



**FCC 47 CFR PART 15 SUBPART E &
INDUSTRY CANADA RSS-210**

TEST REPORT

For

Data Collection PC

Model: CV61, 1011CM01

Trade Name: INTERMEC

Issued to

For FCC

Intermec Technologies Corporation

550 Second Street SE Cedar Rapids Iowa United States 52401-2029

For IC

Intermec Technologies Corporation

6001 36th Avenue West Everett, Washington 98203 USA

Issued by

Compliance Certification Services Inc.

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Issued Date: March 29, 2012



Testing Laboratory
1309

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	March 29, 2012	Initial Issue	ALL	Angel Cheng



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1. TEST RESULT CERTIFICATION

Applicant: **For FCC**
 Intermecc Technologies Corporation
 550 Second Street SE Cedar Rapids Iowa United States
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 Intermecc Technologies Corporation
 6001 36th Avenue West Everett, Washington 98203 USA

Manufacturer: **For FCC**
 Intermecc Technologies Corporation
 550 Second Street SE Cedar Rapids Iowa United States
 52401-2029
For IC
 Intermecc Technologies Corporation
 6001 36th Avenue West Everett, Washington 98203 USA

Equipment Under Test: Data Collection PC

Trade Name: INTERMECC

Model: CV61, 1011CM01

Date of Test: December 16, 2011 ~ March 8, 2012

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 15 Subpart E & Industry Canada RSS-210 Issue 8 <small>December, 2010</small>	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 and Industry Canada RSS-210 Issue 8.

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

Approved by:

Reviewed by:

Jason Lin
 Section Manager
 Compliance Certification Services Inc.

Gina Lo
 Section Manager
 Compliance Certification Services Inc.



2. EUT DESCRIPTION

Product	Data Collection PC					
Trade Name	INTERMEC					
Model Number	CV61, 1011CM01					
Model Discrepancy	All the specification and layout are identical except they come with different model numbers for marketing purposes.					
Received Date	January 30, 2012					
Power Adapter	Intermec Technologies Corporation / 9006AE01 I/P: 100-240V, 50-60Hz, 1500mA O/P: 12V, 8300mA, 100W					
Operating Frequency Range & Number of Channels	UNII Band I	Mode	Frequency Range (MHz)	Number of Channels		
		IEEE 802.11a	5180 – 5240	4 Channels		
		IEEE 802.11n HT 20 MHz	5180 – 5240	4 Channels		
	UNII Band II	IEEE 802.11n HT 40 MHz	5190 ~ 5230	2 Channels		
		IEEE 802.11a	5260 - 5320	4 Channels		
		IEEE 802.11n HT 20 MHz	5260 - 5320	4 Channels		
	UNII Band III	IEEE 802.11n HT 40 MHz	5270 - 5310	2 Channels		
		IEEE 802.11a	5500 - 5700	11 Channels		
		IEEE 802.11n HT 20 MHz	5500 – 5700	11 Channels		
		IEEE 802.11n HT 40 MHz	5510 - 5670	5 Channels		
	Transmit Power	UNII Band I	Mode	Frequency Range (MHz)	Output Power (dBm)	Output Power (mw)
			IEEE 802.11a	5180 – 5240	10.72	11.8032
IEEE 802.11n HT 20 MHz			5180 – 5240	10.05	10.1158	
UNII Band II		IEEE 802.11n HT 40 MHz	5190 ~ 5230	10.58	11.4288	
		IEEE 802.11a	5260 - 5320	12.14	16.3682	
		IEEE 802.11n HT 20 MHz	5260 - 5320	16.30	42.6580	
UNII Band III		IEEE 802.11n HT 40 MHz	5270 - 5310	14.75	29.8538	
		IEEE 802.11a	5500 - 5700	12.99	19.9067	
		IEEE 802.11n HT 20 MHz	5500 – 5700	15.26	33.5738	
IEEE 802.11n HT 40 MHz		5510 - 5670	16.06	40.3645		
Modulation Technique		OFDM (QPSK, BPSK, 16-QAM, 64-QAM)				
Transmit Data Rate		IEEE 802.11a mode: 54, 48, 36, 24, 18, 12, 9, 6 Mbps IEEE 802.11n HT 20 MHz: 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) IEEE 802.11n HT 40 MHz: OFDM (13.5, 15, 27, 30, 40.5, 45, 54, 60, 81, 90, 108, 120, 121.5, 135, 150, 162, 180, 216, 240, 243, 270, 300 Mbps)				
Antenna Specification	<ol style="list-style-type: none"> External antenna 1 Laird Technologies / Model Number: CAF94606AA Main: Patch Antenna / Gain: 3.0 dBi External antenna 2 Laird Technologies / Model Number: OEM2689-P110 Main: Omni Antenna / 2.4G Gain: 3.0 dBi, 5G Gain: 5.0 dBi Internal MIMO antenna Venture Corp. Ltd / MIMO1 antenna: Part No.: VE027-6007-A0 MIMO2 antenna: Part No.: VE027-6008-A0 Main: PIFA Antenna / 2.4G Gain: 3.0 dBi, 5G Gain: 5.25 dBi Aux: PIFA Antenna / 2.4G Gain: 4.92 dBi, 5G Gain: 5.36 dBi 					



	2.4G MIMO: $10 \cdot \text{LOG}(\frac{10^{(4.38/20)} + 10^{(4.92/20)}}{2}) = 7.66 \text{ dBi}$ (Numeric gain: 5.83) 5G MIMO: $10 \cdot \text{LOG}(\frac{10^{(5.25/20)} + 10^{(5.36/20)}}{2}) = 8.32 \text{ dBi}$ (Numeric gain: 6.79)
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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

Remark: *The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*



3. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4: 2003 Radiated testing was performed at an antenna to EUT distance 3 meters.

The tests documented in this report were performed in accordance with ANSI C63.4: 2003 and FCC CFR 47 Part 15.207, 15.209 and 15.247, RSS-GEN Issue 2, and RSS-210 Issue 8.

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: 2003.



3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

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

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

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

² Above 38.6

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



3.5 DESCRIPTION OF TEST MODES

The EUT (model: CV61) had been tested under operating condition.

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

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

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

UNII Band I:

IEEE 802.11a for 5180 ~ 5240MHz:

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

IEEE 802.11n HT 20 MHz for 5180 ~ 5240MHz:

Channel Low (5180MHz), Channel Mid (5220MHz) and Channel High (5240MHz) with 6.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz Channel for 5190 ~ 5230MHz:

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

UNII Band II:

IEEE 802.11a for 5260 ~ 5320MHz:

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

IEEE 802.11n HT 20 MHz for 5260 ~ 5320MHz:

Channel Low (5260MHz), Channel Mid (5280MHz) and Channel High (5320MHz) with 6.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz for 5270 ~ 5310MHz:

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

UNII Band III:

IEEE 802.11a for 5500 ~ 5700MHz:

Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5700MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT 20 MHz for 5500 ~ 5700MHz:

Channel Low (5500MHz), Channel Mid (5580MHz) and Channel High (5700MHz) with 6.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT 40 MHz for 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 and Loop Antenna is scheduled for calibration once three years.

Conducted Emissions Test Site				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY43360131	03/16/2013
Power Meter	Anritsu	ML2495A	1012009	04/27/2012
Power Sensor	Anritsu	MA2411B	0917072	04/27/2012

Wugu 966 Chamber A				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US42510268	11/15/2012
EMI Test Receiver	R&S	ESCI	100064	02/16/2013
Pre-Amplifier	Mini-Circuits	ZFL-1000LN	SF350700823	01/12/2013
Pre-Amplifier	MITEQ	AFS44-00102650-42-10P-44	1415367	11/20/2012
Bilog Antenna	Sunol Sciences	JB3	A030105	10/03/2012
Horn Antenna	EMCO	3117	00055165	01/11/2013
Horn Antenna	EMCO	3116	00026370	10/12/2012
Loop Antenna	EMCO	6502	8905/2356	06/10/2013
Turn Table	CCS	CC-T-1F	N/A	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R
Site NSA	CCS	N/A	N/A	12/25/2012
Test S/W	EZ-EMC (CCS-3A1RE)			

Conducted Emission room # A				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
TEST RECEIVER	R&S	ESCI	101201	09/05/2012
LISN (EUT)	SCHWARZBECK	NSLK 8127	8127527	12/13/2012
LISN	SCHWARZBECK	NSLK 8127	8127526	12/13/2012
BNC CABLE	EMCI	5Dr	BNC A6	12/07/2012
THERMO-HYGRO METER	TECPEL	DTM-303	NO.3	11/21/2012

Dynamic Frequency Selection				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Rohde&Schwarz	FSEK 30	100264	05/24/2012
Signal Generator	Agilent	E8267C	US42340162	08/08/2012



4.3 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
Powerline Conducted Emission	+/- 1.0717
3M Semi Anechoic Chamber / 30M~200M	+/- 4.0138
3M Semi Anechoic Chamber / 200M~1000M	+/- 3.9483
3M Semi Anechoic Chamber / 1G~8G	+/- 2.5975
3M Semi Anechoic Chamber / 8G~18G	+/- 2.6112
3M Semi Anechoic Chamber / 18G~26G	+/- 2.7389
3M Semi Anechoic Chamber / 26G~40G	+/- 2.9683

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.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.

Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029

Remark: The radiated emissions test items was tested at Compliance Certification Services Inc. (Sindian Lab.) The test equipments were listed in page 10 and the test data, please refer page 220-221.

No.11, Wu-Gong 6th Rd., Wugu Industrial Park, New Taipei City 248, Taiwan (R.O.C.)

Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

No.81-1, Lane 210, Bade 2nd Rd., Luchu Hsiang, Taoyuan Hsien 338, Taiwan

Tel: 886-3-324-0332 / Fax: 886-3-324-5235

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

5.2 EQUIPMENT

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

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

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




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

5.3 LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 0824-01 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC 2324G-1 for 3M Semi Anechoic Chamber A, 2324G-2 for 3M Semi Anechoic Chamber B.



5.4 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.	Equipment	Model No.	Serial No.	FCC ID / BSMI ID	Brand Name	Data Cable	Power Cord
1-2	Load	N/A	N/A	N/A	N/A	Shielded, 1.4m	N/A
3	USB Mouse	X05-48976	N/A	N/A	Microsoft	Shielded, 2.0m with a core	N/A
4	PS/2 Keyboard	AK7	N/A	N/A	Intermec	Shielded, 0.8m	N/A
5	Earphone	N/A	N/A	N/A	Motorola	Unshielded, 1.1m	N/A
6	Earphone	SHP1900	N/A	N/A	Philips	Unshielded, 1.9m	N/A
7	Load	N/A	N/A	N/A	N/A	N/A	N/A
8	Storage Media	curzer micro 2.0G	N/A	N/A	SanDisk	Shielded, 0.2m with a core	N/A
9	HUB	WRT54GC	N/A	N/A	LINKSYS	N/A	Unshielded, 1.8m
10	Server PC	HD075AV	SGH948QGVW	DOC BSMI: R33001	HP	Unshielded, 20m	Unshielded, 1.8m
11	Cisco Access Point	AIR-AP1262N-A-K9	FTX1536K51Z	N/A	CISCO	N/A	N/A

Remark:

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



7. APPLICABLE RULES

RSS-210 §2 General Certification Requirements and Specifications

RSS-210 §2.1 RSS-Gen Compliance

In addition to RSS-210, the requirements in RSS-Gen, *General Requirements and Information for the Certification of Radio Apparatus*, must be met.

RSS-210 §2.2 Emissions Falling Within Restricted Frequency Bands

Category I licence-exempt equipment is required to comply with the provisions in RSS-Gen with respect to emissions falling within restricted frequency bands. These restricted frequency bands are listed in RSS-Gen.

RSS-210 §2.3 Receivers

Category I equipment receivers for use with transmitters subject to RSS-210 must comply with the applicable requirements set out in RSS-Gen and be certified under RSS-210. Category II equipment receivers for use with transmitters subject to RSS-210 are exempt from certification, but are subject to compliance with RSS-Gen and RSS-310.

RSS-210 §2.5 General Field Strength Limits

RSS-Gen includes the general field strength limits of unwanted emissions, where applicable, for transmitters and receivers operating in accordance with the provisions specified in this standard. Unwanted emissions of transmitters and receivers are permitted to fall within the restricted bands listed in RSS-Gen, and including the TV bands, but fundamental emissions are prohibited in the restricted bands.

RSS-210 §2.5.1 Transmitters with Wanted Emissions that are Within the General Field Strength Limits

Whether or not their operation is addressed by published RSS standards, transmitters whose wanted and unwanted emissions are within the general field strength limits shown in RSS-Gen, they may operate in any of the frequency bands, other than the restricted bands listed in RSS-Gen and including the TV bands, and shall be certified under RSS-210. Under no conditions may the level of any unwanted emissions exceed the level of the fundamental emission.

Note: Devices operating below 490 kHz in which all emissions are at least 40 dB below the limit listed in RSS-Gen (*General Field Strength Limits for Transmitters at Frequencies below 30 MHz*) are Category II devices and are subject to RSS-310.



RSS-210 §2.7 Tables

RSS-210 §Annex 8: Frequency Hopping and Digital Modulation Systems Operating in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz Bands

This section applies to systems that employ frequency hopping (FH) and digital modulation technology in the 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz bands. Systems in these bands may employ frequency hopping, digital modulation and or a combination (hybrid) of both techniques.

A frequency hopping system that synchronizes with another or several other systems (to avoid frequency collision among them) via off-air sensing or via connecting cables is not hopping randomly and therefore is not in compliance with RSS-210.

RSS-210 §A8.1 Frequency Hopping Systems

Frequency hopping systems are spread spectrum systems in which the carrier is modulated with coded information in a conventional manner causing a conventional spreading of the RF energy about the carrier frequency. The frequency of the carrier is not fixed but changes at fixed intervals under the direction of a coded sequence.

Frequency hopping systems are not required to employ all available hopping frequencies during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream.

Incorporation of intelligence into a frequency hopping system that enables it to recognize other users of the band and to avoid occupied frequencies is permitted, provided that the frequency hopping system does it individually, and independently chooses or adapts its hopset. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

The following applies to frequency hopping systems in each of the three bands.

(a) The bandwidth of a frequency hopping channel is the 20 dB emission bandwidth, measured with the hopping stopped. The system RF bandwidth is equal to the channel bandwidth multiplied by the number of channels in the hopset. The hopset shall be such that the near term distribution of frequencies appears random, with sequential hops randomly distributed in both direction and magnitude of change in the hopset while the long term distribution appears evenly distributed.



(b) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 0.125 W. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(d) Frequency hopping systems operating in the 2400-2483.5 MHz band shall use at least 15 hopping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Transmissions on particular hopping frequencies may be avoided or suppressed provided that a minimum of 15 hopping channels are used.

RSS-210 §A8.2 Digital Modulation Systems

These include systems employing digital modulation techniques resulting in spectral characteristics similar to direct sequence systems. The following applies to all three bands.

RSS-210 §A8.4 Transmitter Output Power and e.i.r.p. Requirements

(4) For systems employing digital modulation techniques operating in the 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz bands, the maximum peak conducted power shall not exceed 1 W. Except as provided in Section A8.4(5), the e.i.r.p. shall not exceed 4 W.

As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power (see RSS-Gen)

(5) Point-to-point systems in the bands 2400-2483.5 MHz and 5725-5850 MHz are permitted to have an e.i.r.p. higher than 4 W, provided that the higher e.i.r.p. is achieved by employing higher gain directional antennas and not higher transmitter output powers. Point-to-multipoint systems, omni-directional applications and multiple co-located transmitters transmitting the same information are prohibited from exceeding 4 W e.i.r.p. However, remote stations of point-to-multipoint systems shall be allowed to operate at greater than 4 W e.i.r.p. under the same conditions as for point-to-point systems.

Note: "Fixed, point-to-point operation", excludes point-to-multipoint systems, omnidirectional applications and multiple co-located transmitters transmitting the same information.



RSS-210 §A8.5 Out-of-band Emissions

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the radio frequency power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under section A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Tables 2 and 3 is not required.

RSS-Gen §2 General Information

RSS-Gen §2.1.2 Category II Equipment

Category II equipment comprises radio devices where a standard has been prescribed but for which a TAC is not required, that is, equipment certification by Industry Canada or a Certification Body (CB) is not required (certification exempt), pursuant to subsection 4(3) of the Radiocommunication Act. The manufacturer or importer shall nevertheless ensure that the standards are complied with. A test report shall be available on request and the device shall be properly labelled.

RSS-Gen §2.2 Receivers

Receivers that are used for radiocommunication other than broadcasting are defined as Category I equipment or Category II equipment, subject to compliance with applicable Industry Canada standards.

Receivers shall be capable of operation only with transmitters for which RSSs are published. Receivers are classified as described in sections 2.2.1 and 2.2.2.

RSS-Gen §2.2.1 Category I Equipment Receivers

A receiver is classified as Category I equipment if it meets one of the following conditions:

- (a) a stand-alone receiver (see Note 1, below), which operates on any frequency in the band 30-960 MHz, and is used for the reception of signals in that frequency band from a transmitter classified as Category I equipment;
- (b) a Citizen's Band (CB) receiver (26.96-27.410 MHz);
- (c) a scanner receiver.

Note 1: A *stand-alone receiver* is defined as any receiver that is not permanently combined together with a transmitter in a single case (transceiver), in which it functions as the receiver component of the transceiver.

Receivers classified as Category I equipment shall comply with the limits for receiver spurious emissions set out in RSS-Gen; however, equipment certification is granted under the applicable RSS standard along with the associated transmitter classified as Category I equipment. Scanner receivers are covered under their own specific RSS.

RSS-Gen §2.2.2 Category II Equipment Receivers

A receiver is classified as Category II equipment if it does not meet any of the conditions of Section 2.2.1.

Category II receivers shall comply with the applicable testing, labelling and user manual requirements in RSS-310.



RSS-Gen §5.6 Exposure of Humans to RF Fields

Category I and Category II equipment shall comply with the applicable requirements of RSS-102.

RSS-Gen §6 Receiver Spurious Emission Standard

Receivers shall comply with the limits of spurious emissions set out in this section, measured over the frequency range determined in accordance with Section 4.10.

RSS-Gen §6.1 Radiated Limits

Radiated spurious emission measurements shall be performed with the receiver antenna connected to the receiver antenna terminals.

Spurious emissions from receivers shall not exceed the radiated limits shown in the table below:

RSS-Gen Table 2 - Spurious Emission Limits for Receivers

Frequency (MHz)	Field Strength microvolts/m at 3 metres
30-88	100
88-216	150
216-960	200
Above 960	500

*Measurements for compliance with limits in the above table may be performed at distances other than 3 metres, in accordance with Section 7.2.7.

**RSS- Gen Table 3: Restricted Frequency Bands** ^(Note)

MHz	MHz	MHz	MHz	GHz
0.090-0.110	8.37625-8.38675	--	1718.8-1722.2	9.0-9.2
--	8.41425-8.41475	156.52475-156.52525	2200-2300	9.3-9.5
2.1735-2.1905	12.29-12.293	156.7-156.9	2310-2390	10.6-12.7
3.020-3.026	12.51975-12.52025	--	--	13.25-13.4
4.125-4.128	12.57675-12.57725	--	2655-2900	14.47-14.5
4.17725-4.17775	13.36-13.41	240-285	3260-3267	15.35-16.2
4.20725-4.20775	16.42-16.423	322-335.4	3332-3339	17.7-21.4
5.677-5.683	16.69475-16.69525	399.9-410	3345.8-3358	22.01-23.12
6.215-6.218	16.80425-16.80475	608-614	3500-4400	23.6-24.0
6.26775-6.26825	25.5-25.67	960-1427	4500-5150	31.2-31.8
6.31175-6.31225	37.5-38.25	1435-1626.5	5350-5460	36.43-36.5
8.291-8.294	73-74.6; 74.8-75.2	1645.5-1646.5	7250-7750	Above 38.6
8.362-8.366	108-138	1660-1710	8025-8500	

Note: Certain frequency bands listed in Table 2 and above 38.6 GHz are designated for low-power licence-exempt applications. These frequency bands and the requirements that apply to the devices are set out in this Standard as well as RSS-310.

RSS- Gen Table 5: General Field Strength Limits for Transmitters at Frequencies Above 30 MHz

Frequency (MHz)	Field Strength (microvolt/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960	500

Note: Transmitting devices are not permitted in Table 1 bands or, unless stated otherwise, in TV bands (54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz and 614-806 MHz).



RSS- Gen Table 6: General Field Strength Limits for Transmitters at Frequencies Below 30 MHz (Transmit)

Frequency (fundamental or spurious)	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/377F (F in Hz)	300
490-1.705 kHz	24,000/F (F in kHz)	24,000/377F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Note: The emission limits for the bands 9-90 kHz and 110-490 kHz are based on measurements employing an average detector.



RSS-Gen §7.1.2 Transmitter Antenna

A transmitter can only be sold or operated with antennas with which it was approved. Transmitter may be approved with multiple antenna types. An antenna type comprises antennas having similar in-band and out-of-band radiation patterns. Testing shall be performed using the highest gain antenna of each combination of transmitter and antenna type for which approval is being sought, with the transmitter output power set at the maximum level. Any antenna of the same type having equal or lesser gain as an antenna that had been successfully tested with the transmitter, will also be considered approved with the transmitter, and may be used and marketed with the transmitter. For Category I transmitters, the manufacturer shall include with the application for certification a list of acceptable antenna types to be used with the transmitter.

When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer.

For transmitters of RF output power of 10 milliwatts or less, only the portion of the antenna gain that is in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power to demonstrate compliance with the radiated power limits specified in the applicable standard. For transmitters of output power greater than 10 milliwatts, the total antenna gain shall be added to the measured RF output power to demonstrate compliance to the specified radiated power limits. User manuals for transmitters shall display the following notice in a conspicuous location:

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

The above notice may be affixed to the device instead of displayed in the user manual.

User manuals for transmitters equipped with detachable antennas shall also contain the following notice in a conspicuous location:

This radio transmitter (identify the device by certification number, or model number if Category II) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types approved for use with the transmitter, indicating the maximum permissible antenna gain (in dBi) and required impedance for each.



RSS-Gen §7.2.4 Transmitter and Receiver AC Power Lines Conducted Emission Limits

Except when the requirements applicable to a given device state otherwise, for any radio apparatus equipped to operate from the public utility AC power supply, either directly or indirectly (such as with a battery charger), the radio frequency voltage of emissions conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in the table below. The more stringent limit applies at the frequency range boundaries.

The conducted emissions shall be measured with a 50 ohm/50 microhenry line impedance stabilization network (LISN).

RSS-Gen Table 4 – AC Power Line Conducted Emission Limits

Frequency Range (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50

**Decreases with the logarithm of the frequency.*



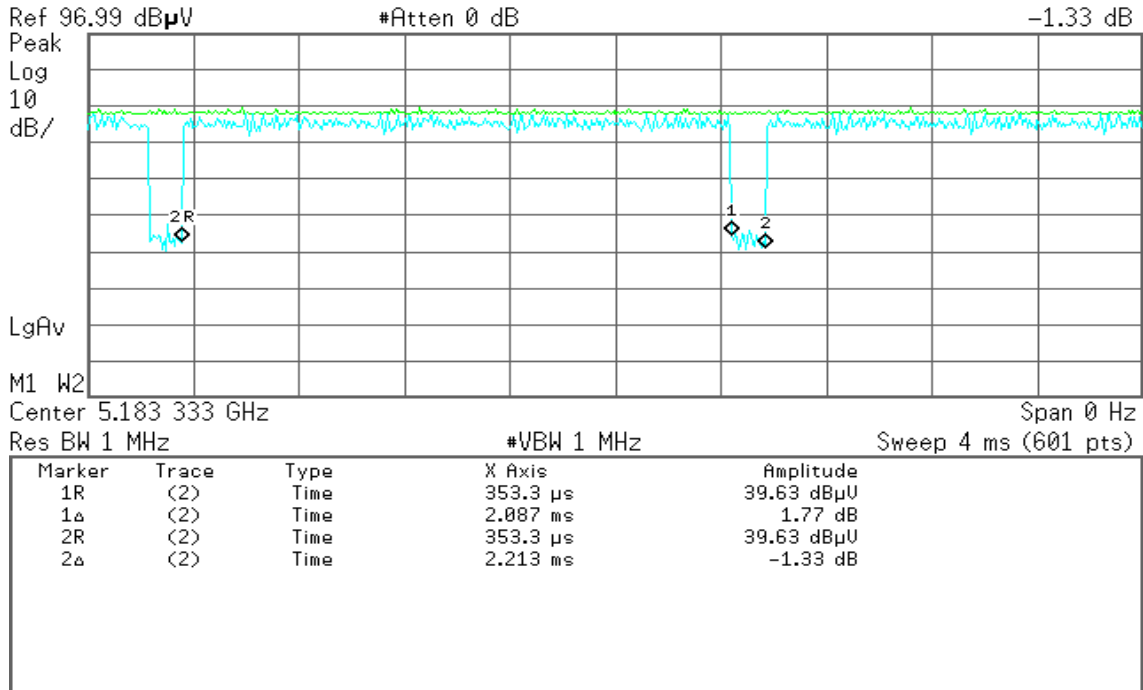
8. FCC PART 15 REQUIREMENTS & RSS 210 REQUIREMENTS

8.1 DUTY CYCLE

Agilent 18:44:30 19 Dec 2011

R T

Mkr2 2.213 ms
-1.33 dB



A mode duty cycle

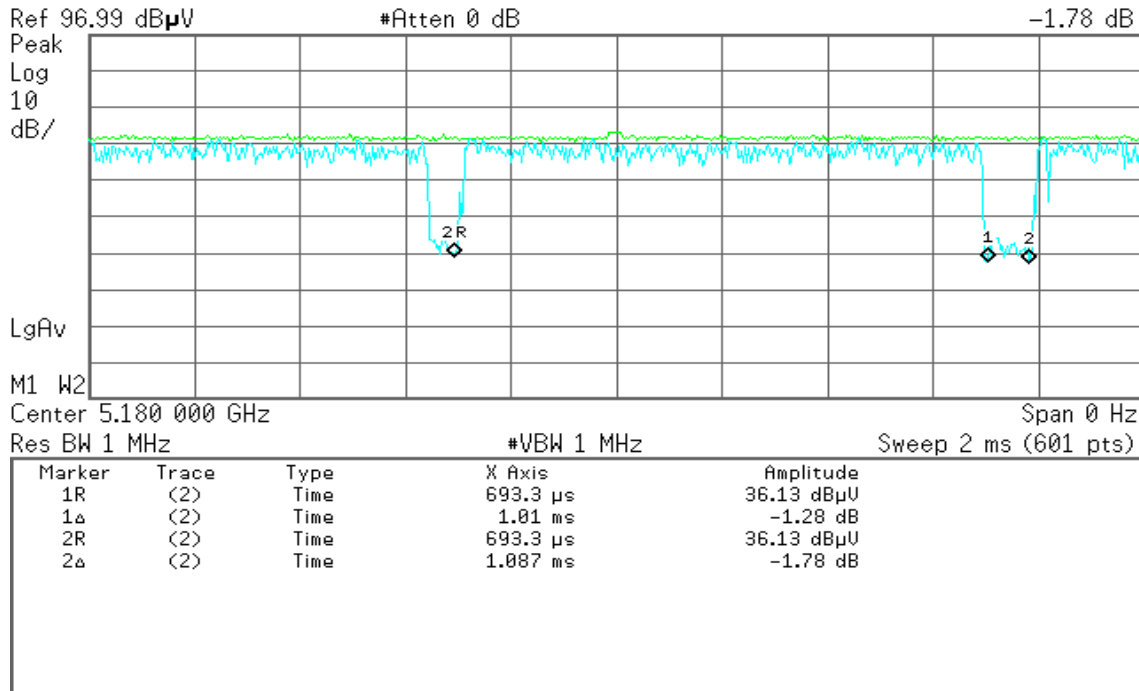
$$2.087/2.213=0.94 < 98$$



Agilent 10:30:29 20 Dec 2011

R T

Mkr2 1.087 ms
-1.78 dB



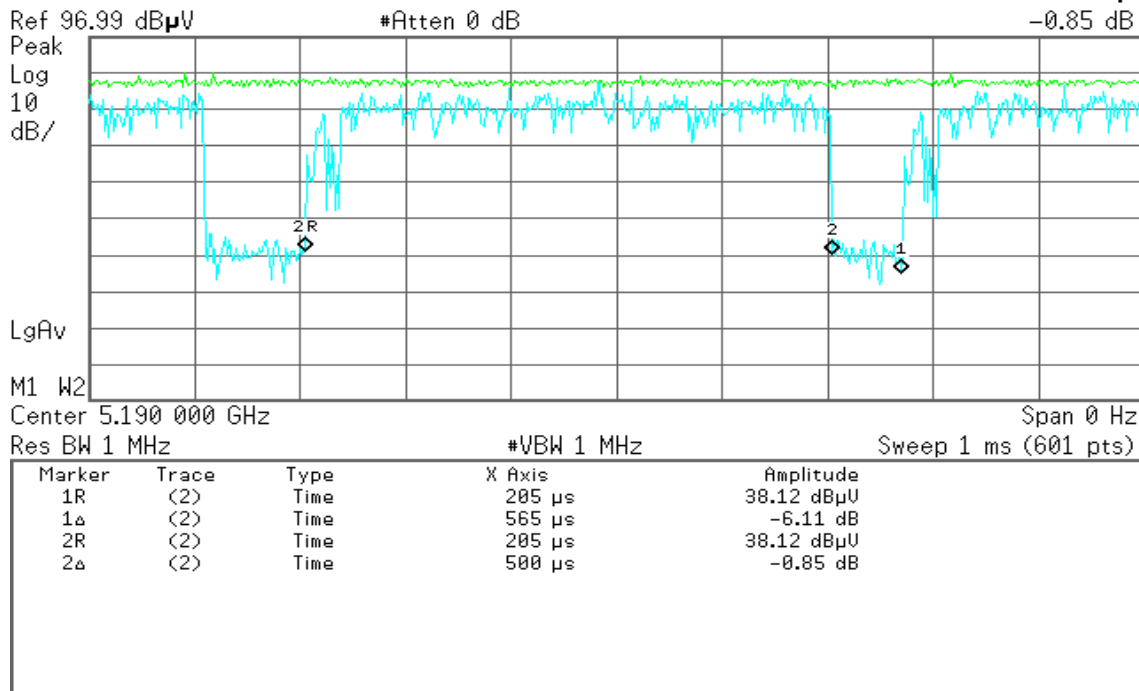
A20 mode duty cycle

$1.01/1.087 = 0.93 < 98$

Agilent 14:49:29 20 Dec 2011

R T

Mkr2 500 μ s
-0.85 dB



A40mode duty cycle

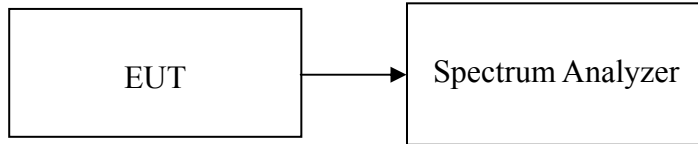
$500/565 = 0.88 < 98$



8.2 99% BANDWIDTH

Test Configuration

TEST PROCEDURE



The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold.



TEST RESULTS

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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	17.5878
Mid	5220	17.4002
High	5240	17.3079

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	18.0256
Mid	5220	17.9294
High	5240	18.0780

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5180	17.9780
Mid	5220	17.9927
High	5240	18.0323

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5190	36.1819
High	5230	36.2423

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5190	36.2221
High	5230	36.1747



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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	17.3561
Mid	5280	17.2957
High	5320	17.2852

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	18.0442
Mid	5280	18.0270
High	5320	18.0406

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5260	18.0088
Mid	5280	17.9570
High	5320	18.0231

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	36.1659
High	5310	36.1934

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5270	36.2137
High	5310	36.2172



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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	17.2852
Mid	5580	18.1166
High	5700	22.2055

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	18.1202
Mid	5580	18.1181
High	5700	18.2658

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	18.0456
Mid	5580	18.0661
High	5700	18.3282

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	36.2526
Mid	5590	36.2167
High	5670	36.1552

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	36.2534
Mid	5590	36.2132
High	5670	36.1717



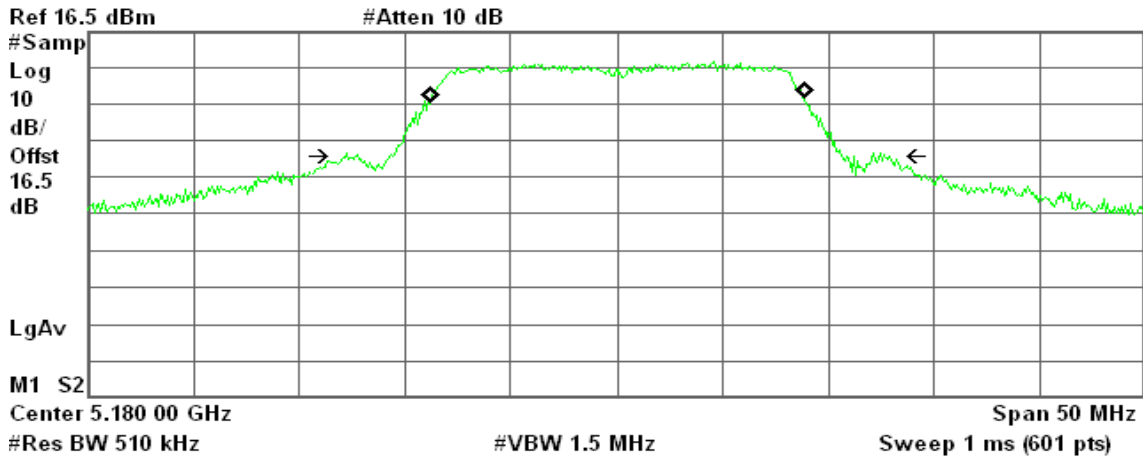
Test Plot

IEEE 802.11a mode / 5180 ~ 5240MHz

99% Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
17.5878 MHz

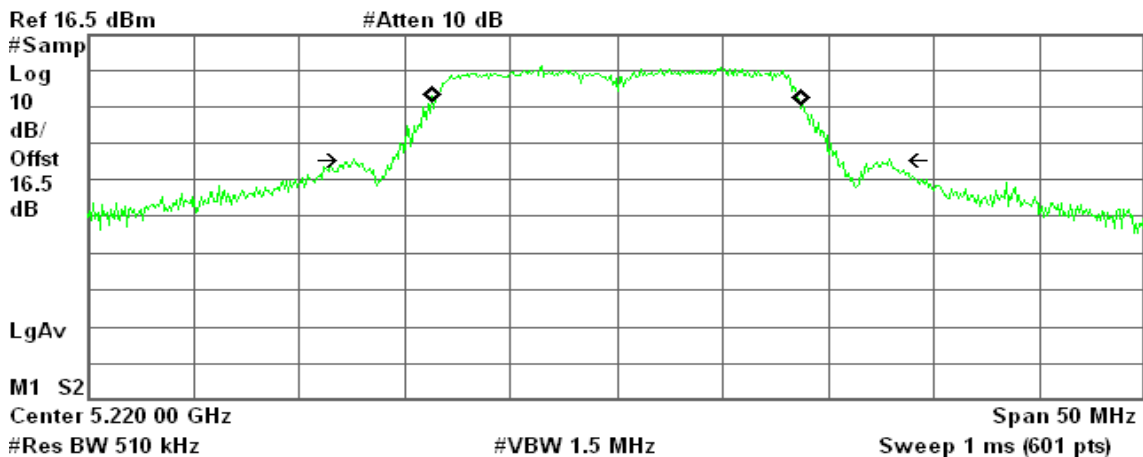
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 9.910 kHz
x dB Bandwidth 25.750 MHz*

99% Bandwidth (CH Mid)

Agilent

R T



Occupied Bandwidth
17.4002 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

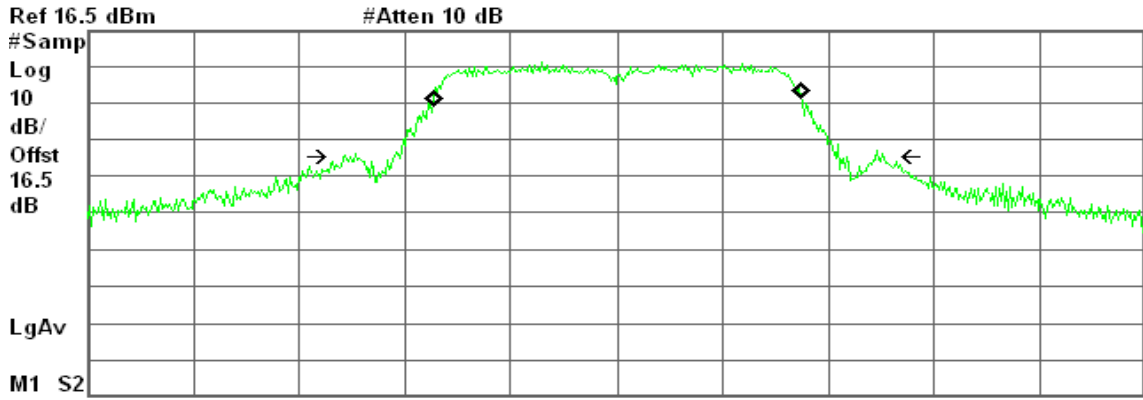
Transmit Freq Error 2.646 kHz
x dB Bandwidth 25.416 MHz*



99% Bandwidth (CH High)

Agilent

R T



Center 5.240 00 GHz Span 50 MHz
 #Res BW 510 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
 17.3079 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

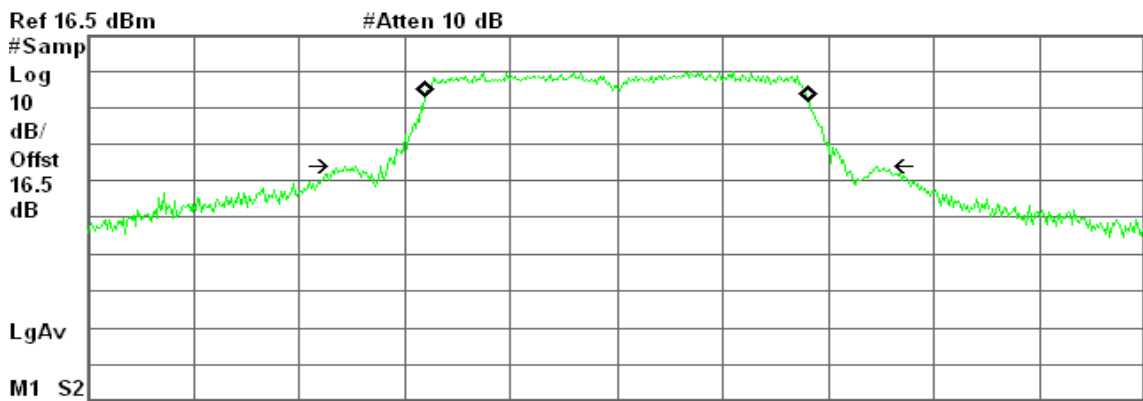
Transmit Freq Error 38.964 kHz
 x dB Bandwidth 25.545 MHz*

IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

99% Bandwidth (CH Low)

Agilent

R T



Center 5.180 00 GHz Span 50 MHz
 #Res BW 510 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
 18.0256 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

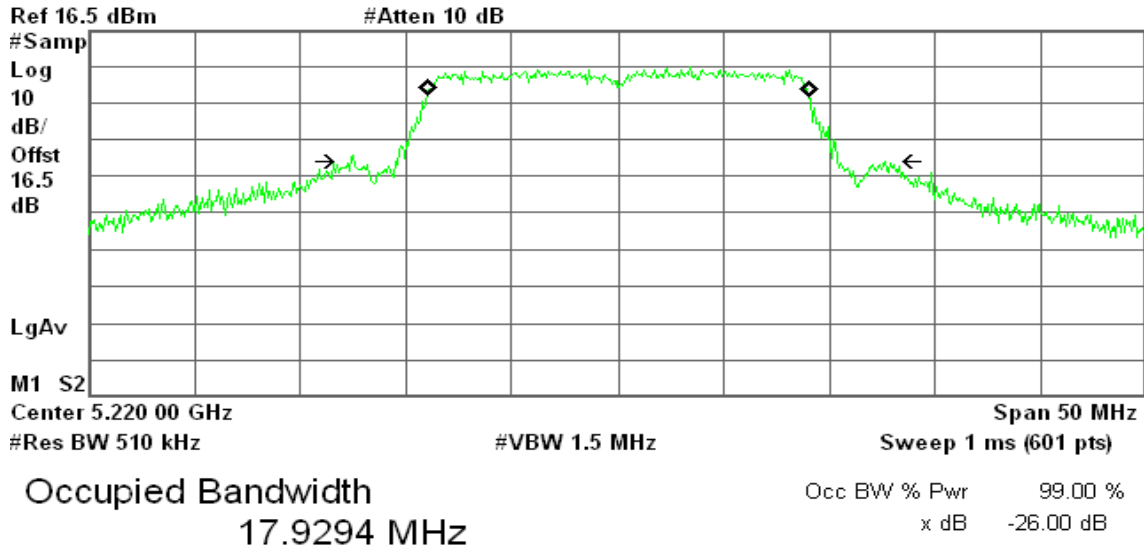
Transmit Freq Error 19.473 kHz
 x dB Bandwidth 25.187 MHz*



99% Bandwidth (CH Mid)

Agilent

R T

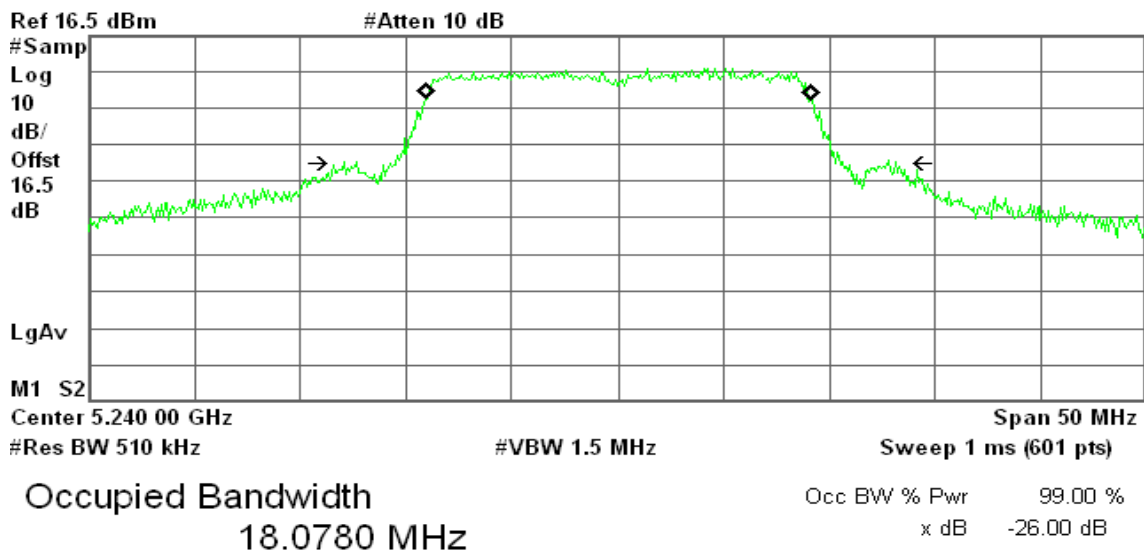


Transmit Freq Error 22.678 kHz
x dB Bandwidth 25.293 MHz*

99% Bandwidth (CH High)

Agilent

R T



Transmit Freq Error 52.839 kHz
x dB Bandwidth 26.120 MHz*

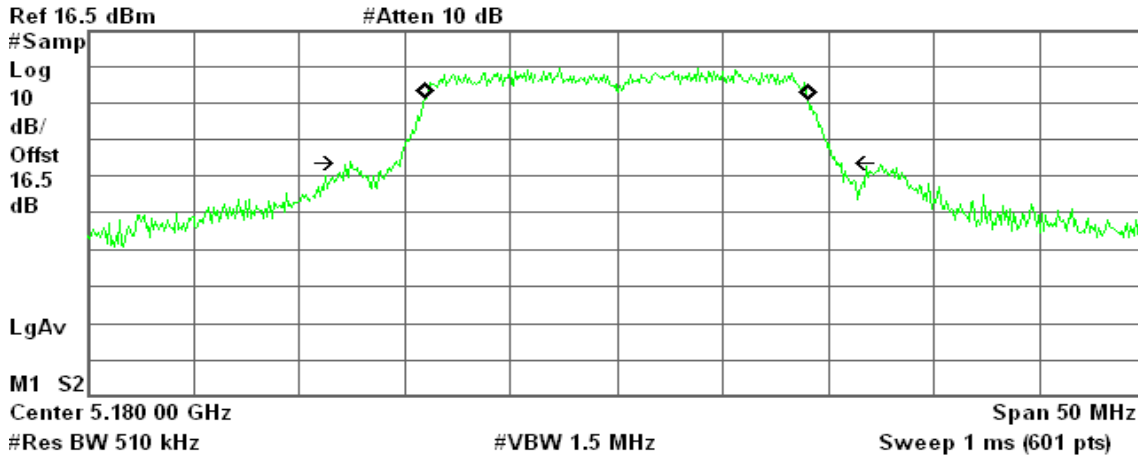


IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

99% Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
17.9780 MHz

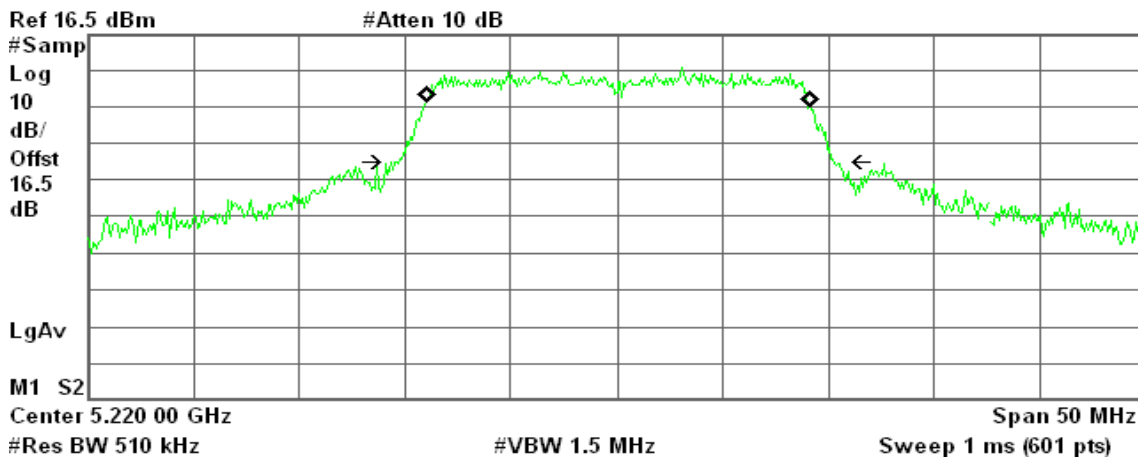
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 25.666 kHz
x dB Bandwidth 23.112 MHz*

99% Bandwidth (CH Mid)

Agilent

R T



Occupied Bandwidth
17.9927 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

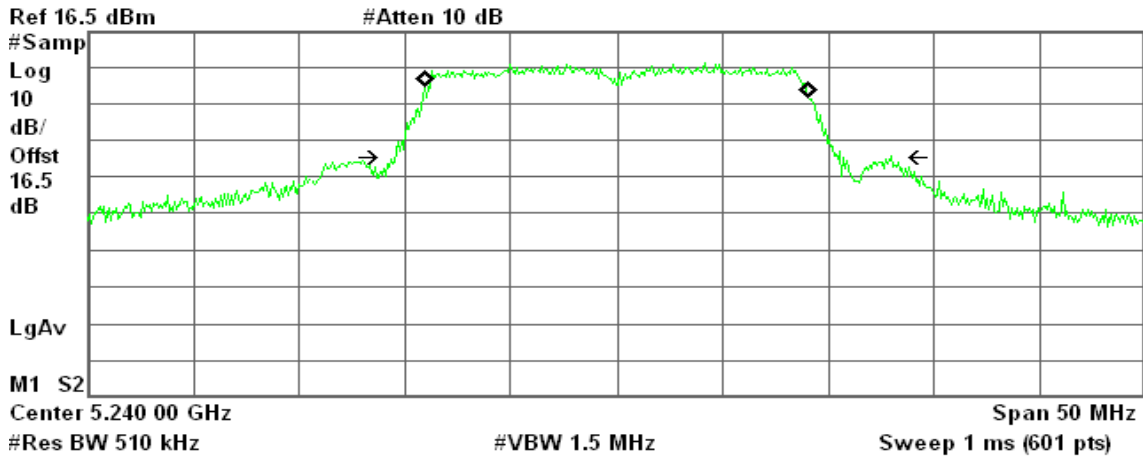
Transmit Freq Error 53.736 kHz
x dB Bandwidth 20.618 MHz*



99% Bandwidth (CH High)

Agilent

R T



Occupied Bandwidth
18.0323 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

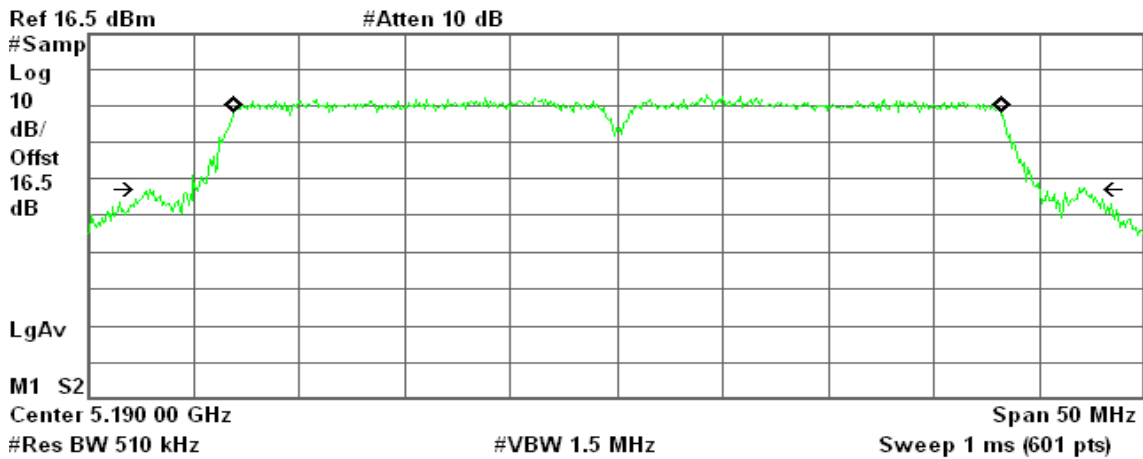
Transmit Freq Error 6.485 kHz
x dB Bandwidth 23.498 MHz*

IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

99% Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
36.1819 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

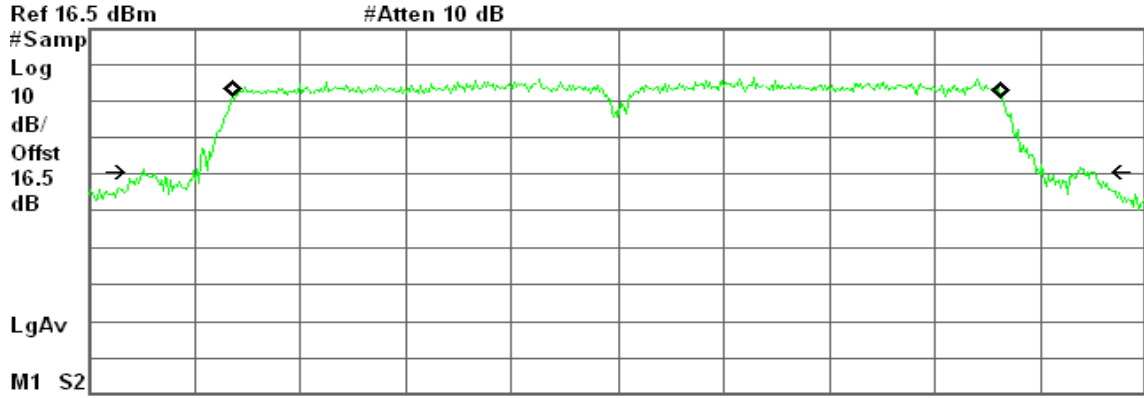
Transmit Freq Error 42.862 kHz
x dB Bandwidth 44.293 MHz*



99% Bandwidth (CH High)

Agilent

R T



Center 5.230 00 GHz Span 50 MHz
 #Res BW 510 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
 36.2423 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

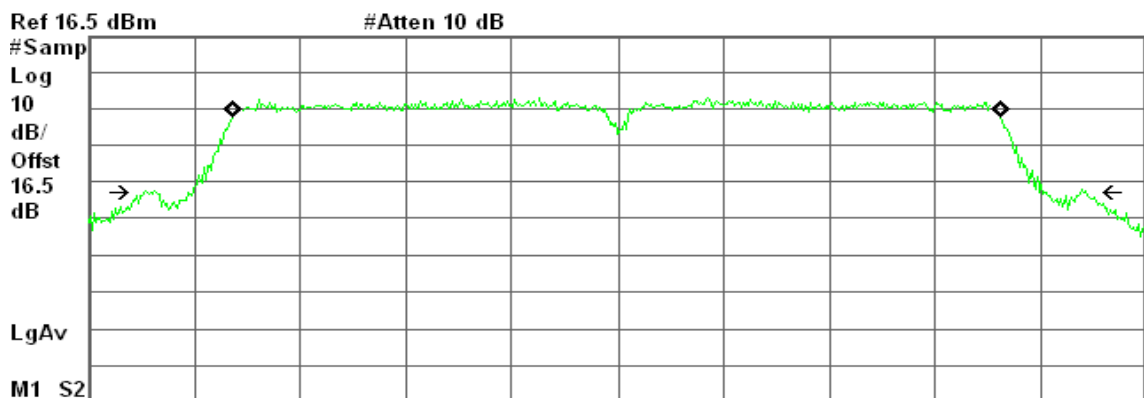
Transmit Freq Error -4.449 kHz
 x dB Bandwidth 45.079 MHz*

IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

99% Bandwidth (CH Low)

Agilent

R T



Center 5.190 00 GHz Span 50 MHz
 #Res BW 510 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
 36.2221 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

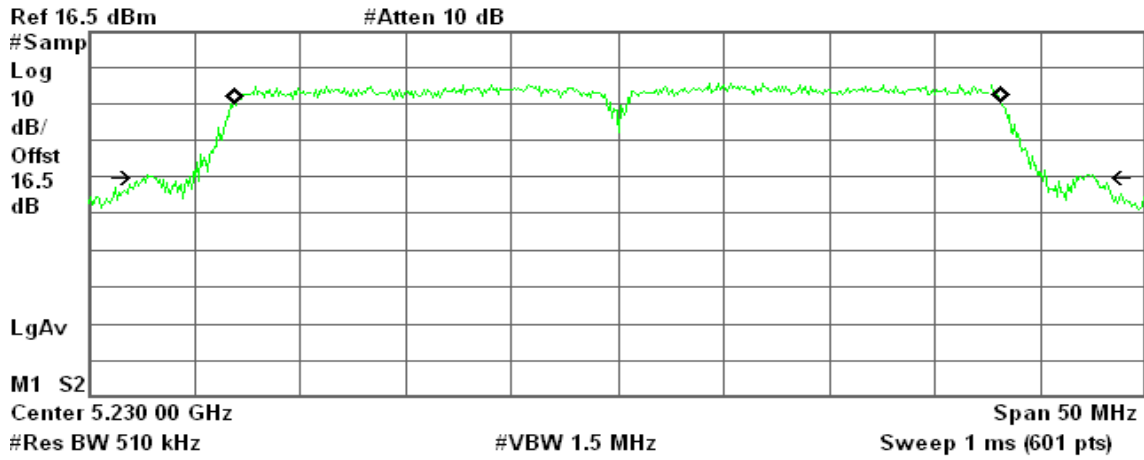
Transmit Freq Error -40.340 kHz
 x dB Bandwidth 44.562 MHz*



99% Bandwidth (CH High)

Agilent

R T



Occupied Bandwidth
36.1747 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

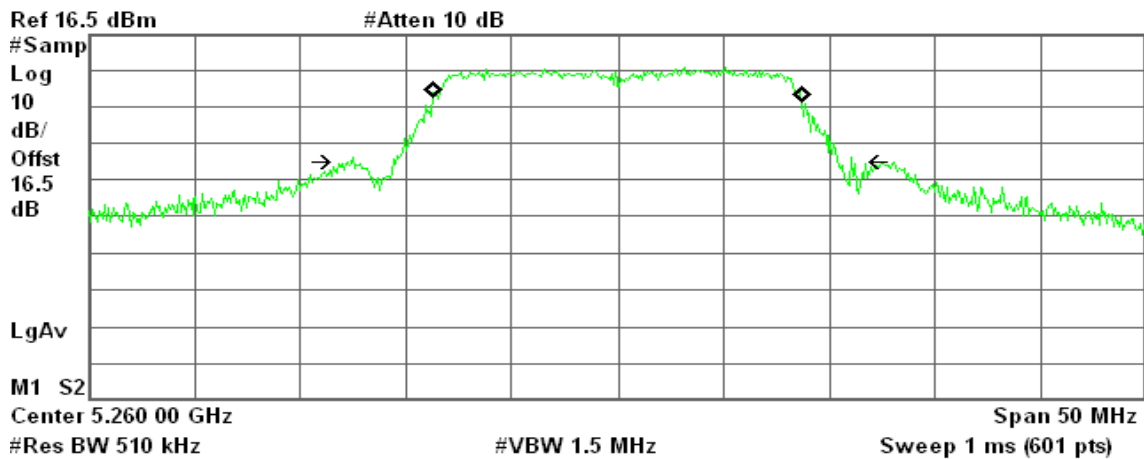
Transmit Freq Error 27.675 kHz
x dB Bandwidth 44.895 MHz*

IEEE 802.11a mode / 5260 ~ 5320MHz

99% Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
17.3561 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

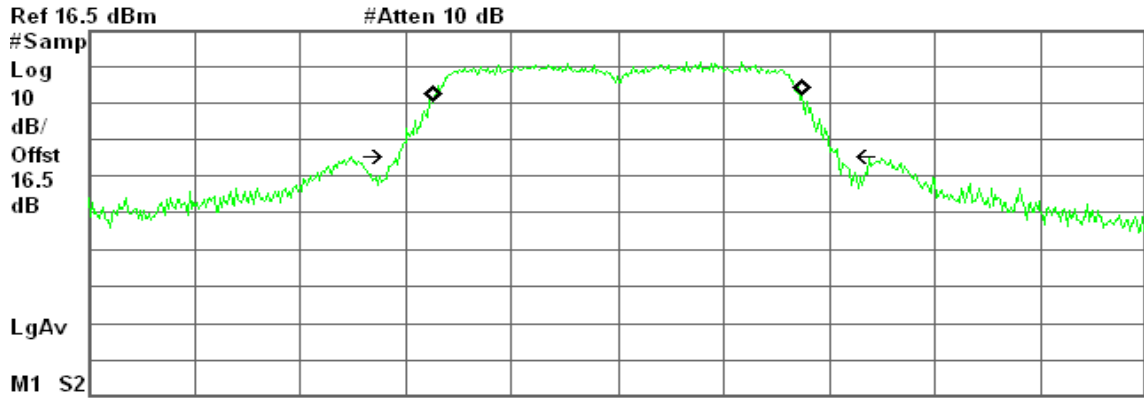
Transmit Freq Error -7.087 kHz
x dB Bandwidth 23.896 MHz*



99% Bandwidth (CH Mid)

Agilent

R T



Center 5.280 00 GHz Span 50 MHz
 #Res BW 510 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
 17.2957 MHz

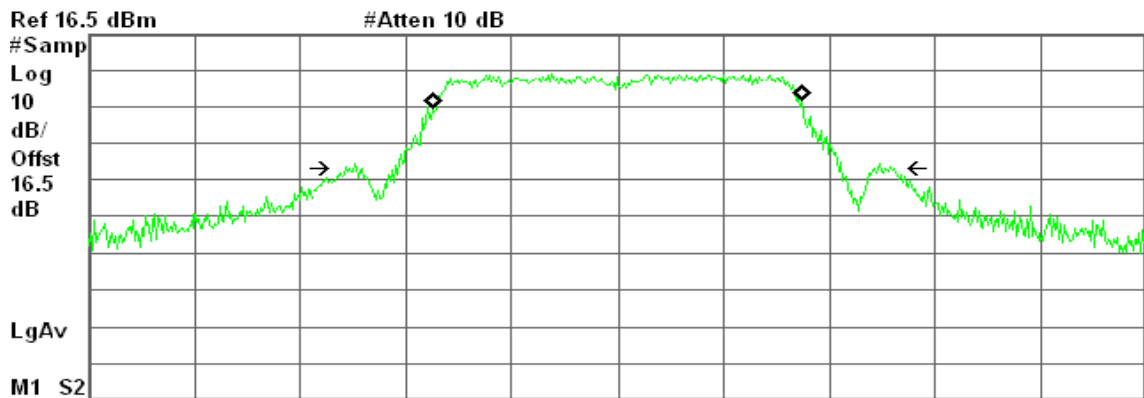
Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -2.156 kHz
 x dB Bandwidth 20.827 MHz*

99% Bandwidth (CH High)

Agilent

R T



Center 5.320 00 GHz Span 50 MHz
 #Res BW 510 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
 17.2852 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error 3.849 kHz
 x dB Bandwidth 25.803 MHz*

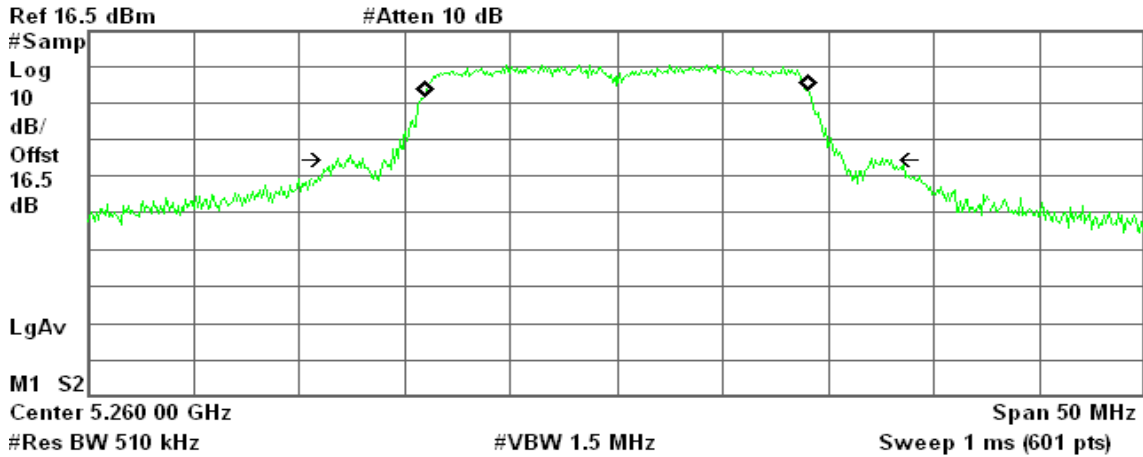


IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

99% Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
18.0442 MHz

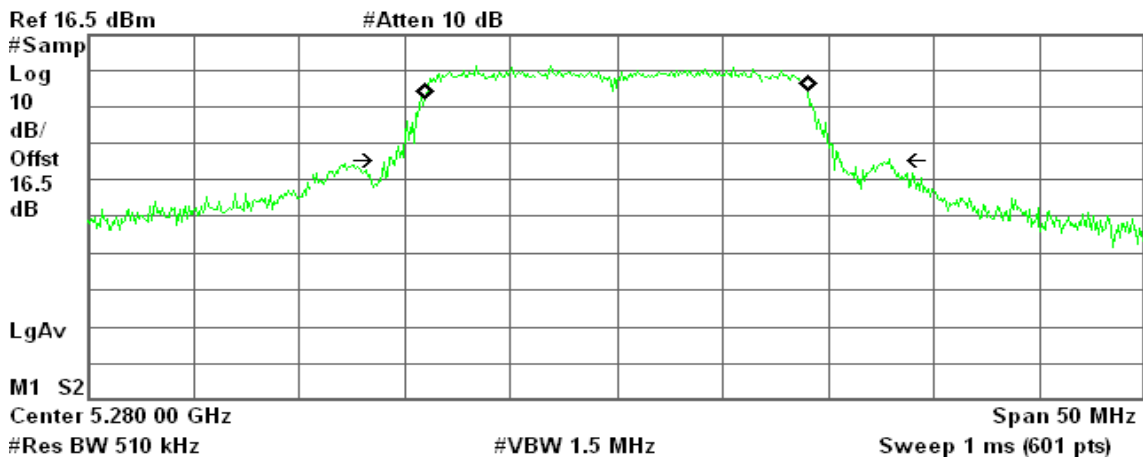
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 8.172 kHz
x dB Bandwidth 25.793 MHz*

99% Bandwidth (CH Mid)

Agilent

R T



Occupied Bandwidth
18.0270 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

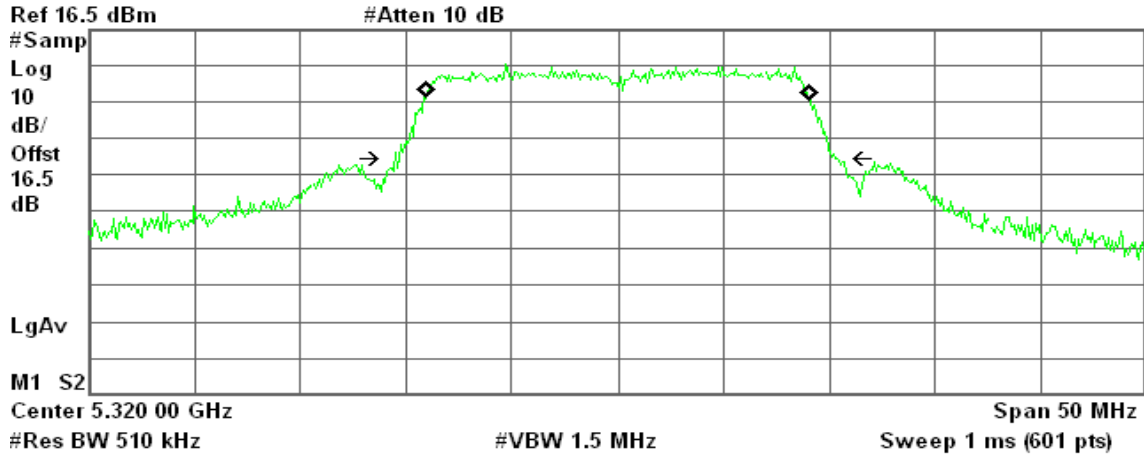
Transmit Freq Error -9.354 kHz
x dB Bandwidth 23.721 MHz*



99% Bandwidth (CH High)

Agilent

R T



Occupied Bandwidth
18.0406 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

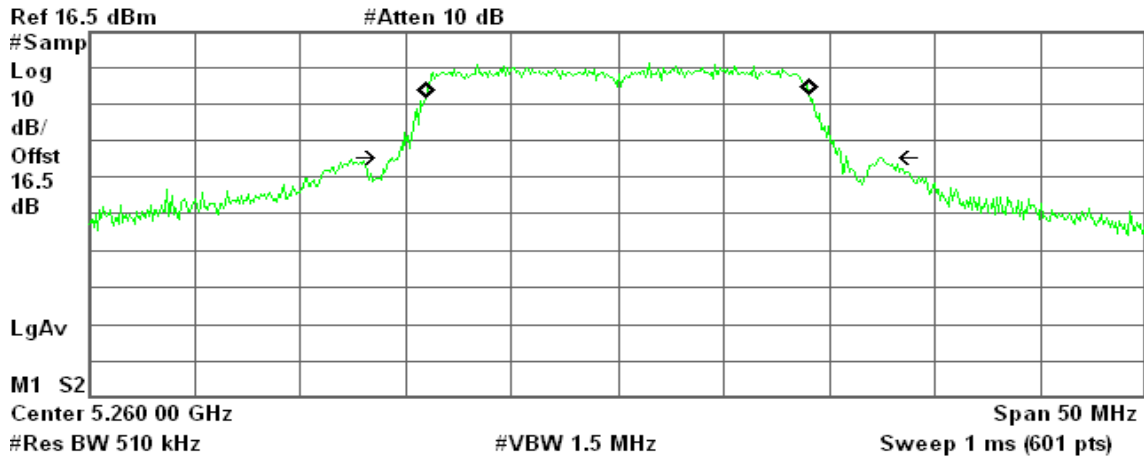
Transmit Freq Error -15.192 kHz
x dB Bandwidth 20.865 MHz*

IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

99% Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
18.0088 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

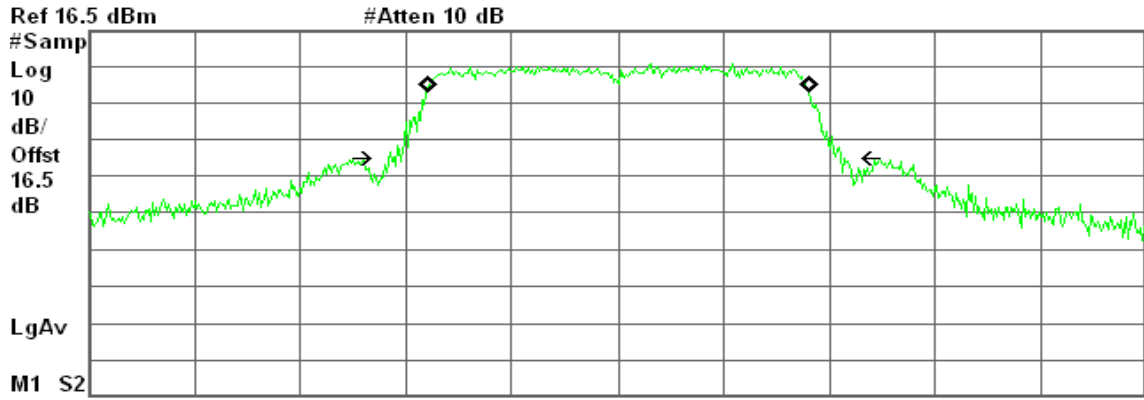
Transmit Freq Error 13.907 kHz
x dB Bandwidth 23.208 MHz*



99% Bandwidth (CH Mid)

Agilent

R T



Center 5.280 00 GHz Span 50 MHz
#Res BW 510 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
17.9570 MHz

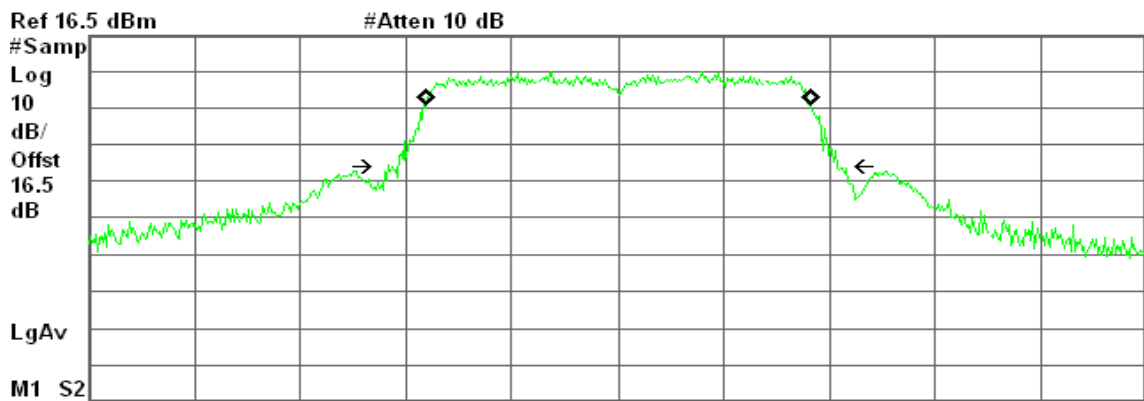
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 20.541 kHz
x dB Bandwidth 21.550 MHz*

99% Bandwidth (CH High)

Agilent

R T



Center 5.320 00 GHz Span 50 MHz
#Res BW 510 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
18.0231 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 34.986 kHz
x dB Bandwidth 21.263 MHz*

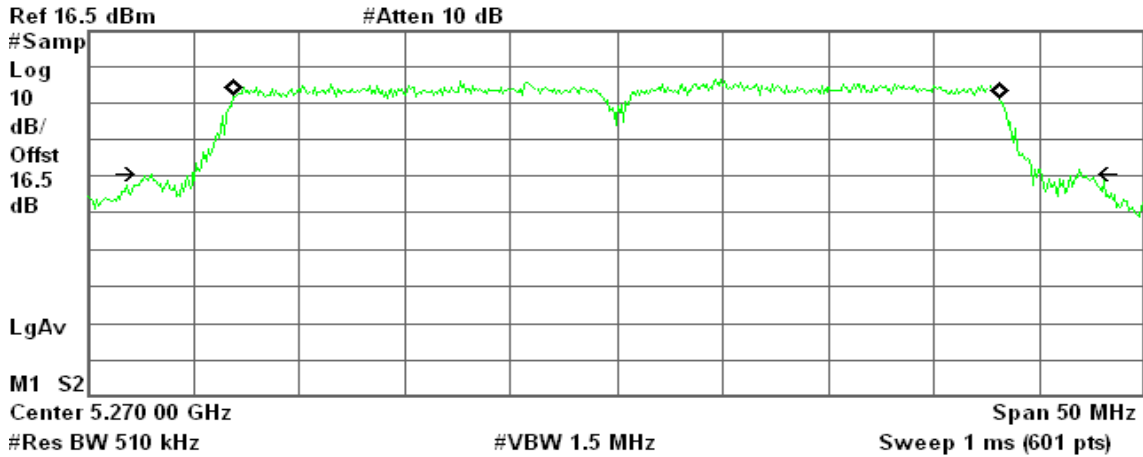


IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

99% Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
36.1659 MHz

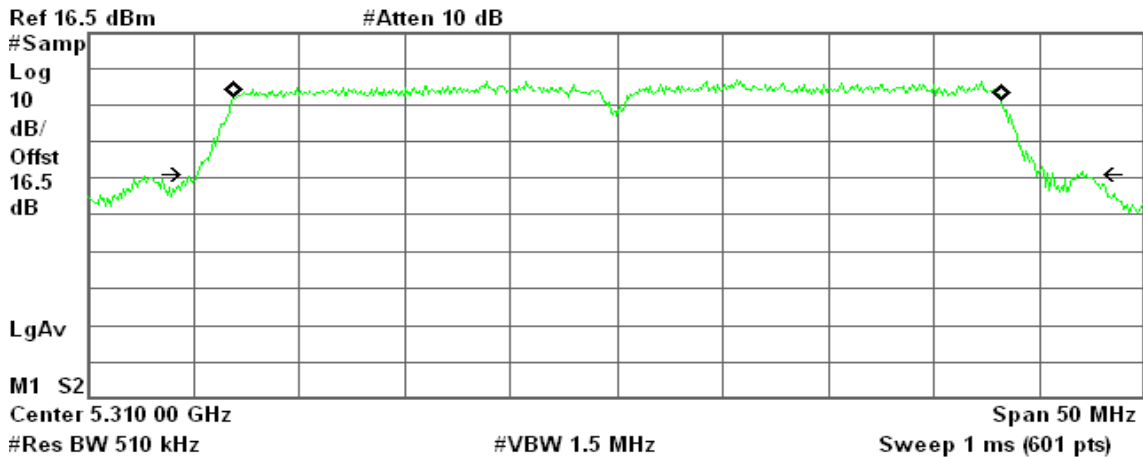
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 5.093 kHz
x dB Bandwidth 43.982 MHz*

99% Bandwidth (CH High)

Agilent

R T



Occupied Bandwidth
36.1934 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 37.769 kHz
x dB Bandwidth 42.045 MHz*

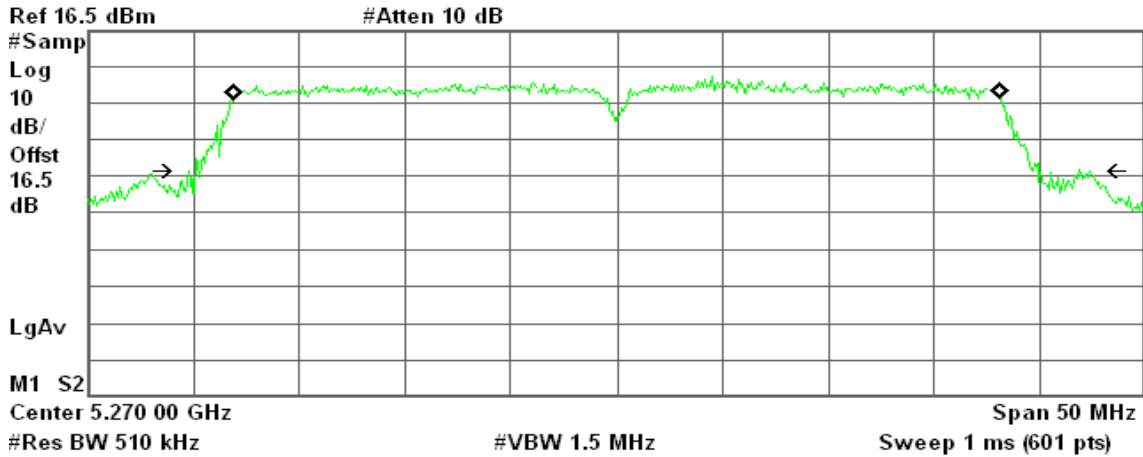


IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

99% Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
36.2137 MHz

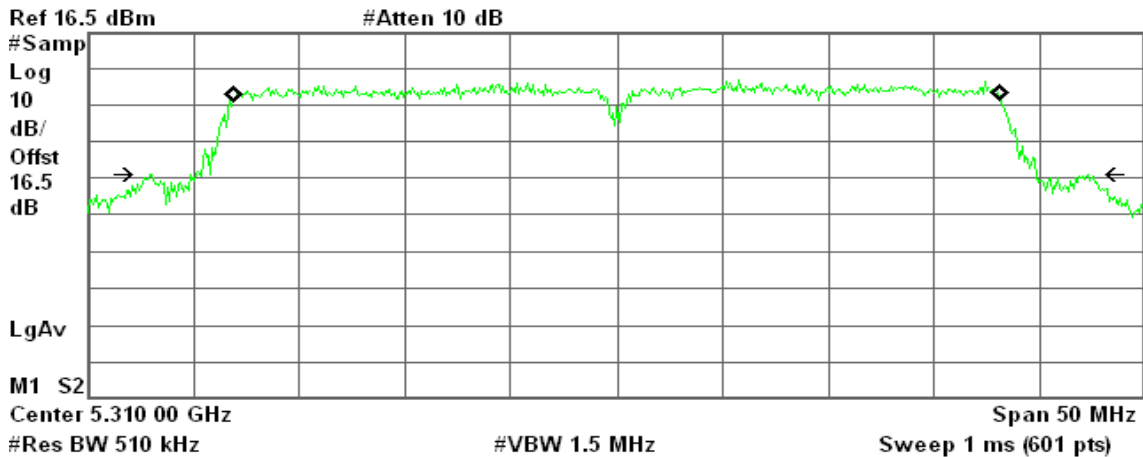
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 15.418 kHz
x dB Bandwidth 42.700 MHz*

99% Bandwidth (CH High)

Agilent

R T



Occupied Bandwidth
36.2172 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 9.365 kHz
x dB Bandwidth 44.418 MHz*

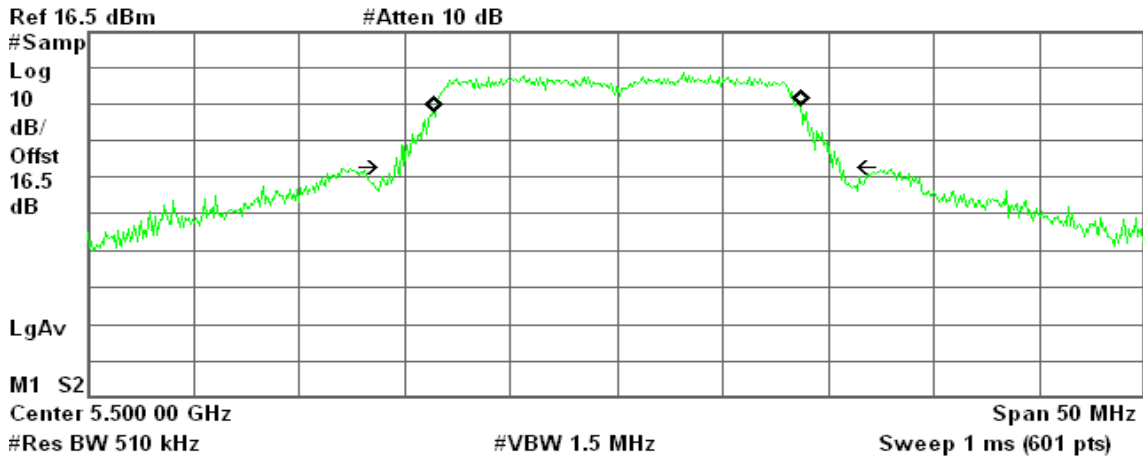


Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

99% Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
17.2852 MHz

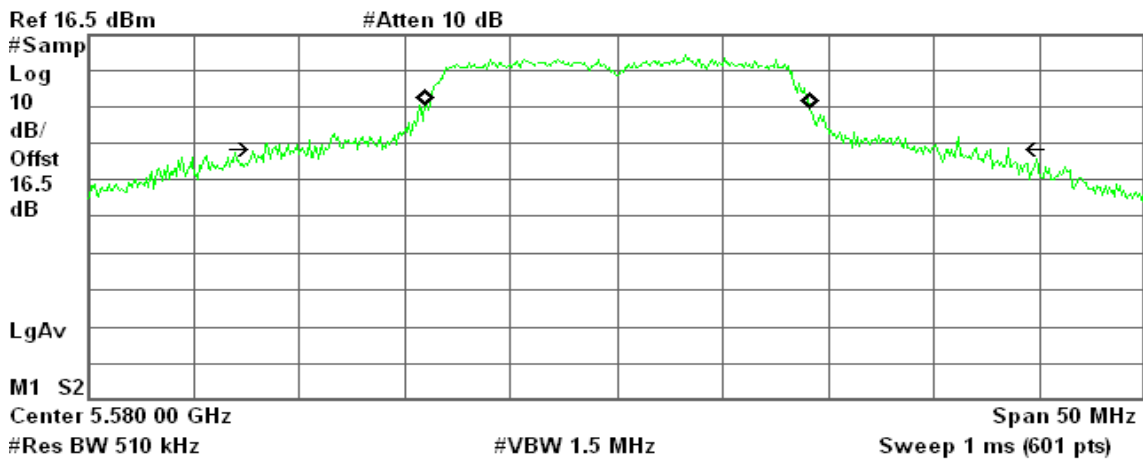
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 41.555 kHz
x dB Bandwidth 21.080 MHz*

99% Bandwidth (CH Mid)

Agilent

R T



Occupied Bandwidth
18.1166 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

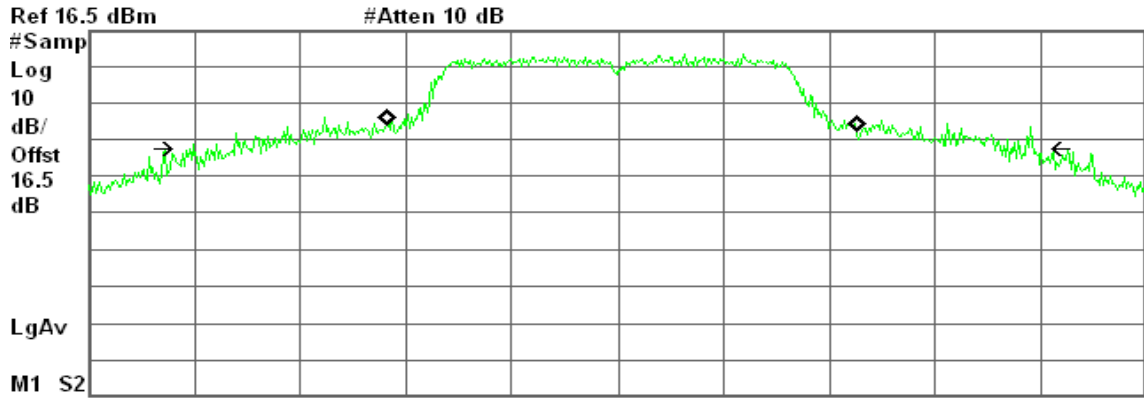
Transmit Freq Error 44.538 kHz
x dB Bandwidth 35.120 MHz*



99% Bandwidth (CH High)

Agilent

R T



Occupied Bandwidth
22.2055 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

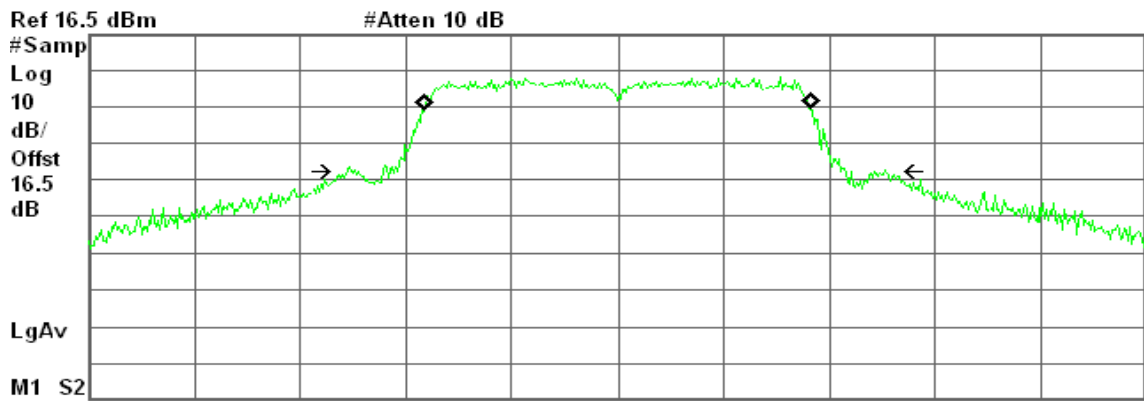
Transmit Freq Error 207.598 kHz
x dB Bandwidth 39.893 MHz*

IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

99% Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
18.1202 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

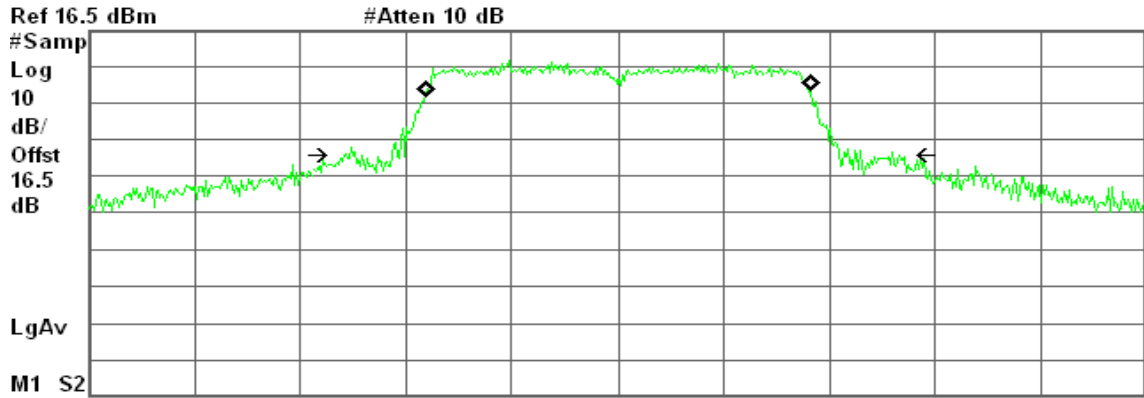
Transmit Freq Error -3.488 kHz
x dB Bandwidth 25.470 MHz*



99% Bandwidth (CH Mid)

Agilent

R T



Center 5.580 00 GHz Span 50 MHz
 #Res BW 510 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
 18.1181 MHz

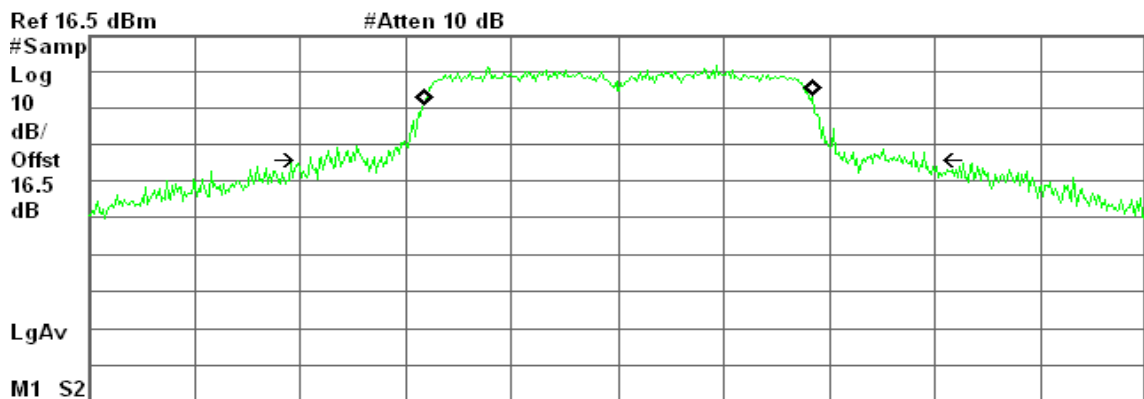
Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error 29.419 kHz
 x dB Bandwidth 26.274 MHz*

99% Bandwidth (CH High)

Agilent

R T



Center 5.700 00 GHz Span 50 MHz
 #Res BW 510 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
 18.2658 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error 37.154 kHz
 x dB Bandwidth 29.076 MHz*

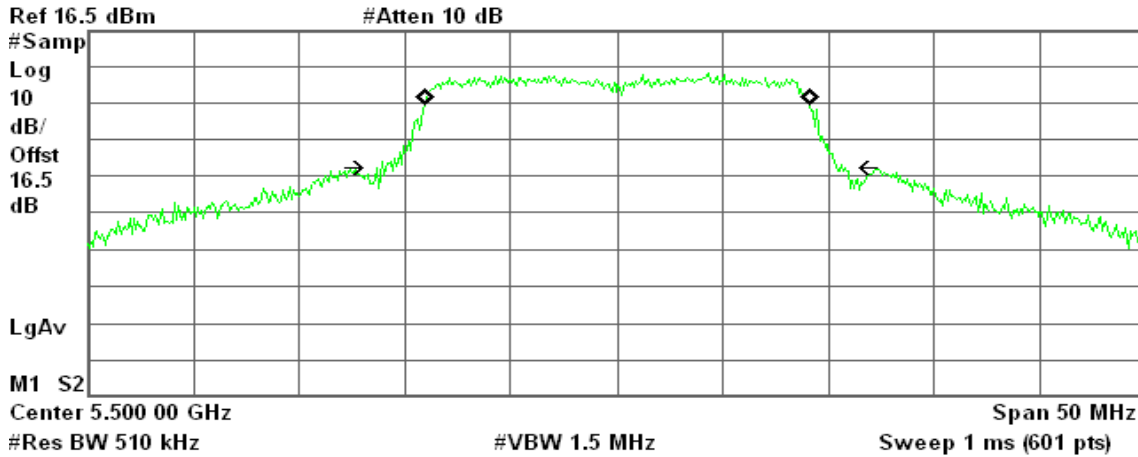


IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

99% Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
18.0456 MHz

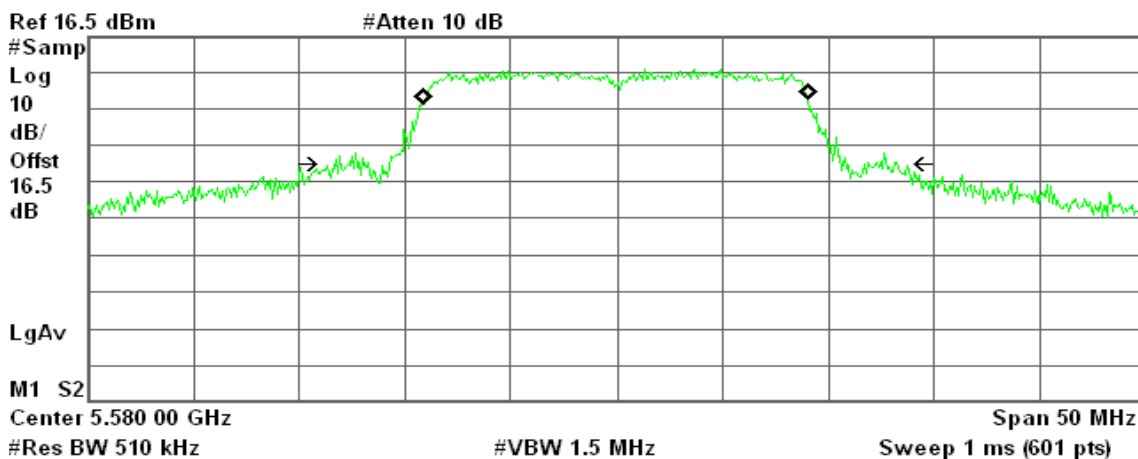
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 42.027 kHz
x dB Bandwidth 21.828 MHz*

99% Bandwidth (CH Mid)

Agilent

R T



Occupied Bandwidth
18.0661 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

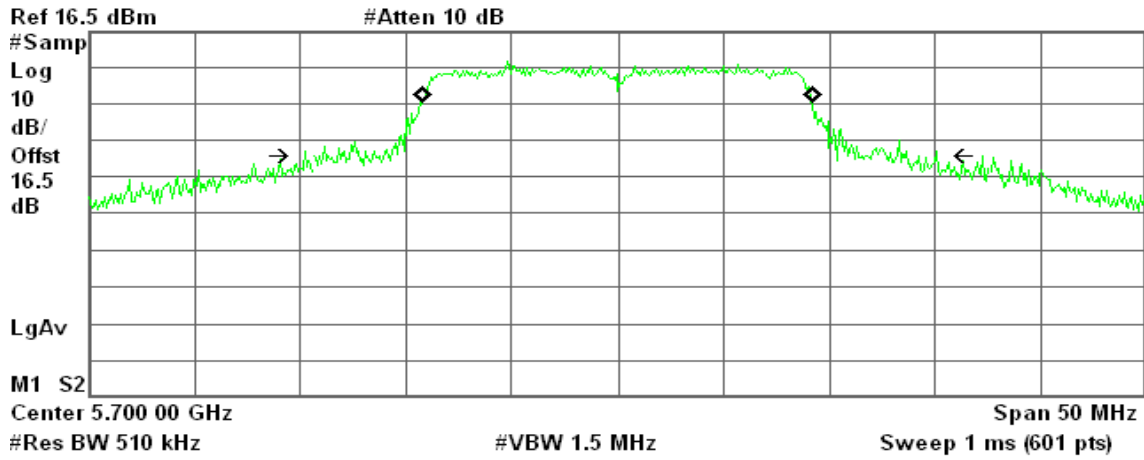
Transmit Freq Error -33.670 kHz
x dB Bandwidth 26.575 MHz*



99% Bandwidth (CH High)

Agilent

R T



Occupied Bandwidth
18.3282 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

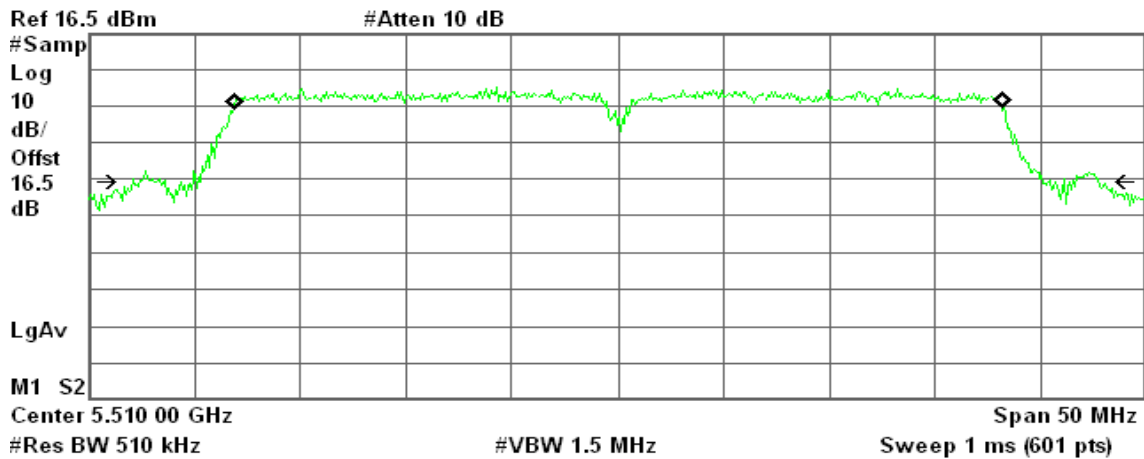
Transmit Freq Error -25.712 kHz
x dB Bandwidth 29.890 MHz*

IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 0

99% Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
36.2526 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

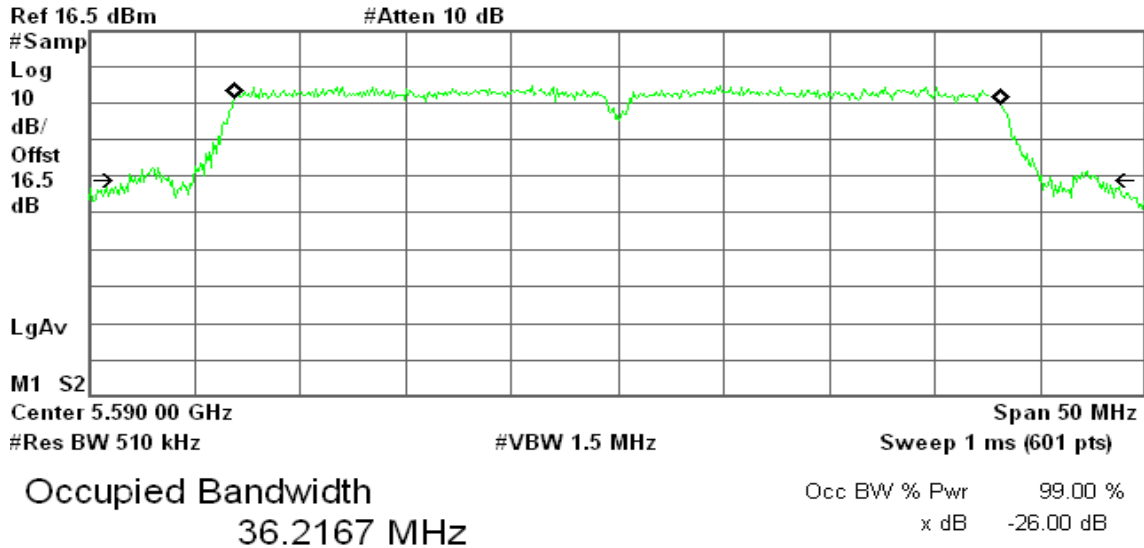
Transmit Freq Error 5.975 kHz
x dB Bandwidth 45.724 MHz*



99% Bandwidth (CH Mid)

Agilent

R T

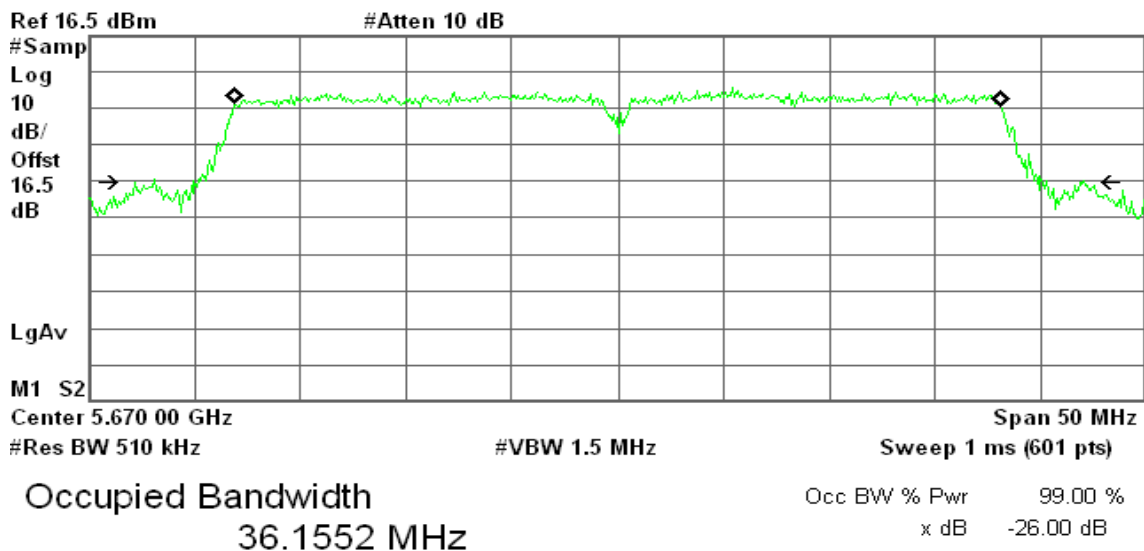


Transmit Freq Error 5.084 kHz
x dB Bandwidth 45.907 MHz*

99% Bandwidth (CH High)

Agilent

R T



Transmit Freq Error 25.980 kHz
x dB Bandwidth 44.941 MHz*

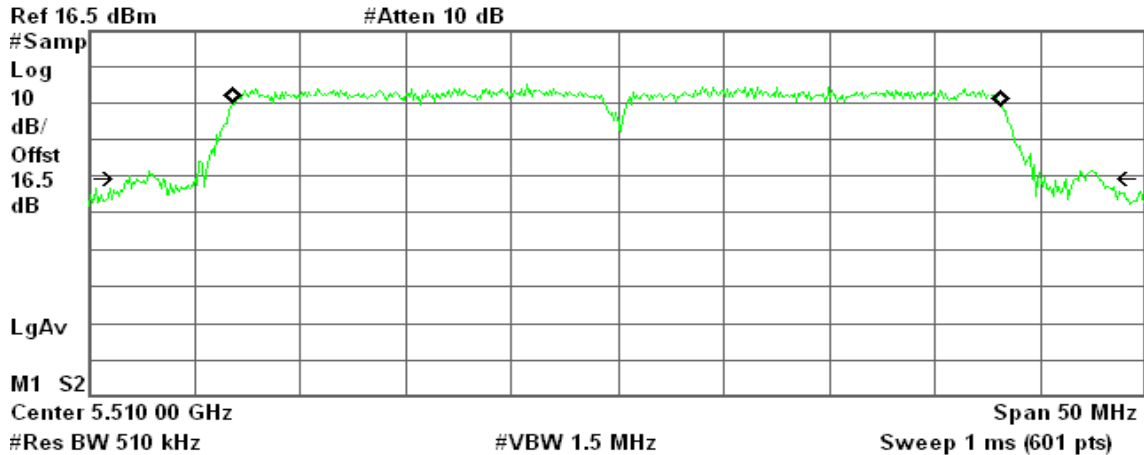


IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 1

99% Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
36.2534 MHz

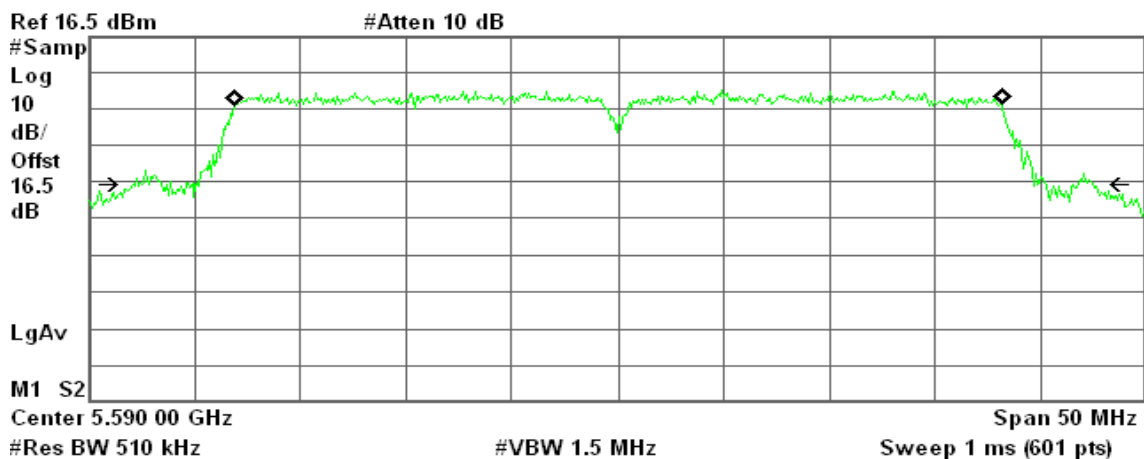
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -16.659 kHz
x dB Bandwidth 45.944 MHz*

99% Bandwidth (CH Mid)

Agilent

R T



Occupied Bandwidth
36.2132 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

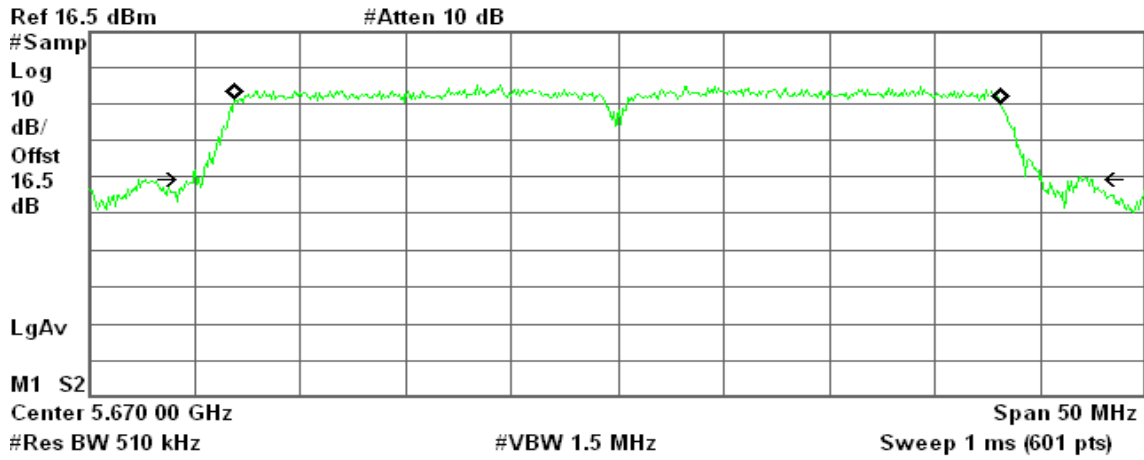
Transmit Freq Error 26.210 kHz
x dB Bandwidth 45.342 MHz*



99% Bandwidth (CH High)

Agilent

R T



Occupied Bandwidth
36.1717 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 18.491 kHz
x dB Bandwidth 42.331 MHz*

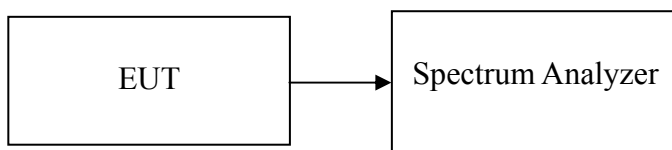


8.3 26 dB EMISSION BANDWIDTH

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 (B) (MHz)
Low	5180	20.257
Mid	5220	25.204
High	5240	20.020

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	25.136
Mid	5220	20.698
High	5240	20.751

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5180	22.861
Mid	5220	19.557
High	5240	20.487

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5190	44.821
High	5230	42.039

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5190	44.821
High	5230	42.039



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

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5260	22.848
Mid	5280	22.678
High	5320	22.256

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5260	20.724
Mid	5280	20.560
High	5320	22.627

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5260	20.605
Mid	5280	23.103
High	5320	25.616

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5270	41.829
High	5310	42.462

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (B) (MHz)
Low	5270	44.475
High	5310	44.777



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

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	22.527
Mid	5580	20.712
High	5700	23.491

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	20.168
Mid	5580	22.820
High	5700	22.797

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5500	25.155
Mid	5580	22.694
High	5700	22.817

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	39.794
Mid	5590	42.047
High	5670	42.292

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	5510	44.548
Mid	5590	44.291
High	5670	47.801



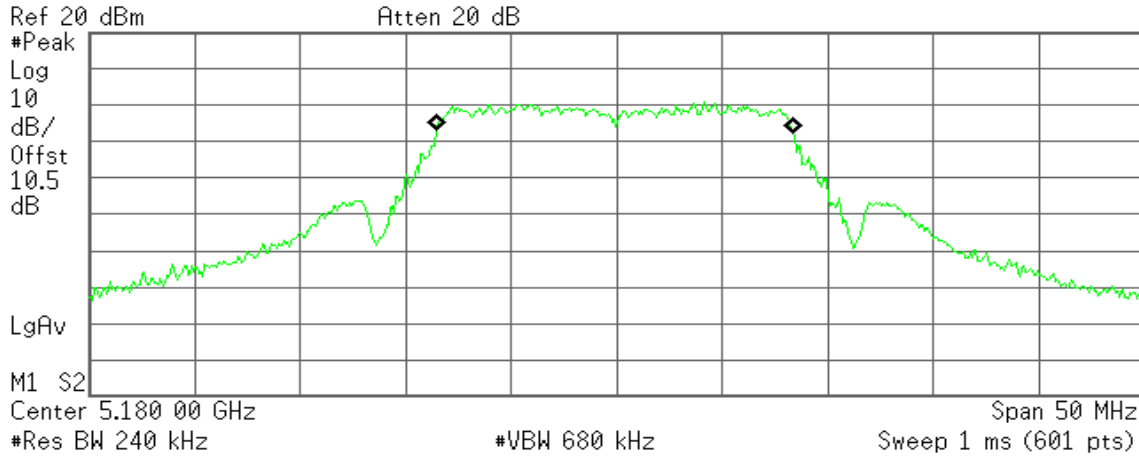
Test Plot

IEEE 802.11a for 5180 ~ 5240MHz

CH Low

Agilent 14:29:45 Dec 20, 2011

R T



Occupied Bandwidth
16.8698 MHz

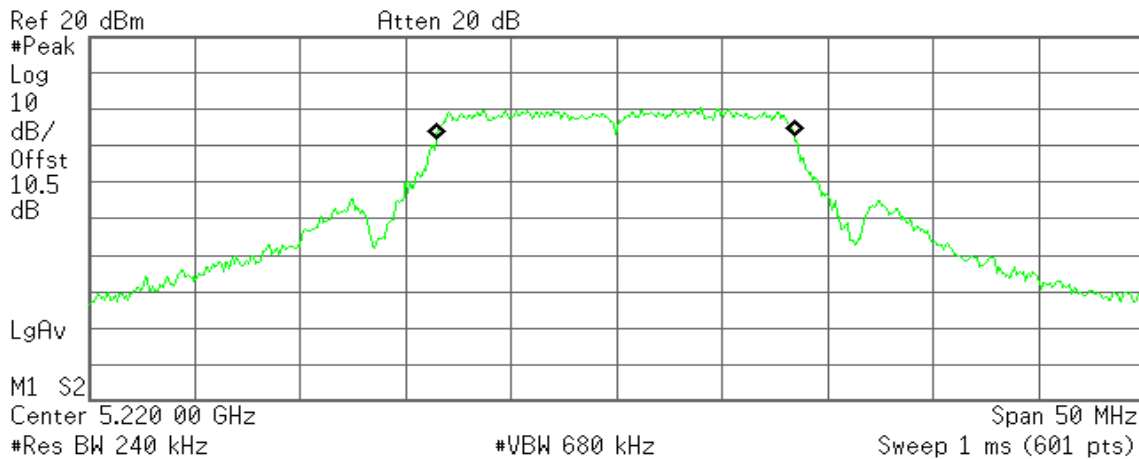
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -79.332 kHz
x dB Bandwidth 20.257 MHz

CH Mid

Agilent 14:35:51 Dec 20, 2011

R T



Occupied Bandwidth
16.8959 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

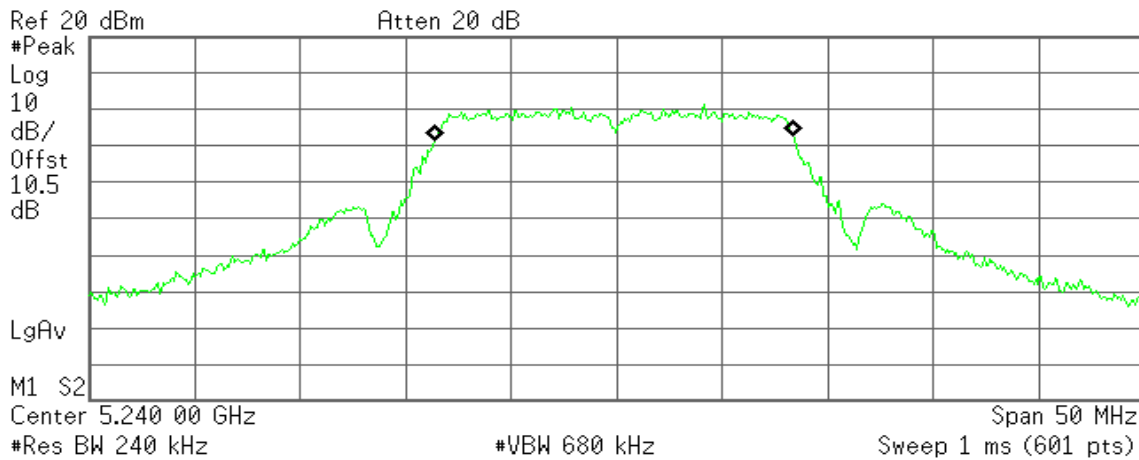
Transmit Freq Error -58.690 kHz
x dB Bandwidth 25.204 MHz



CH High

Agilent 14:40:22 Dec 20, 2011

R T



Occupied Bandwidth
16.9804 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

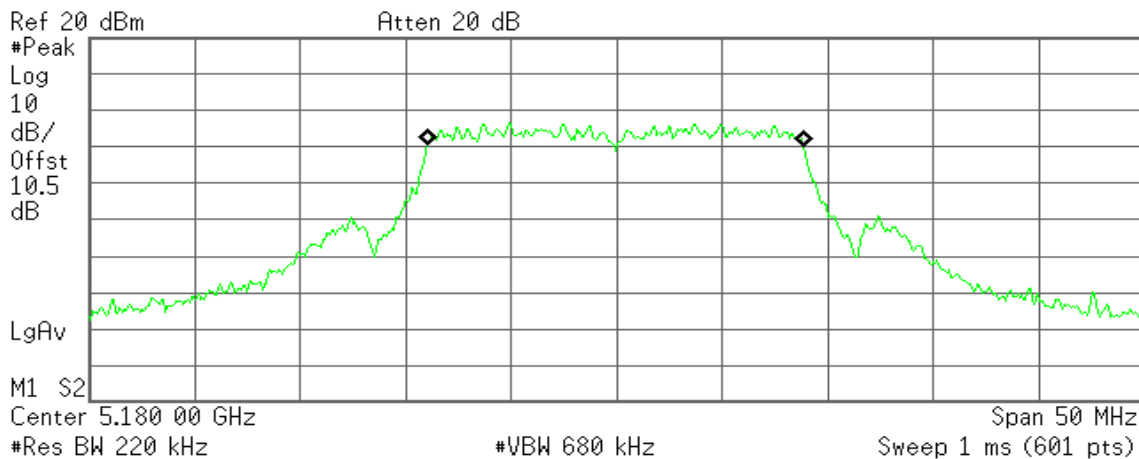
Transmit Freq Error -116.255 kHz
x dB Bandwidth 20.020 MHz

IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

CH Low

Agilent 15:21:11 Dec 20, 2011

R T



Occupied Bandwidth
17.7694 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

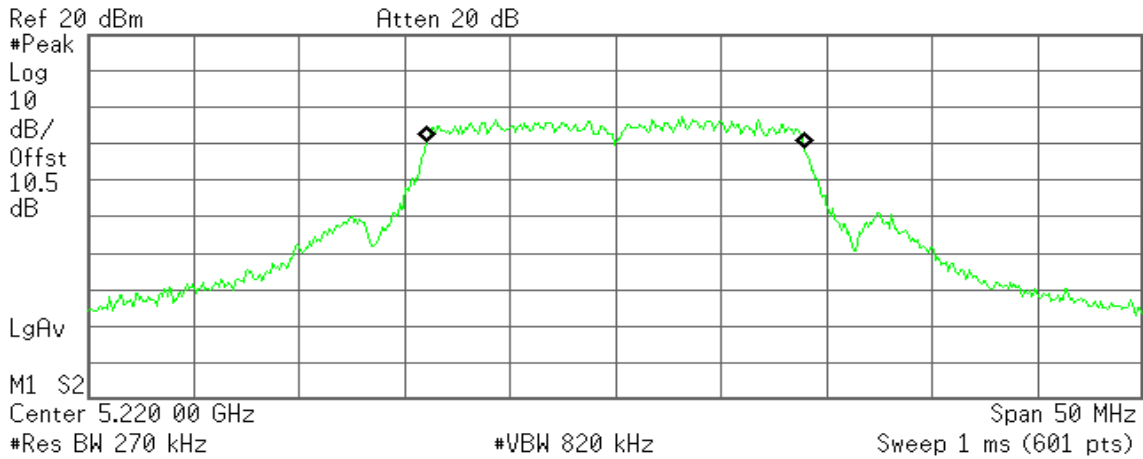
Transmit Freq Error -53.802 kHz
x dB Bandwidth 25.136 MHz



CH Mid

Agilent 15:25:41 Dec 20, 2011

R T



Occupied Bandwidth
17.8116 MHz

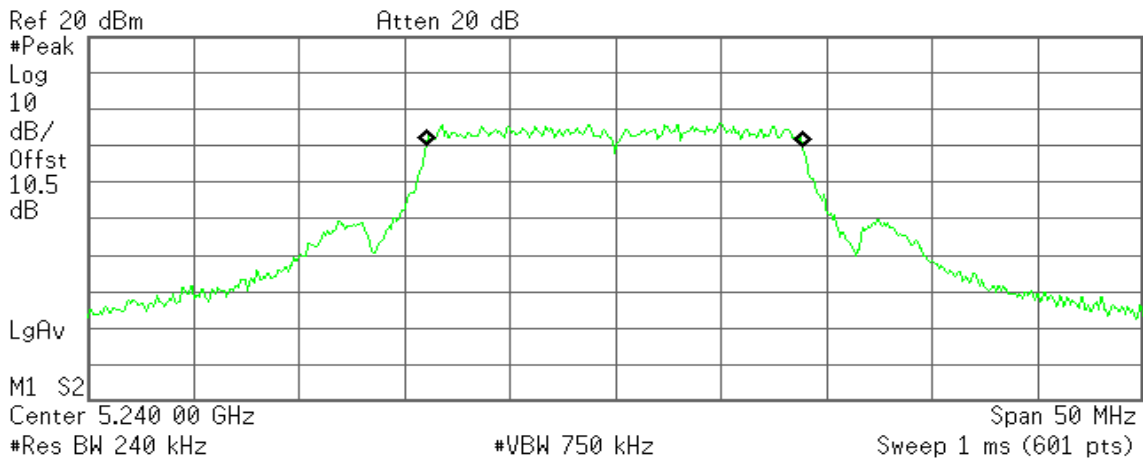
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -25.353 kHz
x dB Bandwidth 20.698 MHz

CH High

Agilent 15:29:16 Dec 20, 2011

R T



Occupied Bandwidth
17.7652 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -44.938 kHz
x dB Bandwidth 20.751 MHz

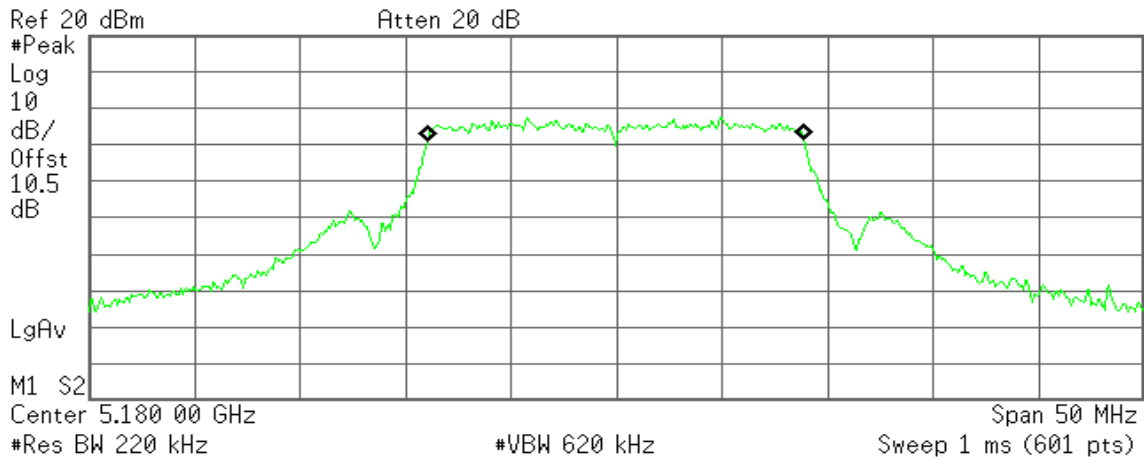


IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

CH Low

Agilent 17:59:20 Dec 20, 2011

R T



Occupied Bandwidth
17.7772 MHz

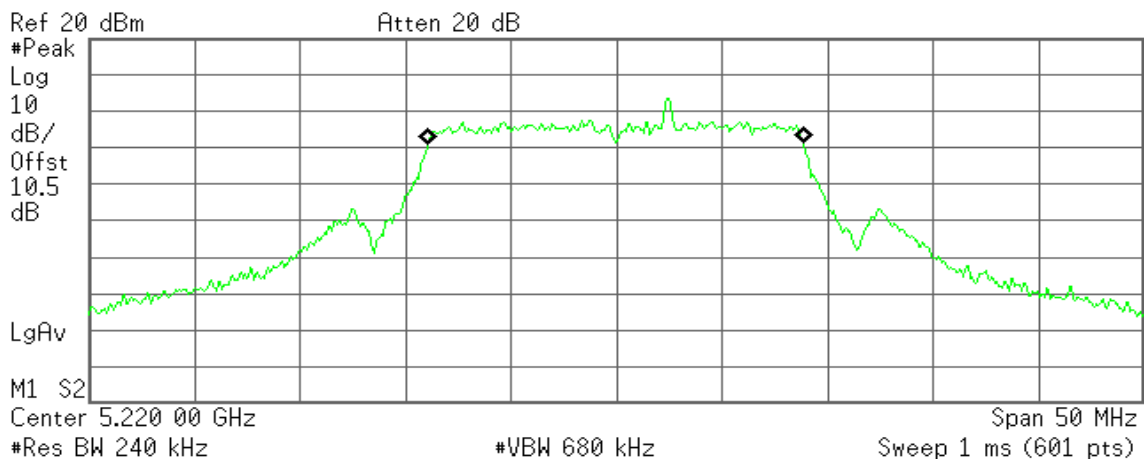
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -36.419 kHz
x dB Bandwidth 22.861 MHz

CH Mid

Agilent 18:05:58 Dec 20, 2011

R T



Occupied Bandwidth
17.7027 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

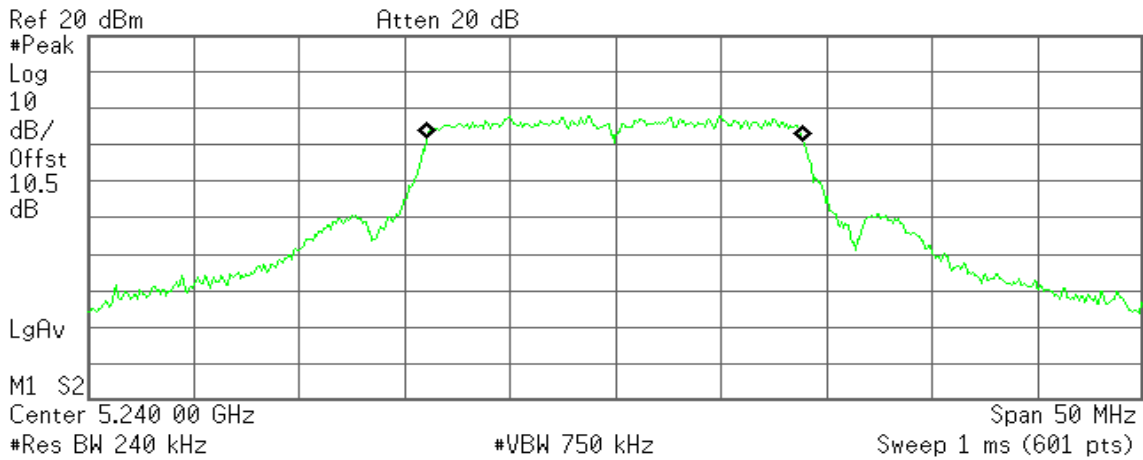
Transmit Freq Error -47.426 kHz
x dB Bandwidth 19.557 MHz



CH High

Agilent 18:13:51 Dec 20, 2011

R T



Occupied Bandwidth
17.7660 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

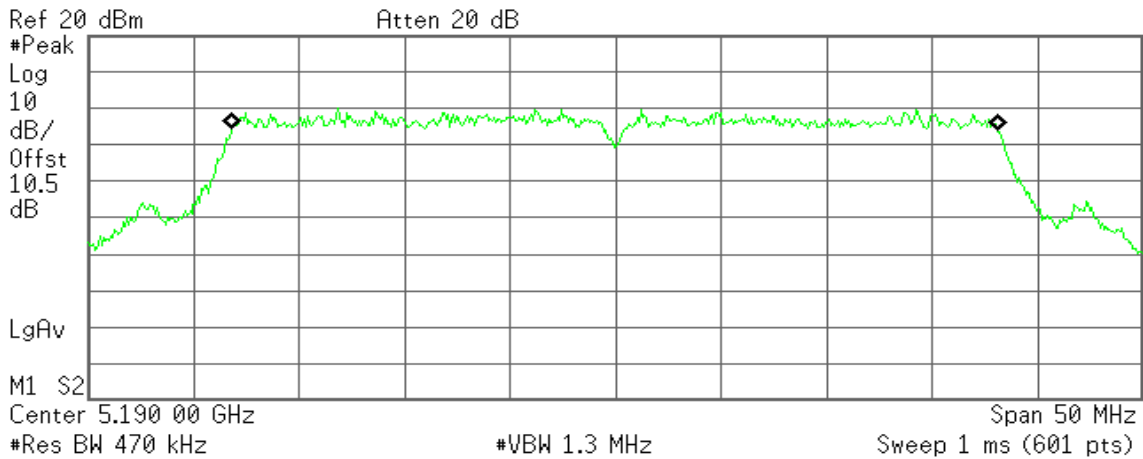
Transmit Freq Error -24.488 kHz
x dB Bandwidth 20.487 MHz

IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

CH Low

Agilent 16:06:11 Dec 20, 2011

R T



Occupied Bandwidth
36.2013 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

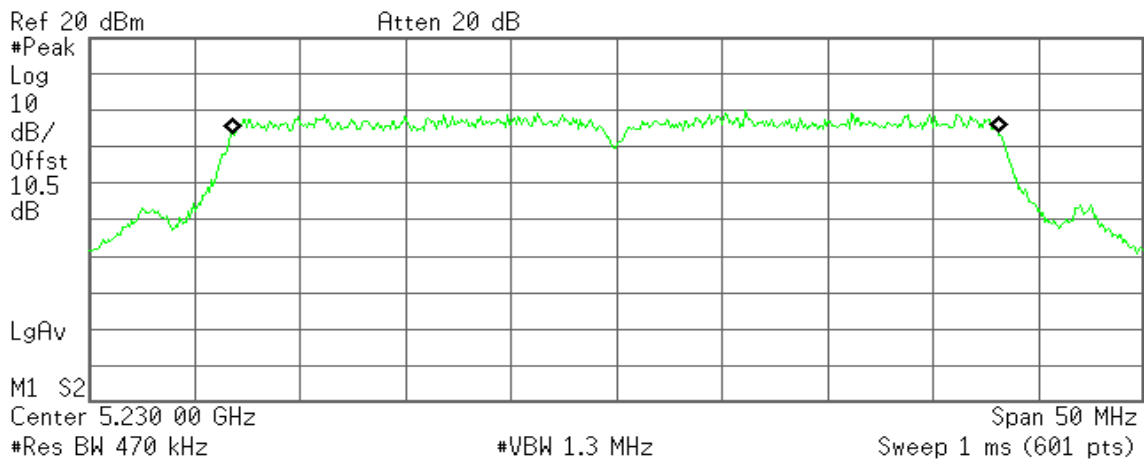
Transmit Freq Error -32.407 kHz
x dB Bandwidth 44.821 MHz



CH High

Agilent 16:17:44 Dec 20, 2011

R T



Occupied Bandwidth
36.1936 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

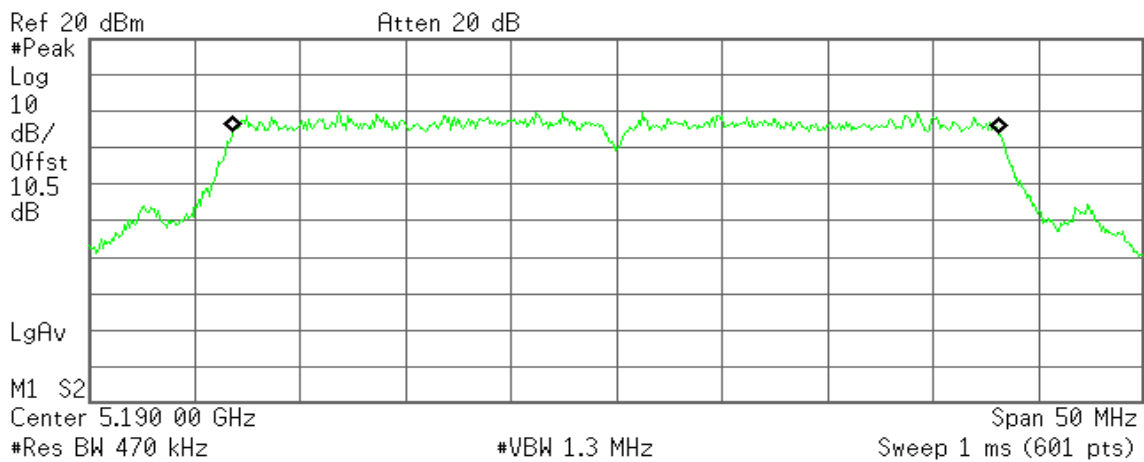
Transmit Freq Error -45.190 kHz
x dB Bandwidth 42.039 MHz

IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

CH Low

Agilent 16:06:11 Dec 20, 2011

R T



Occupied Bandwidth
36.2013 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

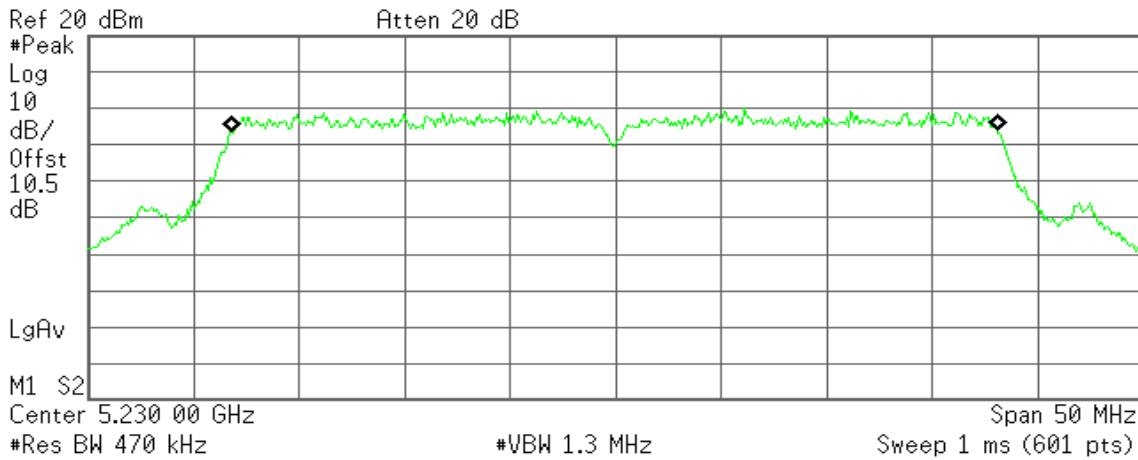
Transmit Freq Error -32.407 kHz
x dB Bandwidth 44.821 MHz



CH High

Agilent 16:17:44 Dec 20, 2011

R T



Occupied Bandwidth
36.1936 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

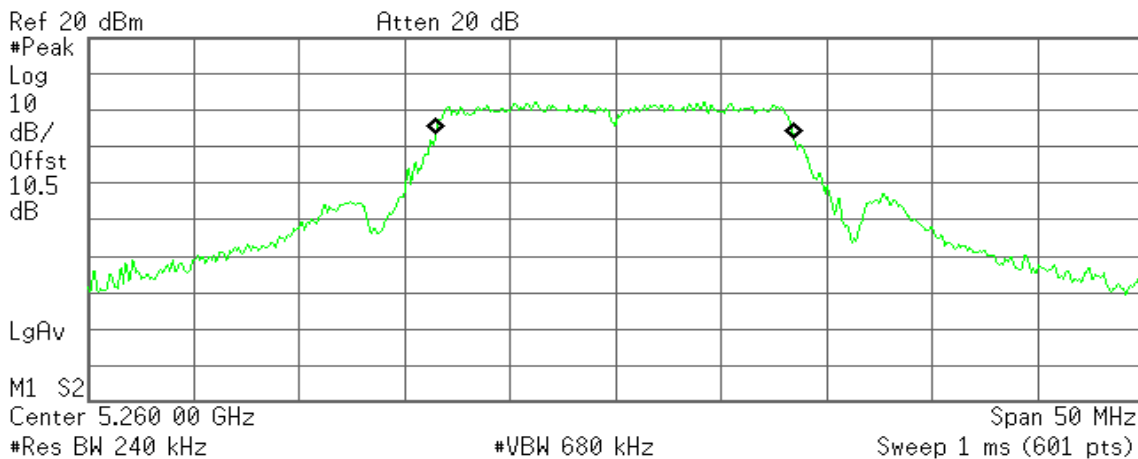
Transmit Freq Error -45.190 kHz
x dB Bandwidth 42.039 MHz

IEEE 802.11a mode / 5260 ~ 5320MHz

CH Low

Agilent 14:48:45 Dec 20, 2011

R T



Occupied Bandwidth
16.8852 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

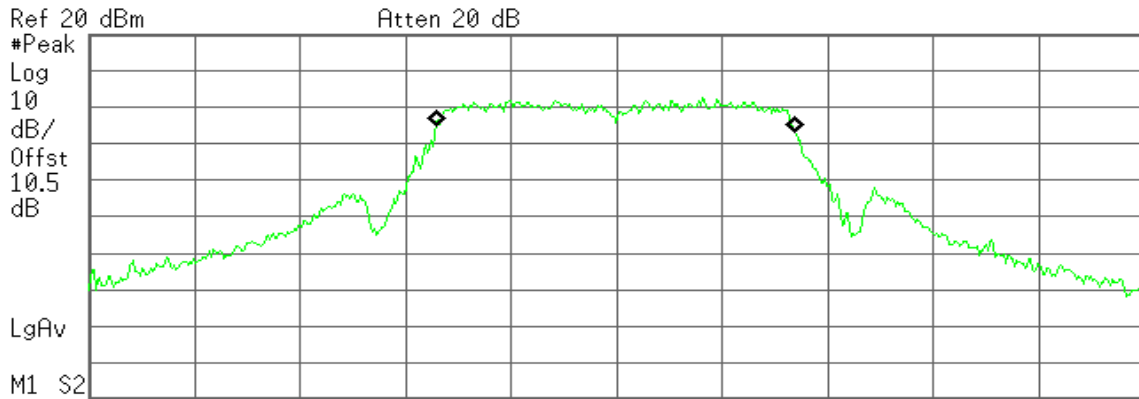
Transmit Freq Error -36.765 kHz
x dB Bandwidth 22.848 MHz



CH Mid

Agilent 14:51:19 Dec 20, 2011

R T



Center 5.280 00 GHz Span 50 MHz
#Res BW 240 kHz #VBW 680 kHz Sweep 1 ms (601 pts)

Occupied Bandwidth
16.9396 MHz

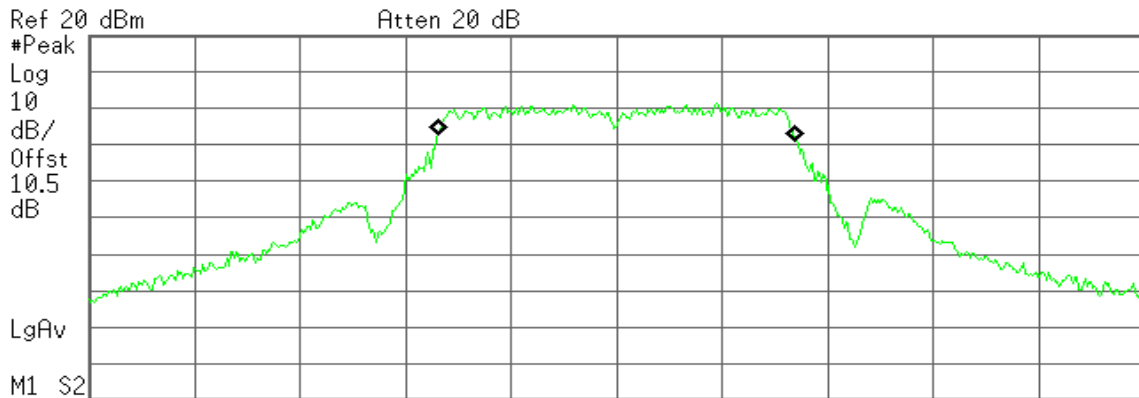
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -58.526 kHz
x dB Bandwidth 22.678 MHz

CH High

Agilent 14:54:33 Dec 20, 2011

R T



Center 5.320 00 GHz Span 50 MHz
#Res BW 240 kHz #VBW 680 kHz Sweep 1 ms (601 pts)

Occupied Bandwidth
16.8583 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -8.347 kHz
x dB Bandwidth 22.256 MHz

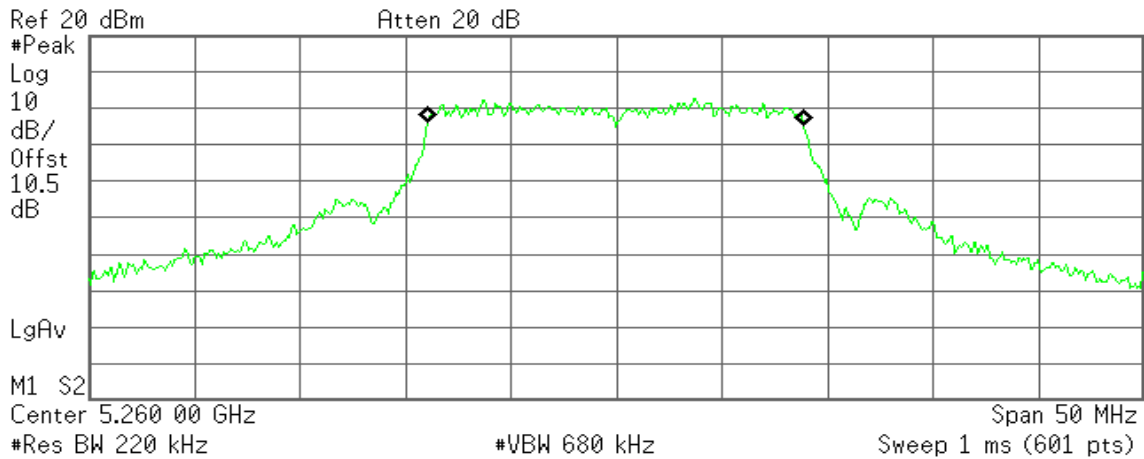


IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

CH Low

Agilent 15:33:58 Dec 20, 2011

R T



Occupied Bandwidth
17.7419 MHz

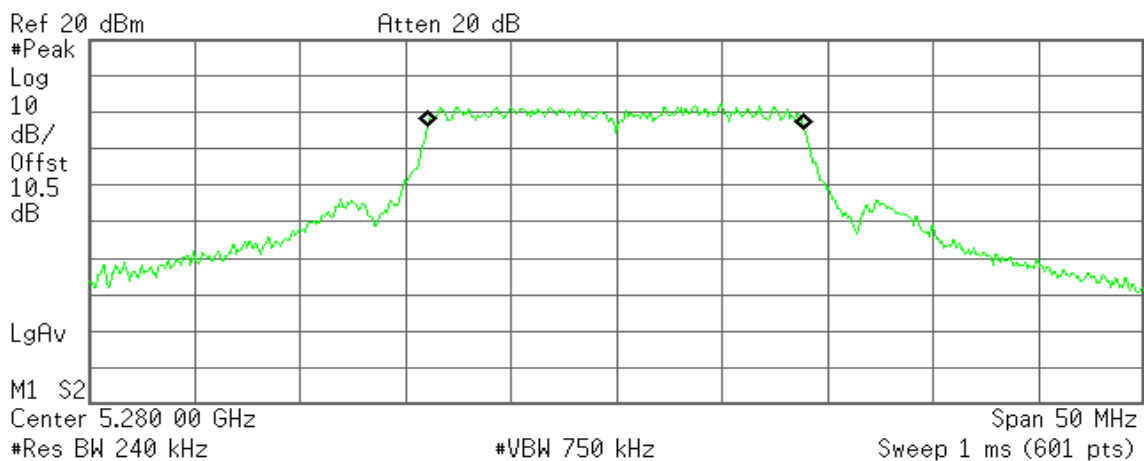
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -31.885 kHz
x dB Bandwidth 20.724 MHz

CH Mid

Agilent 15:37:31 Dec 20, 2011

R T



Occupied Bandwidth
17.7994 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

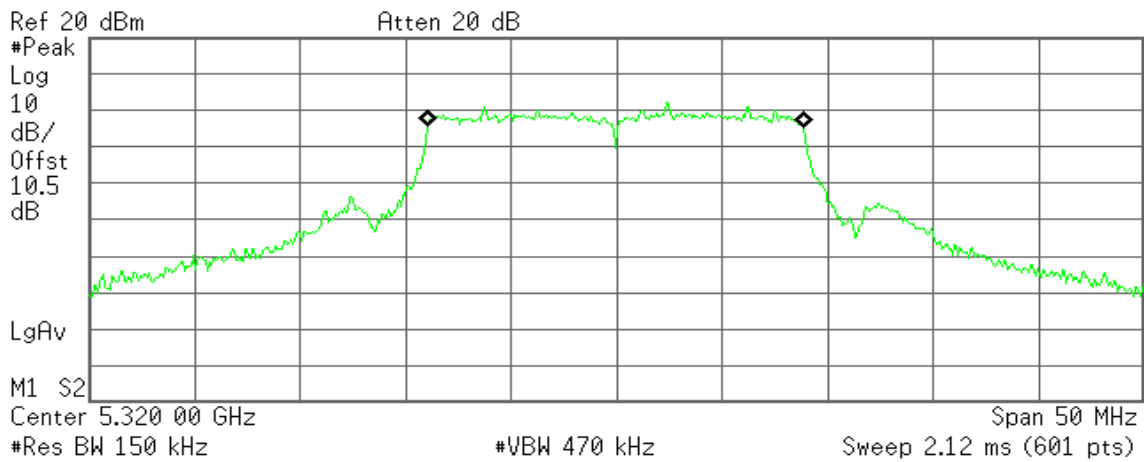
Transmit Freq Error -33.284 kHz
x dB Bandwidth 20.560 MHz



CH High

Agilent 15:40:46 Dec 20, 2011

R T



Occupied Bandwidth
17.7161 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

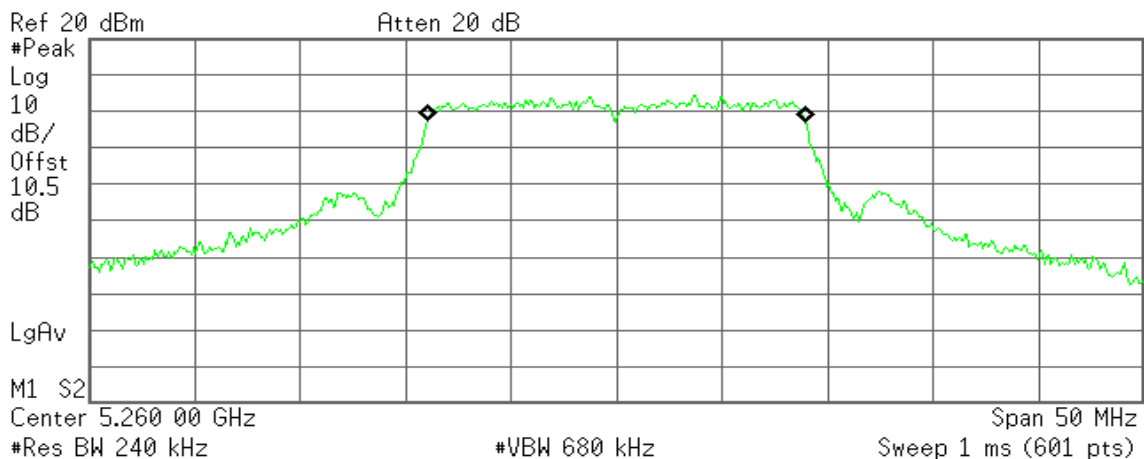
Transmit Freq Error -43.104 kHz
x dB Bandwidth 22.627 MHz

IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

CH Low

Agilent 18:20:09 Dec 20, 2011

R T



Occupied Bandwidth
17.8353 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

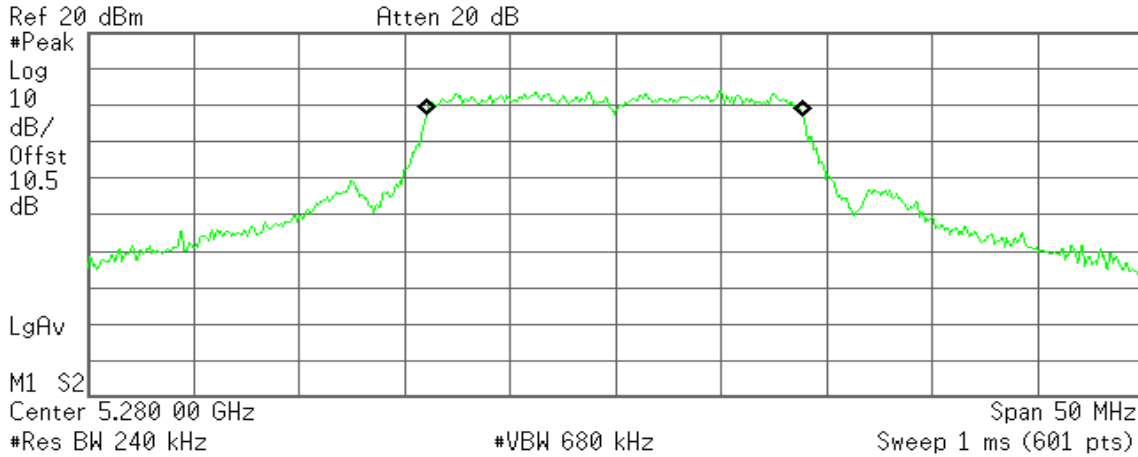
Transmit Freq Error -21.406 kHz
x dB Bandwidth 20.605 MHz



CH Mid

Agilent 18:23:59 Dec 20, 2011

R T



Occupied Bandwidth
17.7868 MHz

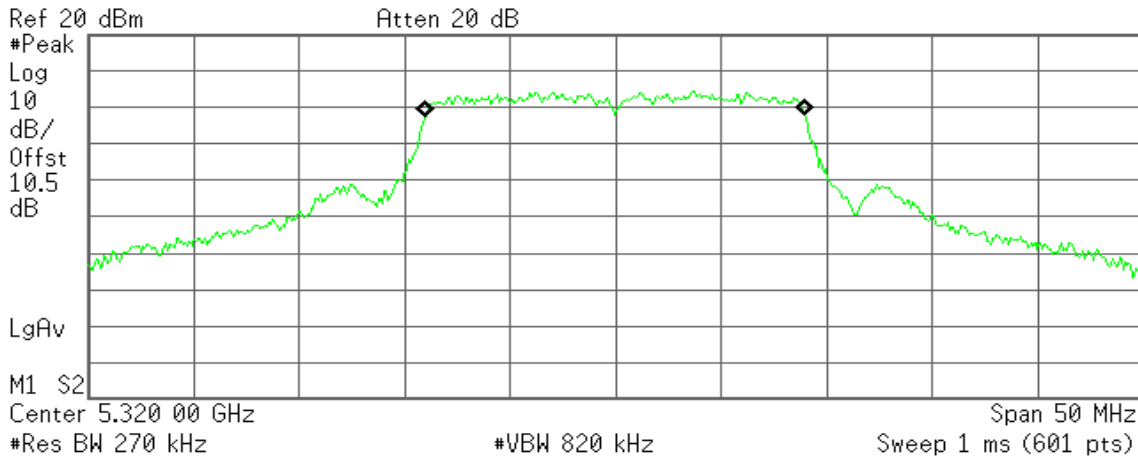
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -37.917 kHz
x dB Bandwidth 23.103 MHz

CH High

Agilent 18:28:31 Dec 20, 2011

R T



Occupied Bandwidth
17.8924 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -20.220 kHz
x dB Bandwidth 25.616 MHz

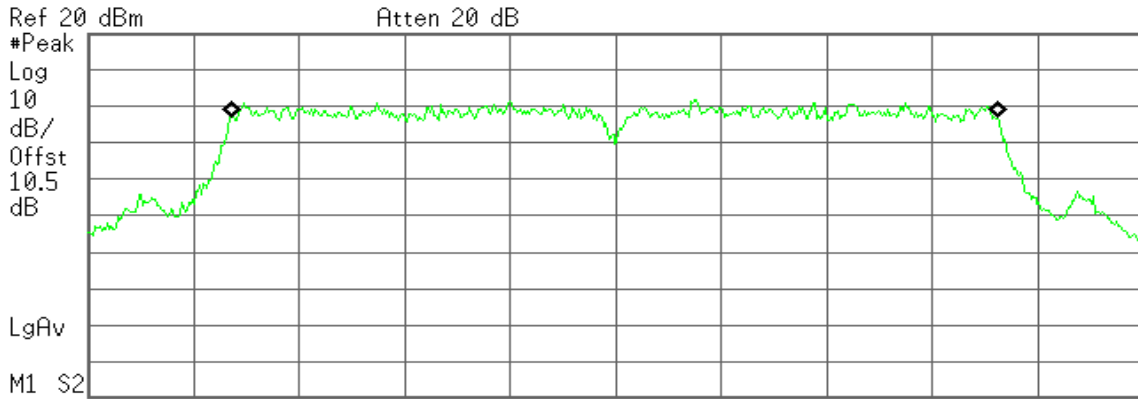


IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

CH Low

Agilent 16:22:04 Dec 20, 2011

R T



Center 5.270 00 GHz Span 50 MHz
 #Res BW 360 kHz #VBW 1.1 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
36.2191 MHz

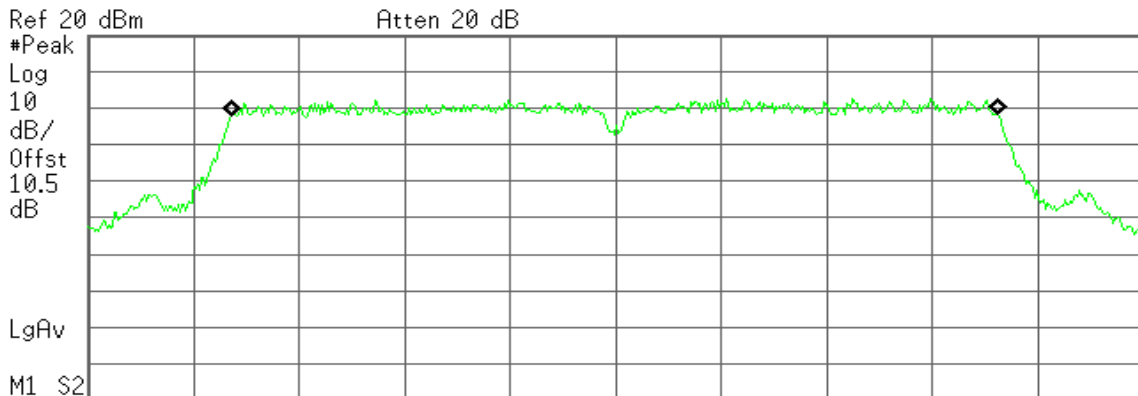
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -62.519 kHz
x dB Bandwidth 41.829 MHz

CH High

Agilent 16:33:23 Dec 20, 2011

R T



Center 5.310 00 GHz Span 50 MHz
 #Res BW 470 kHz #VBW 1.3 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
36.2899 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -29.555 kHz
x dB Bandwidth 42.462 MHz

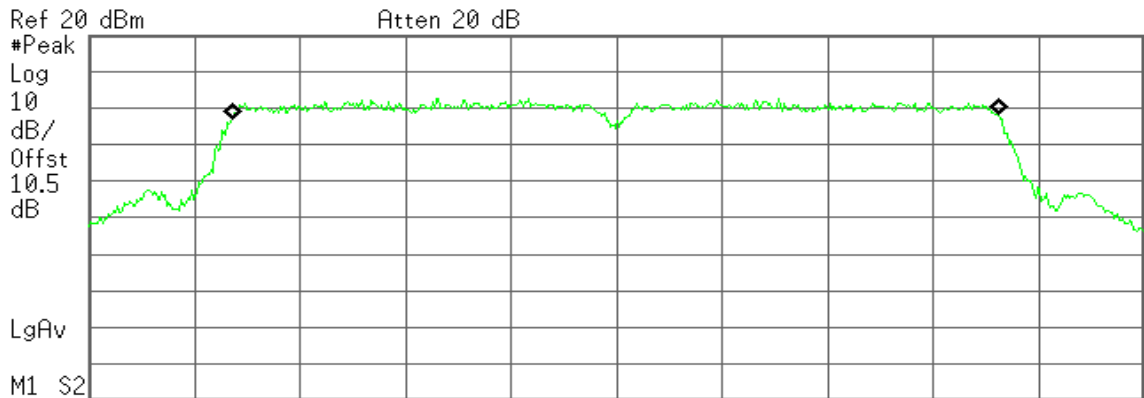


IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

CH Low

Agilent 17:13:27 Dec 20, 2011

R T



Ref 20 dBm Atten 20 dB
#Peak Log 10 dB/ Offst 10.5 dB
LgAv
M1 S2
Center 5.270 00 GHz Span 50 MHz
#Res BW 470 kHz #VBW 1.3 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
36.2982 MHz

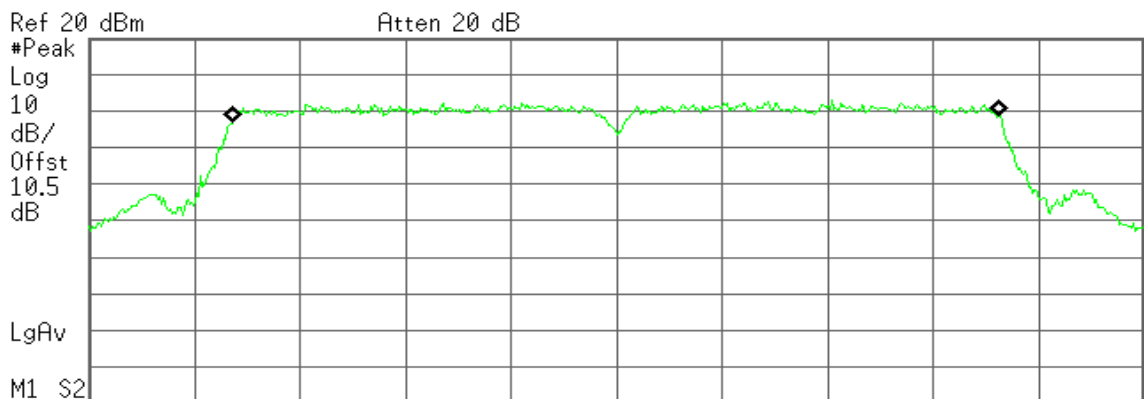
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -48.351 kHz
x dB Bandwidth 44.475 MHz

CH High

Agilent 17:17:46 Dec 20, 2011

R T



Ref 20 dBm Atten 20 dB
#Peak Log 10 dB/ Offst 10.5 dB
LgAv
M1 S2
Center 5.310 00 GHz Span 50 MHz
#Res BW 470 kHz #VBW 1.3 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
36.2542 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -22.792 kHz
x dB Bandwidth 44.777 MHz

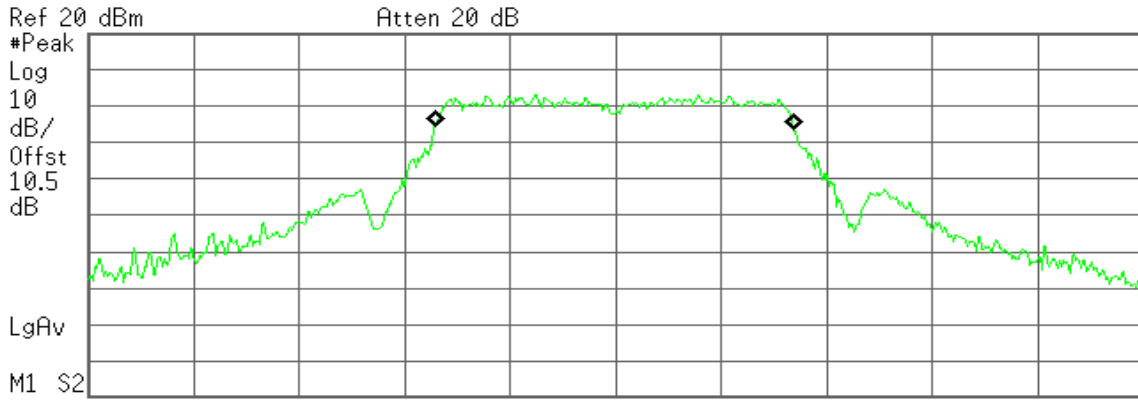


Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

CH Low

Agilent 15:01:48 Dec 20, 2011

R T



Ref 20 dBm Atten 20 dB
M1 S2
Center 5.500 00 GHz Span 50 MHz
#Res BW 240 kHz #VBW 680 kHz Sweep 1 ms (601 pts)

Occupied Bandwidth
16.8932 MHz

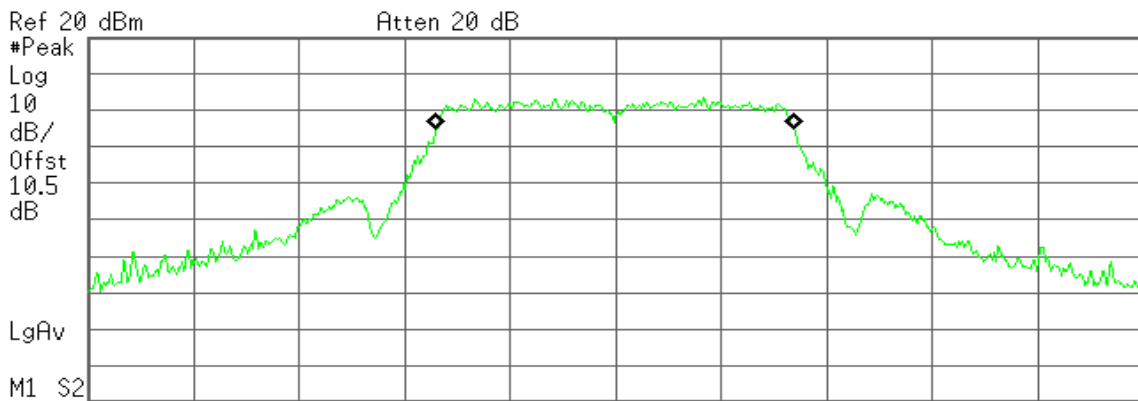
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -43.061 kHz
x dB Bandwidth 22.527 MHz

CH Mid

Agilent 15:07:09 Dec 20, 2011

R T



Ref 20 dBm Atten 20 dB
M1 S2
Center 5.580 00 GHz Span 50 MHz
#Res BW 270 kHz #VBW 820 kHz Sweep 1 ms (601 pts)

Occupied Bandwidth
16.8948 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

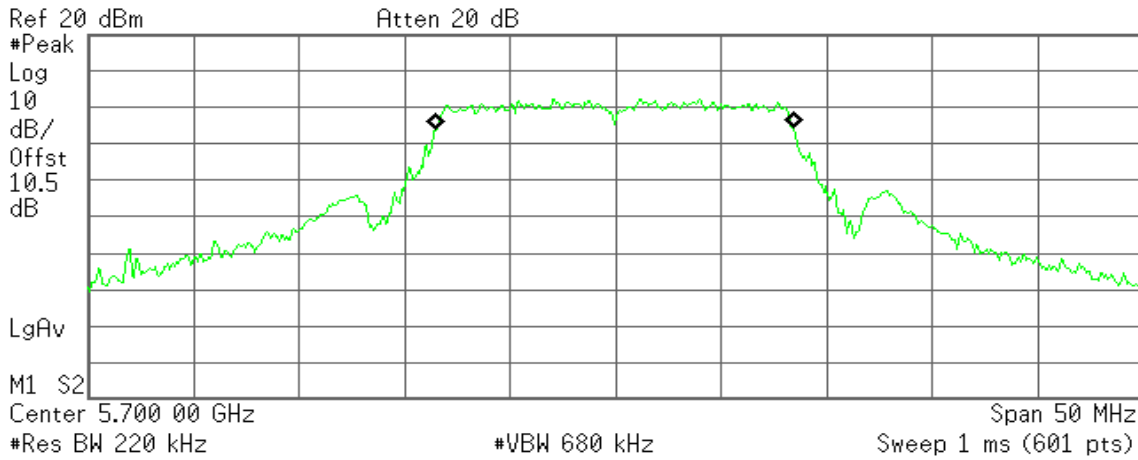
Transmit Freq Error -33.540 kHz
x dB Bandwidth 20.712 MHz



CH High

Agilent 15:12:14 Dec 20, 2011

R T



Occupied Bandwidth
16.8569 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

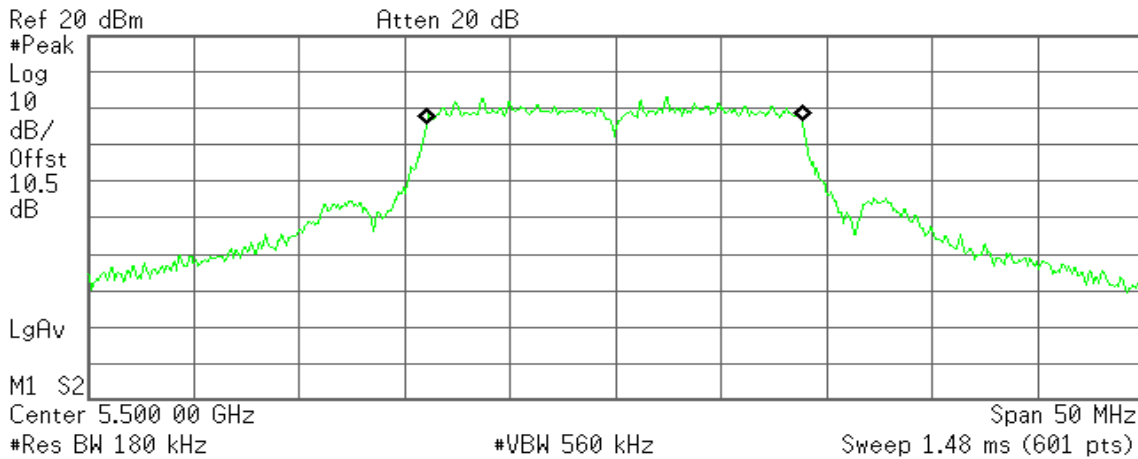
Transmit Freq Error -41.727 kHz
x dB Bandwidth 23.491 MHz

IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

CH Low

Agilent 15:51:23 Dec 20, 2011

R T



Occupied Bandwidth
17.7335 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

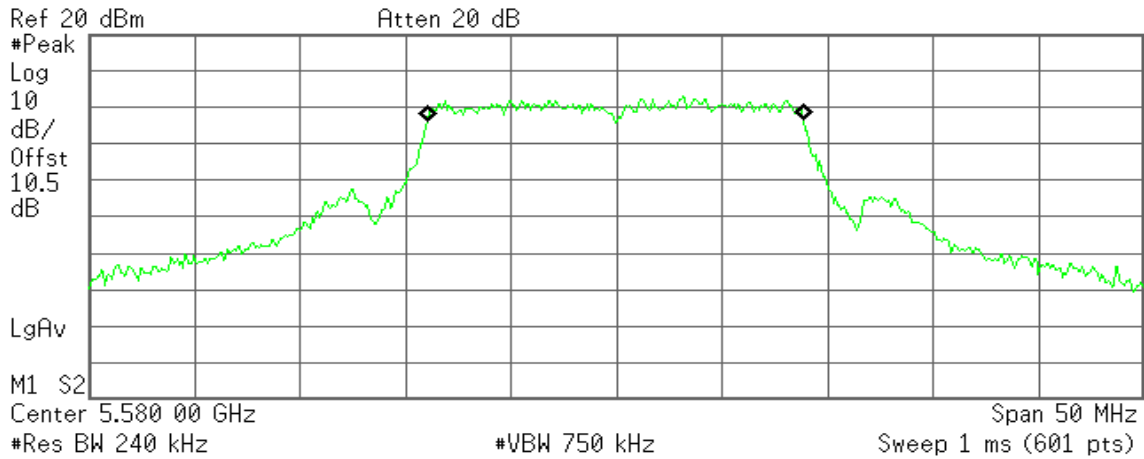
Transmit Freq Error -49.820 kHz
x dB Bandwidth 20.168 MHz



CH Mid

Agilent 15:55:04 Dec 20, 2011

R T



Occupied Bandwidth
17.7689 MHz

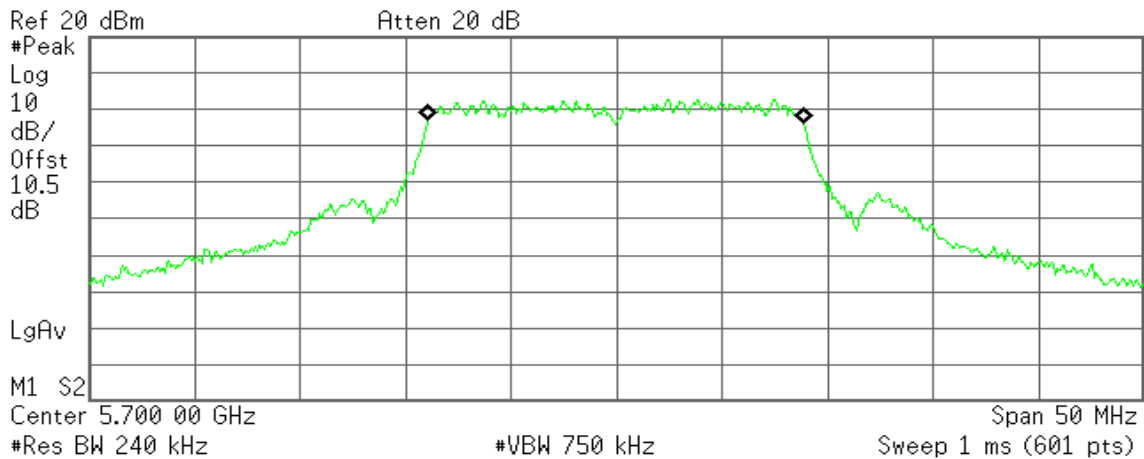
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -44.454 kHz
x dB Bandwidth 22.820 MHz

CH High

Agilent 15:58:26 Dec 20, 2011

R T



Occupied Bandwidth
17.7550 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -49.408 kHz
x dB Bandwidth 22.797 MHz

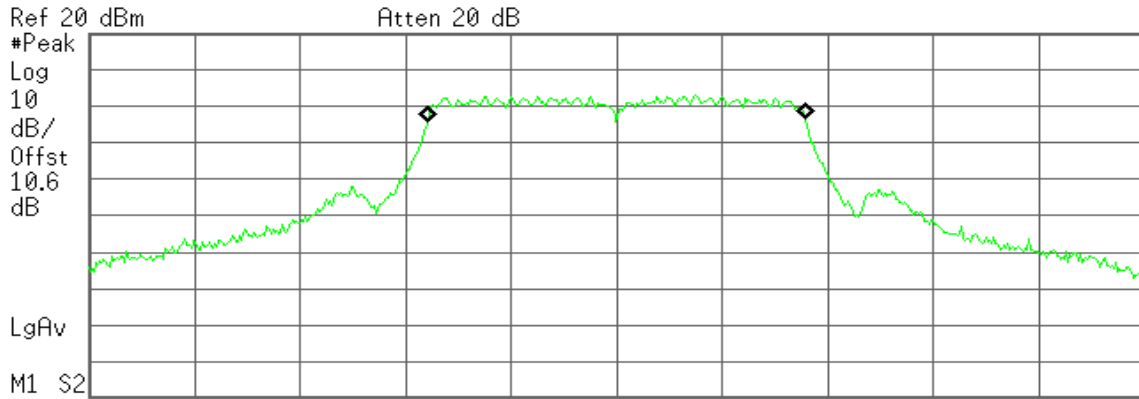


IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

CH Low

Agilent 19:15:30 Dec 20, 2011

R T



Center 5.500 00 GHz Span 50 MHz
 #Res BW 240 kHz #VBW 750 kHz Sweep 20 ms (601 pts)

Occupied Bandwidth
17.7930 MHz

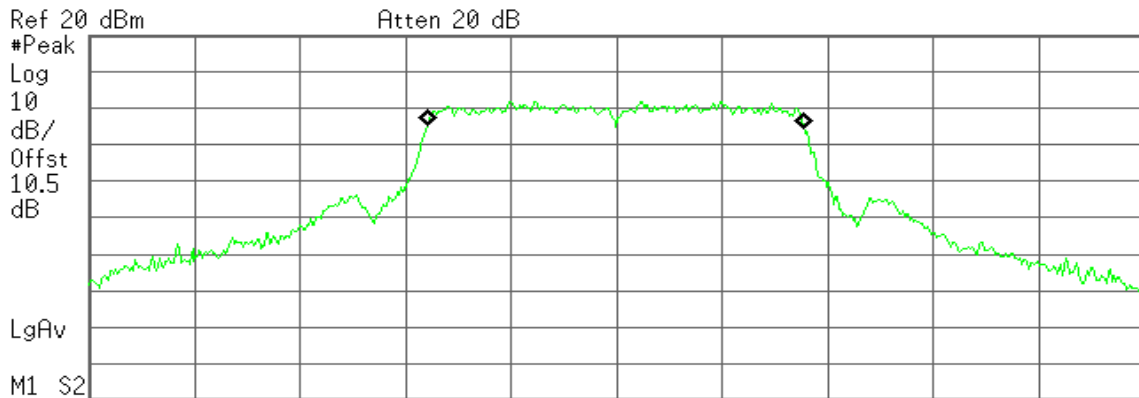
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -6.261 kHz
x dB Bandwidth 25.155 MHz

CH Mid

Agilent 19:21:39 Dec 20, 2011

R T



Center 5.580 00 GHz Span 50 MHz
 #Res BW 240 kHz #VBW 680 kHz Sweep 1 ms (601 pts)

Occupied Bandwidth
17.7951 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

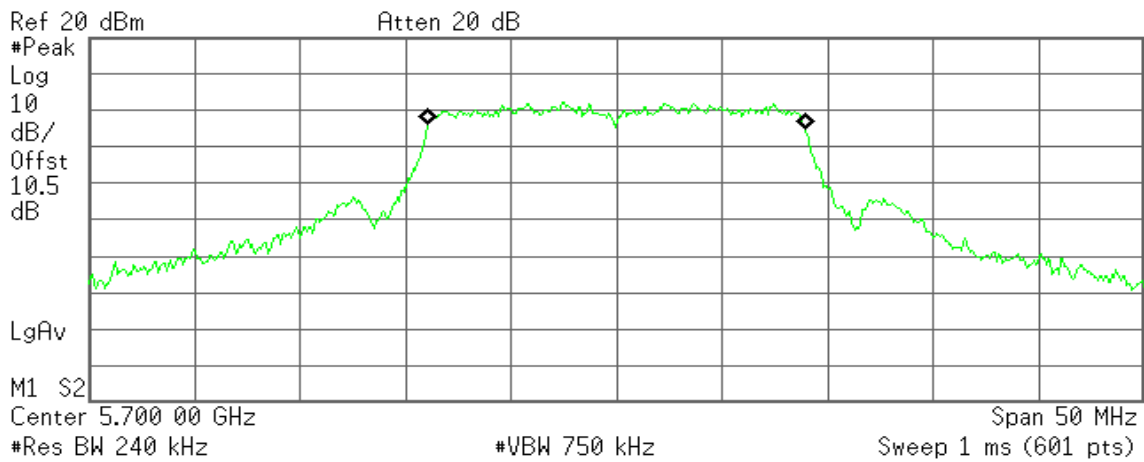
Transmit Freq Error -47.988 kHz
x dB Bandwidth 22.694 MHz



CH High

Agilent 19:25:23 Dec 20, 2011

R T



Occupied Bandwidth
17.7795 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

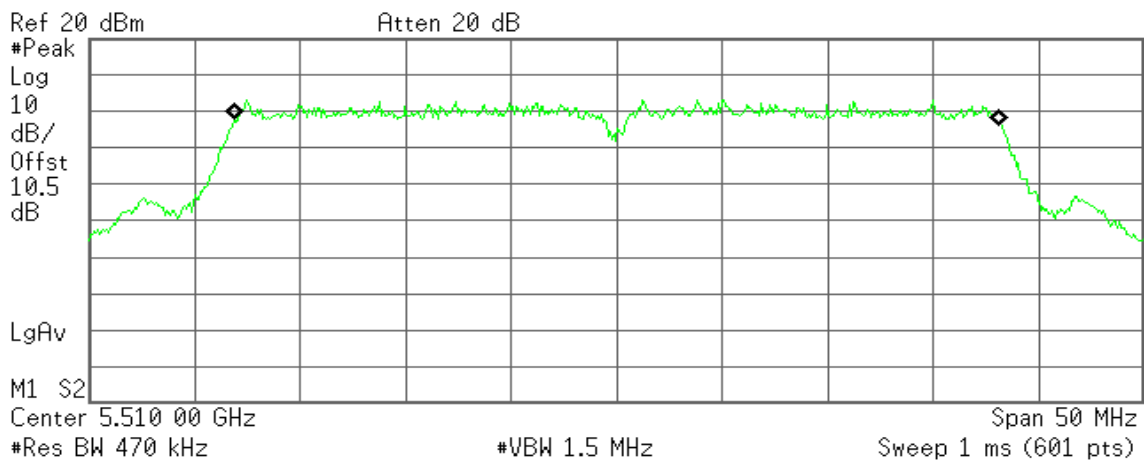
Transmit Freq Error -13.948 kHz
x dB Bandwidth 22.817 MHz

IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 0

CH Low

Agilent 16:37:39 Dec 20, 2011

R T



Occupied Bandwidth
36.1712 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

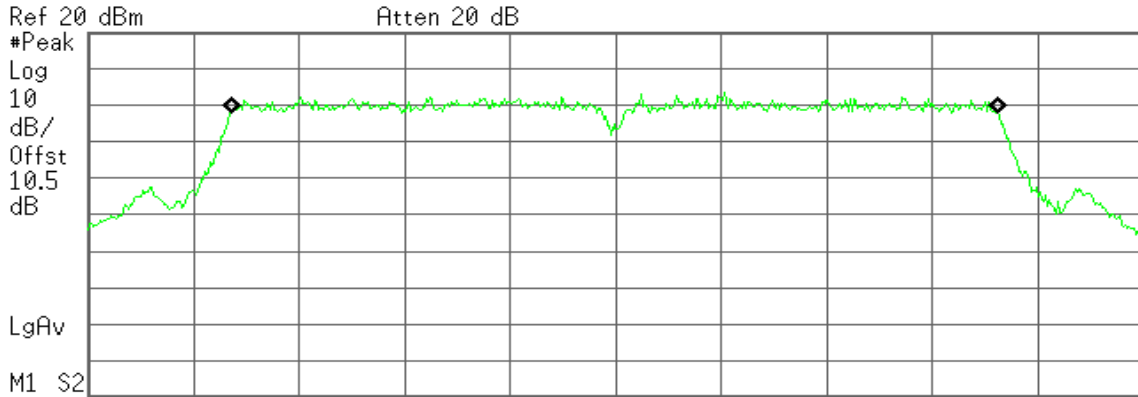
Transmit Freq Error -1.046 kHz
x dB Bandwidth 39.794 MHz



CH Mid

Agilent 16:47:06 Dec 20, 2011

R T



Center 5.590 00 GHz Span 50 MHz
 #Res BW 470 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
36.2691 MHz

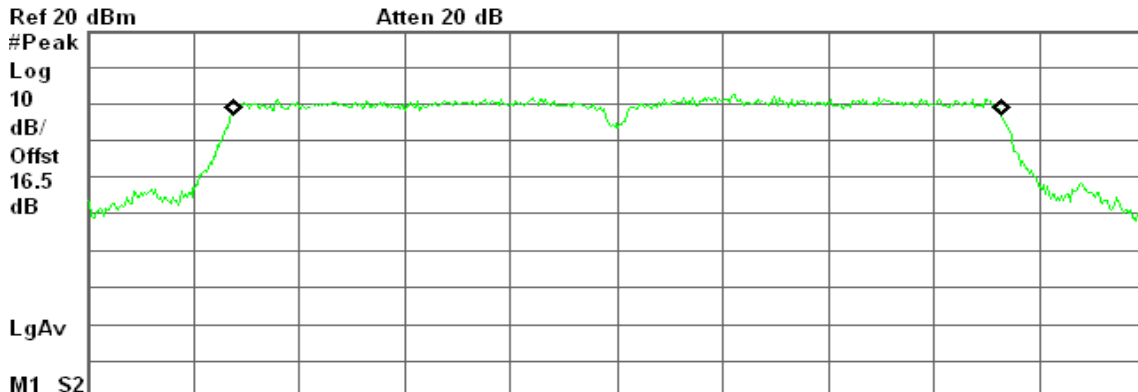
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -52.463 kHz
x dB Bandwidth 42.047 MHz

CH High

Agilent

R T



Center 5.670 00 GHz Span 50 MHz
 #Res BW 470 kHz #VBW 1.3 MHz Sweep 1 ms (601 pts)

Occupied Bandwidth
36.2531 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 22.753 kHz
x dB Bandwidth 42.292 MHz

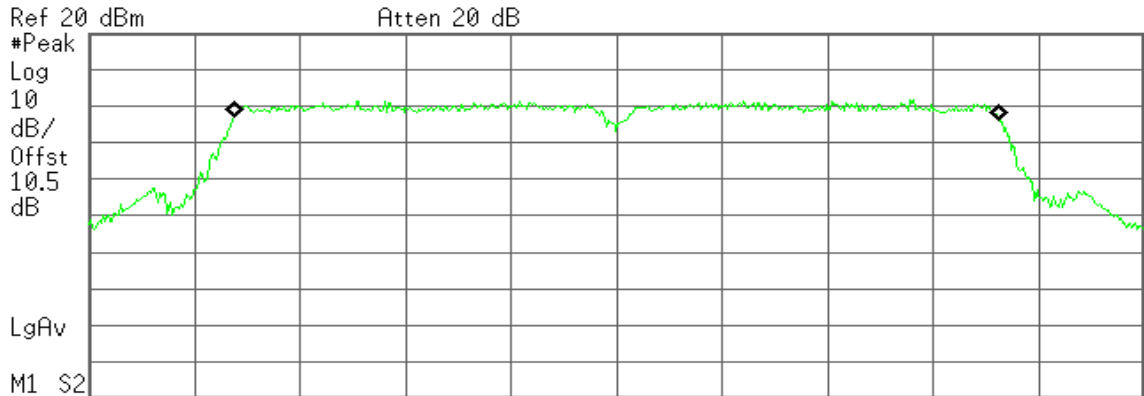


IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 1

CH Low

Agilent 17:21:48 Dec 20, 2011

R T



Occupied Bandwidth
36.2284 MHz

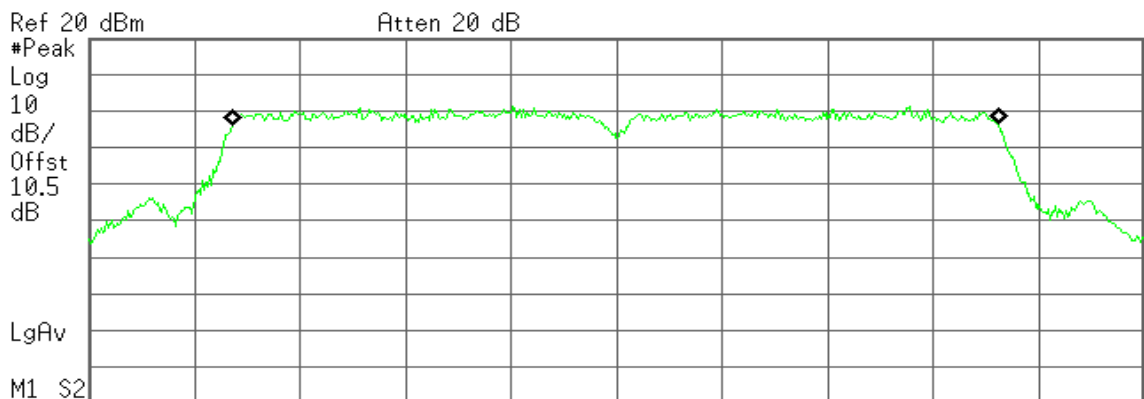
Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -10.686 kHz
x dB Bandwidth 44.548 MHz

CH Mid

Agilent 17:25:42 Dec 20, 2011

R T



Occupied Bandwidth
36.2109 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

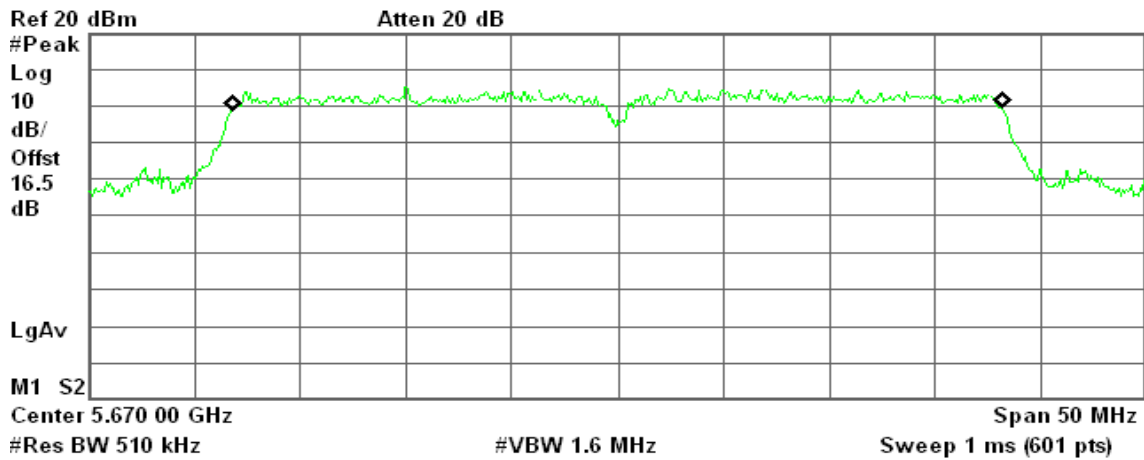
Transmit Freq Error -62.782 kHz
x dB Bandwidth 44.291 MHz



CH High

Agilent

R T



Occupied Bandwidth
36.3318 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -1.930 kHz
x dB Bandwidth 47.801 MHz



8.4 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.

According to RSS-210 §A9.2,

- (1) For the band 5150-5250 MHz, the maximum equivalent isotropically radiated power (e.i.r.p.) shall not exceed 200 mW or $10 + 10 \text{ Log}_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.
- (2) For the band 5250-5350 MHz and 5470-5725 MHz, the maximum conducted output power shall not exceed 250 mW or $11 + 10 \text{ Log}_{10} B$, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \text{ Log}_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

In addition, devices with maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

The peak power shall not exceed the limit as follow:

**For FCC****Specified Limit of the Peak Power****Test mode: IEEE 802.11a mode / 5180 ~ 5240MHz**

Channel	Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 4 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5180	20.257	13.07	17.07	17
Mid	5220	25.204	14.01	18.01	17
High	5240	20.02	13.01	17.01	17

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Chain 0 26dB Bandwidth (B) (MHz)	Chain 1 26dB Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 4 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5180	25.136	22.861	14.00	18.00	17
Mid	5220	20.698	19.557	13.16	17.16	17
High	5240	20.751	20.487	13.17	17.17	17

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz

Channel	Frequency (MHz)	Chain 0 26dB Bandwidth (B) (MHz)	Chain 1 26dB Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 4 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5190	44.821	44.821	16.51	20.51	17
High	5230	42.039	42.039	16.24	20.24	17

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

Channel	Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5260	22.848	13.59	24.59	24.00
Mid	5280	22.678	13.56	24.56	24.00
High	5320	22.256	13.47	24.47	24.00

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Chain 0 26dB Bandwidth (B) (MHz)	Chain 1 26dB Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5260	20.724	20.605	13.16	24.16	24.00
Mid	5280	20.56	23.103	13.64	24.64	24.00
High	5320	22.627	25.616	14.09	25.09	24.00

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz

Channel	Frequency (MHz)	Chain 0 26dB Bandwidth (B) (MHz)	Chain 1 26dB Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5270	41.829	44.475	16.48	27.48	24.00
High	5310	42.462	44.777	16.51	27.51	24.00

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

Channel	Frequency (MHz)	26dB Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5500	22.527	13.53	23.53	24.00
Mid	5580	20.712	13.16	23.16	24.00
High	5700	23.491	13.71	23.71	24.00

Test mode: IEEE 802.11n HT 20 MHz Channel mode/ 5500 ~ 5700MHz

Channel	Frequency (MHz)	Chain 0 26dB Bandwidth (B) (MHz)	Chain 1 26dB Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5500	20.168	25.155	14.01	24.01	24.00
Mid	5580	22.82	22.694	13.58	23.58	24.00
High	5700	22.797	22.817	13.58	23.58	24.00

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz

Channel	Frequency (MHz)	Chain 0 26dB Bandwidth (B) (MHz)	Chain 1 26dB Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 11 + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
Low	5510	39.794	44.548	16.49	26.49	24.00
Mid	5590	42.047	44.291	16.46	26.46	24.00
High	5670	42.292	47.801	16.79	26.79	24.00



FOR IC
Specified Limit of the Peak Power

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

Channel	Frequency (MHz)	99% Bandwidth (B) (MHz)	10 Log B (dB)	EIRP 10 + 10 Log B (dBm)	EIRP Power Limit (dBm)
Low	5180	17.59	12.45	22.45	23.01
Mid	5220	17.40	12.41	22.41	23.01
High	5240	17.31	12.38	22.38	23.01

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Chain 0 99% Bandwidth (B) (MHz)	Chain 1 99% Bandwidth (B) (MHz)	10 Log B (dB)	EIRP 10 + 10 Log B (dBm)	EIRP Power Limit (dBm)
Low	5180	18.03	17.98	12.56	22.56	23.01
Mid	5220	17.93	17.99	12.55	22.55	23.01
High	5240	18.08	18.03	12.57	22.57	23.01

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz

Channel	Frequency (MHz)	Chain 0 99% Bandwidth (B) (MHz)	Chain 1 99% Bandwidth (B) (MHz)	10 Log B (dB)	EIRP 10 + 10 Log B (dBm)	EIRP Power Limit (dBm)
Low	5190	36.18	36.22	15.59	25.59	23.01
High	5230	36.24	36.17	15.59	25.59	23.01

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

Channel	Frequency (MHz)	99% Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 11 + 10 Log B (dBm)	Conducted Power Limit (dBm)	EIRP 17 + 10 Log B (dBm)	EIRP Power Limit (dBm)
Low	5260	17.3561	12.39	23.39	24.00	29.39	30.00
Mid	5280	17.2957	12.38	23.38	24.00	29.38	30.00
High	5320	17.2852	12.38	23.38	24.00	29.38	30.00

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Chain 0 99% Bandwidth (B) (MHz)	Chain 1 99% Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 11 + 10 Log B (dBm)	Conducted Power Limit (dBm)	EIRP 17 + 10 Log B (dBm)	EIRP Power Limit (dBm)
Low	5260	18.0442	18.0088	12.56	23.56	24.00	29.56	30.00
Mid	5280	18.027	17.957	12.56	23.56	24.00	29.56	30.00
High	5320	18.0406	18.0231	12.56	23.56	24.00	29.56	30.00

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz

Channel	Frequency (MHz)	Chain 0 99% Bandwidth (B) (MHz)	Chain 1 99% Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 11 + 10 Log B (dBm)	Conducted Power Limit (dBm)	EIRP 17 + 10 Log B (dBm)	EIRP Power Limit (dBm)
Low	5270	36.1659	36.2137	15.59	26.59	24.00	32.59	30.00
High	5310	36.1934	36.2172	15.59	26.59	24.00	32.59	30.00

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

Channel	Frequency (MHz)	99% Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 11 + 10 Log B (dBm)	Conducted Power Limit (dBm)	EIRP 17 + 10 Log B (dBm)	EIRP Power Limit (dBm)
Low	5500	17.2852	12.38	23.38	24.00	29.38	30.00
Mid	5580	18.1166	12.58	23.58	24.00	29.58	30.00
High	5700	22.2055	13.46	24.46	24.00	30.46	30.00

Test mode: IEEE 802.11n HT 20 MHz Channel mode/ 5500 ~ 5700MHz

Channel	Frequency (MHz)	Chain 0 99% Bandwidth (B) (MHz)	Chain 1 99% Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 11 + 10 Log B (dBm)	Conducted Power Limit (dBm)	EIRP 17 + 10 Log B (dBm)	EIRP Power Limit (dBm)
Low	5500	18.1202	18.0456	12.58	23.58	24.00	29.58	30.00
Mid	5580	18.1181	18.0661	12.58	23.58	24.00	29.58	30.00
High	5700	18.2658	18.3282	12.63	23.63	24.00	29.63	30.00

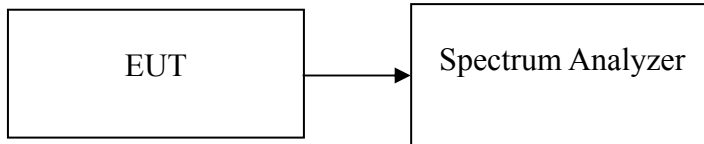
Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz

Channel	Frequency (MHz)	Chain 0 99% Bandwidth (B) (MHz)	Chain 1 99% Bandwidth (B) (MHz)	10 Log B (dB)	Conducted 11 + 10 Log B (dBm)	Conducted Power Limit (dBm)	EIRP 17 + 10 Log B (dBm)	EIRP Power Limit (dBm)
Low	5510	36.2526	36.2534	15.59	26.59	24.00	32.59	30.00
Mid	5590	36.2167	36.2132	15.59	26.59	24.00	N/A	N/A
High	5670	36.1552	36.1717	15.58	26.58	24.00	32.58	30.00



Test Configuration

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



TEST PROCEDURE

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

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

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

Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times

TEST RESULTS

No non-compliance noted

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5180	10.72	17.00
Mid	5220	10.18	17.00
High	5240	9.99	17.00

Test mode: IEEE 802.11n HT 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	6.18	7.75	10.05	14.74
Mid	5220	5.95	7.47	9.79	14.74
High	5240	3.85	7.86	9.31	14.74

Test mode: IEEE 802.11n HT 40 MHz 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	7.97	7.13	10.58	14.74
High	5230	7.58	7.52	10.56	14.74

Remark: Total PPSD (dBm) = $10 \cdot \text{LOG}(10^{(\text{Chain 0 PPSD} / 10)} + 10^{(\text{Chain 1 PPSD} / 10)})$

2. The maximum antenna gain is 8.26dBi; therefore the reduction due to antenna gain is 2.26dBi, so the limit is 17.74dBm.

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5260	10.99	24.00
Mid	5280	12.14	24.00
High	5320	11.07	24.00

Test mode: IEEE 802.11n HT 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	12.14	14.20	16.30	21.74
Mid	5280	12.11	12.92	15.54	21.74
High	5320	12.16	13.95	16.16	21.74

Test mode: IEEE 802.11n HT 40 MHz 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	10.34	11.48	13.96	21.74
High	5310	11.22	12.21	14.75	21.74

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

Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low	5500	12.99	24.00
Mid	5600	11.57	24.00
High	5700	12.12	24.00

Test mode: IEEE 802.11n HT 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	11.96	11.95	14.97	21.74
Mid	5600	12.41	12.09	15.26	21.74
High	5700	12.31	10.37	14.46	21.74

Test mode: IEEE 802.11n HT 40 MHz 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	10.95	10.00	13.51	21.74
Mid	5590	11.48	9.96	13.80	21.74
High	5670	12.37	13.63	16.06	21.74

Remark: Total PPSD (dBm) = $10 \cdot \text{LOG}(10^{\wedge}(\text{Chain 0 PPSD} / 10) + 10^{\wedge}(\text{Chain 1 PPSD} / 10))$

2. The maximum antenna gain is 8.26dBi; therefore the reduction due to antenna gain is 2.26dBi, so the limit is 21.74dBm.



For IC

IEEE 802.11a MHz Channel mode / 5180 ~ 5240MHz				
Duty Cycle measurement X: (Ton/Ton + Toff) =				0.94
10 * log (1/x) =				0.27
Antenna Assembly Gain:		ANT0	ANT1	MAX Gain
		5.25	5.36	5.36
Cable Loss=				20.5
TEST CONDITIONS			TRANSMITTER POWER (dBm)	Limit (dBm)
Channel	Frequency(MHz)	POWER	Output Power (dBm)	
Low	5180	Measured Power	-9.78	22.45
		EIRP	16.35	
Mid	5220	Measured Power	-10.32	22.41
		EIRP	15.81	
High	5240	Measured Power	-10.51	22.38
		EIRP	15.62	



IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz						
Duty Cycle measurement X: (Ton/Ton + Toff) =						0.93
10 * log (1/x) =						0.32
Antenna Assembly Gain:			ANT0	ANT1	Total Gain	
			5.25	5.36	8.32	
Cable Loss=						20.5
TEST CONDITIONS			TRANSMITTER POWER (dBm)			Limit (dBm)
Channel	Frequency(MHz)	POWER	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	
Low	5180	Measured Power	-14.32	-12.75	-10.45	22.56
		EIRP	14.81	16.38	18.92	
Mid	5220	Measured Power	-14.55	-13.03	-10.71	22.55
		EIRP	14.58	16.10	18.66	
High	5240	Measured Power	-16.65	-12.64	-11.19	22.57
		EIRP	12.48	16.49	18.18	

IEEE 802.11n HT 40 MHz Channel mode / 5190 ~ 5230MHz						
Duty Cycle measurement X: (Ton/Ton + Toff) =						0.88
10 * log (1/x) =						0.56
Antenna Assembly Gain:			ANT0	ANT1	Total Gain	
			5.25	5.36	8.32	
Cable Loss=						20.5
TEST CONDITIONS			TRANSMITTER POWER (dBm)			Limit (dBm)
Channel	Frequency(MHz)	POWER	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	
Low	5190	Measured Power	-12.53	-15.44	-10.74	23.01
		EIRP	16.84	13.69	18.64	
High	5230	Measured Power	-12.92	-12.98	-9.94	23.01
		EIRP	16.21	16.15	19.43	



IEEE 802.11a MHz Channel mode / 5260 ~ 5320MHz				
Duty Cycle measurement X: (Ton/Ton + Toff) =				0.94
10 * log (1/x) =				0.27
Antenna Assembly Gain:		ANT0	ANT1	MAX Gain
		5.25	5.36	5.36
Cable Loss=				20.5
TEST CONDITIONS			TRANSMITTER POWER (dBm)	
Channel	Frequency(MHz)	POWER	Output Power (dBm)	Limit (dBm)
Low	5260	Measured Power	-9.51	29.39
		EIRP	16.62	
Mid	5280	Measured Power	-8.36	29.38
		EIRP	17.77	
High	5320	Measured Power	-9.43	29.38
		EIRP	16.70	



IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz						
Duty Cycle measurement X: (Ton/Ton + Toff) =						0.93
10 * log (1/x) =						0.32
Antenna Assembly Gain:			ANT0	ANT1	Total Gain	
			5.25	5.36	8.32	
Cable Loss=						20.5
TEST CONDITIONS			TRANSMITTER POWER (dBm)			Limit (dBm)
Channel	Frequency(MHz)	POWER	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	
Low	5260	Measured Power	-8.36	-6.3	-4.20	29.56
		EIRP	20.77	22.83	25.17	
Mid	5280	Measured Power	-8.39	-7.58	-4.96	29.56
		EIRP	20.74	21.55	24.41	
High	5320	Measured Power	-8.34	-6.55	-4.34	29.56
		EIRP	20.79	22.58	25.03	

IEEE 802.11n HT 40 MHz Channel mode / 5270 ~ 5310MHz						
Duty Cycle measurement X: (Ton/Ton + Toff) =						0.88
10 * log (1/x) =						0.56
Antenna Assembly Gain:			ANT0	ANT1	Total Gain	
			5.25	5.36	8.32	
Cable Loss=						20.5
TEST CONDITIONS			TRANSMITTER POWER (dBm)			Limit (dBm)
Channel	Frequency(MHz)	POWER	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	
Low	5270	Measured Power	-10.16	-9.02	-6.54	30.00
		EIRP	19.21	20.11	22.83	
High	5310	Measured Power	-9.28	-8.29	-5.75	30.00
		EIRP	19.85	20.84	23.62	



EEE 802.11a MHz Channel mode / 5500 ~ 5700MHz				
Duty Cycle measurement X: (Ton/Ton + Toff) =				0.94
10 * log (1/x) =				0.27
Antenna Assembly Gain:		ANT0	ANT1	MAX Gain
		5.25	5.36	5.36
Cable Loss=				20.5
TEST CONDITIONS			TRANSMITTER POWER (dBm)	
Channel	Frequency(MHz)	POWER	Output Power (dBm)	
Low	5550	Measured Power	-7.51	
		EIRP	18.62	
Mid	5580	Measured Power	-8.93	
		EIRP	17.20	
High	5700	Measured Power	-8.38	
		EIRP	17.75	
				Limit (dBm)
				29.38
				29.58
				30.00



IEEE 802.11n HT 20 MHz Channel mode /5500 ~ 5700MHz						
Duty Cycle measurement X: (Ton/Ton + Toff) =						0.93
10 * log (1/x) =						0.32
Antenna Assembly Gain:			ANT0	ANT1	Total Gain	
			5.25	5.36	8.32	
Cable Loss=						20.5
TEST CONDITIONS			TRANSMITTER POWER (dBm)			Limit (dBm)
Channel	Frequency(MHz)	POWER	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	
Low	5500	Measured Power	-8.54	-8.55	-5.53	29.58
		EIRP	20.59	20.58	23.84	
Mid	5580	Measured Power	-8.09	-8.41	-5.24	29.58
		EIRP	21.04	20.72	24.13	
High	5700	Measured Power	-8.19	-10.13	-6.04	29.63
		EIRP	20.94	19.00	23.33	

IEEE 802.11n HT 40 MHz Channel mode / 5510 ~ 5670MHz						
Duty Cycle measurement X: (Ton/Ton + Toff) =						0.88
10 * log (1/x) =						0.56
Antenna Assembly Gain:			ANT0	ANT1	Total Gain	
			5.25	5.36	8.32	
Cable Loss=						20.5
TEST CONDITIONS			TRANSMITTER POWER (dBm)			Limit (dBm)
Channel	Frequency(MHz)	POWER	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Maximum Conducted Output Power (dBm)	
Low	5510	Measured Power	-9.55	-10.50	-6.99	30.00
		EIRP	19.82	18.63	22.38	
High	5670	Measured Power	-8.13	-6.87	-4.44	30.00
		EIRP	21.00	22.26	24.93	



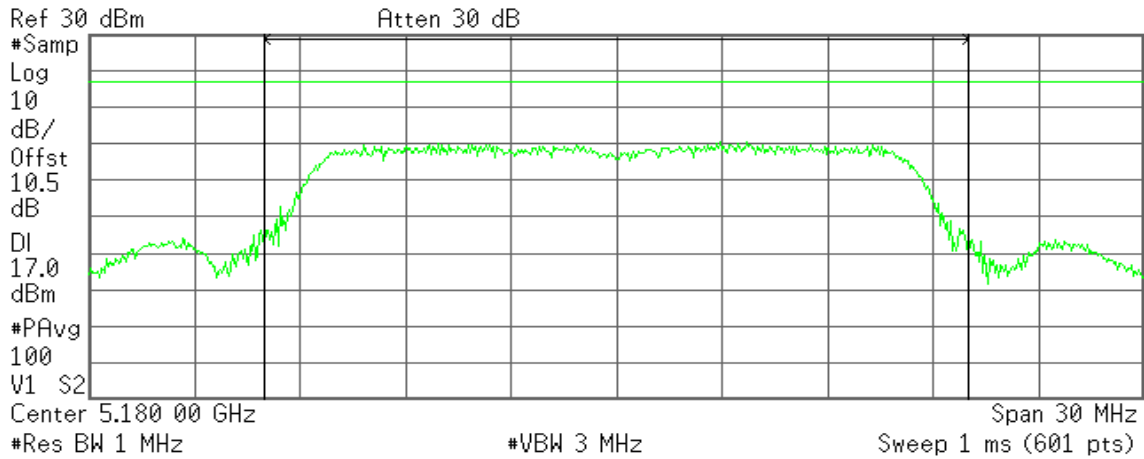
Test Plot

IEEE 802.11a mode / 5180 ~ 5240MHz

CH Low

Agilent 14:30:20 Dec 20, 2011

R T



Channel Power

10.72 dBm /20.0000 MHz

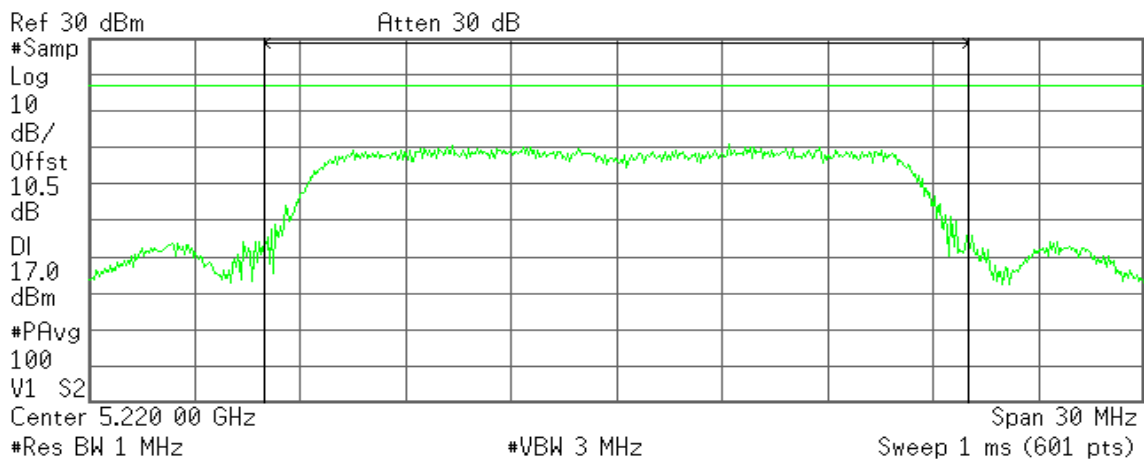
Power Spectral Density

-62.29 dBm/Hz

CH Mid

Agilent 14:36:23 Dec 20, 2011

R T



Channel Power

10.18 dBm /20.0000 MHz

Power Spectral Density

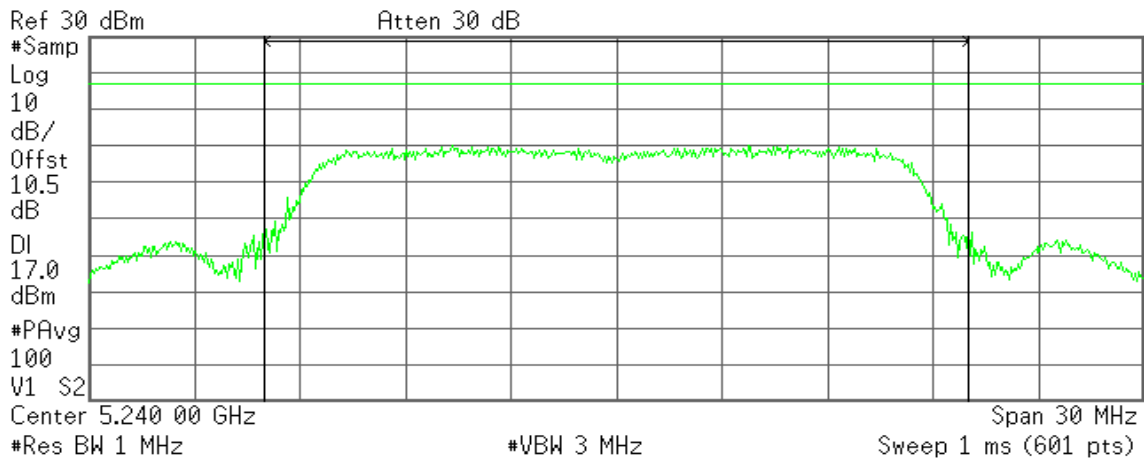
-62.83 dBm/Hz



CH High

Agilent 14:40:53 Dec 20, 2011

R T



Channel Power

9.99 dBm /20.0000 MHz

Power Spectral Density

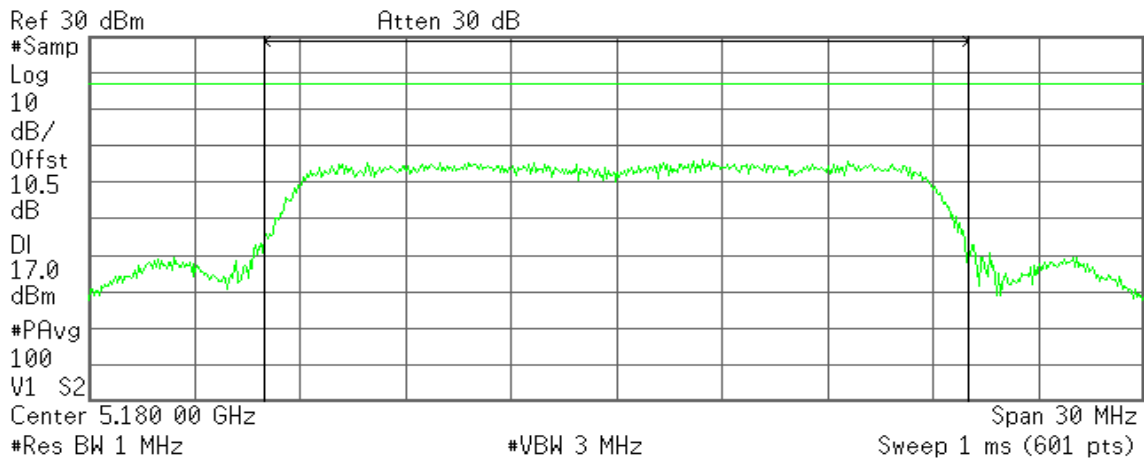
-63.02 dBm/Hz

IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

CH Low

Agilent 15:21:43 Dec 20, 2011

R T



Channel Power

6.18 dBm /20.0000 MHz

Power Spectral Density

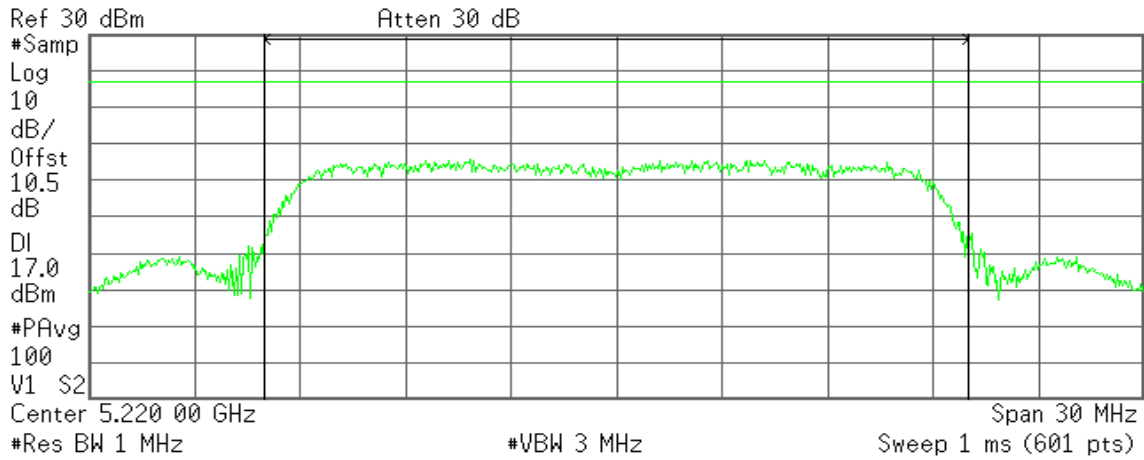
-66.83 dBm/Hz



CH Mid

Agilent 15:26:08 Dec 20, 2011

R T



Channel Power

5.95 dBm /20.0000 MHz

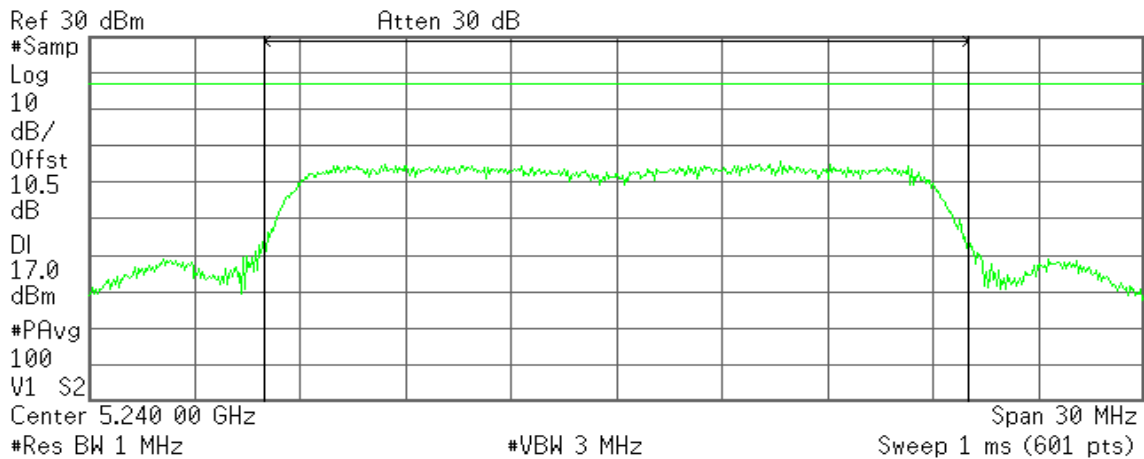
Power Spectral Density

-67.06 dBm/Hz

CH High

Agilent 15:30:00 Dec 20, 2011

R T



Channel Power

3.85 dBm /20.0000 MHz

Power Spectral Density

-69.16 dBm/Hz

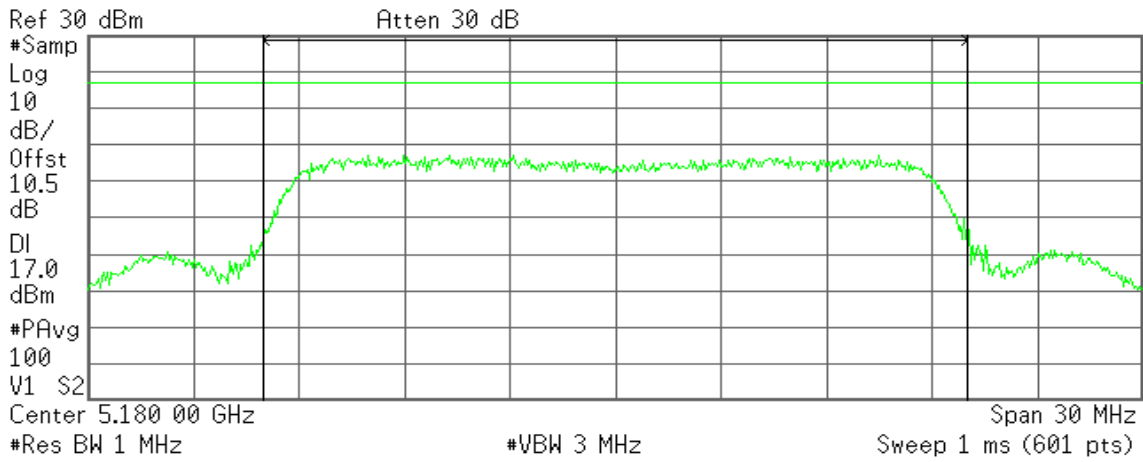


IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

CH Low

Agilent 18:00:06 Dec 20, 2011

R T



Channel Power

7.75 dBm /20.0000 MHz

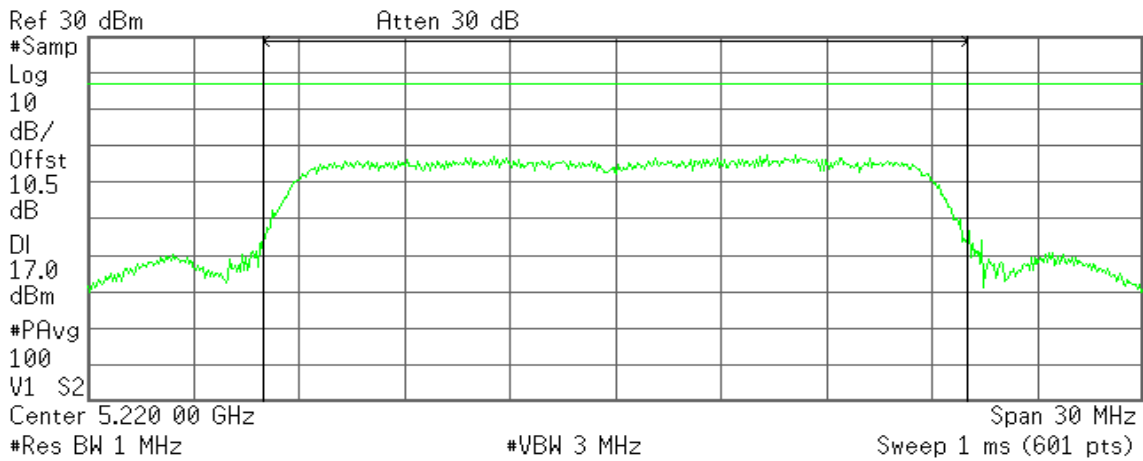
Power Spectral Density

-65.26 dBm/Hz

CH Mid

Agilent 18:06:26 Dec 20, 2011

R T



Channel Power

7.47 dBm /20.0000 MHz

Power Spectral Density

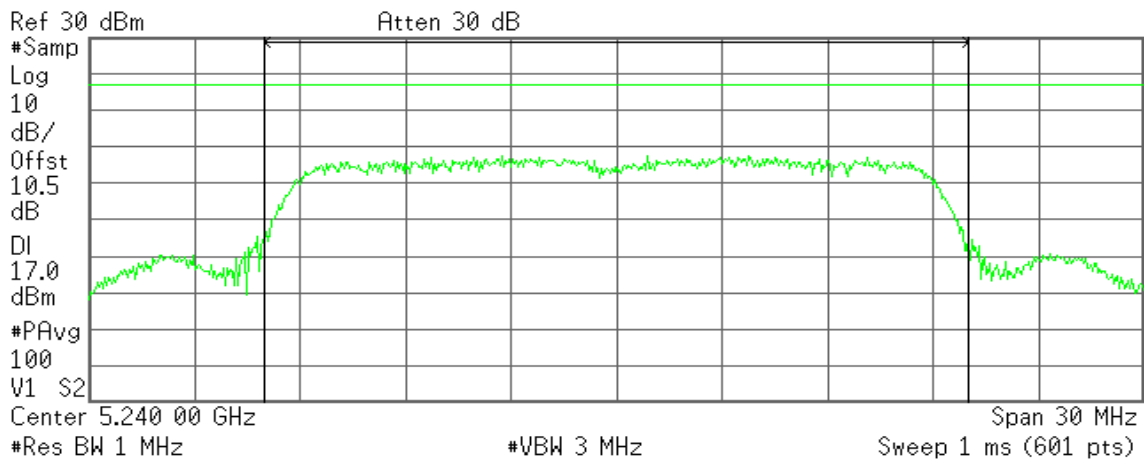
-65.54 dBm/Hz



CH High

Agilent 18:15:27 Dec 20, 2011

R T



Channel Power

7.86 dBm /20.0000 MHz

Power Spectral Density

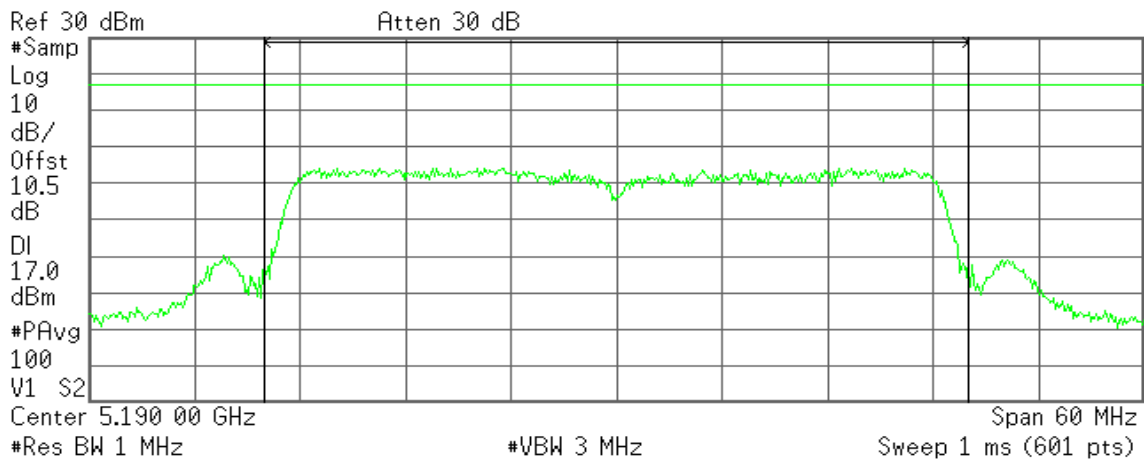
-65.15 dBm/Hz

IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

CH Low

Agilent 16:06:54 Dec 20, 2011

R T



Channel Power

7.97 dBm /40.0000 MHz

Power Spectral Density

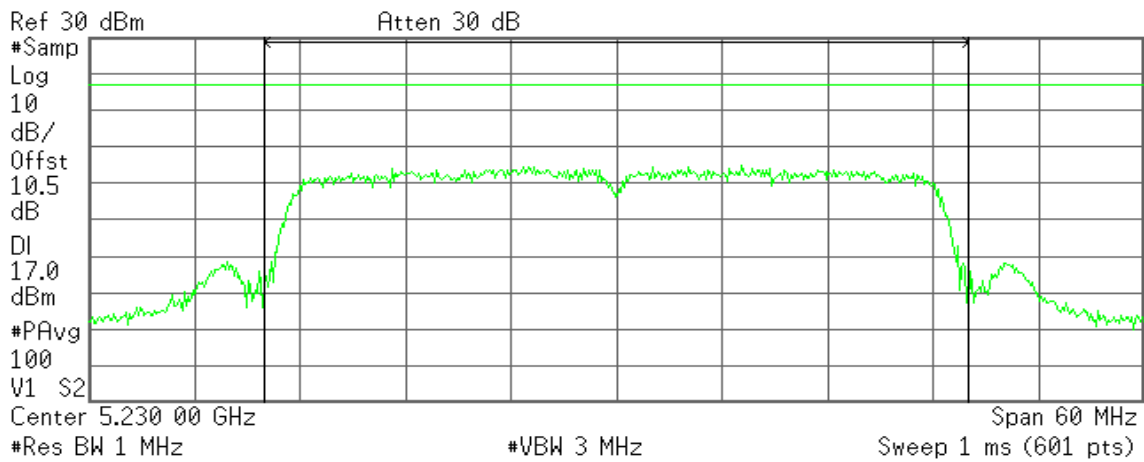
-68.05 dBm/Hz



CH High

Agilent 16:18:12 Dec 20, 2011

R T



Channel Power

7.58 dBm /40.0000 MHz

Power Spectral Density

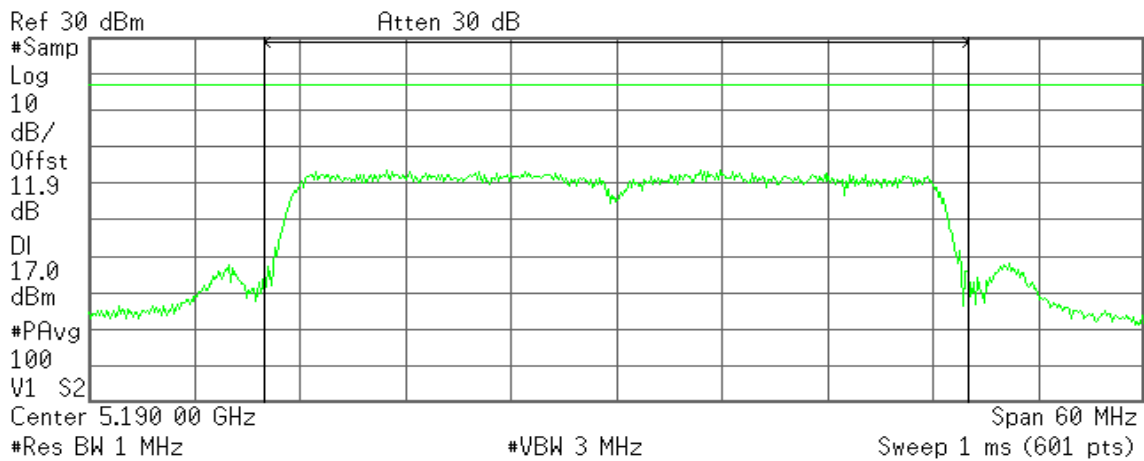
-68.44 dBm/Hz

IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

CH Low

Agilent 17:11:38 Dec 20, 2011

R T



Channel Power

7.13 dBm /40.0000 MHz

Power Spectral Density

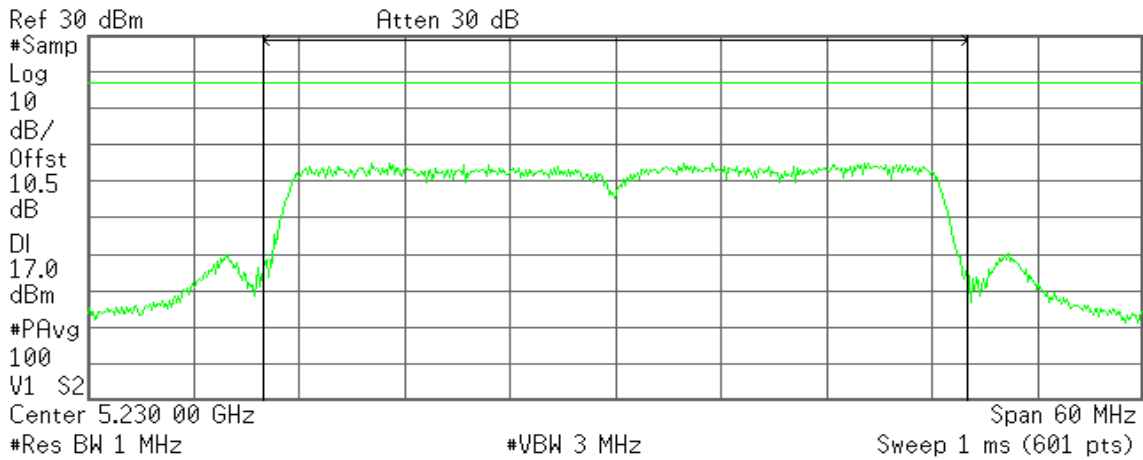
-68.89 dBm/Hz



CH High

Agilent 17:06:18 Dec 20, 2011

R T



Channel Power

7.52 dBm /40.0000 MHz

Power Spectral Density

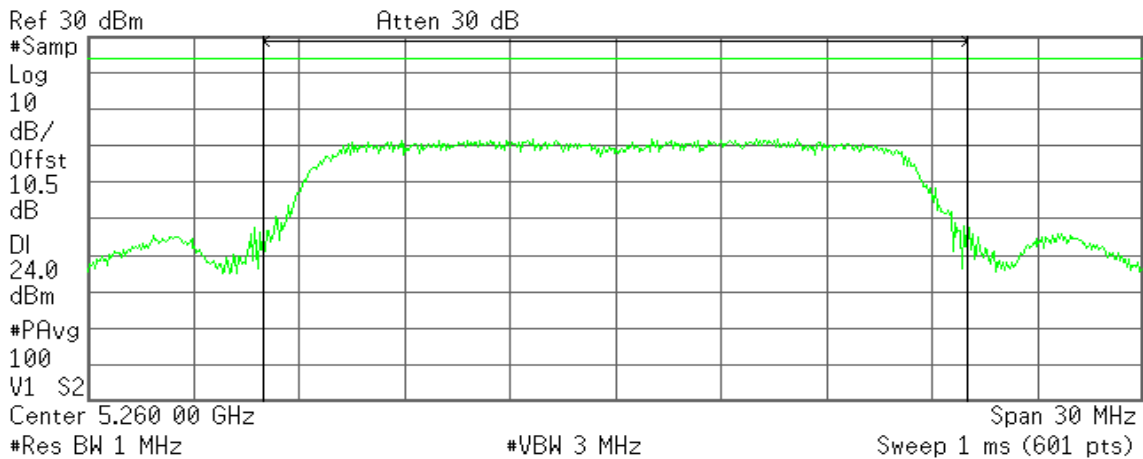
-68.50 dBm/Hz

IEEE 802.11a mode / 5260 ~ 5320MHz

CH Low

Agilent 14:49:07 Dec 20, 2011

R T



Channel Power

10.99 dBm /20.0000 MHz

Power Spectral Density

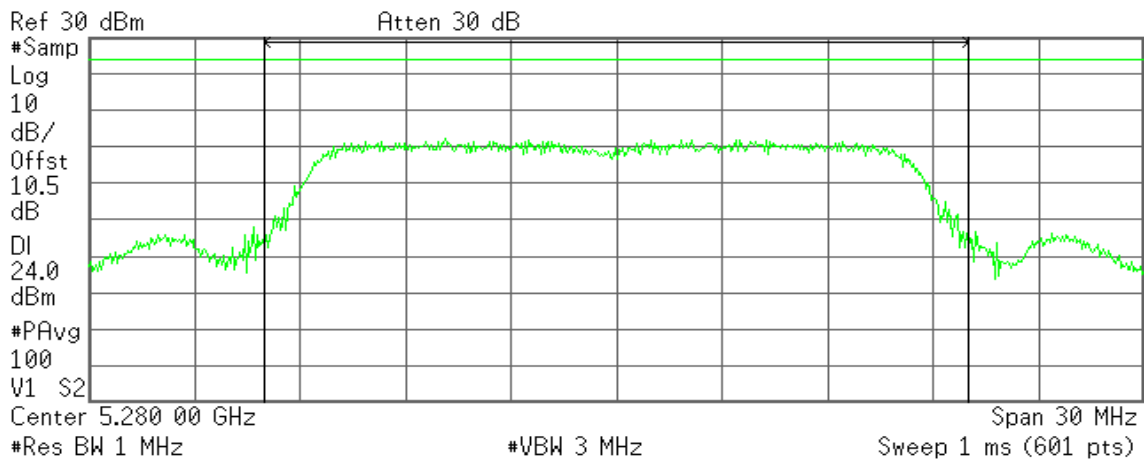
-62.02 dBm/Hz



CH Mid

Agilent 14:51:48 Dec 20, 2011

R T



Channel Power

12.14 dBm /20.0000 MHz

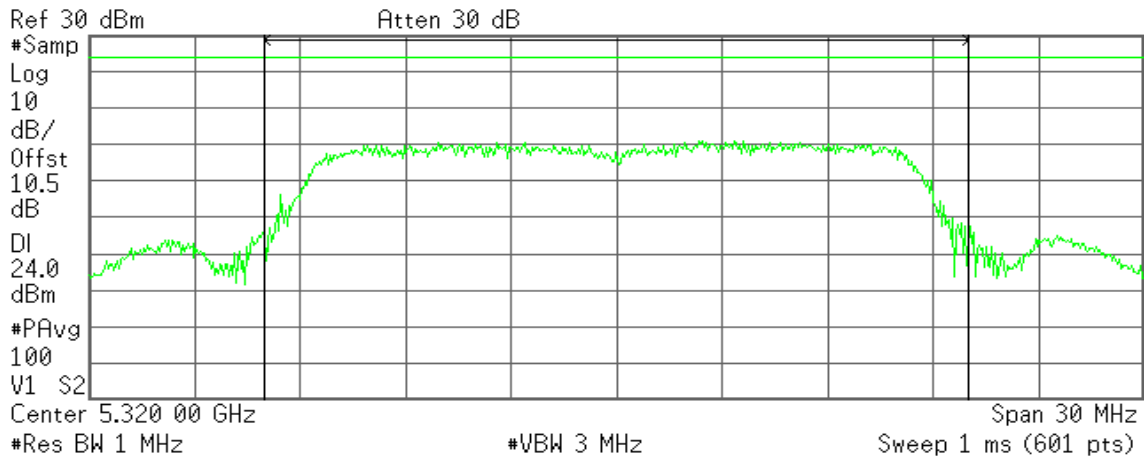
Power Spectral Density

-60.87 dBm/Hz

CH High

Agilent 14:54:55 Dec 20, 2011

R T



Channel Power

11.07 dBm /20.0000 MHz

Power Spectral Density

-61.94 dBm/Hz

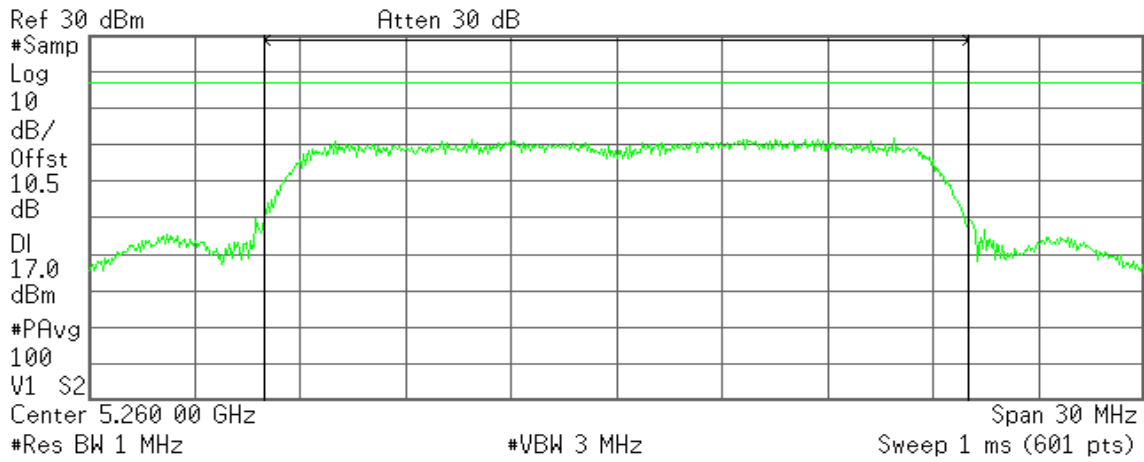


IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

CH Low

Agilent 15:34:26 Dec 20, 2011

R T



Channel Power

12.14 dBm /20.0000 MHz

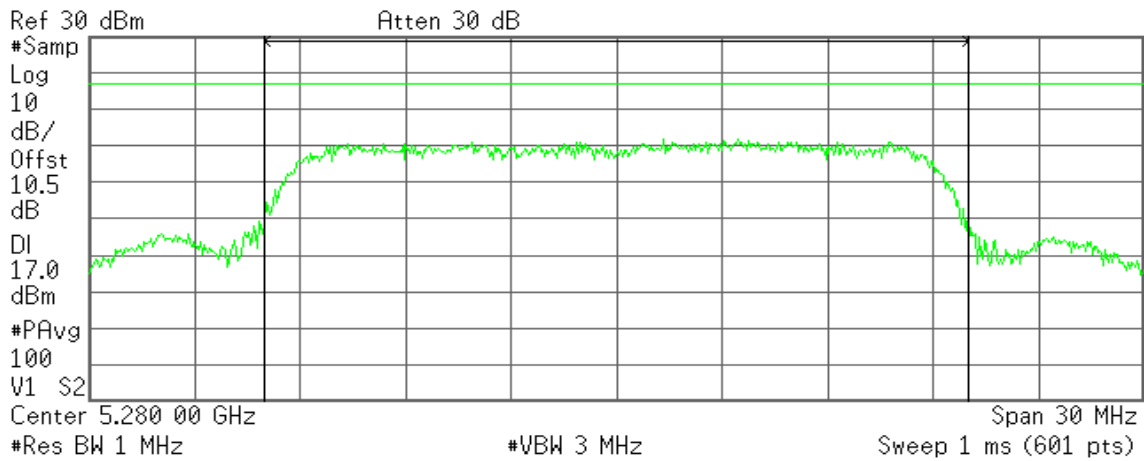
Power Spectral Density

-60.87 dBm/Hz

CH Mid

Agilent 15:38:00 Dec 20, 2011

R T



Channel Power

12.11 dBm /20.0000 MHz

Power Spectral Density

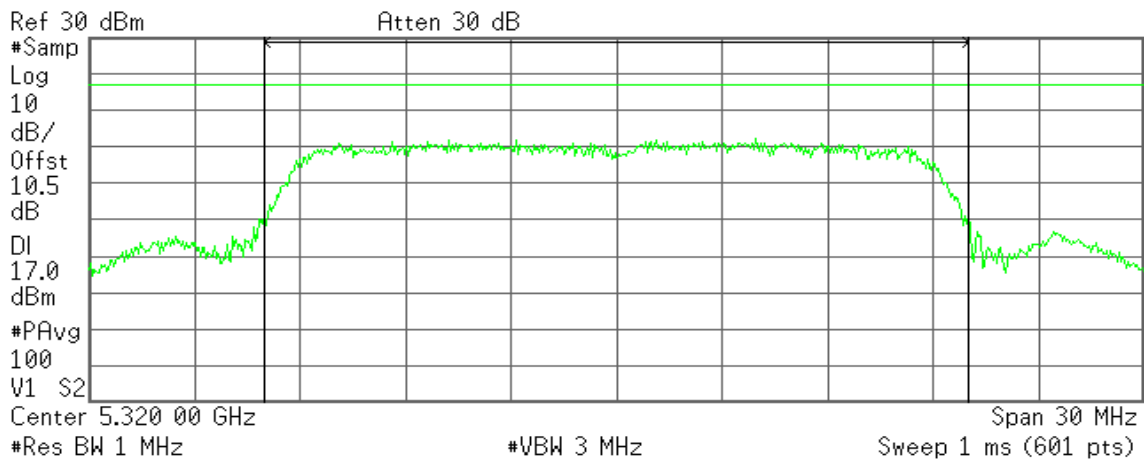
-60.90 dBm/Hz



CH High

Agilent 15:41:48 Dec 20, 2011

R T



Channel Power

12.16 dBm /20.0000 MHz

Power Spectral Density

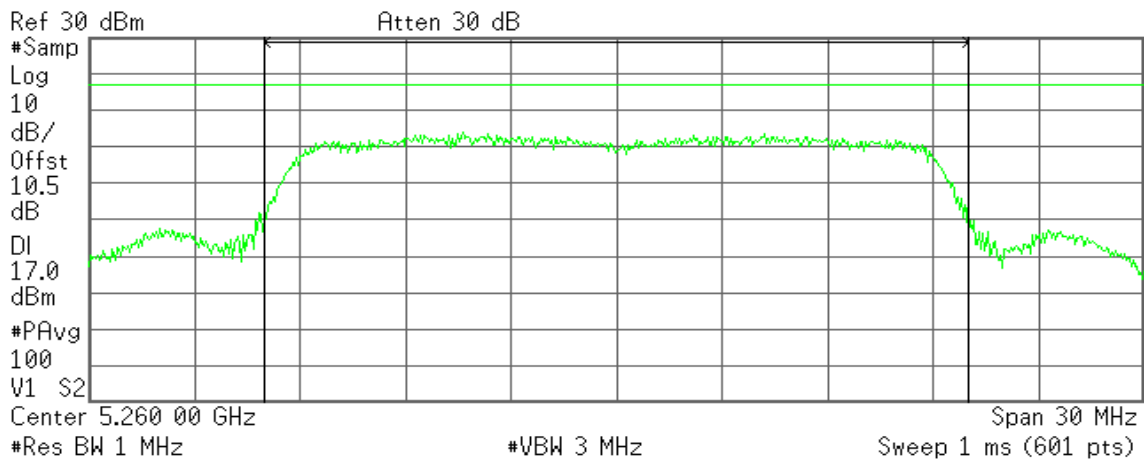
-60.85 dBm/Hz

IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

CH Low

Agilent 18:20:37 Dec 20, 2011

R T



Channel Power

14.20 dBm /20.0000 MHz

Power Spectral Density

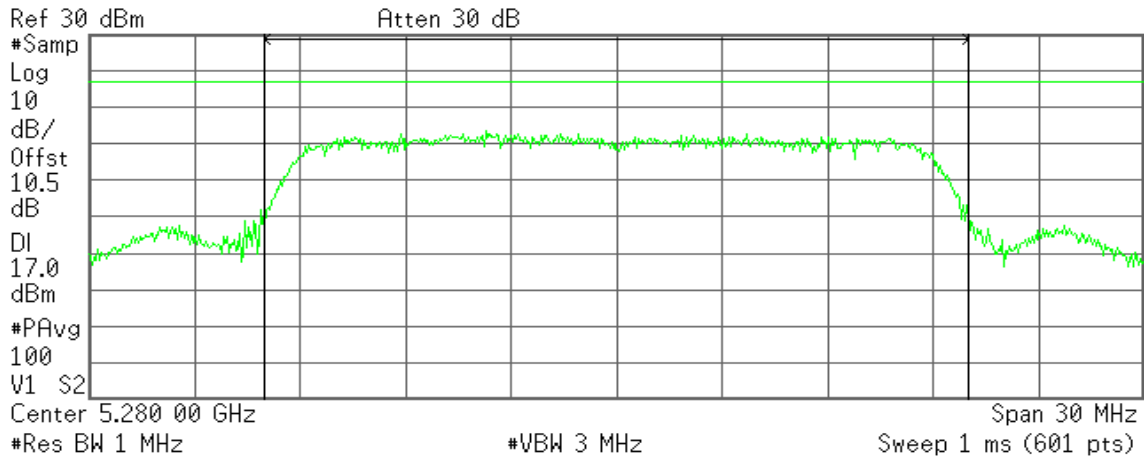
-58.81 dBm/Hz



CH Mid

Agilent 18:24:31 Dec 20, 2011

R T



Channel Power

12.92 dBm /20.0000 MHz

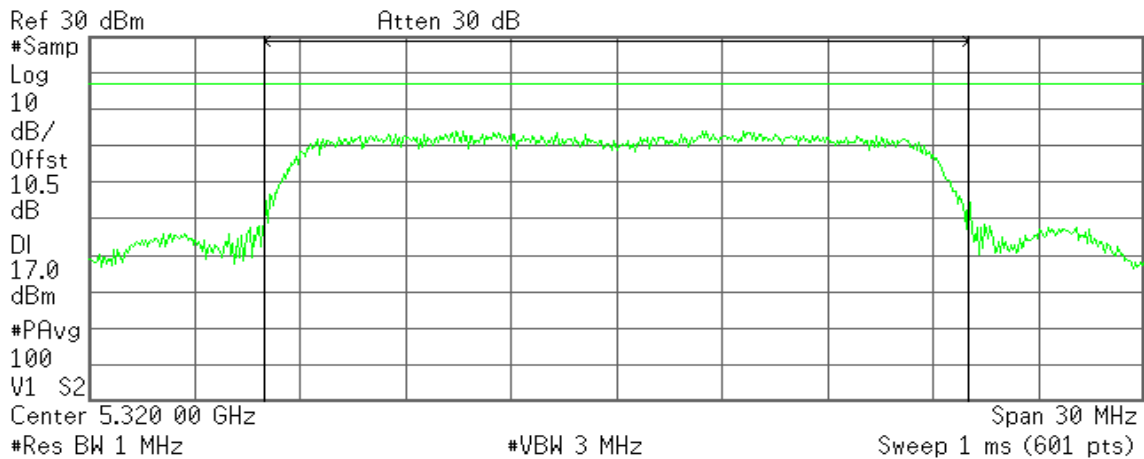
Power Spectral Density

-60.09 dBm/Hz

CH High

Agilent 18:28:59 Dec 20, 2011

R T



Channel Power

13.95 dBm /20.0000 MHz

Power Spectral Density

-59.06 dBm/Hz

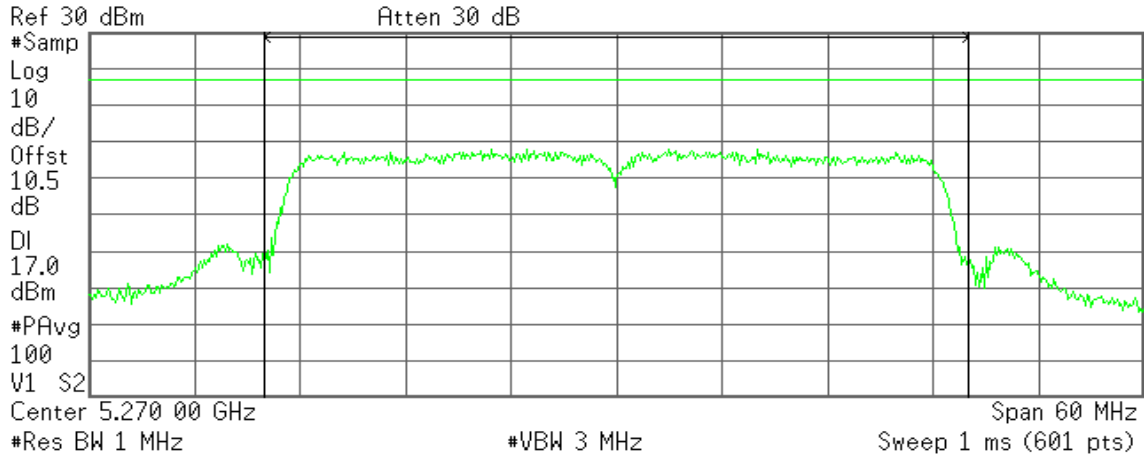


IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

CH Low

Agilent 16:23:18 Dec 20, 2011

R T



Channel Power

10.34 dBm /40.0000 MHz

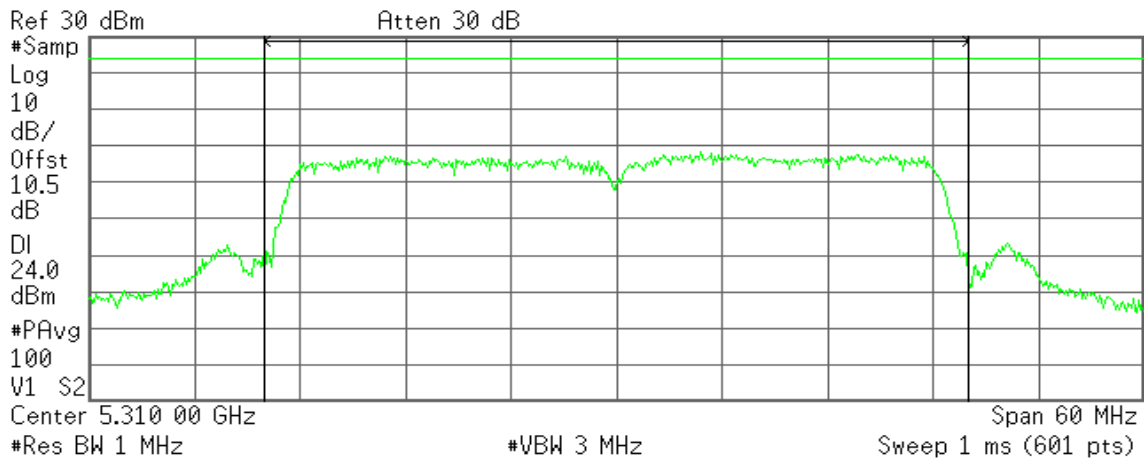
Power Spectral Density

-65.69 dBm/Hz

CH High

Agilent 16:33:52 Dec 20, 2011

R T



Channel Power

11.22 dBm /40.0000 MHz

Power Spectral Density

-64.80 dBm/Hz

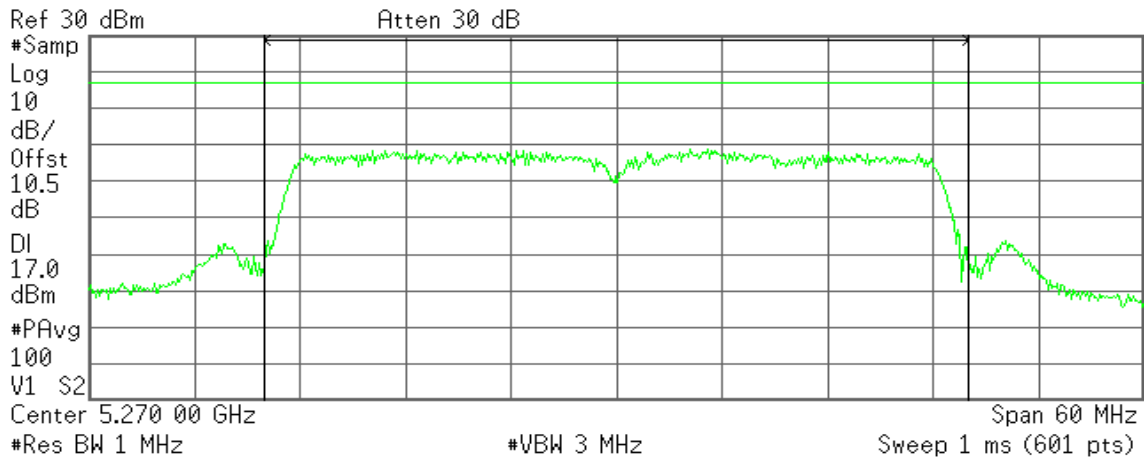


IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

CH Low

Agilent 17:13:55 Dec 20, 2011

R T



Channel Power

11.48 dBm /40.0000 MHz

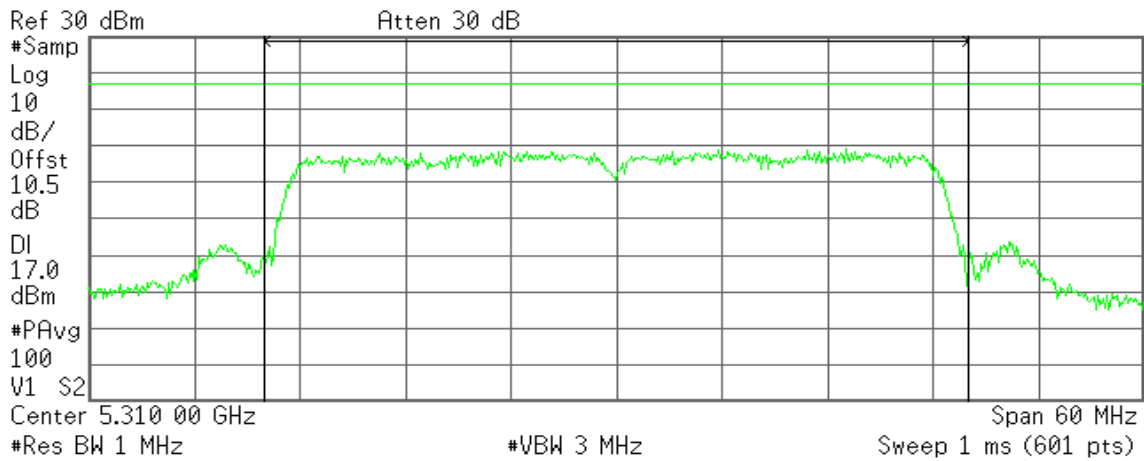
Power Spectral Density

-64.54 dBm/Hz

CH High

Agilent 17:18:18 Dec 20, 2011

R T



Channel Power

12.21 dBm /40.0000 MHz

Power Spectral Density

-63.81 dBm/Hz



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

CH Low

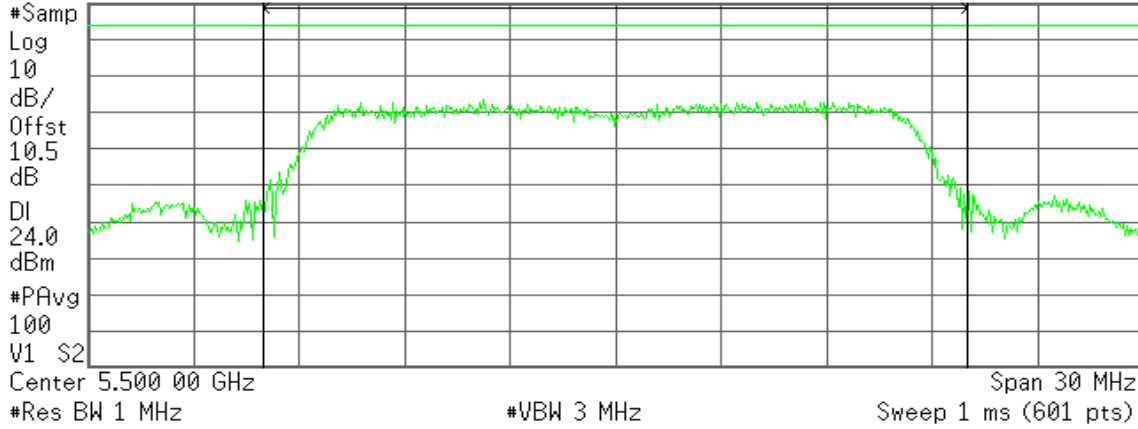
Agilent 15:02:59 Dec 20, 2011

R T

26 dB BW, a Mode Low Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

12.99 dBm /20.0000 MHz

Power Spectral Density

-60.02 dBm/Hz

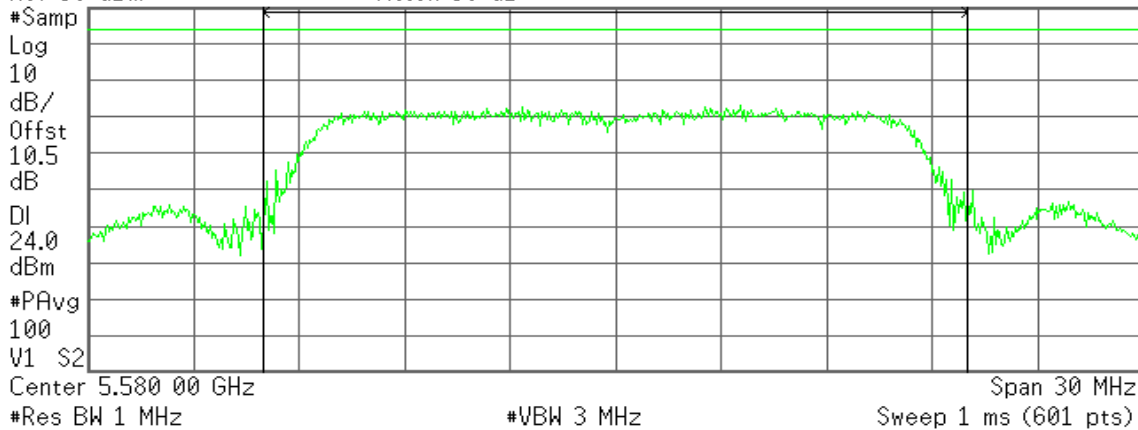
CH Mid

Agilent 15:07:40 Dec 20, 2011

R T

Ref 30 dBm

Atten 30 dB



Channel Power

11.57 dBm /20.0000 MHz

Power Spectral Density

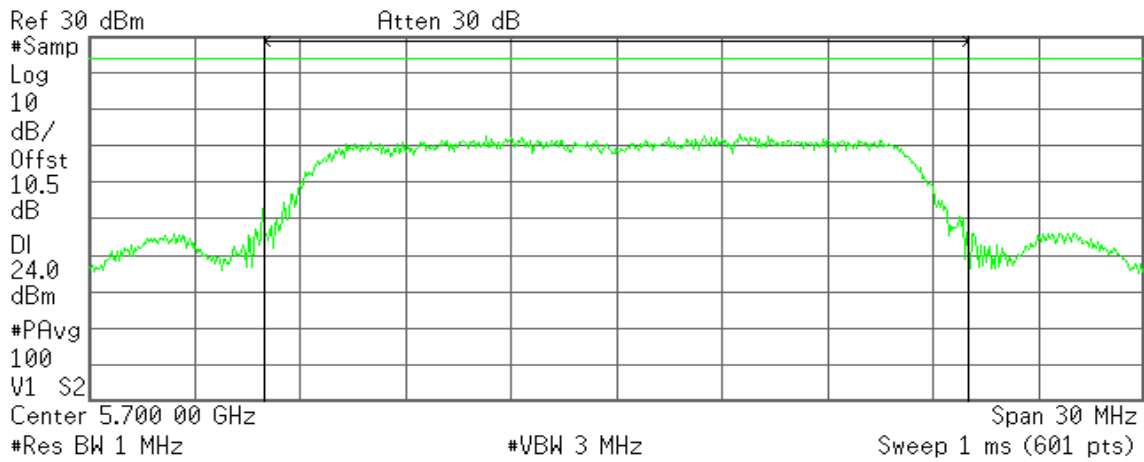
-61.44 dBm/Hz



CH High

Agilent 15:12:48 Dec 20, 2011

R T



Channel Power

12.12 dBm /20.0000 MHz

Power Spectral Density

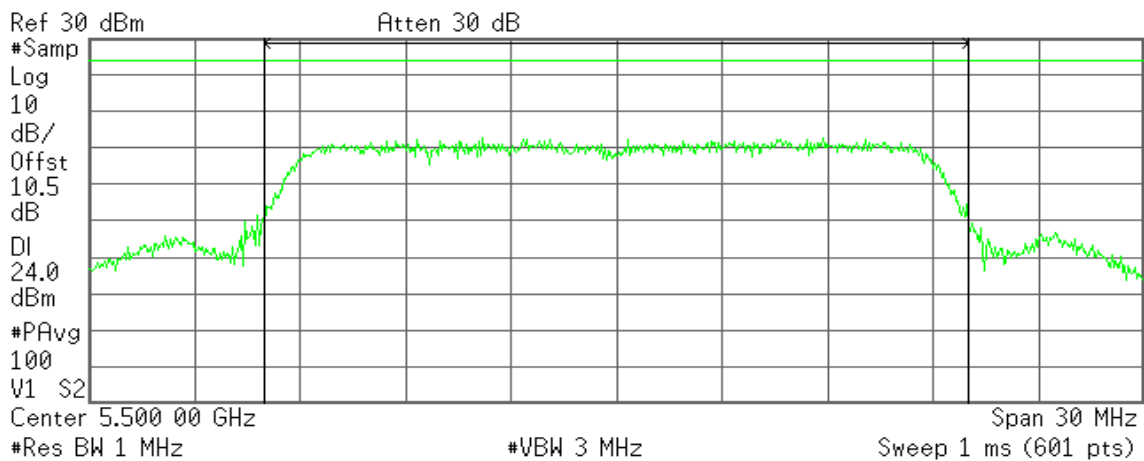
-60.89 dBm/Hz

IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

CH Low

Agilent 15:51:51 Dec 20, 2011

R T



Channel Power

11.96 dBm /20.0000 MHz

Power Spectral Density

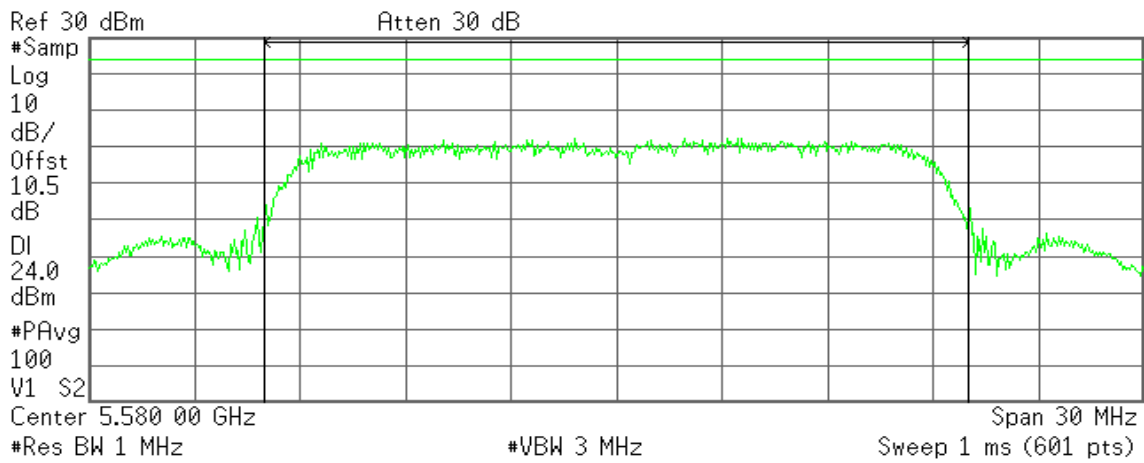
-61.05 dBm/Hz



CH Mid

Agilent 15:55:31 Dec 20, 2011

R T



Channel Power

12.41 dBm /20.0000 MHz

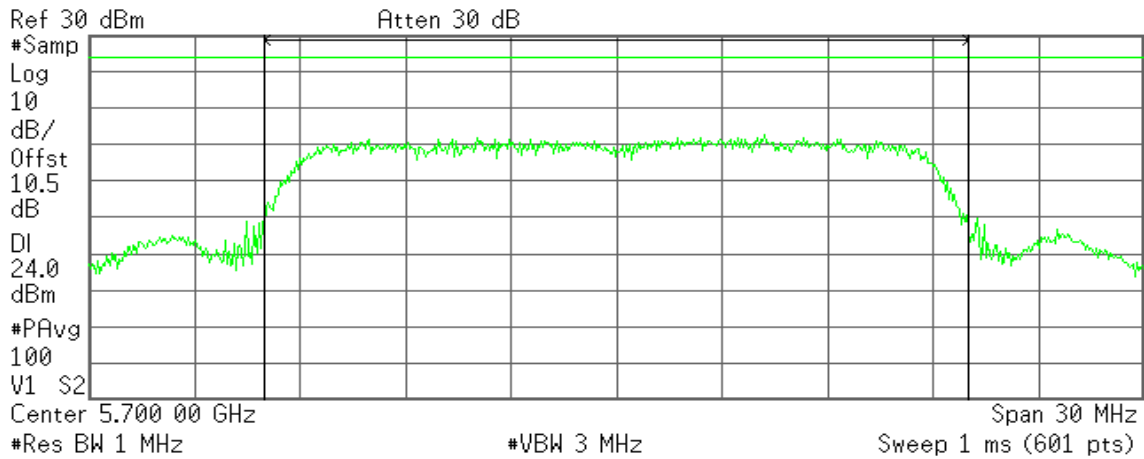
Power Spectral Density

-60.60 dBm/Hz

CH High

Agilent 15:59:04 Dec 20, 2011

R T



Channel Power

12.31 dBm /20.0000 MHz

Power Spectral Density

-60.70 dBm/Hz

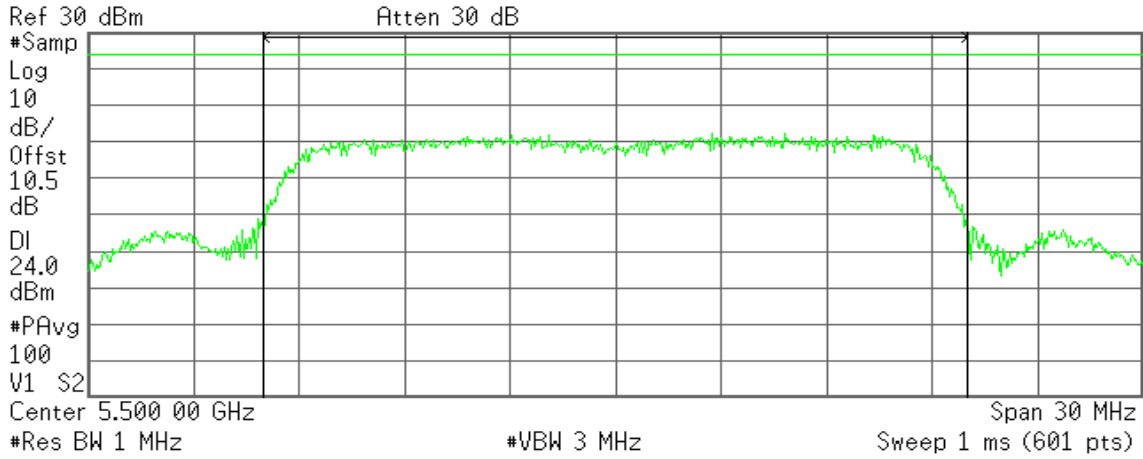


IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

CH Low

Agilent 19:23:46 Dec 20, 2011

R T



Channel Power

11.95 dBm /20.0000 MHz

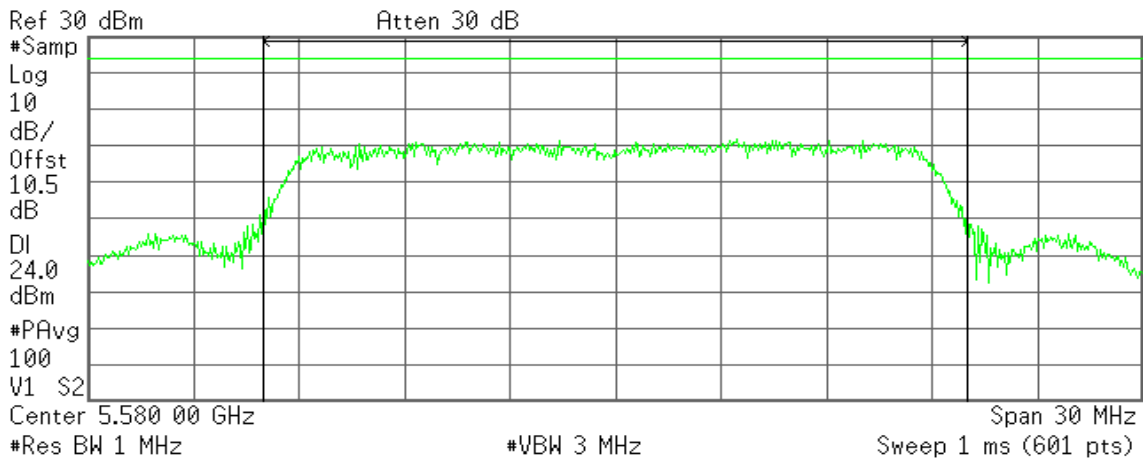
Power Spectral Density

-61.06 dBm/Hz

CH Mid

Agilent 19:19:06 Dec 20, 2011

R T



Channel Power

12.09 dBm /20.0000 MHz

Power Spectral Density

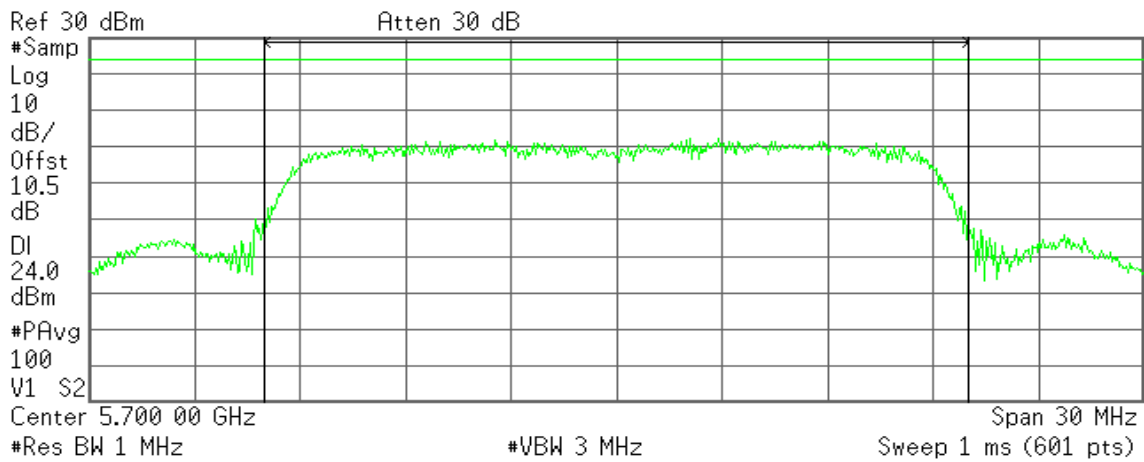
-60.92 dBm/Hz



CH High

Agilent 19:25:52 Dec 20, 2011

R T



Channel Power

10.37 dBm /20.0000 MHz

Power Spectral Density

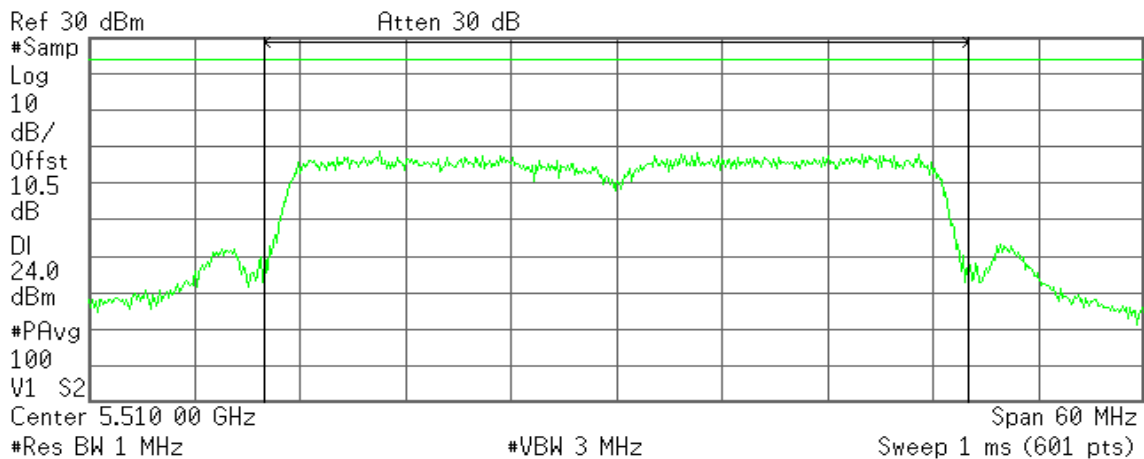
-62.64 dBm/Hz

IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 0

CH Low

Agilent 16:38:12 Dec 20, 2011

R T



Channel Power

10.95 dBm /40.0000 MHz

Power Spectral Density

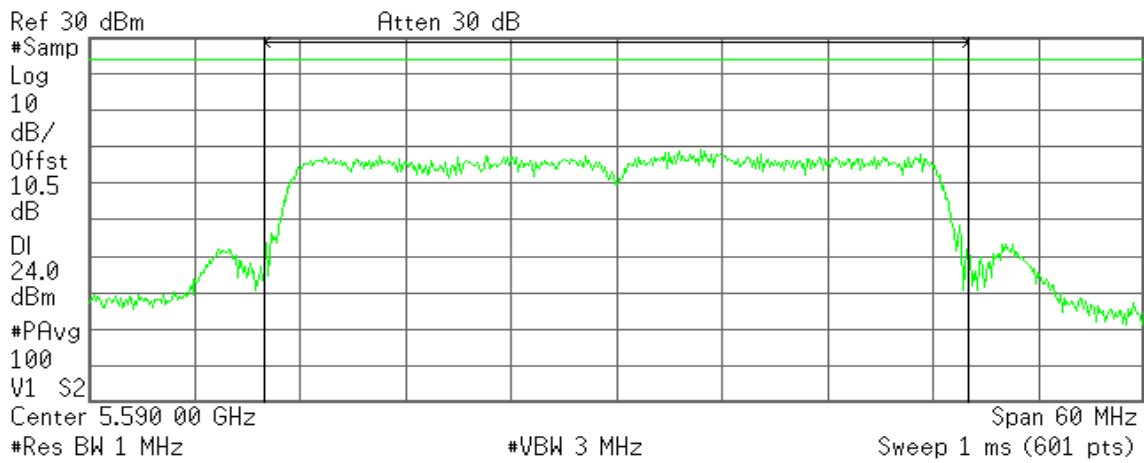
-65.07 dBm/Hz



CH Mid

Agilent 16:47:33 Dec 20, 2011

R T



Channel Power

11.48 dBm /40.0000 MHz

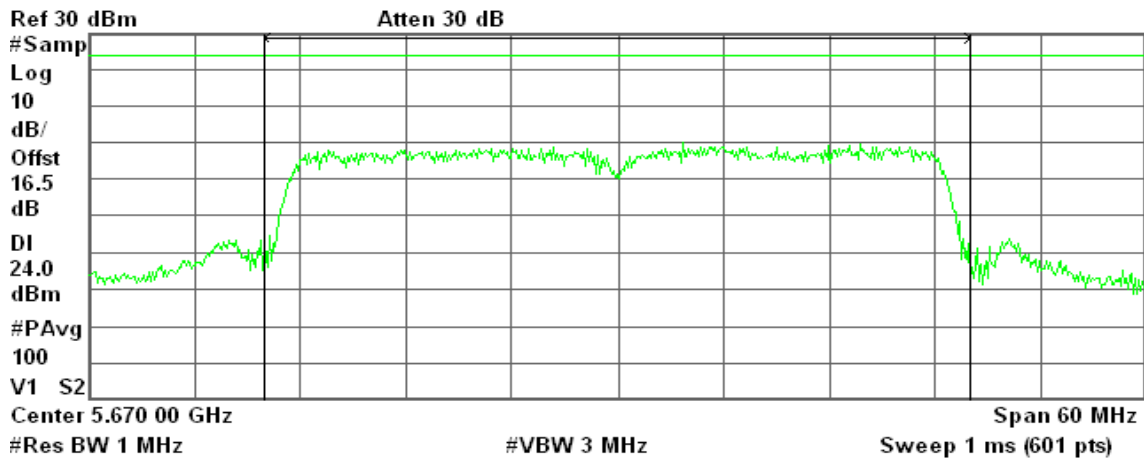
Power Spectral Density

-64.54 dBm/Hz

CH High

Agilent

R T



Channel Power

12.37 dBm /40.0000 MHz

Power Spectral Density

-63.65 dBm/Hz

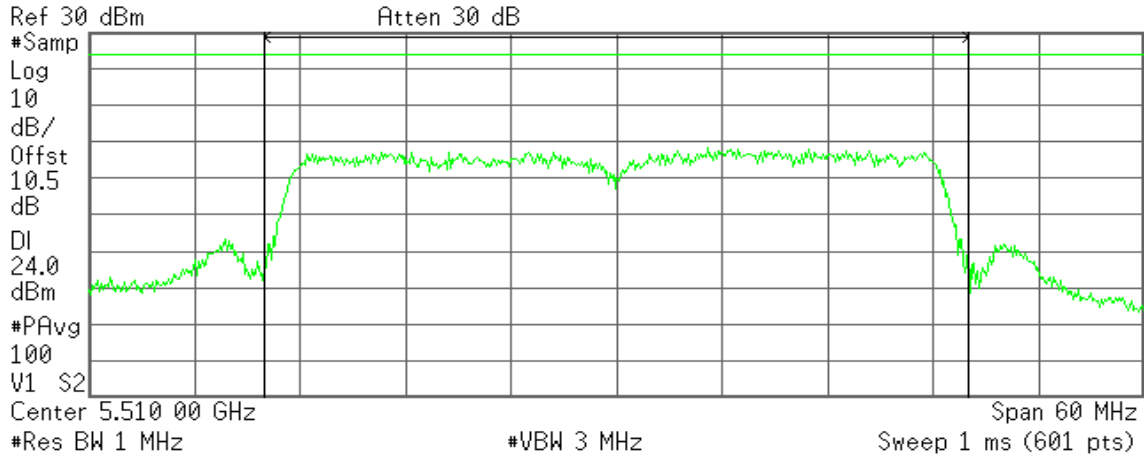


IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 1

CH Low

Agilent 17:22:17 Dec 20, 2011

R T



Channel Power

10.00 dBm /40.00000 MHz

Power Spectral Density

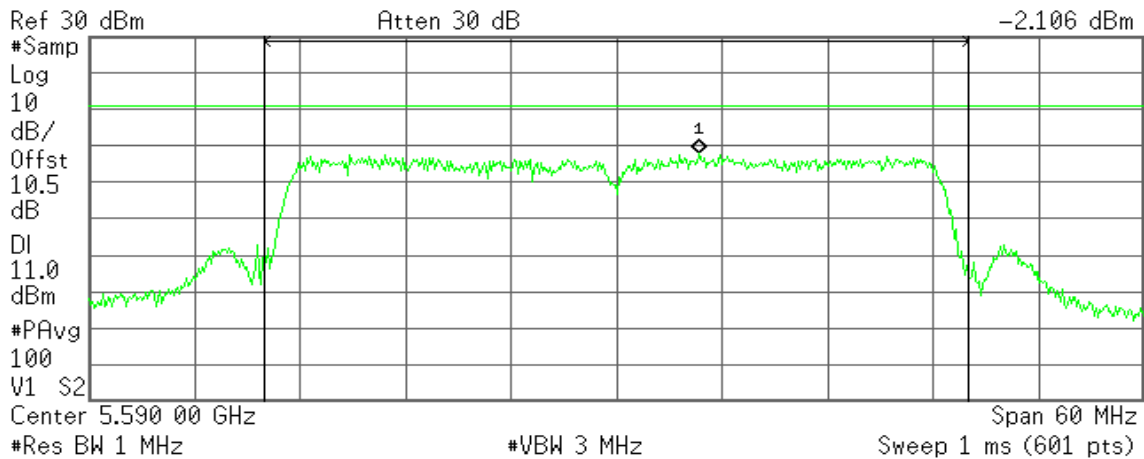
-66.02 dBm/Hz

CH Mid

Agilent 17:26:24 Dec 20, 2011

R T

Mkr1 5.594 70 GHz
-2.106 dBm



Channel Power

9.96 dBm /40.00000 MHz

Power Spectral Density

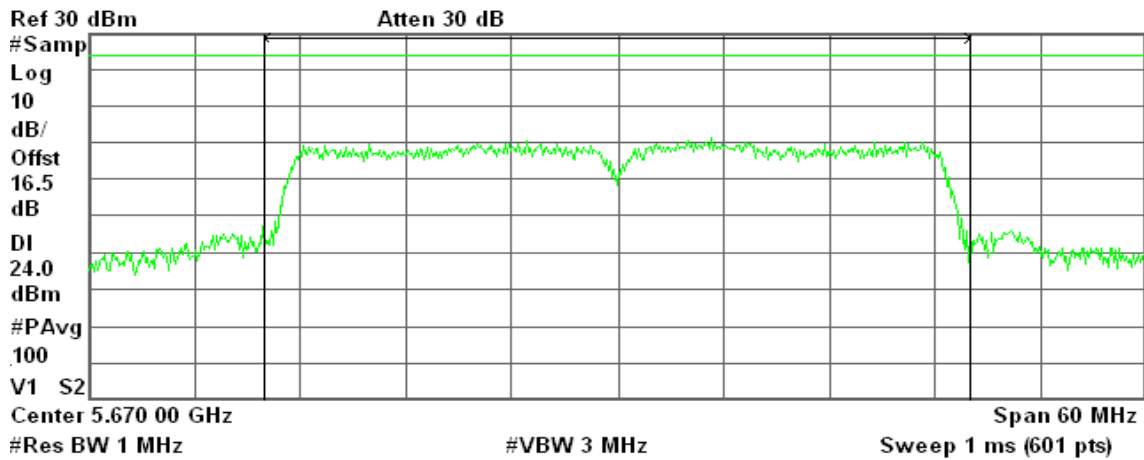
-66.07 dBm/Hz



CH High

Agilent

R L



Channel Power

13.63 dBm / 40.0000 MHz

Power Spectral Density

-62.39 dBm/Hz



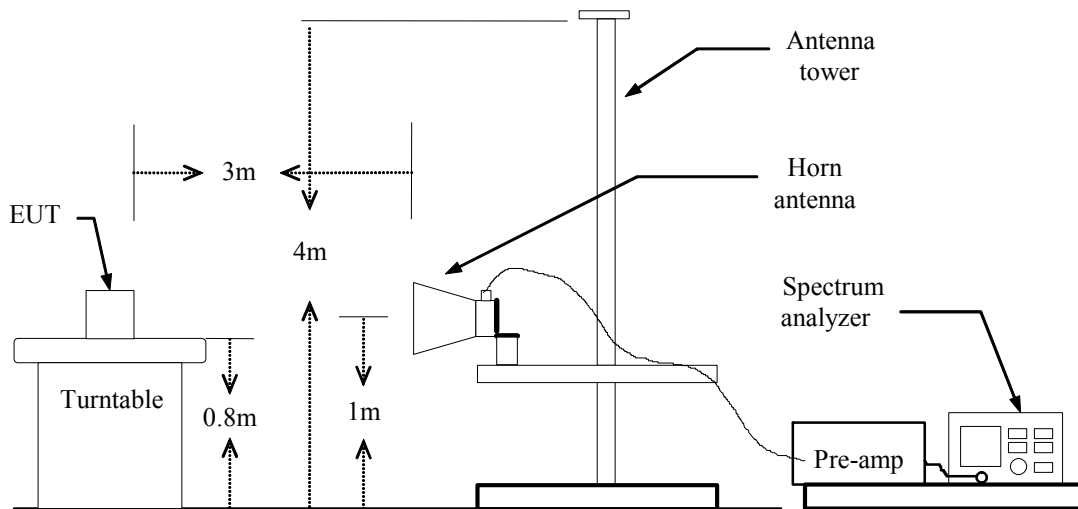
8.5 BAND EDGES MEASUREMENT

LIMIT

According to §15.407(b) & RSS-210 §A8.5,

- (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=1MHz VBW=3MHz / Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz
duty cycle ≥ 98 percent, set VBW \leq RBW/100 but not less than 10 Hz.
duty cycle < 98 percent, set VBW $\geq 1/T$
 - (c) / 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.



A mode duty cycle

$2.087/2.213=0.94 <98$

$1/T=1/2.087\text{ms}=479\text{Hz} <510$

VBW=510Hz

A20 mode duty cycle

$1.01/1.087 = 0.93 <98$

$1/T=1/1.01\text{ms} =990\text{Hz} <1\text{k}$

VBW=1kHz

A40 mode duty cycle

$500/565= 0.88 <98$

$1/T=1/0.5\text{ms}=2\text{k} <3\text{k}$

VBW=3kHz



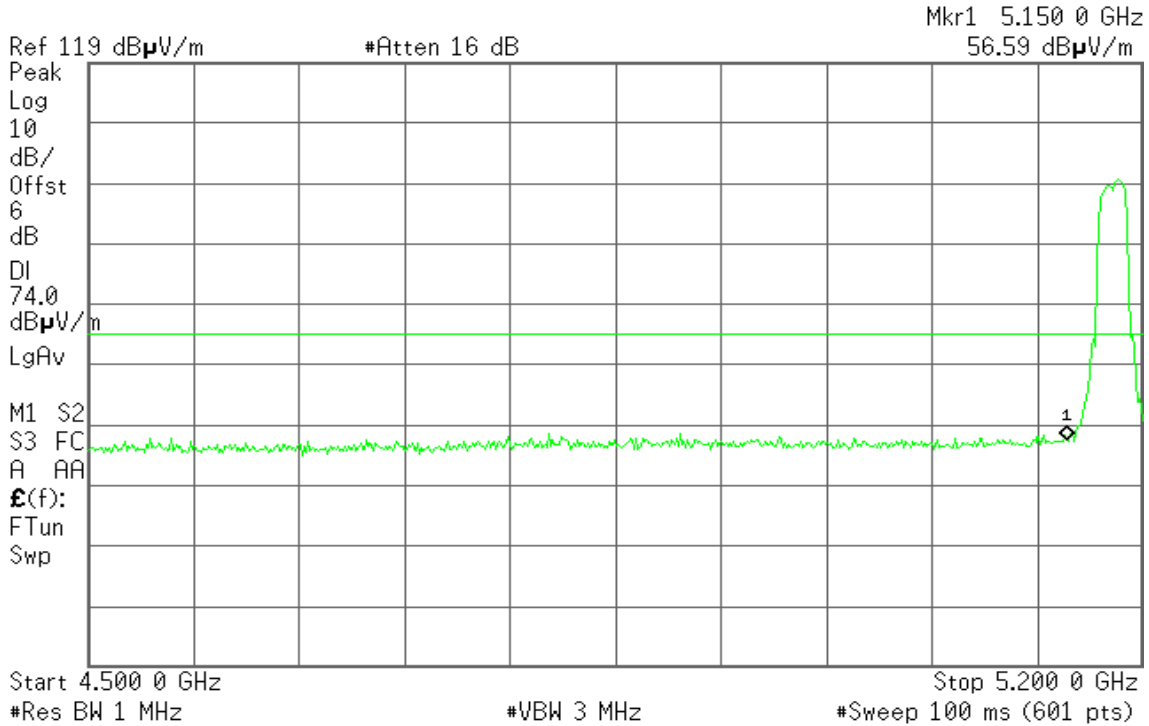
For Venture Antenna Band Edges (IEEE 802.11a mode / 5180 MHz)

Detector mode: Peak

Polarity: Vertical

Agilent 19:28:09 19 Dec 2011

R T

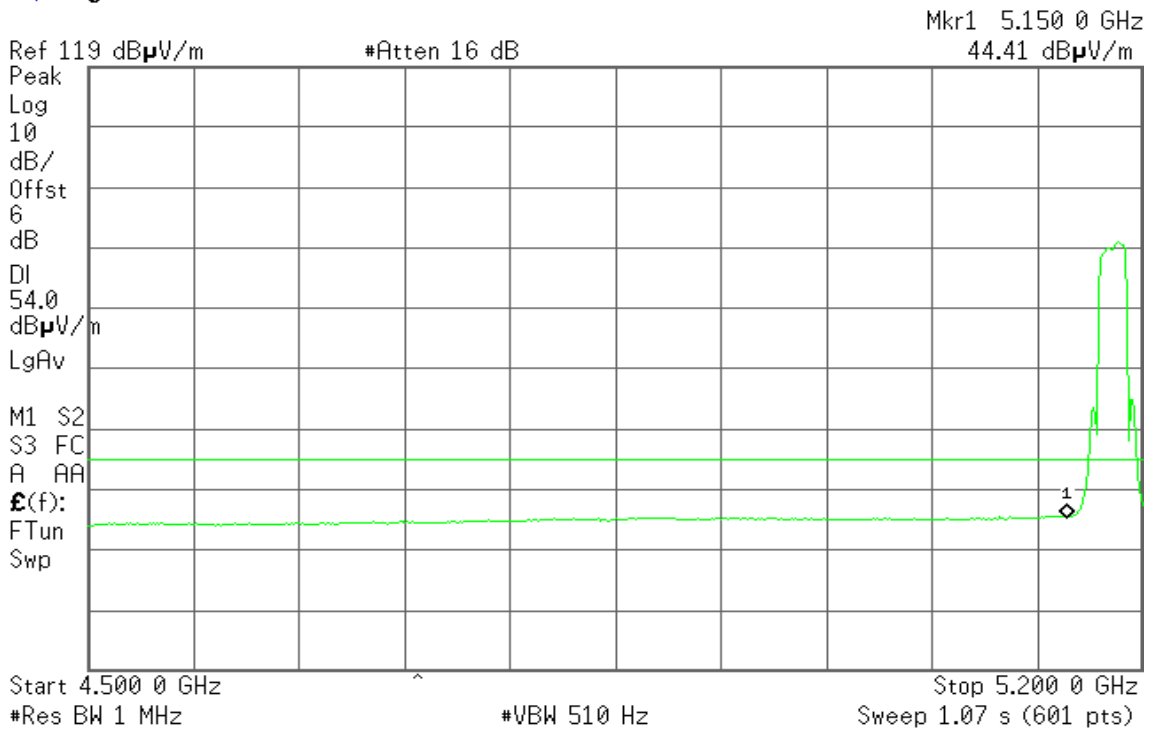


Detector mode: Average

Polarity: Vertical

Agilent 19:28:31 19 Dec 2011

R T



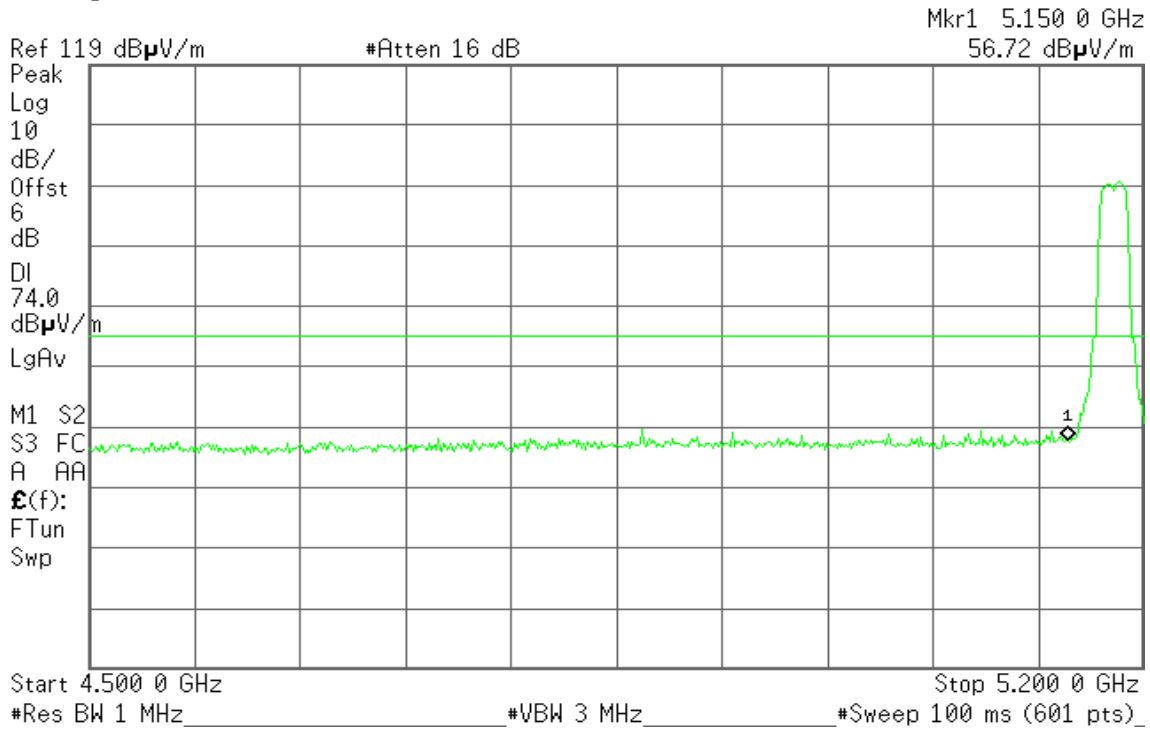


Detector mode: Peak

Polarity: Horizontal

* Agilent 19:22:51 19 Dec 2011

R T

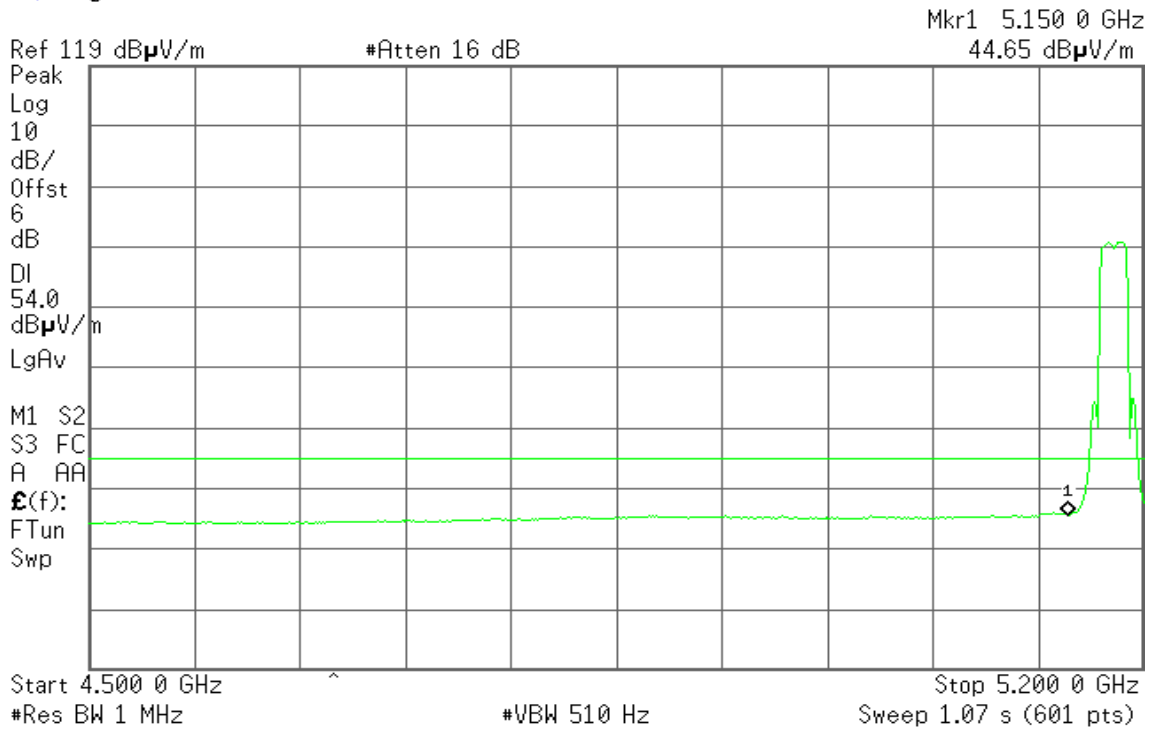


Detector mode: Average

Polarity: Horizontal

* Agilent 19:23:37 19 Dec 2011

R T





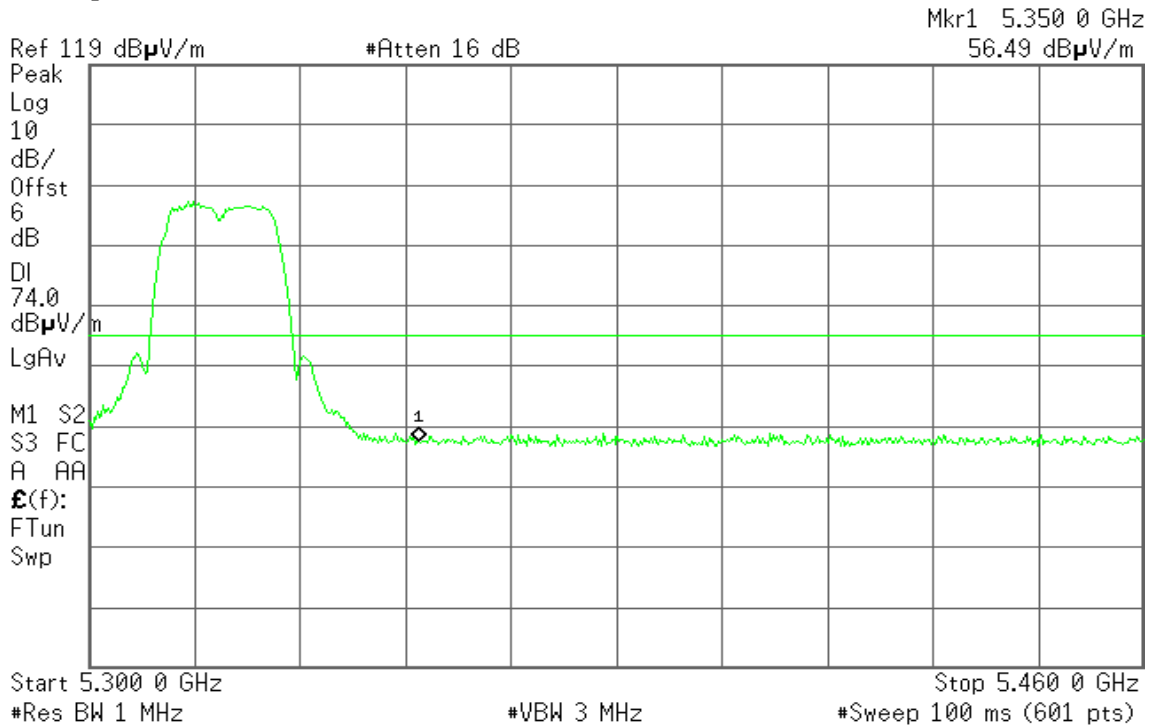
Band Edges (IEEE 802.11a mode / 5320 MHz)

Detector mode: Peak

Polarity: Vertical

Agilent 19:58:55 19 Dec 2011

R T

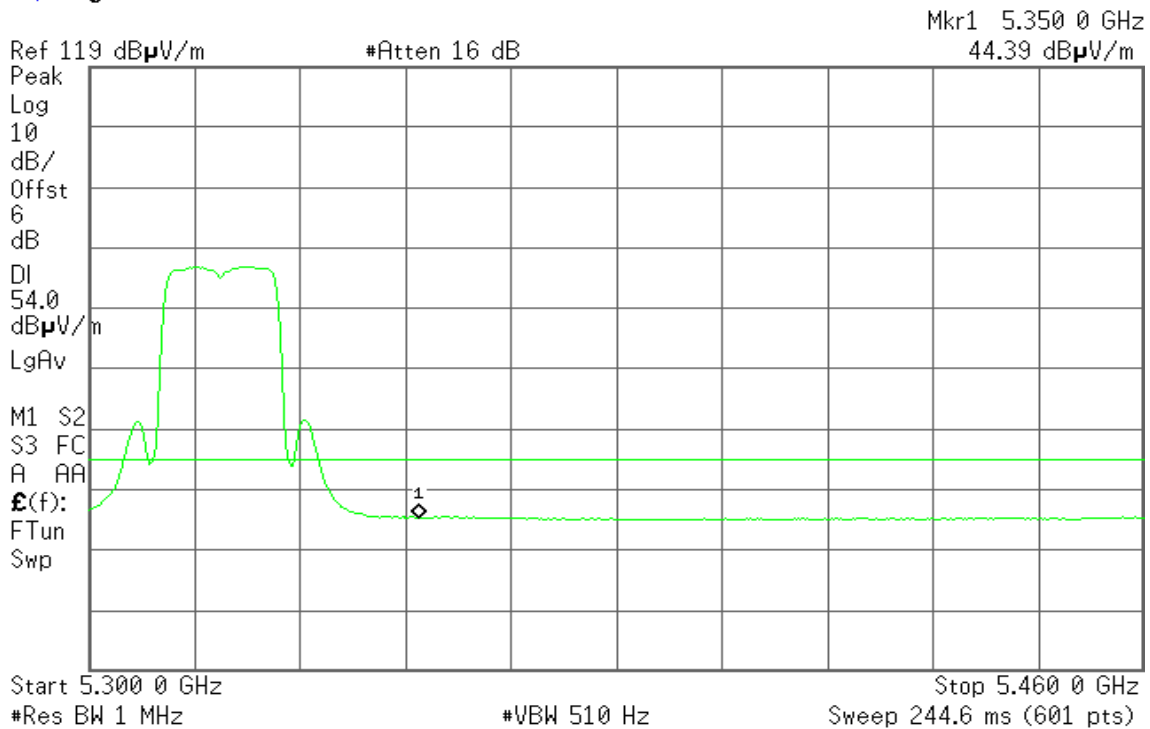


Detector mode: Average

Polarity: Vertical

Agilent 19:59:31 19 Dec 2011

R T



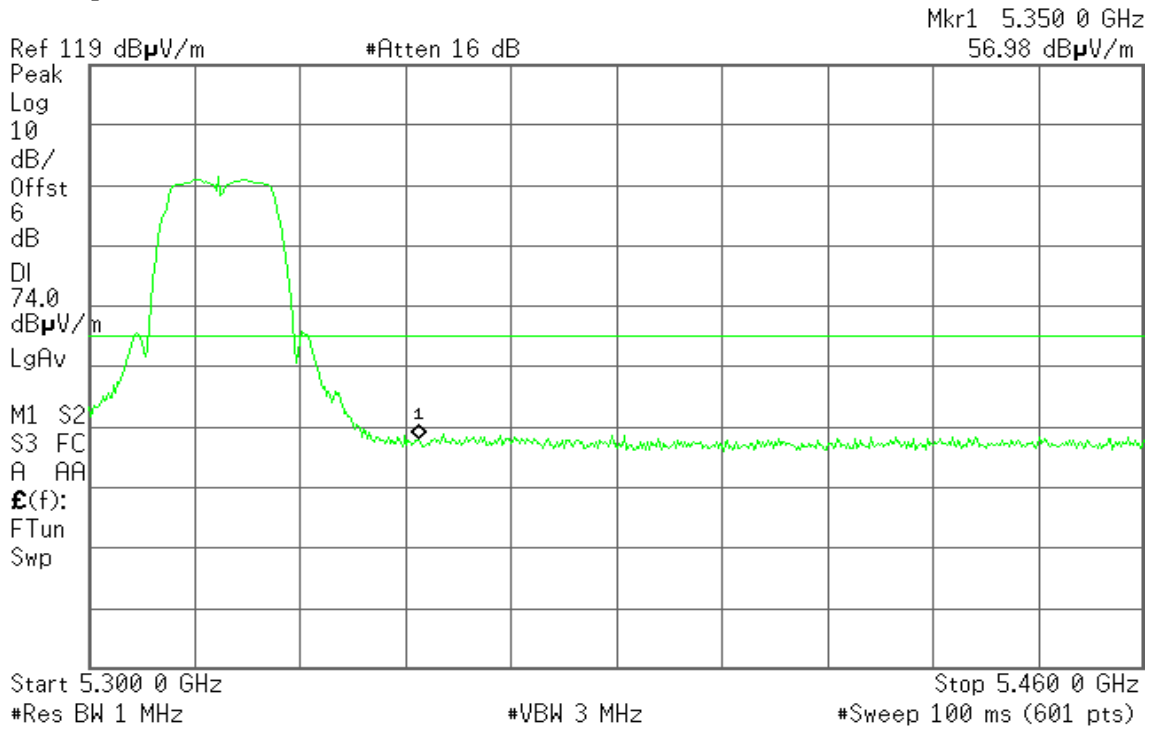


Detector mode: Peak

Polarity: Horizontal

Agilent 20:03:57 19 Dec 2011

R T

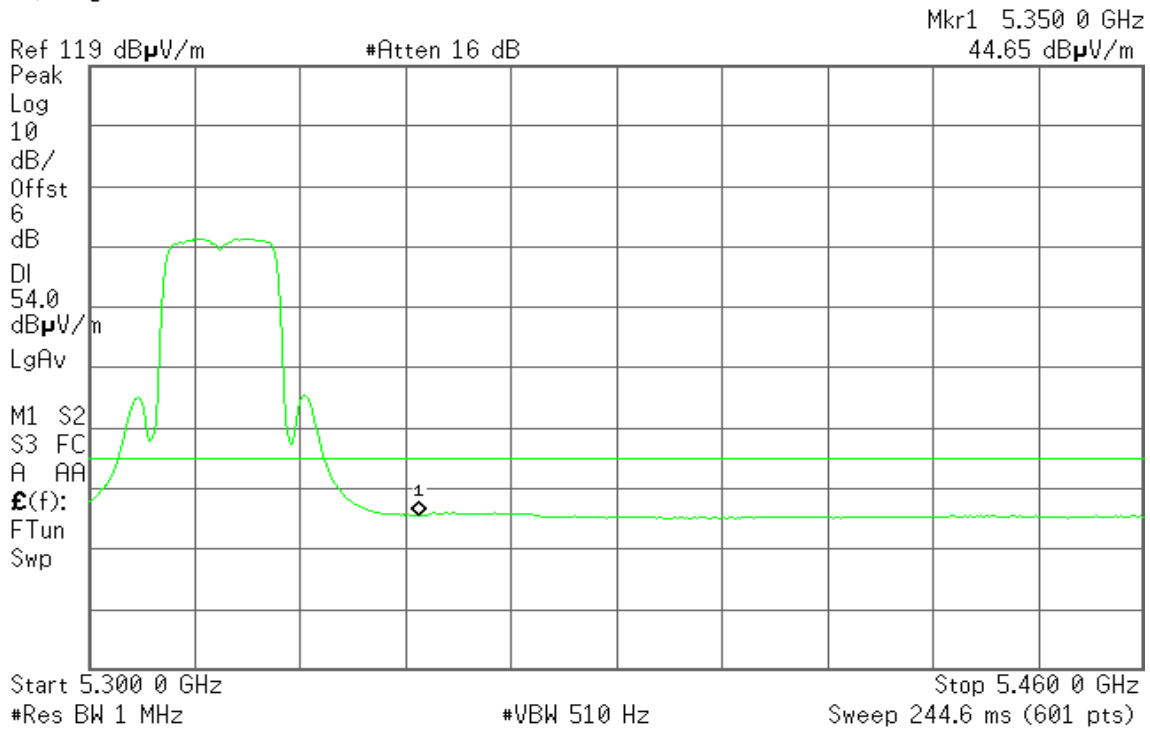


Detector mode: Average

Polarity: Horizontal

Agilent 20:04:49 19 Dec 2011

R T





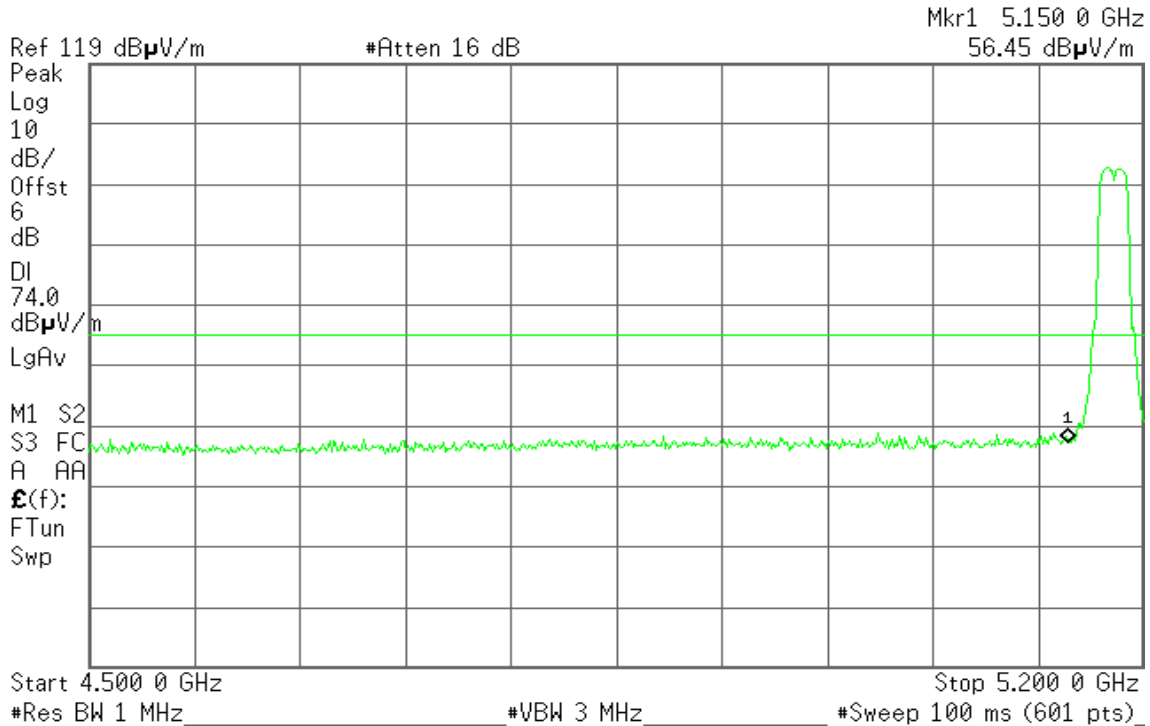
Band Edges (IEEE 802.11n HT 20 MHz Channel mode / 5180 MHz)

Detector mode: Peak

Polarity: Vertical

Agilent 10:48:37 20 Dec 2011

R T

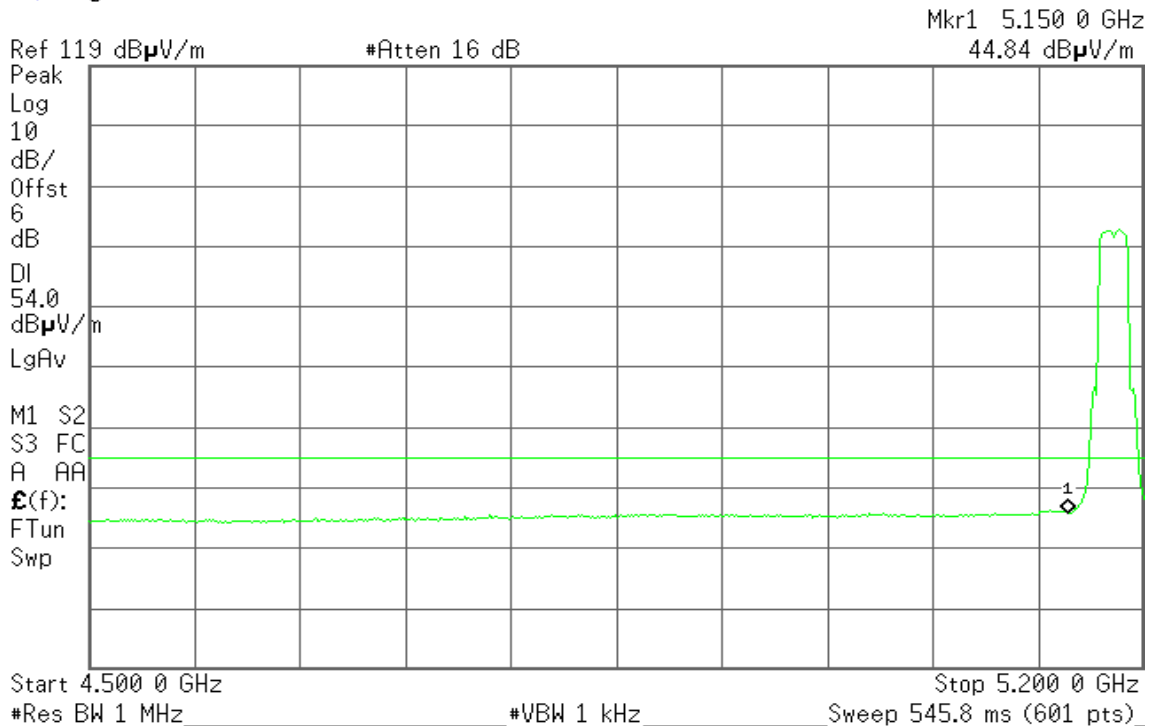


Detector mode: Average

Polarity: Vertical

Agilent 10:48:58 20 Dec 2011

R T



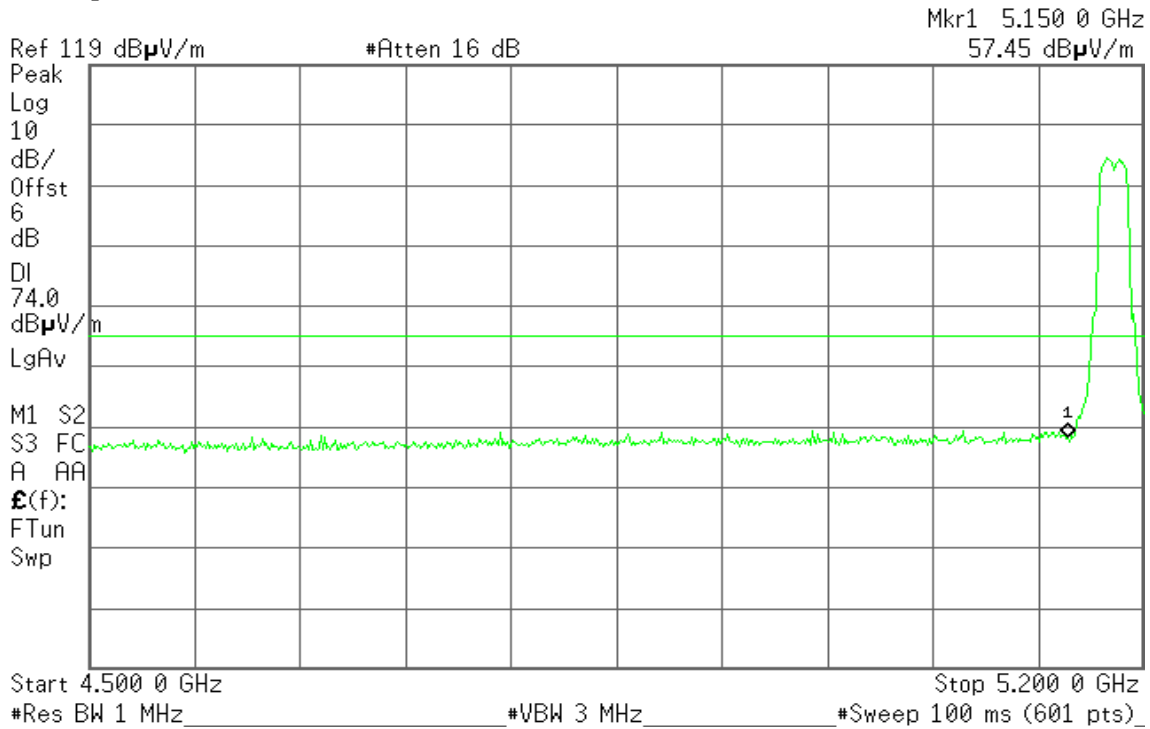


Detector mode: Peak

Polarity: Horizontal

Agilent 10:43:10 20 Dec 2011

R T

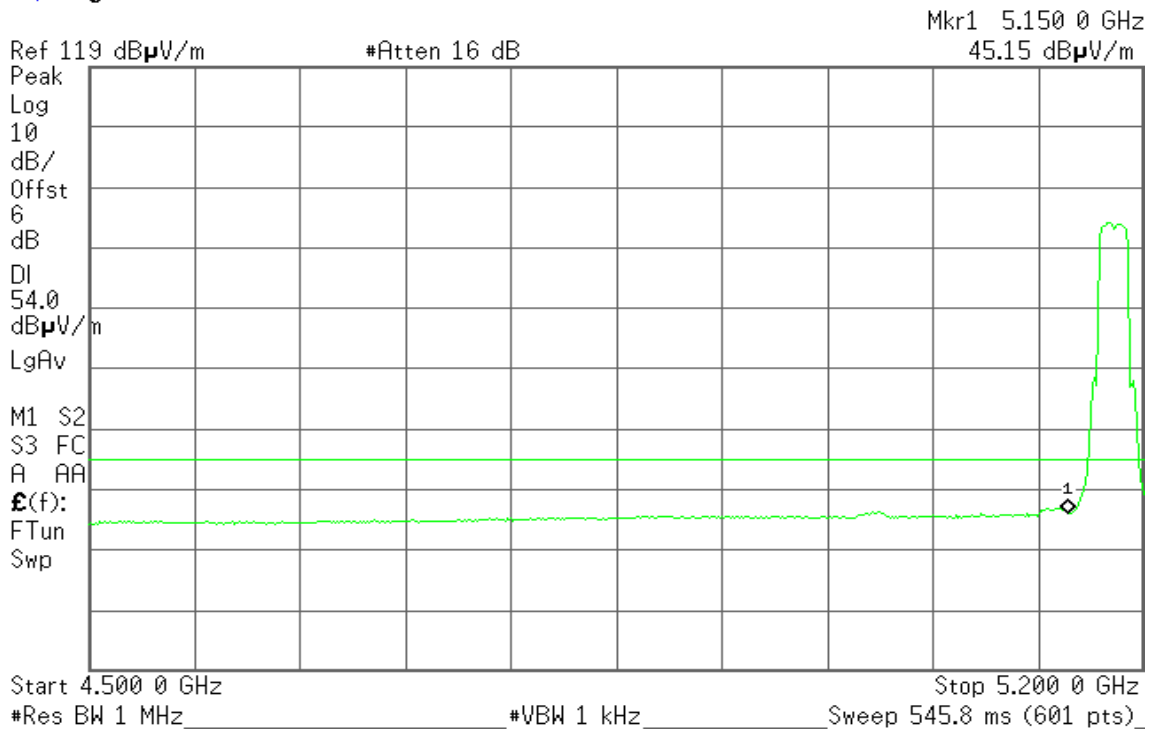


Detector mode: Average

Polarity: Horizontal

Agilent 10:43:35 20 Dec 2011

R T





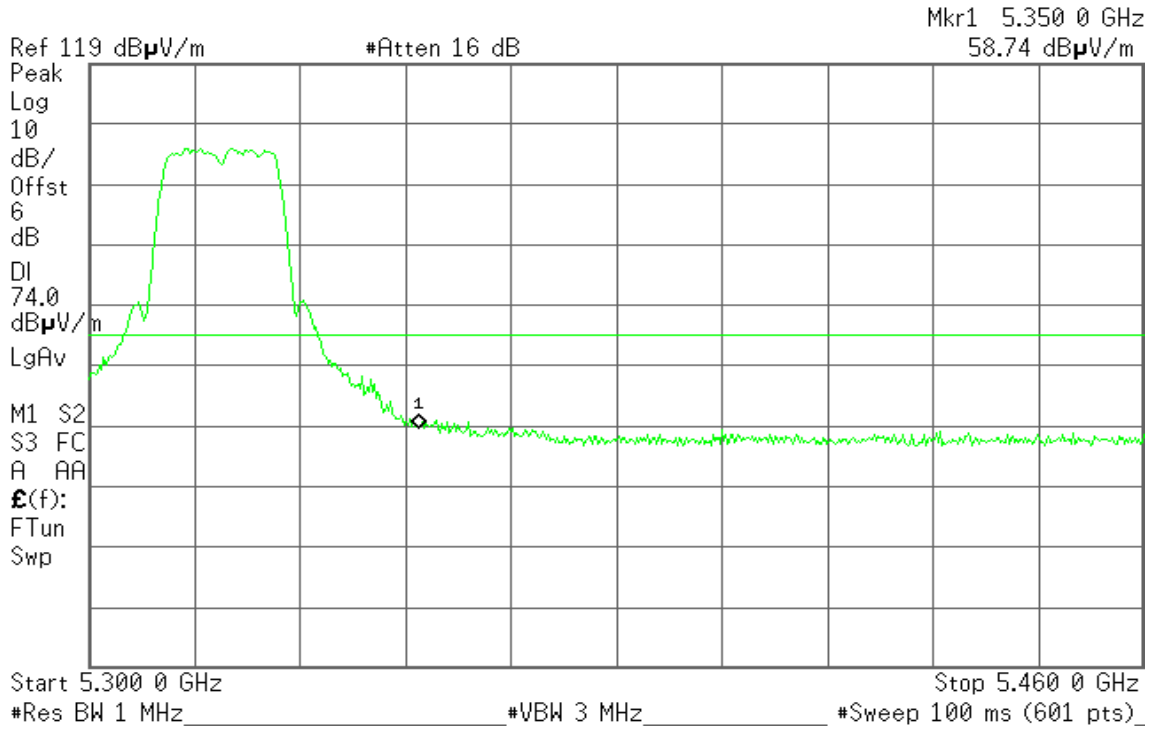
Band Edges (IEEE 802.11n HT 20 MHz Channel mode / 5320 MHz)

Detector mode: Peak

Polarity: Vertical

Agilent 11:17:52 20 Dec 2011

R T

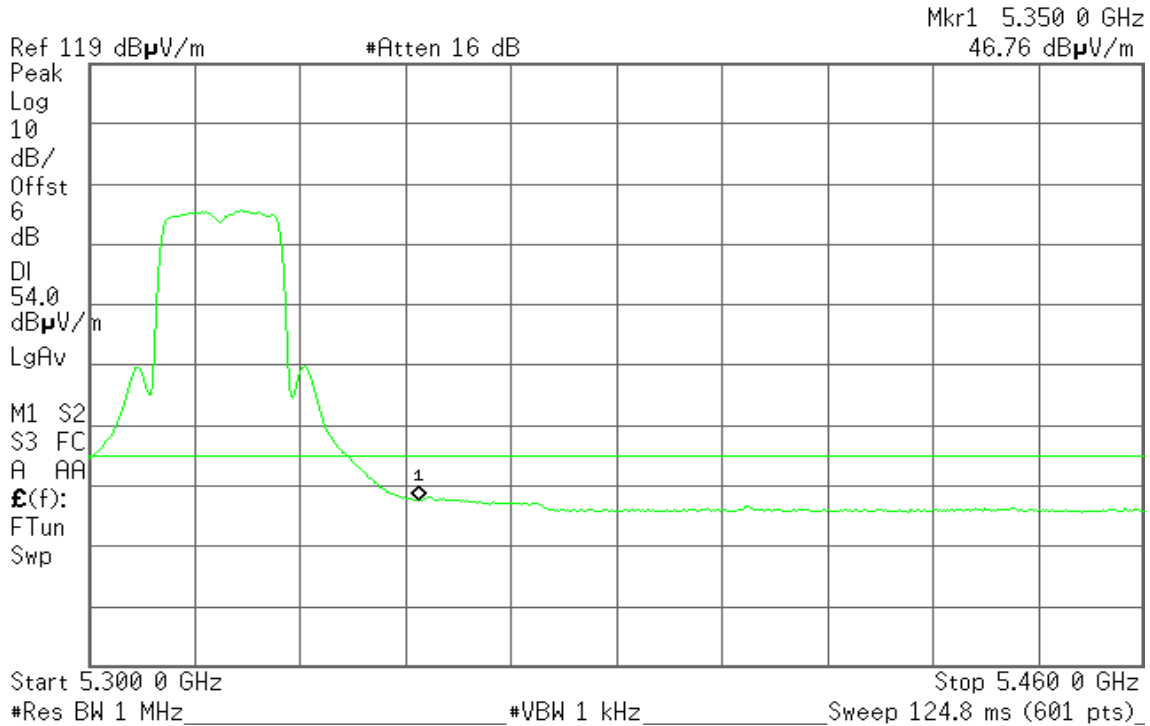


Detector mode: Average

Polarity: Vertical

Agilent 11:18:17 20 Dec 2011

R T



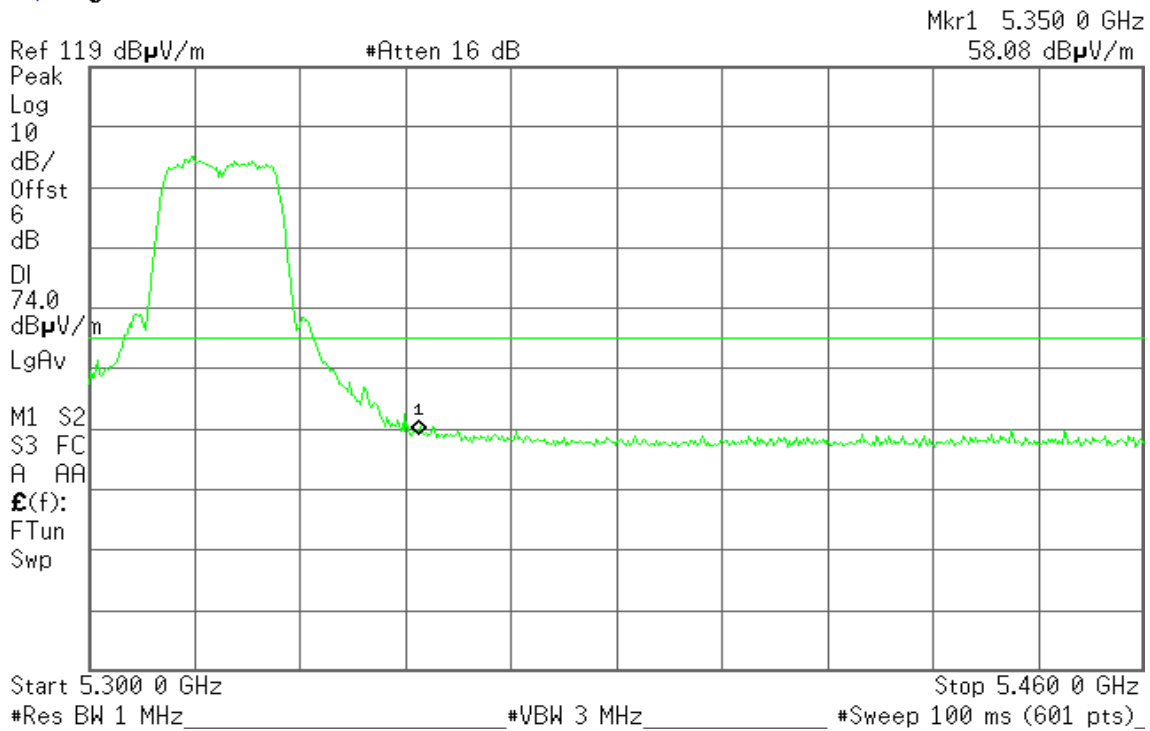


Detector mode: Peak

Polarity: Horizontal

Agilent 11:22:37 20 Dec 2011

R T

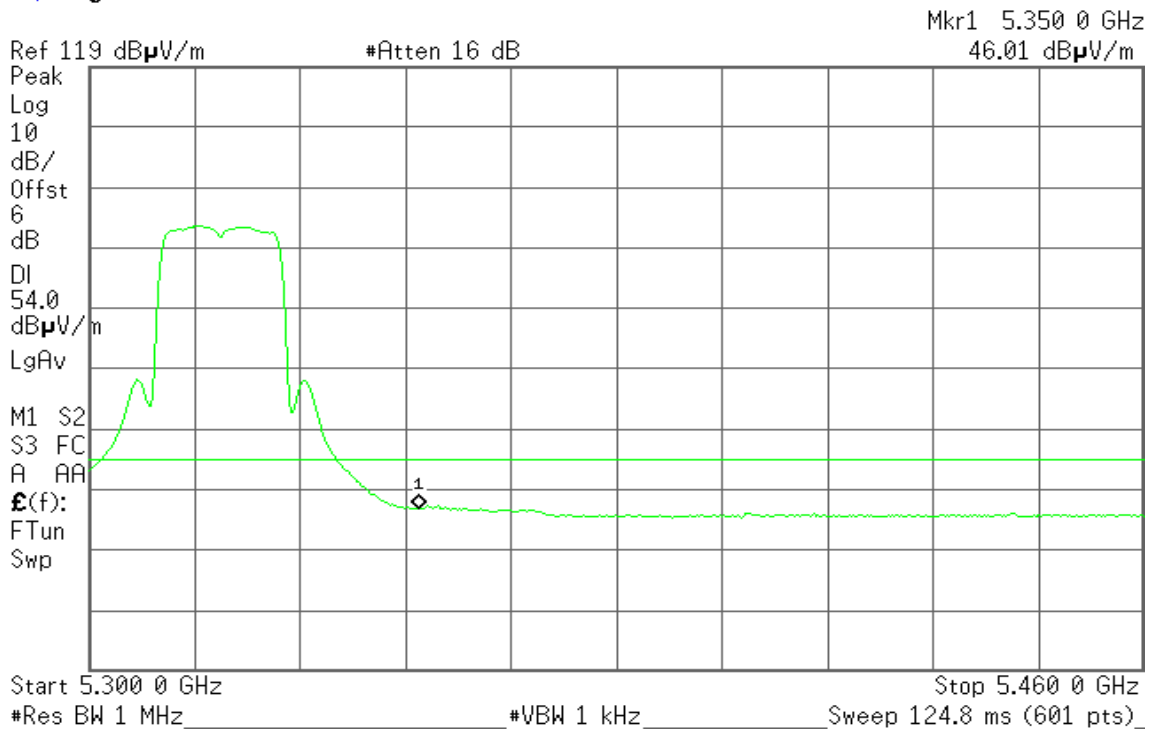


Detector mode: Average

Polarity: Horizontal

Agilent 11:22:57 20 Dec 2011

R T





Band Edges (IEEE 802.11n HT 40 MHz mode / 5190 MHz)

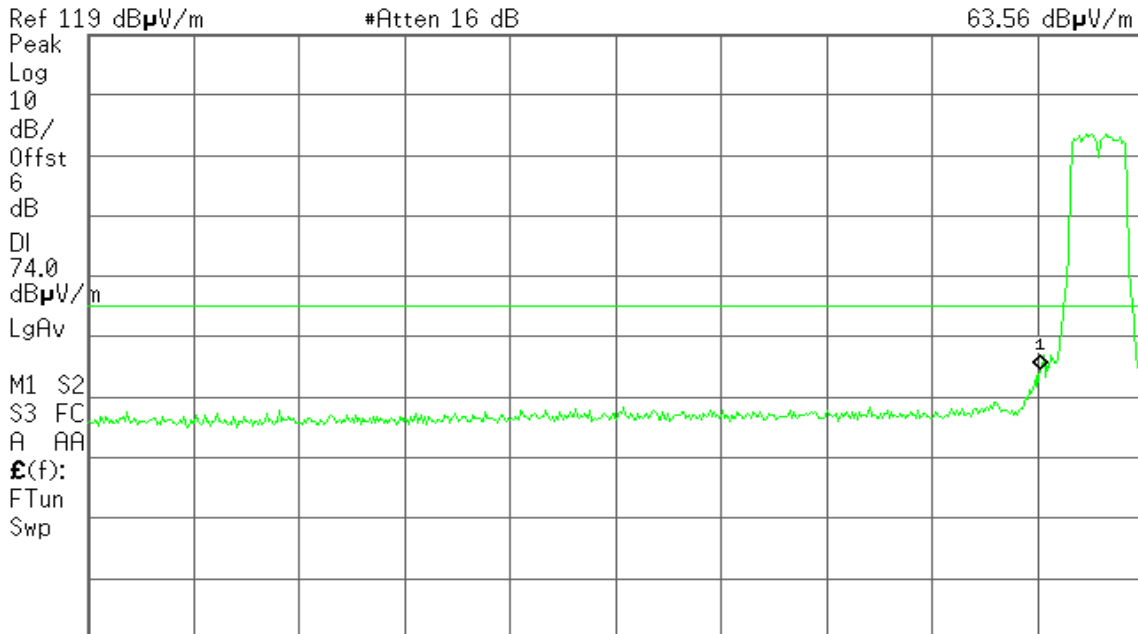
Detector mode: Peak

Polarity: Vertical

Agilent 15:11:10 20 Dec 2011

R T

Mkr1 5.150 0 GHz
63.56 dB μ V/m



Start 4.500 0 GHz Stop 5.220 0 GHz
#Res BW 1 MHz #VBW 3 MHz #Sweep 100 ms (601 pts)

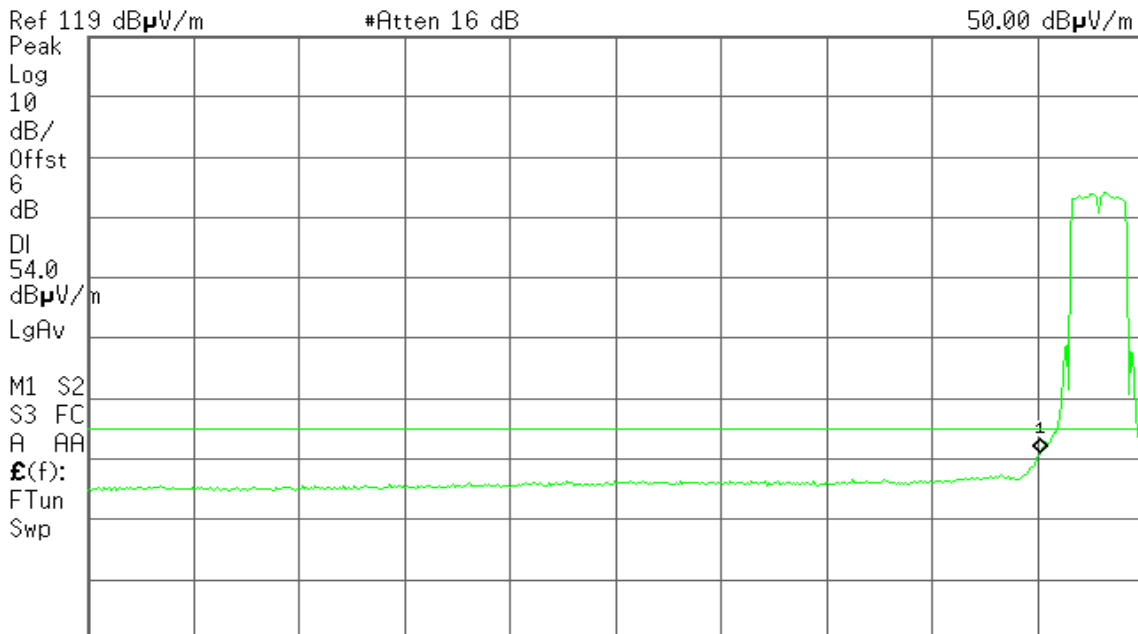
Detector mode: Average

Polarity: Vertical

Agilent 15:11:35 20 Dec 2011

R T

Mkr1 5.150 0 GHz
50.00 dB μ V/m



Start 4.500 0 GHz Stop 5.220 0 GHz
#Res BW 1 MHz #VBW 3 kHz Sweep 187.2 ms (601 pts)

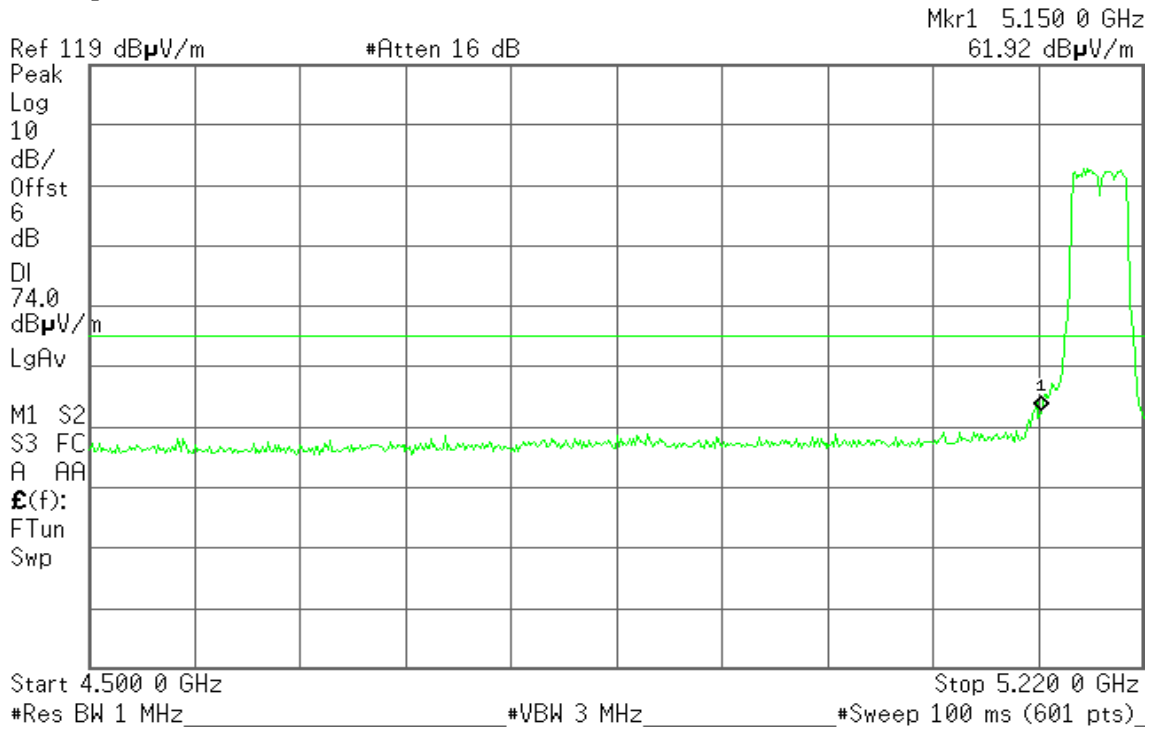


Detector mode: Peak

Polarity: Horizontal

Agilent 15:04:54 20 Dec 2011

R T

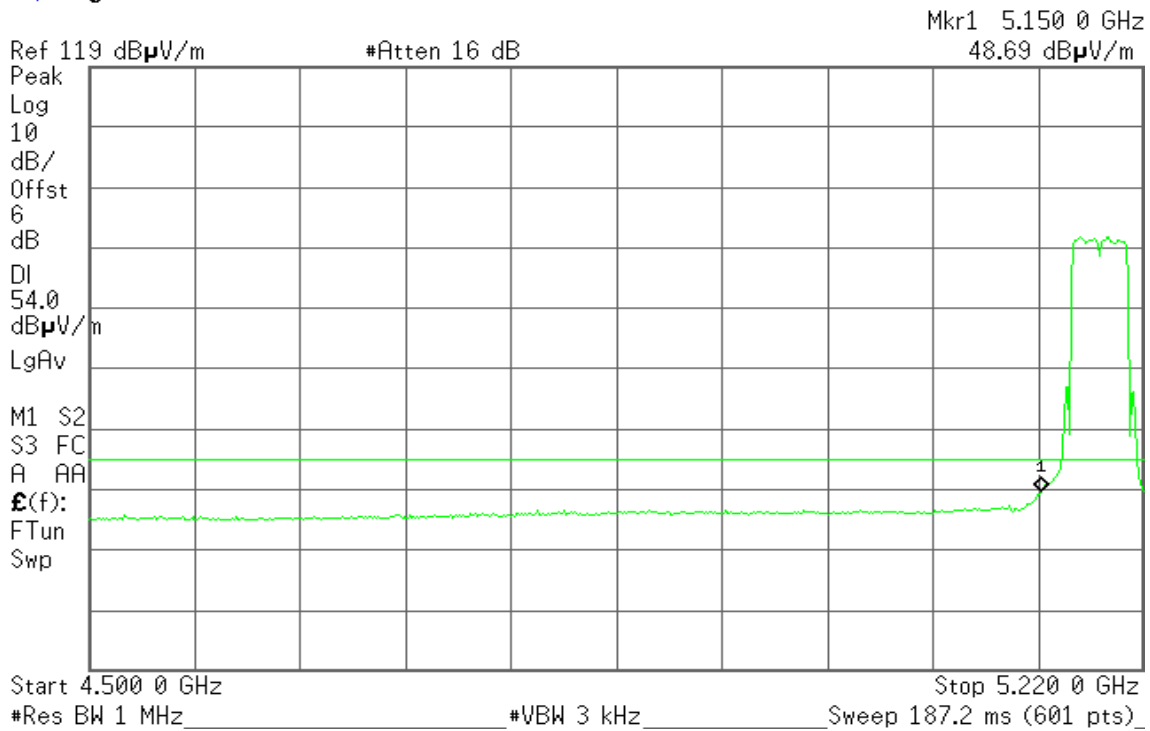


Detector mode: Average

Polarity: Horizontal

Agilent 15:12:49 20 Dec 2011

R T





Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5310 MHz)

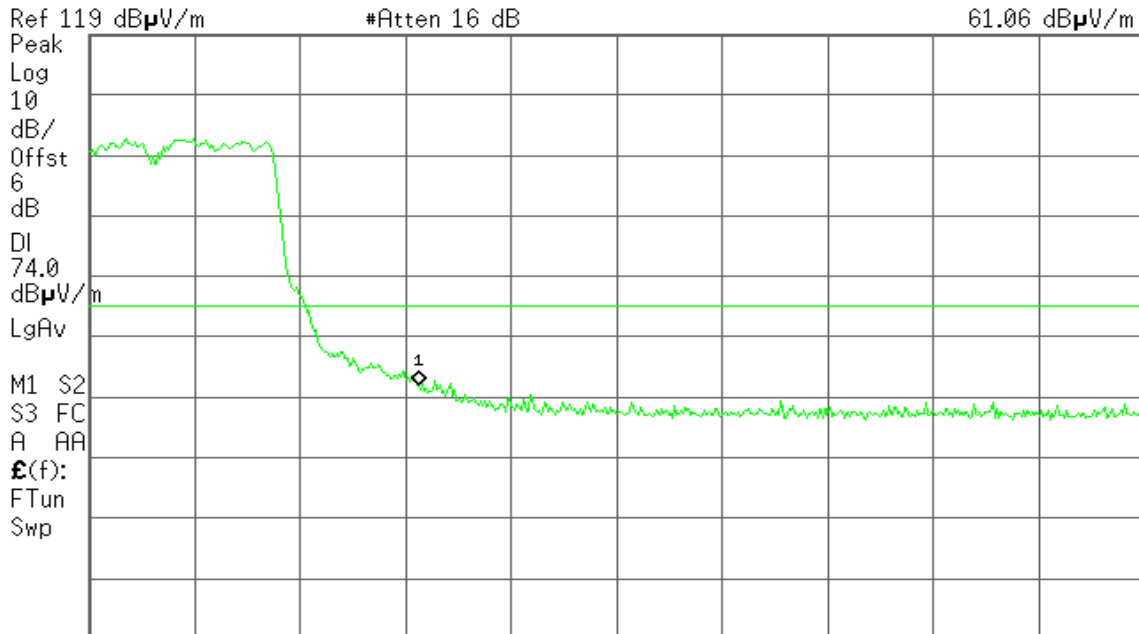
Detector mode: Peak

Polarity: Vertical

Agilent 15:31:25 20 Dec 2011

R T

Mkr1 5.350 0 GHz
61.06 dB μ V/m



Start 5.300 0 GHz Stop 5.460 0 GHz
#Res BW 1 MHz #VBW 3 MHz #Sweep 100 ms (601 pts)

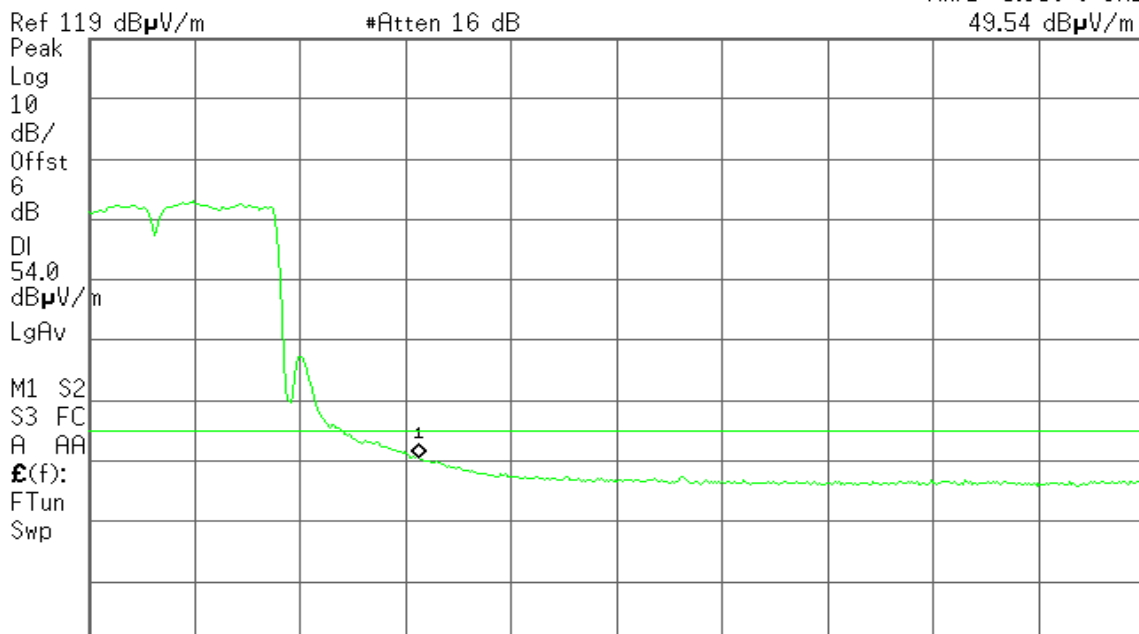
Detector mode: Average

Polarity: Vertical

Agilent 15:31:45 20 Dec 2011

R T

Mkr1 5.350 0 GHz
49.54 dB μ V/m



Start 5.300 0 GHz Stop 5.460 0 GHz
#Res BW 1 MHz #VBW 3 kHz Sweep 41.6 ms (601 pts)

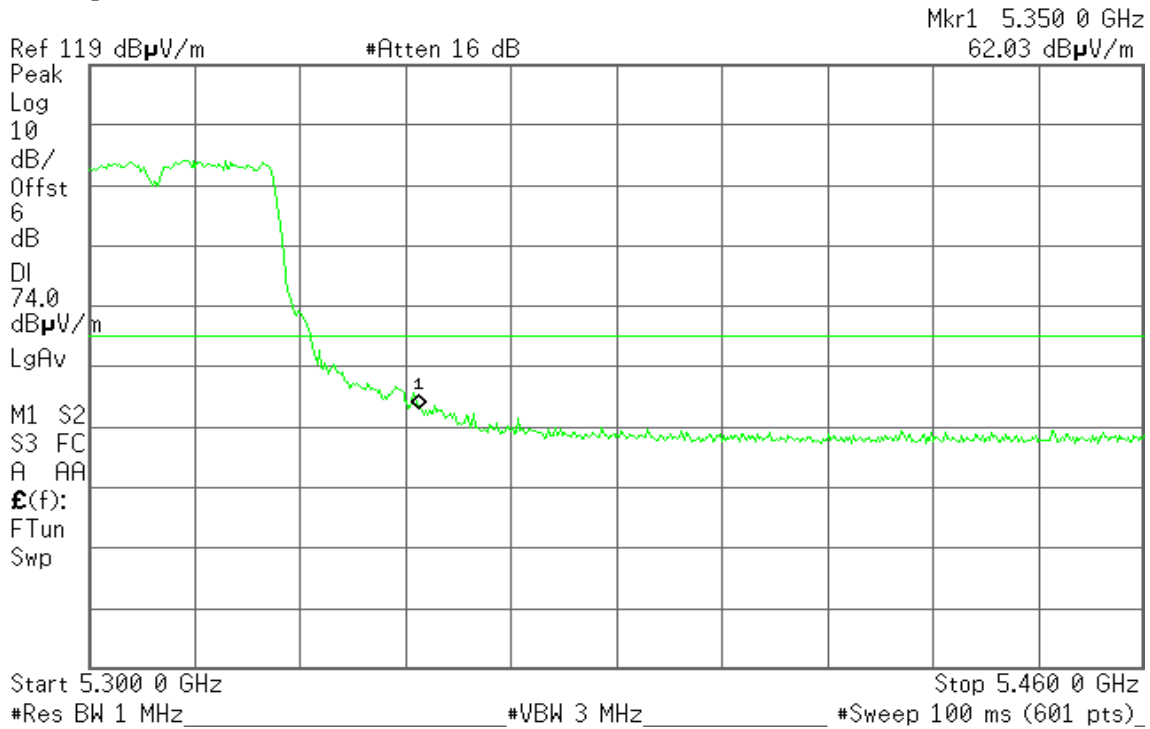


Detector mode: Peak

Polarity: Horizontal

Agilent 15:26:37 20 Dec 2011

R T

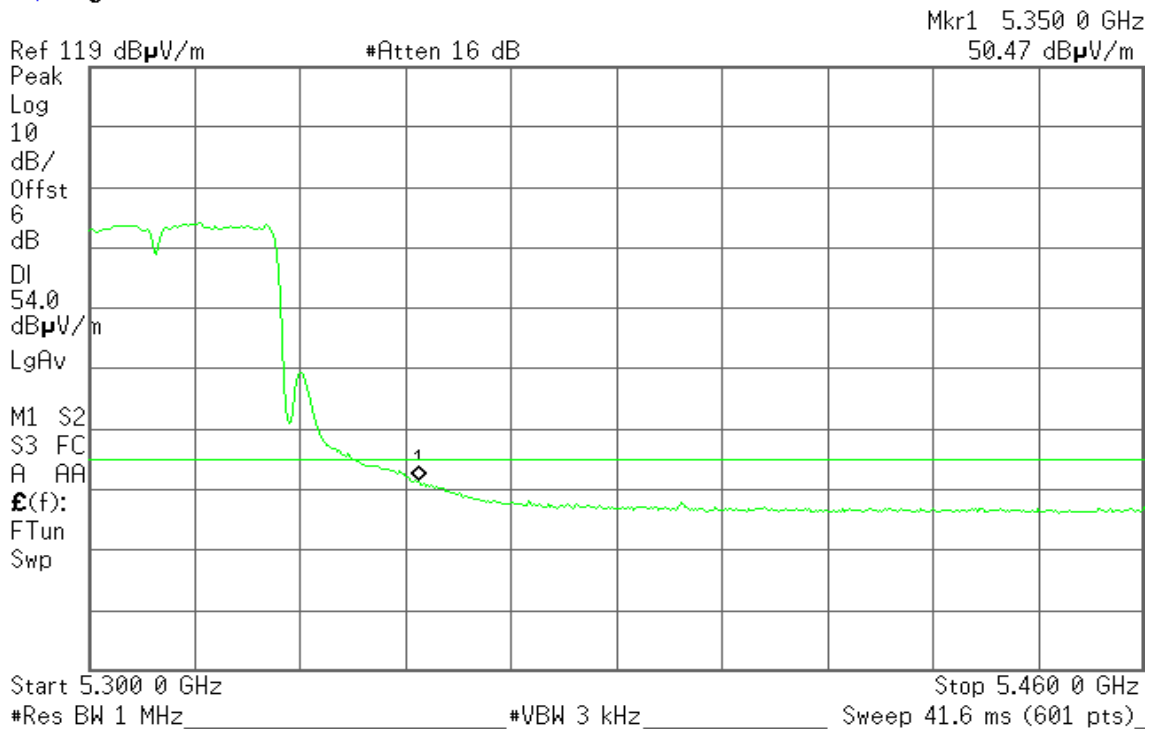


Detector mode: Average

Polarity: Horizontal

Agilent 15:26:55 20 Dec 2011

R L





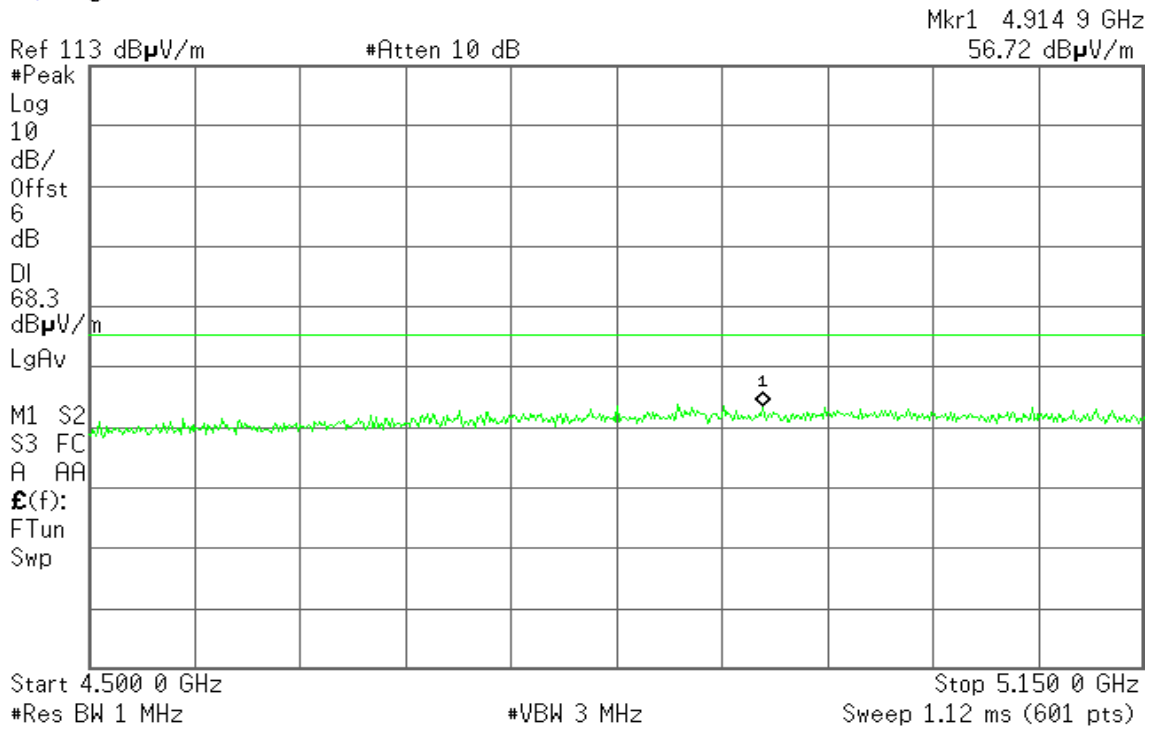
Antenna for Laird Technologies / Part Number: OEM2689-P110 Band Edges (IEEE 802.11a mode / 5180 MHz)

Detector mode: Peak

Polarity: Vertical

Agilent

R T

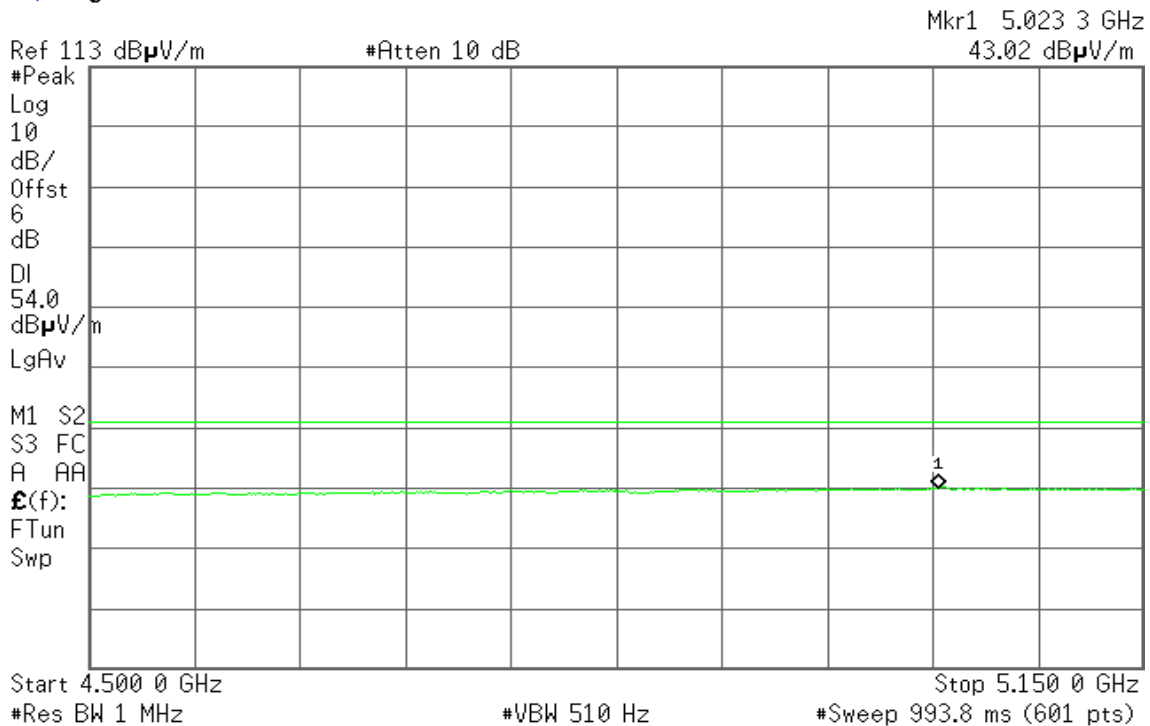


Detector mode: Average

Polarity: Vertical

Agilent

R T



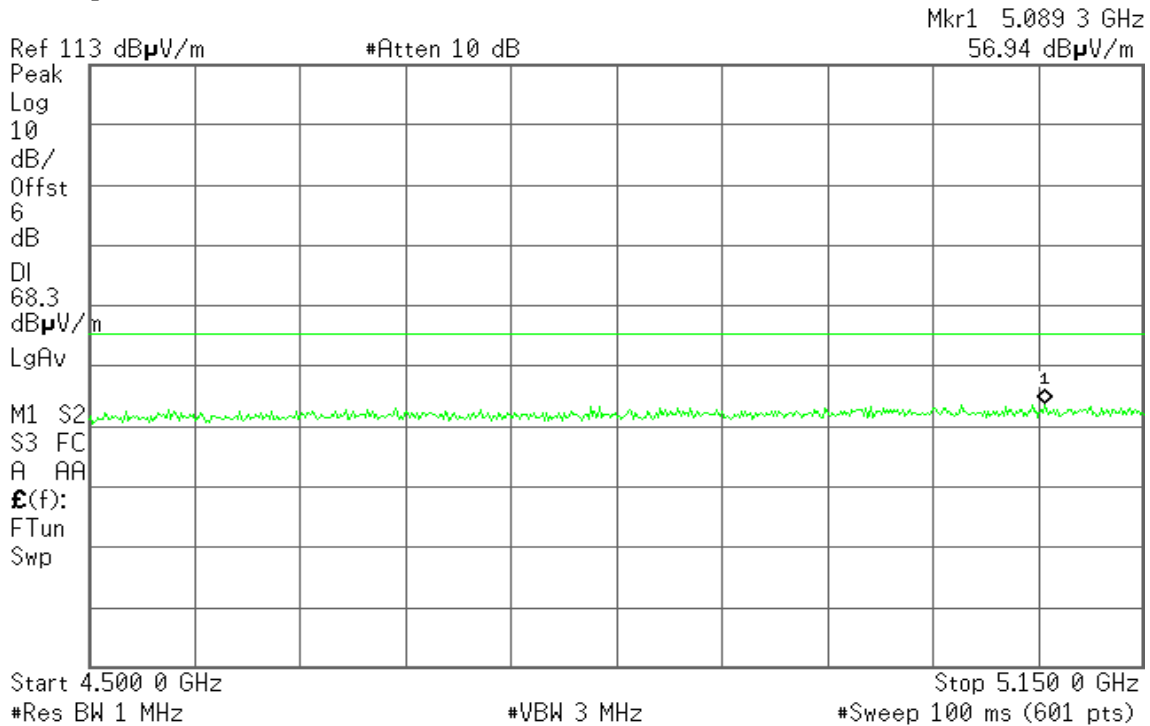


Detector mode: Peak

Polarity: Horizontal

Agilent

R T

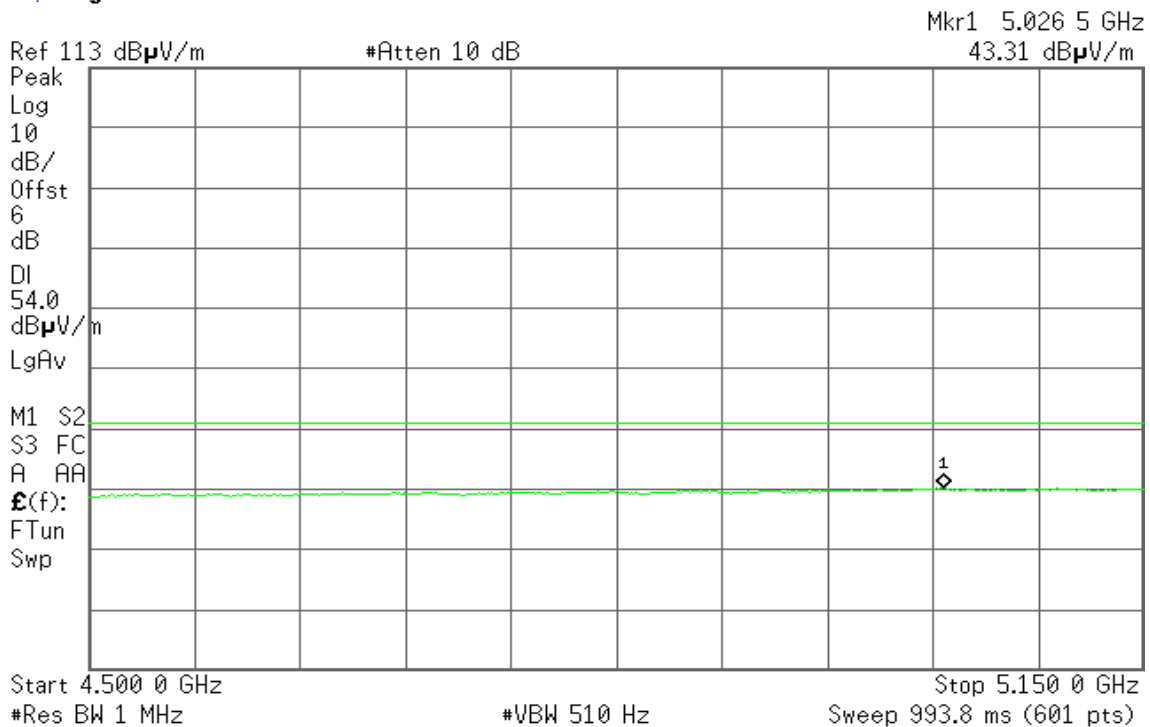


Detector mode: Average

Polarity: Horizontal

Agilent

R T

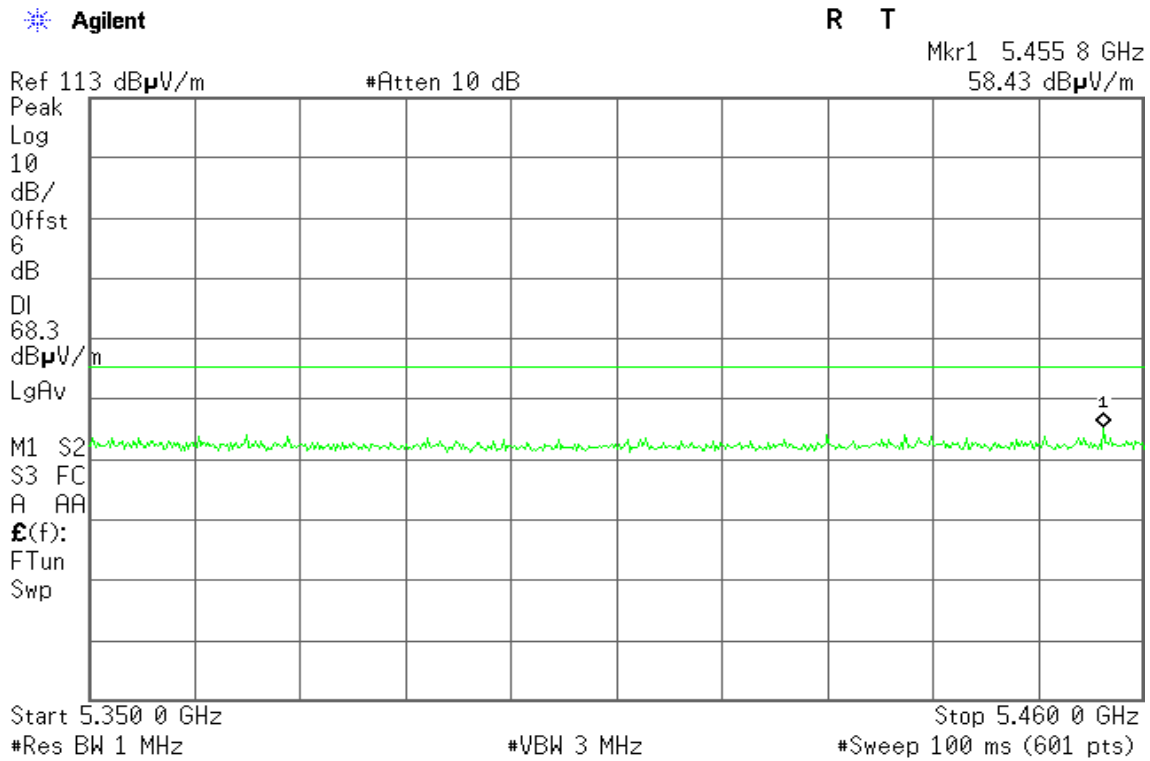




Band Edges (IEEE 802.11a mode / 5320 MHz)

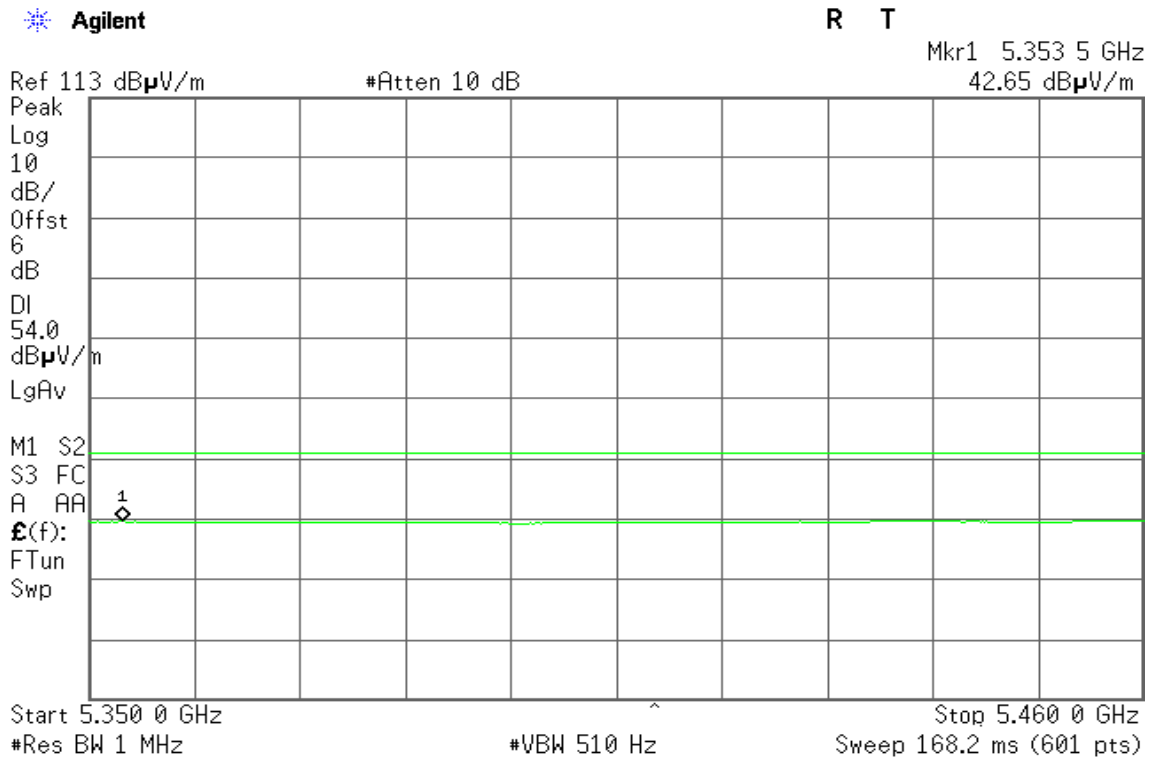
Detector mode: Peak

Polarity: Vertical



Detector mode: Average

Polarity: Vertical



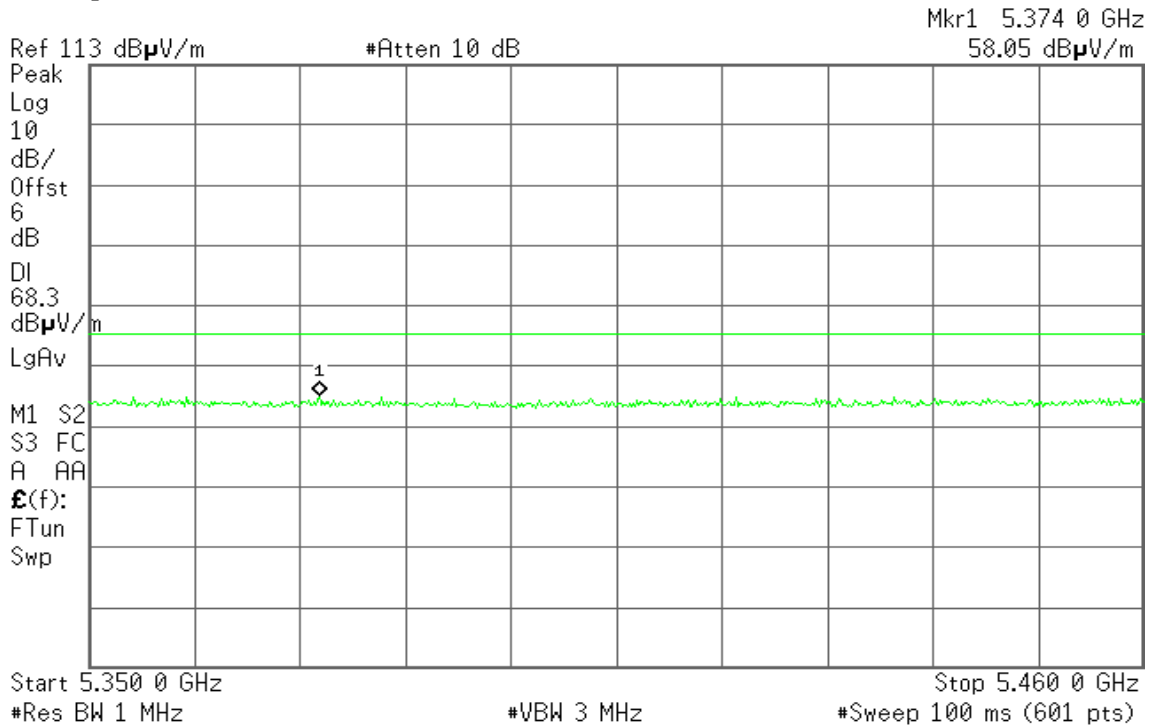


Detector mode: Peak

Polarity: Horizontal

Agilent

R T

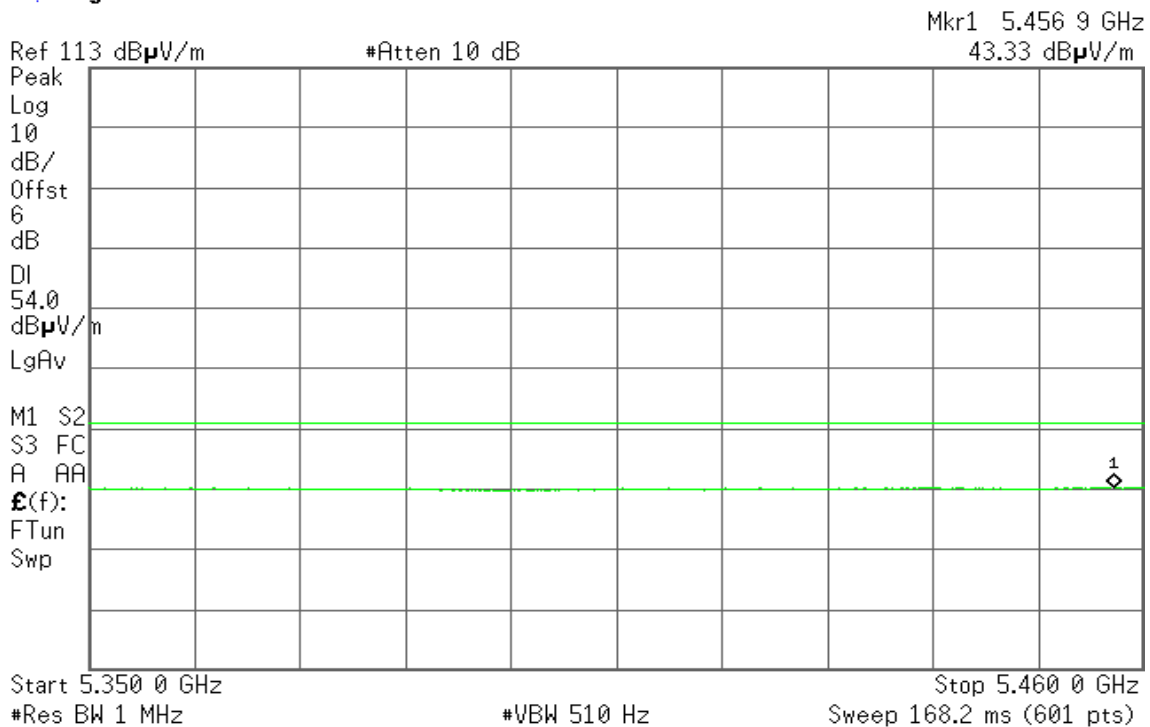


Detector mode: Average

Polarity: Horizontal

Agilent

R T





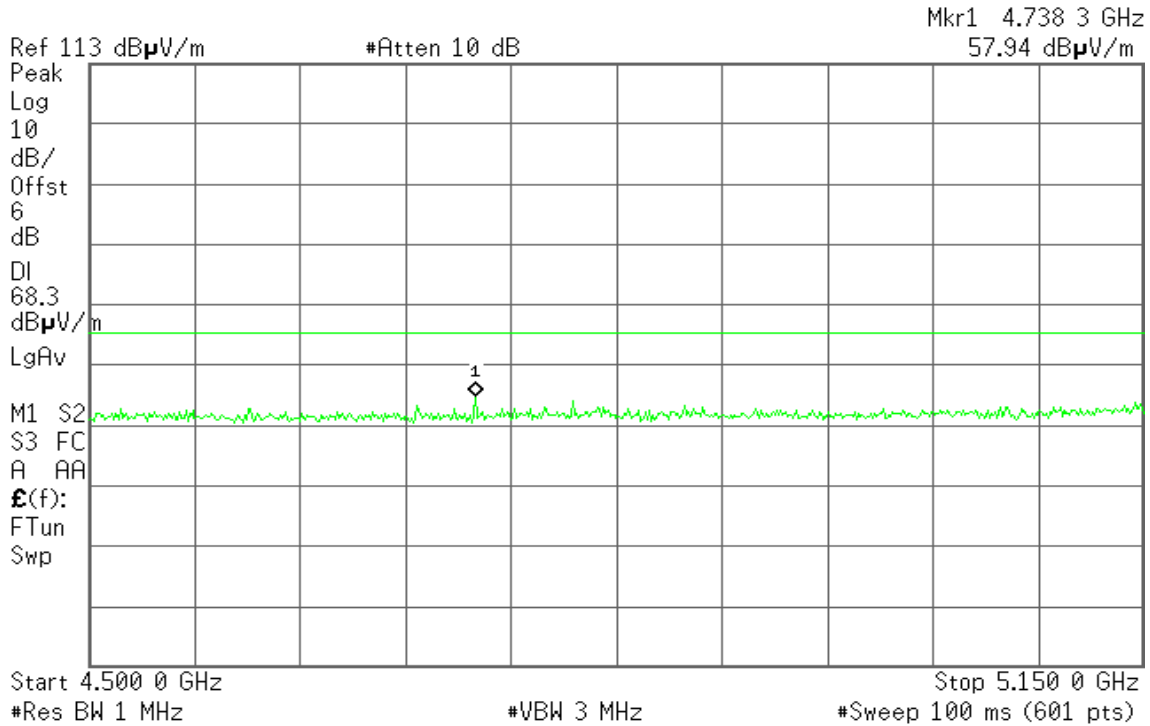
Band Edges (IEEE 802.11n HT 20 MHz Channel mode / 5180 MHz)

Detector mode: Peak

Polarity: Vertical

Agilent

R T

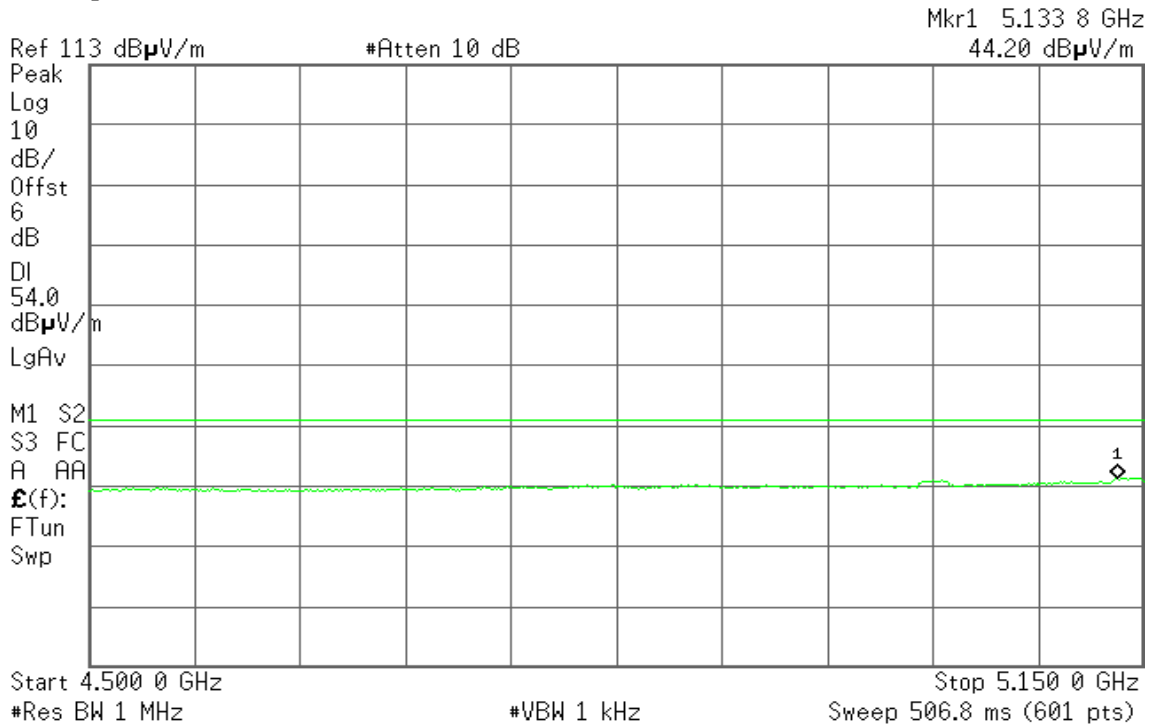


Detector mode: Average

Polarity: Vertical

Agilent

R T



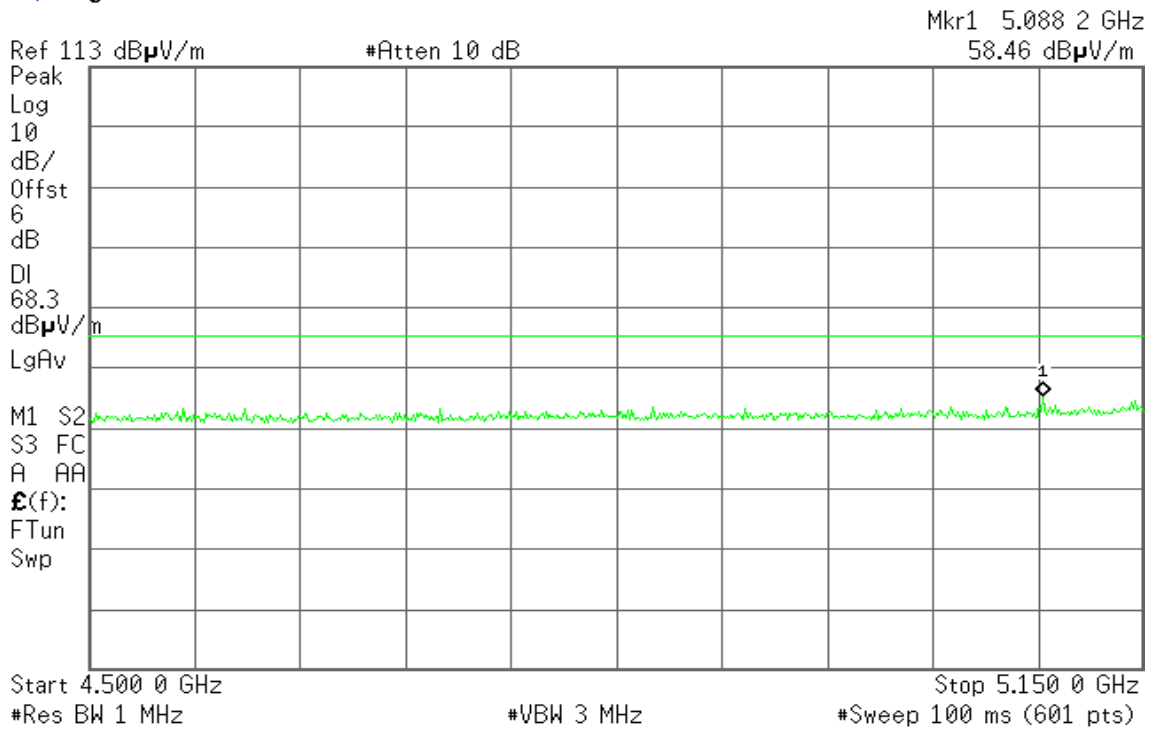


Detector mode: Peak

Polarity: Horizontal

Agilent

R T

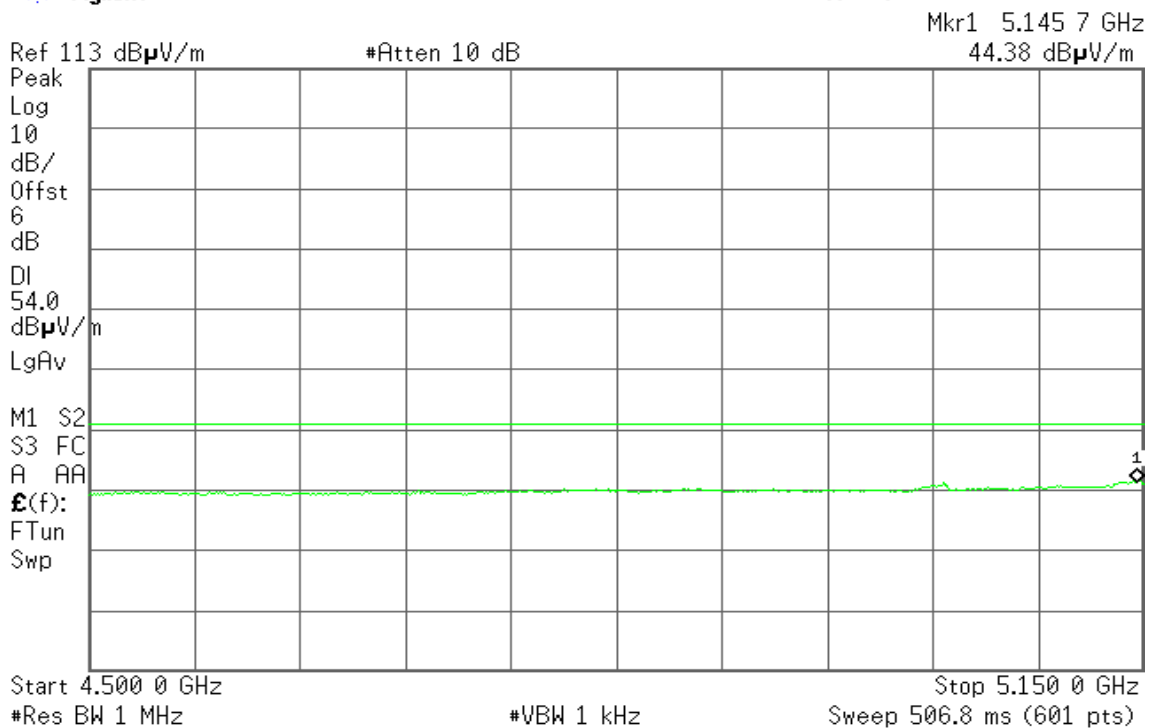


Detector mode: Average

Polarity: Horizontal

Agilent

R T





Band Edges (IEEE 802.11n HT 20 MHz Channel mode / 5320 MHz)

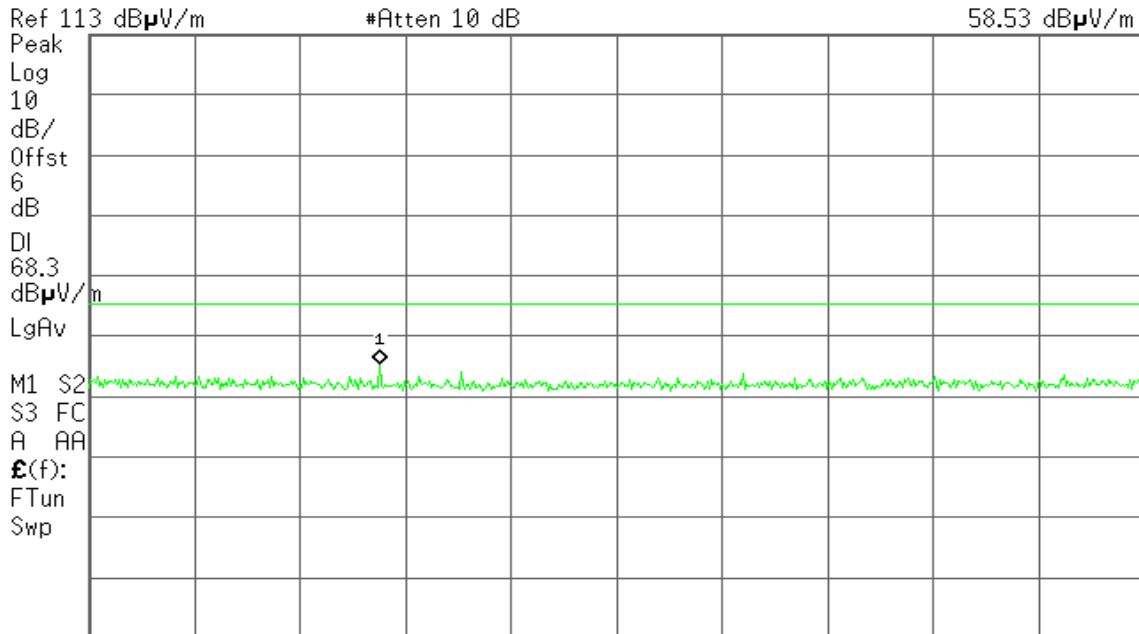
Detector mode: Peak

Polarity: Vertical

Agilent

R T

Mkr1 5.380 2 GHz
58.53 dB μ V/m



Start 5.350 0 GHz #Res BW 1 MHz #VBW 3 MHz Stop 5.460 0 GHz #Sweep 100 ms (601 pts)

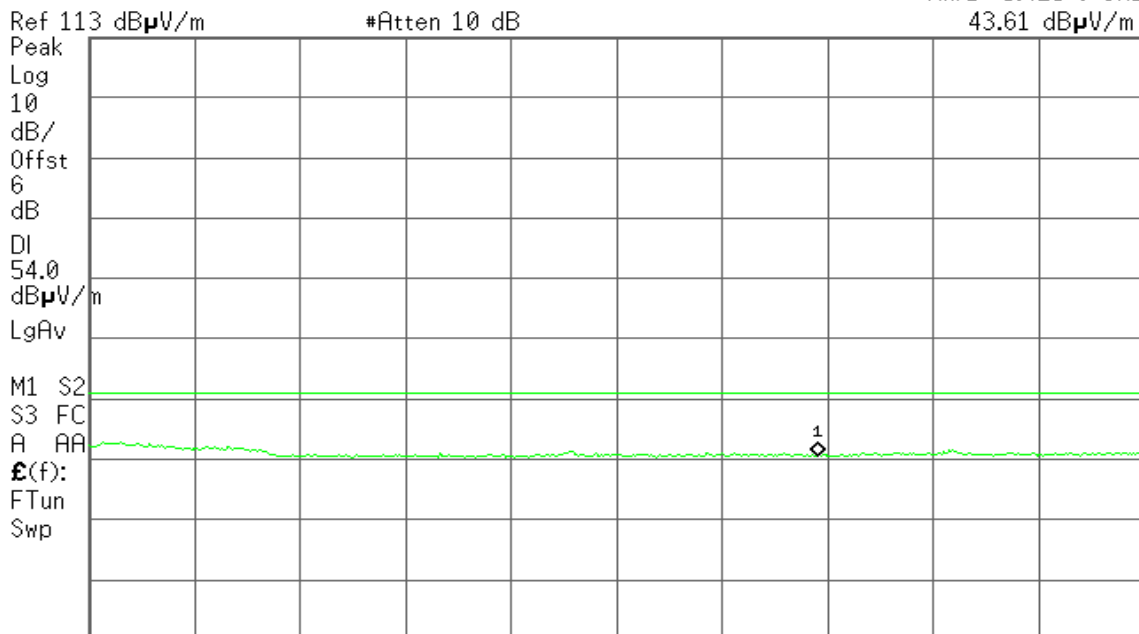
Detector mode: Average

Polarity: Vertical

Agilent

R T

Mkr1 5.425 9 GHz
43.61 dB μ V/m



Start 5.350 0 GHz #Res BW 1 MHz #VBW 1 kHz Stop 5.460 0 GHz Sweep 85.8 ms (601 pts)

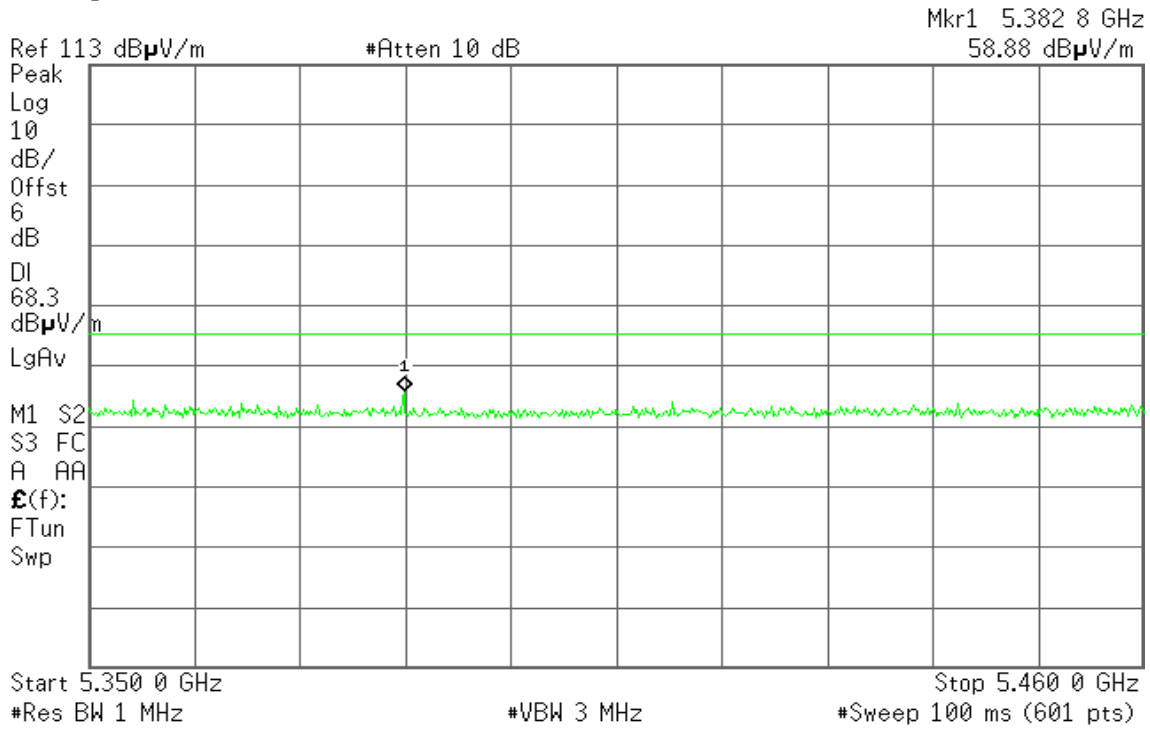


Detector mode: Peak

Polarity: Horizontal

Agilent

R T

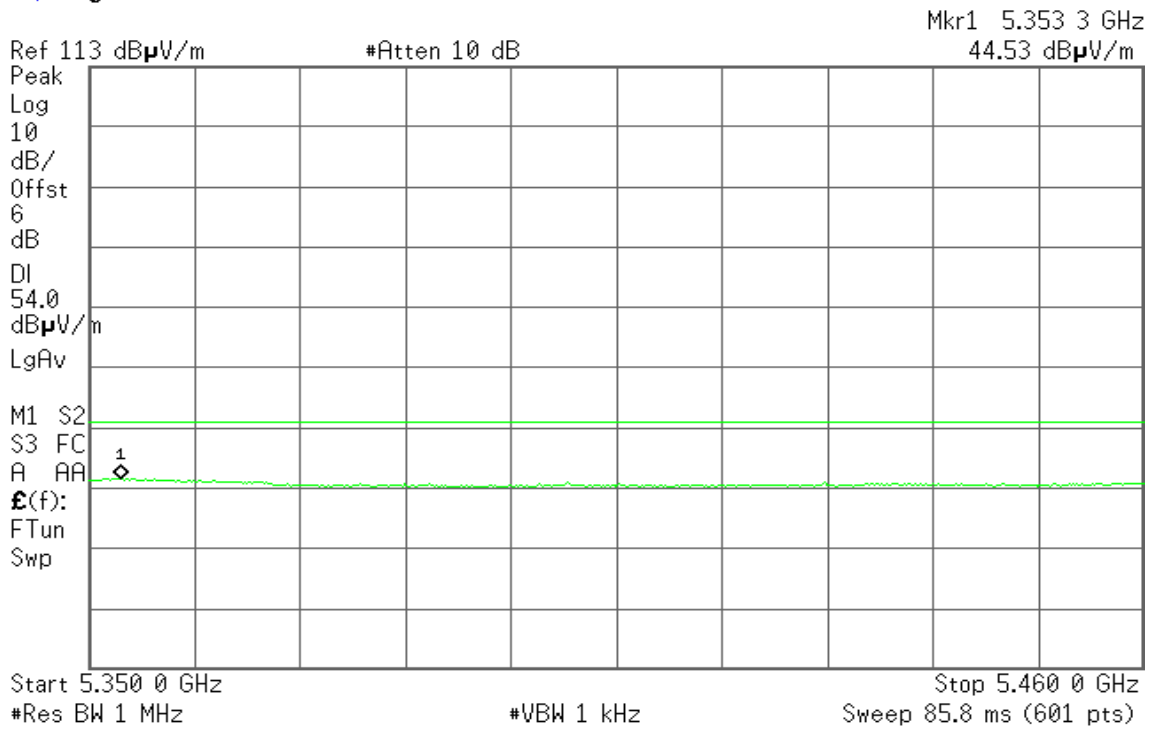


Detector mode: Average

Polarity: Horizontal

Agilent

R T





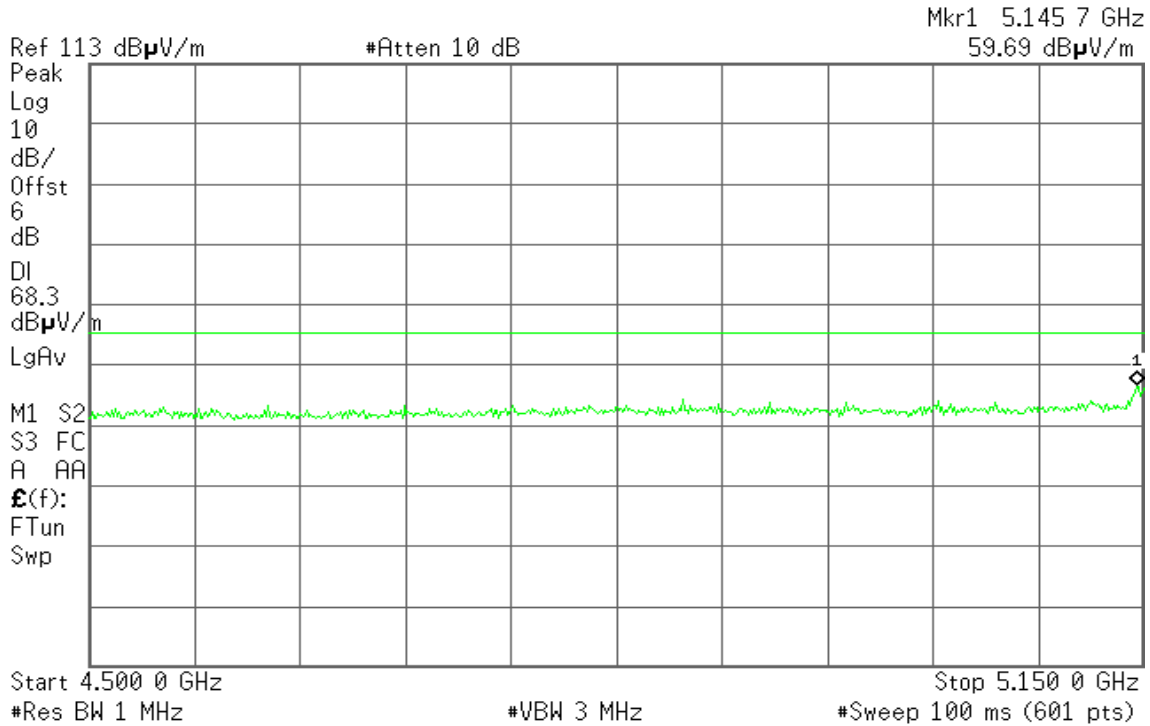
Band Edges (IEEE 802.11n HT 40 MHz mode / 5190 MHz)

Detector mode: Peak

Polarity: Vertical

Agilent

R T

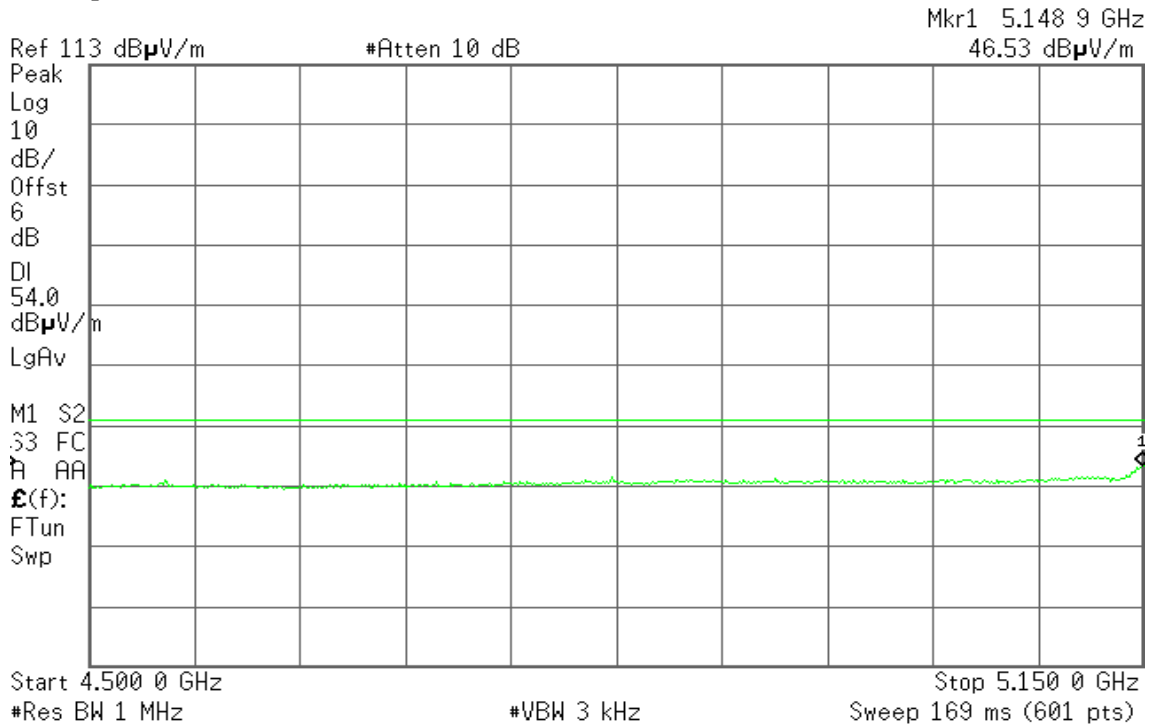


Detector mode: Average

Polarity: Vertical

Agilent

R T



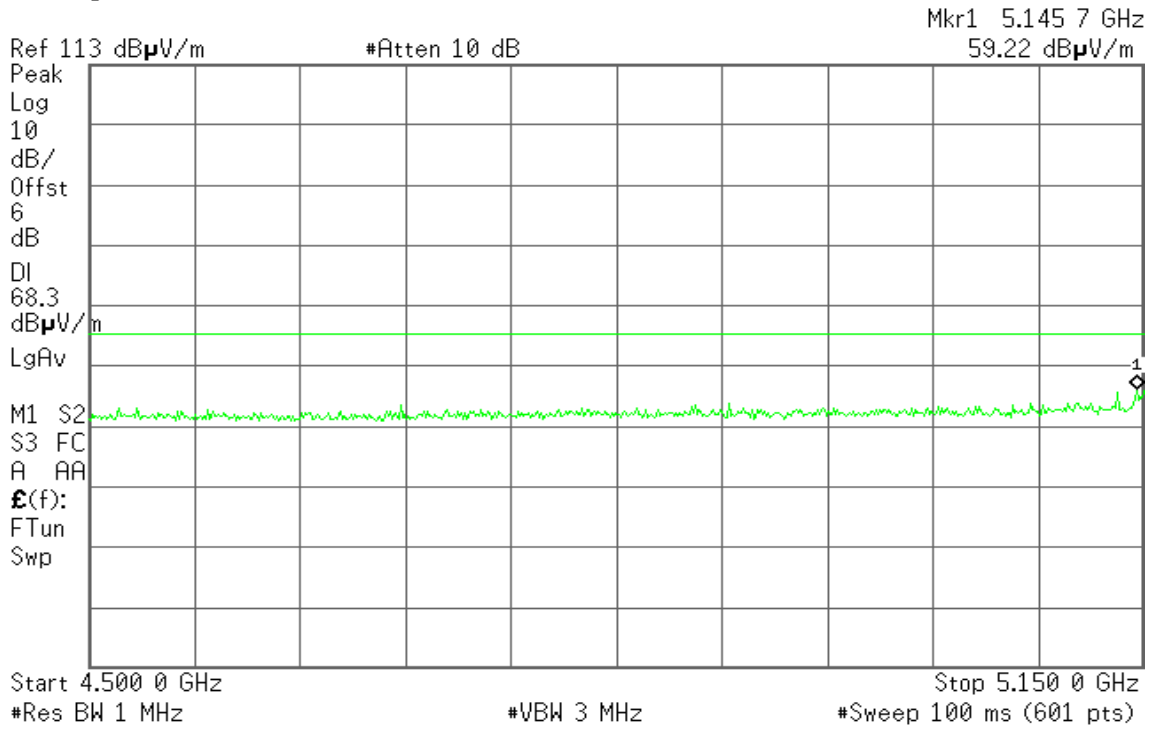


Detector mode: Peak

Polarity: Horizontal

Agilent

R T

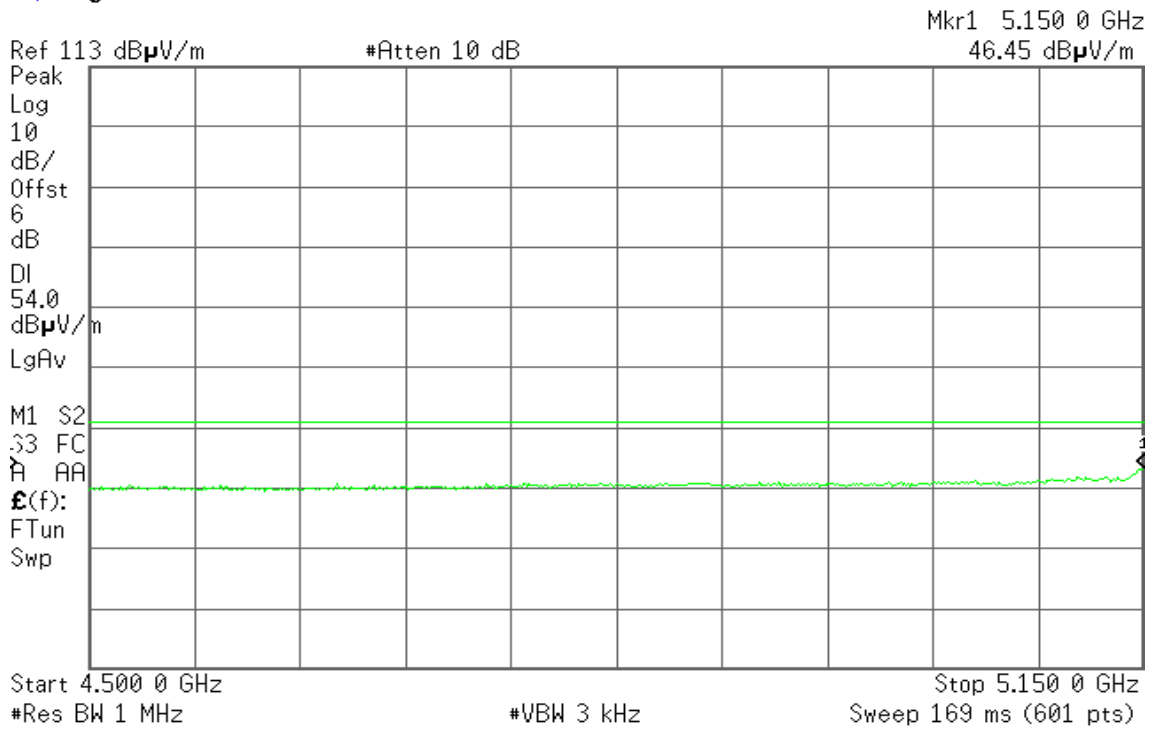


Detector mode: Average

Polarity: Horizontal

Agilent

R T





Band Edges (IEEE 802.11n HT 40 MHz mode / CH 5310 MHz)

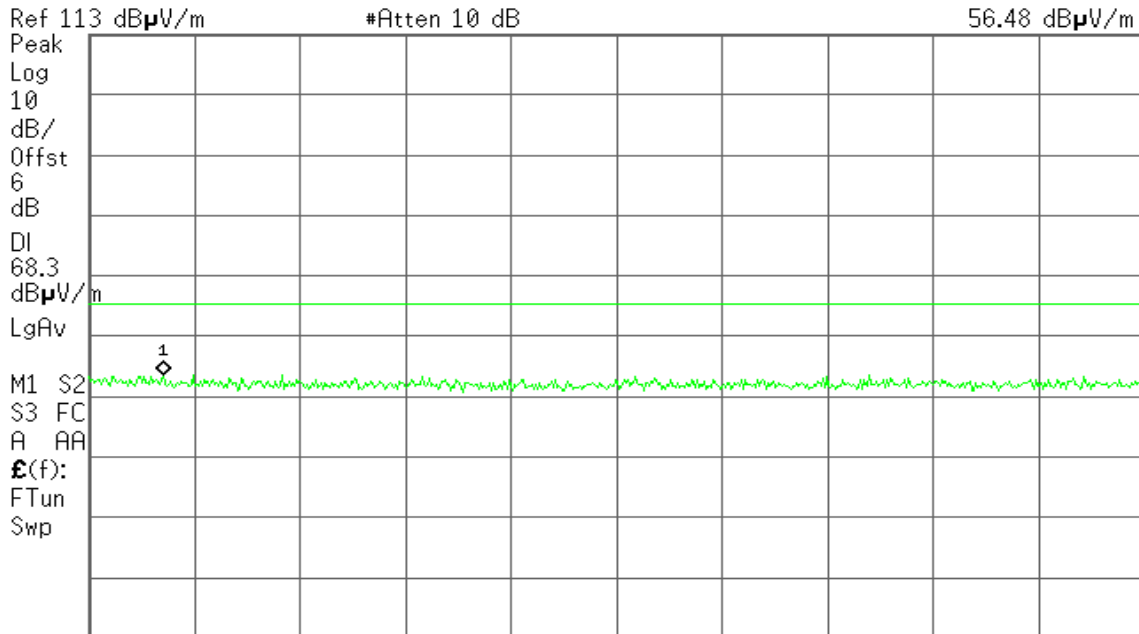
Detector mode: Peak

Polarity: Vertical

Agilent

R T

Mkr1 5.357 7 GHz
56.48 dB μ V/m



Detector mode: Average

Polarity: Vertical

Agilent

R T

Mkr1 5.355 7 GHz
44.05 dB μ V/m



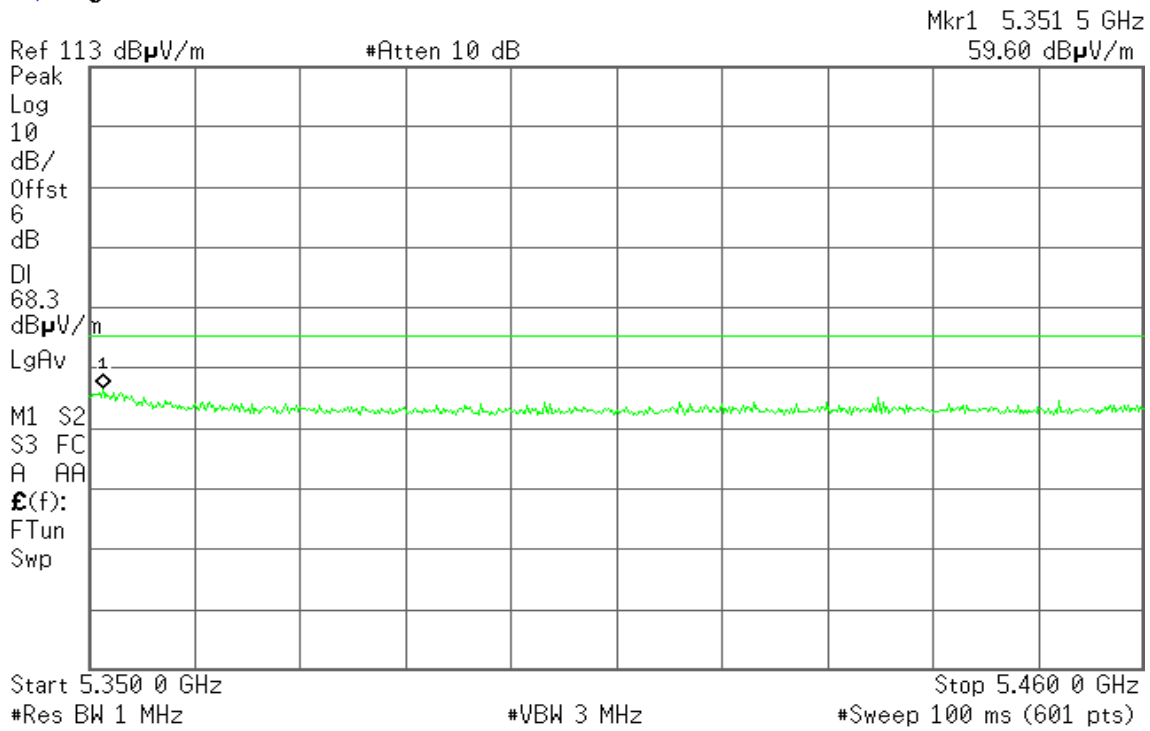


Detector mode: Peak

Polarity: Horizontal

Agilent

R T

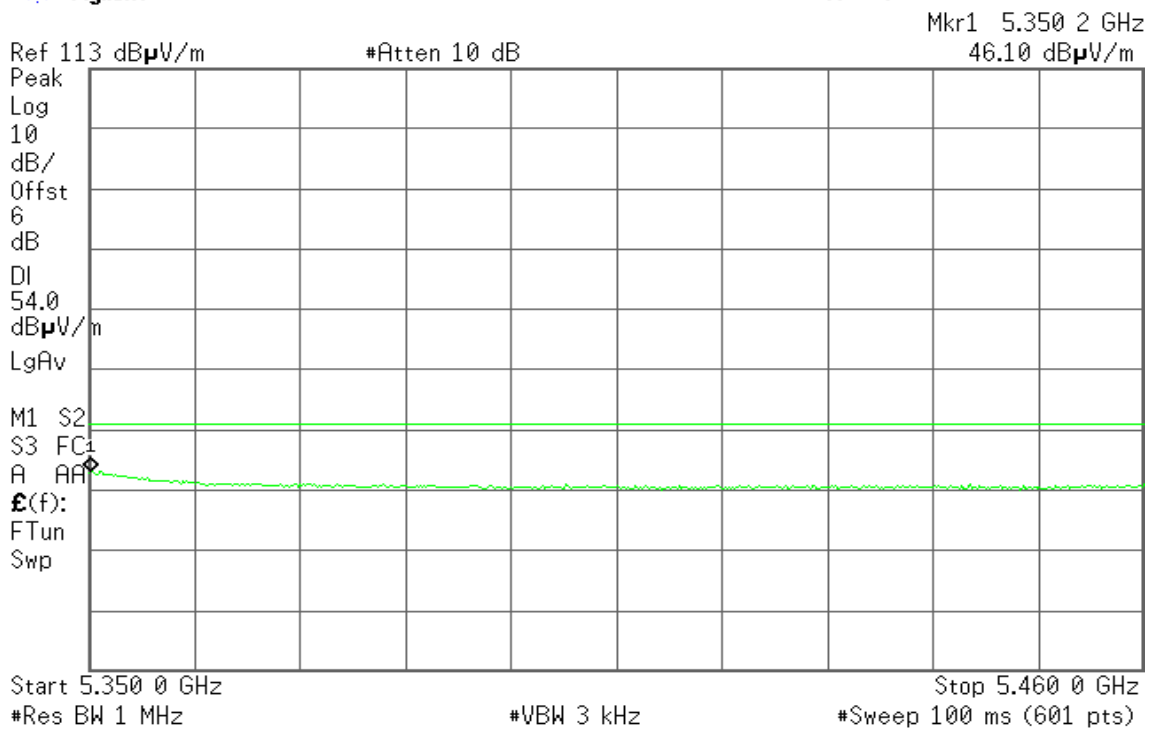


Detector mode: Average

Polarity: Horizontal

Agilent

R T





8.6 PEAK POWER SPECTRAL DENSITY

LIMIT

According to §15.407(a)

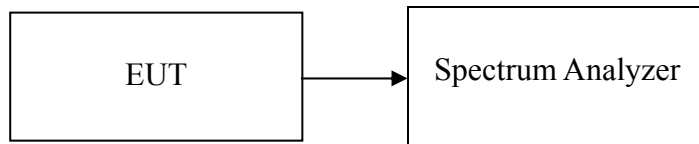
- (1) For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4dBm in any 1MHz band.
- (2) For the band 5.25-5.35 GHz, and 5.47-5.725 GHz the peak power spectral density shall not exceed 11dBm in any 1MHz band.

According to RSS-210 §A9.2,

- (1) The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.
- (2) The power spectral density shall not exceed 11 dBm in any 1.0 MHz 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
duty cycle ≥ 98 add $10 \log(1/x)$, where x is the duty cycle, to the peak of the spectrum.

TEST RESULTS

No non-compliance noted

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

Channel	Frequency (MHz)	PPSD (dBm)	MAX PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5180	0.711	0.98	4	3.02	PASS
Mid	5220	1.000	1.27	4	2.73	PASS
High	5240	0.227	0.50	4	3.50	PASS

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 0 Max PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 1 Max PPSD (dBm)	Total Max PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5180	-3.766	-3.45	-2.853	-2.54	0.04	1.63	1.59	PASS
Mid	5220	-4.023	-3.71	-2.643	-2.33	0.05	1.63	1.58	PASS
High	5240	-4.077	-3.76	-2.498	-2.18	0.11	1.63	1.52	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 0 Max PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 1 Max PPSD (dBm)	Total Max PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5190	-5.897	-5.34	-6.353	-5.80	-2.55	1.63	4.18	PASS
High	5230	-5.050	-4.49	-4.877	-4.32	-1.40	1.63	3.03	PASS

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

2. The maximum antenna gain is 8.37dBi; therefore the reduction due to antenna gain is 2.37dBi, so the limit is 1.63dBm.

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

Channel	Frequency (MHz)	PPSD (dBm)	MAX PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5260	2.025	2.114	11	-8.886	PASS
Mid	5280	2.199	3.015	11	-7.985	PASS
High	5320	1.132	2.901	11	-8.099	PASS

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 0 Max PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 1 Max PPSD (dBm)	Total Max PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5260	1.688	2.00	3.722	4.04	6.15	8.63	2.48	PASS
Mid	5280	2.083	2.40	3.557	3.87	6.21	8.63	2.42	PASS
High	5320	2.406	2.72	4.224	4.54	6.73	8.63	1.90	PASS

Test mode: IEEE 802.11n HT 240 MHz mode / 5270 ~ 5310MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 0 Max PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 1 Max PPSD (dBm)	Total Max PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5270	-2.012	-1.46	-1.06	-0.50	2.06	8.63	6.57	PASS
Mid	5310	-1.615	-1.06	-1	-0.44	2.27	8.63	6.36	PASS

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

2. The maximum antenna gain is 8.37dBi; therefore the reduction due to antenna gain is 2.37dBi, so the limit is 8.63dBm.

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

Channel	Frequency (MHz)	PPSD (dBm)	MAX PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5500	2.38	11	8.62	2.38	PASS
Mid	5580	3.28	11	7.72	3.28	PASS
High	5700	3.17	11	7.83	3.17	PASS

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 0 Max PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 1 Max PPSD (dBm)	Total Max PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5500	2.831	3.15	2.509	2.82	6.00	8.63	2.63	PASS
Mid	5580	2.512	2.83	1.509	1.82	5.36	8.63	3.27	PASS
High	5700	2.61	2.93	2.536	2.85	5.90	8.63	2.73	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 0 Max PPSD (dBm)	Chain 1 PPSD (dBm)	Chain 1 Max PPSD (dBm)	Total Max PPSD (dBm)	Limit (dBm)	Margin	Result
Low	5510	-1.345	-0.79	-1.777	-1.22	2.01	8.63	6.62	PASS
Mid	5590	-0.943	-0.39	-2.106	-1.55	2.08	8.63	6.55	PASS
High	5670	0.042	0.60	1.324	1.88	4.30	8.63	4.33	PASS

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

2. The maximum antenna gain is 8.37dBi; therefore the reduction due to antenna gain is 2.37dBi, so the limit is 8.63dBm.



Test Plot

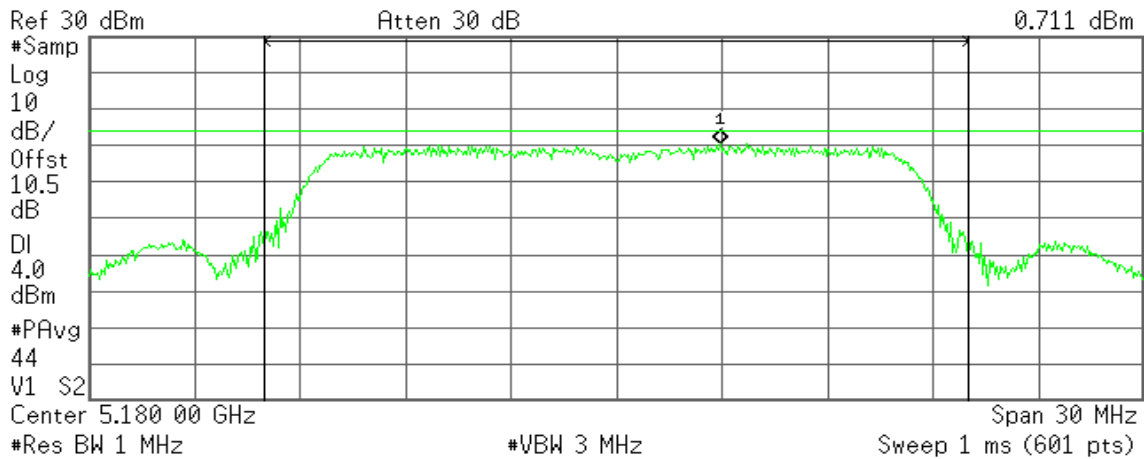
IEEE 802.11a mode / 5180 ~ 5240MHz

CH Low

Agilent 14:30:44 Dec 20, 2011

R T

Mkr1 5.182 95 GHz
0.711 dBm



Channel Power

10.46 dBm /20.0000 MHz

Power Spectral Density

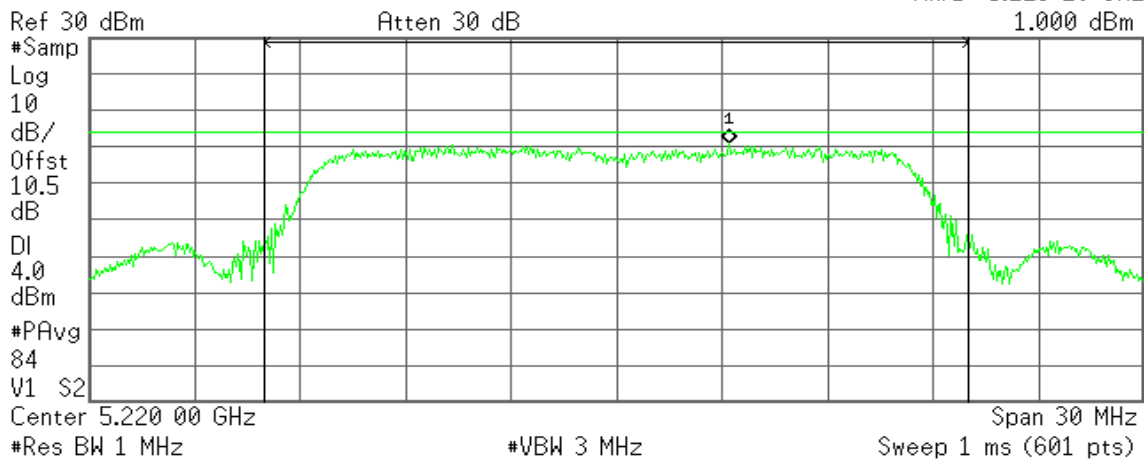
-62.55 dBm/Hz

CH Mid

Agilent 14:36:54 Dec 20, 2011

R T

Mkr1 5.223 20 GHz
1.000 dBm



Channel Power

10.49 dBm /20.0000 MHz

Power Spectral Density

-62.52 dBm/Hz

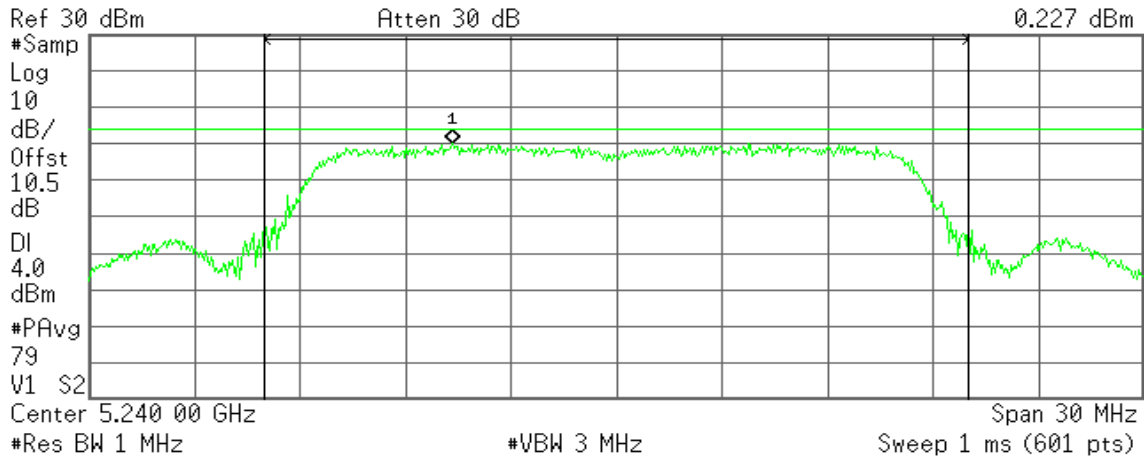


CH High

Agilent 14:41:26 Dec 20, 2011

R T

Mkr1 5.235 35 GHz
0.227 dBm



Channel Power

10.09 dBm /20.0000 MHz

Power Spectral Density

-62.92 dBm/Hz

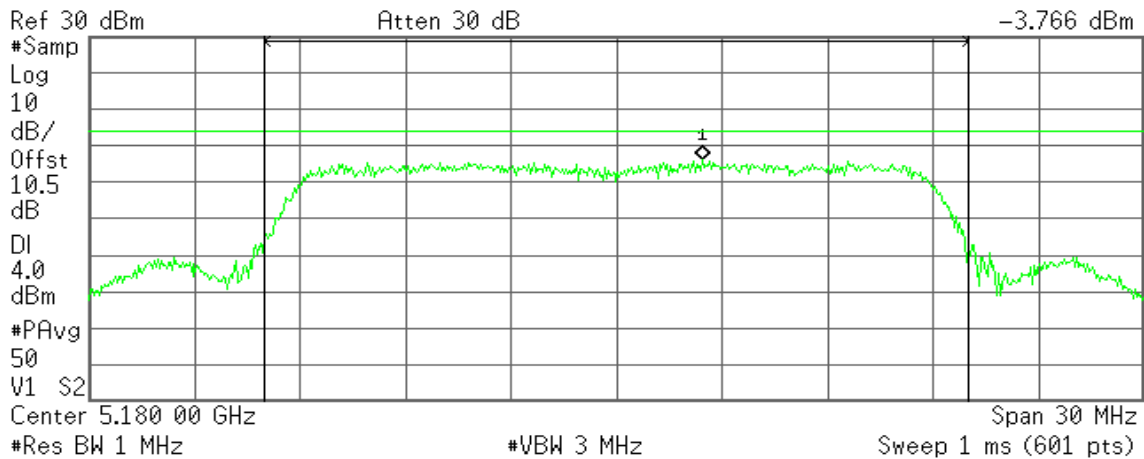
IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

CH Low

Agilent 15:22:02 Dec 20, 2011

R T

Mkr1 5.182 45 GHz
-3.766 dBm



Channel Power

6.36 dBm /20.0000 MHz

Power Spectral Density

-66.65 dBm/Hz

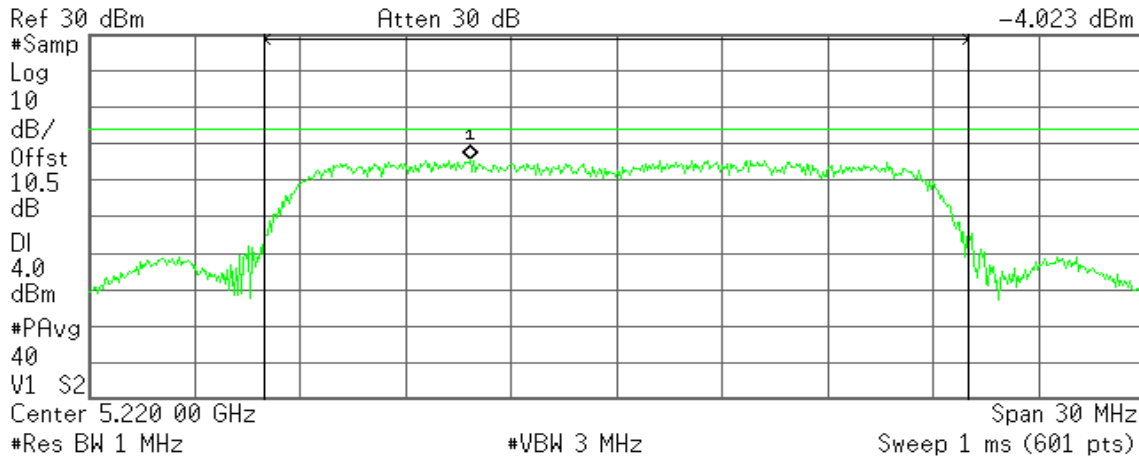


CH Mid

Agilent 15:26:25 Dec 20, 2011

R T

Mkr1 5.215 85 GHz
-4.023 dBm



Channel Power

6.16 dBm /20.0000 MHz

Power Spectral Density

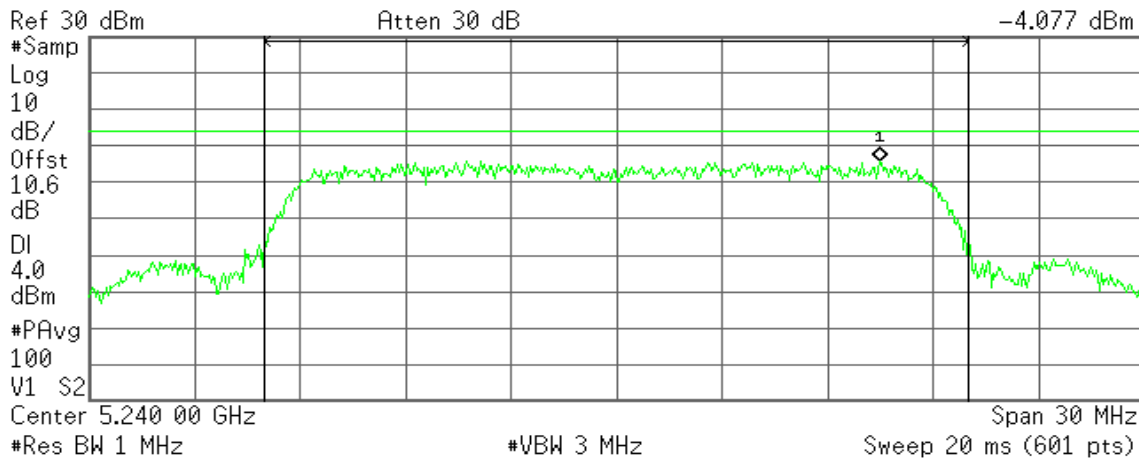
-66.85 dBm/Hz

CH High

Agilent 14:09:32 Dec 30, 2011

R T

Mkr1 5.247 50 GHz
-4.077 dBm



Channel Power

5.30 dBm /20.0000 MHz

Power Spectral Density

-67.71 dBm/Hz



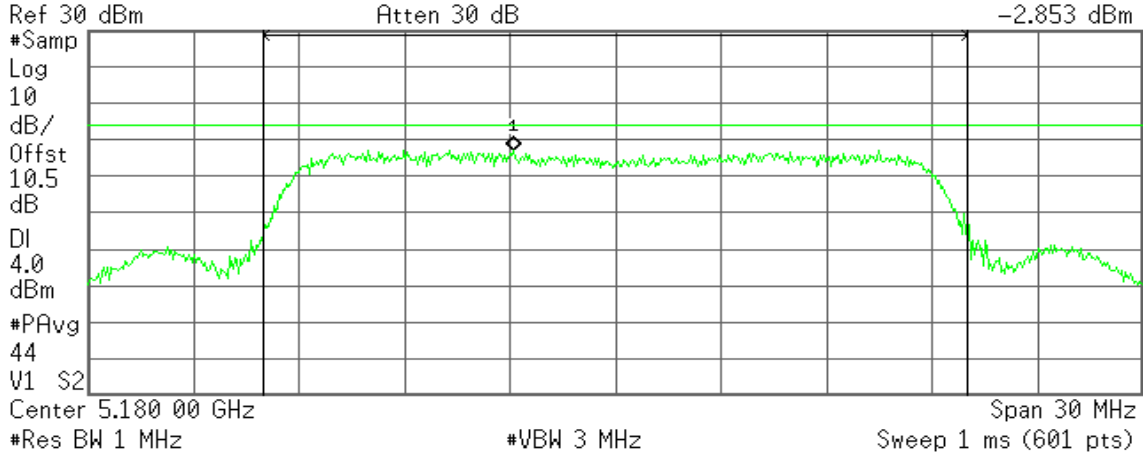
IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

CH Low

Agilent 18:00:23 Dec 20, 2011

R T

Mkr1 5.177 10 GHz
-2.853 dBm



Channel Power

6.98 dBm /20.0000 MHz

Power Spectral Density

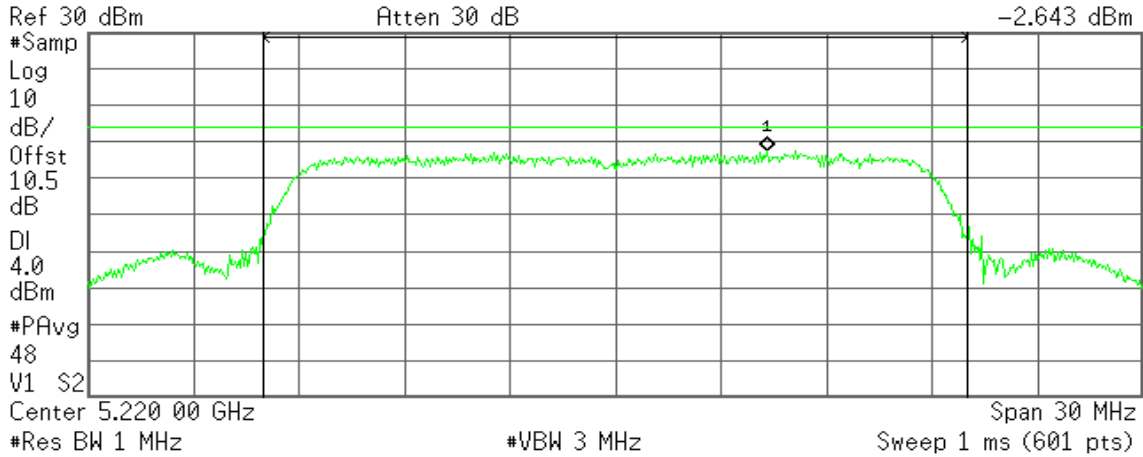
-66.03 dBm/Hz

CH Mid

Agilent 18:06:42 Dec 20, 2011

R T

Mkr1 5.224 30 GHz
-2.643 dBm



Channel Power

5.90 dBm /20.0000 MHz

Power Spectral Density

-67.11 dBm/Hz

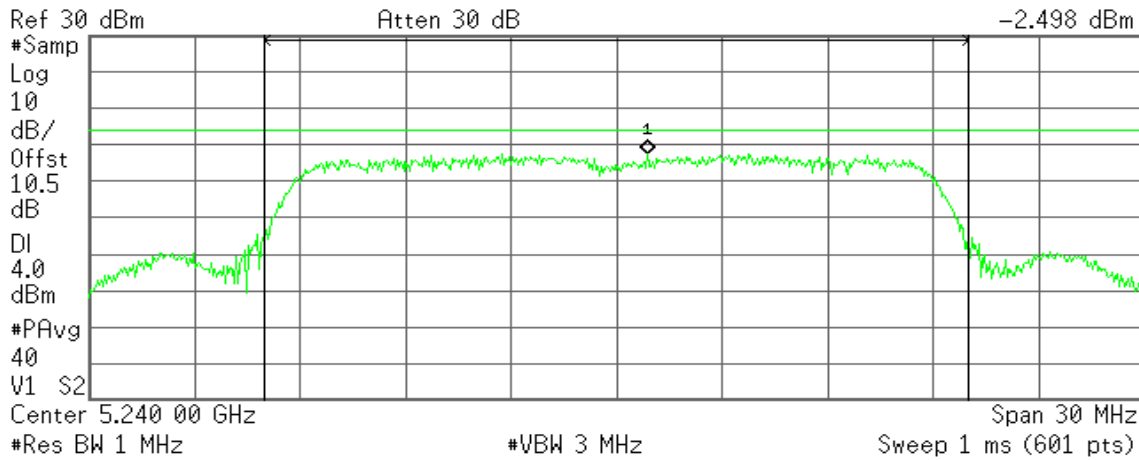


CH High

Agilent 18:15:44 Dec 20, 2011

R T

Mkr1 5.240 90 GHz
-2.498 dBm



Channel Power

6.92 dBm /20.0000 MHz

Power Spectral Density

-66.09 dBm/Hz

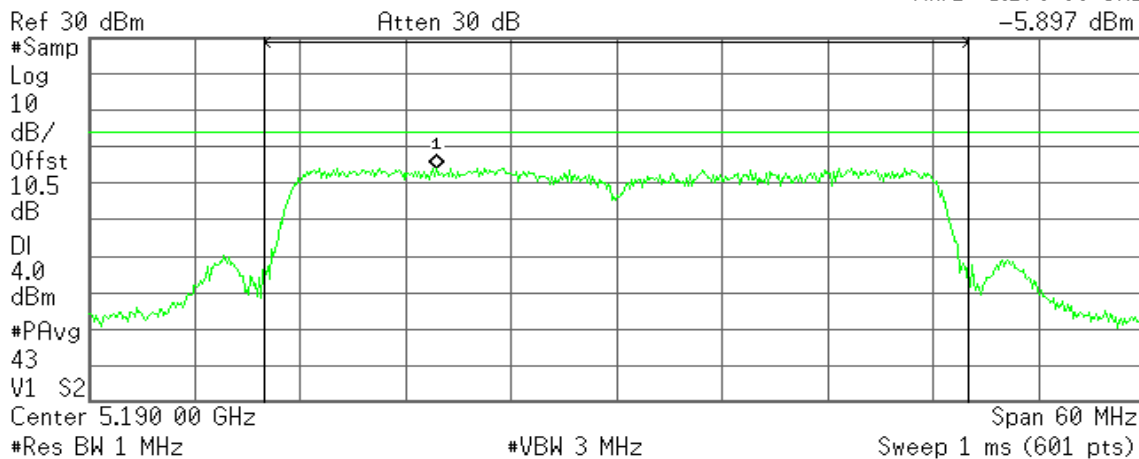
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

CH Low

Agilent 16:07:12 Dec 20, 2011

R T

Mkr1 5.179 80 GHz
-5.897 dBm



Channel Power

8.30 dBm /40.0000 MHz

Power Spectral Density

-67.72 dBm/Hz

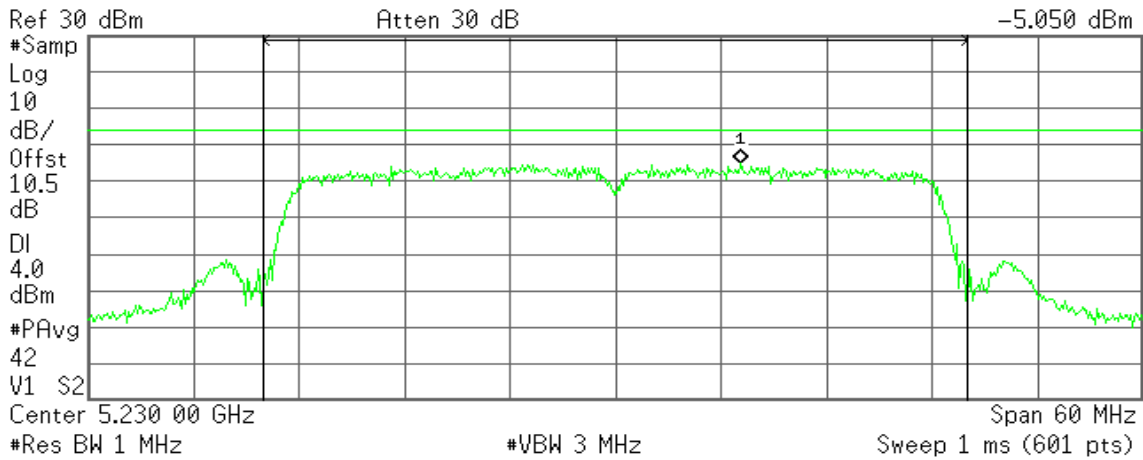


CH High

Agilent 16:18:27 Dec 20, 2011

R T

Mkr1 5.237 10 GHz
-5.050 dBm



Channel Power

7.36 dBm /40.0000 MHz

Power Spectral Density

-68.66 dBm/Hz

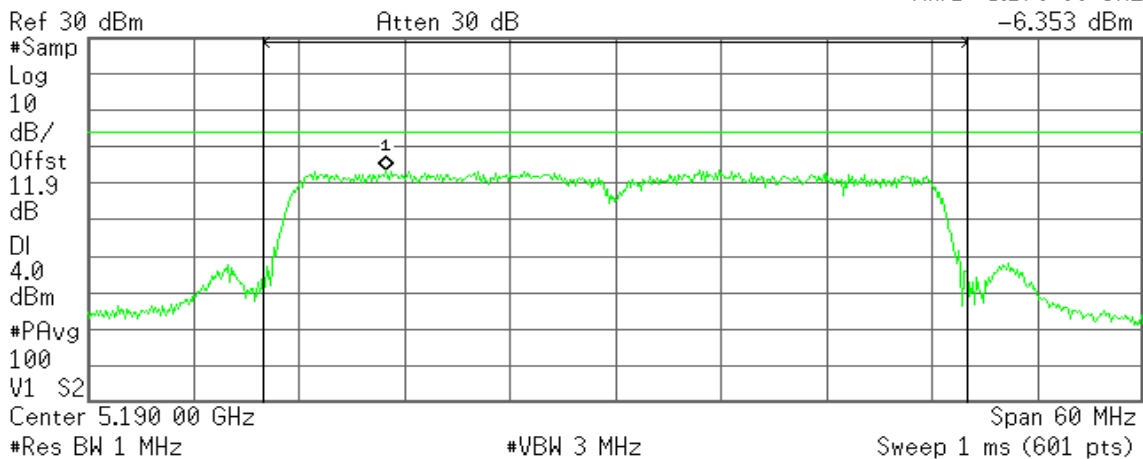
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

CH Low

Agilent 17:11:54 Dec 20, 2011

R T

Mkr1 5.176 90 GHz
-6.353 dBm



Channel Power

7.66 dBm /40.0000 MHz

Power Spectral Density

-68.36 dBm/Hz

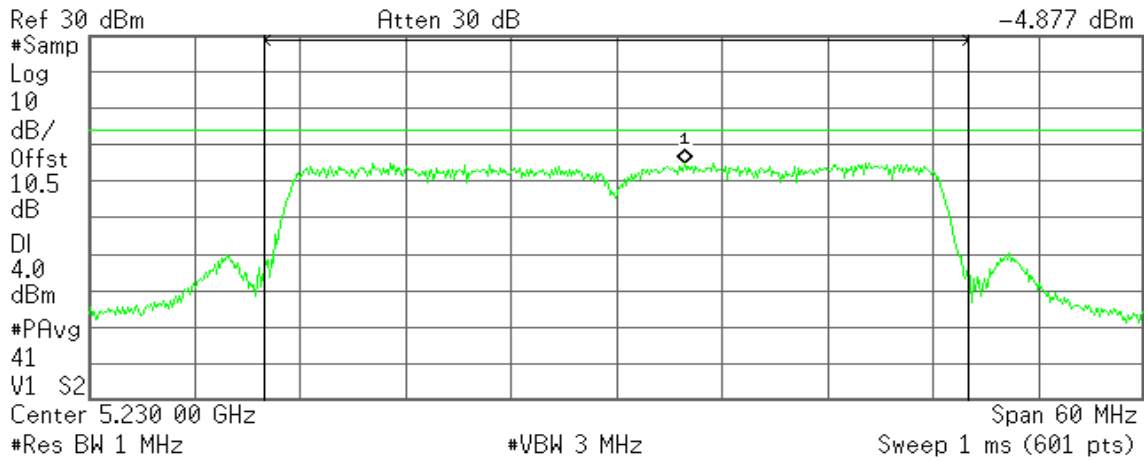


CH High

Agilent 17:06:33 Dec 20, 2011

R T

Mkr1 5.233 90 GHz
-4.877 dBm



Channel Power

8.14 dBm /40.0000 MHz

Power Spectral Density

-67.88 dBm/Hz

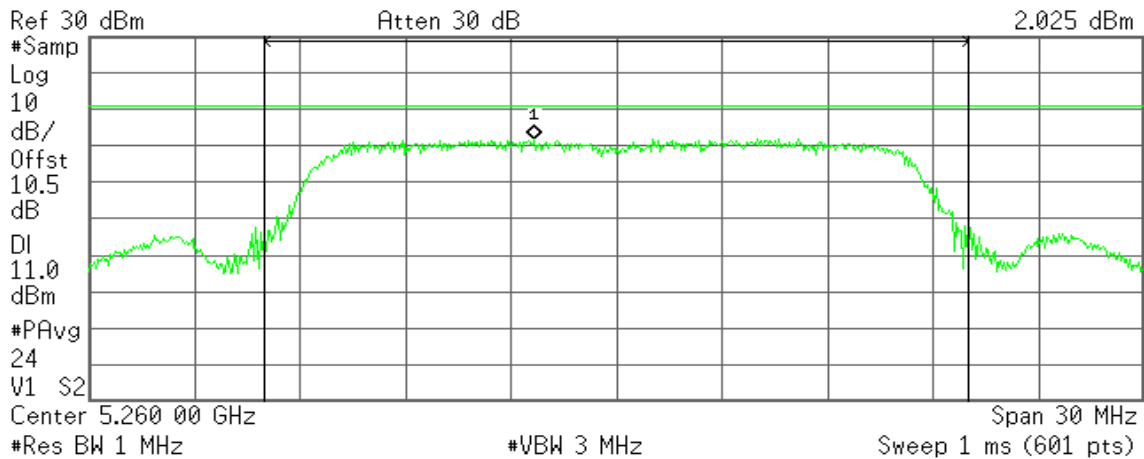
IEEE 802.11a mode / 5260 ~ 5320MHz

CH Low

Agilent 14:49:16 Dec 20, 2011

R T

Mkr1 5.257 65 GHz
2.025 dBm



Channel Power

12.53 dBm /20.0000 MHz

Power Spectral Density

-60.48 dBm/Hz

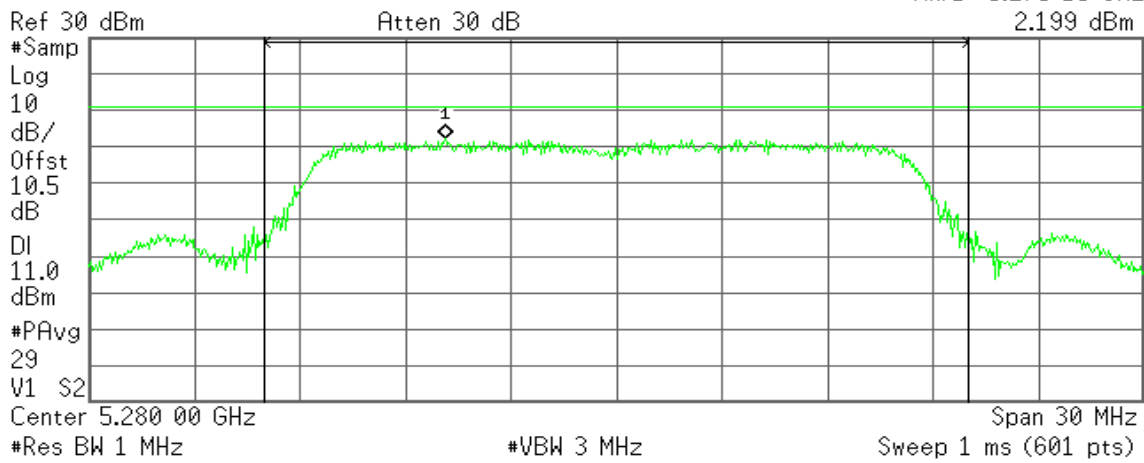


CH Mid

Agilent 14:51:59 Dec 20, 2011

R T

Mkr1 5.275 15 GHz
2.199 dBm



Channel Power

12.58 dBm /20.0000 MHz

Power Spectral Density

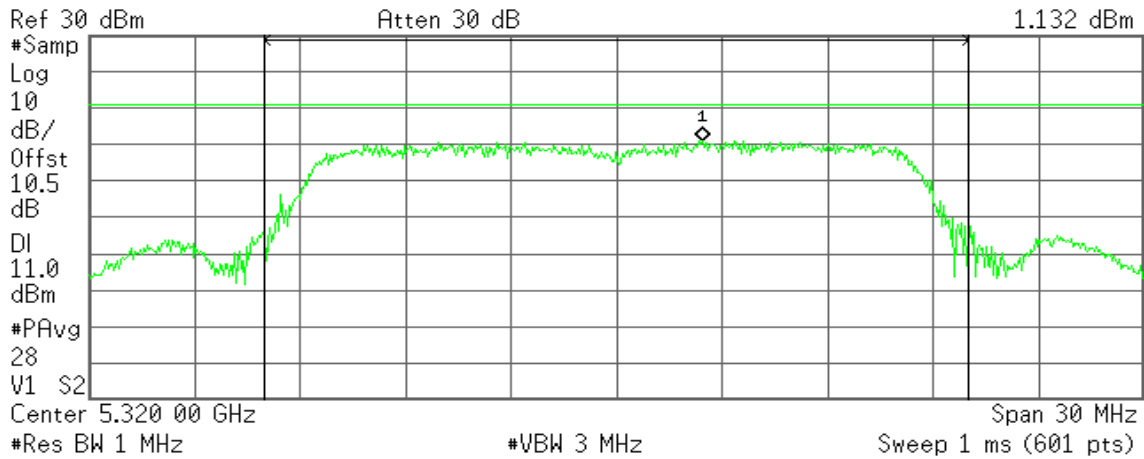
-60.43 dBm/Hz

CH High

Agilent 14:55:05 Dec 20, 2011

R T

Mkr1 5.322 45 GHz
1.132 dBm



Channel Power

10.73 dBm /20.0000 MHz

Power Spectral Density

-62.28 dBm/Hz



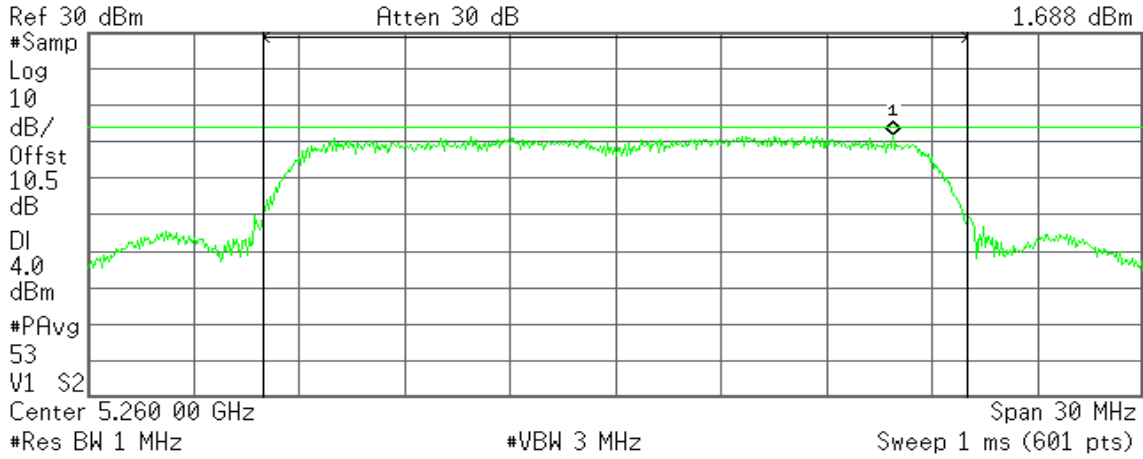
IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

CH Low

Agilent 15:34:43 Dec 20, 2011

R T

Mkr1 5.267 90 GHz
1.688 dBm



Channel Power

11.88 dBm /20.0000 MHz

Power Spectral Density

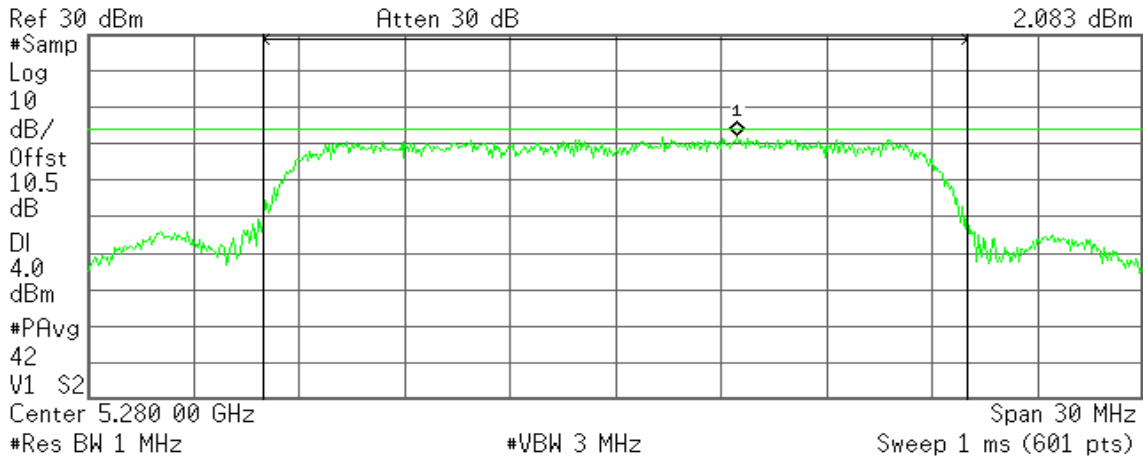
-61.13 dBm/Hz

CH Mid

Agilent 15:38:15 Dec 20, 2011

R T

Mkr1 5.283 45 GHz
2.083 dBm



Channel Power

11.80 dBm /20.0000 MHz

Power Spectral Density

-61.21 dBm/Hz

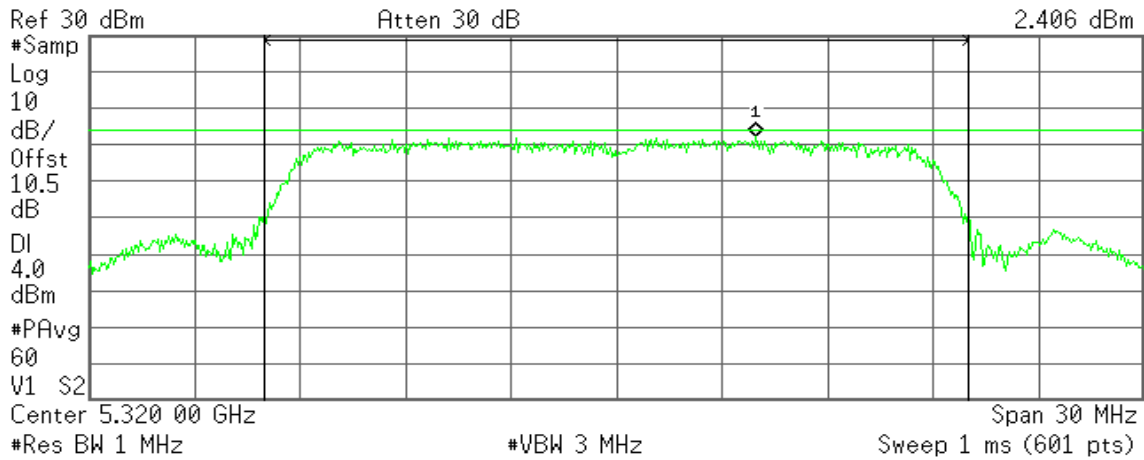


CH High

Agilent 15:42:08 Dec 20, 2011

R T

Mkr1 5.323 95 GHz
2.406 dBm



Channel Power

12.31 dBm /20.0000 MHz

Power Spectral Density

-60.70 dBm/Hz

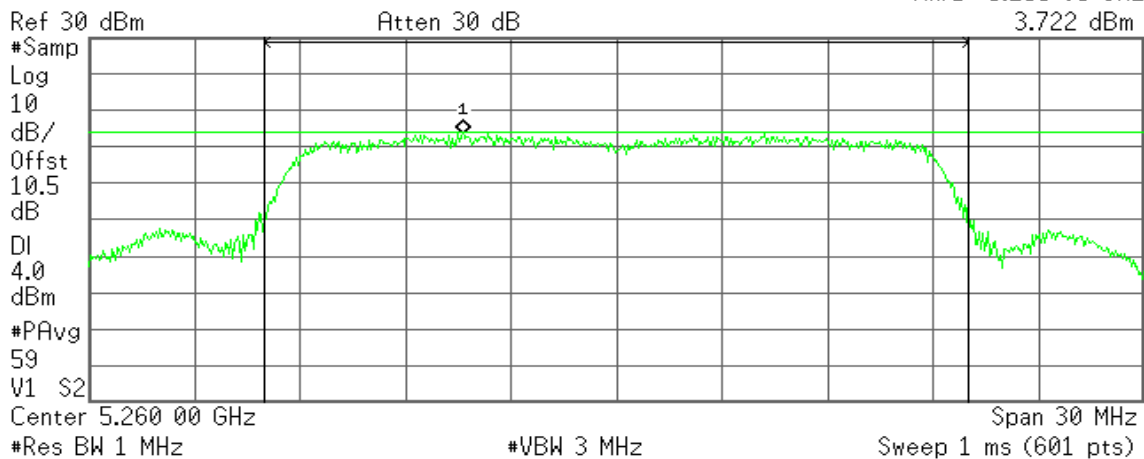
IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

CH Low

Agilent 18:20:57 Dec 20, 2011

R T

Mkr1 5.255 65 GHz
3.722 dBm



Channel Power

13.85 dBm /20.0000 MHz

Power Spectral Density

-59.16 dBm/Hz

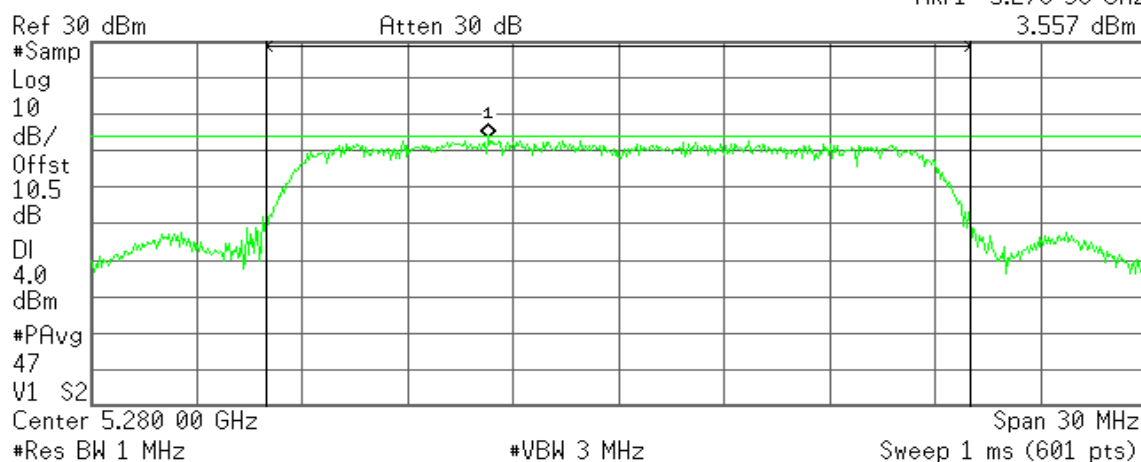


CH Mid

Agilent 18:24:46 Dec 20, 2011

R T

Mkr1 5.276 30 GHz
3.557 dBm



Channel Power

12.64 dBm /20.0000 MHz

Power Spectral Density

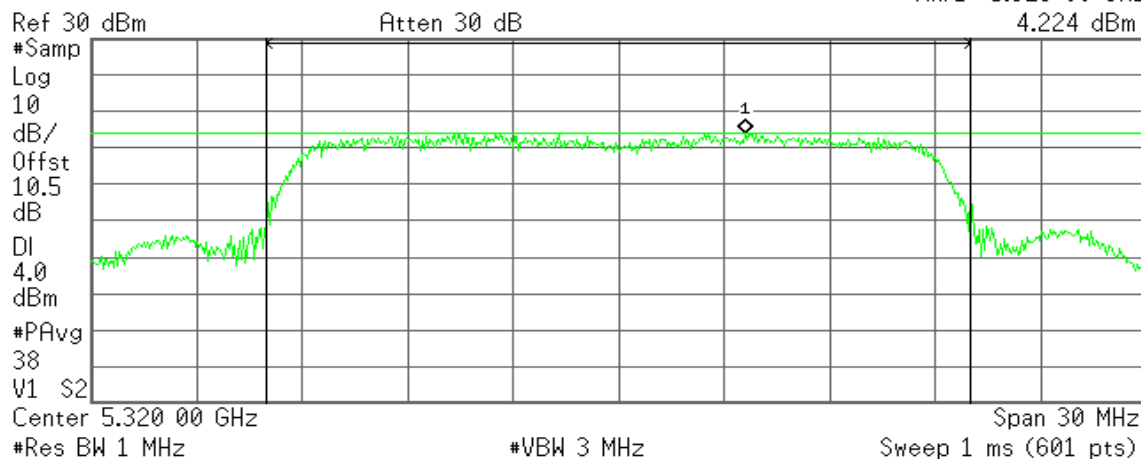
-60.37 dBm/Hz

CH High

Agilent 18:29:14 Dec 20, 2011

R T

Mkr1 5.323 60 GHz
4.224 dBm



Channel Power

13.11 dBm /20.0000 MHz

Power Spectral Density

-59.90 dBm/Hz



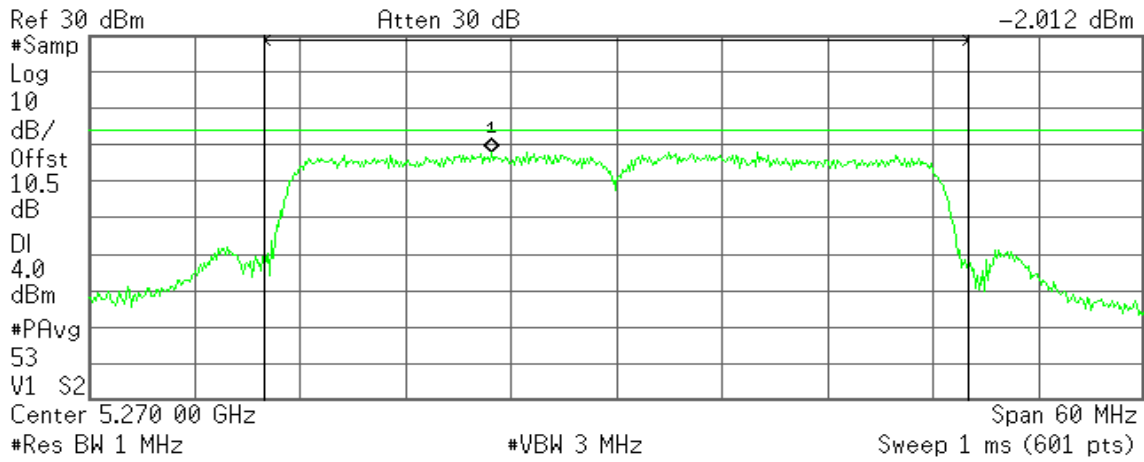
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

CH Low

Agilent 16:23:38 Dec 20, 2011

R T

Mkr1 5.262 90 GHz
-2.012 dBm



Channel Power

11.43 dBm /40.0000 MHz

Power Spectral Density

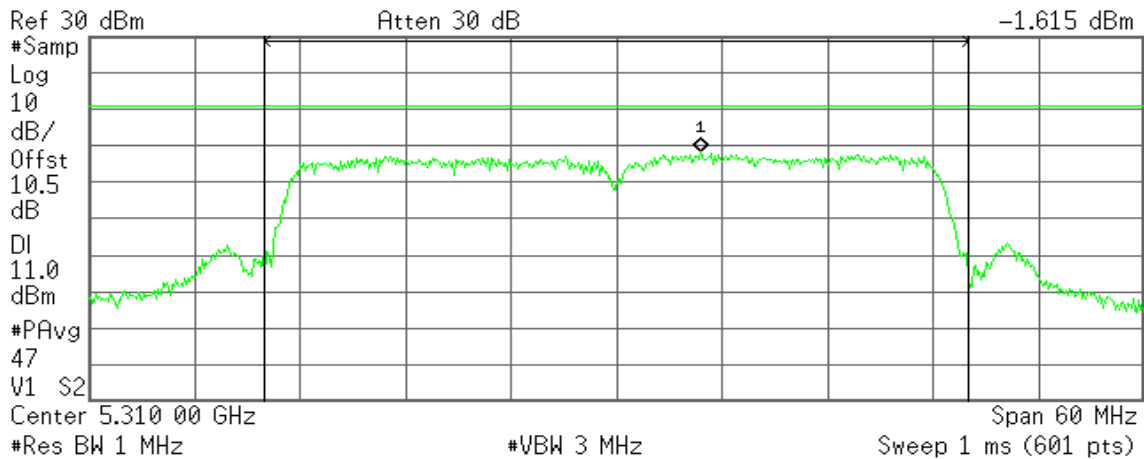
-64.59 dBm/Hz

CH High

Agilent 16:34:08 Dec 20, 2011

R T

Mkr1 5.314 80 GHz
-1.615 dBm



Channel Power

11.34 dBm /40.0000 MHz

Power Spectral Density

-64.68 dBm/Hz



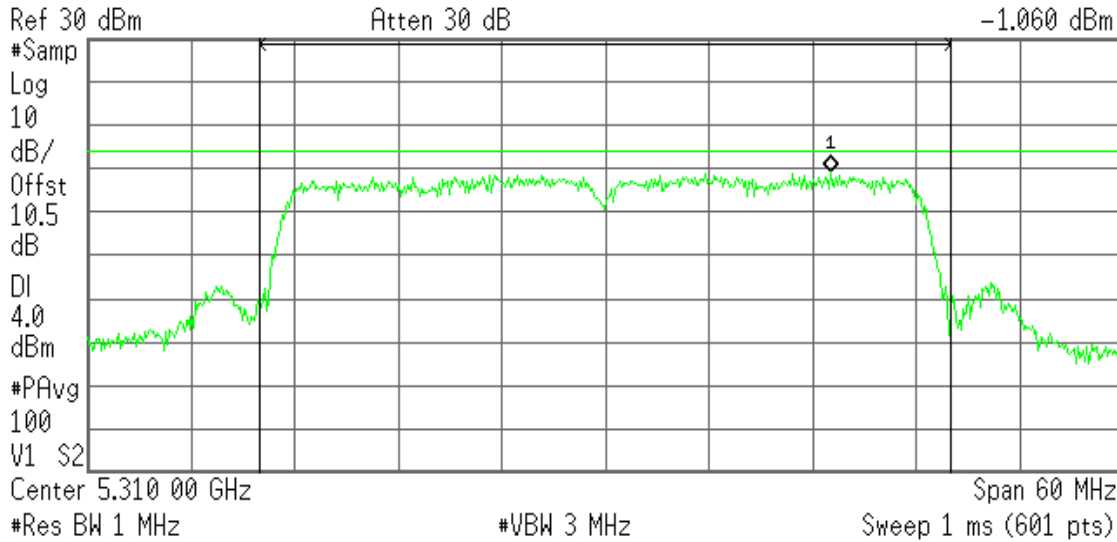
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

CH Low

Agilent 17:18:33 Dec 20, 2011

R T

Mkr1 5.323 10 GHz
-1.060 dBm



Channel Power

11.97 dBm /40.0000 MHz

Power Spectral Density

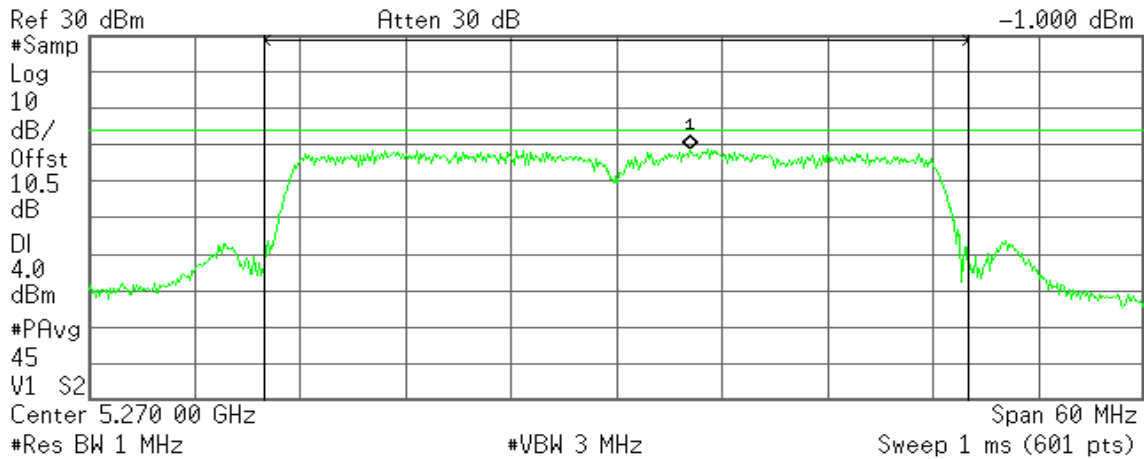
-64.05 dBm/Hz

CH High

Agilent 17:14:09 Dec 20, 2011

R T

Mkr1 5.274 20 GHz
-1.000 dBm



Channel Power

11.45 dBm /40.0000 MHz

Power Spectral Density

-64.57 dBm/Hz



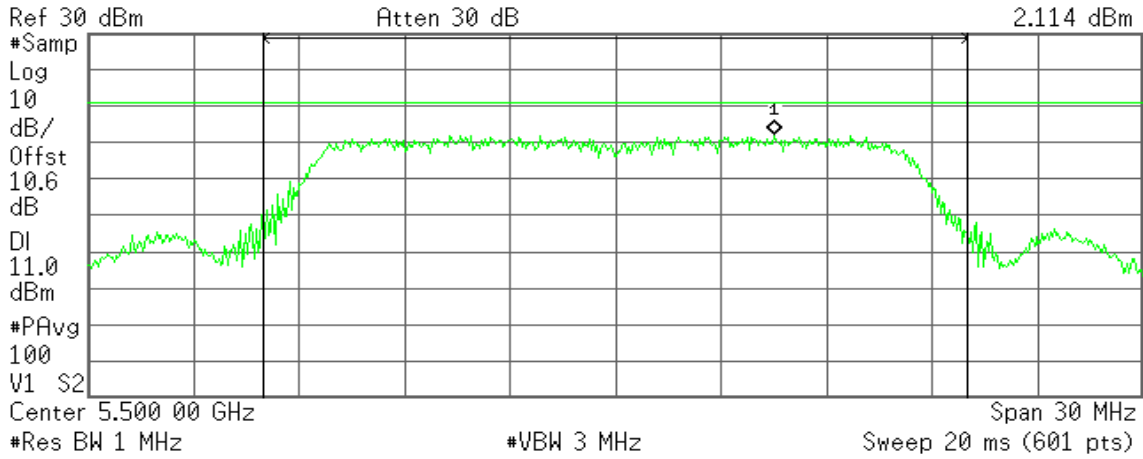
Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

CH Low

Agilent 09:39:14 Dec 30, 2011

R T

Mkr1 5.504 50 GHz
2.114 dBm



Channel Power

11.53 dBm /20.0000 MHz

Power Spectral Density

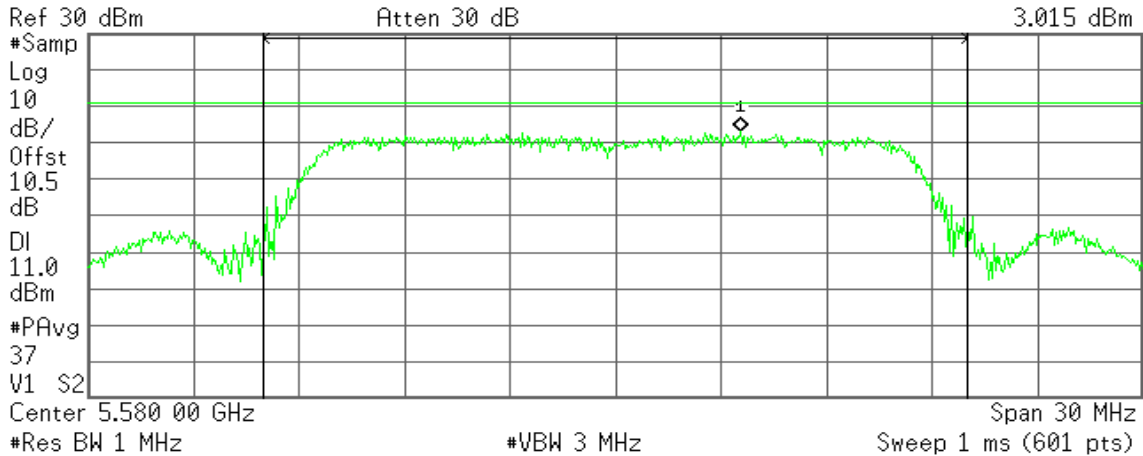
-61.48 dBm/Hz

CH Mid

Agilent 15:08:00 Dec 20, 2011

R T

Mkr1 5.583 55 GHz
3.015 dBm



Channel Power

12.88 dBm /20.0000 MHz

Power Spectral Density

-60.13 dBm/Hz

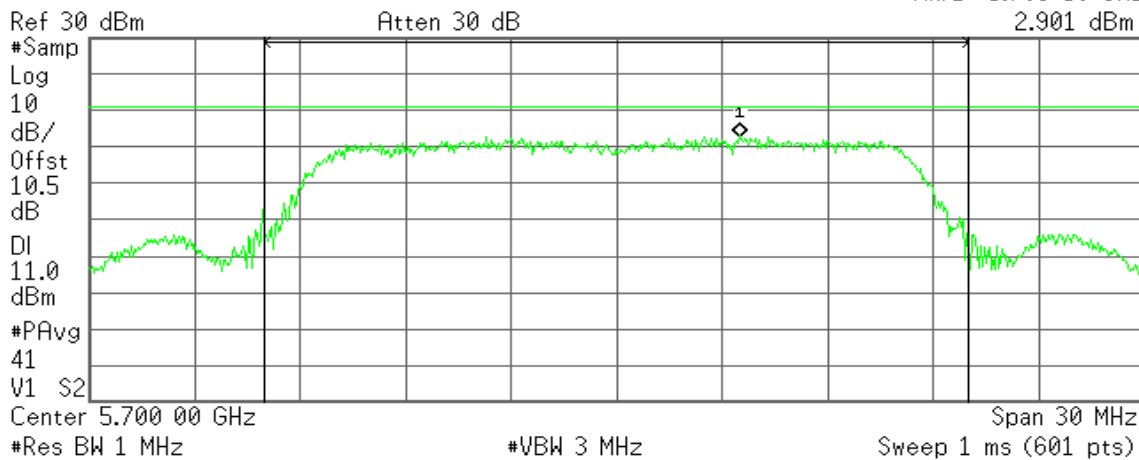


CH High

Agilent 15:13:07 Dec 20, 2011

R T

Mkr1 5.703 50 GHz
2.901 dBm



Channel Power

12.36 dBm /20.0000 MHz

Power Spectral Density

-60.65 dBm/Hz

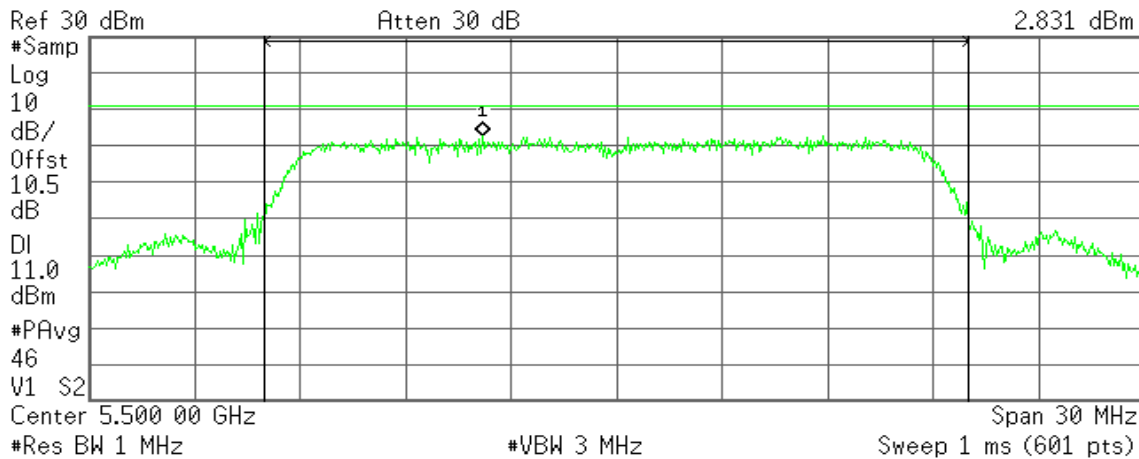
IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

CH Low

Agilent 15:52:09 Dec 20, 2011

R T

Mkr1 5.496 20 GHz
2.831 dBm



Channel Power

13.27 dBm /20.0000 MHz

Power Spectral Density

-59.74 dBm/Hz

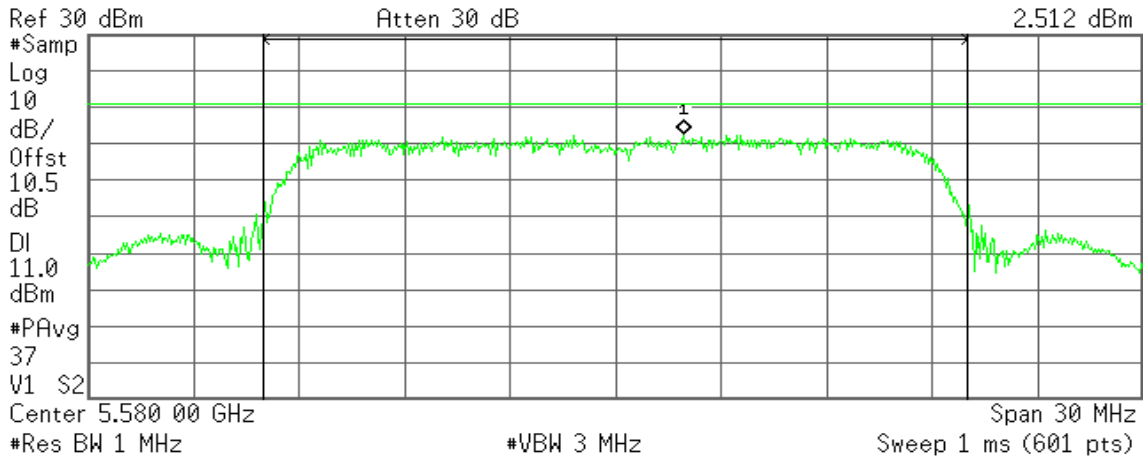


CH Mid

Agilent 15:55:45 Dec 20, 2011

R T

Mkr1 5.581 95 GHz
2.512 dBm



Channel Power

10.69 dBm /20.0000 MHz

Power Spectral Density

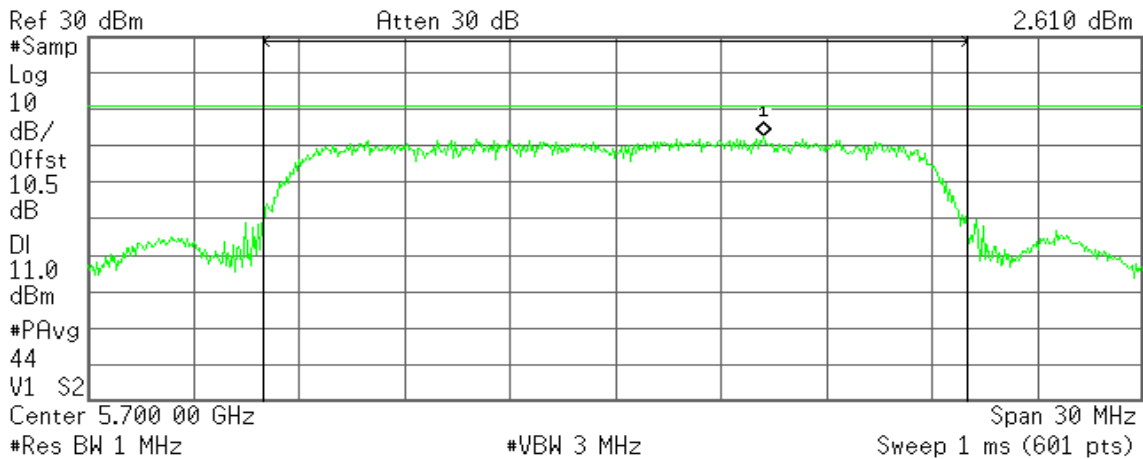
-62.32 dBm/Hz

CH High

Agilent 15:59:20 Dec 20, 2011

R T

Mkr1 5.704 20 GHz
2.610 dBm



Channel Power

10.52 dBm /20.0000 MHz

Power Spectral Density

-62.49 dBm/Hz



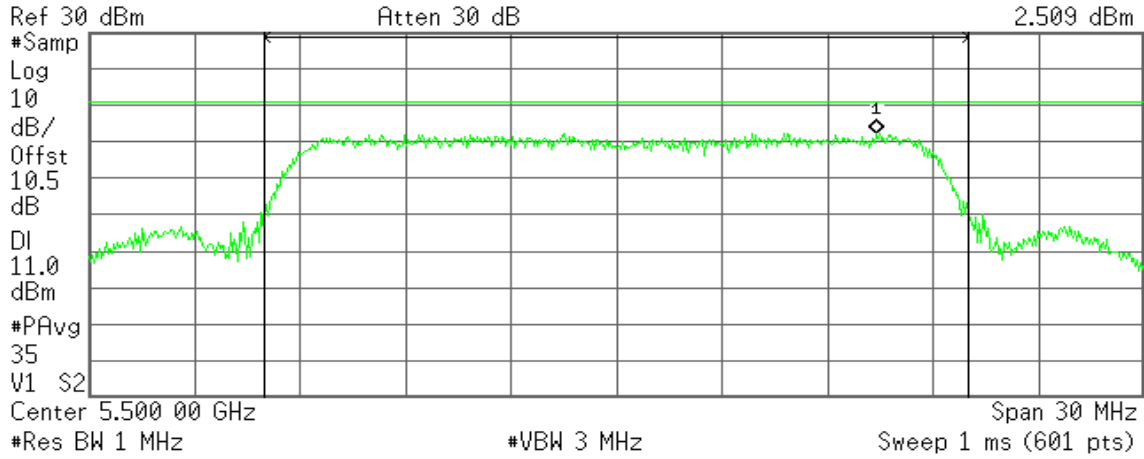
IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

CH Low

Agilent 19:15:45 Dec 20, 2011

R T

Mkr1 5.507 40 GHz
2.509 dBm



Channel Power

13.31 dBm /20.0000 MHz

Power Spectral Density

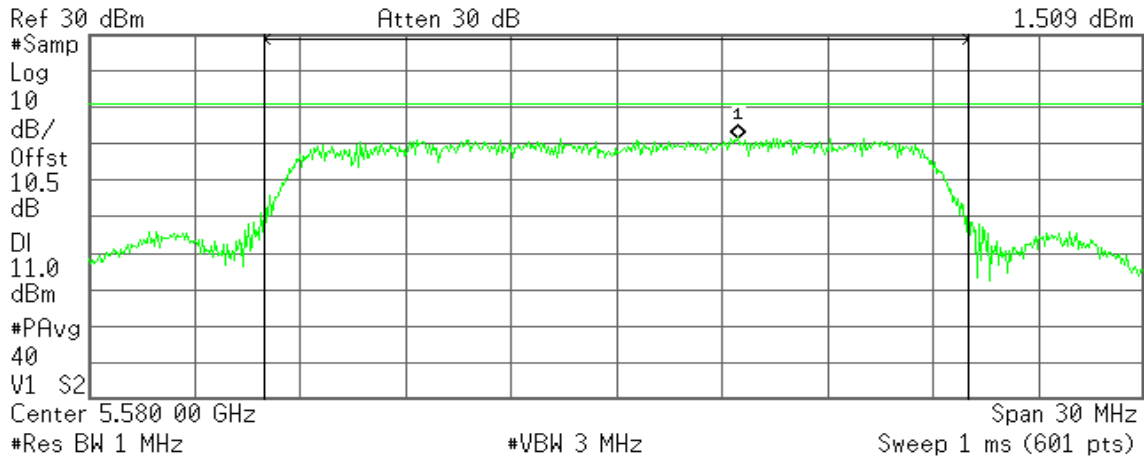
-59.70 dBm/Hz

CH Mid

Agilent 19:19:21 Dec 20, 2011

R T

Mkr1 5.583 45 GHz
1.509 dBm



Channel Power

12.34 dBm /20.0000 MHz

Power Spectral Density

-60.67 dBm/Hz

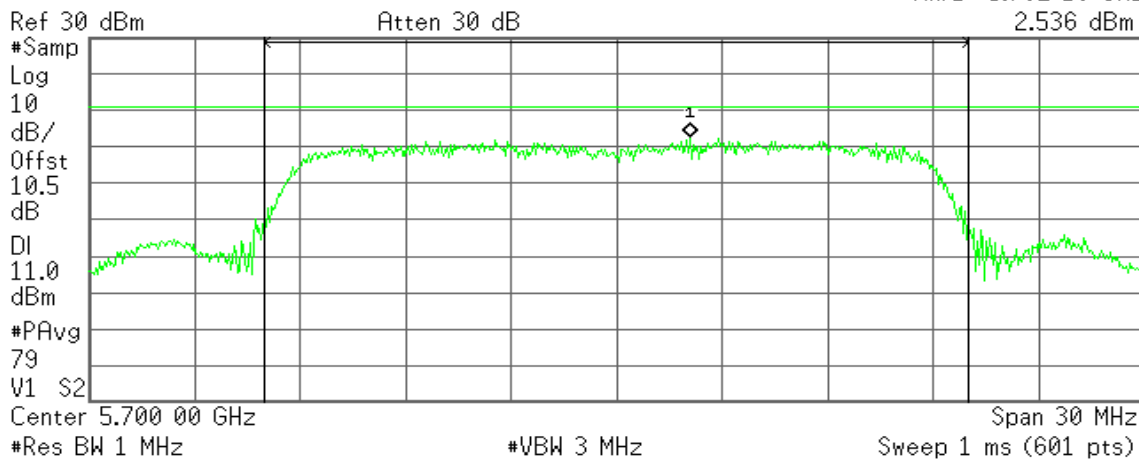


CH High

Agilent 19:26:13 Dec 20, 2011

R T

Mkr1 5.702 10 GHz
2.536 dBm



Channel Power

12.14 dBm /20.0000 MHz

Power Spectral Density

-60.87 dBm/Hz

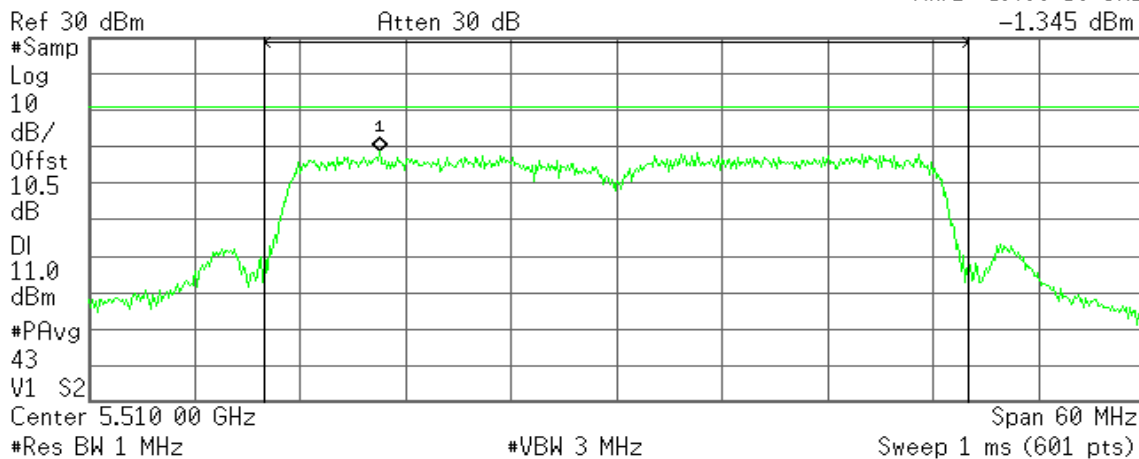
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 0

CH Low

Agilent 16:38:29 Dec 20, 2011

R T

Mkr1 5.496 50 GHz
-1.345 dBm



Channel Power

11.00 dBm /40.0000 MHz

Power Spectral Density

-65.02 dBm/Hz

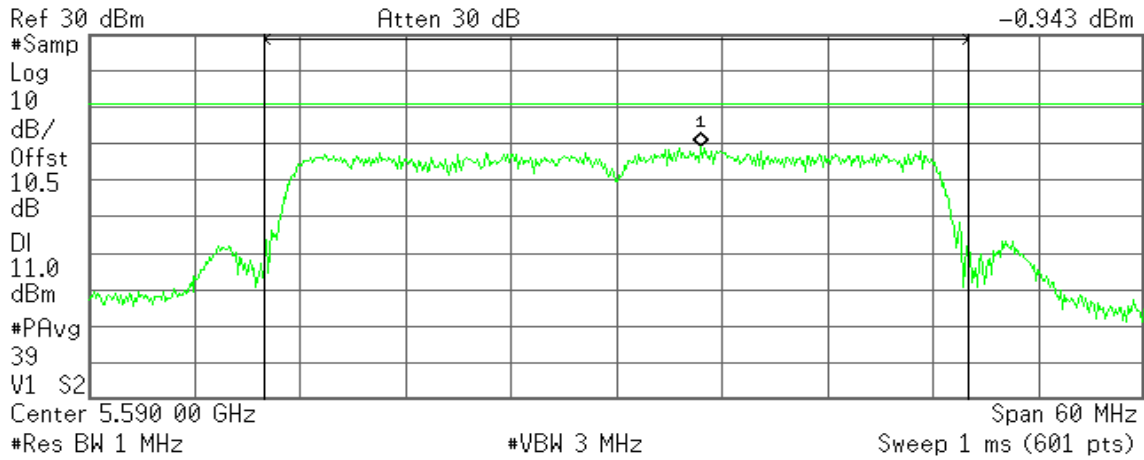


CH Mid

Agilent 16:47:49 Dec 20, 2011

R T

Mkr1 5.594 80 GHz
-0.943 dBm



Channel Power

11.69 dBm /40.0000 MHz

Power Spectral Density

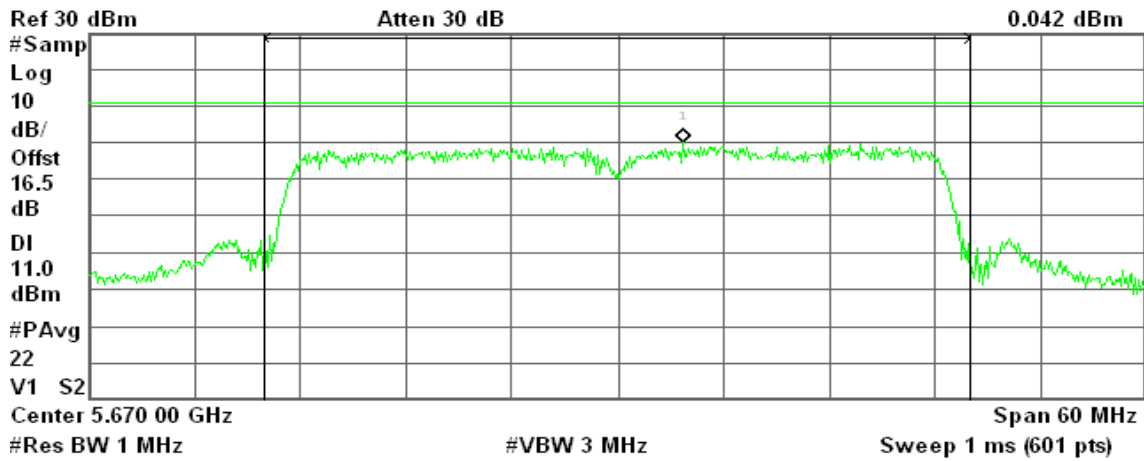
-64.33 dBm/Hz

CH High

Agilent

R T

Mkr1 5.673 70 GHz
0.042 dBm



Channel Power

12.37 dBm /40.0000 MHz

Power Spectral Density

-63.65 dBm/Hz



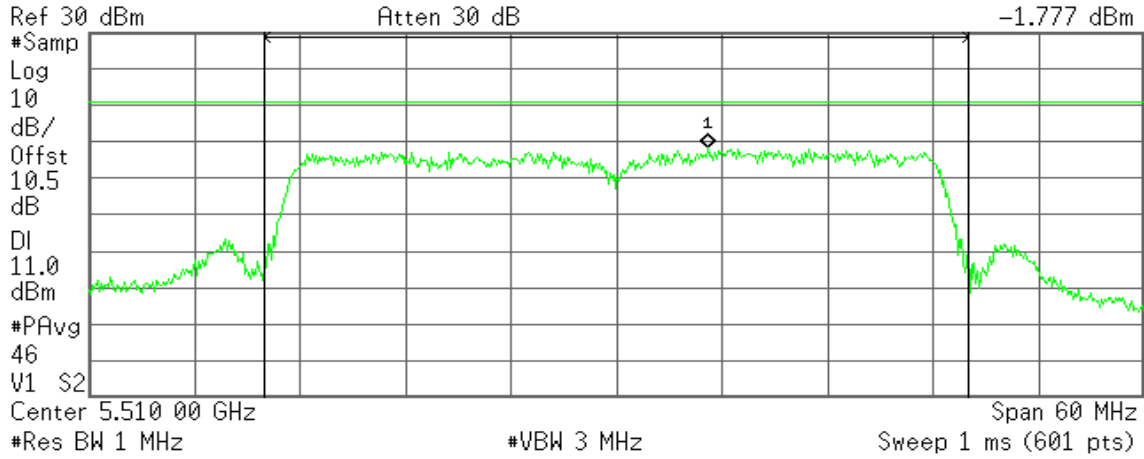
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 1

CH Low

Agilent 17:22:32 Dec 20, 2011

R T

Mkr1 5.515 20 GHz
-1.777 dBm



Channel Power

11.09 dBm /40.0000 MHz

Power Spectral Density

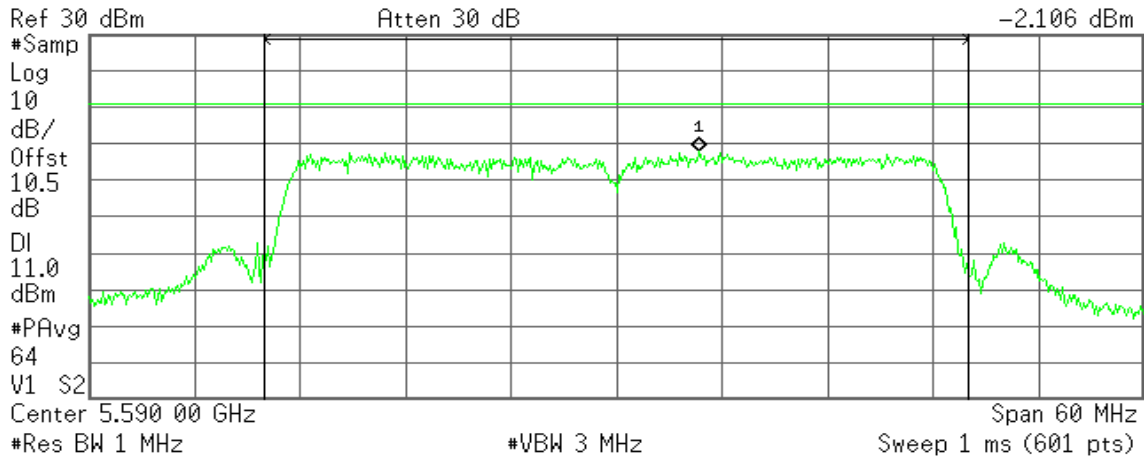
-64.94 dBm/Hz

CH Mid

Agilent 17:26:30 Dec 20, 2011

R T

Mkr1 5.594 70 GHz
-2.106 dBm



Channel Power

9.96 dBm /40.0000 MHz

Power Spectral Density

-66.07 dBm/Hz



CH High

Agilent

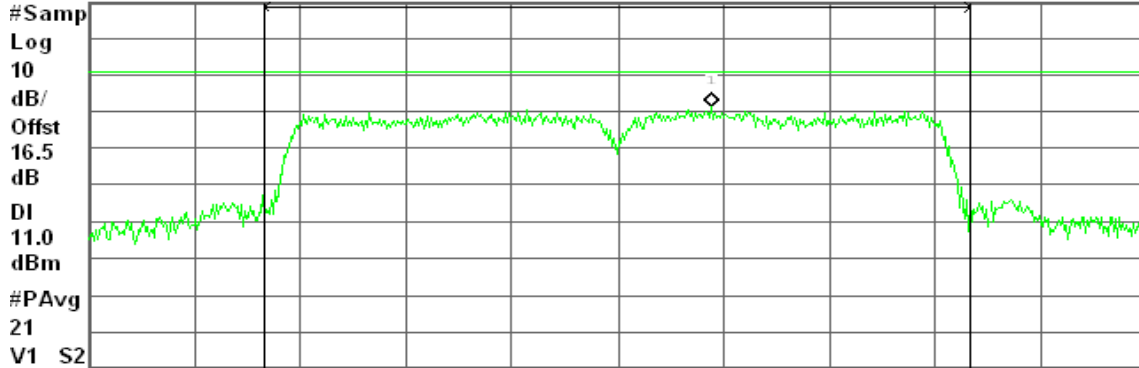
R T

Mkr1 5.675 30 GHz

1.324 dBm

Ref 30 dBm

Atten 30 dB



Channel Power

13.58 dBm / 40.0000 MHz

Power Spectral Density

-62.44 dBm/Hz

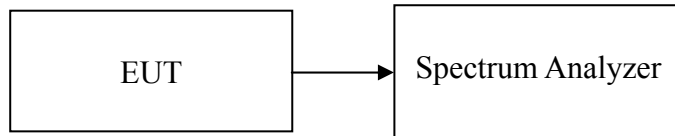


8.7 PEAK EXCURSION

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	8.34	13.00	-4.66	PASS
Mid	5220	7.38	13.00	-5.62	PASS
High	5240	10.02	13.00	-2.98	PASS

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5180	10.33	13.00	-2.67	PASS
Mid	5220	9.72	13.00	-3.28	PASS
High	5240	11.62	13.00	-1.38	PASS

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5180	10.16	13.00	-2.84	PASS
Mid	5220	9.51	13.00	-3.49	PASS
High	5240	10.33	13.00	-2.67	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5190	12.14	13.00	-0.86	PASS
High	5230	11.36	13.00	-1.64	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5190	10.78	13.00	-2.22	PASS
High	5230	12.62	13.00	-0.38	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5260	8.84	13.00	-4.16	PASS
Mid	5280	10.54	13.00	-2.46	PASS
High	5320	10.09	13.00	-2.91	PASS

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5260	9.94	13.00	-3.06	PASS
Mid	5280	10.17	13.00	-2.83	PASS
High	5320	11.65	13.00	-1.35	PASS

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5260	9.91	13.00	-3.09	PASS
Mid	5280	10.81	13.00	-2.19	PASS
High	5320	10.25	13.00	-2.75	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5270	10.48	13.00	-2.52	PASS
High	5310	10.38	13.00	-2.62	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5270	11.88	13.00	-1.12	PASS
High	5310	10.59	13.00	-2.41	PASS

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

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5500	9.36	13.00	-3.64	PASS
Mid	5600	8.95	13.00	-4.05	PASS
High	5700	7.08	13.00	-5.92	PASS

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5500	8.79	13.00	-4.21	PASS
Mid	5600	9.73	13.00	-3.27	PASS
High	5700	9.33	13.00	-3.67	PASS

Test mode: IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5500	9.16	13.00	-3.84	PASS
Mid	5600	8.80	13.00	-4.20	PASS
High	5700	9.01	13.00	-3.99	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 0

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5510	11.37	13.00	-1.63	PASS
Mid	5590	11.54	13.00	-1.46	PASS
High	5670	8.73	13.00	-4.27	PASS

Test mode: IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 1

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
Low	5510	12.26	13.00	-0.74	PASS
Mid	5590	12.69	13.00	-0.31	PASS
High	5670	8.63	13.00	-4.37	PASS



Test Plot

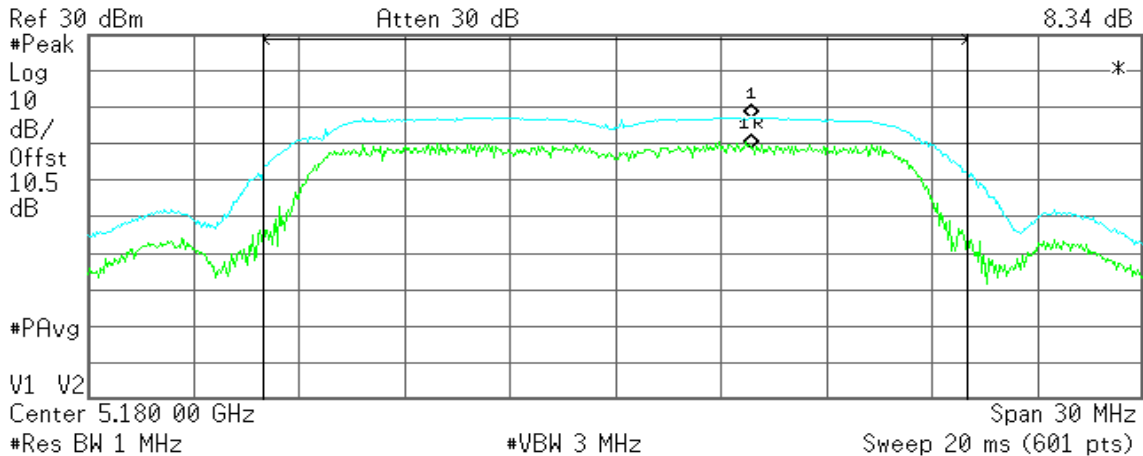
IEEE 802.11a mode / 5180 ~ 5240MHz

CH Low

Agilent 14:31:14 Dec 20, 2011

R T

Mkr1 0 Hz
8.34 dB



Channel Power

16.69 dBm /20.0000 MHz

Power Spectral Density

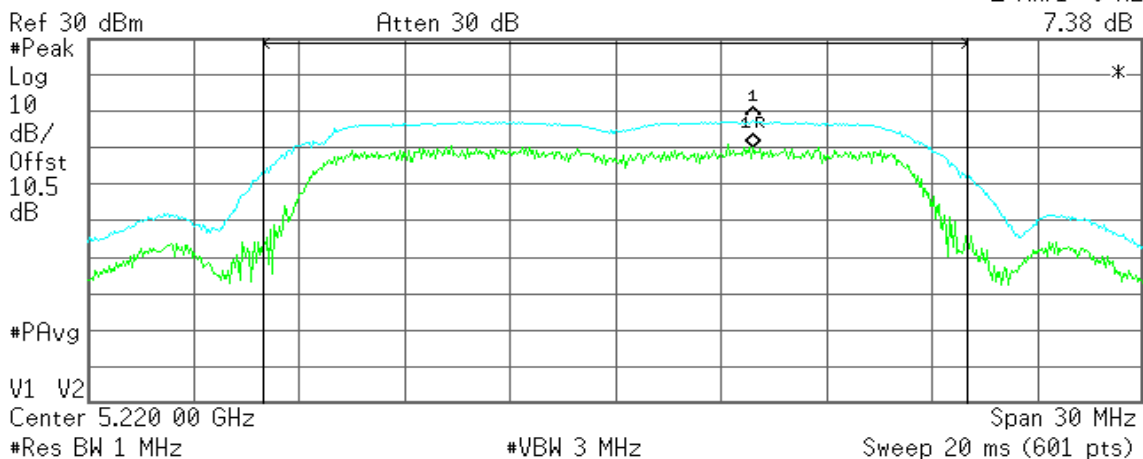
-56.32 dBm/Hz

CH Mid

Agilent 14:37:31 Dec 20, 2011

R T

Mkr1 0 Hz
7.38 dB



Channel Power

16.62 dBm /20.0000 MHz

Power Spectral Density

-56.39 dBm/Hz

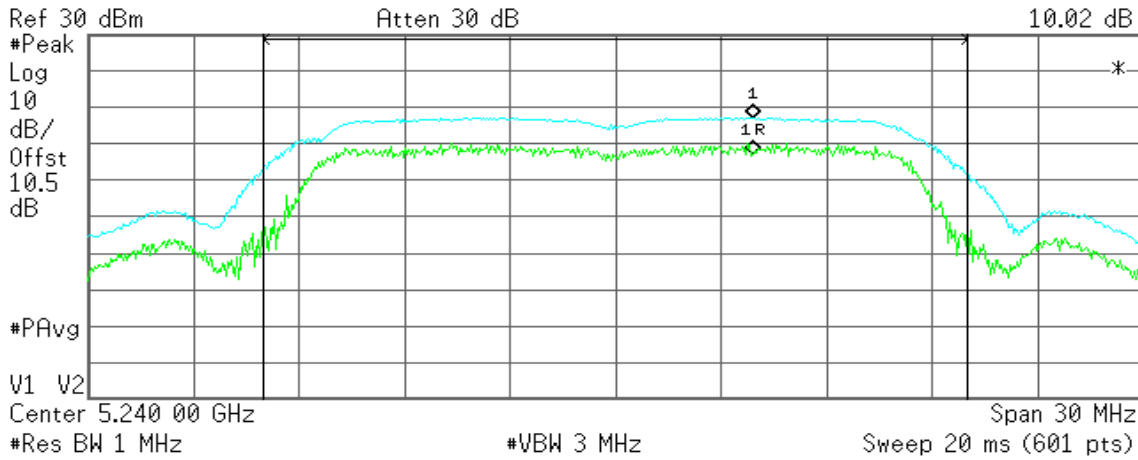


CH High

Agilent 14:41:54 Dec 20, 2011

R T

Mkr1 0 Hz
10.02 dB



Channel Power

16.26 dBm /20.0000 MHz

Power Spectral Density

-56.75 dBm/Hz

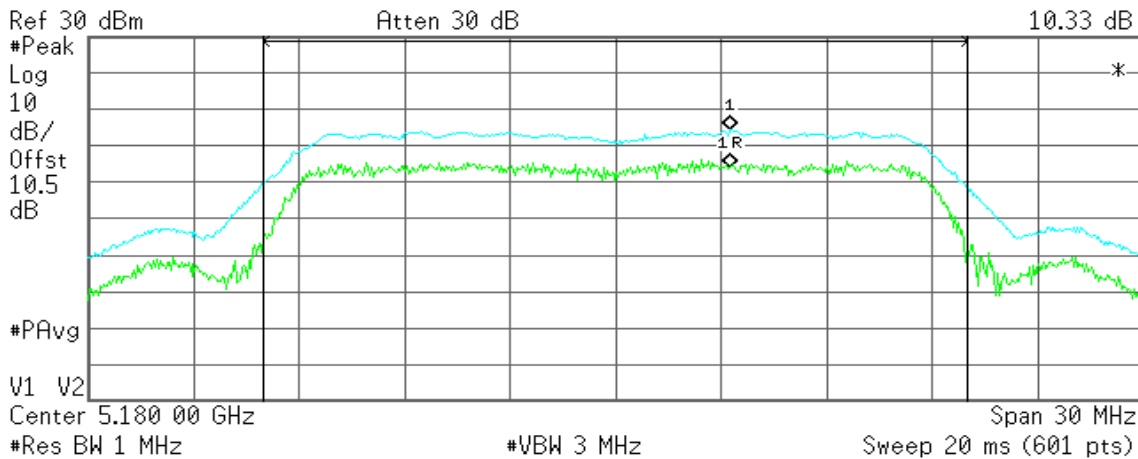
IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 0

CH Low

Agilent 15:22:33 Dec 20, 2011

R T

Mkr1 0 Hz
10.33 dB



Channel Power

12.47 dBm /20.0000 MHz

Power Spectral Density

-60.54 dBm/Hz

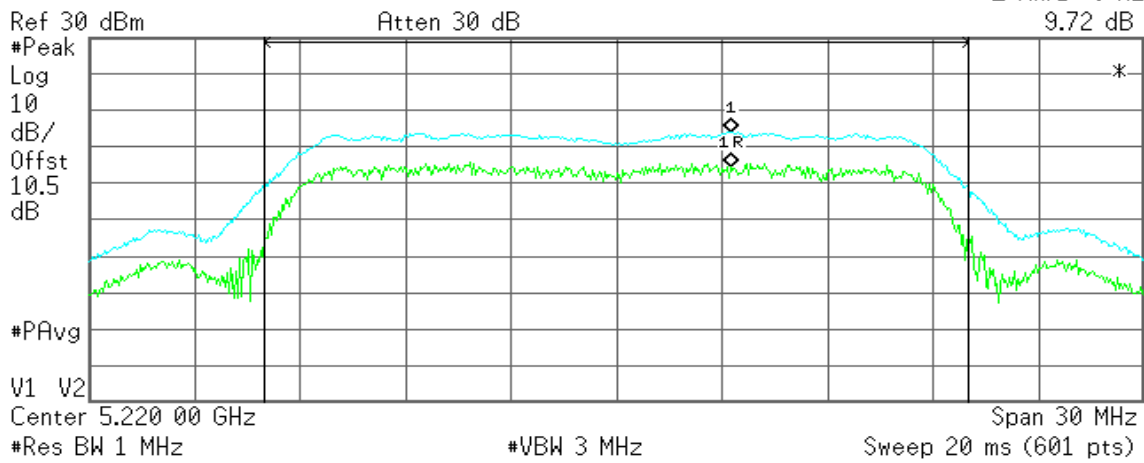


CH Mid

Agilent 15:26:52 Dec 20, 2011

R T

Mkr1 0 Hz
9.72 dB



Channel Power

12.29 dBm /20.0000 MHz

Power Spectral Density

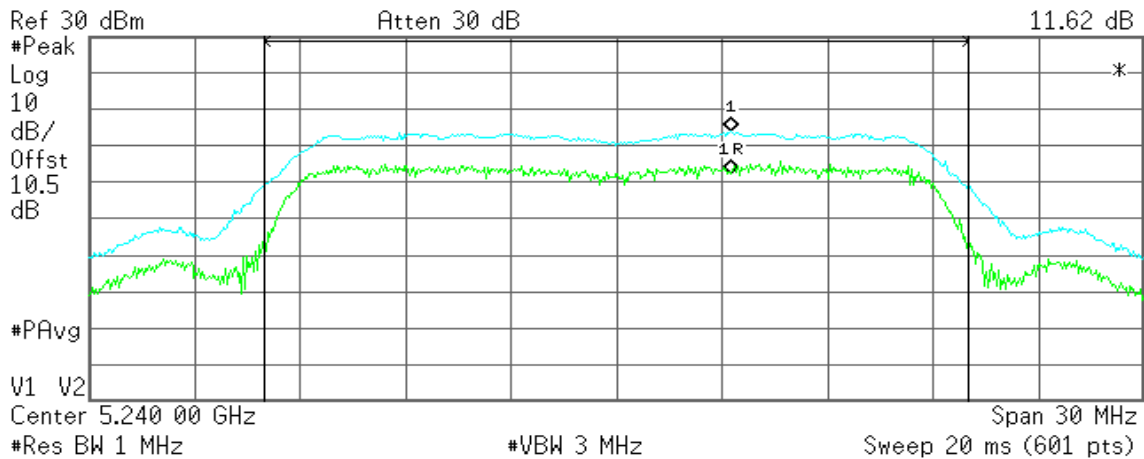
-60.72 dBm/Hz

CH High

Agilent 15:30:48 Dec 20, 2011

R T

Mkr1 0 Hz
11.62 dB



Channel Power

11.98 dBm /20.0000 MHz

Power Spectral Density

-61.03 dBm/Hz

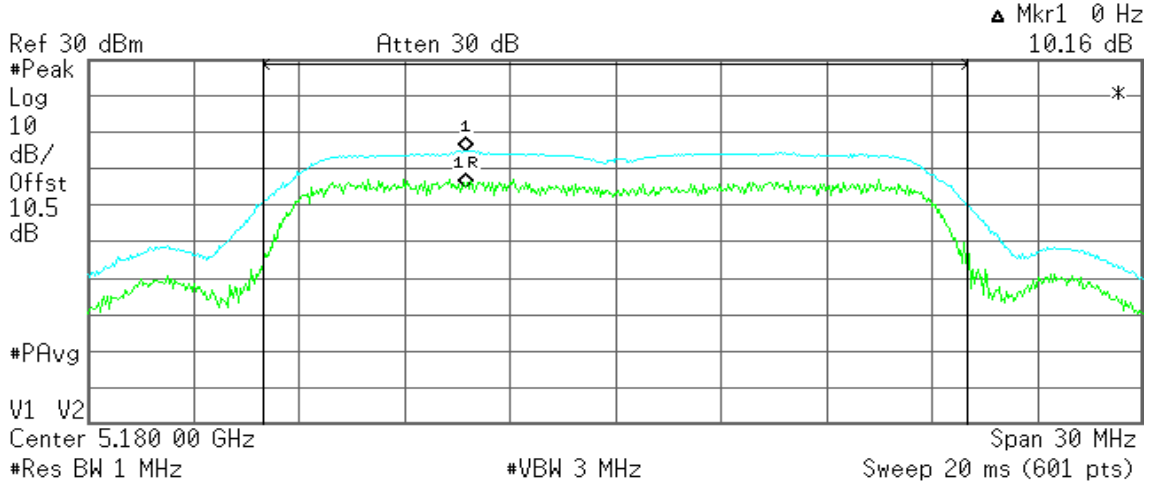


IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / Chain 1

CH Low

Agilent 18:01:01 Dec 20, 2011

R T



Channel Power

13.81 dBm /20.0000 MHz

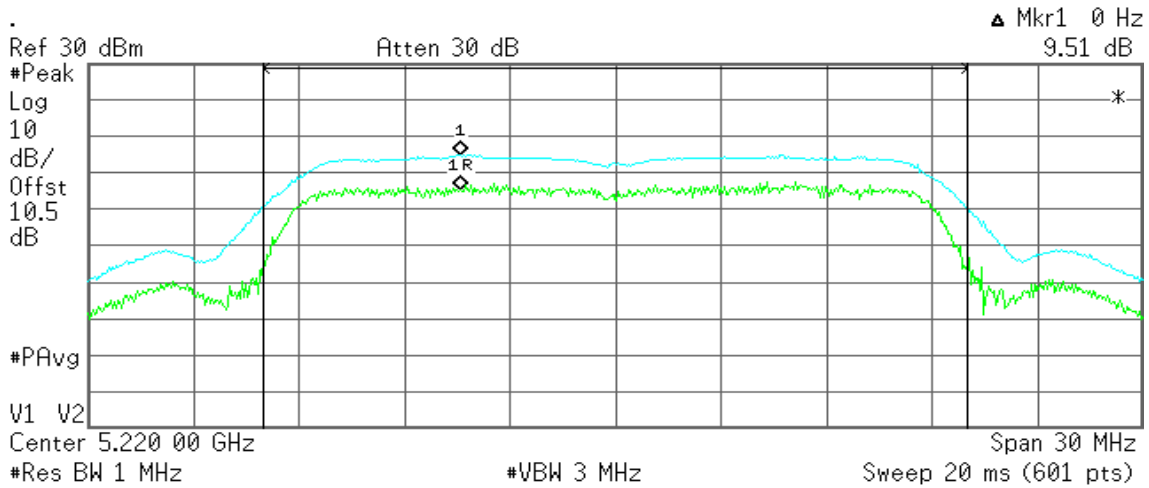
Power Spectral Density

-59.20 dBm/Hz

CH Mid

Agilent 18:07:12 Dec 20, 2011

R T



Channel Power

13.84 dBm /20.0000 MHz

Power Spectral Density

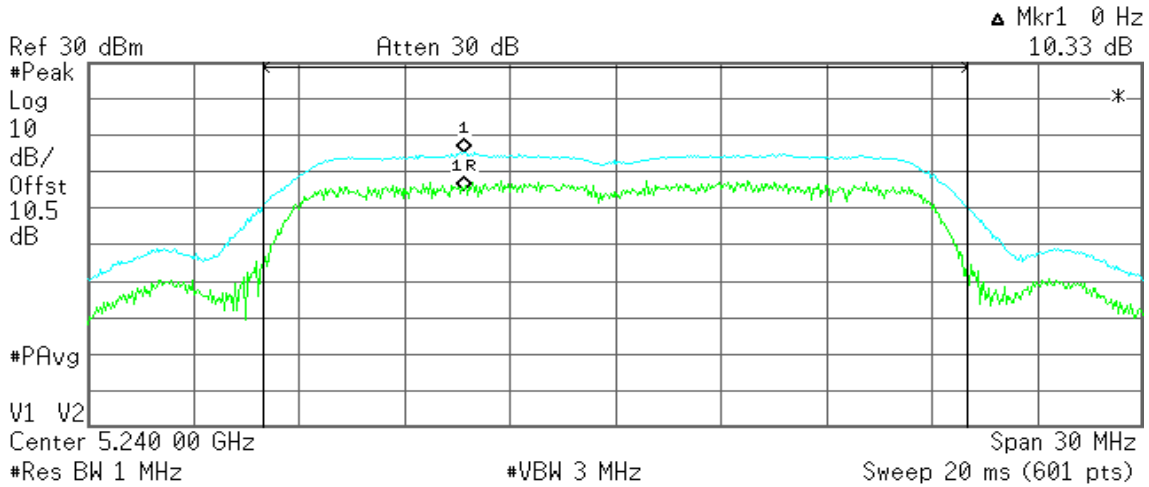
-59.17 dBm/Hz



CH High

Agilent 18:16:13 Dec 20, 2011

R T



Channel Power

13.89 dBm /20.0000 MHz

Power Spectral Density

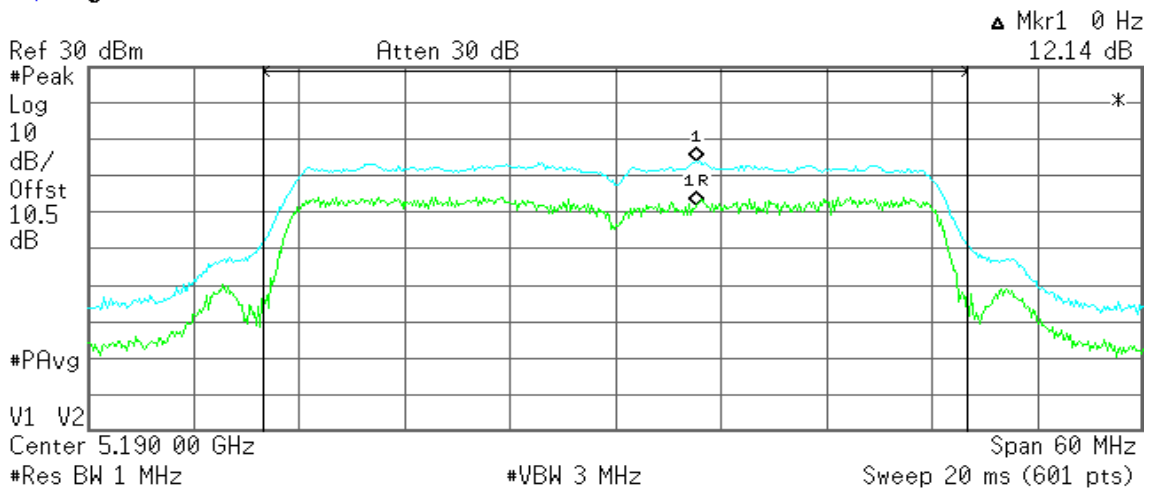
-59.12 dBm/Hz

IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 0

CH Low

Agilent 16:07:39 Dec 20, 2011

R T



Channel Power

14.32 dBm /40.0000 MHz

Power Spectral Density

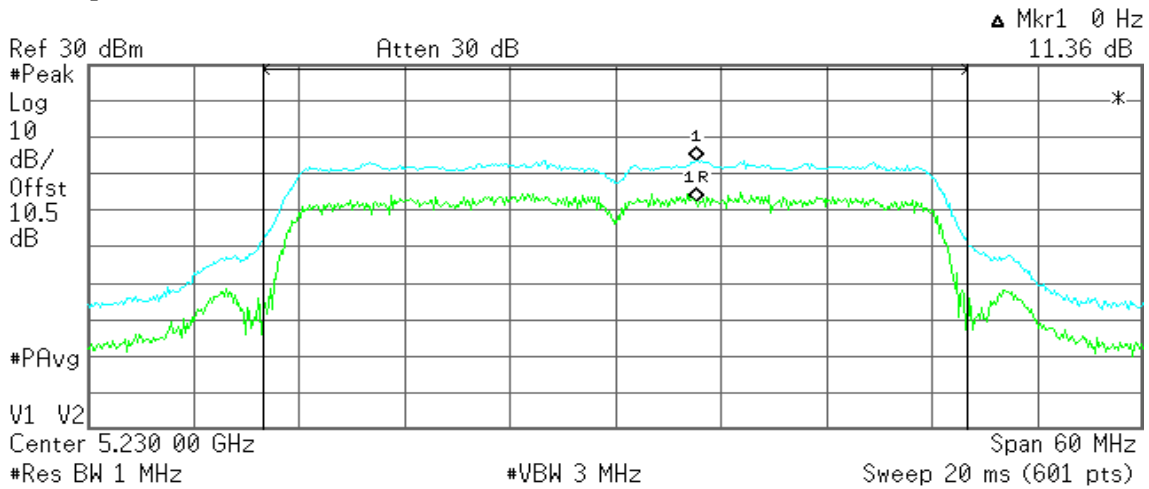
-61.70 dBm/Hz



CH High

Agilent 16:18:57 Dec 20, 2011

R T



Channel Power

14.02 dBm /40.00000 MHz

Power Spectral Density

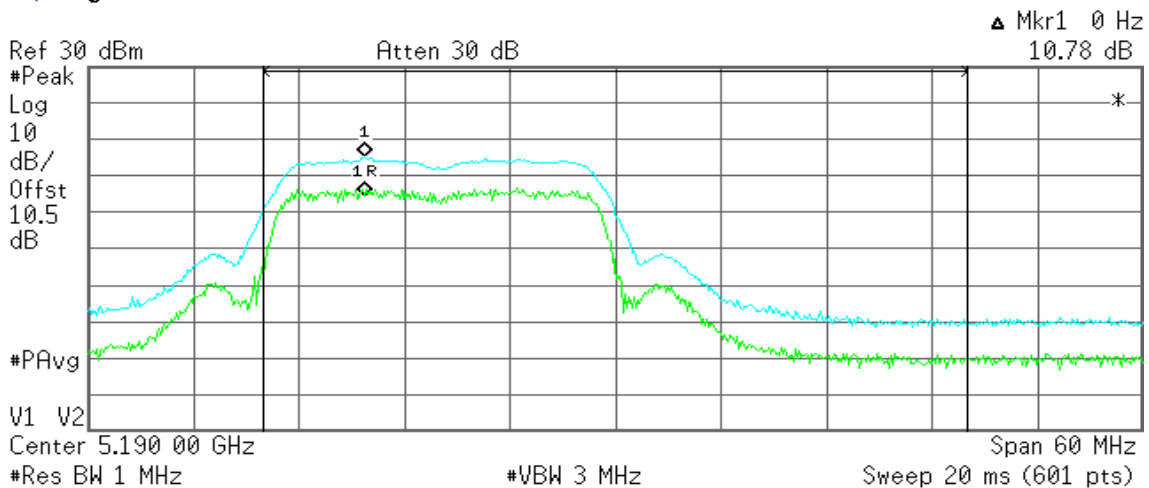
-62.00 dBm/Hz

IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

CH Low

Agilent 17:01:53 Dec 20, 2011

R T



Channel Power

13.50 dBm /40.00000 MHz

Power Spectral Density

-62.52 dBm/Hz

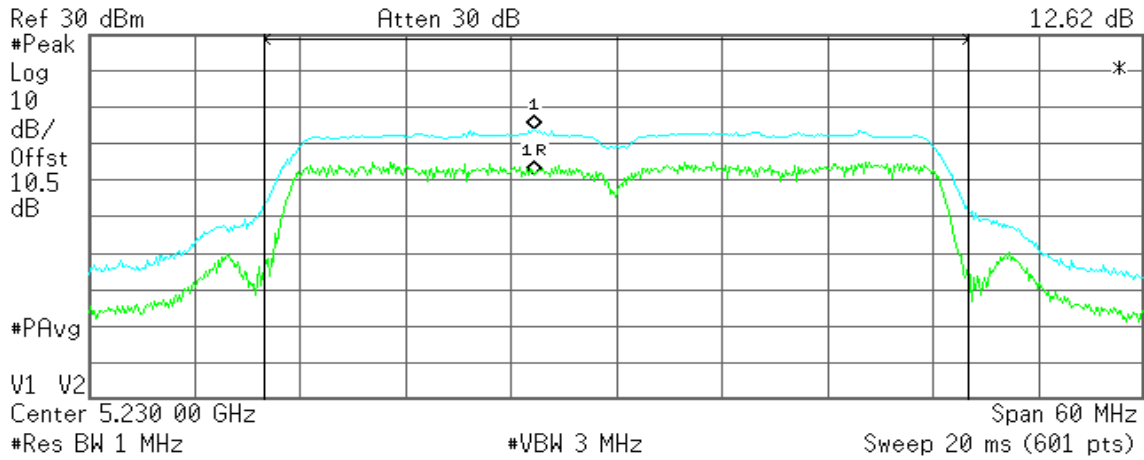


CH High

Agilent 17:06:59 Dec 20, 2011

R T

Mkr1 0 Hz
12.62 dB



Channel Power

14.82 dBm /40.0000 MHz

Power Spectral Density

-61.20 dBm/Hz

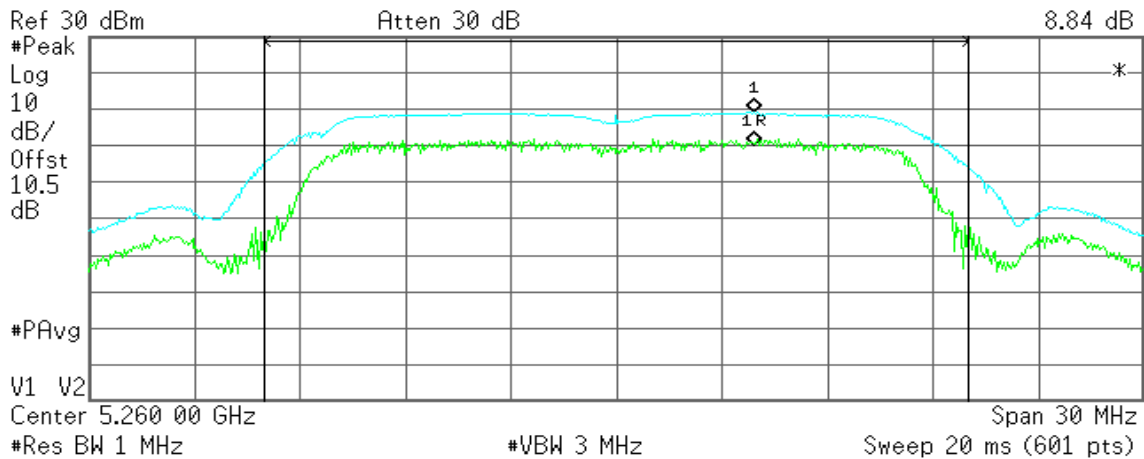
IEEE 802.11a mode / 5260 ~ 5320MHz

CH Low

Agilent 14:49:37 Dec 20, 2011

R T

Mkr1 0 Hz
8.84 dB



Channel Power

18.38 dBm /20.0000 MHz

Power Spectral Density

-54.63 dBm/Hz

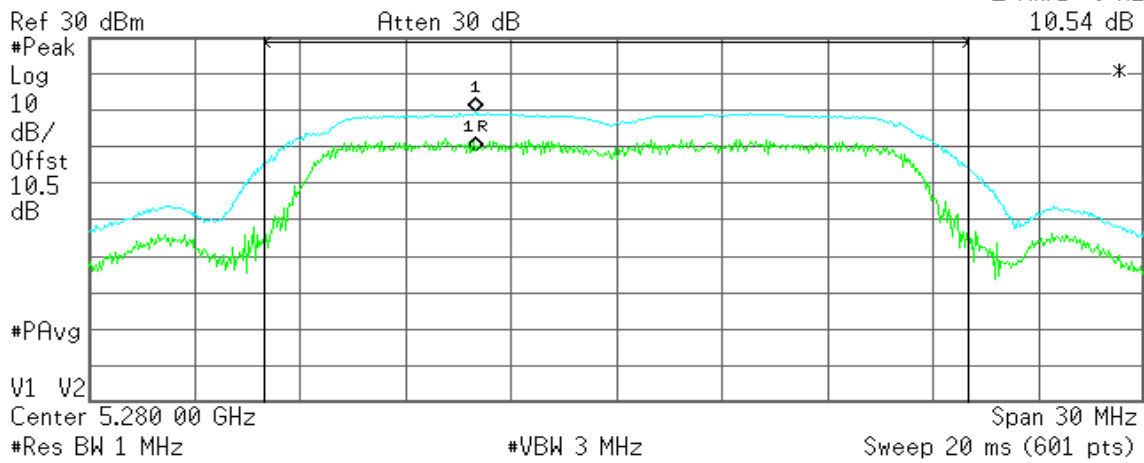


CH Mid

Agilent 14:52:21 Dec 20, 2011

R T

Mkr1 0 Hz
10.54 dB



Channel Power

18.47 dBm /20.0000 MHz

Power Spectral Density

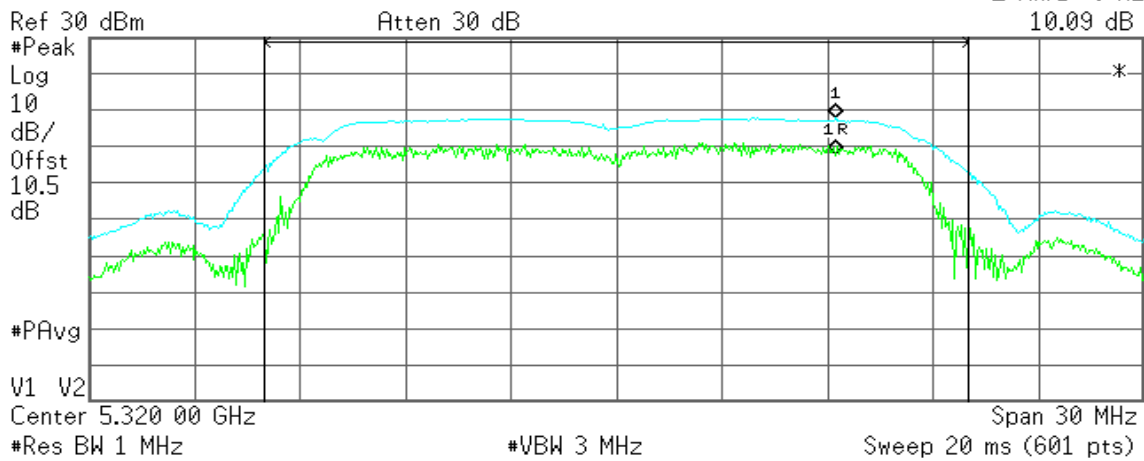
-54.54 dBm/Hz

CH High

Agilent 14:55:30 Dec 20, 2011

R T

Mkr1 0 Hz
10.09 dB



Channel Power

17.17 dBm /20.0000 MHz

Power Spectral Density

-55.84 dBm/Hz

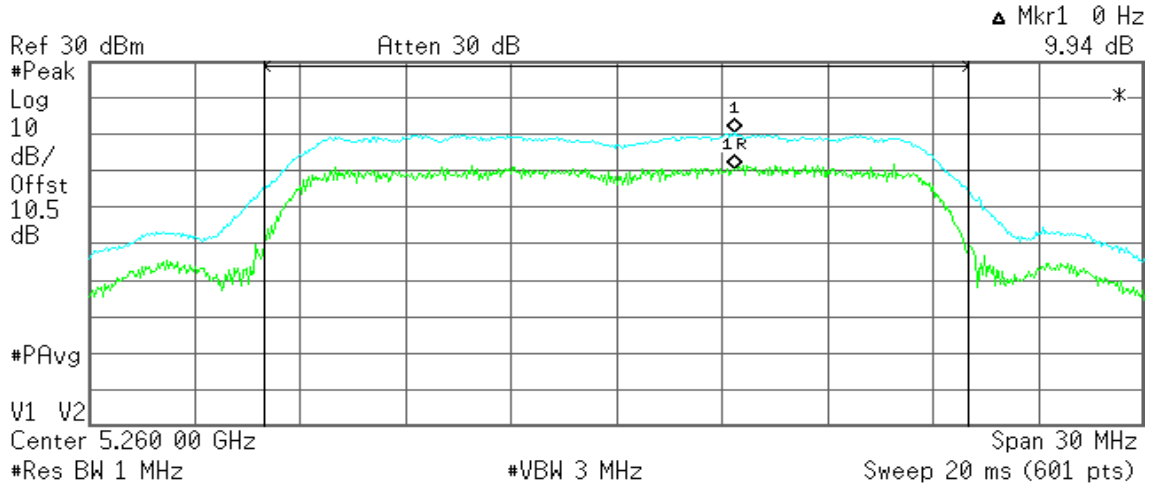


IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

CH Low

Agilent 15:35:19 Dec 20, 2011

R T



Channel Power

18.24 dBm /20.0000 MHz

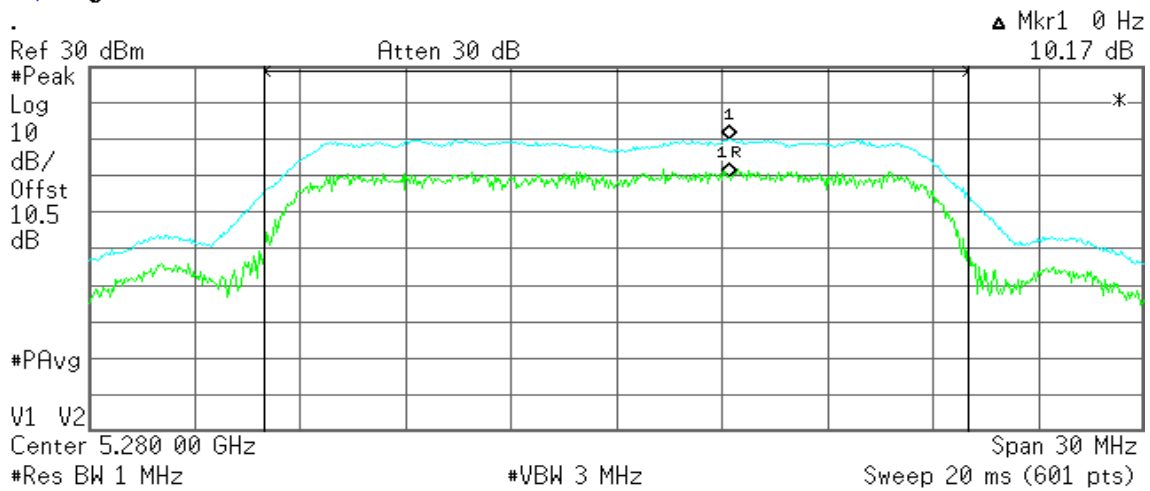
Power Spectral Density

-54.77 dBm/Hz

CH Mid

Agilent 15:38:42 Dec 20, 2011

R T



Channel Power

18.20 dBm /20.0000 MHz

Power Spectral Density

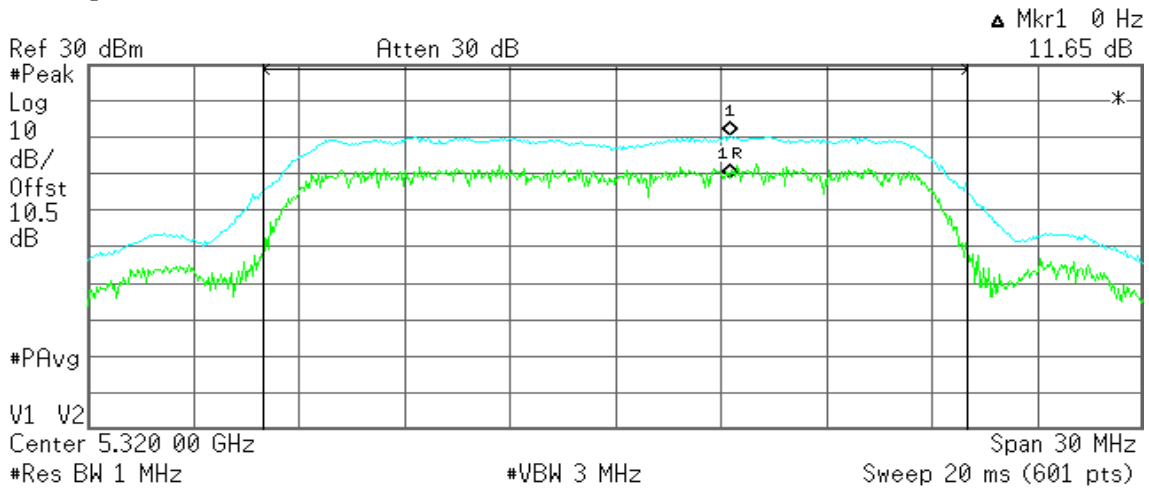
-54.81 dBm/Hz



CH High

Agilent 15:48:07 Dec 20, 2011

R T



Channel Power

18.57 dBm /20.0000 MHz

Power Spectral Density

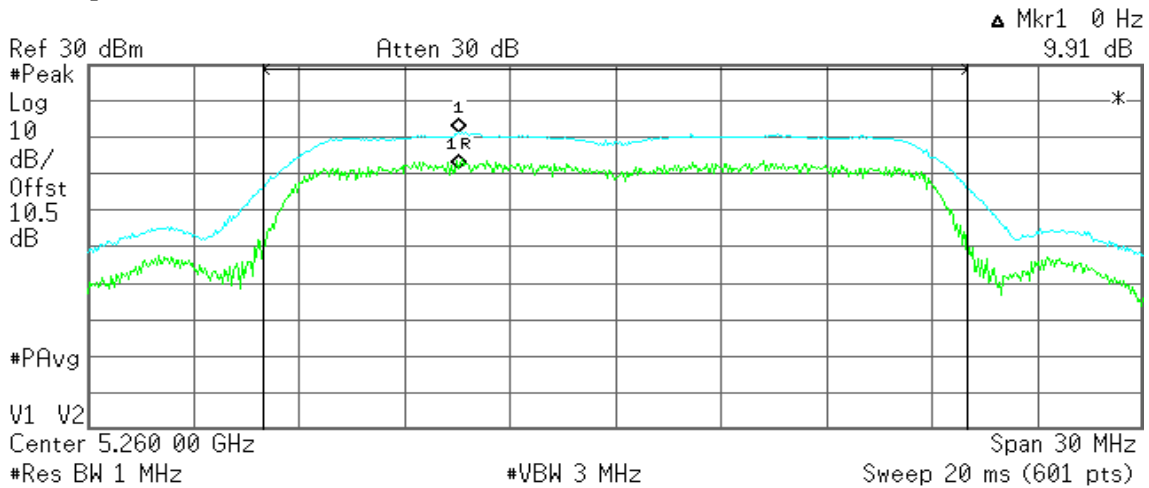
-54.44 dBm/Hz

IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

CH Low

Agilent 18:21:26 Dec 20, 2011

R T



Channel Power

19.88 dBm /20.0000 MHz

Power Spectral Density

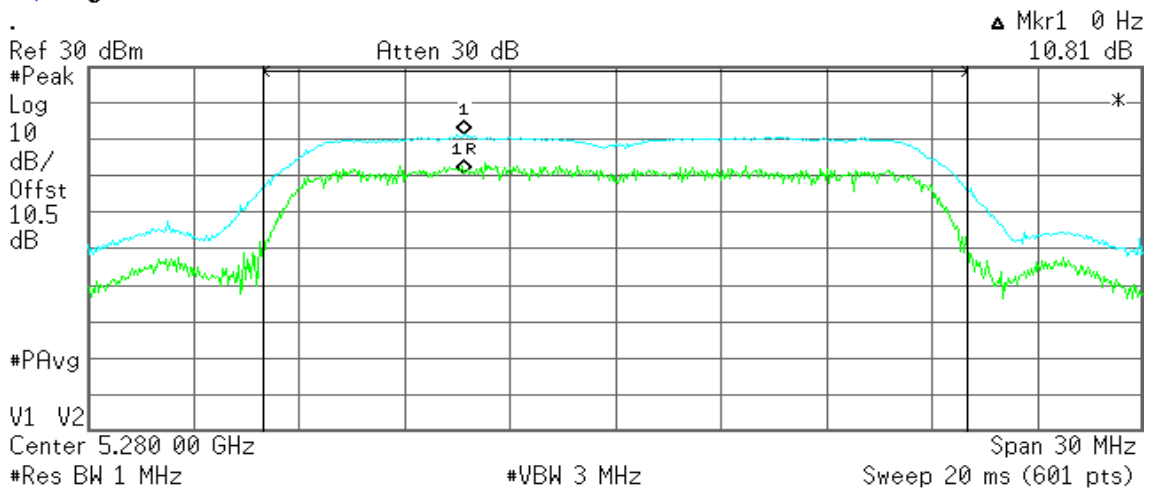
-53.13 dBm/Hz



CH Mid

Agilent 18:25:14 Dec 20, 2011

R T



Channel Power

19.80 dBm /20.0000 MHz

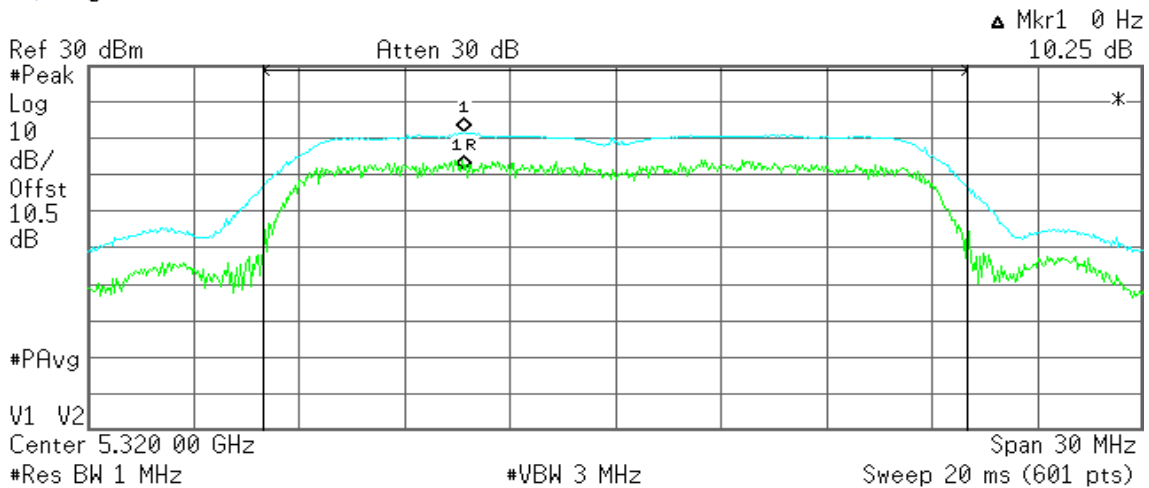
Power Spectral Density

-53.21 dBm/Hz

CH High

Agilent 18:29:46 Dec 20, 2011

R T



Channel Power

20.32 dBm /20.0000 MHz

Power Spectral Density

-52.69 dBm/Hz

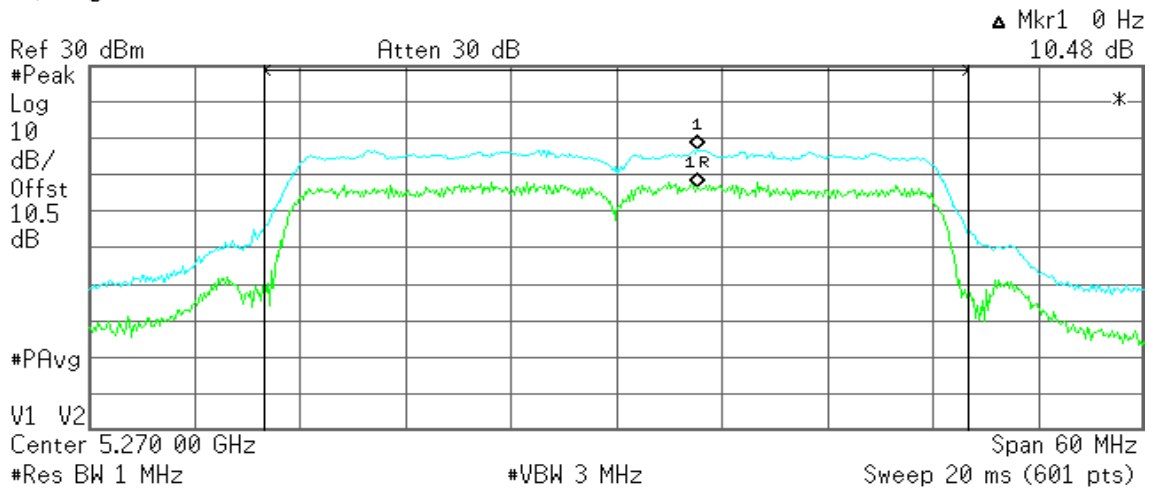


IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

CH Low

Agilent 16:26:24 Dec 20, 2011

R T



Channel Power

17.42 dBm /40.0000 MHz

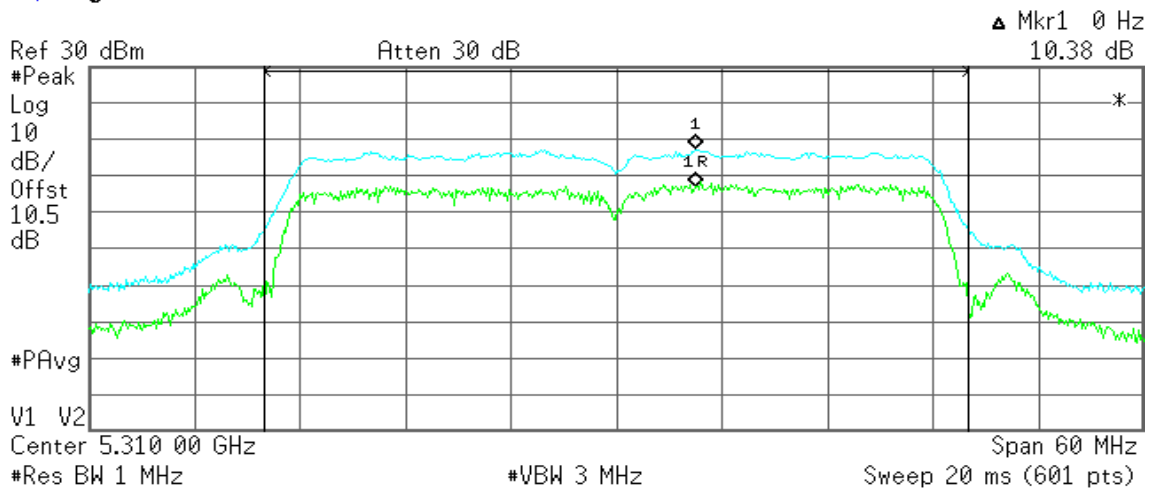
Power Spectral Density

-58.60 dBm/Hz

CH High

Agilent 16:34:33 Dec 20, 2011

R T



Channel Power

17.58 dBm /40.0000 MHz

Power Spectral Density

-58.44 dBm/Hz

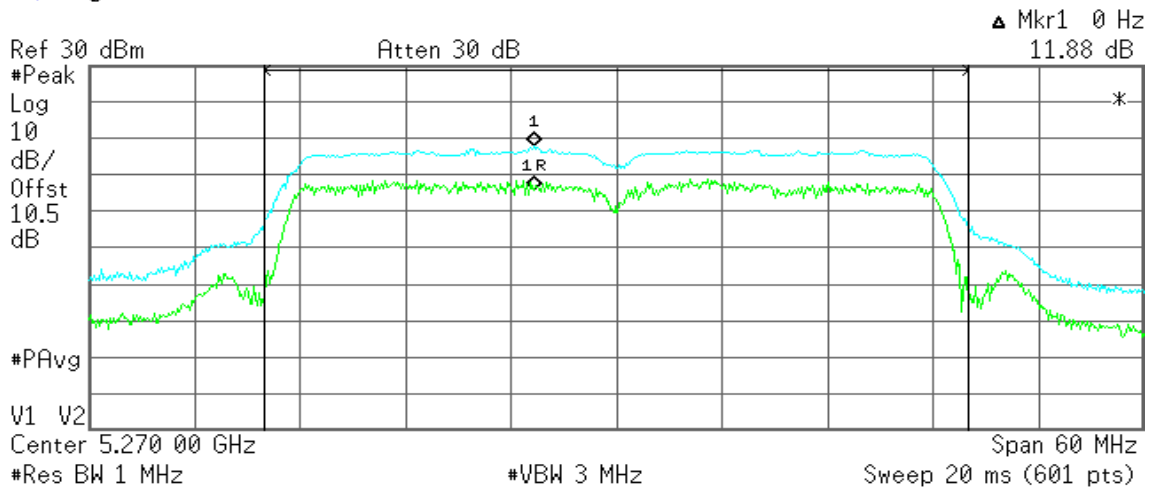


IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

CH Low

Agilent 17:14:35 Dec 20, 2011

R T



Channel Power

18.36 dBm /40.0000 MHz

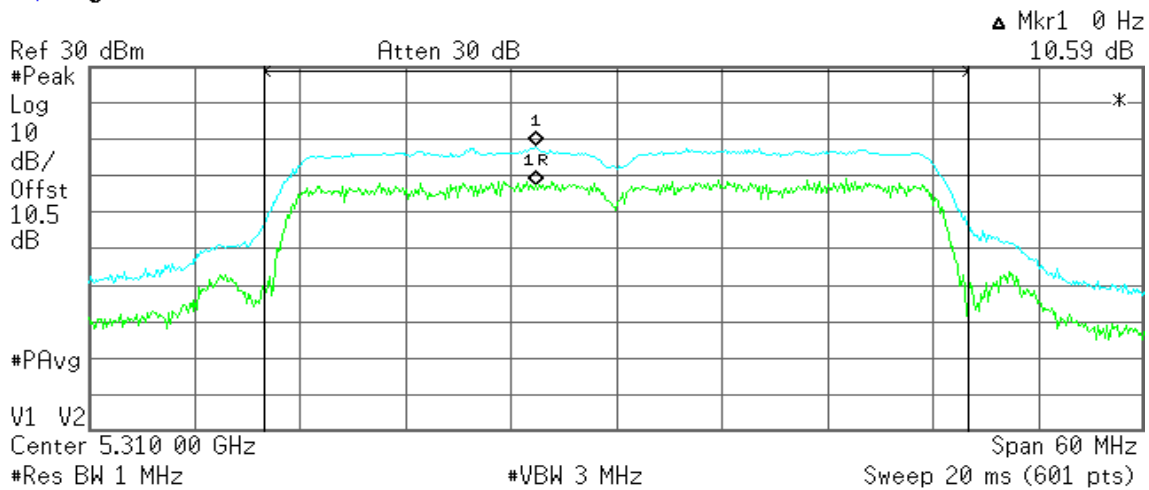
Power Spectral Density

-57.66 dBm/Hz

CH High

Agilent 17:19:02 Dec 20, 2011

R T



Channel Power

18.73 dBm /40.0000 MHz

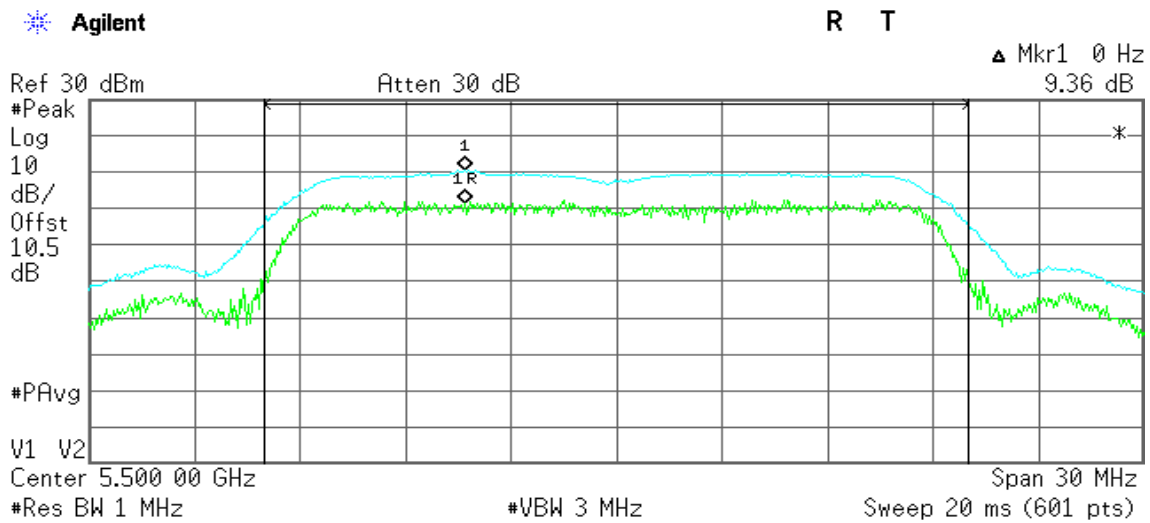
Power Spectral Density

-57.29 dBm/Hz



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

CH Low



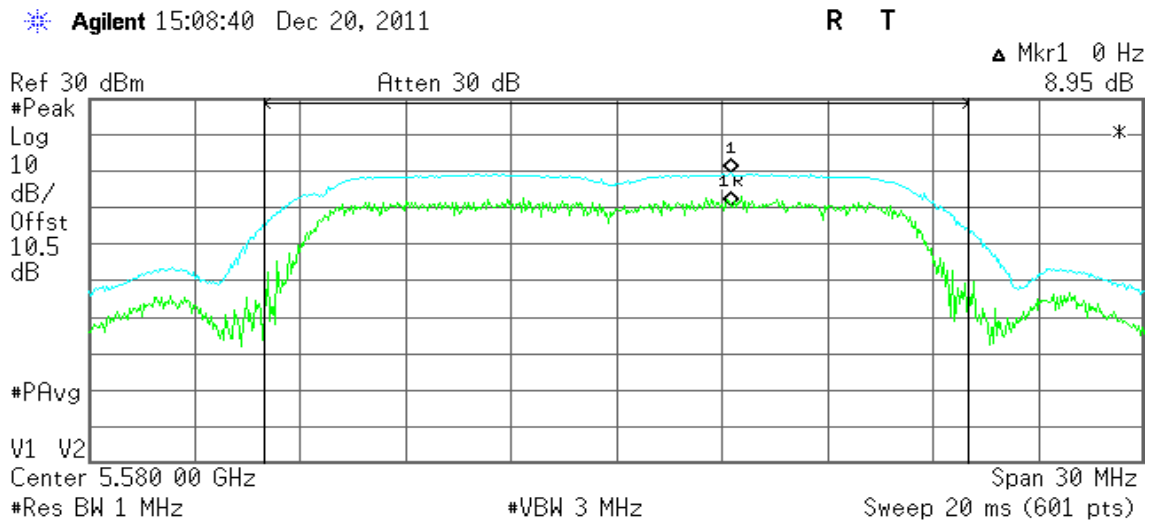
Channel Power

19.24 dBm /20.0000 MHz

Power Spectral Density

-52.47 dBm/Hz

CH Mid



Channel Power

18.72 dBm /20.0000 MHz

Power Spectral Density

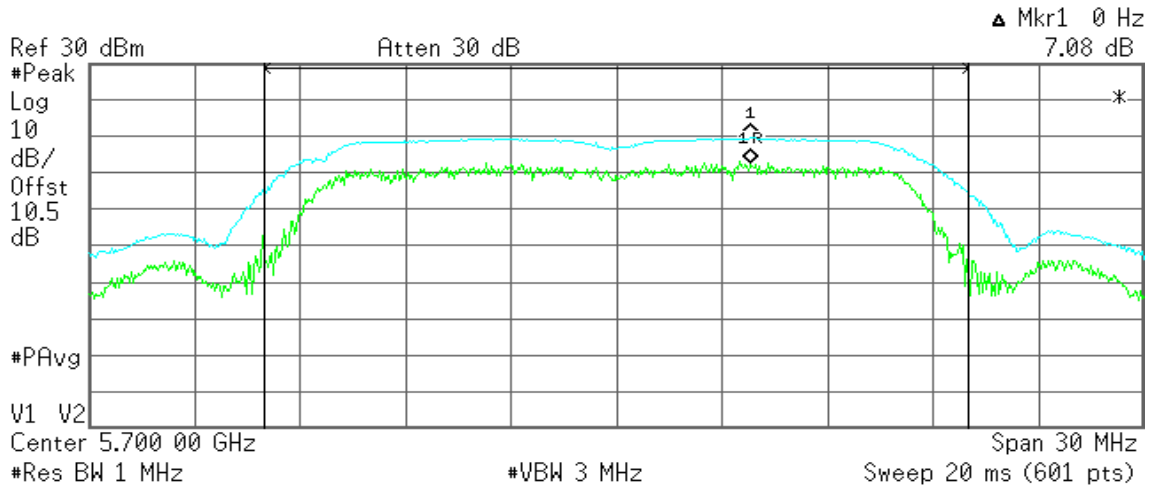
-54.29 dBm/Hz



CH High

Agilent 15:13:41 Dec 20, 2011

R T



Channel Power

19.02 dBm /20.0000 MHz

Power Spectral Density

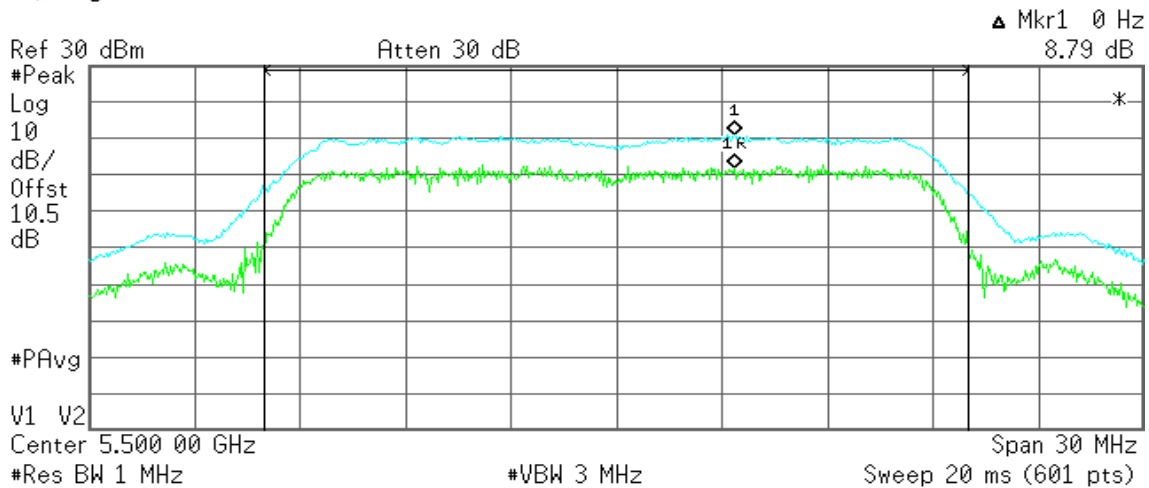
-53.99 dBm/Hz

IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

CH Low

Agilent 15:52:38 Dec 20, 2011

R T



Channel Power

18.89 dBm /20.0000 MHz

Power Spectral Density

-54.12 dBm/Hz

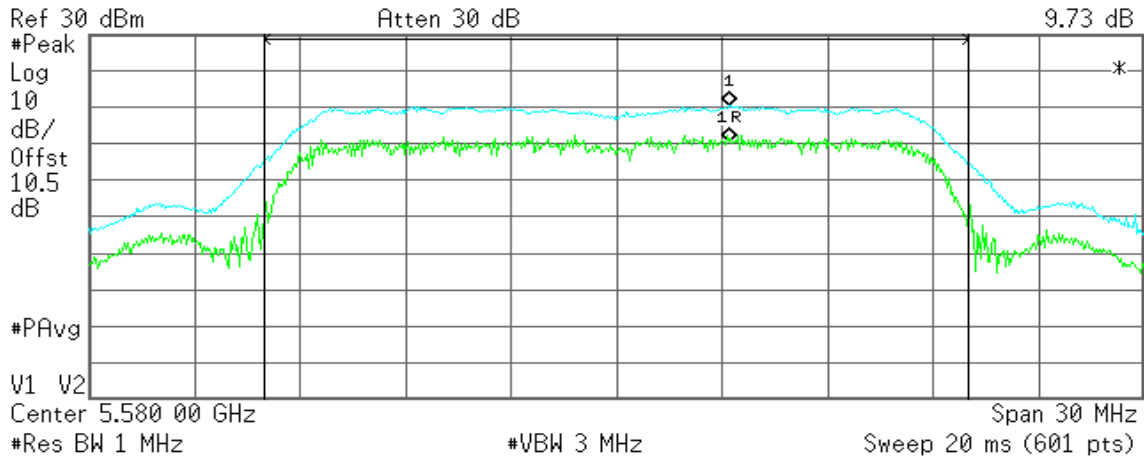


CH Mid

Agilent 15:56:12 Dec 20, 2011

R T

Mkr1 0 Hz
9.73 dB



Channel Power

18.49 dBm /20.0000 MHz

Power Spectral Density

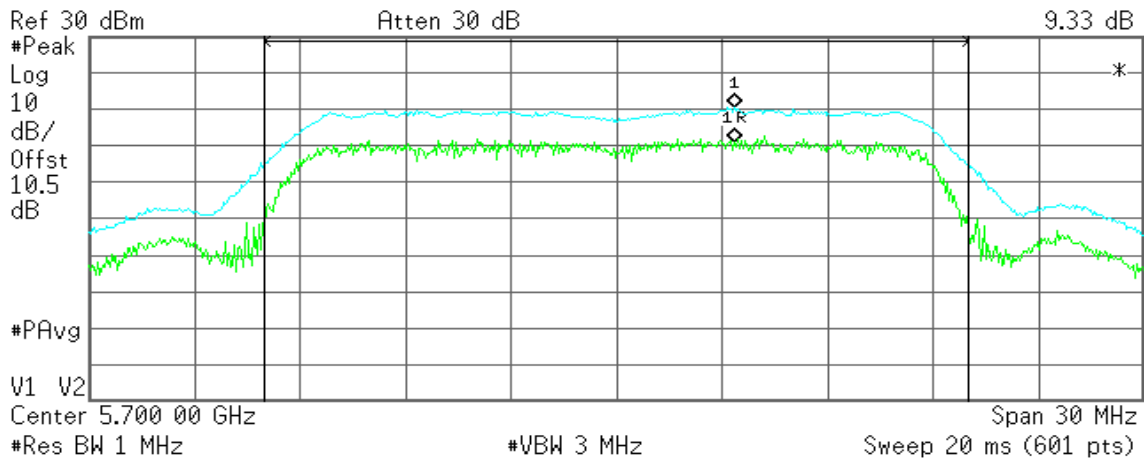
-54.52 dBm/Hz

CH High

Agilent 15:59:49 Dec 20, 2011

R T

Mkr1 0 Hz
9.33 dB



Channel Power

18.15 dBm /20.0000 MHz

Power Spectral Density

-54.86 dBm/Hz

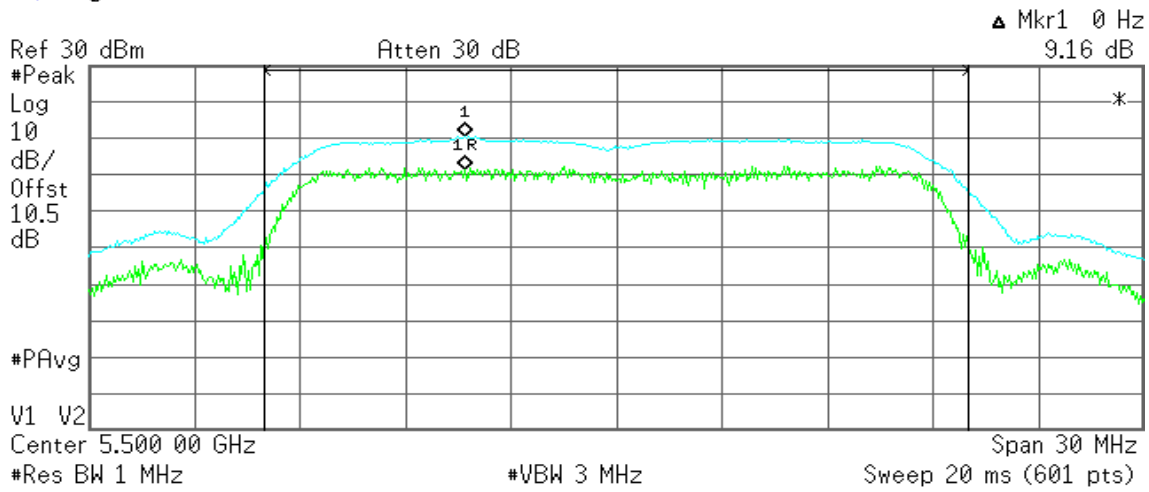


IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

CH Low

Agilent 19:16:12 Dec 20, 2011

R T



Channel Power

18.94 dBm /20.0000 MHz

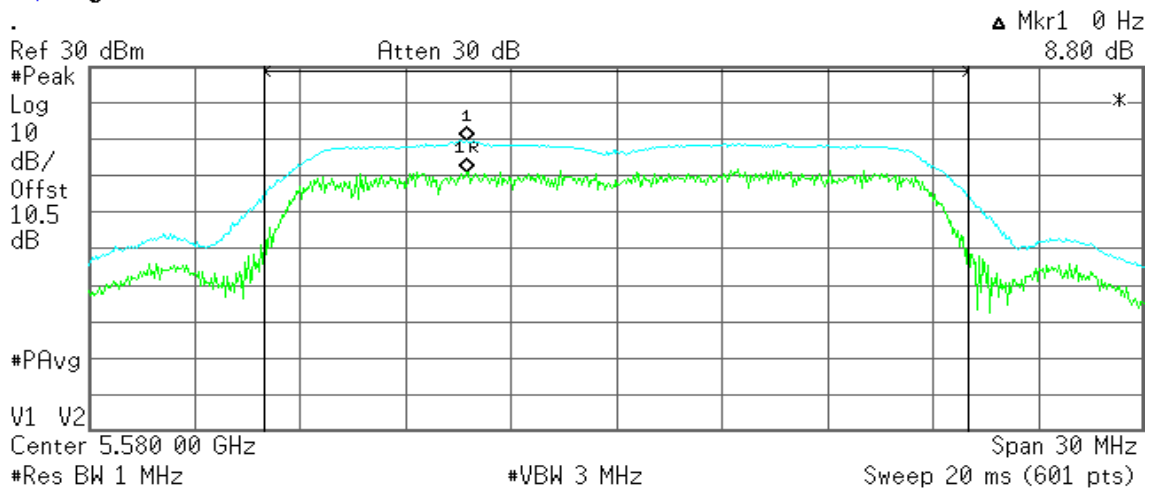
Power Spectral Density

-54.07 dBm/Hz

CH Mid

Agilent 19:19:47 Dec 20, 2011

R T



Channel Power

18.09 dBm /20.0000 MHz

Power Spectral Density

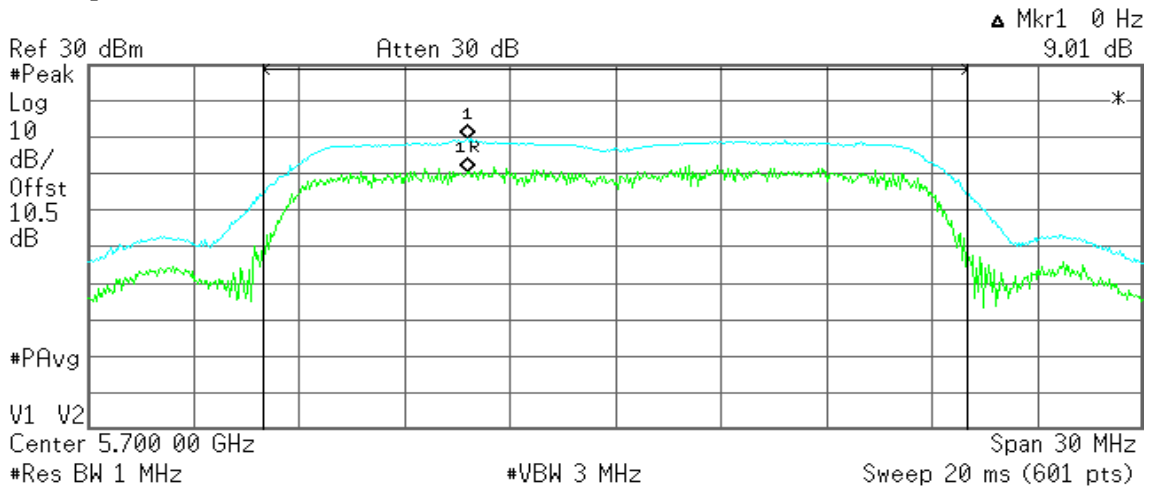
-54.92 dBm/Hz



CH High

Agilent 19:26:45 Dec 20, 2011

R T



Channel Power

18.07 dBm /20.0000 MHz

Power Spectral Density

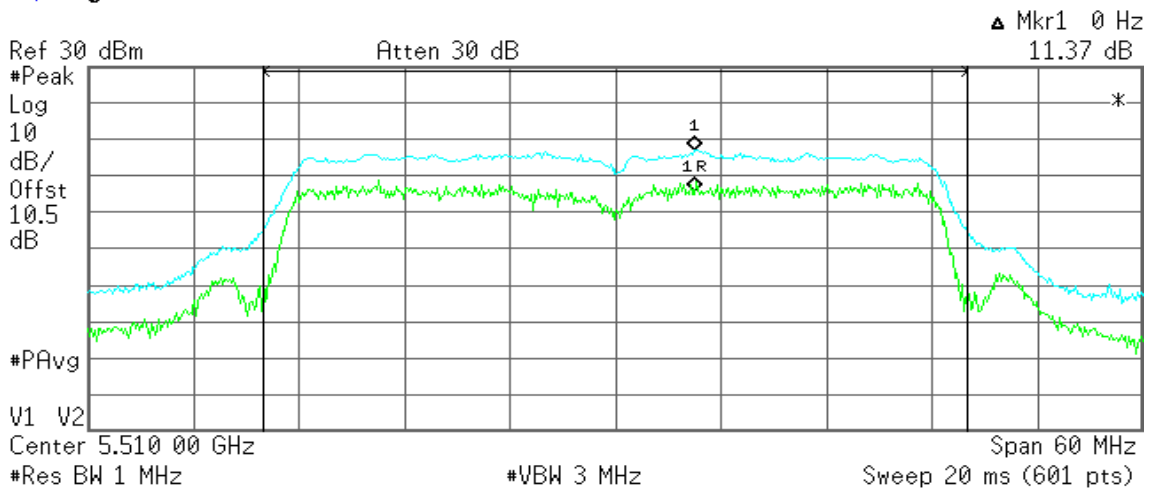
-54.94 dBm/Hz

IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 0

CH Low

Agilent 16:38:59 Dec 20, 2011

R T



Channel Power

17.28 dBm /40.0000 MHz

Power Spectral Density

-58.74 dBm/Hz

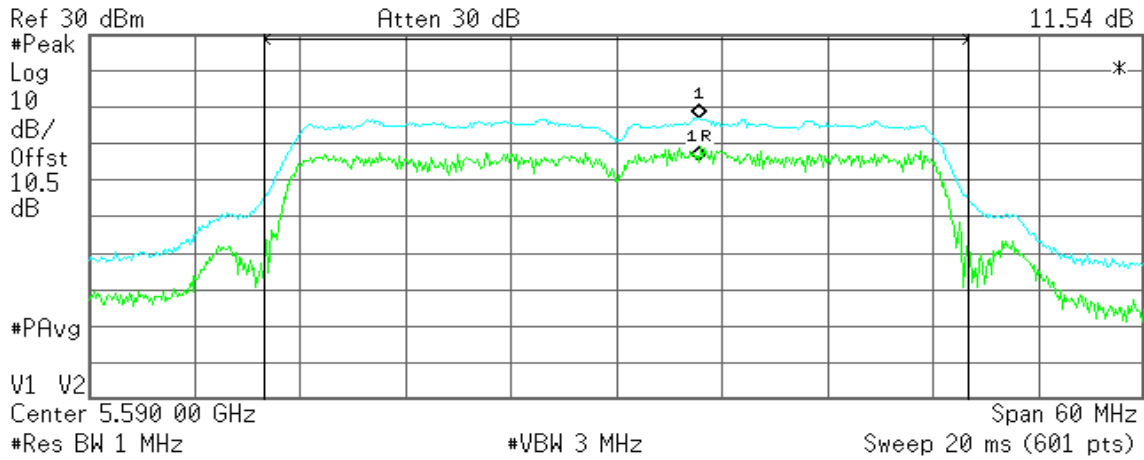


CH Mid

Agilent 16:48:16 Dec 20, 2011

R T

Mkr1 0 Hz
11.54 dB



Channel Power

17.38 dBm /40.0000 MHz

Power Spectral Density

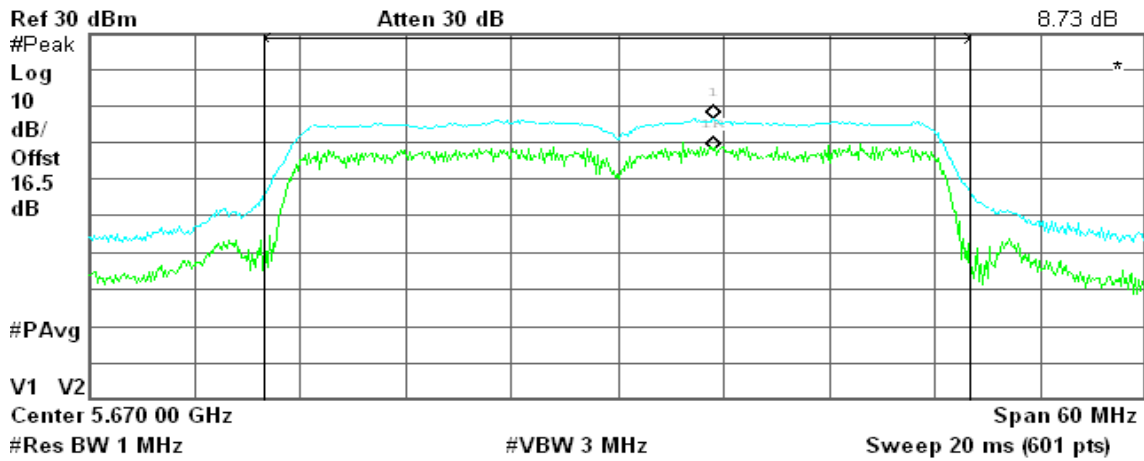
-58.64 dBm/Hz

CH High

Agilent

R L

Mkr1 0 Hz
8.73 dB



Channel Power

18.37 dBm /40.0000 MHz

Power Spectral Density

-57.65 dBm/Hz

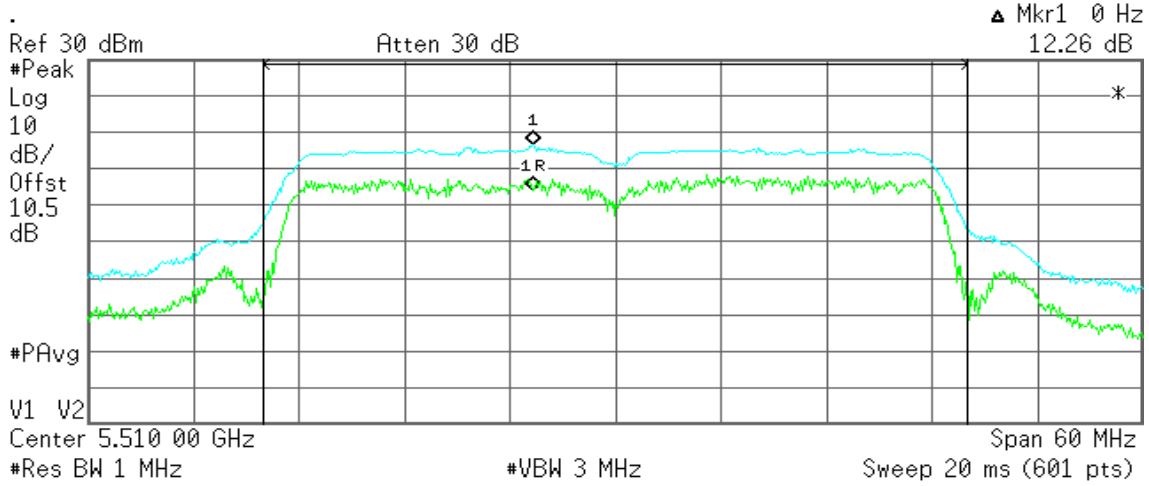


IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 1

CH Low

Agilent 17:23:04 Dec 20, 2011

R T



Channel Power

17.10 dBm /40.0000 MHz

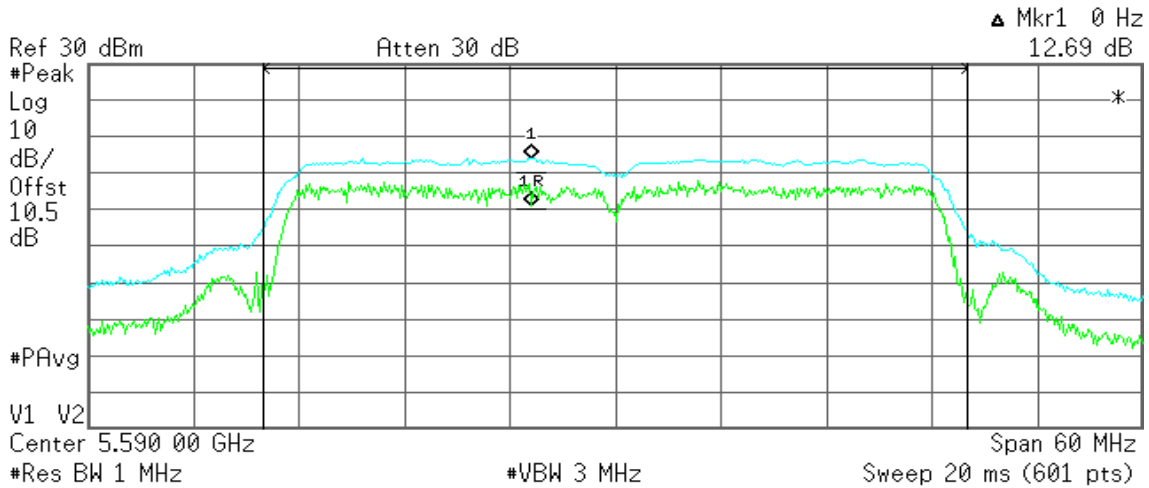
Power Spectral Density

-58.92 dBm/Hz

CH Mid

Agilent 17:26:58 Dec 20, 2011

R T



Channel Power

16.80 dBm /40.0000 MHz

Power Spectral Density

-59.22 dBm/Hz

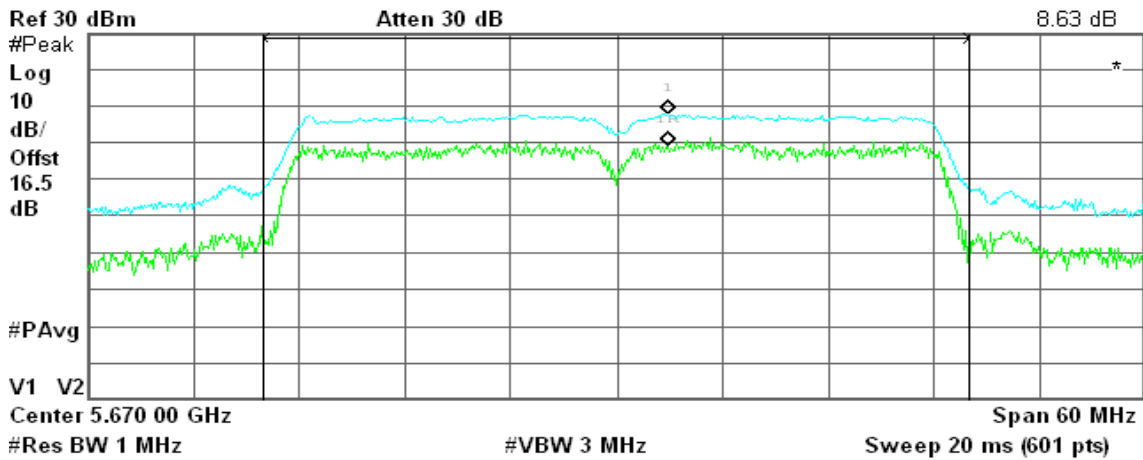


CH High

Agilent

R T

Δ Mkr1 0 Hz
8.63 dB



Channel Power

19.55 dBm / 40.0000 MHz

Power Spectral Density

-56.47 dBm/Hz



8.8 RADIATED UNDESIRABLE EMISSION

1. According to §15.209(a) & RSS-210 §A9.3, 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 ($\mu\text{V/m}$)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

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

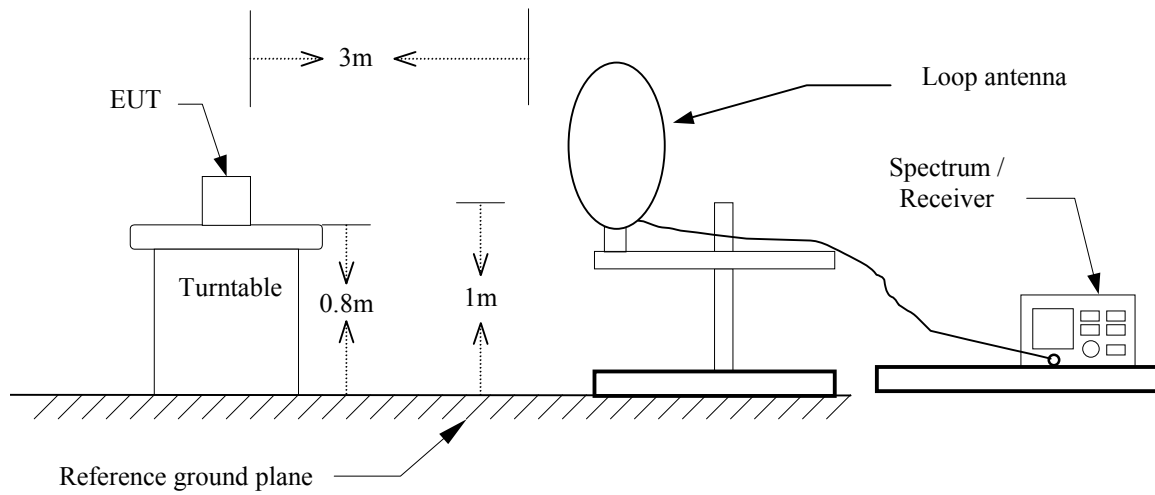
2. In the emission table above, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength ($\mu\text{V/m}$ at 3-meter)	Field Strength (dB $\mu\text{V/m}$ at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

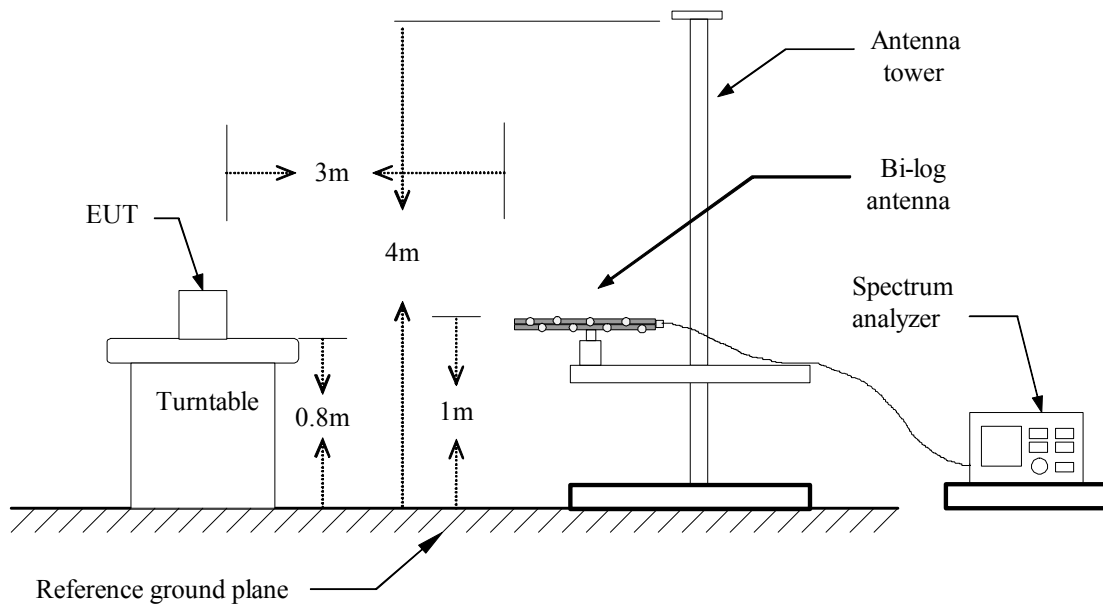


Test Configuration

9kHz ~ 30MHz

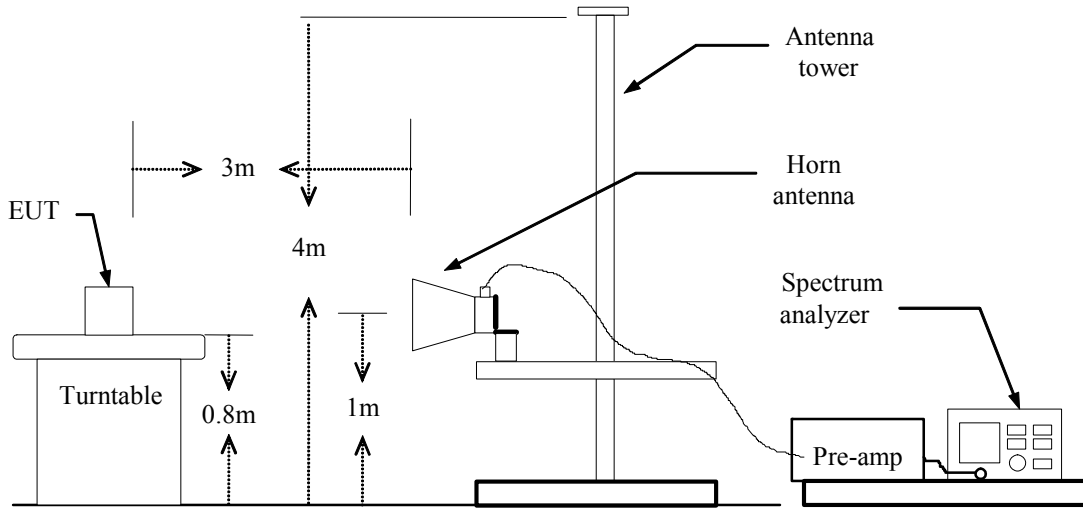


30MHz ~ 1GHz





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=1MHz / VBW=3MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz

duty cycle \geq 98 percent, set VBW \leq RBW/100 but not less than 10 Hz.

duty cycle $<$ 98 percent, set VBW \geq 1/T

/ Sweep=AUTO

7. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.
8. Repeat above procedures until the measurements for all frequencies are complete.

**Below 1 GHz****For Venture Antenna****Operation Mode:** Normal Link**Test Date:** December 20, 2011**Temperature:** 25°C**Tested by:** Sehni Hu**Humidity:** 50% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Pol. (H/V)
455.18	46.93	-8.53	38.40	46.00	-7.60	QP	V
521.47	43.66	-7.77	35.89	46.00	-10.11	Peak	V
550.57	41.02	-7.39	33.63	46.00	-12.37	Peak	V
586.13	38.58	-6.96	31.62	46.00	-14.38	Peak	V
600.68	39.13	-6.78	32.36	46.00	-13.64	Peak	V
749.42	38.13	-4.31	33.82	46.00	-12.18	Peak	V
455.18	47.71	-8.53	39.18	46.00	-6.82	Peak	H
521.47	40.69	-7.77	32.92	46.00	-13.08	Peak	H
649.18	40.27	-5.83	34.45	46.00	-11.55	Peak	H
699.30	41.11	-5.21	35.90	46.00	-10.10	Peak	H
717.08	41.49	-4.89	36.60	46.00	-9.40	Peak	H
749.42	46.01	-4.31	41.70	46.00	-4.30	Peak	H

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).

**Antenna for Laird Technologies / Part Number: OEM2689-P110****Operation Mode:** Normal Link**Test Date:** March 21, 2012**Temperature:** 25°C**Tested by:** Sehni Hu**Humidity:** 50% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant. Pol. (H/V)
57.48	68.95	-33.90	35.05	40.00	-4.95	Peak	V
390.52	56.84	-24.10	32.74	46.00	-13.26	Peak	V
456.80	63.45	-22.76	40.69	46.00	-5.31	QP	V
553.80	59.56	-21.55	38.01	46.00	-7.99	Peak	V
586.13	58.22	-21.12	37.10	46.00	-8.90	QP	V
749.42	58.46	-18.12	40.34	46.00	-5.66	Peak	V
455.18	59.02	-22.78	36.24	46.00	-9.76	Peak	H
550.57	59.94	-21.60	38.35	46.00	-7.65	Peak	H
600.68	64.93	-20.92	44.01	46.00	-1.99	QP	H
649.18	58.16	-19.50	38.66	46.00	-7.34	Peak	H
749.42	60.00	-18.12	41.89	46.00	-4.11	Peak	H
799.53	56.97	-17.48	39.50	46.00	-6.50	Peak	H

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. $Margin (dB) = Result (dBuV/m) - Limit (dBuV/m)$.

**Above 1 GHz****For Venture Antenna**

Operation Mode: Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Low **Test Date:** December 19, 2011
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1840.00	55.68	---	-7.10	48.59	---	68.30	54.00	-5.41	Peak	V
10383.33	38.42	27.12	17.14	55.56	44.26	68.30	54.00	-9.74	AVG	V
N/A										
1956.67	55.57	---	-5.91	49.66	---	68.30	54.00	-4.34	Peak	H
10383.33	37.19	26.93	17.14	54.33	44.07	68.30	54.00	-9.93	AVG	H
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:** December 19, 2011
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1805.00	55.76	---	-7.45	48.31	---	68.30	54.00	-5.69	Peak	V
10440.00	38.74	26.77	17.22	55.96	43.99	68.30	54.00	-10.01	AVG	V
N/A										
1956.67	55.03	---	-5.91	49.12	---	68.30	54.00	-4.88	Peak	H
10440.00	37.27	26.89	17.22	54.49	44.11	68.30	54.00	-9.89	AVG	H
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: December 19, 2011

Temperature: 25°C

Tested by: Sehni Hu

Humidity: 50% RH

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1793.33	55.36	---	-7.57	47.79	---	68.30	54.00	-6.21	Peak	V
10483.33	37.69	26.73	17.62	55.31	44.35	68.30	54.00	-9.65	AVG	V
N/A										
1886.67	54.93	---	-6.62	48.31	---	68.30	54.00	-5.69	Peak	H
10483.33	37.38	26.70	17.62	55.00	44.32	68.30	54.00	-9.68	AVG	H
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 802.11n HT 20 MHz
/ 5180 ~ 5240MHz / CH Low

Test Date: December 19, 2011

Temperature: 25°C

Tested by: Sehni Hu

Humidity: 50% RH

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2003.33	54.59	---	-5.46	49.13	---	68.30	54.00	-4.87	Peak	V
15550.00	37.82	26.68	20.00	57.82	46.68	68.30	54.00	-7.32	AVG	V
N/A										
1921.67	56.47	---	-6.27	50.20	---	68.30	54.00	-3.80	Peak	H
15550.00	37.84	26.63	20.00	57.84	46.63	68.30	54.00	-7.37	AVG	H
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 802.11n HT 20 MHz
/ 5180 ~ 5240MHz / CH Mid

Test Date: December 19, 2011

Temperature: 25°C

Tested by: Sehni Hu

Humidity: 50% RH

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2318.33	55.37	---	-4.61	50.75	---	68.30	54.00	-3.25	Peak	V
15616.67	38.18	27.67	20.39	58.57	48.06	68.30	54.00	-5.94	AVG	V
N/A										
2353.33	56.08	---	-4.47	51.61	---	68.30	54.00	-2.39	Peak	H
15616.67	39.10	27.64	20.39	59.49	48.03	68.30	54.00	-5.97	AVG	H
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 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH High **Test Date:** December 19, 2011

Temperature: 25°C **Tested by:** Sehni Hu

Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1875.00	55.02	---	-6.74	48.28	---	68.30	54.00	-5.72	Peak	V
15683.33	41.10	27.01	20.77	61.88	47.78	68.30	54.00	-6.22	AVG	V
N/A										
1886.67	55.72	---	-6.62	49.10	---	68.30	54.00	-4.90	Peak	H
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 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / CH Low **Test Date:** December 19, 2011
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2108.33	56.49	---	-5.19	51.30	---	68.30	54.00	-2.70	Peak	V
15566.67	37.81	27.38	20.10	57.91	47.48	68.30	54.00	-6.52	AVG	V
N/A										
2003.33	55.68	---	-5.46	50.22	---	68.30	54.00	-3.78	Peak	H
15566.67	37.48	27.44	20.10	57.58	47.54	68.30	54.00	-6.46	AVG	H
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 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / CH High **Test Date:** December 19, 2011
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2353.33	55.70	---	-4.47	51.23	---	68.30	54.00	-2.77	Peak	V
15683.33	39.58	28.68	20.77	60.36	49.45	68.30	54.00	-4.55	AVG	V
N/A										
2388.33	55.54	---	-4.33	51.21	---	68.30	54.00	-2.79	Peak	H
15683.33	39.81	28.45	20.77	60.58	49.22	68.30	54.00	-4.78	AVG	H
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:** December 19, 2011
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1886.67	55.01	---	-6.62	48.39	---	68.30	54.00	-5.61	Peak	V
10533.33	37.44	26.77	17.74	55.18	44.51	68.30	54.00	-9.49	AVG	V
N/A										
1956.67	55.62	---	-5.91	49.71	---	68.30	54.00	-4.29	Peak	H
10533.33	37.23	26.82	17.74	54.97	44.56	68.30	54.00	-9.44	AVG	H
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:** December 19, 2011
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2120.00	55.81	---	-5.16	50.65	---	68.30	54.00	-3.35	Peak	V
10583.33	37.70	26.82	17.79	55.49	44.61	68.30	54.00	-9.39	AVG	V
N/A										
2108.33	55.72	---	-5.19	50.53	---	68.30	54.00	-3.47	Peak	H
10583.33	37.24	26.91	17.79	55.04	44.70	68.30	54.00	-9.30	AVG	H
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: December 19, 2011

Temperature: 25°C

Tested by: Sehni Hu

Humidity: 50% RH

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2003.33	55.24	---	-5.46	49.78	---	68.30	54.00	-4.22	Peak	V
10650.00	37.02	26.58	17.87	54.89	44.45	68.30	54.00	-9.55	AVG	V
N/A										
1921.67	55.44	---	-6.27	49.17	---	68.30	54.00	-4.83	Peak	H
10650.00	37.44	26.54	17.87	55.30	44.41	68.30	54.00	-9.59	AVG	H
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 802.11n HT 20 MHz
/ 5260 ~ 5320MHz / CH Low

Test Date: December 19, 2011

Temperature: 23°C

Tested by: Sehni Hu

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2085.00	55.38	---	-5.25	50.13	---	68.30	54.00	-3.87	Peak	V
N/A										
2108.33	55.25	---	-5.19	50.06	---	68.30	54.00	-3.94	Peak	H
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 802.11n HT 20 MHz / 5260 ~ 5320MHz / CH Mid

Test Date: December 19, 2011

Temperature: 23°C

Tested by: Sehni Hu

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2050.00	54.46	---	-5.34	49.12	---	68.30	54.00	-4.88	Peak	V
N/A										
2108.33	56.15	---	-5.19	50.96	---	68.30	54.00	-3.04	Peak	H
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 802.11n HT 20 MHz
/ 5260 ~ 5320MHz / CH High

Test Date: December 19, 2011

Temperature: 23°C

Tested by: Sehni Hu

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2003.33	55.01	---	-5.46	49.55	---	68.30	54.00	-4.45	Peak	V
10650.00	38.41	26.71	17.87	56.28	44.58	68.30	54.00	-9.42	AVG	V
15966.67	40.19	27.97	22.42	62.60	50.39	68.30	54.00	-3.61	AVG	V
N/A										
2108.33	56.41	---	-5.19	51.22	---	68.30	54.00	-2.78	Peak	H
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 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / CH Low **Test Date:** December 19, 2011
Temperature: 23°C **Tested by:** Sehni Hu
Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2108.33	55.18	---	-5.19	49.99	---	68.30	54.00	-4.01	Peak	V
N/A										
1875.00	55.53	---	-6.74	48.79	---	68.30	54.00	-5.21	Peak	H
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 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / CH High **Test Date:** December 19, 2011
Temperature: 23°C **Tested by:** Sehni Hu
Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1921.67	54.95	---	-6.27	48.69	---	68.30	54.00	-5.31	Peak	V
10683.33	38.86	27.11	17.91	56.77	45.02	68.30	54.00	-8.98	AVG	V
15950.00	40.74	28.01	22.32	63.06	50.33	68.30	54.00	-3.67	AVG	V
N/A										
2108.33	55.58	---	-5.19	50.39	---	68.30	54.00	-3.61	Peak	H
10683.33	38.49	27.10	17.91	56.39	45.01	68.30	54.00	-8.99	AVG	H
15916.67	39.47	27.53	22.13	61.60	49.66	68.30	54.00	-4.34	AVG	H
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

Temperature: 25°C

Humidity: 50% RH

Test Date: December 19, 2011

Tested by: Sehni Hu

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1816.67	56.68	---	-7.33	49.35	---	68.30	54.00	-4.65	Peak	V
11000.00	39.80	26.62	18.26	58.06	44.88	68.30	54.00	-9.12	AVG	V
N/A										
2096.67	55.36	---	-5.22	50.14	---	68.30	54.00	-3.86	Peak	H
11000.00	39.06	26.24	18.26	57.32	44.50	68.30	54.00	-9.50	AVG	H
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:** December 19, 2011
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1968.33	55.76	---	-5.79	49.97	---	68.30	54.00	-4.03	Peak	V
11166.67	39.27	25.67	19.19	58.46	44.86	68.30	54.00	-9.14	AVG	V
N/A										
1863.33	54.90	---	-6.86	48.04	---	68.30	54.00	-5.96	Peak	H
11166.67	37.10	25.74	19.19	56.29	44.93	68.30	54.00	-9.07	AVG	H
N/A										

Remark:

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



Operation Mode: Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH High **Test Date:** December 19, 2011
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2003.33	55.01	---	-5.46	49.55	---	68.30	54.00	-4.45	Peak	V
11400.00	36.83	26.45	20.50	57.33	46.95	68.30	54.00	-7.05	AVG	V
N/A										
1805.00	55.78	---	-7.45	48.33	---	68.30	54.00	-5.67	Peak	H
11400.00	37.29	26.46	20.50	57.79	46.96	68.30	54.00	-7.04	AVG	H
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 802.11n HT 20 MHz Channel
mode / 5500 ~ 5700MHz / CH Low

Temperature: 25°C

Humidity: 50% RH

Test Date: December 19, 2011

Tested by: Sehni Hu

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2096.67	55.22	---	-5.22	50.00	---	68.30	54.00	-4.00	Peak	V
N/A										
2108.33	55.62	---	-5.19	50.43	---	68.30	54.00	-3.57	Peak	H
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 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH Mid
Temperature: 25°C
Humidity: 50% RH

Test Date: December 19, 2011
Tested by: Sehni Hu
Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1758.33	56.84	---	-7.93	48.92	---	68.30	54.00	-5.08	Peak	V
11133.33	38.62	25.85	19.01	57.62	44.86	68.30	54.00	-9.14	AVG	V
N/A										
1921.67	54.99	---	-6.27	48.72	---	68.30	54.00	-5.28	Peak	H
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 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH High
Temperature: 25°C
Humidity: 50% RH

Test Date: December 19, 2011
Tested by: Sehni Hu
Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
5865.00	58.77	49.64	3.75	62.52	53.39	68.30	54.00	-0.61	AVG	V
N/A										
2096.67	55.69	---	-5.22	50.48	---	68.30	54.00	-3.52	Peak	H
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 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Low **Test Date:** December 19, 2011

Temperature: 25°C **Tested by:** Sehni Hu

Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1875.00	55.67	---	-6.74	48.93	---	68.30	54.00	-5.07	Peak	V
N/A										
2003.33	55.54	---	-5.46	50.08	---	68.30	54.00	-3.92	Peak	H
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 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Mid **Test Date:** December 19, 2011
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1945.00	55.52	---	-6.03	49.49	---	68.30	54.00	-4.51	Peak	V
11183.33	37.52	26.23	19.29	56.81	45.52	68.30	54.00	-8.48	AVG	V
N/A										
1851.67	55.39	---	-6.98	48.41	---	68.30	54.00	-5.59	Peak	H
11183.33	37.61	26.51	19.29	56.89	45.80	68.30	54.00	-8.20	AVG	H
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 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH High **Test Date:** December 19, 2011
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1991.67	54.30	---	-5.55	48.74	---	68.30	54.00	-5.26	Peak	V
N/A										
2108.33	55.96	---	-5.19	50.77	---	68.30	54.00	-3.23	Peak	H
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).

**Antenna for Laird Technologies / Part Number: OEM2689-P110****Operation Mode:** Tx / IEEE 802.11a mode / 5180 ~ 5240MHz / CH Low **Test Date:** March 8, 2012**Temperature:** 25°C **Tested by:** Sehni Hu**Humidity:** 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2528.33	52.97	---	-3.77	49.20	---	68.30	54.00	-4.80	Peak	V
N/A										
2108.33	55.58	---	-5.19	50.39	---	68.30	54.00	-3.61	Peak	H
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 8, 2012
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1700.00	54.56	---	-8.52	46.04	---	68.30	54.00	-7.96	Peak	V
N/A										
2108.33	54.78	---	-5.19	49.60	---	68.30	54.00	-4.40	Peak	H
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
Temperature: 25°C
Humidity: 50% RH

Test Date: March 8, 2012
Tested by: Sehni Hu
Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1910.00	54.51	---	-6.38	48.12	---	68.30	54.00	-5.88	Peak	V
N/A										
2108.33	55.70	---	-5.19	50.51	---	68.30	54.00	-3.49	Peak	H
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 802.11n HT 20 MHz
/ 5180 ~ 5240MHz / CH Low

Test Date: March 8, 2012

Temperature: 25°C

Tested by: Sehni Hu

Humidity: 50% RH

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2003.33	53.78	---	-5.46	48.32	---	68.30	54.00	-5.68	Peak	V
N/A										
2108.33	54.85	---	-5.19	49.66	---	68.30	54.00	-4.34	Peak	H
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 802.11n HT 20 MHz
/ 5180 ~ 5240MHz / CH Mid

Test Date: March 8, 2012

Temperature: 25°C

Tested by: Sehni Hu

Humidity: 50% RH

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2318.33	54.83	---	-4.61	50.22	---	68.30	54.00	-3.78	Peak	V
N/A										
2248.33	55.12	---	-4.82	50.29	---	68.30	54.00	-3.71	Peak	H
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 802.11n HT 20 MHz Channel mode / 5180 ~ 5240MHz / CH High **Test Date:** March 8, 2012
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2330.00	54.51	---	-4.57	49.94	---	68.30	54.00	-4.06	Peak	V
N/A										
2108.33	56.39	---	-5.19	51.20	---	68.30	54.00	-2.80	Peak	H
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 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / CH Low **Test Date:** March 8, 2012
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2085.00	54.56	---	-5.25	49.32	---	68.30	54.00	-4.68	Peak	V
N/A										
2306.67	55.08	---	-4.66	50.42	---	68.30	54.00	-3.58	Peak	H
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 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / CH High **Test Date:** March 8, 2012

Temperature: 25°C **Tested by:** Sehni Hu

Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2318.33	54.59	---	-4.61	49.97	---	68.30	54.00	-4.03	Peak	V
N/A										
2610.00	55.45	---	-3.50	51.95	---	68.30	54.00	-2.05	Peak	H
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 8, 2012
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2026.67	53.79	---	-5.40	48.39	---	68.30	54.00	-5.61	Peak	V
N/A										
2108.33	56.35	---	-5.19	51.17	---	68.30	54.00	-2.83	Peak	H
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 8, 2012
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2050.00	52.96	---	-5.34	47.62	---	68.30	54.00	-6.38	Peak	V
N/A										
2026.67	54.65	---	-5.40	49.25	---	68.30	54.00	-4.75	Peak	H
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 8, 2012
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1723.33	55.11	---	-8.28	46.83	---	68.30	54.00	-7.17	Peak	V
10650.00	33.58	26.42	17.87	51.45	44.29	68.30	54.00	-9.71	AVG	V
15966.67	35.00	27.48	22.42	57.42	49.90	68.30	54.00	-4.10	AVG	V
N/A										
2108.33	55.98	---	-5.19	50.79	---	68.30	54.00	-3.21	Peak	H
10650.00	33.68	26.62	17.87	51.55	44.49	68.30	54.00	-9.51	AVG	H
15966.67	36.25	27.57	22.42	58.67	49.99	68.30	54.00	-4.01	AVG	H
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 802.11n HT 20 MHz
/ 5260 ~ 5320MHz / CH Low

Temperature: 23°C

Humidity: 53% RH

Test Date: March 8, 2012

Tested by: Sehni Hu

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2330.00	54.56	---	-4.57	49.99	---	68.30	54.00	-4.01	Peak	V
N/A										
2330.00	55.68	---	-4.57	51.11	---	68.30	54.00	-2.89	Peak	H
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 802.11n HT 20 MHz
/ 5260 ~ 5320MHz / CH Mid

Test Date: March 8, 2012

Temperature: 23°C

Tested by: Sehni Hu

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1886.67	55.52	---	-6.62	48.90	---	68.30	54.00	-5.10	Peak	V
N/A										
2108.33	54.86	---	-5.19	49.67	---	68.30	54.00	-4.33	Peak	H
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 802.11n HT 20 MHz
/ 5260 ~ 5320MHz / CH High

Test Date: March 8, 2012

Temperature: 23°C

Tested by: Sehni Hu

Humidity: 53% RH

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2330.00	55.19	---	-4.57	50.62	---	68.30	54.00	-3.38	Peak	V
N/A										
2108.33	55.96	---	-5.19	50.78	---	68.30	54.00	-3.22	Peak	H
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 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / CH Low **Test Date:** March 8, 2012
Temperature: 23°C **Tested by:** Sehni Hu
Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2318.33	54.98	---	-4.61	50.37	---	68.30	54.00	-3.63	Peak	V
N/A										
2108.33	55.43	---	-5.19	50.25	---	68.30	54.00	-3.75	Peak	H
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 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / CH High **Test Date:** March 8, 2012
Temperature: 23°C **Tested by:** Sehni Hu
Humidity: 53% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2306.67	54.19	---	-4.66	49.53	---	68.30	54.00	-4.47	Peak	V
N/A										
2120.00	54.32	---	-5.16	49.16	---	68.30	54.00	-4.84	Peak	H
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

Temperature: 25°C

Humidity: 50% RH

Test Date: March 8, 2012

Tested by: Sehni Hu

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1945.00	54.33	---	-6.03	48.30	---	68.30	54.00	-5.70	Peak	V
N/A										
2108.33	56.40	---	-5.19	51.21	---	68.30	54.00	-2.79	Peak	H
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 8, 2012
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2750.00	53.89	---	-3.02	50.87	---	68.30	54.00	-3.13	Peak	V
N/A										
1933.33	54.76	---	-6.15	48.61	---	68.30	54.00	-5.39	Peak	H
N/A										

Remark:

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



Operation Mode: Tx / IEEE 802.11a mode / 5500 ~ 5700MHz / CH High **Test Date:** March 8, 2012
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1781.67	54.94	---	-7.69	47.26	---	68.30	54.00	-6.74	Peak	V
N/A										
2108.33	55.99	---	-5.19	50.80	---	68.30	54.00	-3.20	Peak	H
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 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH Low

Test Date: March 8, 2012

Temperature: 25°C

Tested by: Sehni Hu

Humidity: 50% RH

Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
1991.67	53.44	---	-5.55	47.89	---	68.30	54.00	-4.11	Peak	V
5655.00	55.05	46.06	3.28	58.34	49.34	68.30	54.00	-4.66	AVG	V
N/A										
2108.33	55.07	---	-5.19	49.88	---	68.30	54.00	-4.12	Peak	H
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 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH Mid
Temperature: 25°C
Humidity: 50% RH

Test Date: March 8, 2012
Tested by: Sehni Hu
Polarity: Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2026.67	55.08	---	-5.40	49.68	---	68.30	54.00	-4.32	Peak	V
N/A										
2108.33	54.82	---	-5.19	49.64	---	68.30	54.00	-4.36	Peak	H
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 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / CH High**Test Date:** March 8, 2012**Temperature:** 25°C**Tested by:** Sehni Hu**Humidity:** 50% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
5865.00	56.25	46.73	3.75	60.00	50.48	68.30	54.00	-3.52	AVG	V
N/A										
2108.33	54.84	---	-5.19	49.66	---	68.30	54.00	-4.34	Peak	H
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 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Low **Test Date:** March 8, 2012
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2330.00	54.31	---	-4.57	49.74	---	68.30	54.00	-4.26	Peak	V
N/A										
2551.67	54.98	---	-3.69	51.28	---	68.30	54.00	-2.72	Peak	H
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 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH Mid **Test Date:** March 8, 2012
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2318.33	54.15	---	-4.61	49.53	---	68.30	54.00	-4.47	Peak	V
N/A										
2108.33	55.31	---	-5.19	50.12	---	68.30	54.00	-3.88	Peak	H
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 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / CH High **Test Date:** March 8, 2012
Temperature: 25°C **Tested by:** Sehni Hu
Humidity: 50% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	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	Ant.Pol. (H/V)
2003.33	54.66	---	-5.46	49.20	---	68.30	54.00	-4.80	Peak	V
N/A										
2108.33	55.38	---	-5.19	50.19	---	68.30	54.00	-3.81	Peak	H
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).



8.9 CONDUCTED UNDESIRABLE EMISSION

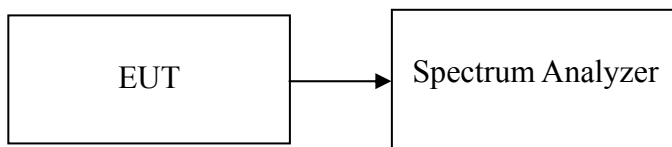
LIMIT

According to 15.407(b) & RSS-210 §A9.3,

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

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

Test Configuration



TEST PROCEDURE

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

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

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

TEST RESULTS

No non-compliance noted



Test Plot

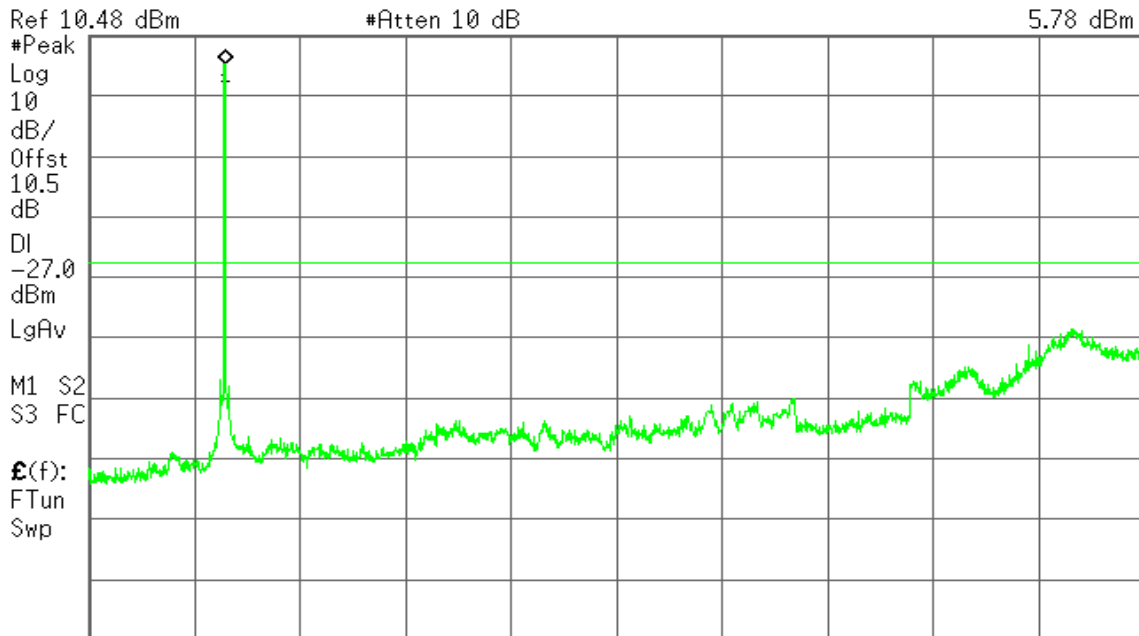
IEEE 802.11a (5180 ~ 5240MHz)

CH Low

Agilent 14:33:27 Dec 20, 2011

R T

Mkr1 5.19 GHz
5.78 dBm



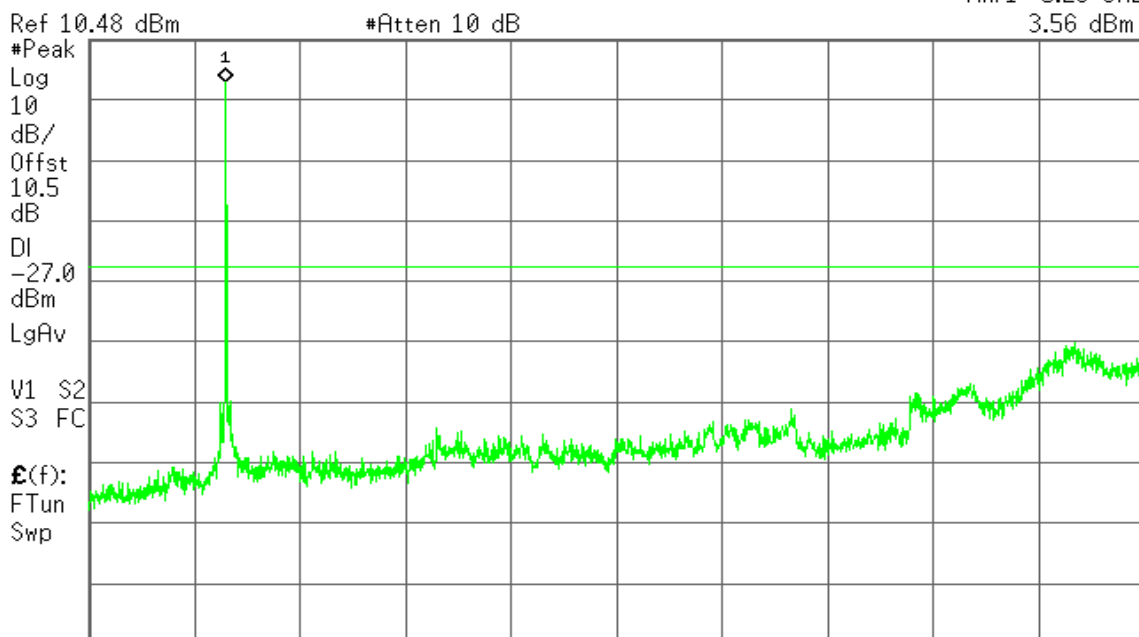
Start 30 MHz #Res BW 1 MHz #VBW 1 MHz Sweep 199.9 ms (2001 pts) Stop 40.00 GHz

CH Mid

Agilent 14:38:50 Dec 20, 2011

R T

Mkr1 5.23 GHz
3.56 dBm



Start 30 MHz #Res BW 1 MHz #VBW 1 MHz Sweep 199.9 ms (2001 pts) Stop 40.00 GHz

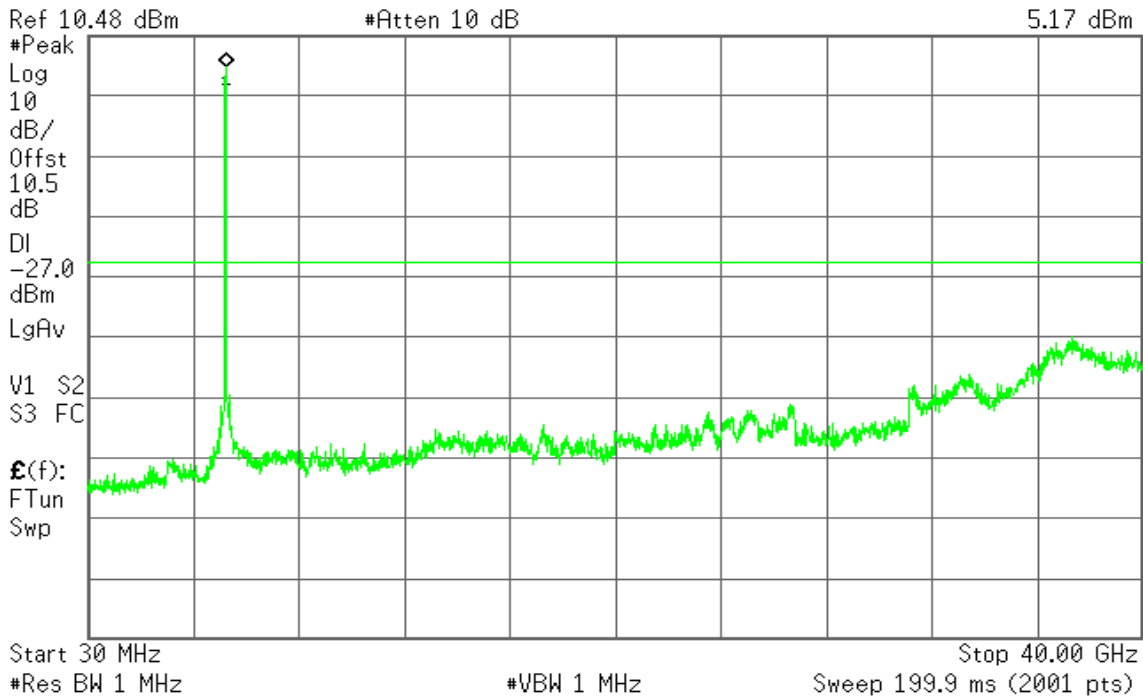


CH High

Agilent 14:43:07 Dec 20, 2011

R T

Mkr1 5.25 GHz
5.17 dBm





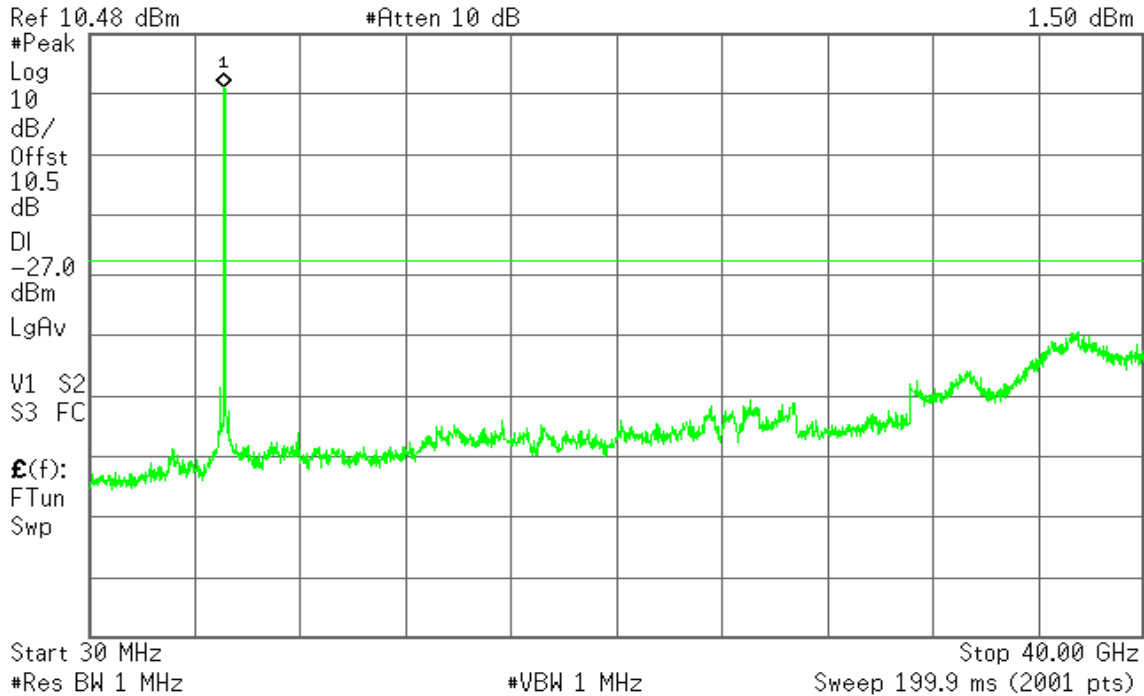
IEEE 802.11n HT 20 MHz (5180 ~ 5240MHz) / Chain 0

CH Low

Agilent 15:23:38 Dec 20, 2011

R T

Mkr1 5.17 GHz
1.50 dBm

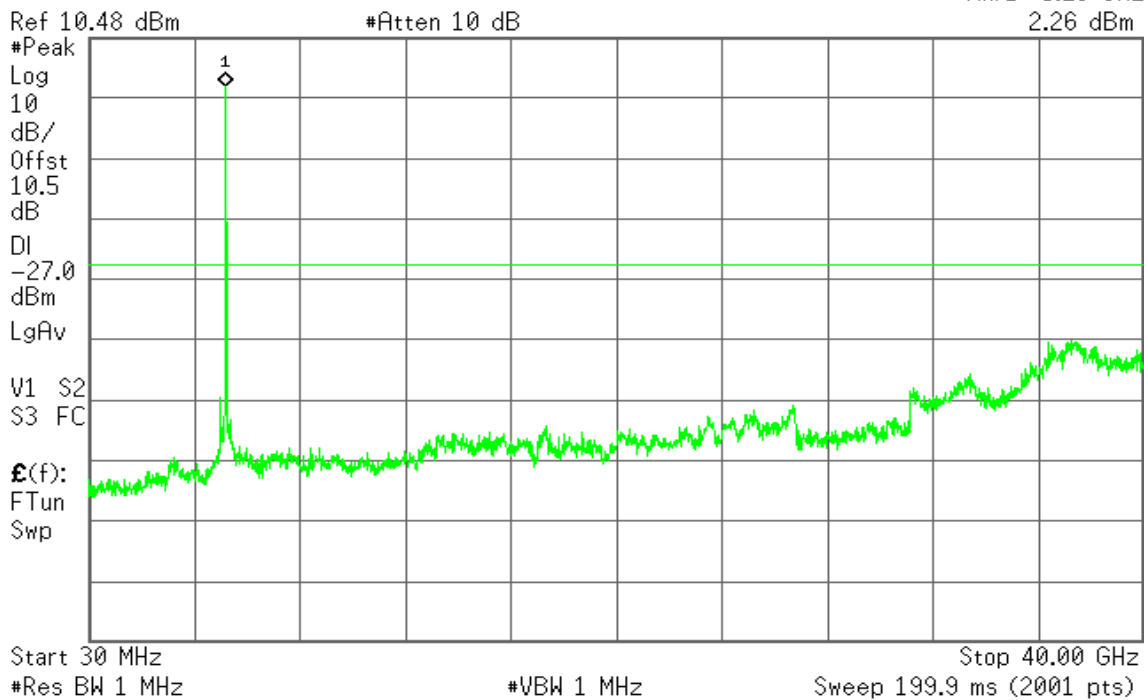


CH Mid

Agilent 15:27:45 Dec 20, 2011

R T

Mkr1 5.23 GHz
2.26 dBm



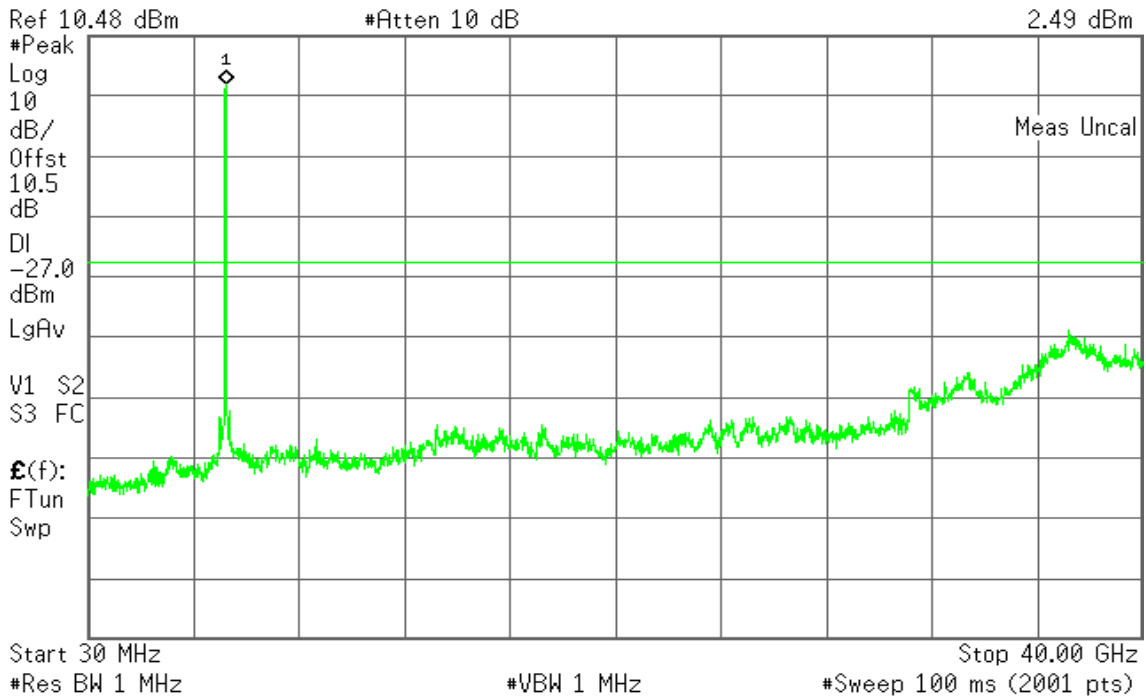


CH High

Agilent 15:31:39 Dec 20, 2011

R T

Mkr1 5.25 GHz
2.49 dBm





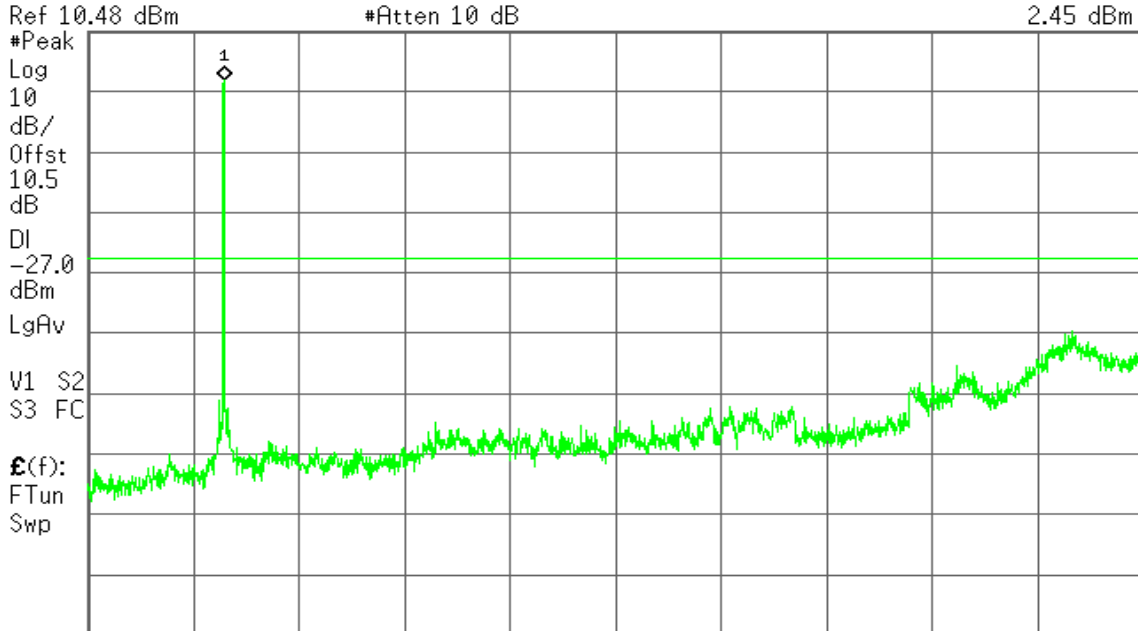
IEEE 802.11n HT 20 MHz (5180 ~ 5240MHz) / Chain 1

CH Low

Agilent 18:03:14 Dec 20, 2011

R T

Mkr1 5.19 GHz
2.45 dBm

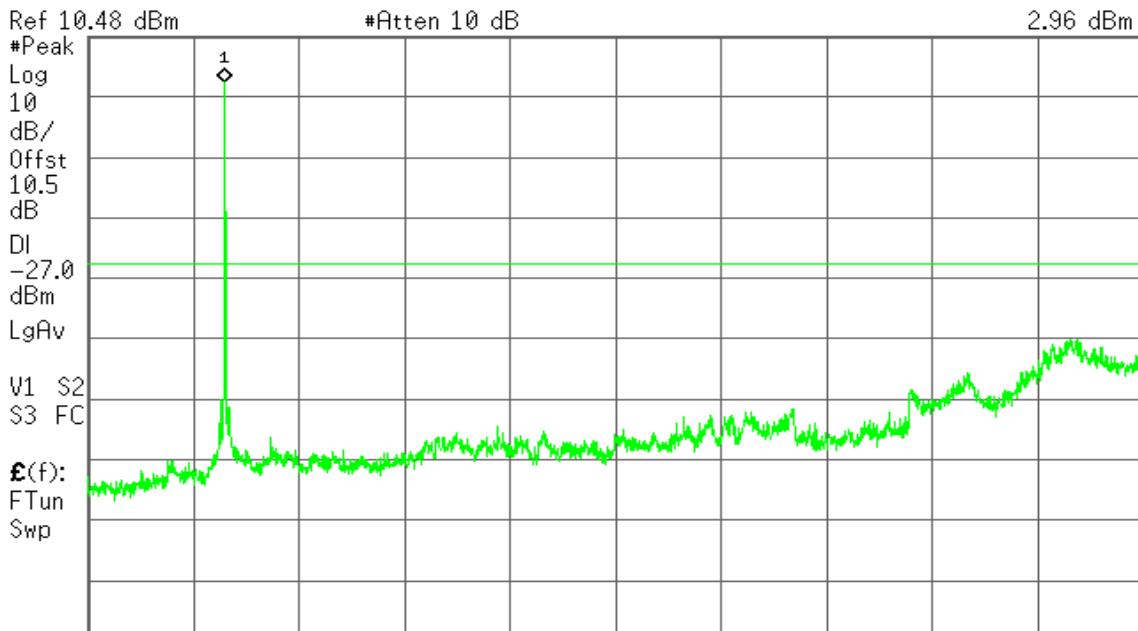


CH Mid

Agilent 18:09:09 Dec 20, 2011

R T

Mkr1 5.23 GHz
2.96 dBm



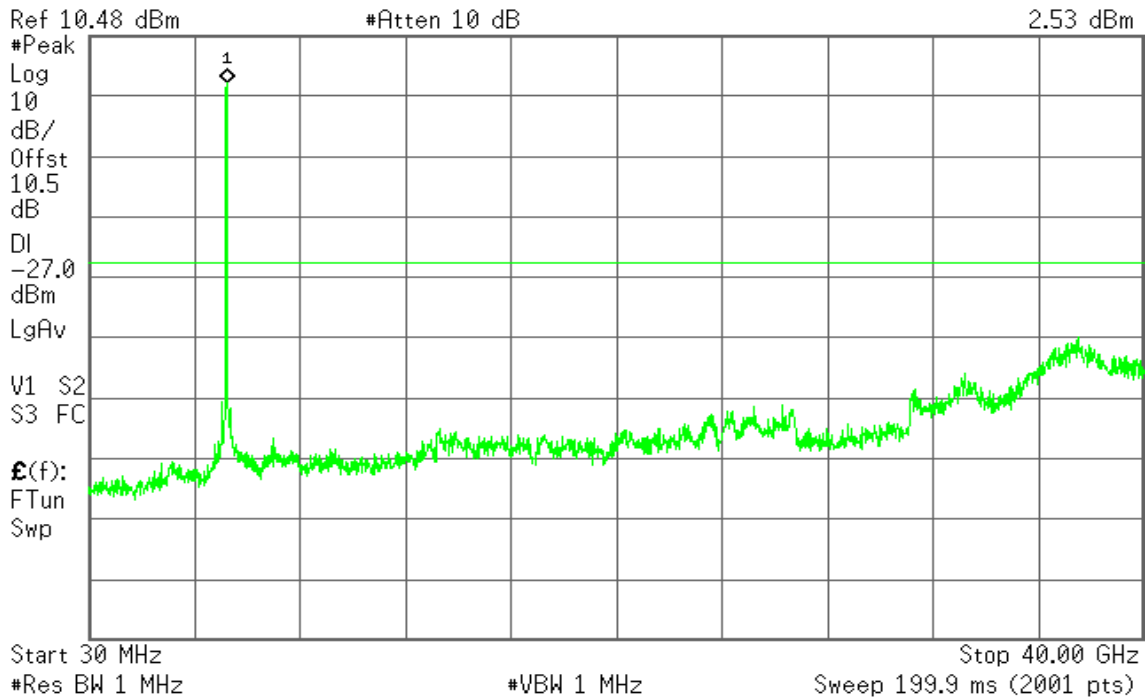


CH High

Agilent 18:16:59 Dec 20, 2011

R T

Mkr1 5.25 GHz
2.53 dBm





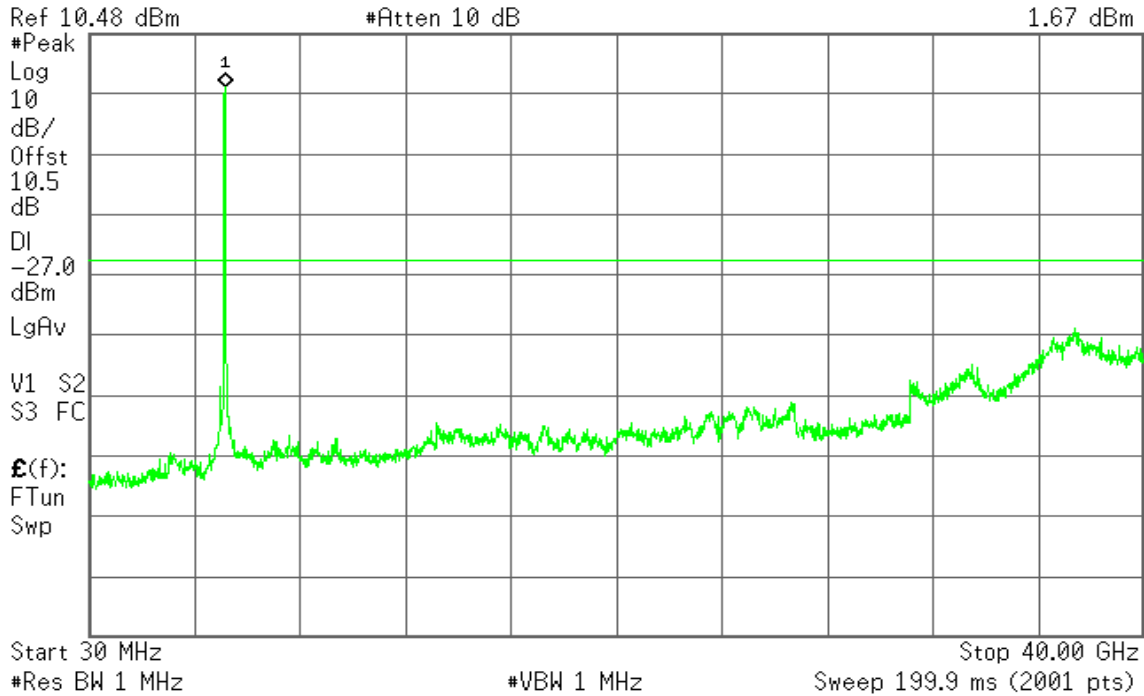
IEEE 802.11n HT 40 MHz (5190 ~ 5230MHz) / Chain 0

CH Low

Agilent 16:08:34 Dec 20, 2011

R T

Mkr1 5.19 GHz
1.67 dBm

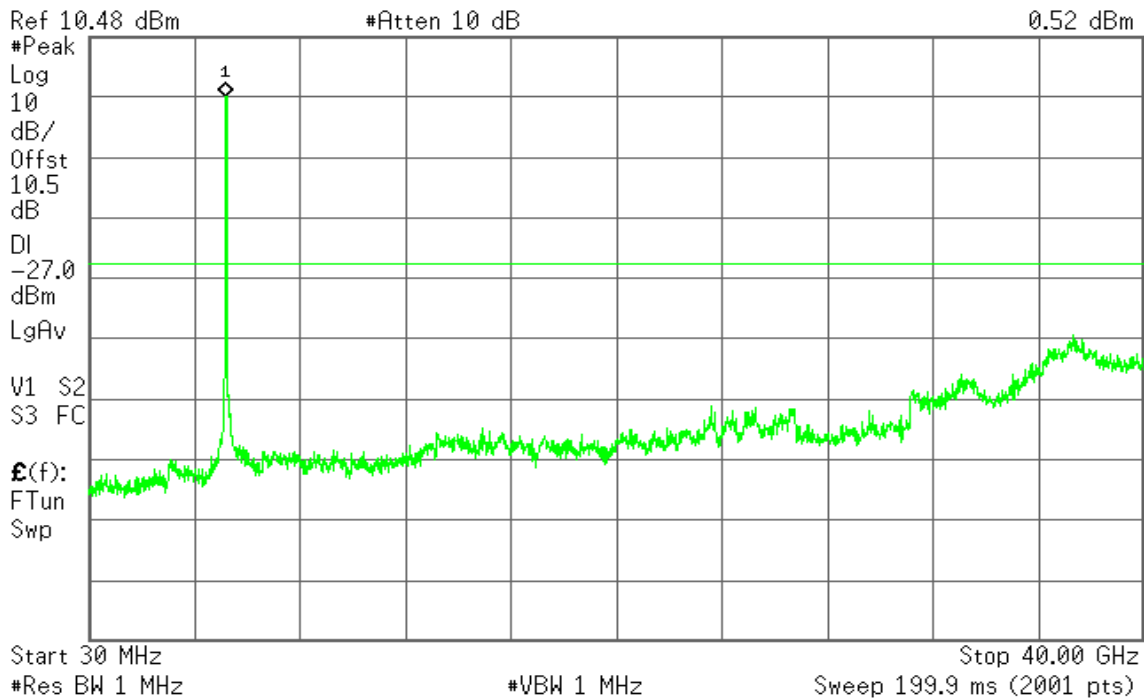


CH High

Agilent 16:21:11 Dec 20, 2011

R T

Mkr1 5.23 GHz
0.52 dBm



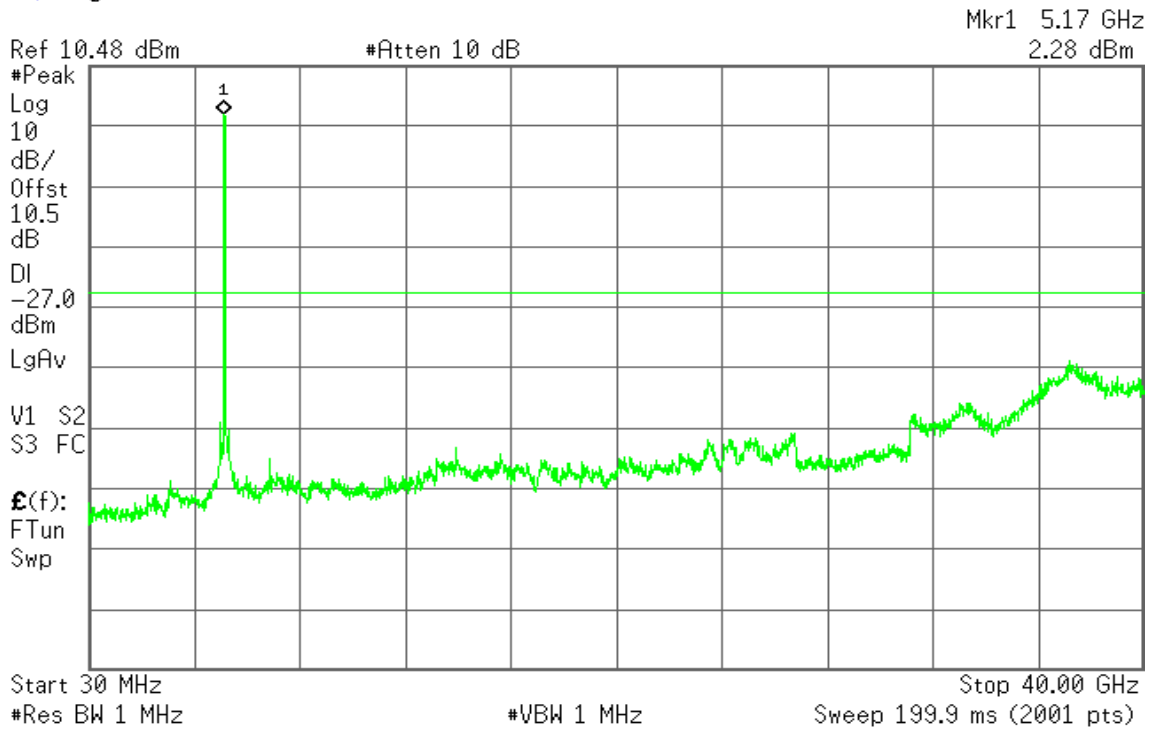


IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz / Chain 1

CH Low

Agilent 17:03:00 Dec 20, 2011

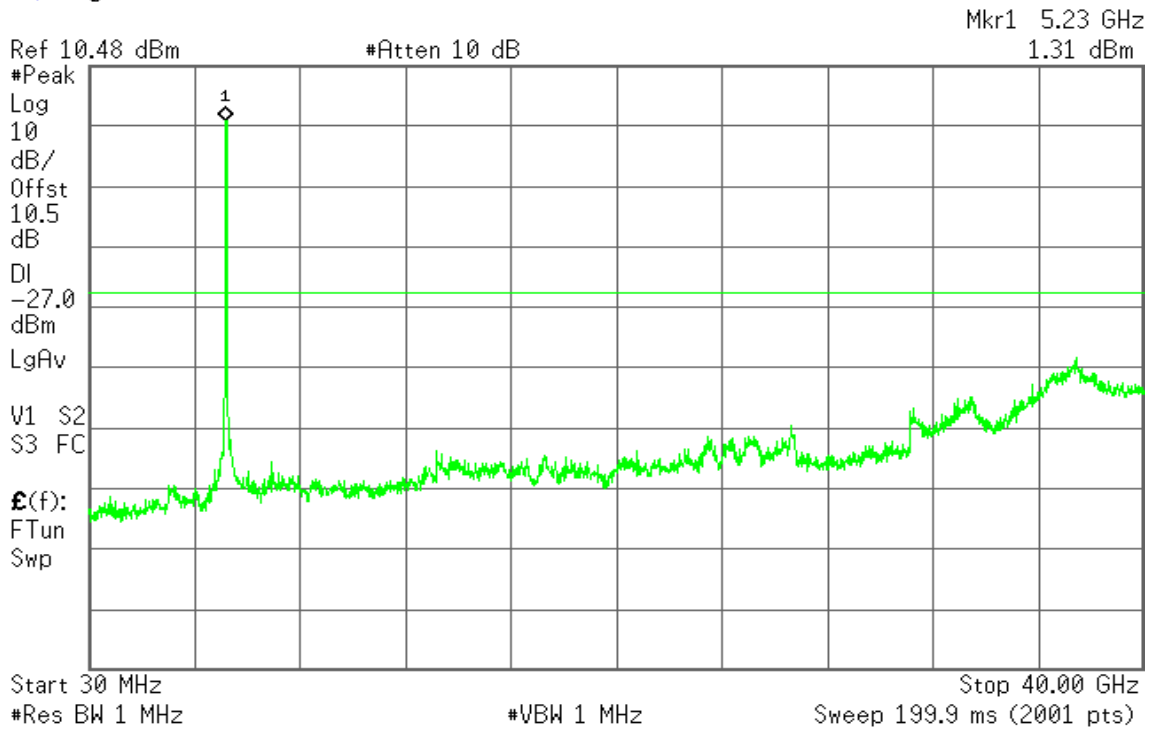
R T



CH High

Agilent 17:07:50 Dec 20, 2011

R T





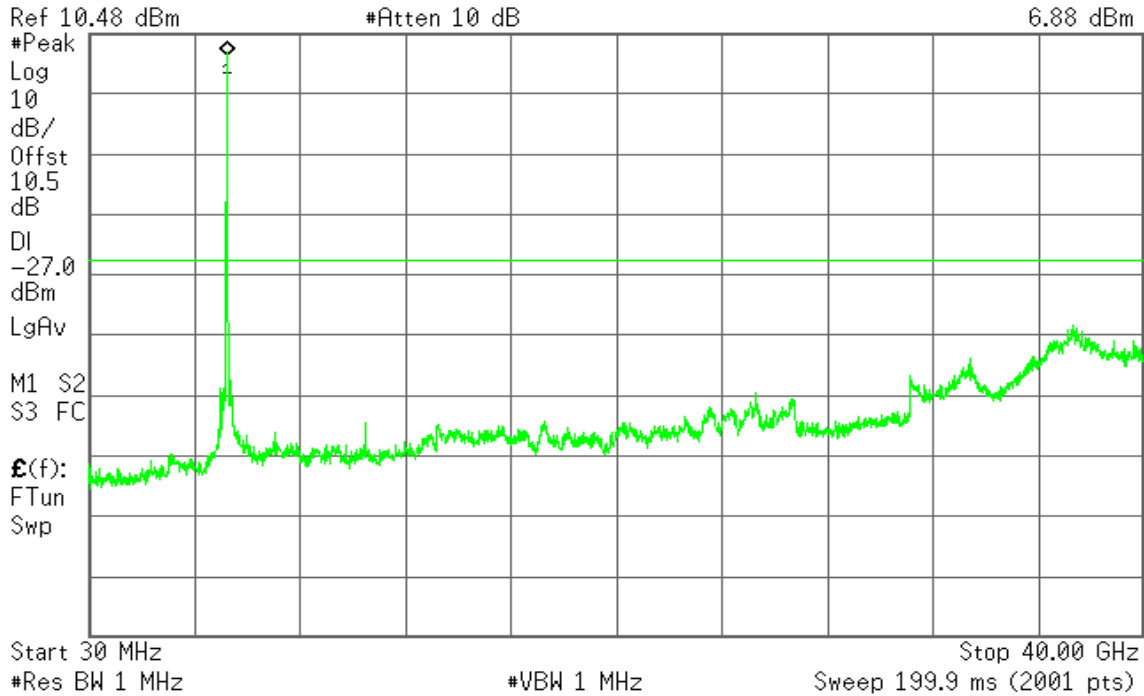
IEEE 802.11a mode / 5260 ~ 5320MHz

CH Low

Agilent 14:50:09 Dec 20, 2011

R T

Mkr1 5.27 GHz
6.88 dBm

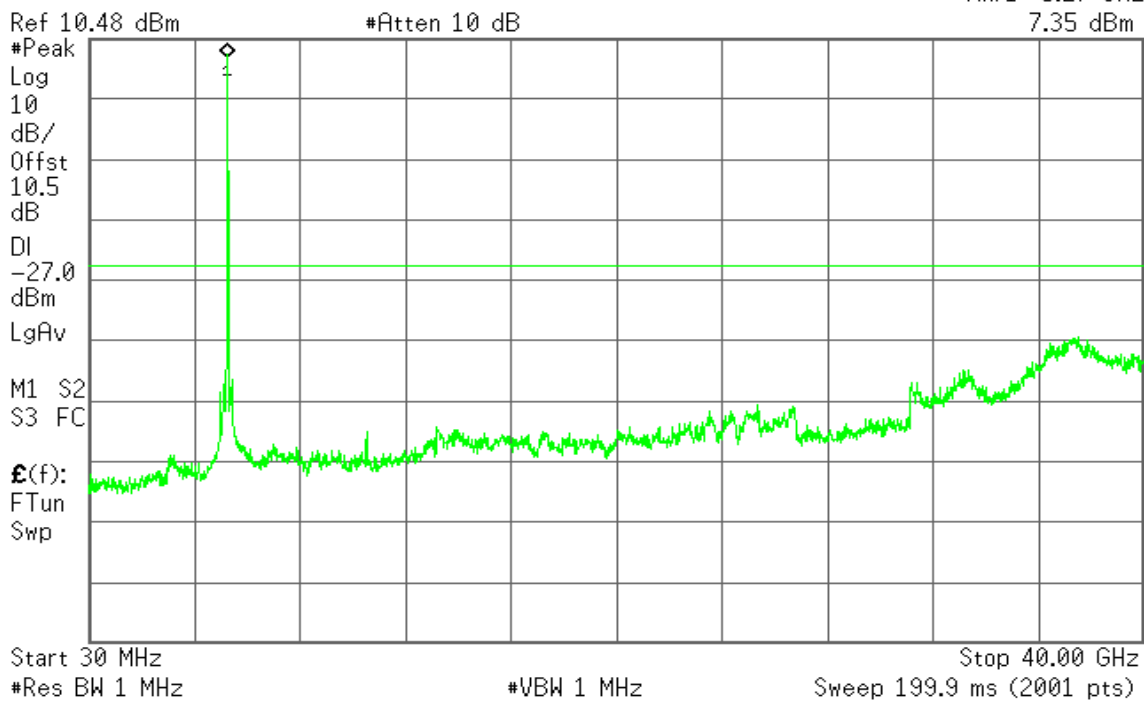


CH Mid

Agilent 14:52:51 Dec 20, 2011

R T

Mkr1 5.27 GHz
7.35 dBm



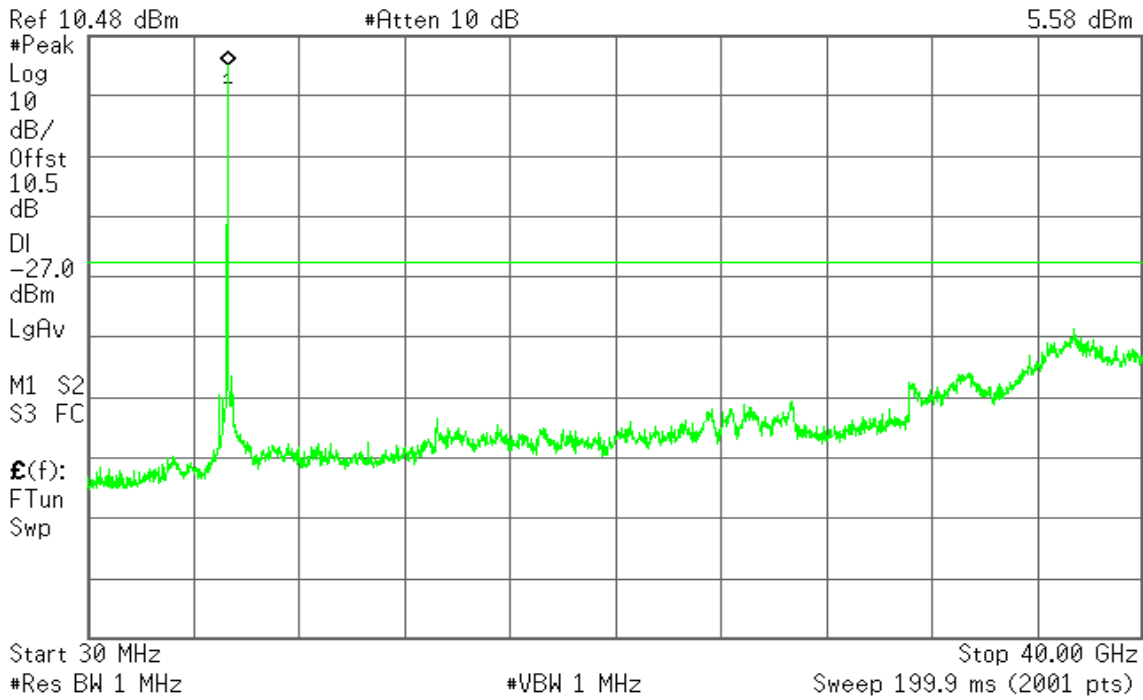


CH High

Agilent 14:55:56 Dec 20, 2011

R T

Mkr1 5.33 GHz
5.58 dBm



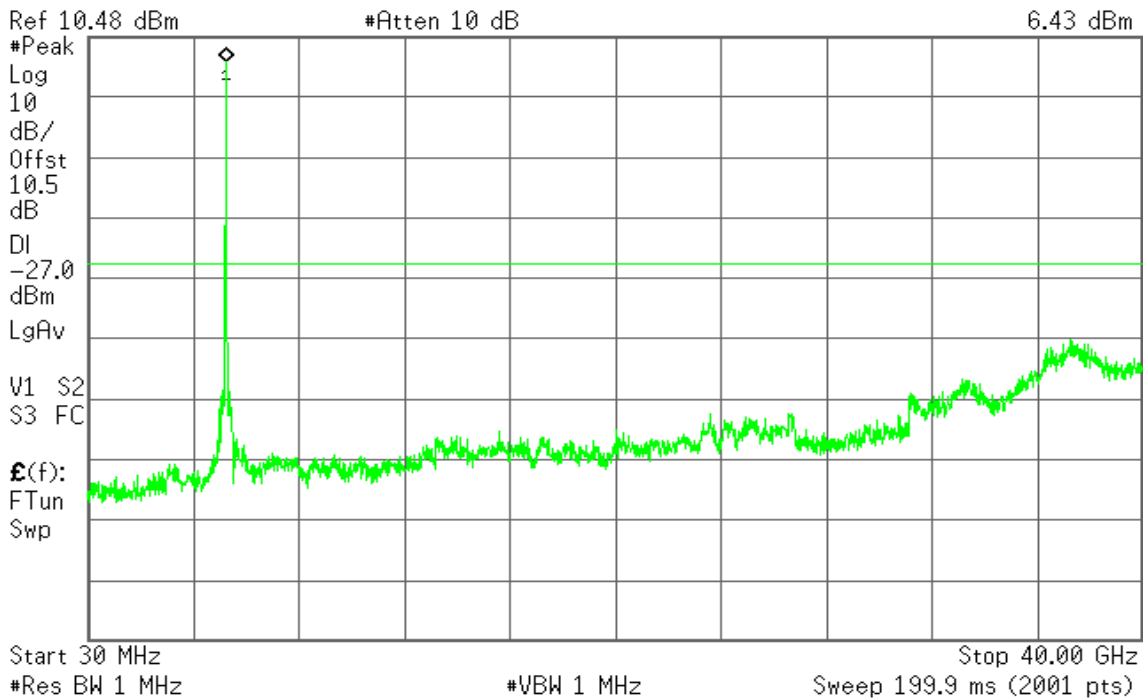
IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 0

CH Low

Agilent 15:36:23 Dec 20, 2011

R T

Mkr1 5.27 GHz
6.43 dBm



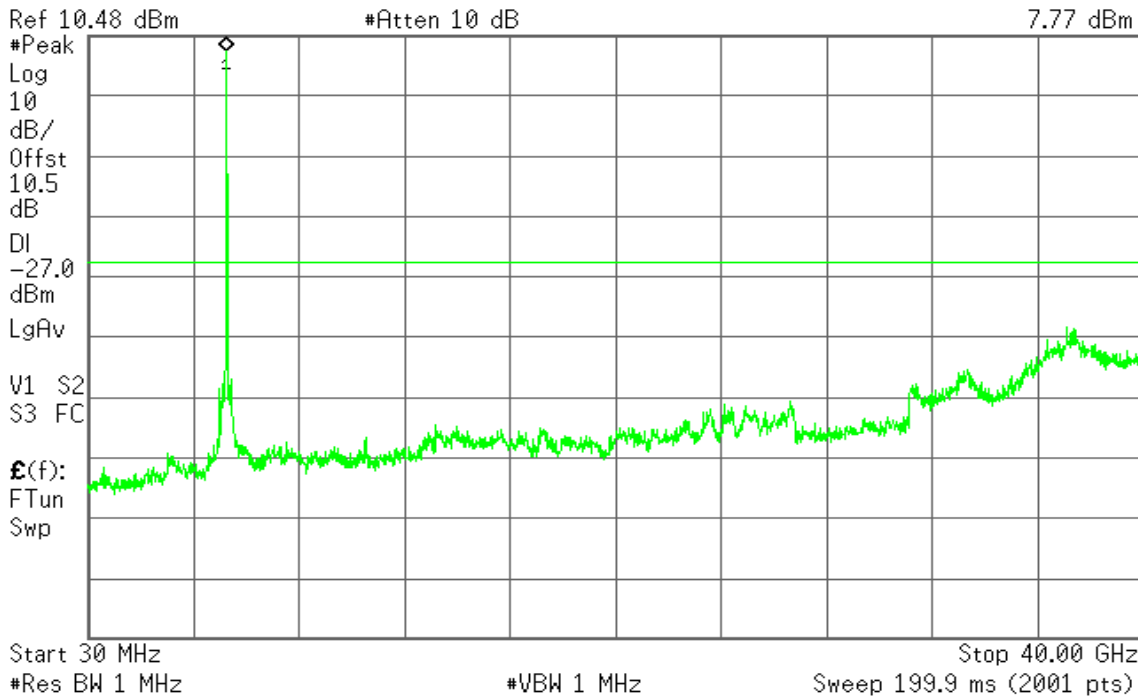


CH Mid

Agilent 15:39:43 Dec 20, 2011

R T

Mkr1 5.29 GHz
7.77 dBm

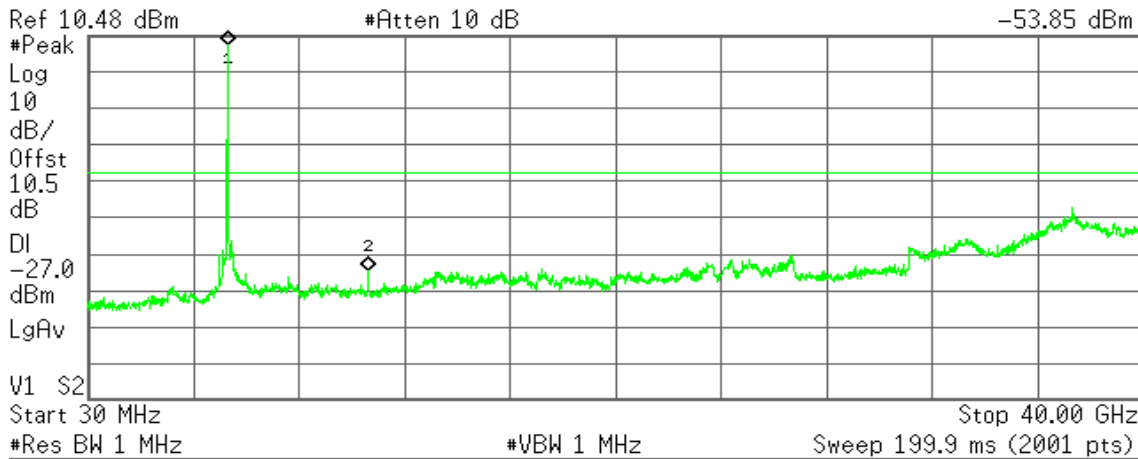


CH High

Agilent 15:44:16 Dec 20, 2011

R T

Mkr2 10.64 GHz
-53.85 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.33 GHz	7.68 dBm
2	(1)	Freq	10.64 GHz	-53.85 dBm



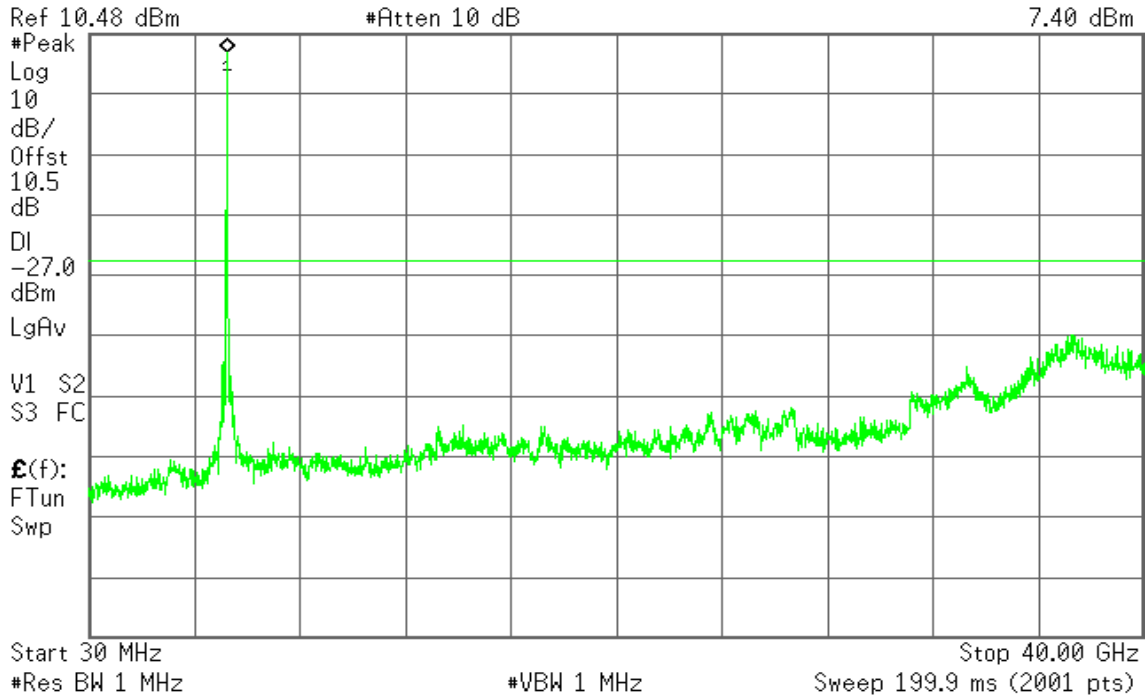
IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320MHz / Chain 1

CH Low

Agilent 18:22:11 Dec 20, 2011

R T

Mkr1 5.27 GHz
7.40 dBm

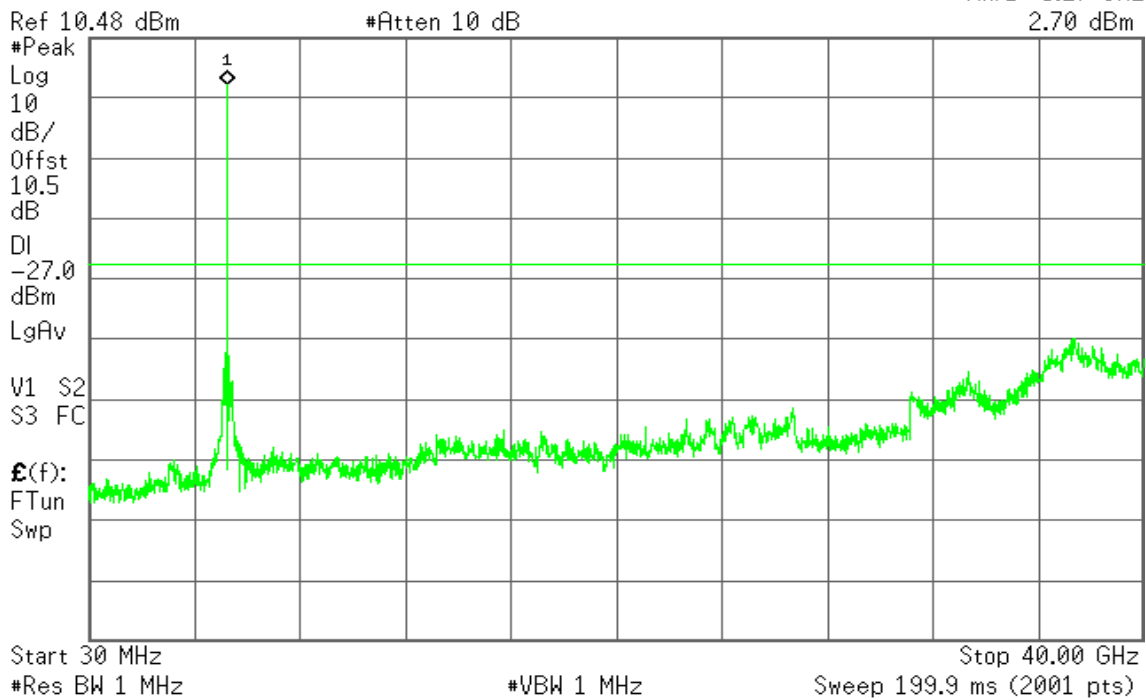


CH Mid

Agilent 18:26:10 Dec 20, 2011

R T

Mkr1 5.27 GHz
2.70 dBm

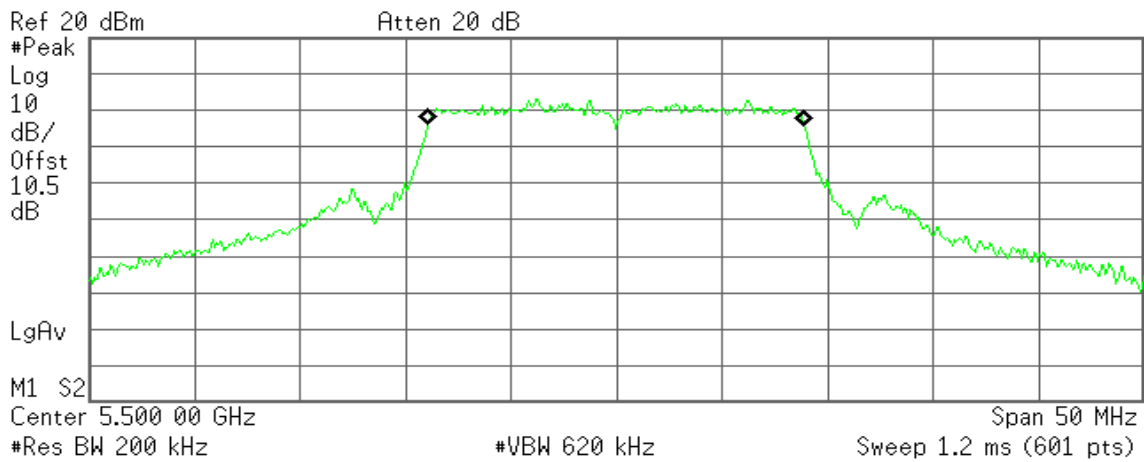




CH High

Agilent 19:13:34 Dec 20, 2011

R T



Occupied Bandwidth
17.7604 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -31.299 kHz
x dB Bandwidth 22.827 MHz



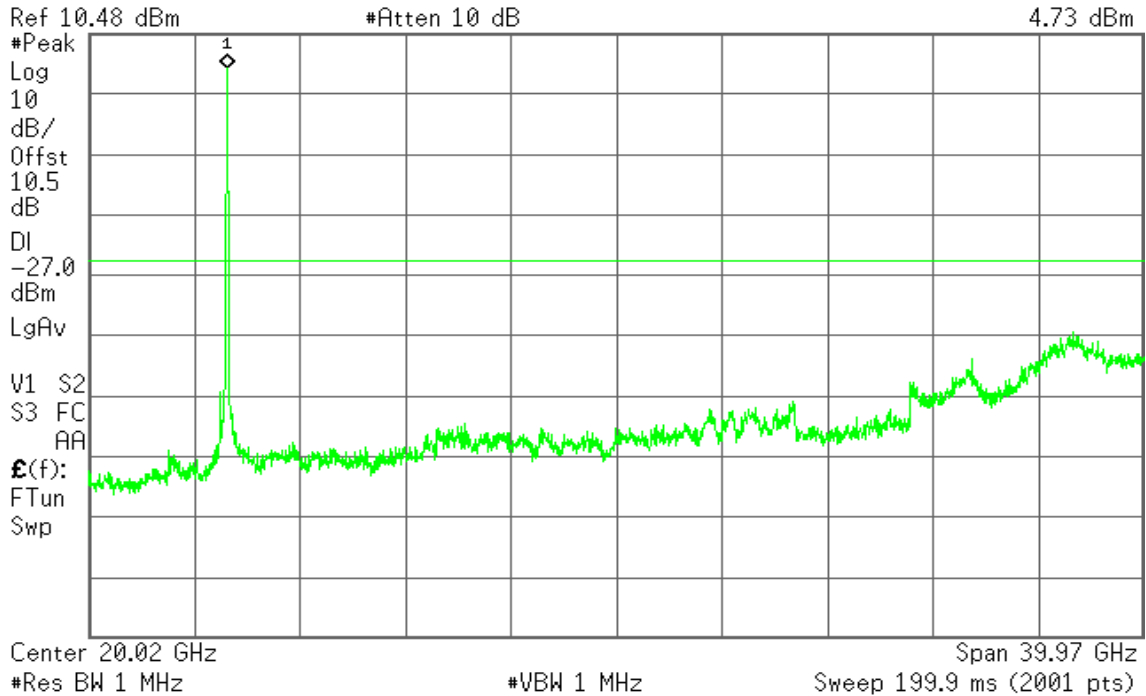
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 0

CH Low

Agilent 16:28:44 Dec 20, 2011

R T

Mkr1 5.29 GHz
4.73 dBm

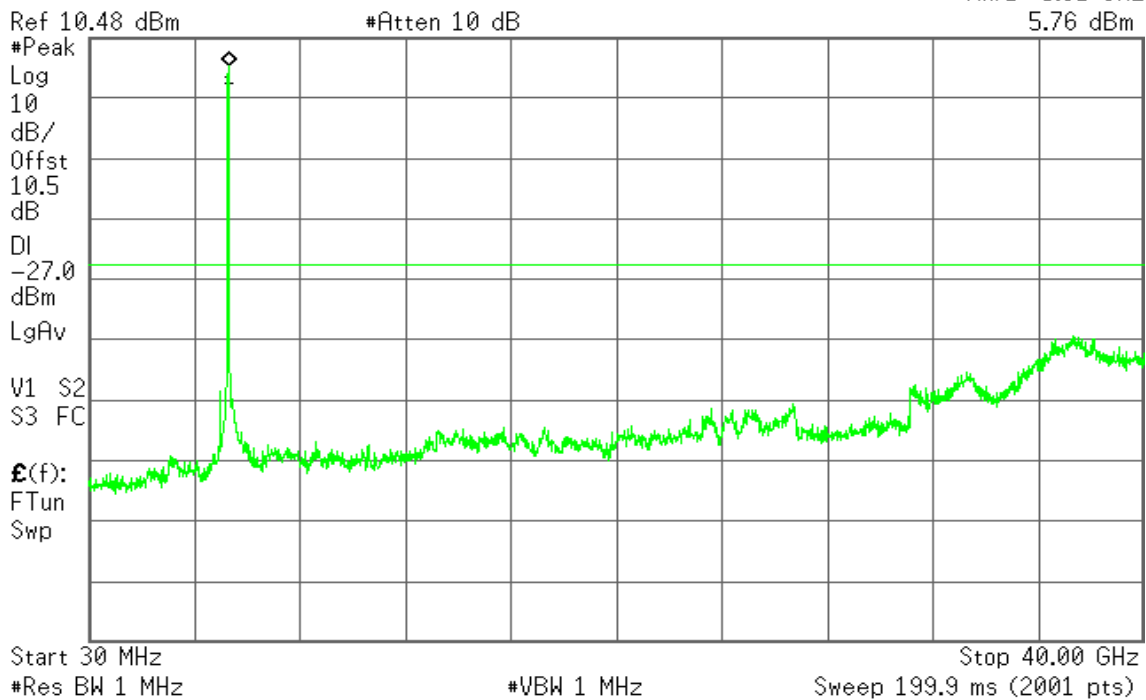


CH High

Agilent 16:35:27 Dec 20, 2011

R T

Mkr1 5.31 GHz
5.76 dBm





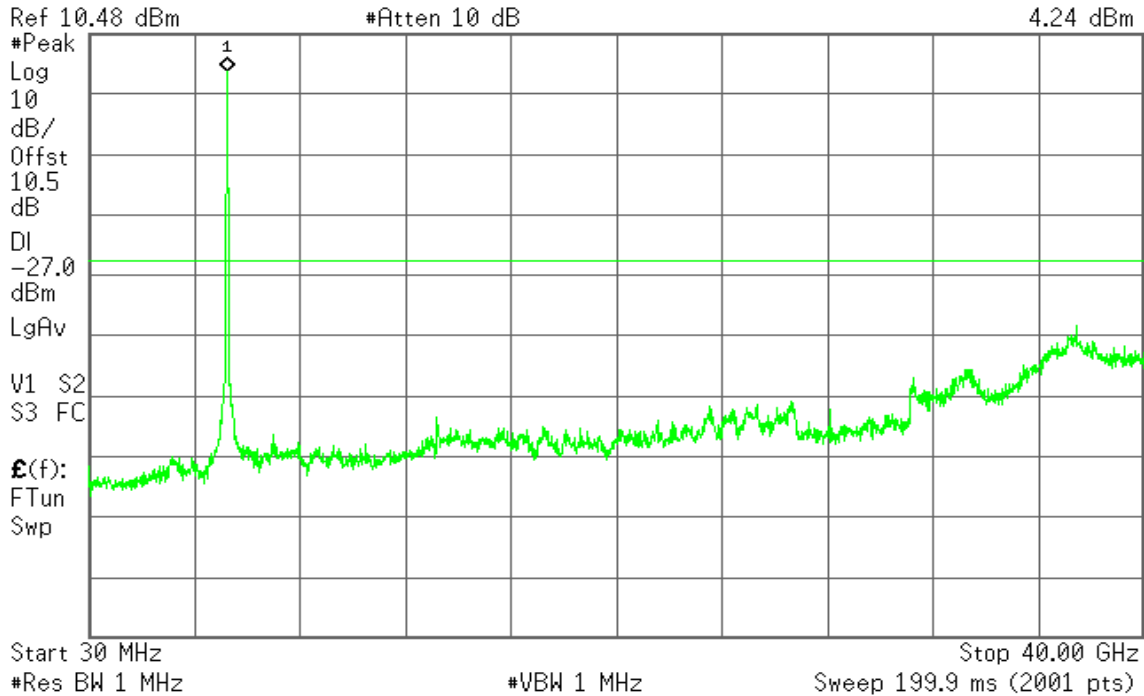
IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310MHz / Chain 1

CH Low

Agilent 17:15:28 Dec 20, 2011

R T

Mkr1 5.27 GHz
4.24 dBm

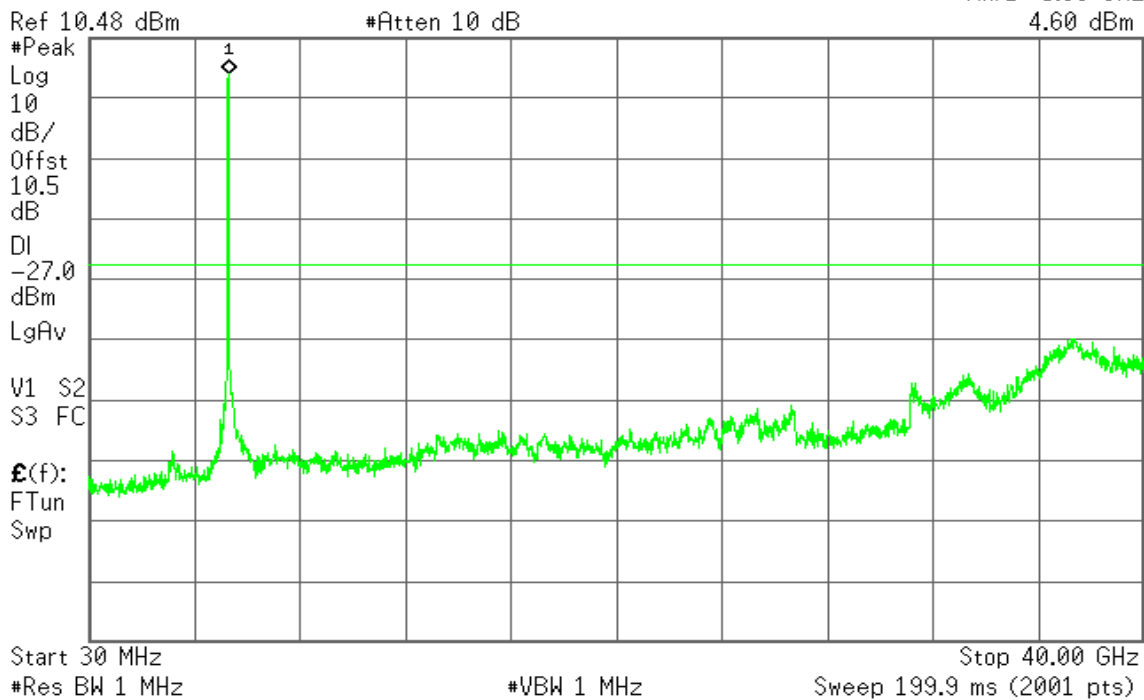


CH High

Agilent 17:19:45 Dec 20, 2011

R T

Mkr1 5.33 GHz
4.60 dBm



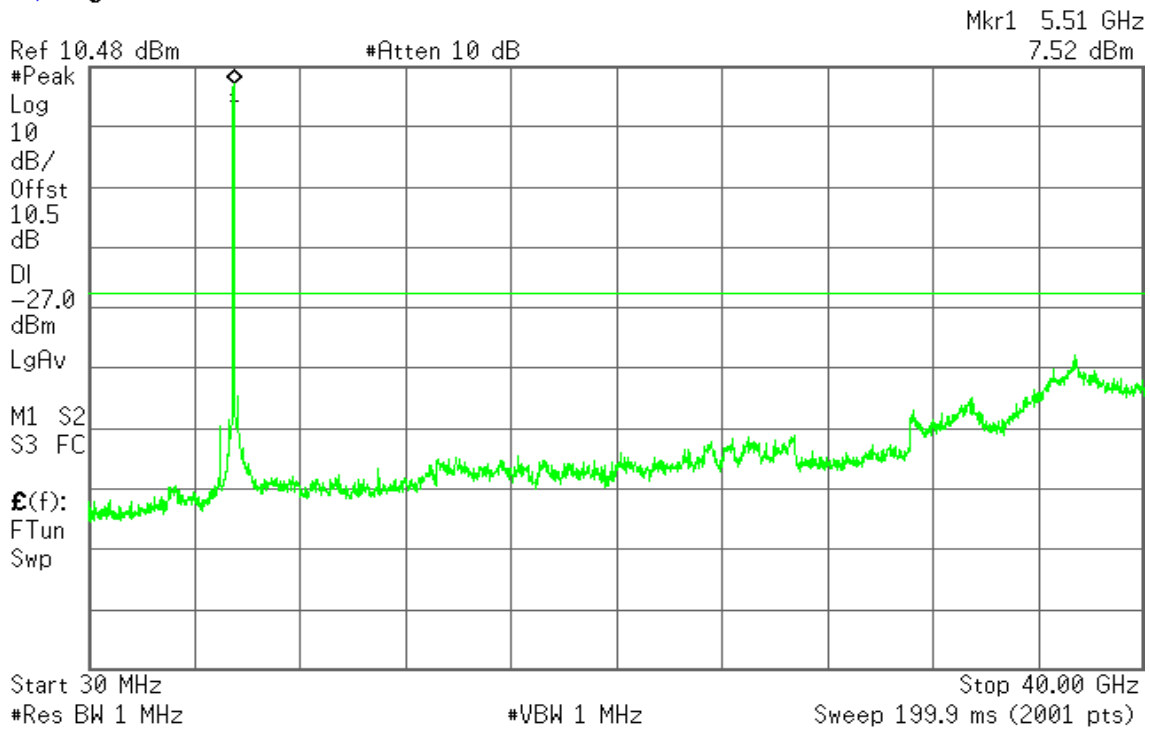


Test mode: IEEE 802.11a mode / 5500 ~ 5700MHz

CH Low

Agilent 15:04:25 Dec 20, 2011

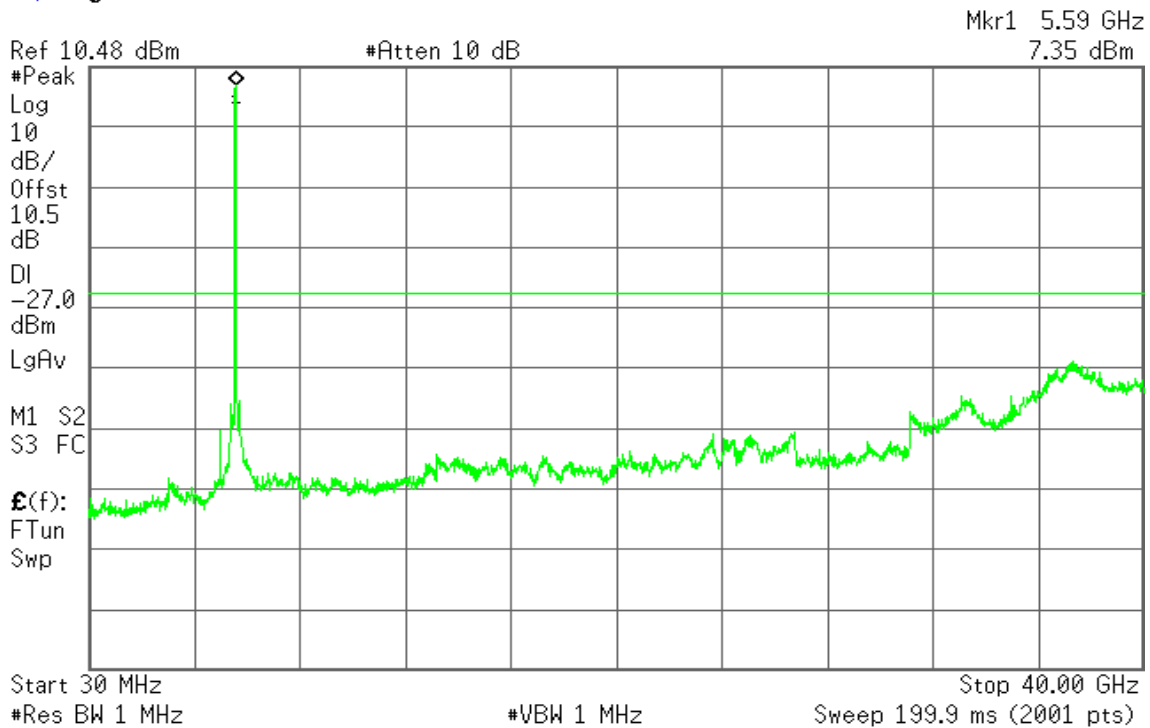
R T



CH Mid

Agilent 15:10:48 Dec 20, 2011

R T



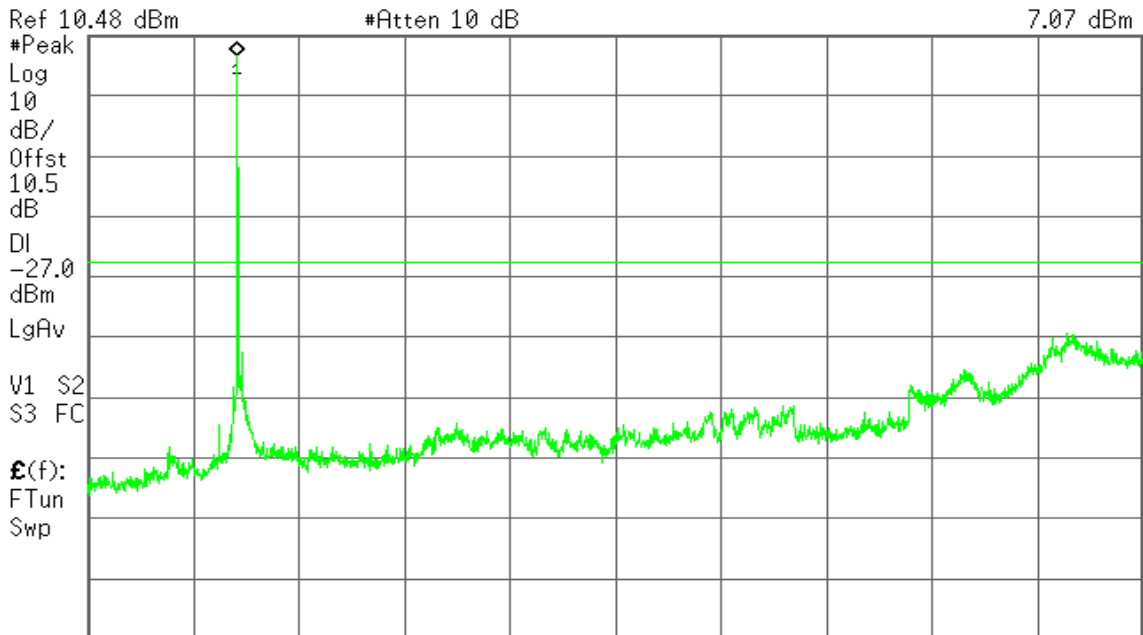


CH High

Agilent 15:14:43 Dec 20, 2011

R T

Mkr1 5.71 GHz
7.07 dBm



Start 30 MHz Stop 40.00 GHz
#Res BW 1 MHz #VBW 1 MHz Sweep 199.9 ms (2001 pts)

IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 0

CH Low

Agilent 15:53:51 Dec 20, 2011

R T

Mkr1 5.51 GHz
7.12 dBm



Start 30 MHz Stop 40.00 GHz
#Res BW 1 MHz #VBW 1 MHz Sweep 199.9 ms (2001 pts)

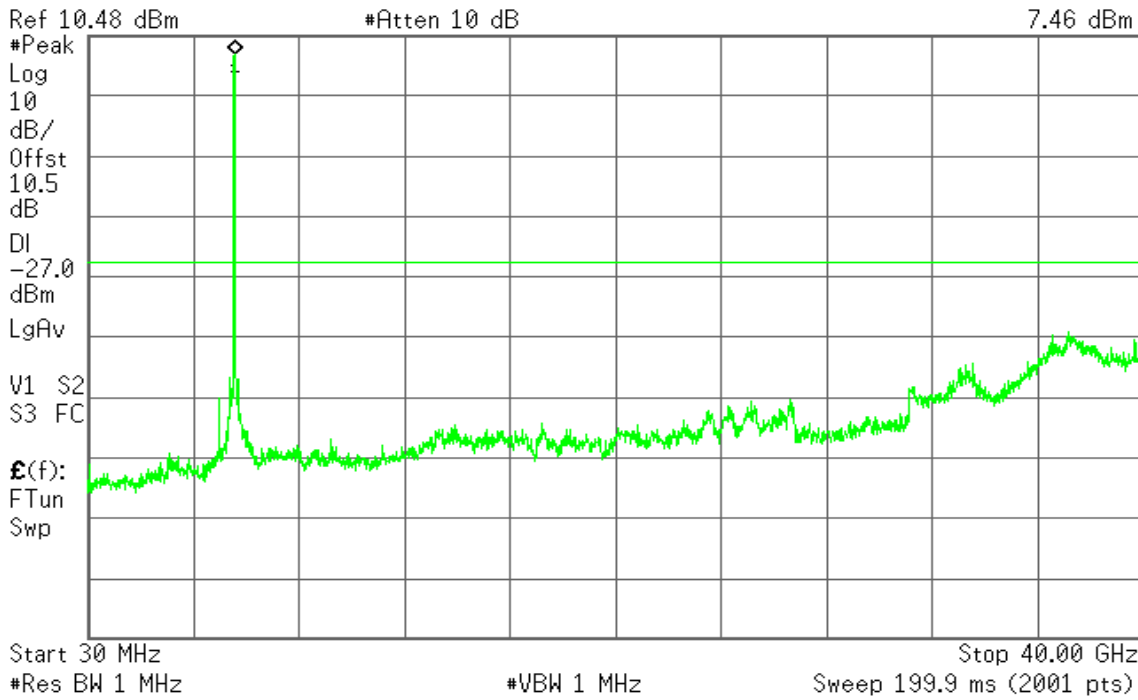


CH Mid

Agilent 15:57:01 Dec 20, 2011

R T

Mkr1 5.59 GHz
7.46 dBm

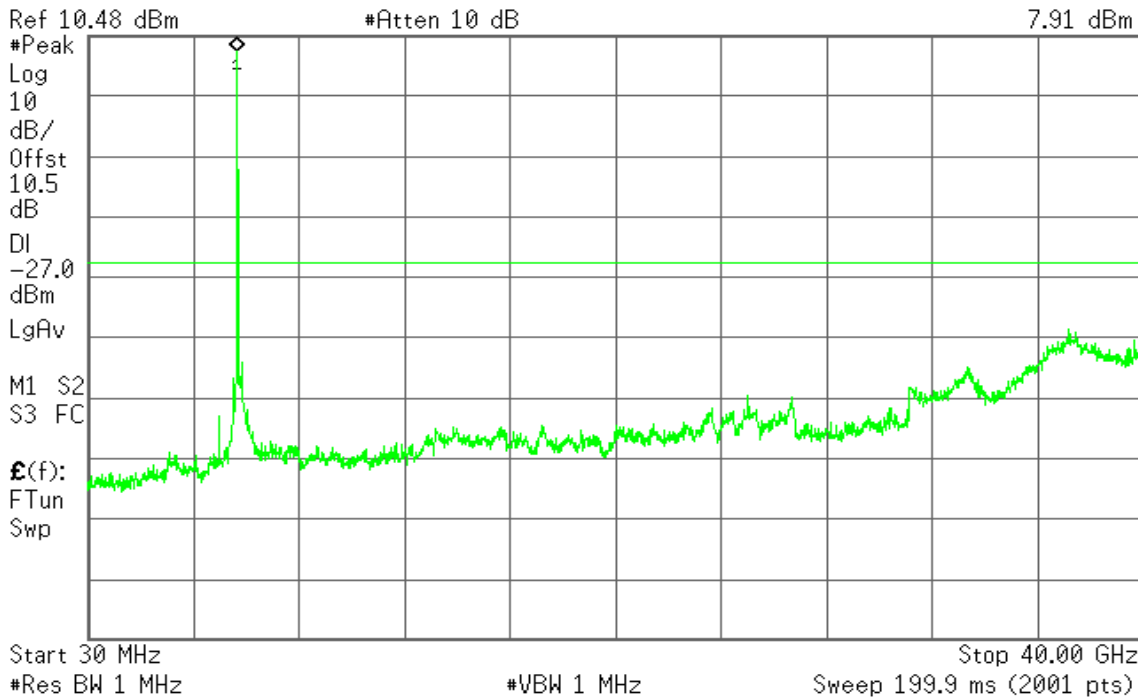


CH High

Agilent 16:00:19 Dec 20, 2011

R T

Mkr1 5.71 GHz
7.91 dBm





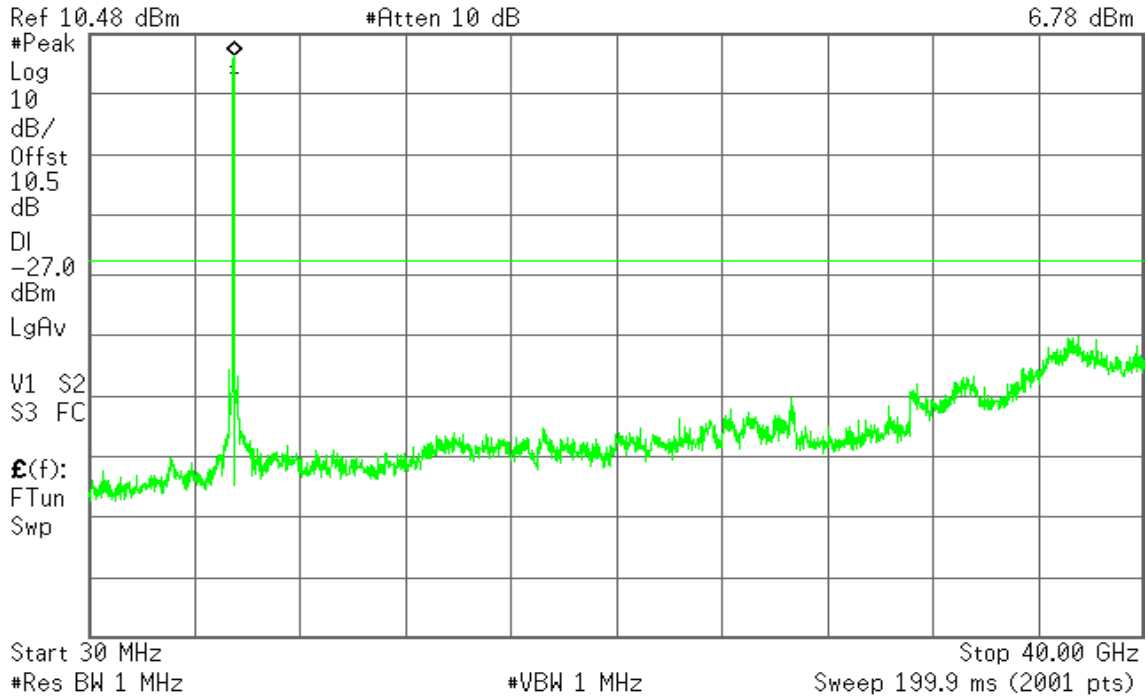
IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700MHz / Chain 1

CH Low

Agilent 19:17:03 Dec 20, 2011

R T

Mkr1 5.51 GHz
6.78 dBm

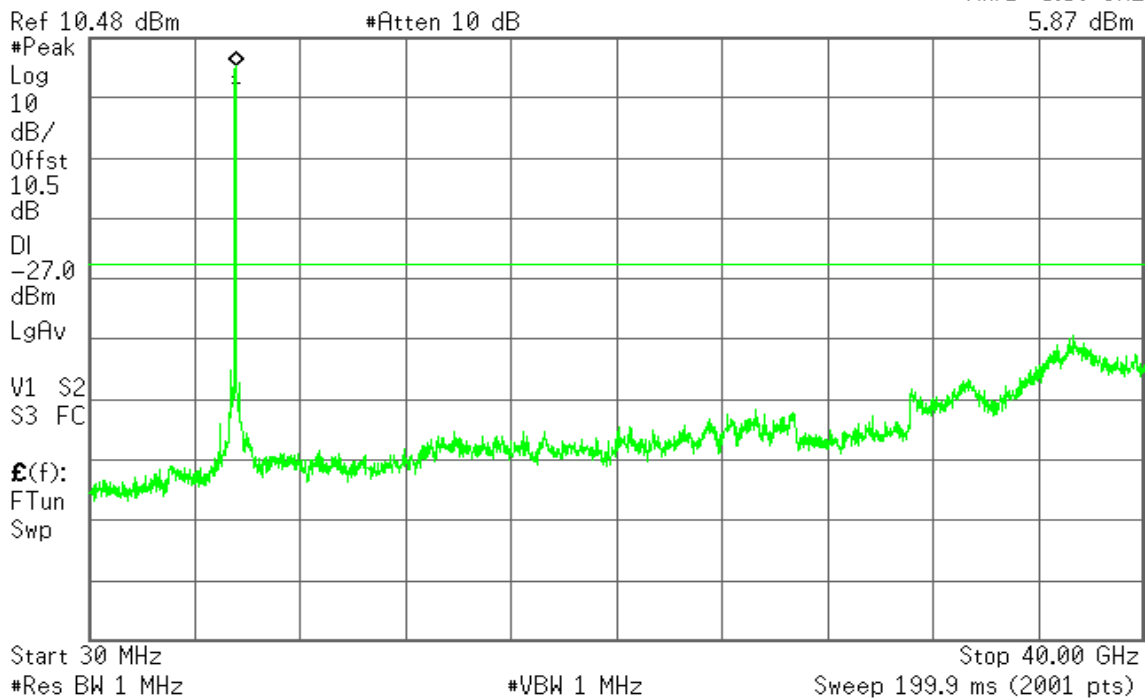


CH Mid

Agilent 19:20:34 Dec 20, 2011

R T

Mkr1 5.59 GHz
5.87 dBm



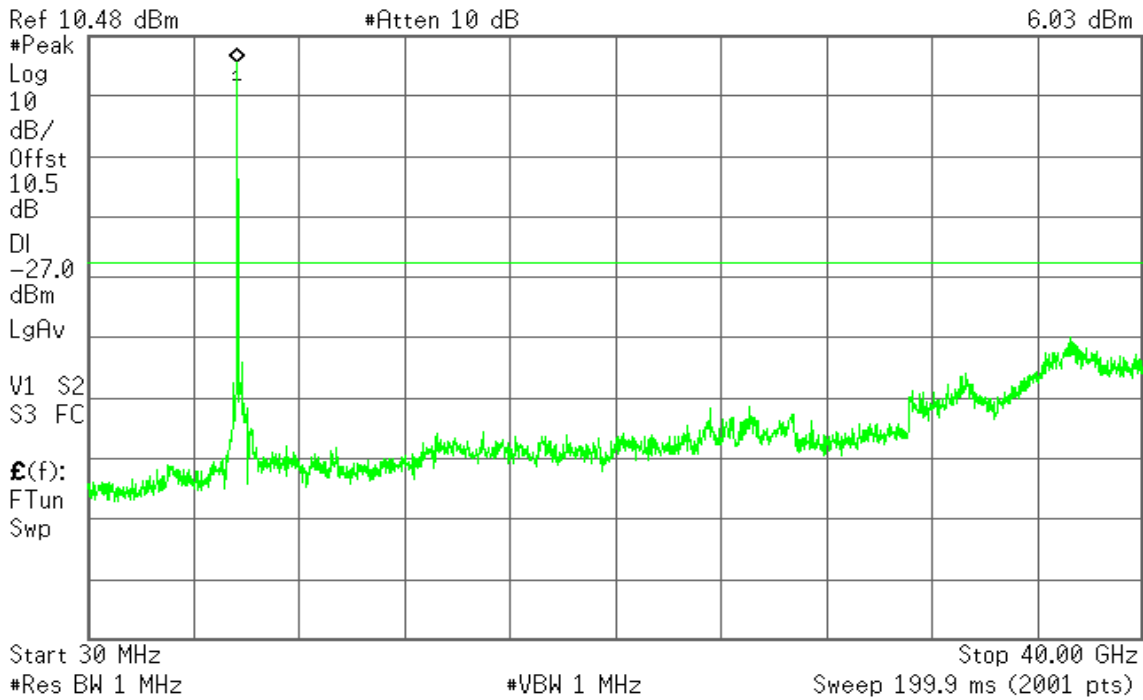


CH High

Agilent 19:27:29 Dec 20, 2011

R T

Mkr1 5.71 GHz
6.03 dBm



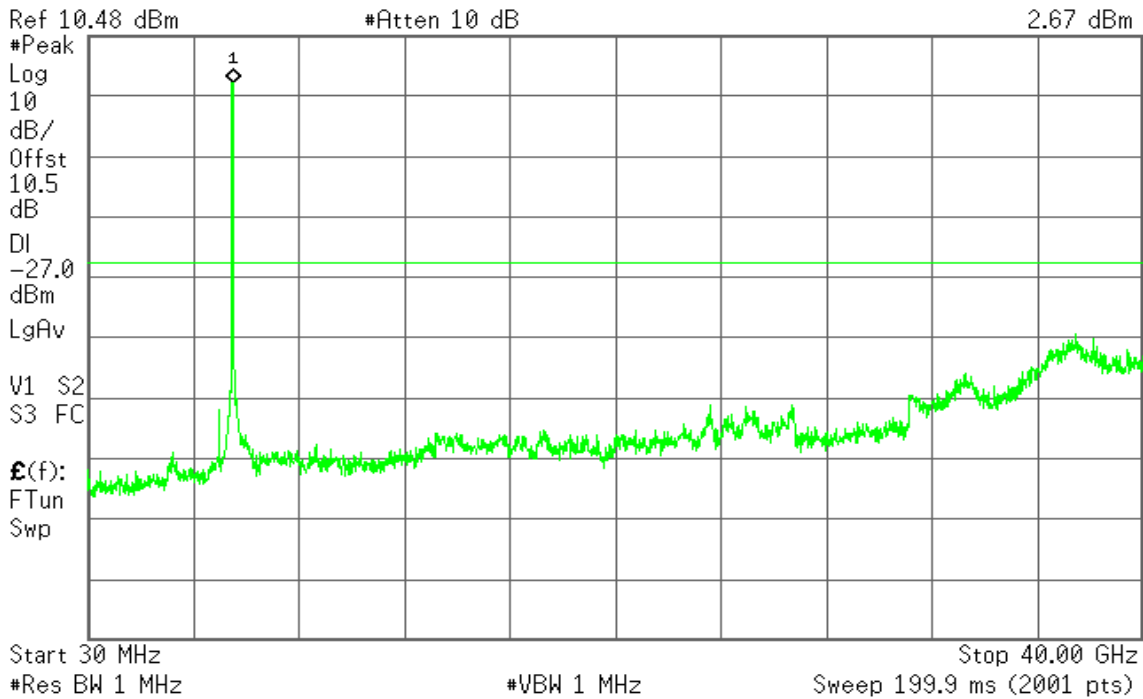
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 0

CH Low

Agilent 16:39:49 Dec 20, 2011

R T

Mkr1 5.51 GHz
2.67 dBm



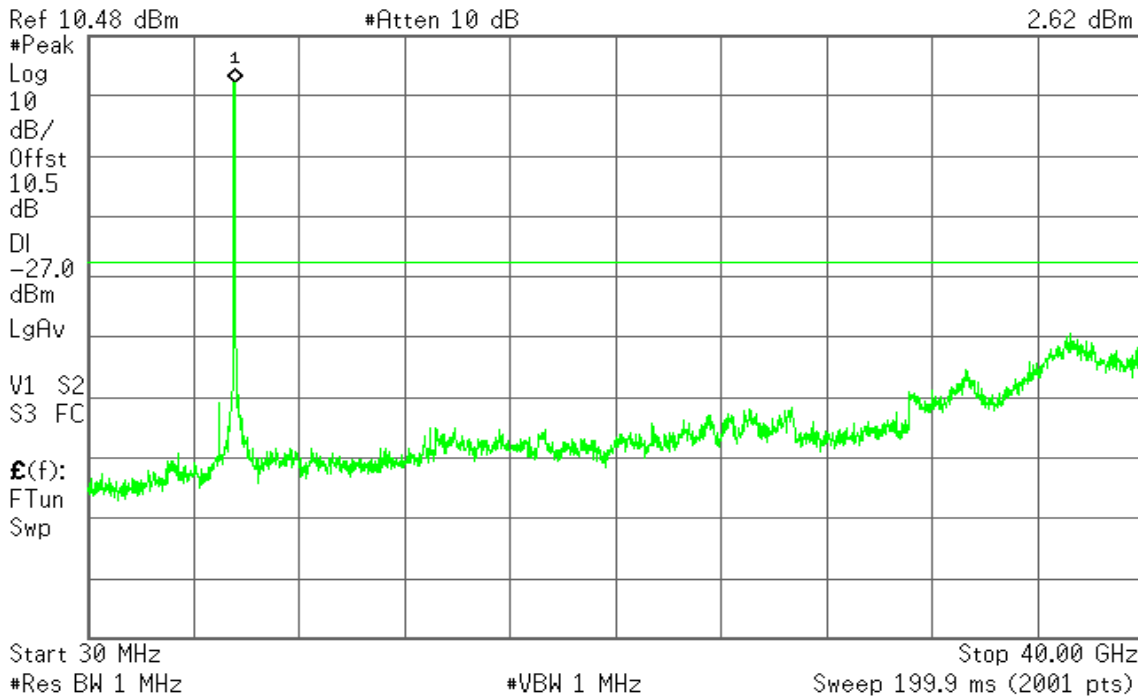


CH Mid

Agilent 16:49:37 Dec 20, 2011

R T

Mkr1 5.59 GHz
2.62 dBm

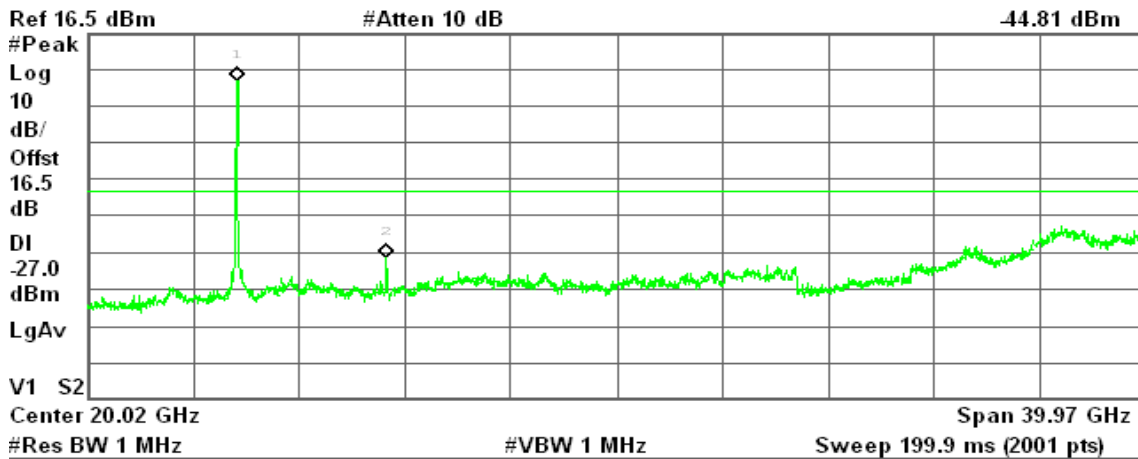


CH High

Agilent

R T

Mkr2 11.32 GHz
-44.81 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.67 GHz	3.55 dBm
2	(1)	Freq	11.32 GHz	-44.81 dBm



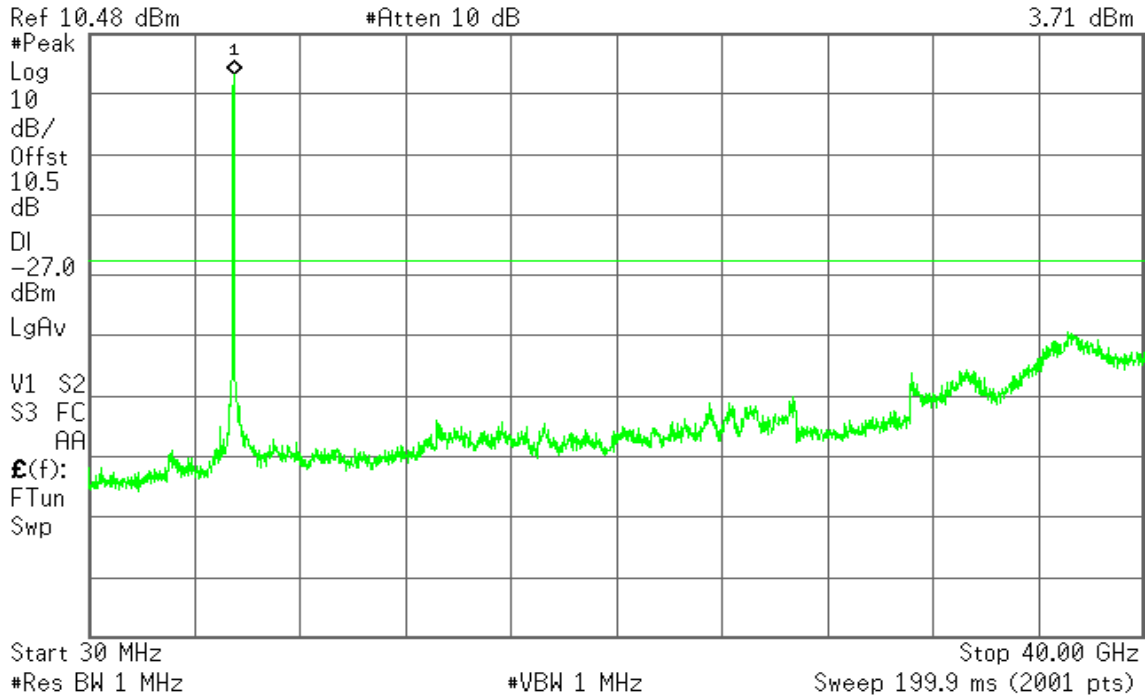
IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670MHz / Chain 1

CH Low

Agilent 17:24:02 Dec 20, 2011

R T

Mkr1 5.51 GHz
3.71 dBm

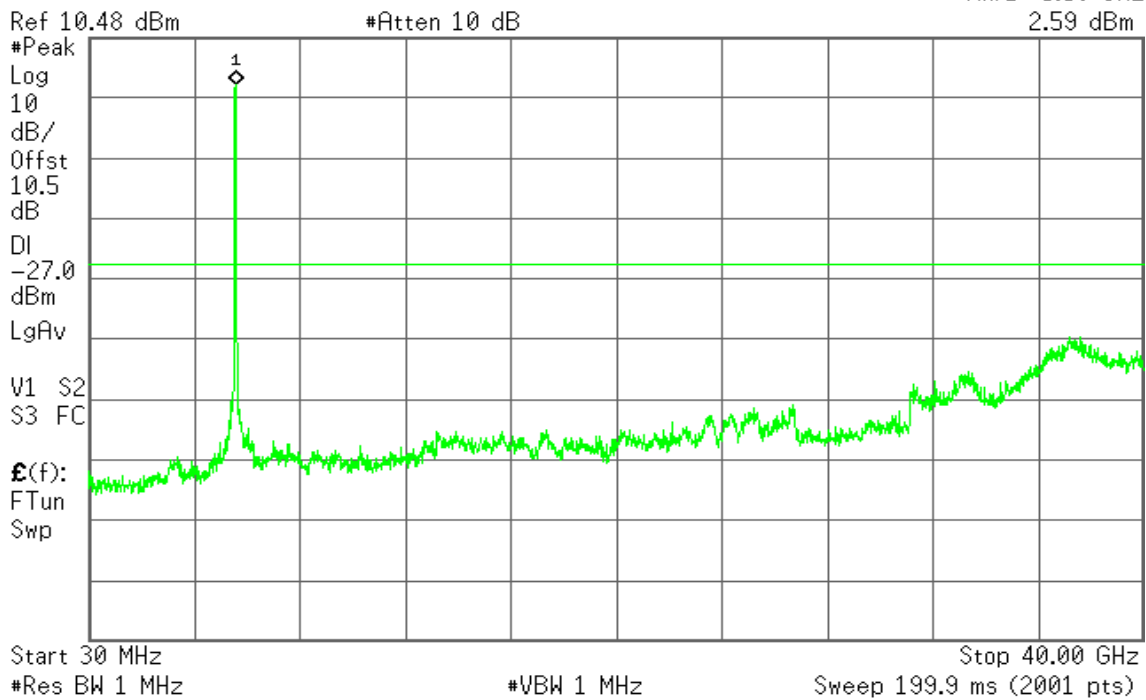


CH Mid

Agilent 17:27:52 Dec 20, 2011

R T

Mkr1 5.59 GHz
2.59 dBm





CH High

Agilent

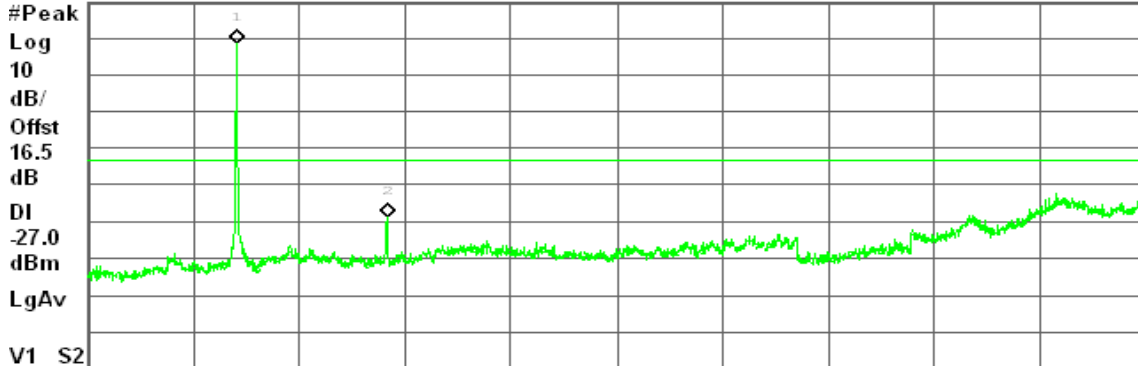
R T

Mkr2 11.36 GHz

-42.33 dBm

Ref 16.5 dBm

#Atten 10 dB



Center 20.02 GHz

Span 39.97 GHz

#Res BW 1 MHz

#VBW 1 MHz

Sweep 199.9 ms (2001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.69 GHz	5.26 dBm
2	(1)	Freq	11.36 GHz	-42.33 dBm



8.10 POWERLINE CONDUCTED EMISSIONS

LIMIT

According to §15.207(a) & RSS-Gen §7.2.4, except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

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

* Decreases with the logarithm of the frequency.

Test Configuration

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

TEST PROCEDURE

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



TEST RESULTS

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

Test Data

Operation Mode: Normal Link

Test Date: December 16, 2011

Temperature: 22°C

Tested by: Howard Pang

Humidity: 55% RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Note
1	0.1500	41.18	10.08	51.26	65.99	-14.73	peak	L1
2	0.1780	40.39	10.04	50.43	64.57	-14.14	peak	L1
3	0.2380	39.15	10.01	49.16	62.16	-13.00	peak	L1
4	1.6940	33.79	10.12	43.91	56.00	-12.09	peak	L1
5	1.9860	33.66	10.15	43.81	56.00	-12.19	peak	L1
6	6.3980	27.64	10.36	38.00	60.00	-22.00	peak	L1
1	0.1819	41.45	10.02	51.47	64.39	-12.92	peak	L2
2	0.2340	37.52	10.00	47.52	62.30	-14.78	peak	L2
3	0.4740	31.50	10.02	41.52	56.44	-14.92	peak	L2
4	1.7340	34.16	10.12	44.28	56.00	-11.72	peak	L2
5	1.9620	36.51	10.14	46.65	56.00	-9.35	peak	L2
6	1.9620	24.72	10.14	34.86	46.00	-11.14	AVG	L2
7	6.3980	27.07	10.35	37.42	60.00	-22.58	peak	L2

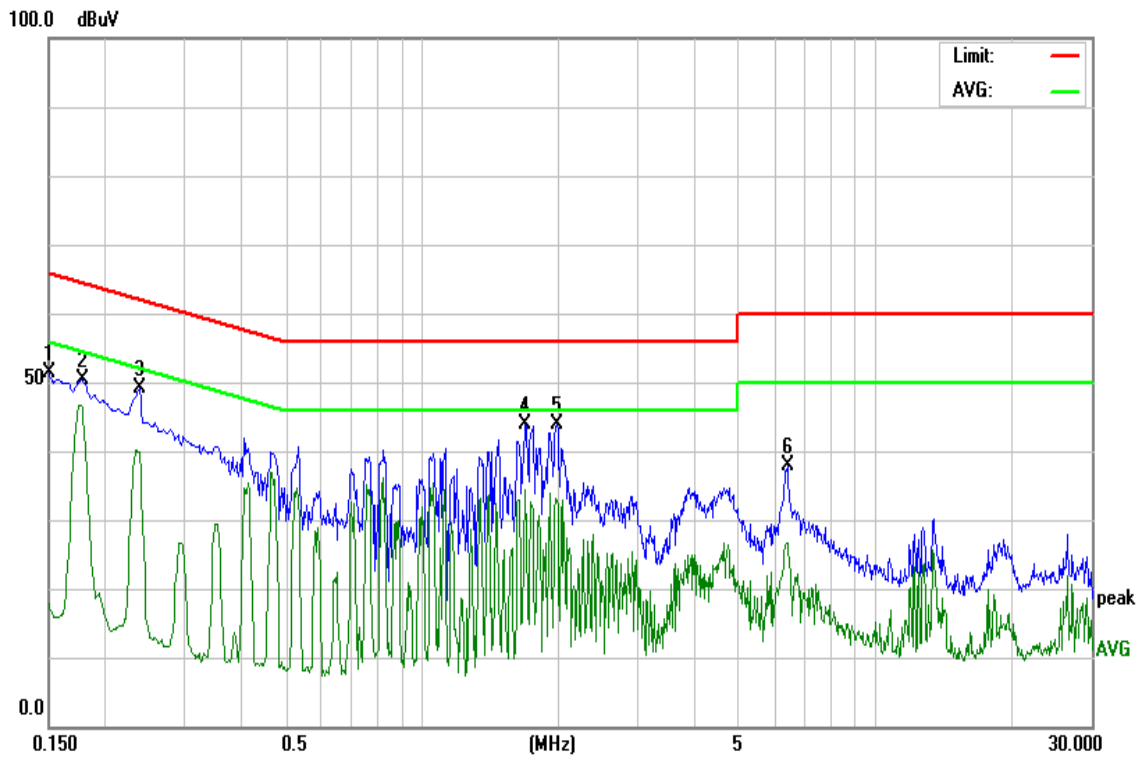
Remark:

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

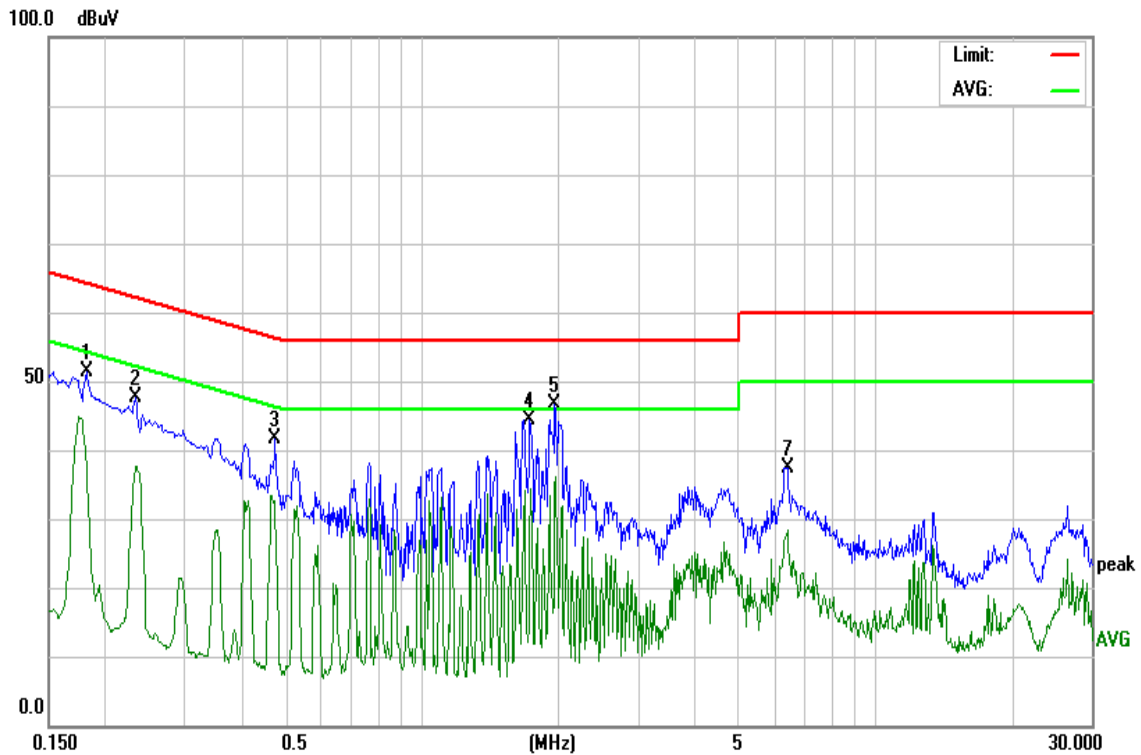


Test Plots

Conducted emissions (Line 1)



Conducted emissions (Line 2)



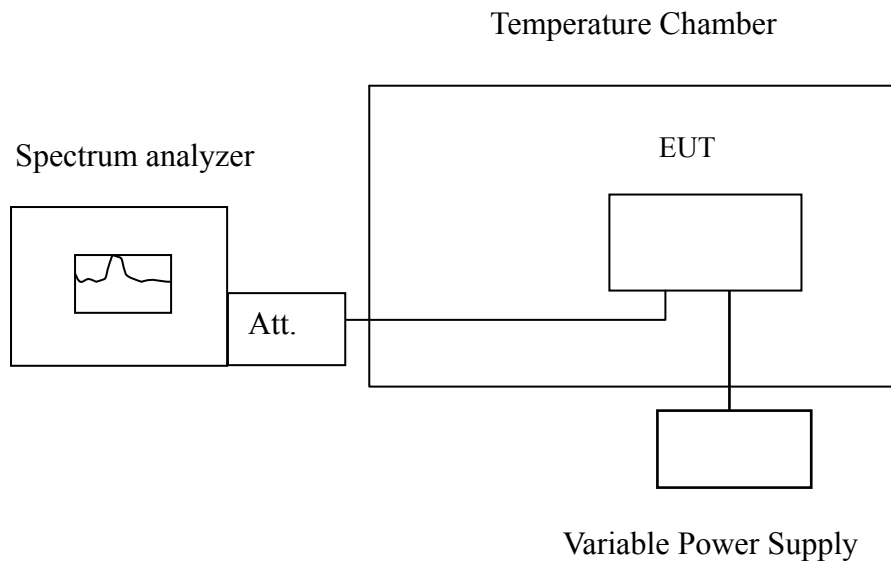


8.11 FREQUENCY STABILITY

LIMIT

According to §15.407(g) & RSS-210 §A9.5(5), manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the operational description.

Test Configuration



Remark: Measurement setup for testing on Antenna connector



TEST PROCEDURE

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

TEST RESULTS

No non-compliance noted.

IEEE 802.11a mode / 5180 ~ 5240 MHz:

CH Low

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5179.989529	5150~5250	Pass
40	110	5179.988312	5150~5250	Pass
30	110	5179.998286	5150~5250	Pass
20	110	5180.007437	5150~5250	Pass
10	110	5179.991483	5150~5250	Pass
0	110	5179.985953	5150~5250	Pass
-10	110	5179.974197	5150~5250	Pass
-20	110	5179.990587	5150~5250	Pass

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5180.00355	5150~5250	Pass
	110	5180.004409	5150~5250	Pass
	121	5179.998988	5150~5250	Pass



CH High

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5239.989419	5150~5250	Pass
40	110	5240.020681	5150~5250	Pass
30	110	5240.003290	5150~5250	Pass
20	110	5239.970001	5150~5250	Pass
10	110	5239.998110	5150~5250	Pass
0	110	5240.018288	5150~5250	Pass
-10	110	5240.002642	5150~5250	Pass
-20	110	5239.977821	5150~5250	Pass

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5240.017469	5150~5250	Pass
	110	5239.996448	5150~5250	Pass
	121	5239.988832	5150~5250	Pass



IEEE 802.11n HT 20 MHz Channel mode / 5180 ~ 5240 MHz:

CH Low

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5179.997416	5150~5250	Pass
40	110	5179.979583	5150~5250	Pass
30	110	5179.979588	5150~5250	Pass
20	110	5179.998196	5150~5250	Pass
10	110	5180.003426	5150~5250	Pass
0	110	5179.982241	5150~5250	Pass
-10	110	5179.986851	5150~5250	Pass
-20	110	5179.990860	5150~5250	Pass

Operating Frequency: 5180 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5179.970218	5150~5250	Pass
	110	5180.014203	5150~5250	Pass
	121	5180.017003	5150~5250	Pass



CH High

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5240.007435	5150~5250	Pass
40	110	5239.974199	5150~5250	Pass
30	110	5239.994157	5150~5250	Pass
20	110	5240.015372	5150~5250	Pass
10	110	5239.998311	5150~5250	Pass
0	110	5240.014170	5150~5250	Pass
-10	110	5239.985436	5150~5250	Pass
-20	110	5239.999026	5150~5250	Pass

Operating Frequency: 5240 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5239.985865	5150~5250	Pass
	110	5240.00024	5150~5250	Pass
	121	5239.976755	5150~5250	Pass



IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230 MHz:

CH Low

Operating Frequency: 5190 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5190.014019	5150~5250	Pass
40	110	5189.974553	5150~5250	Pass
30	110	5189.977154	5150~5250	Pass
20	110	5189.991308	5150~5250	Pass
10	110	5190.000745	5150~5250	Pass
0	110	5189.983833	5150~5250	Pass
-10	110	5190.014652	5150~5250	Pass
-20	110	5189.982773	5150~5250	Pass

Operating Frequency: 5190 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5190.013612	5150~5250	Pass
	110	5189.970715	5150~5250	Pass
	121	5189.976504	5150~5250	Pass



CH High

Operating Frequency: 5230 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5229.971806	5150~5250	Pass
40	110	5230.017270	5150~5250	Pass
30	110	5229.989804	5150~5250	Pass
20	110	5229.970771	5150~5250	Pass
10	110	5230.020241	5150~5250	Pass
0	110	5230.017171	5150~5250	Pass
-10	110	5230.011445	5150~5250	Pass
-20	110	5229.994407	5150~5250	Pass

Operating Frequency: 5230 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5230.005649	5150~5250	Pass
	110	5229.990426	5150~5250	Pass
	121	5229.978727	5150~5250	Pass



IEEE 802.11a mode / 5260 ~ 5320 MHz:

CH Low

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5260.000790	5250~5350	Pass
40	110	5259.981939	5250~5350	Pass
30	110	5260.004912	5250~5350	Pass
20	110	5260.013449	5250~5350	Pass
10	110	5260.009856	5250~5350	Pass
0	110	5259.978192	5250~5350	Pass
-10	110	5259.971300	5250~5350	Pass
-20	110	5260.015207	5250~5350	Pass

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5260.008806	5250~5350	Pass
	110	5259.987984	5250~5350	Pass
	121	5260.001798	5250~5350	Pass



CH High

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5320.015003	5250~5350	Pass
40	110	5320.010180	5250~5350	Pass
30	110	5319.983557	5250~5350	Pass
20	110	5320.009328	5250~5350	Pass
10	110	5319.995049	5250~5350	Pass
0	110	5319.988055	5250~5350	Pass
-10	110	5319.982589	5250~5350	Pass
-20	110	5319.997877	5250~5350	Pass

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5319.979245	5250~5350	Pass
	110	5319.983498	5250~5350	Pass
	121	5320.016241	5250~5350	Pass



IEEE 802.11n HT 20 MHz Channel mode / 5260 ~ 5320 MHz:

CH Low

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5260.006767	5250~5350	Pass
40	110	5259.988355	5250~5350	Pass
30	110	5259.991982	5250~5350	Pass
20	110	5259.995440	5250~5350	Pass
10	110	5260.014623	5250~5350	Pass
0	110	5259.983867	5250~5350	Pass
-10	110	5259.994107	5250~5350	Pass
-20	110	5259.981503	5250~5350	Pass

Operating Frequency: 5260 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5260.0097	5250~5350	Pass
	110	5259.993322	5250~5350	Pass
	121	5259.978913	5250~5350	Pass



CH High

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5320.008093	5250~5350	Pass
40	110	5319.974507	5250~5350	Pass
30	110	5320.010987	5250~5350	Pass
20	110	5320.008051	5250~5350	Pass
10	110	5319.999249	5250~5350	Pass
0	110	5320.014166	5250~5350	Pass
-10	110	5319.974986	5250~5350	Pass
-20	110	5319.999356	5250~5350	Pass

Operating Frequency: 5320 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5319.970161	5250~5350	Pass
	110	5319.984009	5250~5350	Pass
	121	5319.987334	5250~5350	Pass



IEEE 802.11n HT 40 MHz mode / 5270 ~ 5310 MHz:

CH Low

Operating Frequency: 5270 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5270.014907	5250~5350	Pass
40	110	5269.981521	5250~5350	Pass
30	110	5269.976440	5250~5350	Pass
20	110	5270.000632	5250~5350	Pass
10	110	5269.981833	5250~5350	Pass
0	110	5269.989236	5250~5350	Pass
-10	110	5270.016205	5250~5350	Pass
-20	110	5269.991620	5250~5350	Pass

Operating Frequency: 5270 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5270.017057	5250~5350	Pass
	110	5270.006531	5250~5350	Pass
	121	5269.996279	5250~5350	Pass



CH High

Operating Frequency: 5310 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5310.001357	5250~5350	Pass
40	110	5309.976556	5250~5350	Pass
30	110	5310.016576	5250~5350	Pass
20	110	5310.018801	5250~5350	Pass
10	110	5309.984106	5250~5350	Pass
0	110	5309.981323	5250~5350	Pass
-10	110	5310.013099	5250~5350	Pass
-20	110	5309.970808	5250~5350	Pass

Operating Frequency: 5310 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5310.008331	5250~5350	Pass
	110	5309.982808	5250~5350	Pass
	121	5310.012762	5250~5350	Pass



IEEE 802.11a mode / 5500 ~ 5700 MHz:

CH Low

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5499.981556	5470~5725	Pass
40	110	5499.980743	5470~5725	Pass
30	110	5500.018759	5470~5725	Pass
20	110	5500.006819	5470~5725	Pass
10	110	5499.971269	5470~5725	Pass
0	110	5500.002637	5470~5725	Pass
-10	110	5500.020558	5470~5725	Pass
-20	110	5499.994926	5470~5725	Pass

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5499.976246	5470~5725	Pass
	110	5500.002323	5470~5725	Pass
	121	5499.974829	5470~5725	Pass



CH High

Operating Frequency: 5700 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5699.990575	5470~5725	Pass
40	110	5700.017006	5470~5725	Pass
30	110	5700.008576	5470~5725	Pass
20	110	5699.972451	5470~5725	Pass
10	110	5700.012964	5470~5725	Pass
0	110	5699.994966	5470~5725	Pass
-10	110	5700.013206	5470~5725	Pass
-20	110	5700.017128	5470~5725	Pass

Operating Frequency: 5700 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5700.005735	5470~5725	Pass
	110	5699.992222	5470~5725	Pass
	121	5699.98768	5470~5725	Pass



IEEE 802.11n HT 20 MHz Channel mode / 5500 ~ 5700 MHz:

CH Low

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5499.984976	5470~5725	Pass
40	110	5499.971681	5470~5725	Pass
30	110	5500.007799	5470~5725	Pass
20	110	5499.977233	5470~5725	Pass
10	110	5500.012248	5470~5725	Pass
0	110	5499.999387	5470~5725	Pass
-10	110	5499.991675	5470~5725	Pass
-20	110	5499.984289	5470~5725	Pass

Operating Frequency: 5500 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5499.990697	5470~5725	Pass
	110	5500.009397	5470~5725	Pass
	121	5499.970732	5470~5725	Pass

**CH High**

Operating Frequency: 5700 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5699.972288	5470~5725	Pass
40	110	5699.987482	5470~5725	Pass
30	110	5699.972719	5470~5725	Pass
20	110	5699.982575	5470~5725	Pass
10	110	5700.013833	5470~5725	Pass
0	110	5699.973165	5470~5725	Pass
-10	110	5700.002159	5470~5725	Pass
-20	110	5699.982367	5470~5725	Pass

Operating Frequency: 5700 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5699.972476	5470~5725	Pass
	110	5699.991943	5470~5725	Pass
	121	5700.012427	5470~5725	Pass



IEEE 802.11n HT 40 MHz mode / 5510 ~ 5670 MHz:

CH Low

Operating Frequency: 5510 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5509.980469	5470~5725	Pass
40	110	5509.992751	5470~5725	Pass
30	110	5509.991586	5470~5725	Pass
20	110	5509.991403	5470~5725	Pass
10	110	5510.016655	5470~5725	Pass
0	110	5509.997966	5470~5725	Pass
-10	110	5509.985152	5470~5725	Pass
-20	110	5509.994658	5470~5725	Pass

Operating Frequency: 5510 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5509.982483	5470~5725	Pass
	110	5509.979302	5470~5725	Pass
	121	5509.971472	5470~5725	Pass



CH High

Operating Frequency: 5670 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
50	110	5669.996264	5470~5725	Pass
40	110	5670.007578	5470~5725	Pass
30	110	5669.974948	5470~5725	Pass
20	110	5670.001725	5470~5725	Pass
10	110	5669.992390	5470~5725	Pass
0	110	5669.992205	5470~5725	Pass
-10	110	5670.020759	5470~5725	Pass
-20	110	5669.992380	5470~5725	Pass

Operating Frequency: 5670 MHz				
Environment Temperature (°C)	Voltage (V)	Measured Frequency (MHz)	Limit Range	Test Result
20	99	5669.988448	5470~5725	Pass
	110	5669.986412	5470~5725	Pass
	121	5669.992379	5470~5725	Pass



8.12 DYNAMIC FREQUENCY SELECTION

LIMIT

According to §15.407 (h) and FCC 06-96 appendix “compliance measurement procedures for unlicensed-national information infrastructure devices operating in the 5250-5350 MHz and 5470-5725 MHz bands incorporating dynamic frequency selection”.

Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client(with radar detection)
Non-Occupancy Period	Yes	Yes	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
Uniform Spreading	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client(with radar detection)
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 3: Interference Threshold values, Master or Client incorporating In-Service

Maximum Transmit Power	Value (see note)
≥ 200 Milliwatt	-64 dBm
< 200 Milliwatt	-62 dBm

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.

Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.



Table 4: DFS Response requirement values

Parameter	Value
Non-occupancy period	30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds
Channel Closing Transmission Time	200 milliseconds + approx. 60 milliseconds over remaining 10 second period
<p>The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows:</p> <ul style="list-style-type: none"> ● For the Short pulse radar Test Signals this instant is the end of the Burst. ● For the Frequency Hopping radar Test Signal, this instant is the end of the last radar burst generated. ● For the Long Pulse radar Test Signal this instant is the end of the 12 second period defining the radar transmission. <p>The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate channel changes (an aggregate of approximately 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.</p>	

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (Microseconds)	PRI (Microseconds)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
1	1	1428	18	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

Table 6 – Long Pulse Radar Test Signal

Radar Waveform	Bursts	Pulses per Burst	Pulse Width (µsec)	Chirp Width (µsec)	PRI (µsec)	Minimum Percentage of Successful Detection	Minimum Trials
5	8-20	1-3	50-100	5-20	1000-2000	80%	30

Table 7 – Frequency Hopping Radar Test Signal

Radar Waveform	Pulse Width (µsec)	PRI (µsec)	Burst Length (ms)	Pulses Per Hop	Hopping Rate (kHz)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	300	9	0.33	70%	30



DESCRIPTION OF EUT

Overview Of EUT With Respect To §15.407 (H) Requirements

The firmware installed in the EUT during testing was:

Firmware Rev: 3.2.9

The EUT operates over the 5250-5350 MHz range as a Client Device that does not have radar detection capability.

The EUT uses two transmitters, each connected to a 50-ohm coaxial antenna port. Both antenna ports are connected to the test system via a power divider to perform conducted tests.

The EUT is a Slave Device without radar detection.

WLAN traffic is generated by streaming the video file TestFile.mp2 “6 ½ Magic Hours” from the Master to the Slave in full motion video mode using the media player with the V2.61 Codec package.

TPC is not required since the maximum EIRP is less than 500 mW (27 dBm).

The EUT utilizes the 802.11a architecture, with a nominal channel bandwidth of 20 MHz.

The Master Device is a Cisco Aironet 802.11a/b/g Access Point, FCC ID: LDK102056.

The rated output power of the Master unit is < 23dBm (EIRP). Therefore the required interference threshold level is -62 dBm. After correction for antenna gain and procedural adjustments, the required conducted threshold at the antenna port is $-62 + 3.5 = -58.5$ dBm.

The calibrated conducted DFS Detection Threshold level is set to -58.5 dBm. The tested level is lower than the required level hence it provides margin to the limit.

Manufacturer’s Statement Regarding Uniform Channel Spreading

The end product implements an automatic channel selection feature at startup such that operation commences on channels distributed across the entire set of allowed 5GHz channels. This feature will ensure uniform spreading is achieved while avoiding non-allowed channels due to prior radar events.



TEST AND MEASUREMENT SYSTEM

System Overview

The measurement system is based on a conducted test method.

The short pulse and long pulse signal generating system utilizes the NTIA software. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

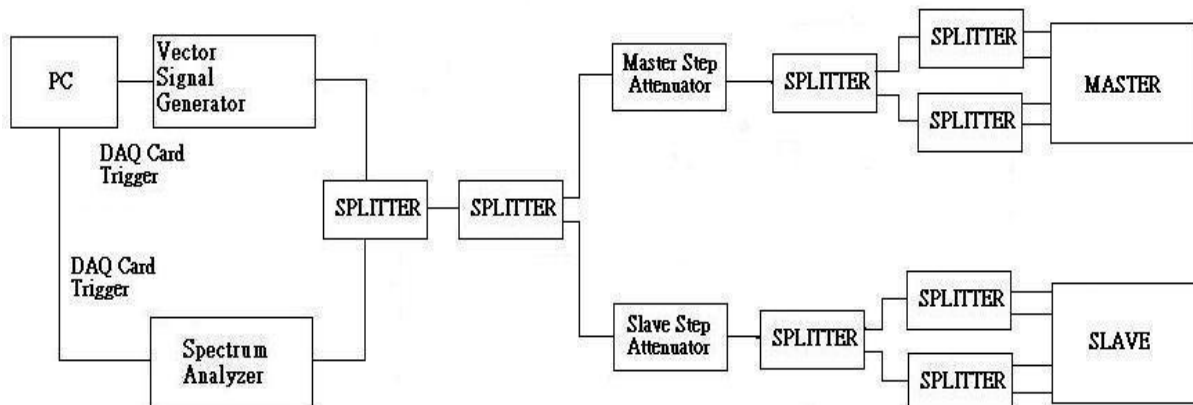
The short pulse types 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time.

The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of FCC 06-96 APPENDIX. The frequency of the signal generator is incremented in 1 MHz steps from FL to FH for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer set to display 8001 bins on the horizontal axis. The time-domain resolution is 2 msec / bin with a 16 second sweep time, meeting the 10 second short pulse reporting criteria. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold. The time-domain resolution is 3 msec / bin with a 24 second sweep time, meeting the 22 second long pulse reporting criteria and allowing a minimum of 10 seconds after the end of the long pulse waveform.

Should multiple RF ports be utilized for the Master and/or Slave devices (for example, for diversity or MIMO implementations), 50 ohm termination would be removed from the splitter so that connection can be established between splitter and the Master and/or Slave devices.

Conducted Method System Block Diagram





System Calibration

Connect the spectrum analyzer to the test system in place of the master device. Set the signal generator to CW mode. Adjust the amplitude of the signal generator to yield a measured level of -62 dBm on the spectrum analyzer.

Without changing any of the instrument settings, reconnect the spectrum analyzer to the Common port of the Spectrum Analyzer Combiner/Divider and connect a 50 ohm load to the Master Device port of the test system.

Measure the amplitude and calculate the difference from -62 dBm. Adjust the Reference Level Offset of the spectrum analyzer to this difference. Confirm that the signal is displayed at -62 dBm. Readjust the RBW and VBW to 3 MHz, set the span to 10 MHz, and confirm that the signal is still displayed at -62 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of -62 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

Set the signal generator to produce a radar waveform, trigger a burst manually and measure the level on the spectrum analyzer. Readjust the amplitude of the signal generator as required so that the peak level of the waveform is at a displayed level equal to the required or desired interference detection threshold. Separate signal generator amplitude settings are determined as required for each radar type.

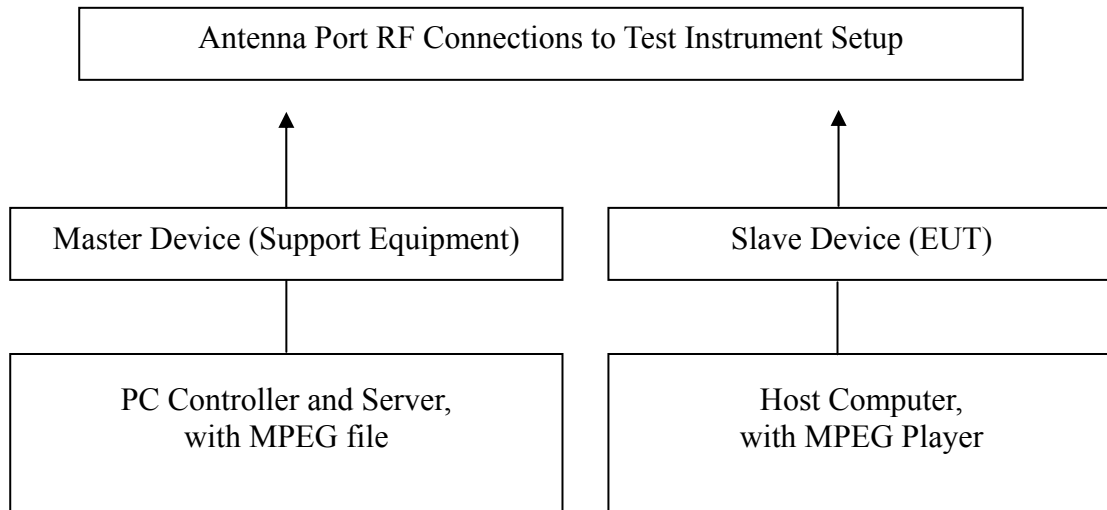
Adjustment Of Displayed Traffic Level

Establish a link between the Master and Slave, adjusting the Link Step Attenuator as needed to provide a suitable received level at the Master and Slave devices. Stream the video test file to generate WLAN traffic. Confirm that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold. Confirm that the displayed traffic is from the Master Device. For Master Device testing confirm that the displayed traffic does not include Slave Device traffic. For Slave Device testing confirm that the displayed traffic does not include Master Device traffic.

If a different setting of the Master Step Attenuator is required to meet the above conditions, perform a new System Calibration for the new Master Step Attenuator setting.



Test Setup



TEST RESULTS

No non-compliance noted



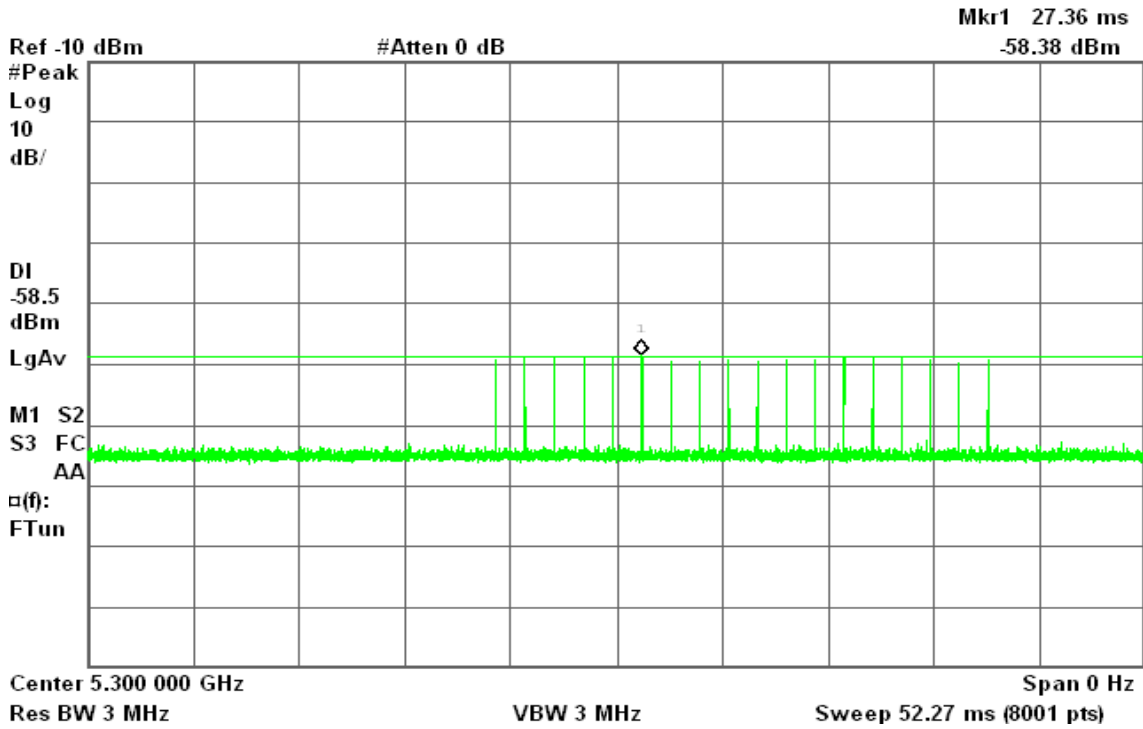
Test Plot

PLOTS OF RADAR WAVEFORMS

Sample of Short Pulse Radar Type 1

Agilent 20:42:38 Jan 17, 2012

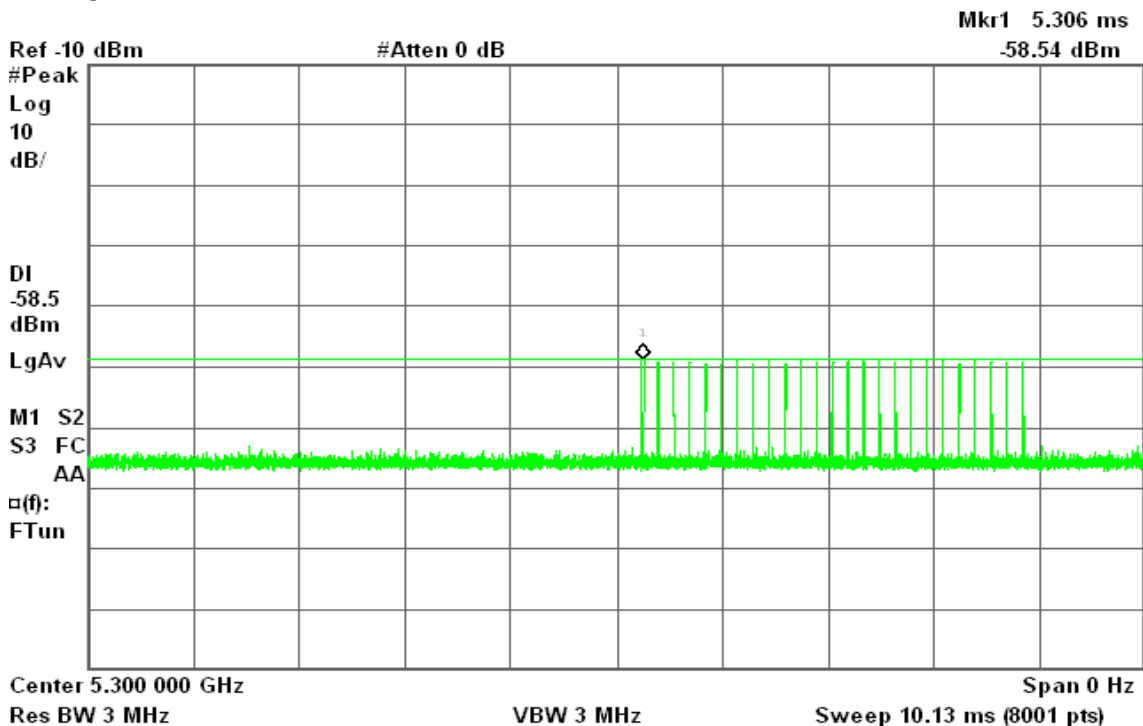
R T



Sample of Short Pulse Radar Type 2

Agilent 20:45:52 Jan 17, 2012

R T

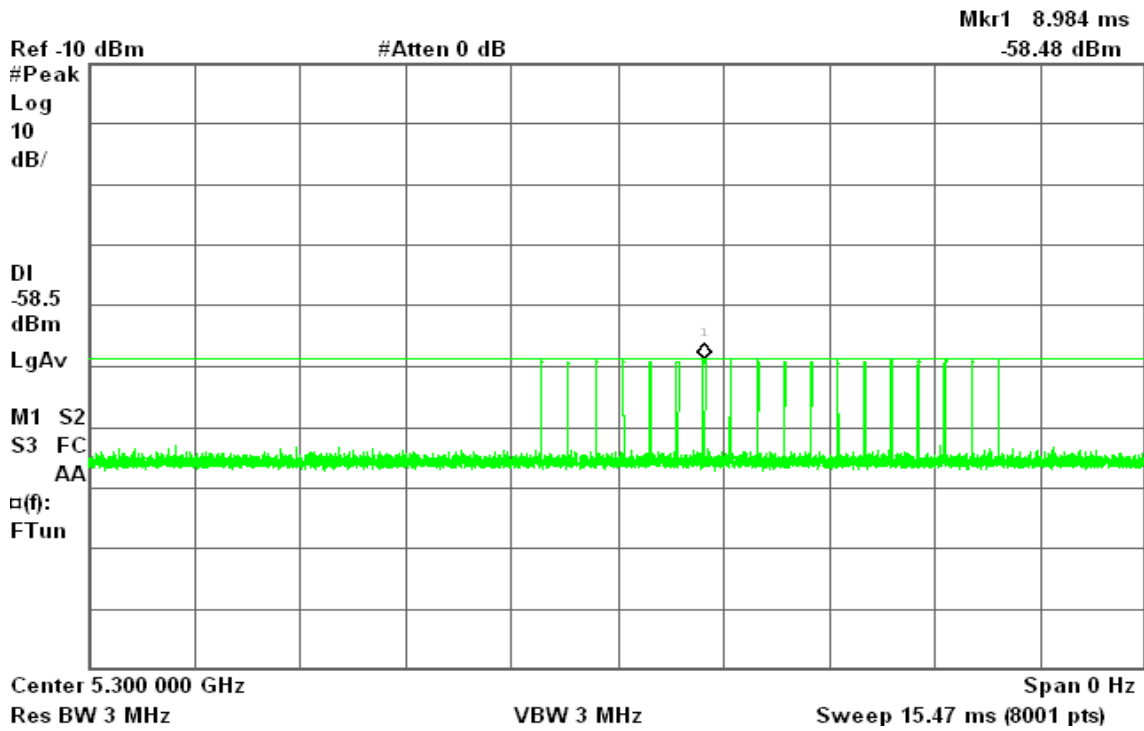




Sample of Short Pulse Radar Type 3

Agilent 20:53:26 Jan 17, 2012

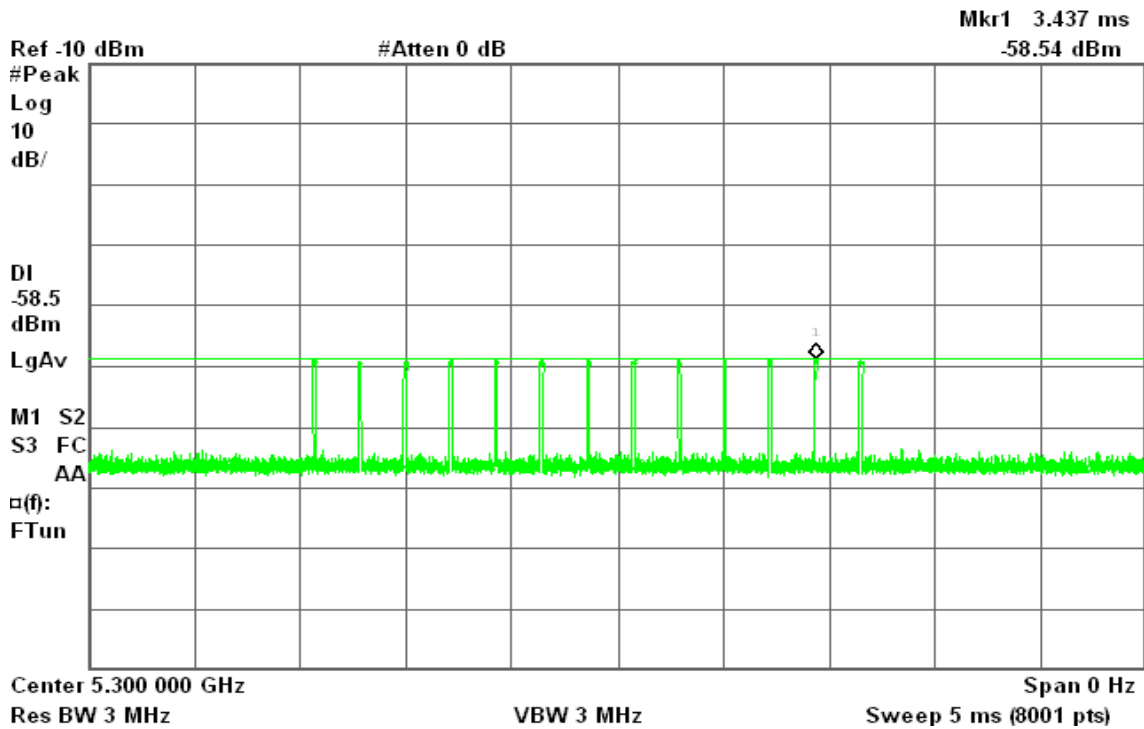
R T



Sample of Short Pulse Radar Type 4

Agilent 20:55:26 Jan 17, 2012

R T

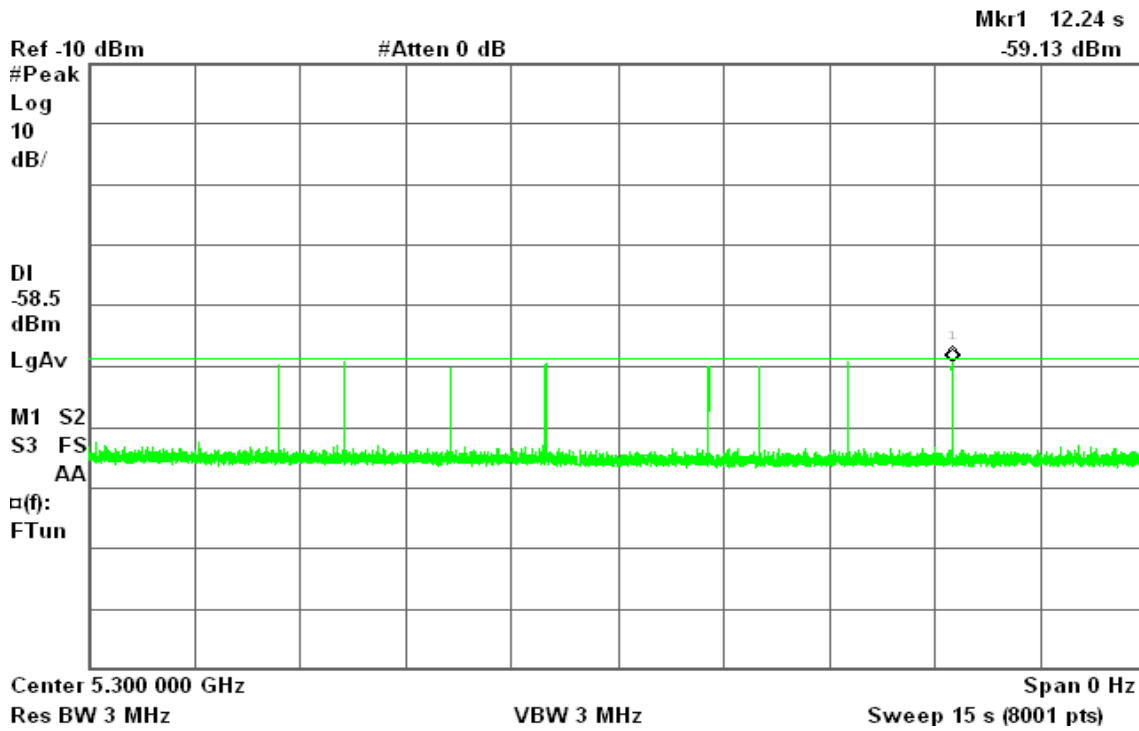




Sample of Long Pulse Radar Type 5

Agilent 21:01:16 Jan 17, 2012

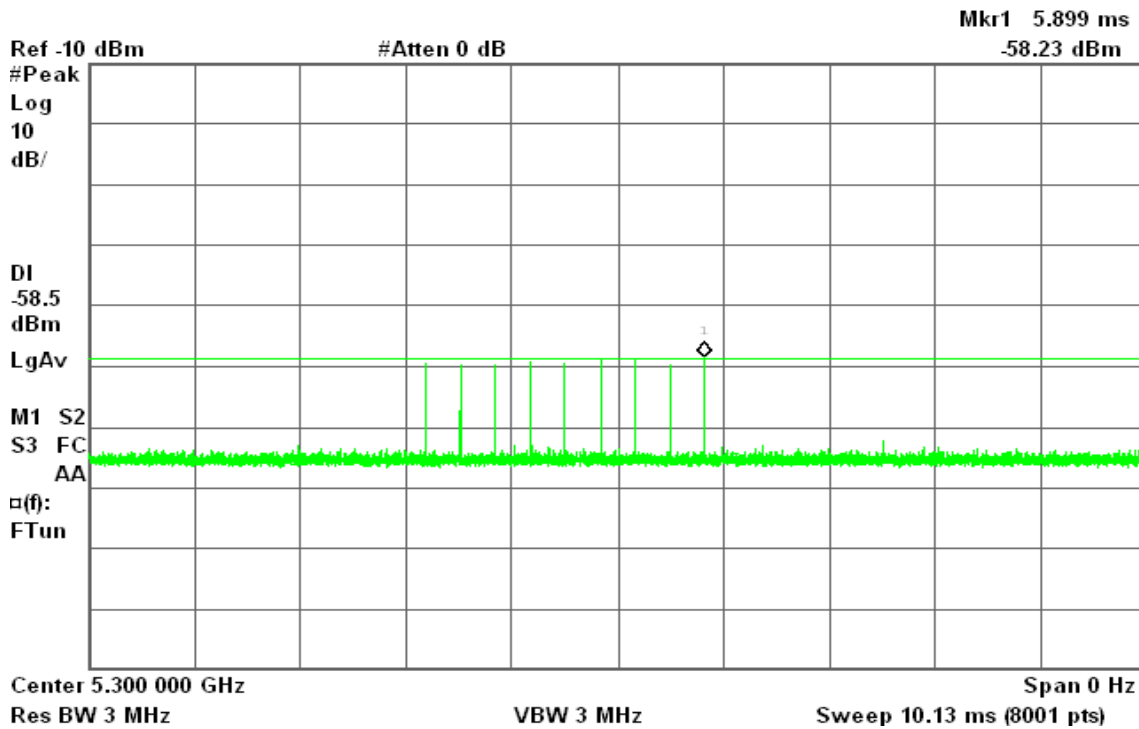
L



Sample of Frequency Hopping Radar Type 6

Agilent 21:15:51 Jan 17, 2012

T



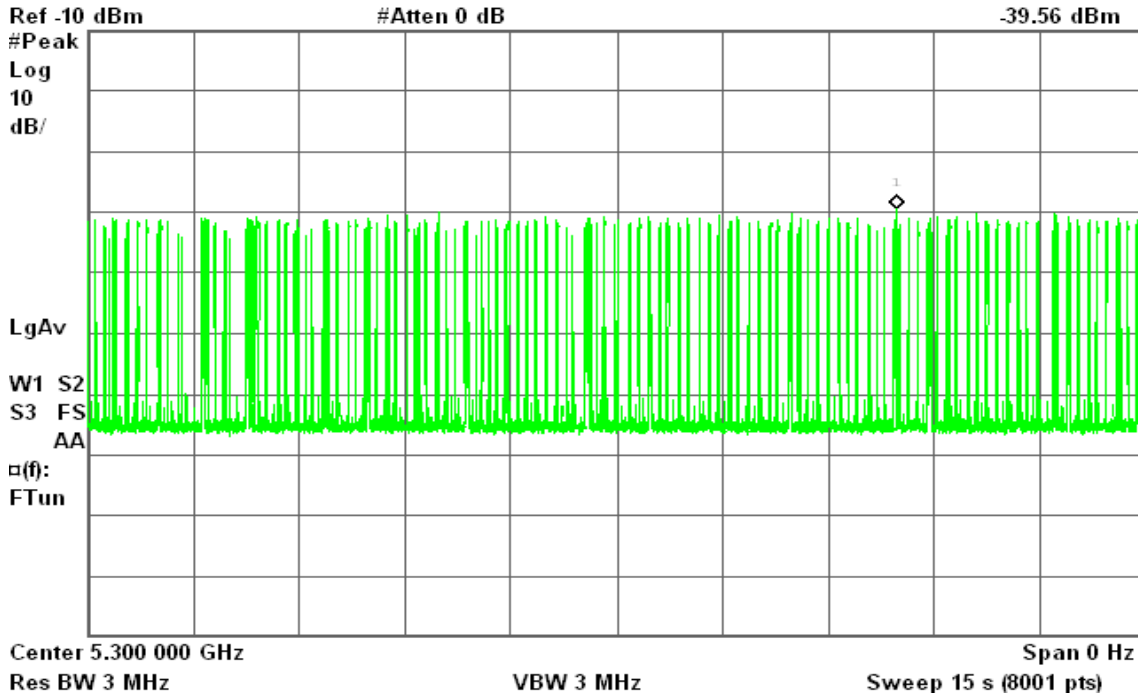


Plot of WLAN Traffic from Slave

Agilent 15:20:43 Jan 18, 2012

R T

Mkr1 11.47 s
-39.56 dBm





TEST CHANNEL AND METHOD

All tests were performed at a channel center frequency of 5300 MHz utilizing a conducted test method.

CHANNEL MOVE TIME AND CHANNEL CLOSING TRANSMISSION TIME

GENERAL REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =

(Number of analyzer bins showing transmission) * (dwell time per bin)

The observation period over which the aggregate time is calculated

Begins at (Reference Marker + 200 msec) and

Ends no earlier than (Reference Marker + 10 sec).



LOW BAND RESULTS

IEEE 802.11n HT 20 MHz Channel mode

Type 1 Channel Move Time Results

No non-compliance noted.

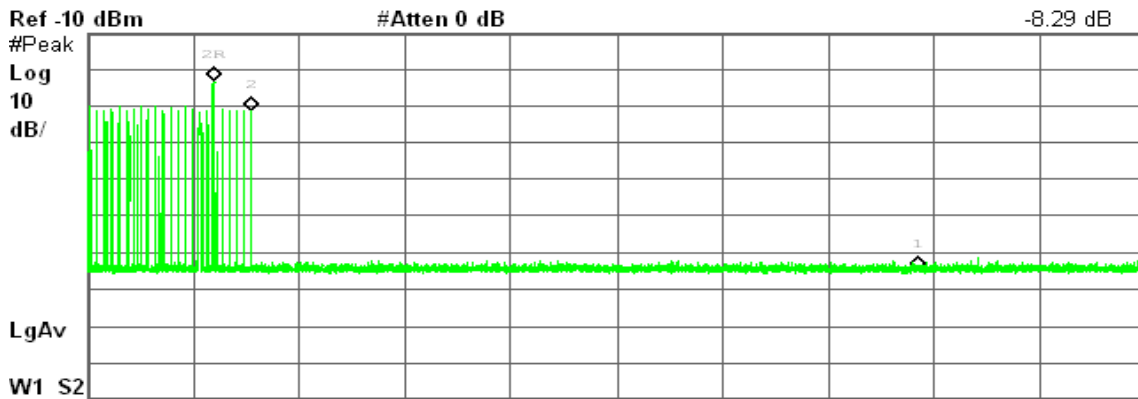
Channel Move Time (s)	Limit (s)
1.785	10

Agilent 09:12:11 Jan 18, 2012

R T

Δ Mkr2 540 ms

-8.29 dB



Center 5.300 000 GHz

Span 0 Hz

Res BW 3 MHz

VBW 3 MHz

Sweep 15 s (8001 pts)

Marker	Trace	Type	X Axis	Amplitude
1R	(1)	Time	1.785 s	-23.13 dBm
1Δ	(1)	Time	10 s	-51.65 dB
2R	(1)	Time	1.785 s	-23.13 dBm
2Δ	(1)	Time	540 ms	-8.29 dB



IEEE 802.11n HT 40 MHz mode

Type 1 Channel Move Time Results

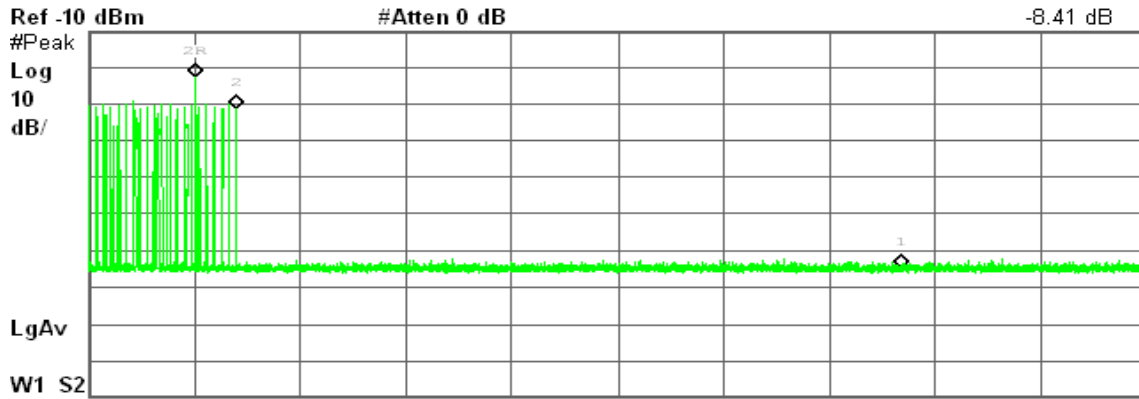
No non-compliance noted.

Channel Move Time (s)	Limit (s)
1.522	10

Agilent 05:39:47 Jan 18, 2012

R T

Δ Mkr2 568.1 ms
-8.41 dB



Center 5.300 000 GHz Span 0 Hz
Res BW 3 MHz VBW 3 MHz Sweep 15 s (8001 pts)

Marker	Trace	Type	X Axis	Amplitude
1R	(1)	Time	1.522 s	-22.72 dBm
1Δ	(1)	Time	10 s	-52.36 dB
2R	(1)	Time	1.522 s	-22.72 dBm
2Δ	(1)	Time	568.1 ms	-8.41 dB



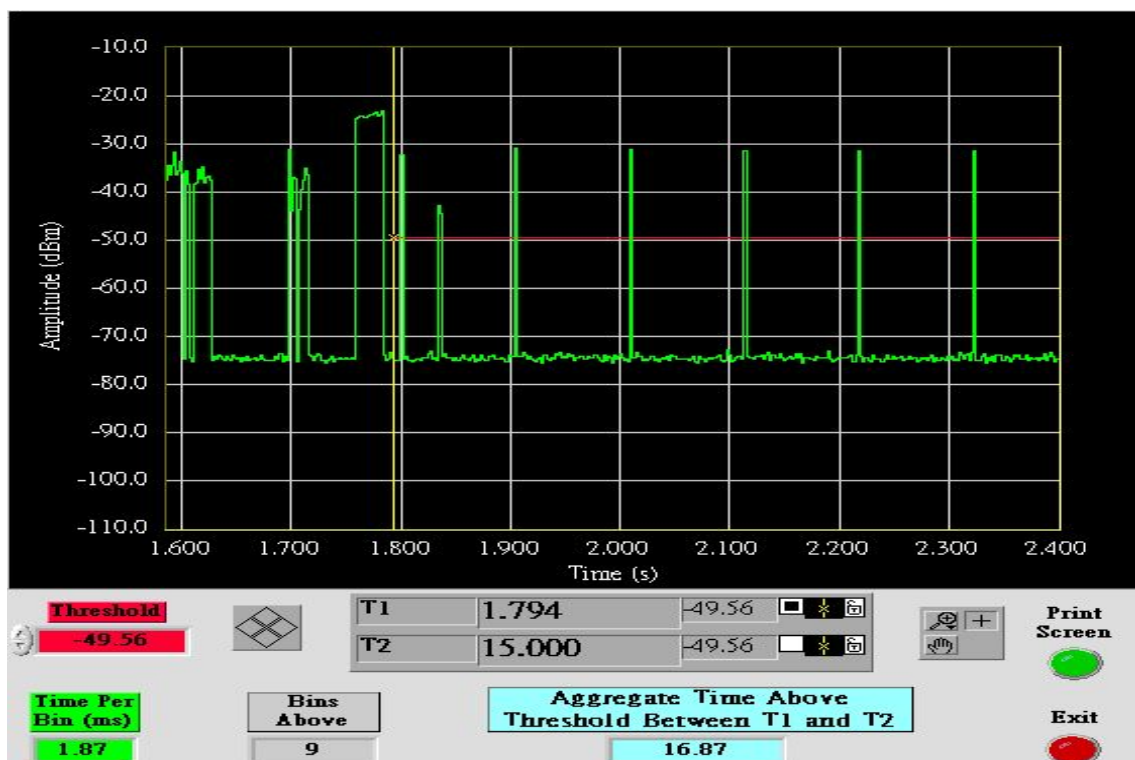
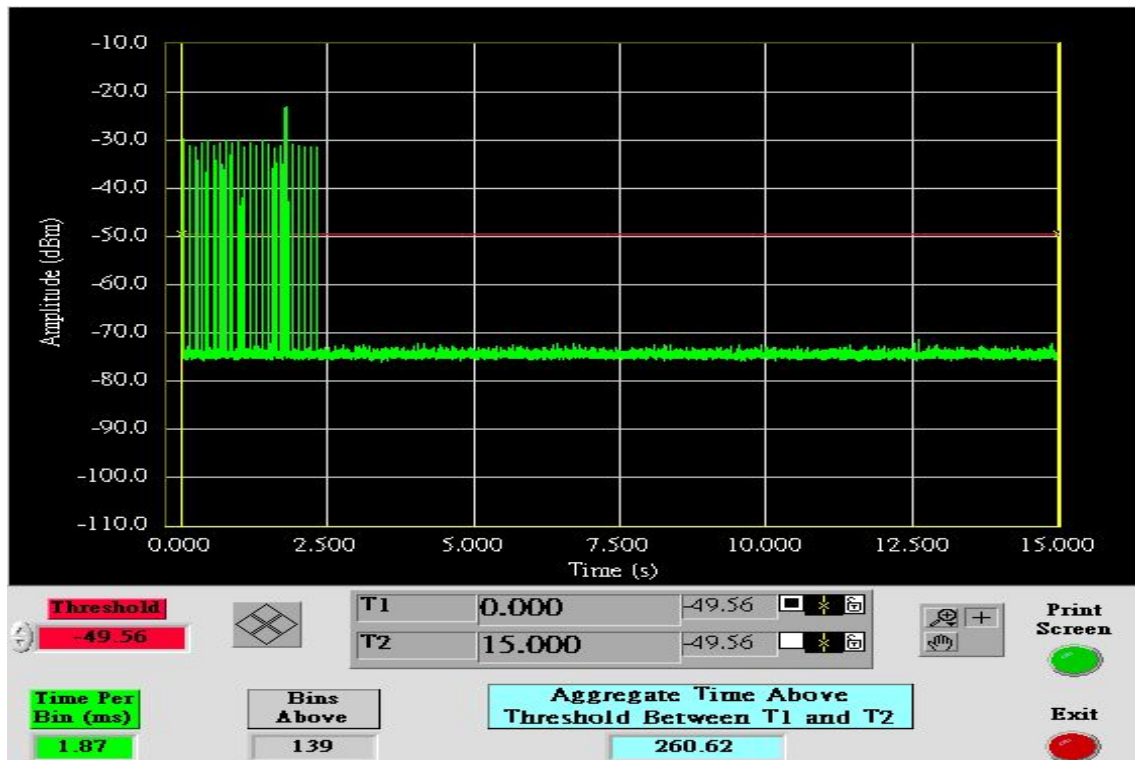
IEEE 802.11n HT 20 MHz Channel mode

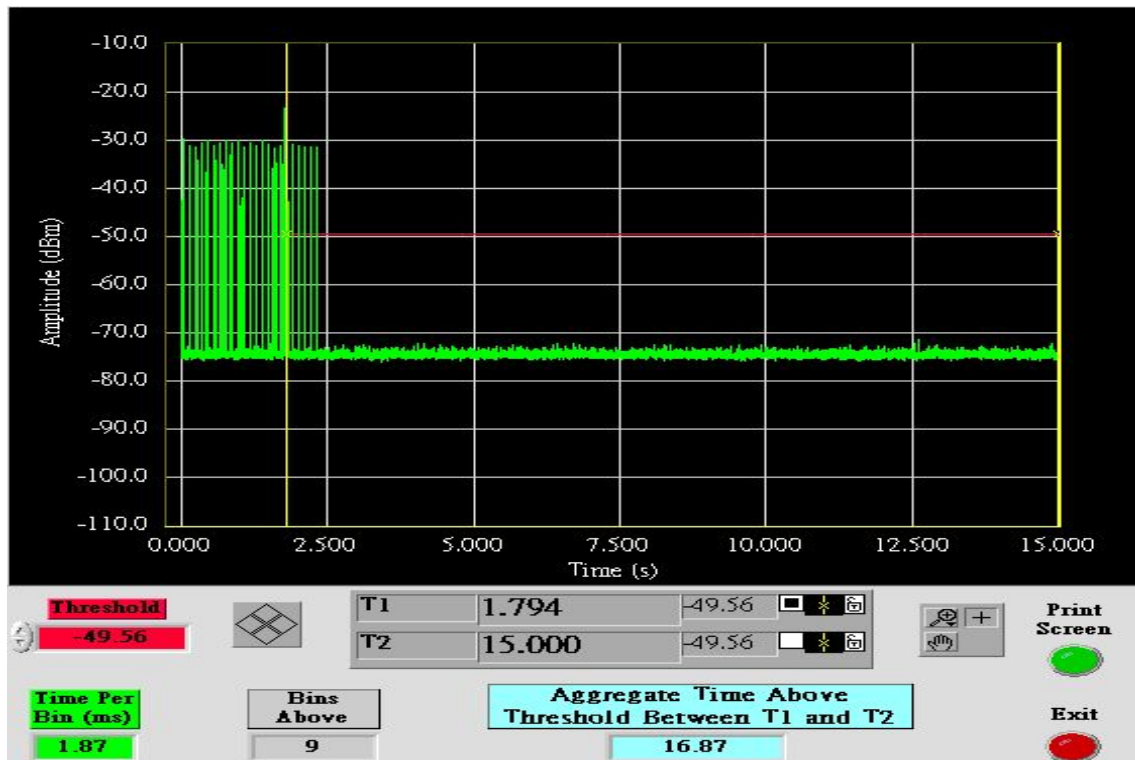
Type 1 Channel Closing Transmission Time Results

No non-compliance noted.

For R1

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
16.87	60	-43.13

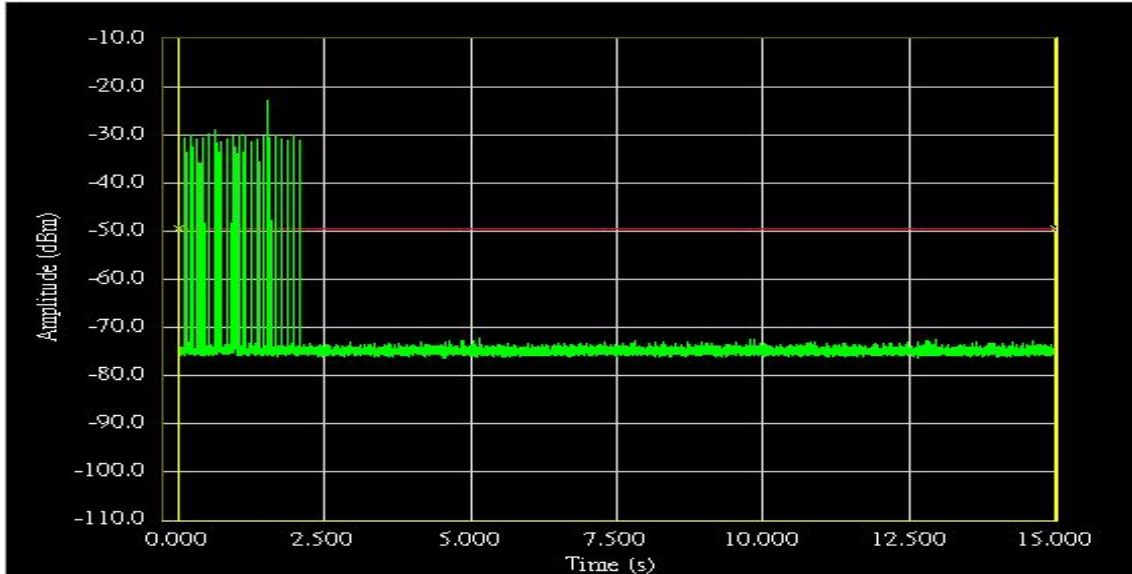






For R5

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
20.62	60	-39.38



Threshold: -49.53

T1: 0.000 -49.53

T2: 15.000 -49.53

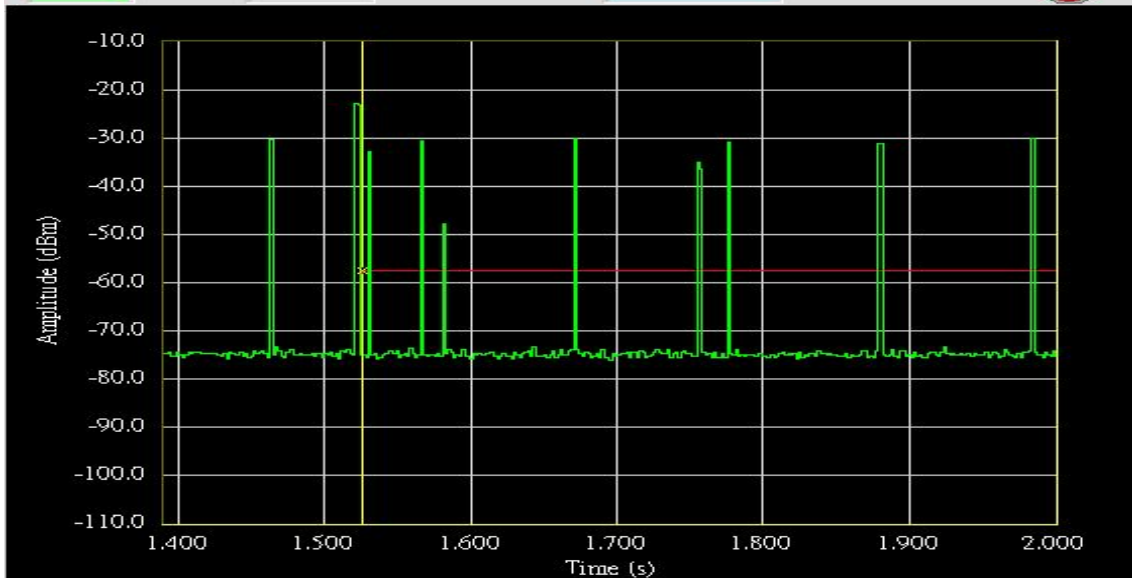
Time Per Bin (ms): 1.87

Bins Above: 132

Aggregate Time Above Threshold Between T1 and T2: 247.50

Print Screen

Exit



Threshold: -57.53

T1: 1.526 -57.53

T2: 15.000 -57.53

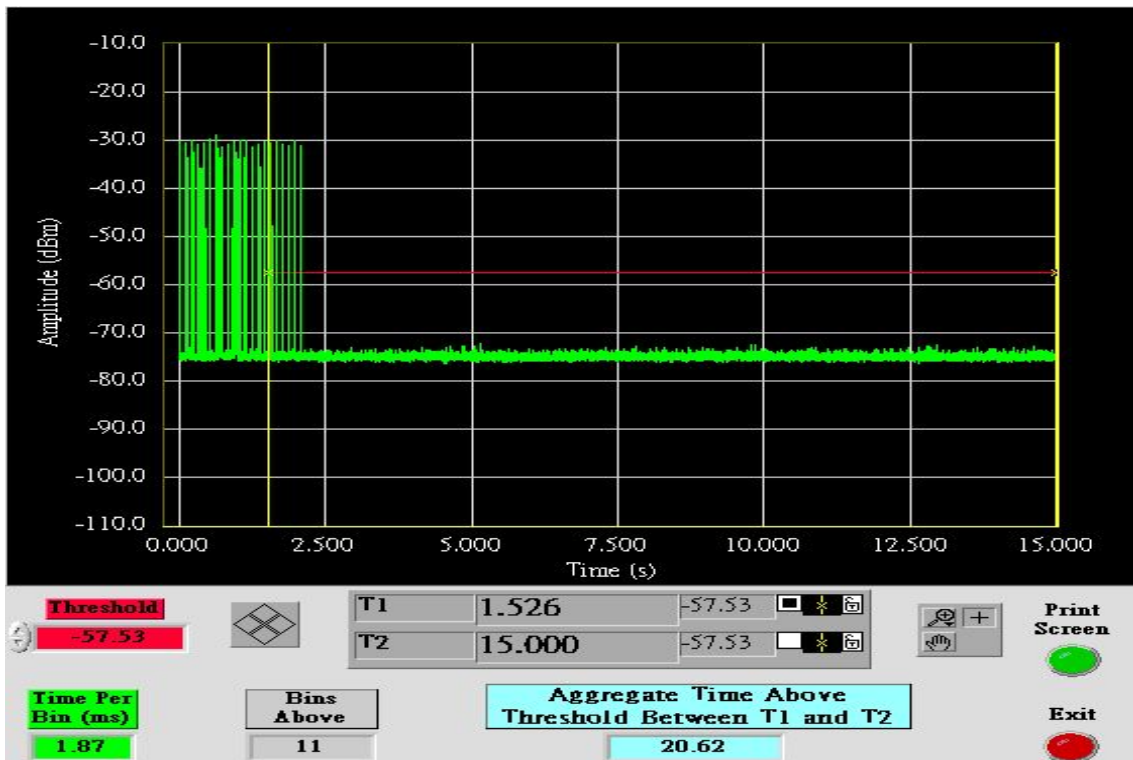
Time Per Bin (ms): 1.87

Bins Above: 11

Aggregate Time Above Threshold Between T1 and T2: 20.62

Print Screen

Exit





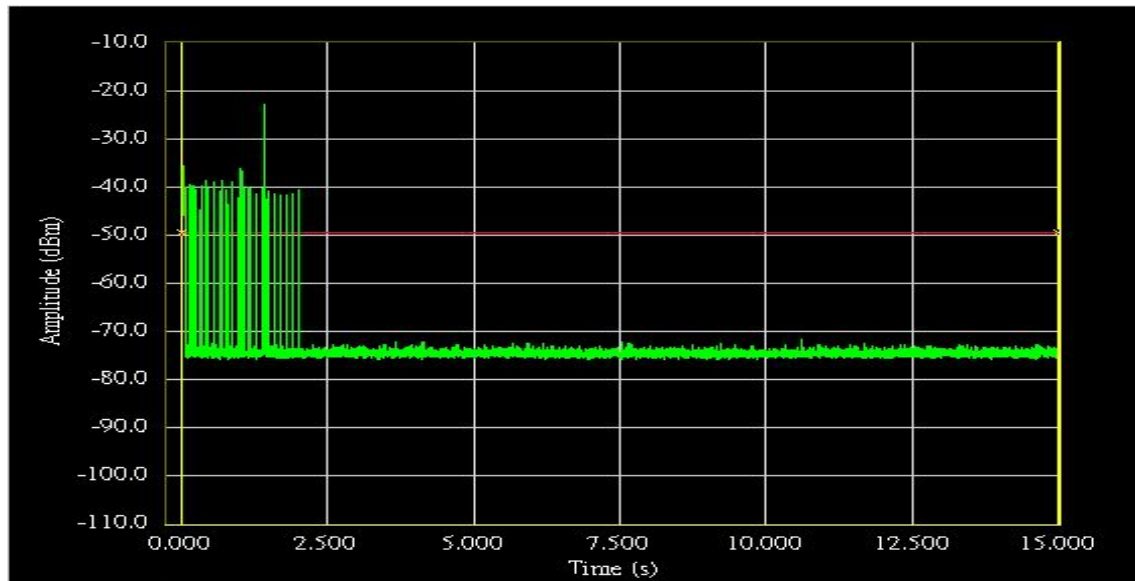
IEEE 802.11n HT 40 MHz mode

Type 1 Channel Closing Transmission Time Results

No non-compliance noted.

For R1

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
13.12	60	-46.88



Threshold: -49.35

T1: 0.000 -49.35

T2: 15.000 -49.35

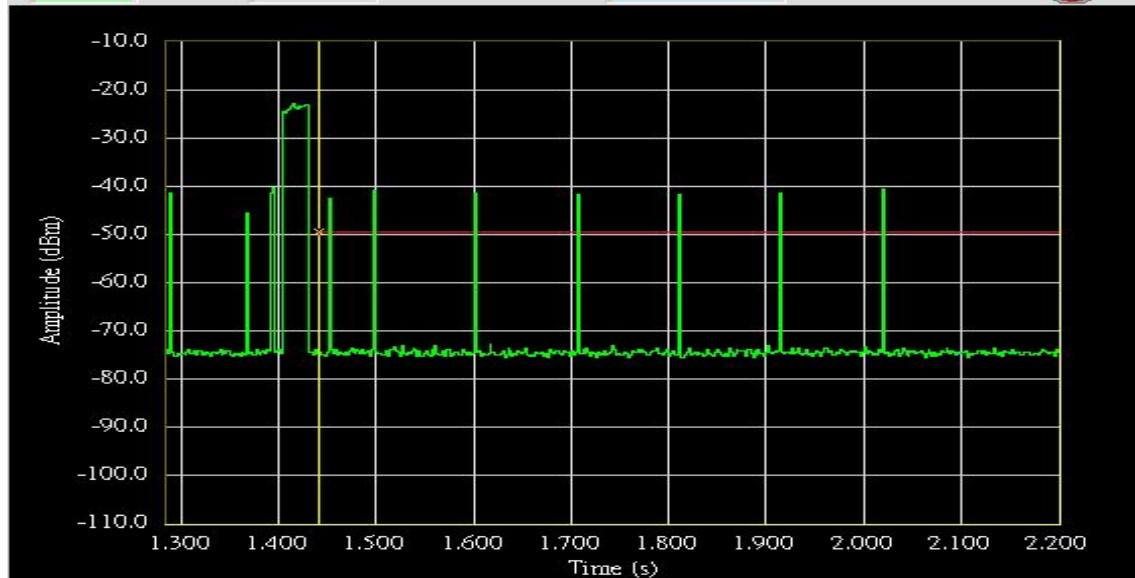
Time Per Bin (ms): 1.87

Bins Above: 160

Aggregate Time Above Threshold Between T1 and T2: 300.00

Print Screen

Exit



Threshold: -49.35

T1: 1.440 -49.35

T2: 15.000 -49.35

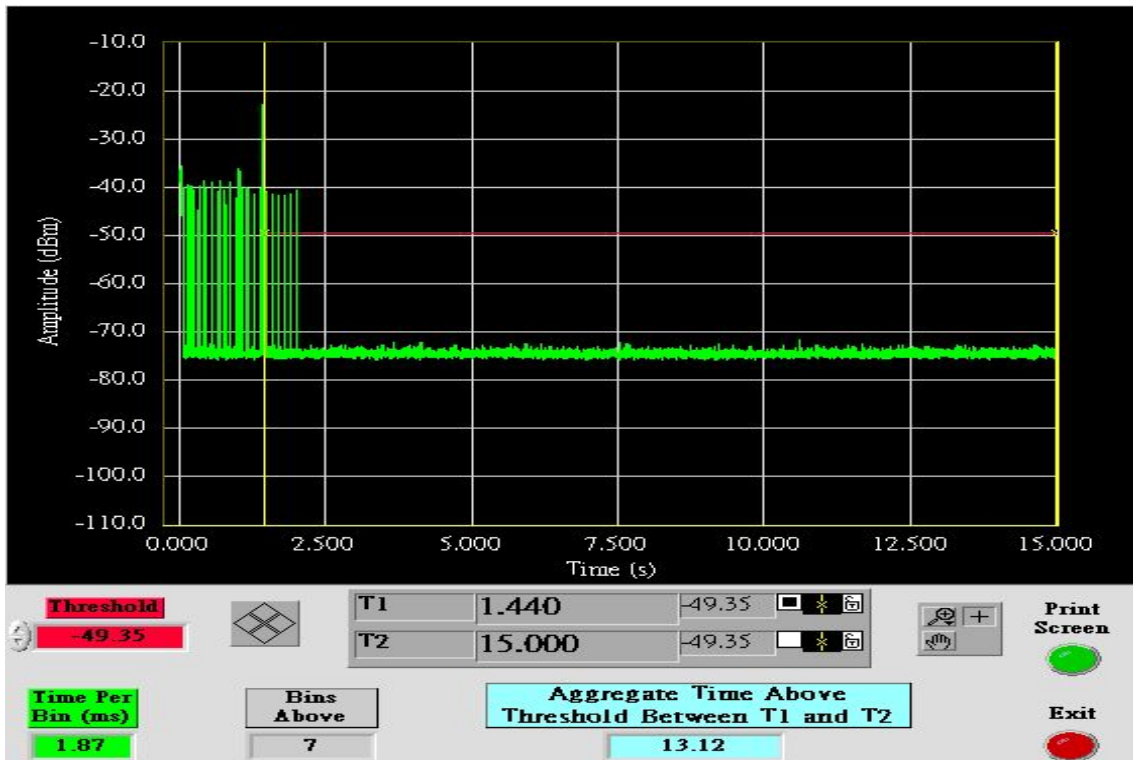
Time Per Bin (ms): 1.87

Bins Above: 7

Aggregate Time Above Threshold Between T1 and T2: 13.12

Print Screen

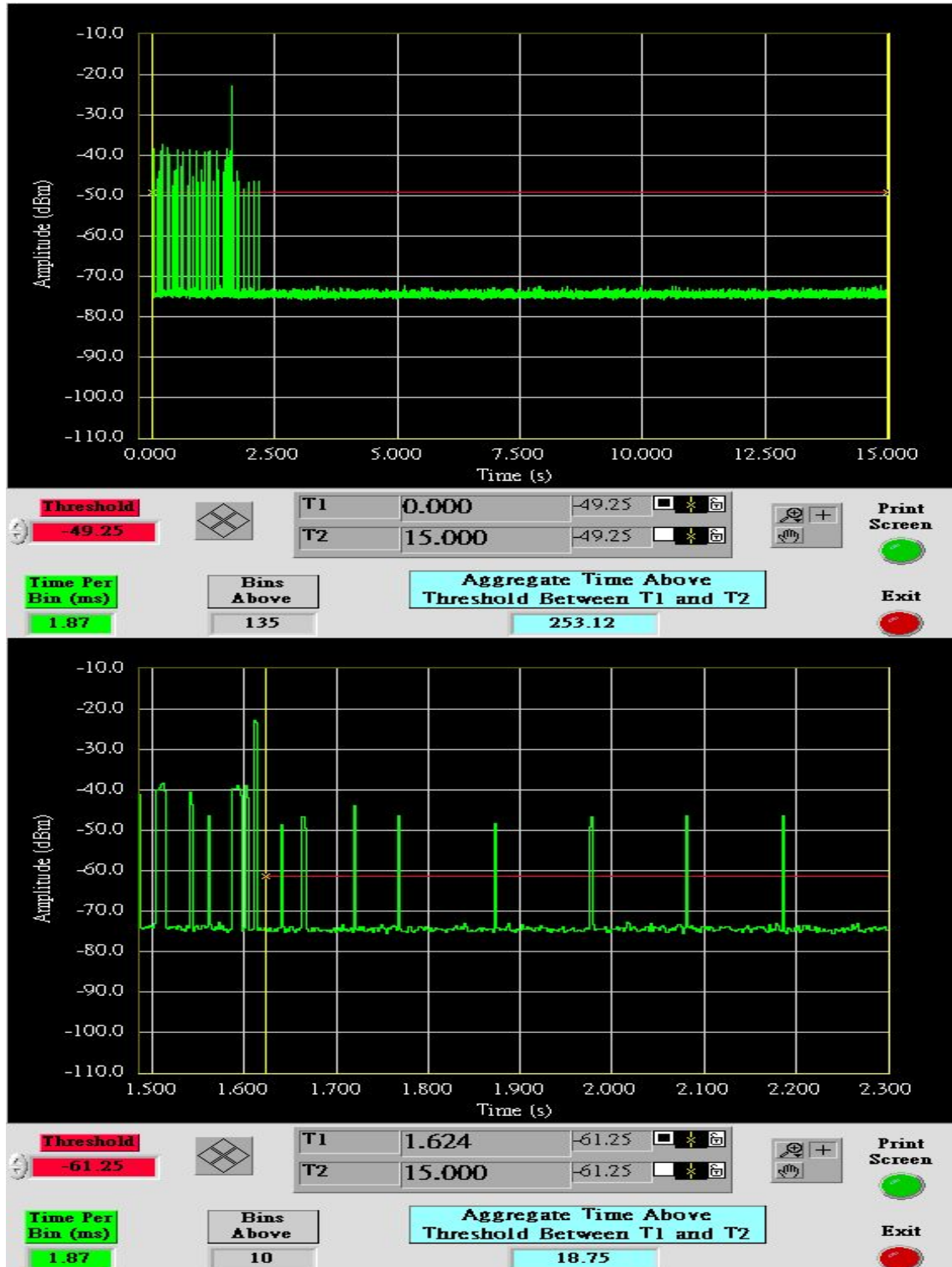
Exit

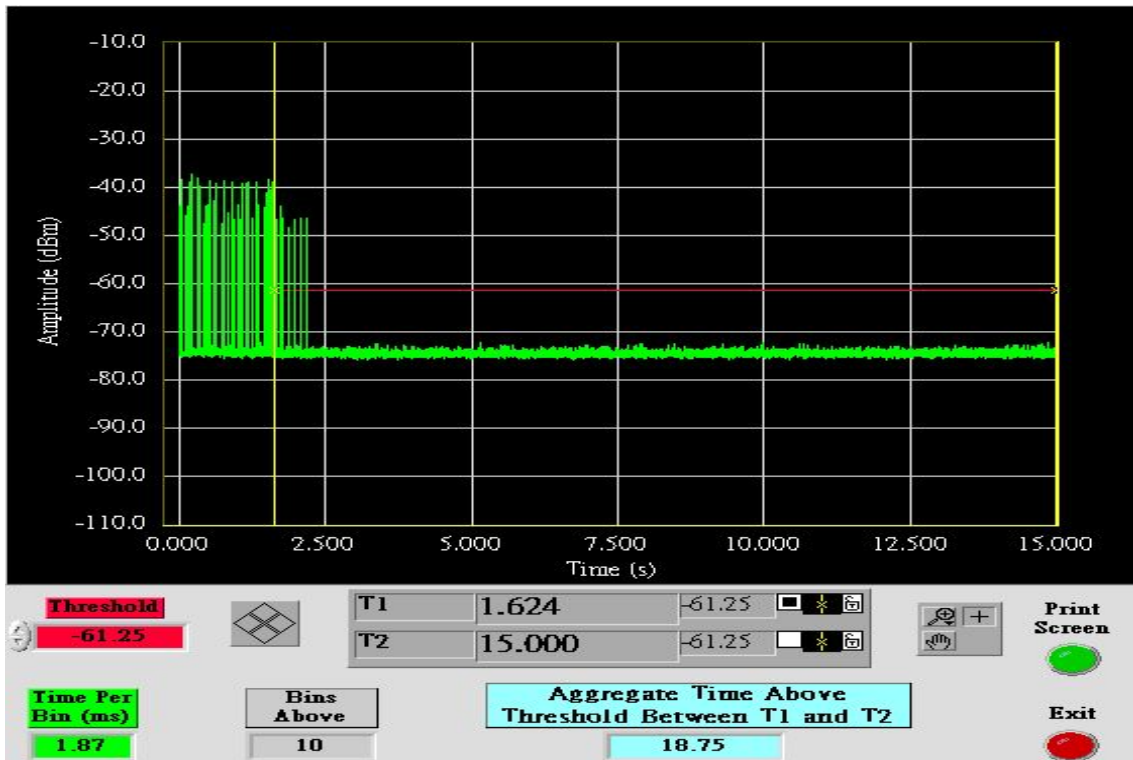




For R5

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
18.75	60	-41.25







HIGH BAND RESULTS

IEEE 802.11n HT 20 MHz Channel mode

Type 1 Channel Move Time Results

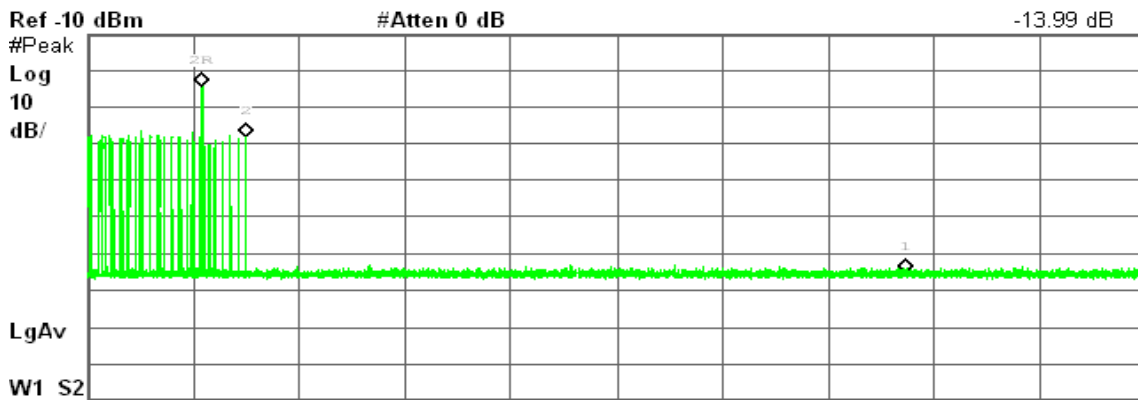
No non-compliance noted.

Channel Move Time (s)	Limit (s)
1.603	10

Agilent 10:07:26 Jan 18, 2012

R T

Δ Mkr2 633.8 ms
-13.99 dB



Center 5.500 000 GHz Span 0 Hz
 Res BW 3 MHz VBW 3 MHz Sweep 15 s (8001 pts)

Marker	Trace	Type	X Axis	Amplitude
1R	(1)	Time	1.603 s	-24.17 dBm
1Δ	(1)	Time	10 s	-50.99 dB
2R	(1)	Time	1.603 s	-24.17 dBm
2Δ	(1)	Time	633.8 ms	-13.99 dB



IEEE 802.11n HT 40 MHz mode

Type 1 Channel Move Time Results

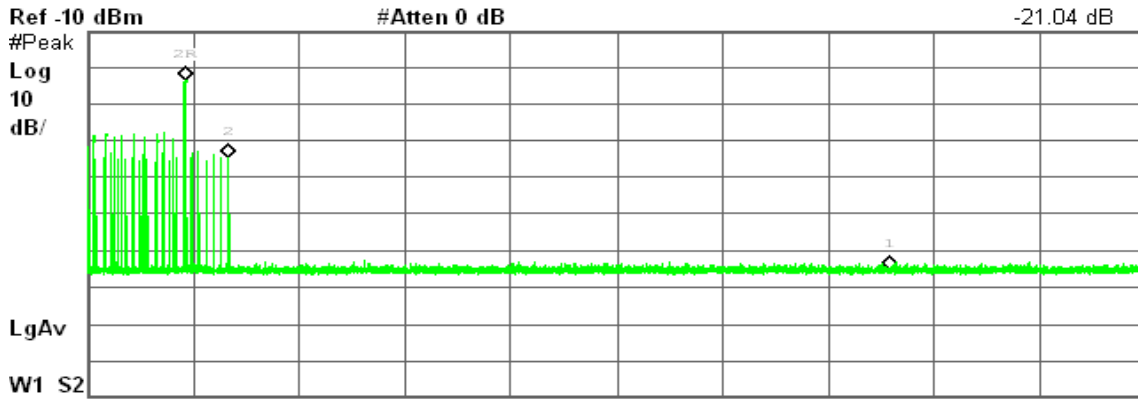
No non-compliance noted.

Channel Move Time (s)	Limit (s)
1.382	10

Agilent 12:03:55 Jan 18, 2012

R T

Δ Mkr2 611.3 ms
-21.04 dB



Center 5.510 000 GHz Span 0 Hz
 Res BW 3 MHz VBW 3 MHz Sweep 15 s (8001 pts)

Marker	Trace	Type	X Axis	Amplitude
1R	(1)	Time	1.382 s	-23.46 dBm
1Δ	(1)	Time	10 s	-51.70 dB
2R	(1)	Time	1.382 s	-23.46 dBm
2Δ	(1)	Time	611.3 ms	-21.04 dB



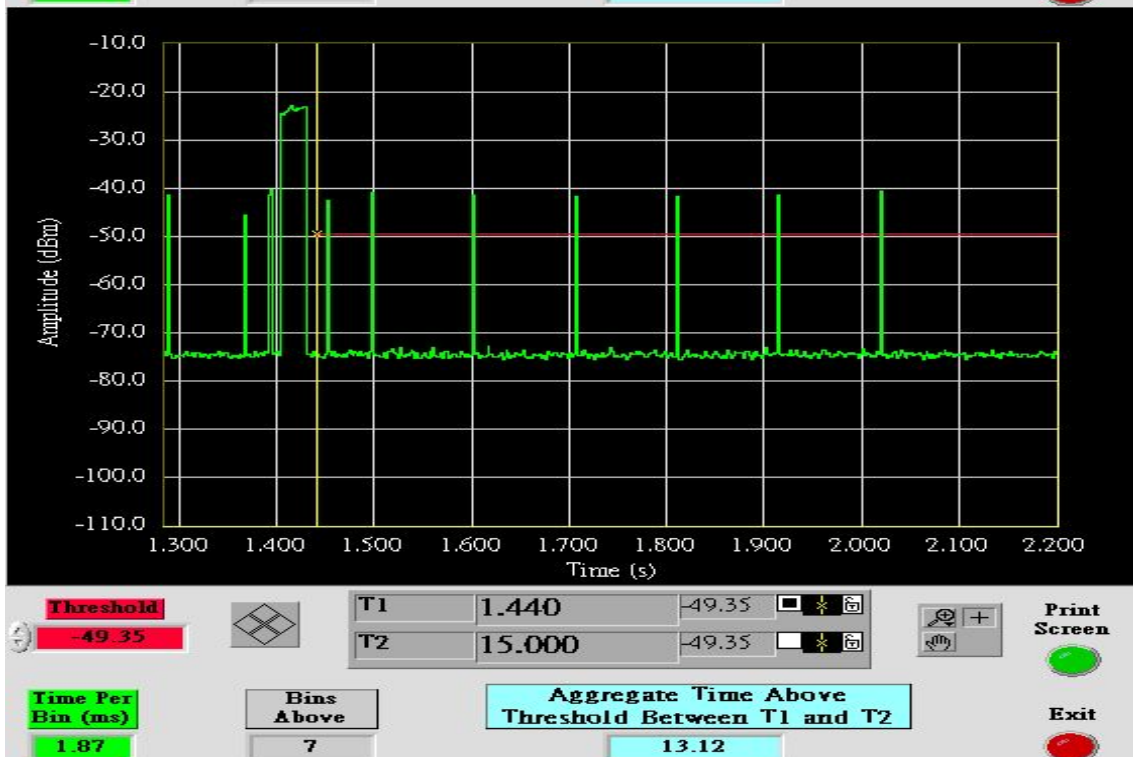
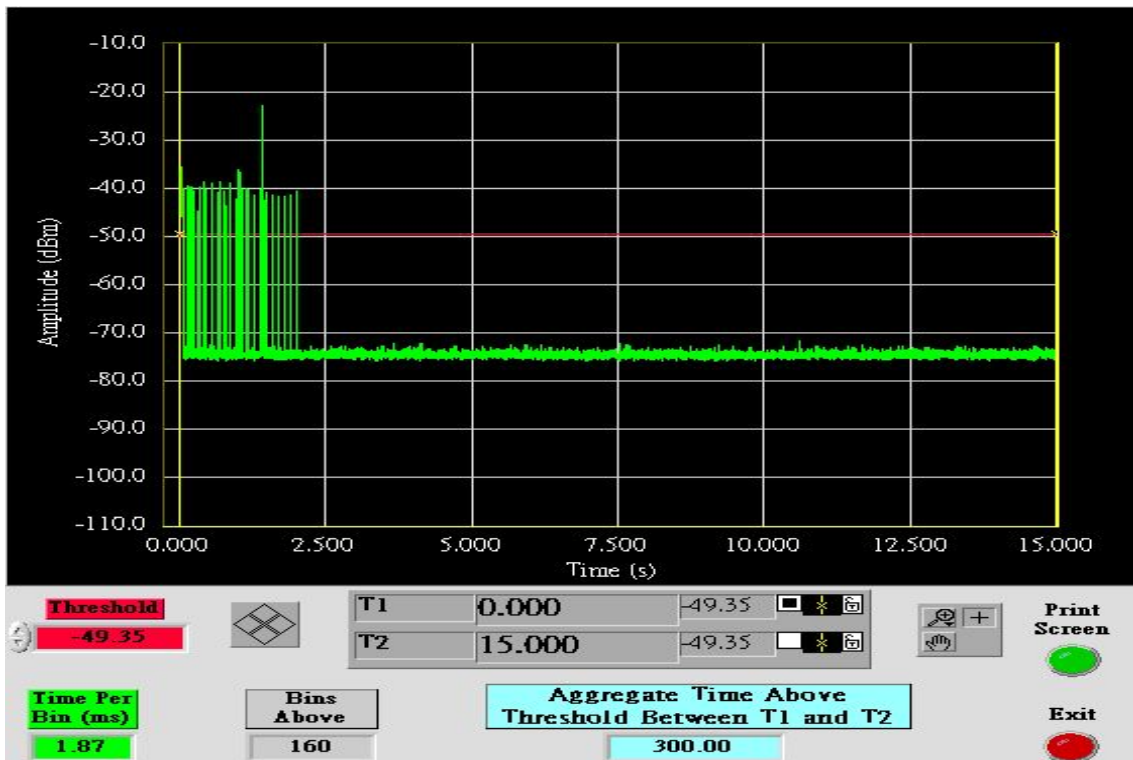
IEEE 802.11n HT 20 MHz Channel mode

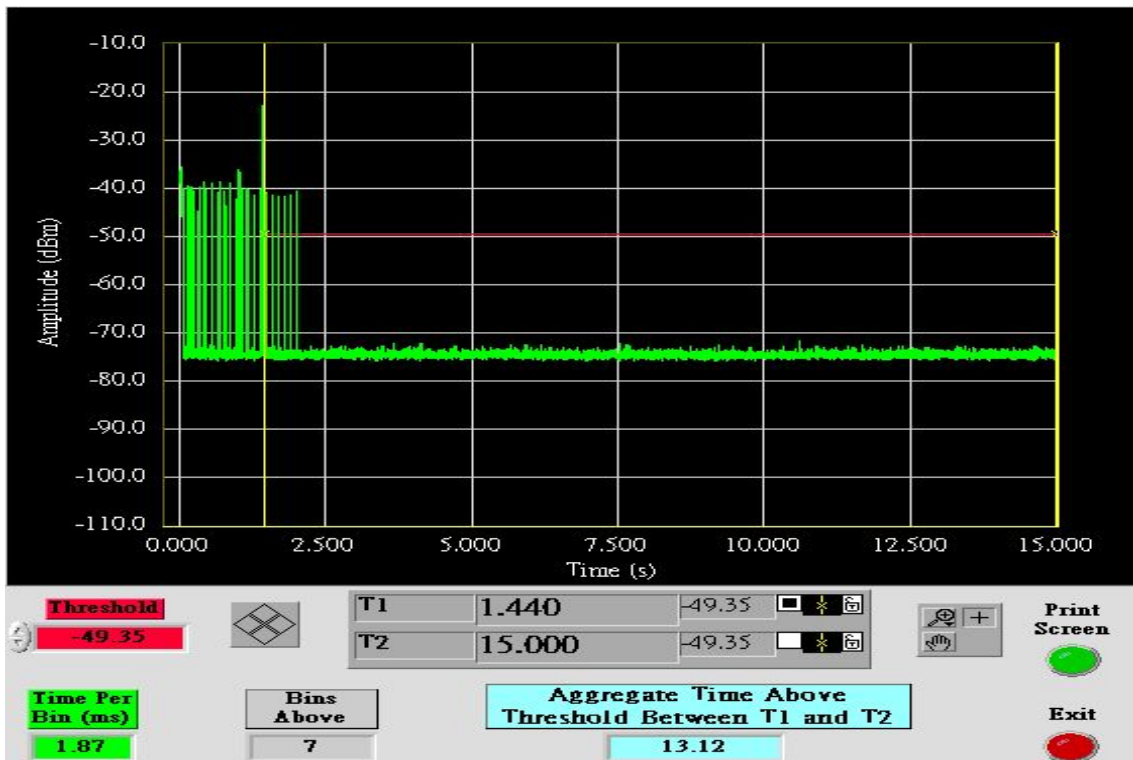
Type 1 Channel Closing Transmission Time Results

No non-compliance noted.

For R1

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
13.12	60	-46.88

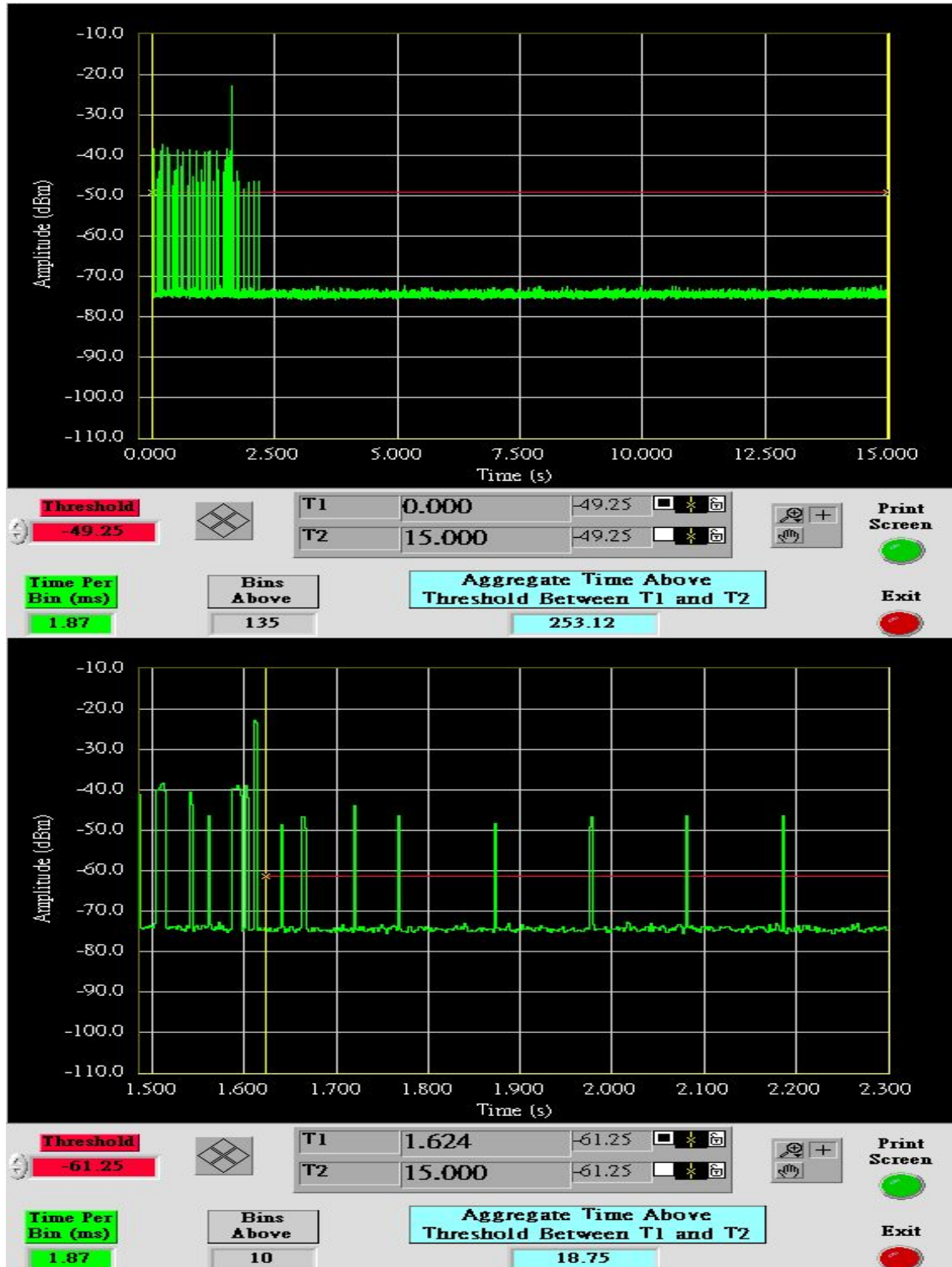


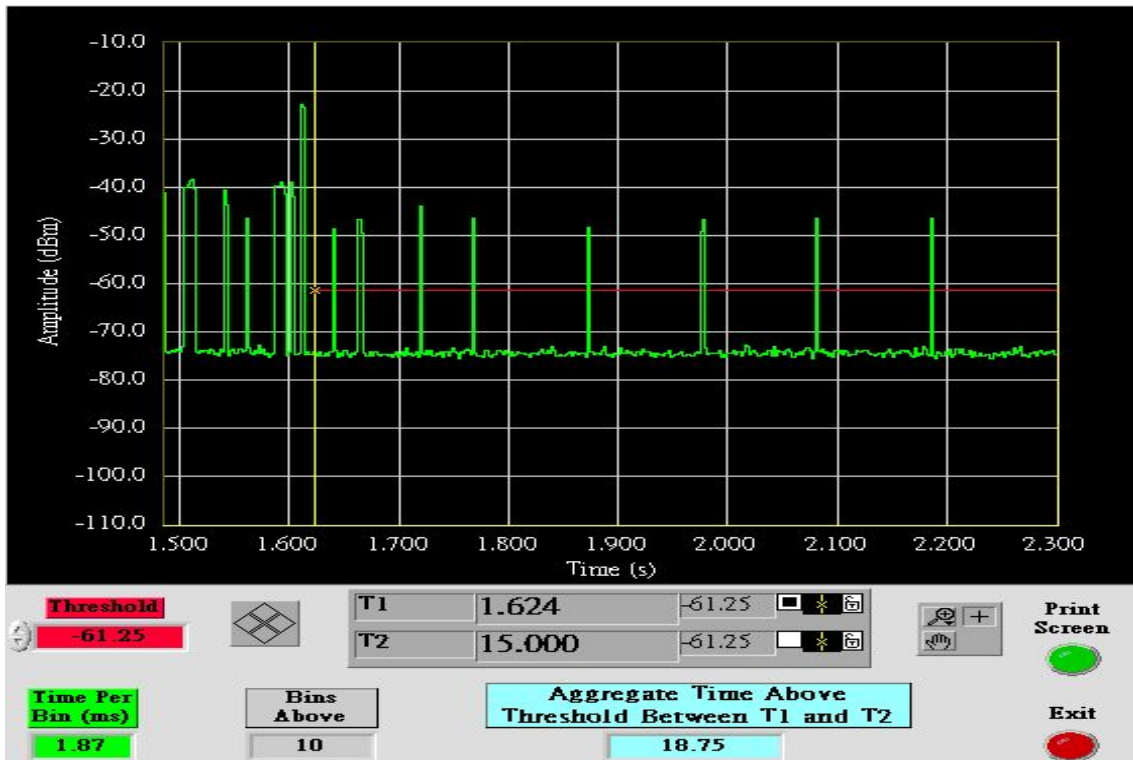




For R5

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
18.75	60	-41.25







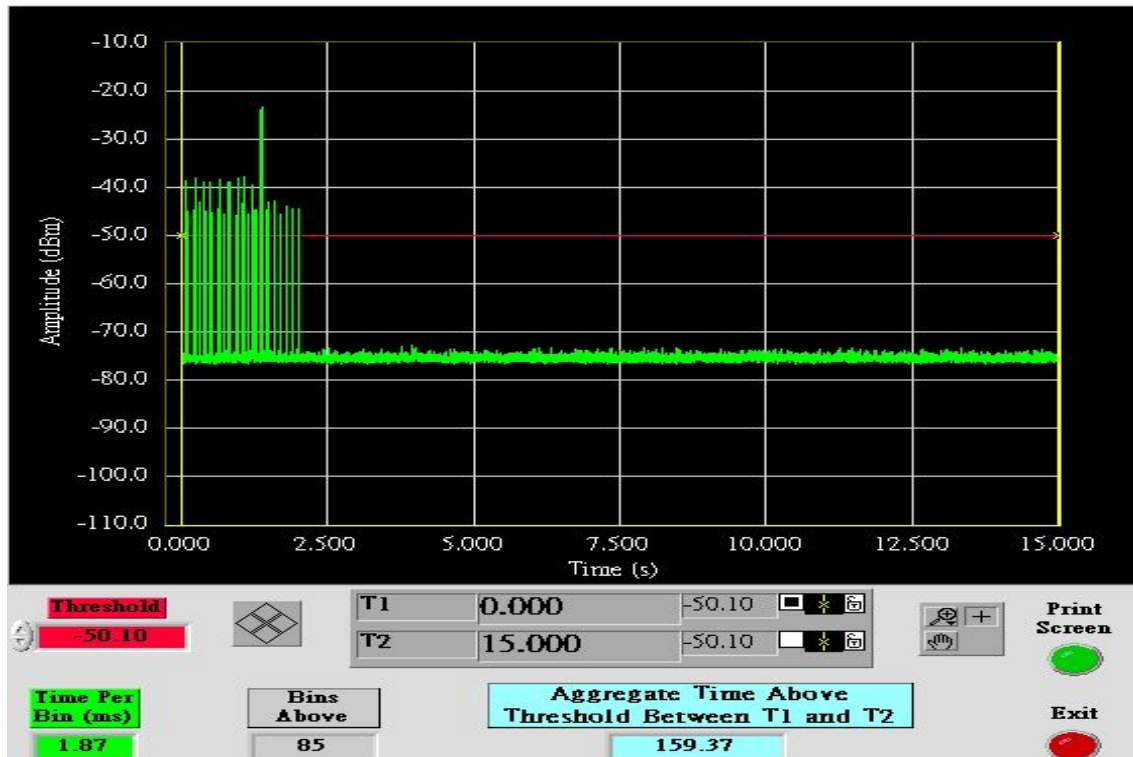
IEEE 802.11n HT 40 MHz mode

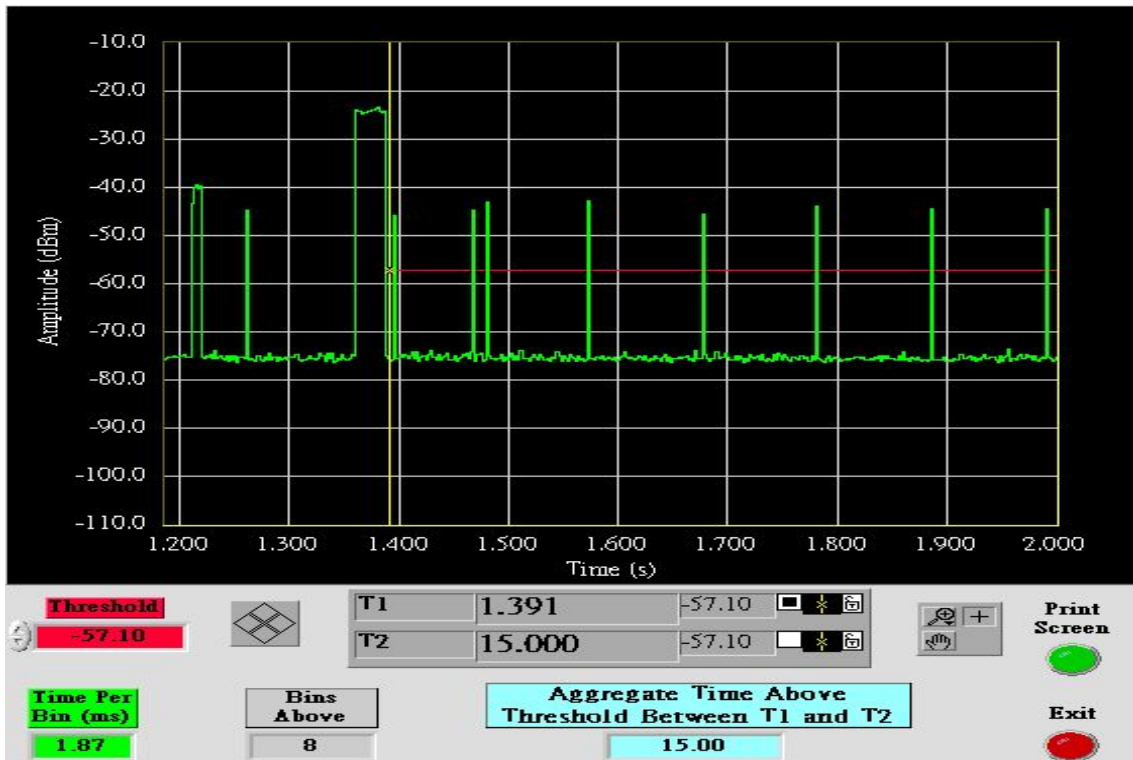
Type 1 Channel Closing Transmission Time Results

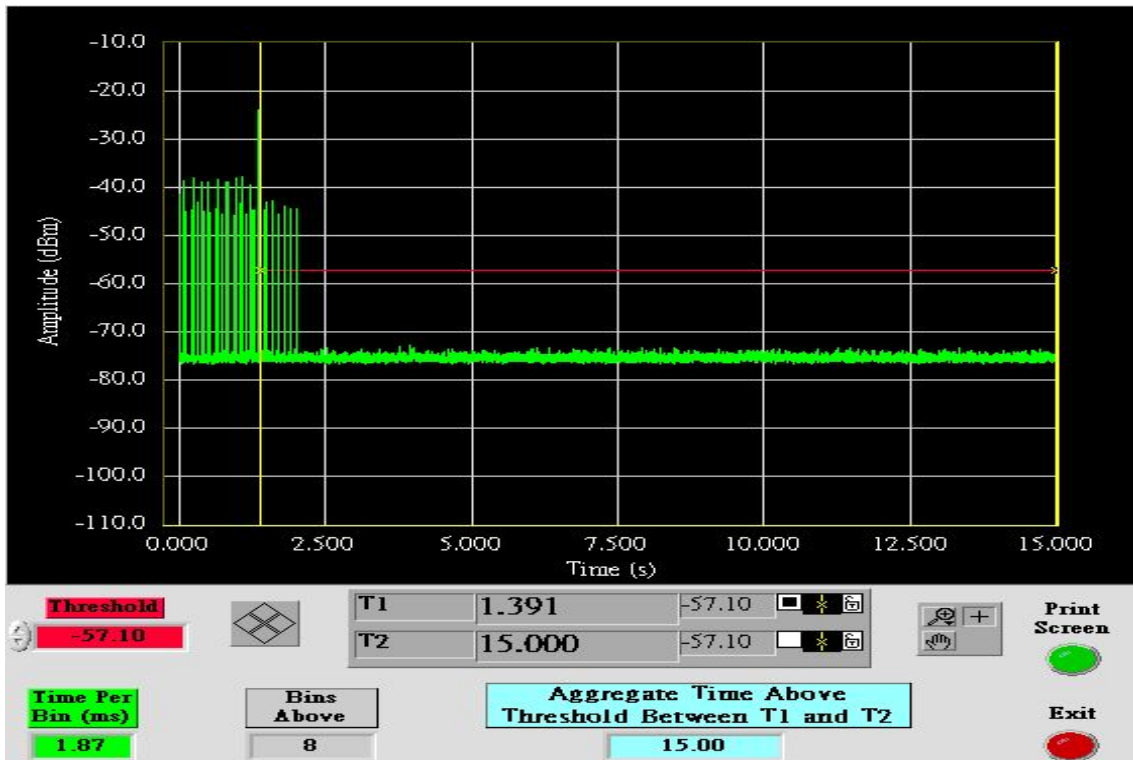
No non-compliance noted.

For R1

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
15	60	-45



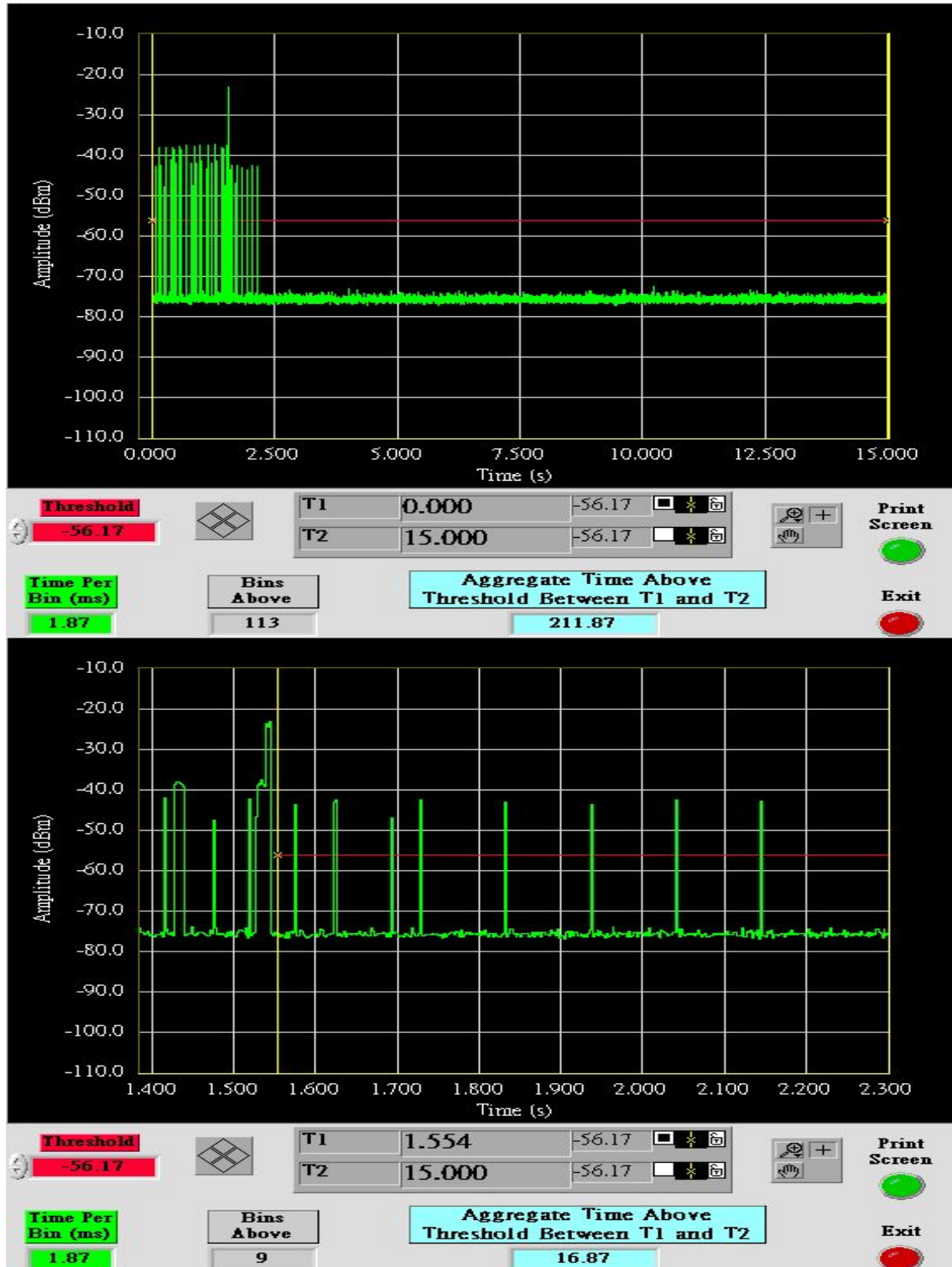


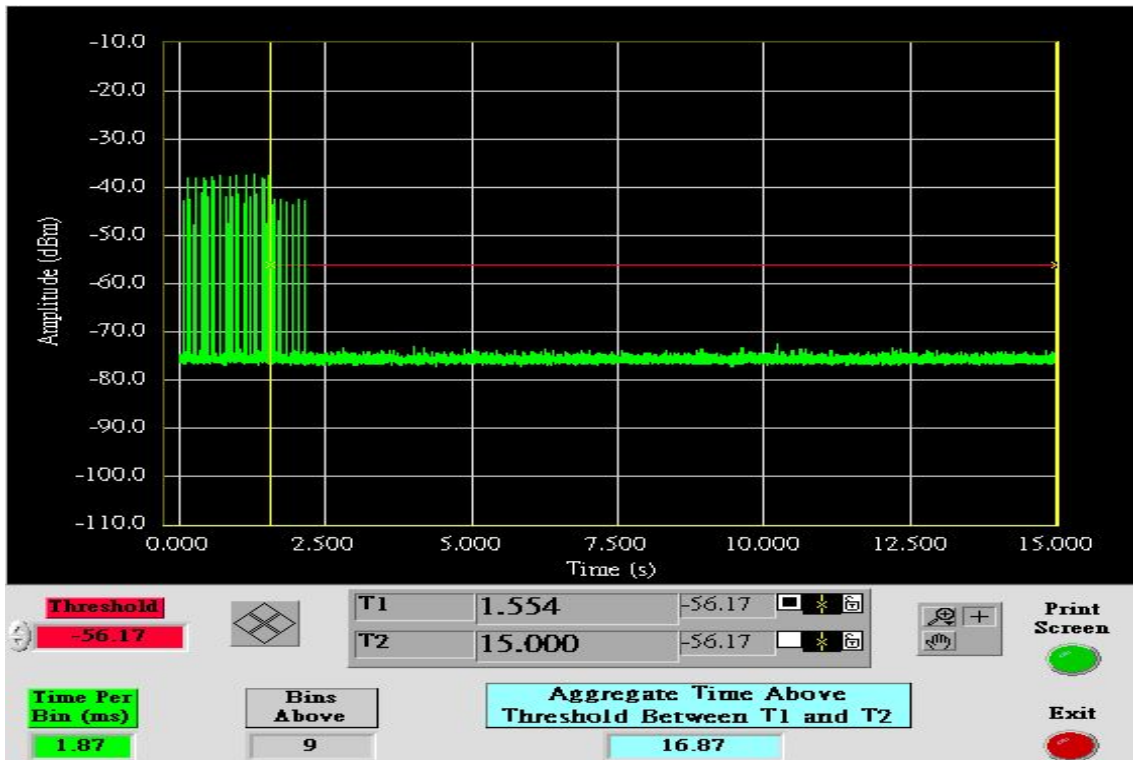




For R5

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
16.87	60	-43.13







NON-OCCUPANCY PERIOD

UNII Band II

IEEE 802.11n HT 20 MHz mode

Type 1 Non-Occupancy Period Test Results

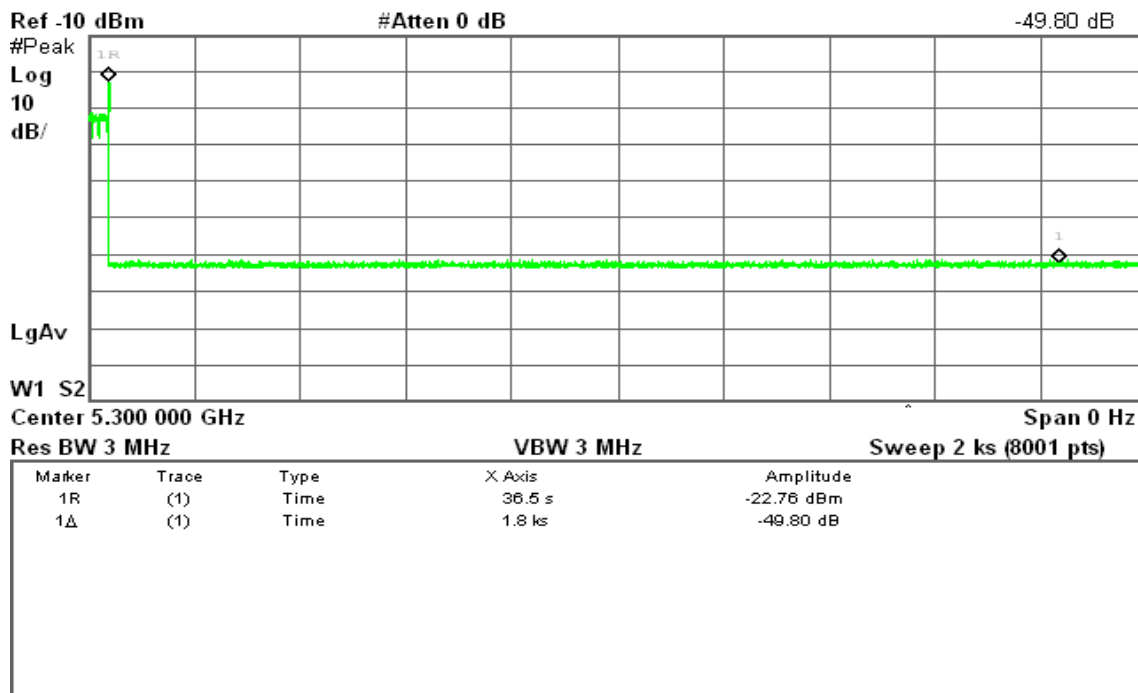
No non-compliance noted.

No EUT transmissions were observed on the test channel during the 30 minute observation time.

Agilent 09:58:27 Jan 18, 2012

R T

Δ Mkr1 1.8 ks
-49.80 dB





Type 5 Non-Occupancy Period Test Results

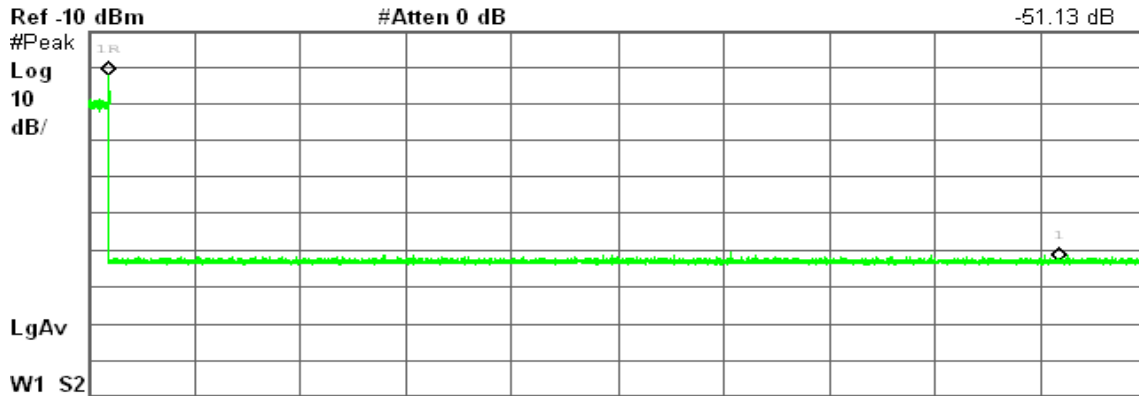
No non-compliance noted.

No EUT transmissions were observed on the test channel during the 30 minute observation time.

Agilent 06:20:28 Jan 18, 2012

R T

Δ Mkr1 1.8 ks



Marker	Trace	Type	X Axis	Amplitude
1R	(1)	Time	38.25 s	-22.24 dBm
1Δ	(1)	Time	1.8 ks	-51.13 dB



IEEE 802.11n HT 40 MHz mode

Type 1 Non-Occupancy Period Test Results

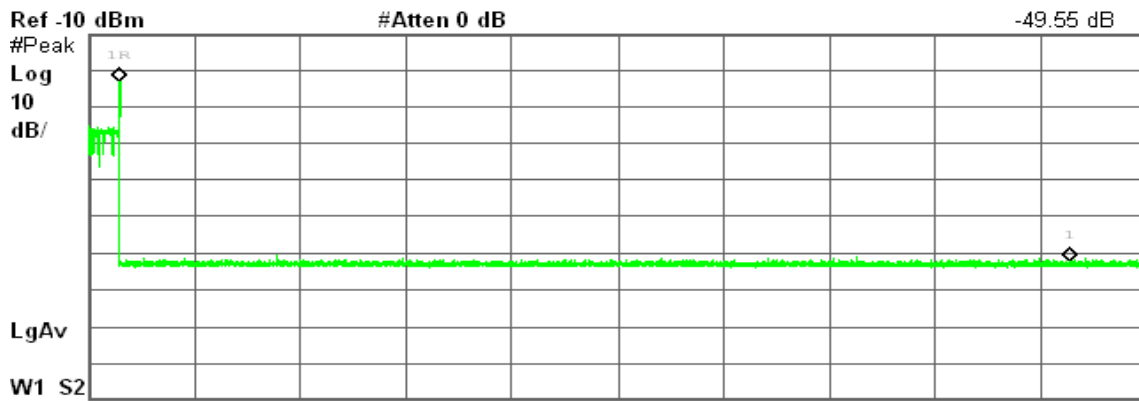
No non-compliance noted.

No EUT transmissions were observed on the test channel during the 30 minute observation time.

Agilent 12:57:43 Jan 18, 2012

R T

Δ Mkr1 1.8 ks



Marker	Trace	Type	X Axis	Amplitude
1R	(1)	Time	56.25 s	-22.99 dBm
1Δ	(1)	Time	1.8 ks	-49.55 dB



Type 5 Non-Occupancy Period Test Results

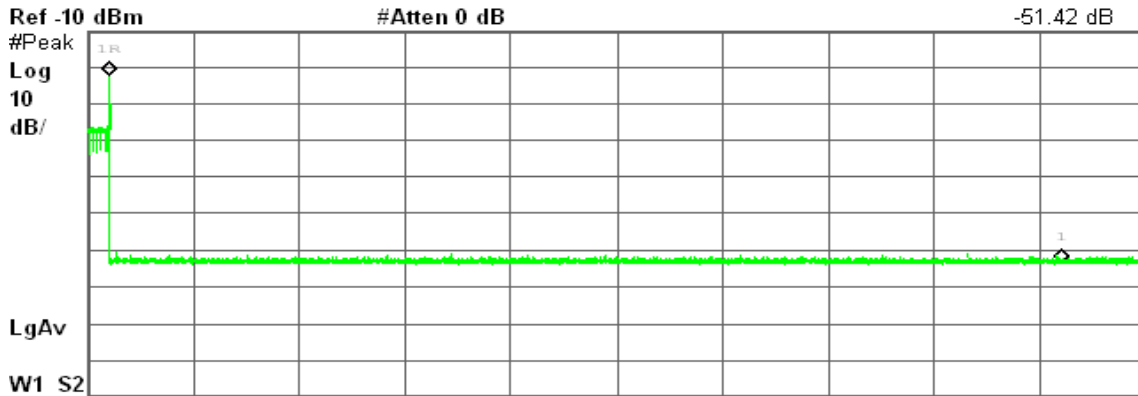
No non-compliance noted.

No EUT transmissions were observed on the test channel during the 30 minute observation time.

Agilent 09:07:20 Jan 18, 2012

R T

Δ Mkr1 1.8 ks



Marker	Trace	Type	X Axis	Amplitude
1R	(1)	Time	40.75 s	-22.16 dBm
1Δ	(1)	Time	1.8 ks	-51.42 dB



UNII Band III

IEEE 802.11n HT 20 MHz mode

Type 1 Non-Occupancy Period Test Results

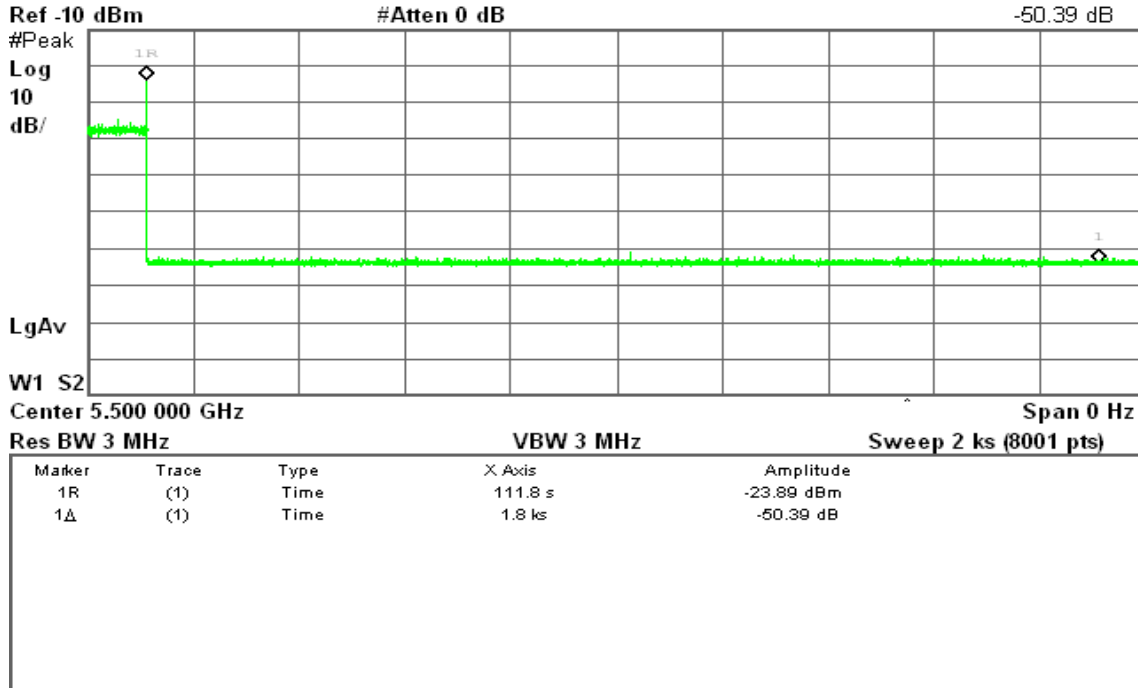
No non-compliance noted.

No EUT transmissions were observed on the test channel during the 30 minute observation time.

Agilent 10:52:47 Jan 18, 2012

R T

Δ Mkr1 1.8 ks
-50.39 dB





Type 5 Non-Occupancy Period Test Results

No non-compliance noted.

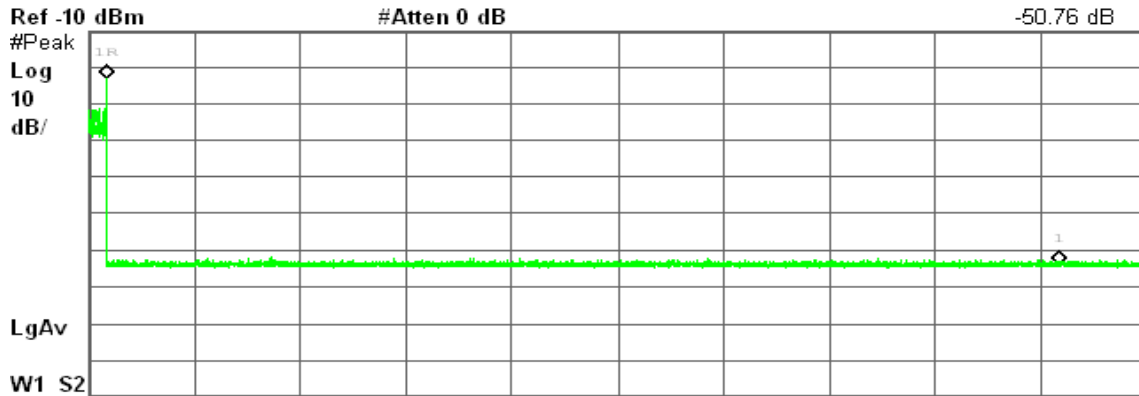
No EUT transmissions were observed on the test channel during the 30 minute observation time.

Agilent 07:16:45 Jan 18, 2012

R T

Δ Mkr1 1.8 ks

-50.76 dB



Center 5.500 000 GHz

Span 0 Hz

Res BW 3 MHz

VBW 3 MHz

Sweep 2 ks (8001 pts)

Marker	Trace	Type	X Axis	Amplitude
1R	(1)	Time	33.75 s	-23.10 dBm
1Δ	(1)	Time	1.8 ks	-50.76 dB



IEEE 802.11n HT 40 MHz mode

Type 1 Non-Occupancy Period Test Results

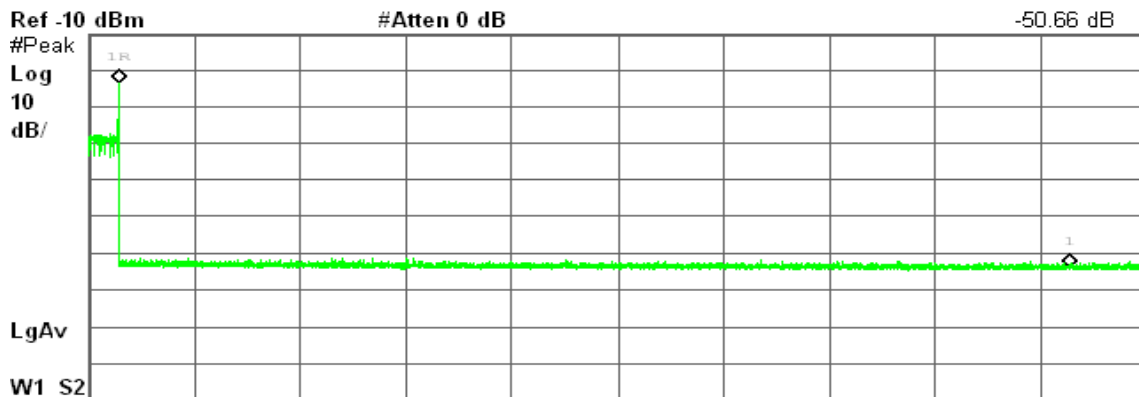
No non-compliance noted.

No EUT transmissions were observed on the test channel during the 30 minute observation time.

Agilent 11:53:24 Jan 18, 2012

R T

Δ Mkr1 1.8 ks



Marker	Trace	Type	X Axis	Amplitude
1R	(1)	Time	55.75 s	-23.43 dBm
1Δ	(1)	Time	1.8 ks	-50.66 dB



Type 5 Non-Occupancy Period Test Results

No non-compliance noted.

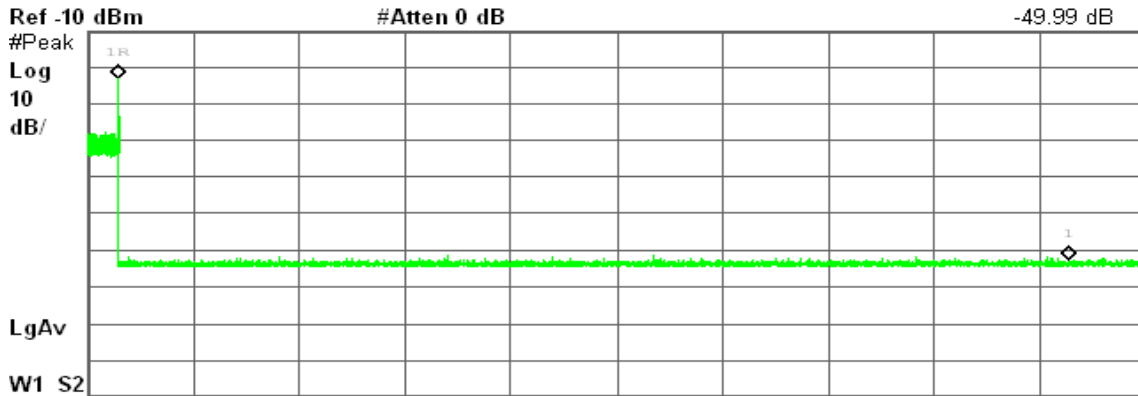
No EUT transmissions were observed on the test channel during the 30 minute observation time.

Agilent 08:16:42 Jan 18, 2012

R L

Δ Mkr1 1.8 ks

-49.99 dB



Start 5.510 000 GHz

Stop 5.510 000 GHz

Res BW 3 MHz

VBW 3 MHz

Sweep 2 ks (8001 pts)

Marker	Trace	Type	X Axis	Amplitude
1R	(1)	Time	56.5 s	-22.99 dBm
1Δ	(1)	Time	1.8 ks	-49.99 dB