



**FCC 47 CFR PART 15 SUBPART E**

**TEST REPORT**

**For**

**10.4” Fanless Mobile Clinical Assistant**

**Model:**

**MICA-101XXXXXXXXXXXX**

**(“x” can be 0-9 or A-Z or blank or any alphanumeric character)**

**Trade Name: Advantech**

*Issued to*

**Advantech Co. Ltd.**

**No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District,  
Taipei 114, Taiwan, R.O.C.**

*Issued by*

**Compliance Certification Services Inc.**

**No. 11, Wu-Gong 6<sup>th</sup> Rd., Wugu Industrial Park,  
Taipei Hsien 248, Taiwan (R.O.C.)**

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# 1. TEST RESULT CERTIFICATION

**Applicant:** Advantech Co. Ltd.  
 No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District,  
 Taipei 114, Taiwan, R.O.C.

**Equipment Under Test:** 10.4" Fanless Mobile Clinical Assistant

**Trade Name:** Advantech

**Model:** MICA-101XXXXXXXXXXXX ("x" can be 0-9 or A-Z or blank or any alphanumeric character)

**Date of Test:** January 6 ~ May 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:

Reviewed by:

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Rex Lai  
 Section Manager  
 Compliance Certification Services Inc.

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Gina Lo  
 Section Manager  
 Compliance Certification Services Inc.



## 2. EUT DESCRIPTION

<b>Product</b>	10.4" Fanless Mobile Clinical Assistant			
<b>Trade Name</b>	Advantech			
<b>Model Number</b>	MICA-101XXXXXXXXXXXX ("x" can be 0-9 or A-Z or blank or any alphanumeric character)			
<b>Model Discrepancy</b>	All the specification and layout are identical except they come with different model numbers for marketing purposes.			
<b>Power Supply</b>	1. VDC from Power Adapter 2. VDC from Battery Rating: 11.1V, 3760mAh			
<b>Power Adapter Manufacturer</b>	SINPRO	<b>Model</b>	MPU63-106	
<b>Power Adapter Power Rating</b>	<b>For MPU63-106</b> I/P: 100-240V, 47-63Hz, 1.62-0.72A O/P: 15V, 4.2A			
<b>Operating Frequency Range &amp; Number of Channels</b>		<b>Mode</b>	<b>Frequency Range (MHz)</b>	<b>Number of Channels</b>
	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	5 Channels
<b>Transmit Power</b>	IEEE 802.11a mode / 5180 ~ 5240MHz: 15.07 dBm draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz: 15.34dBm draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz: 15.79 dBm IEEE 802.11a mode / 5260 ~ 5320MHz: 15.48 dBm draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz: 15.11 dBm draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz: 16.37 dBm IEEE 802.11a mode / 5500 ~ 5700MHz: 16.57 dBm draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz: 20.56dBm draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz: 16.64 dBm			
<b>Modulation Technique</b>	OFDM (QPSK, BPSK, 16-QAM, 64-QAM)			
<b>Transmit Data Rate</b>	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)			
<b>Antenna Specification</b>	Antenna Gain: IEEE 802.11a: 4.09 dBi MIMO: 4.09 dBi + 10 log (2) = 7.09 dBi (Numeric gain: 5.12)			
<b>Antenna Designation</b>	PIFA Antenna			



**Operation Frequency:**

UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII)	
CHANNEL	MHz
36	5180
38	5190
40	5200
44	5220
46	5230
48	5240
52	5260
54	5270
56	5280
60	5300
62	5310
64	5320
100	5500
102	5510
104	5520
108	5540
110	5550
112	5560
116	5580
118	5590
120	5600
124	5620
126	5630
128	5640
132	5660
134	5670
136	5680
140	5700
149	5745
153	5765
157	5785
161	5805
165	5825

**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: **M82-MICA-101** 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
<sup>1</sup> 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	( <sup>2</sup> )
13.36 - 13.41	322 - 335.4		

<sup>1</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup> 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: MICA-101) had been tested under operating condition.

The EUT is a 2x2 configuration spatial MIMO (2Tx & 2Rx) without beam forming function that operate in double TX chains and double RX chains. The 2x2 configuration is implemented with two outside TX & RX chains (Chain 0 and 1).

The EUT comes with one battery and one power adapter for sale. After the preliminary test, the EUT with power adapter was found to emit the worst emissions and therefore had been tested under standby condition.

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

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

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.





## 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	06/18/2009
Horn-Antenna	TRC	HA-1201A	01	08/11/2009
Horn-Antenna	TRC	HA-1301A	01	08/11/2009
Bilog- Antenna	Sunol Sciences	JB3	A030205	03/27/2010
Turn Table	Max-Full	MFT-120S	T120S940302	N.C.R.
Antenna Tower	Max-Full	MFA-430	A440940302	N.C.R.
Controller	Max-Full	MF-CM886	CC-C-1F-13	N.C.R.
Site NSA	CCS	N/A	FCC MRA: TW1039 IC: 2324G-1/-2	10/17/2010 11/04/2010
Test S/W	LABVIEW (V 6.1)			

Powerline Conducted Emissions Test Site # 4				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESCI	100782	05/31/2010
LISN	R&S	ENV216	100066	05/10/2010
LISN	R&S	ENV 4200	830326/016	04/09/2010
Test S/W	LabVIEW 6.1 (CCS Conduction Test SW Version_01)			

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



### 4.3 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
Powerline Conducted Emission	+/-1.7983
3M Semi Anechoic Chamber / 30MHz ~ 1GHz	+/-3.7046
3M Semi Anechoic Chamber / Above 1GHz	+/-3.0958

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



## 5. FACILITIES AND ACCREDITATIONS

### 5.1 FACILITIES

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

No. 11, Wugong 6th Rd., Wugu Industrial Park, Taipei Hsien 248, Taiwan  
Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

No.81-1, Lane 210, Bade 2nd Rd., Luchu Hsiang, Taoyuan Hsien 338, Taiwan  
Tel: 886-3-324-0332 / Fax: 886-3-324-5235

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

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

### 5.2 EQUIPMENT




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

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

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

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

### 5.3 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3M Semi Anechoic Chamber (FCC MRA: TW1039) to perform FCC Part 15 measurements	 FCC MRA: TW1039
Taiwan	TAF	LP0002, RTTE01, FCC Method-47 CFR Part 15 Subpart C, D, E, RSS-210, RSS-310 IDA TS SRD, AS/NZS 4268, AS/NZS 4771, TS 12.1 & 12.2, ETSI EN 300 440-1, ETSI EN 300 440-2, ETSI EN 300 328, ETSI EN 300 220-1, ETSI EN 300 220-2, ETSI EN 301 893, ETSI EN 301 489-1/3/7/17 FCC OET Bulletin 65 + Supplement C, EN 50360, EN 50361, EN 50371, RSS 102, EN 50383, EN 50385, EN 50392, IEC 62209, CNS 14958-1, CNS 14959 FCC Method -47 CFR Part 15 Subpart B IEC / EN 61000-3-2, IEC / EN 61000-3-3, IEC / EN 61000-4-2/3/4/5/6/8/11	
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.	USB Mouse	Logitech	M-UE58	LZA10752880	FCC DoC	Shielded, 1.8m	N/A
2.	LCD Monitor	DELL	2407WFPb	CN-0FC255-46633 -675-25THS	FCC DoC	D-sub Cable: Shielded, 1.8m with two cores	Unshielded, 1.8m
3.	USB Mouse	HP	MO19UCA	020509284	FCC DoC	USB Cable: Unshielded, 1.8m	N/A
4.	Notebook PC (Remote)	HP	COMPAQ NC 4010	CNU5191L58	FCC DOC	LAN Cable: Unshielded, 10m	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core
5.	AP (Remote)	LEMEL	LM-RT210W	12442028770	H8N-RT210W	N/A	Unshielded, 1.8m

**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.



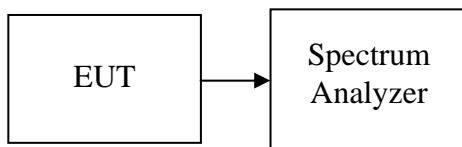
## 7. FCC PART 15 REQUIREMENTS

### 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	23.571
Mid	5220	24.642
High	5240	30.243

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	23.176
Mid	5220	23.313
High	5240	21.490

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	21.877
Mid	5220	23.184
High	5240	23.161

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5190	44.369
High	5230	43.371

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5190	44.618
High	5230	43.828



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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	28.238
Mid	5280	23.279
High	5320	22.548

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	22.221
Mid	5280	23.357
High	5320	22.642

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	23.454
Mid	5280	23.199
High	5320	23.043

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	44.188
High	5310	44.737

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	44.657
High	5310	44.043





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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	24.520
Mid	5600	23.722
High	5700	23.510

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	25.457
Mid	5600	23.572
High	5700	26.140

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	24.914
Mid	5600	27.857
High	5700	25.651

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	44.419
Mid	5590	44.864
High	5670	47.225

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	44.852
Mid	5590	46.117
High	5670	45.338



Test Plot

IEEE 802.11a mode / 5180 ~ 5240MHz

CH Low

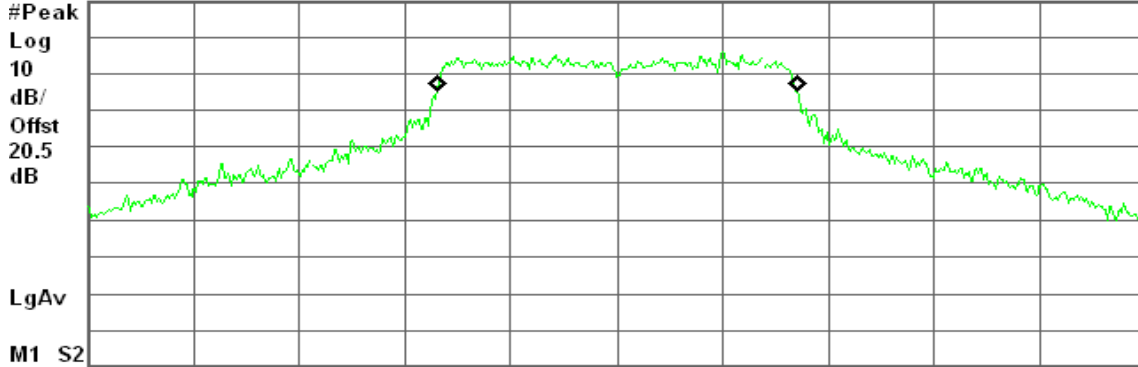
Agilent 18:25:53 Mar 10, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 10 dB



Center 5.180 00 GHz

Span 50 MHz

#Res BW 200 kHz

#VBW 620 kHz

Sweep 1.2 ms (601 pts)

Occupied Bandwidth

16.9062 MHz

Occ BW % Pwr	99.00 %
x dB	-26.00 dB

Transmit Freq Error	11.149 kHz
x dB Bandwidth	23.571 MHz

CH Mid

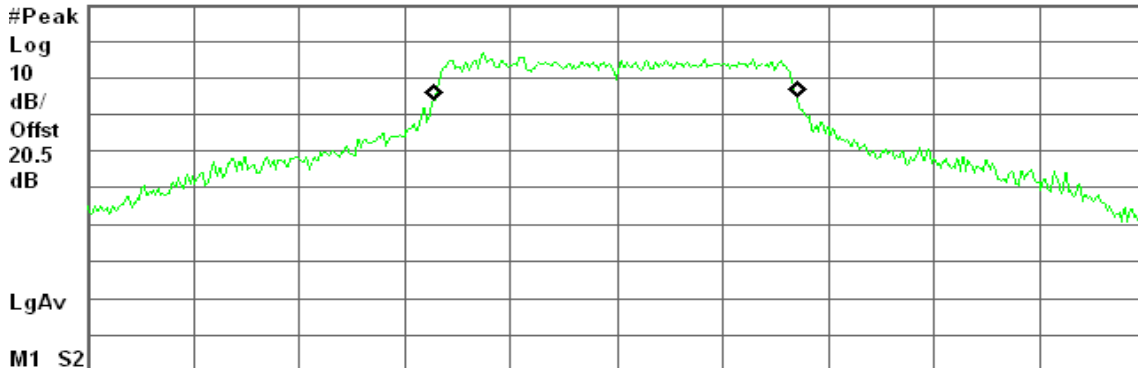
Agilent 18:53:21 Mar 10, 2009

R T

99% BW, a Mode Mid Ch.

Ref 20 dBm

Atten 10 dB



Center 5.220 00 GHz

Span 50 MHz

#Res BW 200 kHz

#VBW 620 kHz

Sweep 1.2 ms (601 pts)

Occupied Bandwidth

17.1169 MHz

Occ BW % Pwr	99.00 %
x dB	-26.00 dB

Transmit Freq Error	-51.459 kHz
x dB Bandwidth	24.642 MHz



CH High

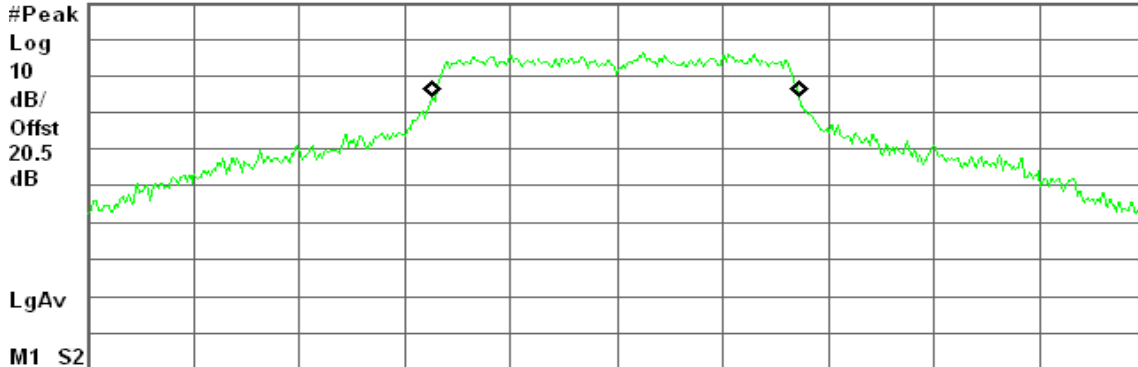
Agilent 19:04:17 Mar 10, 2009

R T

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 10 dB



Center 5.240 00 GHz

Span 50 MHz

#Res BW 200 kHz

#VBW 620 kHz

Sweep 1.2 ms (601 pts)

Occupied Bandwidth  
17.2581 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -24.060 kHz  
x dB Bandwidth 30.243 MHz

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

CH Low

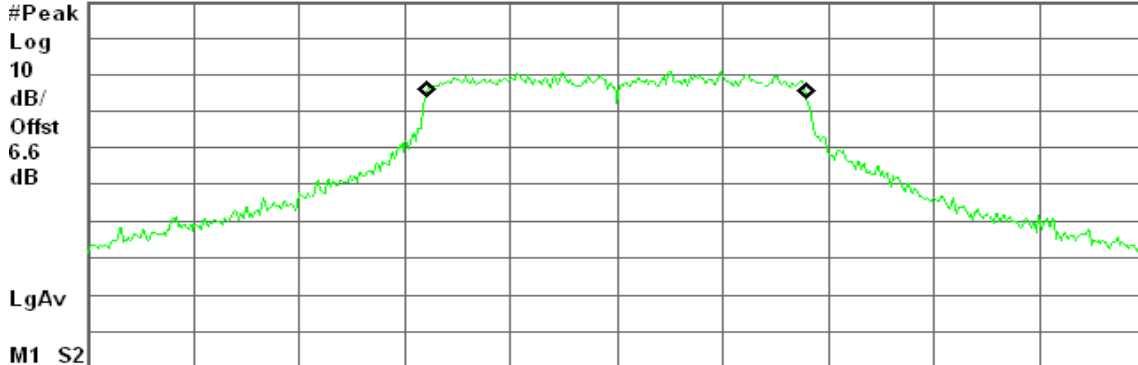
Agilent 10:13:07 May 8, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 30 dB



Center 5.180 00 GHz

Span 50 MHz

#Res BW 200 kHz

#VBW 620 kHz

Sweep 1.2 ms (601 pts)

Occupied Bandwidth  
17.8865 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error 129.395 Hz  
x dB Bandwidth 23.176 MHz



### CH Mid

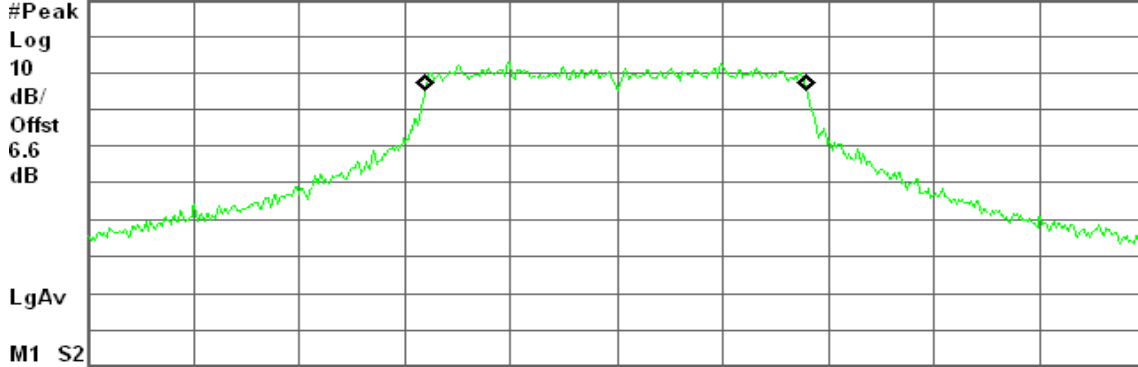
Agilent 10:17:01 May 8, 2009

R T

99% BW, a Mode Mid Ch.

Ref 20 dBm

Atten 30 dB



Center 5.220 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
17.9147 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -4.190 kHz  
x dB Bandwidth 23.313 MHz

### CH High

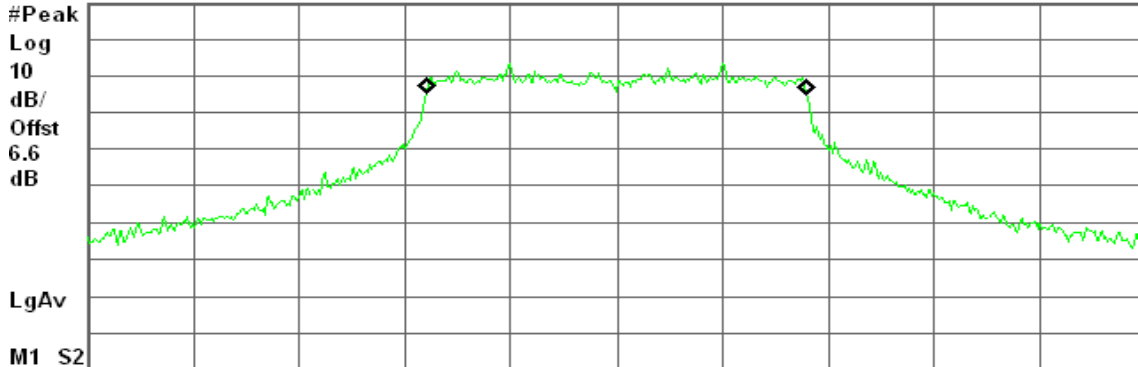
Agilent 10:24:20 May 8, 2009

R T

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 30 dB



Center 5.240 00 GHz

Span 50 MHz

#Res BW 200 kHz

#VBW 620 kHz

Sweep 1.2 ms (601 pts)

Occupied Bandwidth  
17.8835 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error 5.729 kHz  
x dB Bandwidth 21.490 MHz



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

**CH Low**

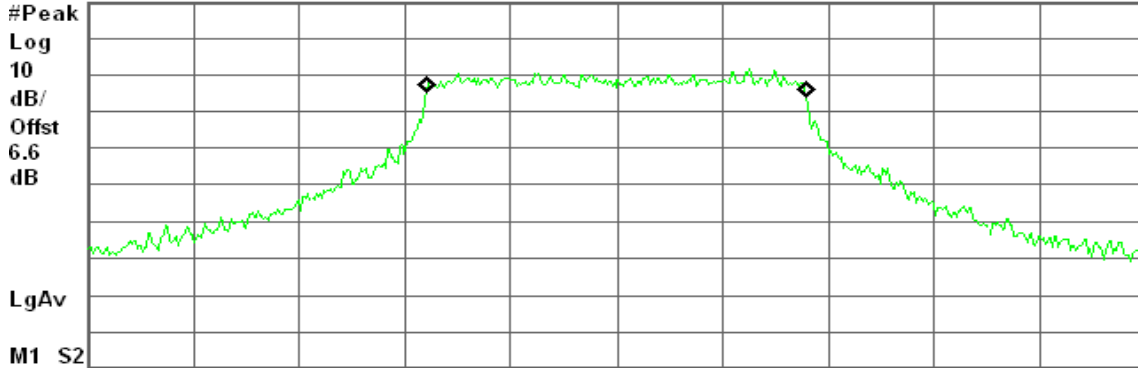
Agilent 10:40:59 May 8, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 30 dB



Center 5.180 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
17.8495 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -7.874 kHz  
x dB Bandwidth 21.877 MHz

**CH Mid**

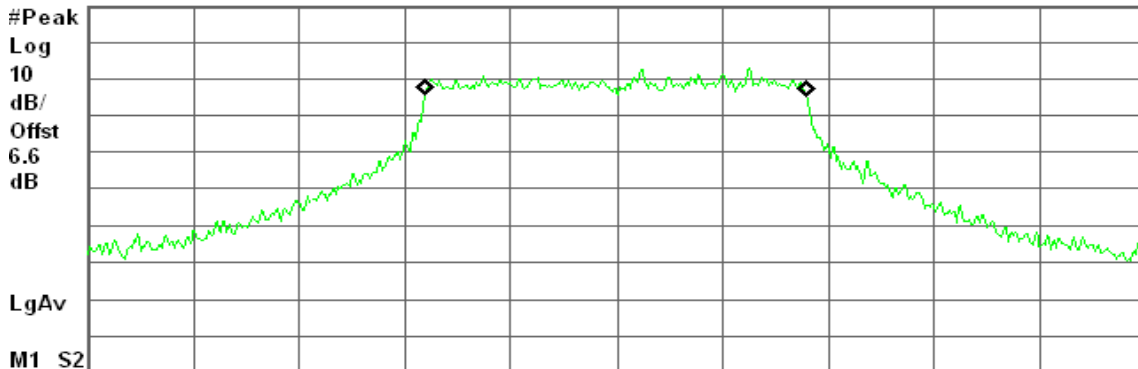
Agilent 10:39:28 May 8, 2009

R T

99% BW, a Mode Mid Ch.

Ref 20 dBm

Atten 30 dB



Center 5.220 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
17.9528 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -19.753 kHz  
x dB Bandwidth 23.184 MHz



### CH High

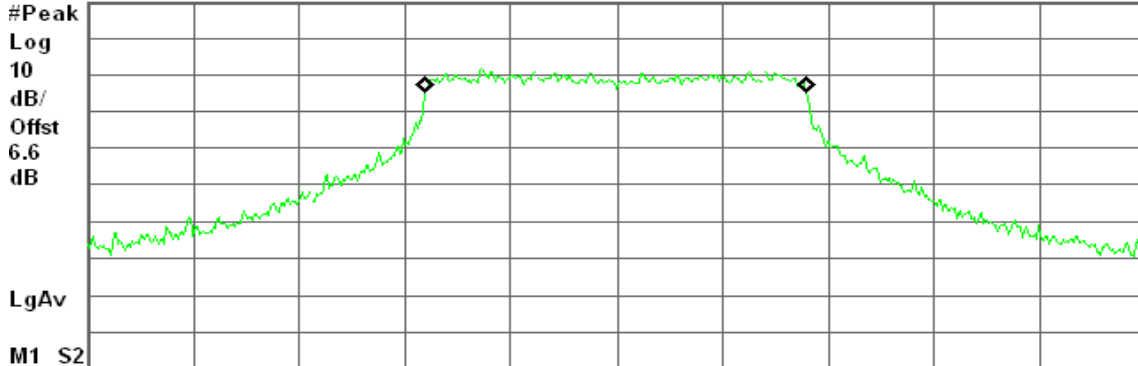
Agilent 10:37:25 May 8, 2009

R L

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 30 dB



Center 5.240 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
17.9091 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -3.864 kHz  
x dB Bandwidth 23.161 MHz

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

### CH Low

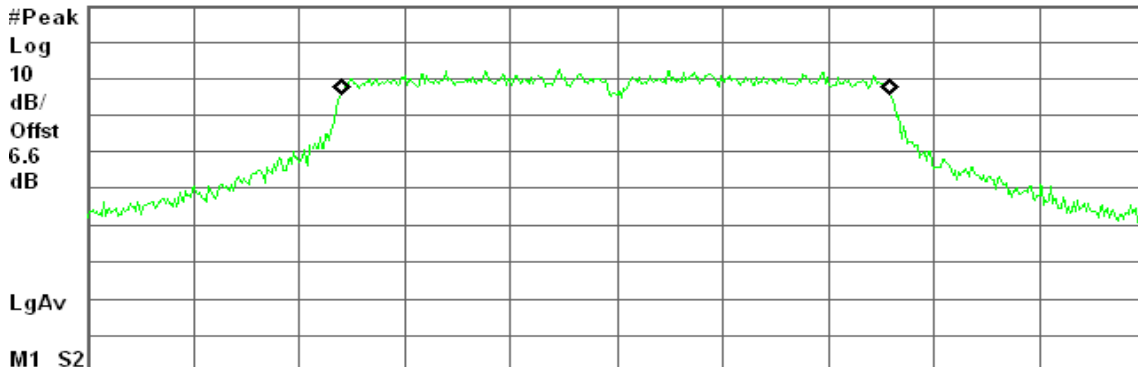
Agilent 11:43:55 May 8, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 30 dB



Center 5.190 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.3058 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -30.497 kHz  
x dB Bandwidth 44.369 MHz



### CH High

Agilent 11:45:28 May 8, 2009

R T

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 30 dB



Center 5.230 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.3137 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -1.175 kHz  
x dB Bandwidth 43.371 MHz

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

### CH Low

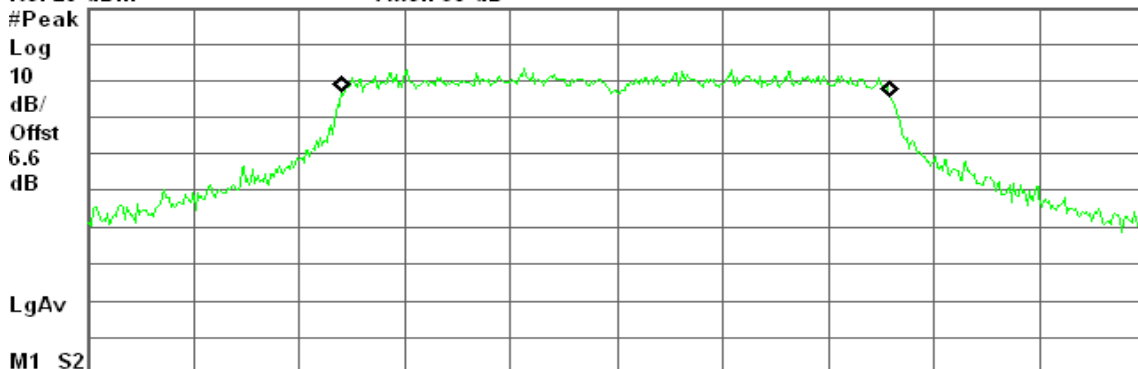
Agilent 11:42:17 May 8, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 30 dB



Center 5.190 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.2789 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -15.635 kHz  
x dB Bandwidth 44.618 MHz



### CH High

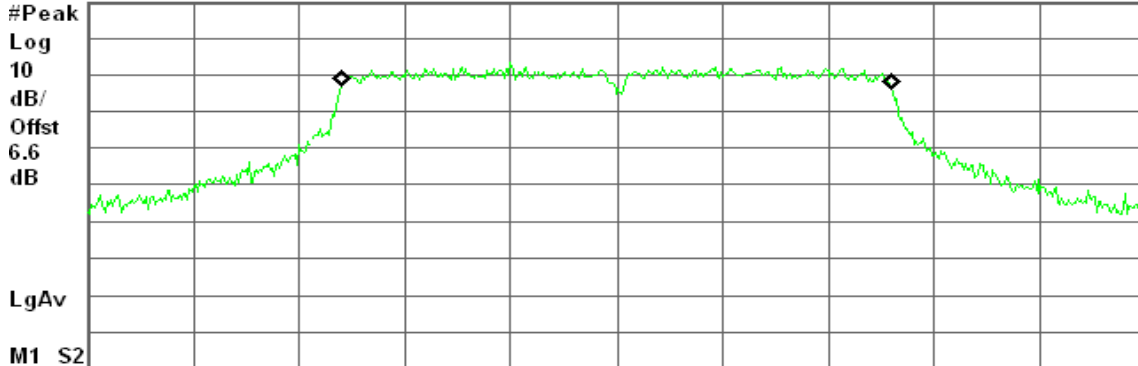
Agilent 11:40:52 May 8, 2009

R T

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 30 dB



Center 5.230 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.3690 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error 4.439 kHz  
x dB Bandwidth 43.828 MHz

### IEEE 802.11a mode / 5260 ~ 5320MHz

### CH Low

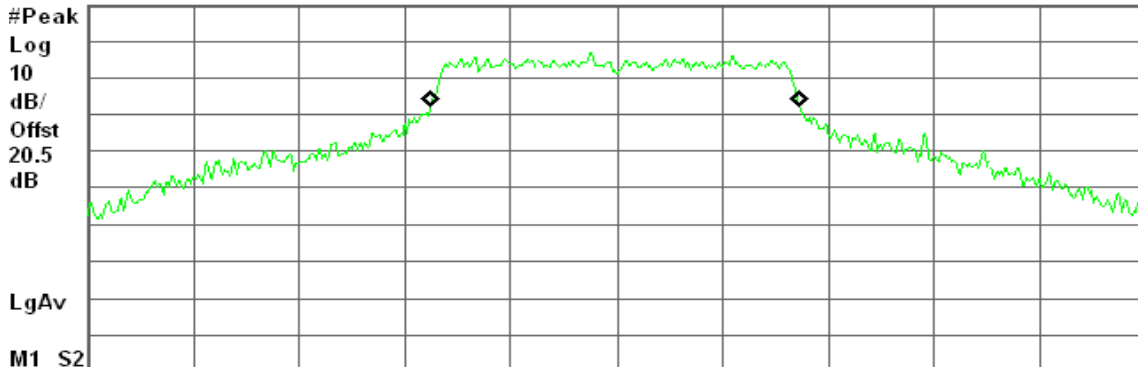
Agilent 19:13:00 Mar 10, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 10 dB



Center 5.260 00 GHz

Span 50 MHz

#Res BW 200 kHz

#VBW 620 kHz

Sweep 1.2 ms (601 pts)

Occupied Bandwidth  
17.3454 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -68.409 kHz  
x dB Bandwidth 28.238 MHz





### CH Mid

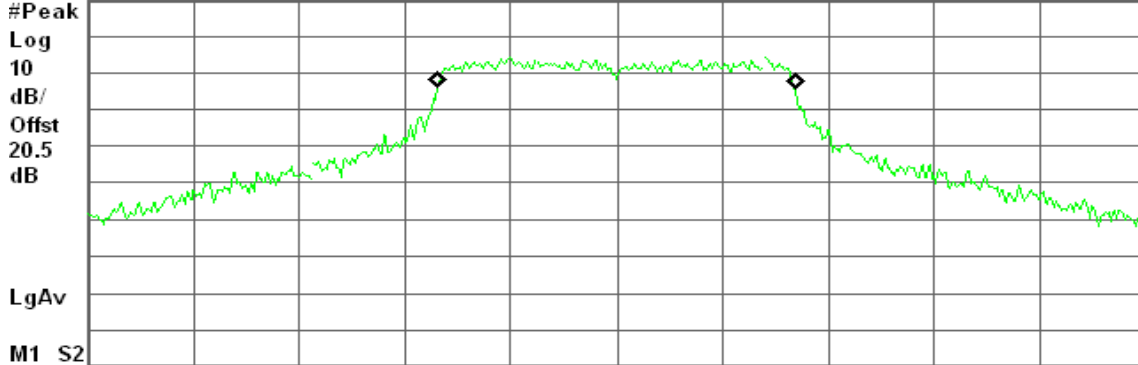
Agilent 19:19:08 Mar 10, 2009

R T

99% BW, a Mode Mid Ch.

Ref 20 dBm

Atten 10 dB



Center 5.280 00 GHz

Span 50 MHz

#Res BW 200 kHz

#VBW 620 kHz

Sweep 1.2 ms (601 pts)

Occupied Bandwidth  
16.8078 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -14.460 kHz  
x dB Bandwidth 23.279 MHz

### CH High

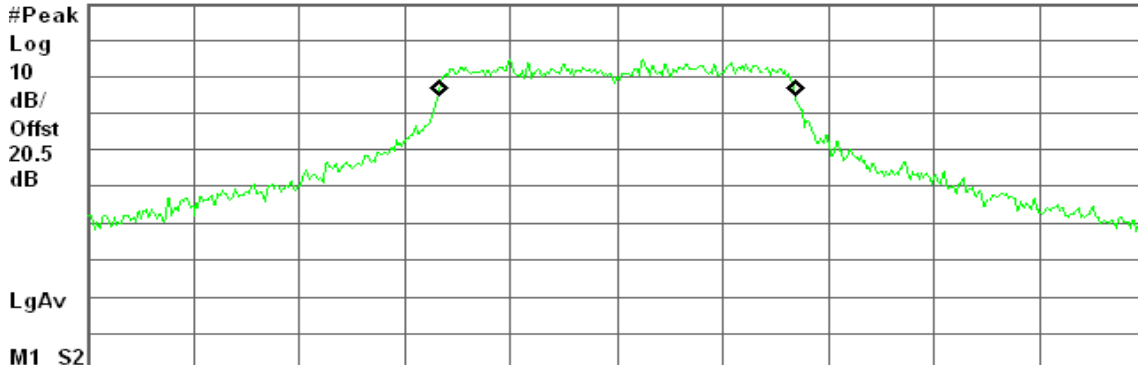
Agilent 19:23:13 Mar 10, 2009

R T

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 10 dB



Center 5.320 00 GHz

Span 50 MHz

#Res BW 200 kHz

#VBW 620 kHz

Sweep 1.2 ms (601 pts)

Occupied Bandwidth  
16.7569 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error 20.525 kHz  
x dB Bandwidth 22.548 MHz



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

**CH Low**

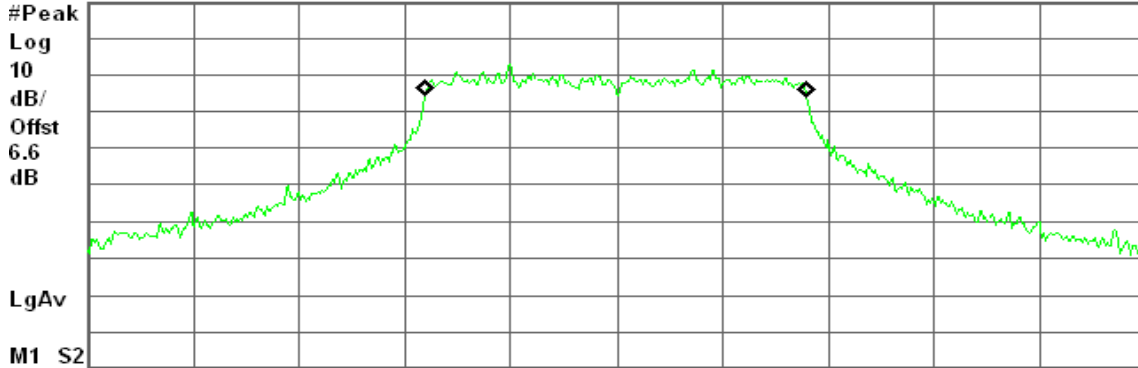
Agilent 10:53:02 May 8, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 30 dB



Center 5.260 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
17.9058 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -24.567 kHz  
x dB Bandwidth 22.221 MHz

**CH Mid**

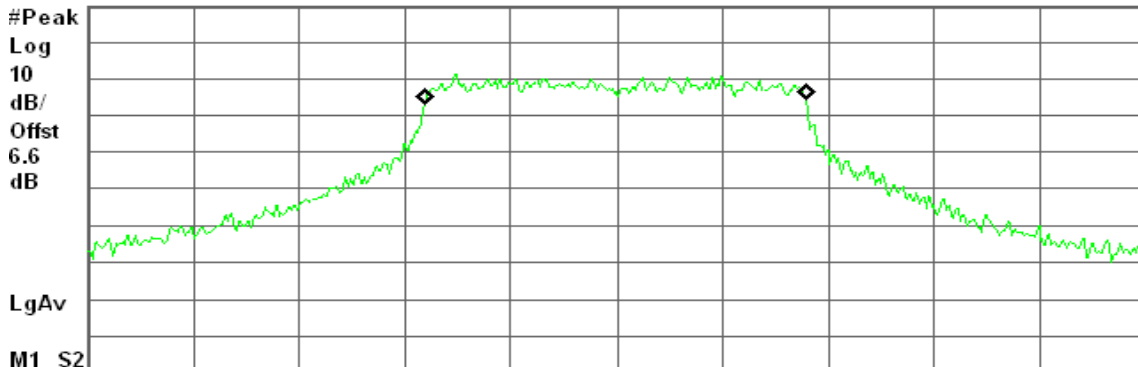
Agilent 10:51:47 May 8, 2009

R T

99% BW, a Mode Mid Ch.

Ref 20 dBm

Atten 30 dB



Center 5.280 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
17.8833 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -40.538 kHz  
x dB Bandwidth 23.357 MHz



### CH High

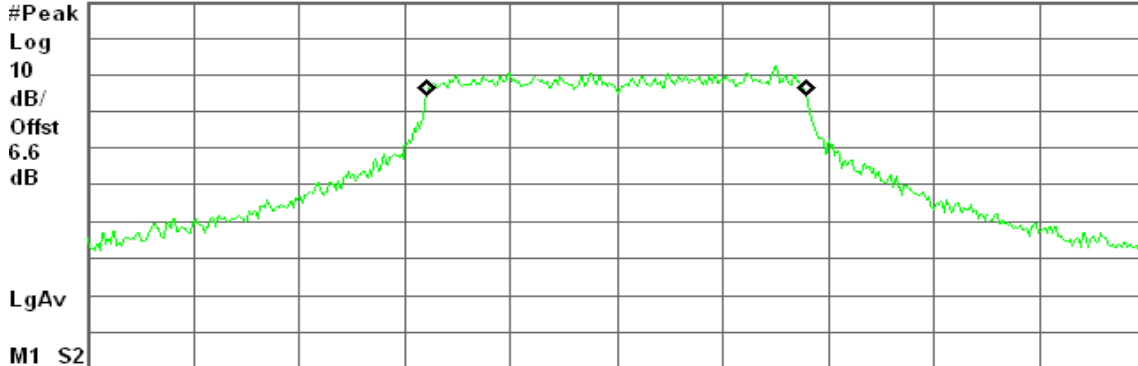
Agilent 10:50:18 May 8, 2009

R T

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 30 dB



Center 5.320 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
17.8627 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error 5.553 kHz  
x dB Bandwidth 22.642 MHz

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

### CH Low

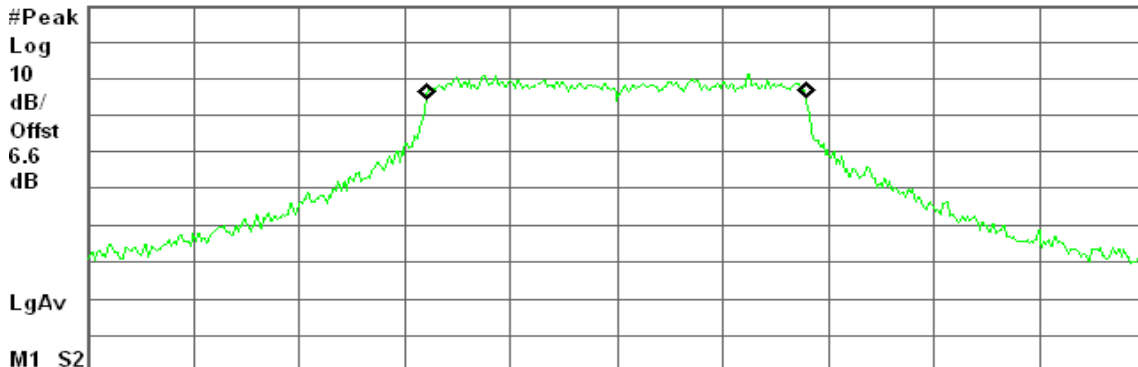
Agilent 10:45:38 May 8, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 30 dB



Center 5.260 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
17.8204 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -8.709 kHz  
x dB Bandwidth 23.454 MHz



### CH Mid

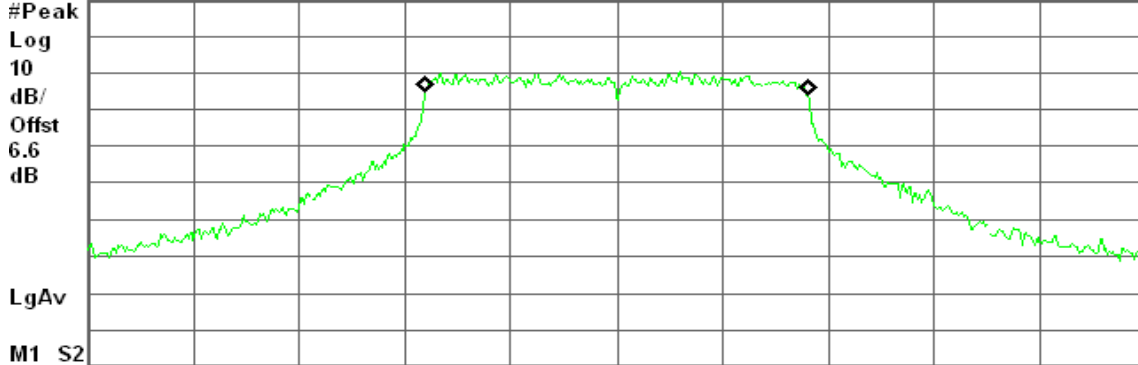
Agilent 10:47:07 May 8, 2009

R T

99% BW, a Mode Mid Ch.

Ref 20 dBm

Atten 30 dB



Center 5.280 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
17.9439 MHz

Occ BW % Pwr	99.00 %
x dB	-26.00 dB

Transmit Freq Error	8.365 kHz
x dB Bandwidth	23.199 MHz

### CH High

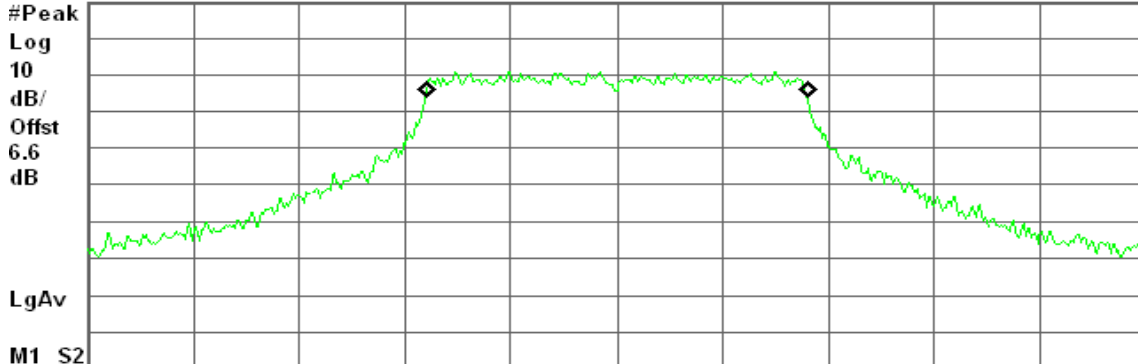
Agilent 10:48:32 May 8, 2009

R T

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 30 dB



Center 5.320 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
17.9181 MHz

Occ BW % Pwr	99.00 %
x dB	-26.00 dB

Transmit Freq Error	2.236 kHz
x dB Bandwidth	23.043 MHz



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

**CH Low**

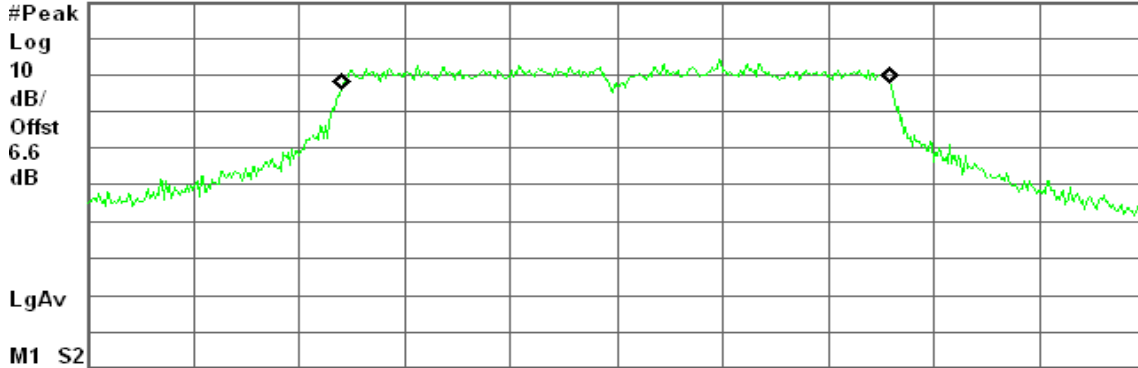
Agilent 11:35:16 May 8, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 30 dB



Center 5.270 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.3387 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -37.300 kHz  
x dB Bandwidth 44.188 MHz

**CH High**

Agilent 11:33:40 May 8, 2009

R T

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 30 dB



Center 5.310 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.4121 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -9.029 kHz  
x dB Bandwidth 44.737 MHz



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

**CH Low**

Agilent 11:36:59 May 8, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 30 dB



Center 5.270 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.3506 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -21.281 kHz  
x dB Bandwidth 44.657 MHz

**CH High**

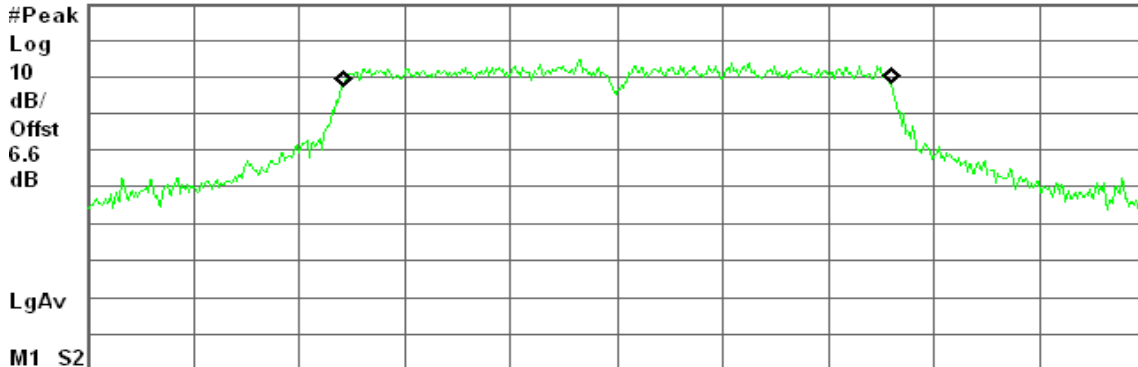
Agilent 11:38:20 May 8, 2009

R T

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 30 dB



Center 5.310 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.3010 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error 13.734 kHz  
x dB Bandwidth 44.043 MHz



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

**CH Low**

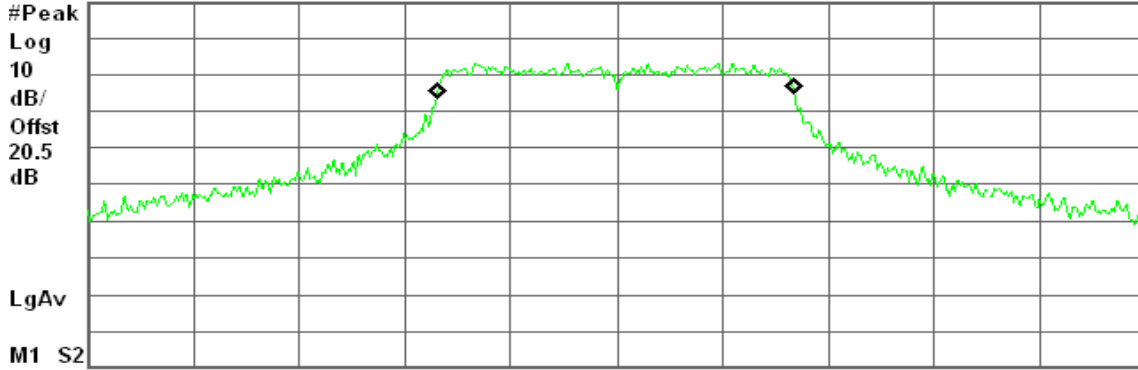
Agilent 19:39:59 Mar 10, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 10 dB



Center 5.500 00 GHz

Span 50 MHz

#Res BW 200 kHz

#VBW 620 kHz

Sweep 1.2 ms (601 pts)

**Occupied Bandwidth**  
**16.8148 MHz**

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -34.097 kHz  
x dB Bandwidth 24.520 MHz

**CH Mid**

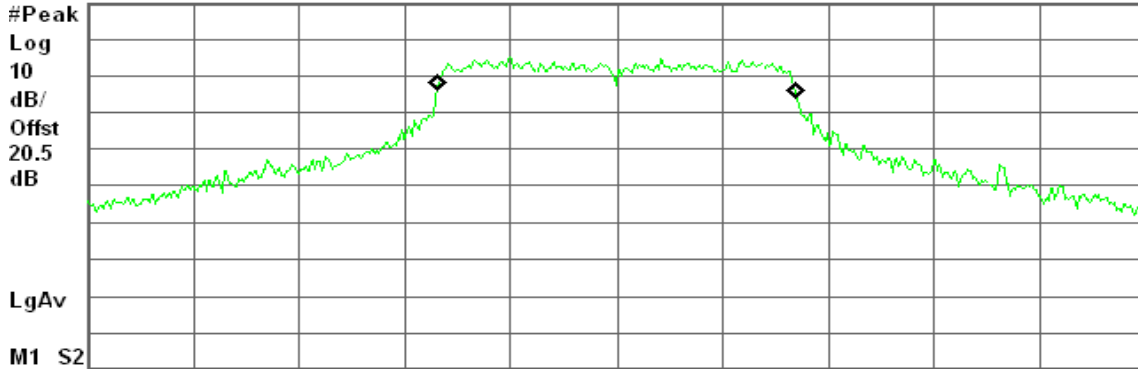
Agilent 19:52:14 Mar 10, 2009

R T

99% BW, a Mode Mid Ch.

Ref 20 dBm

Atten 10 dB



Center 5.600 00 GHz

Span 50 MHz

#Res BW 200 kHz

#VBW 620 kHz

Sweep 1.2 ms (601 pts)

**Occupied Bandwidth**  
**16.8898 MHz**

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error 6.471 kHz  
x dB Bandwidth 23.722 MHz



CH High

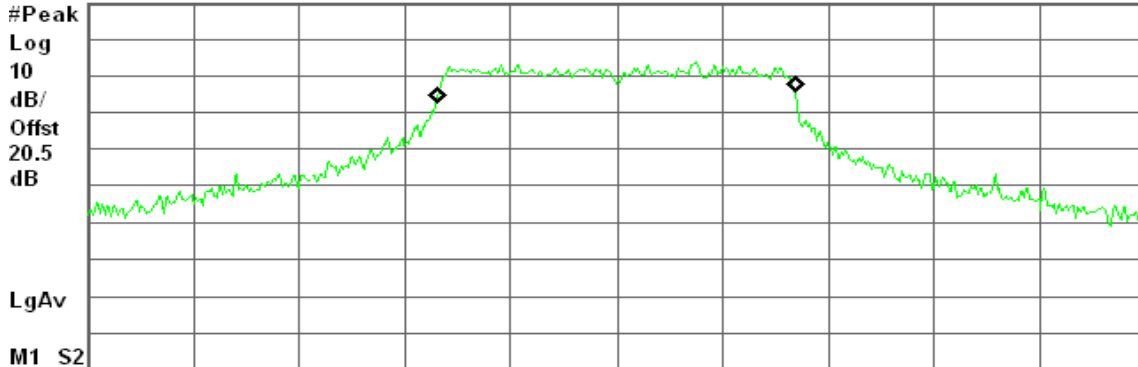
Agilent 19:55:50 Mar 10, 2009

R T

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 10 dB



Center 5.700 00 GHz

Span 50 MHz

#Res BW 200 kHz

#VBW 620 kHz

Sweep 1.2 ms (601 pts)

Occupied Bandwidth  
16.8420 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -35.986 kHz  
x dB Bandwidth 23.510 MHz

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

CH Low

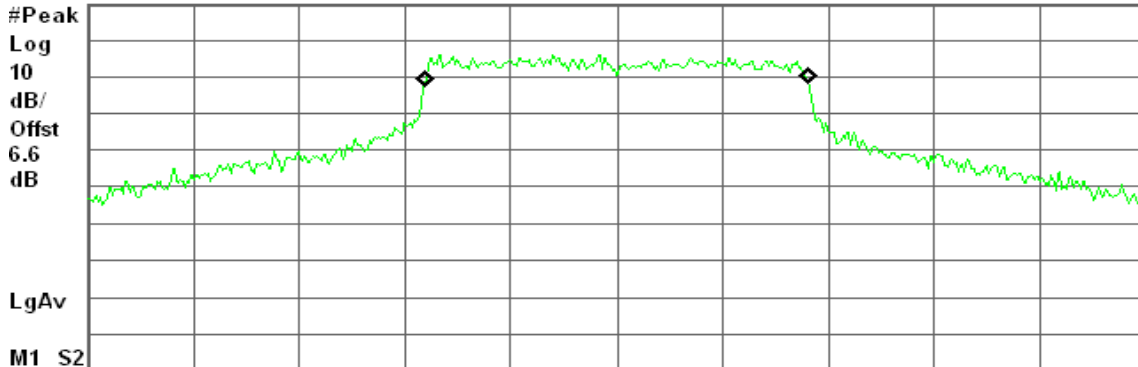
Agilent 10:57:19 May 8, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 30 dB



Center 5.500 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
18.0258 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error 3.281 kHz  
x dB Bandwidth 25.457 MHz





### CH Mid

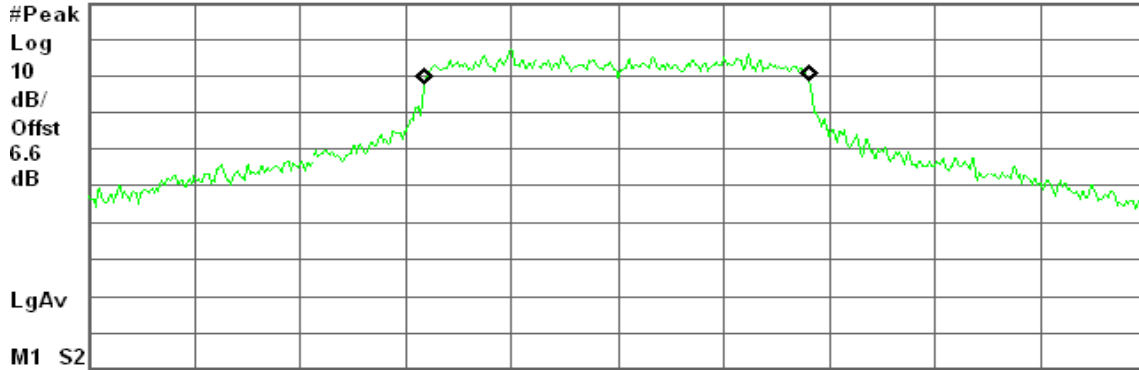
Agilent 10:58:52 May 8, 2009

R T

99% BW, a Mode Mid Ch.

Ref 20 dBm

Atten 30 dB



Center 5.600 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
18.0801 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -12.836 kHz  
x dB Bandwidth 23.572 MHz

### CH High

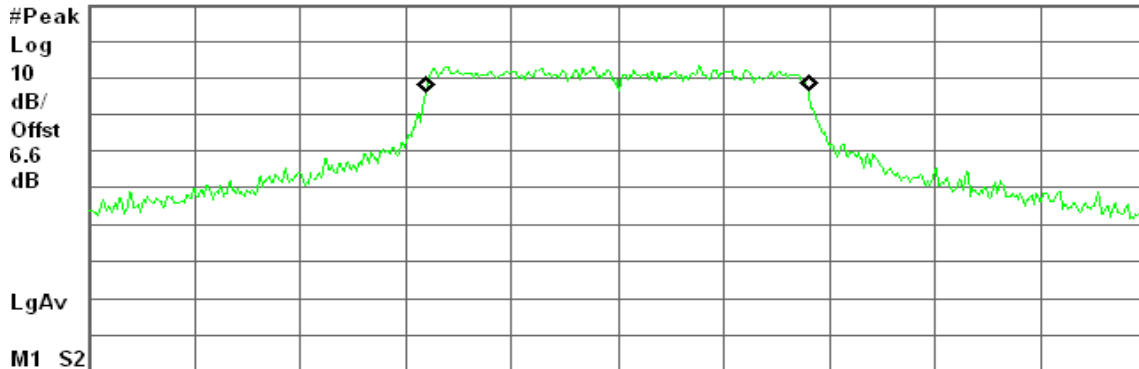
Agilent 11:00:08 May 8, 2009

R T

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 30 dB



Center 5.700 00 GHz

Span 50 MHz

#Res BW 200 kHz

#VBW 620 kHz

Sweep 1.2 ms (601 pts)

Occupied Bandwidth  
17.9814 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -15.596 kHz  
x dB Bandwidth 26.140 MHz



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

**CH Low**

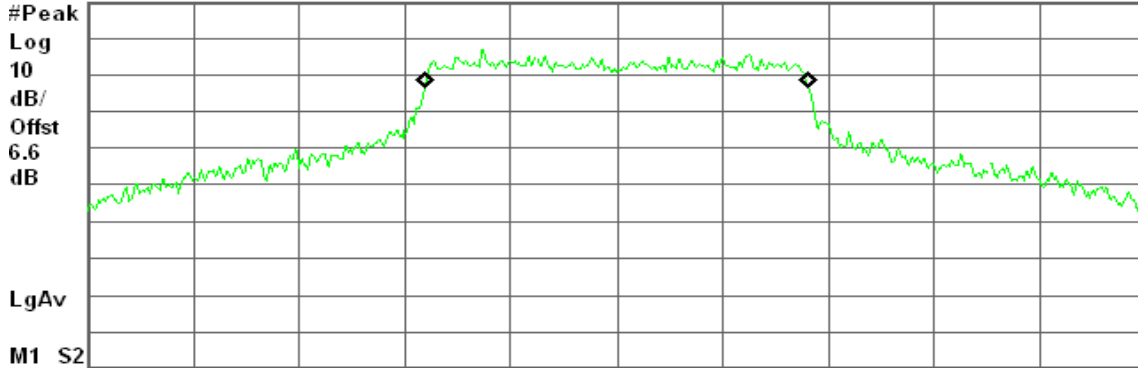
Agilent 11:05:36 May 8, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 30 dB



Center 5.500 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
18.0056 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error 12.501 kHz  
x dB Bandwidth 24.914 MHz

**CH Mid**

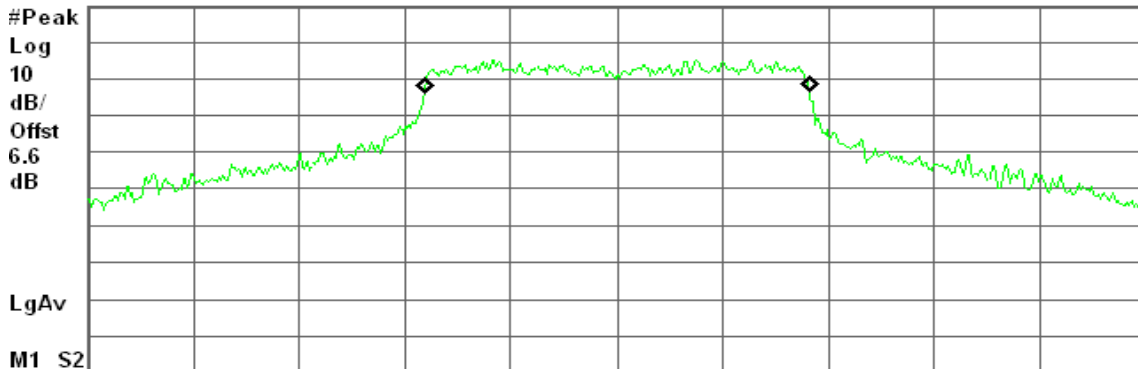
Agilent 11:03:36 May 8, 2009

R T

99% BW, a Mode Mid Ch.

Ref 20 dBm

Atten 30 dB



Center 5.600 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
18.0736 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error 12.462 kHz  
x dB Bandwidth 27.857 MHz



### CH High

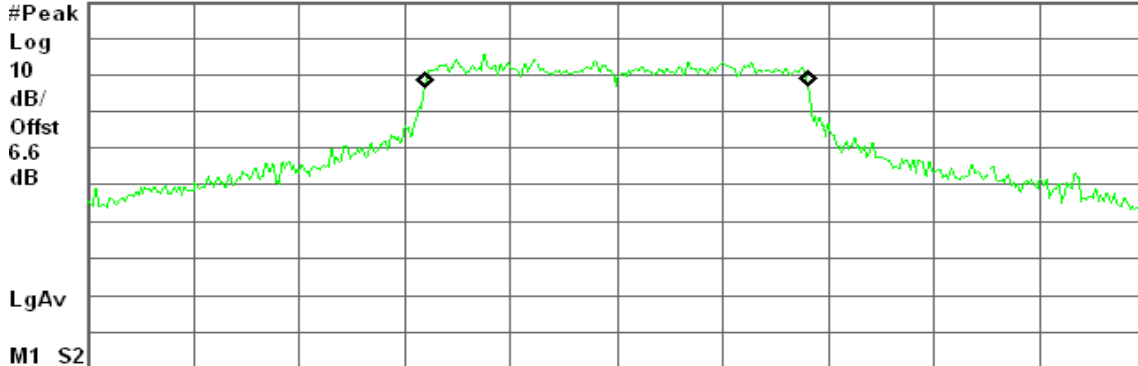
Agilent 11:01:45 May 8, 2009

R T

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 30 dB



Center 5.700 00 GHz

Span 50 MHz

#Res BW 220 kHz

#VBW 620 kHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
18.0396 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -3.654 kHz  
x dB Bandwidth 25.651 MHz

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

### CH Low

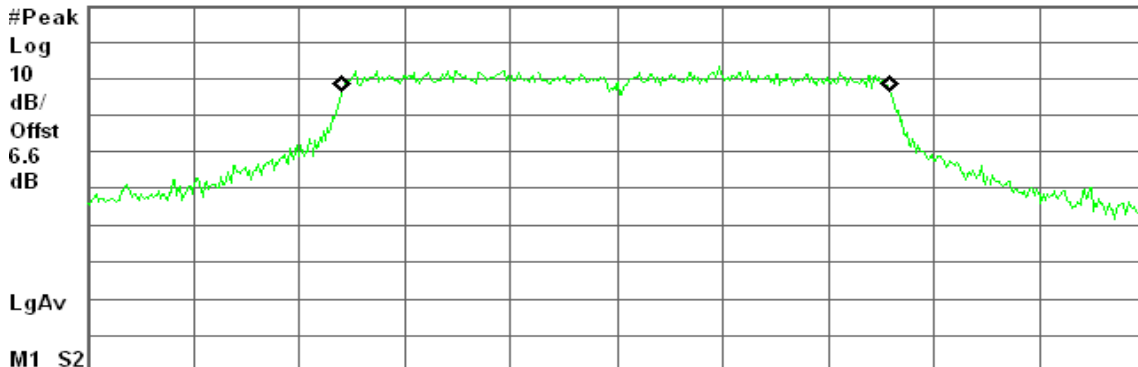
Agilent 11:30:55 May 8, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 30 dB



Center 5.510 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.2743 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -9.587 kHz  
x dB Bandwidth 44.419 MHz



### CH Mid

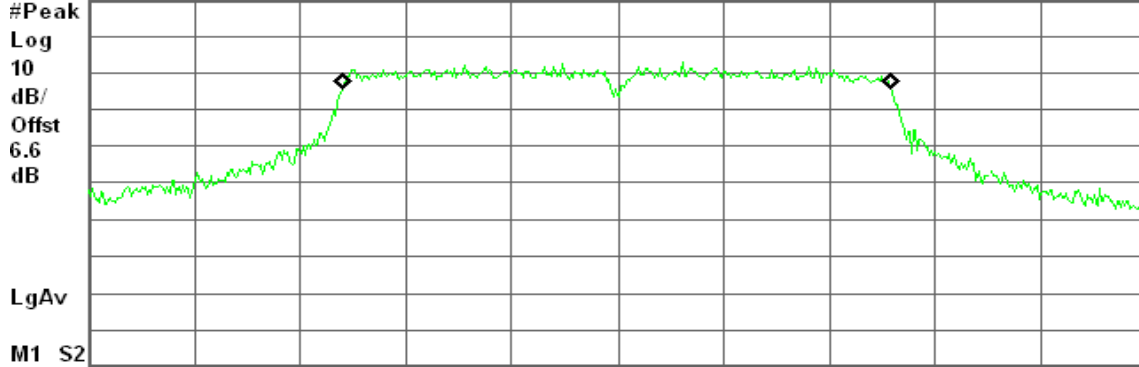
Agilent 11:29:25 May 8, 2009

R T

99% BW, a Mode Mid Ch.

Ref 20 dBm

Atten 30 dB



Center 5.590 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.3003 MHz

Occ BW % Pwr	99.00 %
x dB	-26.00 dB

Transmit Freq Error	-54.063 kHz
x dB Bandwidth	44.864 MHz

### CH High

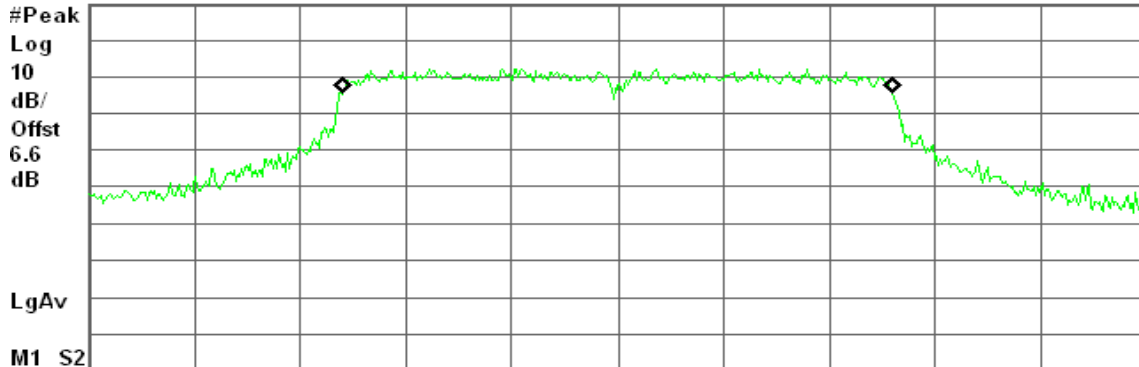
Agilent 11:27:40 May 8, 2009

R L

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 30 dB



Center 5.670 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.3936 MHz

Occ BW % Pwr	99.00 %
x dB	-26.00 dB

Transmit Freq Error	-48.616 kHz
x dB Bandwidth	47.225 MHz



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

**CH Low**

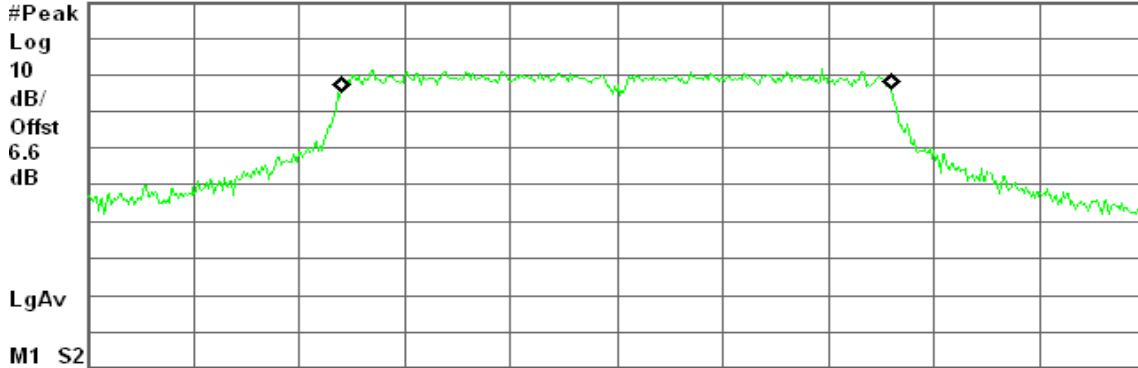
Agilent 11:14:37 May 8, 2009

R T

99% BW, a Mode Low Ch.

Ref 20 dBm

Atten 30 dB



Center 5.510 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.4106 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -30.806 kHz  
x dB Bandwidth 44.852 MHz

**CH Mid**

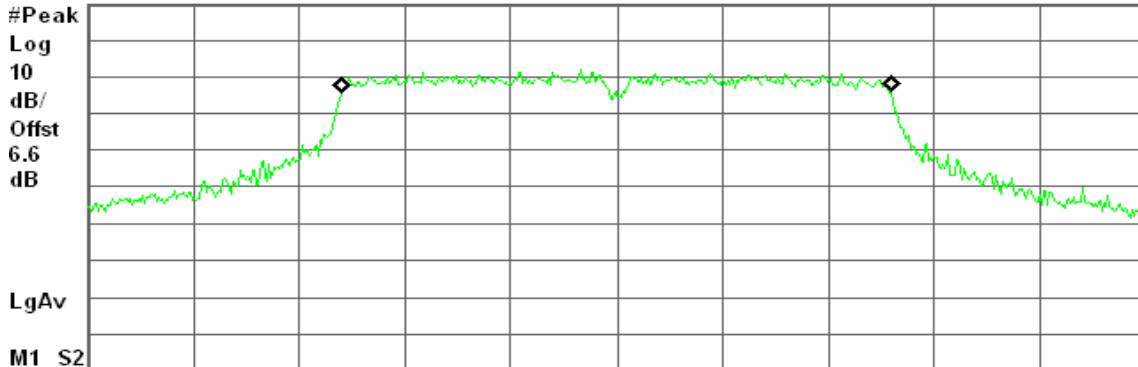
Agilent 11:23:40 May 8, 2009

R T

99% BW, a Mode Mid Ch.

Ref 20 dBm

Atten 30 dB



Center 5.590 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.3232 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error -11.538 kHz  
x dB Bandwidth 46.117 MHz



### CH High

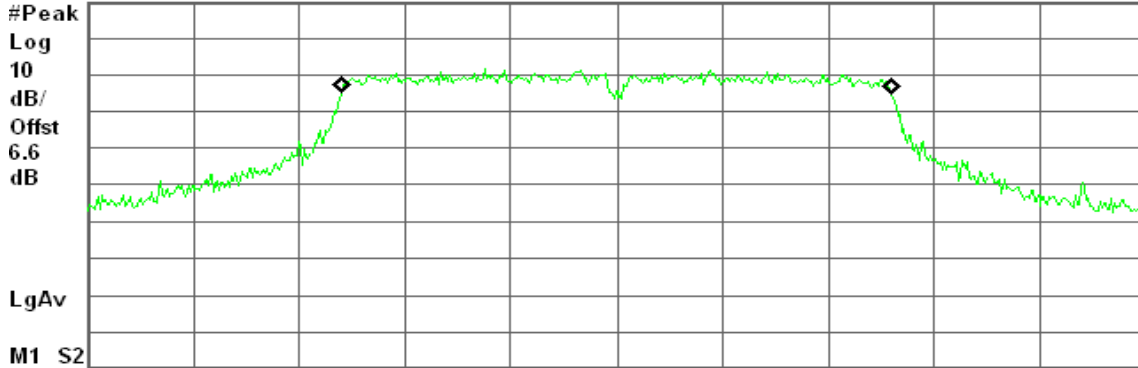
Agilent 11:26:02 May 8, 2009

R T

99% BW, a Mode High Ch.

Ref 20 dBm

Atten 30 dB



Center 5.670 00 GHz

Span 70 MHz

#Res BW 430 kHz

#VBW 1.3 MHz

Sweep 1 ms (601 pts)

Occupied Bandwidth  
36.3616 MHz

Occ BW % Pwr 99.00 %  
x dB -26.00 dB

Transmit Freq Error 8.981 kHz  
x dB Bandwidth 45.338 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	23.571	13.72	17.72	17.00
Mid	5220	24.642	13.92	17.92	17.00
High	5240	30.243	14.81	18.81	17.00

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

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5180	23.176	21.877	13.65	17.65	17.00
Mid	5220	23.313	23.184	13.68	17.68	17.00
High	5240	21.490	23.161	13.65	17.65	17.00

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

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5190	44.369	44.618	16.50	20.50	17.00
High	5230	43.371	43.828	16.42	20.42	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	28.238	14.51	25.51	24.00
Mid	5280	23.279	13.67	24.67	24.00
High	5320	22.548	13.53	24.53	24.00

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

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5260	22.221	23.454	13.70	24.70	24.00
Mid	5280	23.357	23.199	13.68	24.68	24.00
High	5320	22.642	23.043	13.63	24.63	24.00

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

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5270	44.188	44.657	16.50	27.50	24.00
High	5310	44.737	44.043	16.51	27.51	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	24.520	13.90	24.90	24.00
Mid	5600	23.722	13.75	24.75	24.00
High	5700	23.510	13.71	24.71	24.00

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

Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5500	25.457	24.914	14.06	25.06	24.00
Mid	5600	23.572	27.857	14.45	25.45	24.00
High	5700	26.140	25.651	14.17	25.17	24.00

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

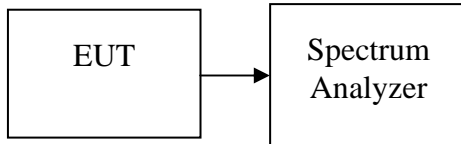
Channel	Frequency (MHz)	Chain 0 26 dB Bandwidth (B) (MHz)	Chain 1 26 dB Bandwidth (B) (MHz)	10 Log B (dB)	4 + 10 Log B or 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5510	44.419	44.852	16.52	27.52	24.00
Mid	5590	44.864	46.117	16.64	27.64	24.00
High	5670	47.225	45.338	16.74	27.74	24.00





### **Test Configuration**

*The EUT was connected to a spectrum analyzer through a 50  $\Omega$  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	14.72	17.00
Mid	5220	14.83	17.00
High	5240	15.07	17.00

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5180	11.72	11.20	14.48	16.00
Mid	5220	12.37	11.80	15.10	16.00
High	5240	13.02	11.50	15.34	16.00

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5190	12.66	11.81	15.27	16.00
High	5230	12.66	12.90	15.79	16.00

**Remark:**

1. Total Output Power (w) = Chain 0 (10^(Output Power /10)/1000) + Chain 1 (10^(Output Power /10)/1000))
2. The maximum antenna gain is 7.09dBi; therefore the reduction due to antenna gain is 1dB, so the limit is 16dBm.

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5260	14.62	24.00
Mid	5280	15.48	24.00
High	5320	14.92	24.00

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5260	12.51	11.64	15.11	23.00
Mid	5280	11.61	11.11	14.38	23.00
High	5320	12.34	11.73	15.06	23.00

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5270	13.33	13.13	16.24	23.00
High	5310	12.93	13.75	16.37	23.00

**Remark:**

1. Total Output Power (w) = Chain 0 ( $10^{(Output\ Power / 10) / 1000}$ ) + Chain 1 ( $10^{(Output\ Power / 10) / 1000}$ )

2. The maximum antenna gain is 7.09dBi; therefore the reduction due to antenna gain is 1dB, so the limit is 23dBm.



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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5500	16.57	24.00
Mid	5600	15.70	24.00
High	5700	14.69	24.00

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5500	18.27	16.69	20.56	23.00
Mid	5600	17.28	16.28	19.82	23.00
High	5700	15.05	14.90	17.99	23.00

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

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5510	12.00	12.69	15.37	23.00
Mid	5590	11.58	13.57	15.70	23.00
High	5670	13.69	13.57	16.64	23.00

**Remark:**

1. Total Output Power (w) = Chain 0 (10<sup>^(Output Power /10)</sup>/1000) + Chain 1 (10<sup>^(Output Power /10)</sup>/1000)
2. The maximum antenna gain is 7.09dBi; therefore the reduction due to antenna gain is 1dB, so the limit is 23dBm.



**Test Plot**

**IEEE 802.11a mode / 5180 ~ 5240MHz**

**CH Low**

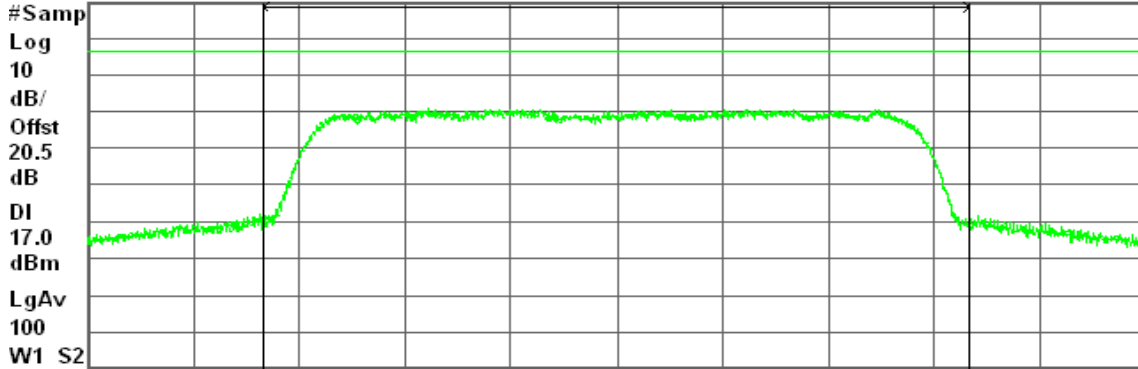
Agilent 18:48:55 Mar 10, 2009

R T

Conducted Spur., a Mode Low Ch.

Ref 30.5 dBm

#Atten 20 dB



Center 5.180 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1.067 ms (2001 pts)

Channel Power

Power Spectral Density

14.72 dBm / 20.0000 MHz

-58.29 dBm/Hz

**CH Mid**

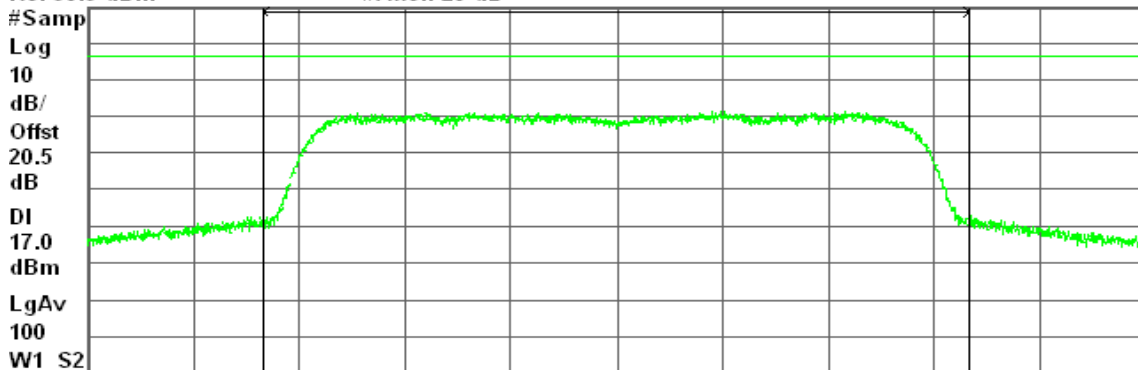
Agilent 19:03:33 Mar 10, 2009

R T

Conducted Spur., a Mode Mid Ch.

Ref 30.5 dBm

#Atten 20 dB



Center 5.220 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1.067 ms (2001 pts)

Channel Power

Power Spectral Density

14.83 dBm / 20.0000 MHz

-58.18 dBm/Hz



CH High

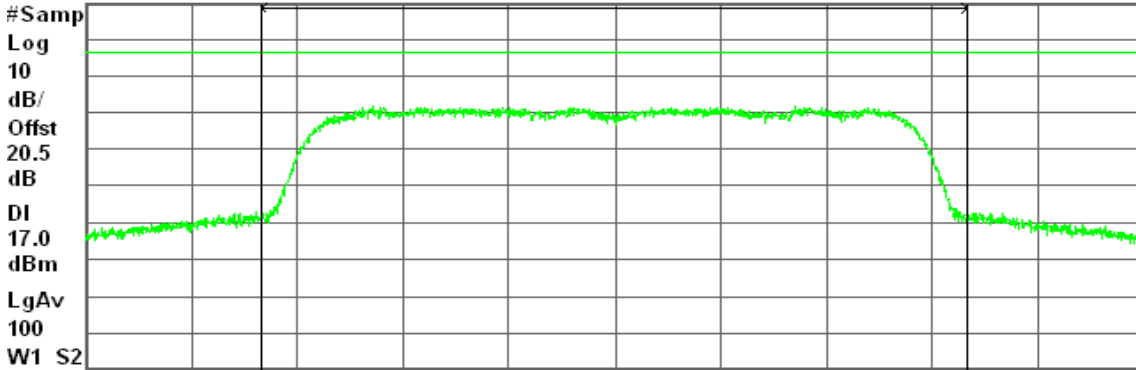
Agilent 19:11:10 Mar 10, 2009

R T

Conducted Spur., a Mode High Ch.

Ref 30.5 dBm

#Atten 20 dB



Center 5.240 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1.067 ms (2001 pts)

Channel Power

Power Spectral Density

15.07 dBm / 20.0000 MHz

-57.94 dBm/Hz

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

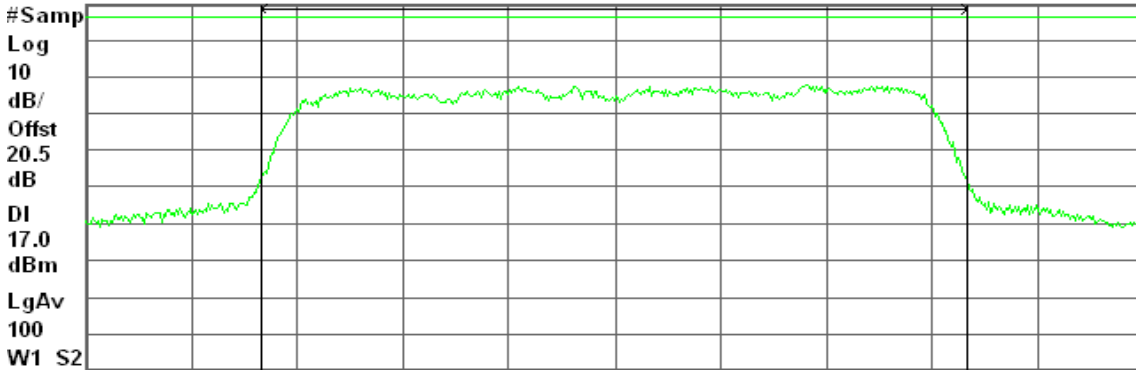
CH Low

Agilent 00:54:12 Mar 11, 2009

R T

Ref 20.5 dBm

#Atten 10 dB



Center 5.180 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

11.72 dBm / 20.0000 MHz

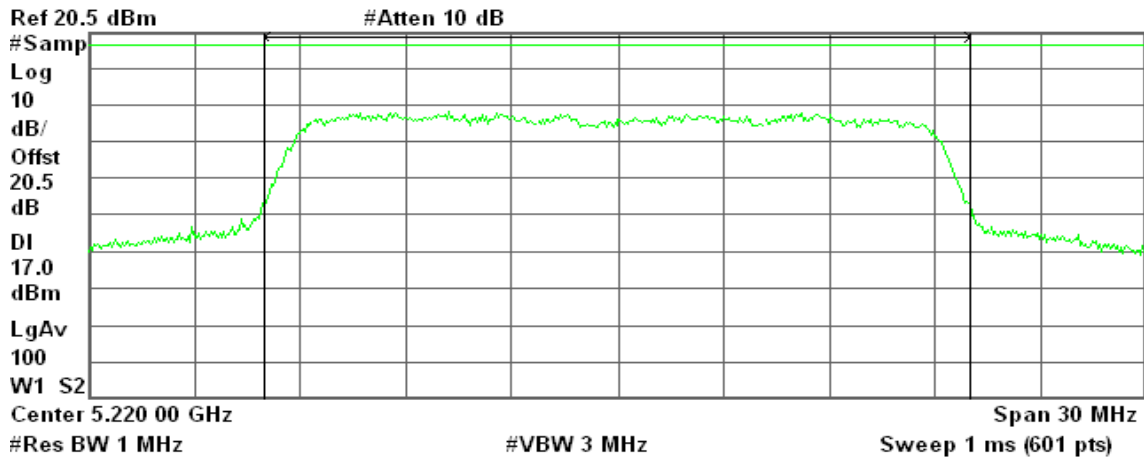
-61.29 dBm/Hz



### CH Mid

Agilent 00:53:43 Mar 11, 2009

R T



Channel Power

12.37 dBm / 20.0000 MHz

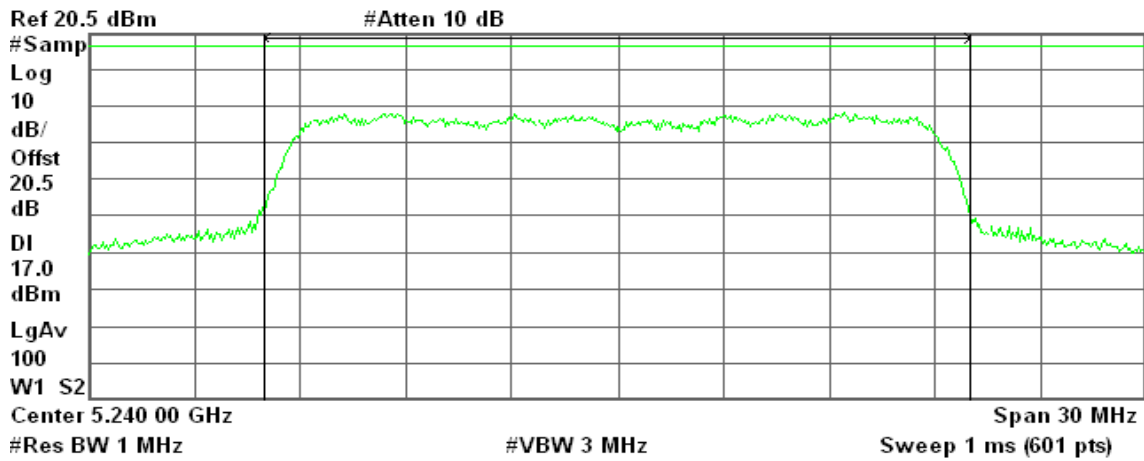
Power Spectral Density

-60.64 dBm/Hz

### CH High

Agilent 00:53:14 Mar 11, 2009

R T



Channel Power

13.02 dBm / 20.0000 MHz

Power Spectral Density

-59.99 dBm/Hz

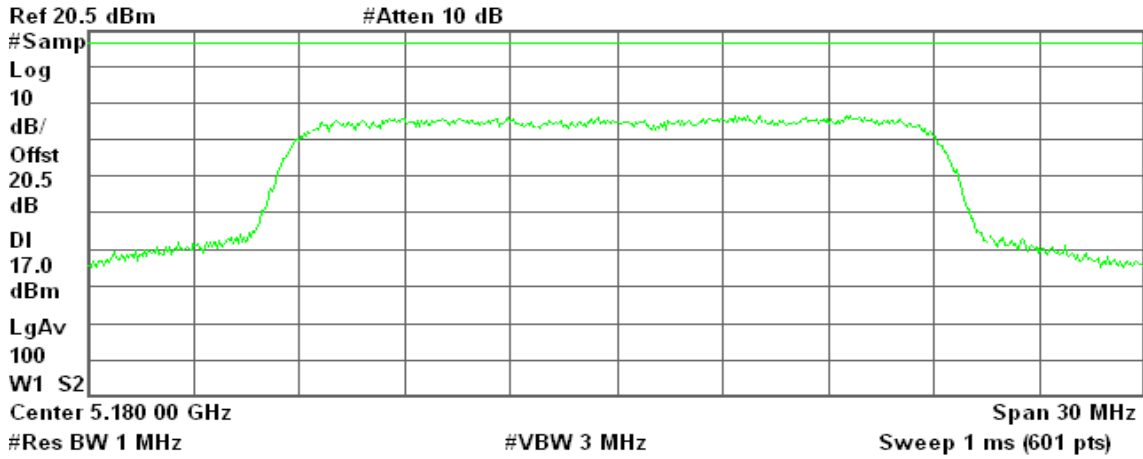


**draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1**

**CH Low**

Agilent 00:57:01 Mar 11, 2009

R T



Channel Power

11.20 dBm / 20.0000 MHz

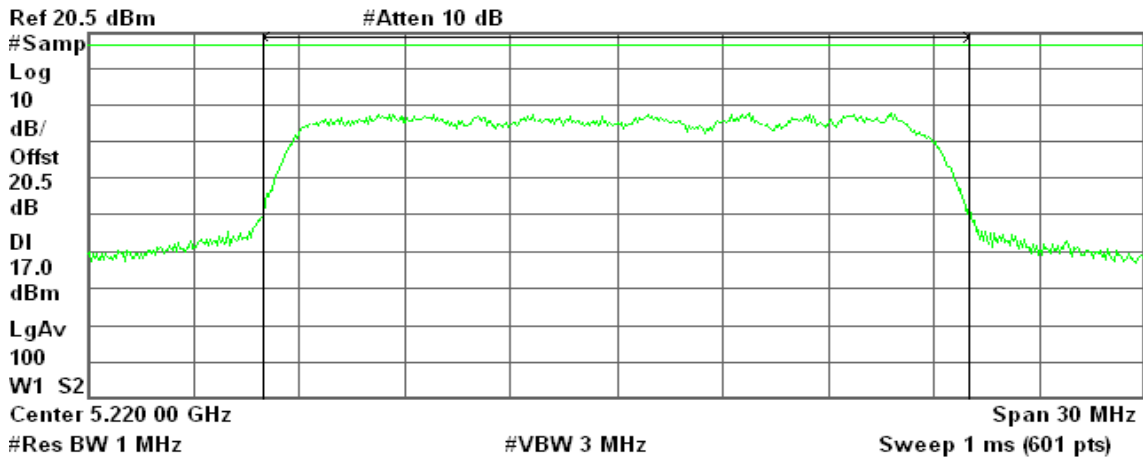
Power Spectral Density

-61.81 dBm/Hz

**CH Mid**

Agilent 00:58:51 Mar 11, 2009

R T



Channel Power

11.80 dBm / 20.0000 MHz

Power Spectral Density

-61.21 dBm/Hz

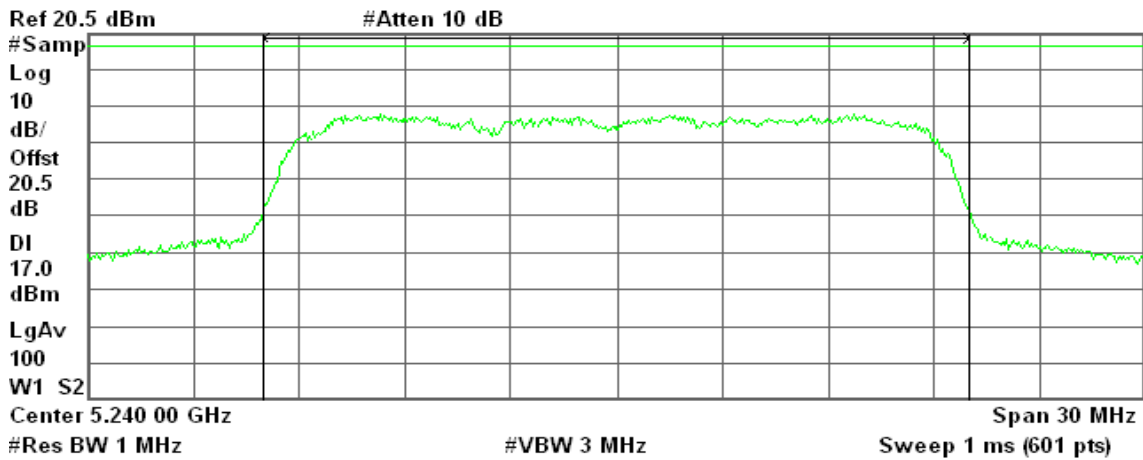




### CH High

Agilent 00:59:32 Mar 11, 2009

R T



Channel Power

11.50 dBm / 20.0000 MHz

Power Spectral Density

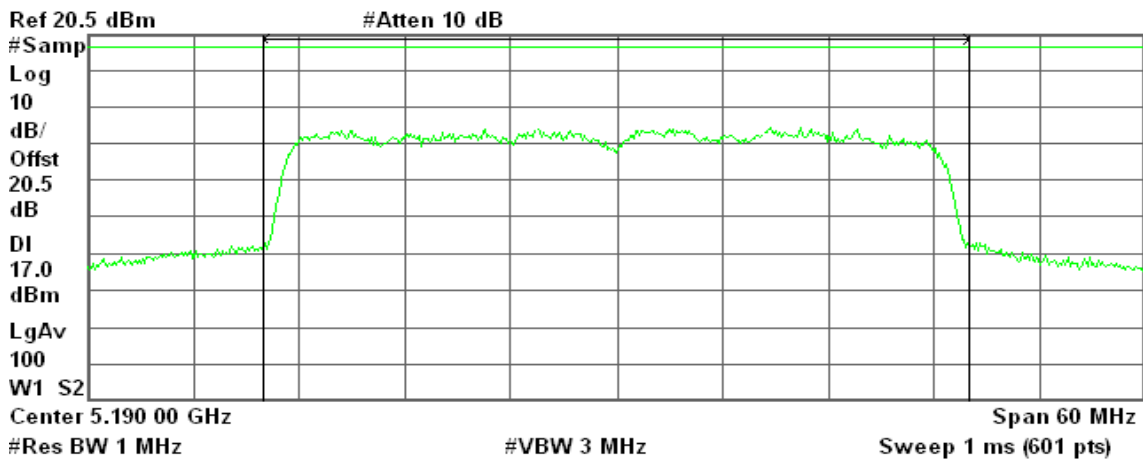
-61.51 dBm/Hz

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

### CH Low

Agilent 02:40:48 Mar 11, 2009

R T



Channel Power

12.66 dBm / 40.0000 MHz

Power Spectral Density

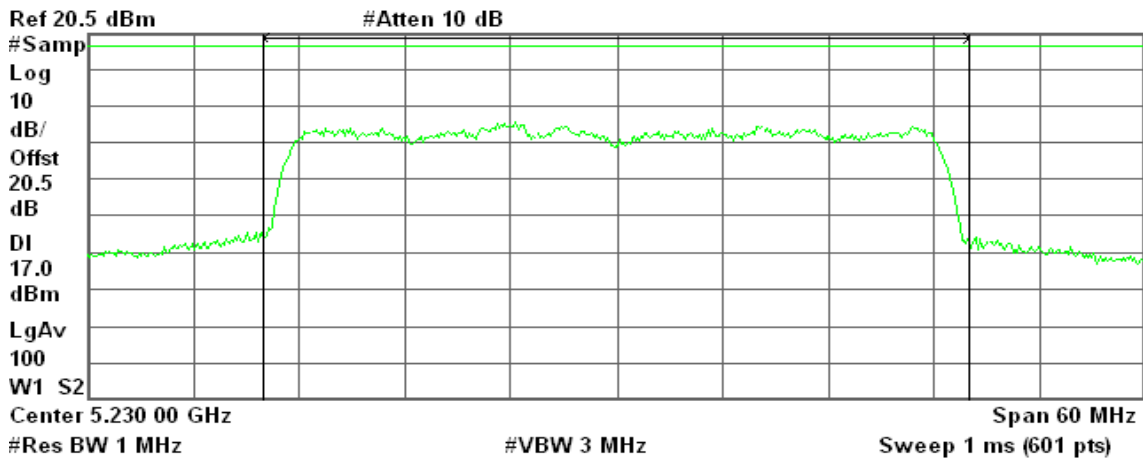
-63.36 dBm/Hz



### CH High

Agilent 02:40:19 Mar 11, 2009

R T



Channel Power

12.66 dBm / 40.0000 MHz

Power Spectral Density

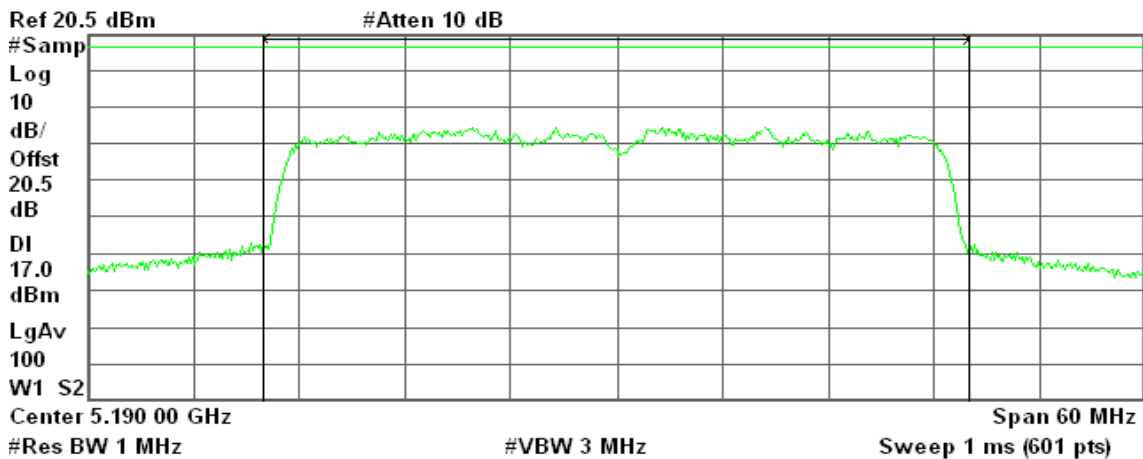
-63.36 dBm/Hz

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

### CH Low

Agilent 02:32:53 Mar 11, 2009

R T



Channel Power

11.81 dBm / 40.0000 MHz

Power Spectral Density

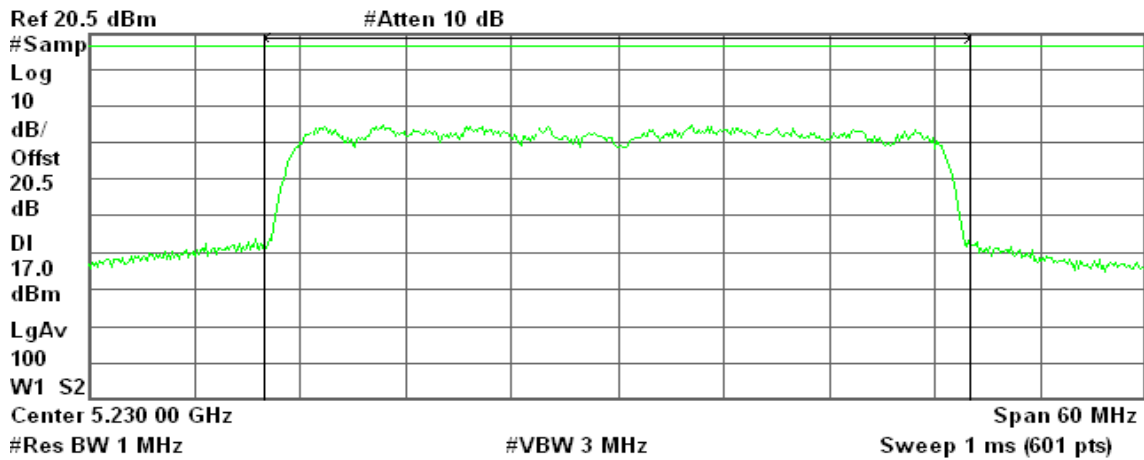
-64.21 dBm/Hz



### CH High

Agilent 02:33:41 Mar 11, 2009

R T



Channel Power

12.90 dBm / 40.0000 MHz

Power Spectral Density

-63.12 dBm/Hz

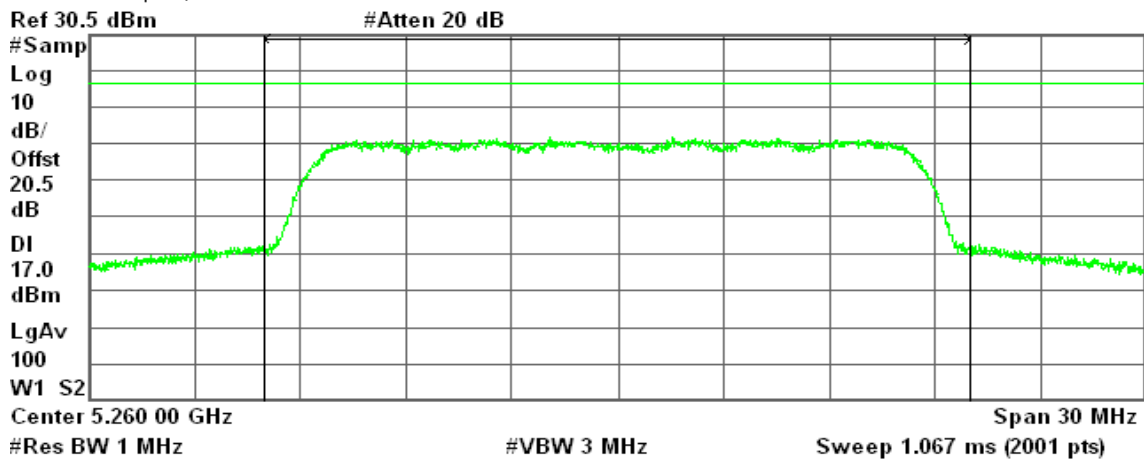
### IEEE 802.11a mode / 5260 ~ 5320MHz

#### CH Low

Agilent 19:18:07 Mar 10, 2009

R T

Conducted Spur., a Mode Low Ch.



Channel Power

14.62 dBm / 20.0000 MHz

Power Spectral Density

-58.39 dBm/Hz



### CH Mid

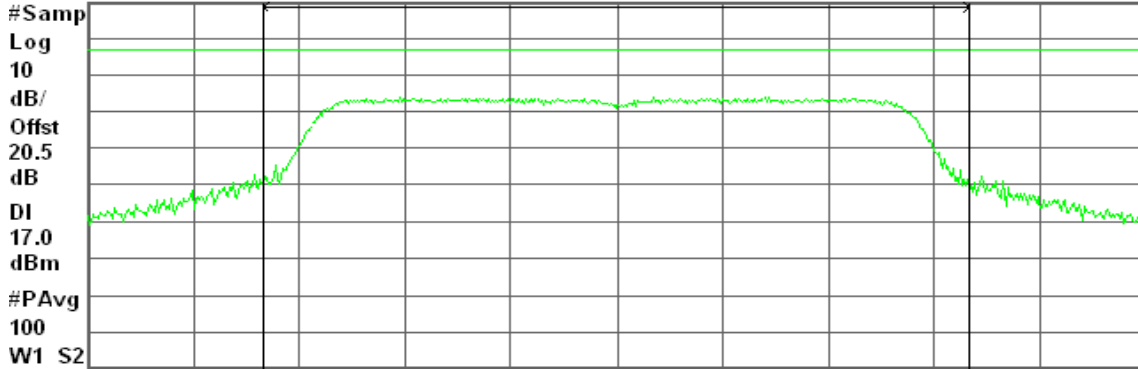
Agilent 19:20:23 Mar 10, 2009

R T

Peak Transmit Power, a Mode Mid Ch.

Ref 30 dBm

Atten 20 dB



Center 5.280 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

15.48 dBm / 20.0000 MHz

-57.53 dBm/Hz

### CH High

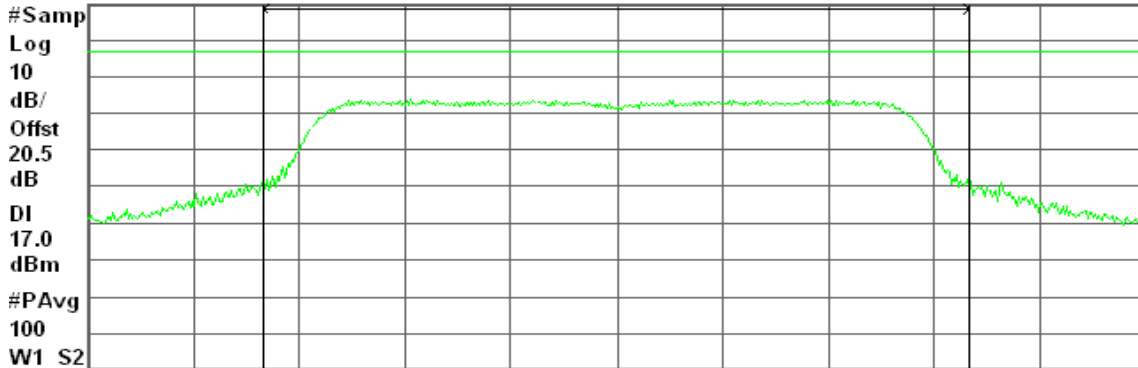
Agilent 19:25:05 Mar 10, 2009

R T

Peak Transmit Power, a Mode High Ch.

Ref 30 dBm

Atten 20 dB



Center 5.320 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

14.92 dBm / 20.0000 MHz

-58.09 dBm/Hz

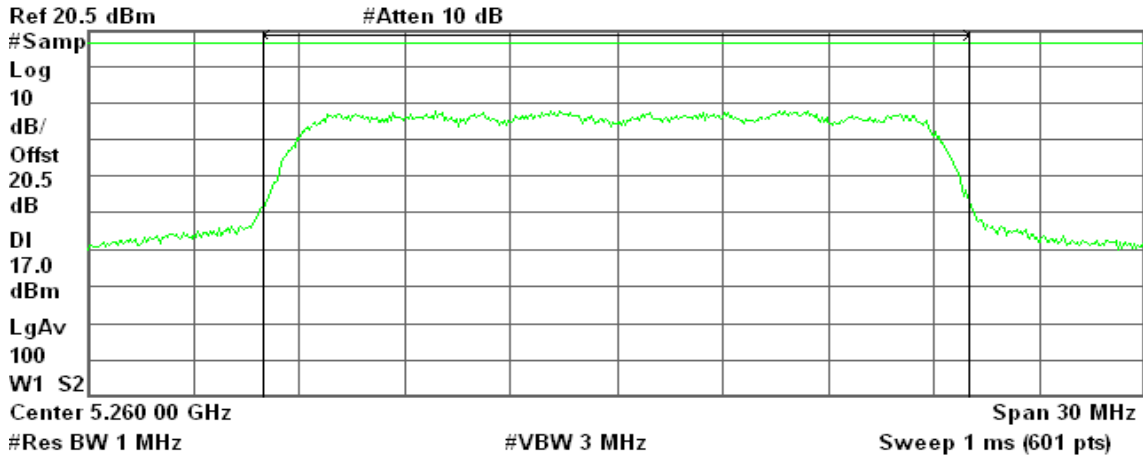


**draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0**

**CH Low**

Agilent 00:52:44 Mar 11, 2009

R T



Channel Power

12.51 dBm / 20.0000 MHz

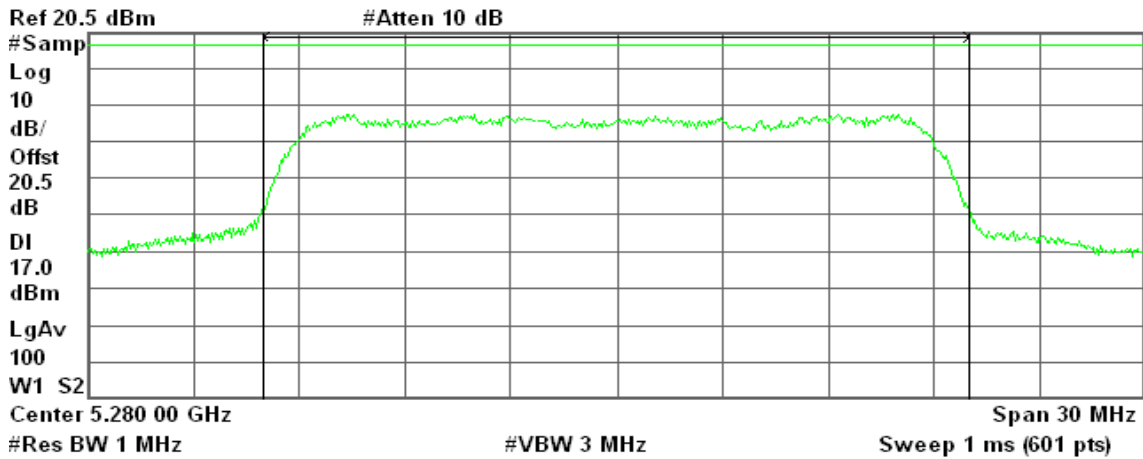
Power Spectral Density

-60.50 dBm/Hz

**CH Mid**

Agilent 00:52:15 Mar 11, 2009

R T



Channel Power

11.61 dBm / 20.0000 MHz

Power Spectral Density

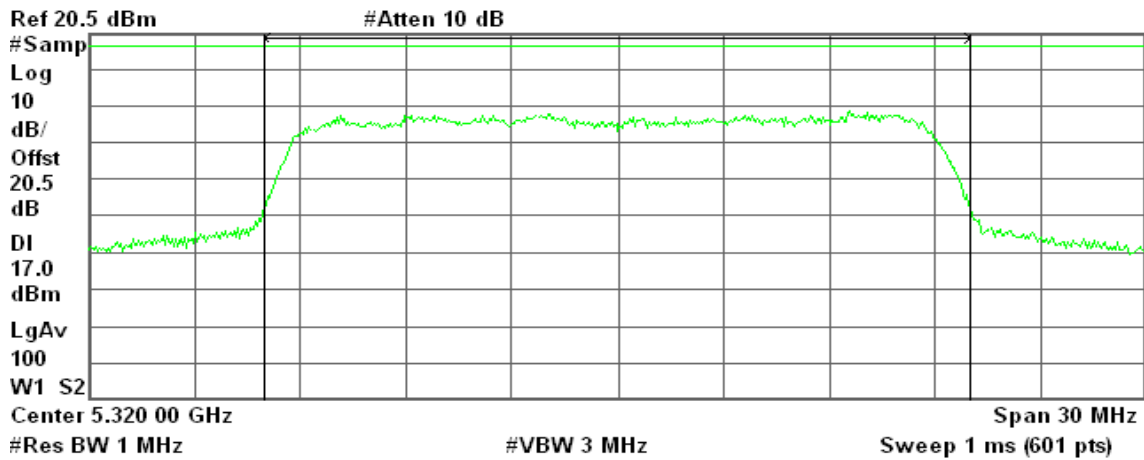
-61.40 dBm/Hz



### CH High

Agilent 00:51:45 Mar 11, 2009

R T



Channel Power

12.34 dBm / 20.0000 MHz

Power Spectral Density

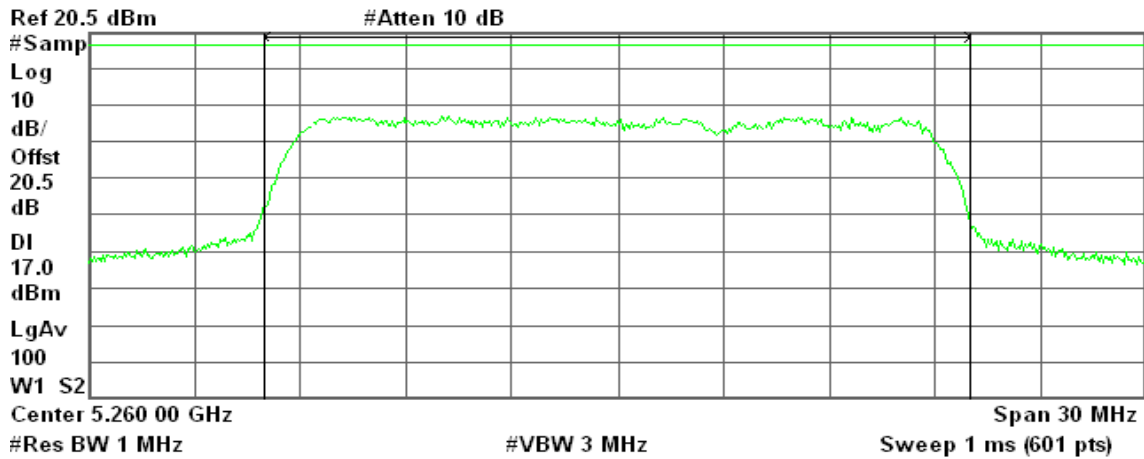
-60.67 dBm/Hz

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

### CH Low

Agilent 01:00:04 Mar 11, 2009

R T



Channel Power

11.64 dBm / 20.0000 MHz

Power Spectral Density

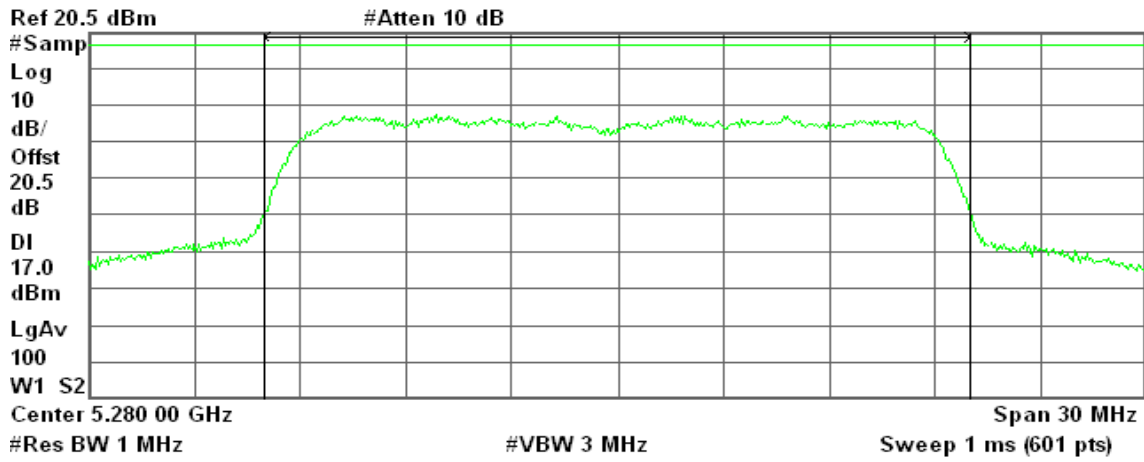
-61.37 dBm/Hz



### CH Mid

Agilent 01:00:44 Mar 11, 2009

R T



Channel Power

11.11 dBm / 20.0000 MHz

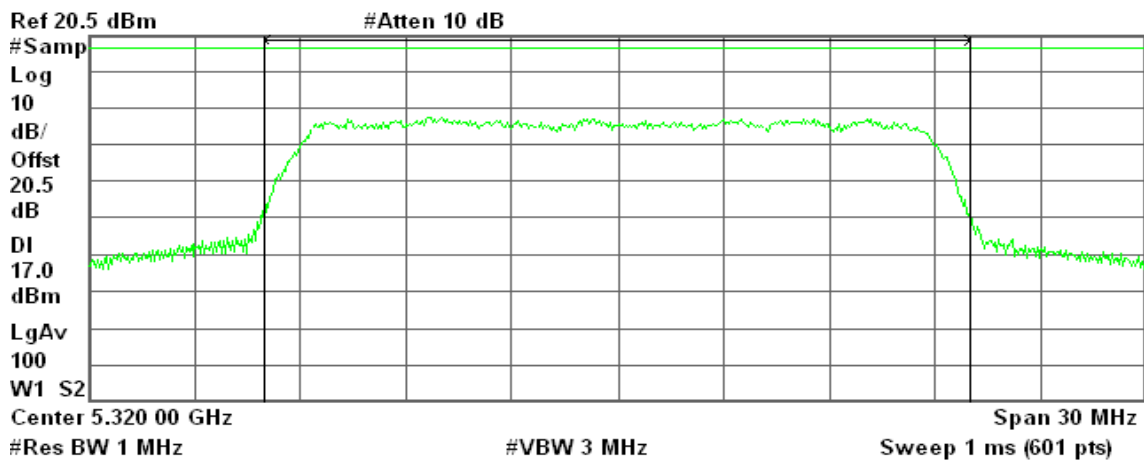
Power Spectral Density

-61.90 dBm/Hz

### CH High

Agilent 01:01:15 Mar 11, 2009

R T



Channel Power

11.73 dBm / 20.0000 MHz

Power Spectral Density

-61.28 dBm/Hz

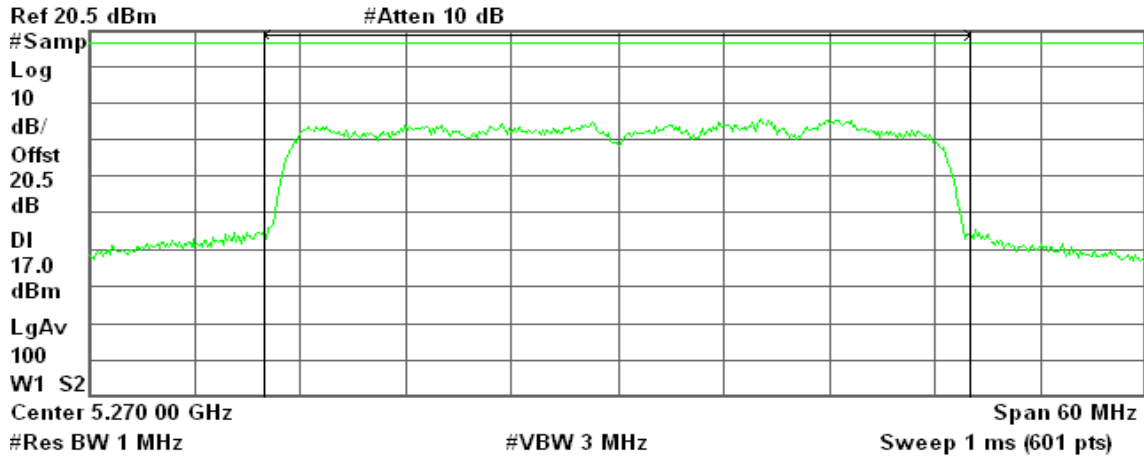


**draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 0**

**CH Low**

Agilent 02:39:50 Mar 11, 2009

R T



Channel Power

13.33 dBm / 40.0000 MHz

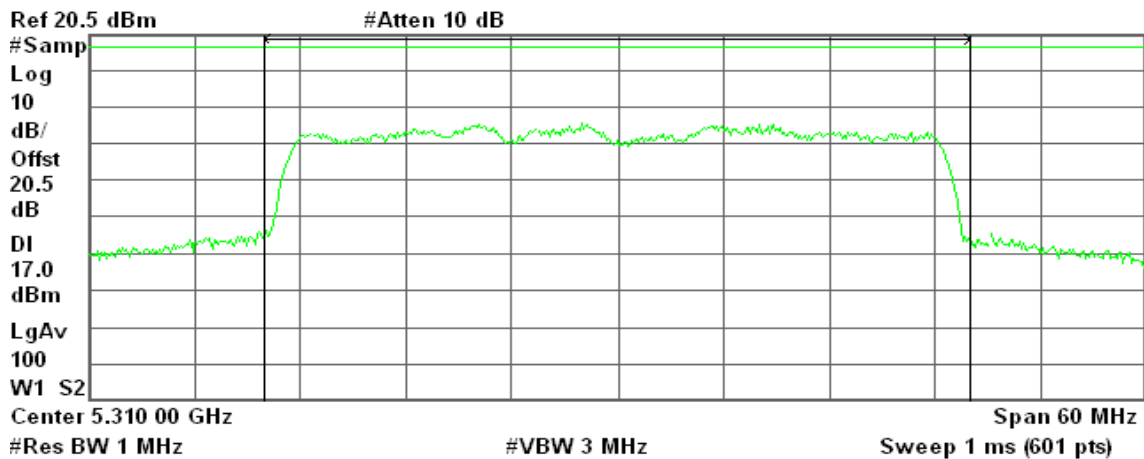
Power Spectral Density

-62.69 dBm/Hz

**CH High**

Agilent 02:39:21 Mar 11, 2009

R T



Channel Power

12.93 dBm / 40.0000 MHz

Power Spectral Density

-63.09 dBm/Hz



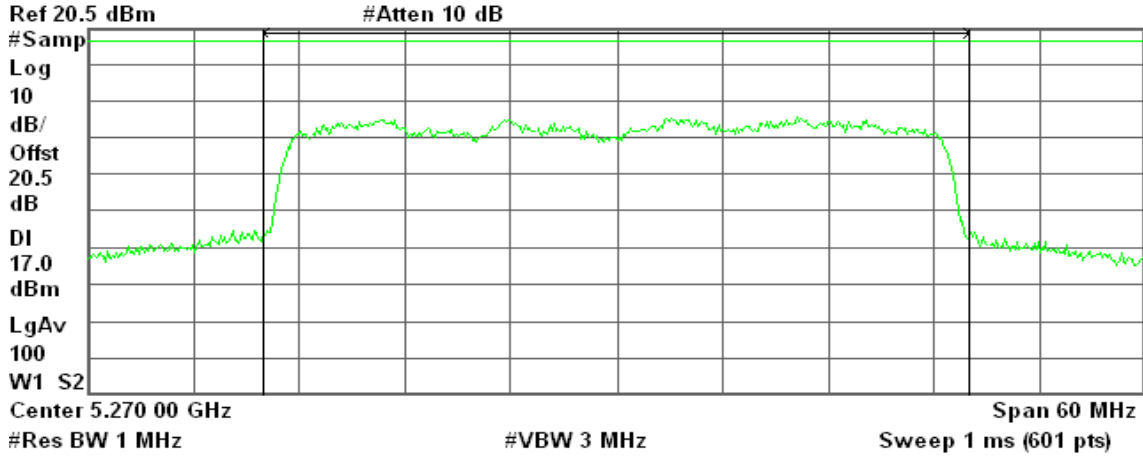


**draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / Chain 1**

**CH Low**

Agilent 02:34:22 Mar 11, 2009

R T



Channel Power

13.13 dBm / 40.0000 MHz

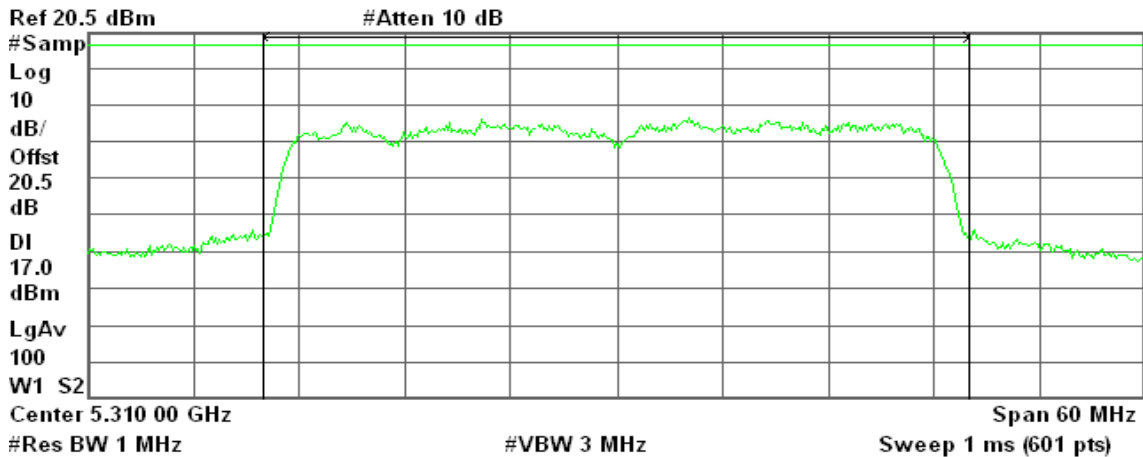
Power Spectral Density

-62.89 dBm/Hz

**CH High**

Agilent 02:34:49 Mar 11, 2009

R T



Channel Power

13.75 dBm / 40.0000 MHz

Power Spectral Density

-62.27 dBm/Hz



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

**CH Low**

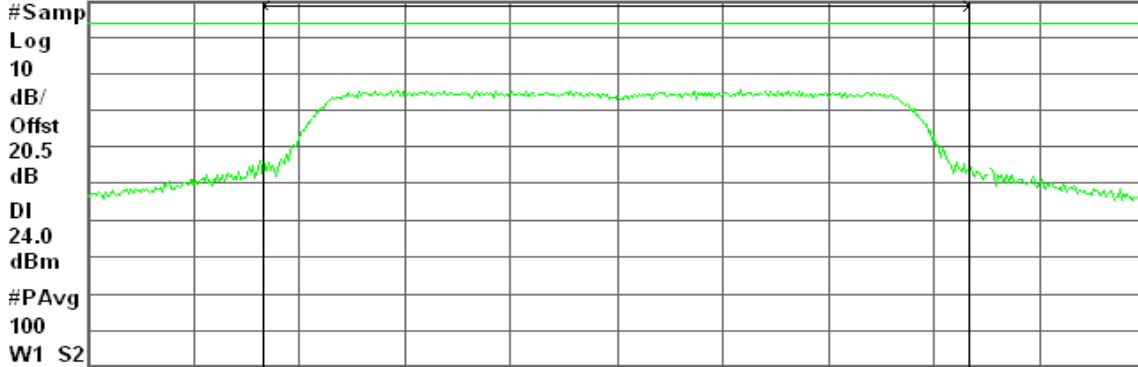
Agilent 19:49:56 Mar 10, 2009

R T

Peak Transmit Power, a Mode Low Ch.

Ref 30 dBm

Atten 20 dB



Center 5.500 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

16.57 dBm / 20.0000 MHz

-56.44 dBm/Hz

**CH Mid**

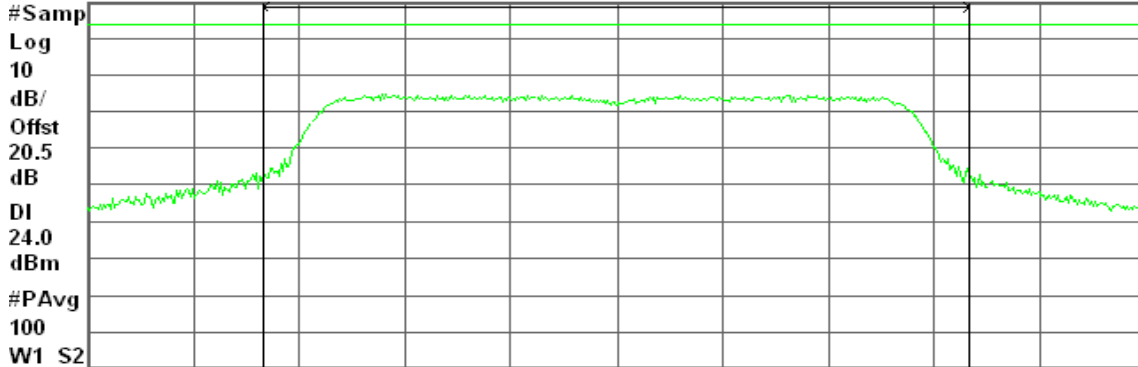
Agilent 19:53:19 Mar 10, 2009

R T

Peak Transmit Power, a Mode Mid Ch.

Ref 30 dBm

Atten 20 dB



Center 5.600 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

15.70 dBm / 20.0000 MHz

-57.31 dBm/Hz



### CH High

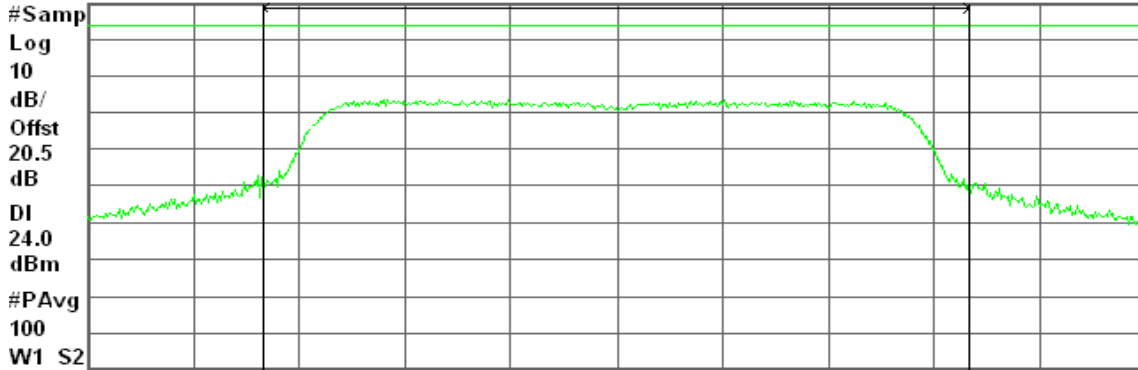
Agilent 19:57:41 Mar 10, 2009

R T

Peak Transmit Power, a Mode High Ch.

Ref 30 dBm

Atten 20 dB



Center 5.700 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

14.69 dBm / 20.0000 MHz

-58.32 dBm/Hz

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

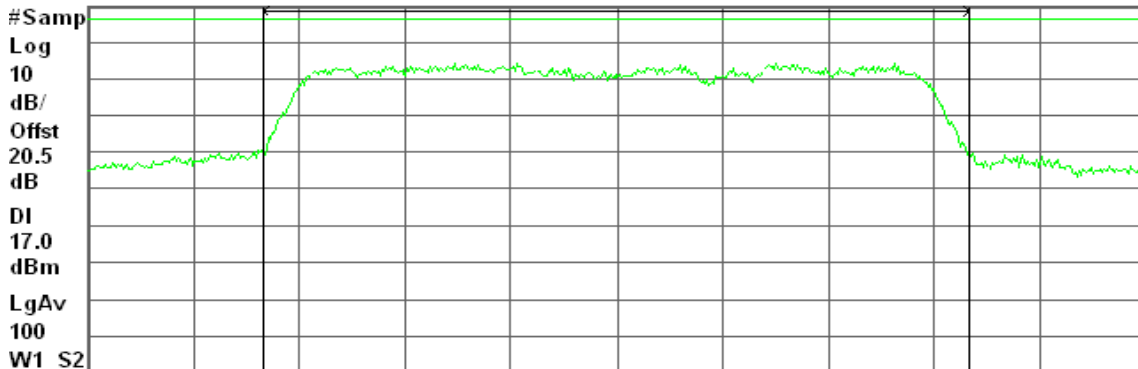
### CH Low

Agilent 00:51:02 Mar 11, 2009

R T

Ref 20.5 dBm

#Atten 10 dB



Center 5.500 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

18.27 dBm / 20.0000 MHz

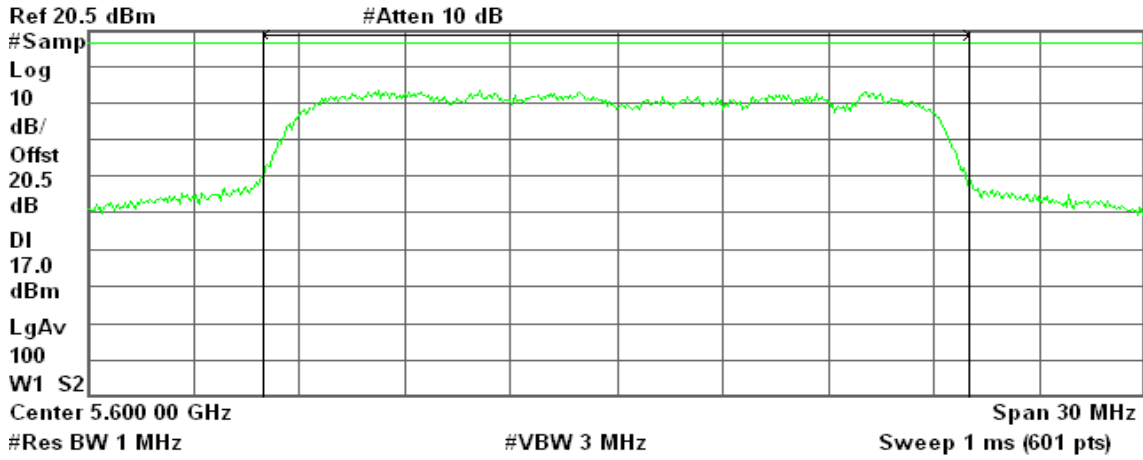
-54.74 dBm/Hz



### CH Mid

Agilent 00:50:34 Mar 11, 2009

R T



Channel Power

17.28 dBm / 20.0000 MHz

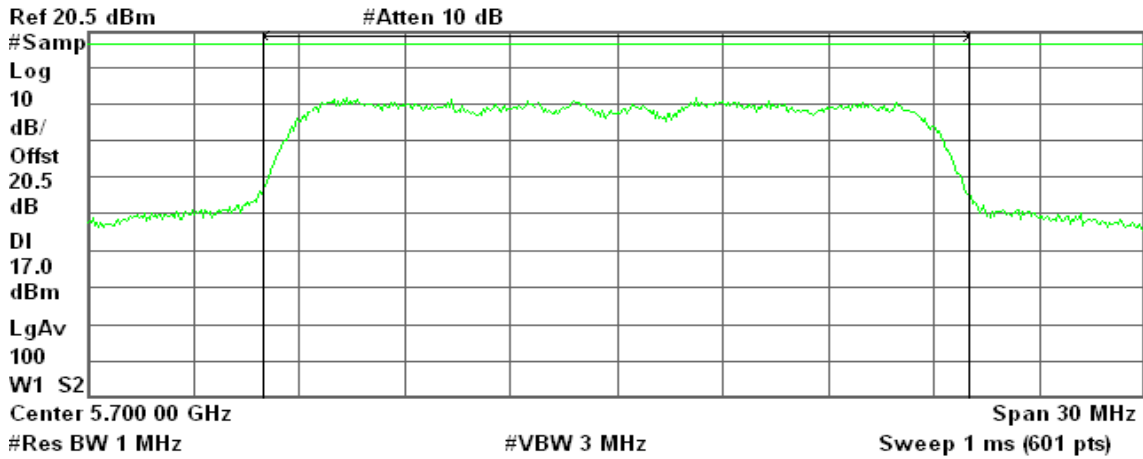
Power Spectral Density

-55.73 dBm/Hz

### CH High

Agilent 00:50:03 Mar 11, 2009

R T



Channel Power

15.05 dBm / 20.0000 MHz

Power Spectral Density

-57.96 dBm/Hz

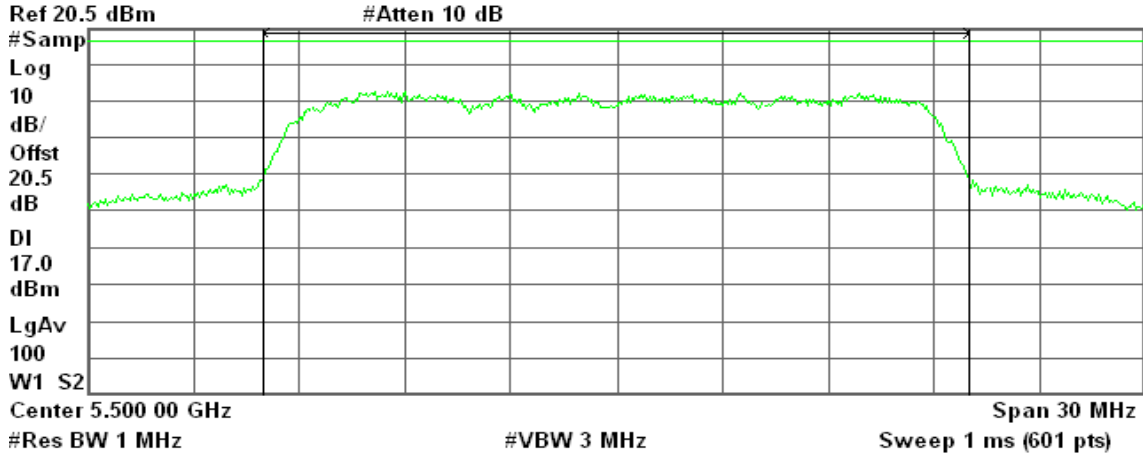


**draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1**

**CH Low**

Agilent 01:01:48 Mar 11, 2009

R T



Channel Power

16.69 dBm / 20.0000 MHz

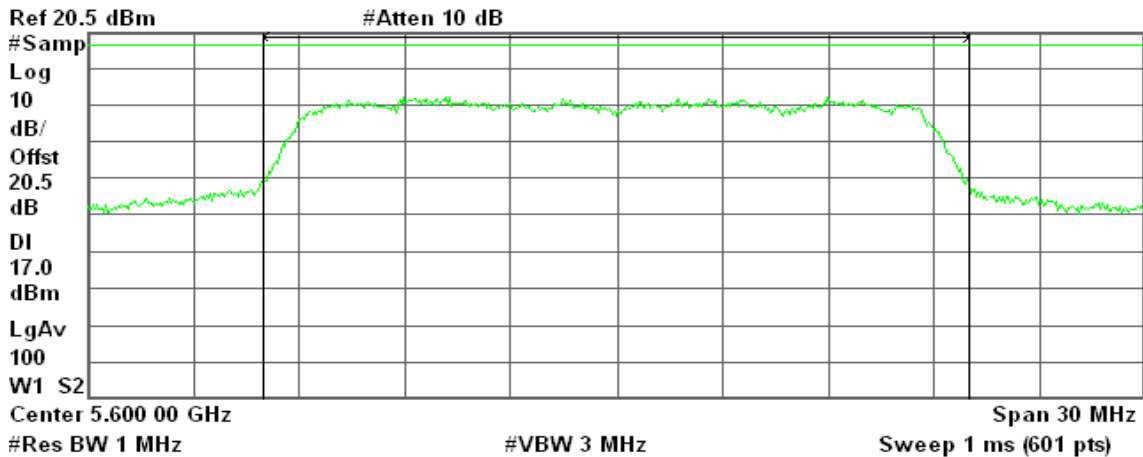
Power Spectral Density

-56.32 dBm/Hz

**CH Mid**

Agilent 01:02:24 Mar 11, 2009

R T



Channel Power

16.28 dBm / 20.0000 MHz

Power Spectral Density

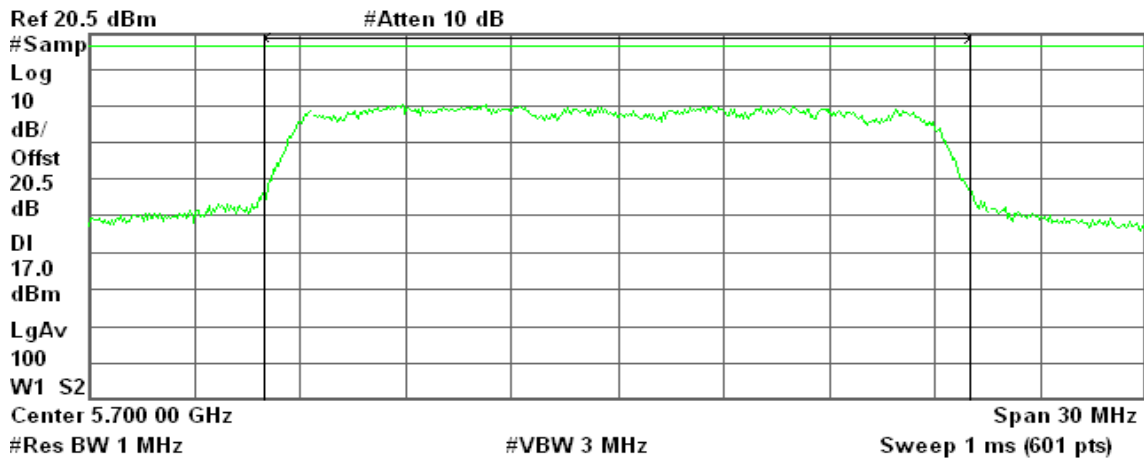
-56.73 dBm/Hz



### CH High

Agilent 01:02:51 Mar 11, 2009

R T



Channel Power

Power Spectral Density

14.90 dBm / 20.0000 MHz

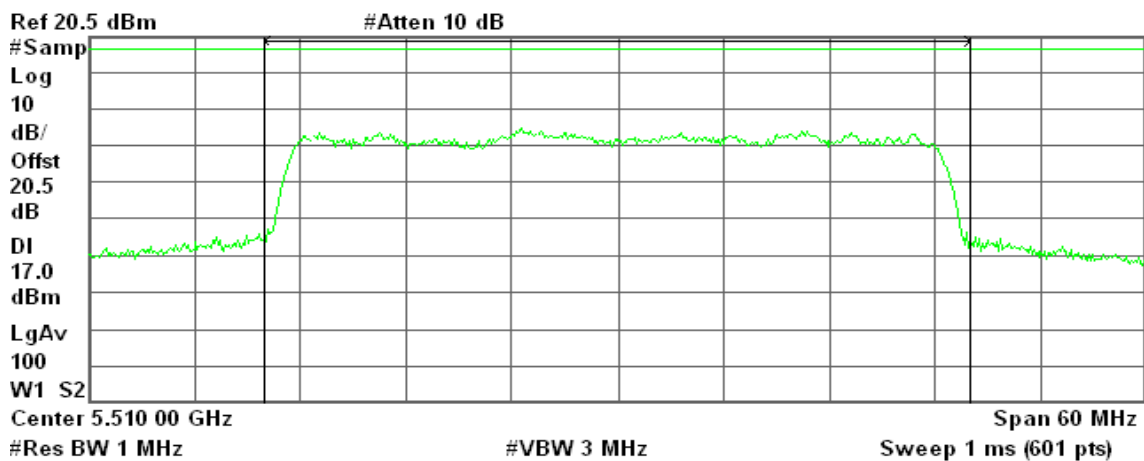
-58.11 dBm/Hz

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

### CH Low

Agilent 02:38:49 Mar 11, 2009

R T



Channel Power

Power Spectral Density

12.00 dBm / 40.0000 MHz

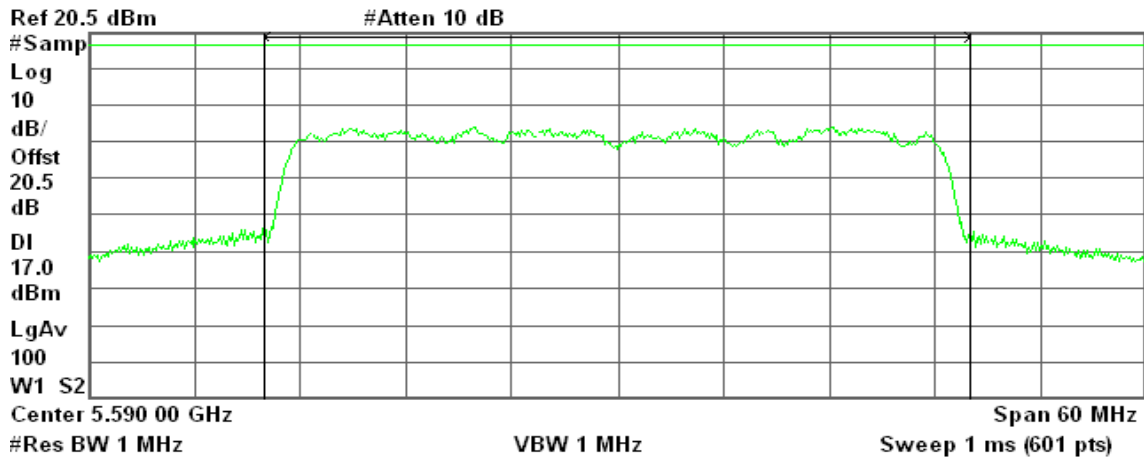
-64.02 dBm/Hz



### CH Mid

Agilent 02:38:14 Mar 11, 2009

R T



Channel Power

11.58 dBm / 40.0000 MHz

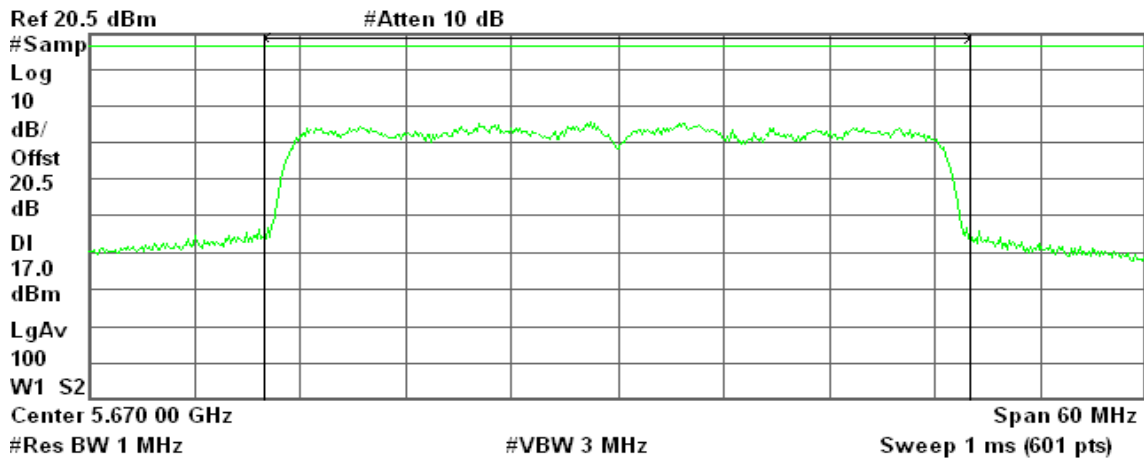
Power Spectral Density

-64.44 dBm/Hz

### CH High

Agilent 02:37:32 Mar 11, 2009

R T



Channel Power

13.69 dBm / 40.0000 MHz

Power Spectral Density

-62.33 dBm/Hz

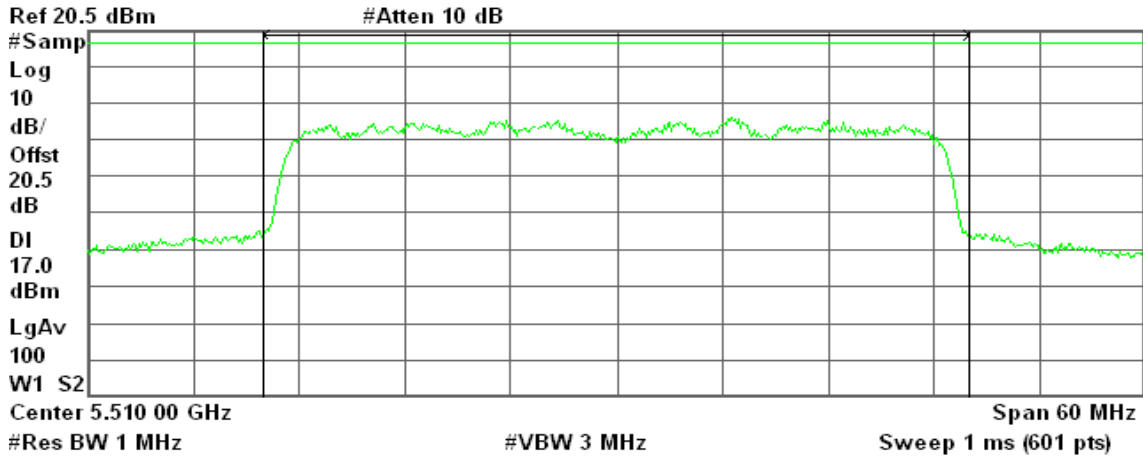


**draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 1**

**CH Low**

Agilent 02:35:53 Mar 11, 2009

R T



Channel Power

12.69 dBm / 40.0000 MHz

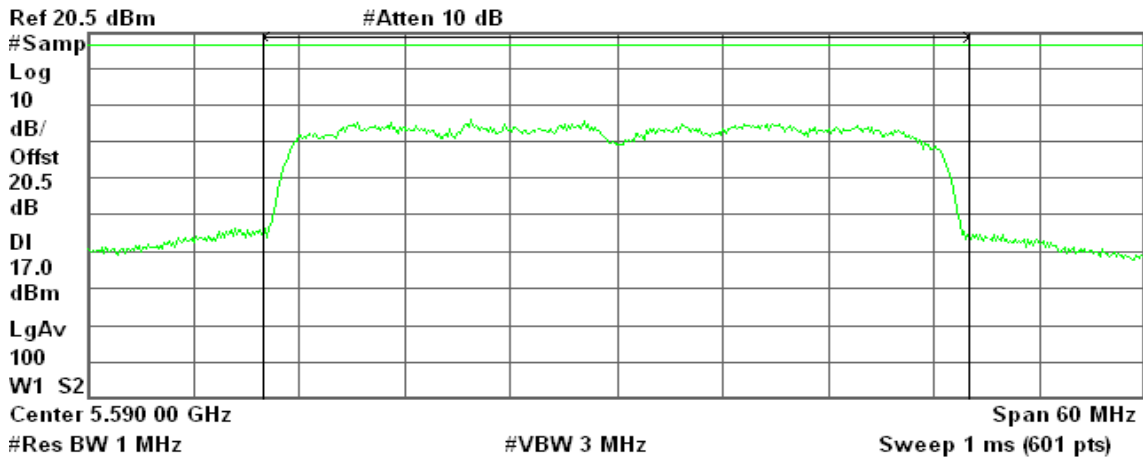
Power Spectral Density

-63.33 dBm/Hz

**CH Mid**

Agilent 02:36:24 Mar 11, 2009

R T



Channel Power

13.57 dBm / 40.0000 MHz

Power Spectral Density

-62.46 dBm/Hz

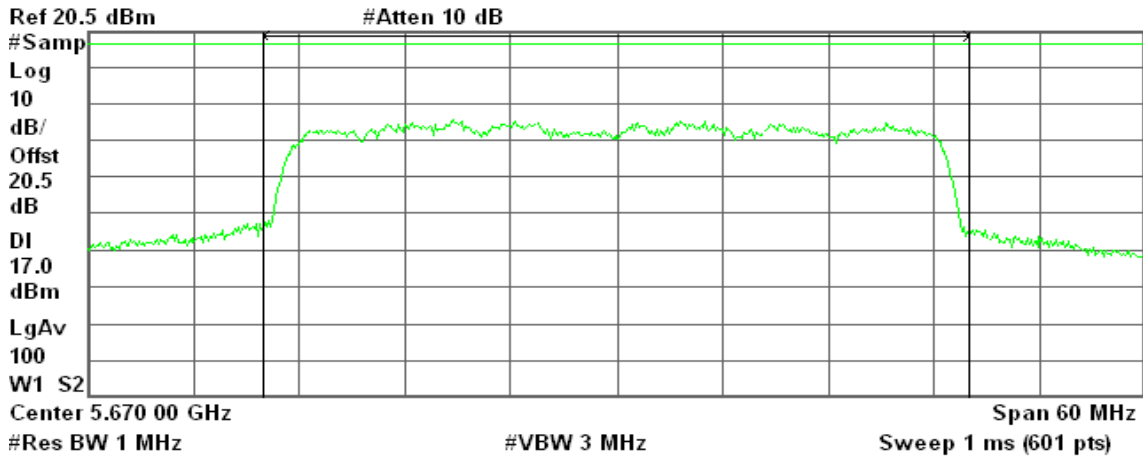




CH High

Agilent 02:36:54 Mar 11, 2009

R T



Channel Power

13.57 dBm / 40.0000 MHz

Power Spectral Density

-62.45 dBm/Hz

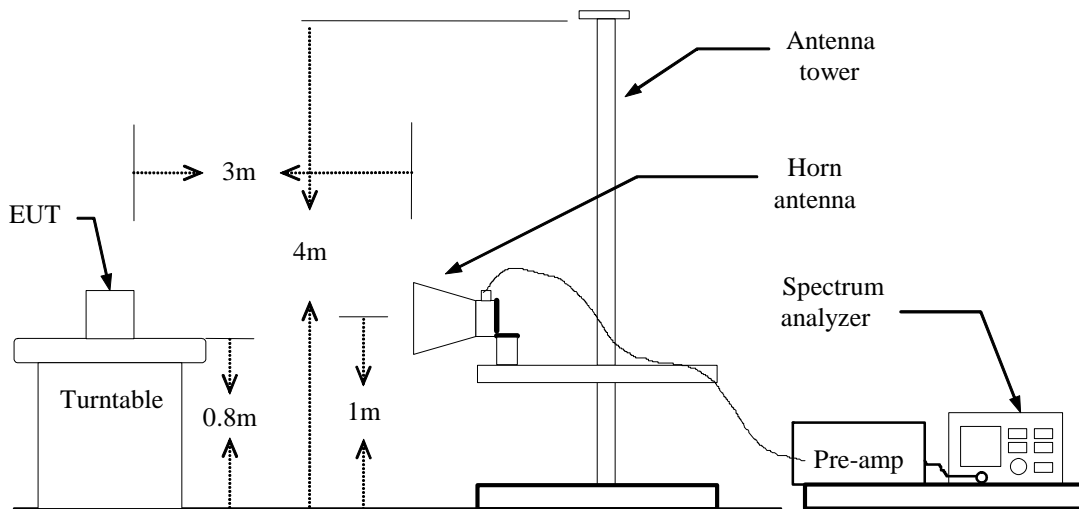
## 7.3 BAND EDGES MEASUREMENT

### 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.

### 802.11a Mode

1. Operating Frequency: 5500-5700MHz
2. CH Low: 5500MHz, CH High: 5700MHz
3. 26dB bandwidth: CH Low: 24.520MHz, CH High: 23.510MHz

Because the mentioned conditions, the test is not applicable.



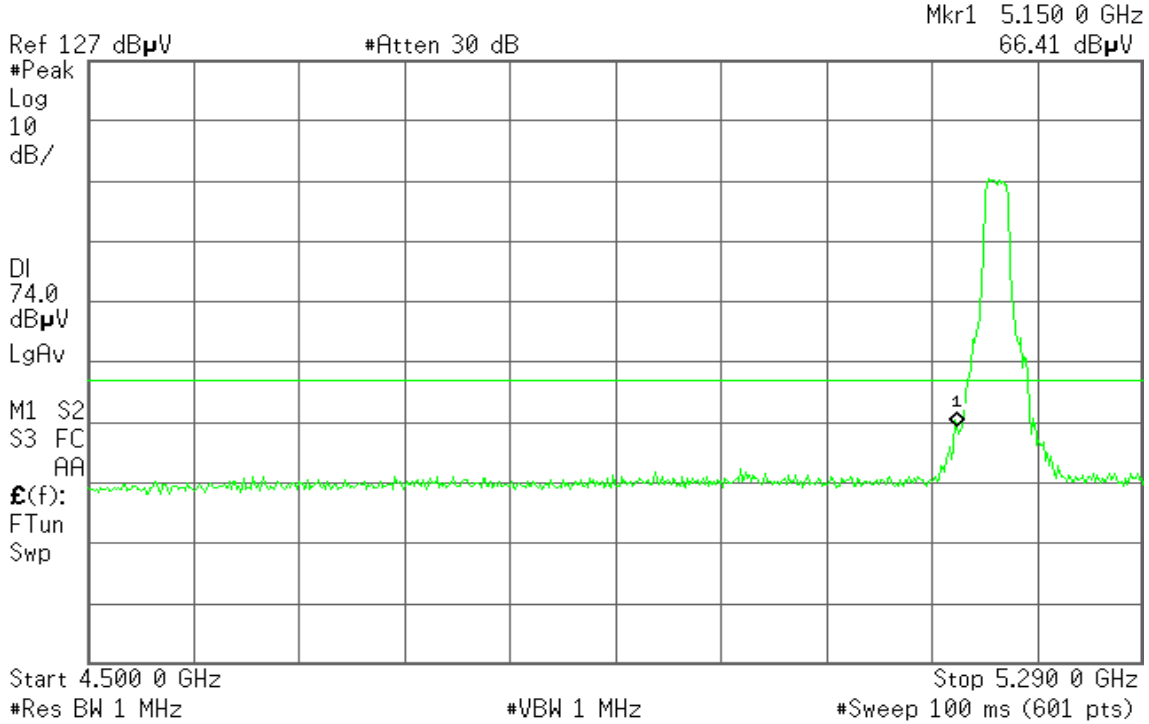
### Band Edges (IEEE 802.11a mode / 5180 MHz)

Detector mode: Peak

Polarity: Vertical

Agilent 19:42:15 Mar 4, 2009

R T

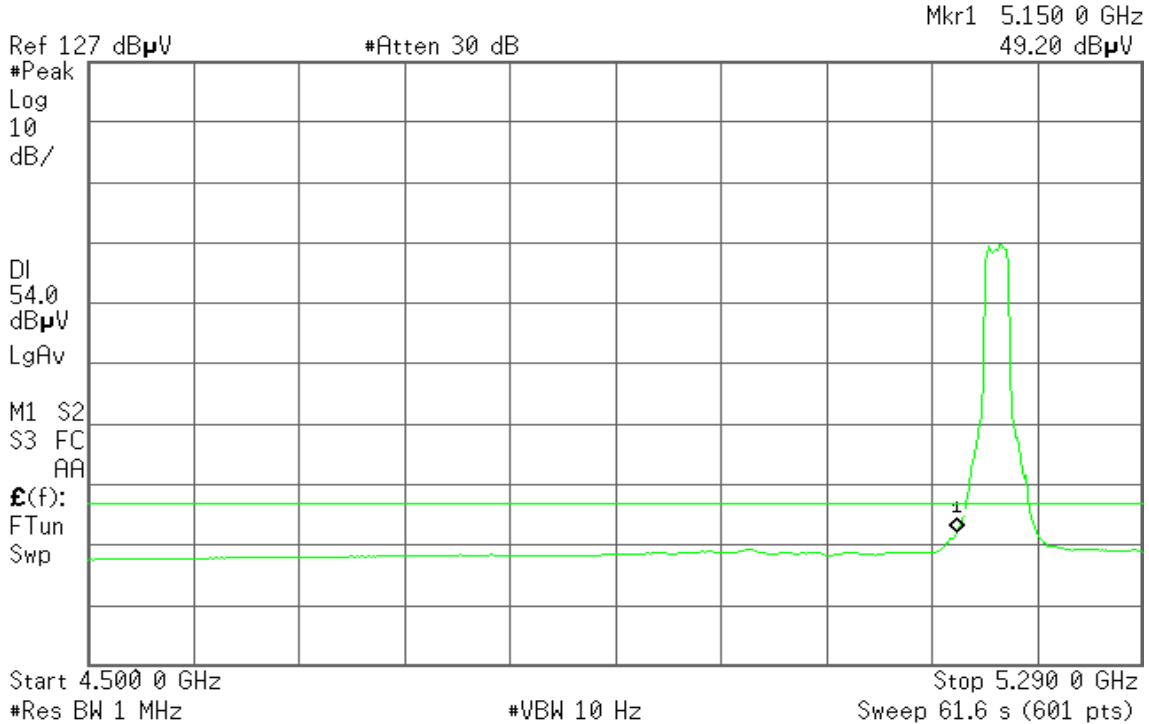


Detector mode: Average

Polarity: Vertical

Agilent 19:43:30 Mar 4, 2009

R T





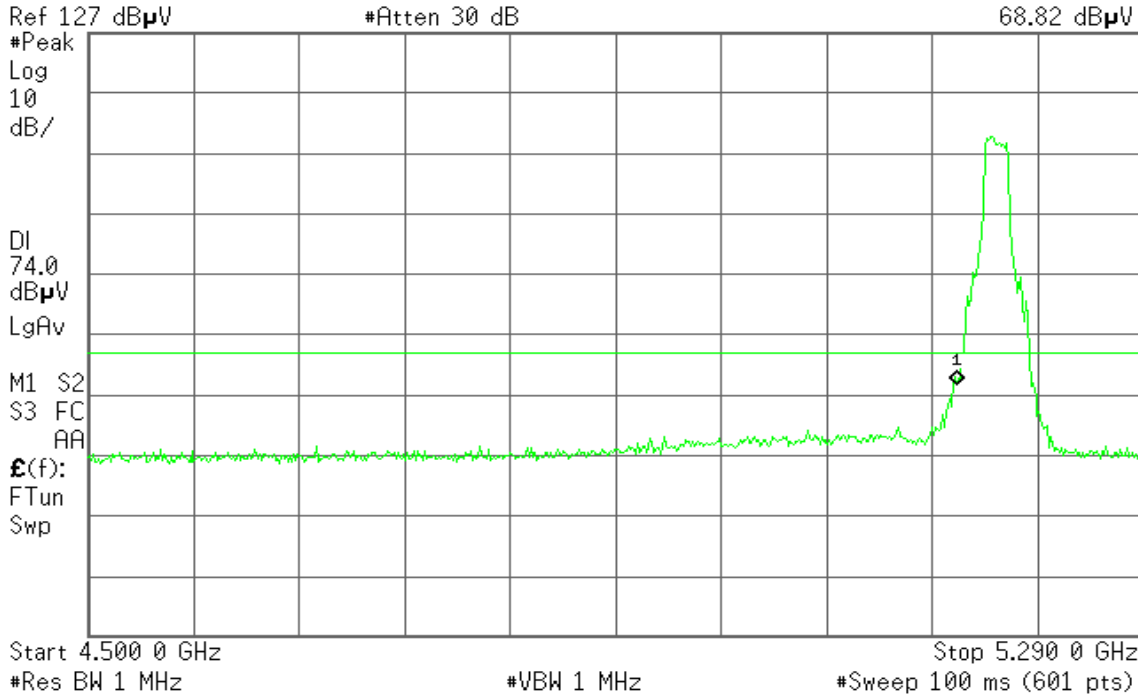
Detector mode: Peak

Polarity: Horizontal

Agilent 19:39:18 Mar 4, 2009

R T

Mkr1 5.150 0 GHz  
68.82 dBµV



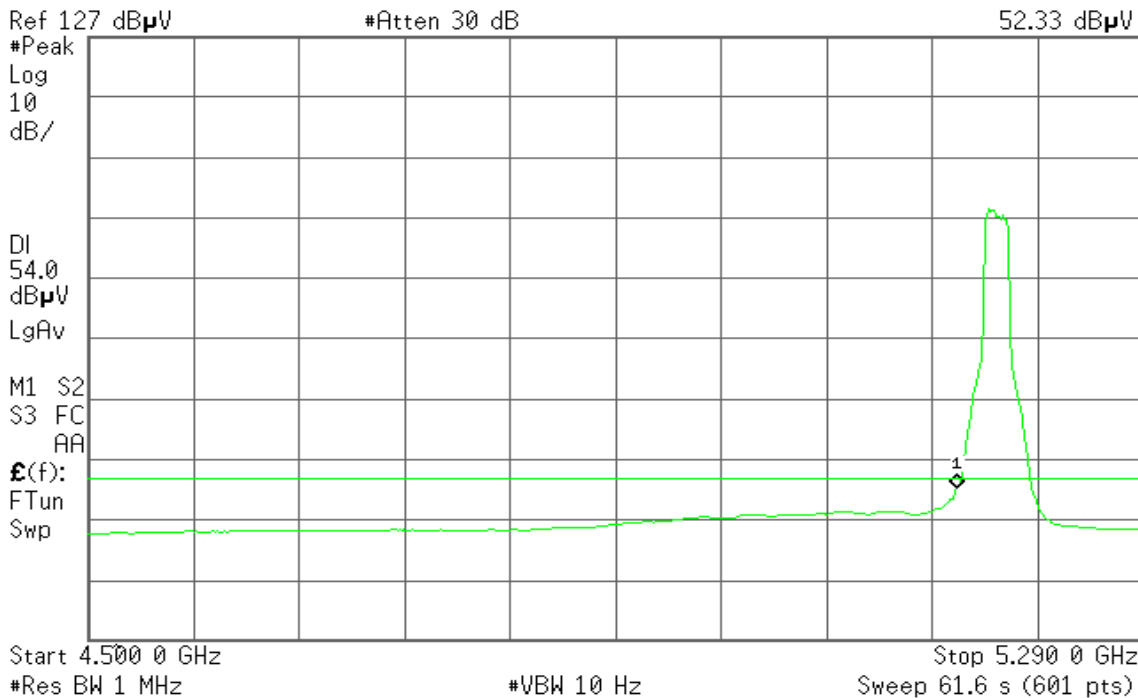
Detector mode: Average

Polarity: Horizontal

Agilent 19:38:59 Mar 4, 2009

R T

Mkr1 5.150 0 GHz  
52.33 dBµV





### Band Edges (IEEE 802.11a mode / 5320 MHz)

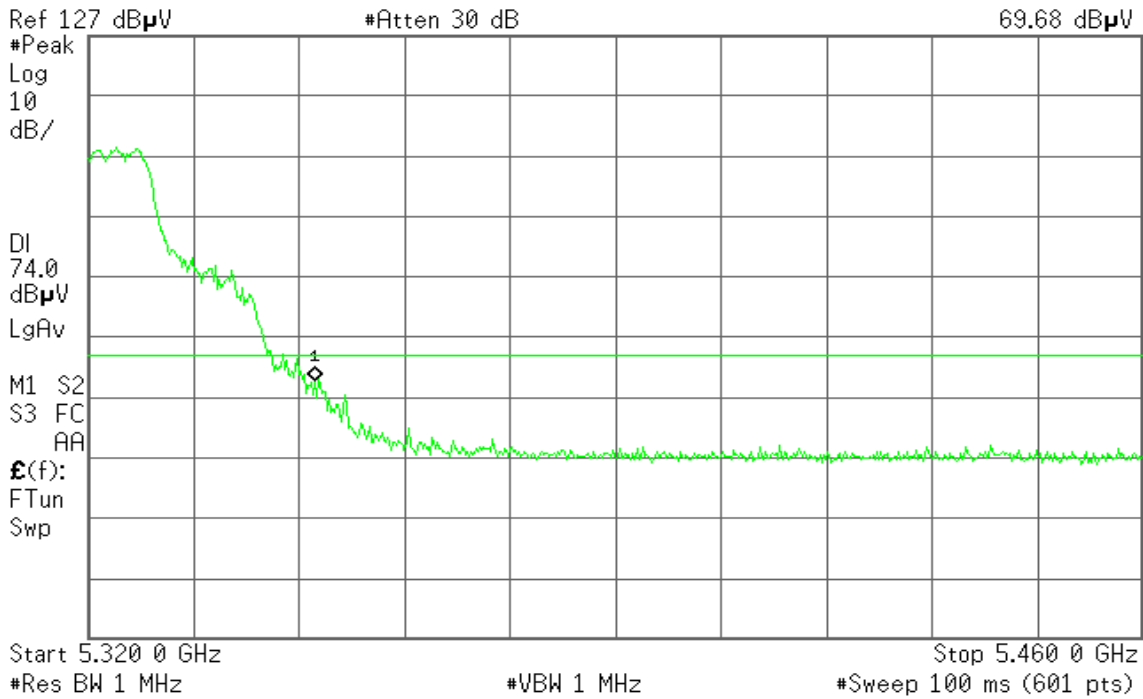
Detector mode: Peak

Polarity: Vertical

Agilent 20:01:56 Mar 4, 2009

R T

Mkr1 5.350 0 GHz  
69.68 dB $\mu$ V



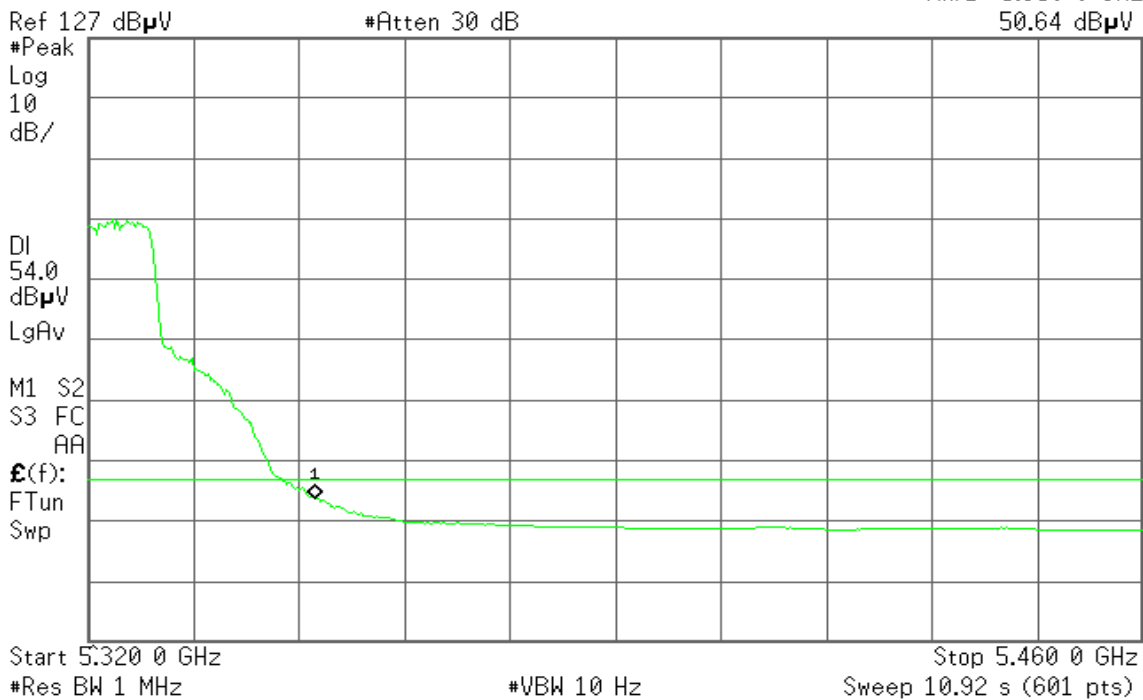
Detector mode: Average

Polarity: Vertical

Agilent 20:01:41 Mar 4, 2009

R T

Mkr1 5.350 0 GHz  
50.64 dB $\mu$ V





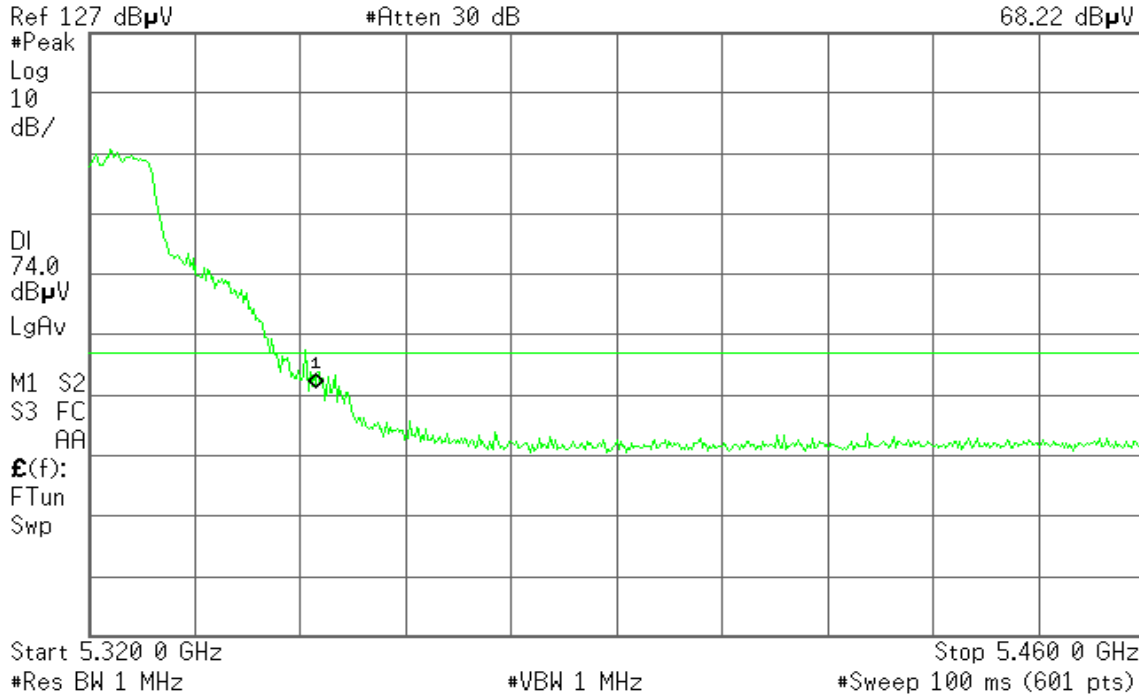
Detector mode: Peak

Polarity: Horizontal

Agilent 20:03:12 Mar 4, 2009

R T

Mkr1 5.350 0 GHz  
68.22 dBµV



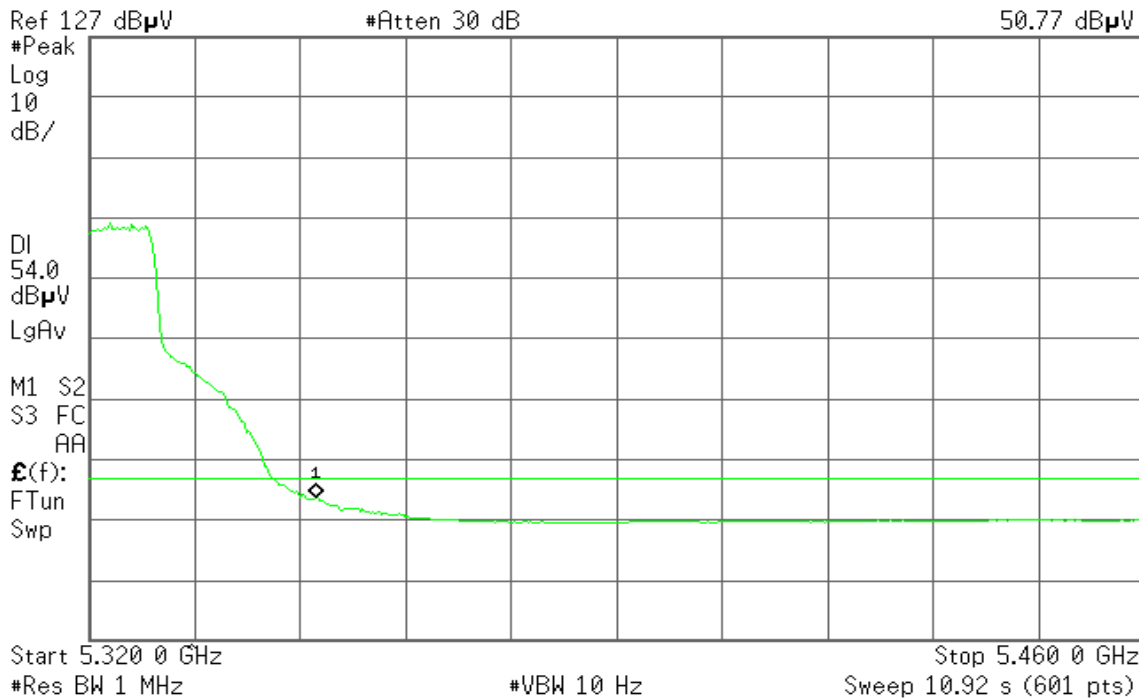
Detector mode: Average

Polarity: Horizontal

Agilent 20:03:41 Mar 4, 2009

R T

Mkr1 5.350 0 GHz  
50.77 dBµV





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

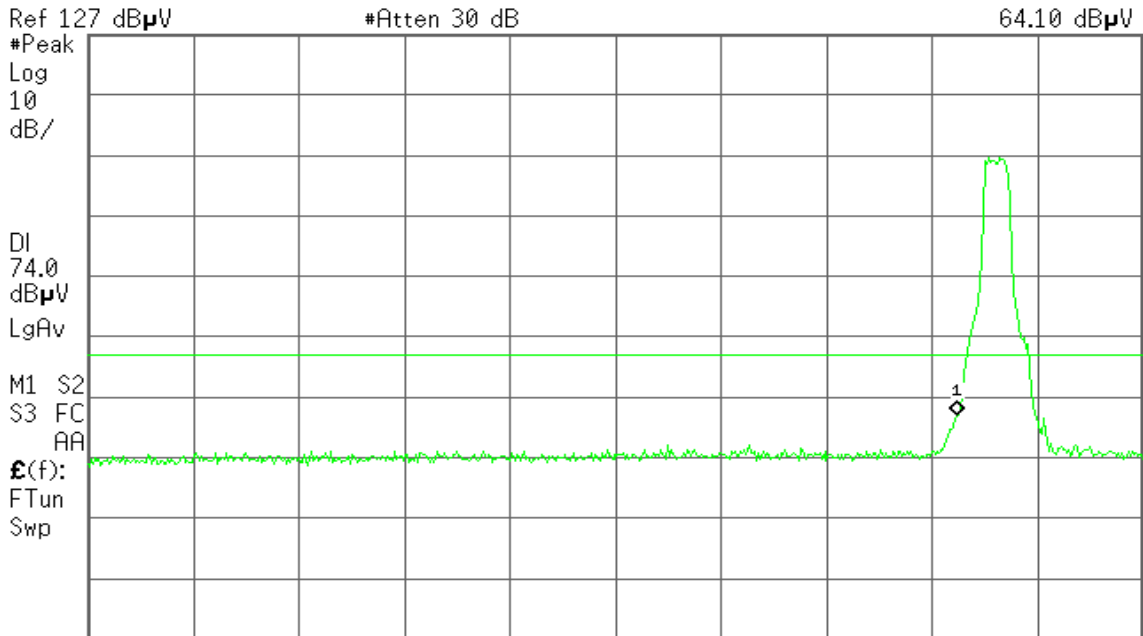
Detector mode: Peak

Polarity: Vertical

Agilent 20:17:21 Mar 4, 2009

R T

Mkr1 5.150 0 GHz  
64.10 dBµV



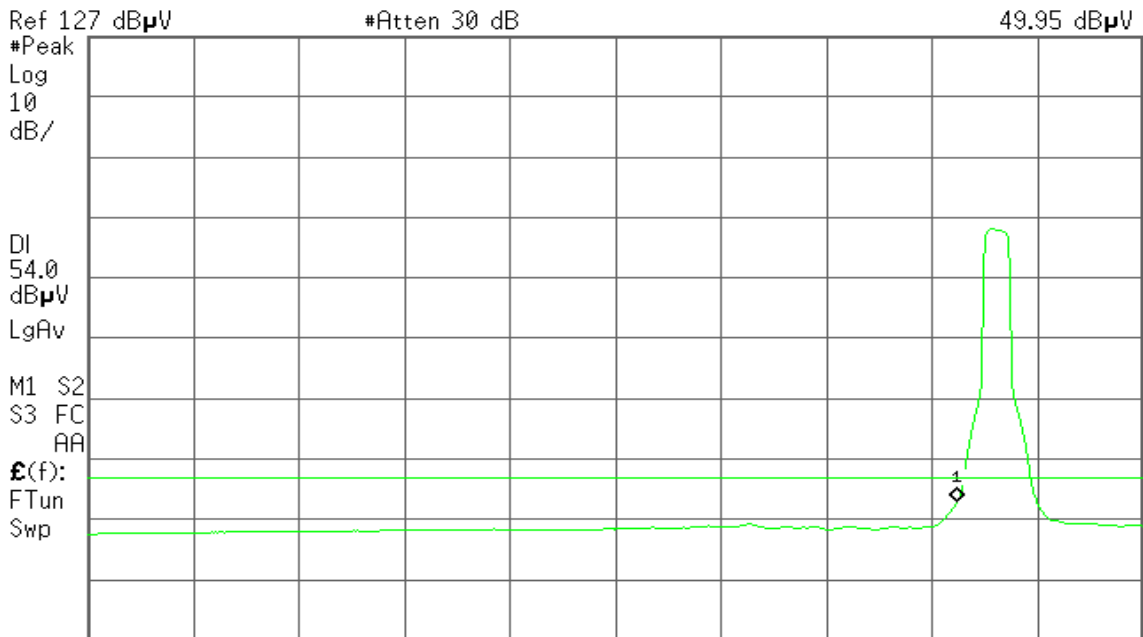
Detector mode: Average

Polarity: Vertical

Agilent 20:18:48 Mar 4, 2009

R T

Mkr1 5.150 0 GHz  
49.95 dBµV





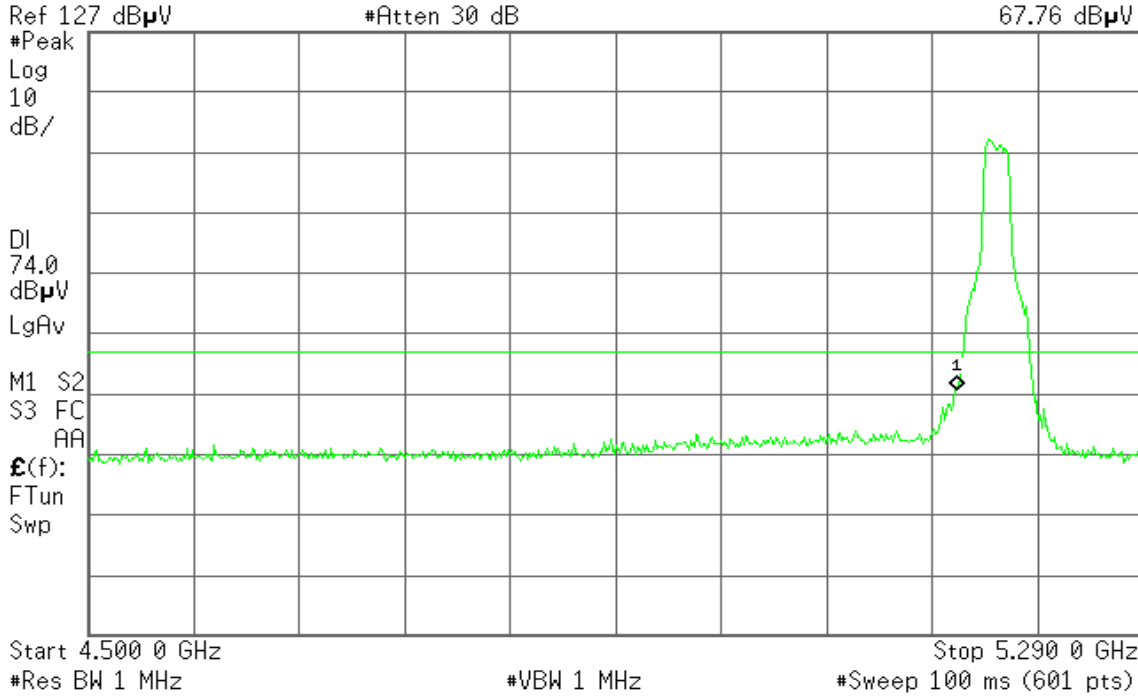
Detector mode: Peak

Polarity: Horizontal

Agilent 20:16:52 Mar 4, 2009

R T

Mkr1 5.150 0 GHz  
67.76 dBµV



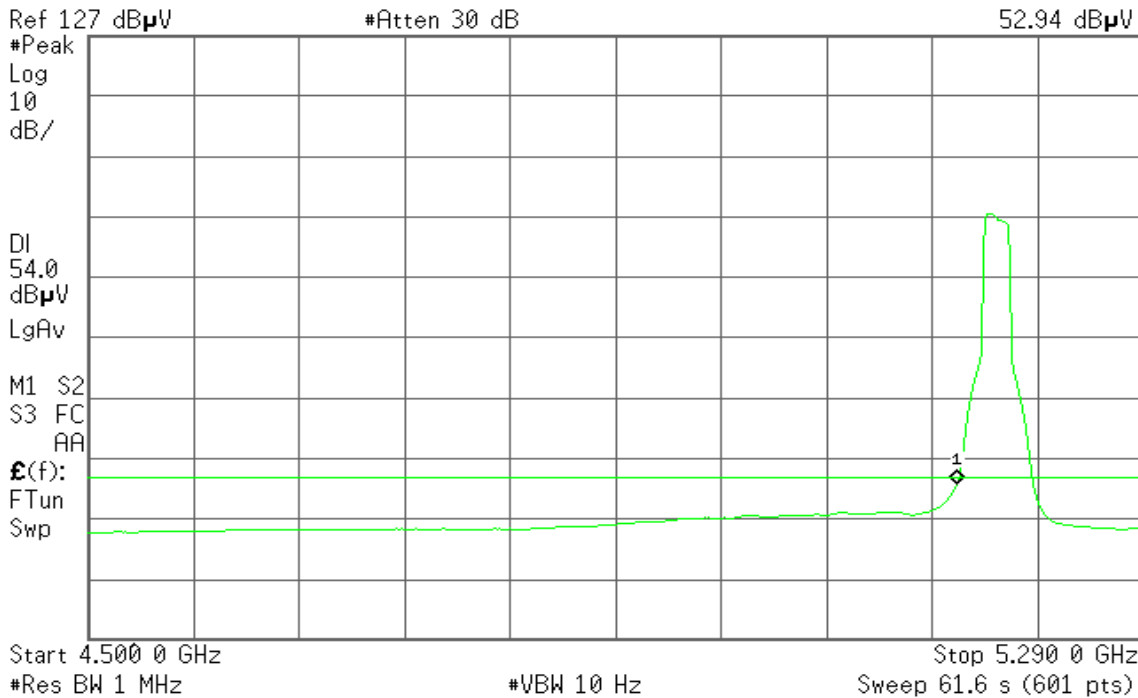
Detector mode: Average

Polarity: Horizontal

Agilent 20:16:33 Mar 4, 2009

R T

Mkr1 5.150 0 GHz  
52.94 dBµV







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

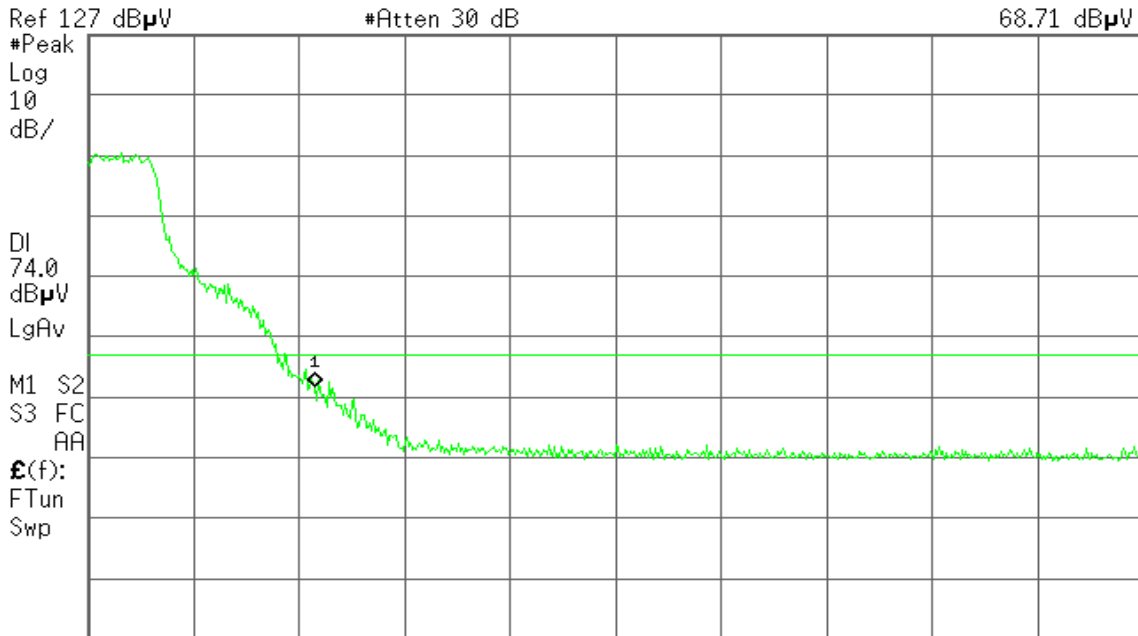
**Detector mode: Peak**

**Polarity: Vertical**

Agilent 20:06:17 Mar 4, 2009

R T

Mkr1 5.350 0 GHz  
68.71 dBμV



Start 5.320 0 GHz #Res BW 1 MHz #VBW 1 MHz #Sweep 100 ms (601 pts) Stop 5.460 0 GHz

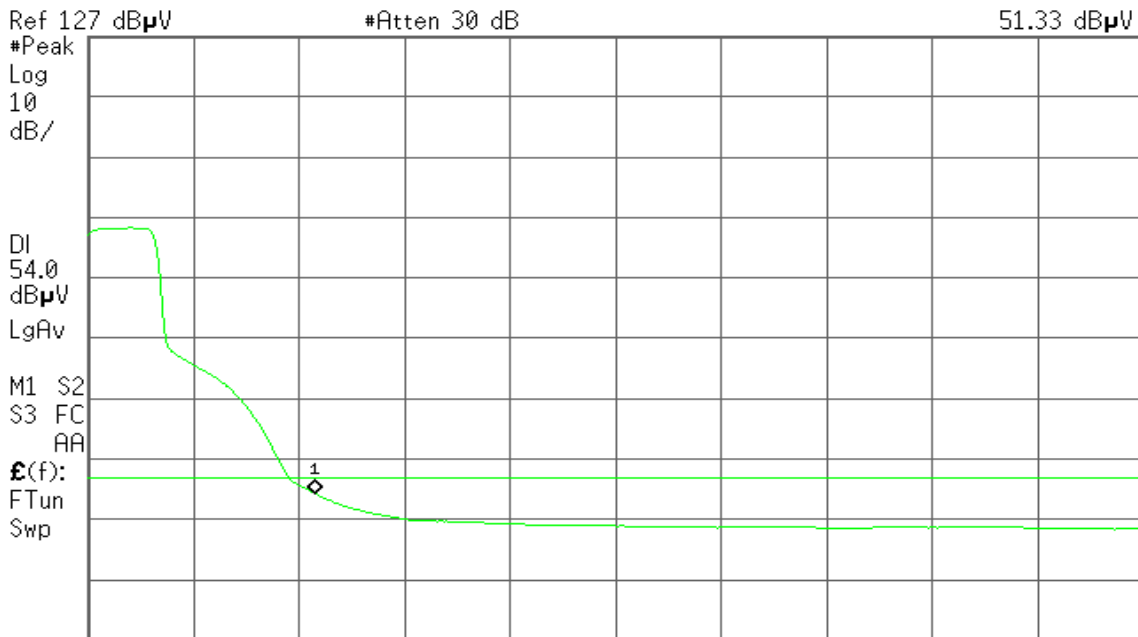
**Detector mode: Average**

**Polarity: Vertical**

Agilent 20:06:38 Mar 4, 2009

R T

Mkr1 5.350 0 GHz  
51.33 dBμV



Start 5.320 0 GHz #Res BW 1 MHz #VBW 10 Hz Sweep 10.92 s (601 pts) Stop 5.460 0 GHz



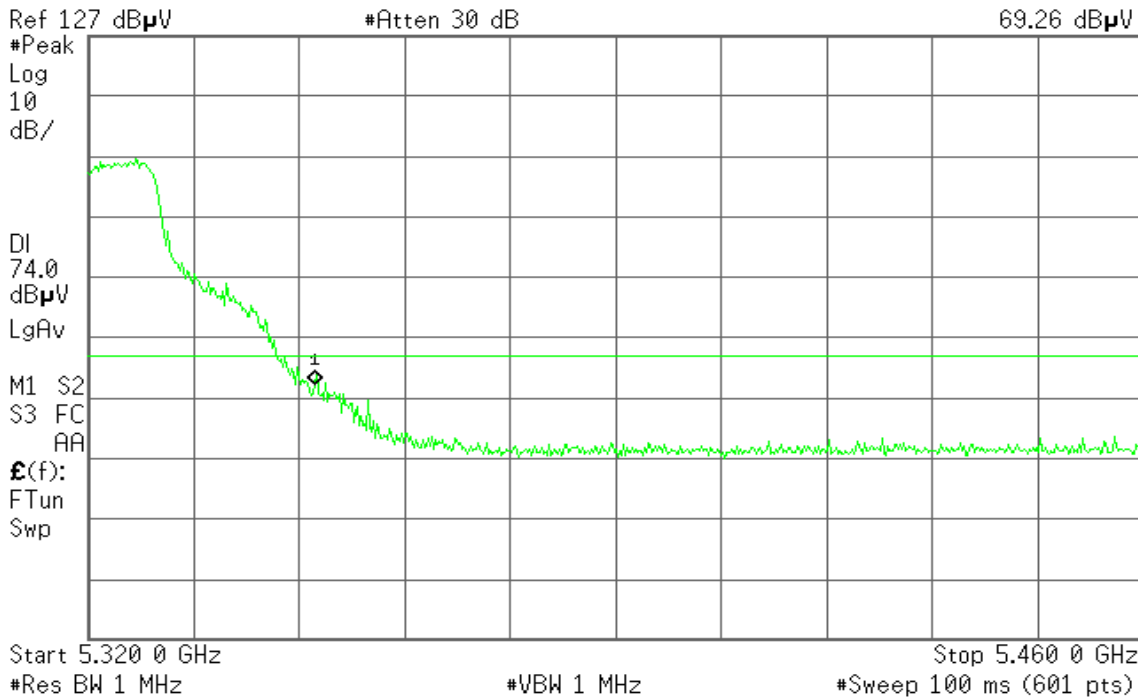
Detector mode: Peak

Polarity: Horizontal

Agilent 20:05:41 Mar 4, 2009

R T

Mkr1 5.350 0 GHz  
69.26 dBµV



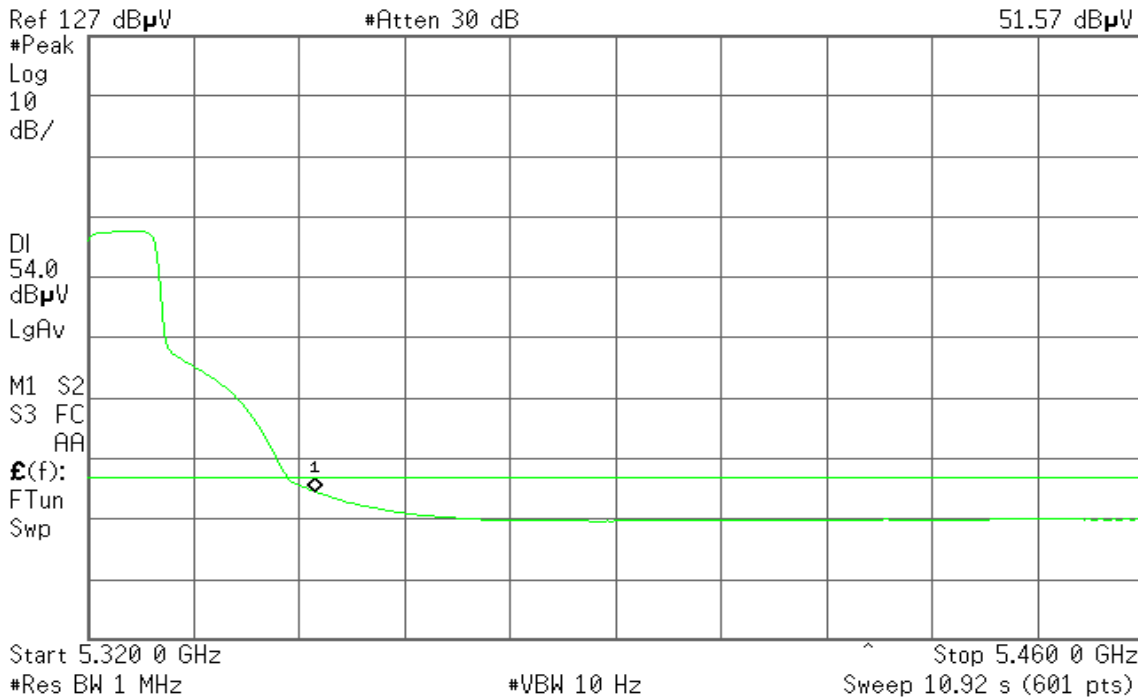
Detector mode: Average

Polarity: Horizontal

Agilent 20:05:21 Mar 4, 2009

R T

Mkr1 5.350 0 GHz  
51.57 dBµV





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

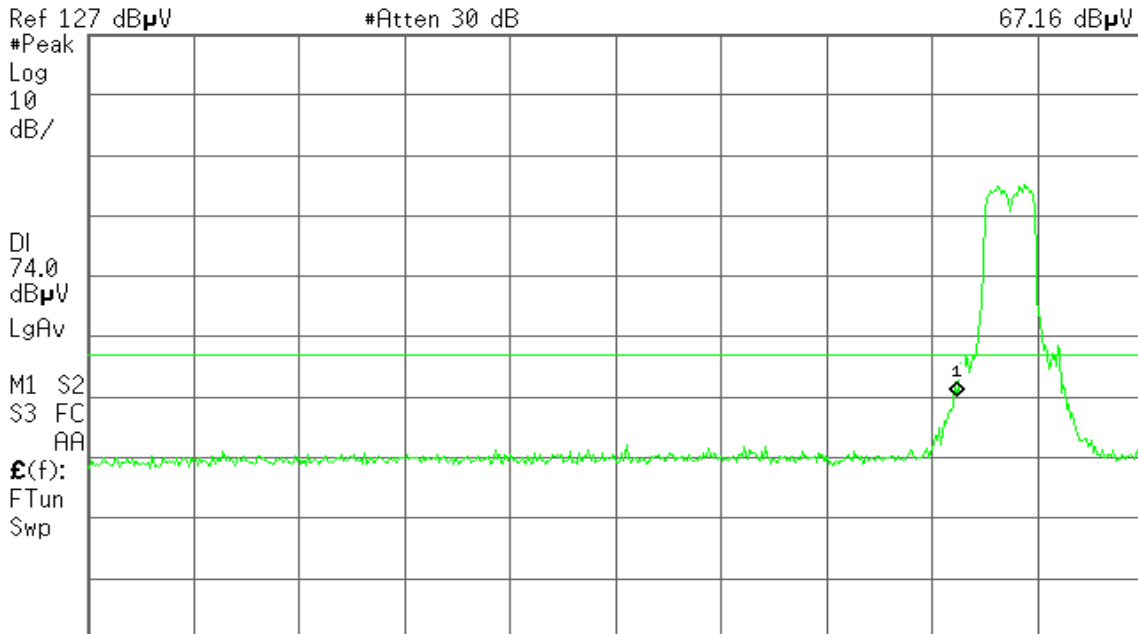
Detector mode: Peak

Polarity: Vertical

Agilent 20:27:46 Mar 4, 2009

R T

Mkr1 5.150 0 GHz  
67.16 dBµV



Start 4.500 0 GHz #Res BW 1 MHz #VBW 1 MHz Stop 5.290 0 GHz #Sweep 100 ms (601 pts)

Detector mode: Average

Polarity: Vertical

Agilent 20:27:26 Mar 4, 2009

R T

Mkr1 5.150 0 GHz  
53.05 dBµV



Start 4.500 0 GHz #Res BW 1 MHz #VBW 10 Hz Stop 5.290 0 GHz Sweep 61.6 s (601 pts)



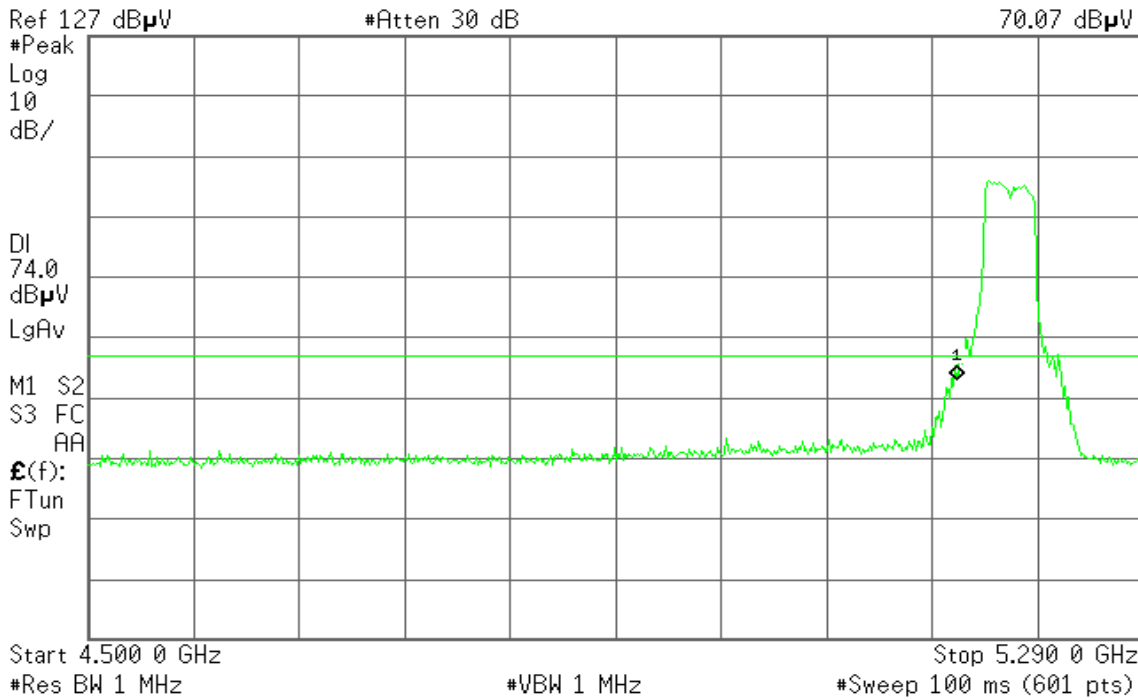
Detector mode: Peak

Polarity: Horizontal

Agilent 20:29:14 Mar 4, 2009

R T

Mkr1 5.150 0 GHz  
70.07 dBμV



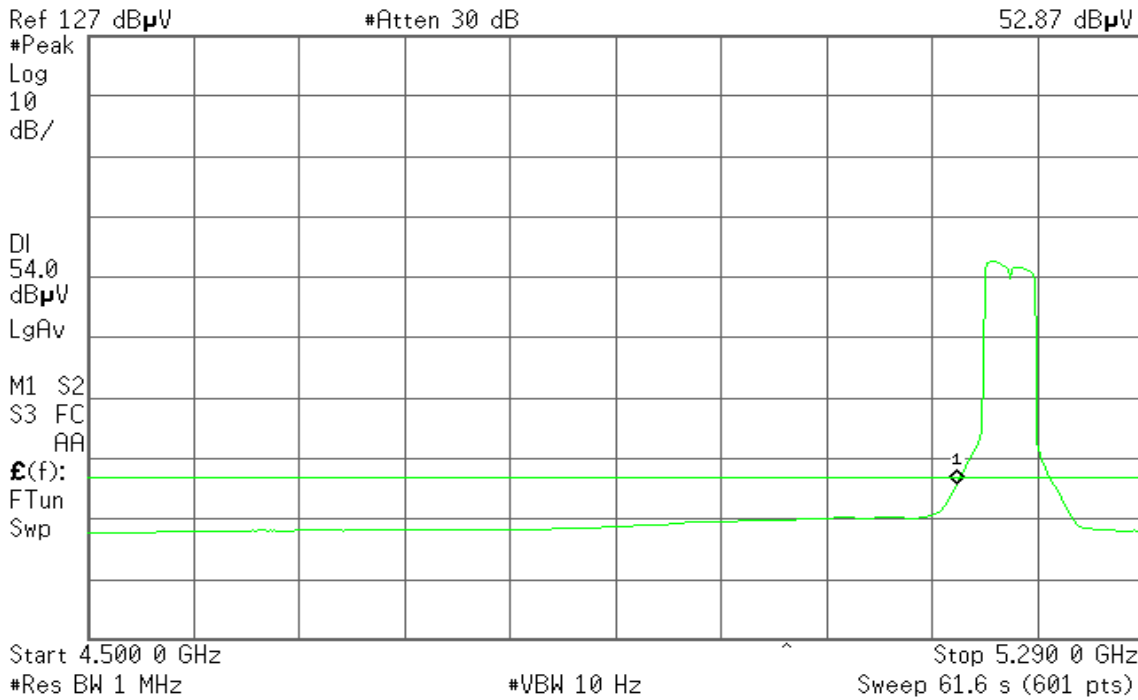
Detector mode: Average

Polarity: Horizontal

Agilent 20:32:50 Mar 4, 2009

R T

Mkr1 5.150 0 GHz  
52.87 dBμV





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

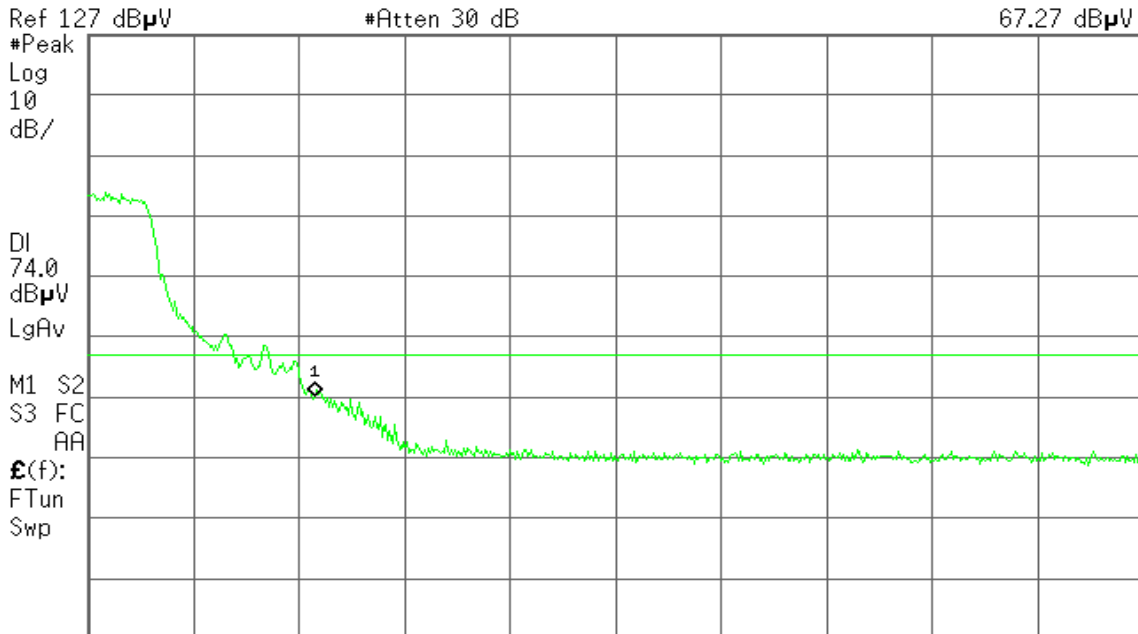
Detector mode: Peak

Polarity: Vertical

Agilent 20:36:16 Mar 4, 2009

R T

Mkr1 5.350 0 GHz  
67.27 dB $\mu$ V



Start 5.320 0 GHz #Res BW 1 MHz #VBW 1 MHz Stop 5.460 0 GHz #Sweep 100 ms (601 pts)

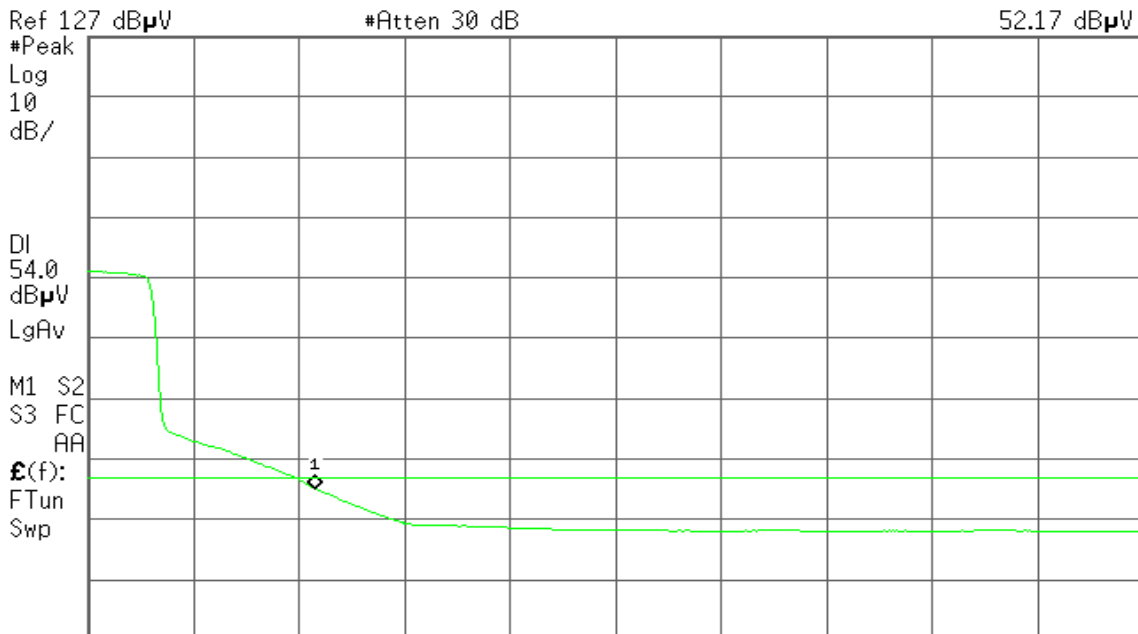
Detector mode: Average

Polarity: Vertical

Agilent 20:36:36 Mar 4, 2009

R T

Mkr1 5.350 0 GHz  
52.17 dB $\mu$ V



Start 5.320 0 GHz #Res BW 1 MHz #VBW 10 Hz Stop 5.460 0 GHz Sweep 10.92 s (601 pts)



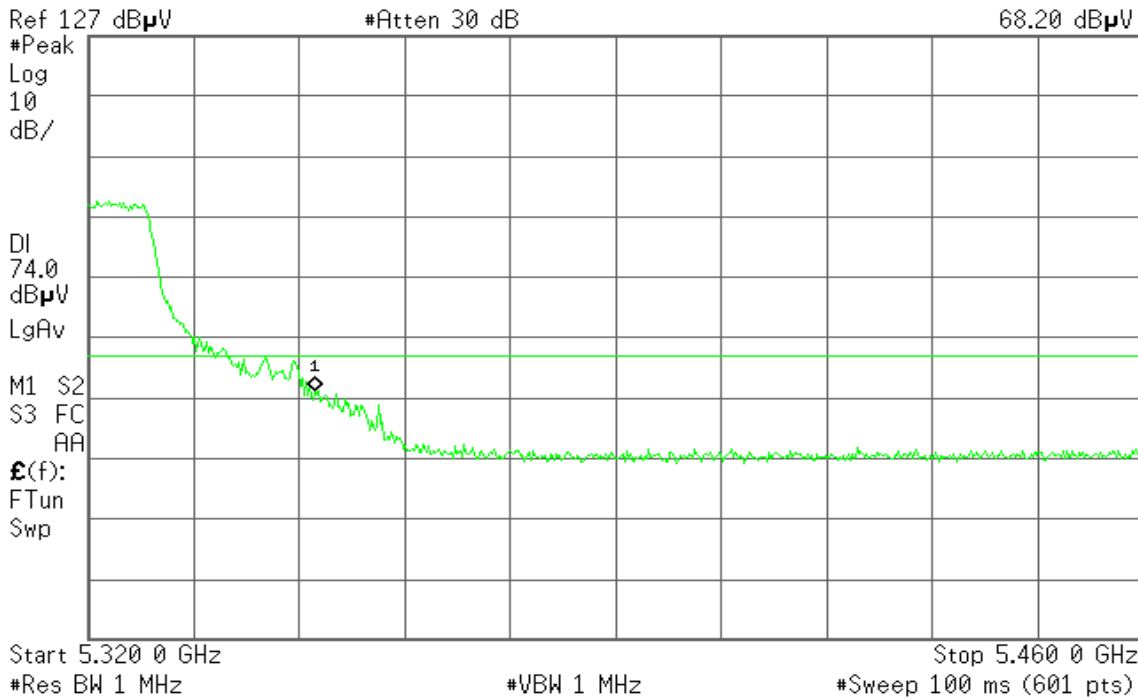
Detector mode: Peak

Polarity: Horizontal

Agilent 20:35:41 Mar 4, 2009

R T

Mkr1 5.350 0 GHz  
68.20 dBµV



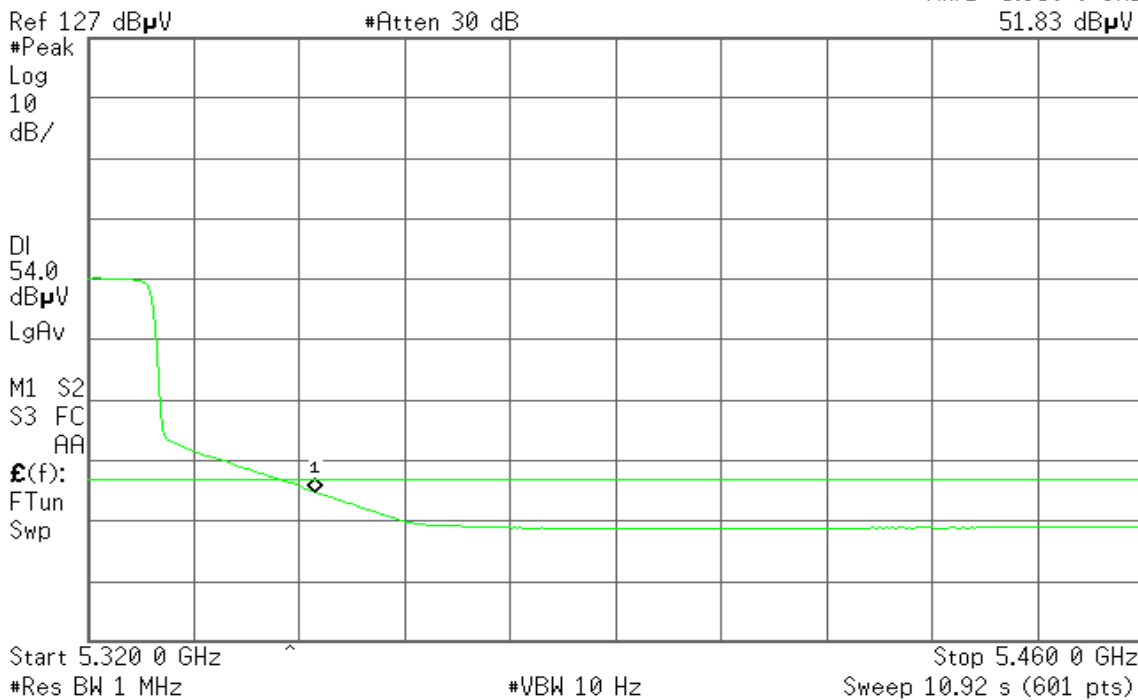
Detector mode: Average

Polarity: Horizontal

Agilent 20:35:19 Mar 4, 2009

R T

Mkr1 5.350 0 GHz  
51.83 dBµV



## 7.4 PEAK POWER SPECTRAL DENSITY

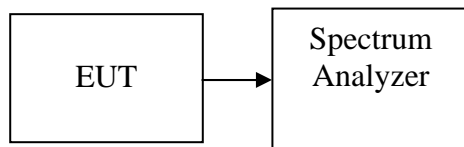
### LIMIT

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	3.508	4.00	-0.492	PASS
Mid	5220	3.051	4.00	-0.949	PASS
High	5240	3.618	4.00	-0.382	PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5180	-1.522	-1.934	1.29	3.00	-2.71	PASS
Mid	5220	-1.385	-1.546	1.55	3.00	-2.45	PASS
High	5240	-1.131	-1.432	1.73	3.00	-2.27	PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5190	-5.554	-3.745	-1.55	3.00	-5.55	PASS
High	5230	-4.984	-4.228	-1.58	3.00	-5.58	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5180	2.375	3.00	-0.625	PASS
Mid	5220	2.205	3.00	-0.795	PASS
High	5240	2.178	3.00	-0.822	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5190	1.159	3.00	-1.841	PASS
High	5230	0.944	3.00	-2.056	PASS

**Remark:**

1. Total PPSD (dBm) =  $10 * \text{LOG}(10^{(\text{Chain 0 PPSD} / 10)} + 10^{(\text{Chain 1 PPSD} / 10)})$

2. The maximum antenna gain is 7.09dBi; therefore the reduction due to antenna gain is 1dB, so the limit is 3dBm.



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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5260	3.039	11.00	-7.961	PASS
Mid	5280	3.602	11.00	-7.398	PASS
High	5320	2.701	11.00	-8.299	PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5260	-0.921	-2.182	1.50	10.00	-8.5	PASS
Mid	5280	-1.811	-2.621	0.81	10.00	-9.19	PASS
High	5320	-1.296	-1.986	1.38	10.00	-8.62	PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5270	-4.006	-3.228	-0.59	10.00	-10.59	PASS
High	5310	-3.027	-2.443	0.29	10.00	-9.71	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5260	3.508	10.00	-6.492	PASS
Mid	5280	2.508	10.00	-7.492	PASS
High	5320	2.675	10.00	-7.325	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5270	2.300	10.00	-7.7	PASS
High	5310	1.346	10.00	-8.654	PASS

**Remark:**

1. Total PPSD (dBm) =  $10 * \text{LOG}(10^{(\text{Chain 0 PPSD} / 10)} + 10^{(\text{Chain 1 PPSD} / 10)})$

2. The maximum antenna gain is 7.09dBi; therefore the reduction due to antenna gain is 1dB, so the limit is 10dBm.

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5500	5.075	11.00	-5.925	PASS
Mid	5600	4.534	11.00	-6.466	PASS
High	5700	2.706	11.00	-8.294	PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5500	4.997	3.535	7.34	10.00	-2.66	PASS
Mid	5600	3.325	2.873	6.12	10.00	-3.88	PASS
High	5700	1.804	1.139	4.49	10.00	-5.51	PASS

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

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5510	-5.364	-4.044	-1.64	10.00	-11.64	PASS
Mid	5590	-4.571	-3.830	-1.17	10.00	-11.17	PASS
High	5670	-3.602	-4.344	-0.95	10.00	-10.95	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5500	8.601	10.00	-1.399	PASS
Mid	5600	7.138	10.00	-2.862	PASS
High	5700	5.522	10.00	-4.478	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5510	2.085	10.00	-7.915	PASS
Mid	5590	0.711	10.00	-9.289	PASS
High	5670	1.046	10.00	-8.954	PASS

**Remark:**

1. Total PPSD (dBm) =  $10 * \text{LOG}(10^{\text{Chain 0 PPSD} / 10} + 10^{\text{Chain 1 PPSD} / 10})$

2. The maximum antenna gain is 7.09dBi; therefore the reduction due to antenna gain is 1dB, so the limit is 10dBm.



### Test Plot IEEE 802.11a mode / 5180 ~ 5240MHz

#### CH Low

Agilent 18:51:25 Mar 10, 2009

R T

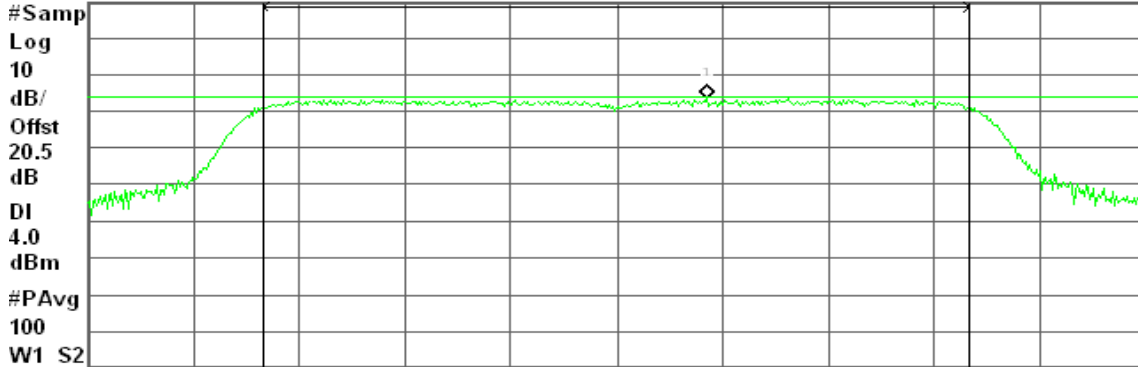
Peak Power Spectral Density, a Mode Low Ch.

Mkr1 5.182 04 GHz

Ref 30 dBm

Atten 20 dB

3.508 dBm



Center 5.180 00 GHz

Span 24 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

14.20 dBm / 16.0000 MHz

-57.84 dBm/Hz

#### CH Mid

Agilent 18:56:30 Mar 10, 2009

R T

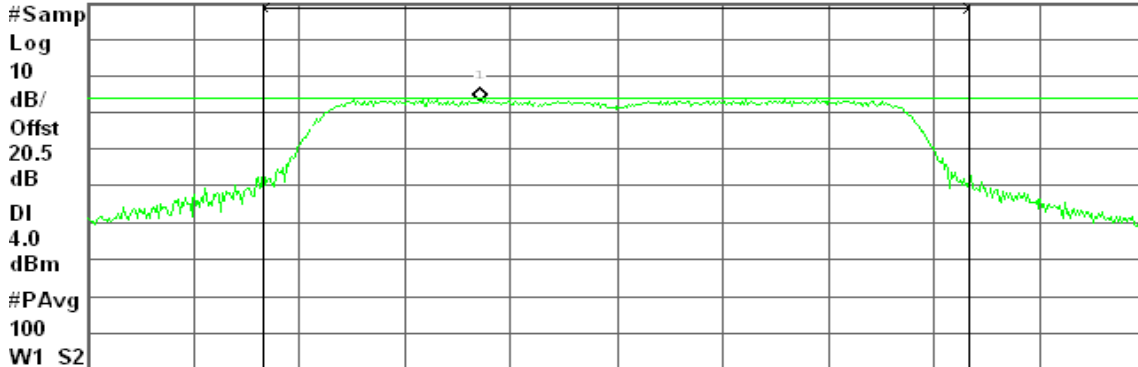
Peak Power Spectral Density, a Mode Mid Ch.

Mkr1 5.216 15 GHz

Ref 30 dBm

Atten 20 dB

3.051 dBm



Center 5.220 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

14.76 dBm / 20.0000 MHz

-58.25 dBm/Hz



### CH High

Agilent 19:07:46 Mar 10, 2009

R T

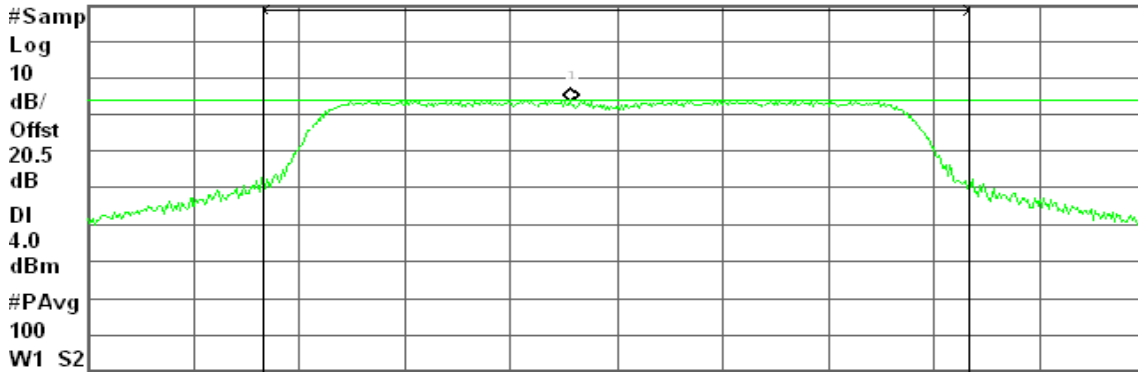
Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.238 70 GHz

Ref 30 dBm

Atten 20 dB

3.618 dBm



Center 5.240 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

15.16 dBm / 20.0000 MHz

-57.85 dBm/Hz

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

### CH Low

Agilent 01:19:23 Mar 11, 2009

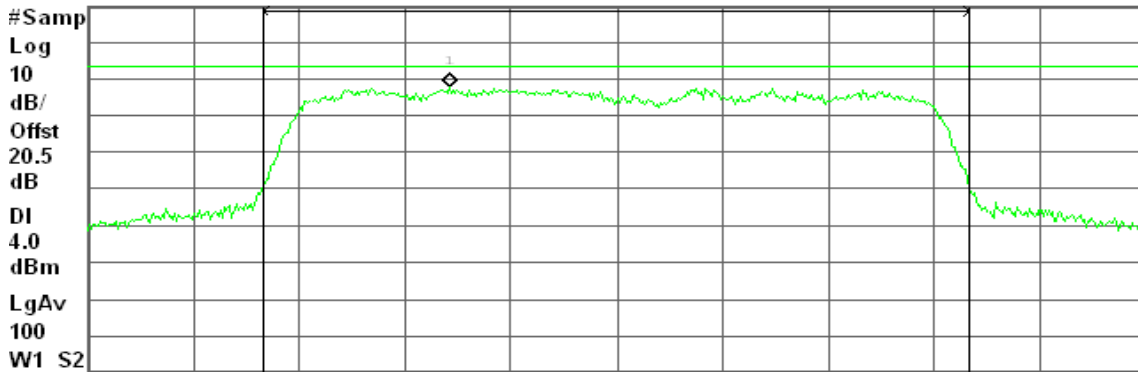
R T

Ref 20.5 dBm

#Atten 10 dB

Mkr1 5.175 30 GHz

-1.522 dBm



Center 5.180 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

11.94 dBm / 20.0000 MHz

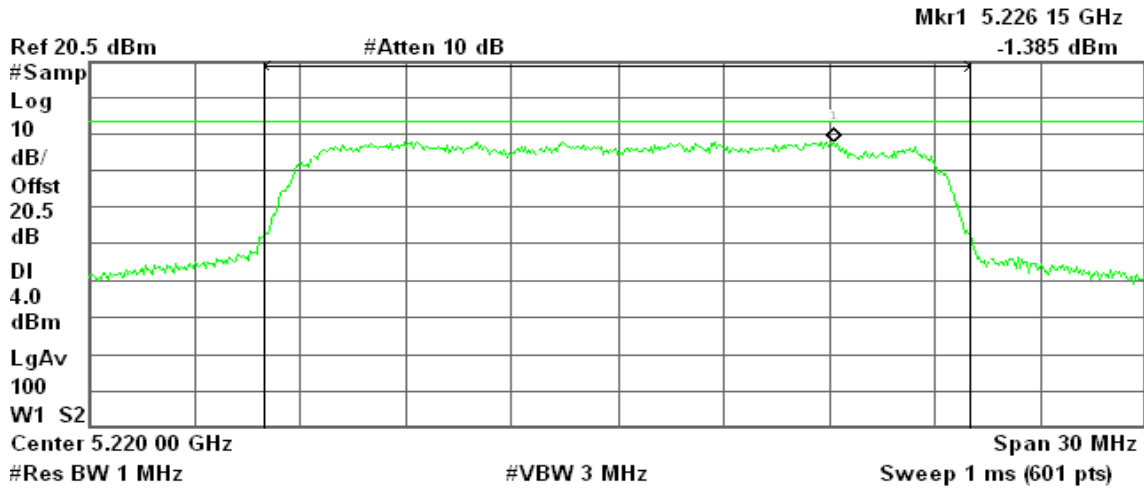
-61.07 dBm/Hz



### CH Mid

Agilent 01:20:12 Mar 11, 2009

R T



Channel Power

12.91 dBm / 20.0000 MHz

Power Spectral Density

-60.10 dBm/Hz

### CH High

Agilent 01:21:02 Mar 11, 2009

R T



Channel Power

12.32 dBm / 20.0000 MHz

Power Spectral Density

-60.69 dBm/Hz



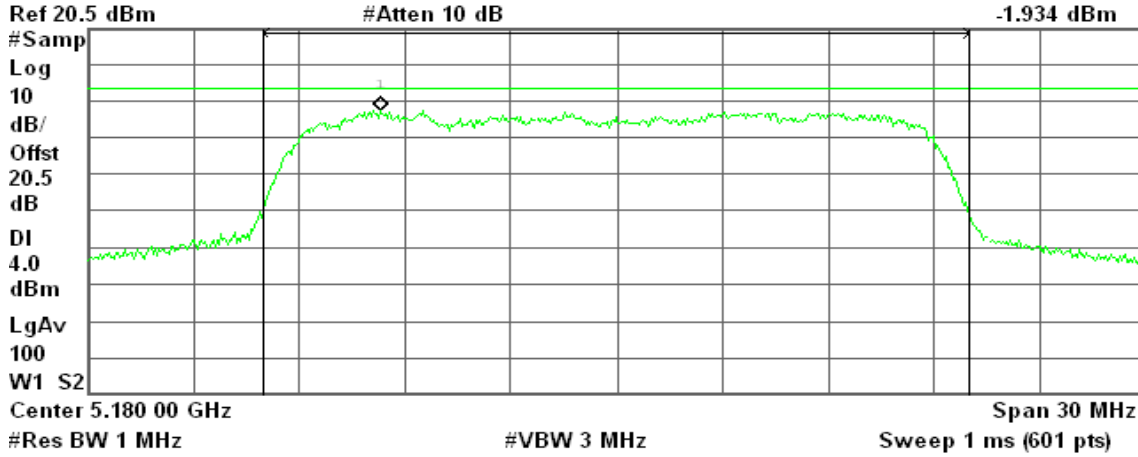
**draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1**

**CH Low**

Agilent 01:18:24 Mar 11, 2009

R T

Mkr1 5.173 30 GHz  
-1.934 dBm



Channel Power

11.09 dBm / 20.0000 MHz

Power Spectral Density

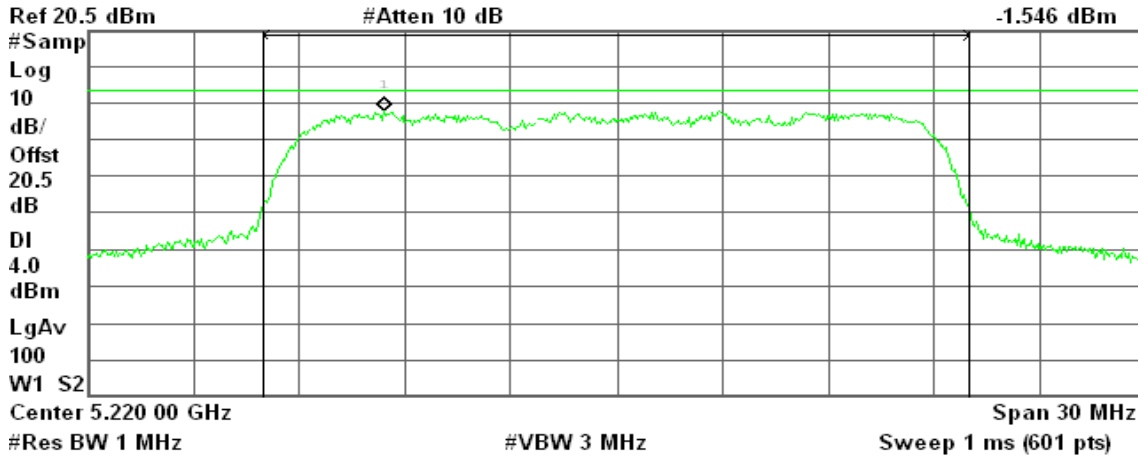
-61.92 dBm/Hz

**CH Mid**

Agilent 01:17:41 Mar 11, 2009

R T

Mkr1 5.213 40 GHz  
-1.546 dBm



Channel Power

11.88 dBm / 20.0000 MHz

Power Spectral Density

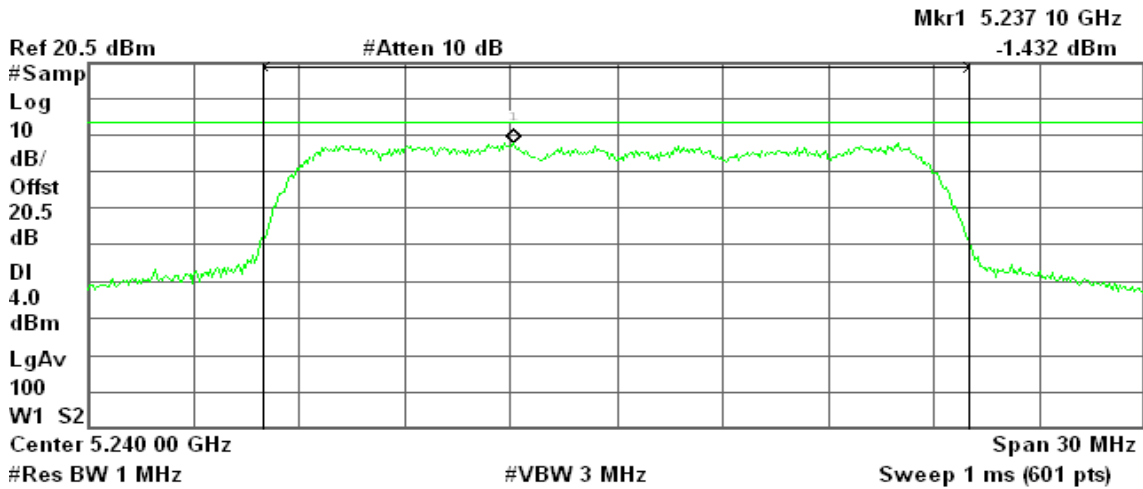
-61.13 dBm/Hz



### CH High

Agilent 01:16:59 Mar 11, 2009

R T



Channel Power

11.85 dBm / 20.0000 MHz

Power Spectral Density

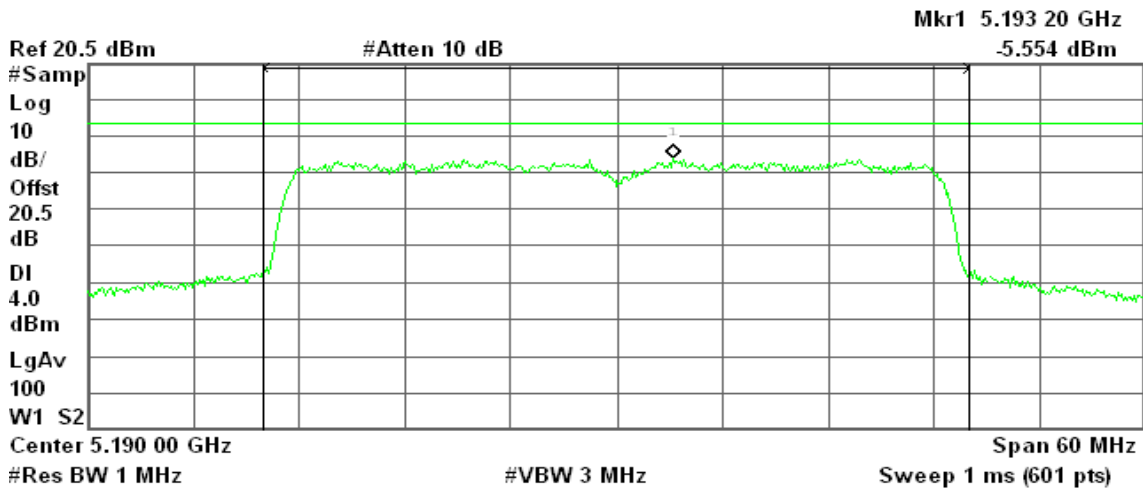
-61.16 dBm/Hz

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

### CH Low

Agilent 02:44:24 Mar 11, 2009

R T



Channel Power

12.51 dBm / 40.0000 MHz

Power Spectral Density

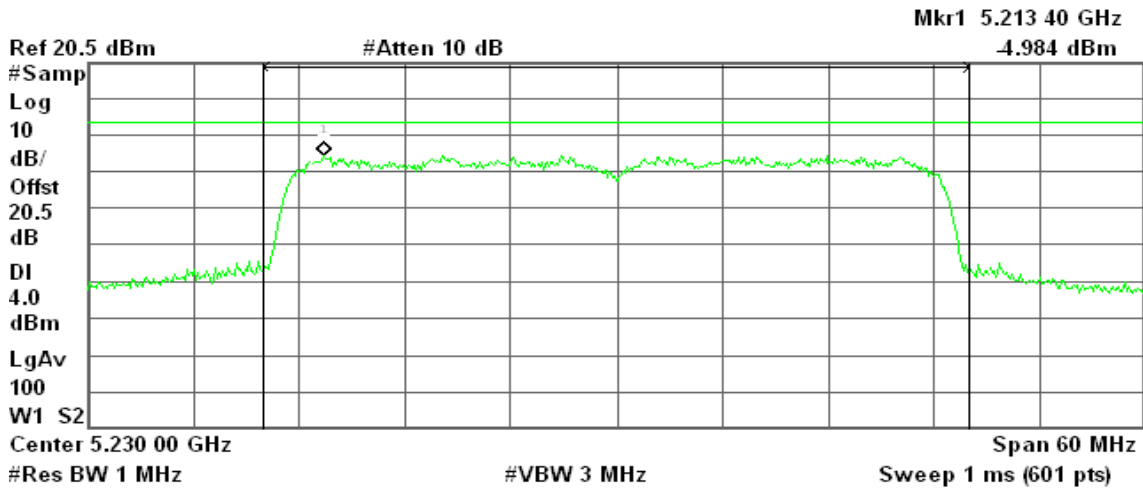
-63.51 dBm/Hz



### CH High

Agilent 02:45:13 Mar 11, 2009

R T



Channel Power

Power Spectral Density

13.10 dBm / 40.0000 MHz

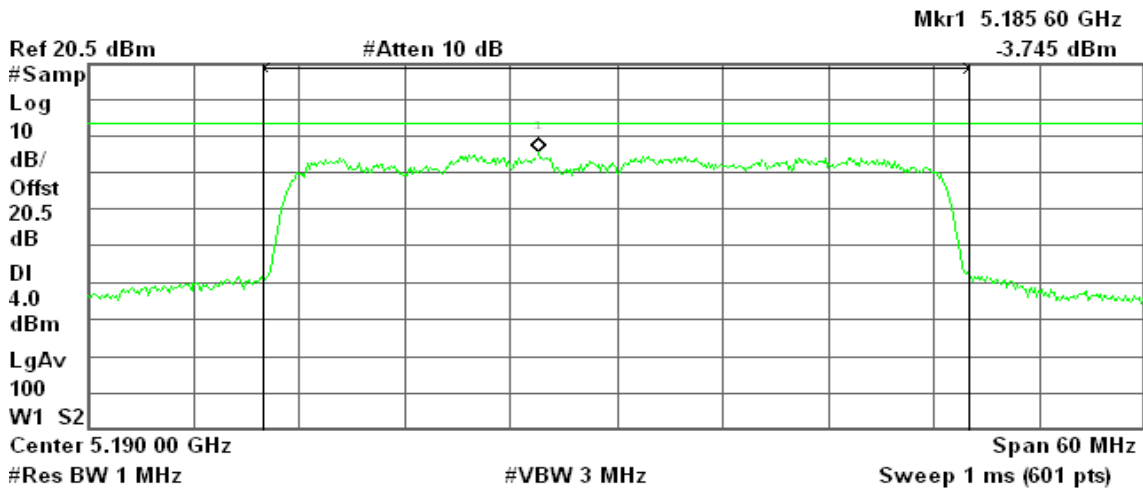
-62.92 dBm/Hz

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

### CH Low

Agilent 02:54:43 Mar 11, 2009

R T



Channel Power

Power Spectral Density

12.58 dBm / 40.0000 MHz

-63.44 dBm/Hz

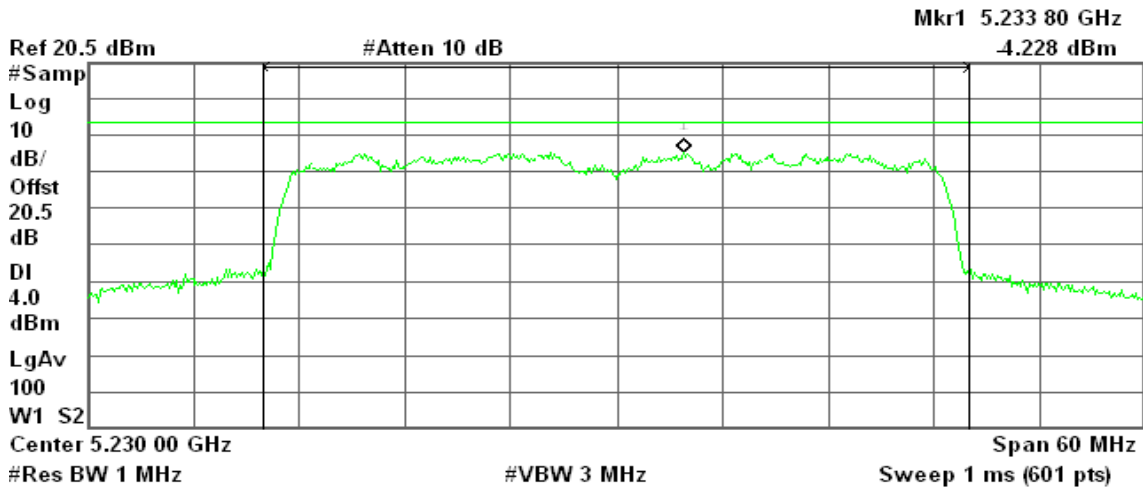




### CH High

Agilent 02:54:10 Mar 11, 2009

R T



Channel Power

13.26 dBm / 40.0000 MHz

Power Spectral Density

-62.76 dBm/Hz

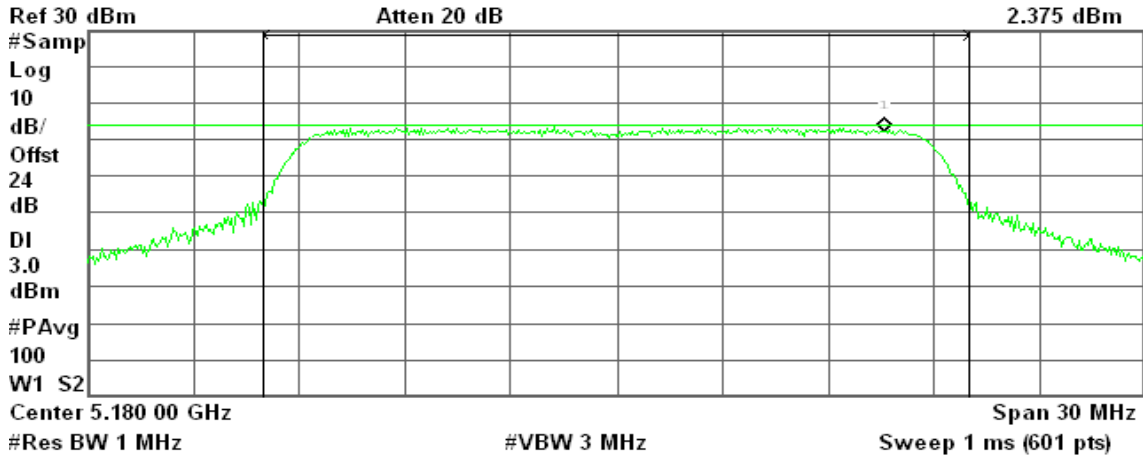
### Test mode: draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz with combiner:

### CH Low

Agilent 20:42:14 Mar 10, 2009

R L

Peak Power Spectral Density, a Mode Low Ch.



Channel Power

14.59 dBm / 20.0000 MHz

Power Spectral Density

-58.43 dBm/Hz



### CH Mid

Agilent 20:49:56 Mar 10, 2009

R T

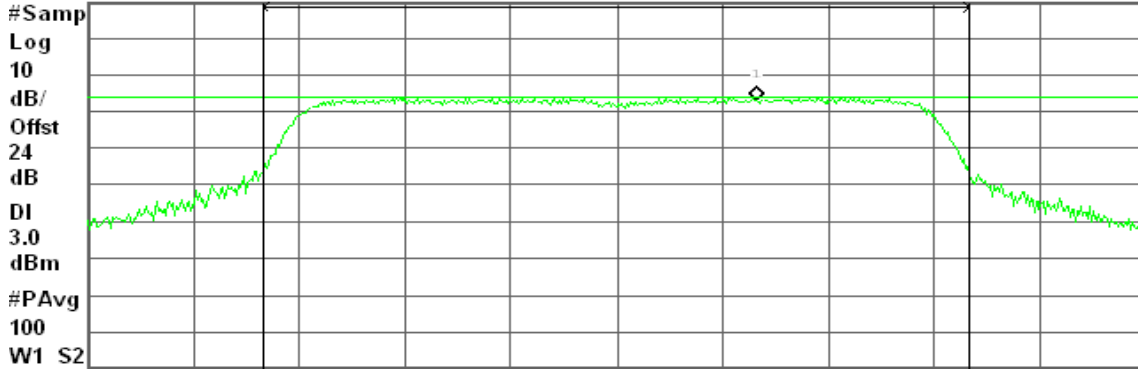
Peak Power Spectral Density, a Mode Mid Ch.

Mkr1 5.223 95 GHz

Ref 30 dBm

Atten 20 dB

2.205 dBm



Center 5.220 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

15.33 dBm / 20.0000 MHz

-57.68 dBm/Hz

### CH High

Agilent 20:55:29 Mar 10, 2009

R T

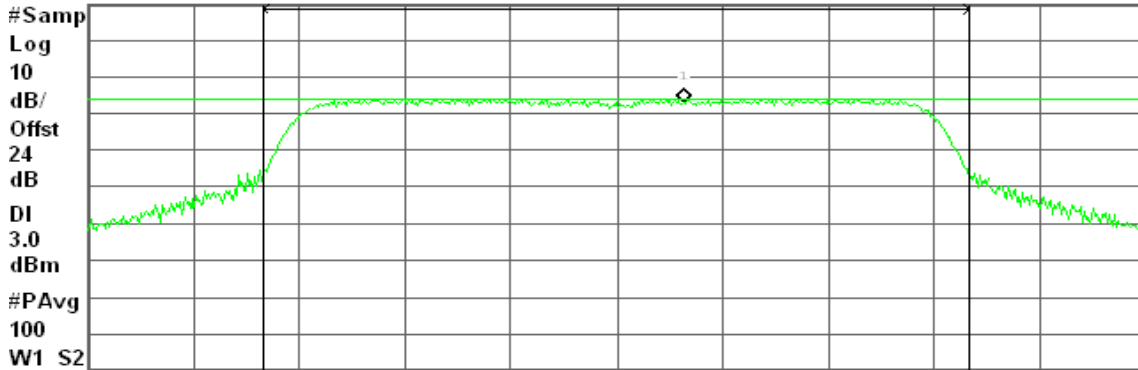
Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.241 90 GHz

Ref 30 dBm

Atten 20 dB

2.178 dBm



Center 5.240 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

15.11 dBm / 20.0000 MHz

-57.90 dBm/Hz



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

**CH Low**

Agilent 23:42:09 Mar 10, 2009

R T

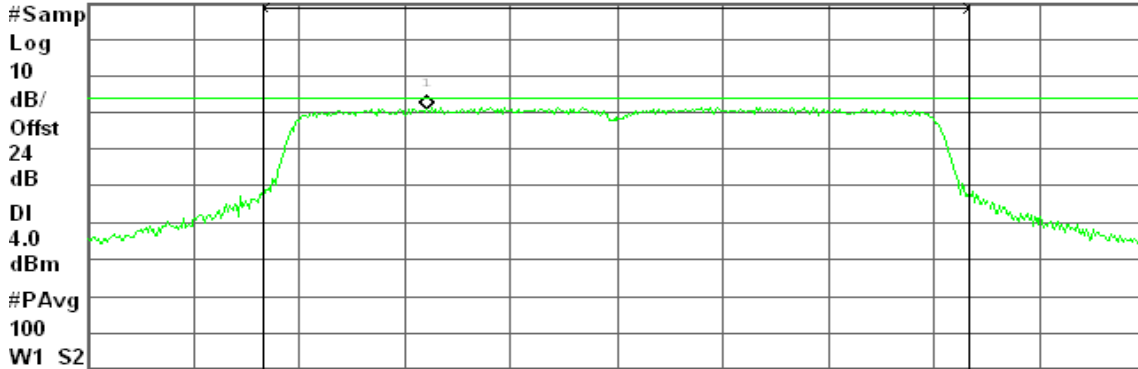
Peak Power Spectral Density, a Mode Low Ch.

Mkr1 5.179 30 GHz

Ref 30 dBm

Atten 20 dB

1.159 dBm



Center 5.190 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

15.48 dBm / 40.0000 MHz

-60.54 dBm/Hz

**CH High**

Agilent 23:46:04 Mar 10, 2009

R T

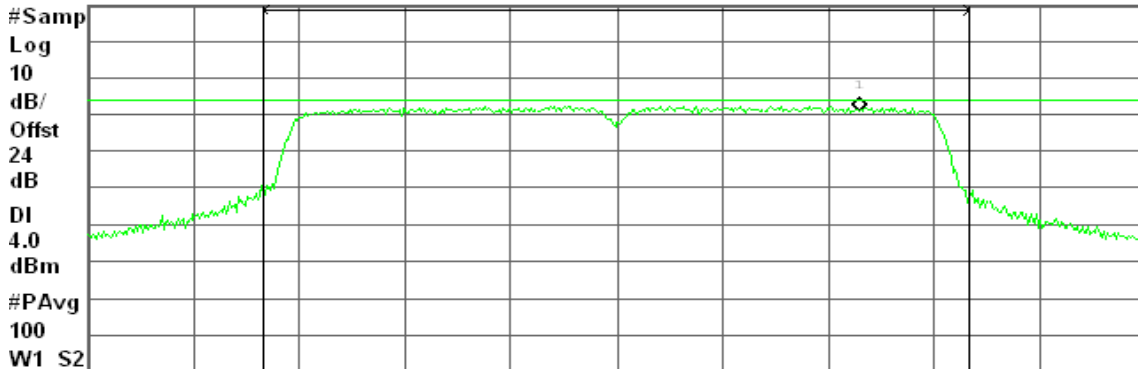
Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.243 80 GHz

Ref 30 dBm

Atten 20 dB

0.944 dBm



Center 5.230 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

16.66 dBm / 40.0000 MHz

-59.36 dBm/Hz



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

**CH Low**

Agilent 19:15:15 Mar 10, 2009

R T

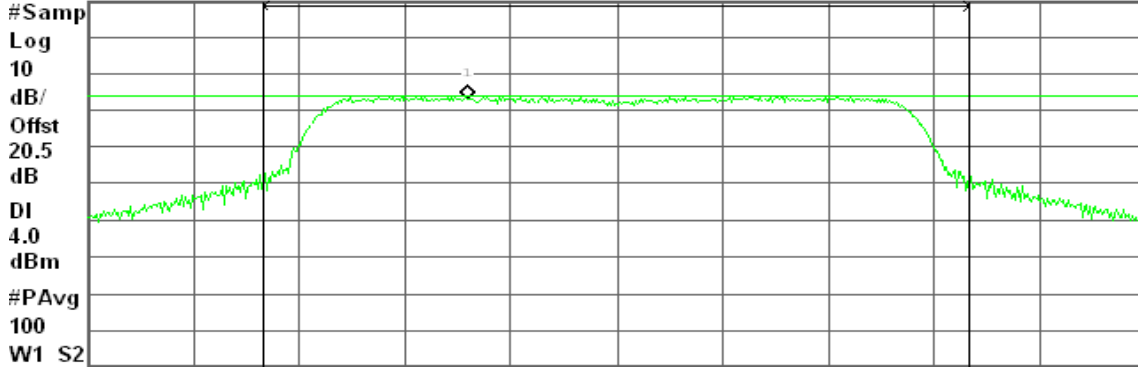
Peak Power Spectral Density, a Mode Low Ch.

Mkr1 5.255 80 GHz

Ref 30 dBm

Atten 20 dB

3.039 dBm



Center 5.260 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

15.08 dBm / 20.0000 MHz

-57.93 dBm/Hz

**CH Mid**

Agilent 19:20:51 Mar 10, 2009

R T

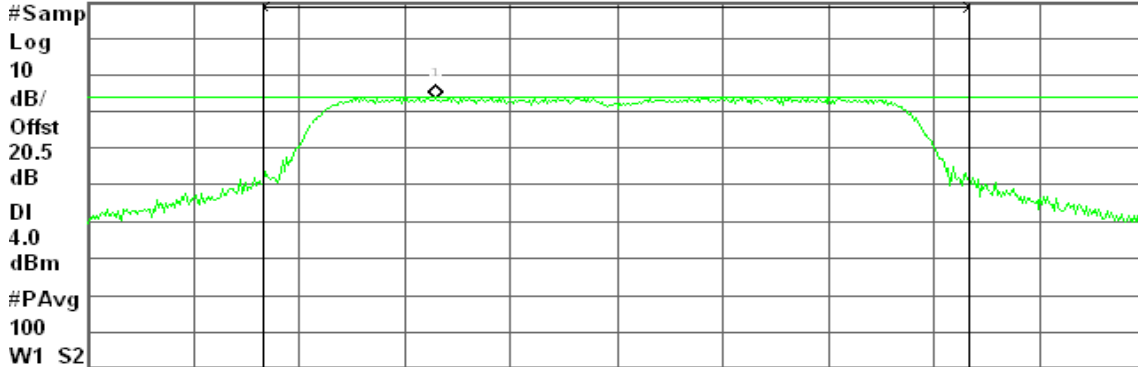
Peak Power Spectral Density, a Mode Mid Ch.

Mkr1 5.274 90 GHz

Ref 30 dBm

Atten 20 dB

3.602 dBm



Center 5.280 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

15.23 dBm / 20.0000 MHz

-57.78 dBm/Hz



### CH High

Agilent 19:25:32 Mar 10, 2009

R T

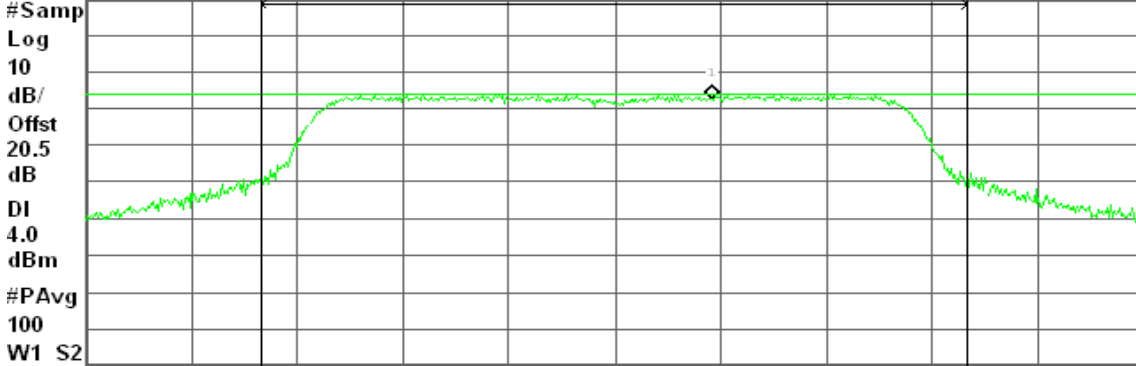
Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.322 75 GHz

Ref 30 dBm

Atten 20 dB

2.701 dBm



Center 5.320 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

15.26 dBm / 20.0000 MHz

-57.75 dBm/Hz

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

### CH Low

Agilent 01:21:41 Mar 11, 2009

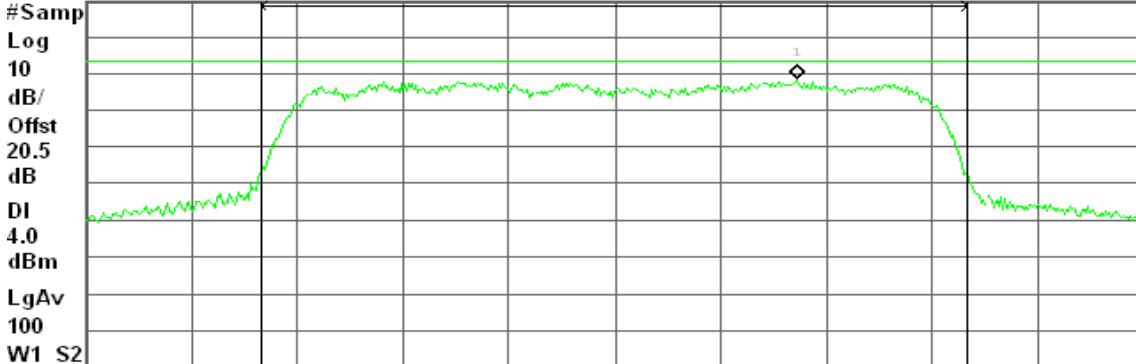
R T

Mkr1 5.265 15 GHz

Ref 20.5 dBm

#Atten 10 dB

-0.921 dBm



Center 5.260 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

11.99 dBm / 20.0000 MHz

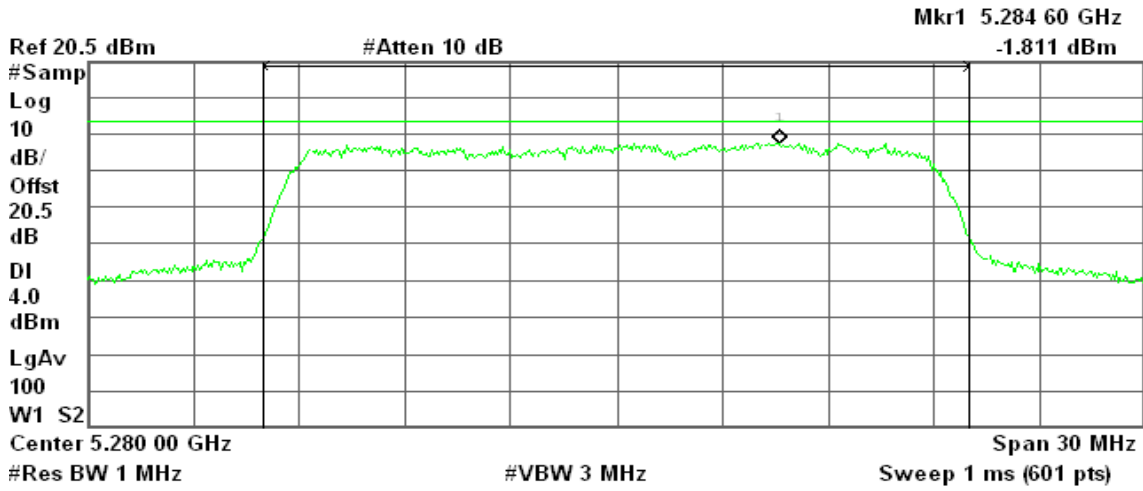
-61.02 dBm/Hz



### CH Mid

Agilent 01:22:21 Mar 11, 2009

R T



Channel Power

11.50 dBm / 20.0000 MHz

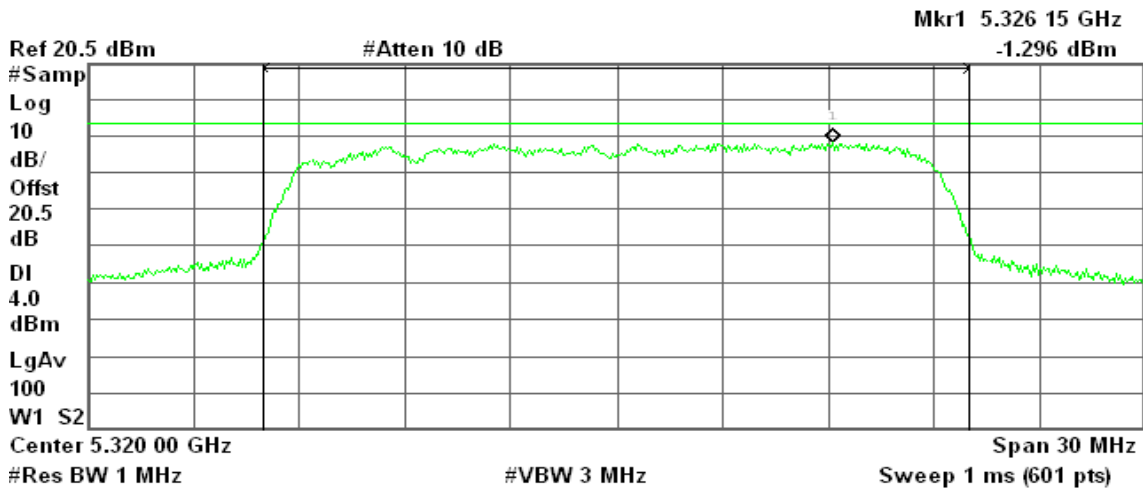
Power Spectral Density

-61.51 dBm/Hz

### CH High

Agilent 01:23:03 Mar 11, 2009

R T



Channel Power

12.16 dBm / 20.0000 MHz

Power Spectral Density

-60.85 dBm/Hz



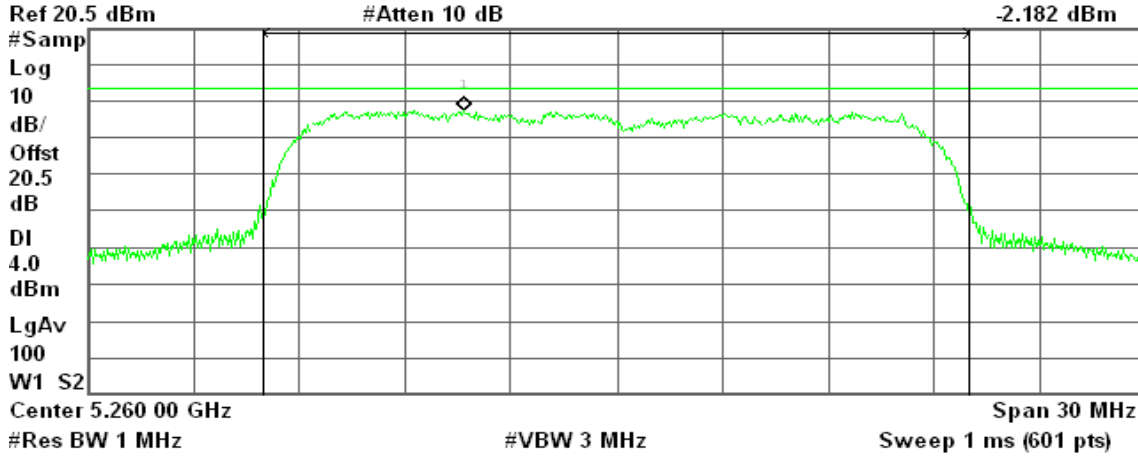
**draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1**

**CH Low**

Agilent 01:15:43 Mar 11, 2009

R T

Mkr1 5.255 70 GHz  
-2.182 dBm



Channel Power

Power Spectral Density

11.56 dBm / 20.0000 MHz

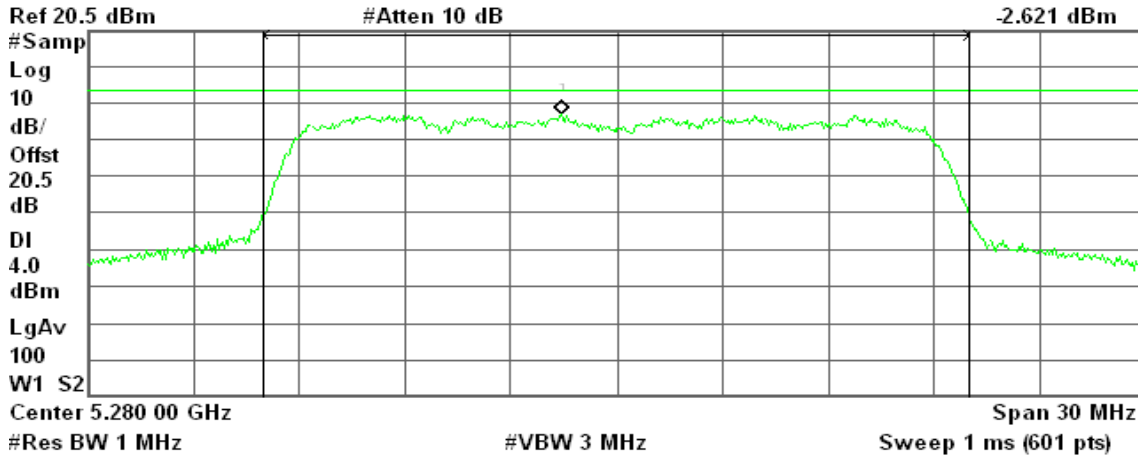
-61.45 dBm/Hz

**CH Mid**

Agilent 01:14:48 Mar 11, 2009

R T

Mkr1 5.278 45 GHz  
-2.621 dBm



Channel Power

Power Spectral Density

11.45 dBm / 20.0000 MHz

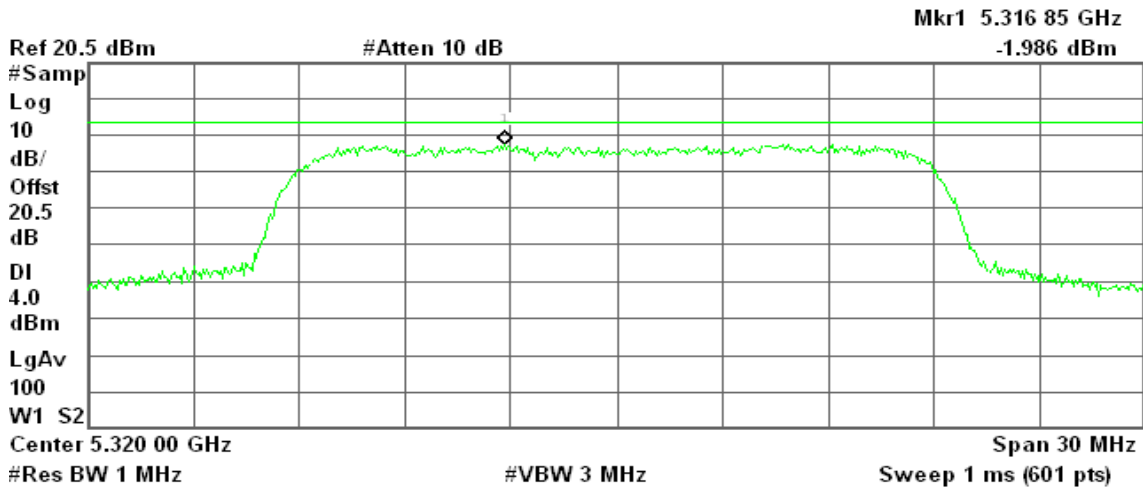
-61.56 dBm/Hz



### CH High

Agilent 01:11:41 Mar 11, 2009

R T



Channel Power

Power Spectral Density

11.86 dBm / 20.0000 MHz

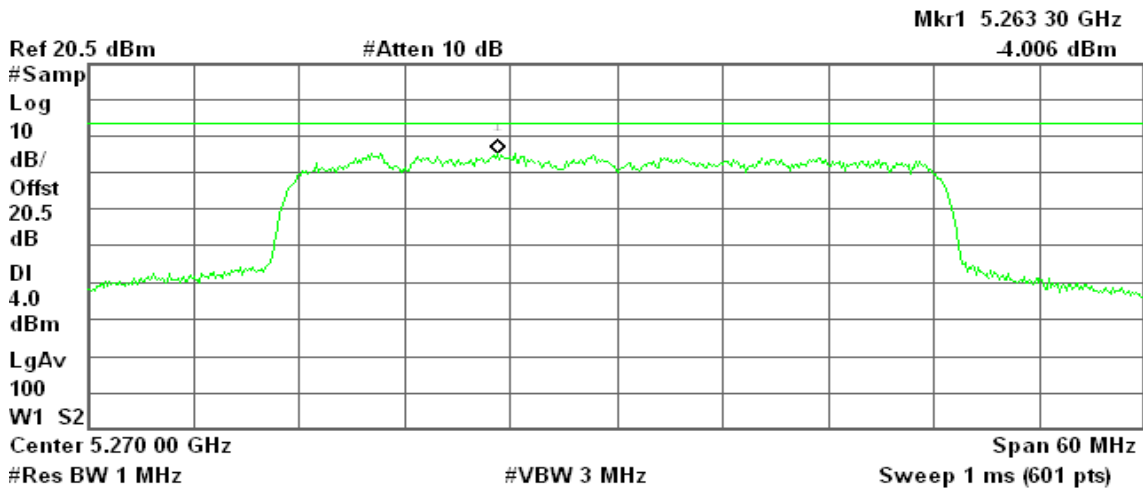
-61.15 dBm/Hz

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

### CH Low

Agilent 02:45:56 Mar 11, 2009

R T



Channel Power

Power Spectral Density

12.80 dBm / 40.0000 MHz

-63.23 dBm/Hz

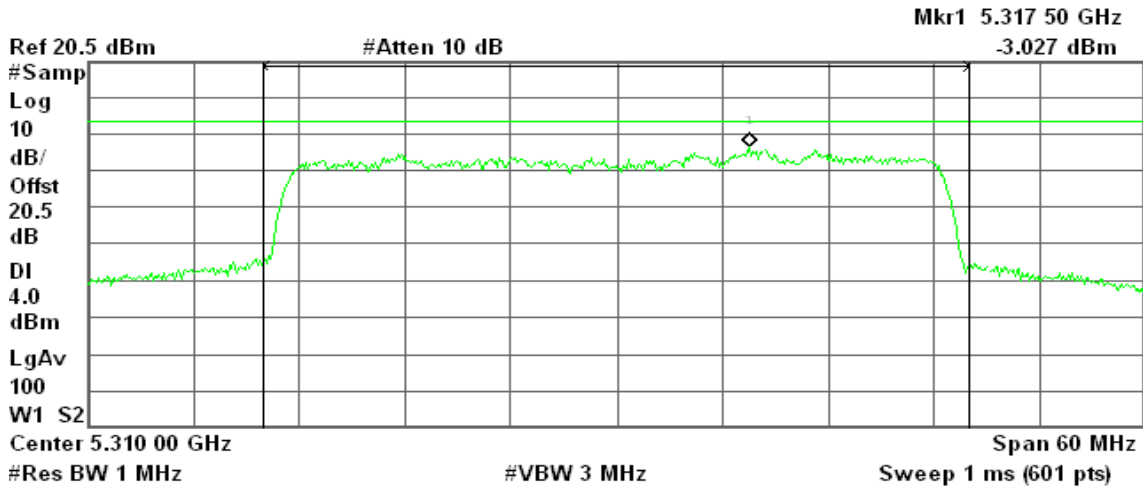




### CH High

Agilent 02:47:25 Mar 11, 2009

R T



Channel Power

12.89 dBm / 40.0000 MHz

Power Spectral Density

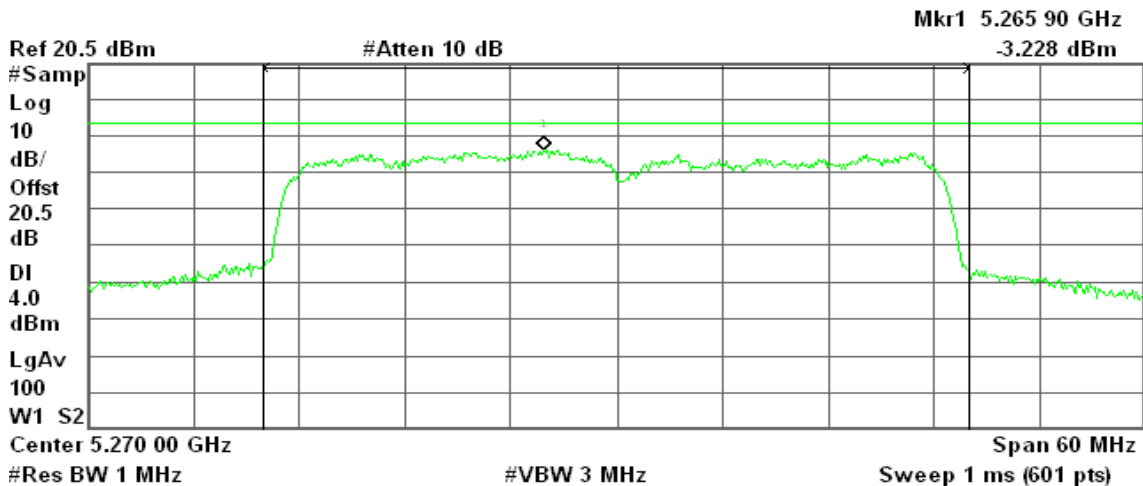
-63.13 dBm/Hz

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

### CH Low

Agilent 02:53:29 Mar 11, 2009

R T



Channel Power

12.78 dBm / 40.0000 MHz

Power Spectral Density

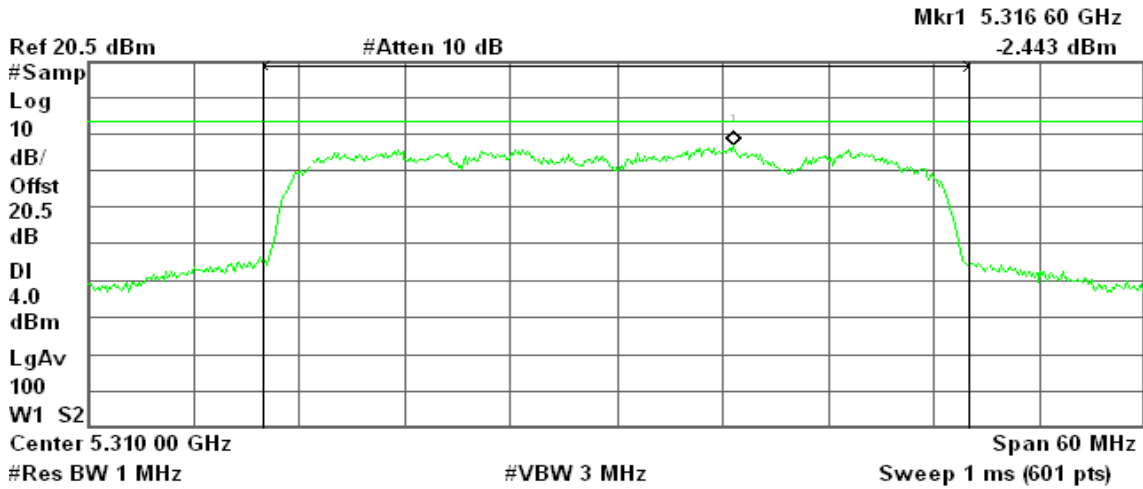
-63.24 dBm/Hz



### CH High

Agilent 02:52:47 Mar 11, 2009

R T



Channel Power

13.75 dBm / 40.0000 MHz

Power Spectral Density

-62.27 dBm/Hz

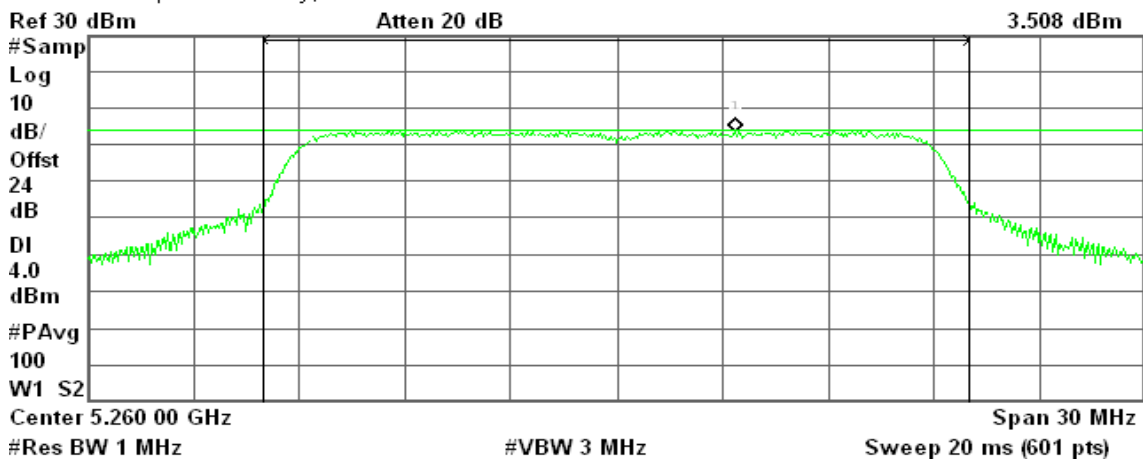
### Test mode: draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz with combiner:

### CH Low

Agilent 21:06:17 Mar 10, 2009

R L

Peak Power Spectral Density, a Mode Low Ch.



Channel Power

15.21 dBm / 20.0000 MHz

Power Spectral Density

-57.80 dBm/Hz



### CH Mid

Agilent 21:06:17 Mar 10, 2009

R L

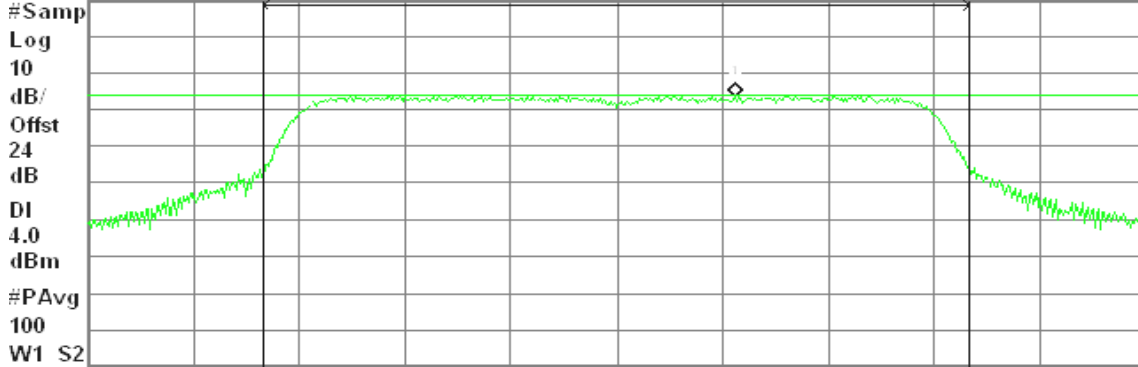
Peak Power Spectral Density, a Mode Low Ch.

Mkr1 5.283 35 GHz

Ref 30 dBm

Atten 20 dB

2.508 dBm



Center 5.280 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

15.21 dBm / 20.0000 MHz

-57.80 dBm/Hz

### CH High

Agilent 21:15:53 Mar 10, 2009

R T

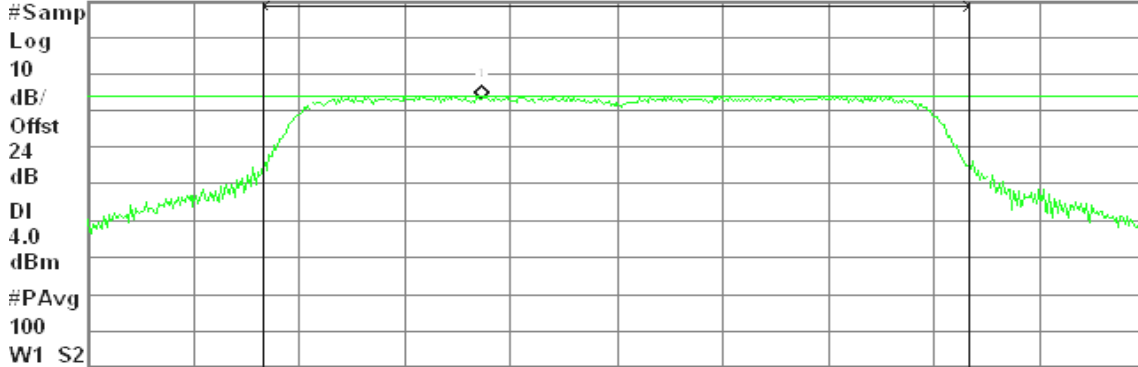
Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.316 20 GHz

Ref 30 dBm

Atten 20 dB

2.675 dBm



Center 5.320 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

15.65 dBm / 20.0000 MHz

-57.36 dBm/Hz



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

**CH Low**

Agilent 23:50:12 Mar 10, 2009

R T

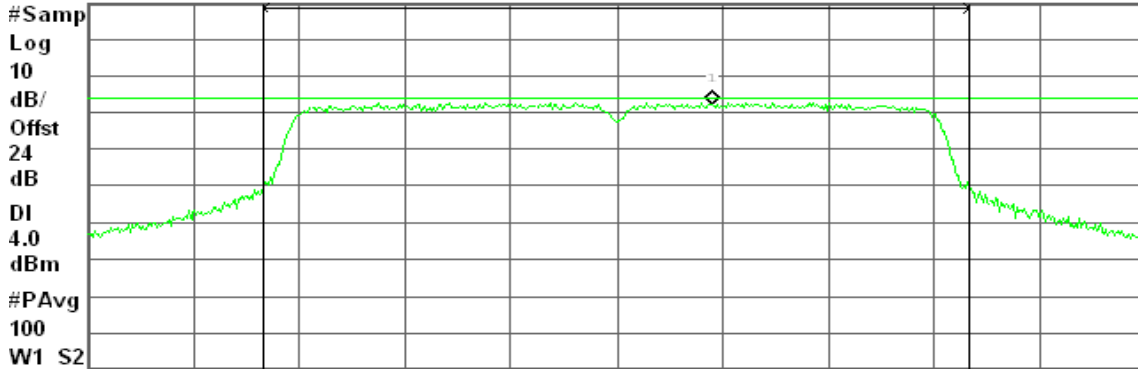
Peak Power Spectral Density, a Mode Low Ch.

Mkr1 5.275 40 GHz

Ref 30 dBm

Atten 20 dB

2.300 dBm



Center 5.270 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

16.75 dBm / 40.0000 MHz

-59.27 dBm/Hz

**CH High**

Agilent 23:54:13 Mar 10, 2009

R T

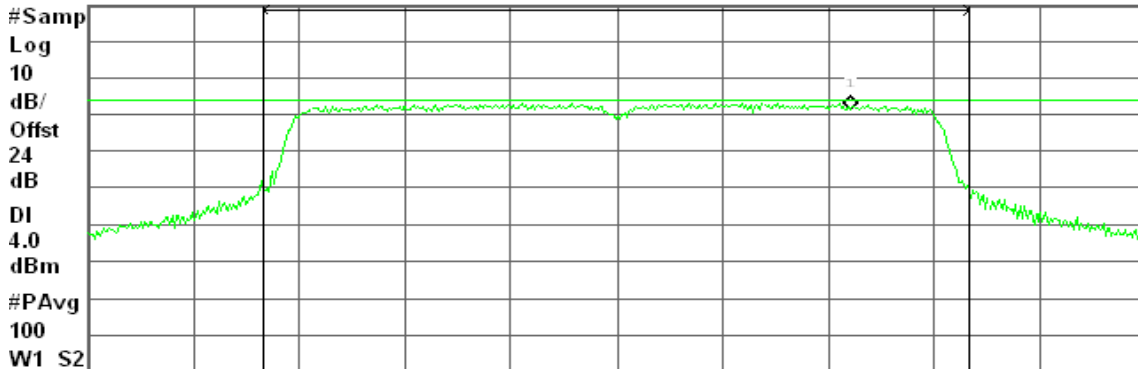
Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.323 30 GHz

Ref 30 dBm

Atten 20 dB

1.346 dBm



Center 5.310 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

18.14 dBm / 40.0000 MHz

-57.88 dBm/Hz



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

**CH Low**

Agilent 19:47:32 Mar 10, 2009

R L

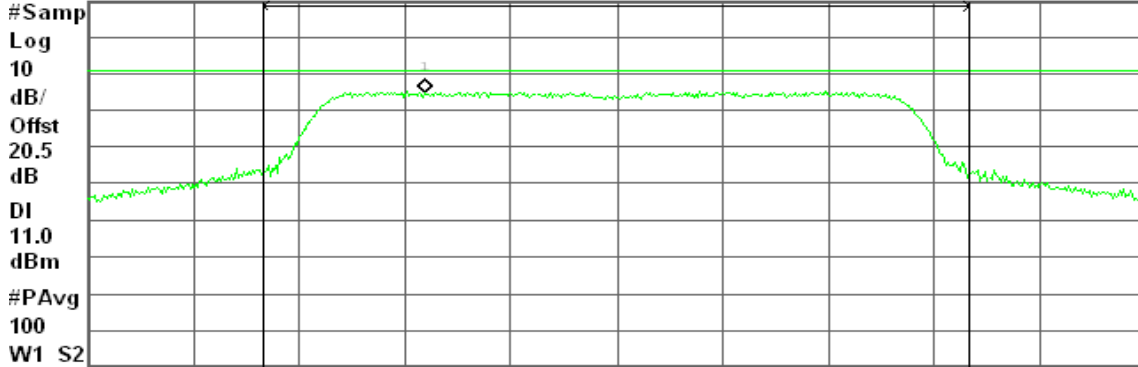
Peak Power Spectral Density, a Mode Low Ch.

Mkr1 5.494 60 GHz

Ref 30 dBm

Atten 20 dB

5.075 dBm



Center 5.500 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

16.57 dBm / 20.0000 MHz

-56.44 dBm/Hz

**CH Mid**

Agilent 19:53:44 Mar 10, 2009

R T

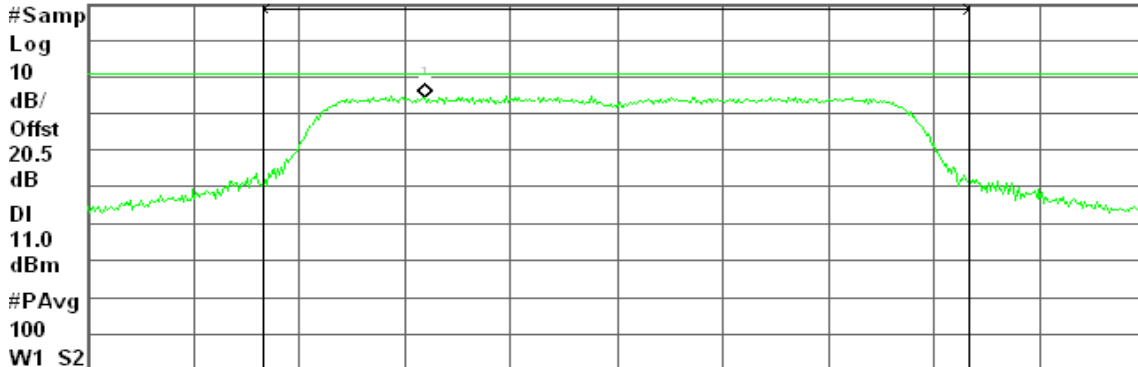
Peak Power Spectral Density, a Mode Mid Ch.

Mkr1 5.594 60 GHz

Ref 30 dBm

Atten 20 dB

4.534 dBm



Center 5.600 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

15.97 dBm / 20.0000 MHz

-57.04 dBm/Hz



### CH High

Agilent 19:58:24 Mar 10, 2009

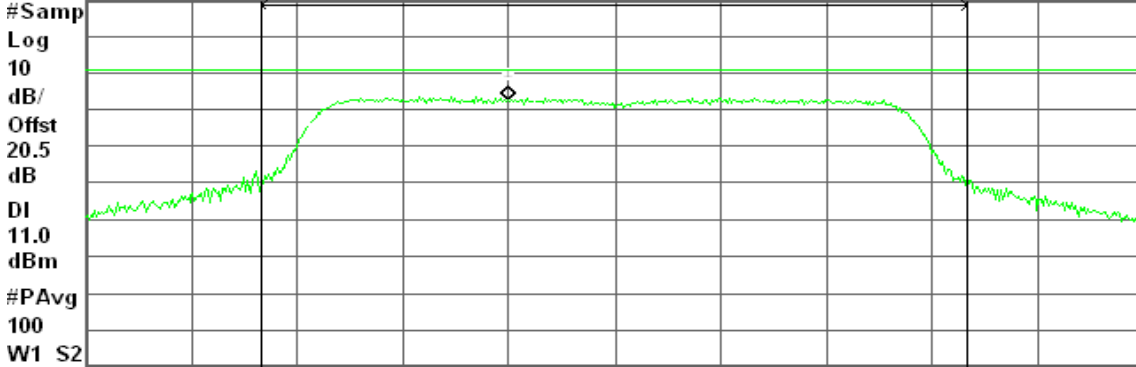
R T

Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.697 00 GHz  
2.706 dBm

Ref 30 dBm

Atten 20 dB



Center 5.700 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

14.12 dBm / 20.0000 MHz

-58.89 dBm/Hz

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

### CH Low

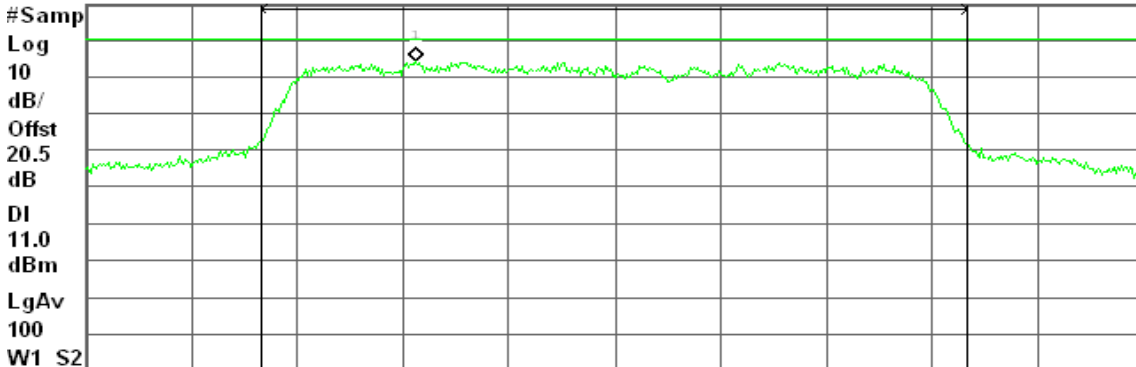
Agilent 01:23:56 Mar 11, 2009

R T

Ref 20.5 dBm

#Atten 10 dB

Mkr1 5.494 40 GHz  
4.997 dBm



Center 5.500 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

17.77 dBm / 20.0000 MHz

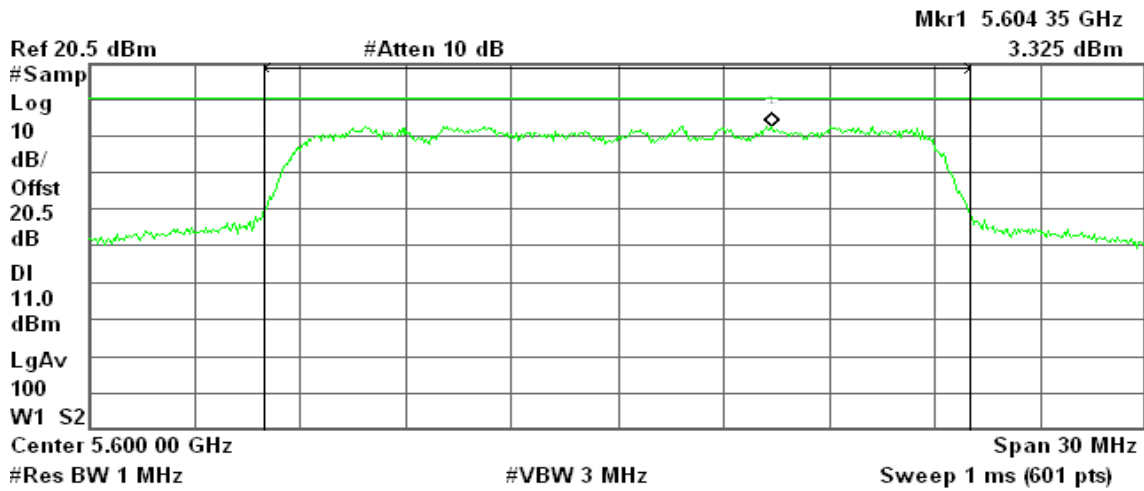
-55.24 dBm/Hz



### CH Mid

Agilent 01:24:39 Mar 11, 2009

R T



Channel Power

16.92 dBm / 20.0000 MHz

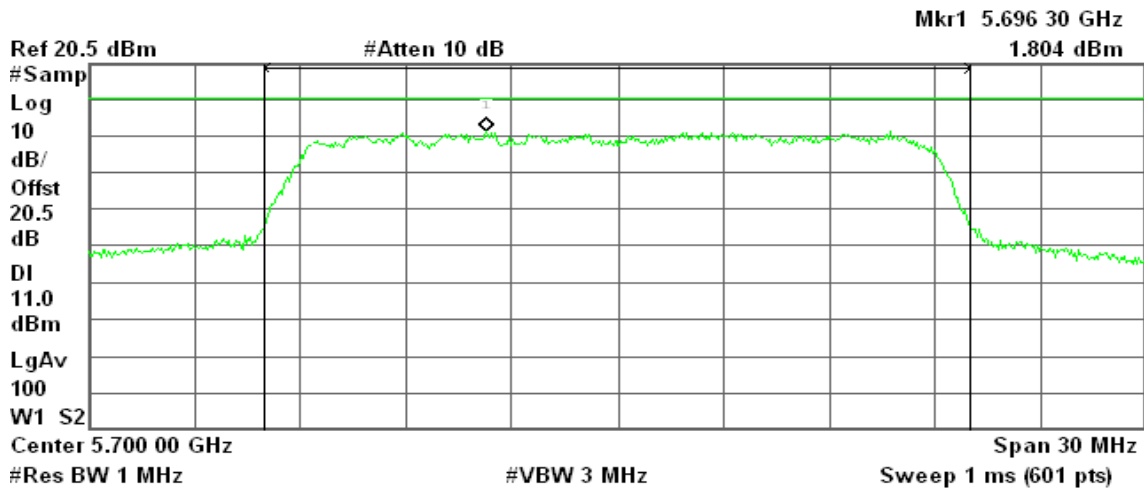
Power Spectral Density

-56.09 dBm/Hz

### CH High

Agilent 01:25:20 Mar 11, 2009

R T



Channel Power

15.05 dBm / 20.0000 MHz

Power Spectral Density

-57.96 dBm/Hz

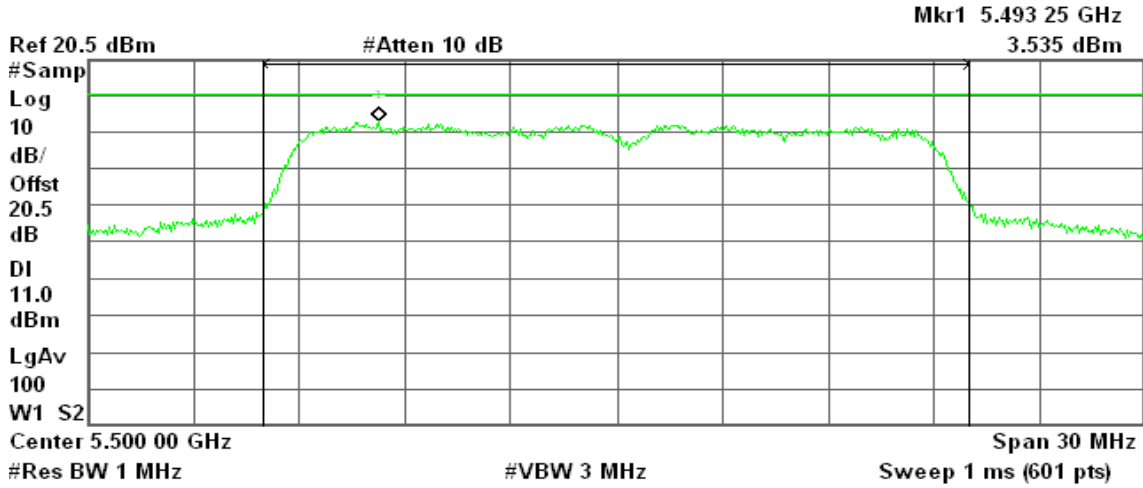


**draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1**

**CH Low**

Agilent 01:10:31 Mar 11, 2009

R T



Channel Power

16.67 dBm / 20.0000 MHz

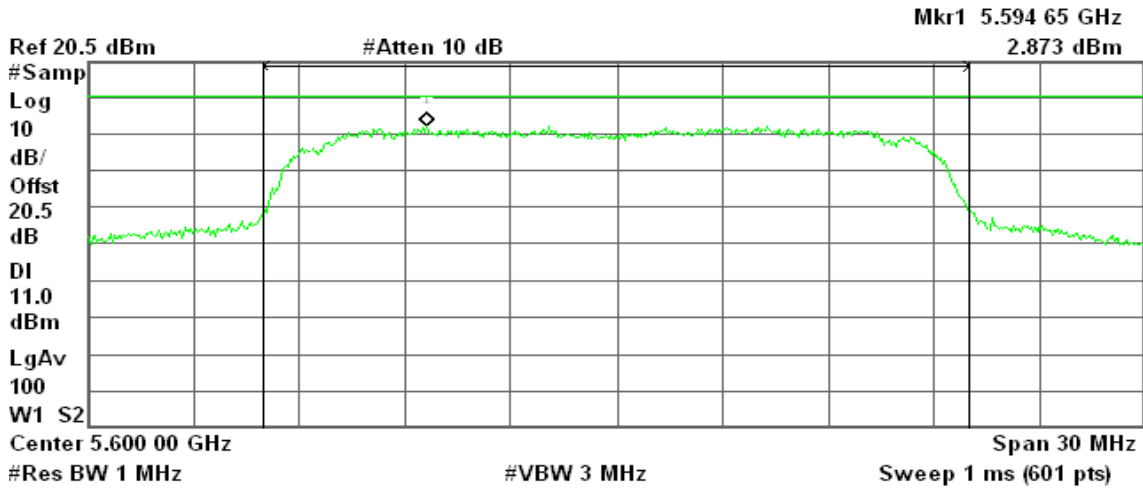
Power Spectral Density

-56.34 dBm/Hz

**CH Mid**

Agilent 01:09:23 Mar 11, 2009

R T



Channel Power

15.82 dBm / 20.0000 MHz

Power Spectral Density

-57.19 dBm/Hz

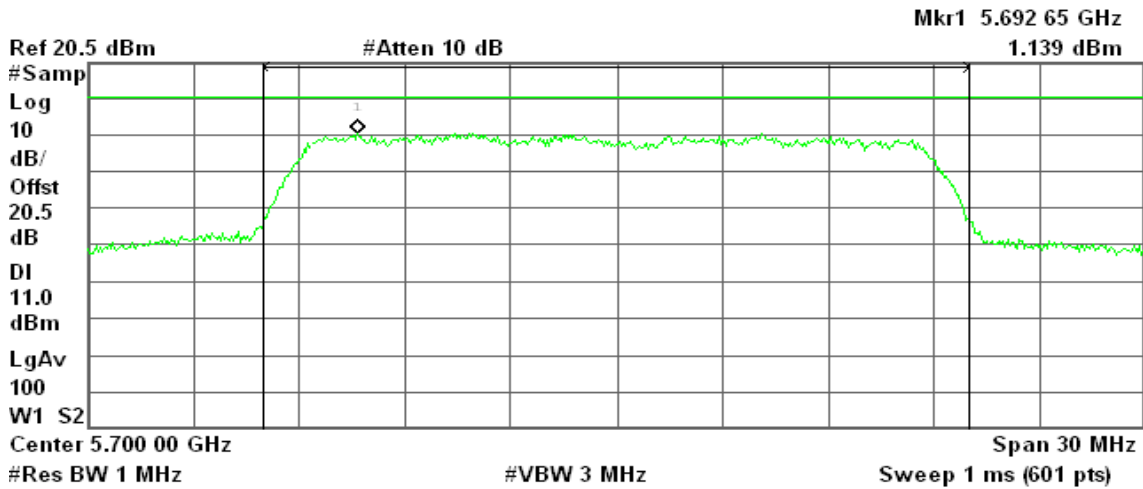




### CH High

Agilent 01:08:10 Mar 11, 2009

R T



Channel Power

14.24 dBm / 20.0000 MHz

Power Spectral Density

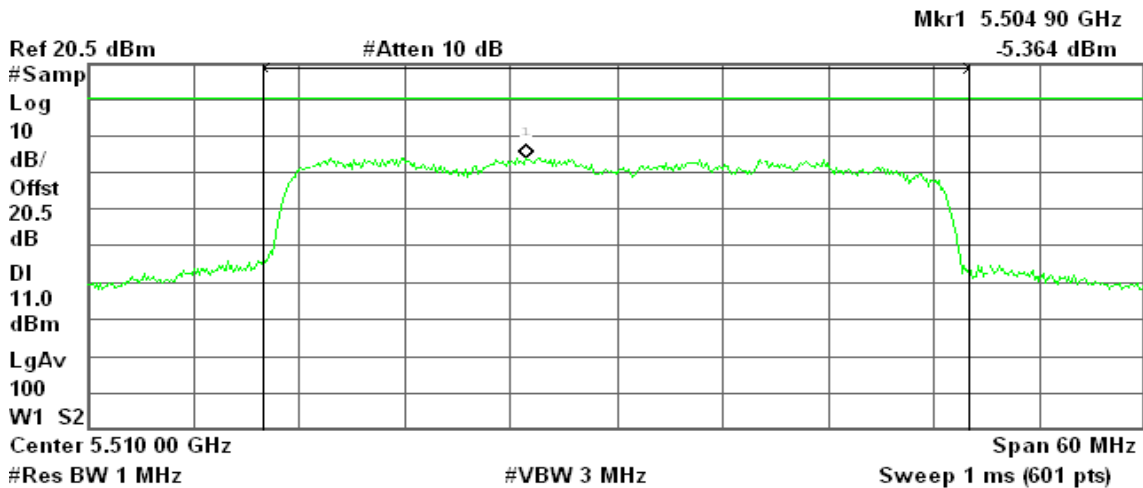
-58.77 dBm/Hz

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

### CH Low

Agilent 02:48:17 Mar 11, 2009

R T



Channel Power

12.09 dBm / 40.0000 MHz

Power Spectral Density

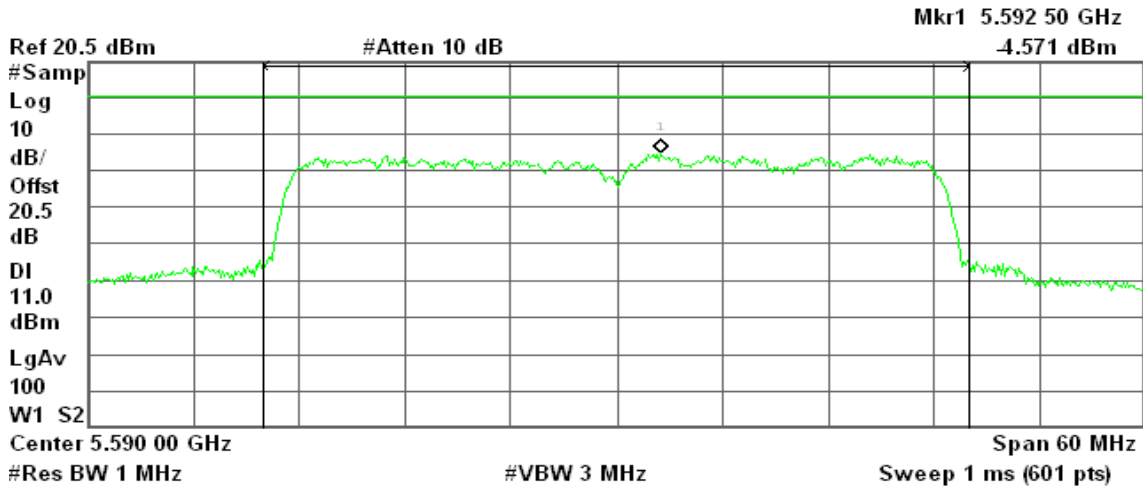
-63.93 dBm/Hz



### CH Mid

Agilent 02:48:59 Mar 11, 2009

R T



Channel Power

12.04 dBm / 40.0000 MHz

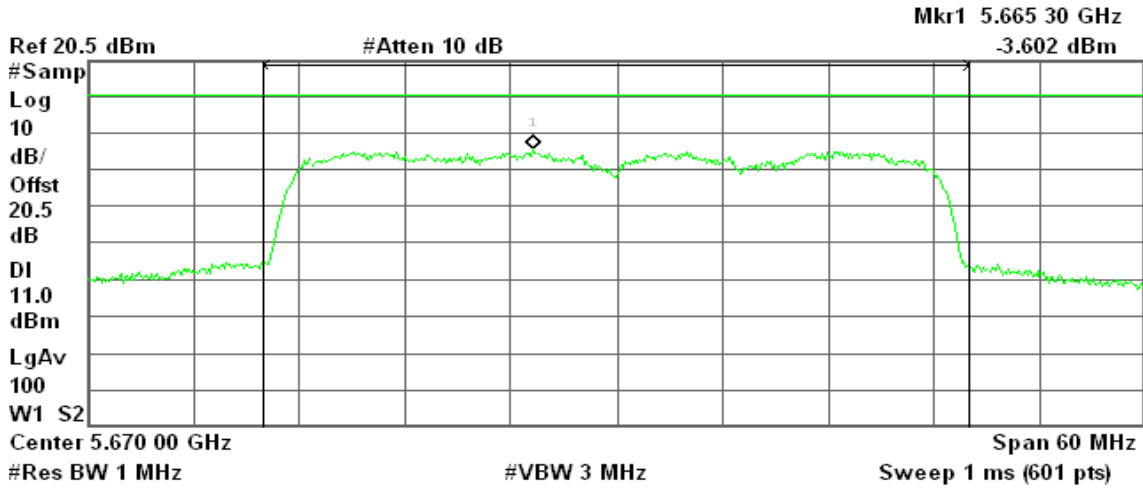
Power Spectral Density

-63.98 dBm/Hz

### CH High

Agilent 02:49:40 Mar 11, 2009

R T



Channel Power

12.88 dBm / 40.0000 MHz

Power Spectral Density

-63.14 dBm/Hz



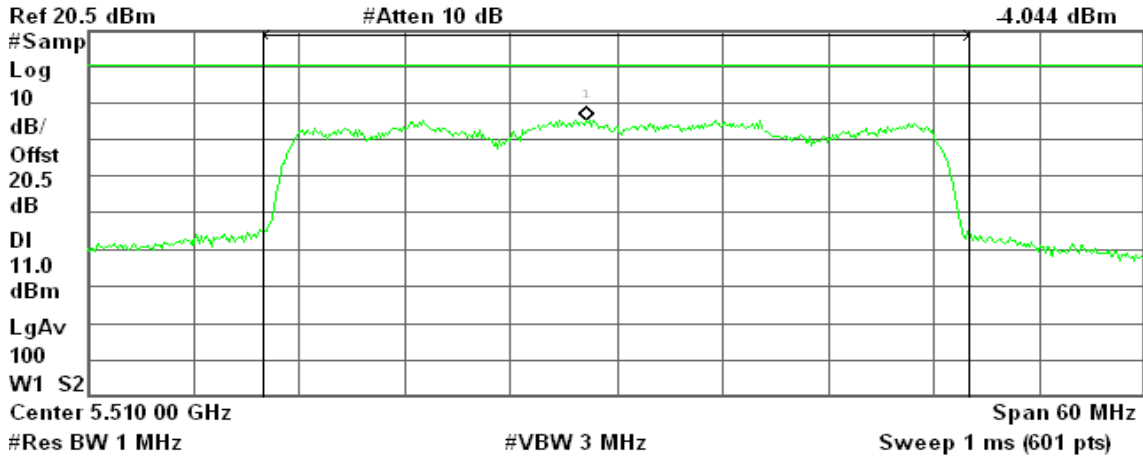
**draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / Chain 1**

**CH Low**

Agilent 02:51:58 Mar 11, 2009

R T

Mkr1 5.508 20 GHz  
-4.044 dBm



Channel Power

12.70 dBm / 40.0000 MHz

Power Spectral Density

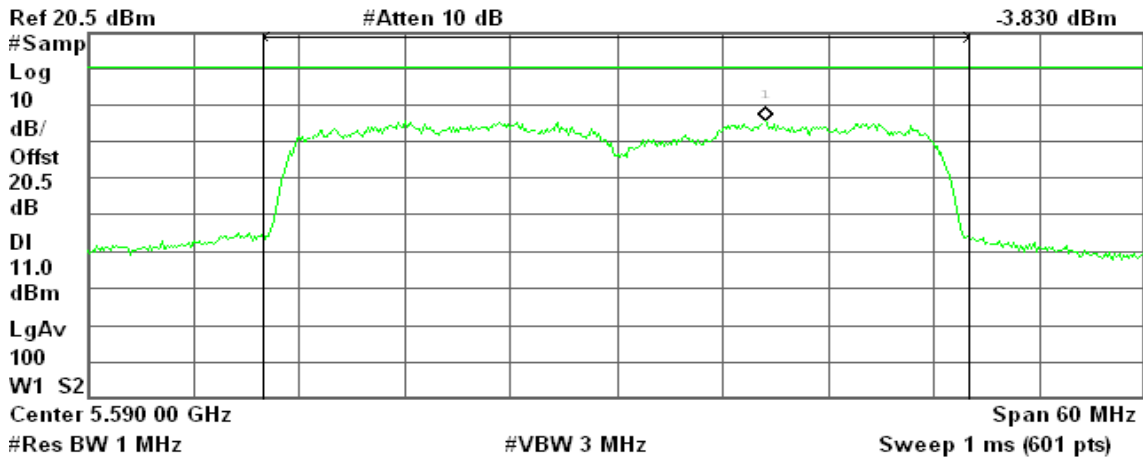
-63.32 dBm/Hz

**CH Mid**

Agilent 02:51:24 Mar 11, 2009

R T

Mkr1 5.598 40 GHz  
-3.830 dBm



Channel Power

12.43 dBm / 40.0000 MHz

Power Spectral Density

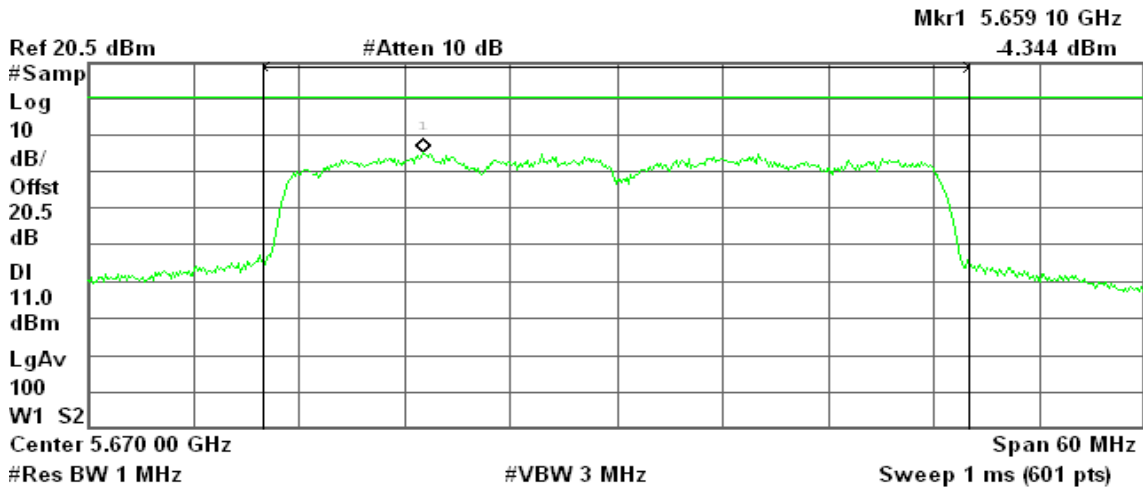
-63.60 dBm/Hz



### CH High

Agilent 02:50:43 Mar 11, 2009

R T



Channel Power

12.74 dBm / 40.0000 MHz

Power Spectral Density

-63.28 dBm/Hz

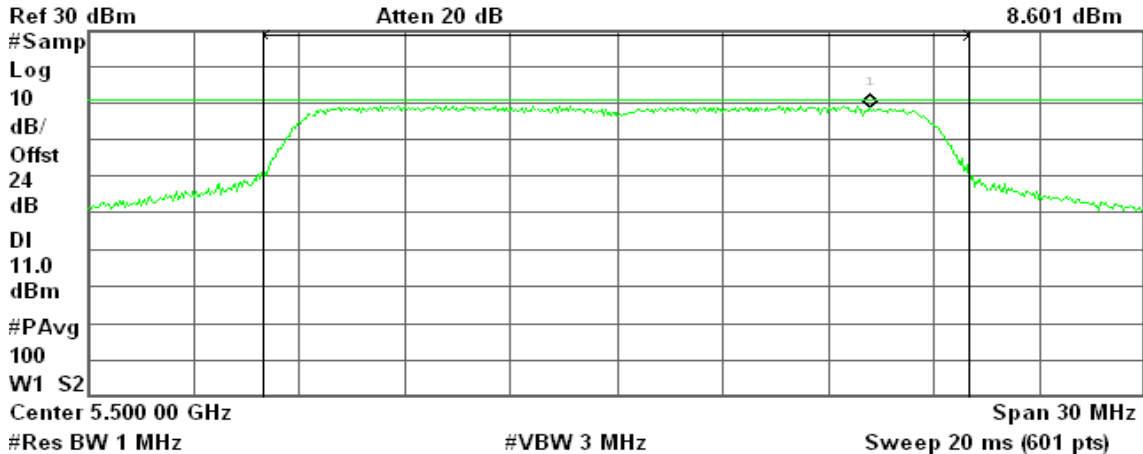
### Test mode: draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz with combiner:

### CH Low

Agilent 21:26:06 Mar 10, 2009

R L

Peak Power Spectral Density, a Mode Low Ch.



Channel Power

20.48 dBm / 20.0000 MHz

Power Spectral Density

-52.53 dBm/Hz



### CH Mid

Agilent 21:29:21 Mar 10, 2009

R T

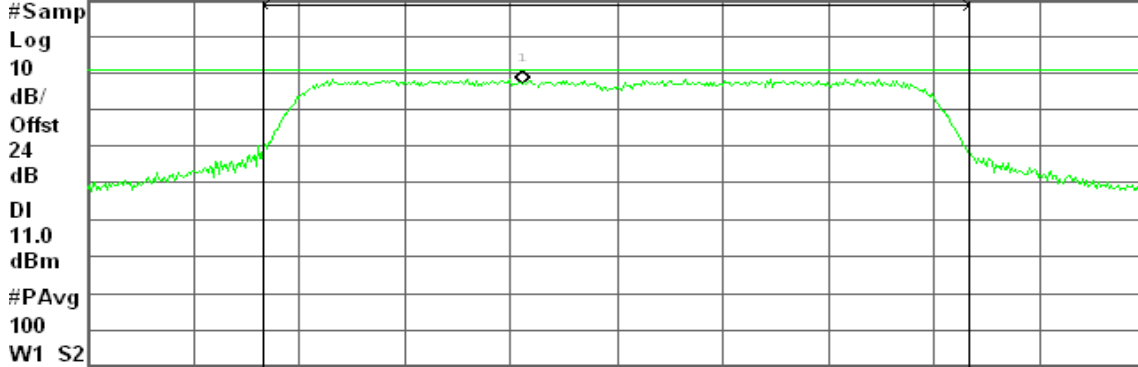
Peak Power Spectral Density, a Mode Mid Ch.

Mkr1 5.597 35 GHz

Ref 30 dBm

Atten 20 dB

7.138 dBm



Center 5.600 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

19.76 dBm / 20.0000 MHz

-53.25 dBm/Hz

### CH High

Agilent 21:32:12 Mar 10, 2009

R T

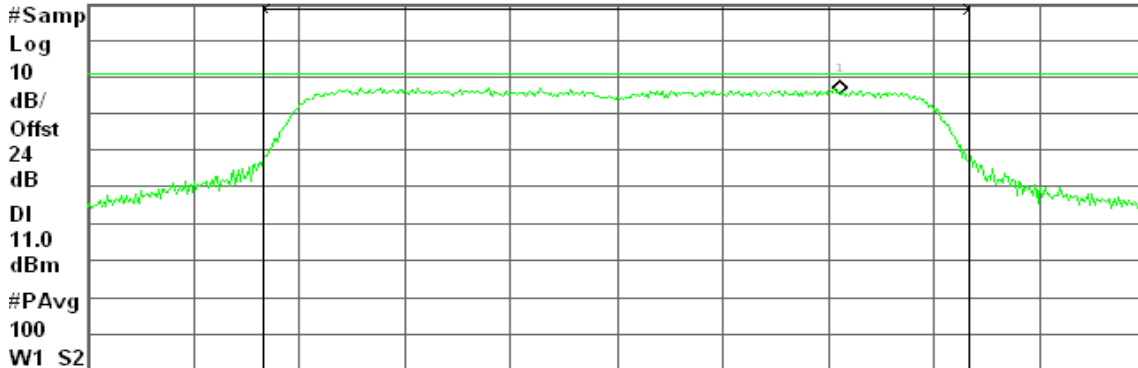
Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.706 35 GHz

Ref 30 dBm

Atten 20 dB

5.522 dBm



Center 5.700 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

18.05 dBm / 20.0000 MHz

-54.96 dBm/Hz



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

**CH Low**

Agilent 23:58:01 Mar 10, 2009

R T

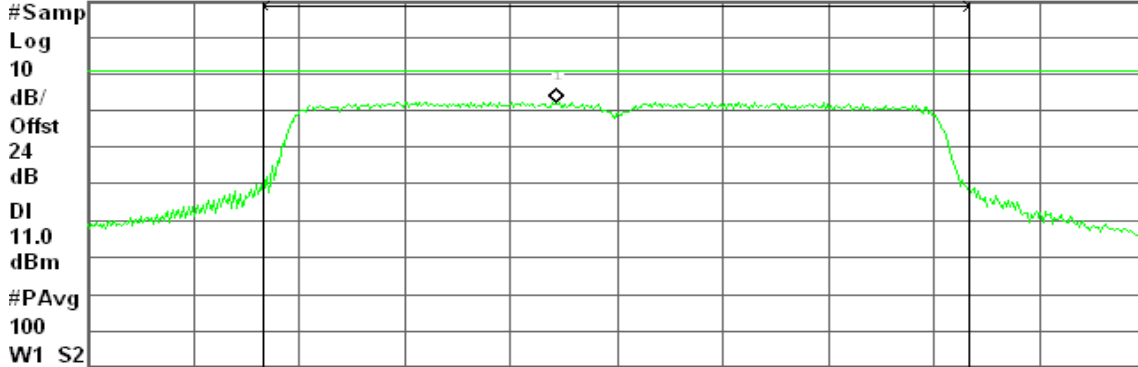
Peak Power Spectral Density, a Mode Low Ch.

Mkr1 5.506 60 GHz

Ref 30 dBm

Atten 20 dB

2.085 dBm



Center 5.510 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

16.51 dBm / 40.0000 MHz

-59.51 dBm/Hz

**CH Mid**

Agilent 00:01:19 Mar 11, 2009

R T

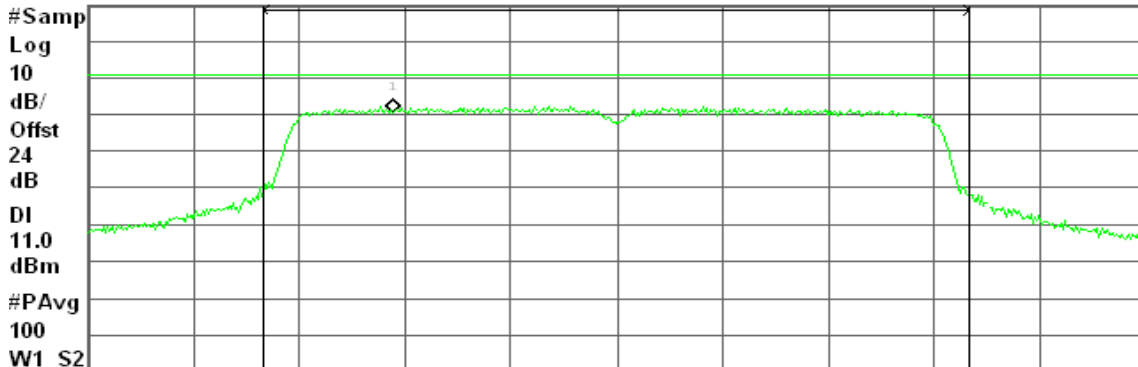
Peak Power Spectral Density, a Mode Mid Ch.

Mkr1 5.577 30 GHz

Ref 30 dBm

Atten 20 dB

0.711 dBm



Center 5.590 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

16.48 dBm / 40.0000 MHz

-59.54 dBm/Hz



### CH High

Agilent 00:07:12 Mar 11, 2009

R T

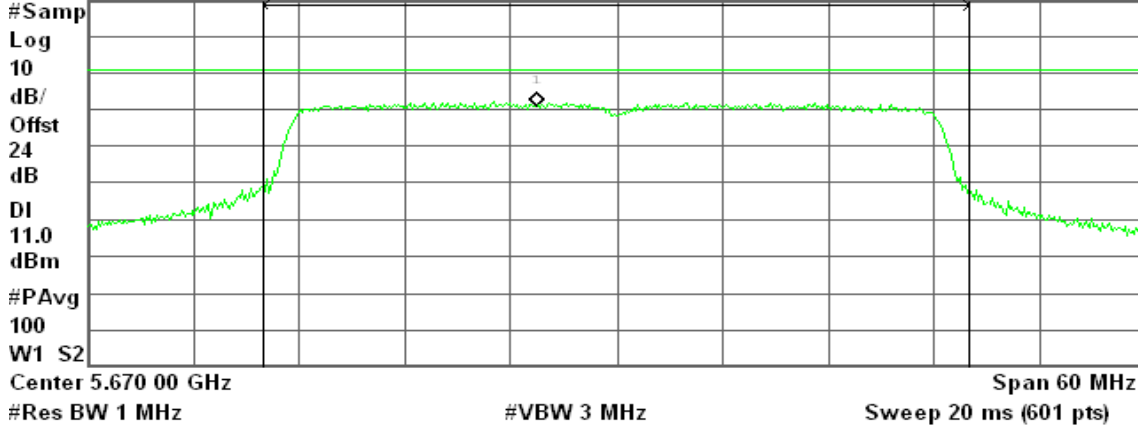
Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.665 50 GHz

Ref 30 dBm

Atten 20 dB

1.046 dBm



Channel Power

Power Spectral Density

16.15 dBm / 40.0000 MHz

-59.87 dBm/Hz

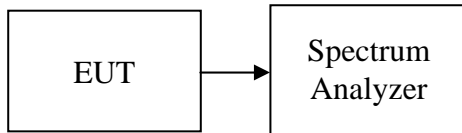


## 7.5 PEAK EXCURSION

### LIMIT

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

### Test Configuration



### TEST PROCEDURE

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

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to spectrum.
3. Trace A, Set RBW = 1MHz, VBW = 3MHz, Span >26dB bandwidth, Max. hold.
4. Delta Mark trace A Maximum frequency and trace B same frequency.
5. Repeat the above procedure until measurements for all frequencies were complete.

### TEST RESULTS

*No non-compliance noted*



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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5180	1.85	13.00	-11.15	PASS
Mid	5220	2.37	13.00	-10.63	PASS
High	5240	2.48	13.00	-10.52	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5180	12.16	13.00	-0.84	PASS
Mid	5220	11.06	13.00	-1.94	PASS
High	5240	12.42	13.00	-0.58	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5180	10.51	13.00	-2.49	PASS
Mid	5220	11.12	13.00	-1.88	PASS
High	5240	12.56	13.00	-0.44	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5190	12.68	13.00	-0.32	PASS
High	5230	11.44	13.00	-1.56	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5190	12.15	13.00	-0.85	PASS
High	5230	9.93	13.00	-3.07	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5260	0.96	13.00	-12.04	PASS
Mid	5280	1.22	13.00	-11.78	PASS
High	5320	1.29	13.00	-11.71	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5260	11.44	13.00	-1.56	PASS
Mid	5280	11.16	13.00	-1.84	PASS
High	5320	11.15	13.00	-1.85	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5260	9.21	13.00	-3.79	PASS
Mid	5280	9.95	13.00	-3.05	PASS
High	5320	12.67	13.00	-0.33	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5270	11.02	13.00	-1.98	PASS
High	5310	10.69	13.00	-2.31	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5270	12.88	13.00	-0.12	PASS
High	5310	9.86	13.00	-3.14	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5500	1.85	13.00	-11.15	PASS
Mid	5600	1.57	13.00	-11.43	PASS
High	5700	1.57	13.00	-11.43	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5500	8.71	13.00	-4.29	PASS
Mid	5600	11.28	13.00	-1.72	PASS
High	5700	11.90	13.00	-1.10	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5500	10.36	13.00	-2.64	PASS
Mid	5600	8.03	13.00	-4.97	PASS
High	5700	10.44	13.00	-2.56	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5510	10.84	13.00	-2.16	PASS
Mid	5590	11.23	13.00	-1.77	PASS
High	5670	11.80	13.00	-1.20	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5510	10.44	13.00	-2.56	PASS
Mid	5590	11.58	13.00	-1.42	PASS
High	5670	10.83	13.00	-2.17	PASS



**Test Plot**

**IEEE 802.11a mode / 5180 ~ 5240MHz**

**CH Low**

Agilent 18:36:07 Mar 10, 2009

R T

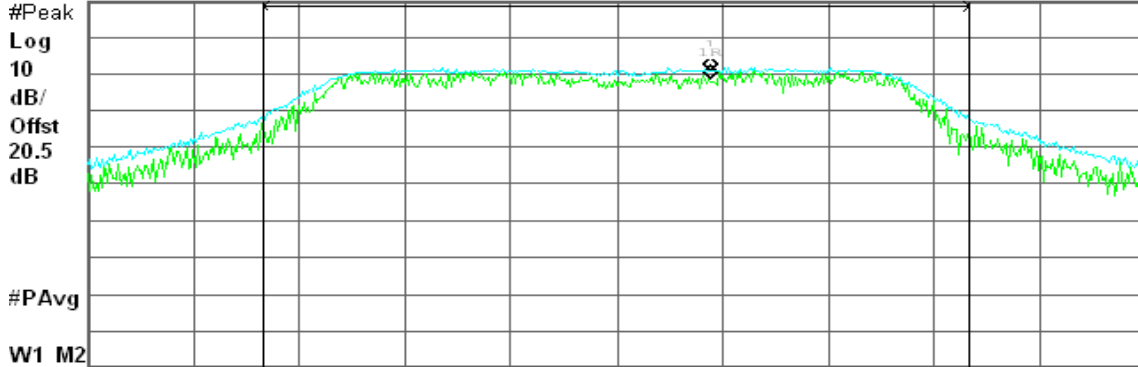
Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 20 dB

1.85 dB



Channel Power

Power Spectral Density

20.75 dBm / 20.0000 MHz

-52.26 dBm/Hz

**CH Mid**

Agilent 18:58:26 Mar 10, 2009

R T

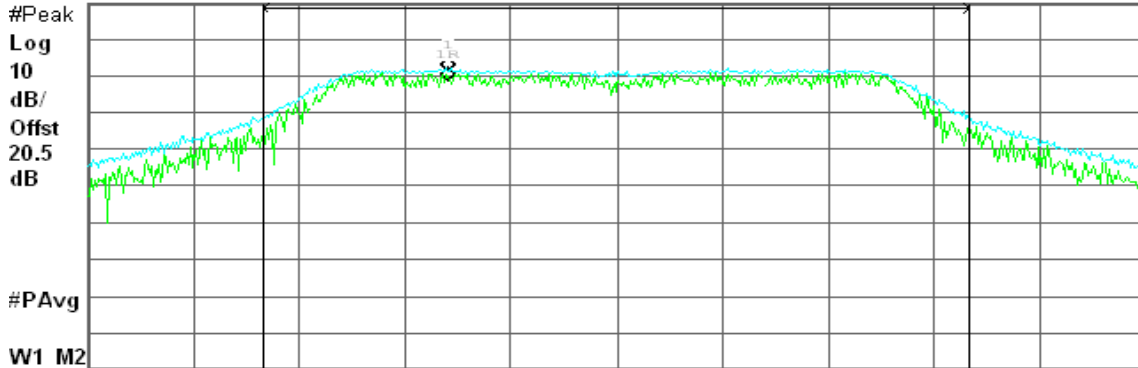
Peak Excursion, a Mode Mid Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 20 dB

2.37 dB



Channel Power

Power Spectral Density

21.10 dBm / 20.0000 MHz

-51.91 dBm/Hz



### CH High

Agilent 19:08:29 Mar 10, 2009

R T

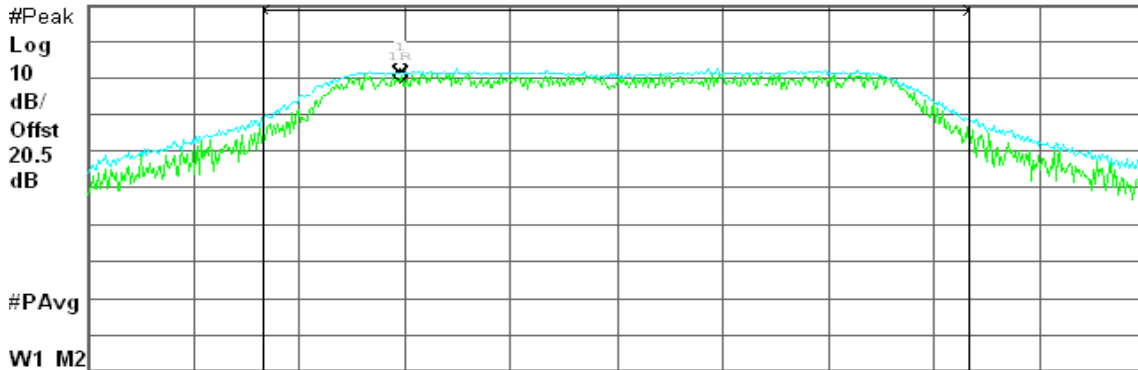
Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 20 dB

2.48 dB



Center 5.240 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

21.39 dBm / 20.0000 MHz

-51.62 dBm/Hz

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

### CH Low

Agilent 10:14:32 May 8, 2009

R T

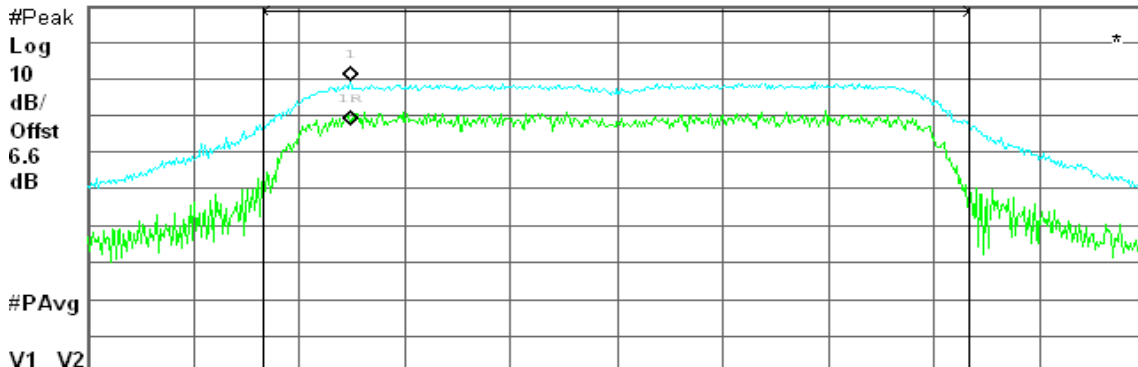
Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

12.16 dB



Center 5.180 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

17.82 dBm / 20.0000 MHz

-55.19 dBm/Hz



### CH Mid

Agilent 10:23:26 May 8, 2009

R T

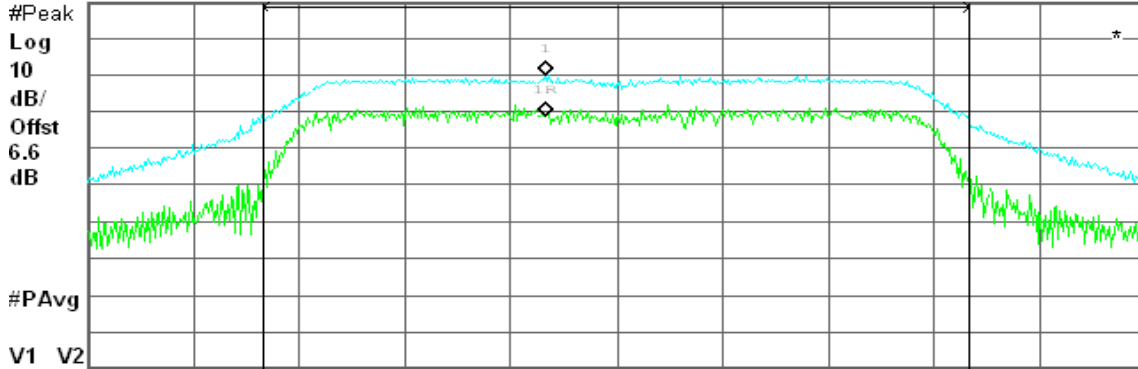
Peak Excursion, a Mode Mid Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

11.06 dB



Center 5.220 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

18.16 dBm / 20.0000 MHz

-54.85 dBm/Hz

### CH High

Agilent 10:25:08 May 8, 2009

R T

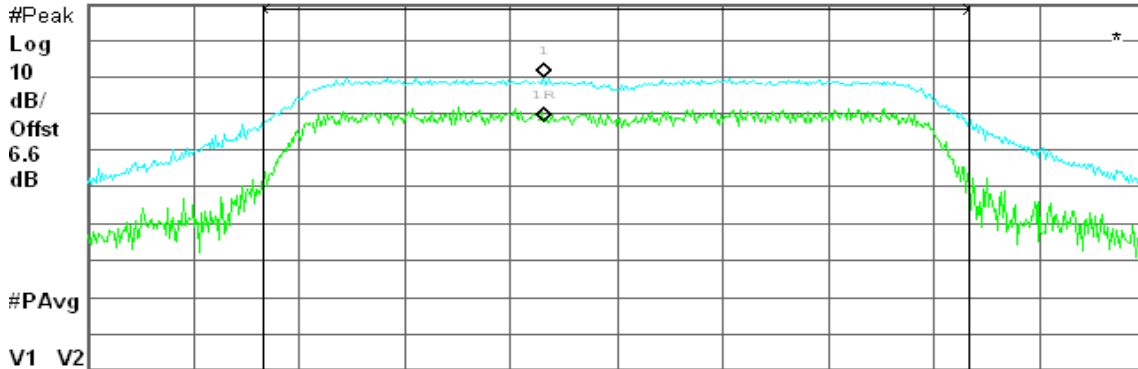
Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

12.42 dB



Center 5.240 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

18.04 dBm / 20.0000 MHz

-54.97 dBm/Hz



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

**CH Low**

Agilent 10:41:46 May 8, 2009

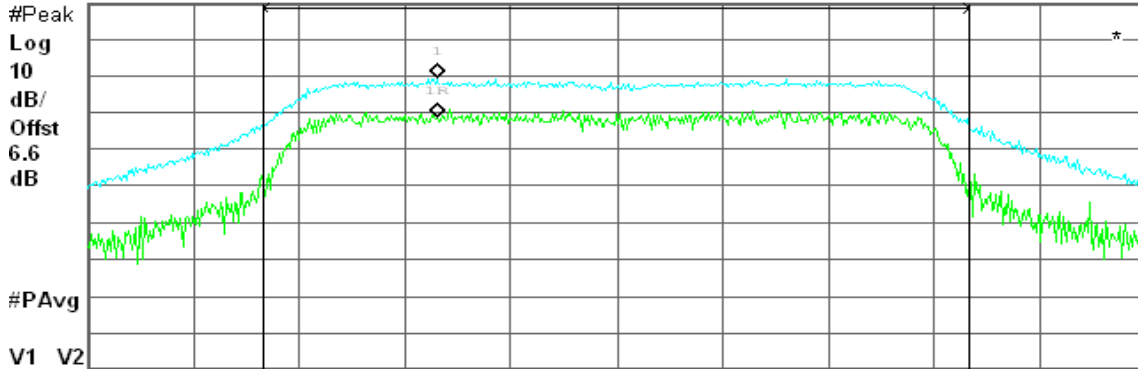
R T

Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz  
10.51 dB

Ref 30 dBm

Atten 40 dB



Center 5.180 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

17.69 dBm / 20.0000 MHz

-55.32 dBm/Hz

**CH Mid**

Agilent 10:40:25 May 8, 2009

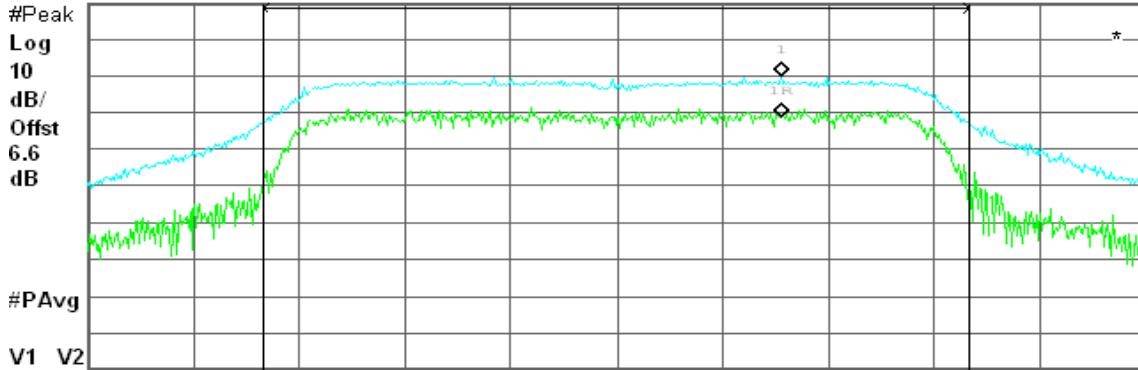
R T

Peak Excursion, a Mode Mid Ch.

Δ Mkr1 0 Hz  
11.12 dB

Ref 30 dBm

Atten 40 dB



Center 5.220 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

18.03 dBm / 20.0000 MHz

-54.98 dBm/Hz



### CH High

Agilent 10:38:19 May 8, 2009

R T

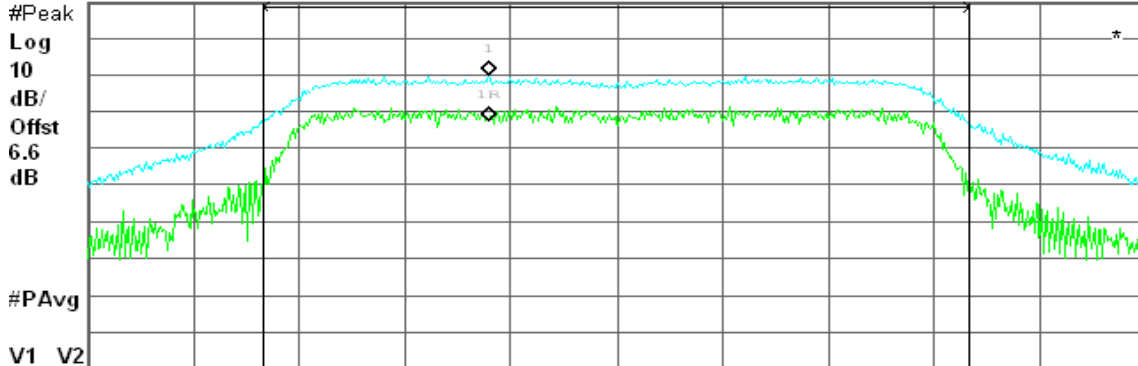
Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

12.56 dB



Center 5.240 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

18.07 dBm / 20.0000 MHz

-54.94 dBm/Hz

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

### CH Low

Agilent 11:44:52 May 8, 2009

R L

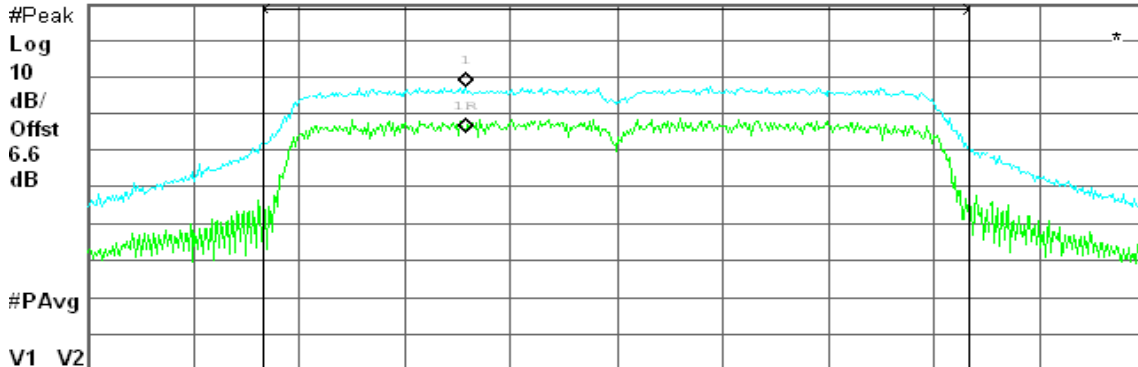
Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

12.68 dB



Center 5.190 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

18.66 dBm / 40.0000 MHz

-57.36 dBm/Hz





### CH High

Agilent 11:46:17 May 8, 2009

R T

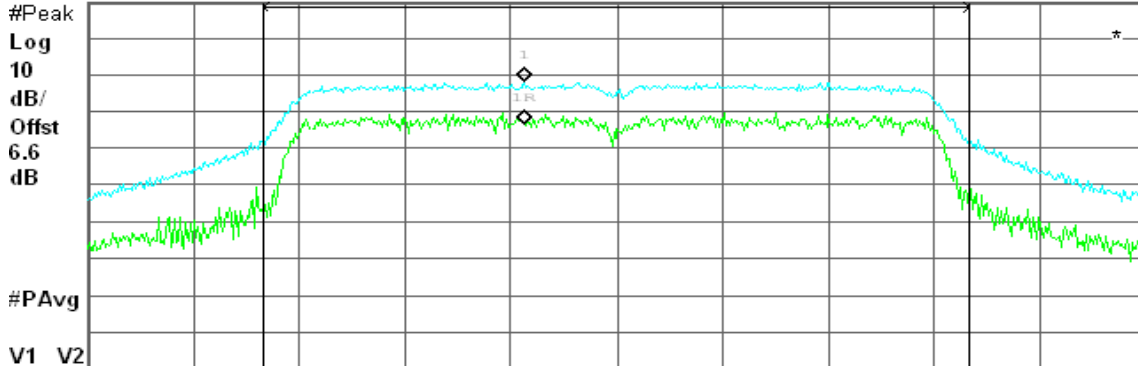
Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

11.44 dB



Center 5.230 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

19.64 dBm / 40.0000 MHz

-56.38 dBm/Hz

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

### CH Low

Agilent 11:43:05 May 8, 2009

R T

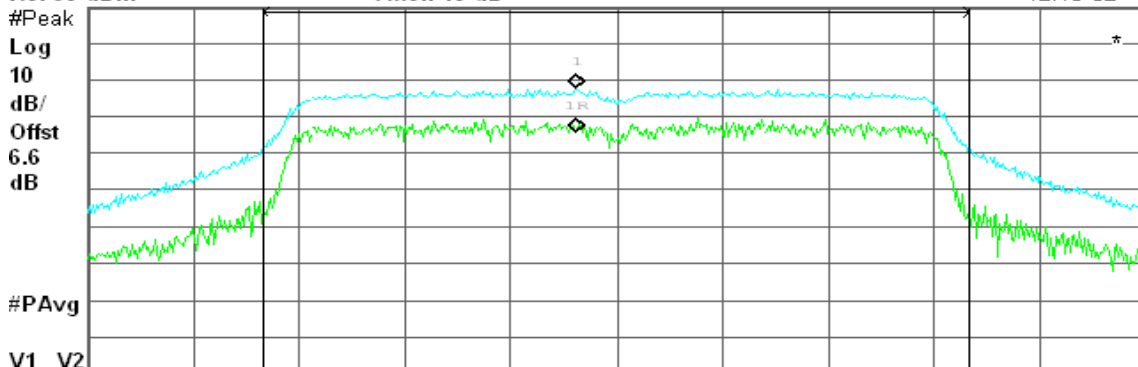
Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

12.15 dB



Center 5.190 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

18.92 dBm / 40.0000 MHz

-57.10 dBm/Hz



### CH High

Agilent 11:41:40 May 8, 2009

R T

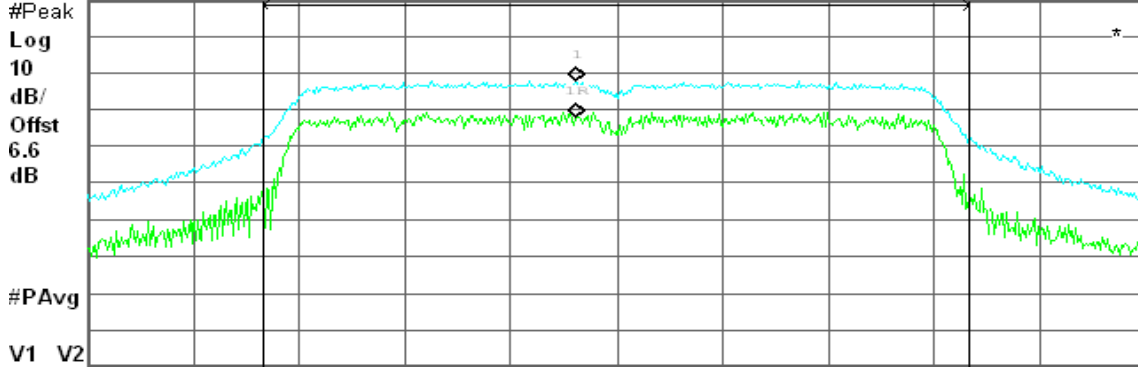
Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

9.93 dB



Center 5.230 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

19.40 dBm / 40.0000 MHz

-56.62 dBm/Hz

### IEEE 802.11a mode / 5260 ~ 5320MHz

#### CH Low

Agilent 19:16:02 Mar 10, 2009

R T

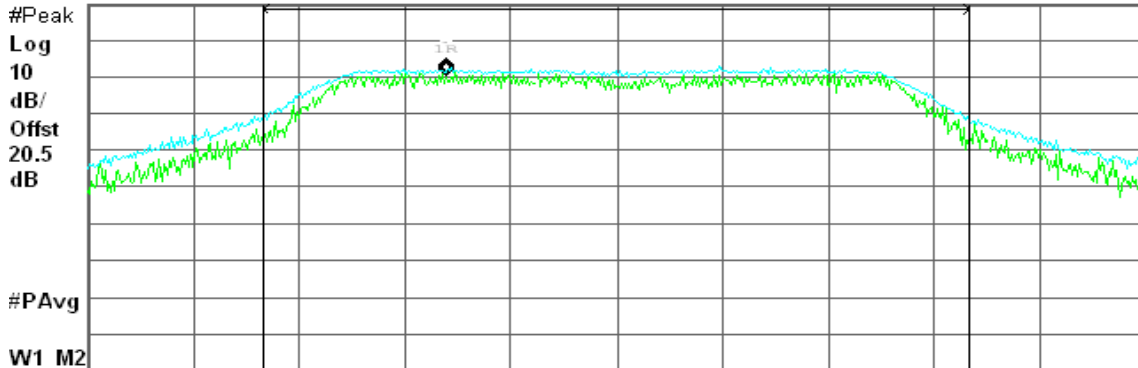
Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 20 dB

0.96 dB



Center 5.260 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

21.17 dBm / 20.0000 MHz

-51.84 dBm/Hz



### CH Mid

Agilent 19:21:31 Mar 10, 2009

R T

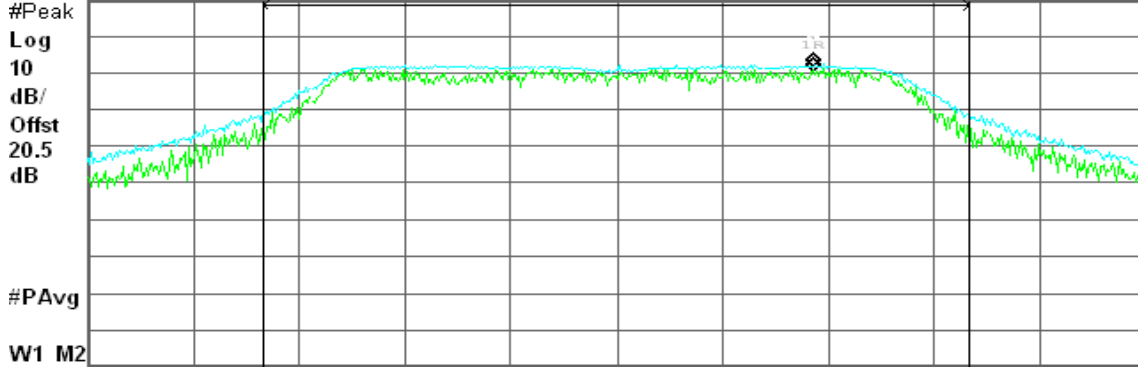
Peak Excursion, a Mode Mid Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 20 dB

1.22 dB



Center 5.280 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

21.46 dBm / 20.0000 MHz

-51.55 dBm/Hz

### CH High

Agilent 19:26:05 Mar 10, 2009

R T

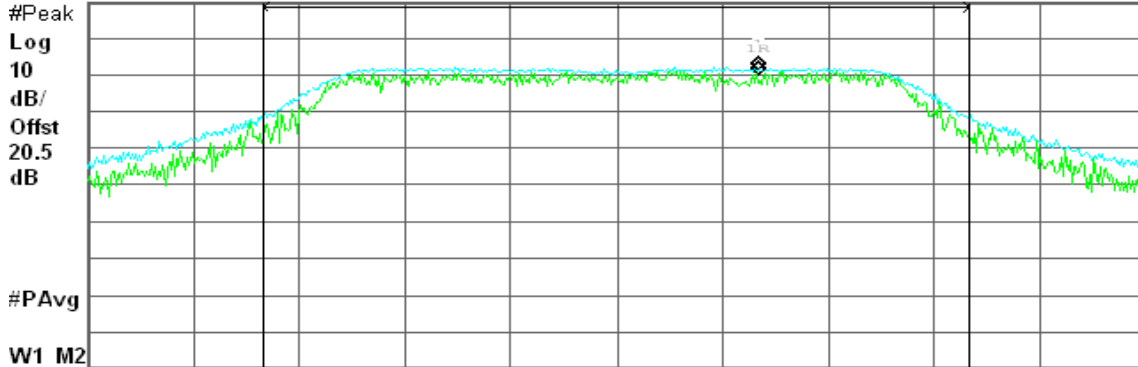
Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 20 dB

1.29 dB



Center 5.320 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

21.21 dBm / 20.0000 MHz

-51.80 dBm/Hz



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

**CH Low**

Agilent 10:53:49 May 8, 2009

R T

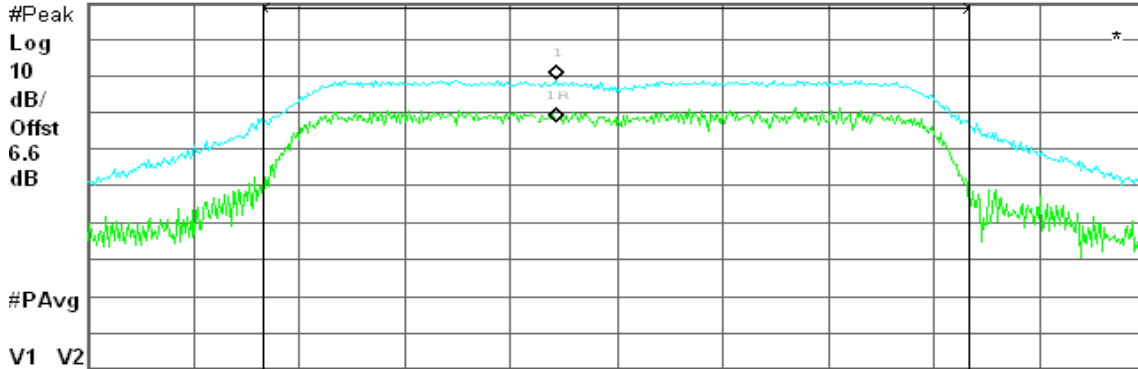
Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

11.44 dB



Center 5.260 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

17.92 dBm / 20.0000 MHz

-55.09 dBm/Hz

**CH Mid**

Agilent 10:52:33 May 8, 2009

R T

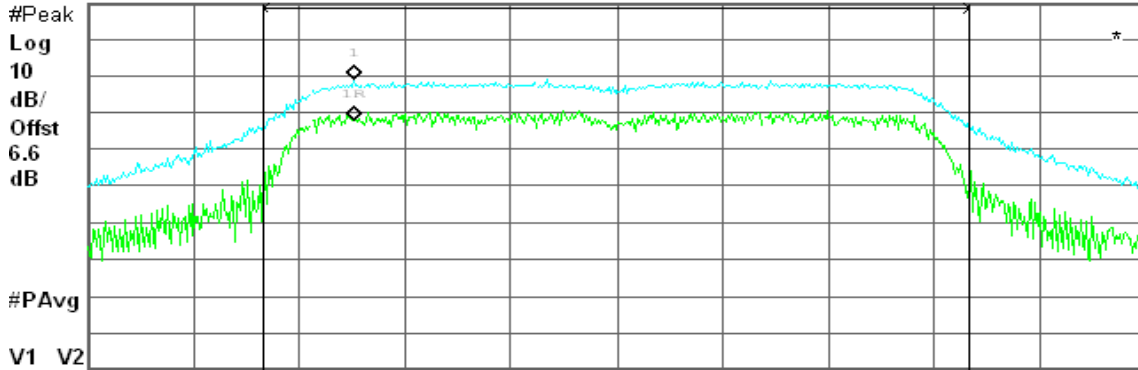
Peak Excursion, a Mode Mid Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

11.16 dB



Center 5.280 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

17.36 dBm / 20.0000 MHz

-55.65 dBm/Hz



### CH High

Agilent 10:51:11 May 8, 2009

R T

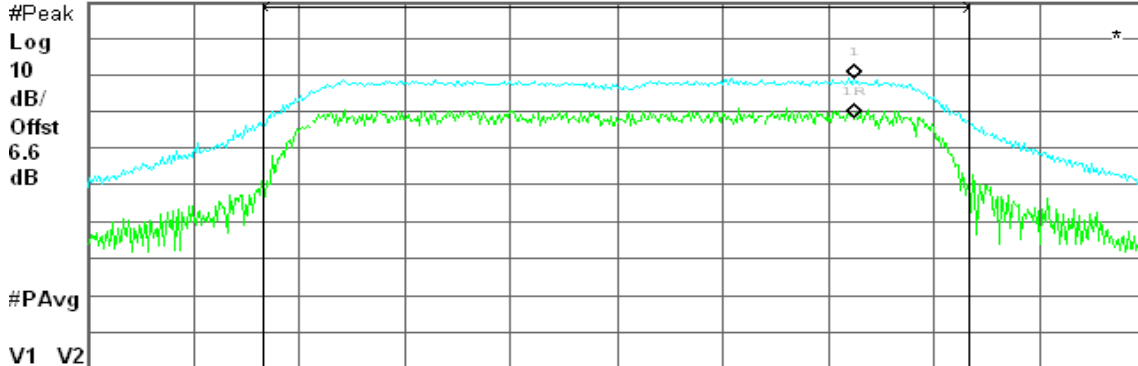
Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

11.15 dB



Center 5.320 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

17.70 dBm / 20.0000 MHz

-55.31 dBm/Hz

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

### CH Low

Agilent 10:46:29 May 8, 2009

R T

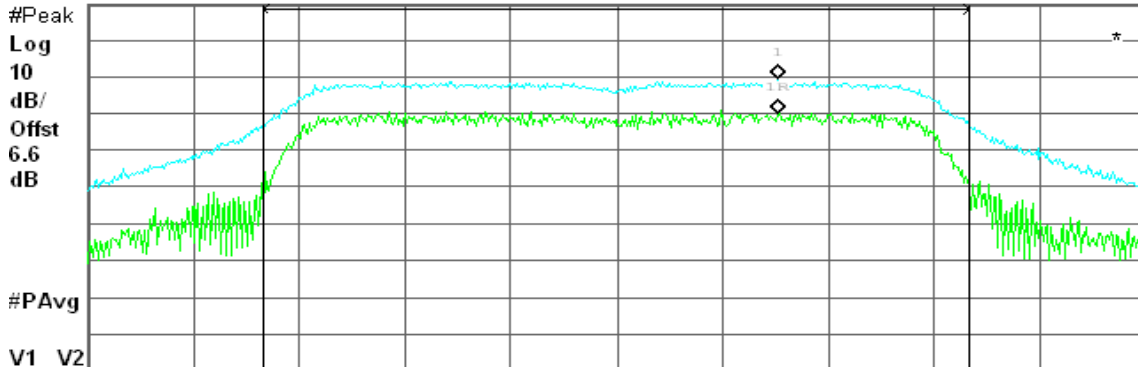
Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

9.21 dB



Center 5.260 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

17.53 dBm / 20.0000 MHz

-55.48 dBm/Hz



### CH Mid

Agilent 10:48:00 May 8, 2009

R T

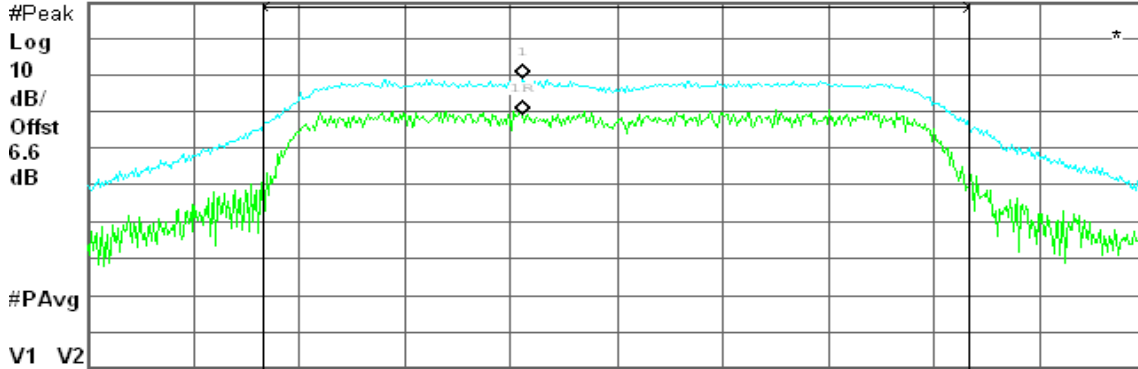
Peak Excursion, a Mode Mid Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

9.95 dB



Center 5.280 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

17.20 dBm / 20.0000 MHz

-55.81 dBm/Hz

### CH High

Agilent 10:49:20 May 8, 2009

R L

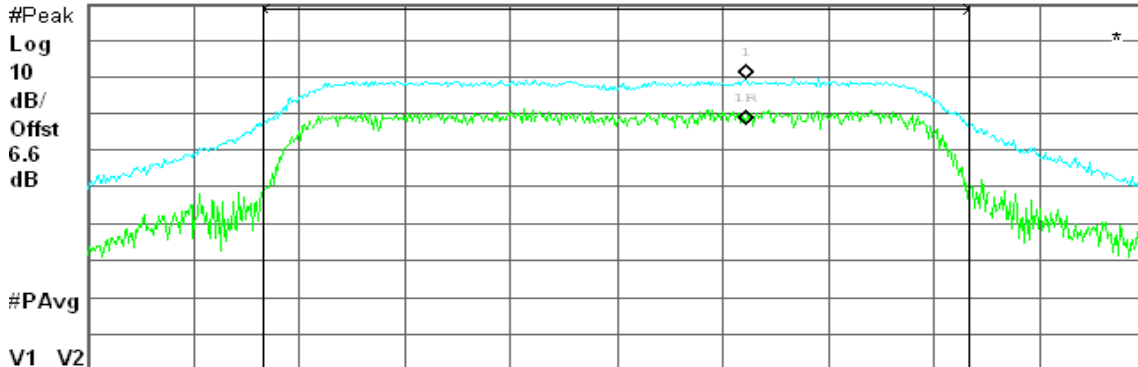
Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

12.67 dB



Center 5.320 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

18.25 dBm / 20.0000 MHz

-54.76 dBm/Hz



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

**CH Low**

Agilent 11:36:08 May 8, 2009

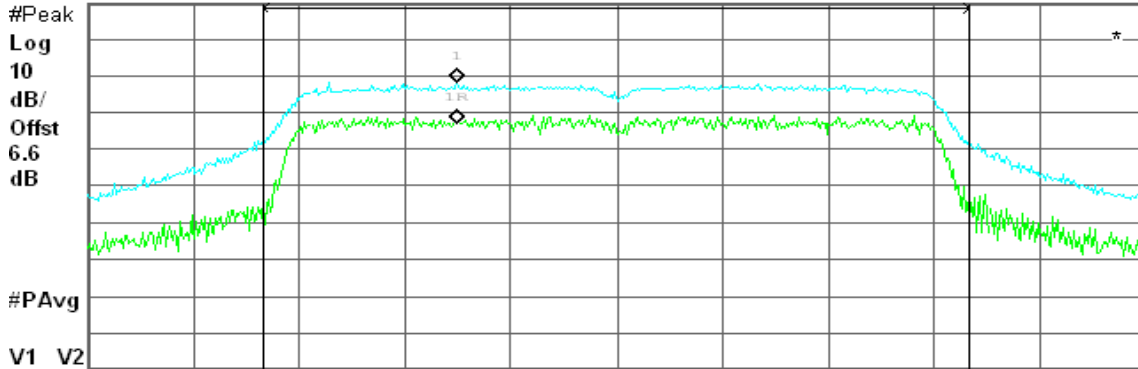
R T

Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz  
11.02 dB

Ref 30 dBm

Atten 40 dB



Channel Power

19.54 dBm / 40.0000 MHz

Power Spectral Density

-56.48 dBm/Hz

**CH High**

Agilent 11:34:34 May 8, 2009

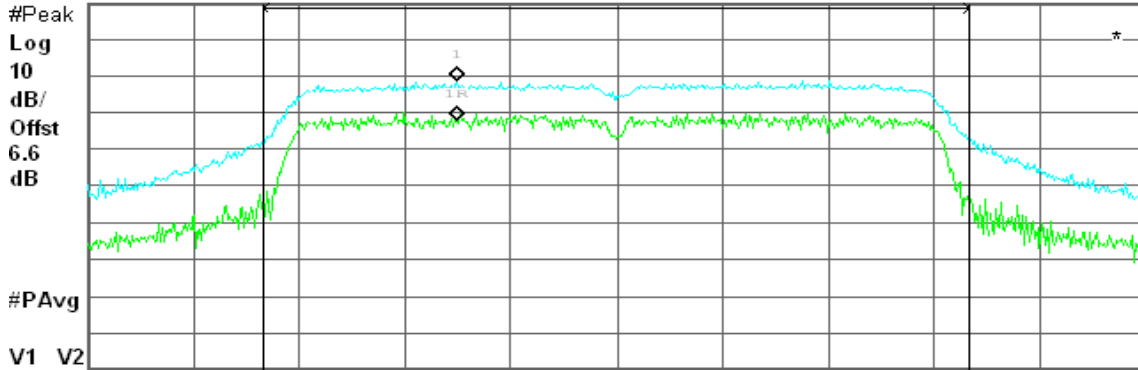
R T

Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz  
10.69 dB

Ref 30 dBm

Atten 40 dB



Channel Power

19.73 dBm / 40.0000 MHz

Power Spectral Density

-56.29 dBm/Hz



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

**CH Low**

Agilent 11:37:48 May 8, 2009

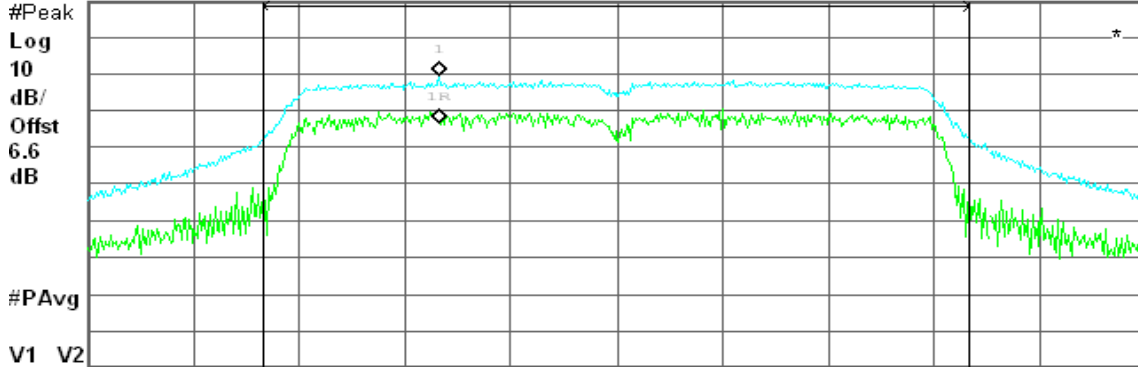
R T

Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz  
12.88 dB

Ref 30 dBm

Atten 40 dB



Center 5.270 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

19.87 dBm / 40.0000 MHz

-56.15 dBm/Hz

**CH High**

Agilent 11:39:07 May 8, 2009

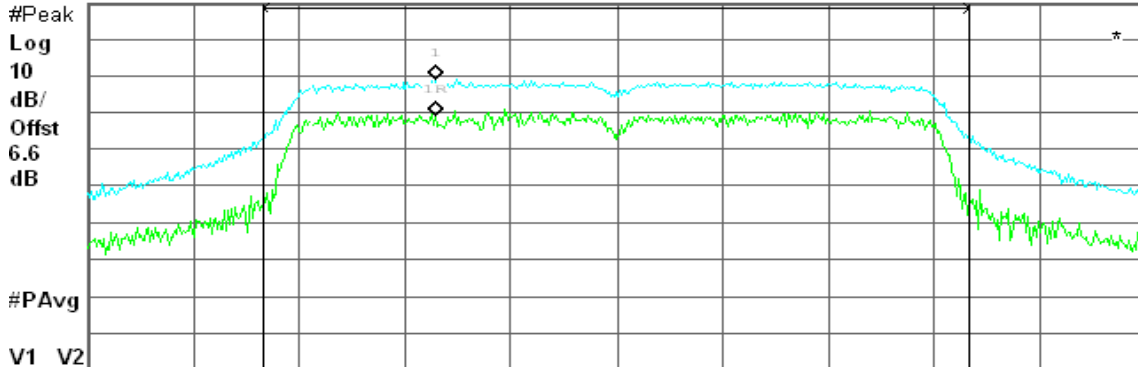
R L

Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz  
9.86 dB

Ref 30 dBm

Atten 40 dB



Center 5.310 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

20.27 dBm / 40.0000 MHz

-55.75 dBm/Hz





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

**CH Low**

Agilent 19:50:47 Mar 10, 2009

R T

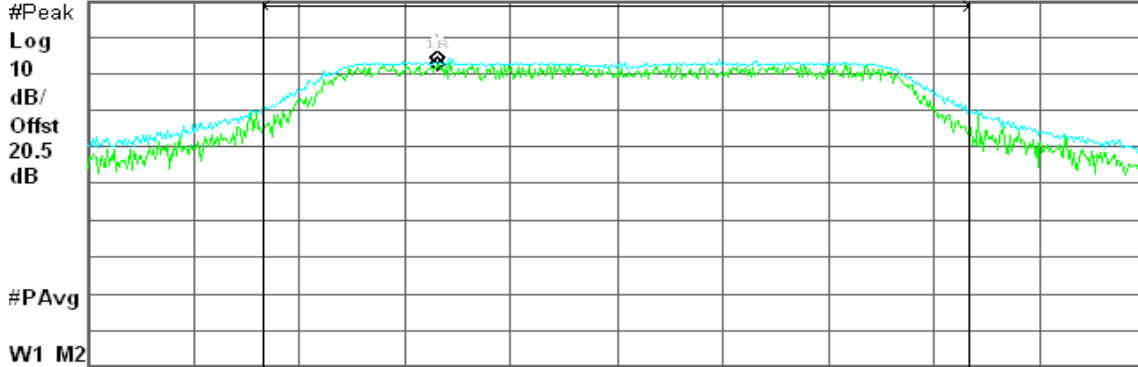
Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 20 dB

1.85 dB



Center 5.500 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

22.75 dBm / 20.0000 MHz

-50.26 dBm/Hz

**CH Mid**

Agilent 19:54:16 Mar 10, 2009

R T

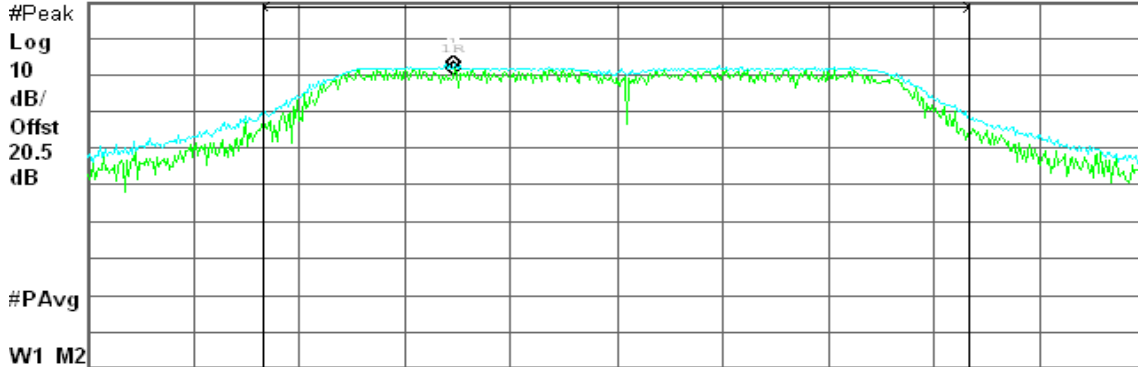
Peak Excursion, a Mode Mid Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 20 dB

1.57 dB



Center 5.600 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

21.87 dBm / 20.0000 MHz

-51.14 dBm/Hz



### CH High

Agilent 19:58:59 Mar 10, 2009

R T

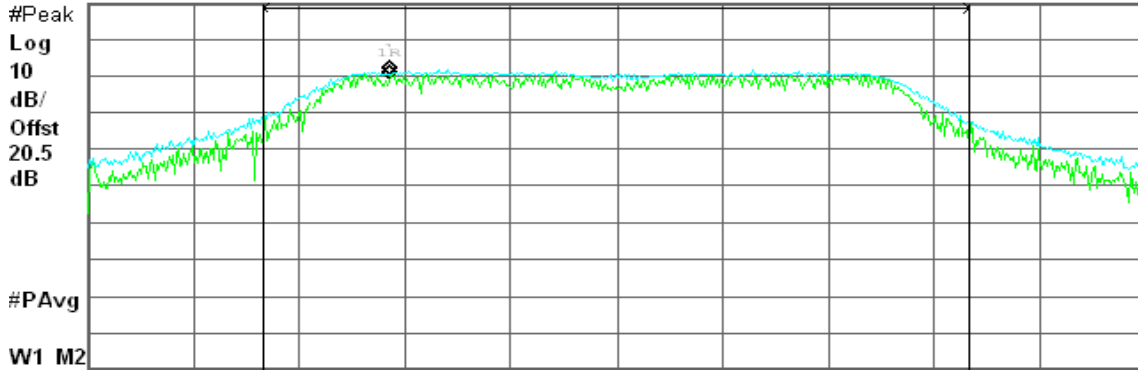
Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 20 dB

1.57 dB



Center 5.700 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

20.77 dBm / 20.0000 MHz

-52.24 dBm/Hz

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

### CH Low

Agilent 10:58:23 May 8, 2009

R T

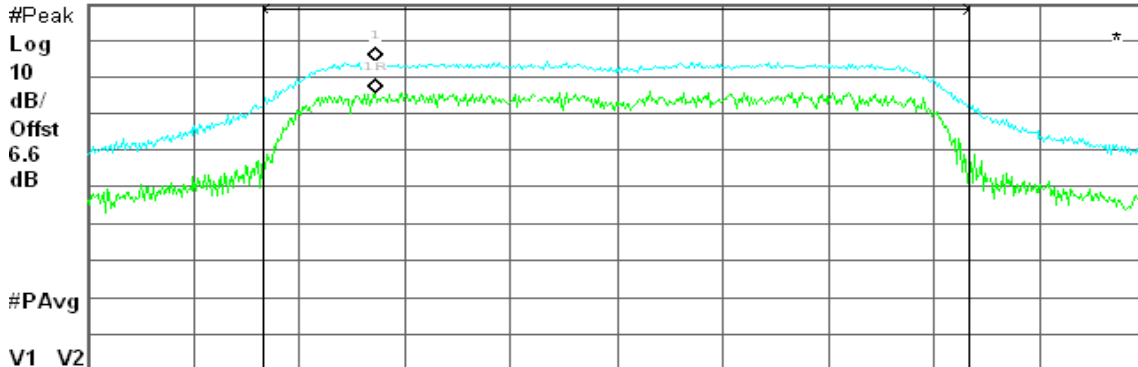
Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

8.71 dB



Center 5.500 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

23.00 dBm / 20.0000 MHz

-50.01 dBm/Hz



### CH Mid

Agilent 10:59:41 May 8, 2009

R T

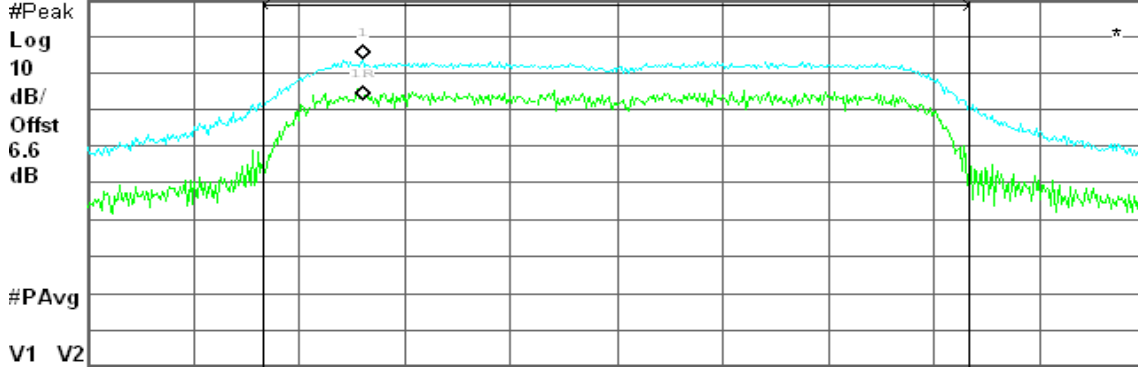
Peak Excursion, a Mode Mid Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

11.28 dB



Center 5.600 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

22.04 dBm / 20.0000 MHz

-50.97 dBm/Hz

### CH High

Agilent 11:00:53 May 8, 2009

R T

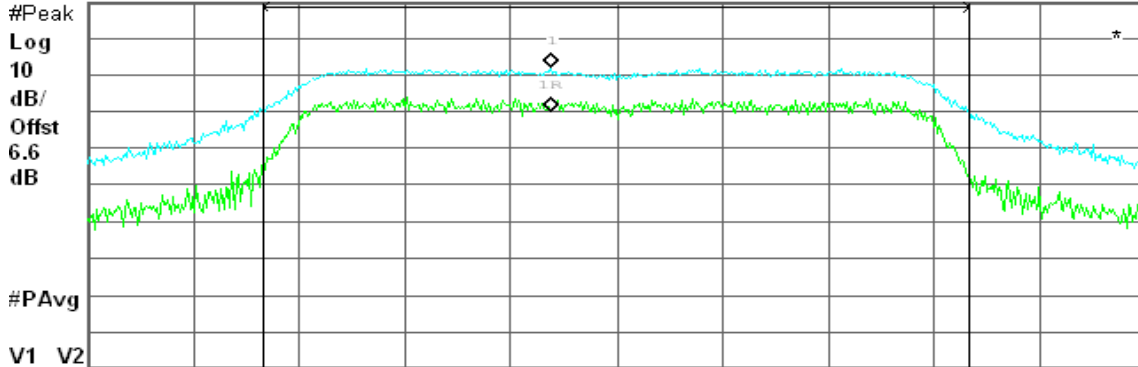
Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

11.90 dB



Center 5.700 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

20.63 dBm / 20.0000 MHz

-52.38 dBm/Hz



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

**CH Low**

Agilent 11:11:31 May 8, 2009

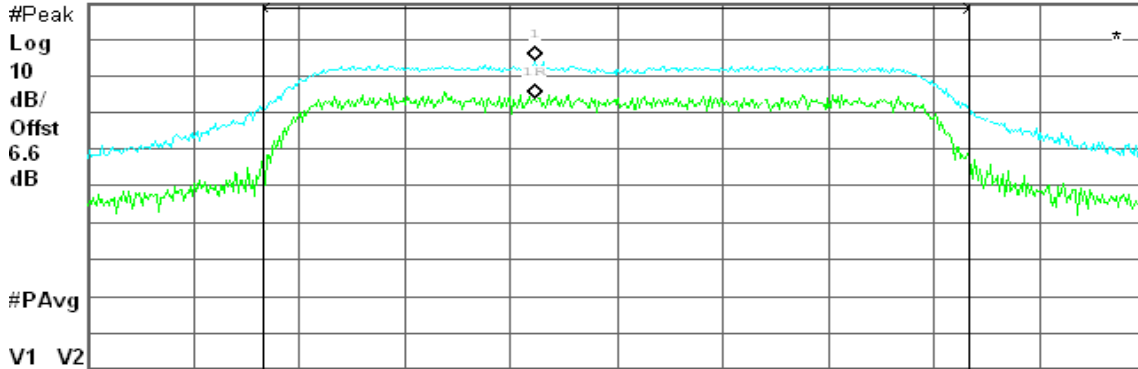
R T

Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz  
10.36 dB

Ref 30 dBm

Atten 40 dB



Center 5.500 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

21.98 dBm / 20.0000 MHz

-51.03 dBm/Hz

**CH Mid**

Agilent 11:04:25 May 8, 2009

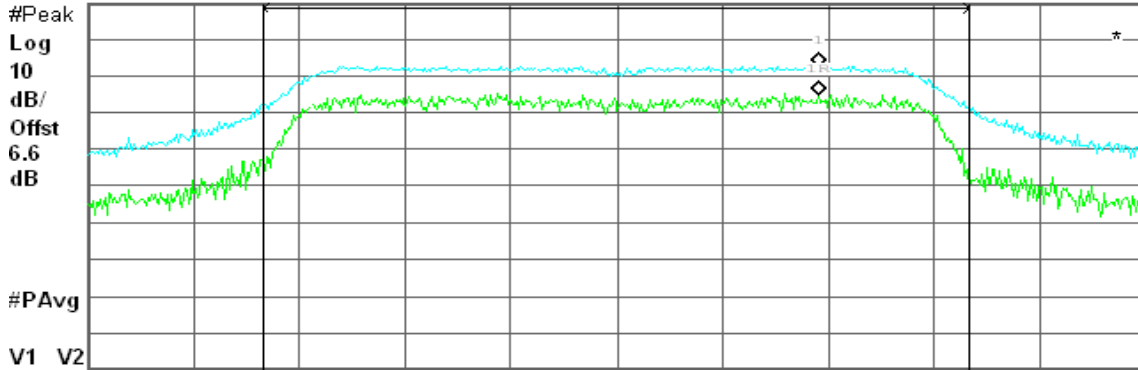
R T

Peak Excursion, a Mode Mid Ch.

Δ Mkr1 0 Hz  
8.03 dB

Ref 30 dBm

Atten 40 dB



Center 5.600 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

21.85 dBm / 20.0000 MHz

-51.16 dBm/Hz



### CH High

Agilent 11:02:35 May 8, 2009

R T

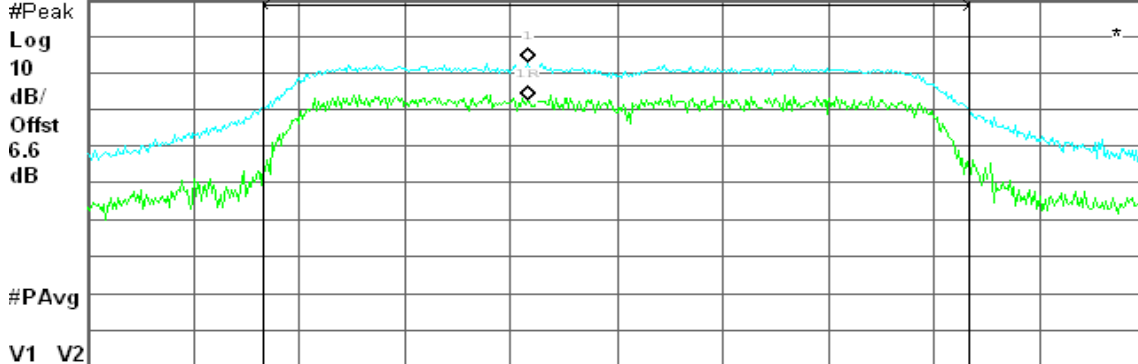
Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

10.44 dB



Center 5.700 00 GHz

Span 30 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

20.92 dBm / 20.0000 MHz

-52.09 dBm/Hz

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

### CH Low

Agilent 11:31:43 May 8, 2009

R L

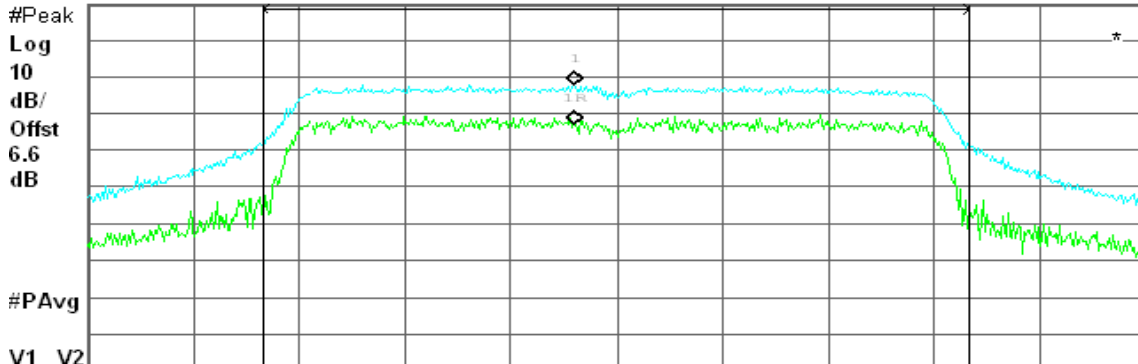
Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

10.84 dB



Center 5.510 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

19.27 dBm / 40.0000 MHz

-56.75 dBm/Hz



### CH Mid

Agilent 11:30:14 May 8, 2009

R T

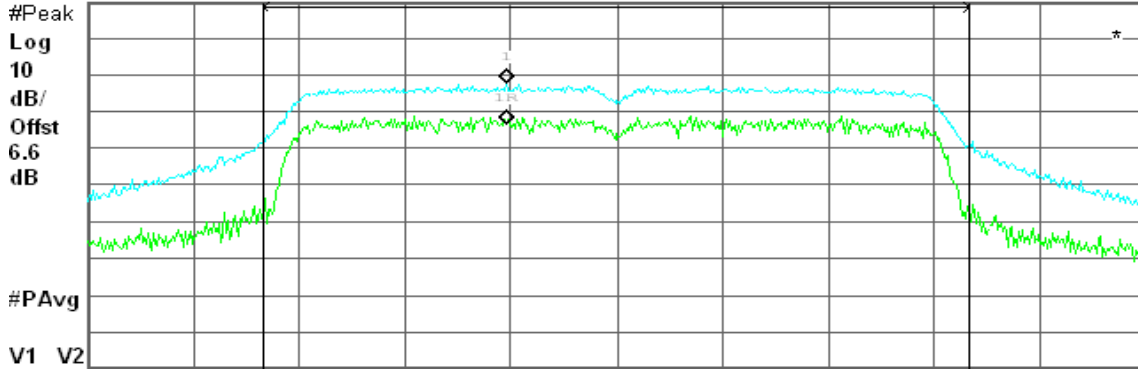
Peak Excursion, a Mode Mid Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

11.23 dB



Center 5.590 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

18.56 dBm / 40.0000 MHz

-57.47 dBm/Hz

### CH High

Agilent 11:28:16 May 8, 2009

R T

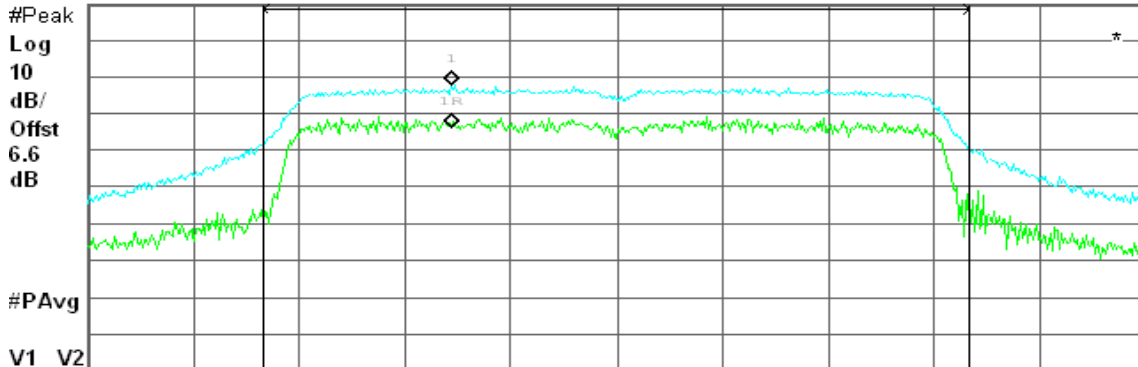
Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

11.80 dB



Center 5.670 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

18.88 dBm / 40.0000 MHz

-57.14 dBm/Hz



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

**CH Low**

Agilent 11:15:50 May 8, 2009

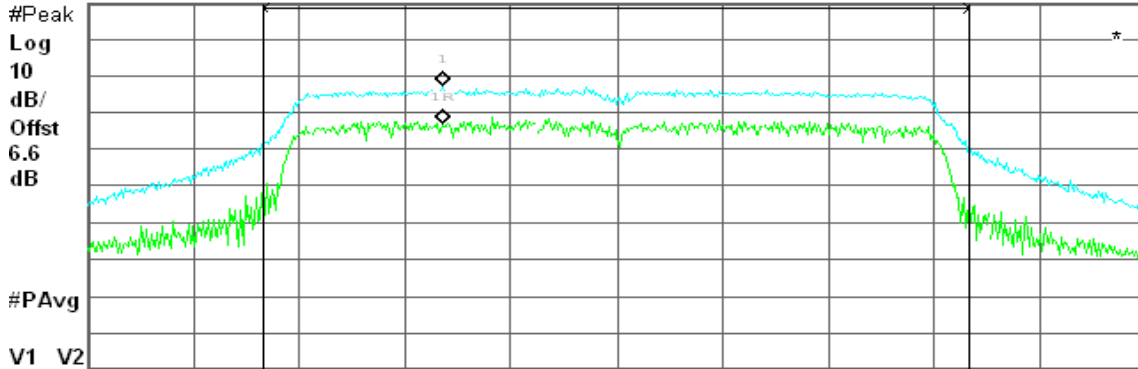
R T

Peak Excursion, a Mode Low Ch.

Δ Mkr1 0 Hz  
10.44 dB

Ref 30 dBm

Atten 40 dB



Center 5.510 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

18.15 dBm / 40.0000 MHz

-57.87 dBm/Hz

**CH Mid**

Agilent 11:25:26 May 8, 2009

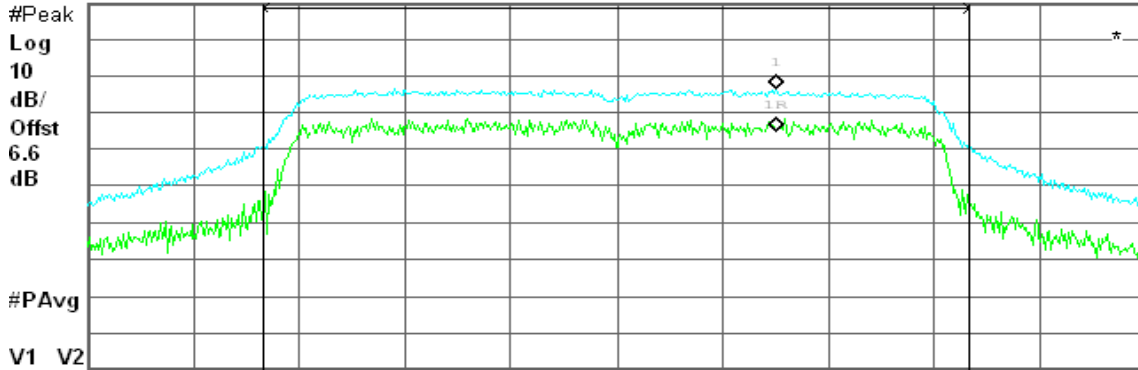
R T

Peak Excursion, a Mode Mid Ch.

Δ Mkr1 0 Hz  
11.58 dB

Ref 30 dBm

Atten 40 dB



Center 5.590 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 8 MHz

Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

18.07 dBm / 40.0000 MHz

-57.95 dBm/Hz



### CH High

Agilent 11:26:50 May 8, 2009

R T

Peak Excursion, a Mode High Ch.

Δ Mkr1 0 Hz

Ref 30 dBm

Atten 40 dB

10.83 dB

#Peak

Log

10

dB/

Offst

6.6

dB

#PAvg

V1 V2

Center 5.670 00 GHz

Span 60 MHz

#Res BW 1 MHz

#VBW 8 MHz

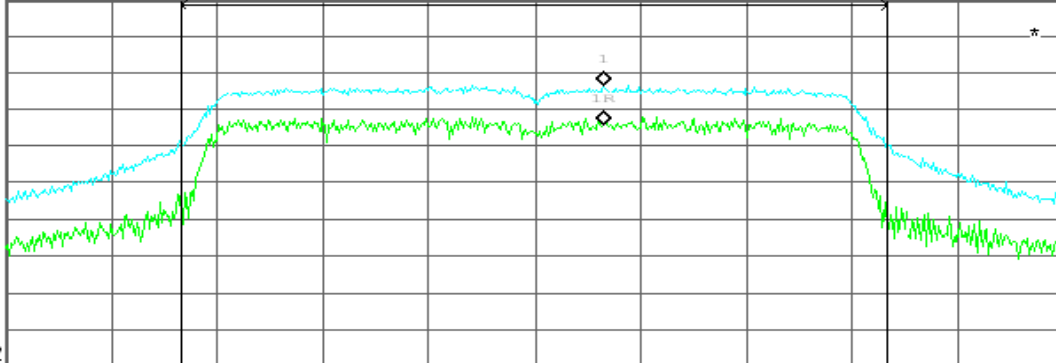
Sweep 20 ms (601 pts)

Channel Power

Power Spectral Density

17.87 dBm / 40.0000 MHz

-58.15 dBm/Hz







### 7.6 RADIATED UNDESIRABLE EMISSION

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

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

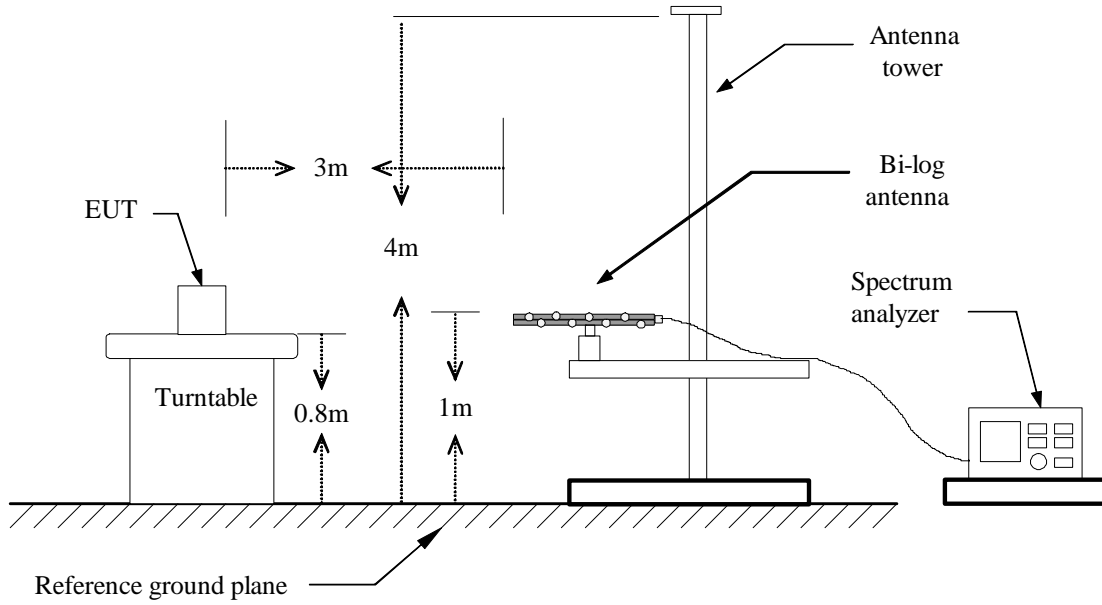
**Remark:** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections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

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

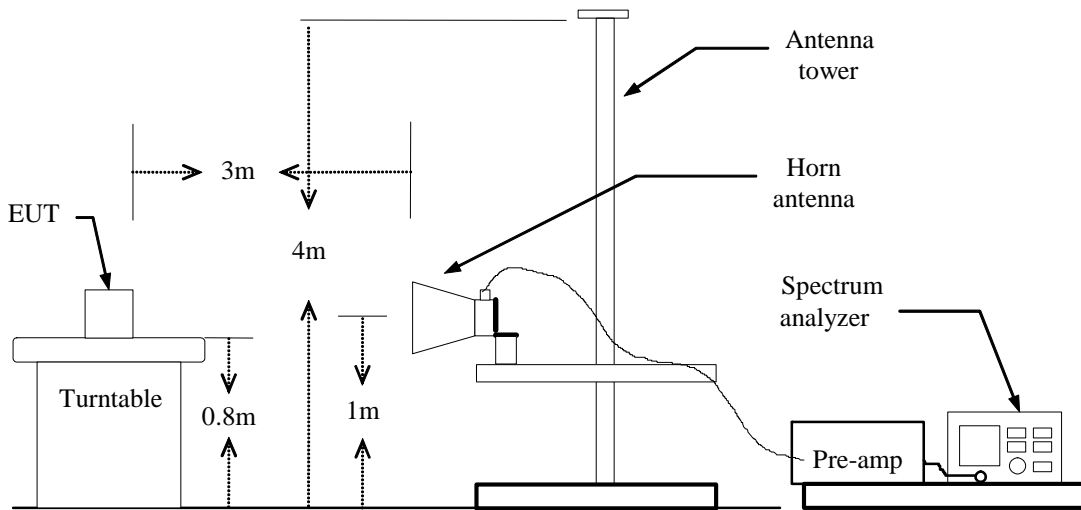
Frequency (MHz)	Field Strength (µV/m at 3-meter)	Field Strength (dBµV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

### Test Configuration

#### Below 1 GHz



#### Above 1 GHz





## **TEST PROCEDURE**

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

Below 1GHz:

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

Above 1GHz:

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

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

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

**TEST RESULTS****Below 1 GHz****Operation Mode:** Normal Link**Test Date:** March 6, 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	48.65	-14.75	33.91	40.00	-6.09	Peak
432.55	V	46.54	-5.84	40.70	46.00	-5.30	Peak
527.93	V	44.95	-3.36	41.59	46.00	-4.41	Peak
623.32	V	41.22	-2.42	38.80	46.00	-7.20	Peak
671.82	V	38.90	-2.18	36.73	46.00	-9.27	Peak
720.32	V	34.37	-1.33	33.04	46.00	-12.96	Peak
114.07	H	39.35	-10.21	29.14	43.50	-14.36	Peak
274.12	H	44.36	-8.98	35.38	46.00	-10.62	Peak
367.88	H	46.44	-7.20	39.25	46.00	-6.75	Peak
432.55	H	44.46	-5.84	38.62	46.00	-7.38	Peak
720.32	H	33.95	-1.33	32.62	46.00	-13.38	Peak
796.30	H	35.93	0.17	36.10	46.00	-9.90	Peak

**Remark:**

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

**Above 1 GHz****Operation Mode:** Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Low **Test Date:** March 5, 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
1593.33	V	55.50	---	-6.14	49.36	---	74.00	54.00	-4.64	Peak
2000.00	V	58.82	43.80	-2.25	56.57	41.55	74.00	54.00	-12.45	AVG
N/A										
1350.00	H	57.19	---	-7.31	49.88	---	74.00	54.00	-4.12	Peak
1400.00	H	56.33	---	-7.22	49.11	---	74.00	54.00	-4.89	Peak
1596.67	H	53.74	---	-6.11	47.64	---	74.00	54.00	-6.36	Peak
1993.33	H	55.62	40.86	-2.31	53.31	38.55	74.00	54.00	-15.45	AVG
3625.00	H	52.85	38.48	0.23	53.08	38.71	74.00	54.00	-15.29	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 / 5180 ~ 5240MHz / CH Mid **Test Date:** March 5, 2009  
**Temperature:** 25°C **Tested by:** Nan Tsai  
**Humidity:** 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1496.67	V	53.94	---	-7.04	46.91	---	74.00	54.00	-7.09	Peak
1596.67	V	54.77	---	-6.11	48.66	---	74.00	54.00	-5.34	Peak
2000.00	V	59.05	42.98	-2.25	56.80	40.73	74.00	54.00	-13.27	AVG
2020.00	V	55.18	38.87	-2.22	52.96	36.65	74.00	54.00	-17.35	AVG
N/A										
1400.00	H	57.23	---	-7.22	50.02	---	74.00	54.00	-3.98	Peak
1590.00	H	53.61	---	-6.17	47.44	---	74.00	54.00	-6.56	Peak
2000.00	H	55.05	40.22	-2.25	52.80	37.97	74.00	54.00	-16.03	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 / 5180 ~ 5240MHz /  
CH High

**Test Date:** March 5, 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
1593.33	V	55.12	---	-6.14	48.98	---	74.00	54.00	-5.02	Peak
1996.67	V	60.79	41.02	-2.28	58.50	38.74	74.00	54.00	-15.26	AVG
2063.33	V	53.78	---	-2.14	51.64	---	74.00	54.00	-2.36	Peak
N/A										
1350.00	H	56.76	---	-7.31	49.45	---	74.00	54.00	-4.55	Peak
1493.33	H	54.63	---	-7.04	47.58	---	74.00	54.00	-6.42	Peak
1586.67	H	54.13	---	-6.20	47.93	---	74.00	54.00	-6.07	Peak
1993.33	H	54.76	40.42	-2.31	52.44	38.11	74.00	54.00	-15.89	AVG
3625.00	H	54.14	38.44	0.23	54.37	38.67	74.00	54.00	-15.33	AVG
N/A										

**Remark:**

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



**Operation Mode:** Tx / draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / CH Low      **Test Date:** March 5, 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
1596.67	V	55.97	---	-6.11	49.86	---	74.00	54.00	-4.14	Peak
1996.67	V	60.10	42.63	-2.28	57.82	40.35	74.00	54.00	-13.65	AVG
N/A										
1353.33	H	55.36	---	-7.30	48.06	---	74.00	54.00	-5.94	Peak
1400.00	H	55.68	---	-7.22	48.46	---	74.00	54.00	-5.54	Peak
1493.33	H	54.85	---	-7.04	47.81	---	74.00	54.00	-6.19	Peak
1993.33	H	54.47	41.25	-2.31	52.16	38.94	74.00	54.00	-15.06	AVG
3633.33	H	52.54	37.99	0.23	52.77	38.22	74.00	54.00	-15.78	AVG
N/A										

**Remark:**

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





**Operation Mode:** Tx / draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / CH Mid **Test Date:** March 5, 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
1593.33	V	55.16	---	-6.14	49.02	---	74.00	54.00	-4.98	Peak
1993.33	V	58.70	41.40	-2.31	56.39	39.09	74.00	54.00	-14.91	AVG
N/A										
1500.00	H	54.83	---	-7.03	47.80	---	74.00	54.00	-6.20	Peak
1993.33	H	56.12	40.88	-2.31	53.81	38.57	74.00	54.00	-15.43	AVG
N/A										

**Remark:**

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



**Operation Mode:** Tx / draft 802.11n Standard-20 MHz Channel mode / 5180 ~ 5240MHz / CH High

**Test Date:** March 5, 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
1596.67	V	56.23	---	-6.11	50.13	---	74.00	54.00	-3.87	Peak
2000.00	V	59.19	43.90	-2.25	56.94	41.65	74.00	54.00	-12.35	AVG
2020.00	V	53.99	---	-2.22	51.77	---	74.00	54.00	-2.23	Peak
2070.00	V	51.25	---	-2.13	49.11	---	74.00	54.00	-4.89	Peak
N/A										
1396.67	H	54.80	---	-7.22	47.58	---	74.00	54.00	-6.42	Peak
1596.67	H	54.34	---	-6.11	48.23	---	74.00	54.00	-5.77	Peak
1996.67	H	56.64	40.87	-2.28	54.36	38.59	74.00	54.00	-15.41	AVG
3641.67	H	53.41	38.43	0.24	53.66	38.67	74.00	54.00	-15.33	AVG
N/A										

**Remark:**

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



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

**Test Date:** March 5, 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
1593.33	V	54.81	---	-6.14	48.67	---	74.00	54.00	-5.33	Peak
1996.67	V	59.26	43.82	-2.28	56.98	41.54	74.00	54.00	-12.46	AVG
N/A										
1393.33	H	54.50	---	-7.23	47.27	---	74.00	54.00	-6.73	Peak
1496.67	H	54.49	---	-7.04	47.46	---	74.00	54.00	-6.54	Peak
1993.33	H	56.69	40.90	-2.31	54.37	38.59	74.00	54.00	-15.41	AVG
3633.33	H	52.98	38.58	0.23	53.21	38.81	74.00	54.00	-15.19	AVG
N/A										

**Remark:**

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



Operation Mode: Tx / draft 802.11n Wide-40 MHz Channel mode / 5190 ~ 5230MHz / CH High

Test Date: March 5, 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
1596.67	V	54.97	---	-6.11	48.87	---	74.00	54.00	-5.13	Peak
2000.00	V	59.17	43.89	-2.25	56.92	41.64	74.00	54.00	-12.36	AVG
2023.33	V	55.84	38.96	-2.21	53.63	36.75	74.00	54.00	-17.25	AVG
N/A										
1400.00	H	55.35	---	-7.22	48.13	---	74.00	54.00	-5.87	Peak
1496.67	H	56.75	---	-7.04	49.71	---	74.00	54.00	-4.29	Peak
1993.33	H	55.46	40.85	-2.31	53.14	38.54	74.00	54.00	-15.46	AVG
3633.33	H	53.20	38.57	0.23	53.43	38.80	74.00	54.00	-15.20	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:** March 5, 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
1593.33	V	56.13	---	-6.14	50.00	---	74.00	54.00	-4.00	Peak
1990.00	V	58.71	41.40	-2.35	56.37	39.05	74.00	54.00	-14.95	AVG
N/A										
1400.00	H	55.16	---	-7.22	47.95	---	74.00	54.00	-6.05	Peak
1500.00	H	55.63	---	-7.03	48.60	---	74.00	54.00	-5.40	Peak
1990.00	H	54.72	40.80	-2.35	52.37	38.45	74.00	54.00	-15.55	AVG
3633.33	H	54.02	38.51	0.23	54.25	38.74	74.00	54.00	-15.26	AVG
N/A										

**Remark:**

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



**Operation Mode:** Tx / IEEE 802.11a mode / 5260 ~ 5320MHz / CH Mid **Test Date:** March 5, 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
1500.00	V	54.68	---	-7.03	47.65	---	74.00	54.00	-6.35	Peak
1596.67	V	54.83	---	-6.11	48.73	---	74.00	54.00	-5.27	Peak
1990.00	V	59.32	41.40	-2.35	56.97	39.05	74.00	54.00	-14.95	AVG
2023.33	V	54.45	39.00	-2.21	52.24	36.79	74.00	54.00	-17.21	AVG
N/A										
1396.67	H	55.53	---	-7.22	48.31	---	74.00	54.00	-5.69	Peak
1993.33	H	54.95	40.91	-2.31	52.63	38.60	74.00	54.00	-15.40	AVG
3641.67	H	54.43	38.52	0.24	54.67	38.76	74.00	54.00	-15.24	AVG
15850.00	H	47.34	34.93	17.41	64.75	52.34	74.00	54.00	-1.66	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 High

Test Date: March 5, 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
1596.67	V	56.33	---	-6.11	50.22	---	74.00	54.00	-3.78	Peak
1996.67	V	58.62	41.53	-2.28	56.34	39.25	74.00	54.00	-14.75	AVG
3625.00	V	52.60	38.61	0.23	52.82	38.84	74.00	54.00	-15.16	AVG
N/A										
1396.67	H	56.51	---	-7.22	49.29	---	74.00	54.00	-4.71	Peak
1500.00	H	57.43	---	-7.03	50.40	---	74.00	54.00	-3.60	Peak
1996.67	H	54.78	40.72	-2.28	52.50	38.44	74.00	54.00	-15.56	AVG
3633.33	H	52.70	38.46	0.23	52.93	38.69	74.00	54.00	-15.31	AVG
N/A										

Remark:

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



**Operation Mode:** Tx / draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / CH Low **Test Date:** March 5, 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
1596.67	V	55.28	---	-6.11	49.17	---	74.00	54.00	-4.83	Peak
1966.67	V	55.34	38.75	-2.57	52.77	36.18	74.00	54.00	-17.82	AVG
1990.00	V	61.93	41.42	-2.35	59.58	39.07	74.00	54.00	-14.93	AVG
2026.67	V	55.73	39.00	-2.21	53.52	36.79	74.00	54.00	-17.21	AVG
2066.67	V	53.28	---	-2.14	51.14	---	74.00	54.00	-2.86	Peak
N/A										
1400.00	H	56.07	---	-7.22	48.85	---	74.00	54.00	-5.15	Peak
1496.67	H	54.65	---	-7.04	47.61	---	74.00	54.00	-6.39	Peak
1593.33	H	53.69	---	-6.14	47.55	---	74.00	54.00	-6.45	Peak
1993.33	H	54.17	---	-2.31	51.86	---	74.00	54.00	-2.14	Peak
3633.33	H	53.48	38.46	0.23	53.72	38.69	74.00	54.00	-15.31	AVG
N/A										

**Remark:**

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





**Operation Mode:** Tx / draft 802.11n Standard-20 MHz Channel mode / 5260 ~ 5320MHz / CH Mid      **Test Date:** March 5, 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
1600.00	V	54.83	---	-6.07	48.76	---	74.00	54.00	-5.24	Peak
1993.33	V	59.47	41.58	-2.31	57.16	39.27	74.00	54.00	-14.73	AVG
N/A										
1400.00	H	54.70	---	-7.22	47.48	---	74.00	54.00	-6.52	Peak
1493.33	H	53.64	---	-7.04	46.59	---	74.00	54.00	-7.41	Peak
1593.33	H	53.62	---	-6.14	47.48	---	74.00	54.00	-6.52	Peak
2000.00	H	54.62	41.12	-2.25	52.37	38.87	74.00	54.00	-15.13	AVG
3625.00	H	53.52	38.46	0.23	53.75	38.69	74.00	54.00	-15.31	AVG
N/A										

**Remark:**

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



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

**Test Date:** March 5, 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
1596.67	V	54.13	---	-6.11	48.02	---	74.00	54.00	-5.98	Peak
1993.33	V	60.09	41.58	-2.31	57.77	39.27	74.00	54.00	-14.73	AVG
N/A										
1400.00	H	53.95	---	-7.22	46.74	---	74.00	54.00	-7.26	Peak
1496.67	H	54.14	---	-7.04	47.11	---	74.00	54.00	-6.89	Peak
1600.00	H	54.05	---	-6.07	47.98	---	74.00	54.00	-6.02	Peak
1993.33	H	55.07	40.77	-2.31	52.76	38.46	74.00	54.00	-15.54	AVG
3633.33	H	54.29	38.45	0.23	54.52	38.68	74.00	54.00	-15.32	AVG
N/A										

**Remark:**

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



Operation Mode: Tx / draft 802.11n Wide-40 MHz Channel mode / 5270 ~ 5310MHz / CH Low

Test Date: March 5, 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
1596.67	V	54.24	---	-6.11	48.14	---	74.00	54.00	-5.86	Peak
1993.33	V	58.97	41.45	-2.31	56.66	39.14	74.00	54.00	-14.86	AVG
2023.33	V	54.62	39.10	-2.21	52.41	36.89	74.00	54.00	-17.11	AVG
N/A										
1400.00	H	56.99	---	-7.22	49.78	---	74.00	54.00	-4.22	Peak
1496.67	H	56.44	---	-7.04	49.41	---	74.00	54.00	-4.59	Peak
1990.00	H	54.63	40.80	-2.35	52.29	38.45	74.00	54.00	-15.55	AVG
3625.00	H	52.86	38.56	0.23	53.09	38.79	74.00	54.00	-15.21	AVG
N/A										

Remark:

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



**Operation Mode:** Tx / draft 802.11n Wide-40 MHz Channel  
mode / 5270 ~ 5310MHz / CH High

**Test Date:** March 5, 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
1596.67	V	56.39	---	-6.11	50.28	---	74.00	54.00	-3.72	Peak
1993.33	V	59.33	42.15	-2.31	57.01	39.84	74.00	54.00	-14.16	AVG
N/A										
1350.00	H	57.23	---	-7.31	49.92	---	74.00	54.00	-4.08	Peak
1500.00	H	55.45	---	-7.03	48.42	---	74.00	54.00	-5.58	Peak
1596.67	H	54.11	---	-6.11	48.00	---	74.00	54.00	-6.00	Peak
1993.33	H	55.82	40.92	-2.31	53.50	38.61	74.00	54.00	-15.39	AVG
3625.00	H	54.15	38.55	0.23	54.38	38.78	74.00	54.00	-15.22	AVG
N/A										

**Remark:**

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



**Operation Mode:** Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH Low      **Test Date:** March 5, 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
1400.00	V	55.46	---	-7.22	48.25	---	74.00	54.00	-5.75	Peak
1996.67	V	58.85	41.99	-2.28	56.57	39.71	74.00	54.00	-14.29	AVG
N/A										
1400.00	H	56.76	---	-7.22	49.54	---	74.00	54.00	-4.46	Peak
1593.33	H	58.47	39.65	-6.14	52.33	33.51	74.00	54.00	-20.49	AVG
1993.33	H	57.17	40.41	-2.31	54.85	38.10	74.00	54.00	-15.90	AVG
N/A										

**Remark:**

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



**Operation Mode:** Tx / IEEE 802.11a mode / 5500 ~ 5700MHz /CH Mid **Test Date:** March 5, 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
1500.00	V	53.80	---	-7.03	46.77	---	74.00	54.00	-7.23	Peak
1600.00	V	55.40	---	-6.07	49.32	---	74.00	54.00	-4.68	Peak
1996.67	V	59.06	40.42	-2.28	56.78	38.14	74.00	54.00	-15.86	AVG
2070.00	V	51.88	---	-2.13	49.75	---	74.00	54.00	-4.25	Peak
4991.67	V	56.28	43.61	0.99	57.27	44.60	74.00	54.00	-9.40	AVG
N/A										
1996.67	H	55.33	42.00	-2.28	53.05	39.72	74.00	54.00	-14.28	AVG
2800.00	H	50.34	---	-0.83	49.52	---	74.00	54.00	-4.48	Peak
3625.00	H	52.58	38.47	0.23	52.81	38.70	74.00	54.00	-15.30	AVG
N/A										

**Remark:**

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



**Operation Mode:** Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH High      **Test Date:** March 5, 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
1500.00	V	52.97	---	-7.03	45.94	---	74.00	54.00	-8.06	Peak
1600.00	V	54.51	---	-6.07	48.44	---	74.00	54.00	-5.56	Peak
1966.67	V	53.26	---	-2.57	50.70	---	74.00	54.00	-3.30	Peak
1993.33	V	59.42	40.43	-2.31	57.10	38.12	74.00	54.00	-15.88	AVG
2020.00	V	55.85	37.28	-2.22	53.63	35.06	74.00	54.00	-18.94	AVG
N/A										
1990.00	H	55.28	41.85	-2.35	52.93	39.50	74.00	54.00	-14.50	AVG
3633.33	H	53.20	38.46	0.23	53.43	38.69	74.00	54.00	-15.31	AVG
N/A										

**Remark:**

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



**Operation Mode:** Tx / draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / CH Low      **Test Date:** March 5, 2009  
**Temperature:** 25°C      **Tested by:** Nan Tsai  
**Humidity:** 50% RH      **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1496.67	V	53.53	---	-7.04	46.49	---	74.00	54.00	-7.51	Peak
1593.33	V	55.65	---	-6.14	49.51	---	74.00	54.00	-4.49	Peak
1993.33	V	59.54	40.39	-2.31	57.22	38.08	74.00	54.00	-15.92	AVG
3641.67	V	51.96	38.10	0.24	52.20	38.34	74.00	54.00	-15.66	AVG
N/A										
1396.67	H	54.09	---	-7.22	46.87	---	74.00	54.00	-7.13	Peak
1493.33	H	53.40	---	-7.04	46.36	---	74.00	54.00	-7.64	Peak
1993.33	H	55.11	41.59	-2.31	52.80	39.28	74.00	54.00	-14.72	AVG
2796.67	H	49.84	---	-0.83	49.01	---	74.00	54.00	-4.99	Peak
3625.00	H	53.05	38.12	0.23	53.28	38.35	74.00	54.00	-15.65	AVG
N/A										

**Remark:**

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





Operation Mode: Tx / draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / CH Mid

Test Date: March 5, 2009

Temperature: 25°C

Tested by: Nan Tsai

Humidity: 50% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1496.67	V	53.74	---	-7.04	46.71	---	74.00	54.00	-7.29	Peak
1600.00	V	52.86	---	-6.07	46.79	---	74.00	54.00	-7.21	Peak
1966.67	V	53.84	---	-2.57	51.28	---	74.00	54.00	-2.72	Peak
1993.33	V	59.75	40.45	-2.31	57.44	38.14	74.00	54.00	-15.86	AVG
2063.33	V	53.62	---	-2.14	51.48	---	74.00	54.00	-2.52	Peak
N/A										
1586.67	H	53.88	---	-6.20	47.67	---	74.00	54.00	-6.33	Peak
1993.33	H	54.72	41.96	-2.31	52.41	39.65	74.00	54.00	-14.35	AVG
N/A										

Remark:

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



**Operation Mode:** Tx / draft 802.11n Standard-20 MHz Channel mode / 5500 ~ 5700MHz / CH High **Test Date:** March 5, 2009  
**Temperature:** 25°C **Tested by:** Nan Tsai  
**Humidity:** 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1496.67	V	54.53	---	-7.04	47.49	---	74.00	54.00	-6.51	Peak
1993.33	V	59.22	40.40	-2.31	56.90	38.09	74.00	54.00	-15.91	AVG
N/A										
1990.00	H	56.21	41.86	-2.35	53.87	39.51	74.00	54.00	-14.49	AVG
N/A										

**Remark:**

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



Operation Mode: Tx / draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / CH Low

Test Date: March 5, 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
1593.33	V	58.51	39.66	-6.14	52.37	33.52	74.00	54.00	-10.48	AVG
2000.00	V	59.09	41.94	-2.25	56.84	39.69	74.00	54.00	-14.31	AVG
N/A										
1996.67	H	55.50	41.87	-2.28	53.22	39.59	74.00	54.00	-14.41	AVG
3641.67	H	54.13	38.54	0.24	54.37	38.78	74.00	54.00	-15.22	AVG
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit 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: March 5, 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
1600.00	V	54.31	---	-6.07	48.24	---	74.00	54.00	-5.76	Peak
2000.00	V	58.52	41.96	-2.25	56.27	39.71	74.00	54.00	-14.29	AVG
N/A										
1790.00	H	52.48	---	-4.26	48.22	---	74.00	54.00	-5.78	Peak
1990.00	H	54.96	41.98	-2.35	52.61	39.63	74.00	54.00	-14.37	AVG
3641.67	H	52.99	38.53	0.24	53.23	38.77	74.00	54.00	-15.23	AVG
N/A										

Remark:

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



Operation Mode: Tx / draft 802.11n Wide-40 MHz Channel mode / 5510 ~ 5670MHz / CH High

Test Date: March 5, 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
1596.67	V	53.94	---	-6.11	47.84	---	74.00	54.00	-6.16	Peak
1993.33	V	60.35	40.40	-2.31	58.04	38.09	74.00	54.00	-15.91	AVG
2063.33	V	51.97	---	-2.14	49.82	---	74.00	54.00	-4.18	Peak
N/A										
1793.33	H	51.93	---	-4.23	47.71	---	74.00	54.00	-6.29	Peak
1996.67	H	54.98	41.98	-2.28	52.70	39.70	74.00	54.00	-14.30	AVG
3633.33	H	54.32	38.51	0.23	54.56	38.74	74.00	54.00	-15.26	AVG
N/A										

Remark:

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