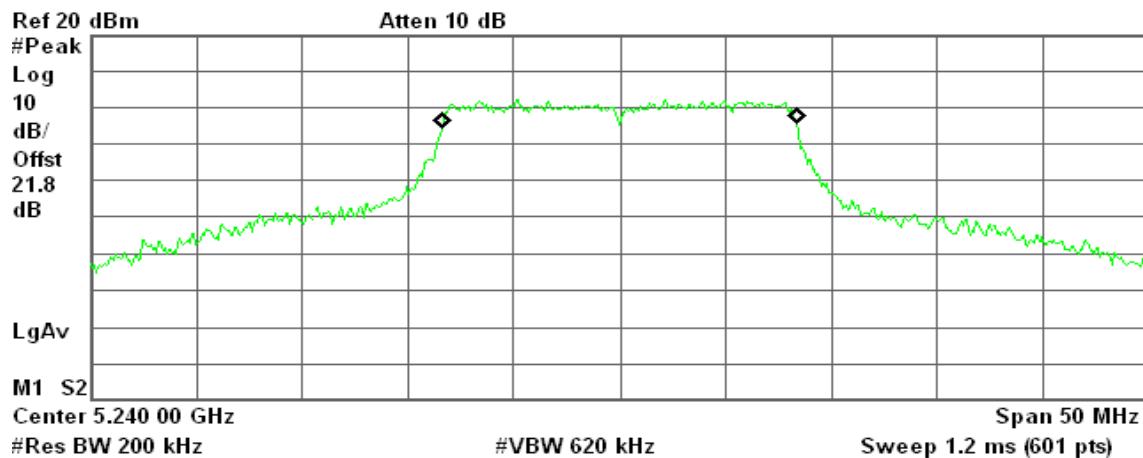
CH Mid

Transmit Freq Error -9.151 kHz
x dB Bandwidth 20.637 MHz

CH High

Agilent 17:58:20 May 6, 2009

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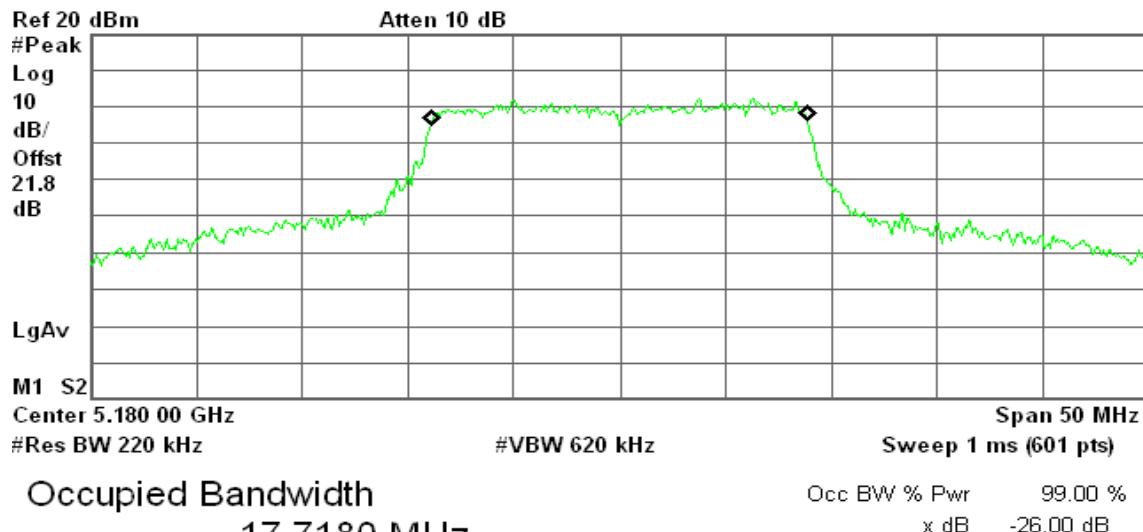


Transmit Freq Error 3.200 kHz
x dB Bandwidth 20.243 MHz

draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz**CH Low**

Agilent 19:57:34 May 6, 2009

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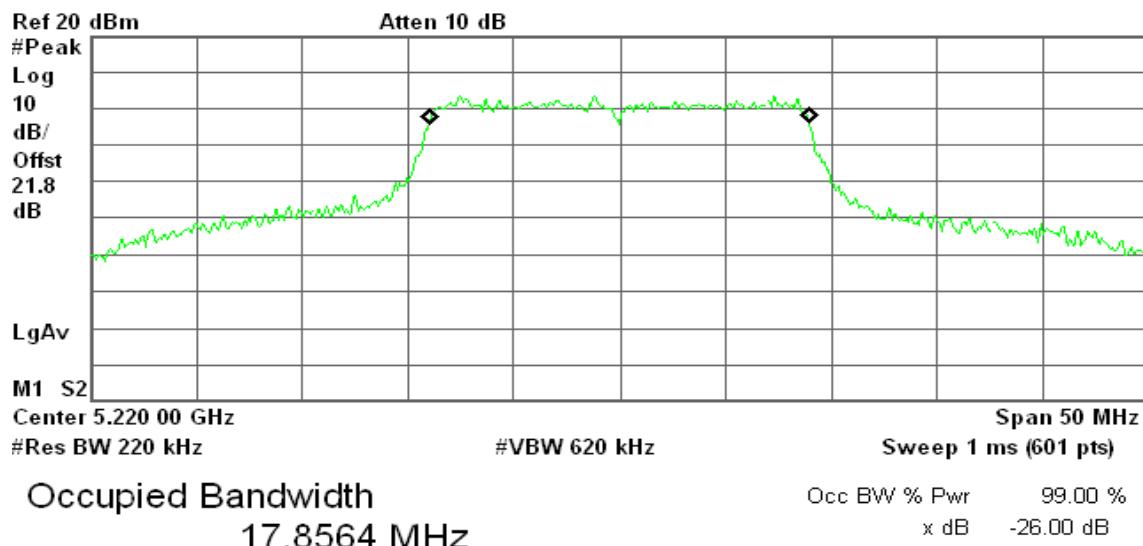


Transmit Freq Error -4.058 kHz
x dB Bandwidth 21.341 MHz

CH Mid

Agilent 20:18:41 May 6, 2009

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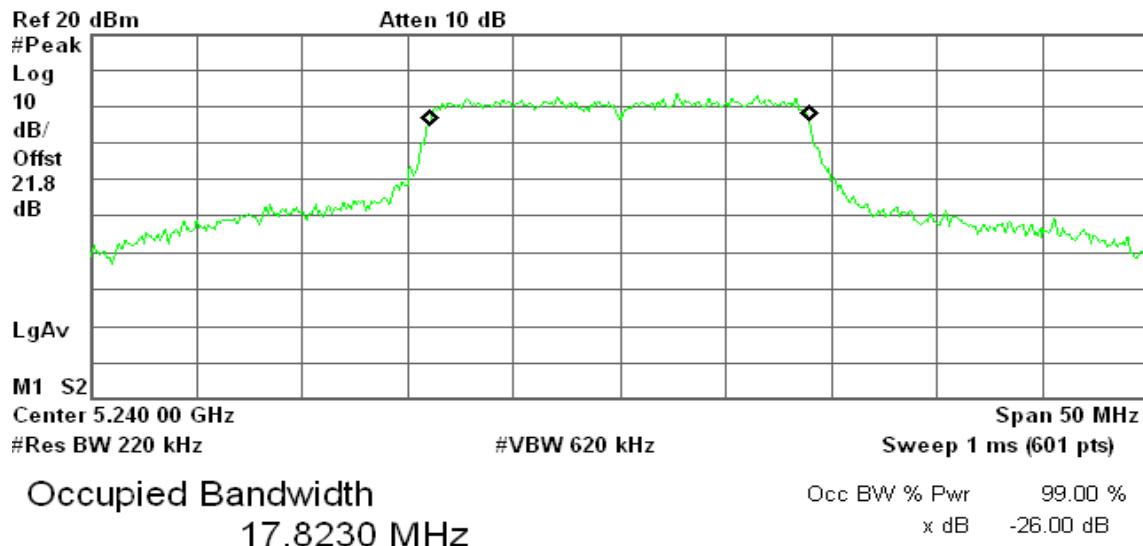


Transmit Freq Error -28.311 kHz
x dB Bandwidth 21.171 MHz

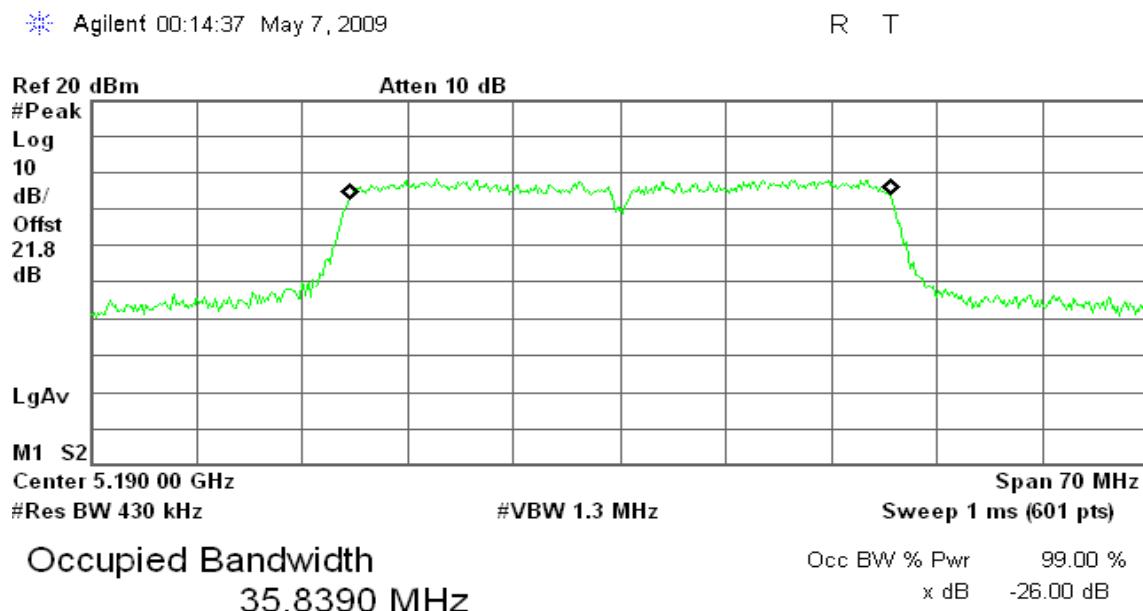
CH High

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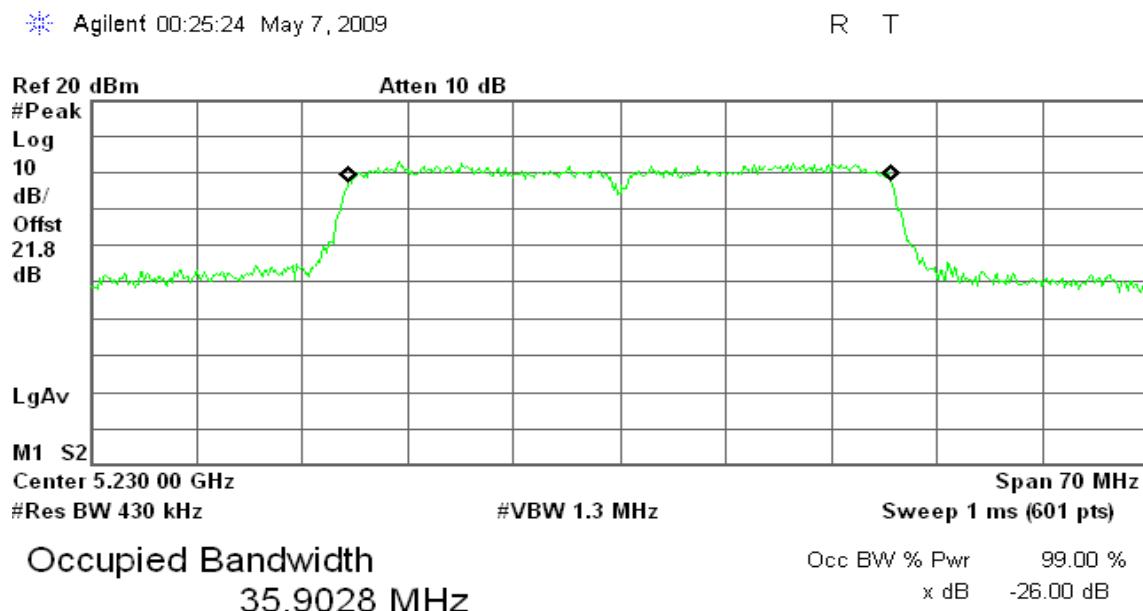
R T



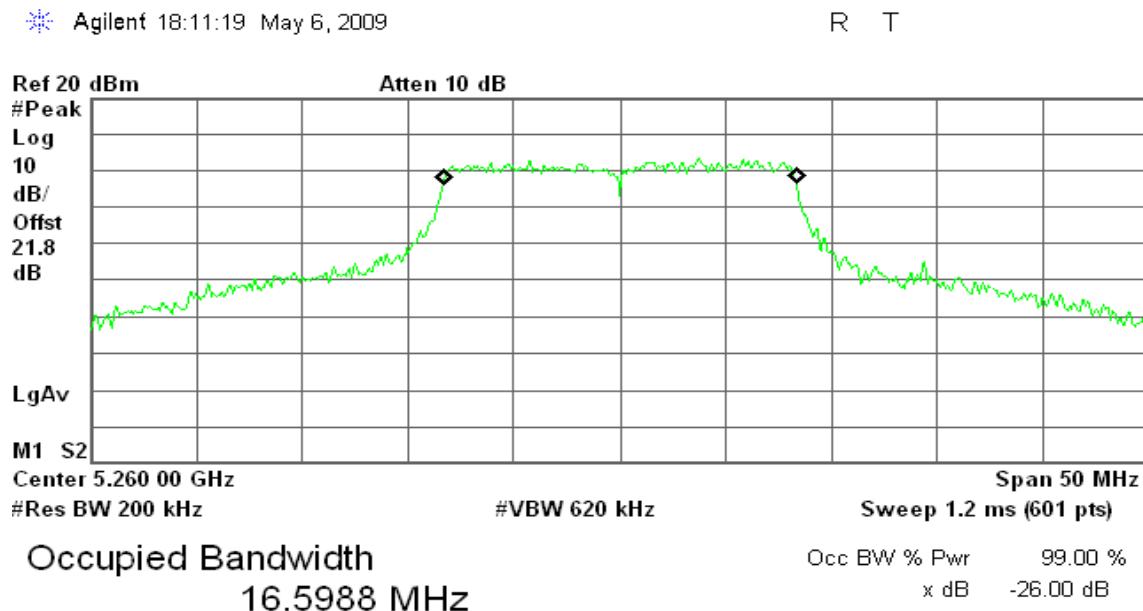
Transmit Freq Error -22.831 kHz
x dB Bandwidth 21.181 MHz

draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz**CH Low**

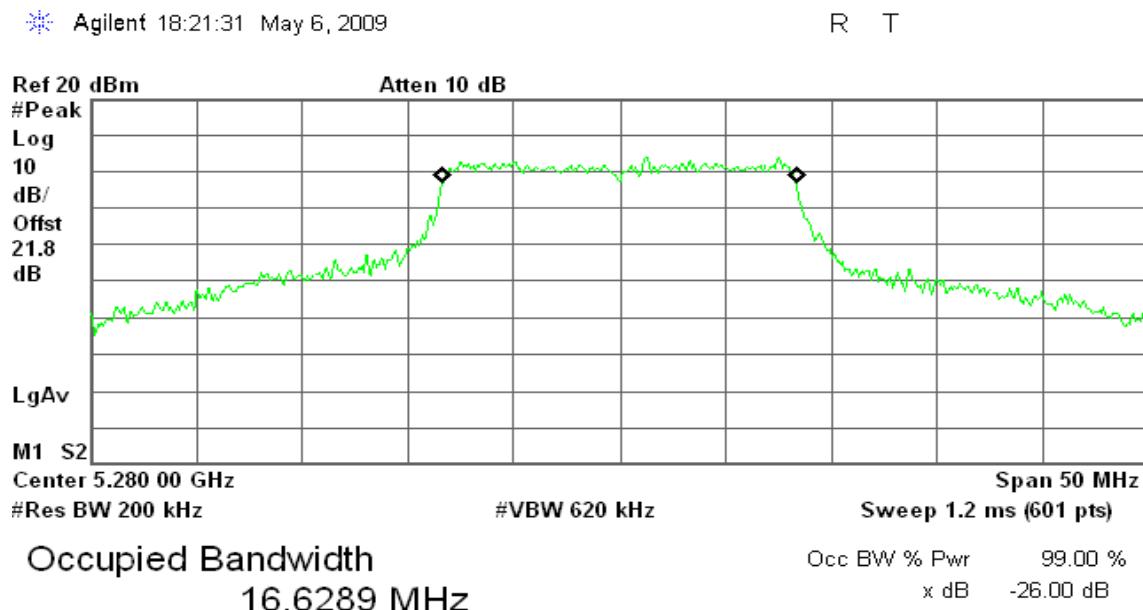
Transmit Freq Error 44.325 kHz
x dB Bandwidth 39.183 MHz

CH High

Transmit Freq Error 32.187 kHz
x dB Bandwidth 39.490 MHz

IEEE 802.11a mode / 5260 ~ 5320MHz**CH Low**

Transmit Freq Error 9.347 kHz
x dB Bandwidth 20.248 MHz

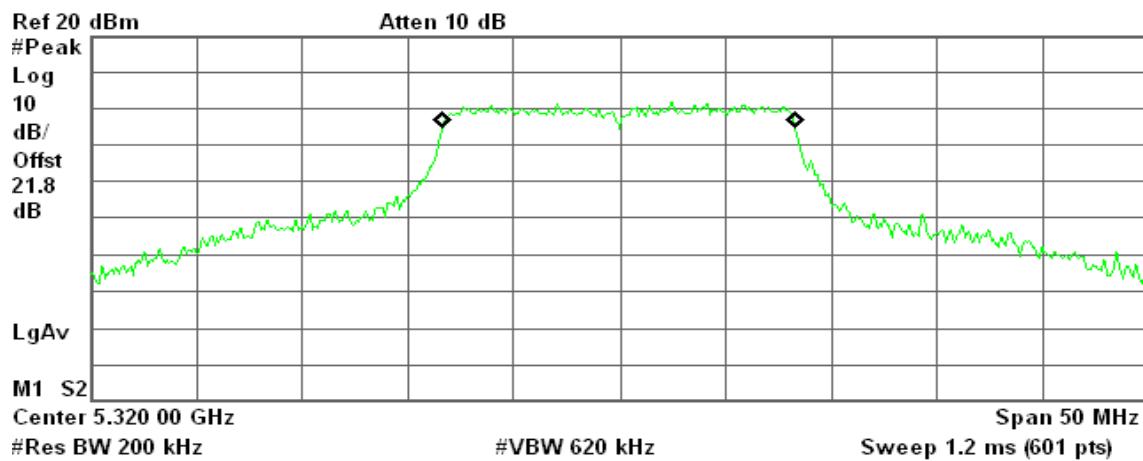
CH Mid

Transmit Freq Error -12.869 kHz
x dB Bandwidth 20.689 MHz

CH High

Agilent 18:27:04 May 6, 2009

R T

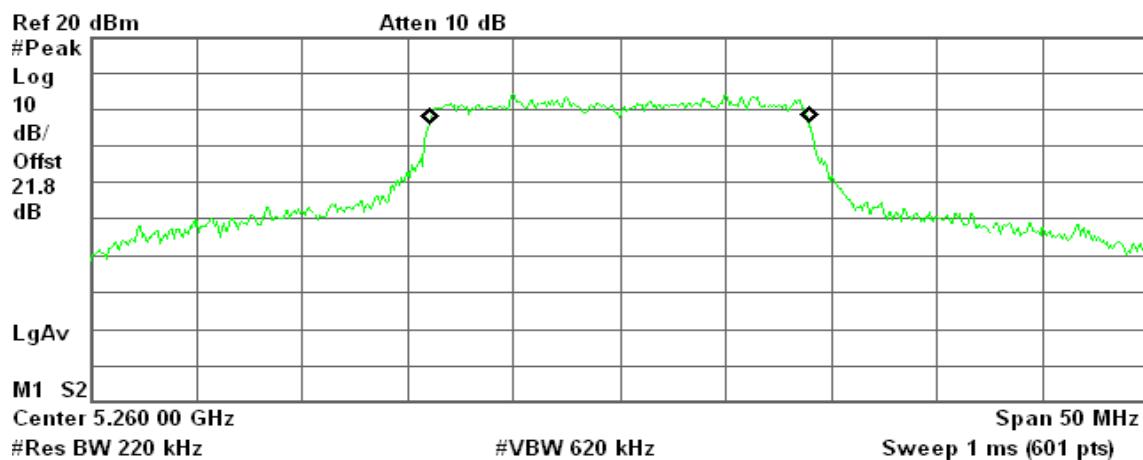


Transmit Freq Error -17.571 kHz
x dB Bandwidth 20.473 MHz

draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz**CH Low**

Agilent 20:28:12 May 6, 2009

R T

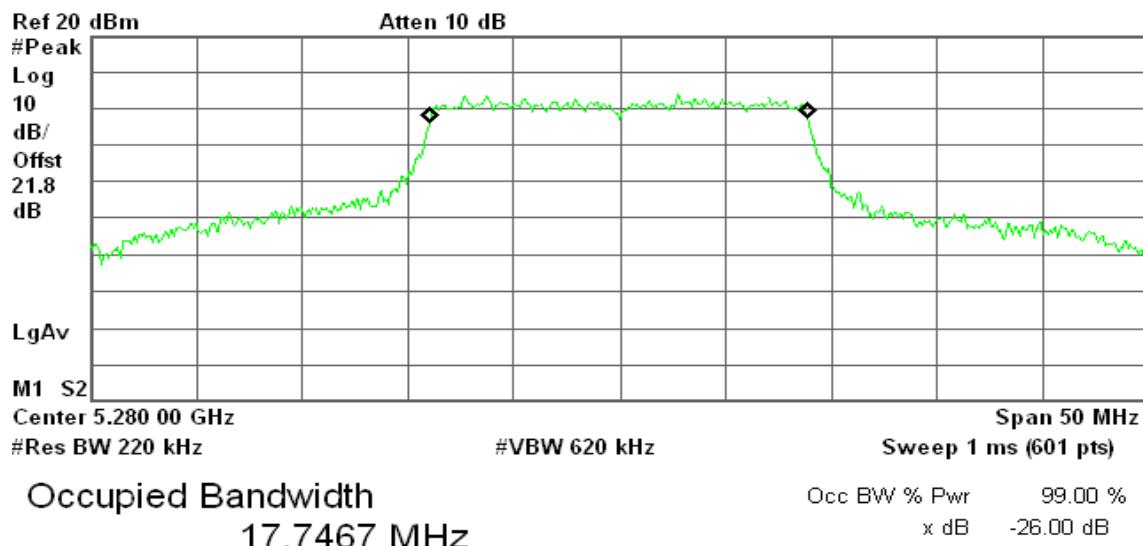


Transmit Freq Error -3.895 kHz
x dB Bandwidth 21.337 MHz

CH Mid

Agilent 21:27:36 May 6, 2009

R T

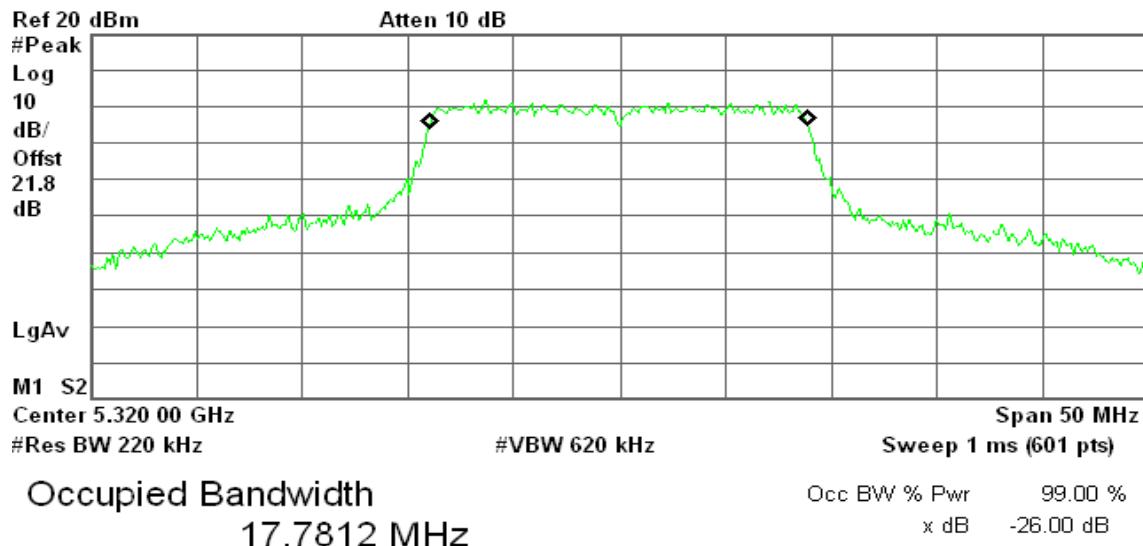


Transmit Freq Error -14.605 kHz
x dB Bandwidth 20.910 MHz

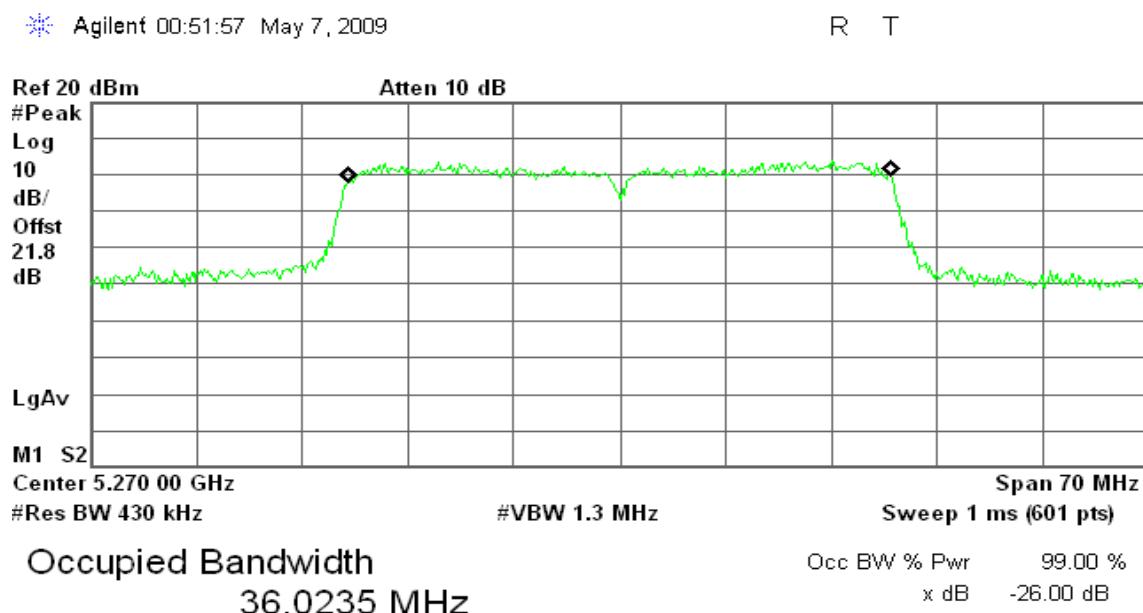
CH High

Agilent 21:36:27 May 6, 2009

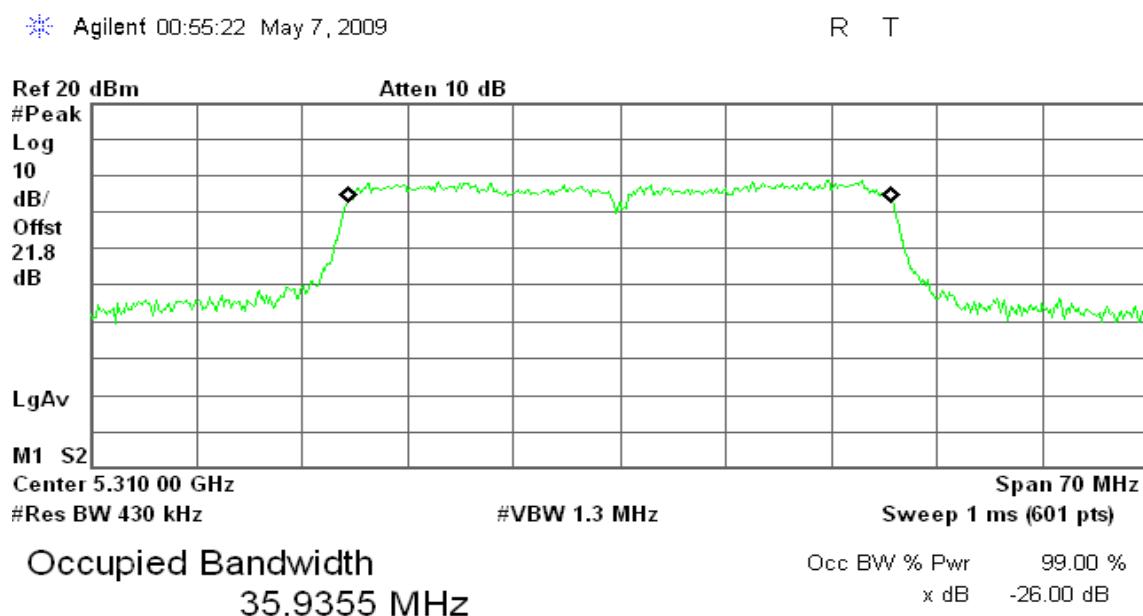
R L



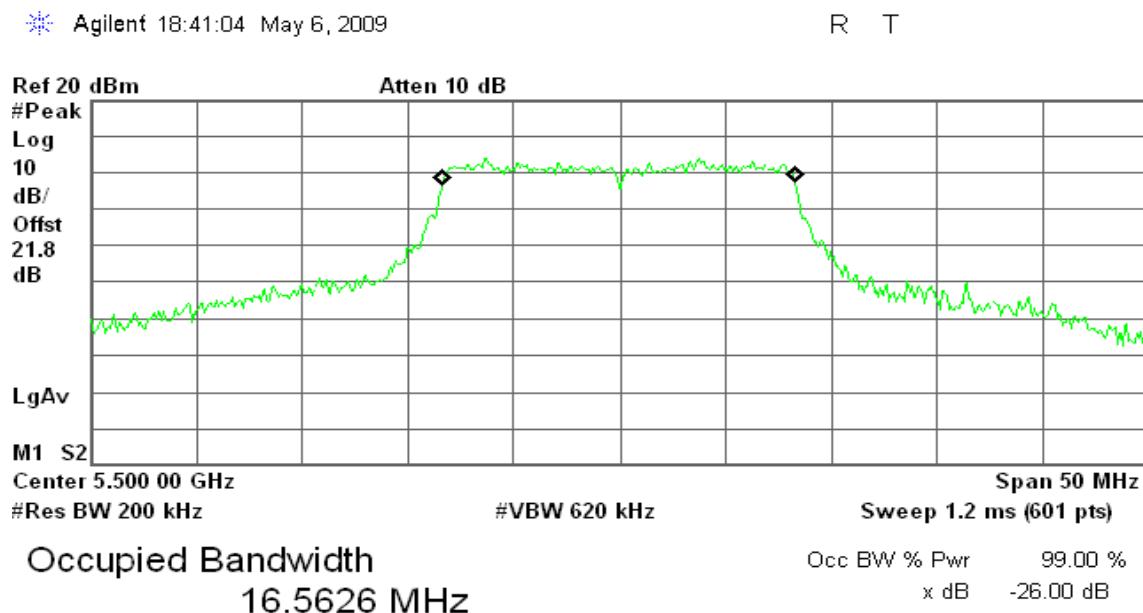
Transmit Freq Error -31.491 kHz
x dB Bandwidth 21.141 MHz

draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz**CH Low**

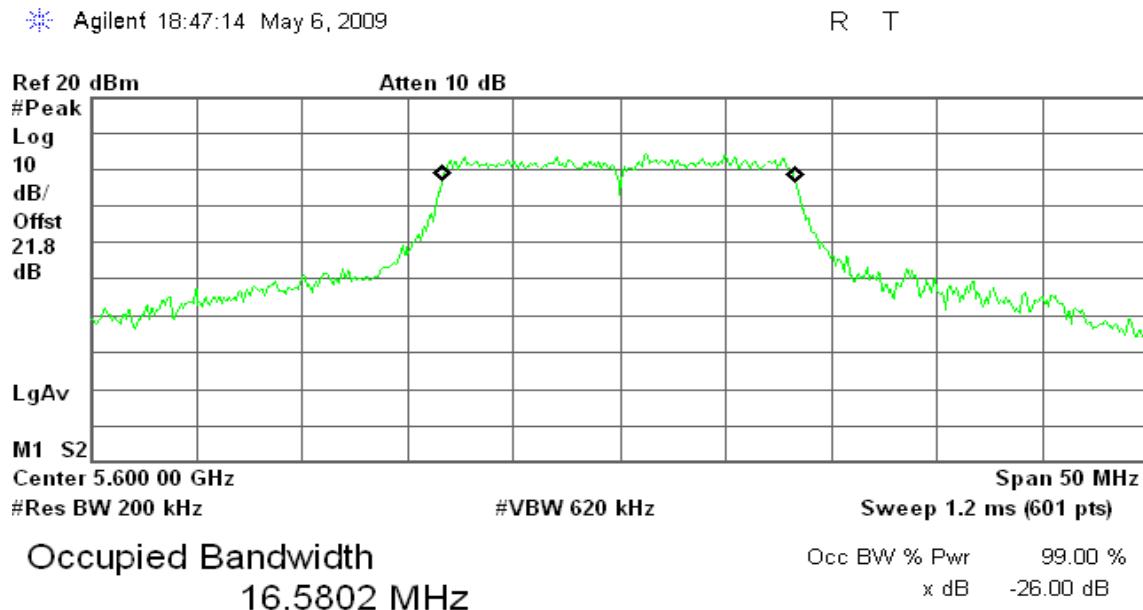
Transmit Freq Error 8.779 kHz
x dB Bandwidth 39.233 MHz

CH High

Transmit Freq Error 15.780 kHz
x dB Bandwidth 39.434 MHz

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz**CH Low**

Transmit Freq Error -26.078 kHz
x dB Bandwidth 20.041 MHz

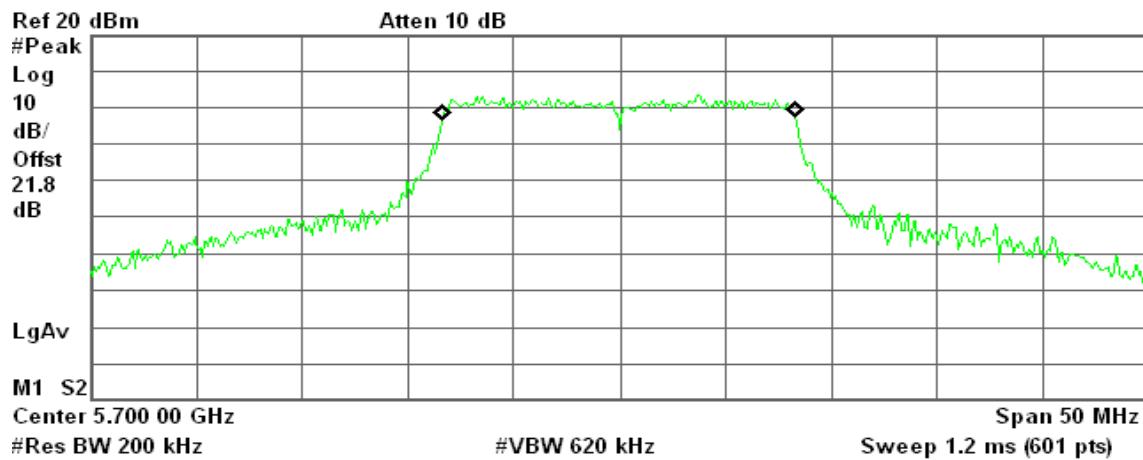
CH Mid

Transmit Freq Error -23.352 kHz
x dB Bandwidth 20.014 MHz

CH High

Agilent 18:55:48 May 6, 2009

R T

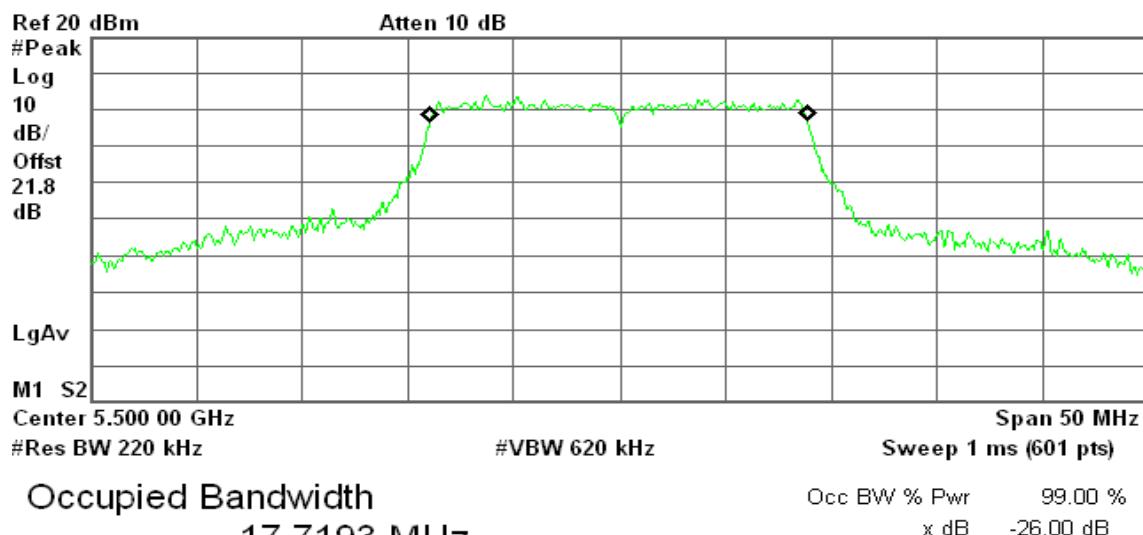


Transmit Freq Error -17.826 kHz
x dB Bandwidth 19.667 MHz

draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz**CH Low**

Agilent 22:05:56 May 6, 2009

R T

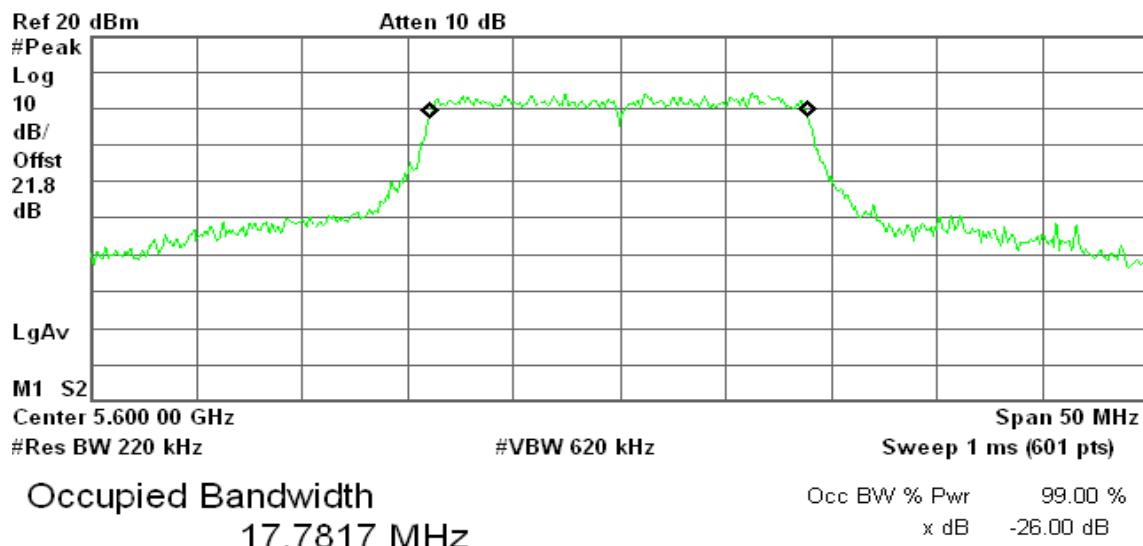


Transmit Freq Error -18.106 kHz
x dB Bandwidth 20.922 MHz

CH Mid

Agilent 22:11:20 May 6, 2009

R L

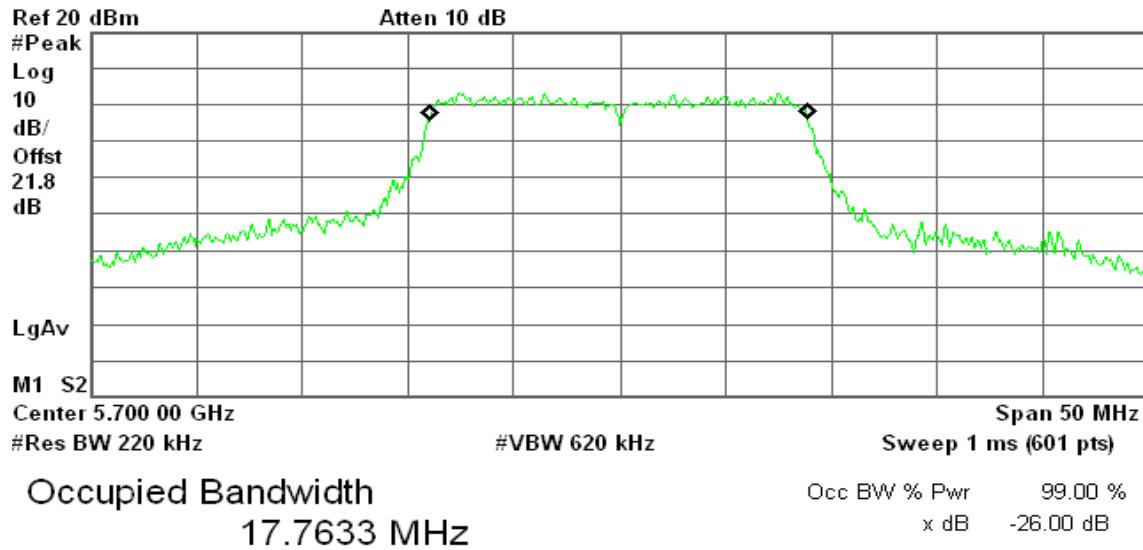


Transmit Freq Error -29.595 kHz
x dB Bandwidth 21.148 MHz

CH High

Agilent 22:28:41 May 6, 2009

R T

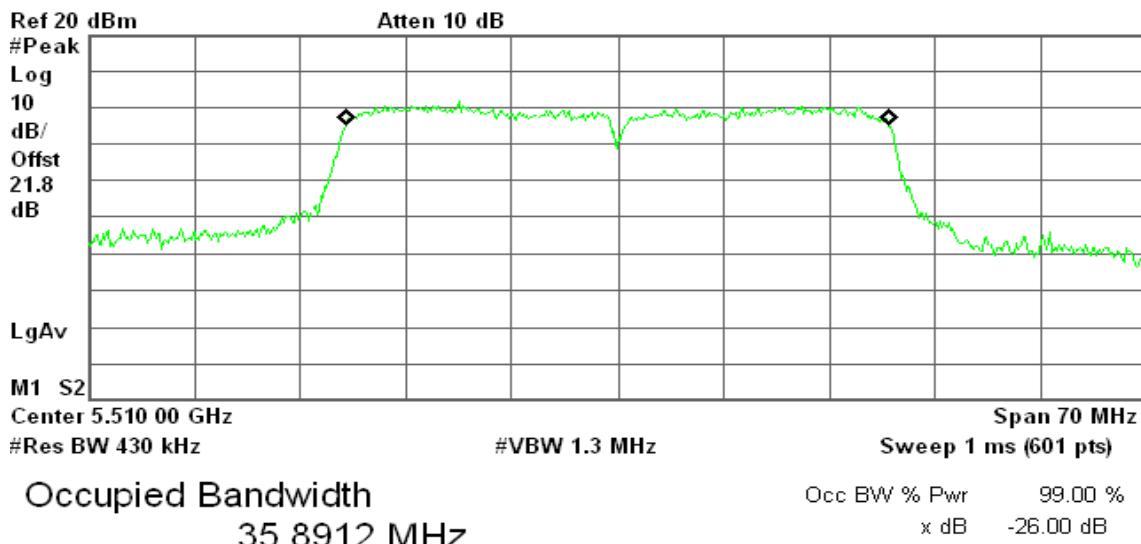


Transmit Freq Error -44.031 kHz
x dB Bandwidth 20.948 MHz

draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz**CH Low**

Agilent 01:04:37 May 7, 2009

R T

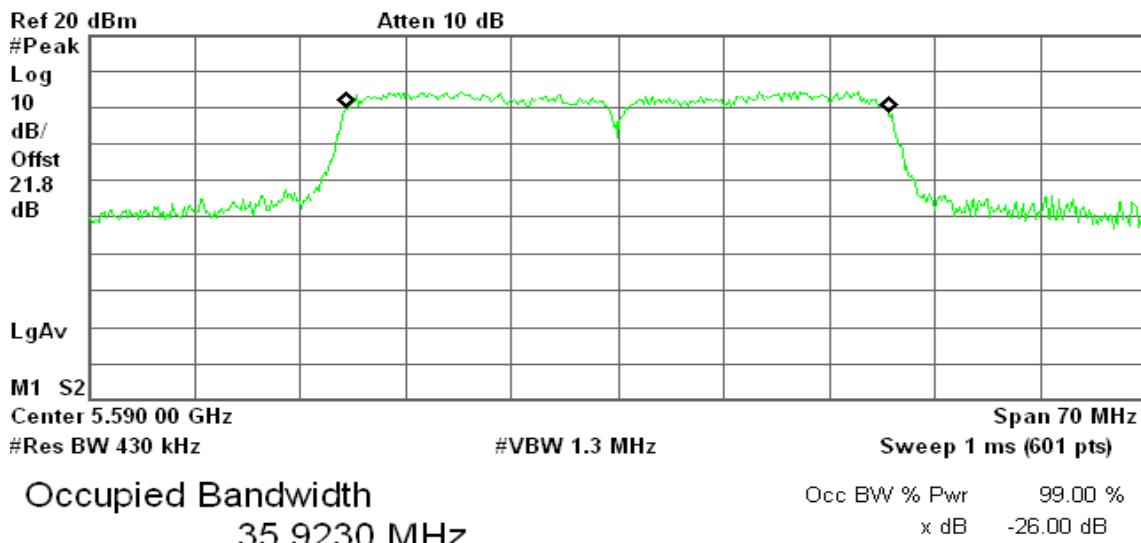


Transmit Freq Error 3.444 kHz
x dB Bandwidth 38.946 MHz

CH Mid

Agilent 01:10:21 May 7, 2009

R T

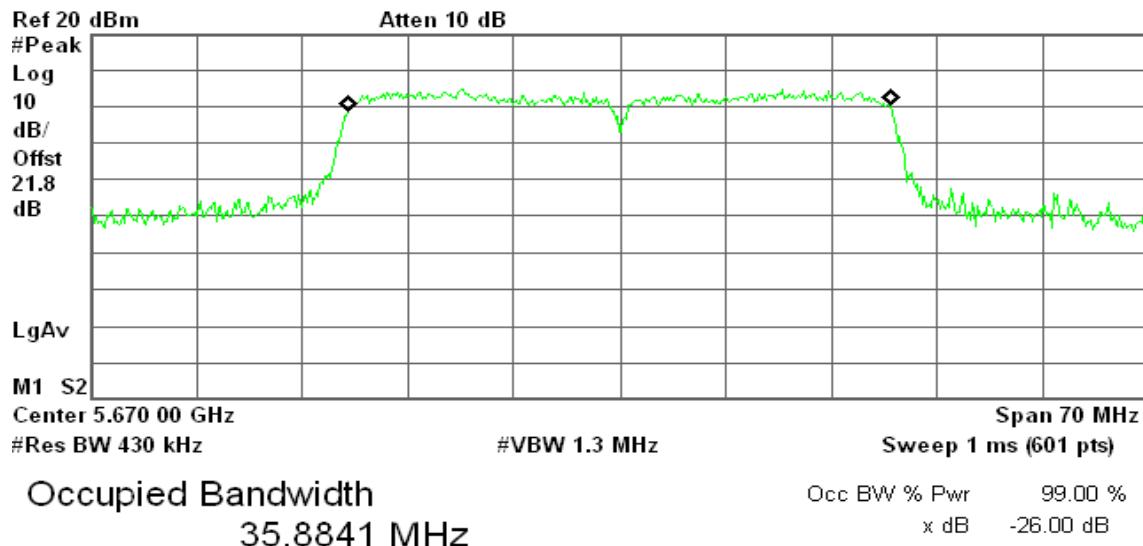


Transmit Freq Error -15.025 kHz
x dB Bandwidth 39.467 MHz

CH High

Agilent 01:18:59 May 7, 2009

R T



Transmit Freq Error 9.326 kHz
x dB Bandwidth 39.310 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 $4 \text{ dBm} + 10 \log B$, 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 $11 \text{ dBm} + 10 \log B$, 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	19.775	12.96	16.96	17.00
Mid	5220	20.637	13.14	17.14	17.00
High	5240	20.243	13.06	17.06	17.00

Test mode: draft 802.11n Standard-20 MHz Channel 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	21.341	13.29	17.29	17.00
Mid	5220	21.171	13.25	17.25	17.00
High	5240	21.181	13.25	17.25	17.00

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

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	5190	39.183	15.93	19.93	17.00
High	5230	39.490	15.96	19.96	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	20.248	13.06	24.06	24.00
Mid	5280	20.689	13.15	24.15	24.00
High	5320	20.473	13.11	24.11	24.00

Test mode: draft 802.11n Standard-20 MHz Channel 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	21.337	13.29	24.29	24.00
Mid	5280	20.910	13.20	24.20	24.00
High	5320	21.141	13.25	24.25	24.00

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

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	5270	39.233	13.93	24.93	24.00
High	5310	39.434	13.95	24.95	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	20.041	13.01	24.01	24.00
Mid	5600	20.014	13.01	24.01	24.00
High	5700	19.667	12.93	23.93	24.00

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

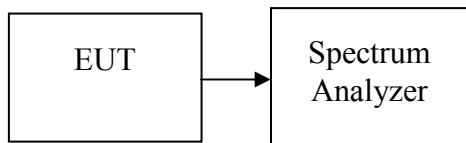
Channel	Frequency (MHz)	26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5500	20.922	13.20	24.20	24.00
Mid	5600	21.148	13.25	24.25	24.00
High	5700	20.948	13.21	24.21	24.00

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

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	5510	38.946	15.90	26.90	24.00
Mid	5590	39.467	15.96	26.96	24.00
High	5670	39.310	15.94	26.94	24.00

Test Configuration

The EUT was connected to a spectrum analyzer through a 50 Ω 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	12.17	17.00
Mid	5220	14.05	17.00
High	5240	14.27	17.00

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5180	12.09	17.00
Mid	5220	14.16	17.00
High	5240	14.12	17.00

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5190	9.21	17.00
High	5230	13.62	17.00

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5260	14.50	24.00
Mid	5280	14.43	24.00
High	5320	12.77	24.00

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5260	14.37	24.00
Mid	5280	14.42	24.00
High	5320	12.50	24.00

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5270	14.33	24.00
High	5310	9.75	24.00

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5500	14.77	24.00
Mid	5600	14.94	24.00
High	5700	14.17	24.00

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5500	14.12	24.00
Mid	5600	14.58	24.00
High	5700	14.13	24.00

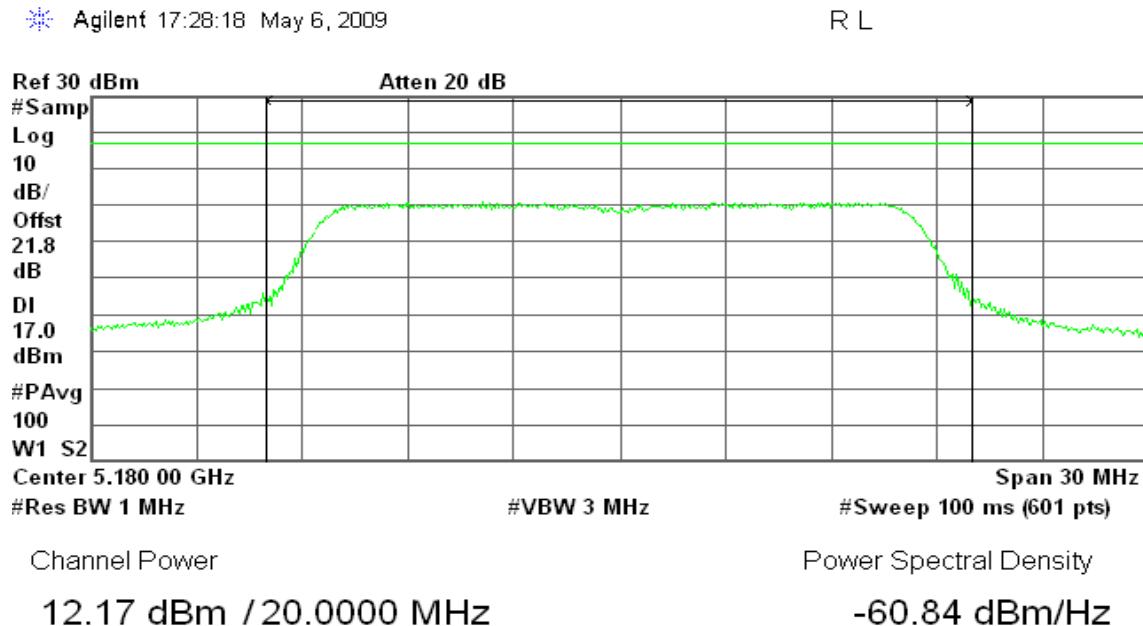
Test mode: draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5510	12.01	24.00
Mid	5590	14.62	24.00
High	5670	14.52	24.00

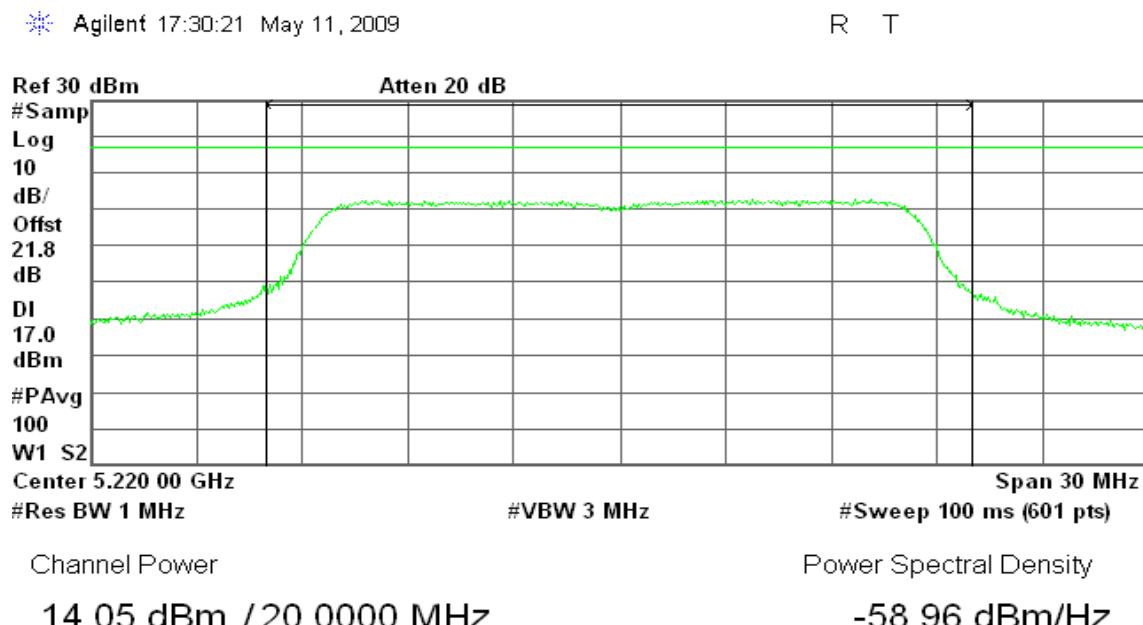
Test Plot

IEEE 802.11a mode / 5180 ~ 5240MHz

CH Low



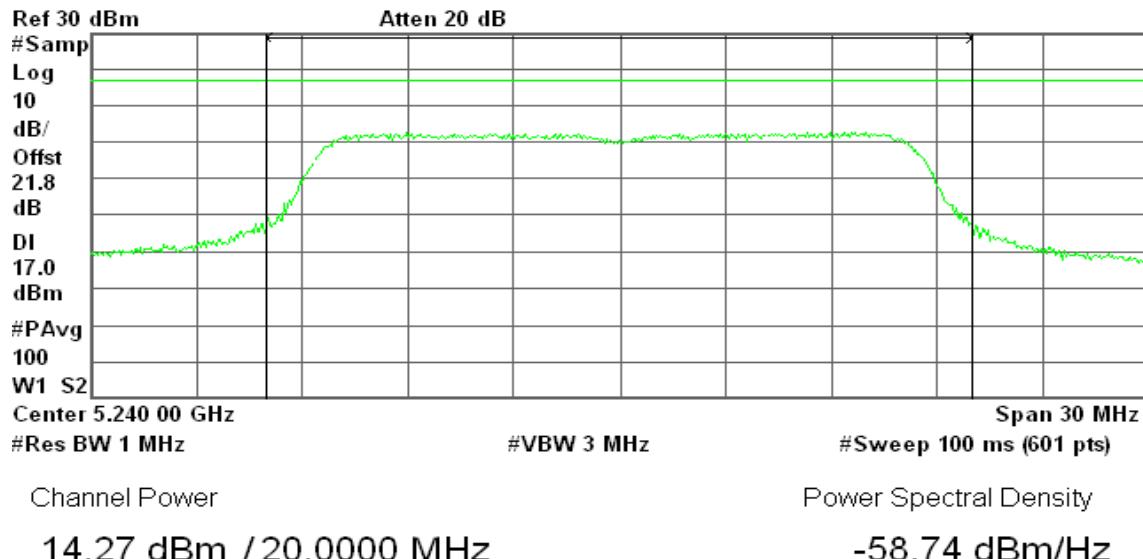
CH Mid



CH High

* Agilent 18:02:07 May 11, 2009

R T

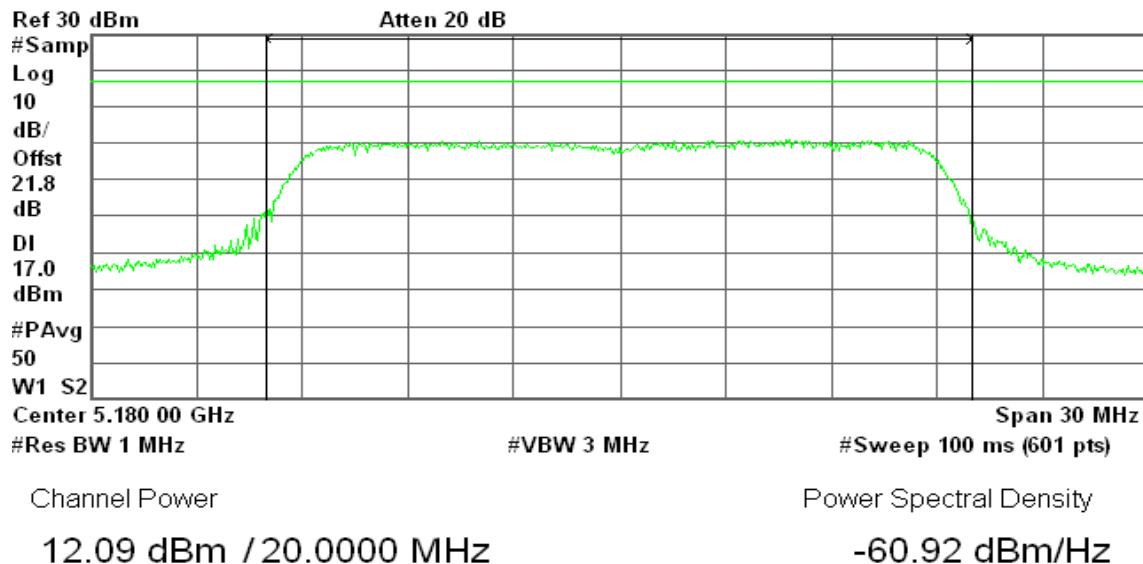


draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz

CH Low

* Agilent 20:14:34 May 6, 2009

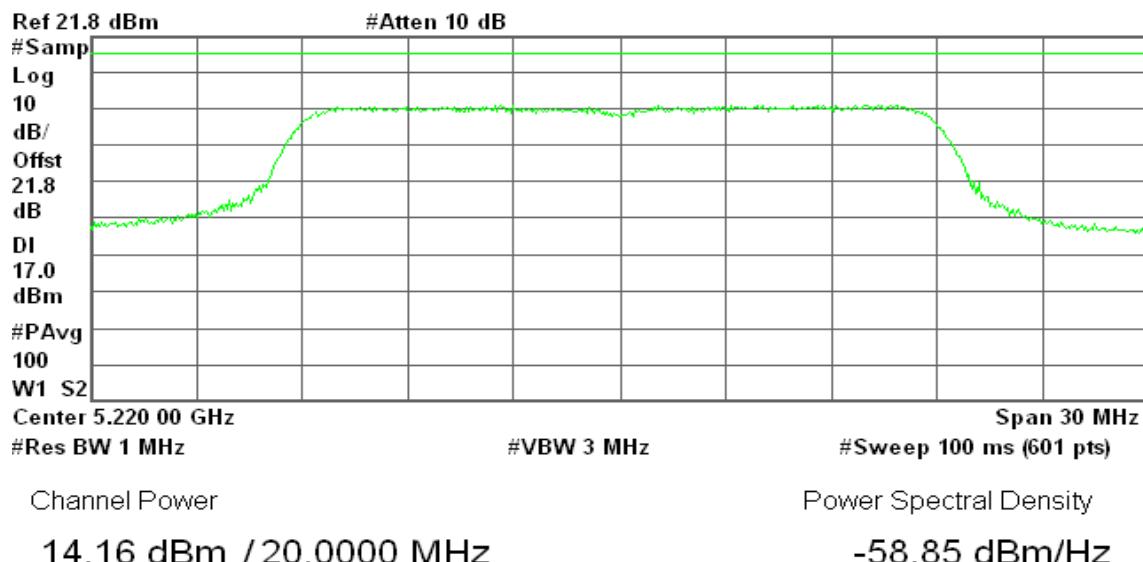
R T



CH Mid

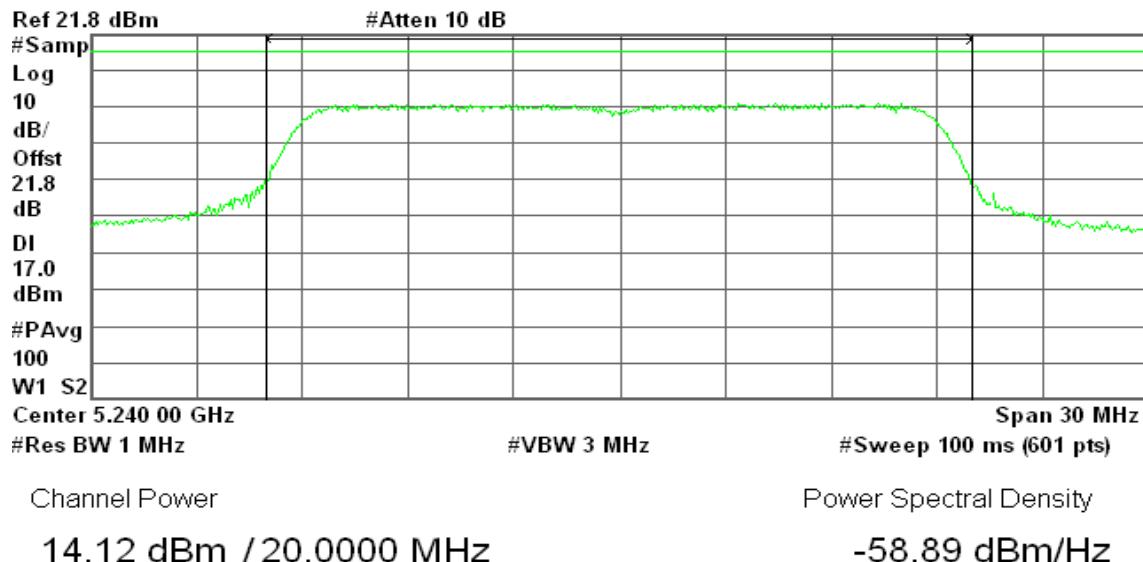
Agilent 19:57:26 May 11, 2009

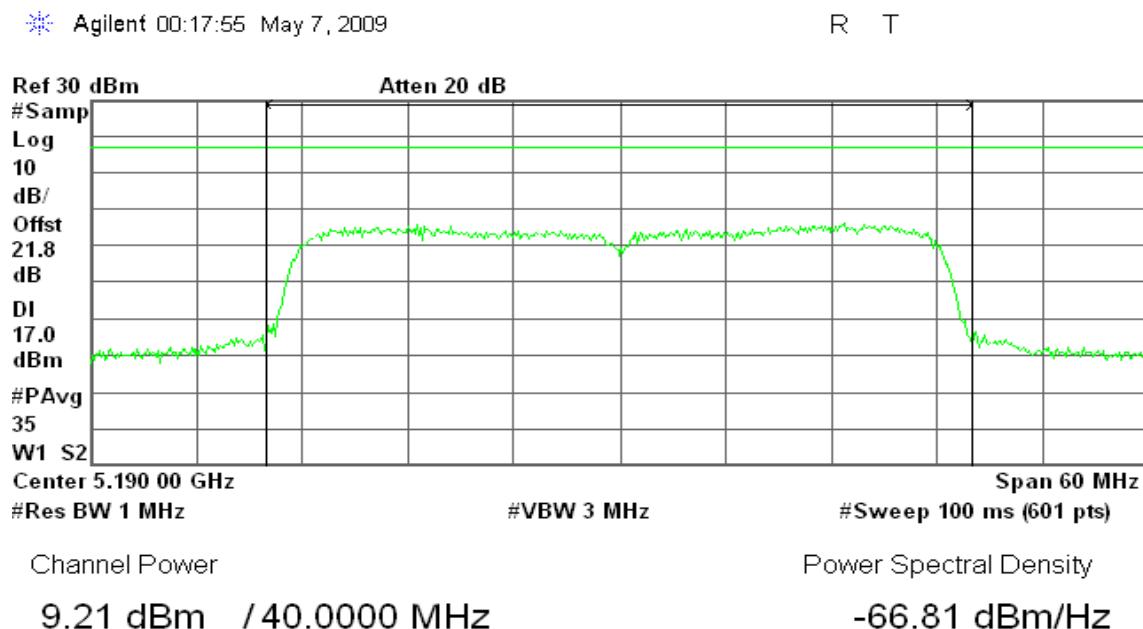
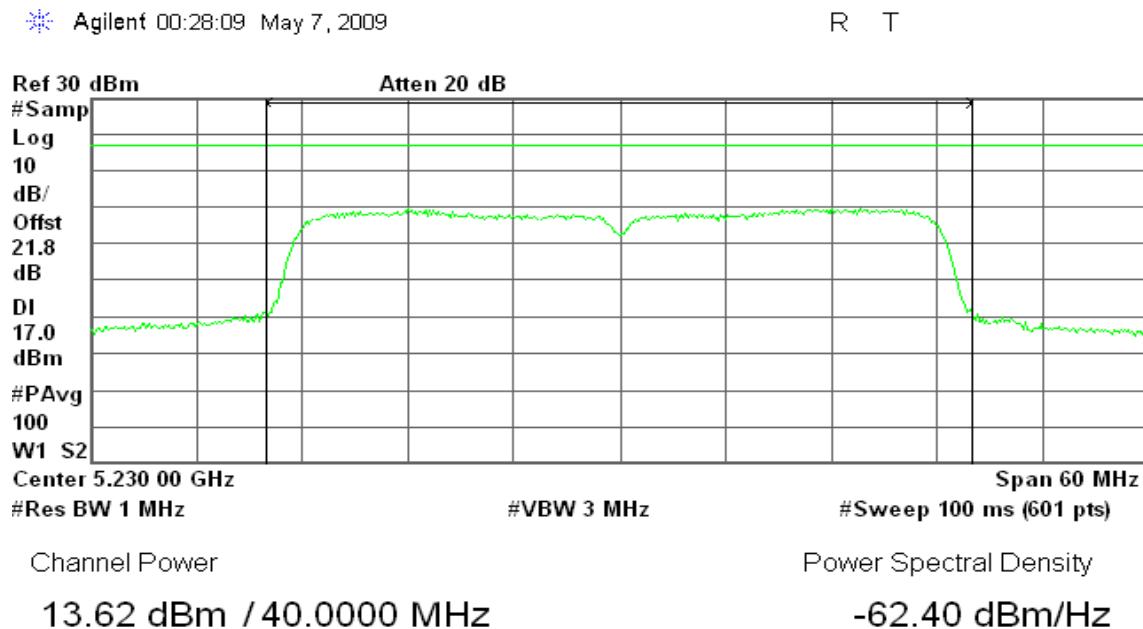
R T

**CH High**

Agilent 19:58:59 May 11, 2009

R T



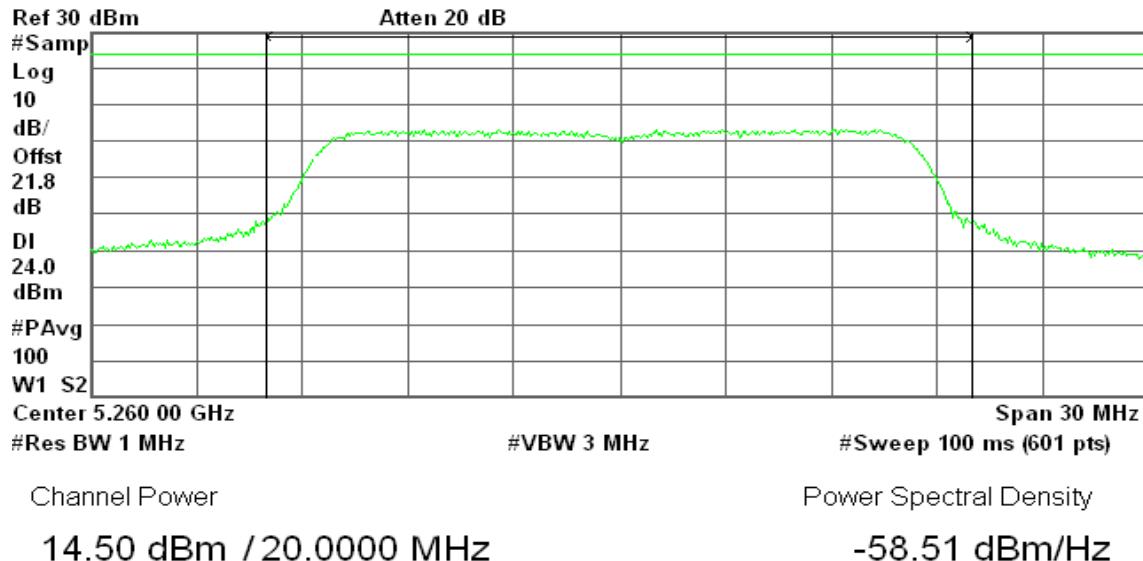
draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz**CH Low****CH High**

IEEE 802.11a mode / 5260 ~ 5320MHz

CH Low

* Agilent 18:15:35 May 6, 2009

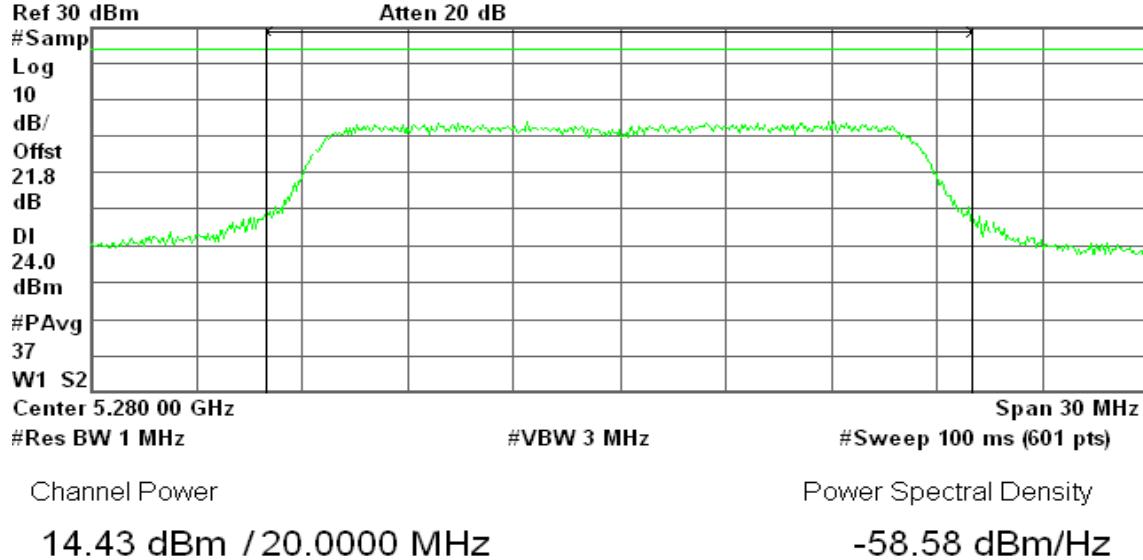
R T



CH Mid

Agilent 18:22:55 May 6, 2009

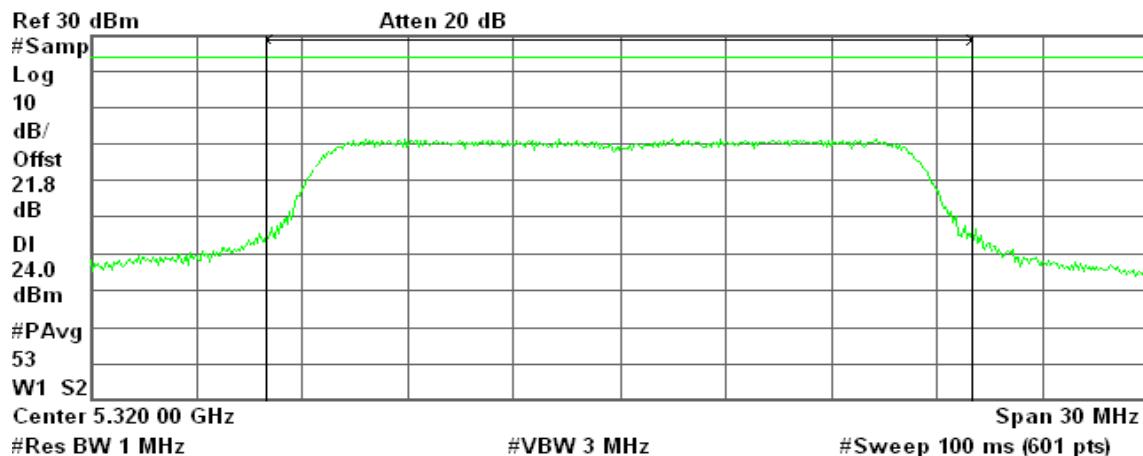
R T



CH High

Agilent 18:28:36 May 6, 2009

R T



Channel Power

12.77 dBm / 20.0000 MHz

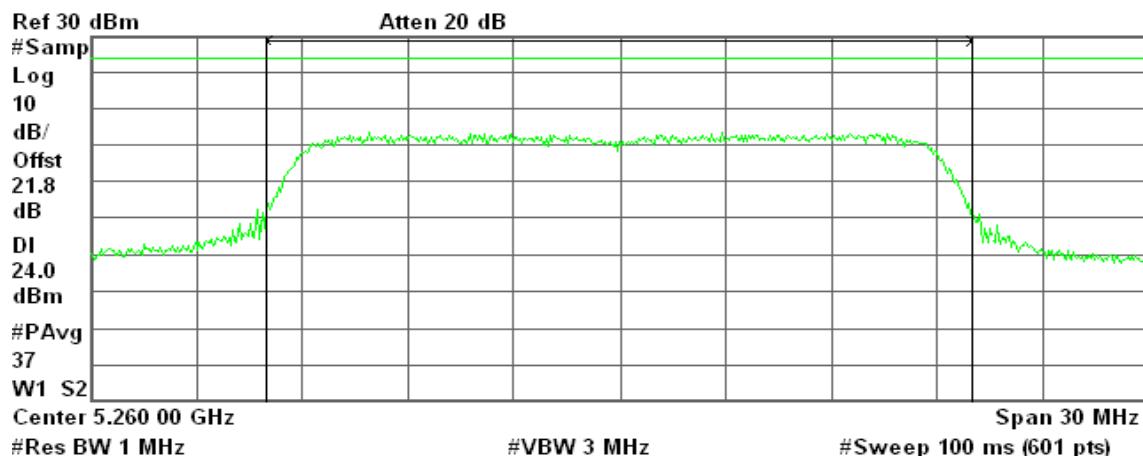
Power Spectral Density

-60.24 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz**CH Low**

Agilent 20:29:30 May 6, 2009

R L



Channel Power

14.37 dBm / 20.0000 MHz

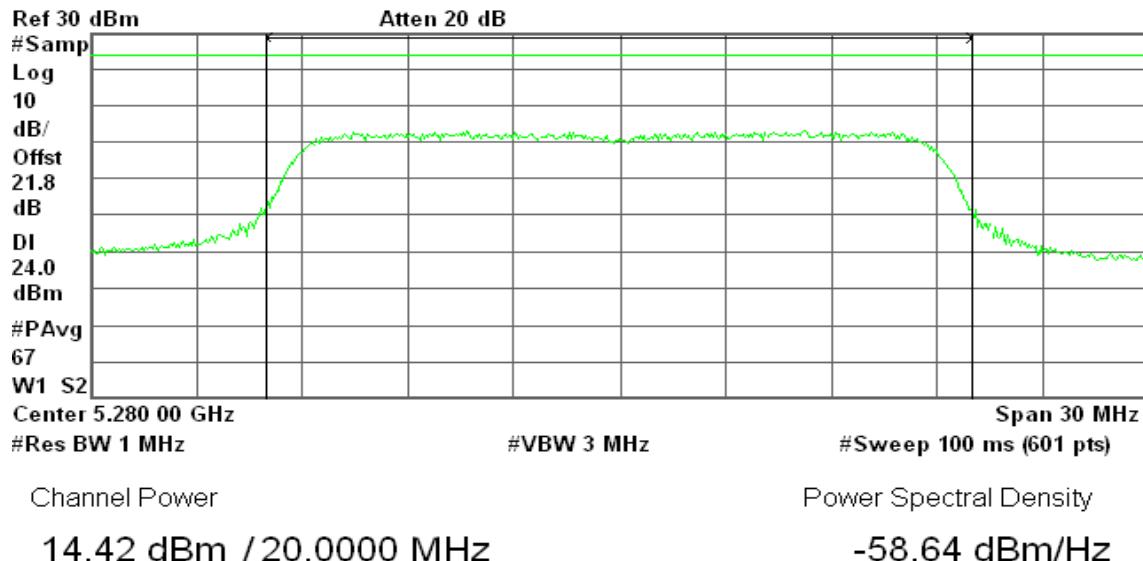
Power Spectral Density

-58.59 dBm/Hz

CH Mid

Agilent 21:31:07 May 6, 2009

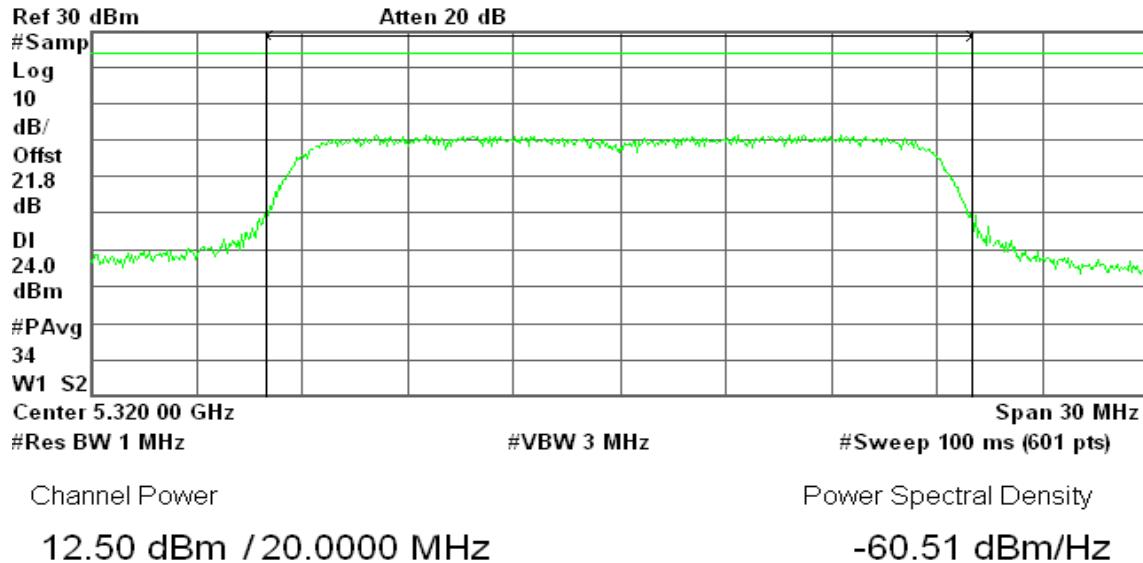
R T

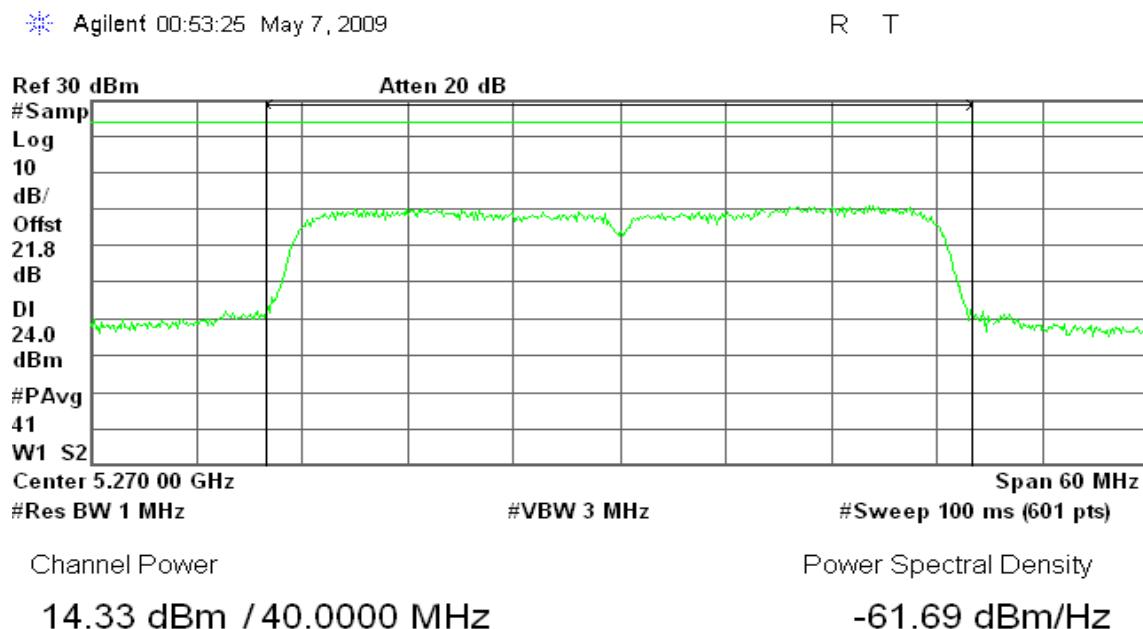
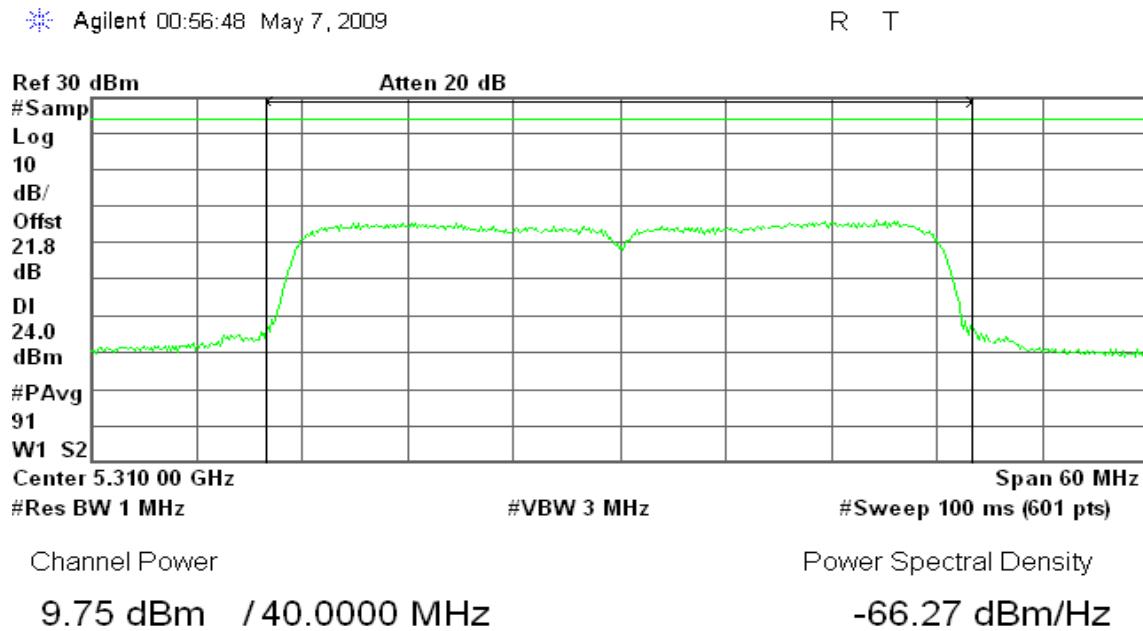


CH High

* Agilent 21:40:52 May 6, 2009

R T



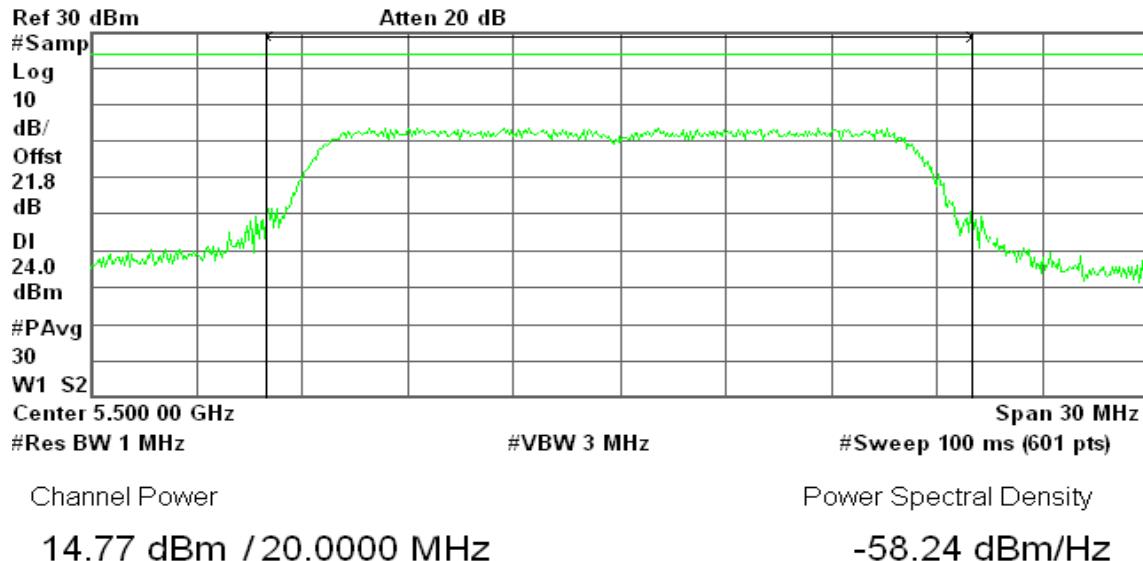
draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz**CH Low****CH High**

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

CH Low

* Agilent 18:42:35 May 6, 2009

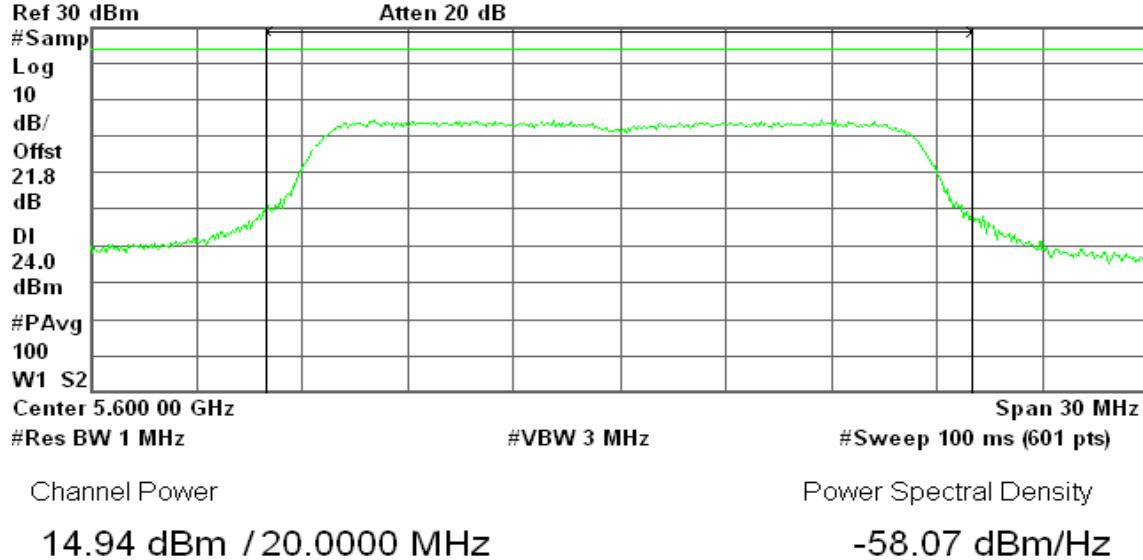
R T



CH Mid

Agilent 18:49:26 May 11, 2009

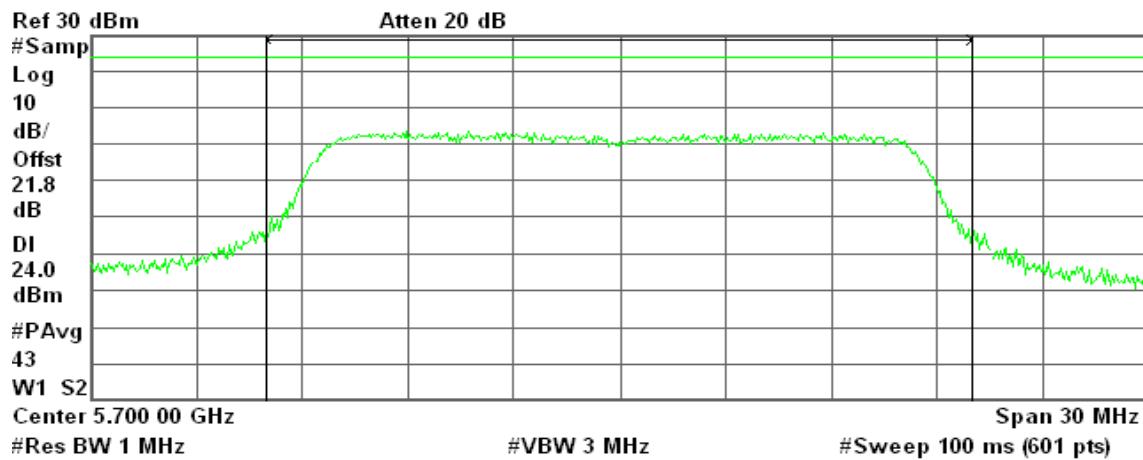
R T



CH High

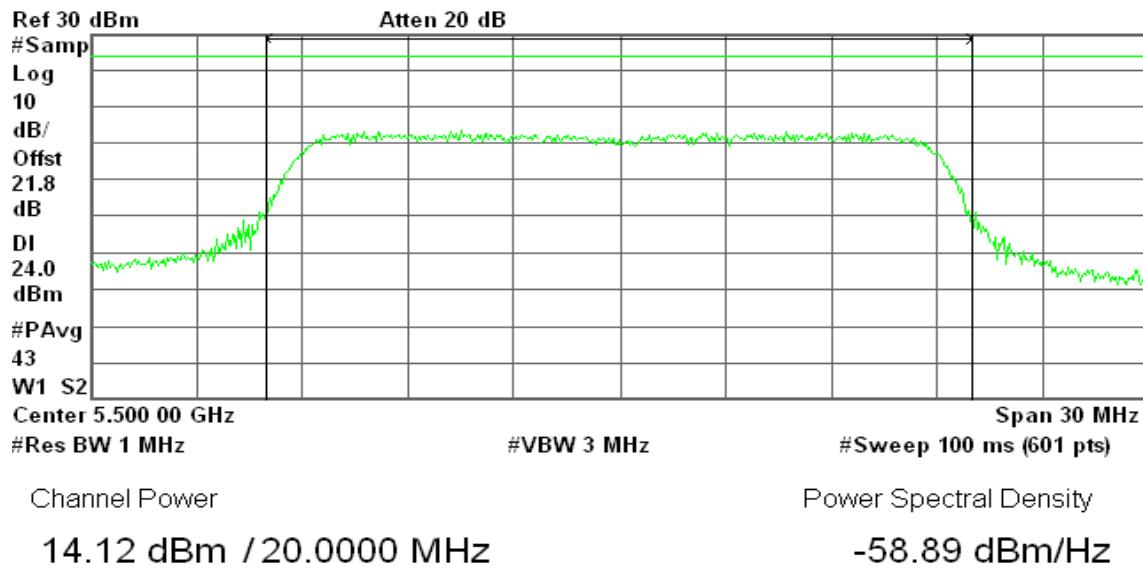
Agilent 18:57:25 May 6, 2009

R T

**draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz****CH Low**

Agilent 22:07:54 May 6, 2009

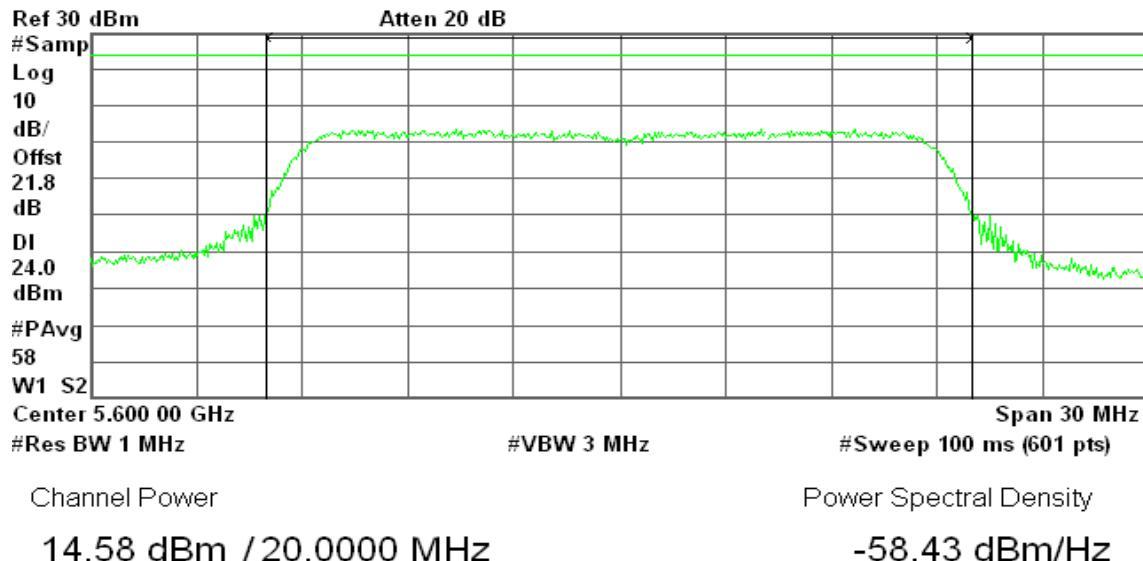
R T



CH Mid

Agilent 22:12:40 May 6, 2009

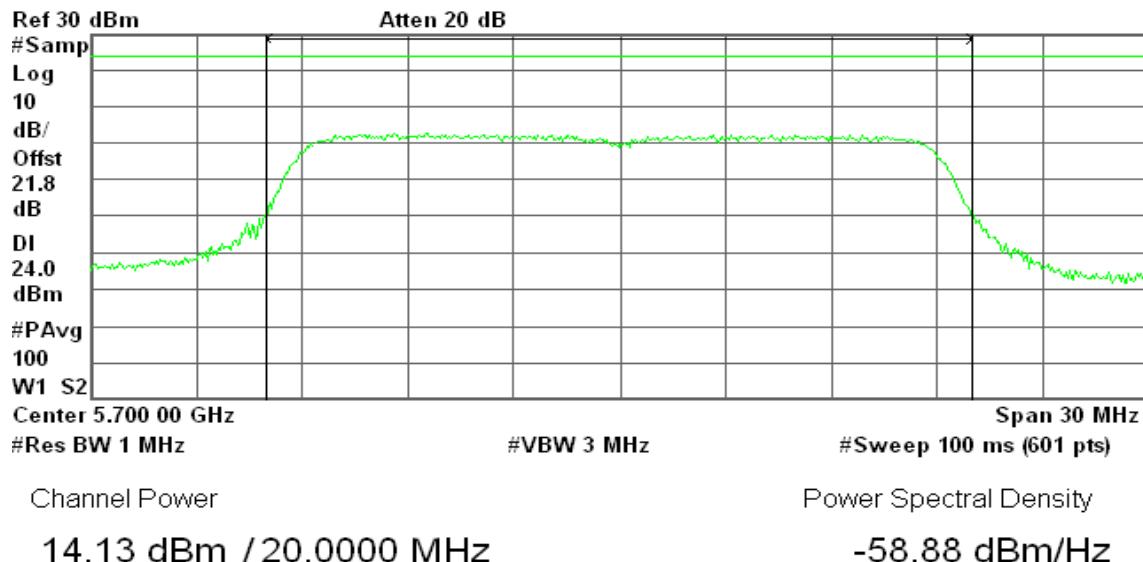
R T

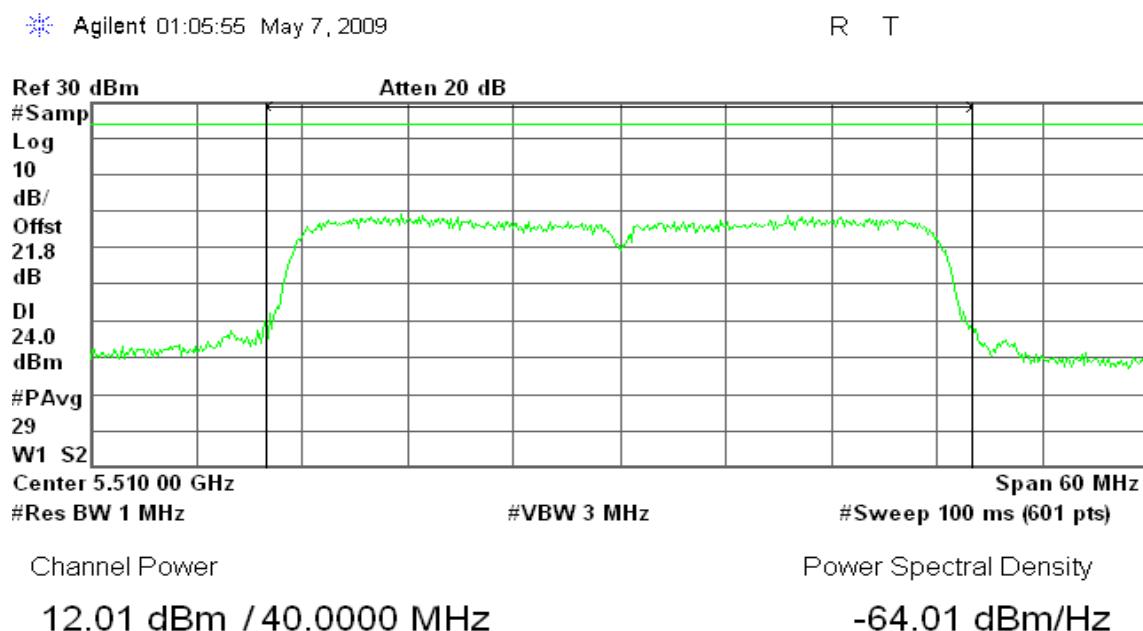
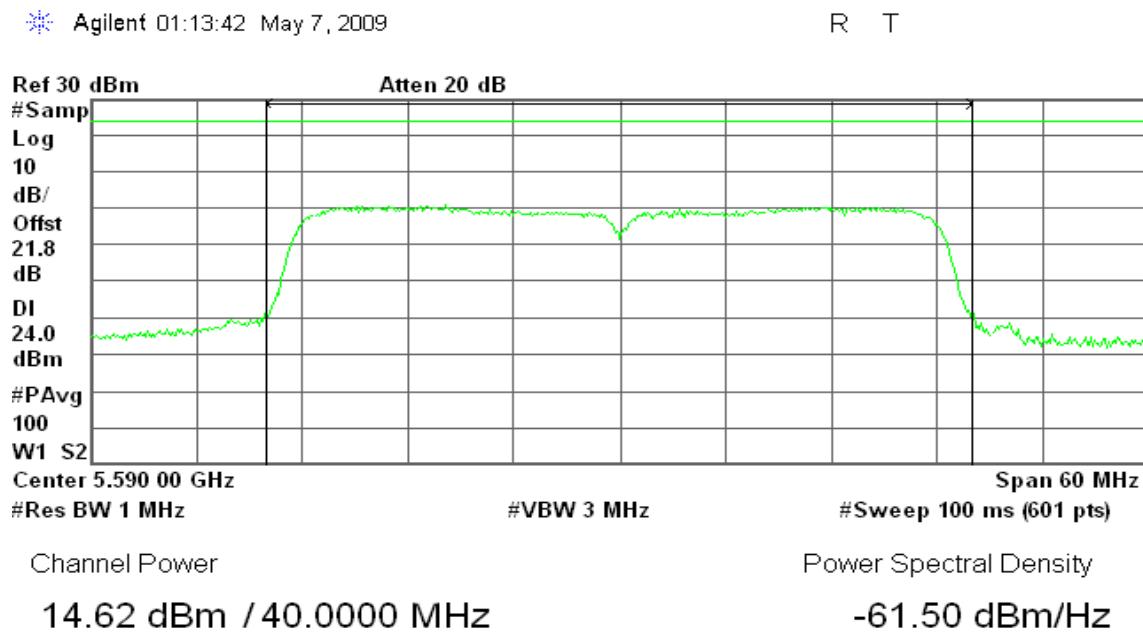


CH High

* Agilent 22:34:13 May 6, 2009

R T

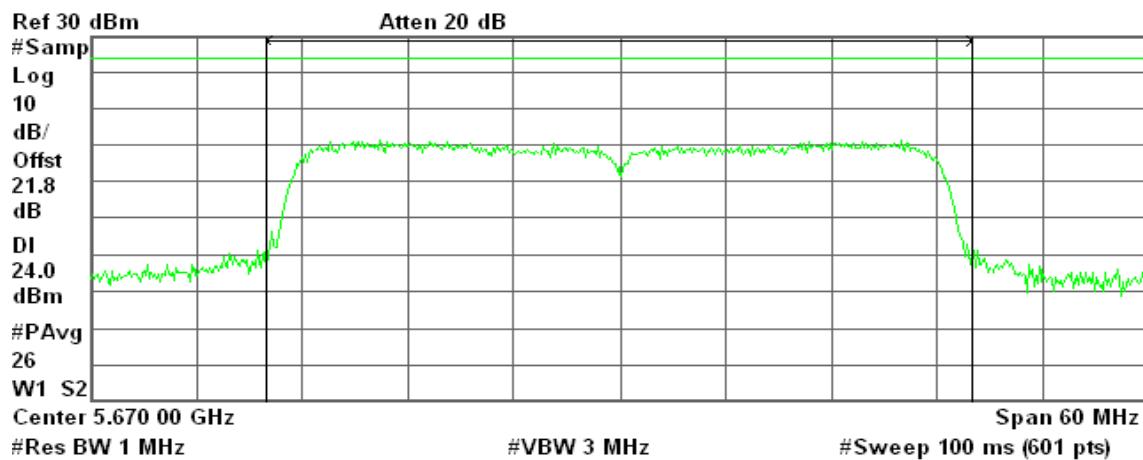


draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz**CH Low****CH Mid**

CH High

Agilent 01:20:24 May 7, 2009

R T



Channel Power

14.52 dBm / 40.0000 MHz

Power Spectral Density

-61.40 dBm/Hz

7.3 BAND EDGES MEASUREMENT

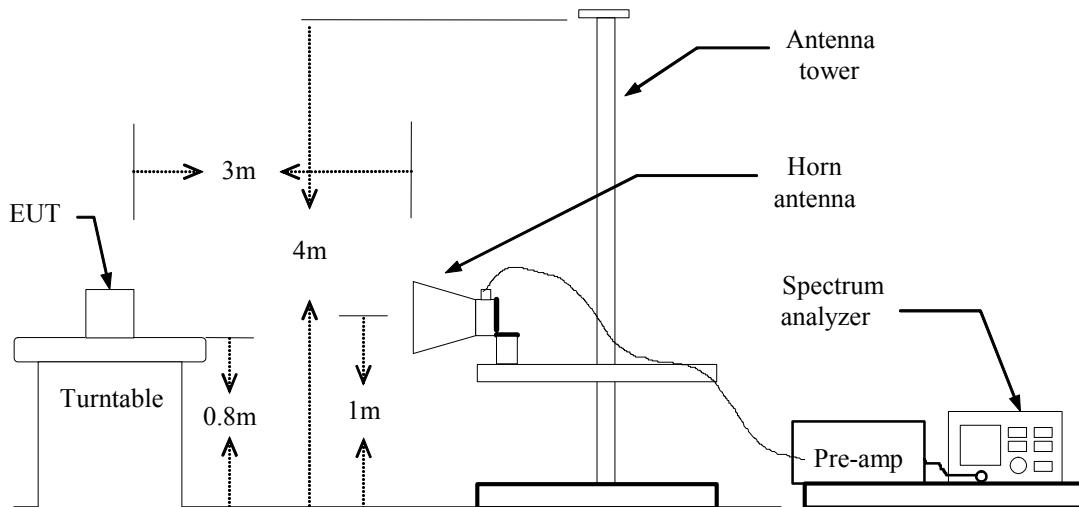
LIMIT

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

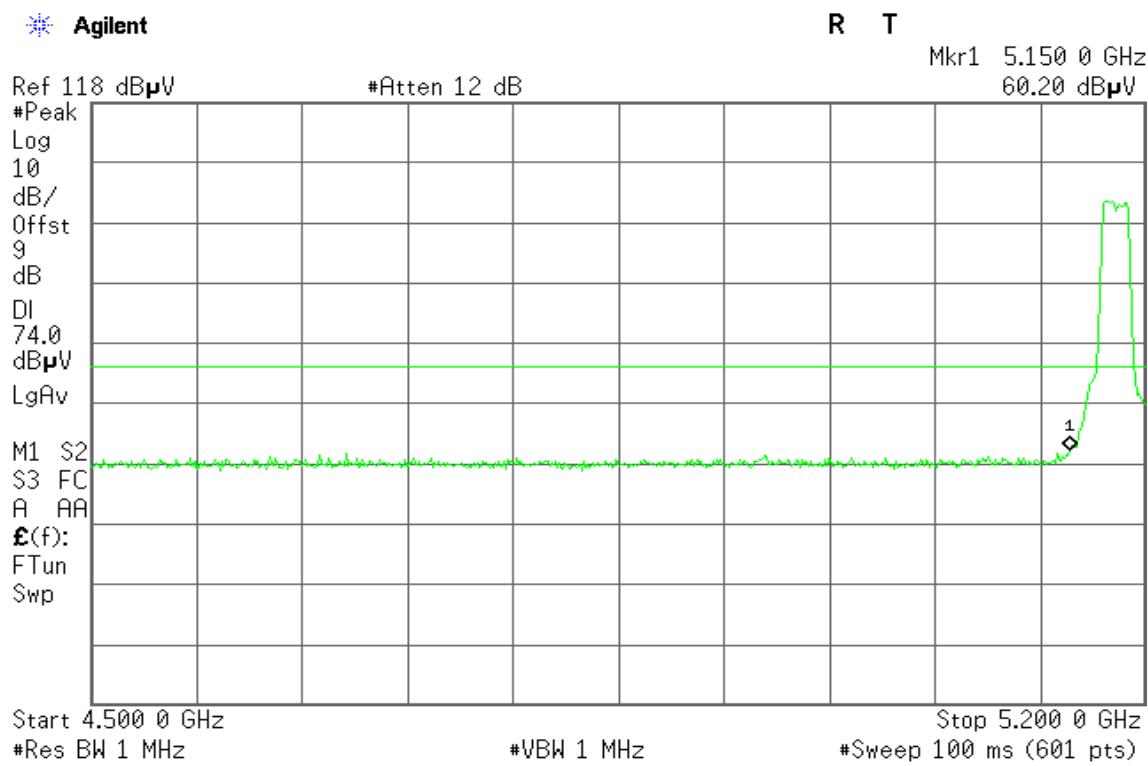
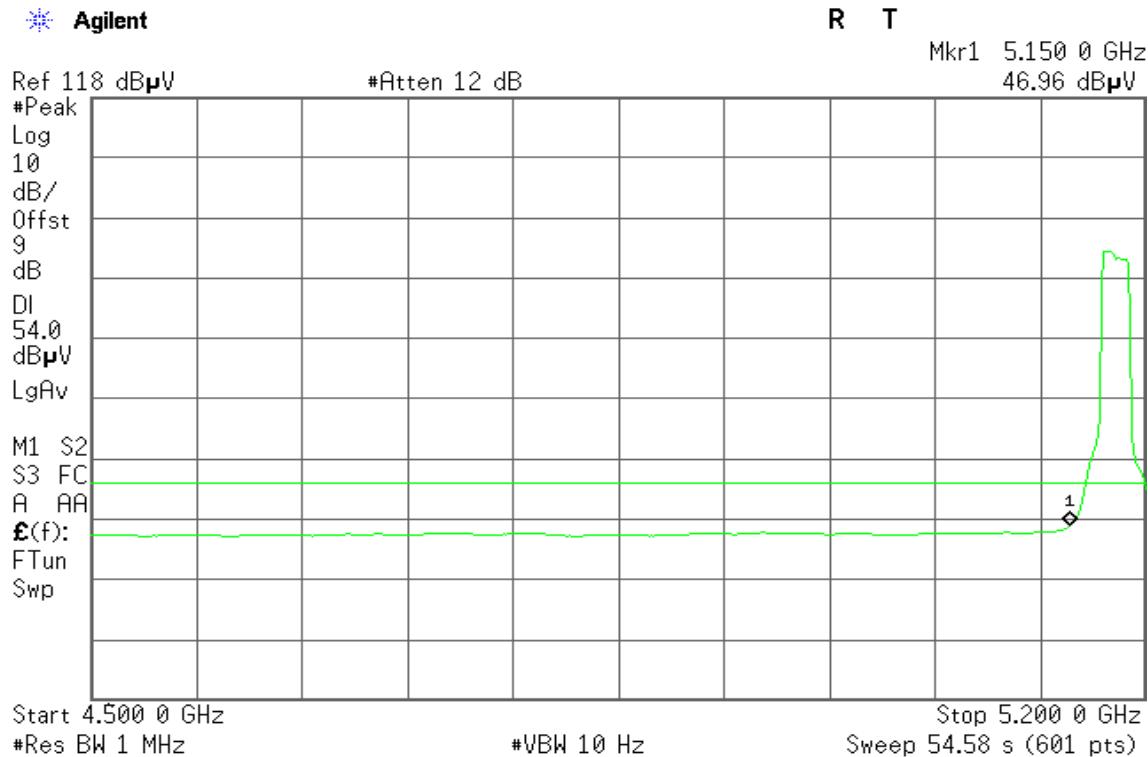


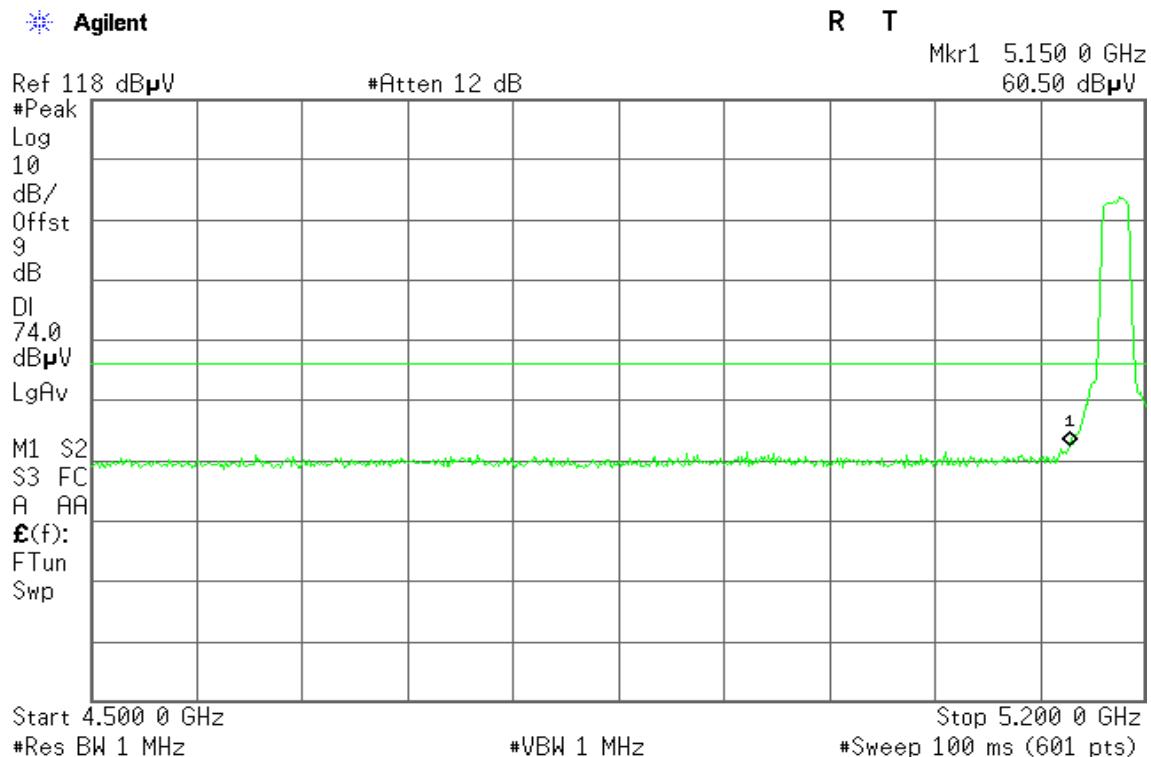
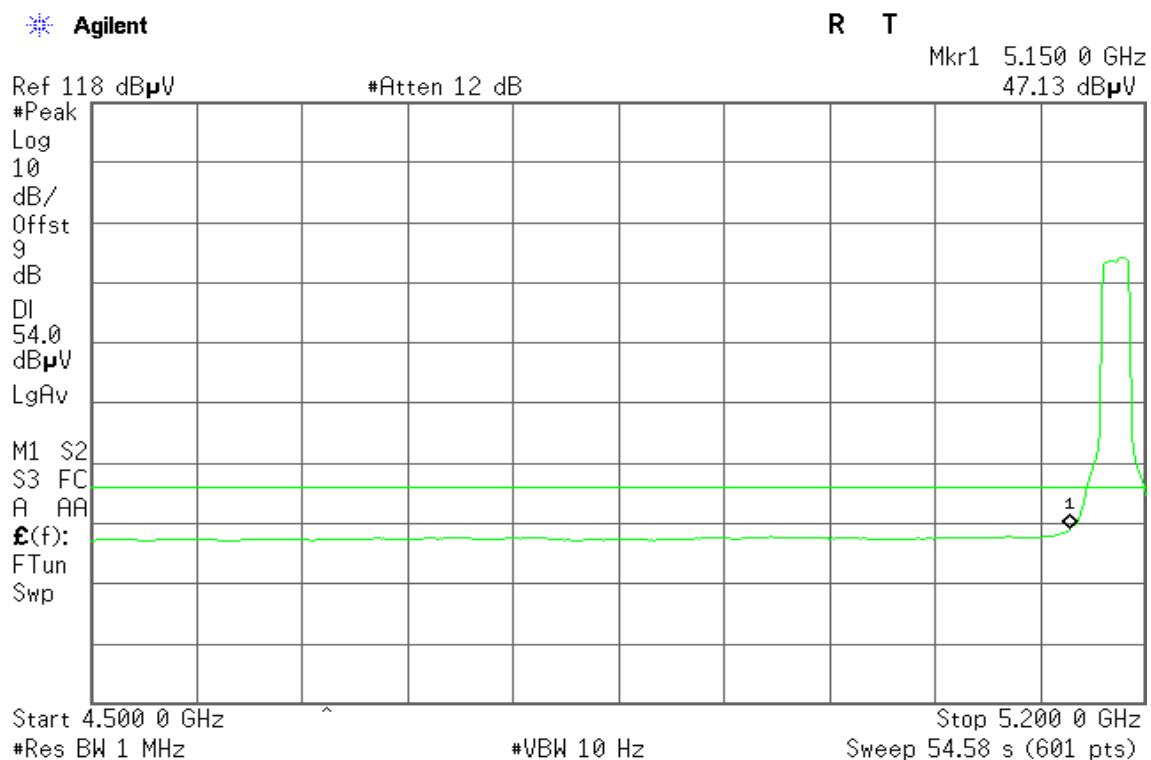
TEST PROCEDURE

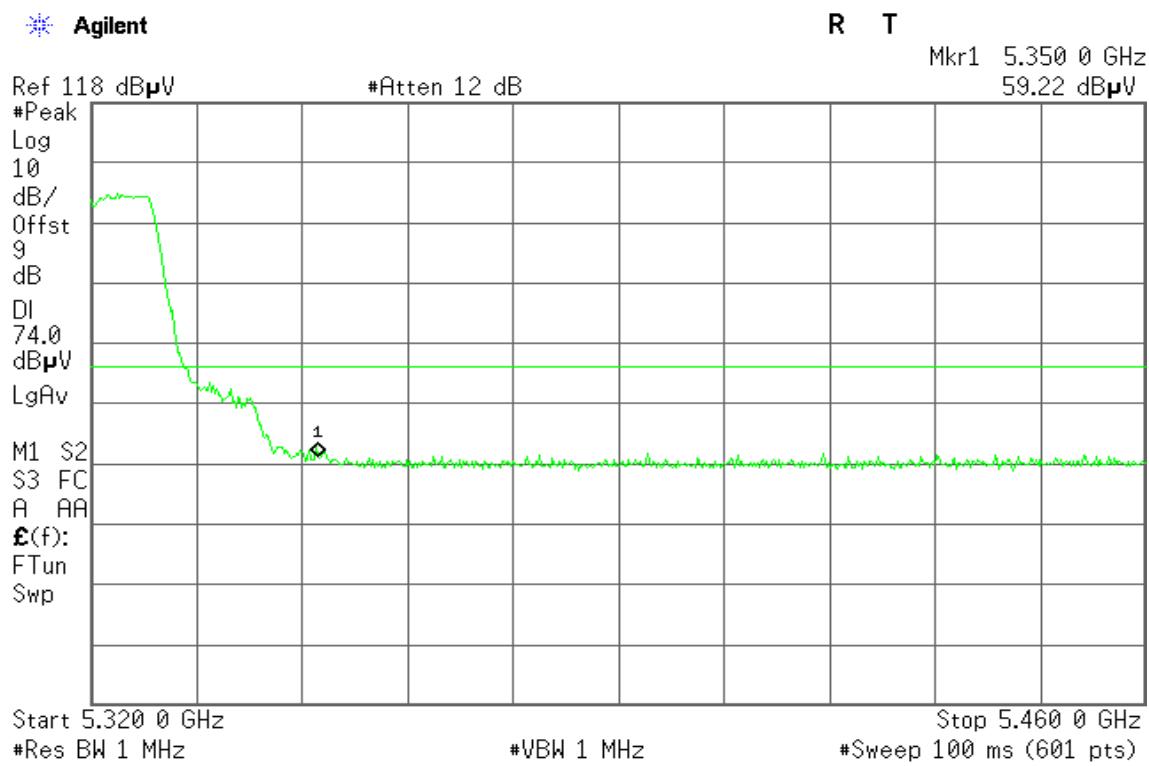
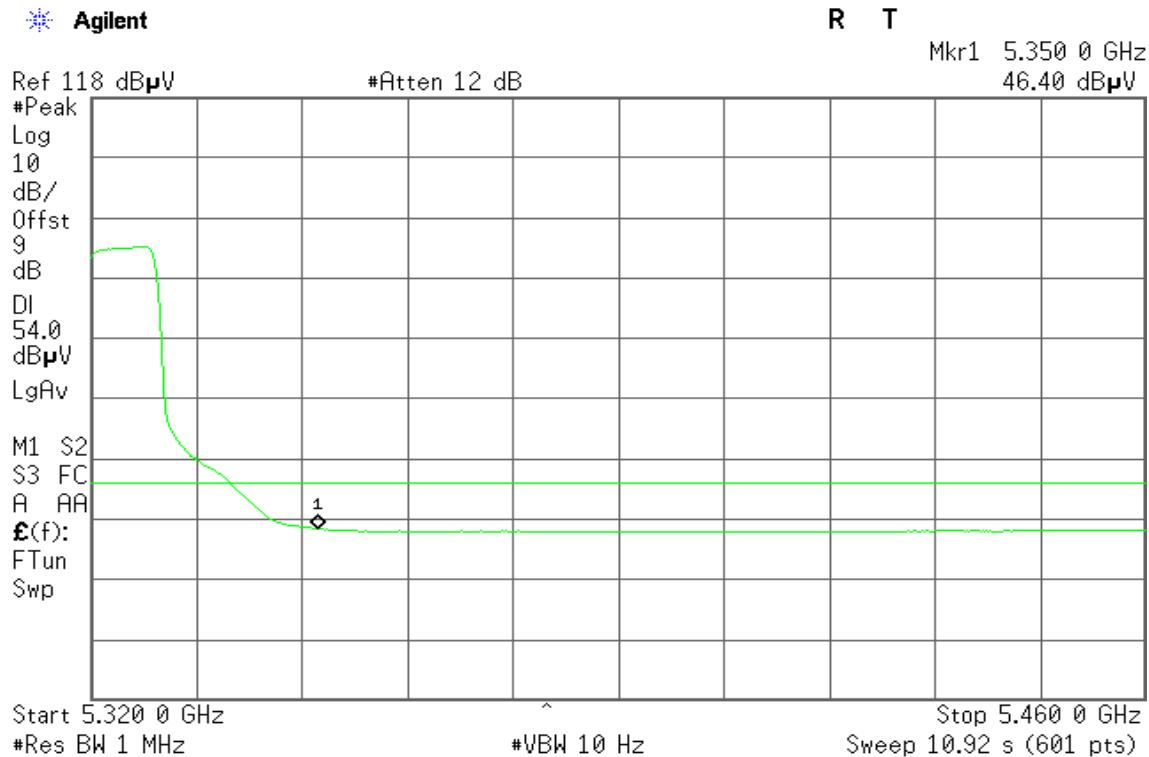
1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the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

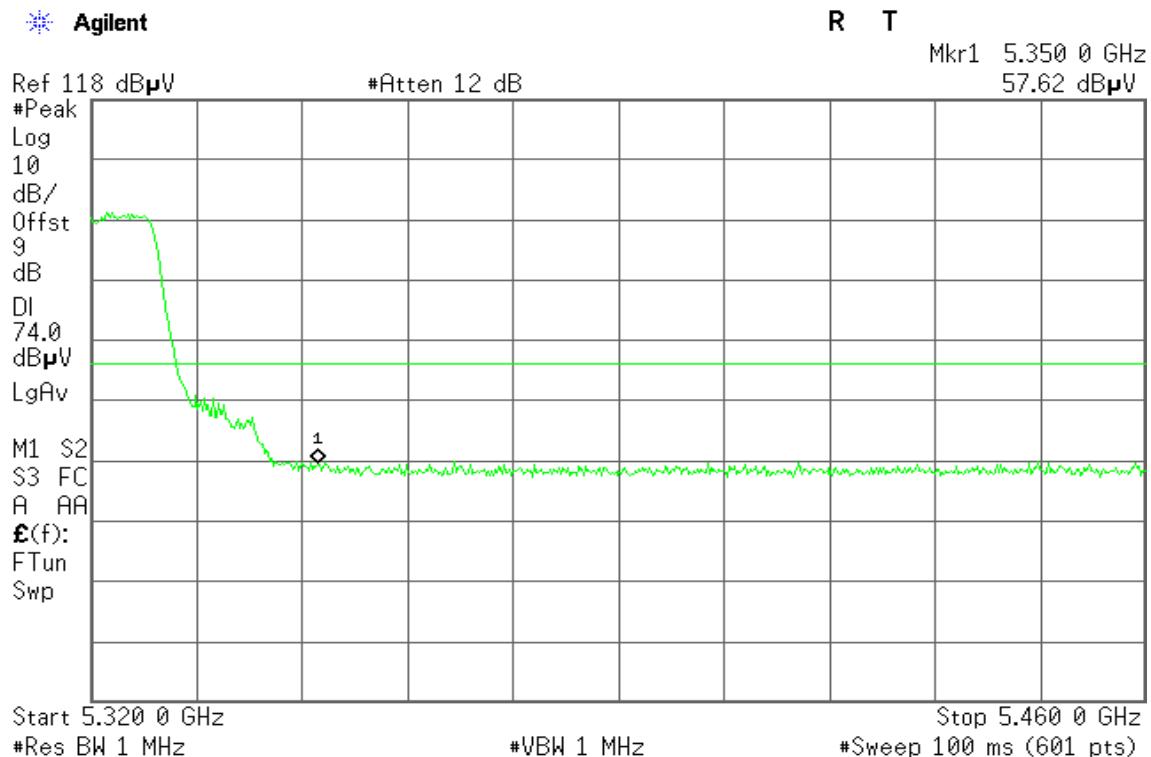
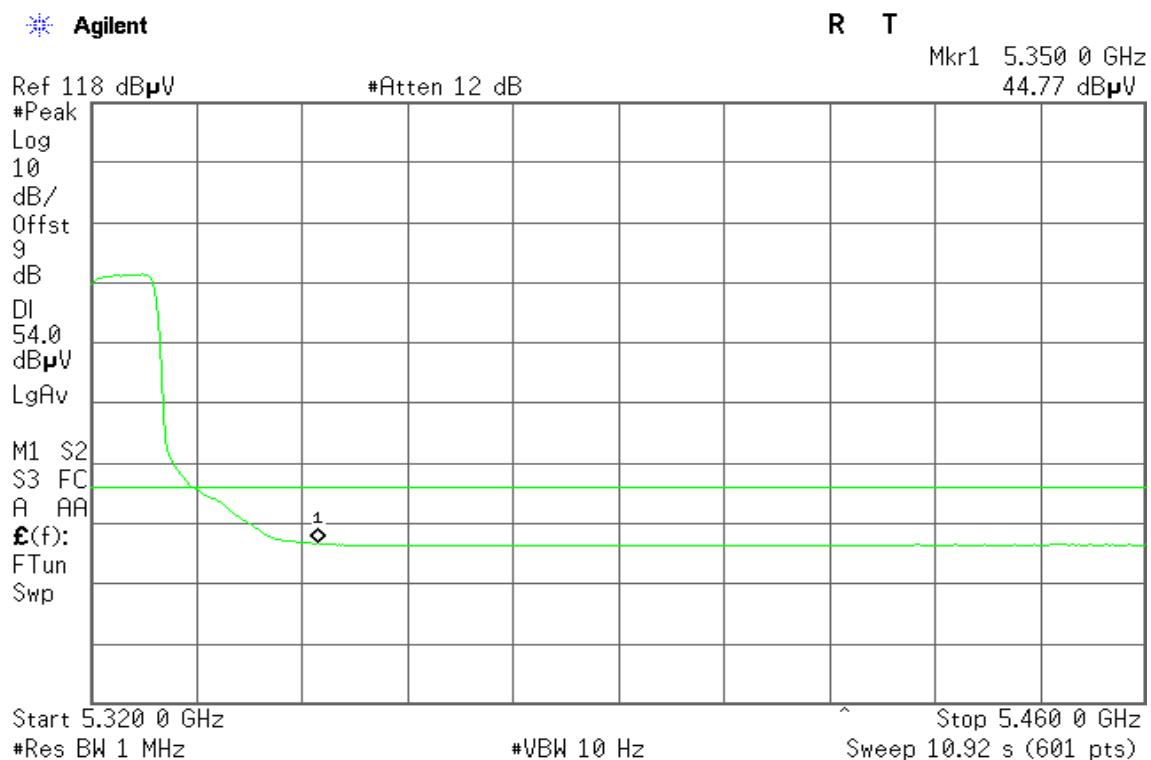
TEST RESULTS

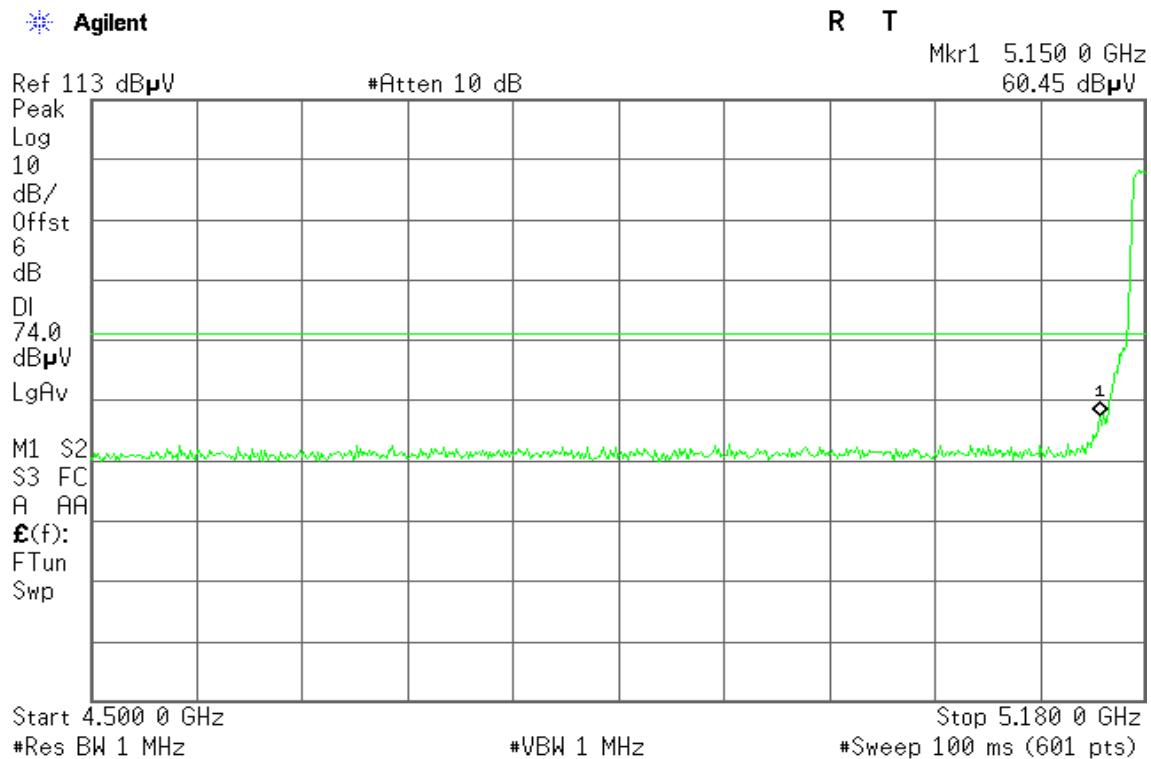
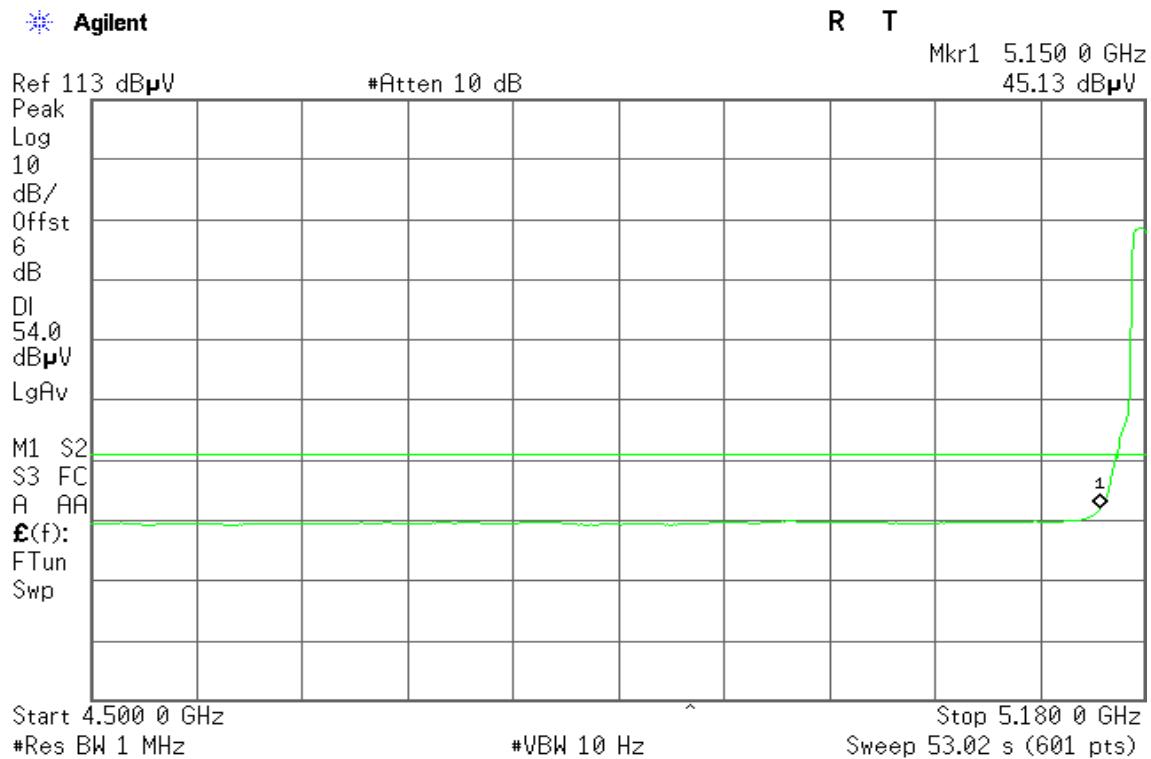
Refer to attach spectrum analyzer data chart.

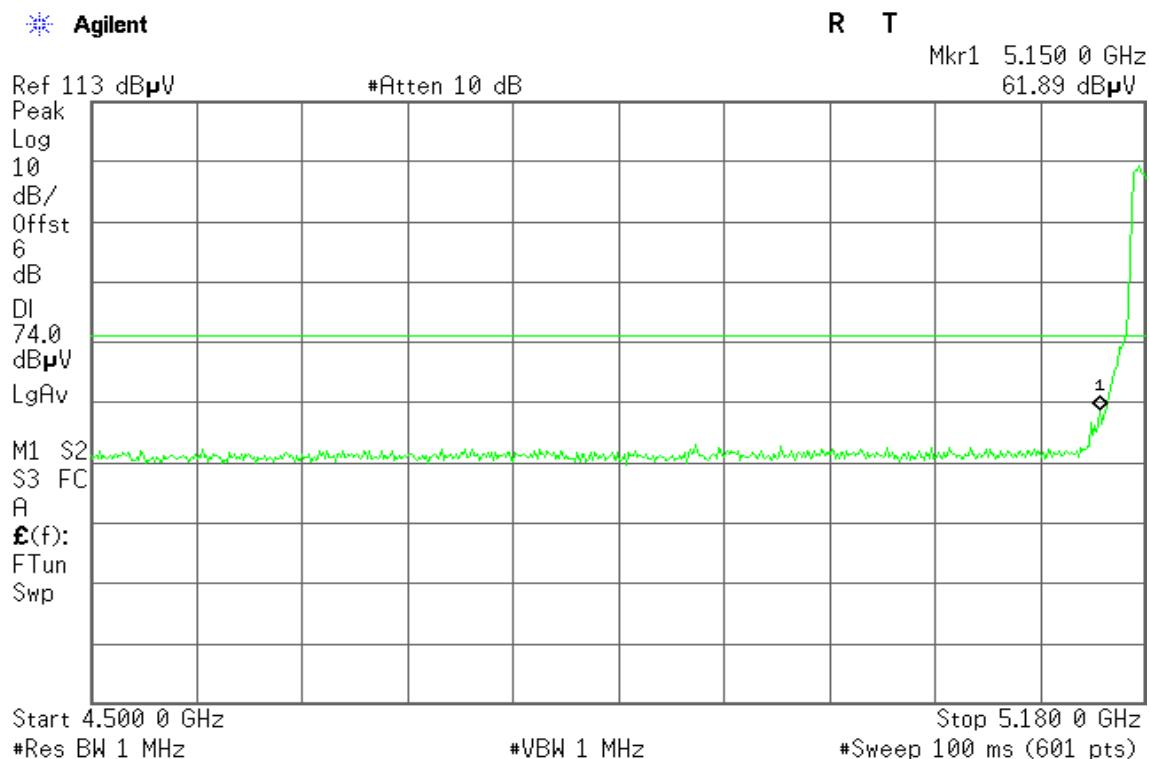
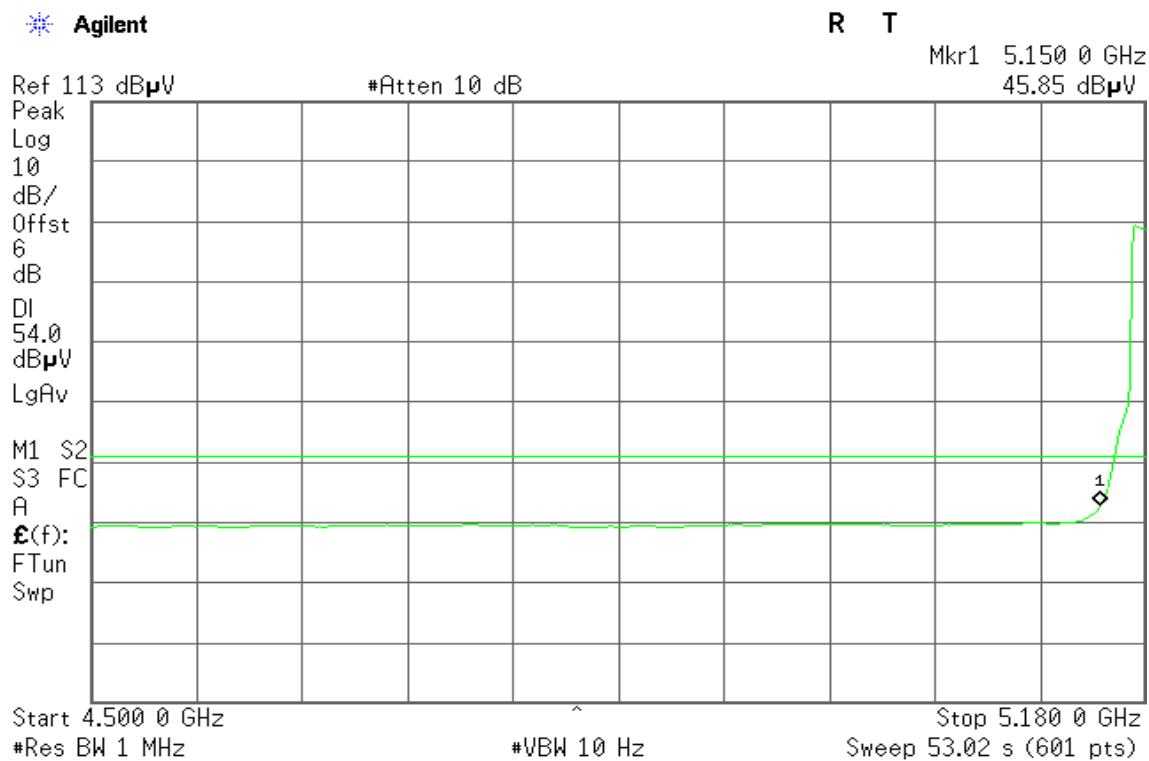
Band Edges (IEEE 802.11a mode / 5180 MHz)**Detector mode: Peak****Polarity: Vertical****Detector mode: Average****Polarity: Vertical**

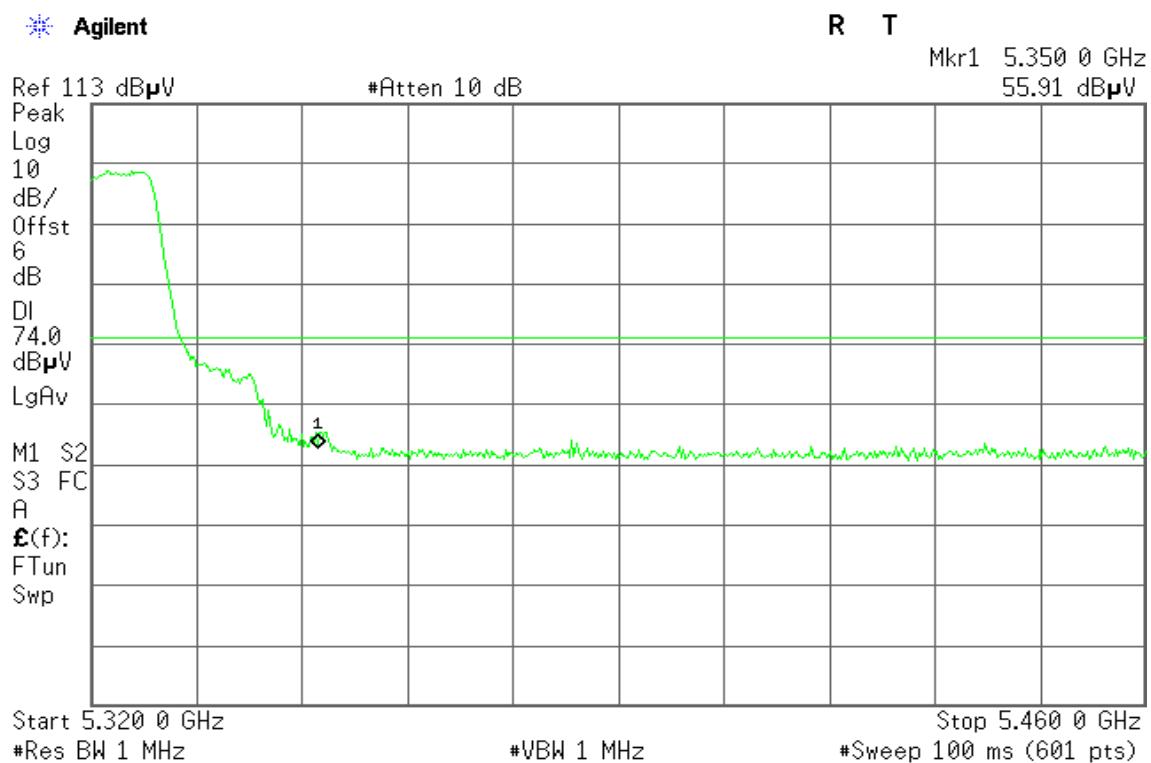
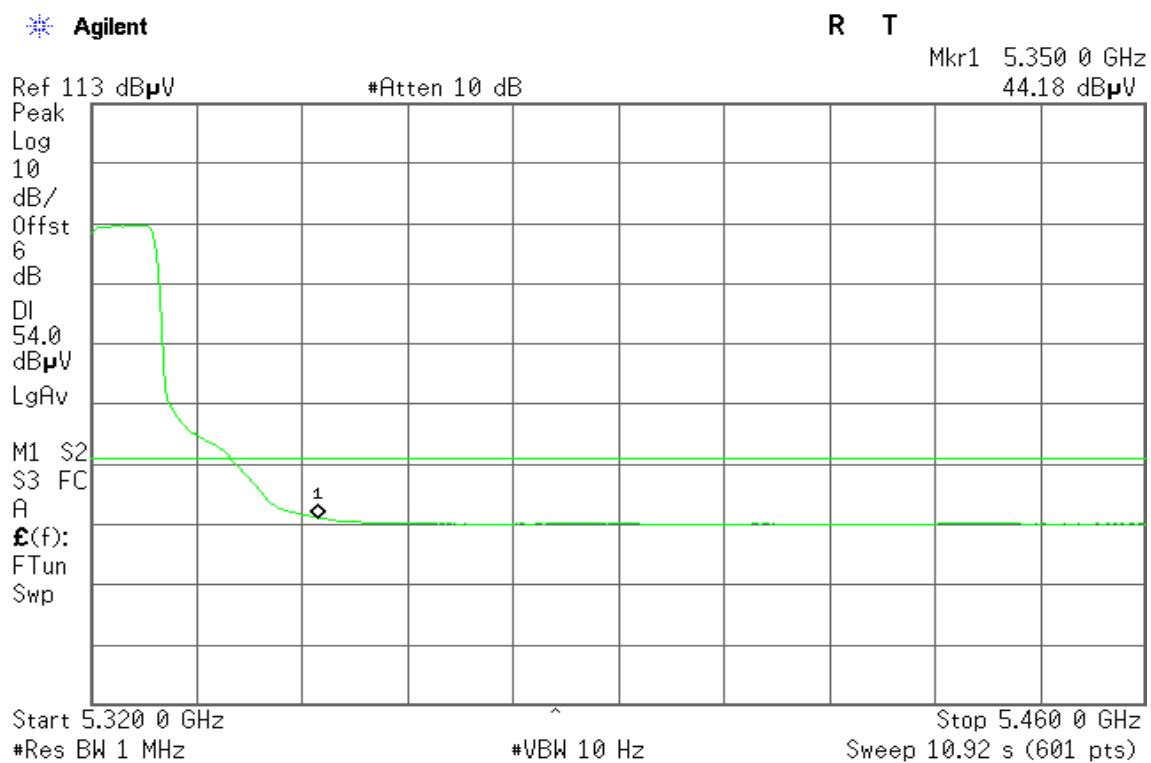
Detector mode: Peak**Polarity: Horizontal****Detector mode: Average****Polarity: Horizontal**

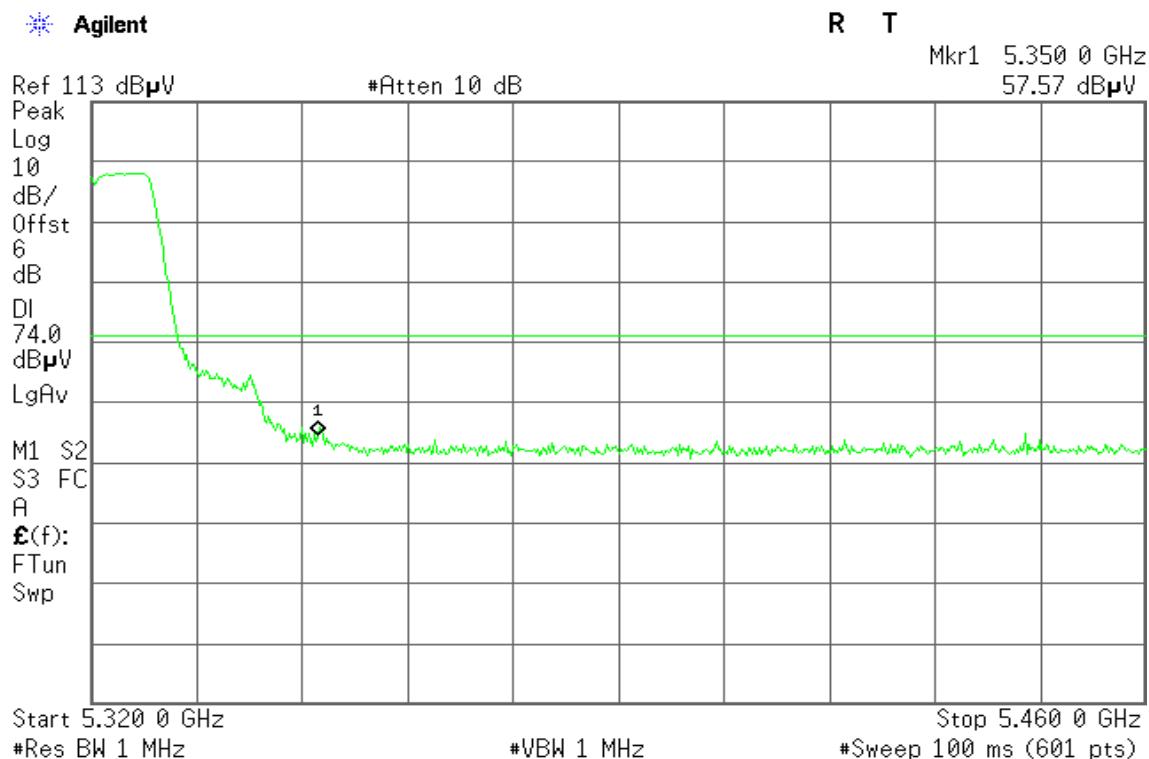
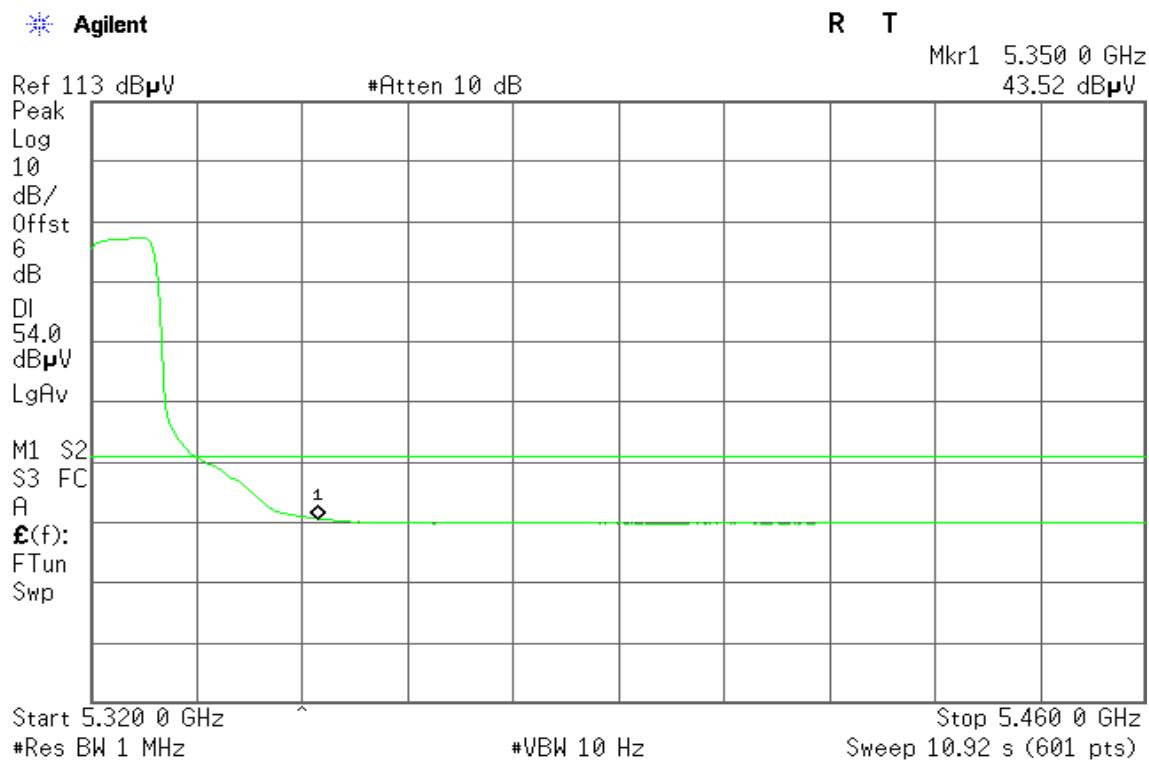
Band Edges (IEEE 802.11a mode / 5320 MHz)**Detector mode: Peak****Polarity: Vertical****Detector mode: Average****Polarity: Vertical**

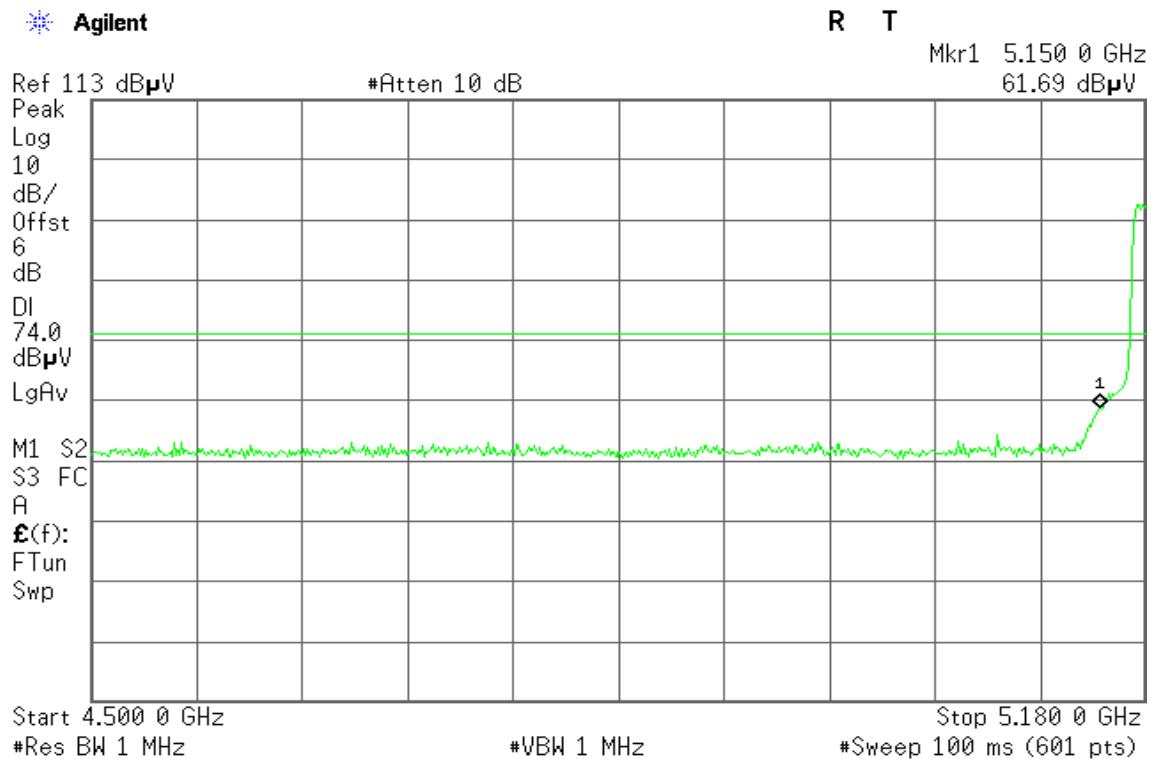
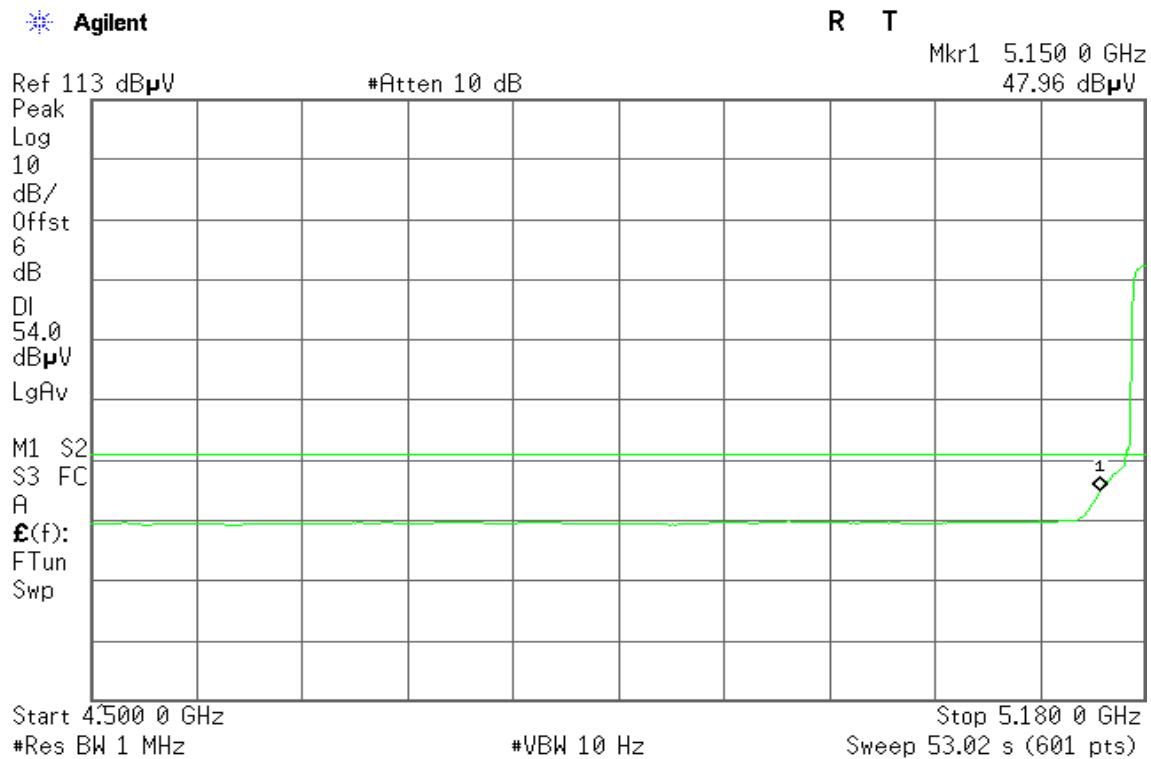
Detector mode: Peak**Polarity: Horizontal****Detector mode: Average****Polarity: Horizontal**

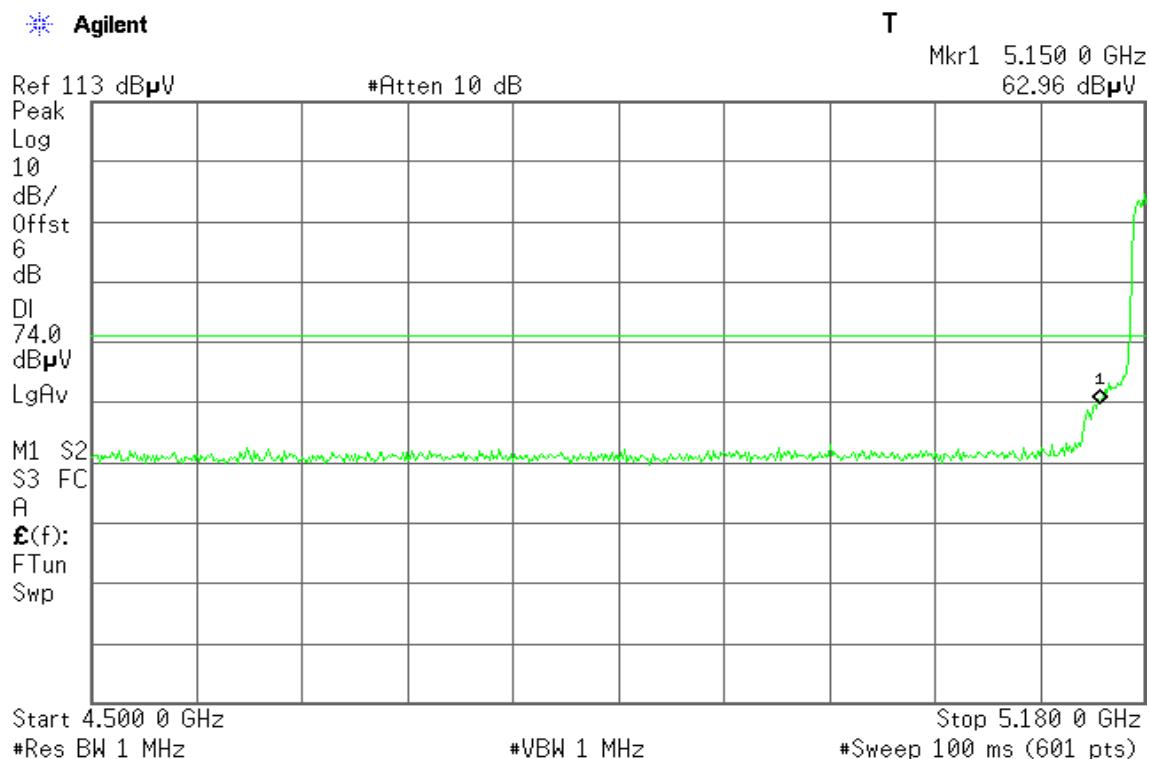
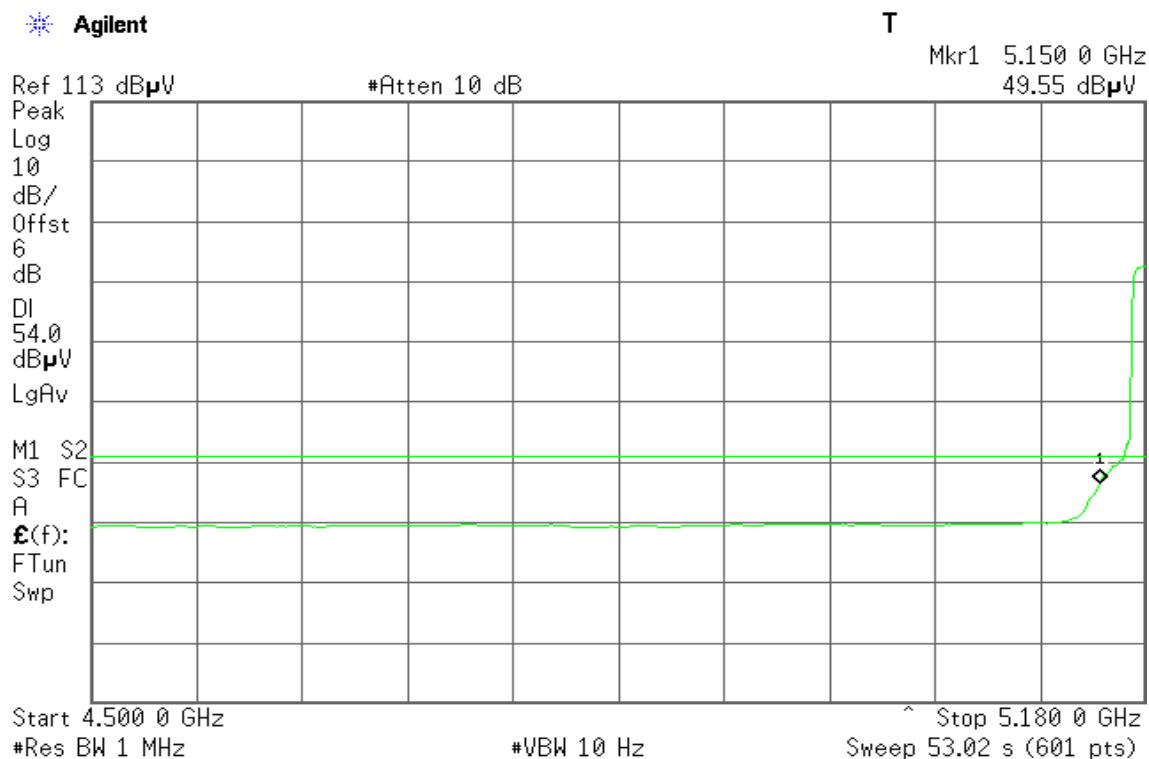
Band Edges (draft 802.11n Standard-20 MHz Channel mode / 5180 MHz)**Detector mode: Peak****Polarity: Vertical****Detector mode: Average****Polarity: Vertical**

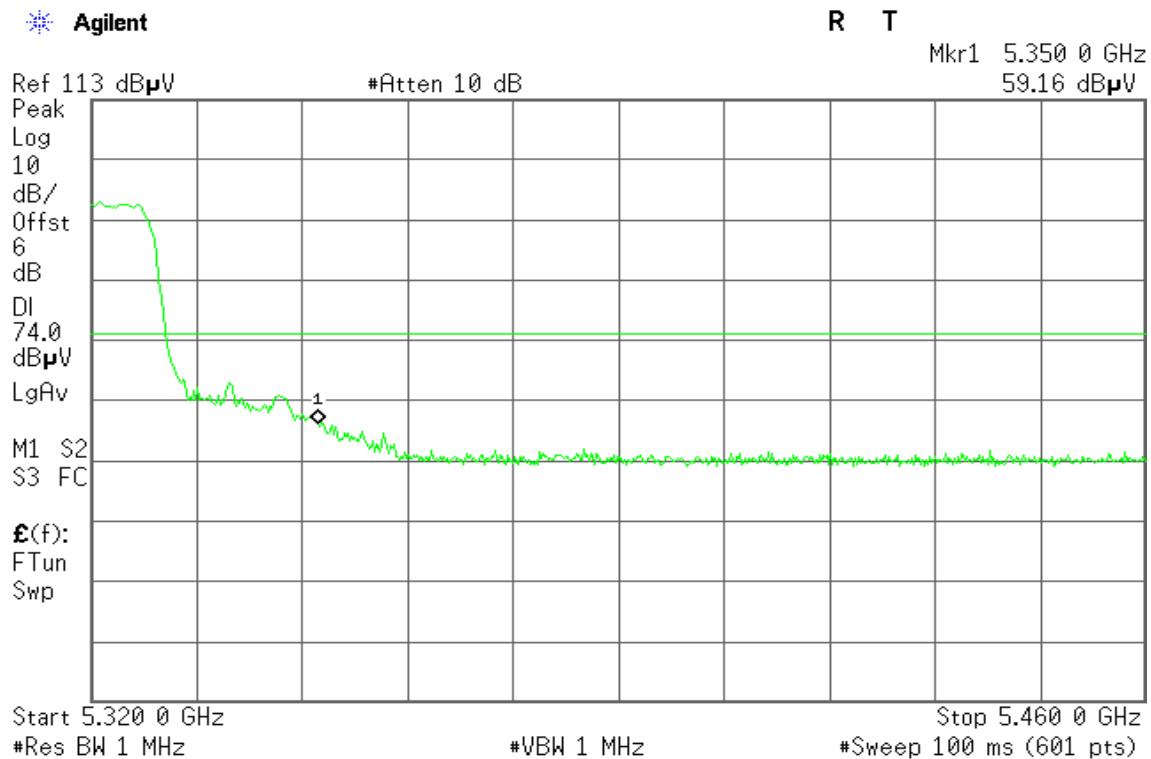
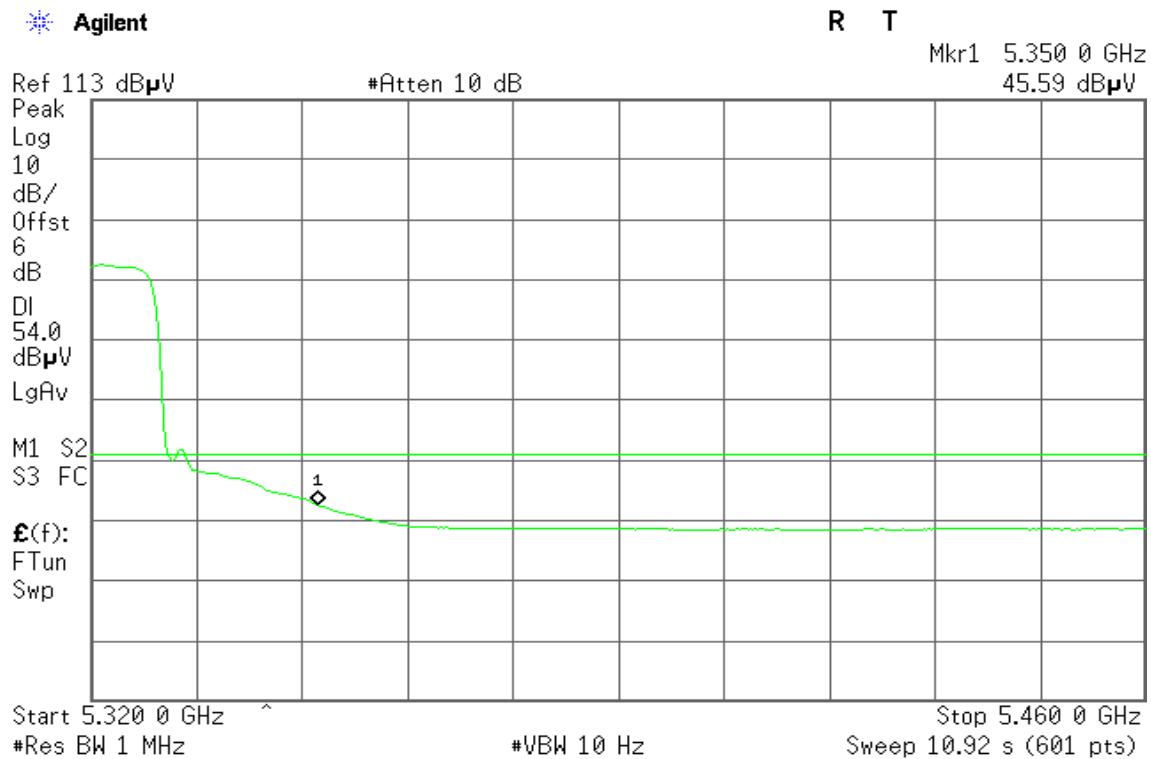
Detector mode: Peak**Polarity: Horizontal****Detector mode: Average****Polarity: Horizontal**

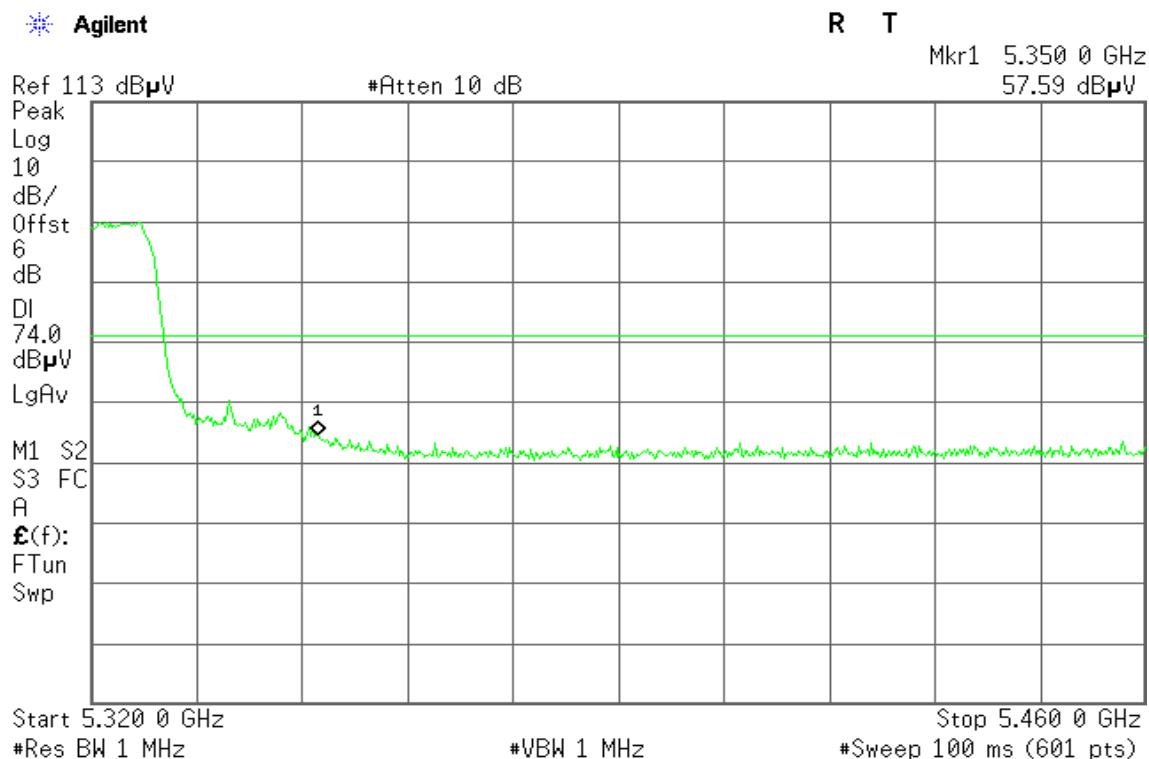
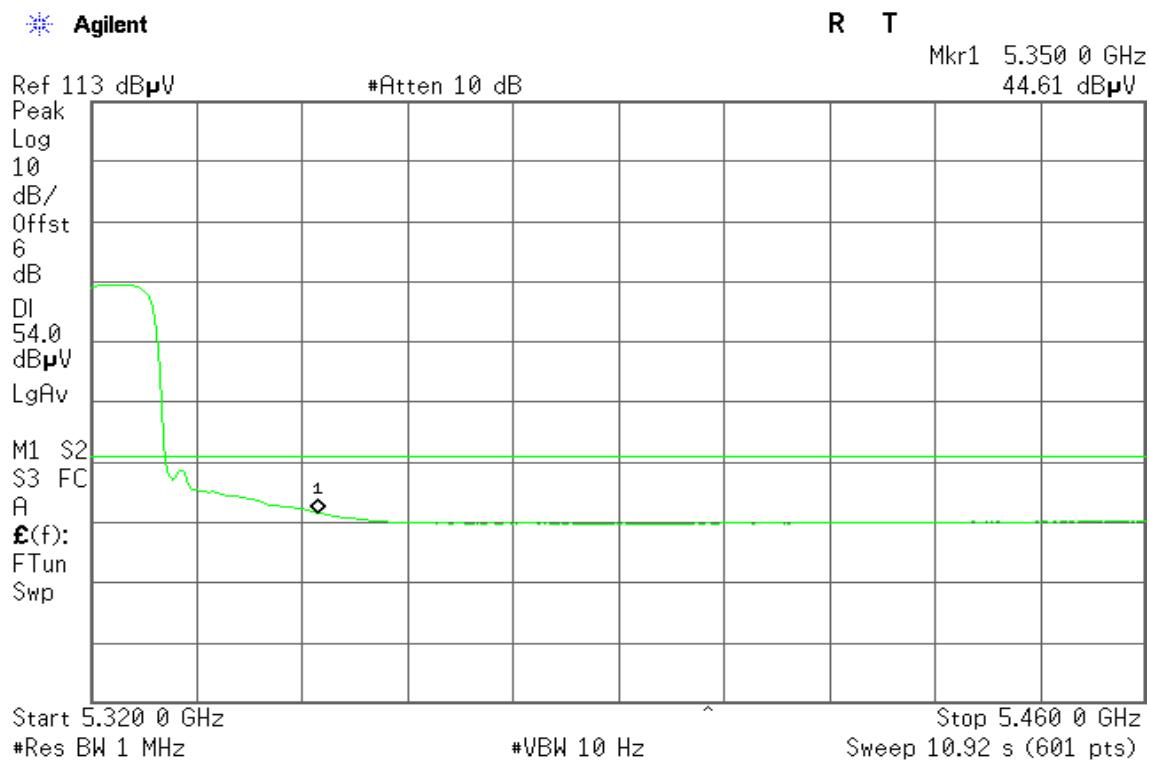
Band Edges (draft 802.11n Standard-20 MHz Channel mode / 5320 MHz)**Detector mode: Peak****Polarity: Vertical****Detector mode: Average****Polarity: Vertical**

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

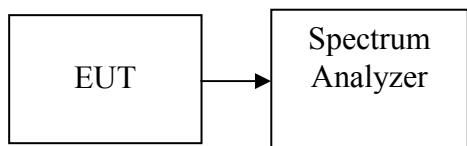
LIMIT

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	0.475	4.00	-3.525	PASS
Mid	5220	2.437	4.00	-1.563	PASS
High	5240	1.861	4.00	-2.139	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5180	-0.173	4.00	-4.173	PASS
Mid	5220	1.266	4.00	-2.734	PASS
High	5240	1.917	4.00	-2.083	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5190	-5.371	4.00	-9.371	PASS
High	5230	-2.758	4.00	-6.758	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5260	2.105	11.00	-8.895	PASS
Mid	5280	3.325	11.00	-7.675	PASS
High	5320	1.141	11.00	-9.859	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5260	1.930	11.00	-9.07	PASS
Mid	5280	1.876	11.00	-9.124	PASS
High	5320	1.145	11.00	-9.855	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5270	-0.392	11.00	-11.392	PASS
High	5310	-4.748	11.00	-15.748	PASS

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

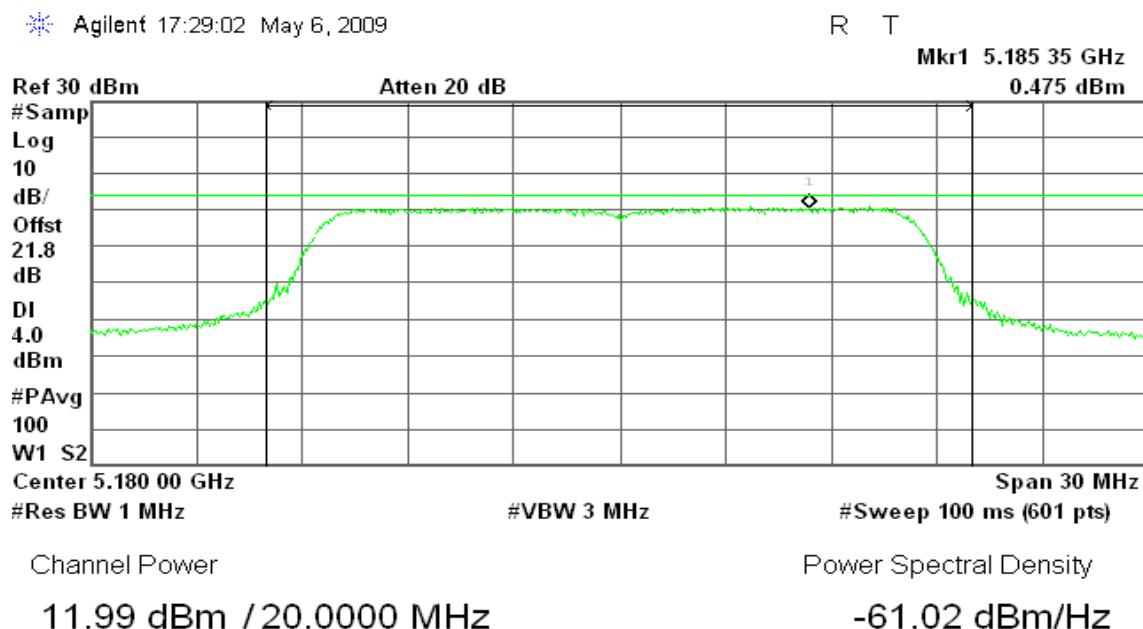
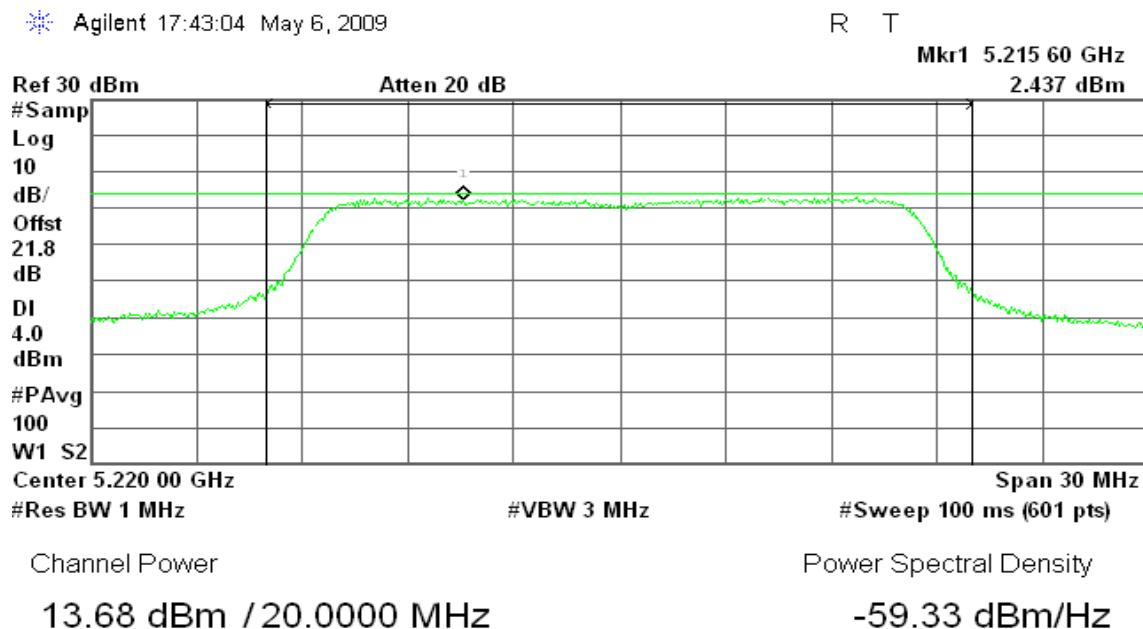
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5500	3.307	11.00	-7.693	PASS
Mid	5600	4.181	11.00	-6.819	PASS
High	5700	3.109	11.00	-7.891	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5500	1.843	11.00	-9.157	PASS
Mid	5600	2.653	11.00	-8.347	PASS
High	5700	2.401	11.00	-8.599	PASS

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

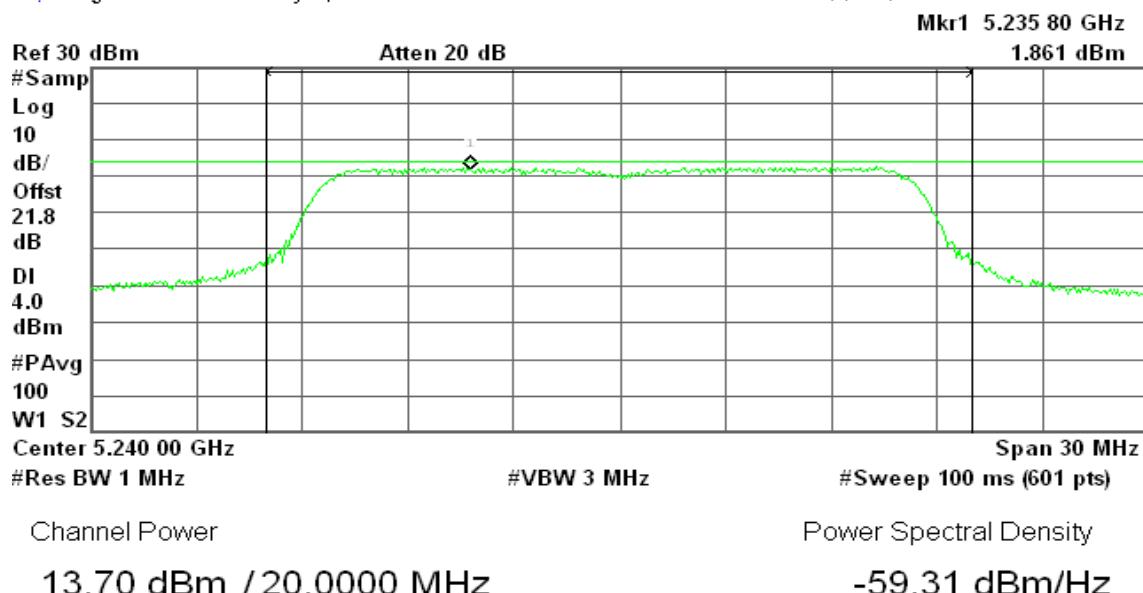
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5510	-2.862	11.00	-13.862	PASS
Mid	5590	-0.401	11.00	-11.401	PASS
High	5670	0.644	11.00	-10.356	PASS

Test Plot**IEEE 802.11a mode / 5180 ~ 5240MHz****CH Low****CH Mid**

CH High

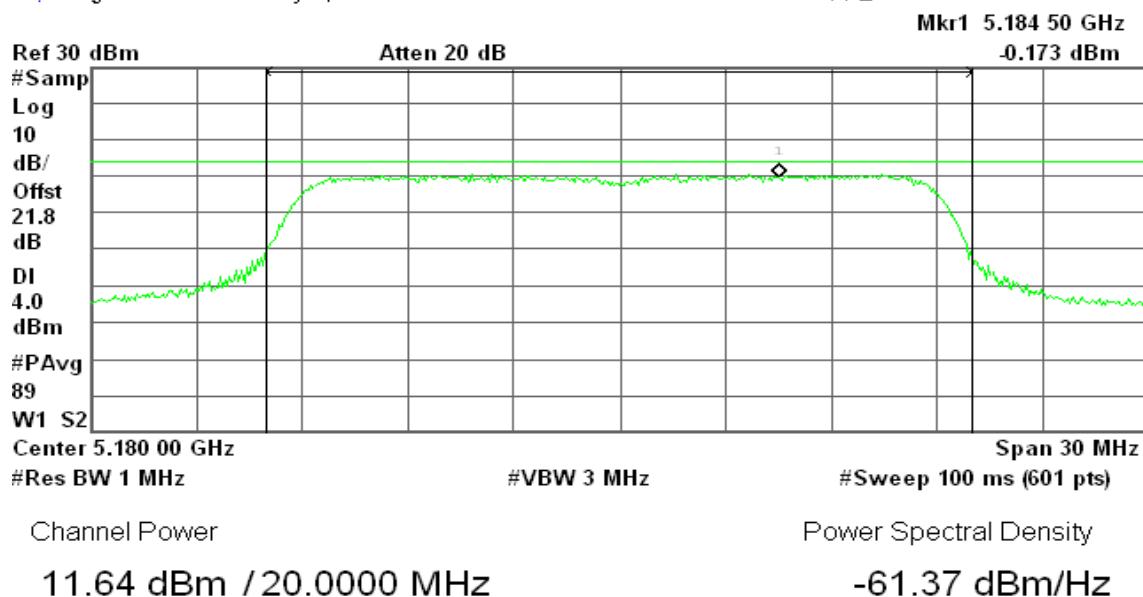
Agilent 18:05:23 May 6, 2009

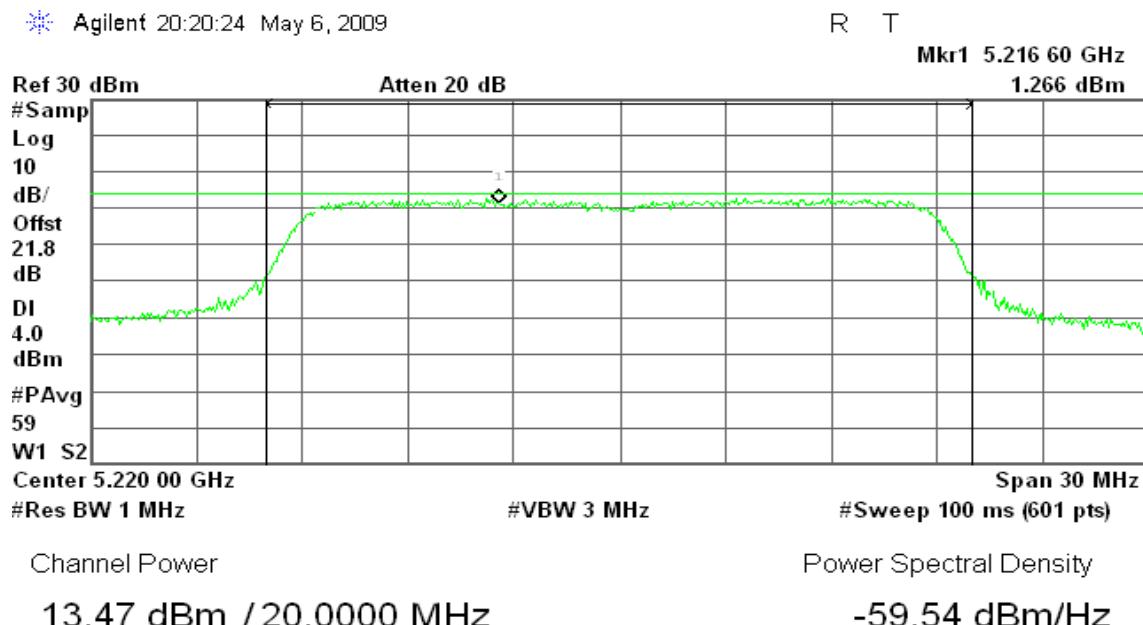
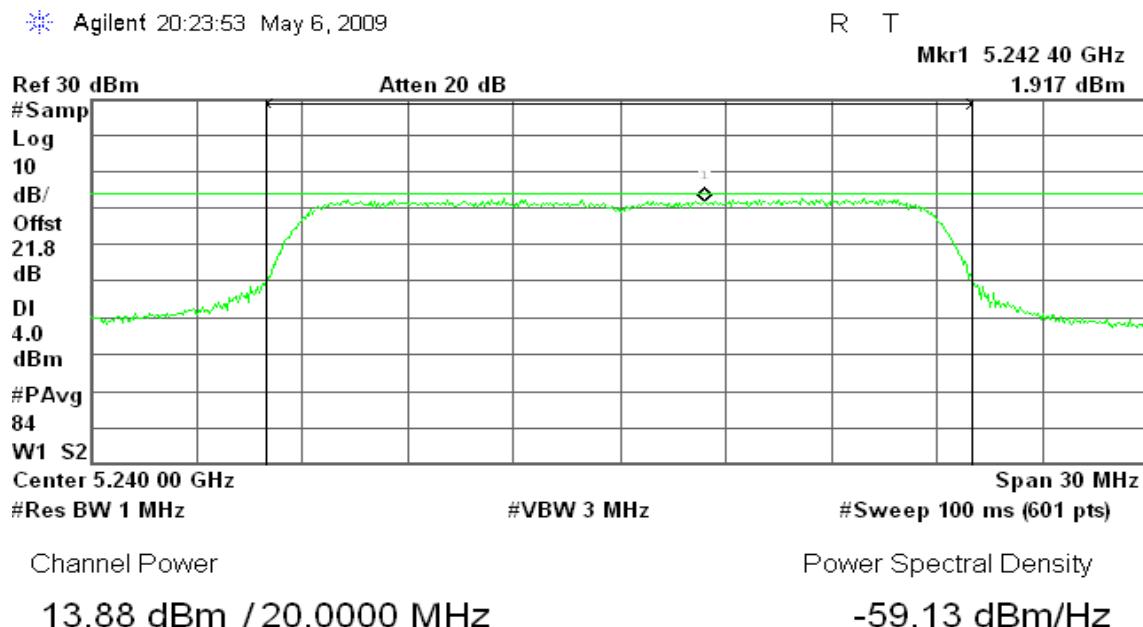
R T

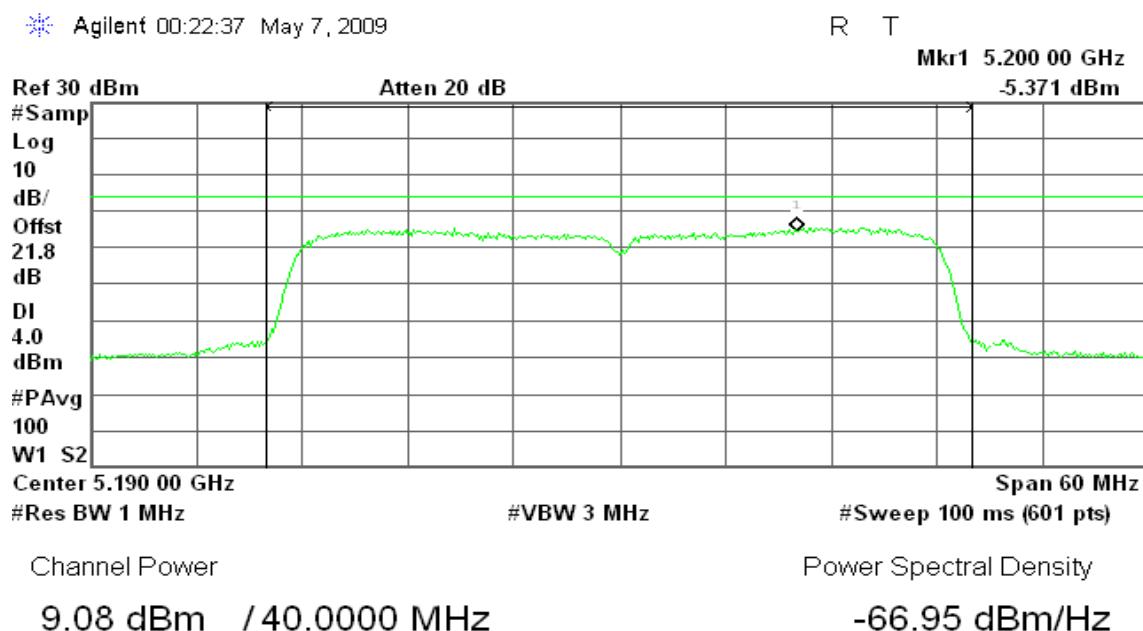
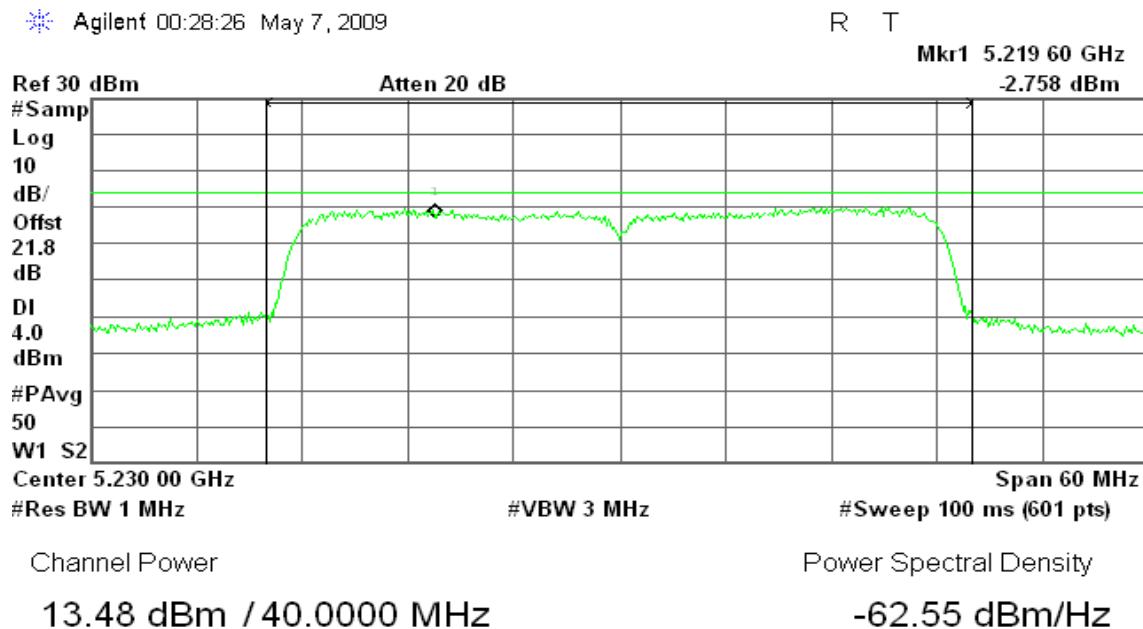
**draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz****CH Low**

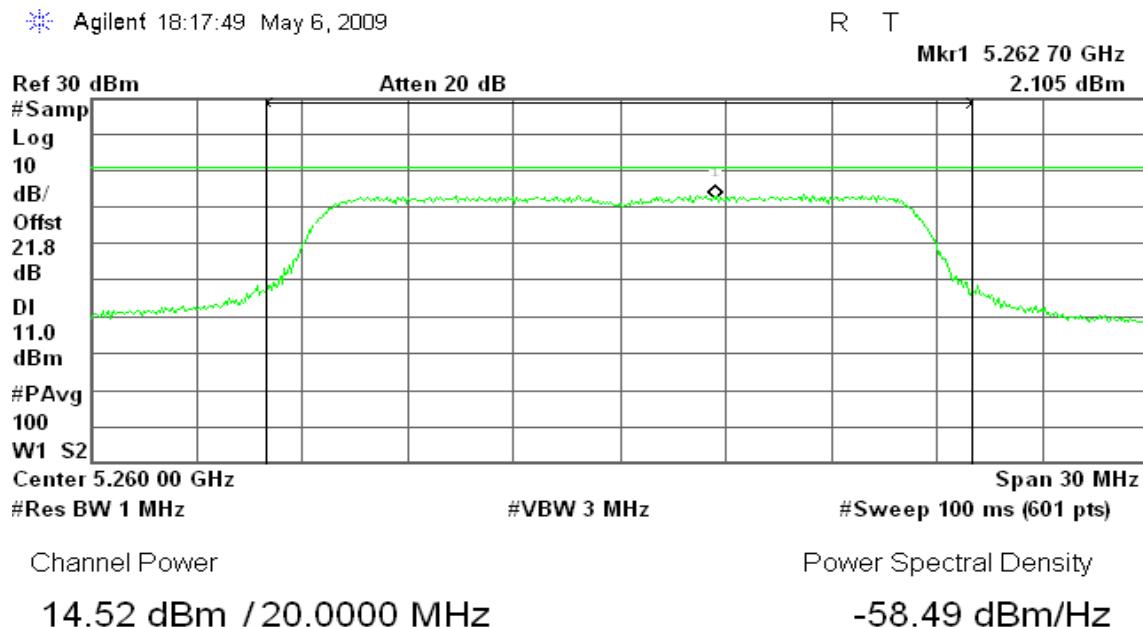
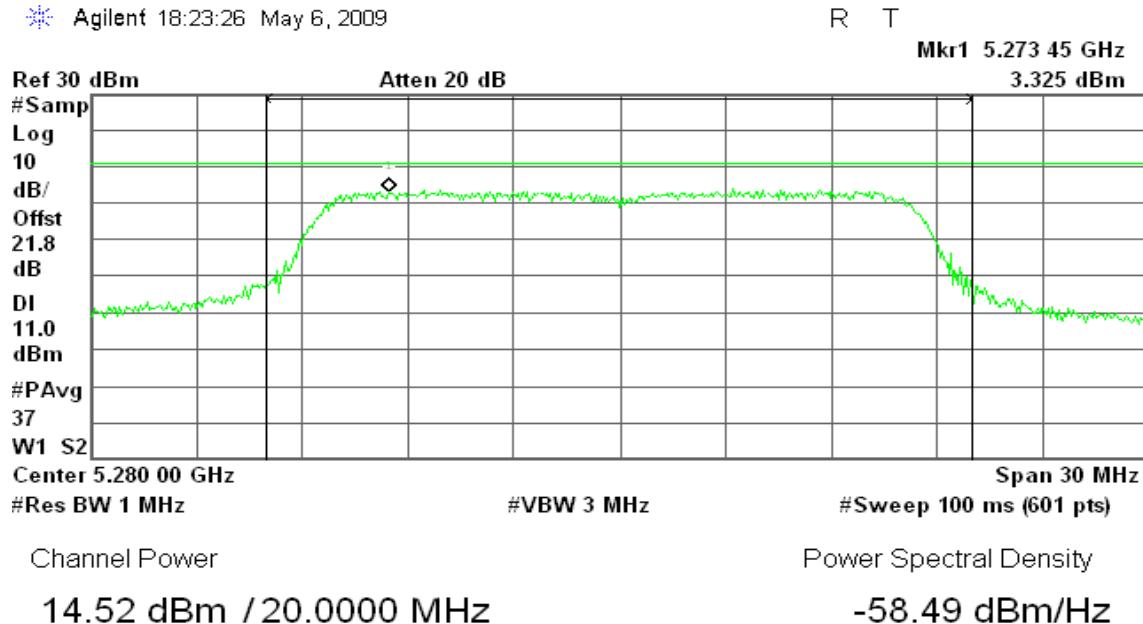
Agilent 20:14:59 May 6, 2009

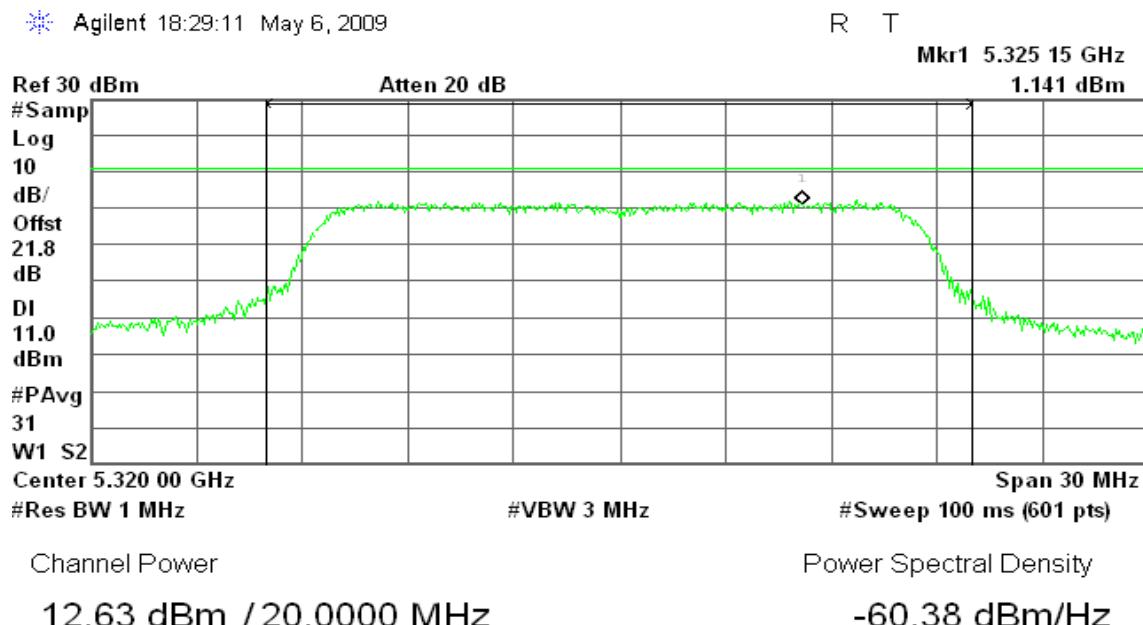
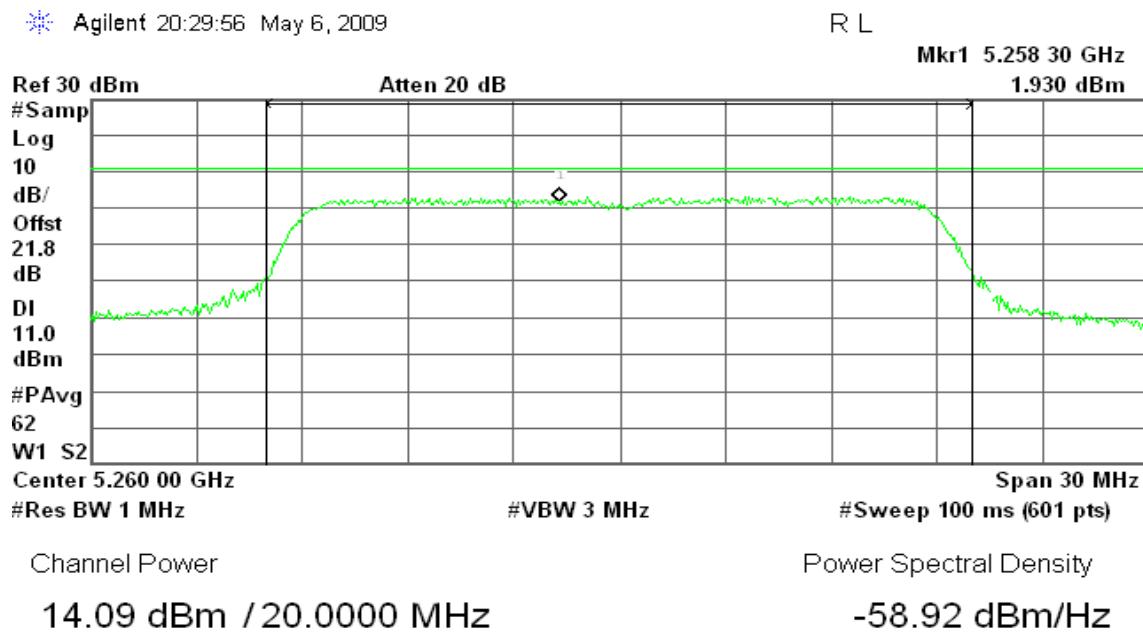
R L

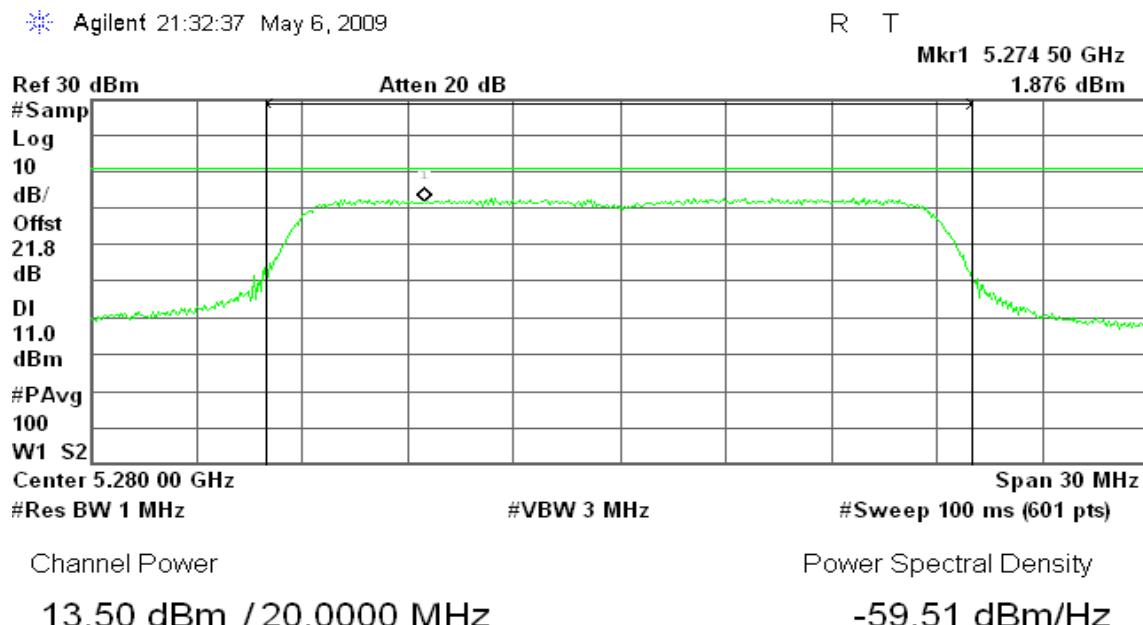
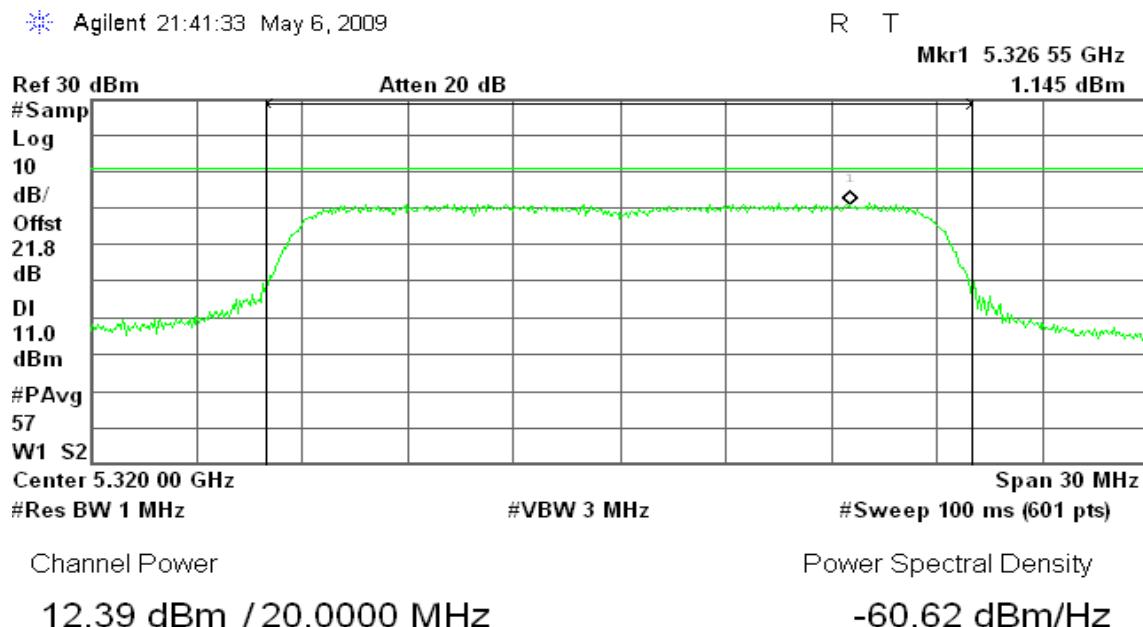


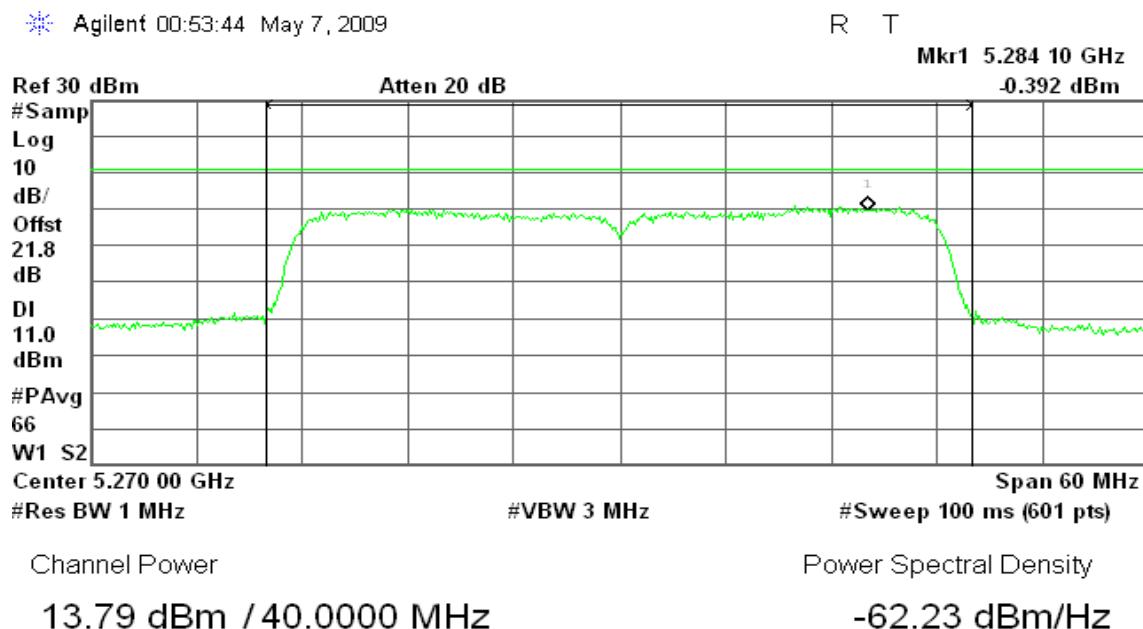
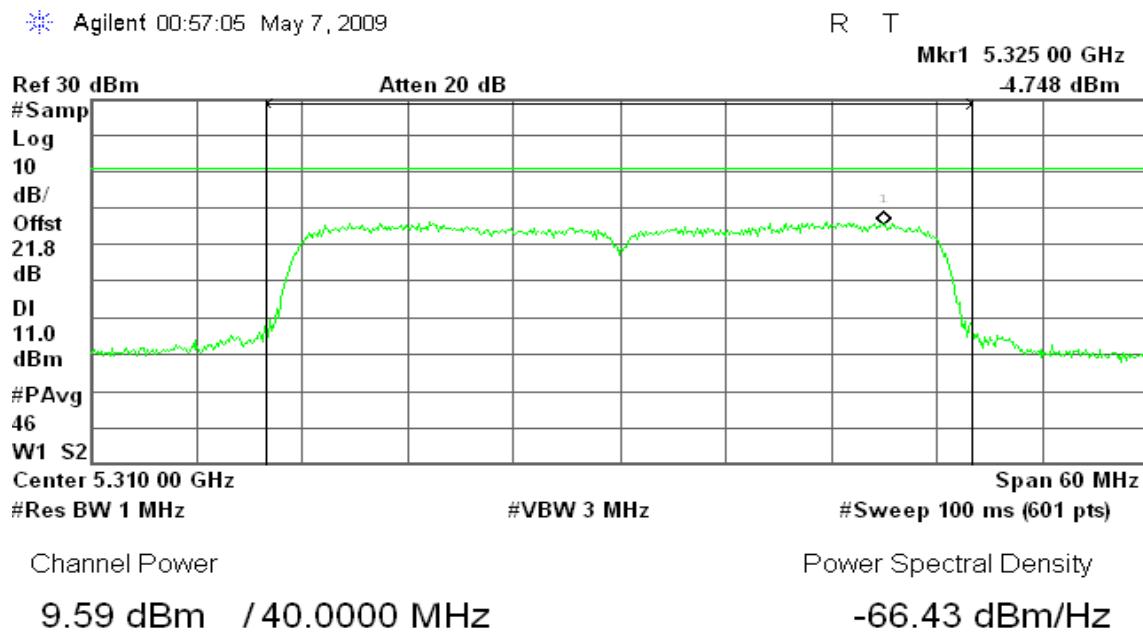
CH Mid**CH High**

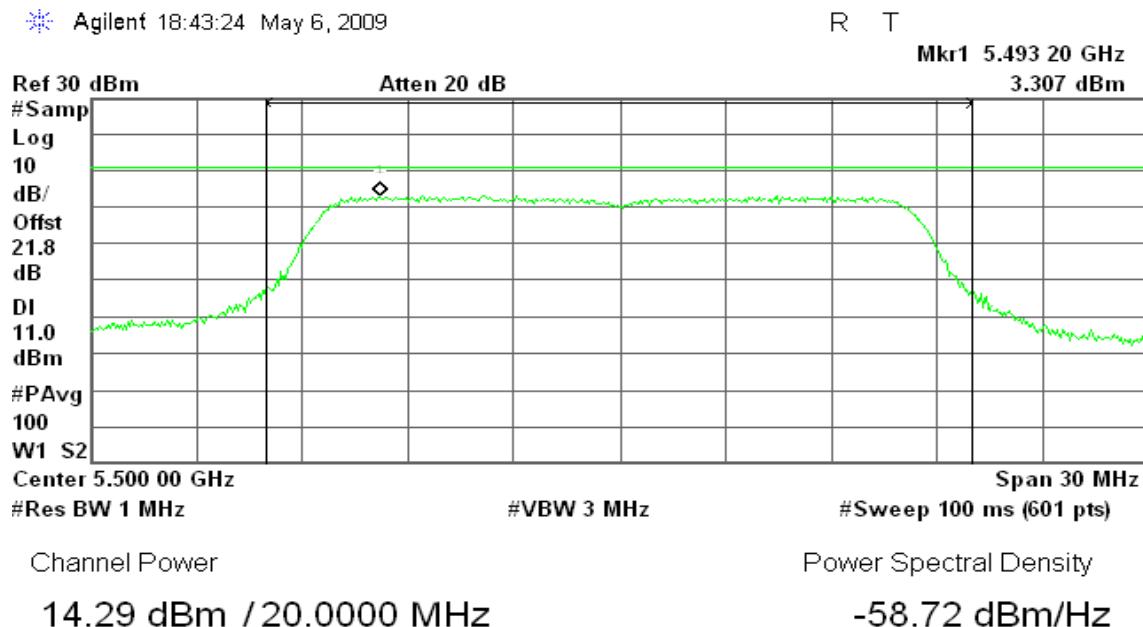
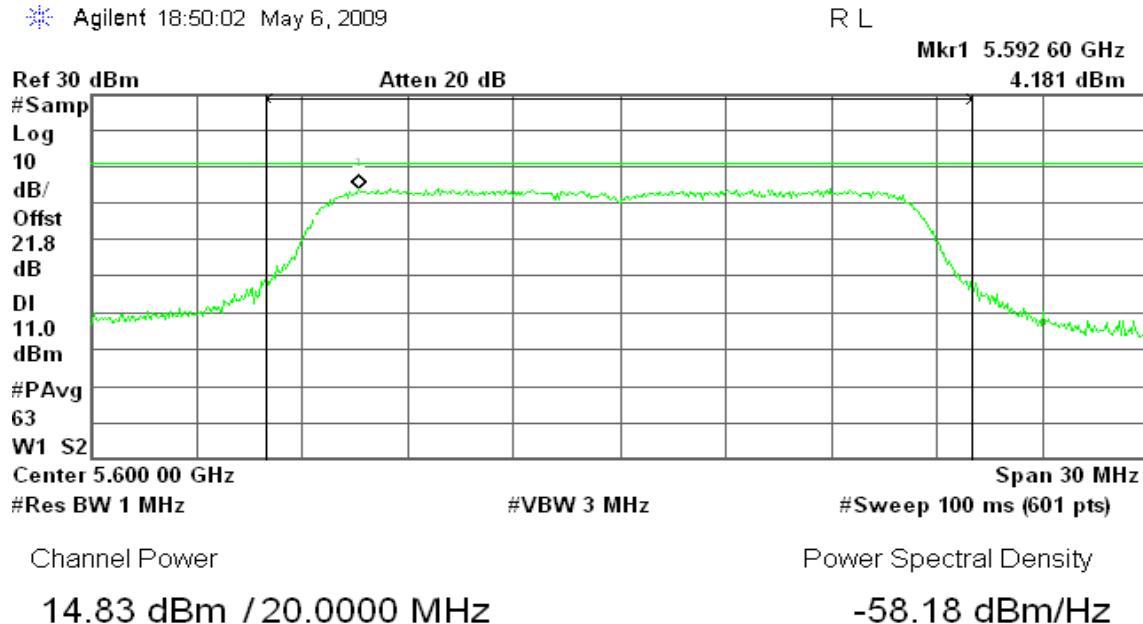
draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz**CH Low****CH High**

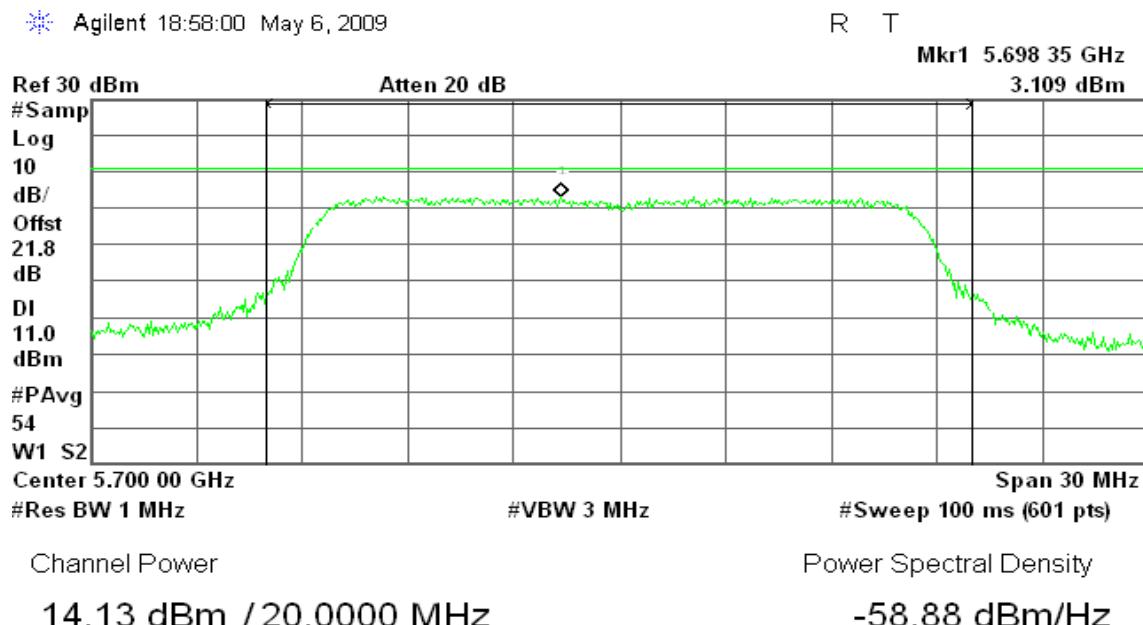
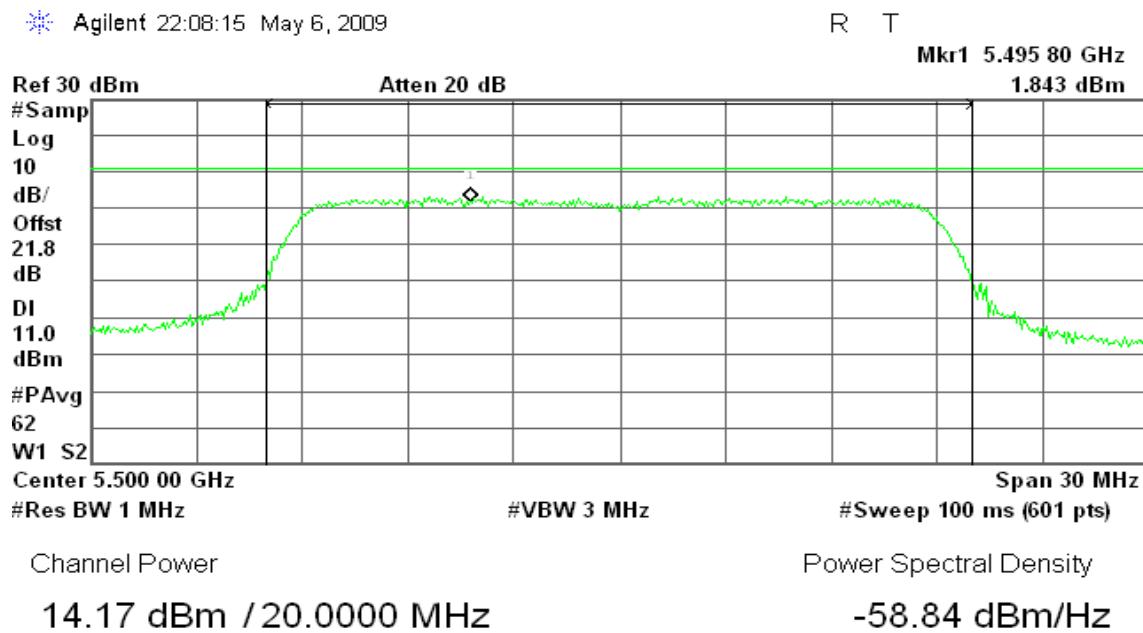
IEEE 802.11a mode / 5260 ~ 5320MHz**CH Low****CH Mid**

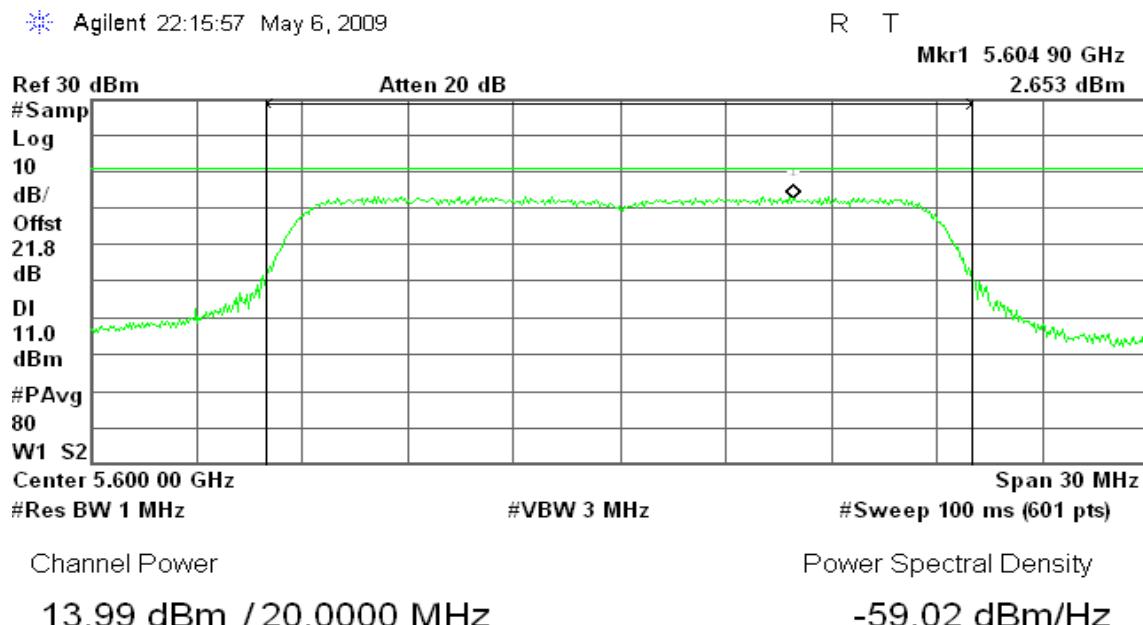
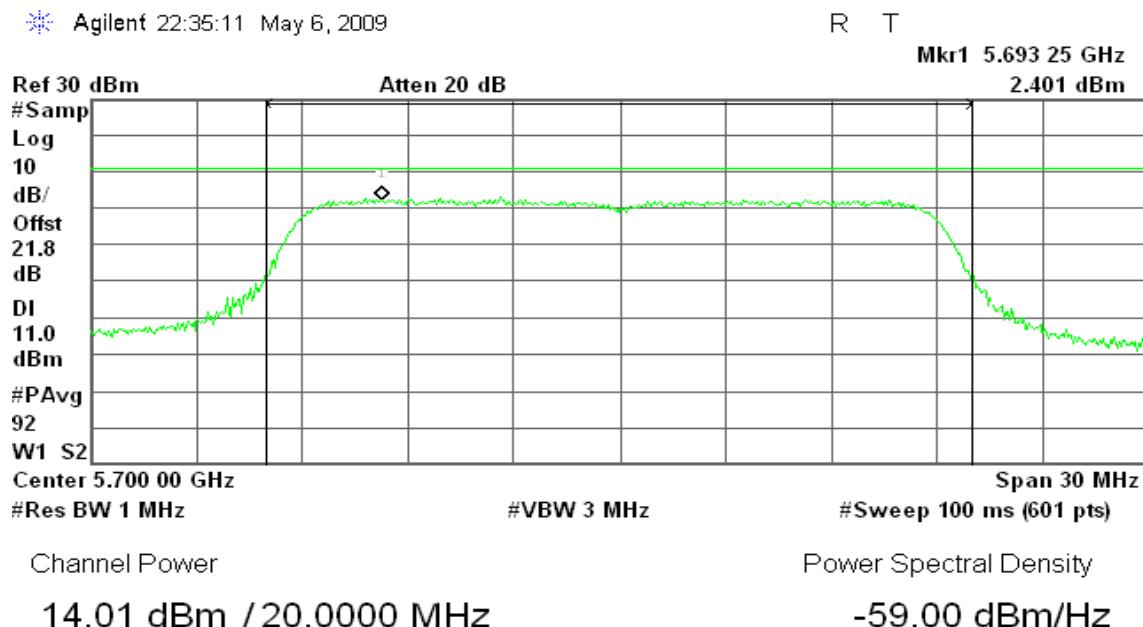
CH High**draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz****CH Low**

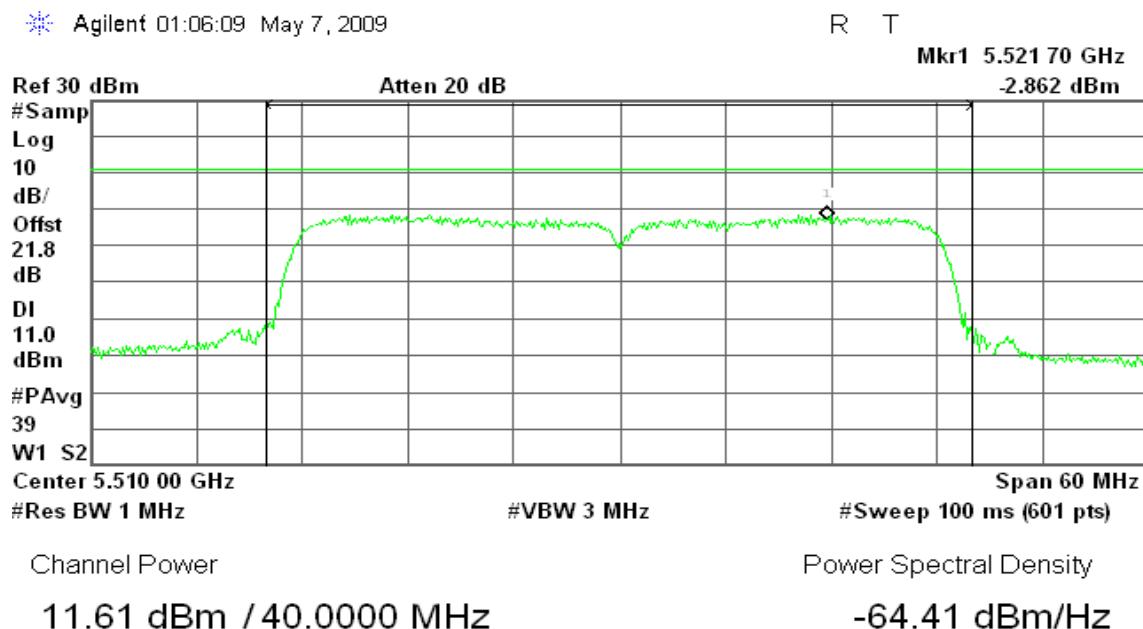
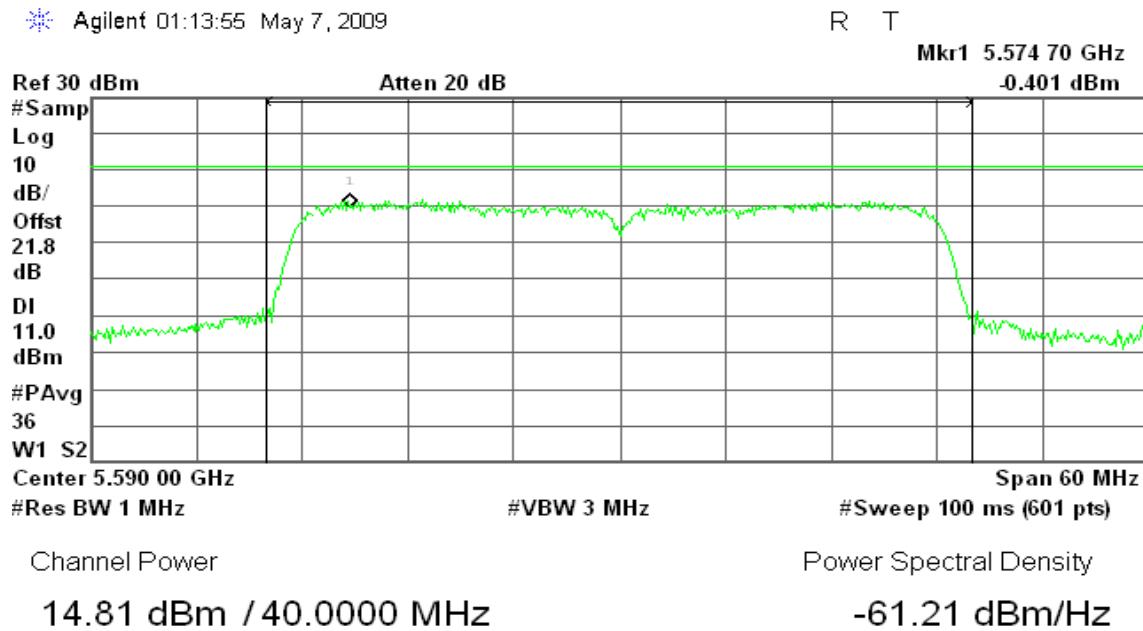
CH Mid**CH High**

draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz**CH Low****CH High**

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz**CH Low****CH Mid**

CH High**draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz****CH Low**

CH Mid**CH High**

draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz**CH Low****CH Mid**

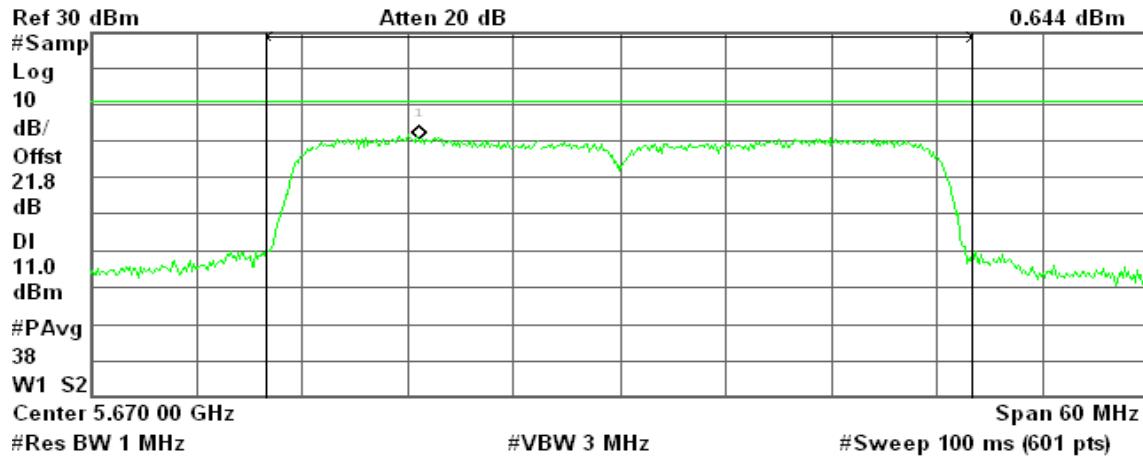
CH High

Agilent 01:20:38 May 7, 2009

R T

Mkr1 5.658 70 GHz

0.644 dBm



Channel Power

14.67 dBm / 40.0000 MHz

Power Spectral Density

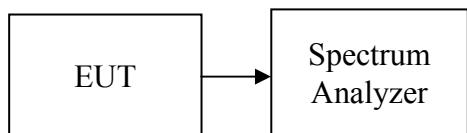
-61.35 dBm/Hz

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 = 8MHz, 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	6.75	13.00	-6.25	PASS
Mid	5220	7.88	13.00	-5.12	PASS
High	5240	10.08	13.00	-2.92	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5180	11.19	13.00	-1.81	PASS
Mid	5220	9.02	13.00	-3.98	PASS
High	5240	7.83	13.00	-5.17	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5190	8.17	13.00	-4.83	PASS
High	5230	9.73	13.00	-3.27	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5260	8.12	13.00	-4.88	PASS
Mid	5280	9.35	13.00	-3.65	PASS
High	5320	9.09	13.00	-3.91	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5260	9.23	13.00	-3.77	PASS
Mid	5280	8.19	13.00	-4.81	PASS
High	5320	8.88	13.00	-4.12	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5270	8.55	13.00	-4.45	PASS
High	5310	8.84	13.00	-4.16	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5500	7.96	13.00	-5.04	PASS
Mid	5600	10.40	13.00	-2.60	PASS
High	5700	9.18	13.00	-3.82	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5500	9.30	13.00	-3.70	PASS
Mid	5600	8.99	13.00	-4.01	PASS
High	5700	8.33	13.00	-4.67	PASS

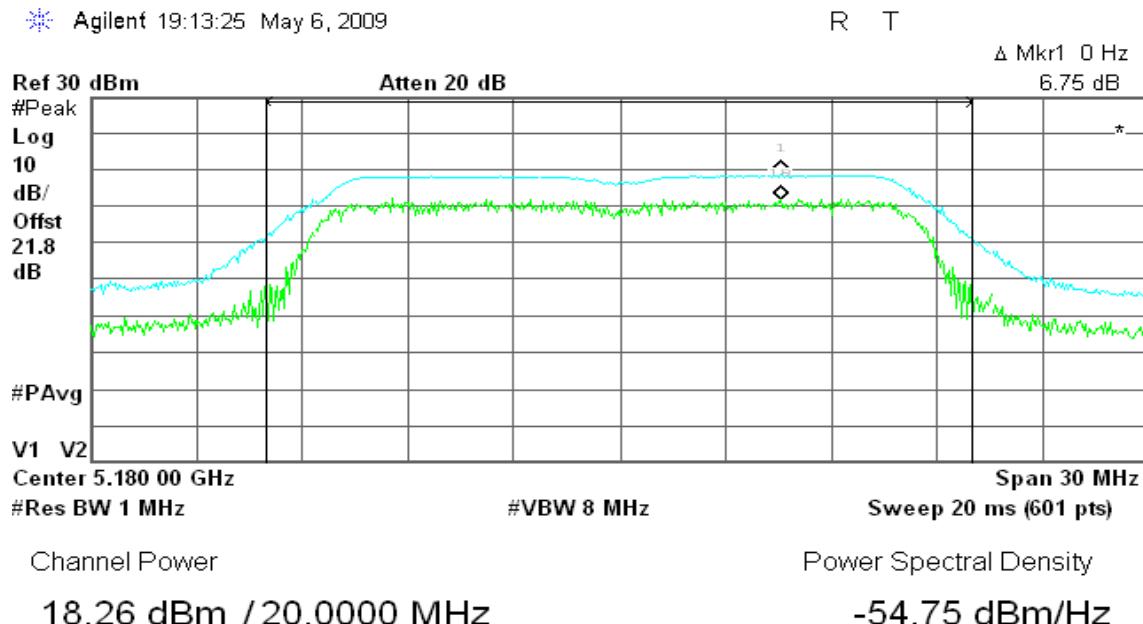
Test mode: draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5510	9.75	13.00	-3.25	PASS
Mid	5590	10.05	13.00	-2.95	PASS
High	5670	10.41	13.00	-2.59	PASS

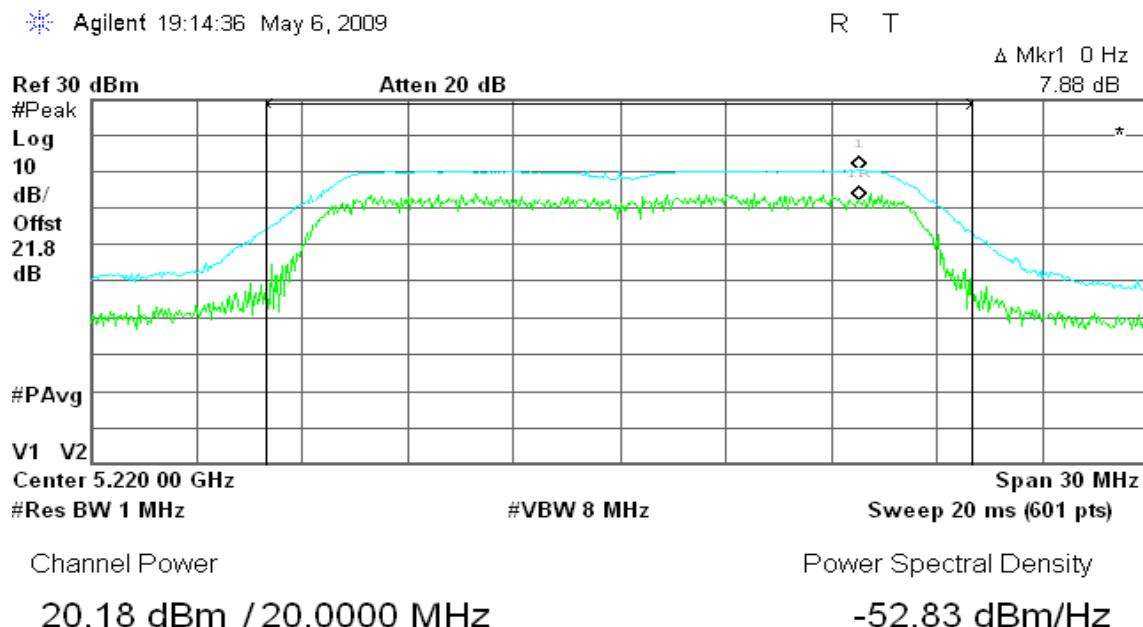
Test Plot

IEEE 802.11a mode / 5180 ~ 5240MHz

CH Low



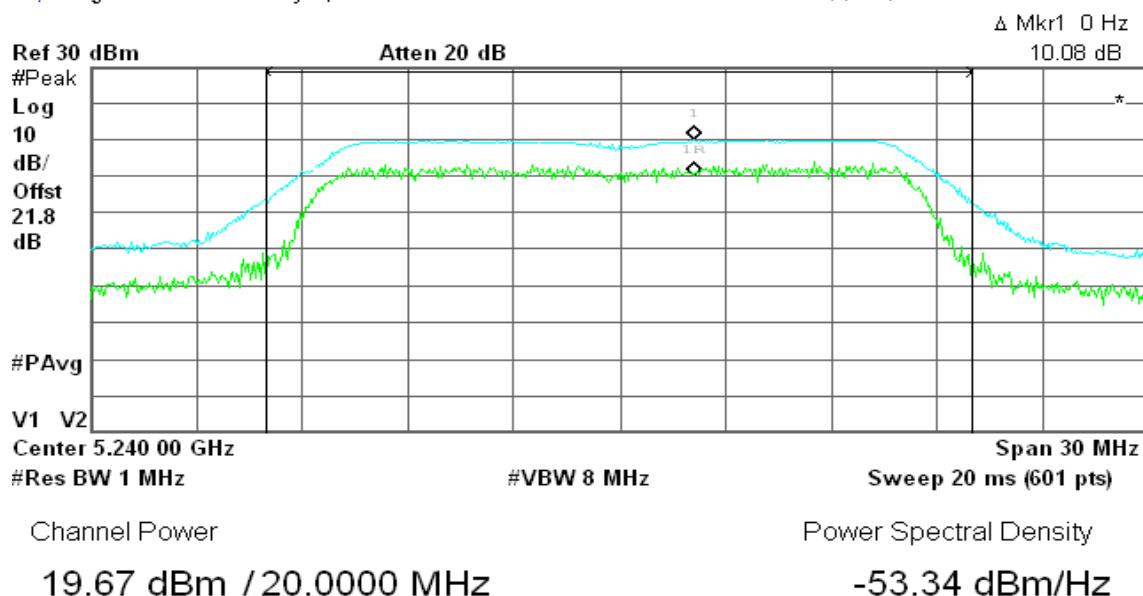
CH Mid



CH High

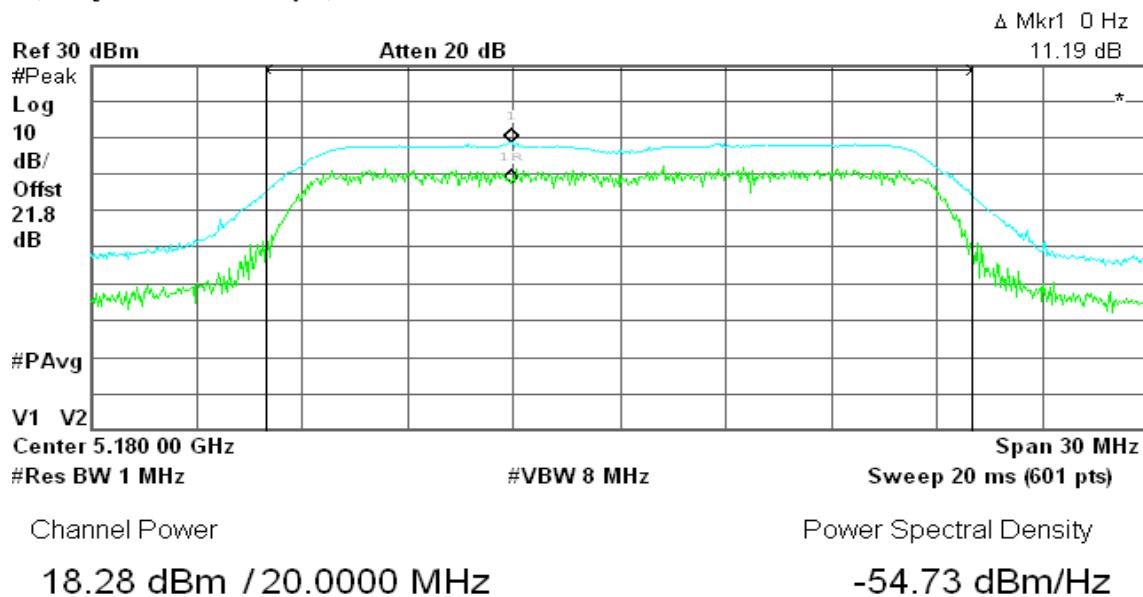
Agilent 19:15:54 May 6, 2009

R T

**draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz****CH Low**

Agilent 23:01:07 May 6, 2009

R T



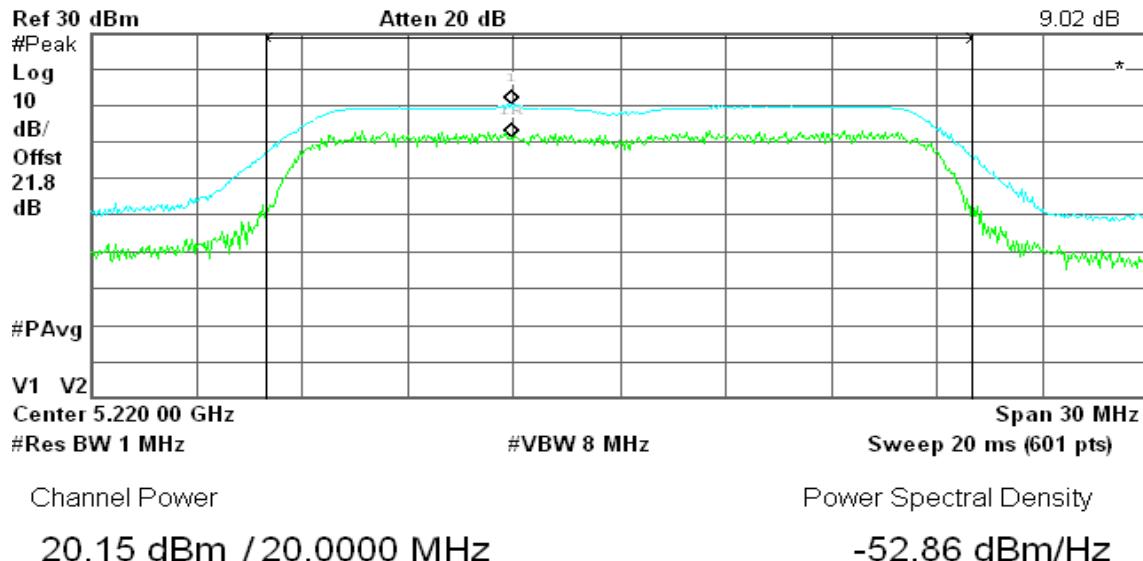
CH Mid

Agilent 23:02:37 May 6, 2009

R T

Δ Mkr1 0 Hz

9.02 dB

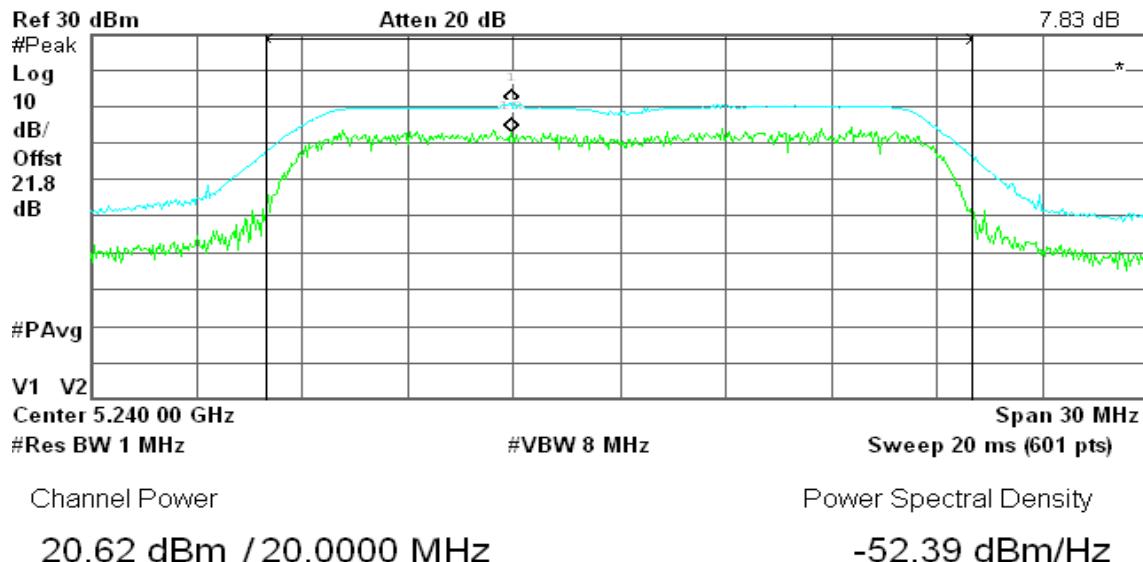
**CH High**

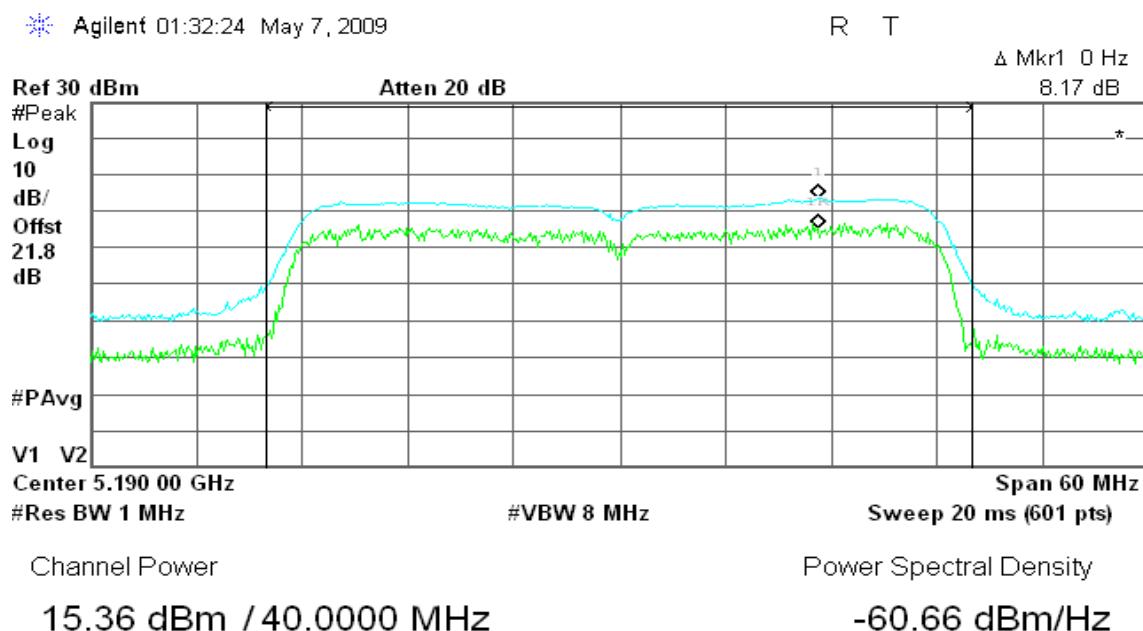
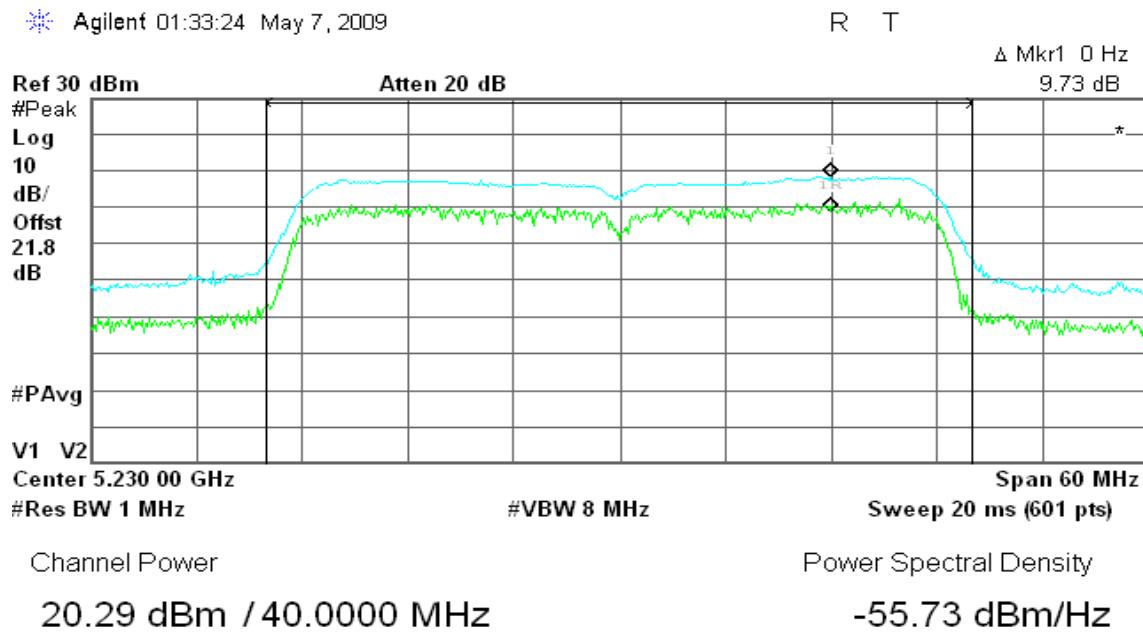
Agilent 23:04:26 May 6, 2009

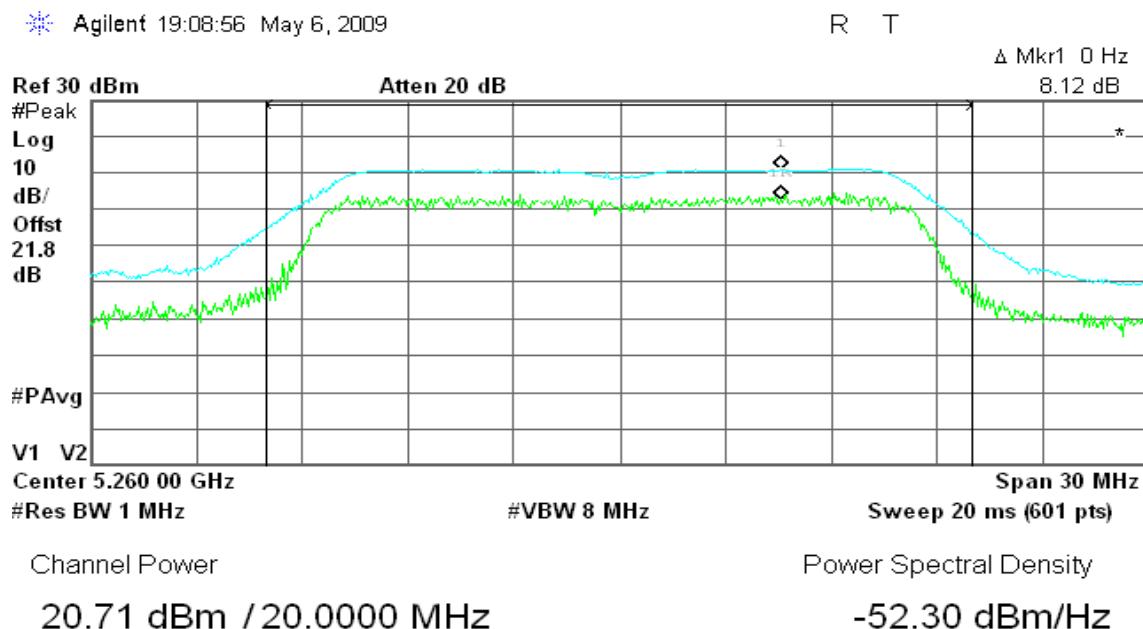
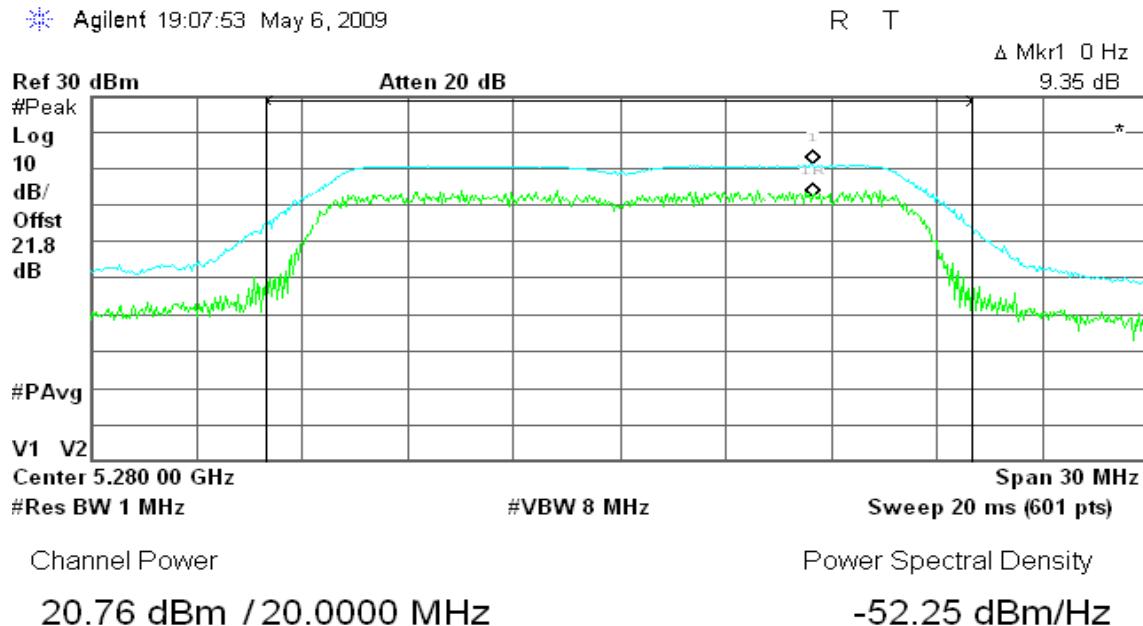
R T

Δ Mkr1 0 Hz

7.83 dB



draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz**CH Low****CH High**

IEEE 802.11a mode / 5260 ~ 5320MHz**CH Low****CH Mid**

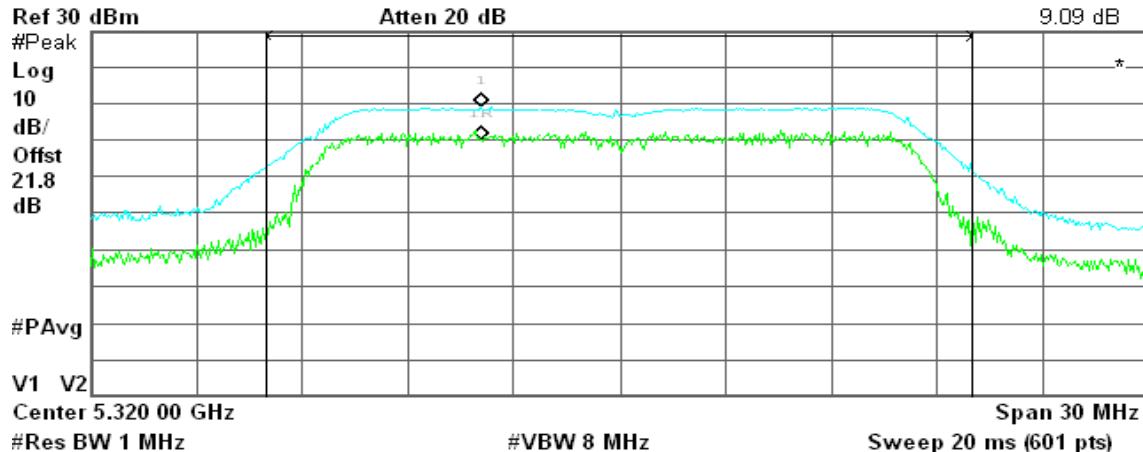
CH High

Agilent 19:06:42 May 6, 2009

R T

Δ Mkr1 0 Hz

9.09 dB



Channel Power

18.72 dBm / 20.0000 MHz

Power Spectral Density

-54.29 dBm/Hz

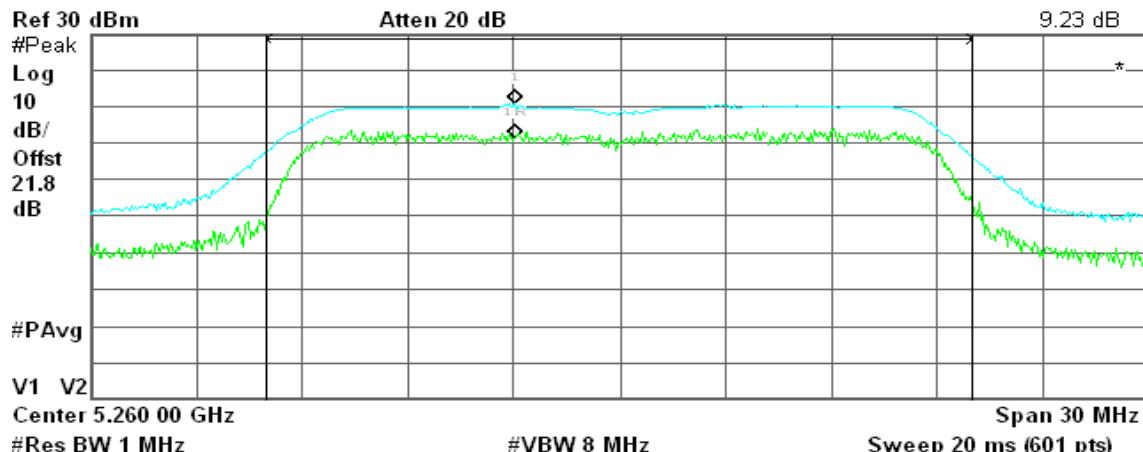
draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz**CH Low**

Agilent 22:49:46 May 6, 2009

R T

Δ Mkr1 0 Hz

9.23 dB

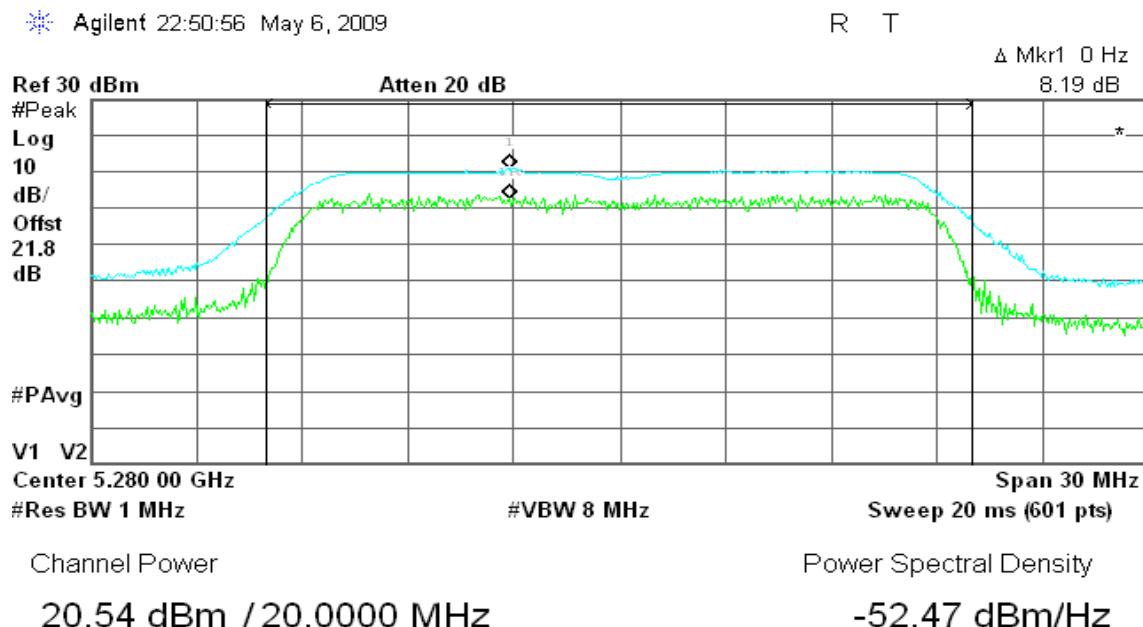
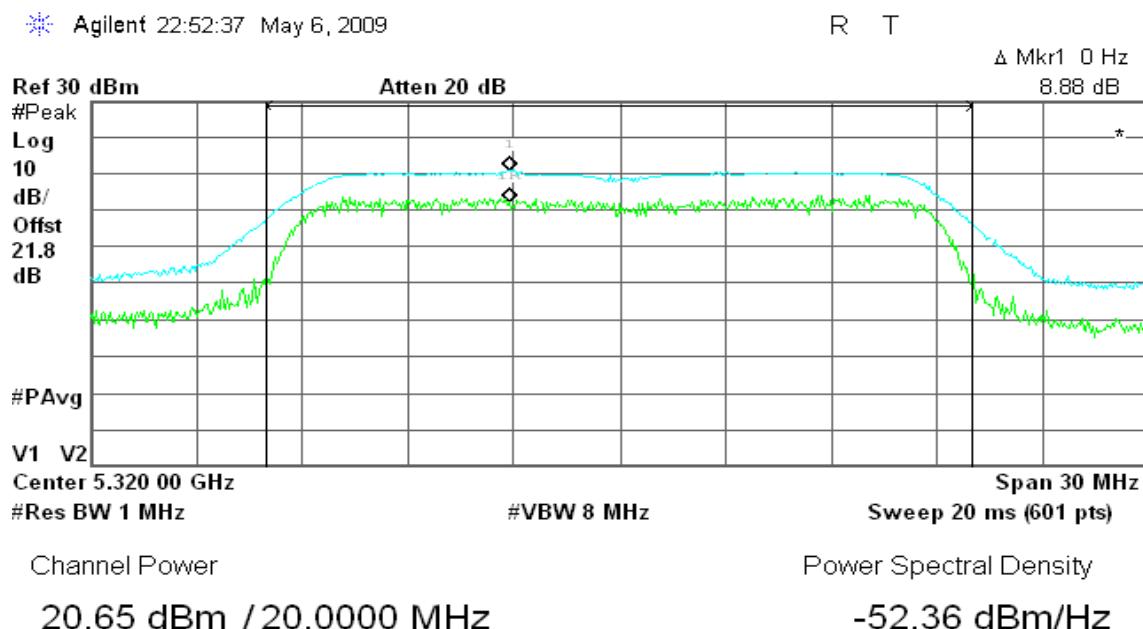


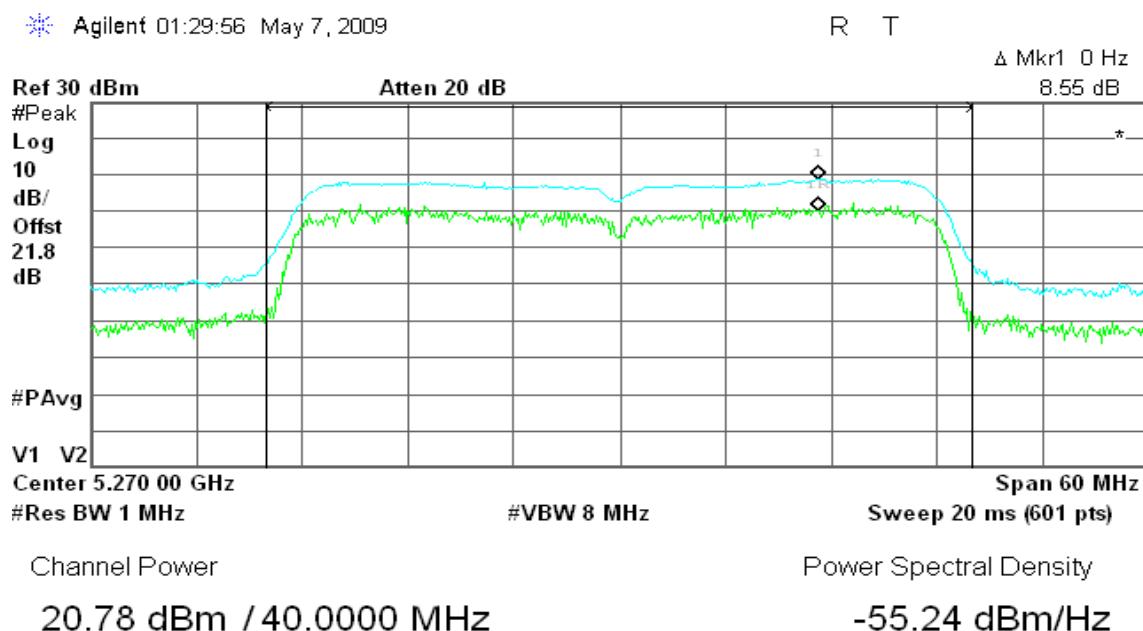
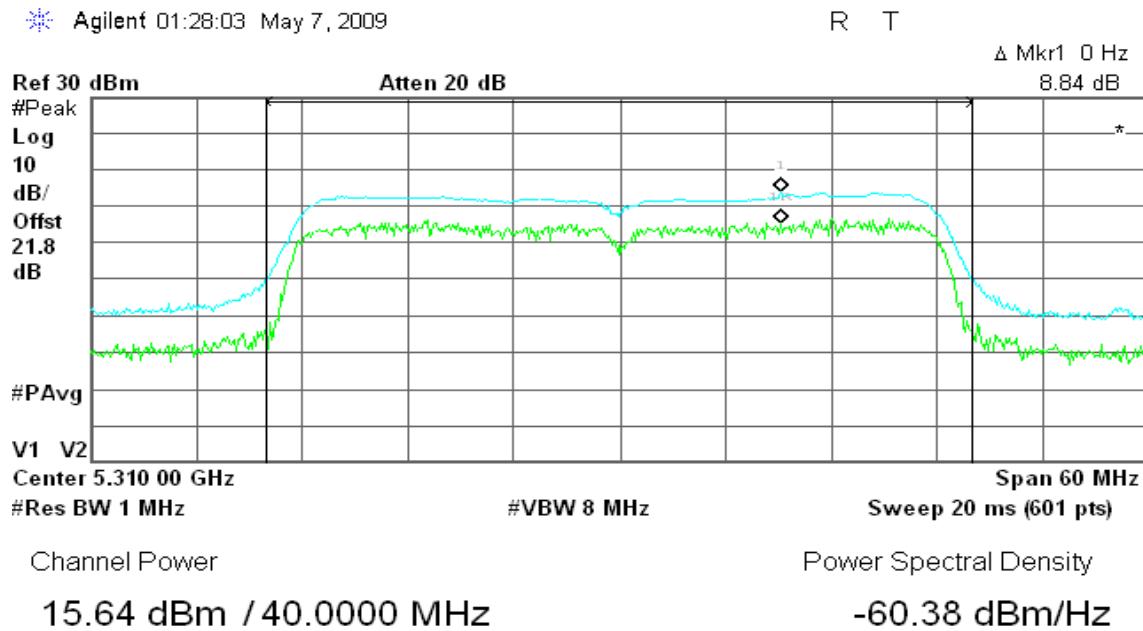
Channel Power

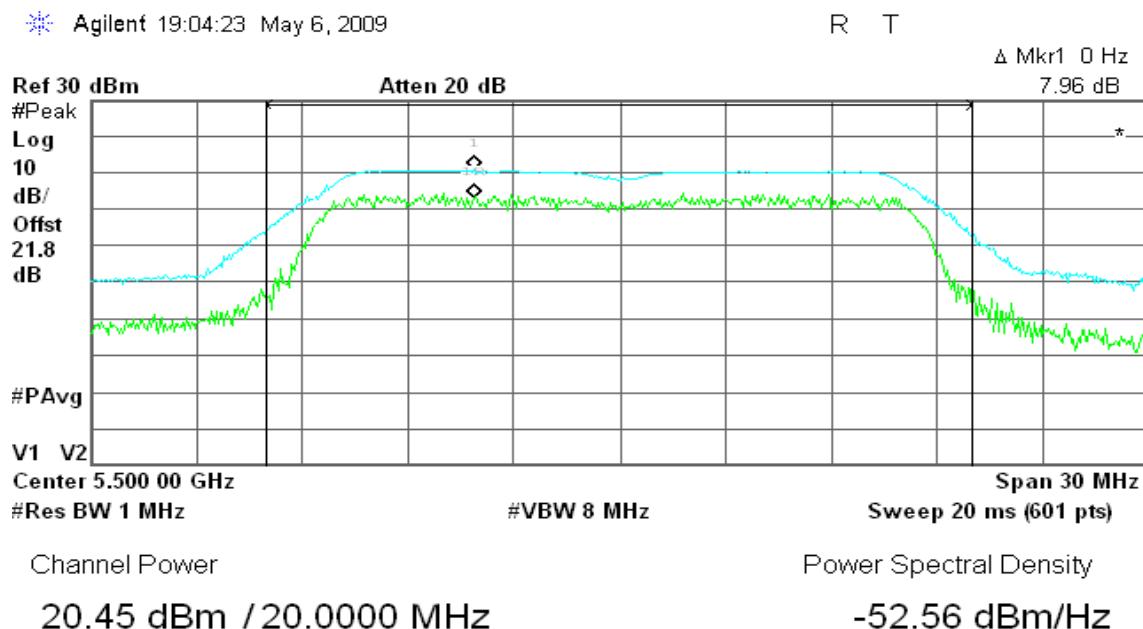
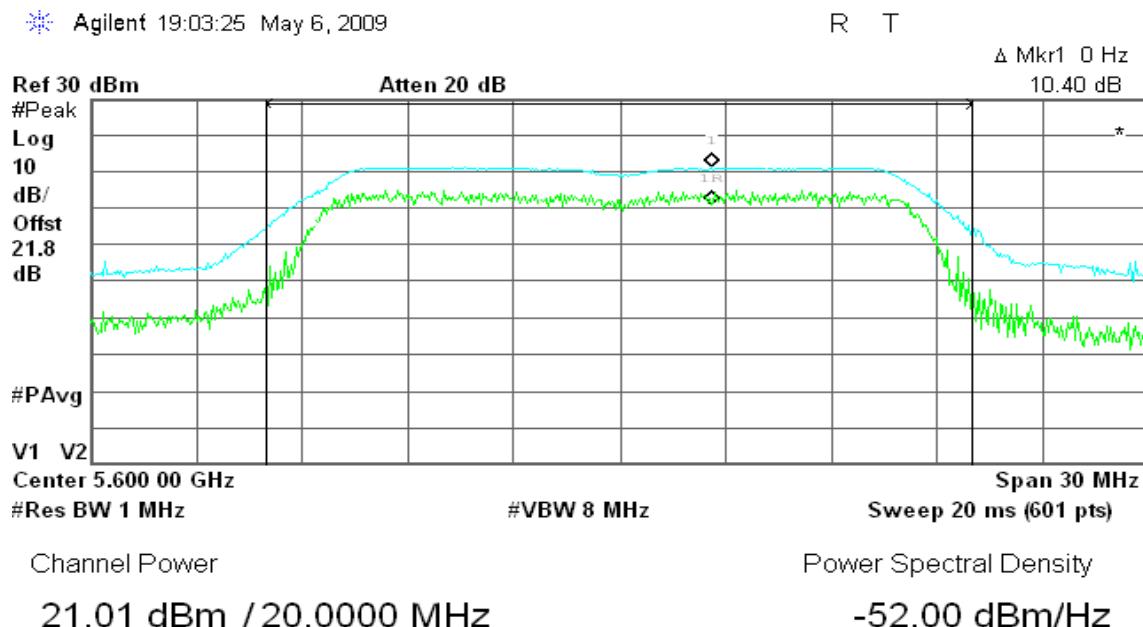
20.59 dBm / 20.0000 MHz

Power Spectral Density

-52.42 dBm/Hz

CH Mid**CH High**

draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz**CH Low****CH High**

Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz**CH Low****CH Mid**

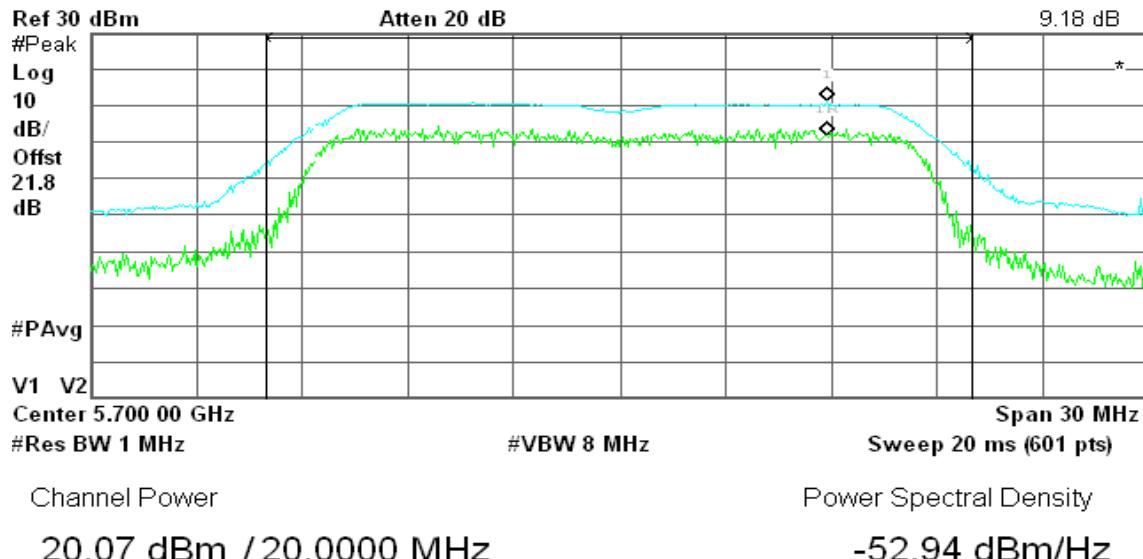
CH High

Agilent 19:01:47 May 6, 2009

R T

Δ Mkr1 0 Hz

9.18 dB

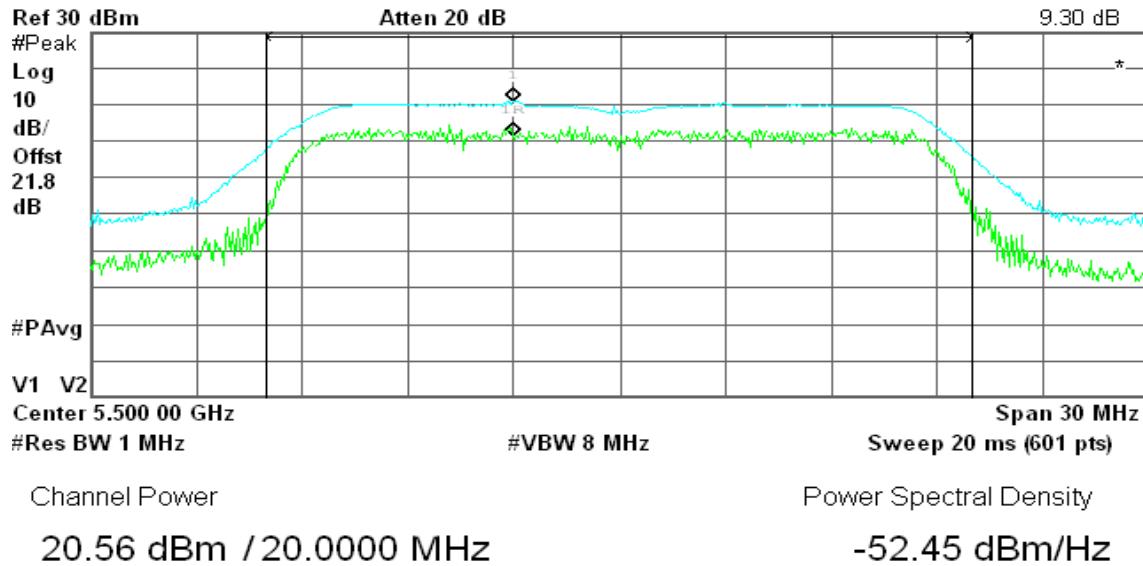
**draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz****CH Low**

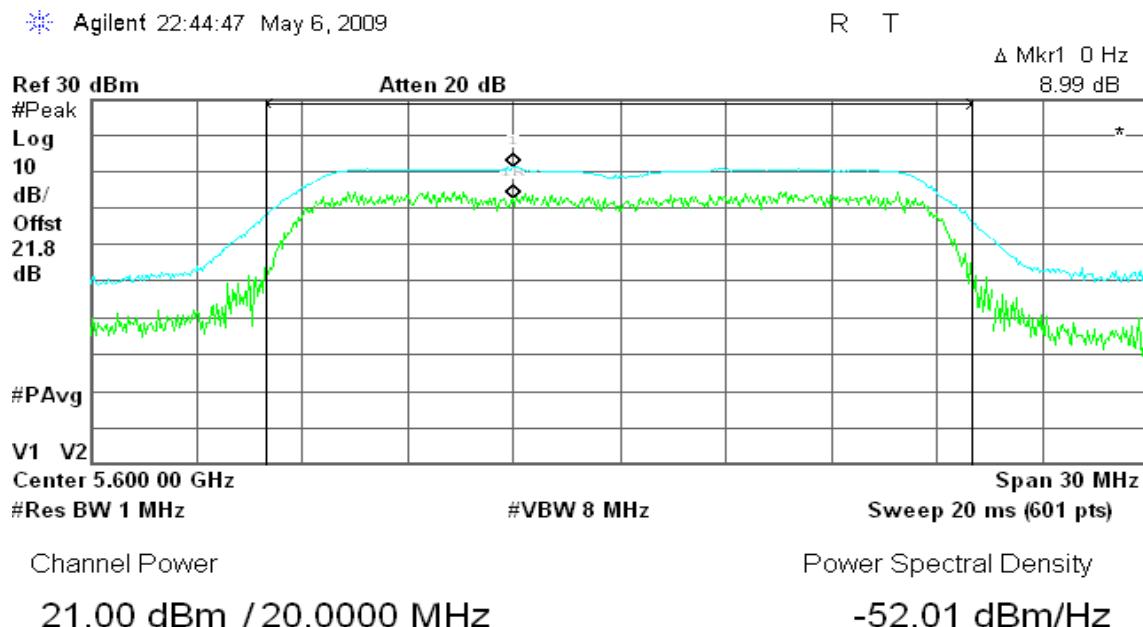
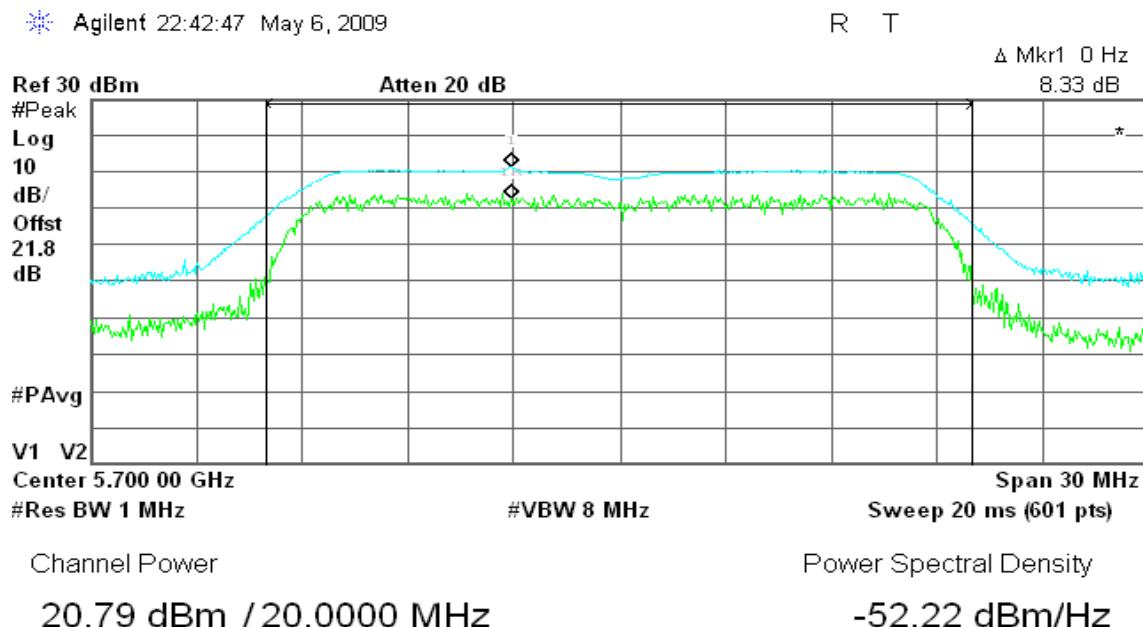
Agilent 22:46:06 May 6, 2009

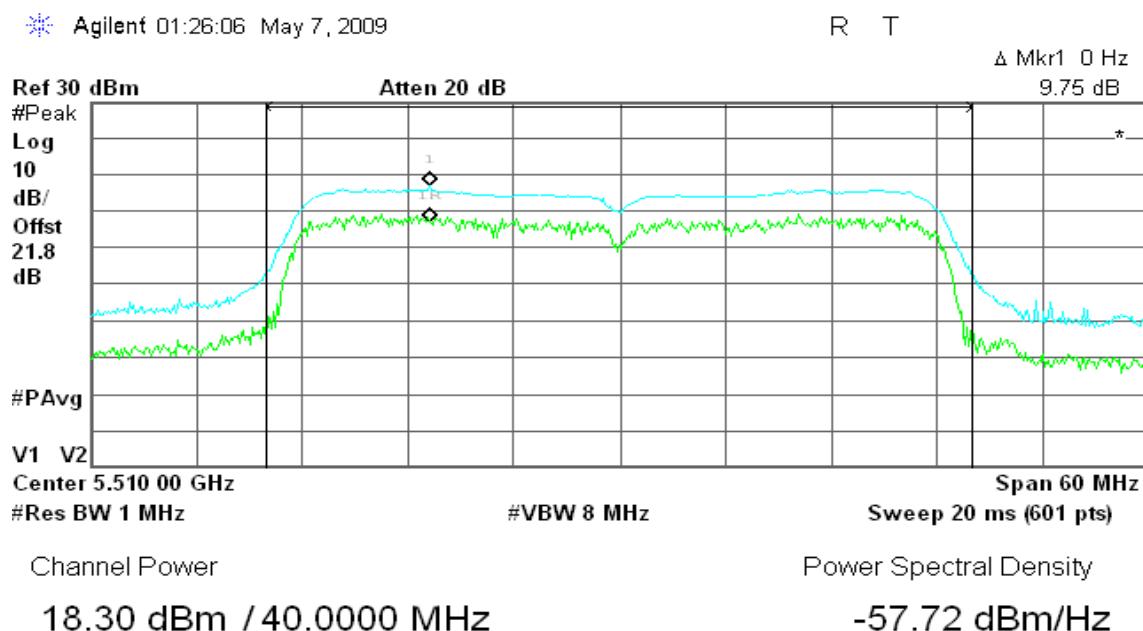
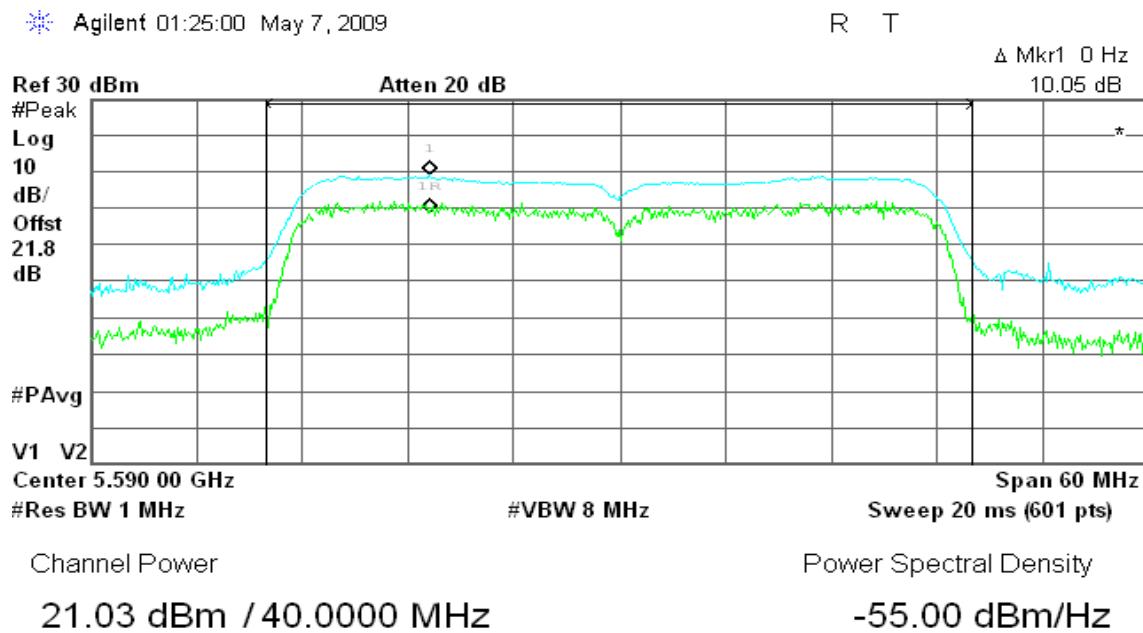
R T

Δ Mkr1 0 Hz

9.30 dB



CH Mid**CH High**

draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz**CH Low****CH Mid**

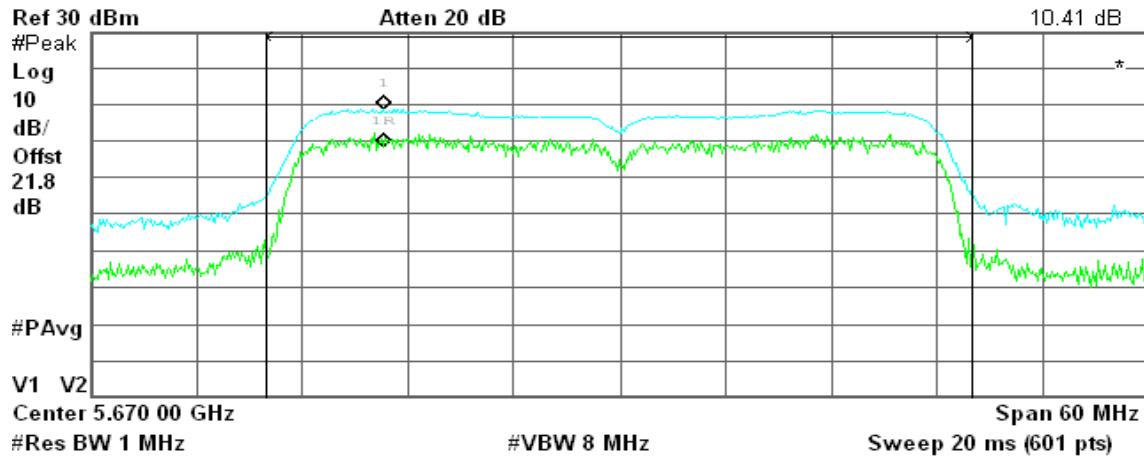
CH High

Agilent 01:23:57 May 7, 2009

R T

Δ Mkr1 0 Hz

10.41 dB



Channel Power

20.84 dBm / 40.0000 MHz

Power Spectral Density

-55.18 dBm/Hz



7.6 RADIATED UNDESIRABLE EMISSION

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

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

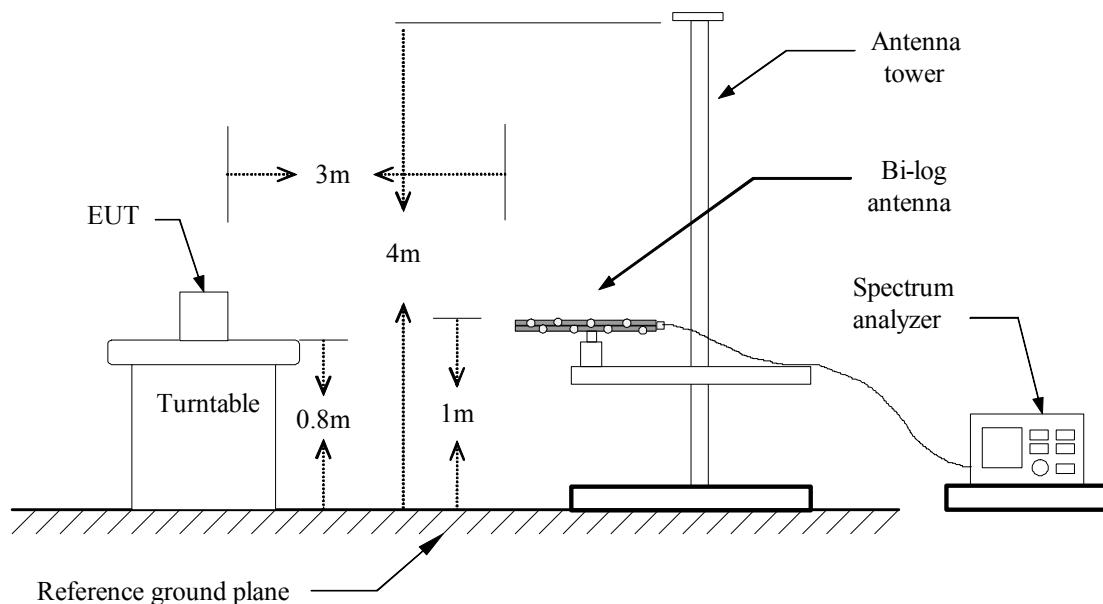
Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of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

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

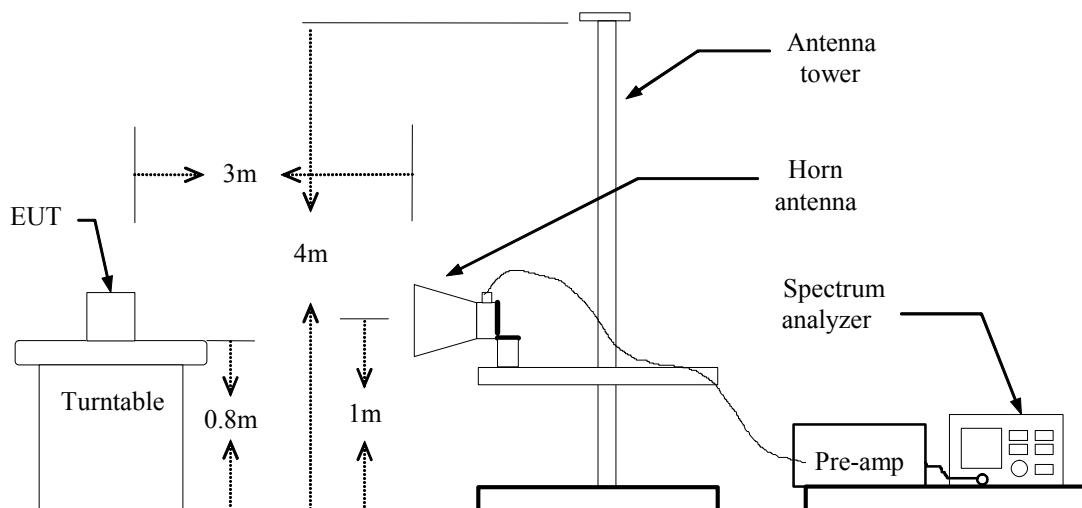
Frequency (MHz)	Field Strength (μ V/m at 3-meter)	Field Strength (dB μ V/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

Below 1 GHz



Above 1 GHz





TEST PROCEDURE

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

Below 1GHz:

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

Above 1GHz:

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

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

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



TEST RESULTS

Below 1 GHz

Operation Mode: Normal Link

Test Date: May 11, 2009

Temperature: 25°C

Tested by: Nan Tsai

Humidity: 50% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
59.10	V	41.90	-14.75	27.15	40.00	-12.85	Peak
165.80	V	39.25	-10.61	28.64	43.50	-14.86	Peak
366.27	V	37.28	-7.26	30.02	46.00	-15.98	Peak
432.55	V	35.79	-5.84	29.96	46.00	-16.04	Peak
629.78	V	40.90	-2.39	38.51	46.00	-7.49	Peak
699.30	V	32.50	-2.03	30.47	46.00	-15.53	Peak
165.80	H	43.20	-10.61	32.58	43.50	-10.92	Peak
233.70	H	45.63	-9.95	35.68	46.00	-10.32	Peak
366.27	H	44.10	-7.26	36.84	46.00	-9.16	Peak
432.55	H	42.02	-5.84	36.18	46.00	-9.82	Peak
629.78	H	36.74	-2.39	34.35	46.00	-11.65	Peak
830.25	H	32.24	0.26	32.50	46.00	-13.50	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 / **Test Date:** April 30, 2009
CH Low

Temperature: 24°C

Tested by: Nan Tsai

Humidity: 47% 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
1066.67	V	55.80	---	-7.84	47.97	---	74.00	54.00	-6.03	Peak
1333.33	V	71.24	45.23	-7.34	63.90	37.89	74.00	54.00	-16.11	AVG
1866.67	V	52.88	---	-3.52	49.35	---	74.00	54.00	-4.65	Peak
2133.33	V	50.11	---	-2.03	48.08	---	74.00	54.00	-5.92	Peak
2653.33	V	52.28	---	-1.12	51.16	---	74.00	54.00	-2.84	Peak
N/A										
1063.33	H	53.56	---	-7.84	45.71	---	74.00	54.00	-8.29	Peak
1326.67	H	60.10	41.23	-7.35	52.75	33.88	74.00	54.00	-20.12	AVG
2130.00	H	52.38	---	-2.03	50.34	---	74.00	54.00	-3.66	Peak
2656.67	H	51.26	---	-1.11	50.15	---	74.00	54.00	-3.85	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 / 5180 ~ 5240MHz / **Test Date:** April 30, 2009
CH Mid

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	55.70	---	-7.84	47.86	---	74.00	54.00	-6.14	Peak
1326.67	V	68.90	41.88	-7.35	61.55	34.53	74.00	54.00	-19.47	AVG
2660.00	V	52.74	---	-1.10	51.64	---	74.00	54.00	-2.36	Peak
N/A										
1063.33	H	53.14	---	-7.84	45.29	---	74.00	54.00	-8.71	Peak
1333.33	H	65.10	42.74	-7.34	57.76	35.40	74.00	54.00	-18.60	AVG
2123.33	H	51.81	---	-2.05	49.76	---	74.00	54.00	-4.24	Peak
2660.00	H	50.88	---	-1.10	49.78	---	74.00	54.00	-4.22	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 / 5180 ~ 5240MHz / CH High **Test Date:** April 30, 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	57.10	---	-7.84	49.25	---	74.00	54.00	-4.75	Peak
1330.00	V	71.24	45.21	-7.35	63.89	37.86	74.00	54.00	-16.14	AVG
1863.33	V	52.40	---	-3.56	48.85	---	74.00	54.00	-5.15	Peak
2490.00	V	50.88	---	-1.44	49.44	---	74.00	54.00	-4.56	Peak
2663.33	V	52.13	---	-1.10	51.03	---	74.00	54.00	-2.97	Peak
N/A										
1063.33	H	53.28	---	-7.84	45.43	---	74.00	54.00	-8.57	Peak
1333.33	H	65.98	41.35	-7.34	58.64	34.01	74.00	54.00	-19.99	AVG
2130.00	H	52.24	---	-2.03	50.20	---	74.00	54.00	-3.80	Peak
2656.67	H	50.44	---	-1.11	49.33	---	74.00	54.00	-4.67	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 / 5180 ~ 5240MHz / CH Low **Test Date:** May 3, 2009
Temperature: 23°C **Tested by:** Nan Tsai
Humidity: 49% 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
1333.33	V	69.14	46.91	-7.34	61.80	39.57	74.00	54.00	-14.43	AVG
2660.00	V	51.04	---	-1.10	49.93	---	74.00	54.00	-4.07	Peak
N/A										
1333.33	H	66.21	43.68	-7.34	58.87	36.34	74.00	54.00	-17.66	AVG
2130.00	H	51.49	---	-2.03	49.46	---	74.00	54.00	-4.54	Peak
2656.67	H	50.10	---	-1.11	48.99	---	74.00	54.00	-5.01	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 / 5180 ~ 5240MHz / CH Mid **Test Date:** May 3, 2009

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

Humidity: 49% 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	55.73	---	-7.84	47.89	---	74.00	54.00	-6.11	Peak
1326.67	V	68.43	46.05	-7.35	61.08	38.70	74.00	54.00	-15.30	AVG
1430.00	V	57.14	---	-7.16	49.98	---	74.00	54.00	-4.02	Peak
2656.67	V	51.63	---	-1.11	50.52	---	74.00	54.00	-3.48	Peak
10433.33	V	46.65	35.45	14.24	60.89	49.69	74.00	54.00	-4.31	AVG
N/A										
1326.67	H	62.39	43.58	-7.35	55.03	36.23	74.00	54.00	-17.77	AVG
2123.33	H	51.76	---	-2.05	49.72	---	74.00	54.00	-4.28	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 / 5180 ~ 5240MHz / CH High **Test Date:** May 4, 2009
Temperature: 23°C **Tested by:** Nan Tsai
Humidity: 49% 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
1066.67	V	55.43	---	-7.84	47.60	---	74.00	54.00	-6.40	Peak
1326.67	V	68.36	46.02	-7.35	61.01	38.67	74.00	54.00	-15.33	AVG
1416.67	V	53.86	---	-7.19	46.67	---	74.00	54.00	-7.33	Peak
1856.67	V	52.36	---	-3.62	48.74	---	74.00	54.00	-5.26	Peak
2653.33	V	51.02	---	-1.12	49.90	---	74.00	54.00	-4.10	Peak
10483.33	V	45.26	35.40	14.57	59.83	49.97	74.00	54.00	-4.03	AVG
1330.00	H	61.11	43.59	-7.35	53.76	36.24	74.00	54.00	-17.76	AVG
2133.33	H	51.78	---	-2.03	49.75	---	74.00	54.00	-4.25	Peak
2656.67	H	49.10	---	-1.11	47.99	---	74.00	54.00	-6.01	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: May 4, 2009

Temperature: 23°C

Tested by: Nan Tsai

Humidity: 49% 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
1330.00	V	69.04	46.18	-7.35	61.70	38.83	74.00	54.00	-15.17	AVG
1860.00	V	51.45	---	-3.59	47.86	---	74.00	54.00	-6.14	Peak
2663.33	V	50.59	---	-1.10	49.50	---	74.00	54.00	-4.50	Peak
10400.00	V	45.20	35.43	14.02	59.21	49.45	74.00	54.00	-4.55	AVG
N/A										
1326.67	H	60.97	43.59	-7.35	53.62	36.24	74.00	54.00	-17.76	AVG
2126.67	H	52.51	---	-2.04	50.47	---	74.00	54.00	-3.53	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 High

Test Date: May 4, 2009

Temperature: 23°C

Tested by: Nan Tsai

Humidity: 49% 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	56.85	---	-7.84	49.00	---	74.00	54.00	-5.00	Peak
1593.33	V	51.55	---	-6.14	45.41	---	74.00	54.00	-8.59	Peak
2126.67	V	49.67	---	-2.04	47.63	---	74.00	54.00	-6.37	Peak
2653.33	V	50.61	---	-1.12	49.49	---	74.00	54.00	-4.51	Peak
10483.33	V	43.92	35.41	14.57	58.49	49.98	74.00	54.00	-4.02	AVG
N/A										
1063.33	H	54.19	---	-7.84	46.35	---	74.00	54.00	-7.65	Peak
1333.33	H	63.60	43.69	-7.34	56.26	36.35	74.00	54.00	-17.65	AVG
2133.33	H	51.42	---	-2.03	49.39	---	74.00	54.00	-4.61	Peak
10483.33	H	44.52	33.79	14.57	59.09	48.36	74.00	54.00	-5.64	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).



Operation Mode: Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH Low **Test Date:** May 4, 2009

Temperature: 25°C **Tested by:** Wolf Huang

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	57.05	---	-7.84	49.21	---	74.00	54.00	-4.79	Peak
1333.33	V	72.45	45.60	-7.34	65.11	38.26	74.00	54.00	-15.74	AVG
2663.33	V	51.92	---	-1.10	50.83	---	74.00	54.00	-3.17	Peak
N/A										
1060.00	H	53.79	---	-7.85	45.94	---	74.00	54.00	-8.06	Peak
1333.33	H	66.43	42.14	-7.34	59.09	34.80	74.00	54.00	-19.20	AVG
2126.67	H	51.91	---	-2.04	49.87	---	74.00	54.00	-4.13	Peak
2660.00	H	51.49	---	-1.10	50.39	---	74.00	54.00	-3.61	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 / **Test Date:** April 30, 2009
CH Mid

Temperature: 25°C

Tested by: Wolf Huang

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	56.60	---	-7.84	48.76	---	74.00	54.00	-5.24	Peak
1333.33	V	70.98	45.21	-7.34	63.64	37.87	74.00	54.00	-16.13	AVG
2660.00	V	52.63	---	-1.10	51.53	---	74.00	54.00	-2.47	Peak
N/A										
1063.33	H	53.02	---	-7.84	45.18	---	74.00	54.00	-8.82	Peak
1333.33	H	64.10	41.70	-7.34	56.76	34.36	74.00	54.00	-19.64	AVG
2130.00	H	52.08	---	-2.03	50.04	---	74.00	54.00	-3.96	Peak
2663.33	H	50.55	---	-1.10	49.45	---	74.00	54.00	-4.55	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 30, 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	55.72	---	-7.85	47.87	---	74.00	54.00	-6.13	Peak
1326.67	V	66.89	42.58	-7.35	59.54	35.23	74.00	54.00	-18.77	AVG
1860.00	V	51.75	---	-3.59	48.16	---	74.00	54.00	-5.84	Peak
2660.00	V	52.76	---	-1.10	51.65	---	74.00	54.00	-2.35	Peak
N/A										
1063.33	H	52.97	---	-7.84	45.13	---	74.00	54.00	-8.87	Peak
1326.67	H	60.21	41.01	-7.35	52.86	33.66	74.00	54.00	-20.34	AVG
2123.33	H	52.24	---	-2.05	50.19	---	74.00	54.00	-3.81	Peak
2660.00	H	50.58	---	-1.10	49.48	---	74.00	54.00	-4.52	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:** May 4, 2009
Temperature: 23°C **Tested by:** Nan Tsai
Humidity: 49% 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
1066.67	V	55.84	---	-7.84	48.01	---	74.00	54.00	-5.99	Peak
1333.33	V	65.40	46.01	-7.34	58.06	38.67	74.00	54.00	-15.33	AVG
2656.67	V	50.97	---	-1.11	49.86	---	74.00	54.00	-4.14	Peak
N/A										
1330.00	H	66.80	43.63	-7.35	59.45	36.28	74.00	54.00	-17.72	AVG
2123.33	H	52.94	---	-2.05	50.90	---	74.00	54.00	-3.10	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:** May 4, 2009
Temperature: 23°C **Tested by:** Nan Tsai
Humidity: 49% 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
1333.33	V	67.75	46.15	-7.34	60.41	38.81	74.00	54.00	-15.19	AVG
2653.33	V	50.63	---	-1.12	49.51	---	74.00	54.00	-4.49	Peak
N/A										
1063.33	H	55.99	---	-7.84	48.14	---	74.00	54.00	-5.86	Peak
1330.00	H	63.81	43.57	-7.35	56.46	36.22	74.00	54.00	-17.78	AVG
2133.33	H	50.78	---	-2.03	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).



Operation Mode: Tx / draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / CH High

Test Date: May 4, 2009

Temperature: 23°C

Tested by: Nan Tsai

Humidity: 49% 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	61.97	42.08	-7.84	54.13	34.24	74.00	54.00	-19.76	AVG
1333.33	V	68.36	46.18	-7.34	61.02	38.84	74.00	54.00	-15.16	AVG
1763.33	V	52.10	---	-4.51	47.59	---	74.00	54.00	-6.41	Peak
2663.33	V	50.97	---	-1.10	49.87	---	74.00	54.00	-4.13	Peak
N/A										
1326.67	H	61.21	43.60	-7.35	53.86	36.25	74.00	54.00	-17.75	AVG
2123.33	H	51.92	---	-2.05	49.88	---	74.00	54.00	-4.12	Peak
2656.67	H	50.62	---	-1.11	49.51	---	74.00	54.00	-4.49	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
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: May 4, 2009

Temperature: 23°C

Tested by: Nan Tsai

Humidity: 49% 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	55.45	---	-7.84	47.61	---	74.00	54.00	-6.39	Peak
1330.00	V	68.42	46.33	-7.35	61.07	38.98	74.00	54.00	-15.02	AVG
1860.00	V	52.79	---	-3.59	49.20	---	74.00	54.00	-4.80	Peak
2653.33	V	51.38	---	-1.12	50.26	---	74.00	54.00	-3.74	Peak
N/A										
1326.67	H	63.79	43.39	-7.35	56.44	36.04	74.00	54.00	-17.96	AVG
2130.00	H	51.12	---	-2.03	49.09	---	74.00	54.00	-4.91	Peak
2660.00	H	49.82	---	-1.10	48.72	---	74.00	54.00	-5.28	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 High

Test Date: May 4, 2009

Temperature: 23°C

Tested by: Nan Tsai

Humidity: 49% 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	55.85	---	-7.84	48.01	---	74.00	54.00	-5.99	Peak
1326.67	V	66.47	46.22	-7.35	59.12	38.87	74.00	54.00	-15.13	AVG
2653.33	V	51.41	---	-1.12	50.30	---	74.00	54.00	-3.70	Peak
N/A										
1330.00	H	62.64	43.59	-7.35	55.29	36.24	74.00	54.00	-17.76	AVG
2133.33	H	52.43	---	-2.03	50.41	---	74.00	54.00	-3.59	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 / 5500 ~ 5700MHz / CH Low **Test Date:** April 30, 2009
Temperature: 28°C **Tested by:** Wolf Huang
Humidity: 48% 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	56.71	---	-7.84	48.86	---	74.00	54.00	-5.14	Peak
1330.00	V	70.21	46.20	-7.35	62.86	38.85	74.00	54.00	-15.15	AVG
2130.00	V	50.66	---	-2.03	48.63	---	74.00	54.00	-5.37	Peak
2663.33	v	53.16	---	-1.10	52.06	---	74.00	54.00	-1.94	Peak
N/A										
1063.33	H	53.20	---	-7.84	45.36	---	74.00	54.00	-8.64	Peak
1333.33	H	63.23	42.36	-7.34	55.89	35.02	74.00	54.00	-18.98	AVG
2123.33	H	52.05	---	-2.05	50.01	---	74.00	54.00	-3.99	Peak
2653.33	H	49.82	---	-1.12	48.70	---	74.00	54.00	-5.30	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 30, 2009

Temperature: 28°C

Tested by: Wolf Huang

Humidity: 48% 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	58.38	---	-7.84	50.54	---	74.00	54.00	-3.46	Peak
1333.33	V	71.68	46.73	-7.34	64.34	39.39	74.00	54.00	-14.61	AVG
2130.00	V	50.03	---	-2.03	47.99	---	74.00	54.00	-6.01	Peak
2660.00	V	52.32	---	-1.10	51.22	---	74.00	54.00	-2.78	Peak
N/A										
1063.33	H	53.18	---	-7.84	45.34	---	74.00	54.00	-8.66	Peak
1330.00	H	62.30	42.14	-7.35	54.95	34.79	74.00	54.00	-19.21	AVG
2133.33	H	52.33	---	-2.03	50.30	---	74.00	54.00	-3.70	Peak
2660.00	H	50.61	---	-1.10	49.51	---	74.00	54.00	-4.49	Peak
N/A										

Remark:

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



Operation Mode: Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH High **Test Date:** April 30, 2009
Temperature: 28°C **Tested by:** Wolf Huang
Humidity: 48% 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
1066.67	V	56.12	---	-7.84	48.29	---	74.00	54.00	-5.71	Peak
1326.67	V	69.20	43.87	-7.35	61.85	36.52	74.00	54.00	-17.48	AVG
2123.33	V	50.96	---	-2.05	48.92	---	74.00	54.00	-5.08	Peak
2653.33	V	51.89	---	-1.12	50.78	---	74.00	54.00	-3.22	Peak
N/A										
1063.33	H	54.43	---	-7.84	46.59	---	74.00	54.00	-7.41	Peak
1330.00	H	61.36	43.65	-7.35	54.01	36.30	74.00	54.00	-17.70	AVG
2126.67	H	51.92	---	-2.04	49.88	---	74.00	54.00	-4.12	Peak
2660.00	H	50.60	---	-1.10	49.50	---	74.00	54.00	-4.50	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:** May 4, 2009
Temperature: 24°C **Tested by:** Nan Tsai
Humidity: 47% 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
1330.00	V	65.11	46.20	-7.35	57.76	38.85	74.00	54.00	-15.15	AVG
2660.00	V	50.67	---	-1.10	49.56	---	74.00	54.00	-4.44	Peak
N/A										
1330.00	H	59.32	---	-7.35	51.97	---	74.00	54.00	-2.03	Peak
2126.67	H	52.18	---	-2.04	50.14	---	74.00	54.00	-3.86	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:** May 4, 2009
Temperature: 23°C **Tested by:** Nan Tsai
Humidity: 49% 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	56.29	---	-7.84	48.45	---	74.00	54.00	-5.55	Peak
1330.00	V	66.11	46.02	-7.35	58.76	38.67	74.00	54.00	-15.33	AVG
2663.33	V	50.20	---	-1.10	49.11	---	74.00	54.00	-4.89	Peak
N/A										
1330.00	H	60.56	43.58	-7.35	53.22	36.23	74.00	54.00	-17.77	AVG
2126.67	H	50.83	---	-2.04	48.79	---	74.00	54.00	-5.21	Peak
2656.67	H	50.26	---	-1.11	49.15	---	74.00	54.00	-4.85	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:** May 4, 2009
Temperature: 23°C **Tested by:** Nan Tsai
Humidity: 49% 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	55.30	---	-7.84	47.45	---	74.00	54.00	-6.55	Peak
1330.00	V	68.15	46.11	-7.35	60.80	38.76	74.00	54.00	-15.24	AVG
2123.33	V	49.46	---	-2.05	47.42	---	74.00	54.00	-6.58	Peak
2663.33	V	50.04	---	-1.10	48.94	---	74.00	54.00	-5.06	Peak
N/A										
1333.33	H	63.11	43.43	-7.34	55.77	36.09	74.00	54.00	-17.91	AVG
2123.33	H	51.39	---	-2.05	49.34	---	74.00	54.00	-4.66	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: May 4, 2009

Temperature: 23°C

Tested by: Nan Tsai

Humidity: 49% 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
1066.67	V	55.42	---	-7.84	47.58	---	74.00	54.00	-6.42	Peak
1326.67	V	64.96	46.11	-7.35	57.61	38.76	74.00	54.00	-15.24	AVG
2653.33	V	50.84	---	-1.12	49.73	---	74.00	54.00	-4.27	Peak
N/A										
1326.67	H	61.94	43.21	-7.35	54.58	35.86	74.00	54.00	-18.14	AVG
2130.00	H	52.40	---	-2.03	50.36	---	74.00	54.00	-3.64	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: May 4, 2009

Temperature: 23°C

Tested by: Nan Tsai

Humidity: 49% 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
1330.00	V	65.64	46.13	-7.35	58.30	38.78	74.00	54.00	-15.22	AVG
1866.67	V	54.10	---	-3.52	50.57	---	74.00	54.00	-3.43	Peak
2656.67	V	51.01	---	-1.11	49.90	---	74.00	54.00	-4.10	Peak
11200.00	V	46.42	35.44	14.20	60.62	49.64	74.00	54.00	-4.36	AVG
N/A										
1326.67	H	61.76	43.29	-7.35	54.40	35.94	74.00	54.00	-18.06	AVG
2123.33	H	52.25	---	-2.05	50.20	---	74.00	54.00	-3.80	Peak
2653.33	H	50.67	---	-1.12	49.55	---	74.00	54.00	-4.45	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: May 4, 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
1330.00	V	67.86	46.12	-7.35	60.51	38.77	74.00	54.00	-15.23	AVG
2653.33	V	50.71	---	-1.12	49.59	---	74.00	54.00	-4.41	Peak
11366.67	V	46.66	35.21	14.12	60.78	49.33	74.00	54.00	-4.67	AVG
N/A										
1063.33	H	53.72	---	-7.84	45.88	---	74.00	54.00	-8.12	Peak
1333.33	H	63.05	43.59	-7.34	55.71	36.25	74.00	54.00	-17.75	AVG
2123.33	H	51.95	---	-2.05	49.90	---	74.00	54.00	-4.10	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

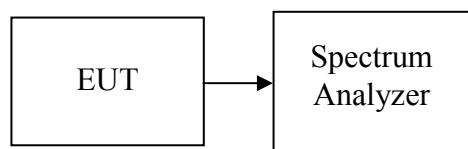
LIMIT

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

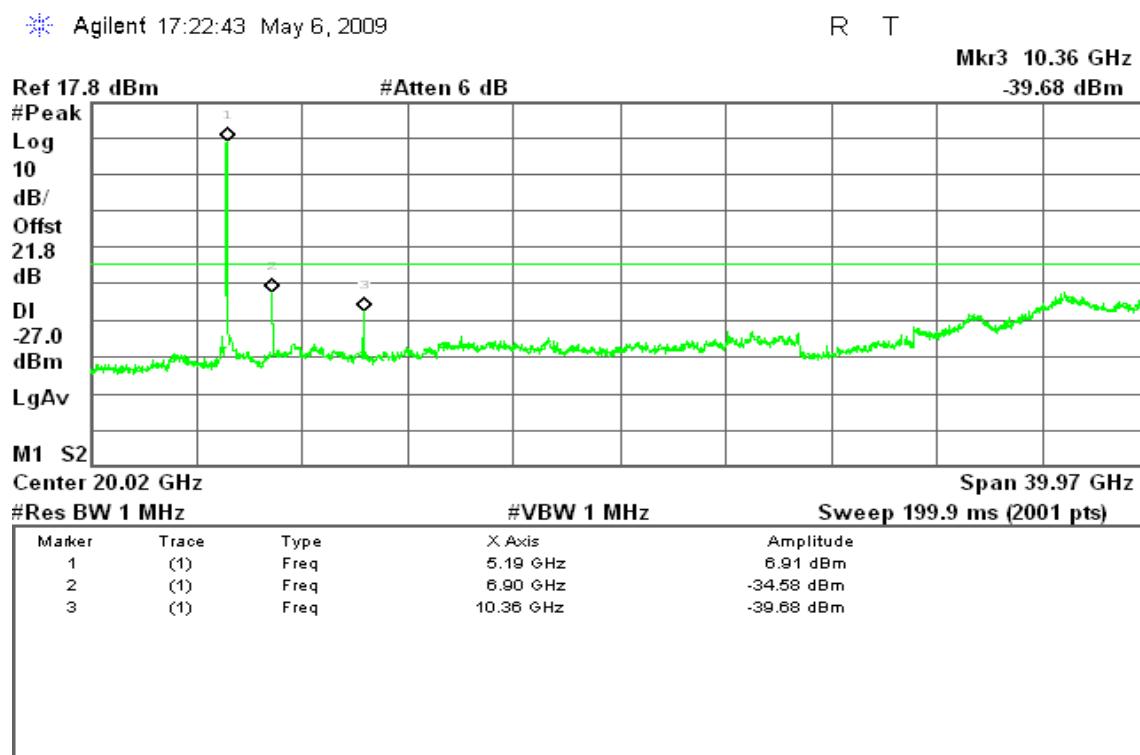
No non-compliance noted

Test Plot

IEEE 802.11a mode / 5180 ~ 5240MHz

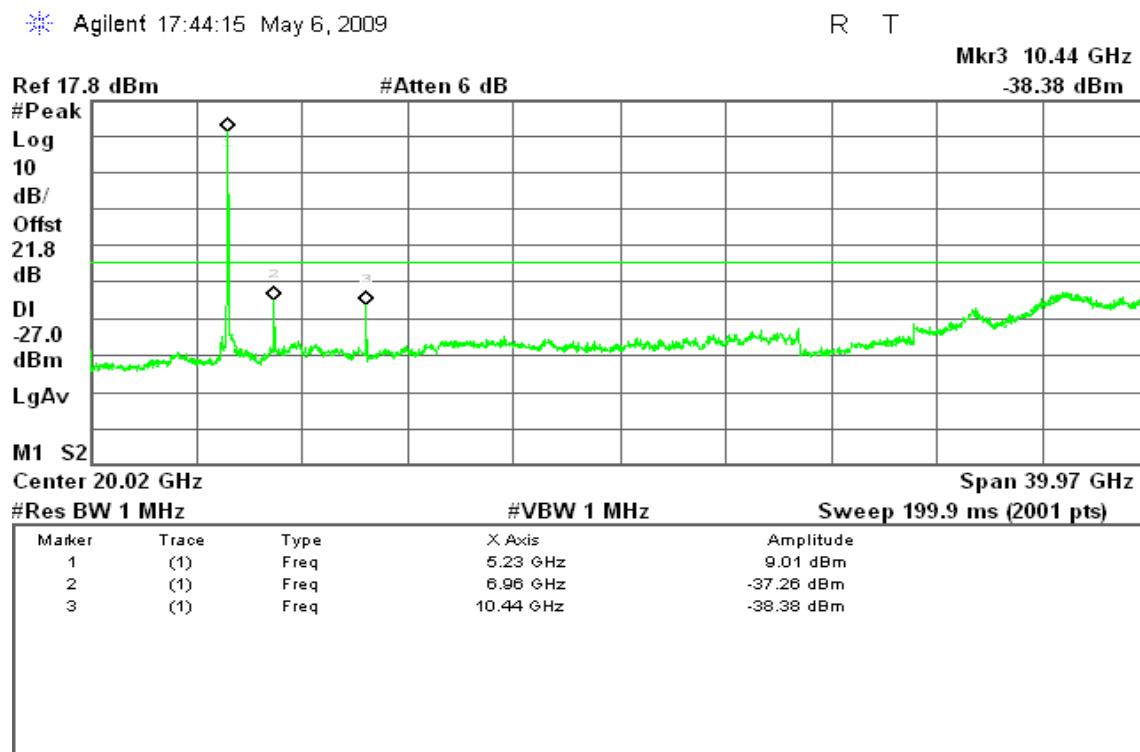
CH Low

30MHz ~ 40GHz



CH Mid

30MHz ~ 40GHz



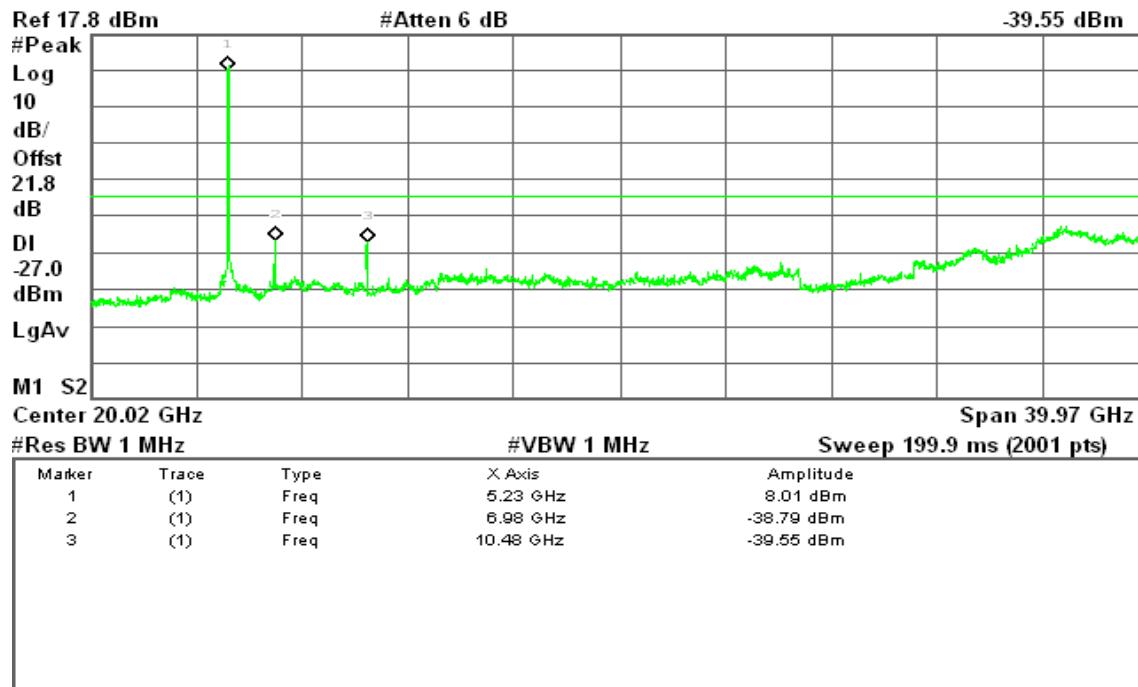
CH High
30MHz ~ 40GHz

Agilent 18:06:37 May 6, 2009

R T

Mkr3 10.48 GHz

-39.55 dBm

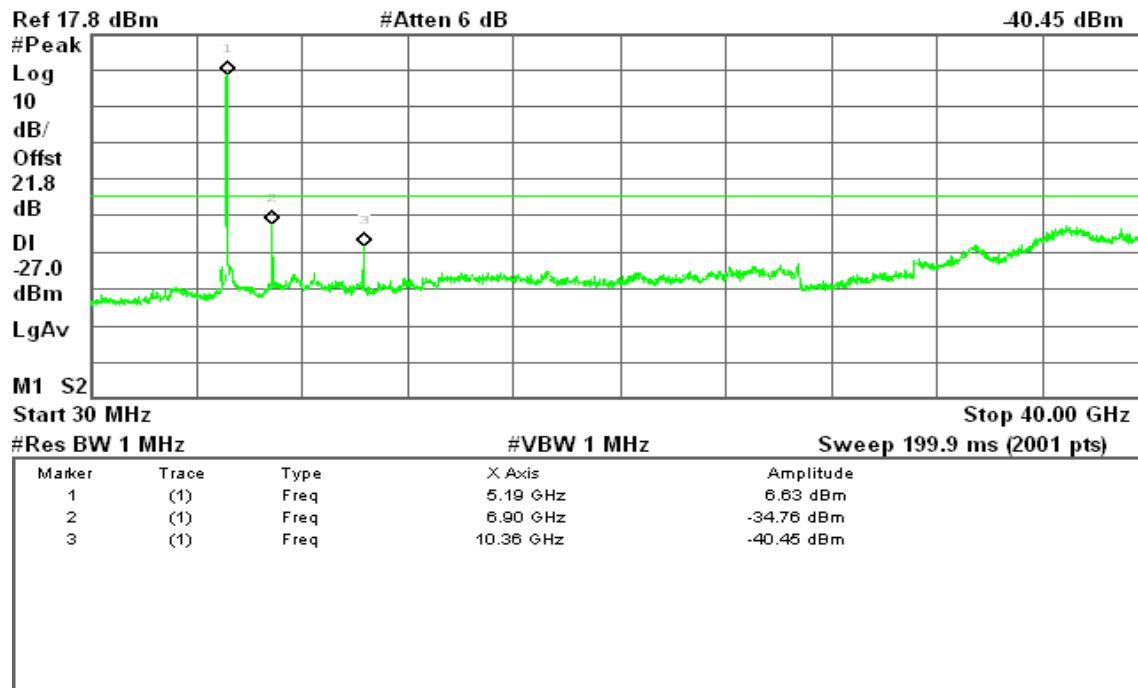

draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz
CH Low
30MHz ~ 40GHz

Agilent 20:16:54 May 6, 2009

R T

Mkr3 10.36 GHz

-40.45 dBm



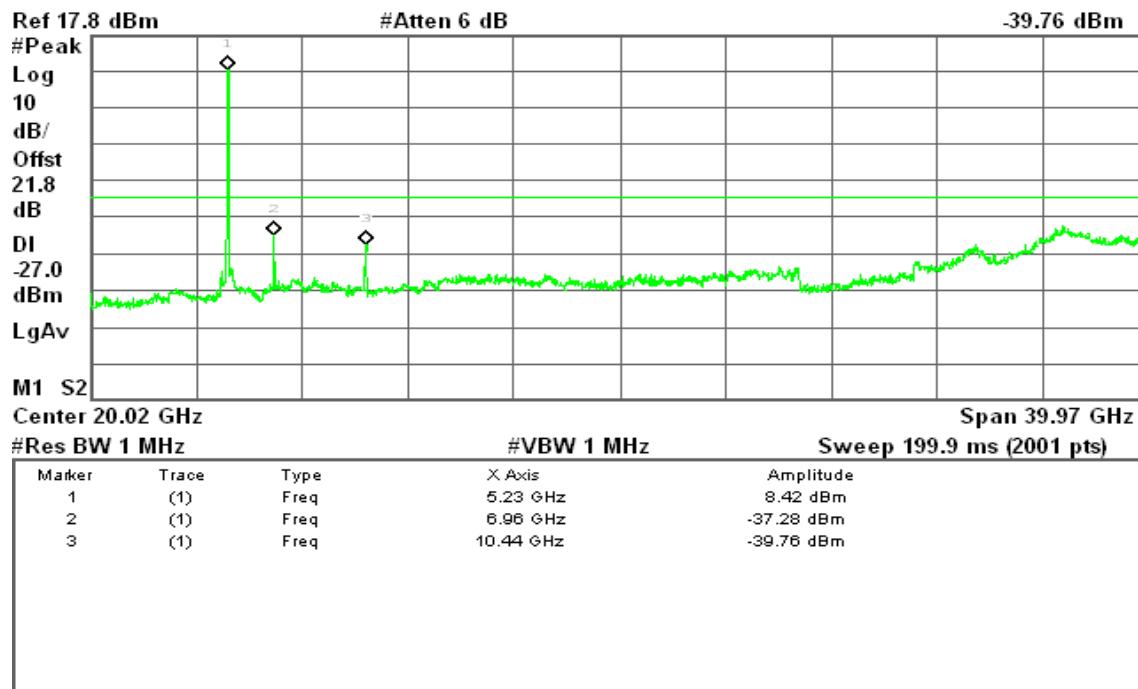
CH Mid**30MHz ~ 40GHz**

Agilent 20:21:30 May 6, 2009

R T

Mkr3 10.44 GHz

-39.76 dBm

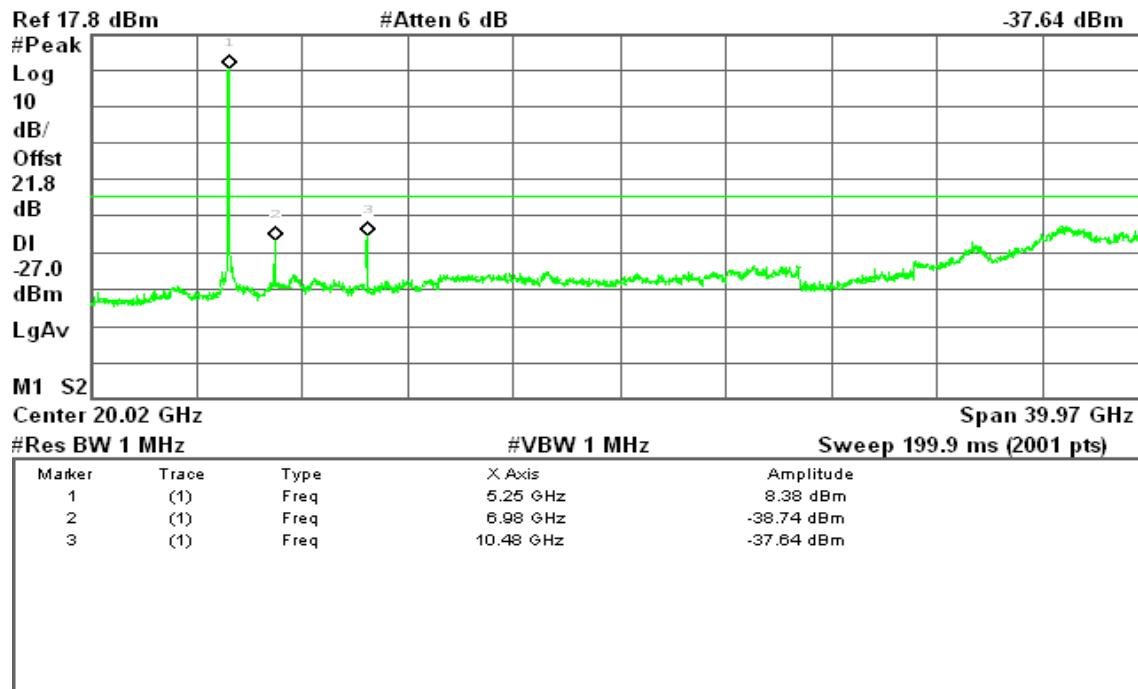
**CH High****30MHz ~ 40GHz**

Agilent 20:24:44 May 6, 2009

R T

Mkr3 10.48 GHz

-37.64 dBm



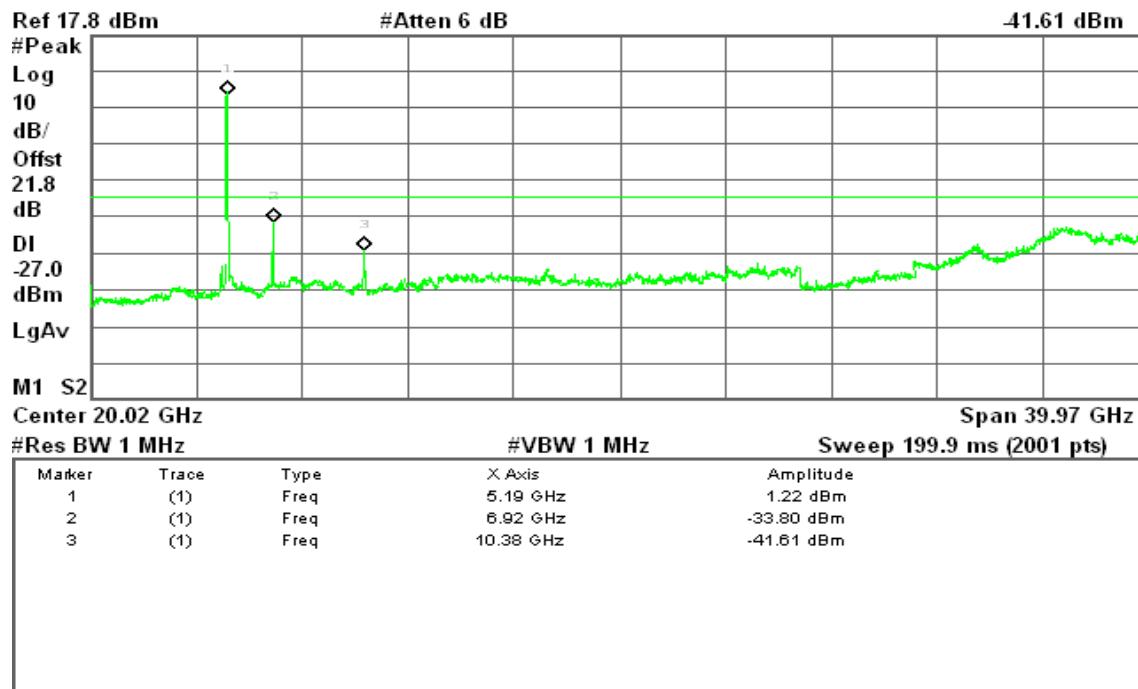
draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz**CH Low****30MHz ~ 40GHz**

Agilent 00:24:06 May 7, 2009

R T

Mkr3 10.38 GHz

-41.61 dBm

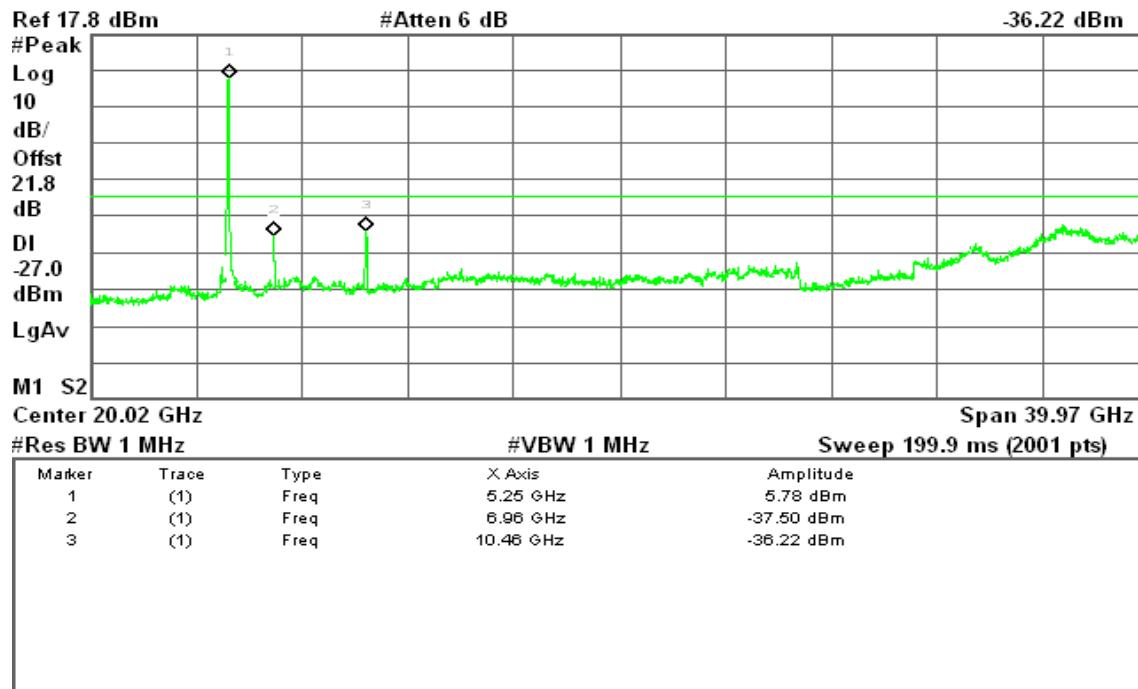
**CH High****30MHz ~ 40GHz**

Agilent 00:29:52 May 7, 2009

R T

Mkr3 10.46 GHz

-36.22 dBm



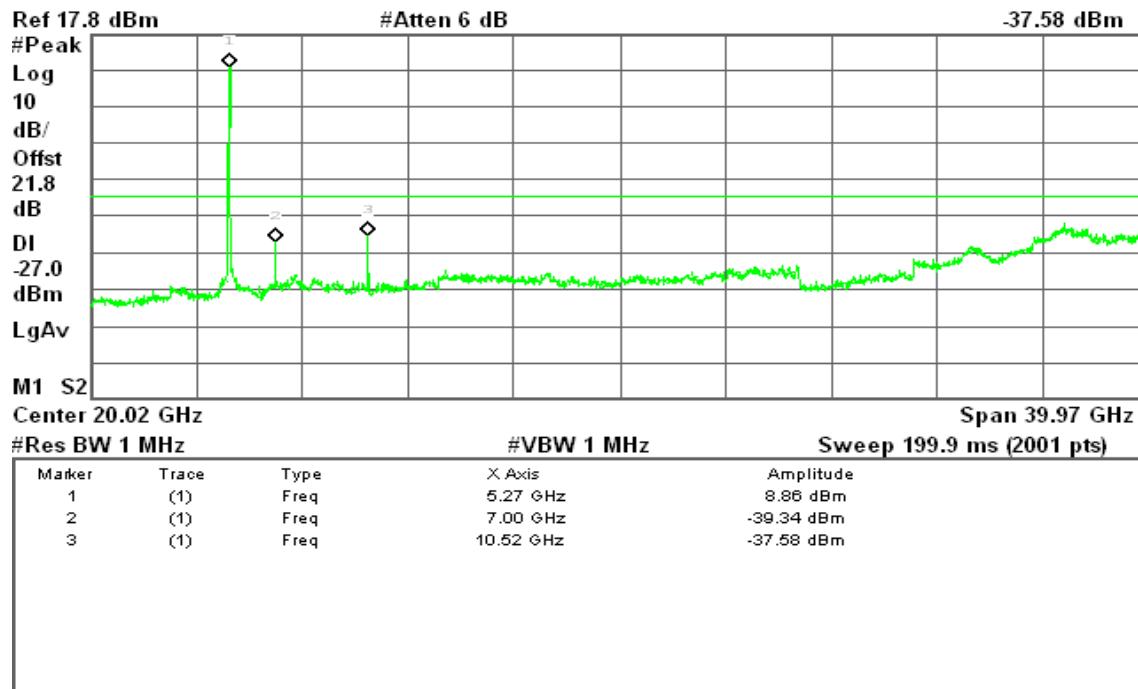
IEEE 802.11a mode / 5260 ~ 5320MHz**CH Low****30MHz ~ 40GHz**

Agilent 18:20:20 May 6, 2009

R T

Mkr3 10.52 GHz

-37.58 dBm

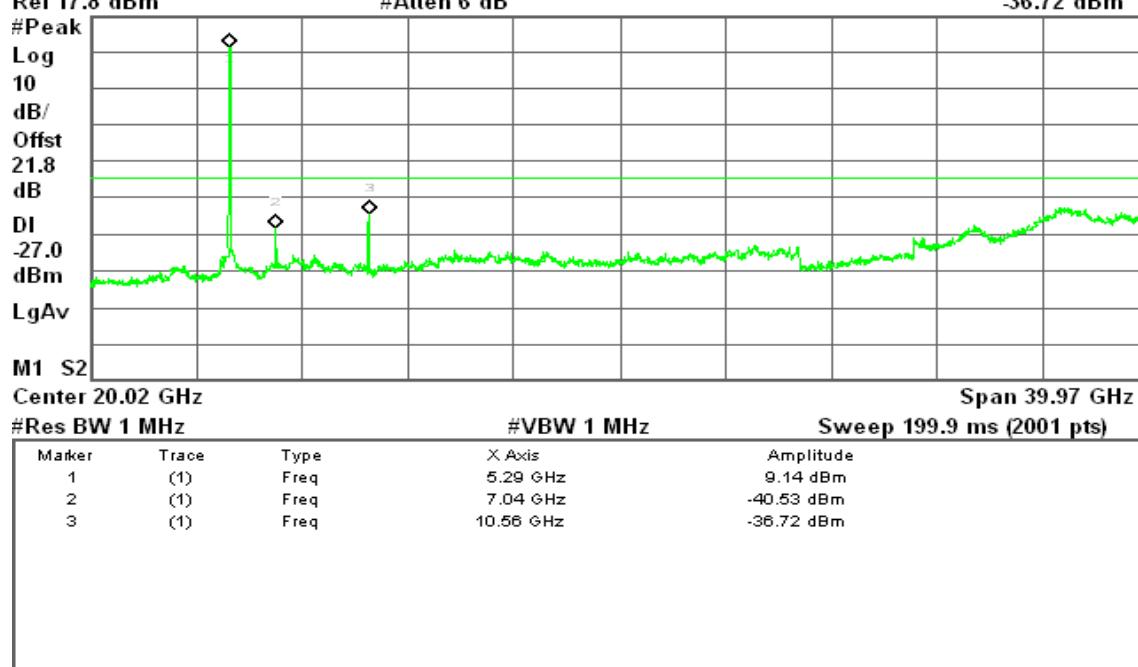
**CH Mid****30MHz ~ 40GHz**

Agilent 18:24:52 May 6, 2009

R T

Mkr3 10.56 GHz

-36.72 dBm



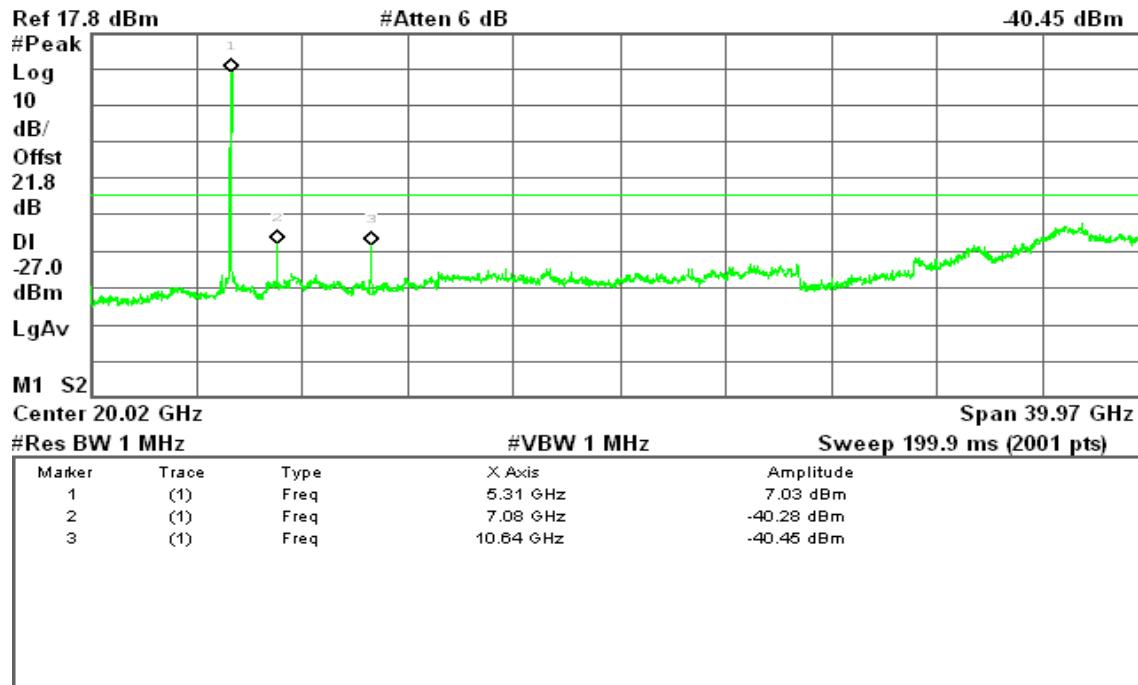
CH High

30MHz ~ 40GHz

Agilent 18:30:01 May 6, 2009

R T

Mkr3 10.64 GHz
-40.45 dBm



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

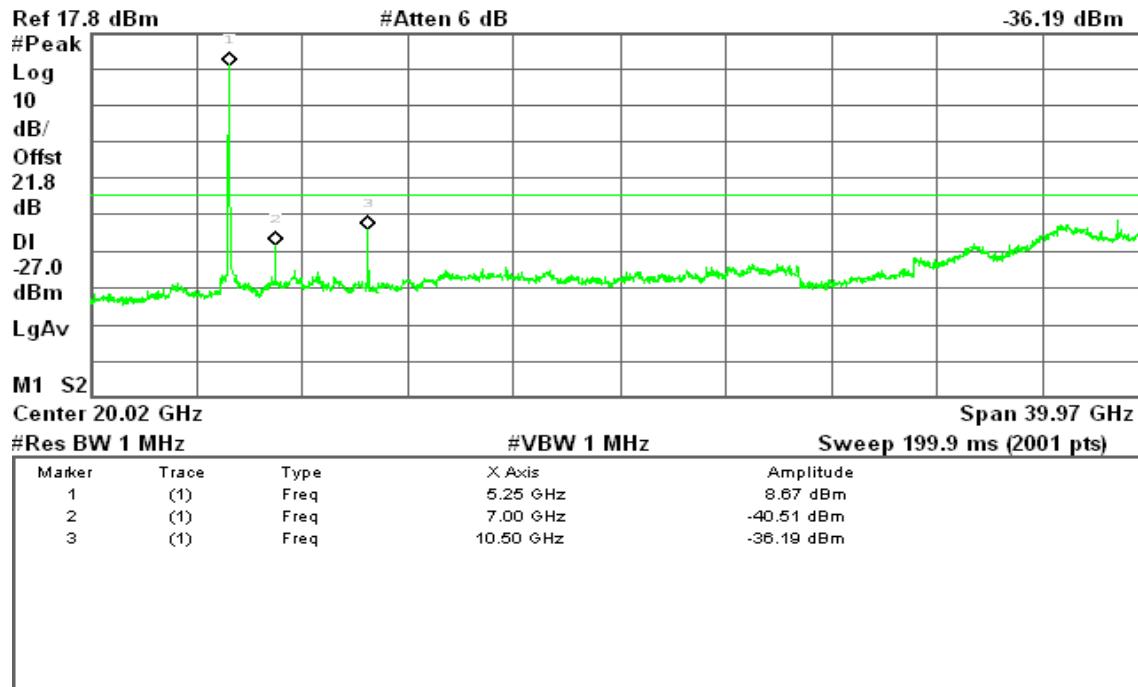
CH Low

30MHz ~ 40GHz

Agilent 20:30:56 May 6, 2009

R T

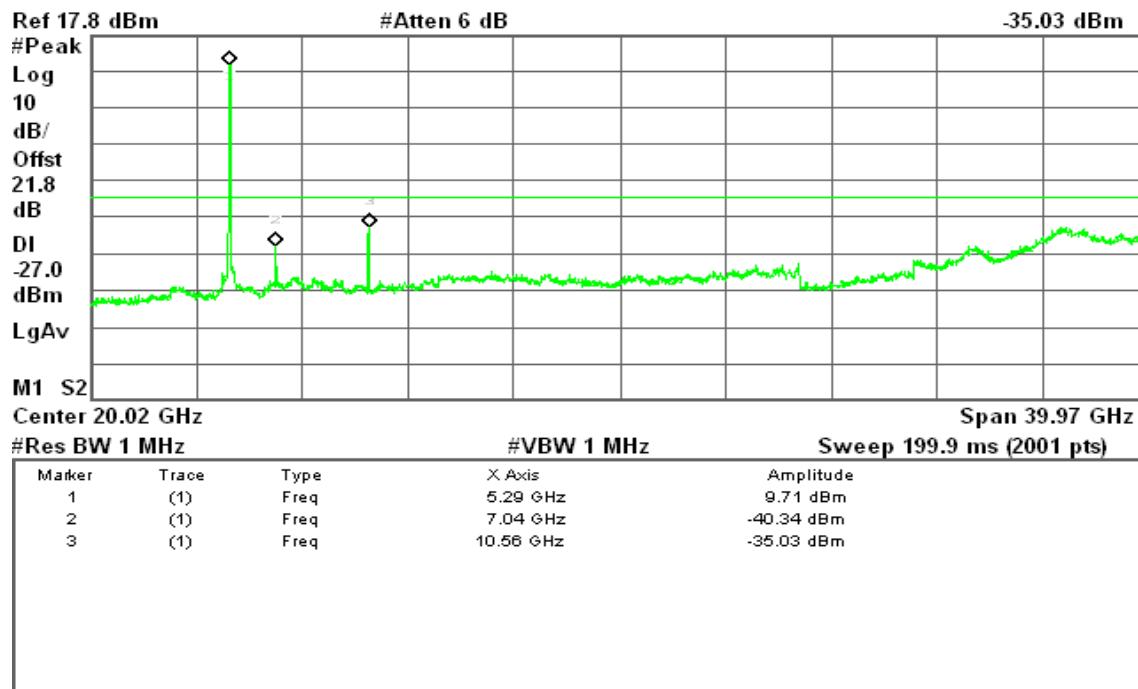
Mkr3 10.50 GHz
-36.19 dBm



CH Mid
30MHz ~ 40GHz

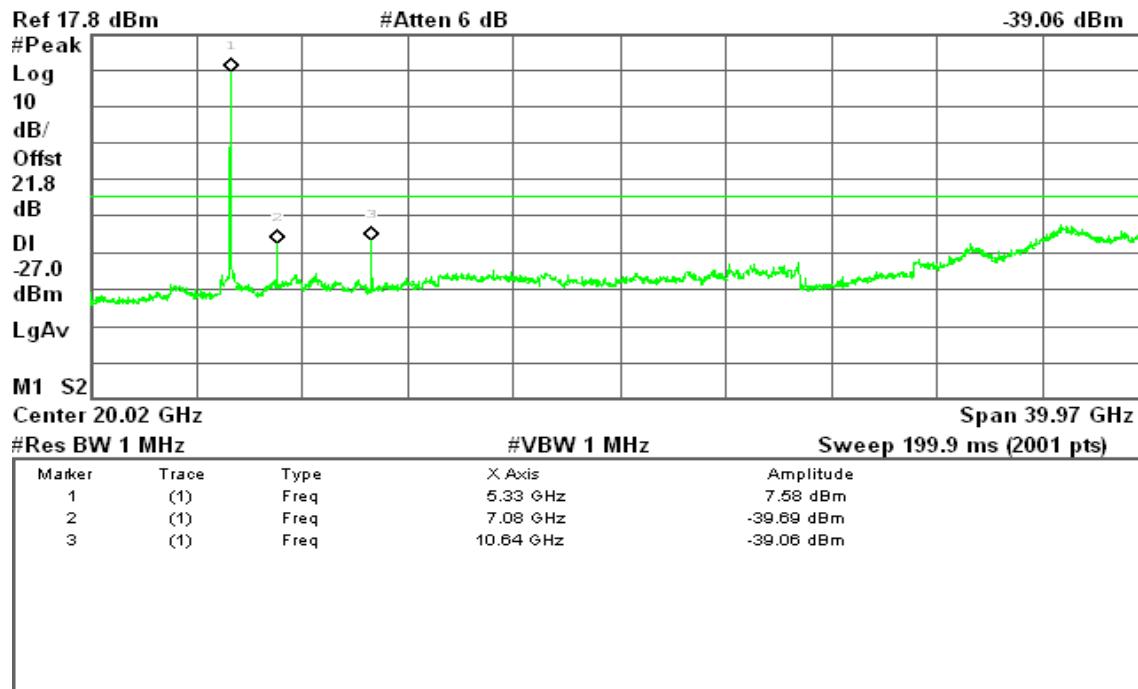
Agilent 21:34:30 May 6, 2009

R T

Mkr3 10.56 GHz**-35.03 dBm**
CH High
30MHz ~ 40GHz

Agilent 21:46:05 May 6, 2009

R T

Mkr3 10.64 GHz**-39.06 dBm**

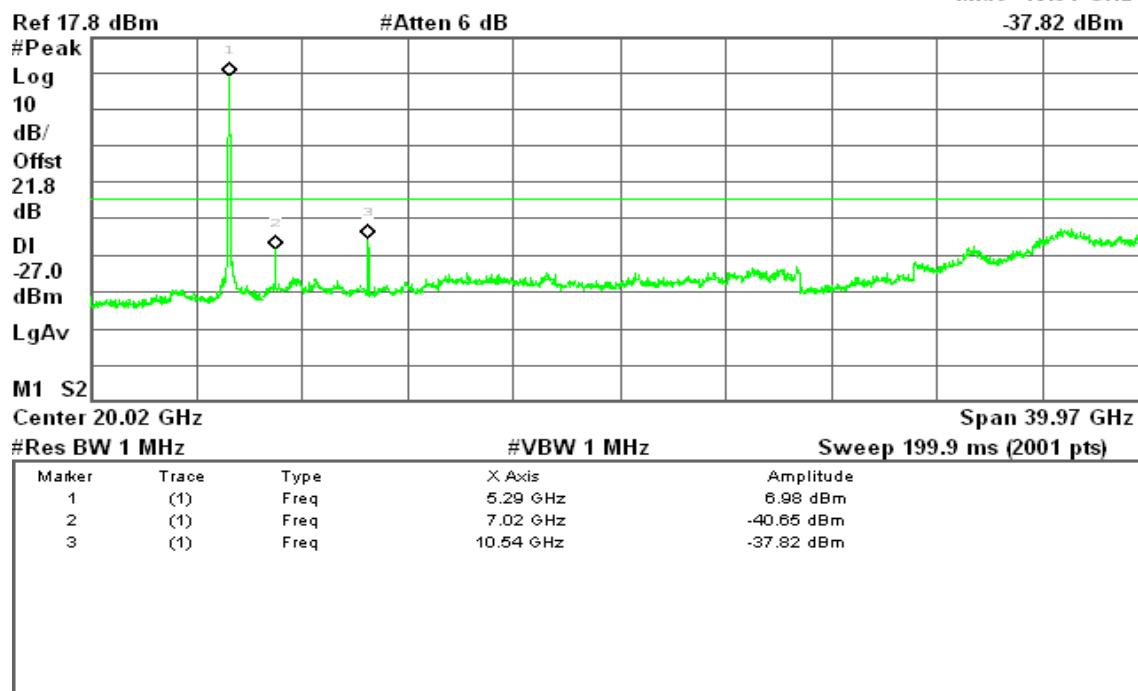
draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz**CH Low****30MHz ~ 40GHz**

Agilent 00:54:37 May 7, 2009

R T

Mkr3 10.54 GHz

-37.82 dBm

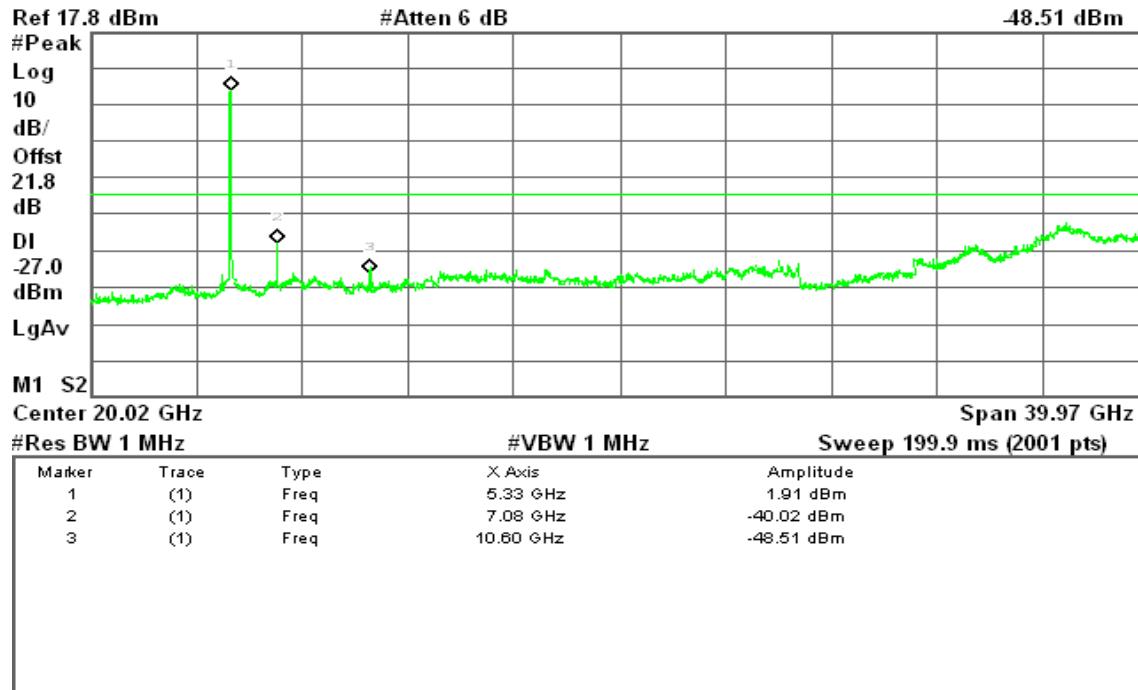
**CH High****30MHz ~ 40GHz**

Agilent 00:58:12 May 7, 2009

R T

Mkr3 10.60 GHz

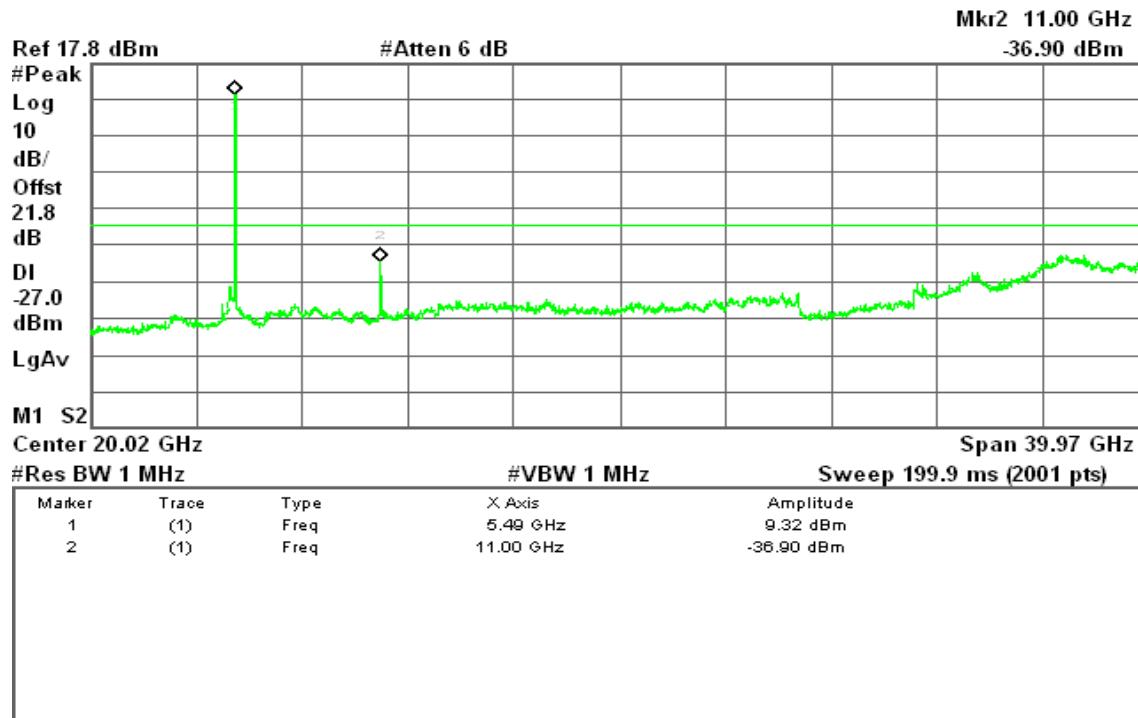
-48.51 dBm



Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz**CH Low****30MHz ~ 40GHz**

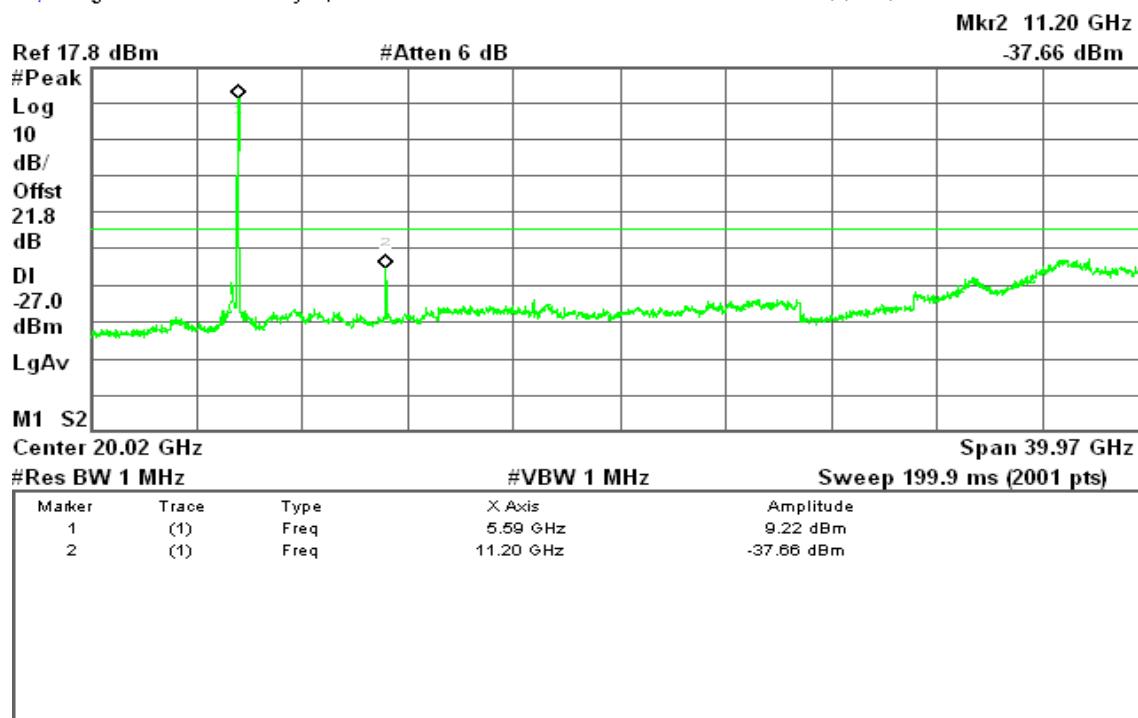
Agilent 18:45:40 May 6, 2009

R T

**CH Mid****30MHz ~ 40GHz**

Agilent 18:50:59 May 6, 2009

R T



CH High

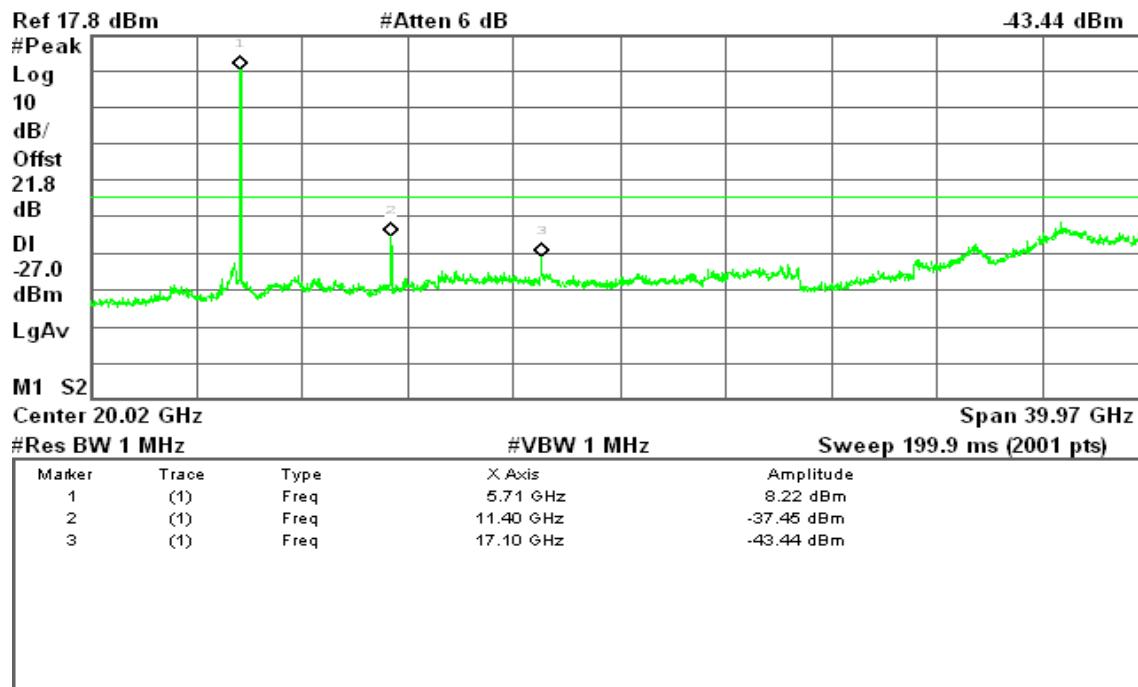
30MHz ~ 40GHz

Agilent 18:59:13 May 6, 2009

R T

Mkr3 17.10 GHz

-43.44 dBm



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

CH Low

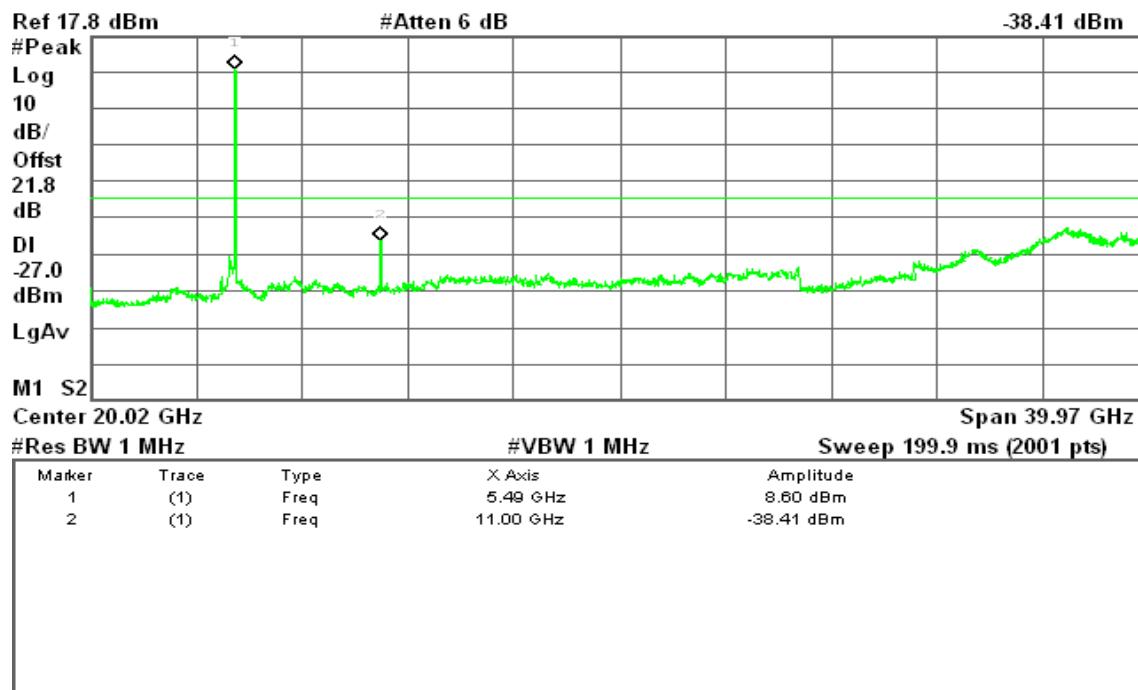
30MHz ~ 40GHz

Agilent 22:09:21 May 6, 2009

R T

Mkr2 11.00 GHz

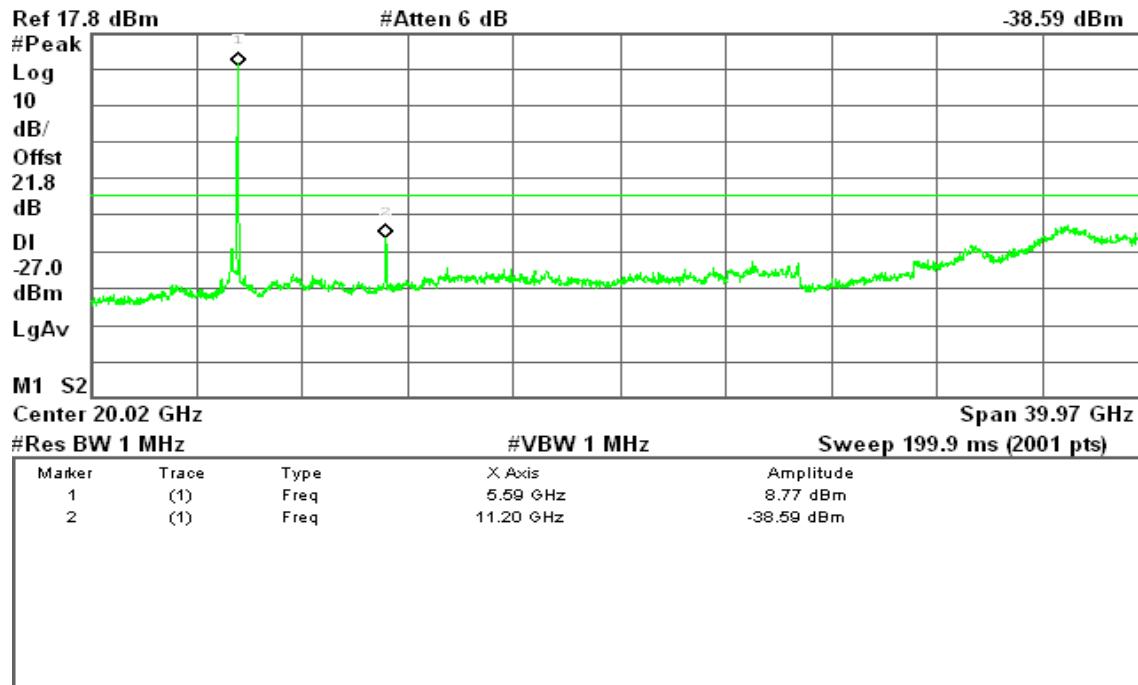
-38.41 dBm



CH Mid**30MHz ~ 40GHz**

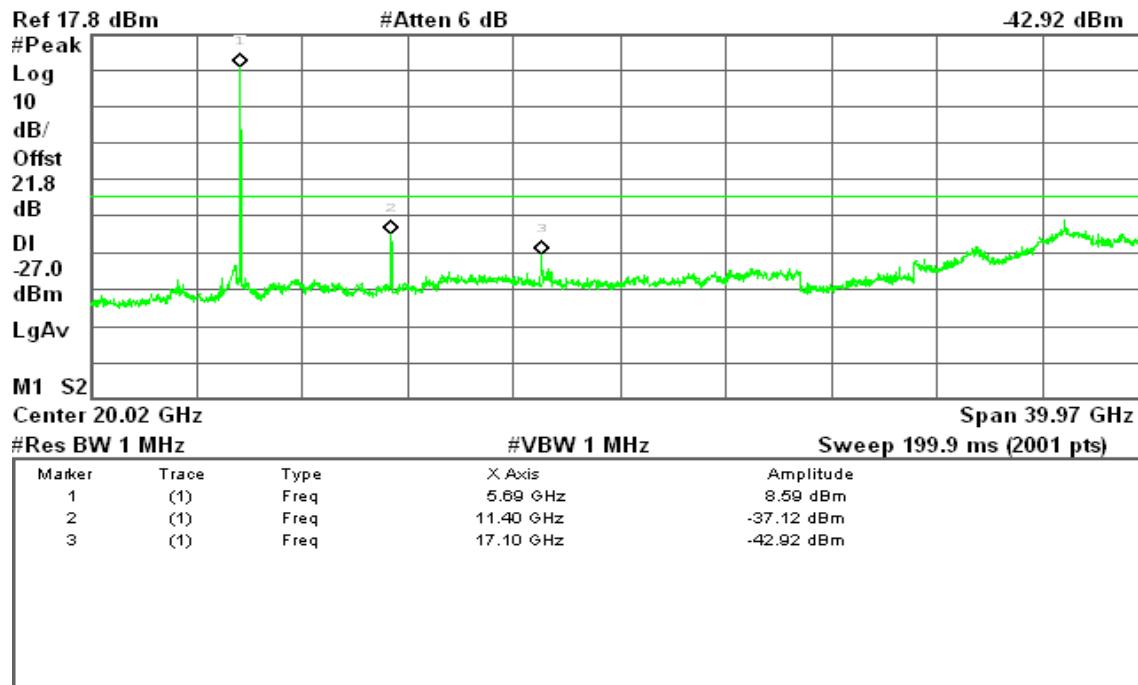
Agilent 22:18:53 May 6, 2009

R T

Mkr2 11.20 GHz**-38.59 dBm****CH High****30MHz ~ 40GHz**

Agilent 22:37:06 May 6, 2009

R T

Mkr3 17.10 GHz**-42.92 dBm**

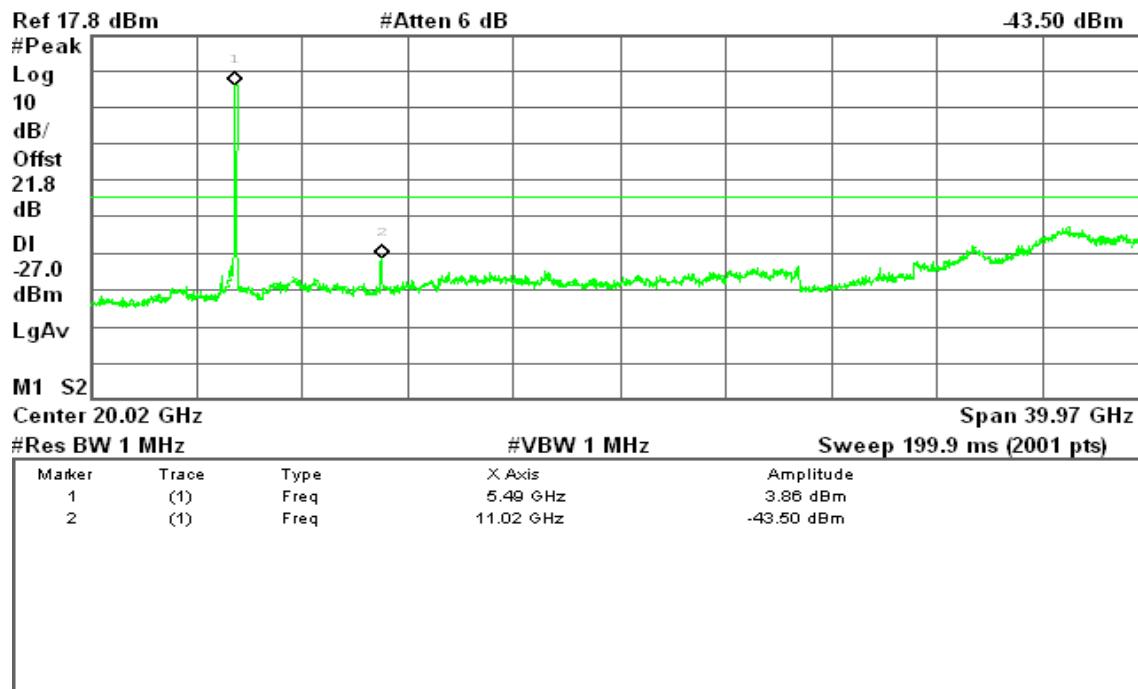
draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz**CH Low****30MHz ~ 40GHz**

Agilent 01:07:16 May 7, 2009

R T

Mkr2 11.02 GHz

-43.50 dBm

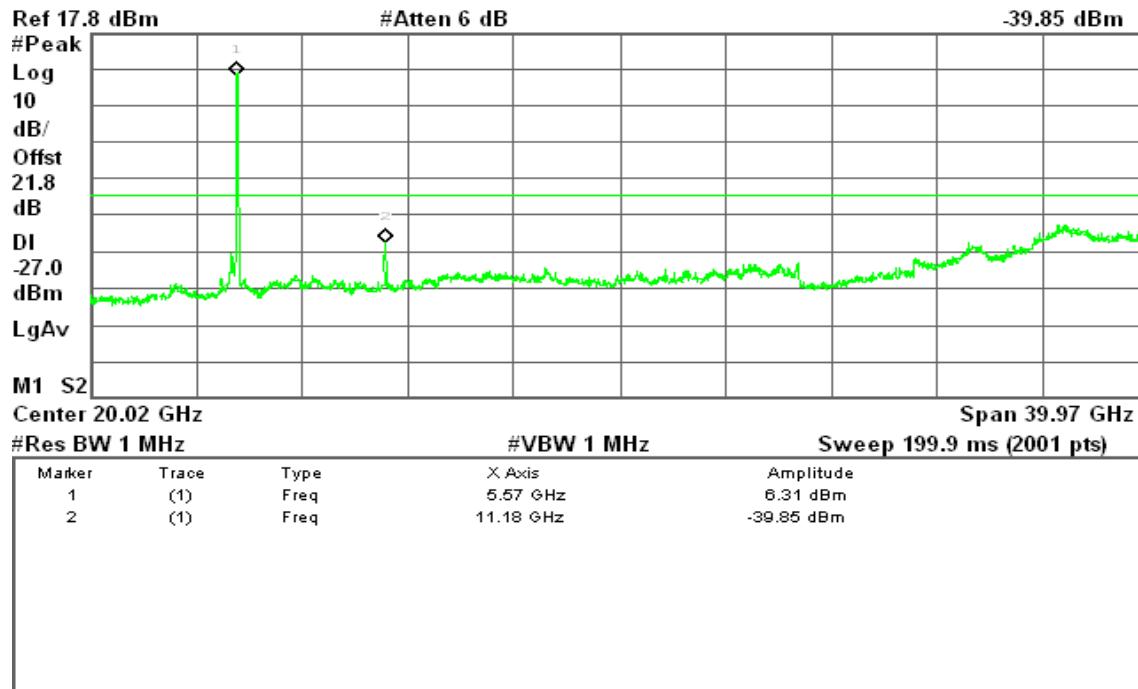
**CH Mid****30MHz ~ 40GHz**

Agilent 01:14:48 May 7, 2009

R T

Mkr2 11.18 GHz

-39.85 dBm



CH High
30MHz ~ 40GHz

Agilent 01:21:56 May 7, 2009

R L

Mkr2 11.34 GHz

-43.08 dBm

