



**FCC 47 CFR PART 15 SUBPART C**

**TEST REPORT**

**For**

**Computer**

**Model:**

**TREK-753, TREK-753R-HWDXPAOE,  
TREK-753XXXXXXXXXXXXXXXXXX;**

**X= (where "X" may be any alphanumeric character , "-" or blank)**

**Trade Name: Advantech**

*Issued to*

**Advantech Co., Ltd.**

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

*Issued by*

**Compliance Certification Services Inc.**

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**Issued Date: June 7, 2012**



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**Revision History**

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	Jane 7, 2012	Initial Issue	ALL	Eunice Shen



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# 1. TEST RESULT CERTIFICATION

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

**Equipment Under Test:** Computer

**Trade Name:** Advantech

**Model:** TREK-753, TREK-753R-HWDXPAOE,  
 TREK-753XXXXXXXXXXXXXXXXXX;  
 X= (where "X" may be any alphanumeric character , "-" or blank)

**Date of Test:** January 9 ~ June 7, 2012

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

### We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2003 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

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

Approved by:

Reviewed by:

*Jason Lin*

*Gina Lo*

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Jason Lin  
 Section Manager  
 Compliance Certification Services Inc.

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Gina Lo  
 Section Manager  
 Compliance Certification Services Inc.



## 2. EUT DESCRIPTION

<b>Product</b>	Computer
<b>Trade Name</b>	Advantech
<b>Model Number</b>	TREK-753, TREK-753R-HWDXPAOE, TREK-753XXXXXXXXXXXXXXXXXX; X= (where "X" may be any alphanumeric character , "-" or blank)
<b>Model Discrepancy</b>	All the specification and layout are identical except they come with different model numbers for marketing purposes.
<b>Received Date</b>	September 28, 2011
<b>Power Adapter</b>	DC 12V
<b>Frequency Range</b>	IEEE 802.11a/ IEEE 802.11n HT 20 MHz: 5.725~5.850 GHz IEEE 802.11b/g/ IEEE 802.11n HT 20 MHz: 2.412~2.462 GHz IEEE 802.11n HT 40 MHz: 2.422~2.452 GHz
<b>Transmit Power</b>	IEEE 802.11a mode: 22.09 dBm IEEE 802.11n HT 20 MHz mode: 24.81 dBm IEEE 802.11n HT 40 MHz mode: 23.72 dBm IEEE 802.11b mode: 19.57 dBm IEEE 802.11g mode: 24.02 dBm IEEE 802.11n HT 20 MHz mode: 25.10 dBm IEEE 802.11n HT 40 MHz mode: 21.35 dBm
<b>Modulation Technique &amp; Transmit Data Rate</b>	IEEE 802.11a: OFDM (54, 48, 36, 24, 18, 12, 9, 6 Mbps) IEEE 802.11n HT 20 MHz mode: OFDM (6.5, 7.2, 13, 14.4, 14.44, 19.5, 21.7, 26, 28.89, 28.9, 39, 43.3, 43.33 52, 57.78, 57.8, 58.5, 65.0, 72.2, 78, 86.67, 104, 115.56, 117, 130, 144.44 Mbps) IEEE 802.11n HT 40 MHz mode: OFDM (13.5, 15, 27, 30, 40.5, 45, 54, 60, 81, 90, 108, 120, 121.5, 135, 150, 162, 180, 216, 240, 243, 270, 300 Mbps) IEEE 802.11b mode: DSSS (1, 2, 5.5 and 11 Mbps) IEEE 802.11g mode: OFDM (6, 9, 12, 18, 24, 36, 48 and 54 Mbps) IEEE 802.11n HT 20 MHz mode: OFDM (6.5, 7.2, 13, 14.4, 14.44, 19.5, 21.7, 26, 28.89, 28.9, 39, 43.3, 43.33 52, 57.78, 57.8, 58.5, 65.0, 72.2, 78, 86.67, 104, 115.56, 117, 130, 144.44 Mbps) IEEE 802.11n HT 40 MHz mode: OFDM (13.5, 15, 27, 30, 40.5, 45, 54, 60, 81, 90, 108, 120, 121.5, 135, 150, 162, 180, 216, 240, 243, 270, 300 Mbps)
<b>Number of Channels</b>	IEEE 802.11a mode: 5 Channels IEEE 802.11n HT 20 MHz mode: 5 Channels IEEE 802.11n HT 40 MHz mode: 2 Channels IEEE 802.11b/g mode: 11 Channels IEEE 802.11n HT 20 MHz mode: 11 Channels IEEE 802.11n HT 40 MHz mode: 7 Channels
<b>Antenna Specification</b>	Antenna Type: Dipole Antenna Antenna Gain: IEEE 802.11a/n mode: 0.39 dBi MIMO: $10 \cdot \log(((10^{(0.39 \text{ dBi}/20)} + 10^{(0.39 \text{ dBi}/20)})^2)/2) = 3.40 \text{ dB}$ IEEE 802.11b/g/n mode: 1.99 dBi MIMO: $10 \cdot \log(((10^{(1.99 \text{ dBi}/20)} + 10^{(1.99 \text{ dBi}/20)})^2)/2) = 5.00 \text{ dBi}$

**Remark:**

1. The sample selected for test was production product and was provided by manufacturer.
2. This submittal(s) (test report) is intended for FCC ID: **M82-TREK-753** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.



### **3. TEST METHODOLOGY**

The tests documented in this report were performed in accordance with ANSI C63.4 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, 15.207, 15.209 and 15.247.

#### **3.1 EUT CONFIGURATION**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

#### **3.2 EUT EXERCISE**

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

#### **3.3 GENERAL TEST PROCEDURES**

##### **Conducted Emissions**

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

##### **Radiated Emissions**

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4.



### 3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

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

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

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

<sup>2</sup> Above 38.6

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



### 3.5 DESCRIPTION OF TEST MODES

The EUT (model: TREK-753) 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 1 and Chain 0).

Software used to control the EUT for staying in continuous transmitting mode was programmed. The worst case data rate is determined as the data rate with highest output power.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode only.

**IEEE 802.11b mode:**

Channel Low (2412MHz), Channel Mid (2442MHz) and Channel High (2462MHz) with 1Mbps data rate were chosen for full testing.

**IEEE 802.11g mode:**

Channel Low (2412MHz), Channel Mid (2442MHz) and Channel High (2462MHz) with 6Mbps data rate were chosen for full testing.

**IEEE 802.11n HT 20 MHz mode:**

Channel Low (2412MHz), Channel Mid (2442MHz) and Channel High (2462MHz) with 6.5Mbps data rate were chosen for full testing.

**IEEE 802.11n HT 40 MHz mode:**

Channel Low (2422MHz), Channel Mid (2442MHz) and Channel High (2452MHz) with 13.5Mbps data rate were chosen for full testing.

**IEEE 802.11a mode:**

Channel Low (5745MHz), Channel Mid (5785MHz) and Channel High (5825MHz) with 6Mbps data rate were chosen for full testing.

**IEEE 802.11n HT 20 MHz mode:**

Channel Low(5745MHz), Channel Mid(5785MHz) and Channel High(5825MHz) with 6.5Mbps data rate were chosen for full testing.

**IEEE 802.11n HT 40 MHz mode:**

Channel Low(5755MHz) and Channel High(5795MHz) 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	04/26/2013
Power Sensor	Anritsu	MA2411B	0917072	04/26/2013

Wugu 966 Chamber A				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US42510252	11/02/2012
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	11/19/2012
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)			



### 4.3 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
Powerline Conducted Emission	N/A
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, Chungshen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.  
Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029
- 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., Lujhu Township, Taoyuan County 33841, TAIWAN, R.O.C.  
Tel: 886-3-324-0332 / Fax: 886-3-324-5235

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

### **5.2 EQUIPMENT**

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




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

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

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



### 5.3 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3M Semi Anechoic Chamber (FCC MRA: TW1039) to perform FCC Part 15 measurements	 FCC MRA: TW1039
Taiwan	TAF	LP0002, RTTE01, FCC Method-47 CFR Part 15 Subpart C, D, E, RSS-210, RSS-310 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 1 for the actual connections between EUT and support equipment.

### **6.2 SUPPORT EQUIPMENT**

<b>No.</b>	<b>Device Type</b>	<b>Brand</b>	<b>Model</b>	<b>Series No.</b>	<b>FCC ID</b>	<b>Data Cable</b>	<b>Power Cord</b>
	N/A						



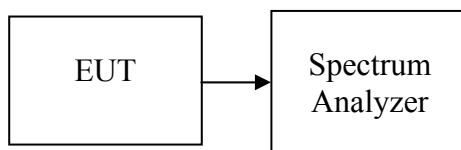
## 7. FCC PART 15.247 REQUIREMENTS

### 7.1 6dB BANDWIDTH

#### LIMIT

According to §15.247(a)(2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6dB bandwidth shall be at least 500 kHz.

#### Test Configuration



#### TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. Set the RBW = 1% of the emission bandwidth, VBW  $\geq 3 \times$  RBW, Detector = Peak, Trace mode = max hold, Sweep = auto couple. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission.

#### TEST RESULTS

*No non-compliance noted*



**Test Data**

**Test mode: IEEE 802.11b mode**

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	10.30	>500	PASS
Mid	2442	10.30		PASS
High	2462	10.30		PASS

**Test mode: IEEE 802.11g mode**

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.60	>500	PASS
Mid	2442	16.57		PASS
High	2462	16.63		PASS

**Test mode: IEEE 802.11n HT 20 MHz mode / Chain 0**

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.70	>500	PASS
Mid	2442	17.77		PASS
High	2462	17.73		PASS

**Test mode: IEEE 802.11n HT 20 MHz mode / Chain 1**

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.87	>500	PASS
Mid	2442	17.73		PASS
High	2462	17.67		PASS

**Test mode: IEEE 802.11n HT 40 MHz mode / Chain 0**

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	36.53	>500	PASS
Mid	2442	36.47		PASS
High	2452	36.47		PASS

**Test mode: IEEE 802.11n HT 40 MHz mode / Chain 1**

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	36.27	>500	PASS
Mid	2442	36.47		PASS
High	2452	36.47		PASS



**Test mode: IEEE 802.11a mode**

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low	5745	16.67	>500	PASS
Mid	5785	16.58		PASS
High	5825	16.58		PASS

**Test mode: IEEE 802.11n HT 20 MHz mode / Chain 0**

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low	5745	17.75	>500	PASS
Mid	5785	17.75		PASS
High	5825	16.58		PASS

**Test mode: IEEE 802.11n HT 20 MHz mode / Chain 1**

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low	5745	17.75	>500	PASS
Mid	5785	17.75		PASS
High	5825	17.75		PASS

**Test mode: IEEE 802.11n HT 40 MHz mode / Chain 0**

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low	5755	36.58	>500	PASS
High	5795	36.58		PASS

**Test mode: IEEE 802.11n HT 40 MHz mode / Chain 1**

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low	5755	36.25	>500	PASS
High	5795	36.50		PASS





### Test Plot

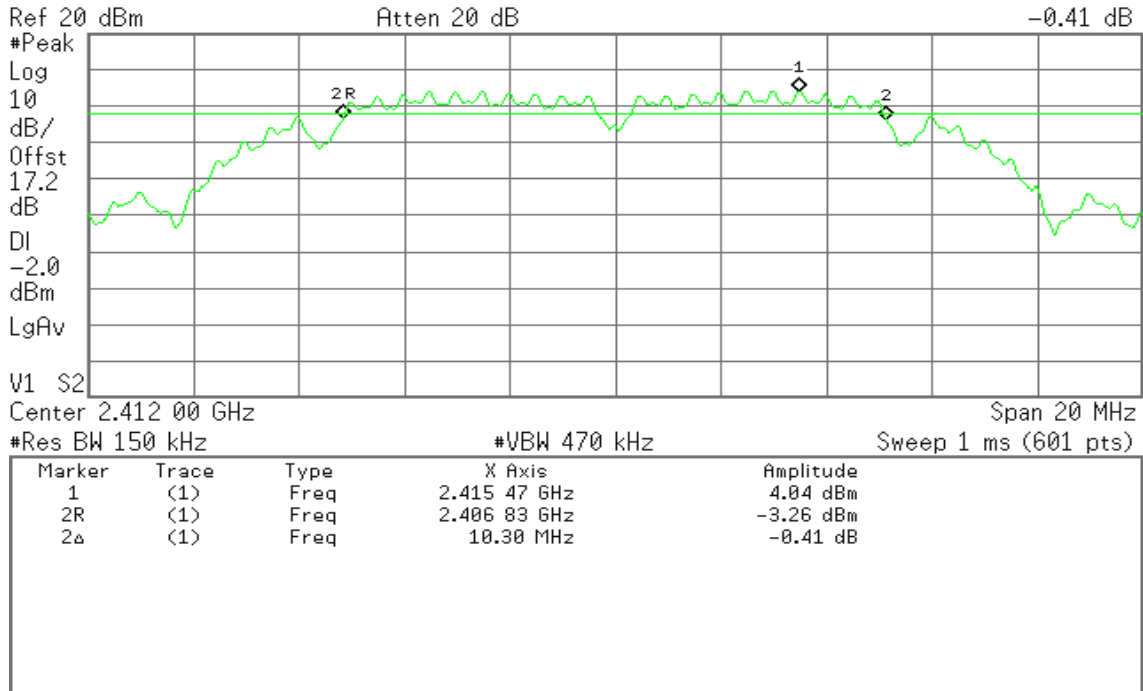
#### IEEE 802.11b mode

#### 6dB Bandwidth (CH Low)

Agilent 16:05:43 May 28, 2012

R T

Mkr2 10.30 MHz  
-0.41 dB

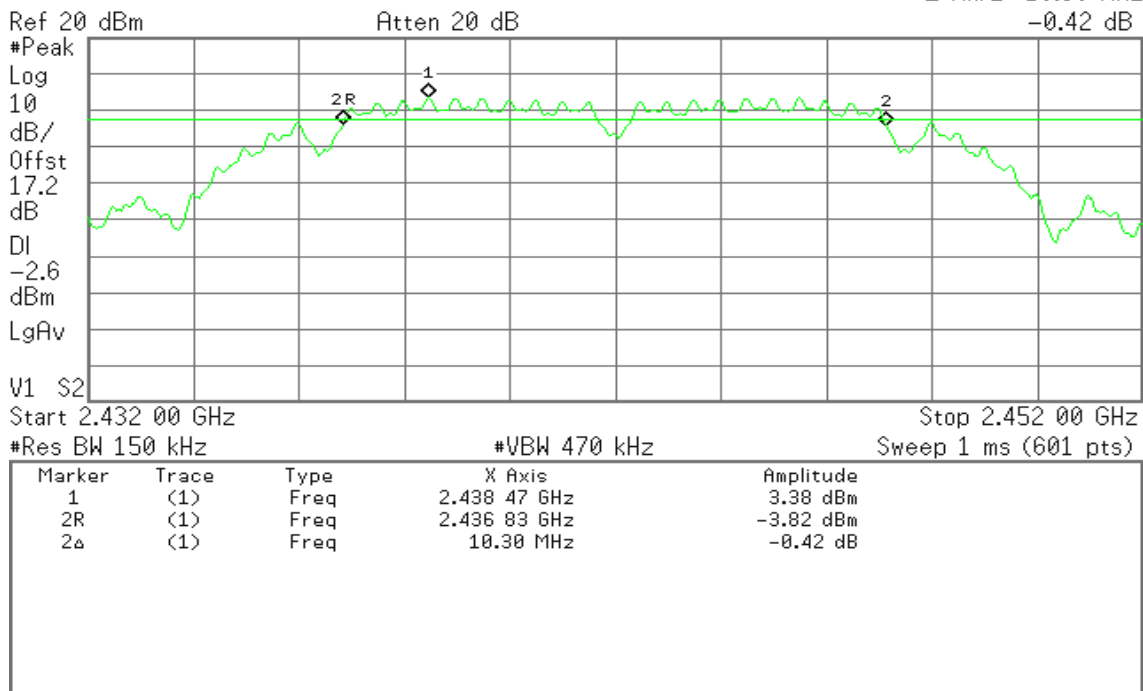


#### 6dB Bandwidth (CH Mid)

Agilent 16:07:02 May 28, 2012

R T

Mkr2 10.30 MHz  
-0.42 dB



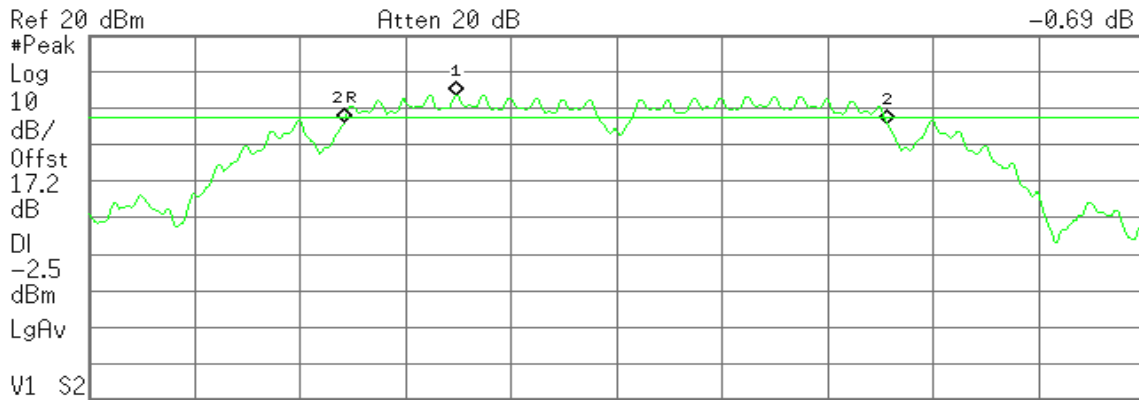


### 6dB Bandwidth (CH High)

Agilent 16:08:08 May 28, 2012

R T

Mkr2 10.30 MHz  
-0.69 dB



Start 2.452 00 GHz Stop 2.472 00 GHz  
#Res BW 150 kHz #VBW 470 kHz Sweep 1 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.458 97 GHz	3.49 dBm
2R	(1)	Freq	2.456 83 GHz	-3.66 dBm
2Δ	(1)	Freq	10.30 MHz	-0.69 dB

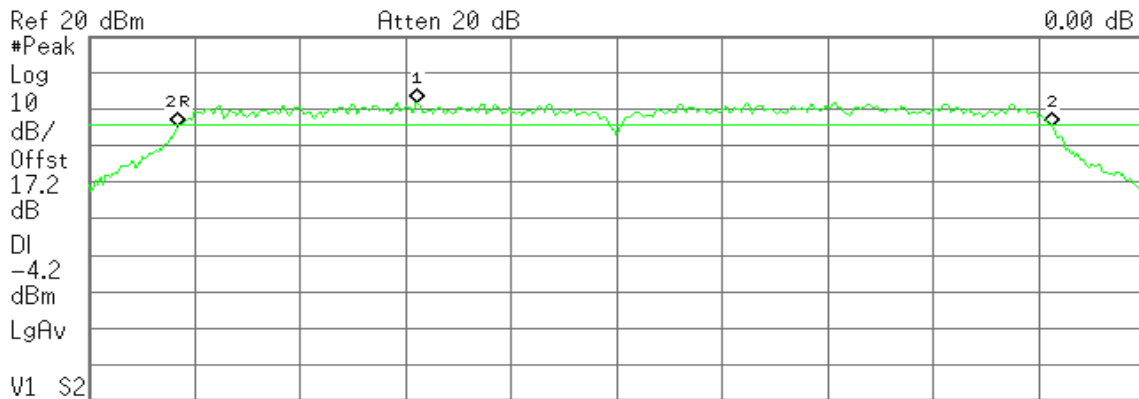
### IEEE 802.11g mode

#### 6dB Bandwidth (CH Low)

Agilent 16:12:11 May 28, 2012

R T

Mkr2 16.60 MHz  
0.00 dB



Center 2.412 00 GHz Span 20 MHz  
#Res BW 180 kHz #VBW 560 kHz Sweep 1 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.408 23 GHz	1.80 dBm
2R	(1)	Freq	2.403 67 GHz	-4.62 dBm
2Δ	(1)	Freq	16.60 MHz	0.00 dB

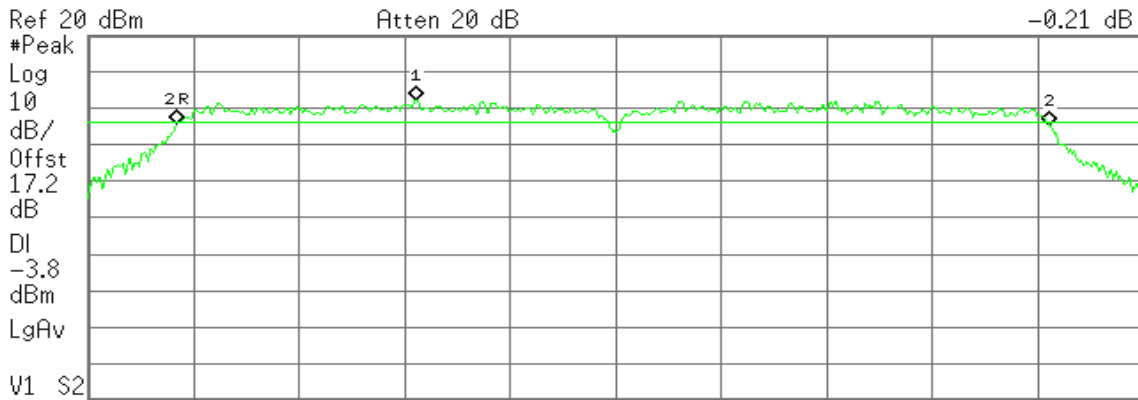


### 6dB Bandwidth (CH Mid)

Agilent 16:10:57 May 28, 2012

R T

▲ Mkr2 16.57 MHz  
-0.21 dB



Center 2.442 00 GHz Span 20 MHz  
#Res BW 180 kHz #VBW 560 kHz Sweep 1 ms (601 pts)

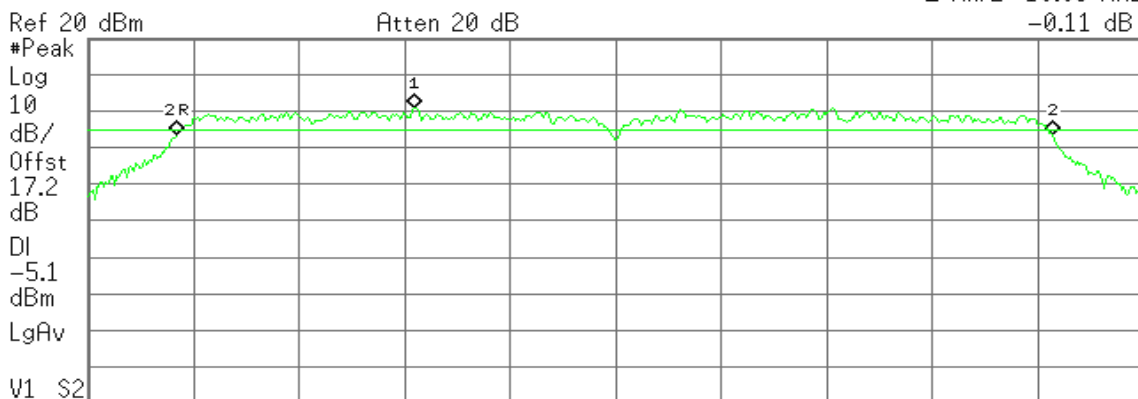
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.438 23 GHz	2.25 dBm
2R	(1)	Freq	2.433 67 GHz	-4.30 dBm
2▲	(1)	Freq	16.57 MHz	-0.21 dB

### 6dB Bandwidth (CH High)

Agilent 16:09:30 May 28, 2012

R T

▲ Mkr2 16.63 MHz  
-0.11 dB



Center 2.462 00 GHz Span 20 MHz  
#Res BW 180 kHz #VBW 560 kHz Sweep 1 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.458 20 GHz	0.88 dBm
2R	(1)	Freq	2.453 67 GHz	-6.39 dBm
2▲	(1)	Freq	16.63 MHz	-0.11 dB



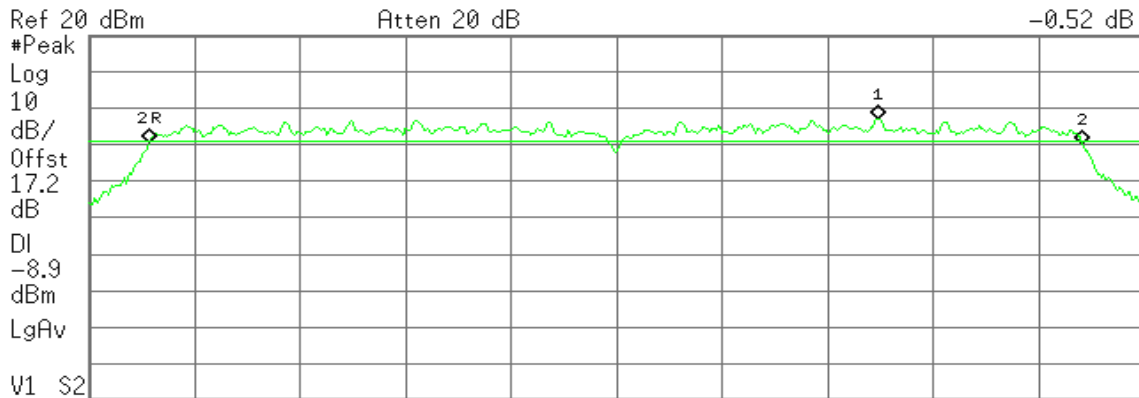
### IEEE 802.11n HT 20 MHz mode / Chain 0

#### 6dB Bandwidth (CH Low)

Agilent 16:13:54 May 28, 2012

R T

Mkr2 17.70 MHz  
-0.52 dB



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.416 97 GHz	-2.91 dBm
2R	(1)	Freq	2.403 13 GHz	-9.38 dBm
2Δ	(1)	Freq	17.70 MHz	-0.52 dB

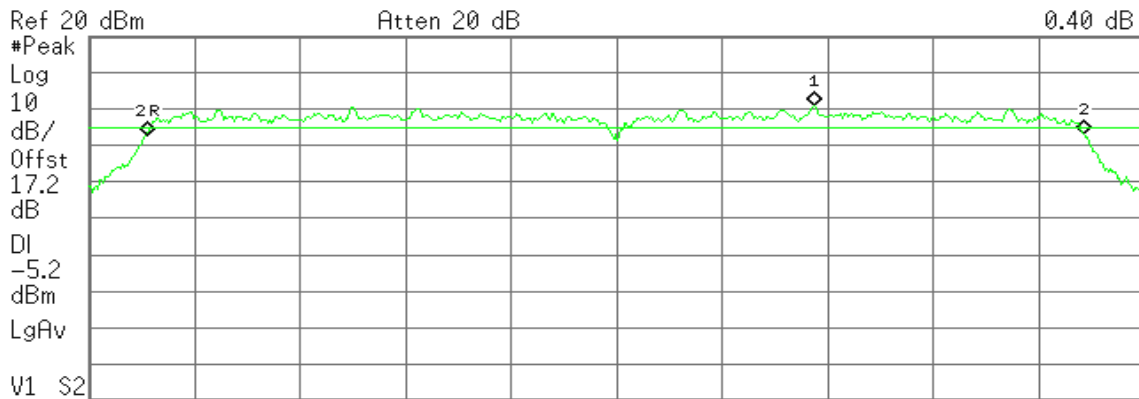
#Res BW 200 kHz #VBW 560 kHz Sweep 1 ms (601 pts)

#### 6dB Bandwidth (CH Mid)

Agilent 16:20:03 May 28, 2012

R T

Mkr2 17.77 MHz  
0.40 dB



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.445 73 GHz	0.75 dBm
2R	(1)	Freq	2.433 10 GHz	-7.36 dBm
2Δ	(1)	Freq	17.77 MHz	0.40 dB

#Res BW 200 kHz #VBW 560 kHz Sweep 1 ms (601 pts)

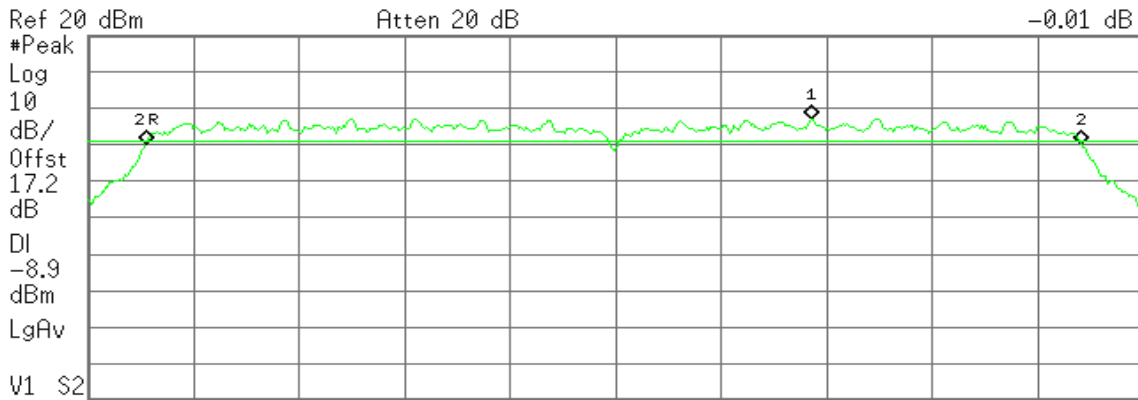


### 6dB Bandwidth (CH High)

Agilent 16:21:39 May 28, 2012

R T

Mkr2 17.73 MHz  
-0.01 dB



Ref 20 dBm Atten 20 dB  
 #Peak Log 10 dB/Offst 17.2 dB DI -8.9 dBm LgAv  
 V1 S2  
 Start 2.452 00 GHz Stop 2.472 00 GHz  
 #Res BW 200 kHz #VBW 560 kHz Sweep 1 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.465 78 GHz	-2.86 dBm
2R	(1)	Freq	2.453 18 GHz	-9.87 dBm
2Δ	(1)	Freq	17.73 MHz	-0.01 dB

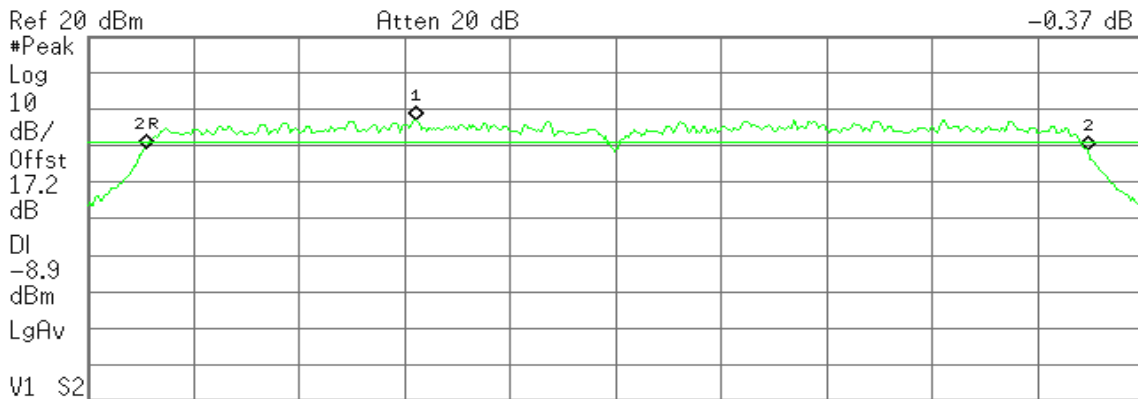
### IEEE 802.11n HT 20 MHz mode / Chain 1

#### 6dB Bandwidth (CH Low)

Agilent 16:15:16 May 28, 2012

R T

Mkr2 17.87 MHz  
-0.37 dB



Ref 20 dBm Atten 20 dB  
 #Peak Log 10 dB/Offst 17.2 dB DI -8.9 dBm LgAv  
 V1 S2  
 Center 2.412 00 GHz Span 20 MHz  
 #Res BW 200 kHz #VBW 560 kHz Sweep 1 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.408 23 GHz	-2.95 dBm
2R	(1)	Freq	2.403 18 GHz	-10.89 dBm
2Δ	(1)	Freq	17.87 MHz	-0.37 dB

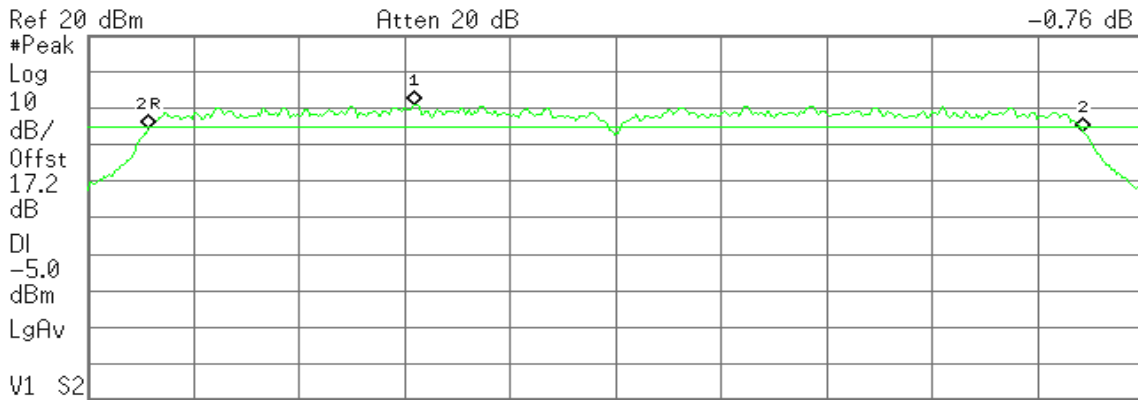


### 6dB Bandwidth (CH Mid)

Agilent 16:18:36 May 28, 2012

R T

Mkr2 17.73 MHz  
-0.76 dB



Center 2.442 00 GHz Span 20 MHz  
#Res BW 200 kHz #VBW 560 kHz Sweep 1 ms (601 pts)

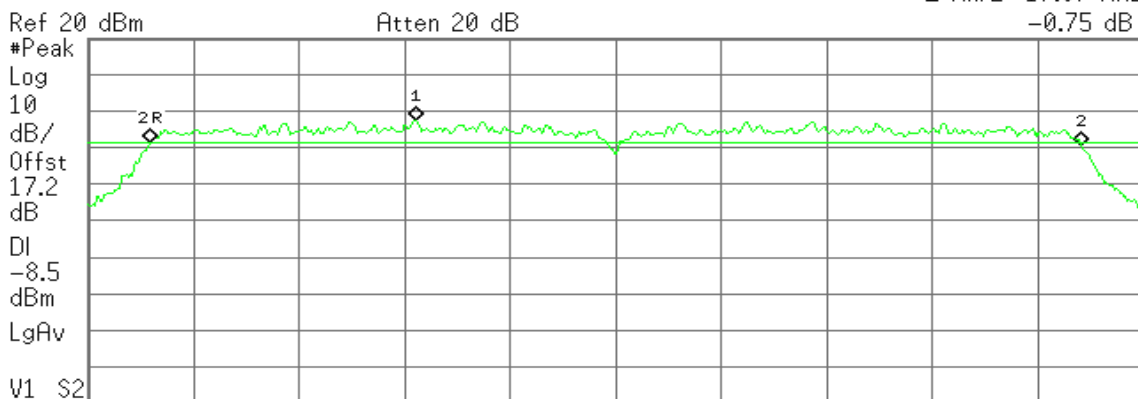
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.438 28 GHz	1.01 dBm
2R	(1)	Freq	2.433 13 GHz	-5.55 dBm
2Δ	(1)	Freq	17.73 MHz	-0.76 dB

### 6dB Bandwidth (CH High)

Agilent 16:22:56 May 28, 2012

R T

Mkr2 17.67 MHz  
-0.75 dB



Center 2.462 00 GHz Span 20 MHz  
#Res BW 200 kHz #VBW 560 kHz Sweep 1 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.458 23 GHz	-2.51 dBm
2R	(1)	Freq	2.453 17 GHz	-8.52 dBm
2Δ	(1)	Freq	17.67 MHz	-0.75 dB



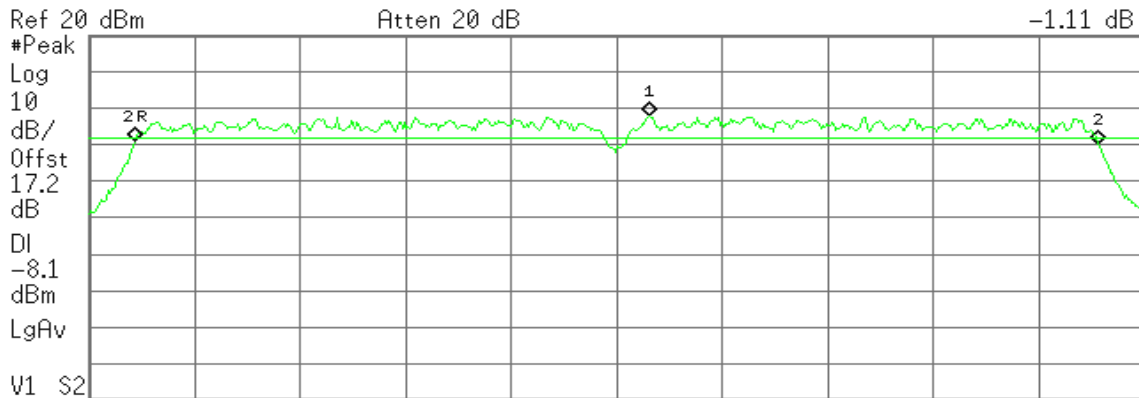
### IEEE 802.11n HT 40 MHz mode / Chain 0

#### 6dB Bandwidth (CH Low)

Agilent 16:26:20 May 28, 2012

R T

Mkr2 36.53 MHz  
-1.11 dB



Center 2.422 00 GHz Span 40 MHz  
#Res BW 390 kHz #VBW 1.2 MHz Sweep 1 ms (601 pts)

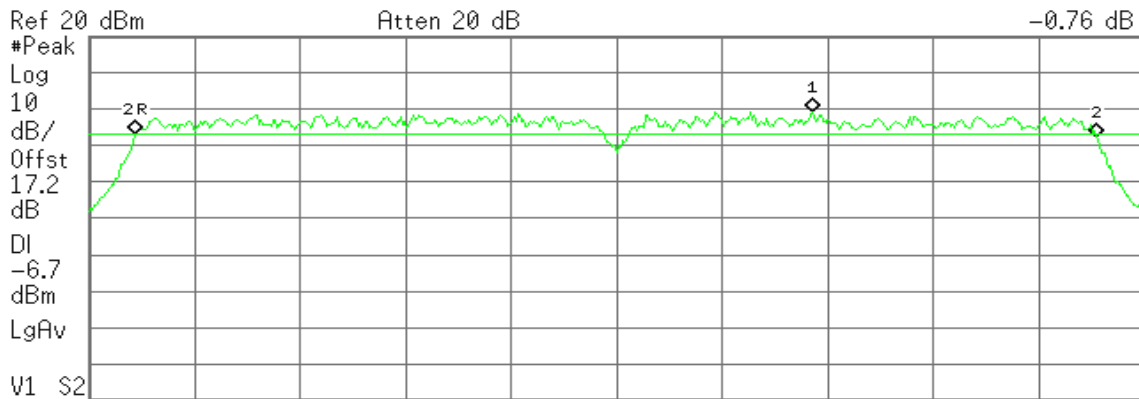
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.423 27 GHz	-2.12 dBm
2R	(1)	Freq	2.403 73 GHz	-8.84 dBm
2Δ	(1)	Freq	36.53 MHz	-1.11 dB

#### 6dB Bandwidth (CH Mid)

Agilent 16:27:51 May 28, 2012

R T

Mkr2 36.47 MHz  
-0.76 dB



Center 2.442 00 GHz Span 40 MHz  
#Res BW 390 kHz #VBW 1.2 MHz Sweep 1 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.449 40 GHz	-0.69 dBm
2R	(1)	Freq	2.423 73 GHz	-7.03 dBm
2Δ	(1)	Freq	36.47 MHz	-0.76 dB

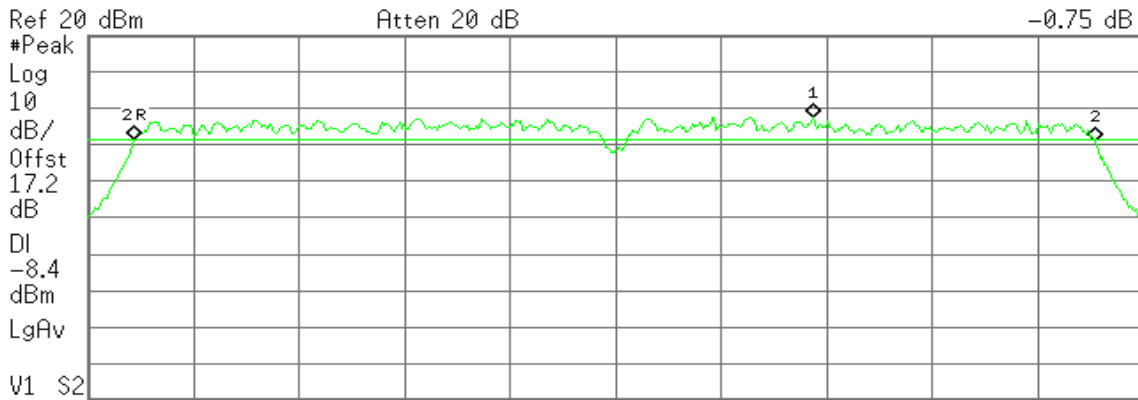


### 6dB Bandwidth (CH High)

Agilent 16:31:54 May 28, 2012

R T

Mkr2 36.47 MHz  
-0.75 dB



Center 2.452 00 GHz Span 40 MHz  
#Res BW 390 kHz #VBW 1.2 MHz Sweep 1 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.459 47 GHz	-2.41 dBm
2R	(1)	Freq	2.433 73 GHz	-8.45 dBm
2Δ	(1)	Freq	36.47 MHz	-0.75 dB

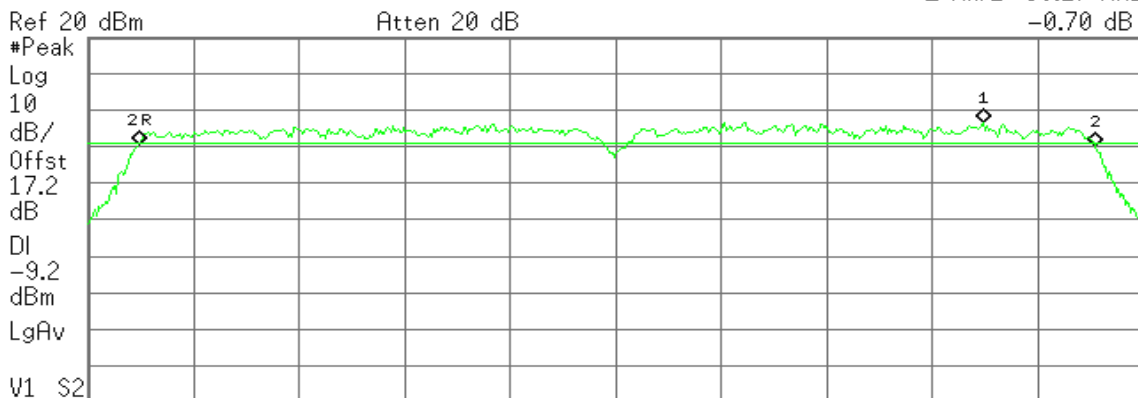
### IEEE 802.11n HT 40 MHz mode / Chain 1

#### 6dB Bandwidth (CH Low)

Agilent 16:25:01 May 28, 2012

R T

Mkr2 36.27 MHz  
-0.70 dB



Center 2.422 00 GHz Span 40 MHz  
#Res BW 390 kHz #VBW 1.2 MHz Sweep 1 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.435 93 GHz	-3.18 dBm
2R	(1)	Freq	2.403 93 GHz	-9.26 dBm
2Δ	(1)	Freq	36.27 MHz	-0.70 dB



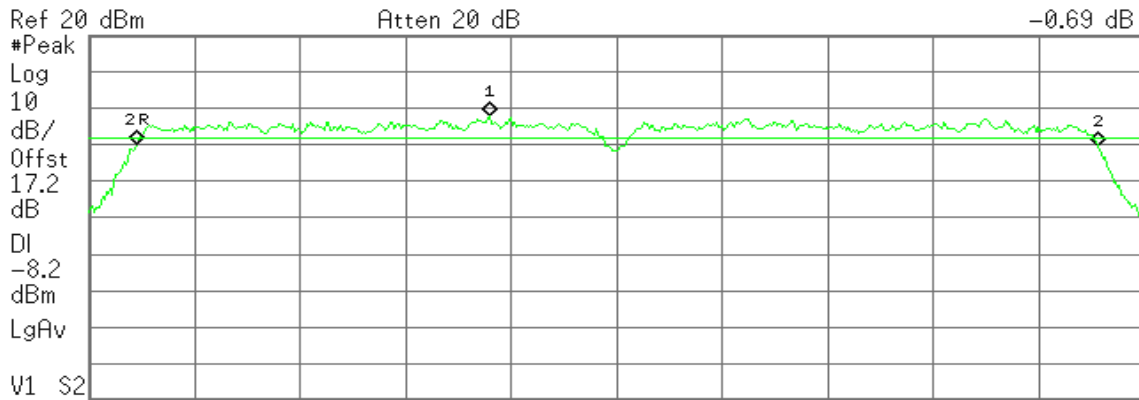


### 6dB Bandwidth (CH Mid)

Agilent 16:29:08 May 28, 2012

R T

Mkr2 36.47 MHz  
-0.69 dB



Center 2.442 00 GHz Span 40 MHz  
#Res BW 390 kHz #VBW 1.2 MHz Sweep 1 ms (601 pts)

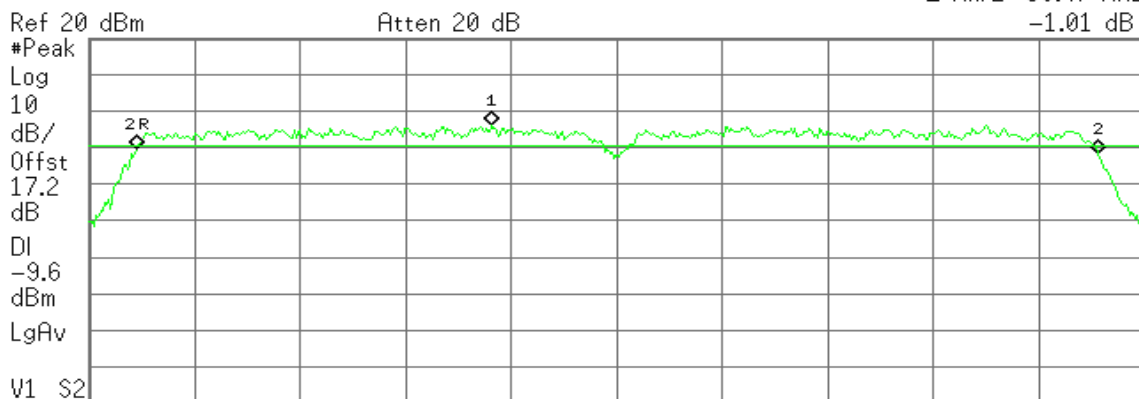
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.437 20 GHz	-2.19 dBm
2R	(1)	Freq	2.423 80 GHz	-9.82 dBm
2Δ	(1)	Freq	36.47 MHz	-0.69 dB

### 6dB Bandwidth (CH High)

Agilent 16:30:23 May 28, 2012

R T

Mkr2 36.47 MHz  
-1.01 dB



Center 2.452 00 GHz Span 40 MHz  
#Res BW 390 kHz #VBW 1.2 MHz Sweep 1 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.447 27 GHz	-3.62 dBm
2R	(1)	Freq	2.433 80 GHz	-10.44 dBm
2Δ	(1)	Freq	36.47 MHz	-1.01 dB

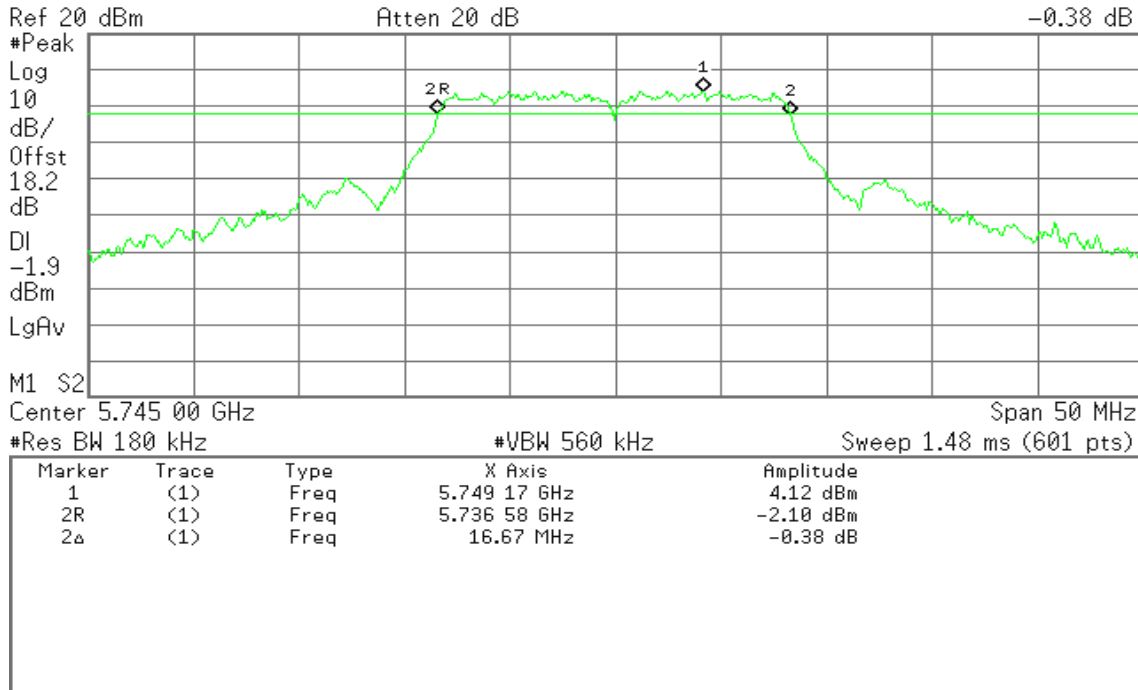


### IEEE 802.11a mode 6dB Bandwidth (CH Low)

Agilent 14:40:01 Jun 6, 2012

R T

Mkr2 16.67 MHz  
-0.38 dB

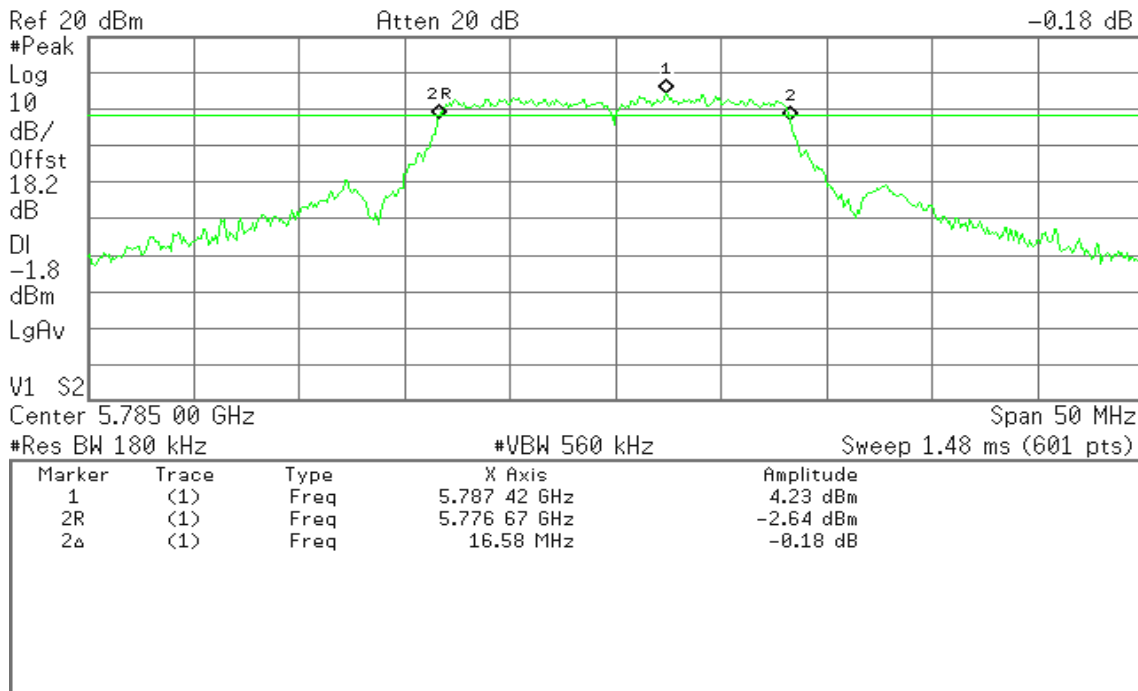


### 6dB Bandwidth (CH Mid)

Agilent 14:41:56 Jun 6, 2012

R T

Mkr2 16.58 MHz  
-0.18 dB



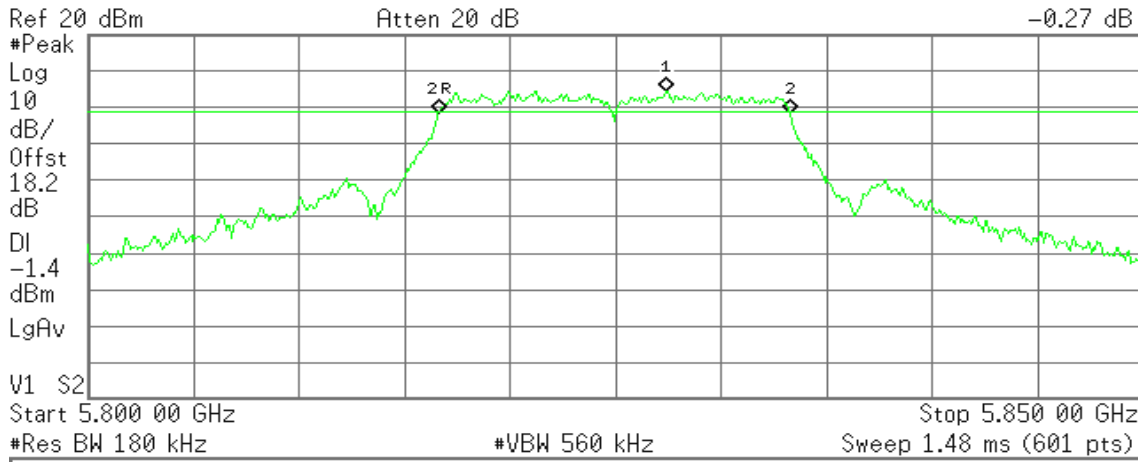


### 6dB Bandwidth (CH High)

Agilent 14:43:37 Jun 6, 2012

R T

Mkr2 16.58 MHz  
-0.27 dB



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.827 42 GHz	4.62 dBm
2R	(1)	Freq	5.816 67 GHz	-1.55 dBm
2Δ	(1)	Freq	16.58 MHz	-0.27 dB

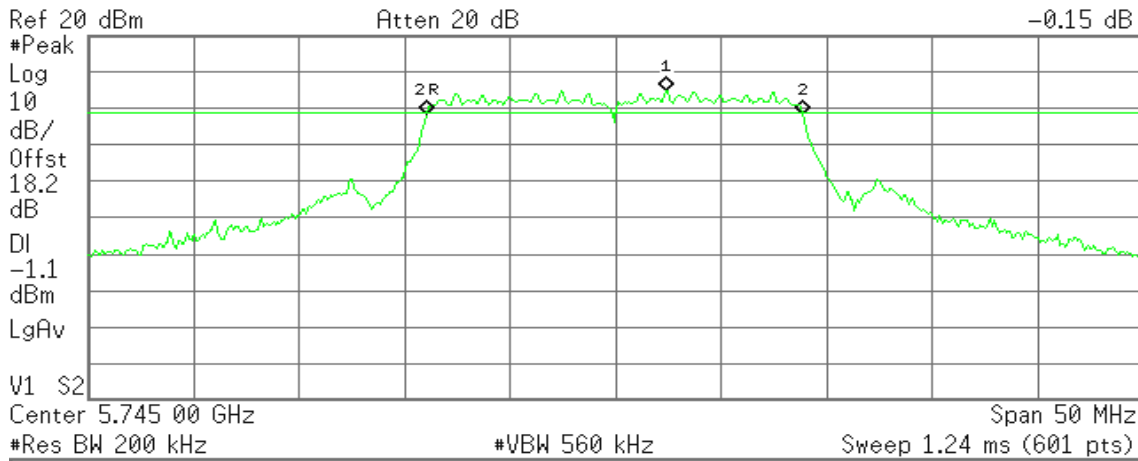
### IEEE 802.11n HT 20 MHz mode / Chain 0

#### 6dB Bandwidth (CH Low)

Agilent 15:04:40 Jun 6, 2012

R T

Mkr2 17.75 MHz  
-0.15 dB



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.747 42 GHz	4.87 dBm
2R	(1)	Freq	5.736 08 GHz	-1.50 dBm
2Δ	(1)	Freq	17.75 MHz	-0.15 dB

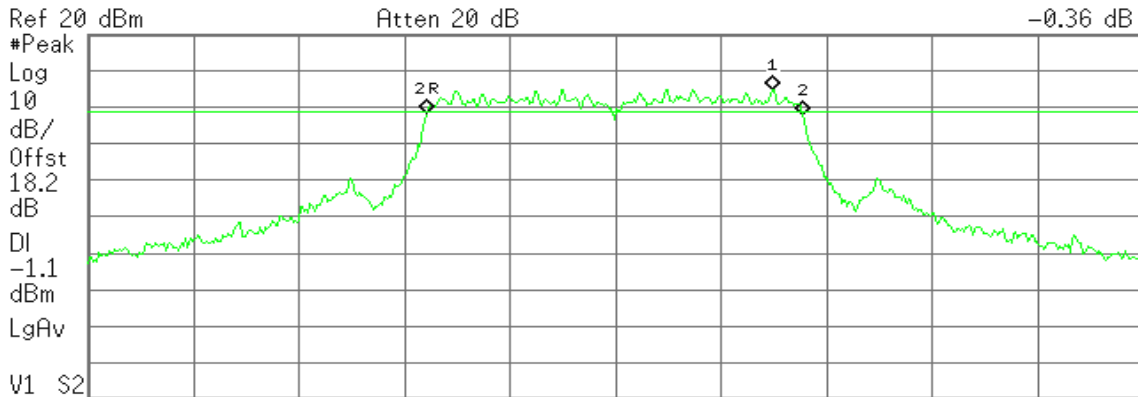


### 6dB Bandwidth (CH Mid)

Agilent 15:10:39 Jun 6, 2012

R T

Mkr2 17.75 MHz  
-0.36 dB



Center 5.785 00 GHz Span 50 MHz  
 #Res BW 200 kHz #VBW 560 kHz Sweep 1.24 ms (601 pts)

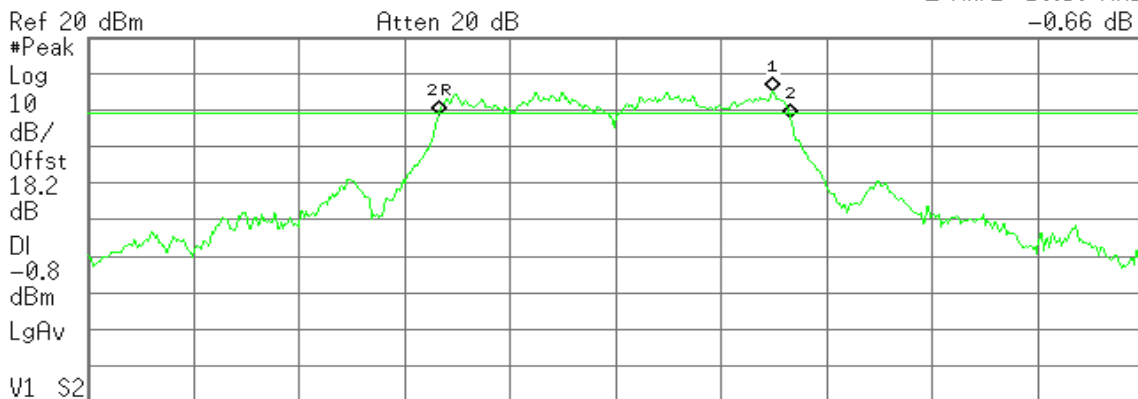
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.792 42 GHz	4.86 dBm
2R	(1)	Freq	5.776 08 GHz	-1.66 dBm
2Δ	(1)	Freq	17.75 MHz	-0.36 dB

### 6dB Bandwidth (CH High)

Agilent 14:45:34 Jun 6, 2012

R T

Mkr2 16.58 MHz  
-0.66 dB



Center 5.825 00 GHz Span 50 MHz  
 #Res BW 200 kHz #VBW 560 kHz Sweep 1.24 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.832 42 GHz	5.20 dBm
2R	(1)	Freq	5.816 67 GHz	-1.29 dBm
2Δ	(1)	Freq	16.58 MHz	-0.66 dB



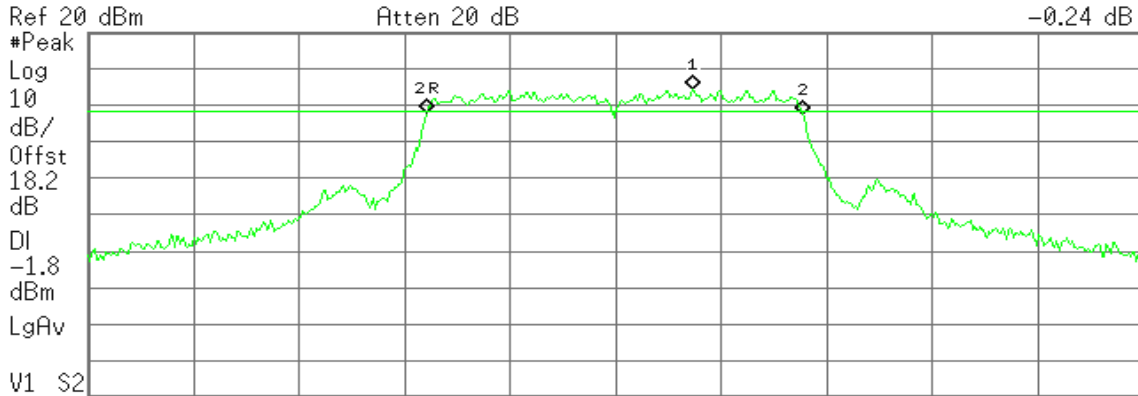
### IEEE 802.11n HT 20 MHz mode / Chain 1

#### 6dB Bandwidth (CH Low)

Agilent 15:18:06 Jun 6, 2012

R T

Mkr2 17.75 MHz  
-0.24 dB



Center 5.745 00 GHz Span 50 MHz  
#Res BW 200 kHz #VBW 560 kHz Sweep 1.24 ms (601 pts)

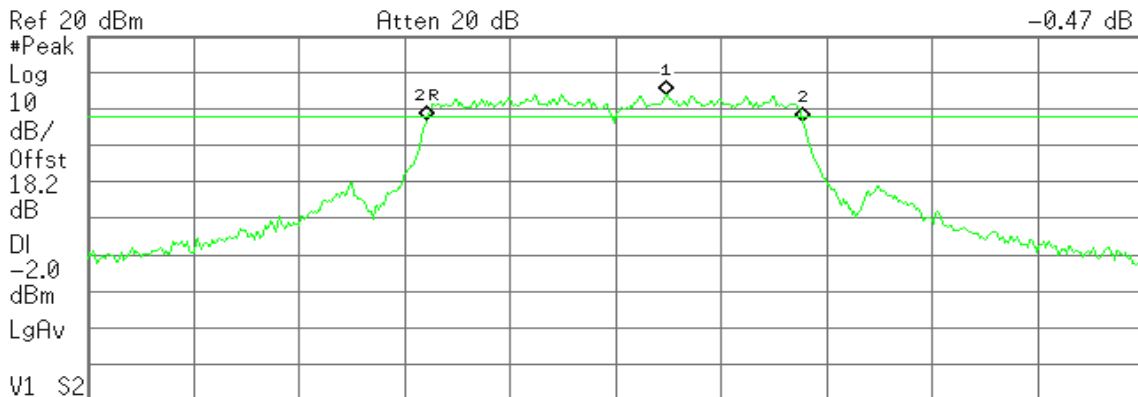
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.748 67 GHz	4.23 dBm
2R	(1)	Freq	5.736 08 GHz	-2.28 dBm
2Δ	(1)	Freq	17.75 MHz	-0.24 dB

#### 6dB Bandwidth (CH Mid)

Agilent 15:13:12 Jun 6, 2012

R T

Mkr2 17.75 MHz  
-0.47 dB



Center 5.785 00 GHz Span 50 MHz  
#Res BW 200 kHz #VBW 560 kHz Sweep 1.24 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.787 42 GHz	4.03 dBm
2R	(1)	Freq	5.776 08 GHz	-3.12 dBm
2Δ	(1)	Freq	17.75 MHz	-0.47 dB

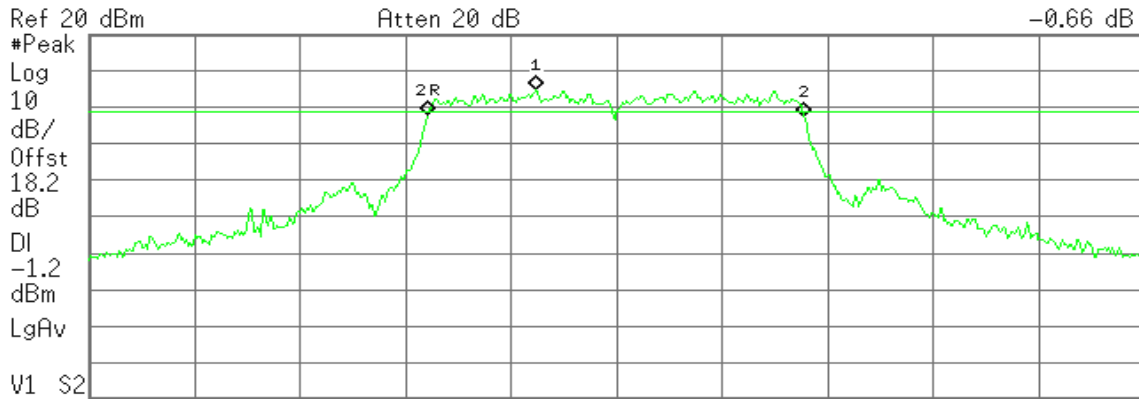


### 6dB Bandwidth (CH High)

Agilent 15:15:48 Jun 6, 2012

R T

▲ Mkr2 17.75 MHz  
-0.66 dB



Center 5.825 00 GHz

Span 50 MHz

#Res BW 200 kHz

#VBW 560 kHz

Sweep 1.24 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.821 17 GHz	4.82 dBm
2R	(1)	Freq	5.816 08 GHz	-1.90 dBm
2▲	(1)	Freq	17.75 MHz	-0.66 dB



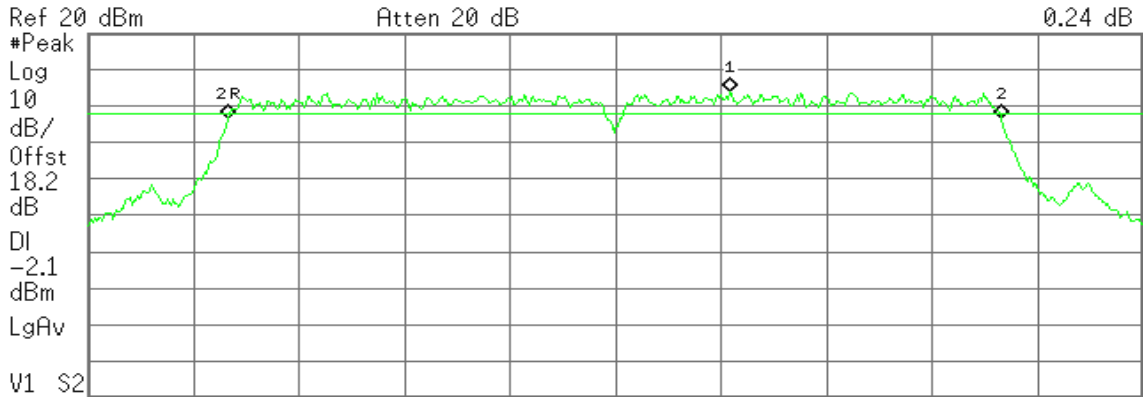
### IEEE 802.11n HT 40 MHz mode / Chain 0

#### 6dB Bandwidth (CH Low)

Agilent 16:24:36 Jun 6, 2012

R T

Mkr2 36.58 MHz  
0.24 dB



Center 5.755 00 GHz Span 50 MHz  
#Res BW 390 kHz #VBW 1.2 MHz Sweep 1 ms (601 pts)

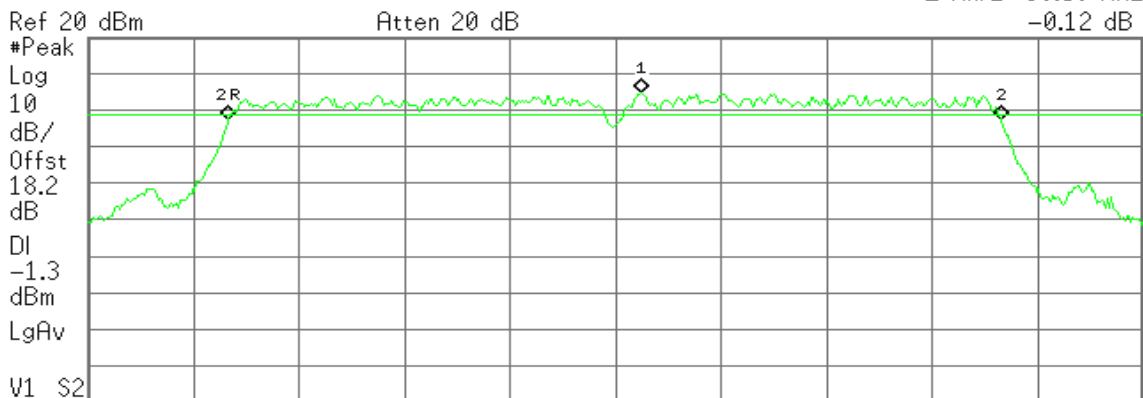
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.760 42 GHz	3.87 dBm
2R	(1)	Freq	5.736 67 GHz	-3.41 dBm
2Δ	(1)	Freq	36.58 MHz	0.24 dB

#### 6dB Bandwidth (CH High)

Agilent 16:22:13 Jun 6, 2012

R T

Mkr2 36.58 MHz  
-0.12 dB



Center 5.795 00 GHz Span 50 MHz  
#Res BW 390 kHz #VBW 1.2 MHz Sweep 1 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.796 25 GHz	4.68 dBm
2R	(1)	Freq	5.776 67 GHz	-2.32 dBm
2Δ	(1)	Freq	36.58 MHz	-0.12 dB



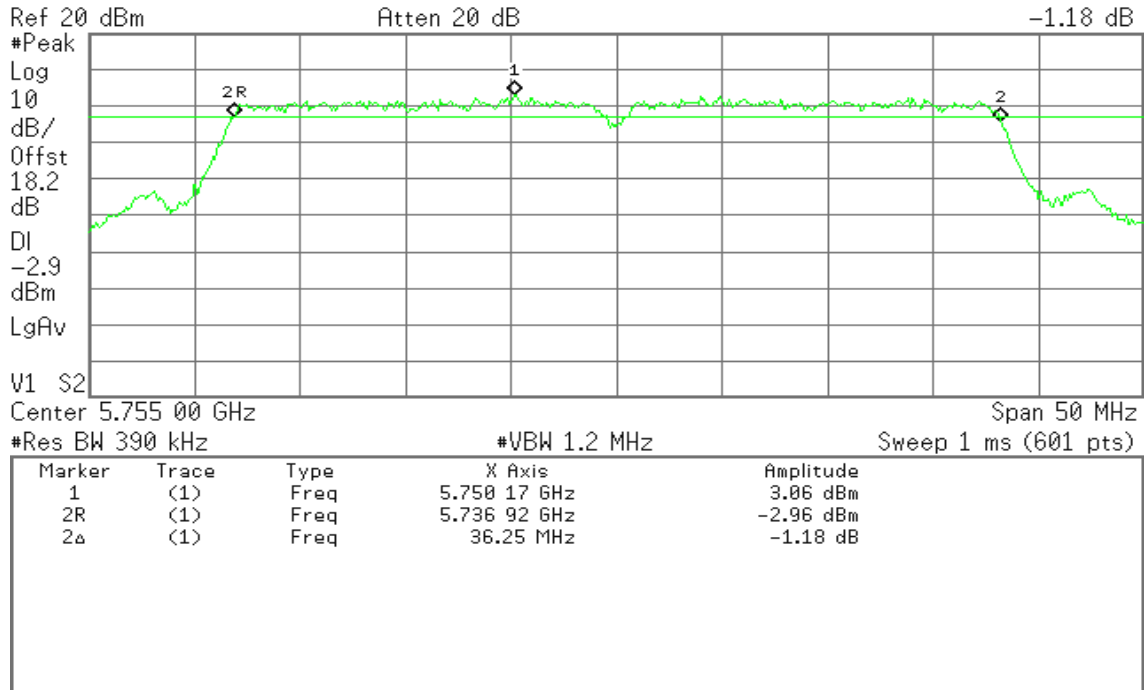
### IEEE 802.11n HT 40 MHz mode / Chain 1

#### 6dB Bandwidth (CH Low)

Agilent 16:28:58 Jun 6, 2012

R T

Mkr2 36.25 MHz  
-1.18 dB

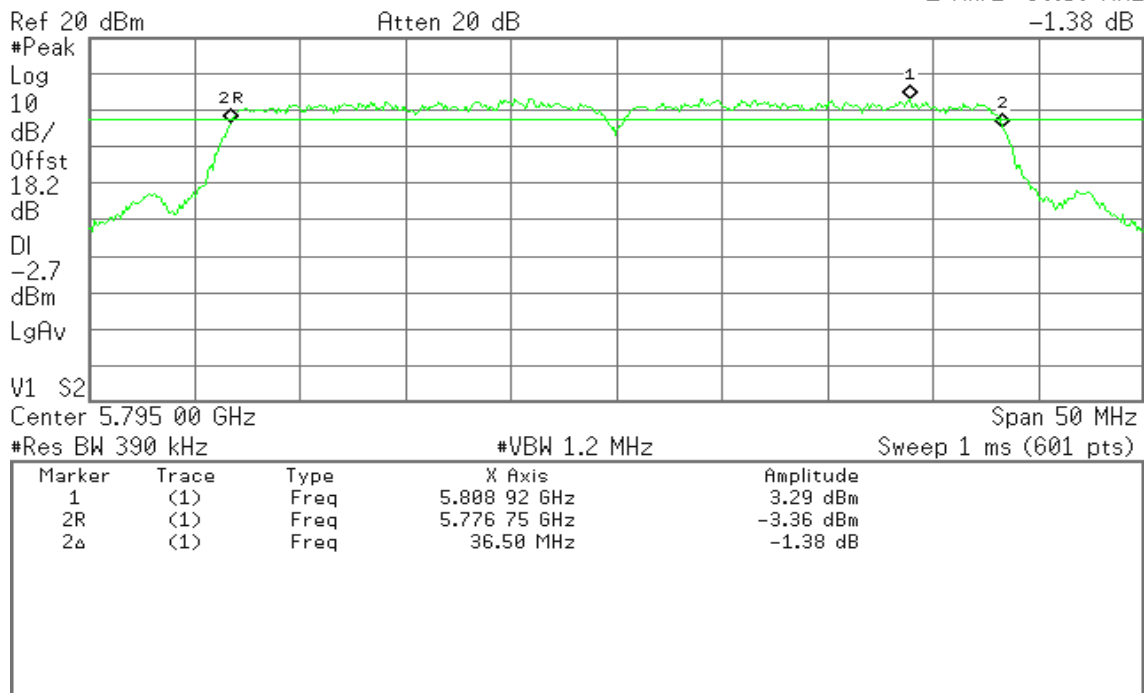


#### 6dB Bandwidth (CH High)

Agilent 16:31:08 Jun 6, 2012

R T

Mkr2 36.50 MHz  
-1.38 dB







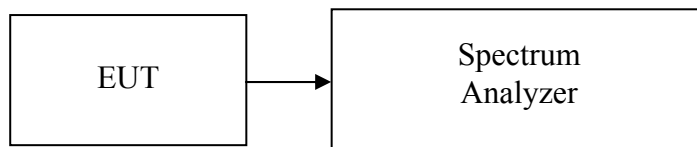
## 7.2 PEAK POWER

### LIMIT

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
2. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### Test Configuration



### TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. Set the RBW = 1MHz, VBW = 3MHz, Detector = Peak, Trace mode = max hold, Sweep = auto couple. Record the max reading. Repeat the above procedure until the measurements for all frequencies are completed.

### TEST RESULTS

*No non-compliance noted.*

**Test Data****Test mode: IEEE 802.11b mode**

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	19.54	0.0899	1.00	PASS
Mid	2442	19.36	0.0863		PASS
High	2462	19.57	0.0906		PASS

**Test mode: IEEE 802.11g mode**

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	23.58	0.2280	1.00	PASS
Mid	2442	24.02	0.2523		PASS
High	2462	22.48	0.1770		PASS

**Test mode: IEEE 802.11n HT 20 MHz mode**

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	18.60	18.05	21.34	0.1363	1.00	PASS
Mid	2442	22.09	22.09	25.10	0.3236		PASS
High	2462	18.36	18.81	21.60	0.1446		PASS

**Test mode: IEEE 802.11n HT 40 MHz mode**

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2422	17.21	16.28	19.78	0.0951	1.00	PASS
Mid	2442	18.43	18.24	21.35	0.1363		PASS
High	2452	17.05	16.41	19.75	0.0945		PASS

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



**Test mode: IEEE 802.11a mode**

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	5745	21.79	0.1510	1.00	PASS
Mid	5785	21.88	0.1542		PASS
High	5825	22.09	0.1618		PASS

**Test mode: IEEE 802.11n HT 20 MHz mode**

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	5745	21.77	21.36	24.58	0.2871	1.00	PASS
Mid	5785	21.77	21.67	24.73	0.2972		PASS
High	5825	21.74	21.85	24.81	0.3024		PASS

**Test mode: IEEE 802.11n HT 40 MHz mode**

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	5755	20.57	20.01	23.31	0.2143	1.00	PASS
High	5795	21.03	20.36	23.72	0.2354		PASS

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



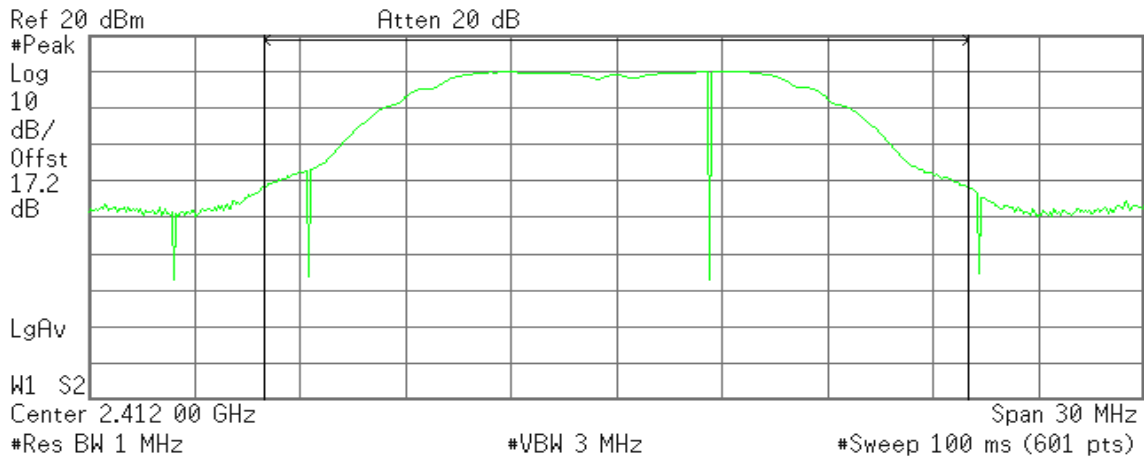
**Test Plot**

**IEEE 802.11b mode**

**Peak Power (CH Low)**

Agilent 13:49:38 May 28, 2012

R T



**Channel Power**

19.54 dBm /20.0000 MHz

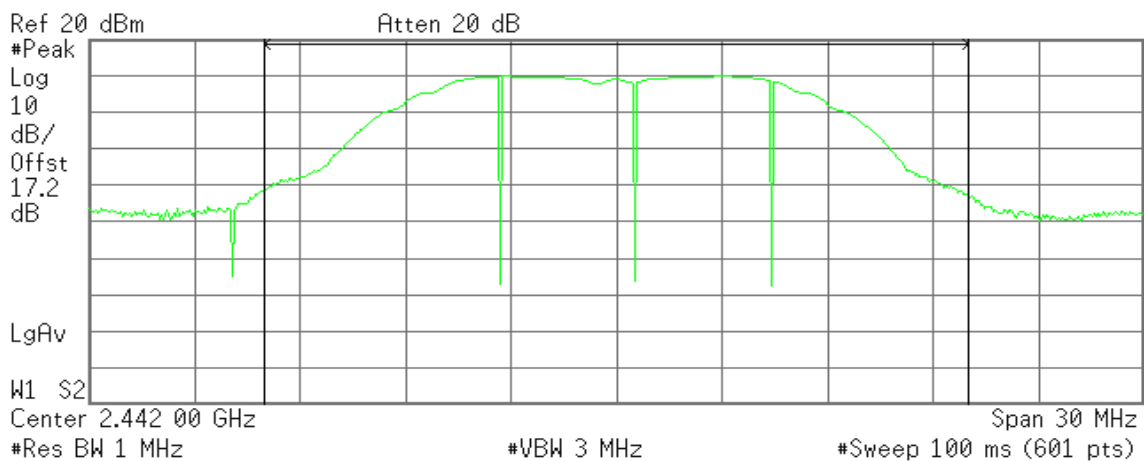
**Power Spectral Density**

-53.47 dBm/Hz

**Peak Power (CH Mid)**

Agilent 13:53:51 May 28, 2012

R T



**Channel Power**

19.36 dBm /20.0000 MHz

**Power Spectral Density**

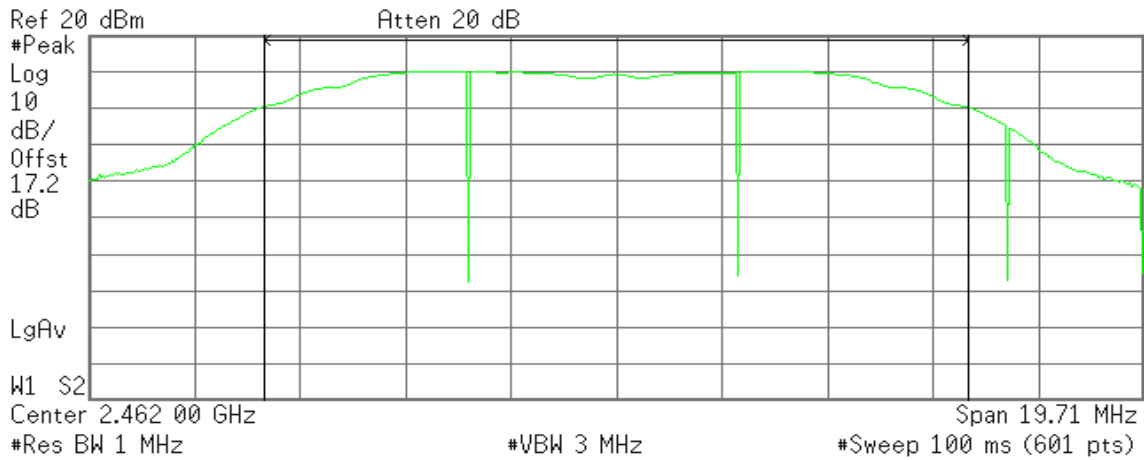
-53.65 dBm/Hz



### Peak Power (CH High)

Agilent 13:57:44 May 28, 2012

R T



Channel Power

19.57 dBm /13.1420 MHz

Power Spectral Density

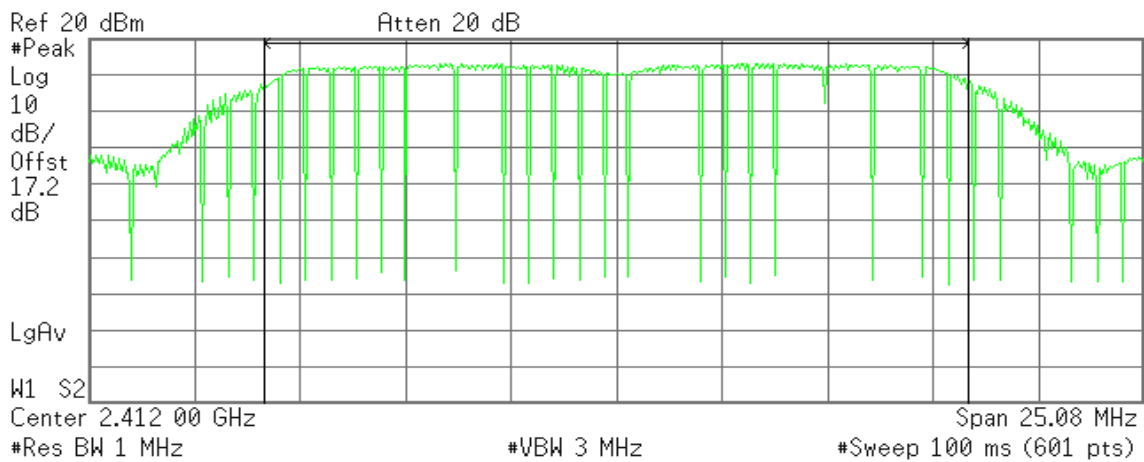
-51.62 dBm/Hz

### IEEE 802.11g mode

#### Peak Power (CH Low)

Agilent 14:03:04 May 28, 2012

R T



Channel Power

23.58 dBm /16.7200 MHz

Power Spectral Density

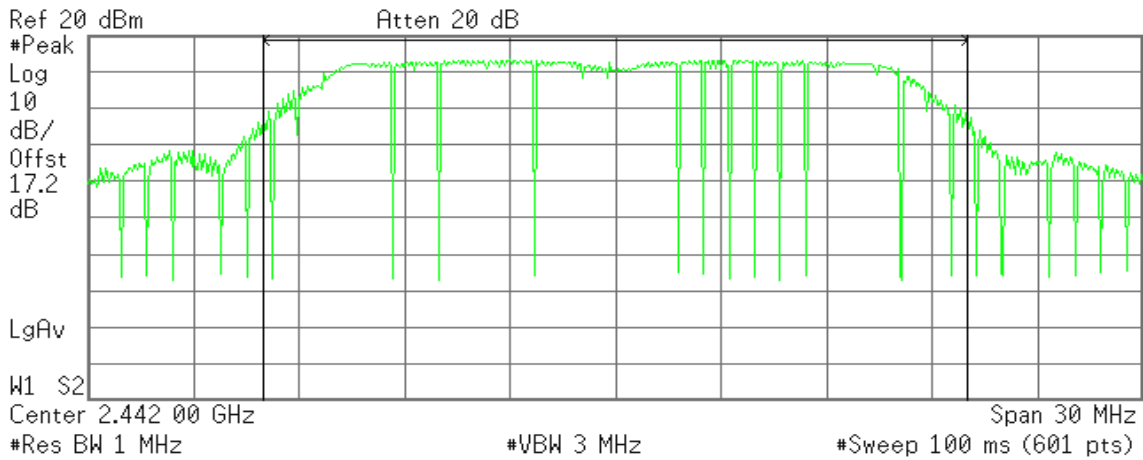
-48.66 dBm/Hz



### Peak Power (CH Mid)

Agilent 14:07:06 May 28, 2012

R T



Channel Power

24.02 dBm /20.0000 MHz

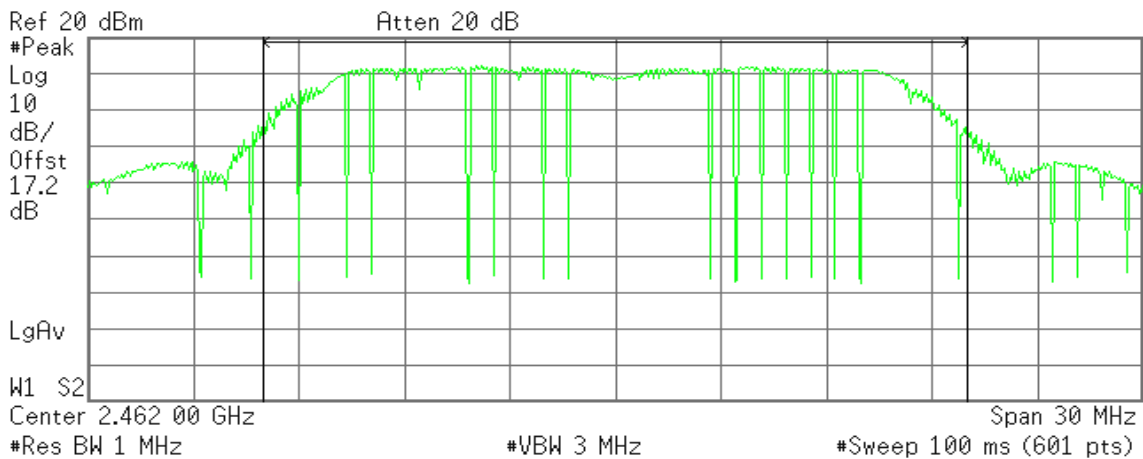
Power Spectral Density

-48.99 dBm/Hz

### Peak Power (CH High)

Agilent 14:12:45 May 28, 2012

R T



Channel Power

22.48 dBm /20.0000 MHz

Power Spectral Density

-50.53 dBm/Hz

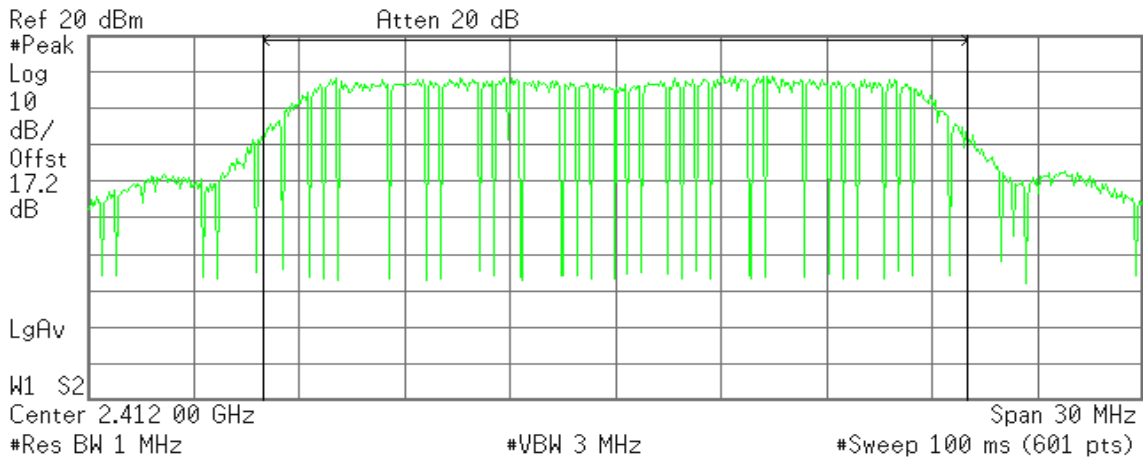


### IEEE 802.11n HT 20 MHz mode / Chain 0

#### Peak Power (CH Low)

Agilent 14:18:06 May 28, 2012

R T



Channel Power

18.60 dBm /20.0000 MHz

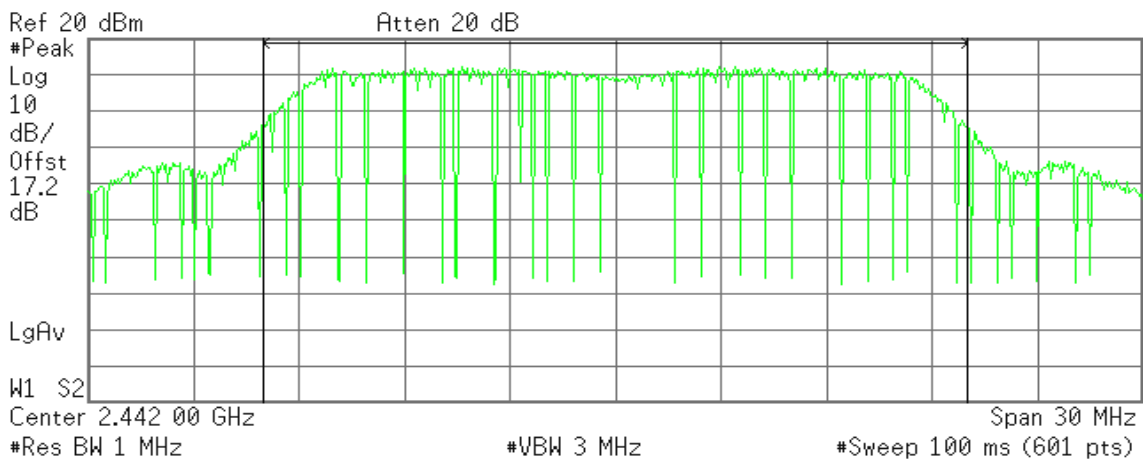
Power Spectral Density

-54.41 dBm/Hz

#### Peak Power (CH Mid)

Agilent 14:21:25 May 28, 2012

R T



Channel Power

22.09 dBm /20.0000 MHz

Power Spectral Density

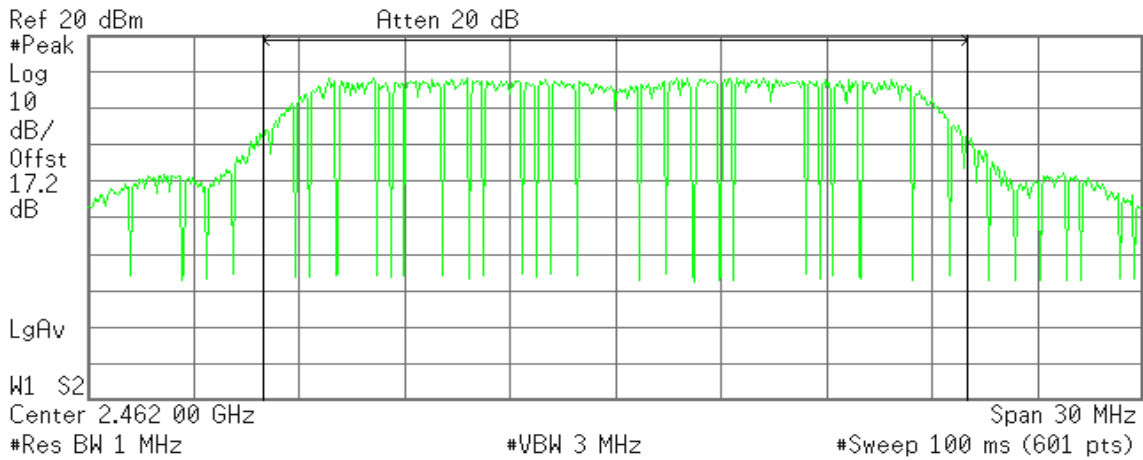
-50.92 dBm/Hz



### Peak Power (CH High)

Agilent 14:24:37 May 28, 2012

R T



Channel Power

18.36 dBm /20.0000 MHz

Power Spectral Density

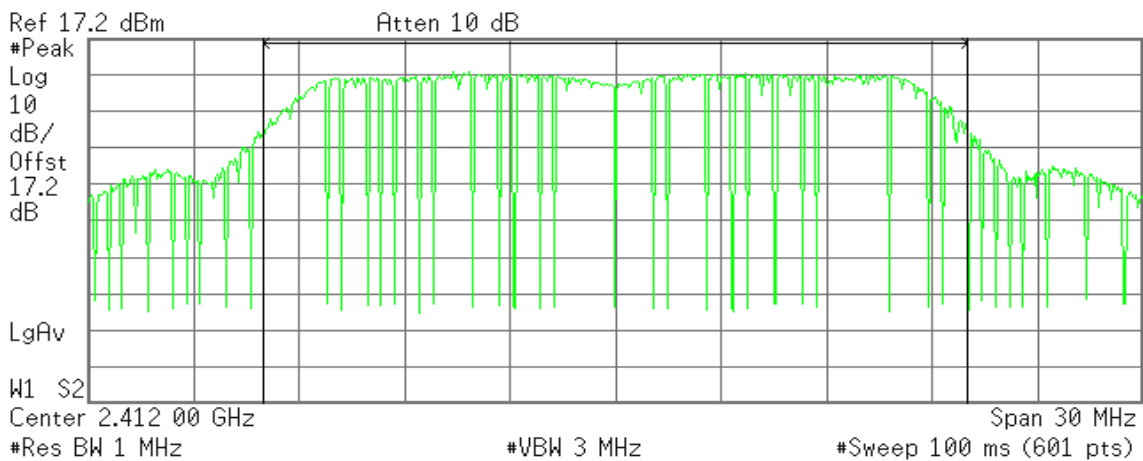
-54.65 dBm/Hz

### IEEE 802.11n HT 20 MHz mode / Chain 1

#### Peak Power (CH Low)

Agilent 09:21:42 May 29, 2012

R T



Channel Power

18.05 dBm /20.0000 MHz

Power Spectral Density

-54.96 dBm/Hz

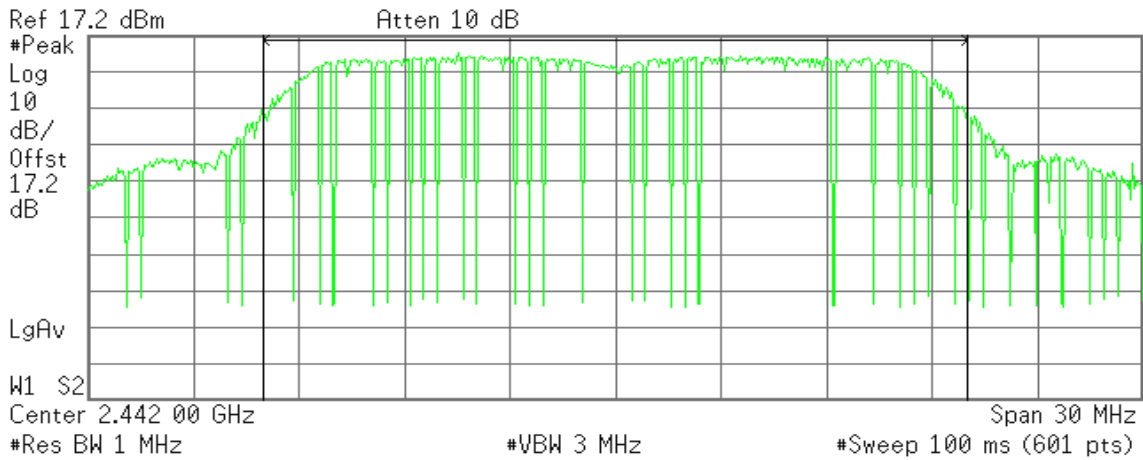




### Peak Power (CH Mid)

Agilent 09:23:56 May 29, 2012

R T



Channel Power

22.09 dBm /20.0000 MHz

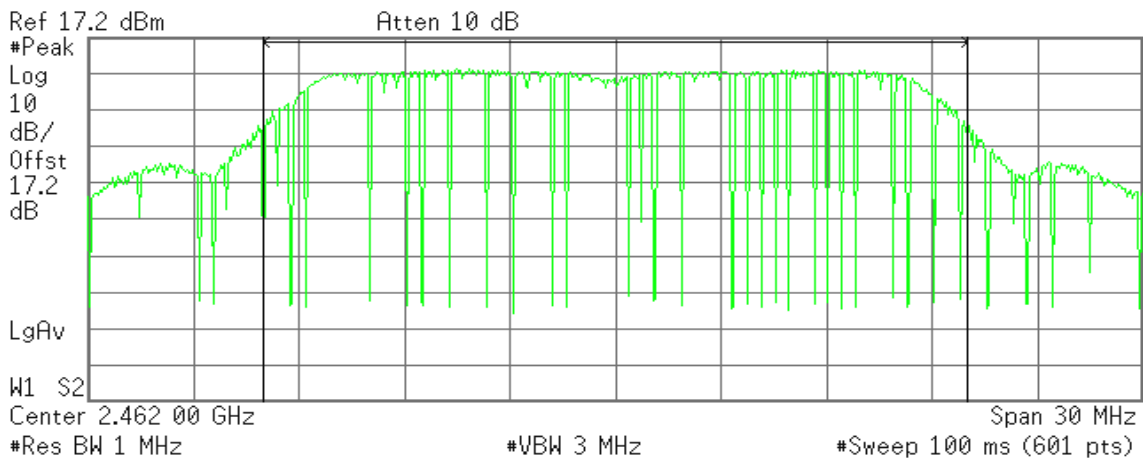
Power Spectral Density

-50.92 dBm/Hz

### Peak Power (CH High)

Agilent 09:23:27 May 29, 2012

R T



Channel Power

18.81 dBm /20.0000 MHz

Power Spectral Density

-54.20 dBm/Hz

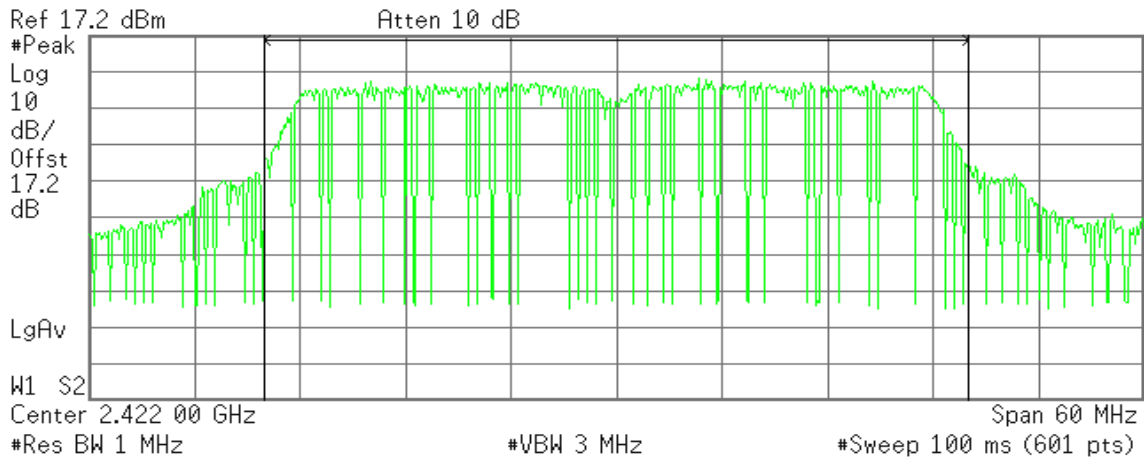


### IEEE 802.11n HT 40 MHz mode / Chain 0

#### Peak Power (CH Low)

Agilent 09:38:45 May 29, 2012

R T



**Channel Power**

17.21 dBm /40.0000 MHz

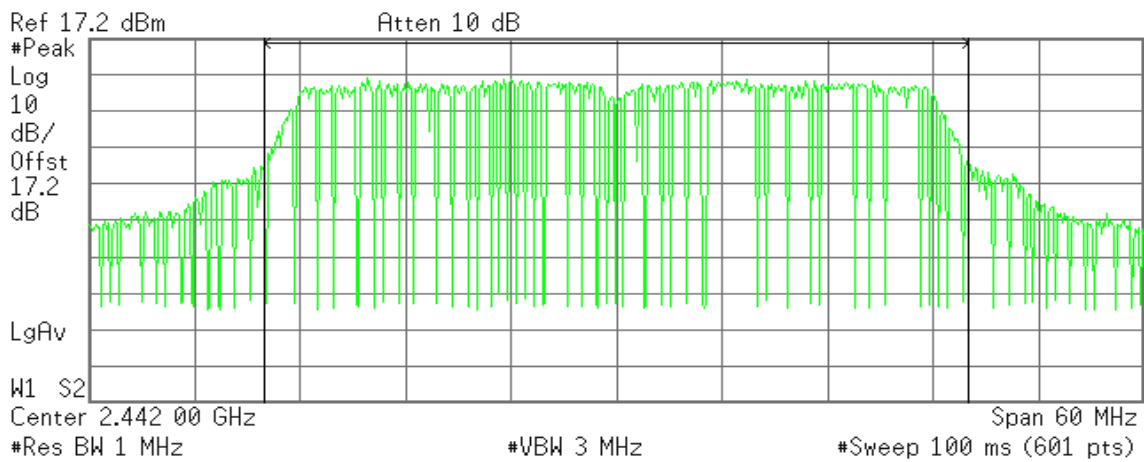
**Power Spectral Density**

-58.81 dBm/Hz

#### Peak Power (CH Mid)

Agilent 09:39:43 May 29, 2012

R T



**Channel Power**

18.43 dBm /40.0000 MHz

**Power Spectral Density**

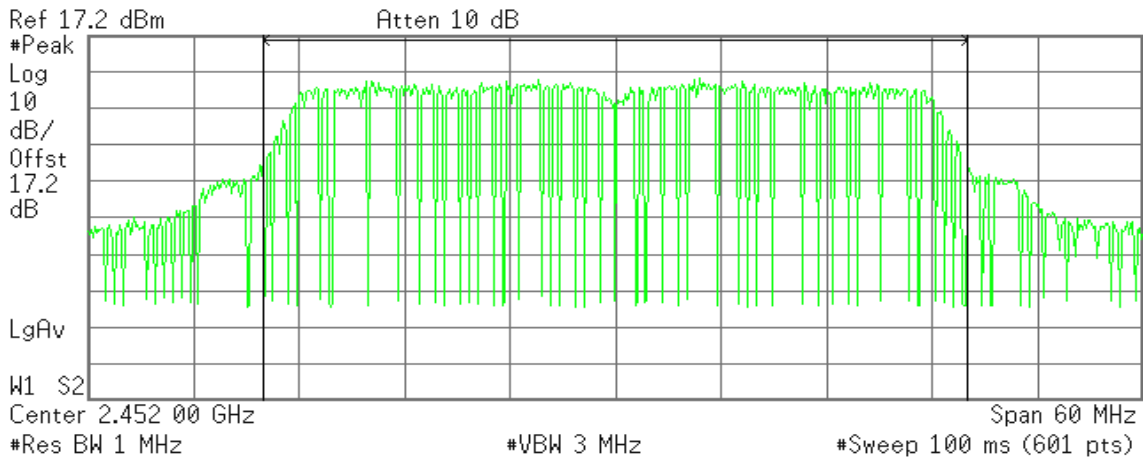
-57.59 dBm/Hz



### Peak Power (CH High)

Agilent 09:41:27 May 29, 2012

R T



Channel Power

17.05 dBm /40.0000 MHz

Power Spectral Density

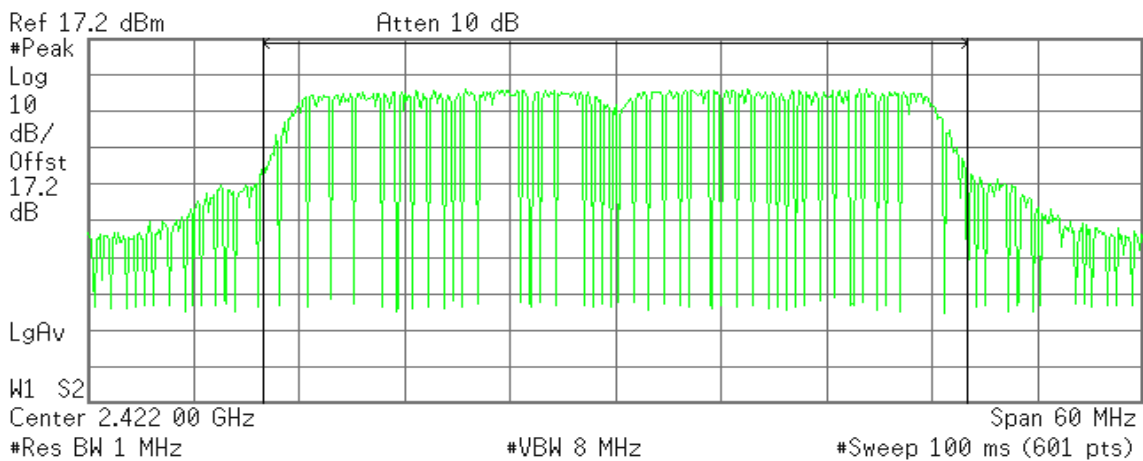
-58.97 dBm/Hz

### IEEE 802.11n HT 40 MHz mode / Chain 1

#### Peak Power (CH Low)

Agilent 09:45:57 May 29, 2012

R T



Channel Power

16.28 dBm /40.0000 MHz

Power Spectral Density

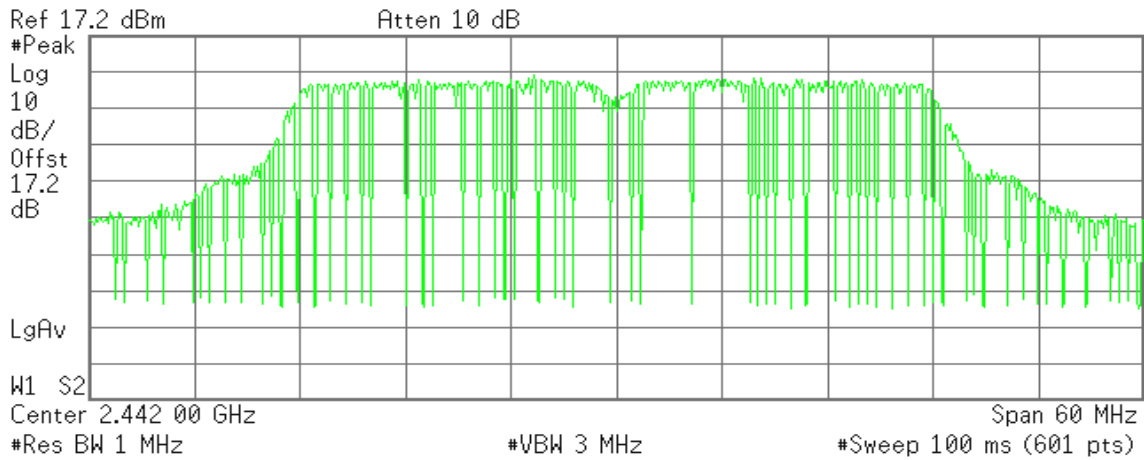
-59.74 dBm/Hz



### Peak Power (CH Mid)

Agilent 09:44:58 May 29, 2012

R T



Channel Power

18.24 dBm /40.0000 MHz

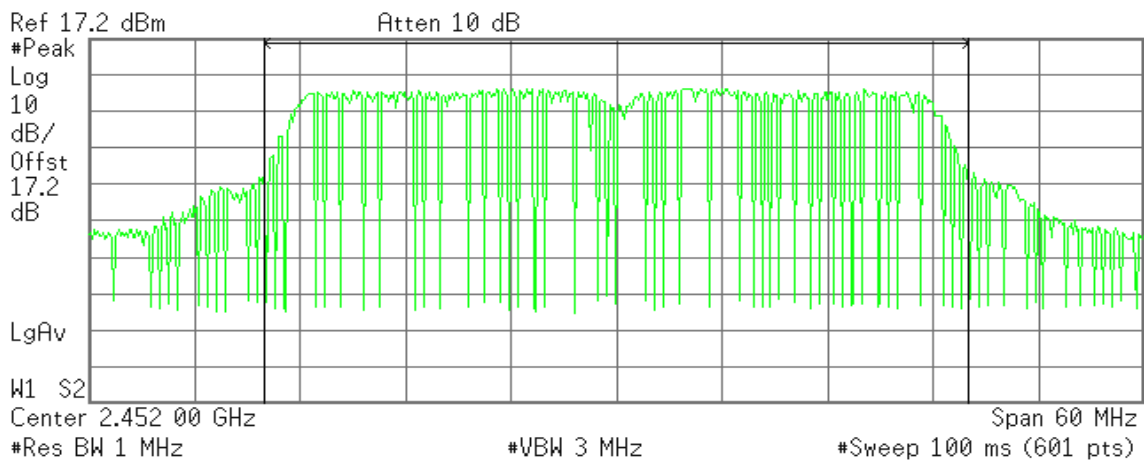
Power Spectral Density

-57.78 dBm/Hz

### Peak Power (CH High)

Agilent 09:43:47 May 29, 2012

R T



Channel Power

16.41 dBm /40.0000 MHz

Power Spectral Density

-59.61 dBm/Hz



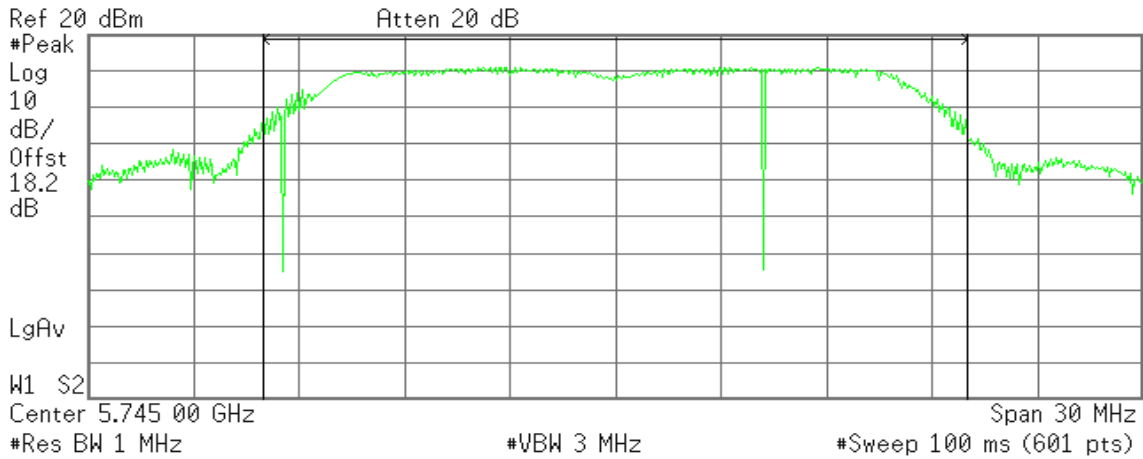
### Test Plot

#### IEEE 802.11a mode

#### Peak Power (CH Low)

Agilent 13:40:48 Jun 6, 2012

R T



Channel Power

21.79 dBm /20.0000 MHz

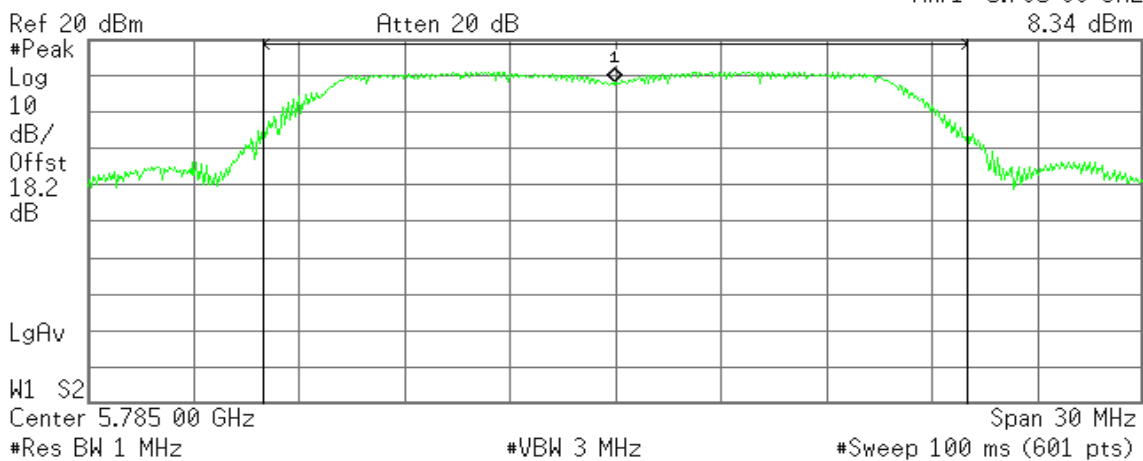
Power Spectral Density

-51.22 dBm/Hz

#### Peak Power (CH Mid)

Agilent 13:46:15 Jun 6, 2012

R T



Channel Power

21.88 dBm /20.0000 MHz

Power Spectral Density

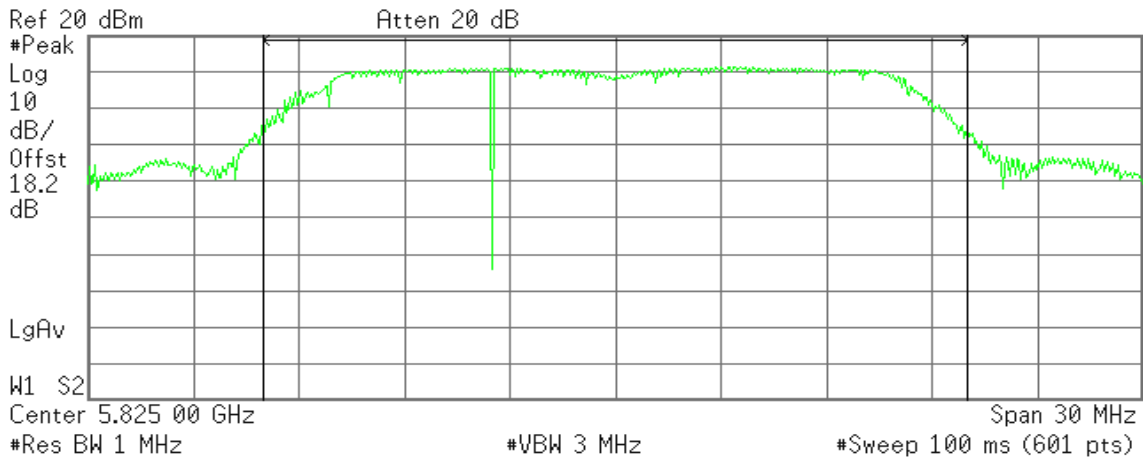
-51.14 dBm/Hz



### Peak Power (CH High)

Agilent 13:50:11 Jun 6, 2012

R T



**Channel Power**

22.09 dBm /20.0000 MHz

**Power Spectral Density**

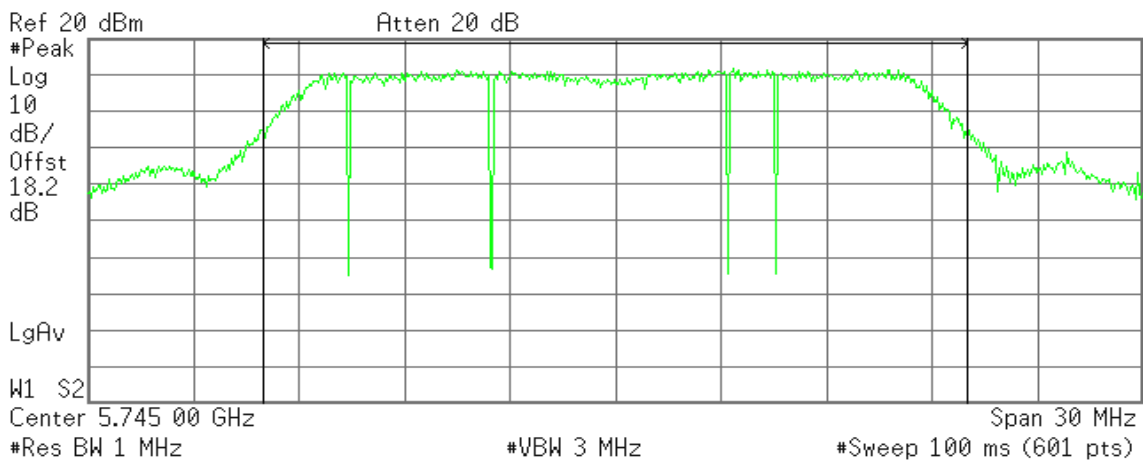
-50.92 dBm/Hz

### IEEE 802.11n HT 20 MHz Channel mode / Chain 0

#### Peak Power (CH Low)

Agilent 14:04:50 Jun 6, 2012

R T



**Channel Power**

21.77 dBm /20.0000 MHz

**Power Spectral Density**

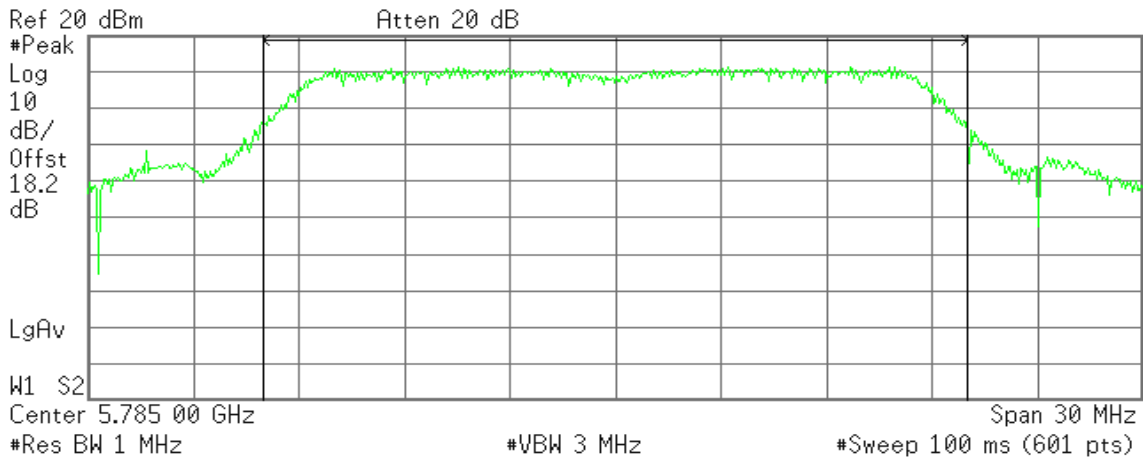
-51.24 dBm/Hz



### Peak Power (CH Mid)

Agilent 14:00:56 Jun 6, 2012

R T



**Channel Power**

21.77 dBm /20.0000 MHz

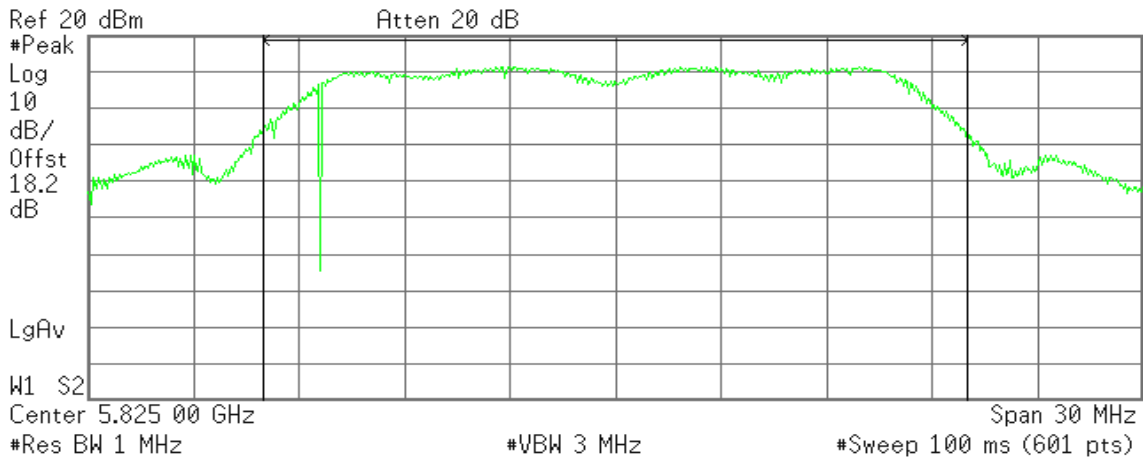
**Power Spectral Density**

-51.24 dBm/Hz

### Peak Power (CH High)

Agilent 13:56:26 Jun 6, 2012

R T



**Channel Power**

21.74 dBm /20.0000 MHz

**Power Spectral Density**

-51.27 dBm/Hz

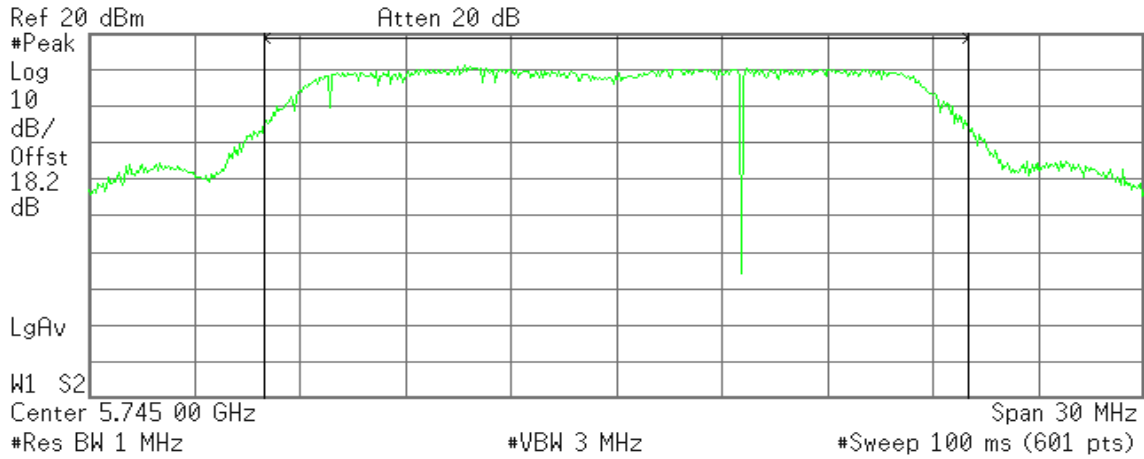


**IEEE 802.11n HT 20 MHz Channel mode / Chain 1**

**Peak Power (CH Low)**

Agilent 14:08:22 Jun 6, 2012

R T



**Channel Power**

21.36 dBm /20.0000 MHz

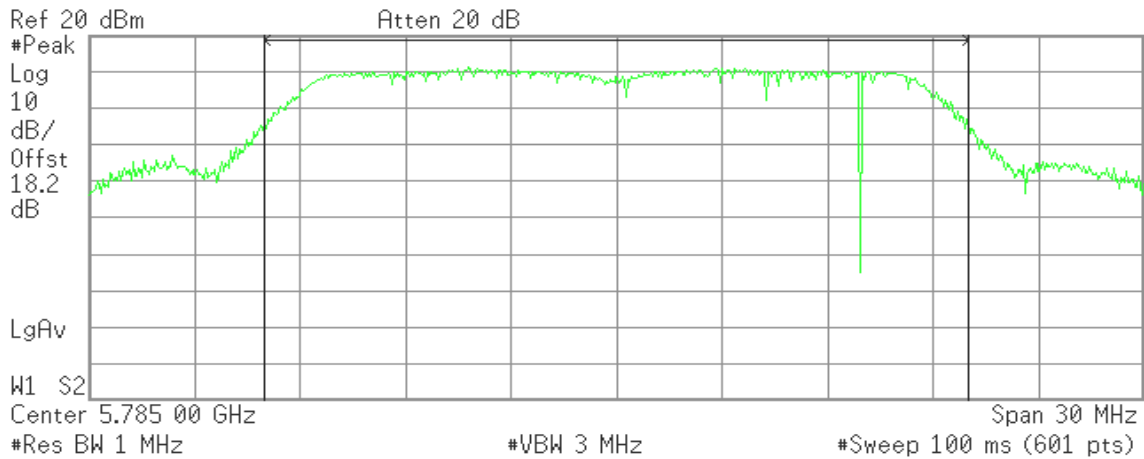
**Power Spectral Density**

-51.65 dBm/Hz

**Peak Power (CH Mid)**

Agilent 14:26:40 Jun 6, 2012

R T



**Channel Power**

21.67 dBm /20.0000 MHz

**Power Spectral Density**

-51.34 dBm/Hz

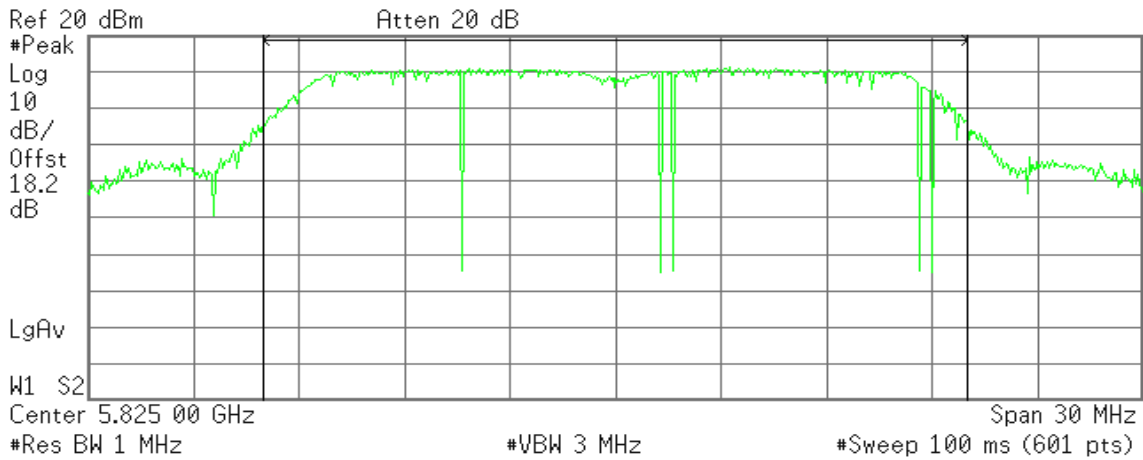




### Peak Power (CH High)

Agilent 14:29:17 Jun 6, 2012

R T



**Channel Power**

21.85 dBm /20.0000 MHz

**Power Spectral Density**

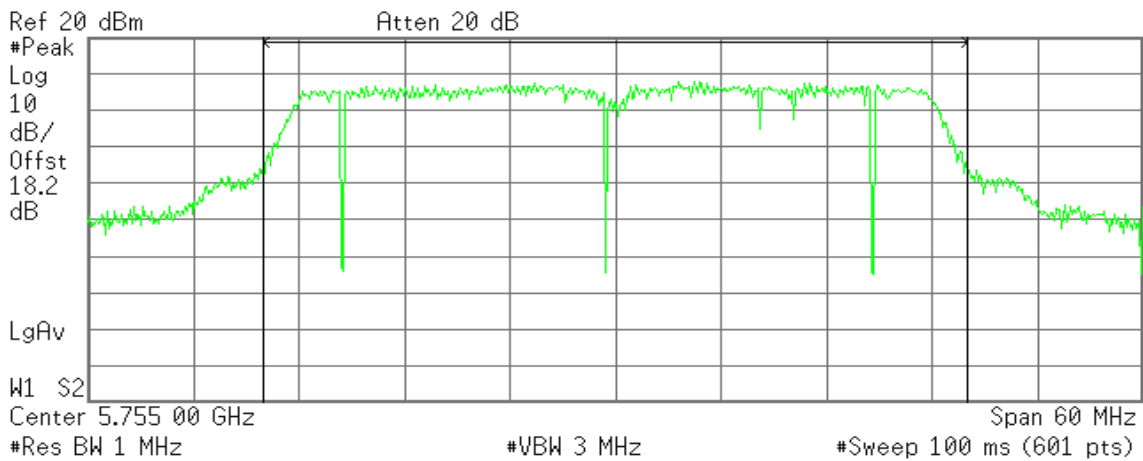
-51.16 dBm/Hz

### IEEE 802.11n HT 40 MHz Channel mode / Chain 0

#### Peak Power (CH Low)

Agilent 15:44:08 Jun 6, 2012

R T



**Channel Power**

20.57 dBm /40.0000 MHz

**Power Spectral Density**

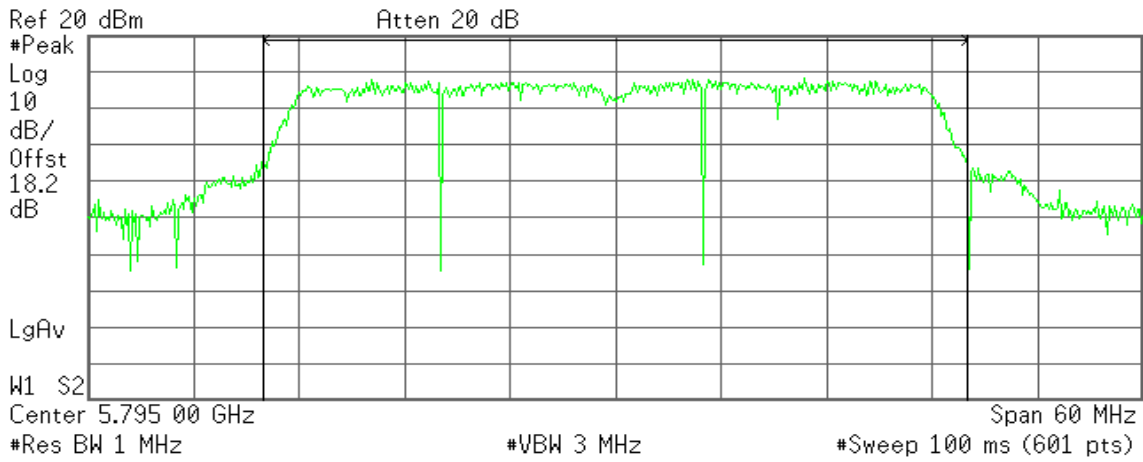
-55.45 dBm/Hz



### Peak Power (CH High)

Agilent 16:10:25 Jun 6, 2012

R T



**Channel Power**

21.03 dBm /40.0000 MHz

**Power Spectral Density**

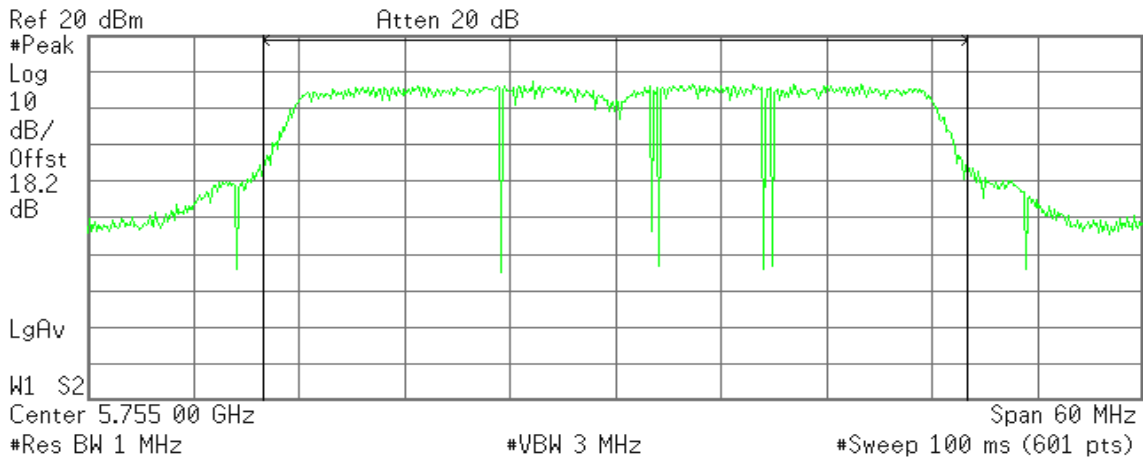
-54.99 dBm/Hz

### IEEE 802.11n HT 40 MHz Channel mode / Chain 1

#### Peak Power (CH Low)

Agilent 15:47:26 Jun 6, 2012

R T



**Channel Power**

20.01 dBm /40.0000 MHz

**Power Spectral Density**

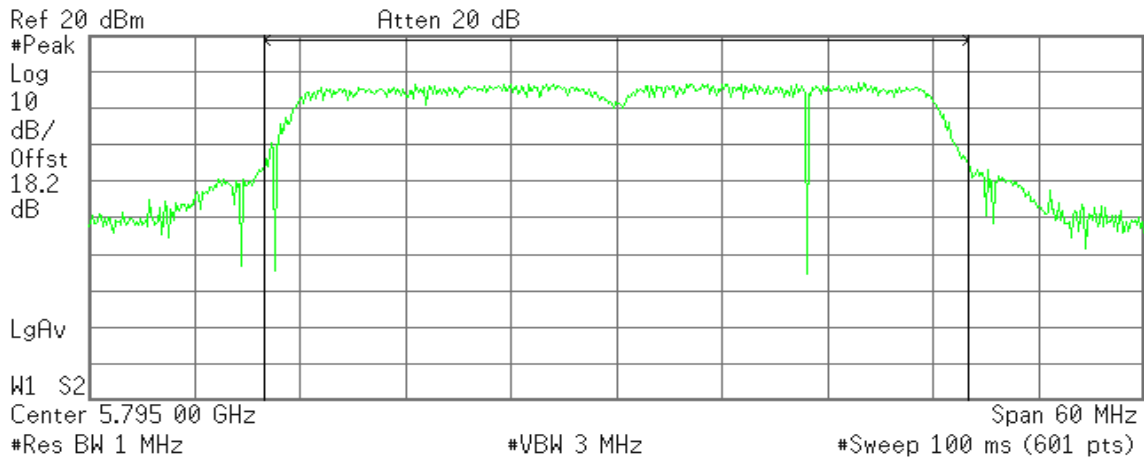
-56.01 dBm/Hz



### Peak Power (CH High)

Agilent 15:51:10 Jun 6, 2012

R T



**Channel Power**

20.36 dBm /40.0000 MHz

**Power Spectral Density**

-55.66 dBm/Hz



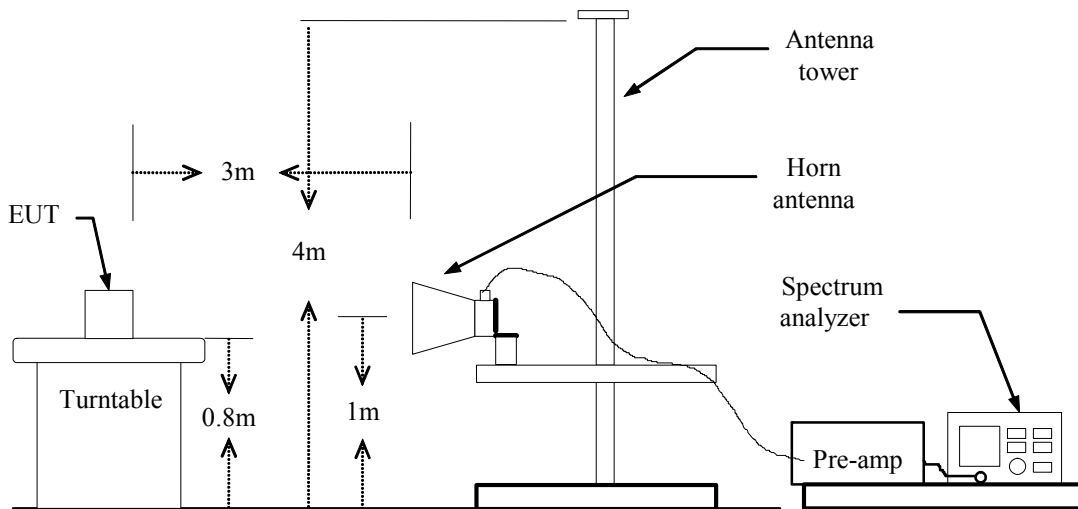
### 7.3 BAND EDGES MEASUREMENT

#### LIMIT

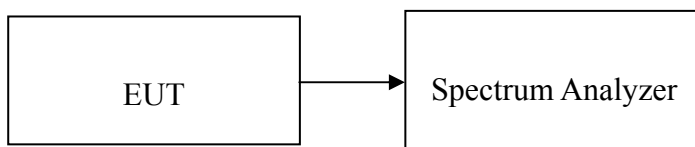
According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

#### Test Configuration

##### For Radiated



##### For Conducted





## **TEST PROCEDURE**

### **For Radiated**

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 / VBW=10Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

### **For Conducted**

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 100 kHz. The video bandwidth is set to 100 kHz.

## **TEST RESULTS**

Refer to attach spectrum analyzer data chart.



**802.11a Mode**

1. Operating Frequency: 5725-5875MHz
2. CH Low: 5745MHz, CH High: 5825MHz
3. 6dB bandwidth: CH Low: 16.67MHz, CH High: 16.58MHz

Because 5725~5875MHz is too far away from the 5460 and 7250 MHz so the test should be able to waive.



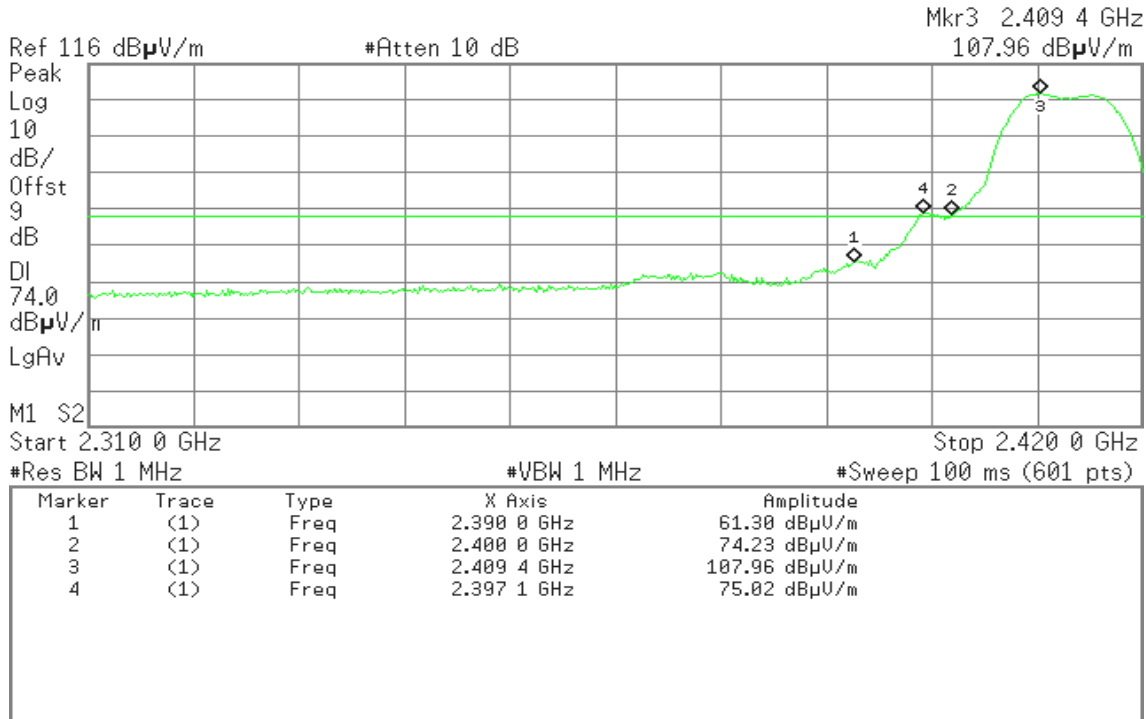
### Band Edges (IEEE 802.11b mode / CH Low)

Detector mode: Peak

Polarity: Vertical

Agilent 14:15:10 9 Jan 2012

T

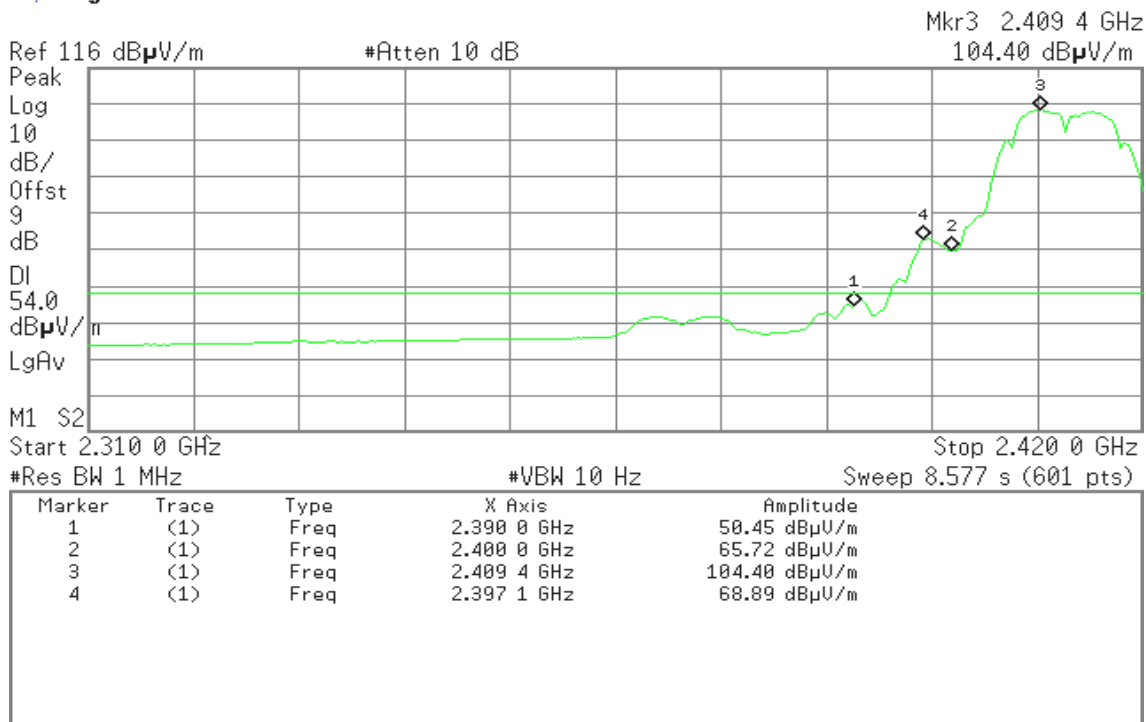


Detector mode: Average

Polarity: Vertical

Agilent 14:15:49 9 Jan 2012

T



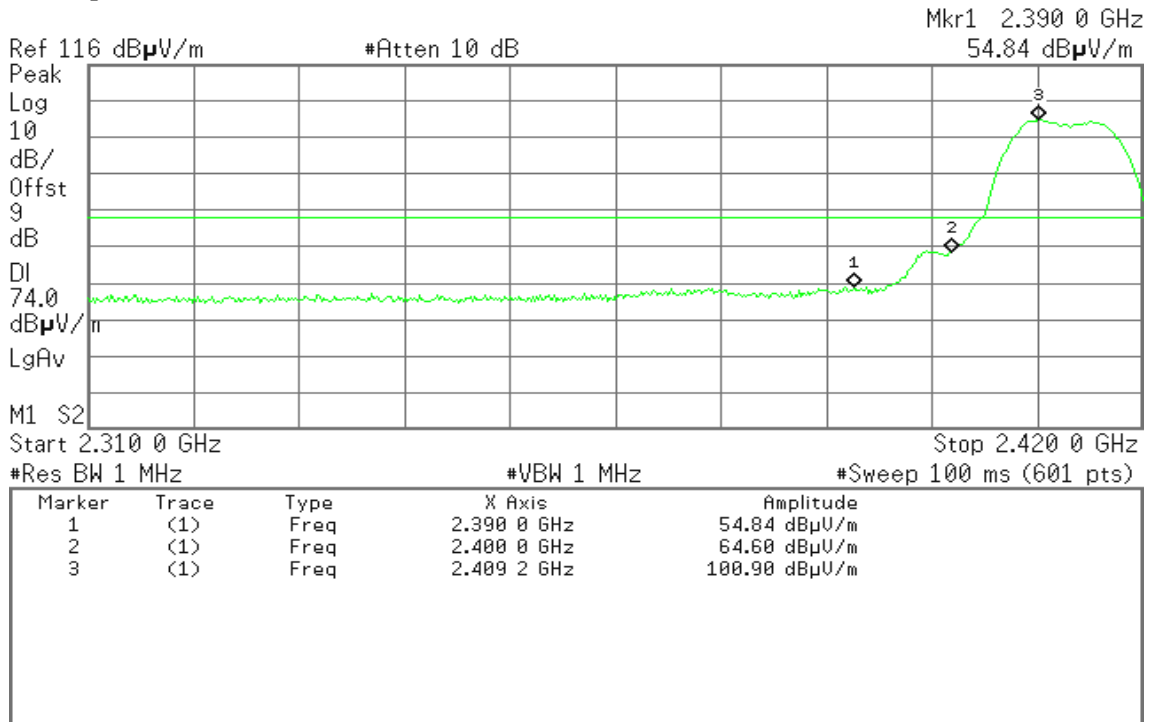


Detector mode: Peak

Polarity: Horizontal

Agilent 14:22:04 9 Jan 2012

T

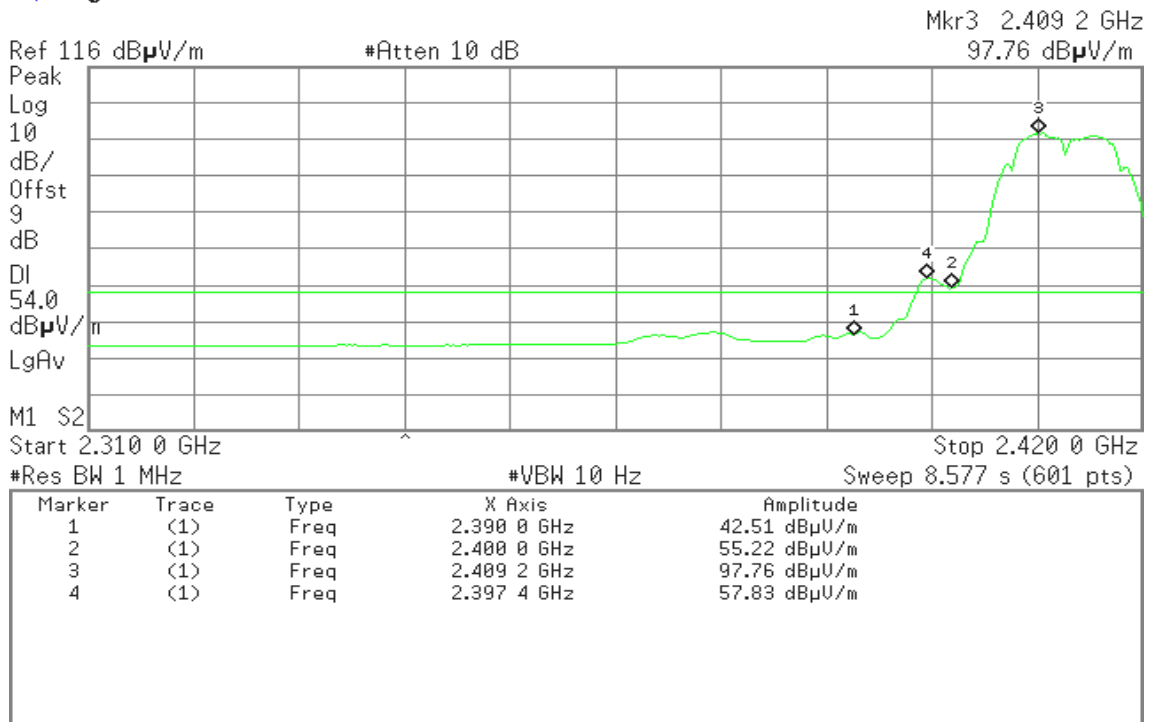


Detector mode: Average

Polarity: Horizontal

Agilent 14:22:43 9 Jan 2012

T







### Band Edges (IEEE 802.11b mode / CH High)

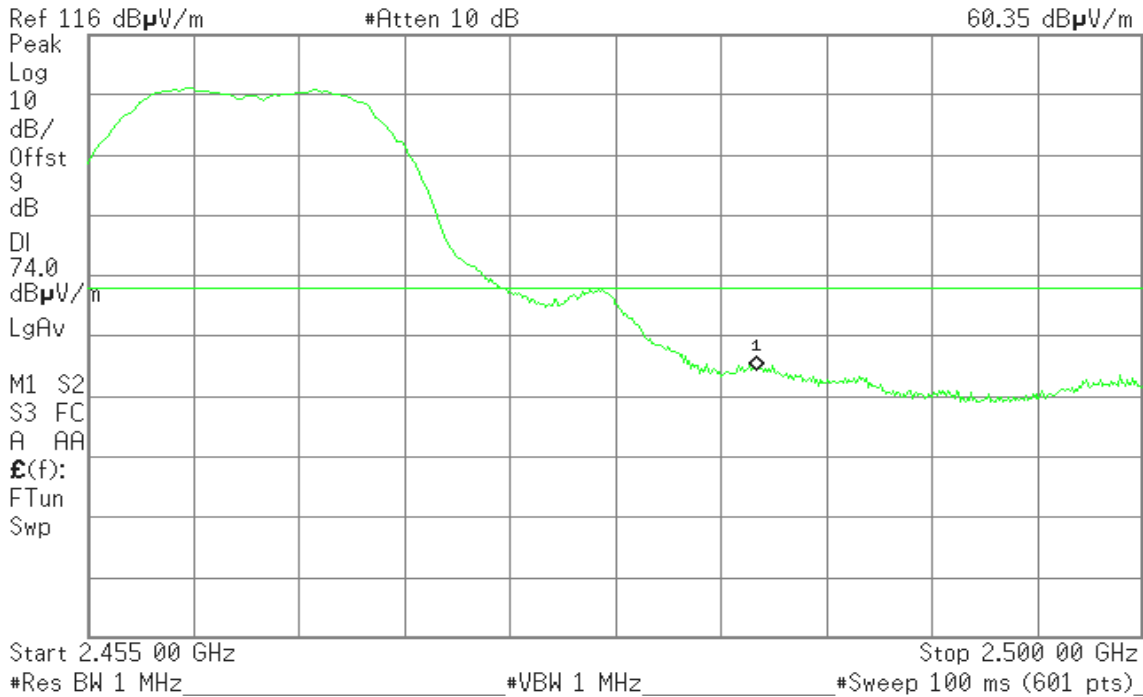
Detector mode: Peak

Polarity: Vertical

Agilent 14:38:45 9 Jan 2012

T

Mkr1 2.483 50 GHz  
60.35 dB $\mu$ V/m



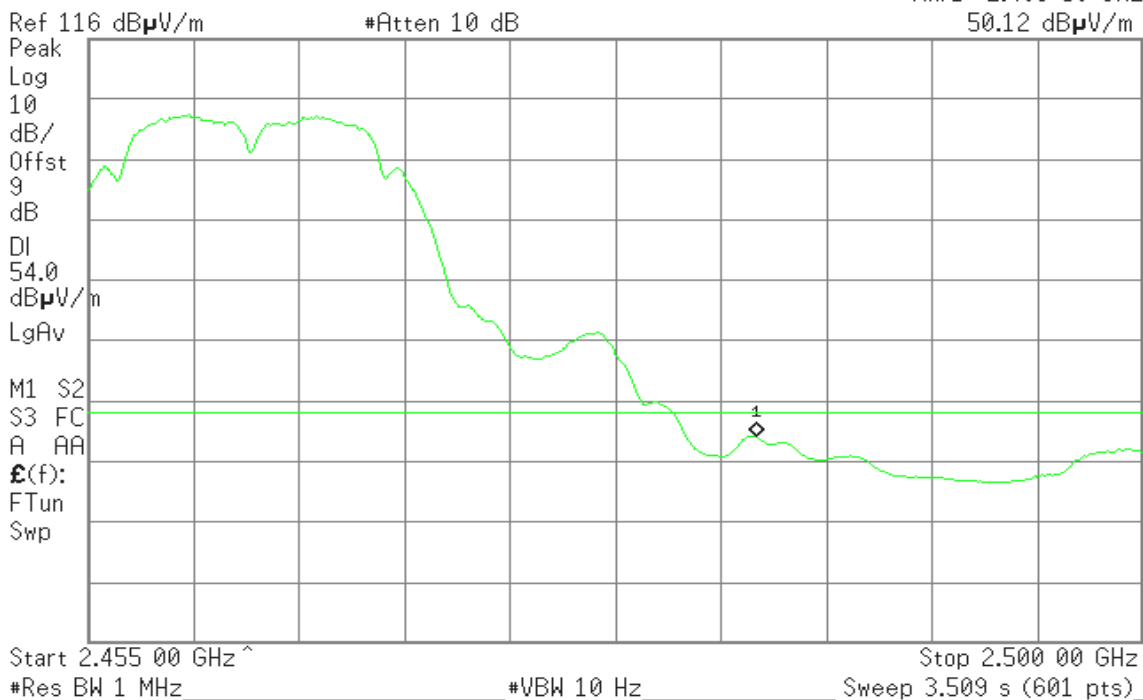
Detector mode: Average

Polarity: Vertical

Agilent 14:39:05 9 Jan 2012

T

Mkr1 2.483 50 GHz  
50.12 dB $\mu$ V/m





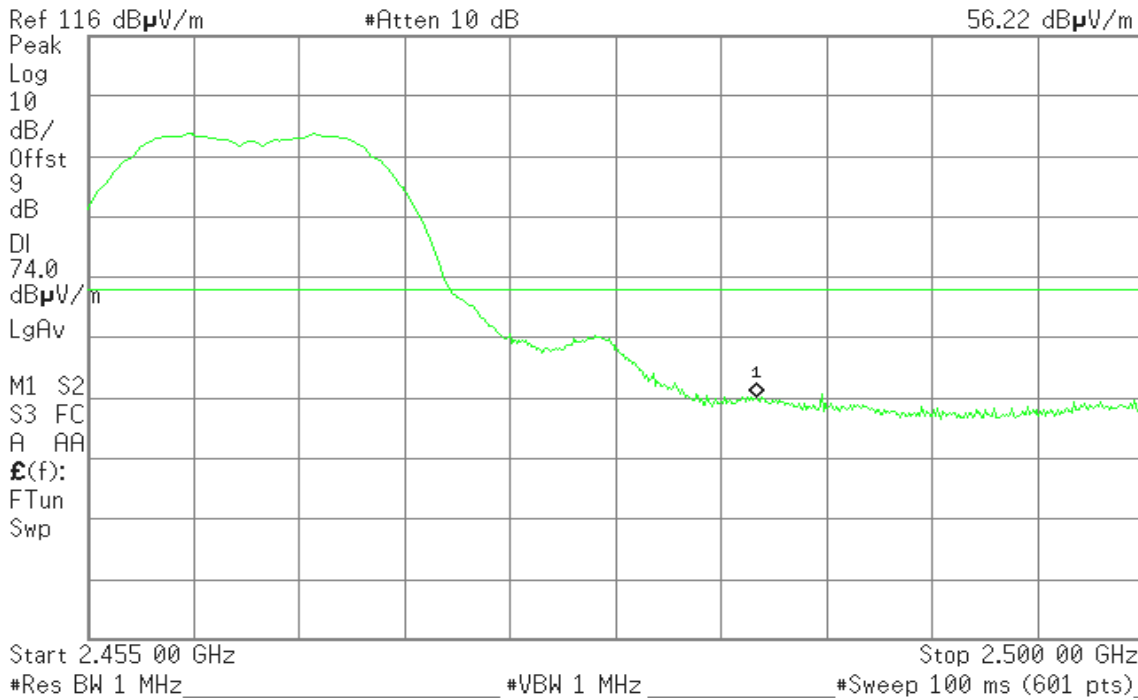
**Detector mode: Peak**

**Polarity: Horizontal**

Agilent 14:44:15 9 Jan 2012

R T

Mkr1 2.483 50 GHz  
56.22 dB $\mu$ V/m



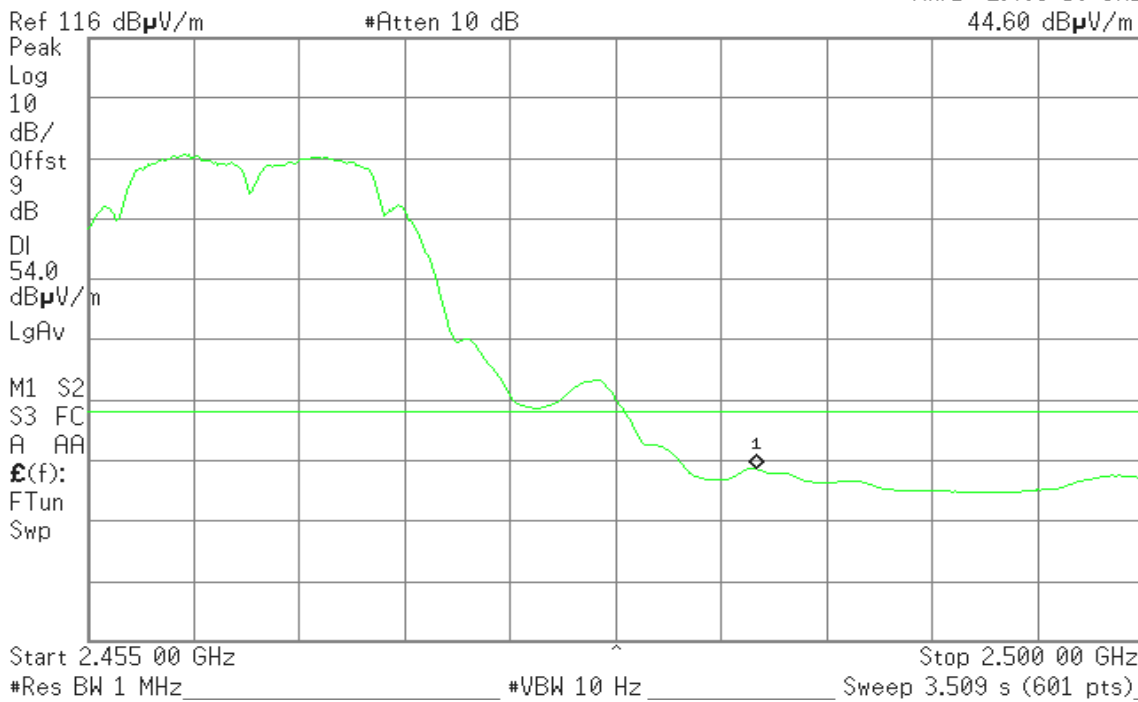
**Detector mode: Average**

**Polarity: Horizontal**

Agilent 14:44:35 9 Jan 2012

R T

Mkr1 2.483 50 GHz  
44.60 dB $\mu$ V/m





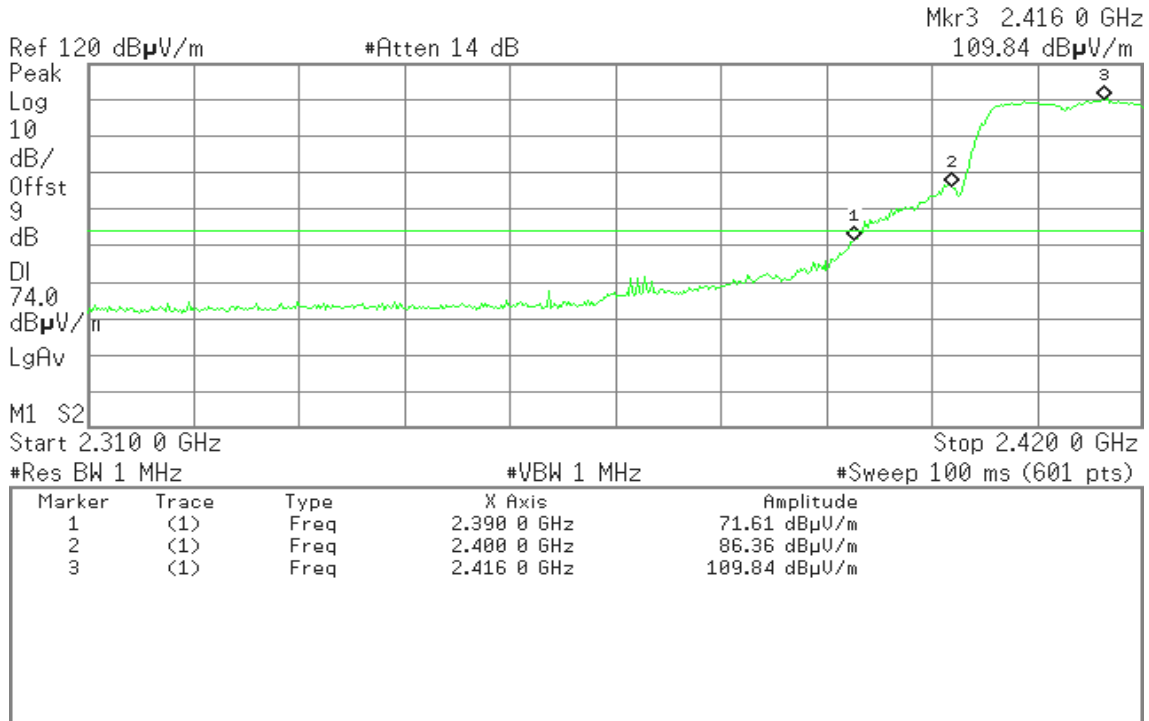
### Band Edges (IEEE 802.11g mode / CH Low)

Detector mode: Peak

Polarity: Vertical

Agilent 17:00:36 9 Jan 2012

T

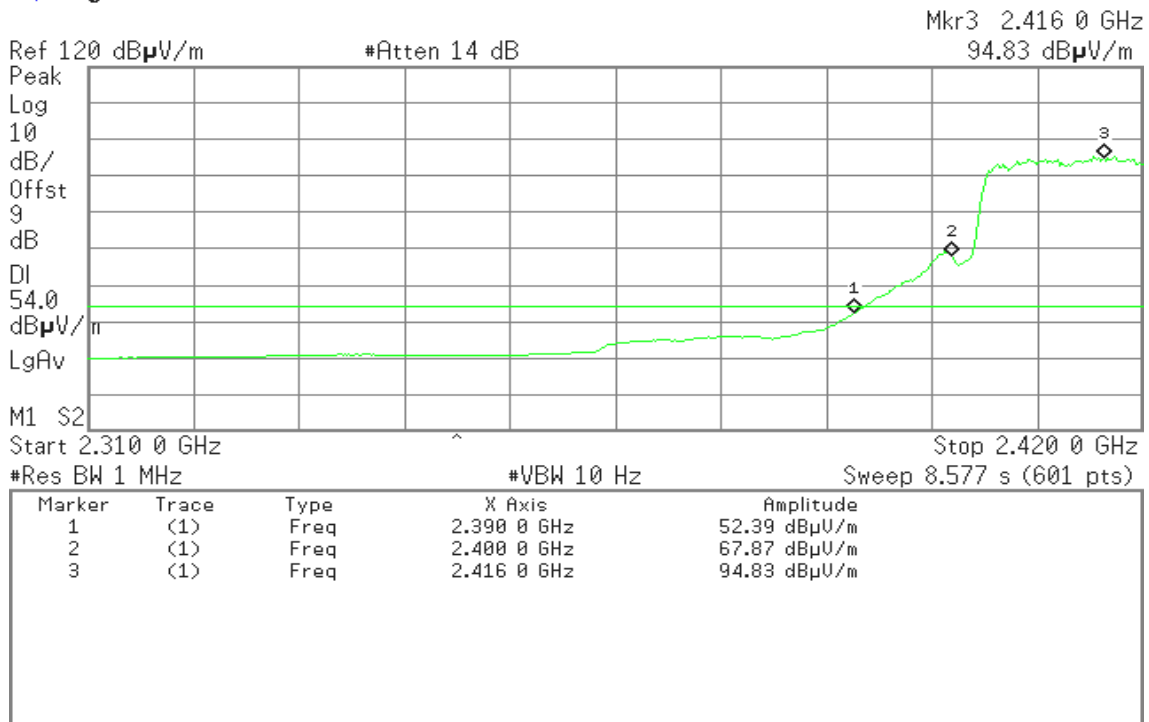


Detector mode: Average

Polarity: Vertical

Agilent 17:01:14 9 Jan 2012

T



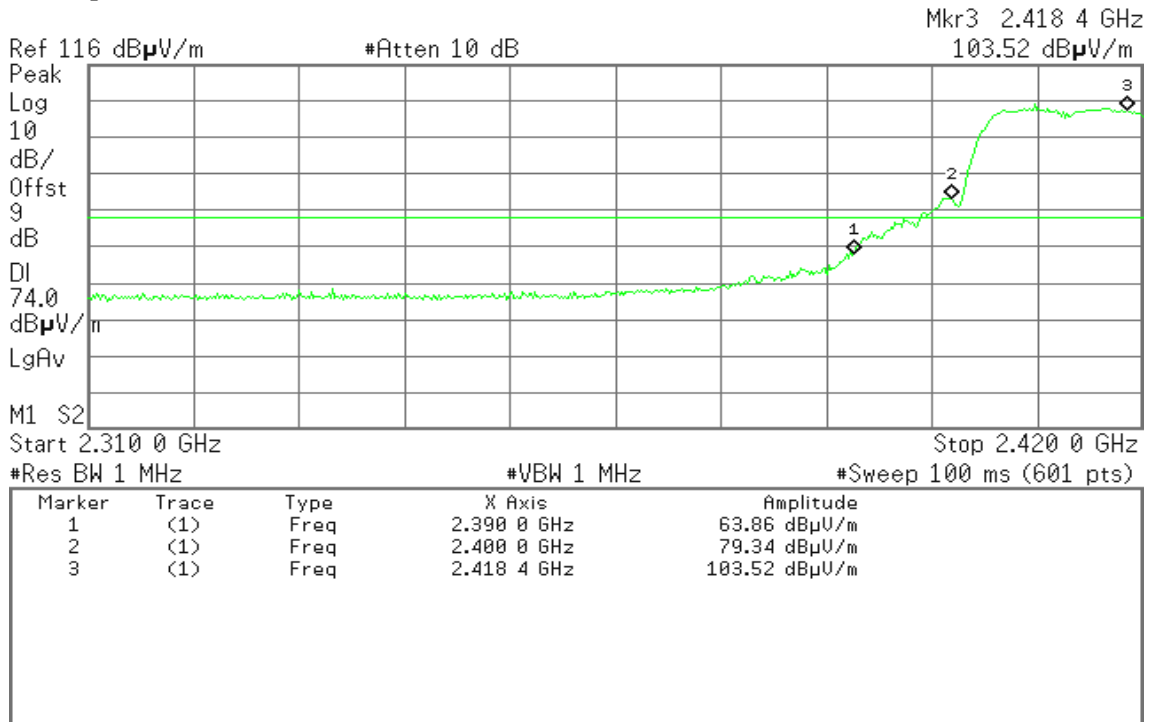


Detector mode: Peak

Polarity: Horizontal

Agilent 17:09:05 9 Jan 2012

R T

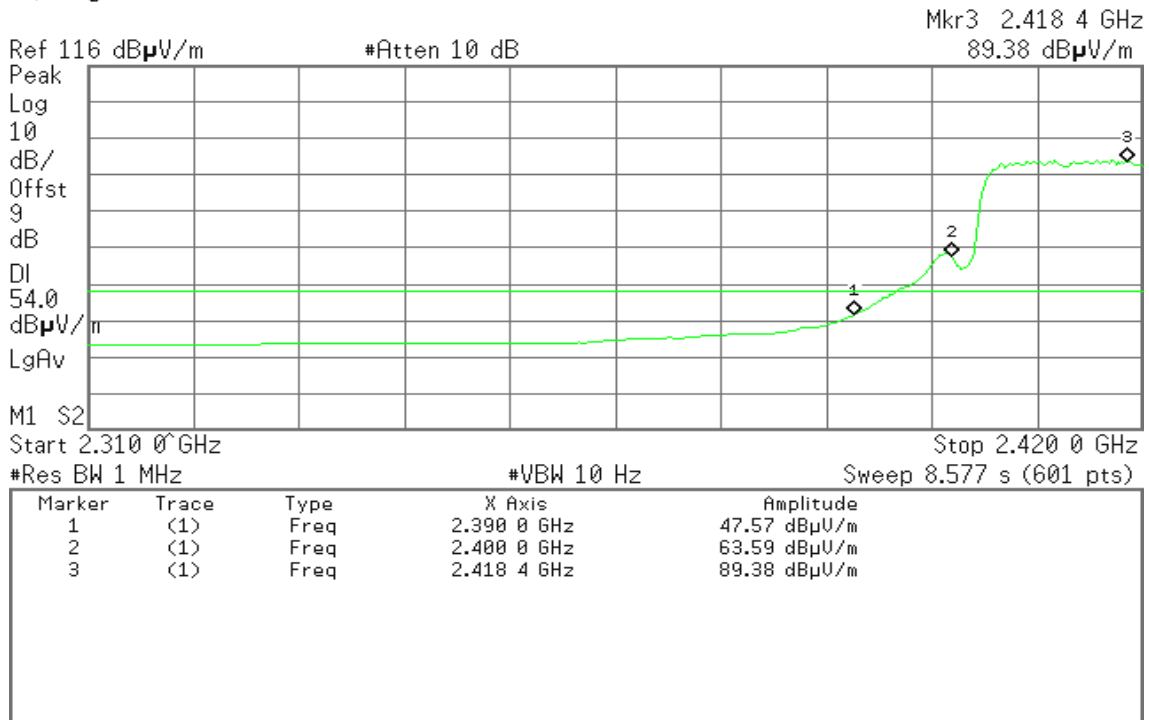


Detector mode: Average

Polarity: Horizontal

Agilent 17:09:34 9 Jan 2012

R T





### Band Edges (IEEE 802.11g mode / CH High)

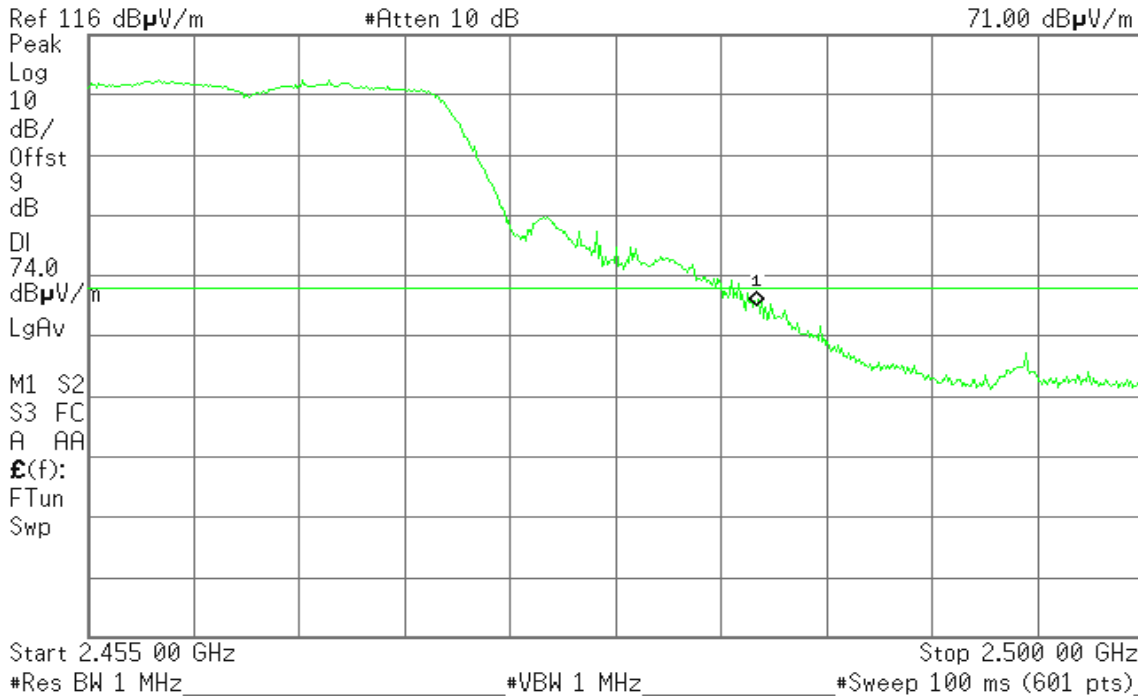
Detector mode: Peak

Polarity: Vertical

Agilent 16:38:31 9 Jan 2012

T

Mkr1 2.483 50 GHz  
71.00 dB $\mu$ V/m



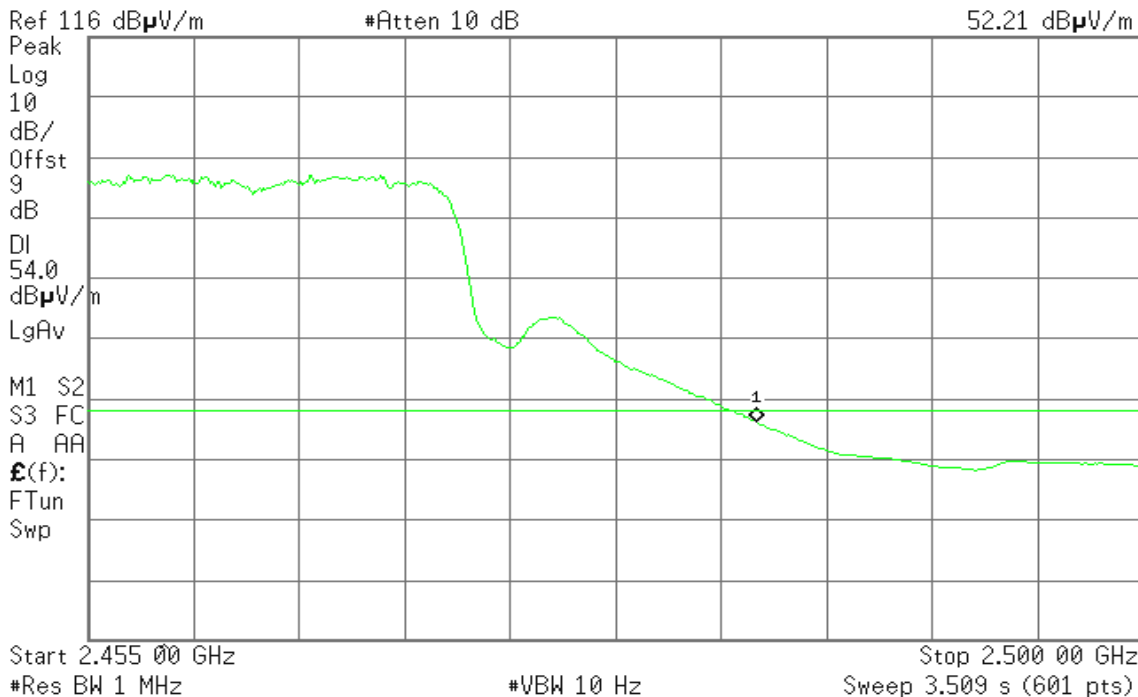
Detector mode: Average

Polarity: Vertical

Agilent 16:38:53 9 Jan 2012

T

Mkr1 2.483 50 GHz  
52.21 dB $\mu$ V/m





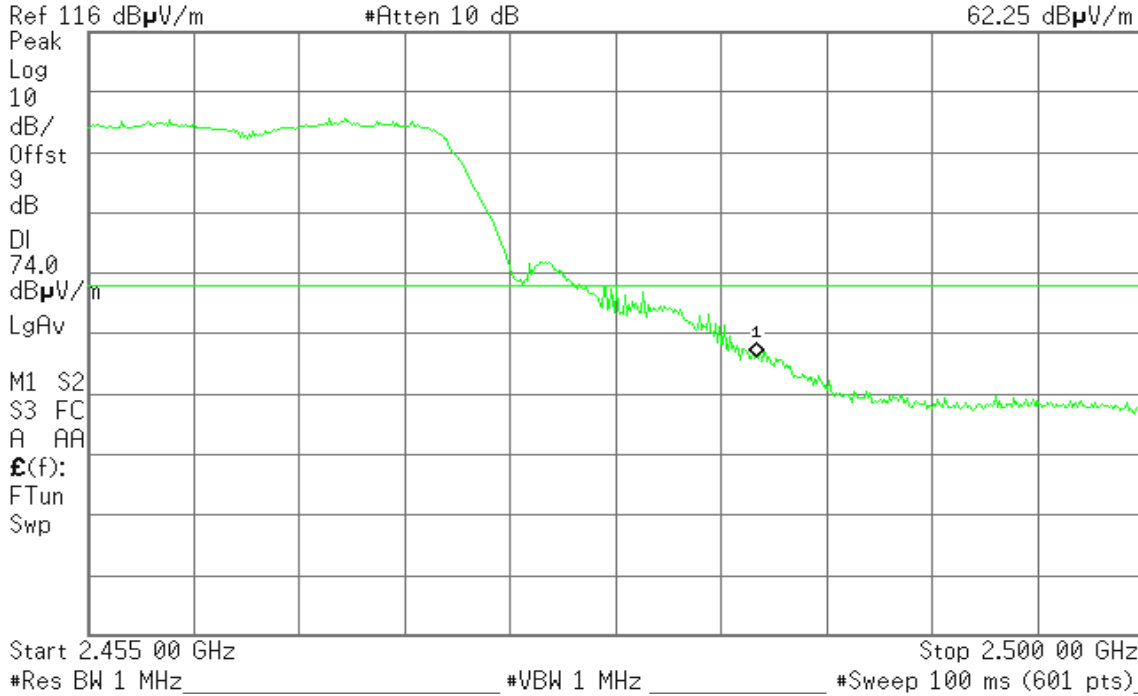
**Detector mode: Peak**

**Polarity: Horizontal**

Agilent 16:43:41 9 Jan 2012

R T

Mkr1 2.483 50 GHz  
62.25 dB $\mu$ V/m



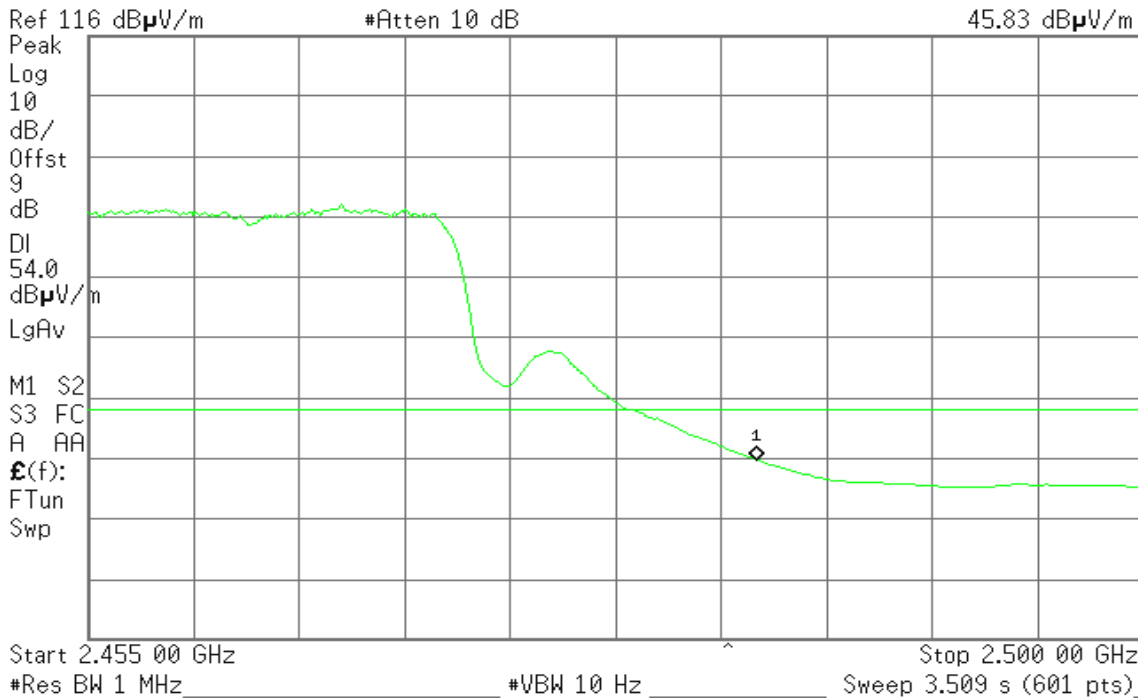
**Detector mode: Average**

**Polarity: Horizontal**

Agilent 16:44:01 9 Jan 2012

R T

Mkr1 2.483 50 GHz  
45.83 dB $\mu$ V/m





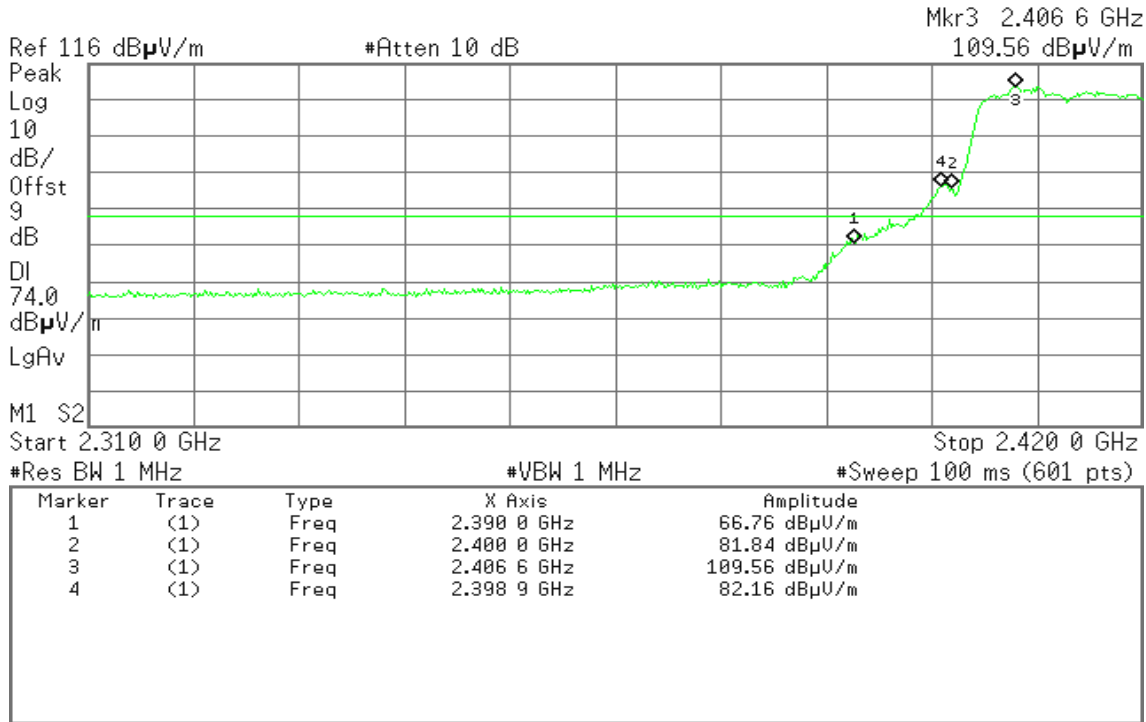
### Band Edges (IEEE 802.11n HT 20 MHz mode / CH Low)

Detector mode: Peak

Polarity: Vertical

Agilent 17:31:32 9 Jan 2012

T

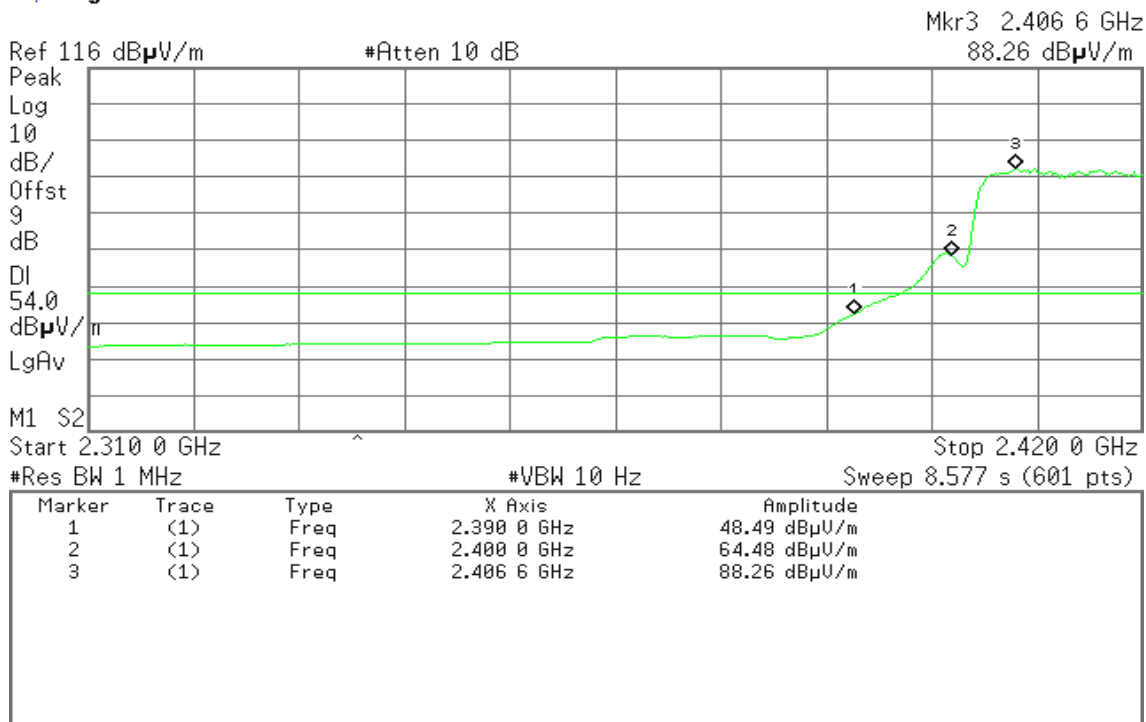


Detector mode: Average

Polarity: Vertical

Agilent 17:32:31 9 Jan 2012

T





Detector mode: Peak

Polarity: Horizontal

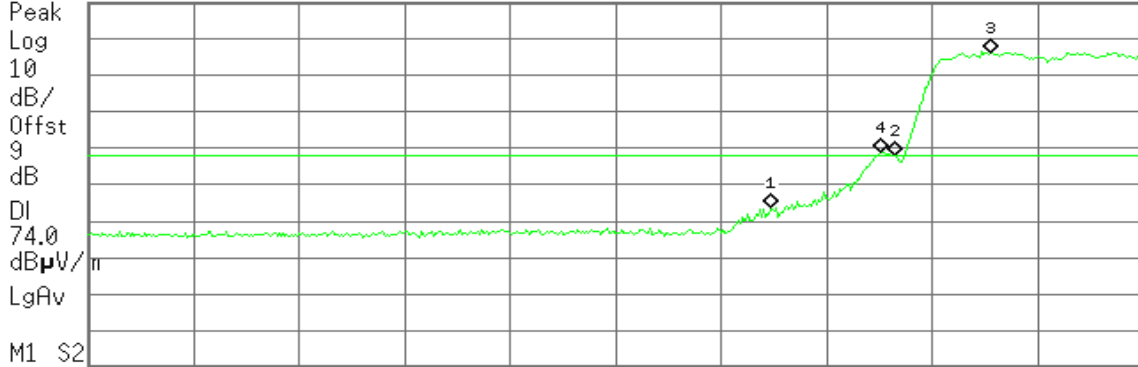
Agilent 17:19:18 9 Jan 2012

R T

Mkr4 2.398 89 GHz  
75.04 dBμV/m

Ref 116 dBμV/m

#Atten 10 dB



Start 2.335 00 GHz

Stop 2.420 00 GHz

#Res BW 1 MHz

#VBW 1 MHz

#Sweep 100 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.398 00 GHz	59.54 dBμV/m
2	(1)	Freq	2.400 00 GHz	73.87 dBμV/m
3	(1)	Freq	2.407 68 GHz	101.95 dBμV/m
4	(1)	Freq	2.398 89 GHz	75.04 dBμV/m

Detector mode: Average

Polarity: Horizontal

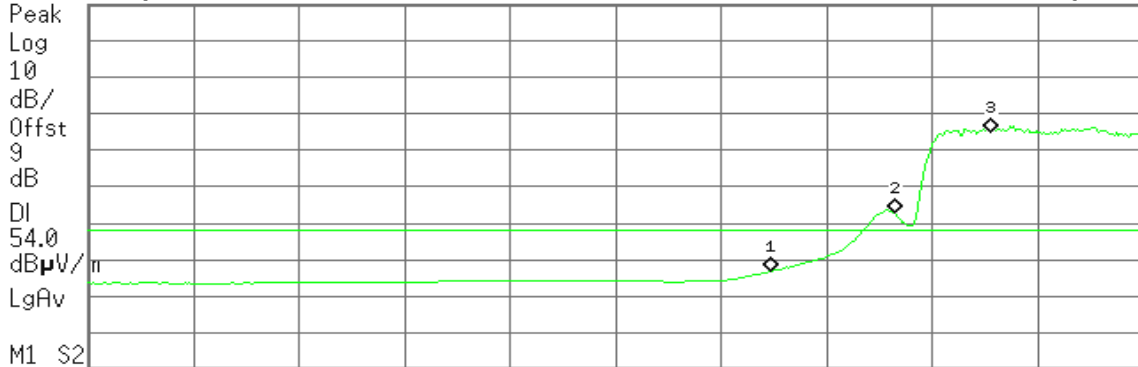
Agilent 17:19:49 9 Jan 2012

R T

Mkr1 2.390 00 GHz  
42.79 dBμV/m

Ref 116 dBμV/m

#Atten 10 dB



Start 2.335 00 GHz

Stop 2.420 00 GHz

#Res BW 1 MHz

#VBW 10 Hz

Sweep 6.628 s (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.390 00 GHz	42.79 dBμV/m
2	(1)	Freq	2.400 00 GHz	58.76 dBμV/m
3	(1)	Freq	2.407 68 GHz	81.06 dBμV/m





### Band Edges (IEEE 802.11n HT 20 MHz mode / CH High)

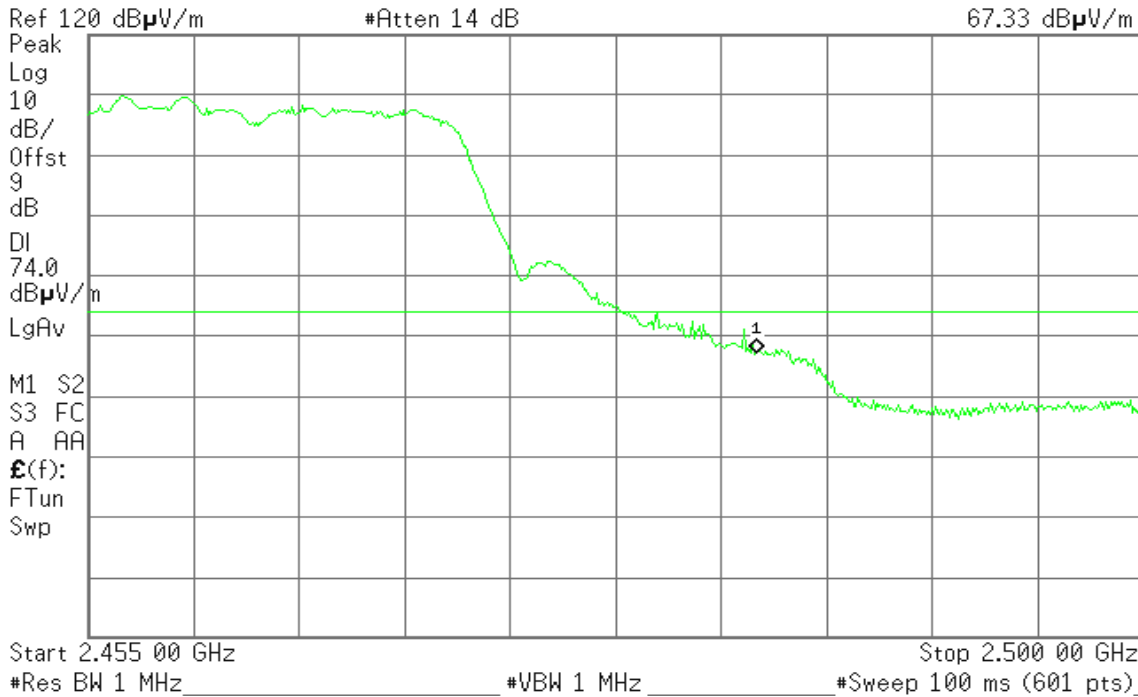
Detector mode: Peak

Polarity: Vertical

Agilent 17:51:52 9 Jan 2012

T

Mkr1 2.483 50 GHz  
67.33 dB $\mu$ V/m



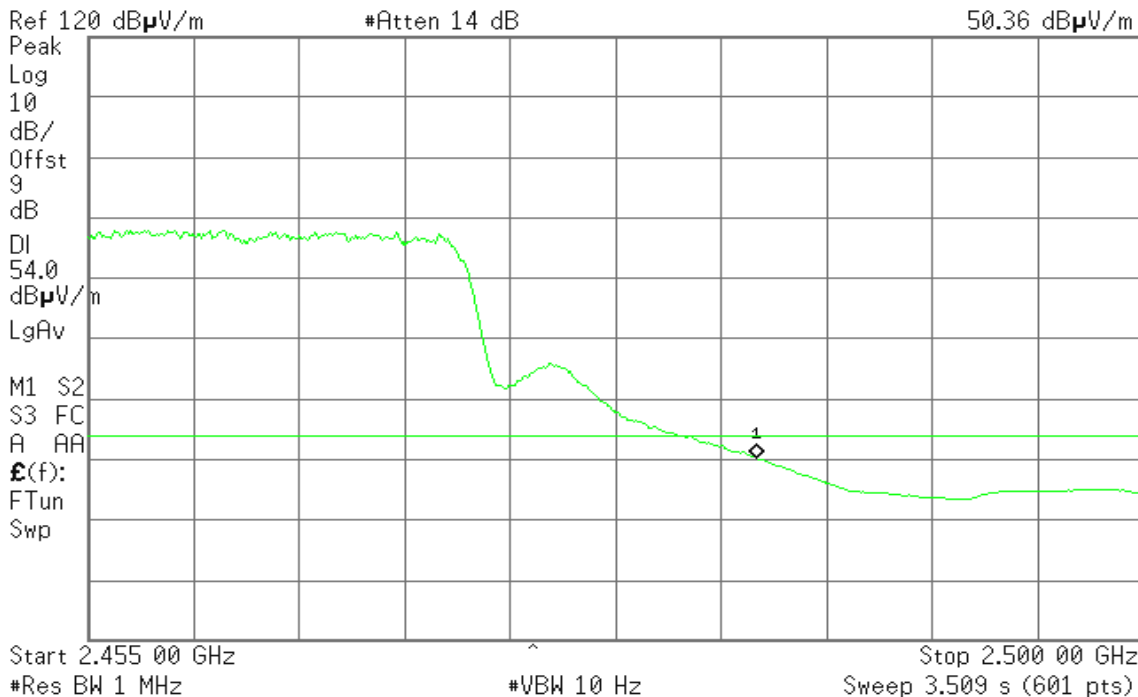
Detector mode: Average

Polarity: Vertical

Agilent 17:52:16 9 Jan 2012

T

Mkr1 2.483 50 GHz  
50.36 dB $\mu$ V/m





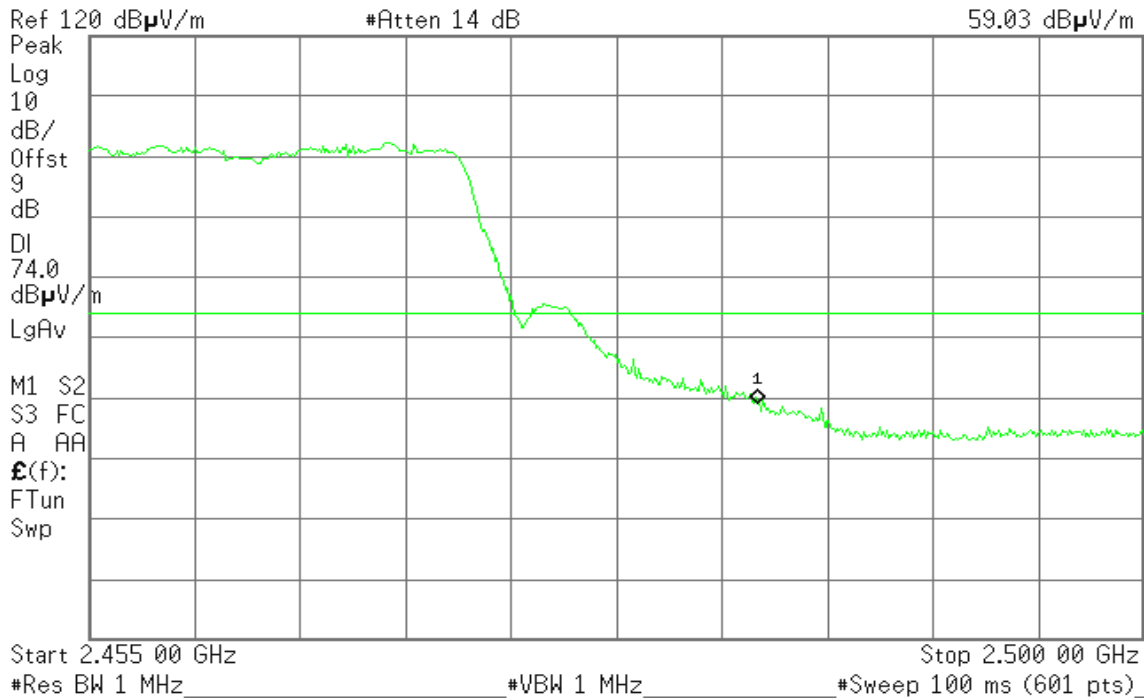
**Detector mode: Peak**

**Polarity: Horizontal**

Agilent 17:46:27 9 Jan 2012

R T

Mkr1 2.483 50 GHz  
59.03 dB $\mu$ V/m



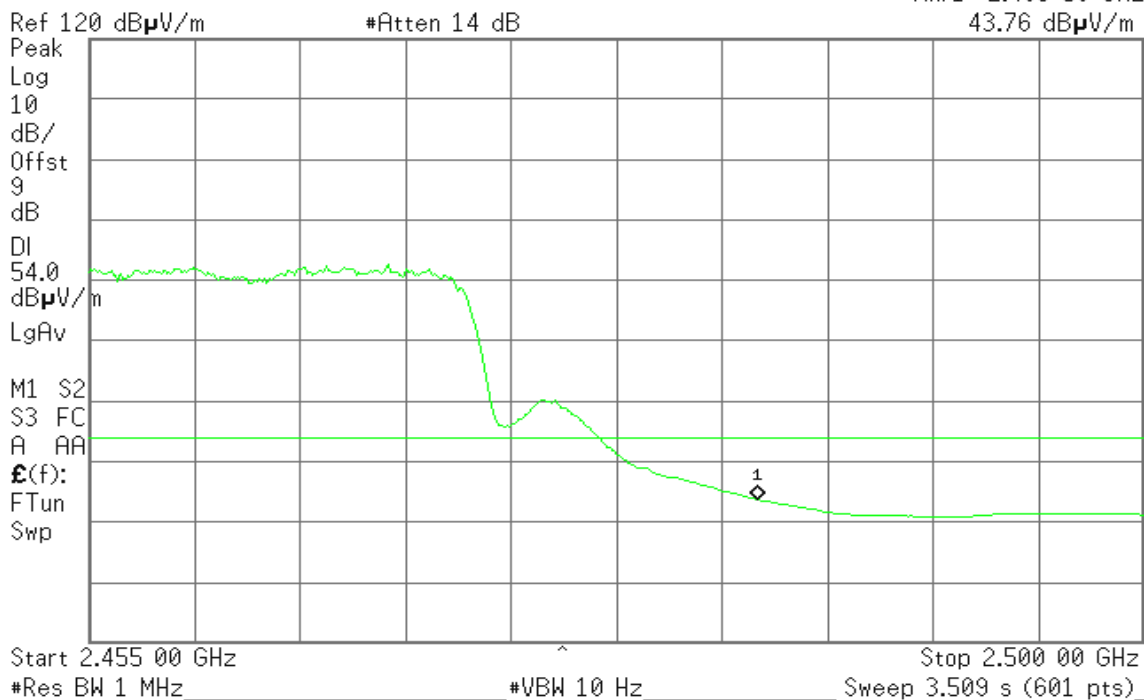
**Detector mode: Average**

**Polarity: Horizontal**

Agilent 17:46:46 9 Jan 2012

R T

Mkr1 2.483 50 GHz  
43.76 dB $\mu$ V/m





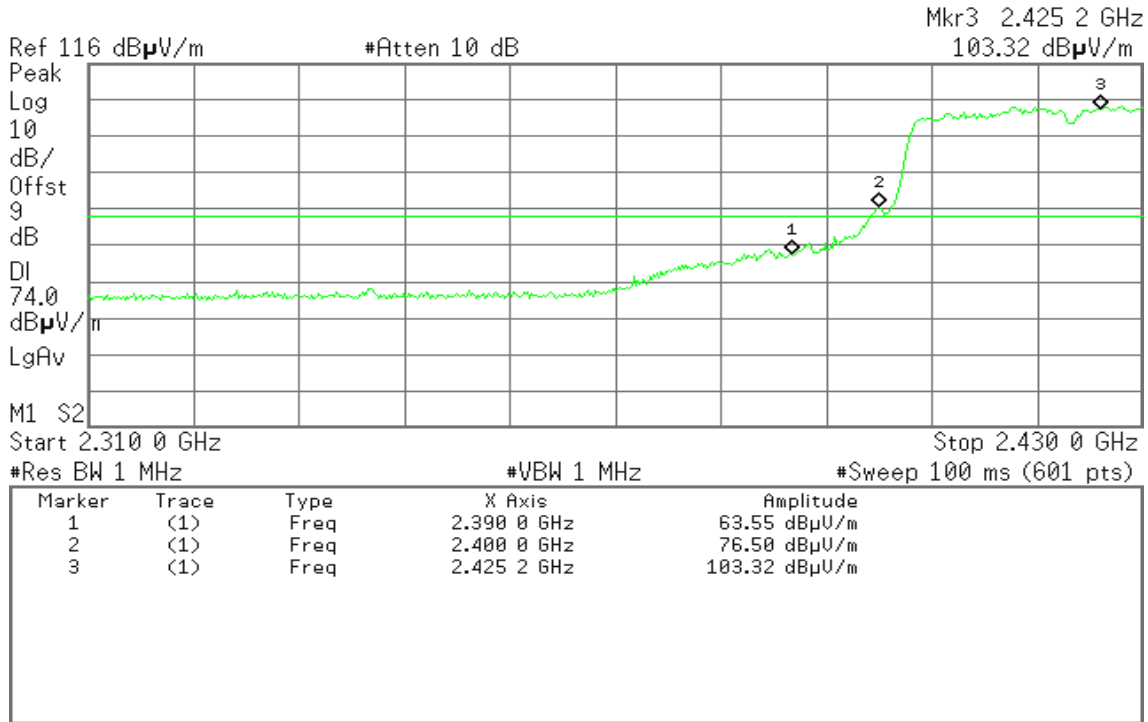
### Band Edges (IEEE 802.11n HT 40 MHz mode / CH Low)

Detector mode: Peak

Polarity: Vertical

Agilent 19:39:36 9 Jan 2012

T

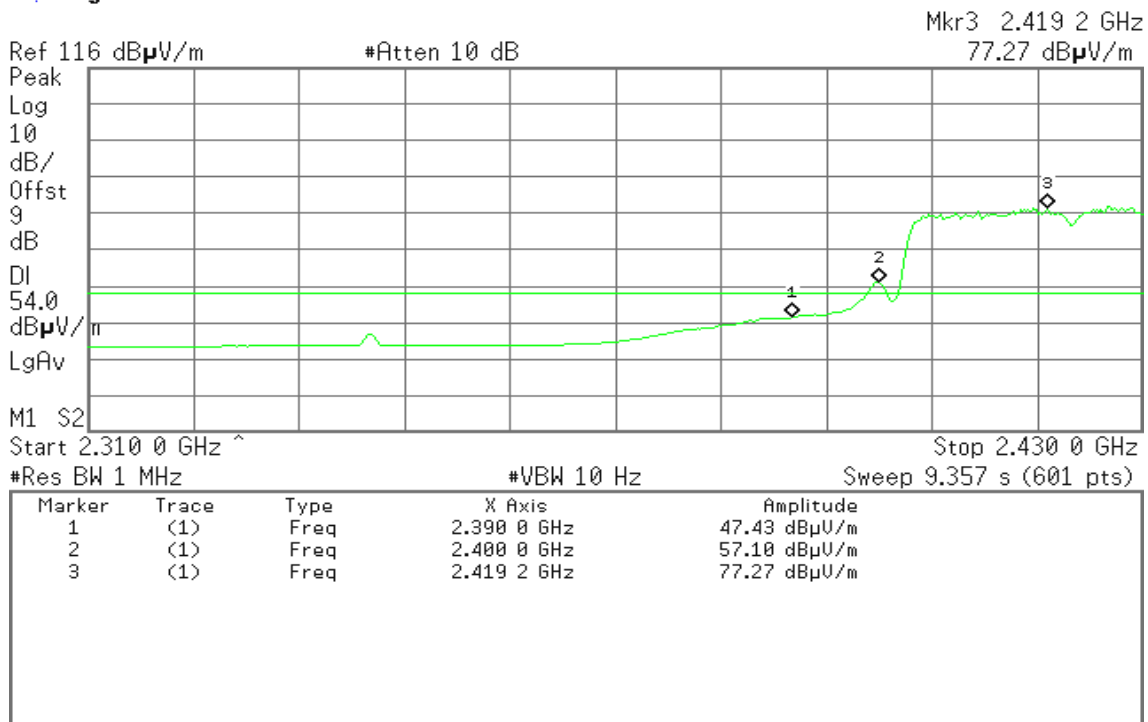


Detector mode: Average

Polarity: Vertical

Agilent 19:41:47 9 Jan 2012

T



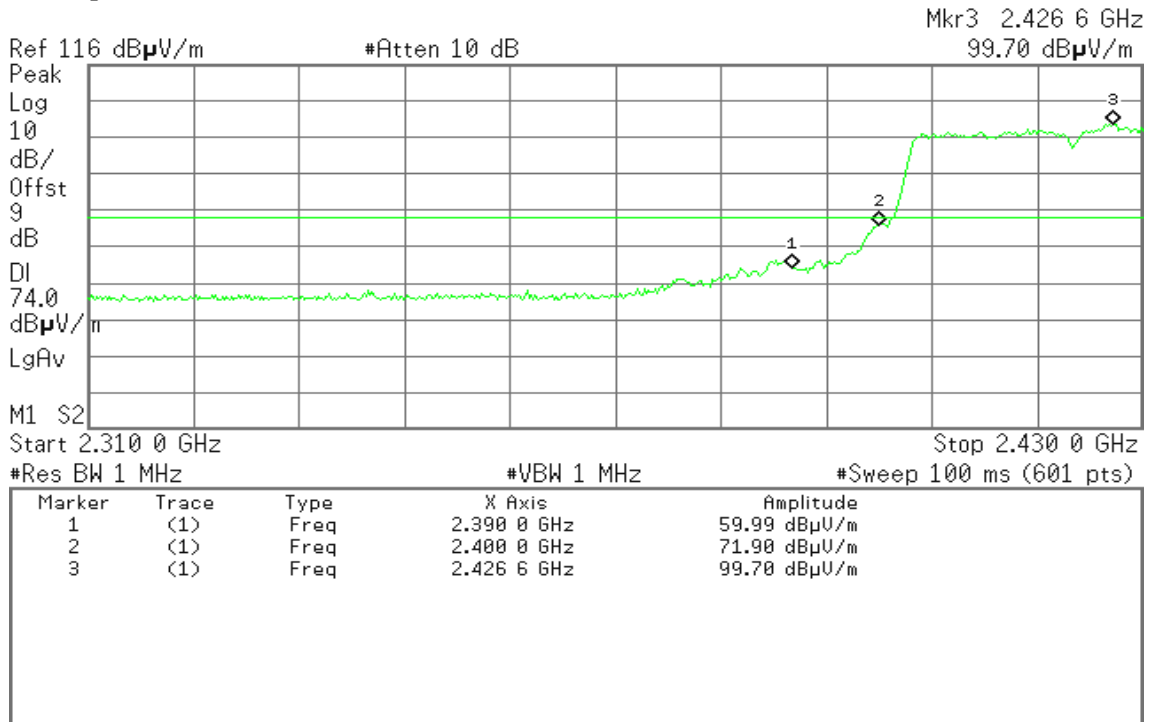


Detector mode: Peak

Polarity: Horizontal

Agilent 19:48:16 9 Jan 2012

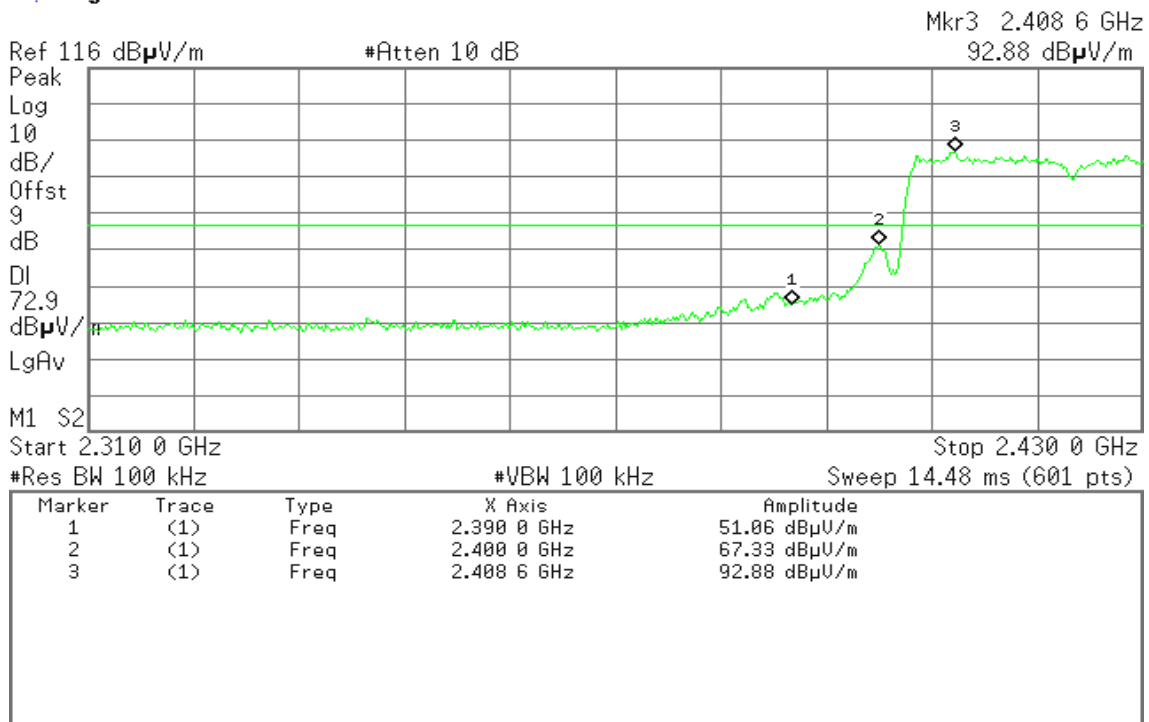
R T



100K

Agilent 19:50:00 9 Jan 2012

R T





Detector mode: Average

Polarity: Horizontal

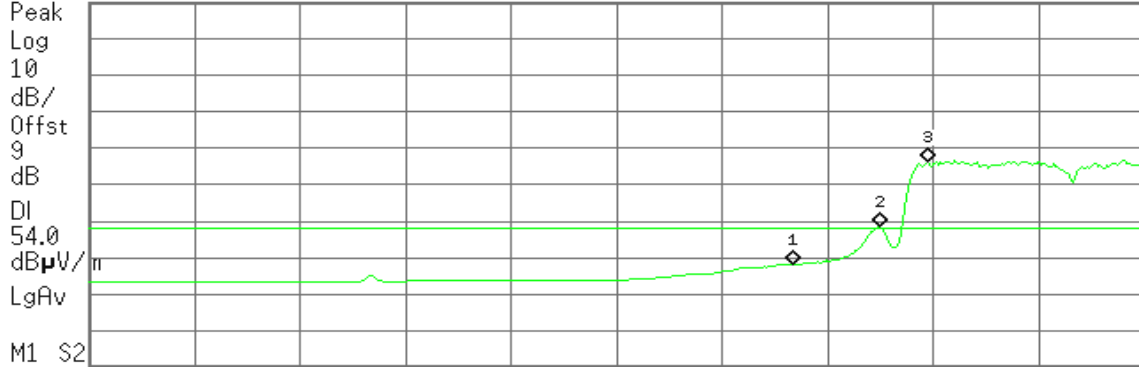
Agilent 19:49:00 9 Jan 2012

R T

Mkr3 2.405 4 GHz  
72.43 dB $\mu$ V/m

Ref 116 dB $\mu$ V/m

#Atten 10 dB



Start 2.310 0 GHz

Stop 2.430 0 GHz

#Res BW 1 MHz

#VBW 10 Hz

Sweep 9.357 s (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.390 0 GHz	44.21 dB $\mu$ V/m
2	(1)	Freq	2.400 0 GHz	54.49 dB $\mu$ V/m
3	(1)	Freq	2.405 4 GHz	72.43 dB $\mu$ V/m



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

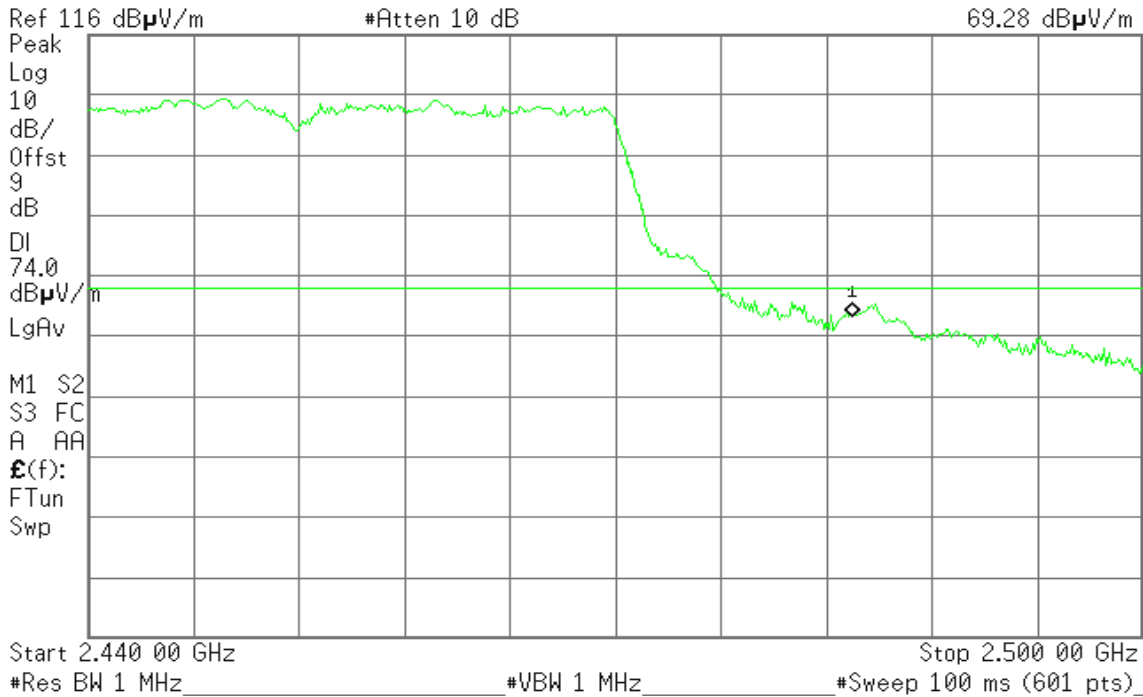
Detector mode: Peak

Polarity: Vertical

Agilent 20:02:37 9 Jan 2012

R T

Mkr1 2.483 50 GHz  
69.28 dB $\mu$ V/m



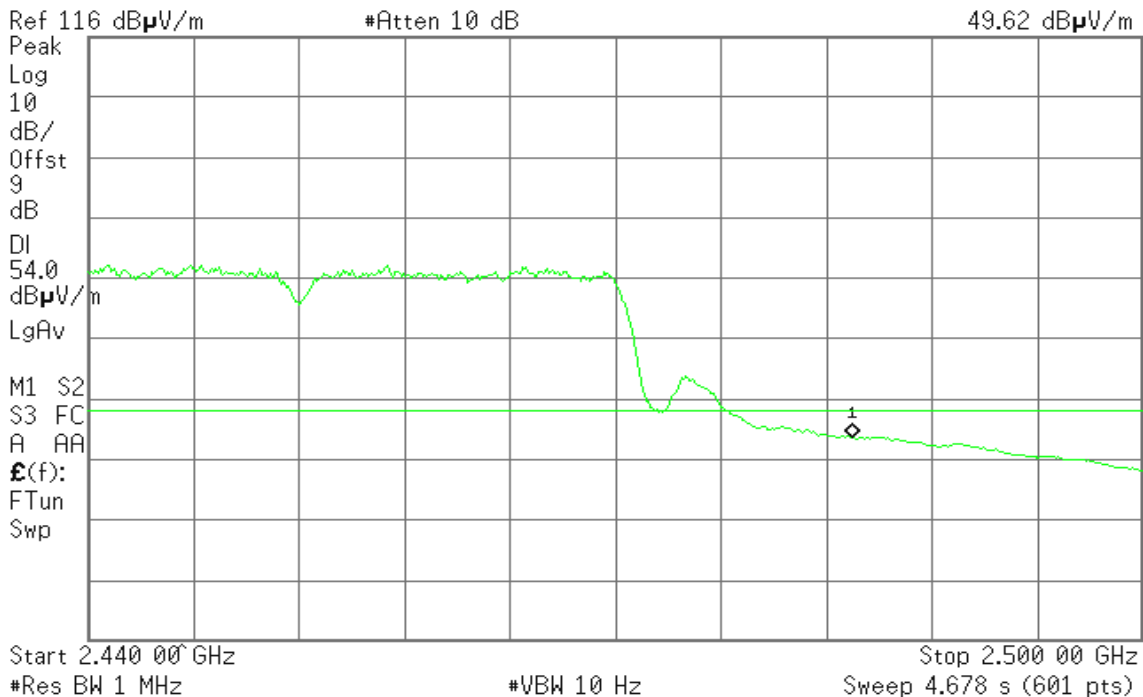
Detector mode: Average

Polarity: Vertical

Agilent 20:03:03 9 Jan 2012

R T

Mkr1 2.483 50 GHz  
49.62 dB $\mu$ V/m





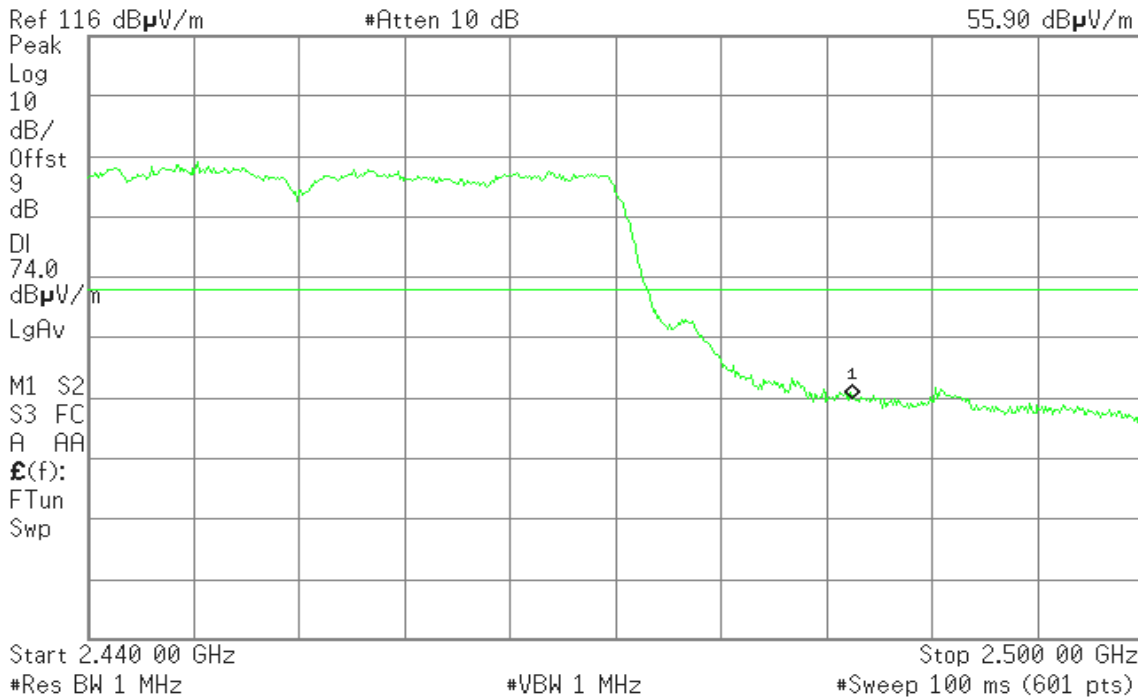
**Detector mode: Peak**

**Polarity: Horizontal**

Agilent 10:49:26 10 Jan 2012

R T

Mkr1 2.483 50 GHz  
55.90 dB $\mu$ V/m



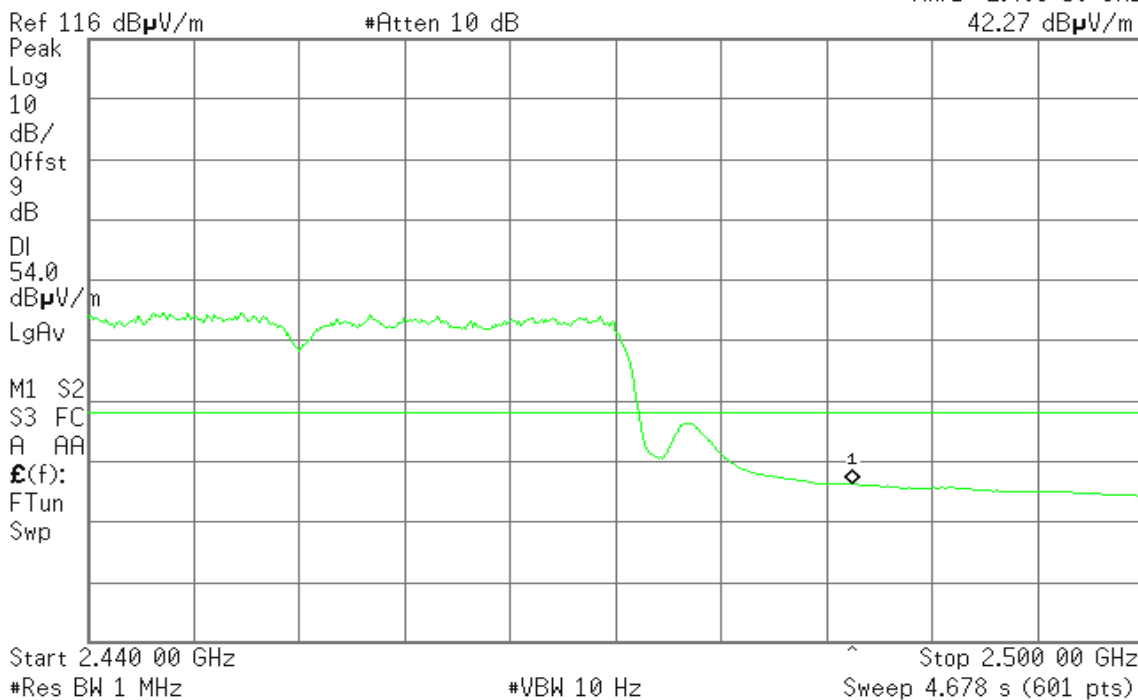
**Detector mode: Average**

**Polarity: Horizontal**

Agilent 10:49:54 10 Jan 2012

R T

Mkr1 2.483 50 GHz  
42.27 dB $\mu$ V/m





### Conducted Bandedge

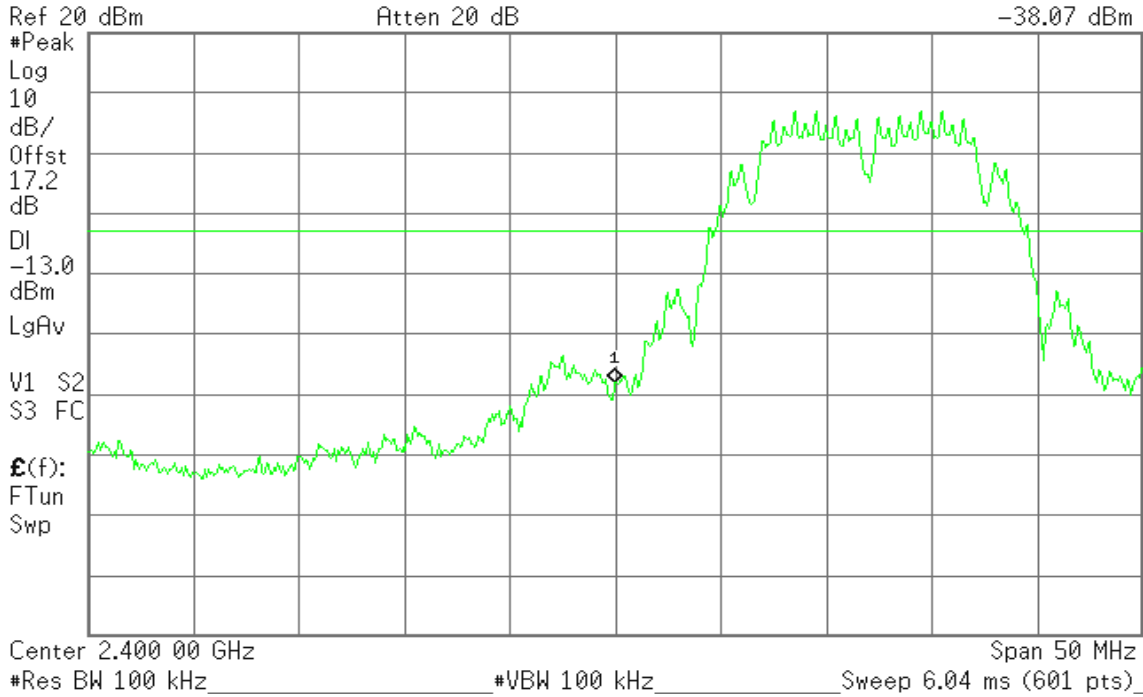
#### IEEE 802.11b mode

#### (CH Low)

Agilent 13:51:41 May 28, 2012

R T

Mkr1 2.400 00 GHz  
-38.07 dBm

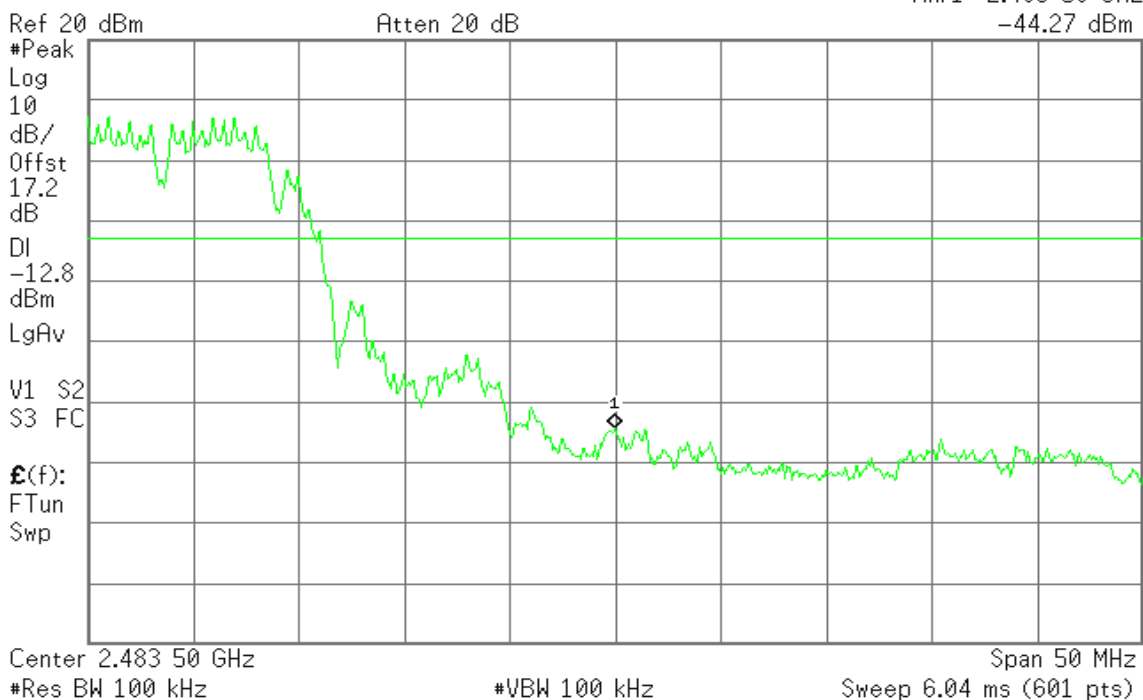


#### (CH High)

Agilent 14:00:19 May 28, 2012

R T

Mkr1 2.483 50 GHz  
-44.27 dBm







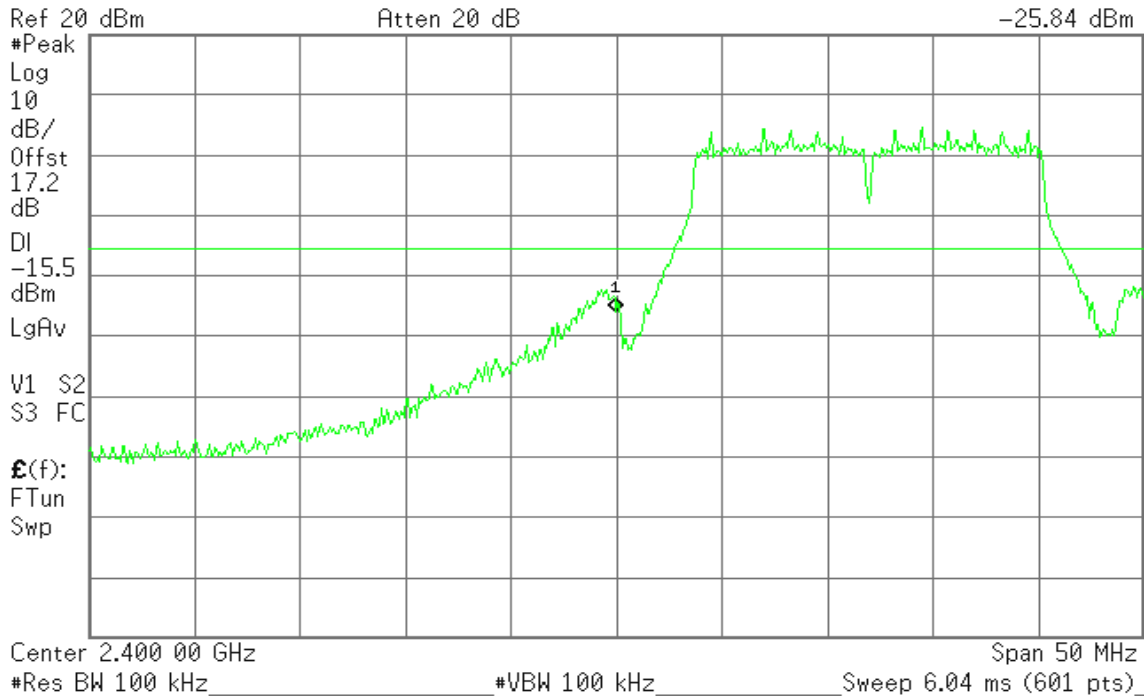
### IEEE 802.11g mode

#### (CH Low)

Agilent 14:04:48 May 28, 2012

R T

Mkr1 2.400 00 GHz  
-25.84 dBm

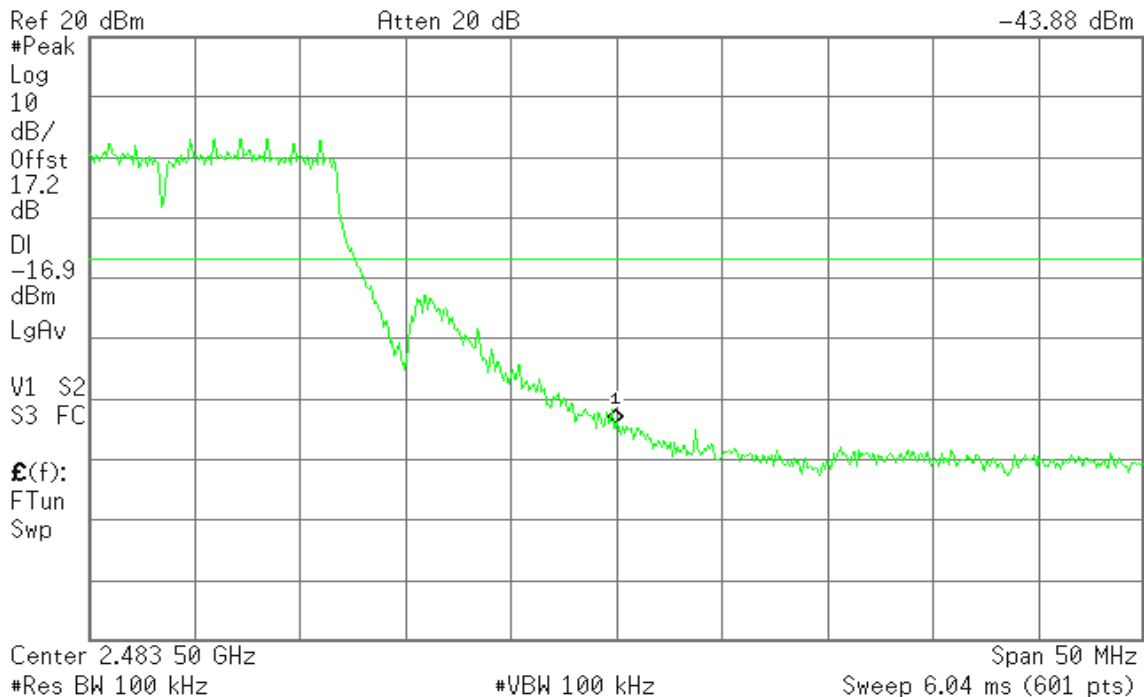


#### (CH High)

Agilent 14:13:51 May 28, 2012

R T

Mkr1 2.483 50 GHz  
-43.88 dBm





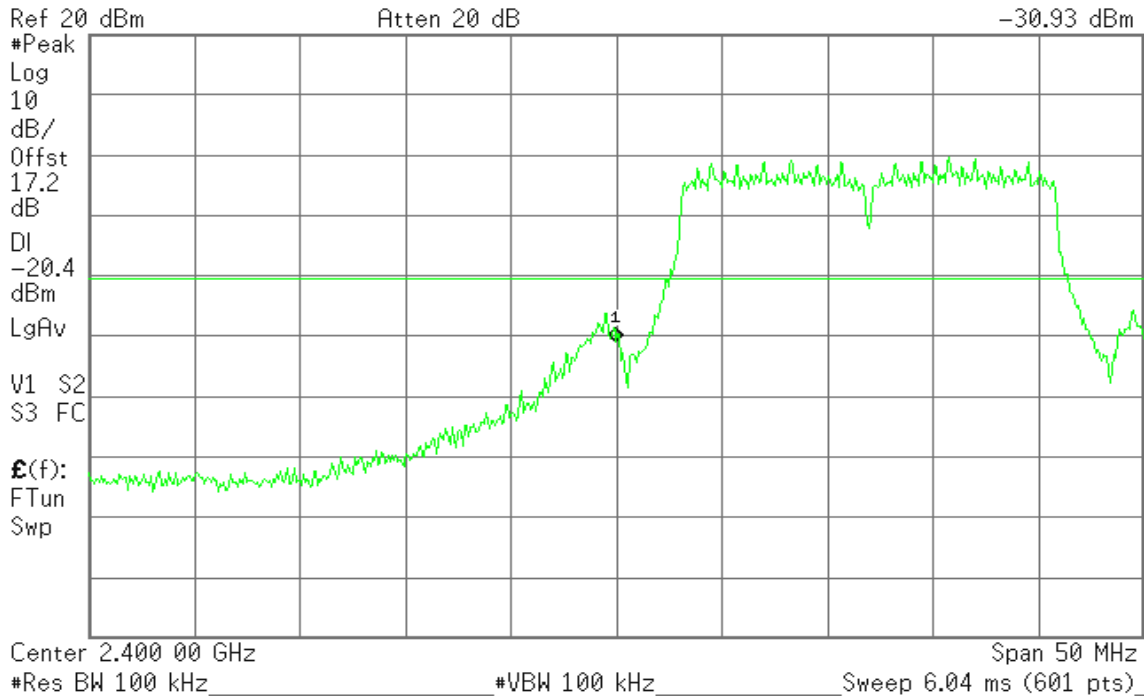
### IEEE 802.11n HT 20 MHz mode / Chain 0

#### (CH Low)

Agilent 14:19:17 May 28, 2012

R T

Mkr1 2.400 00 GHz  
-30.93 dBm

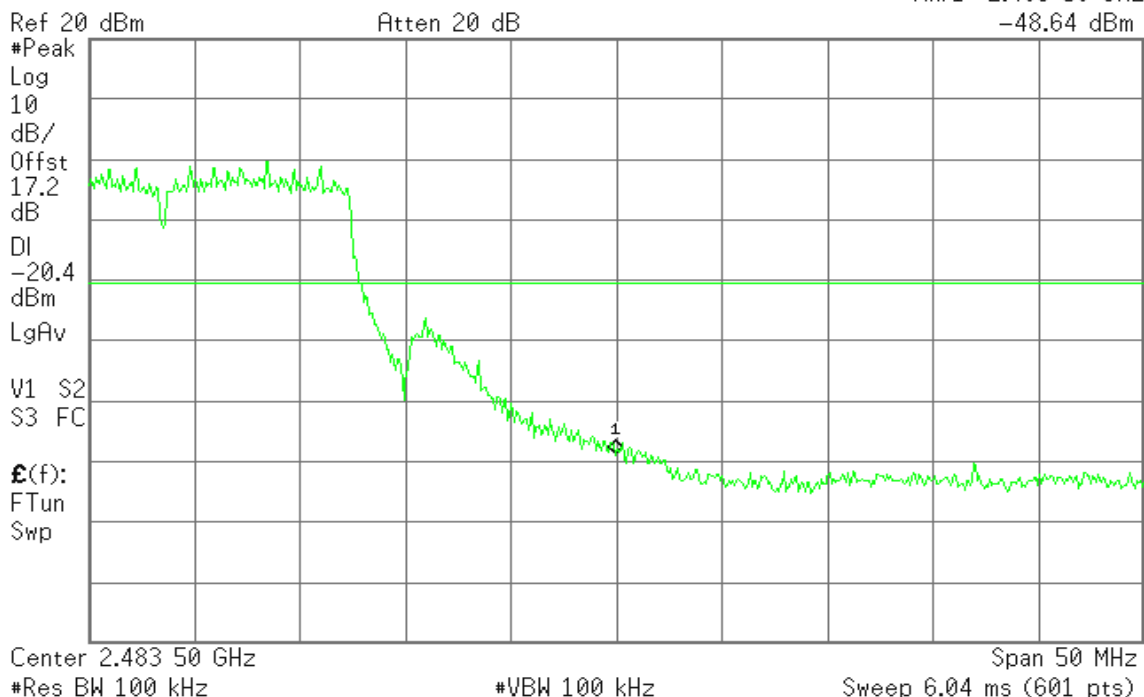


#### (CH High)

Agilent 14:25:59 May 28, 2012

R T

Mkr1 2.483 50 GHz  
-48.64 dBm





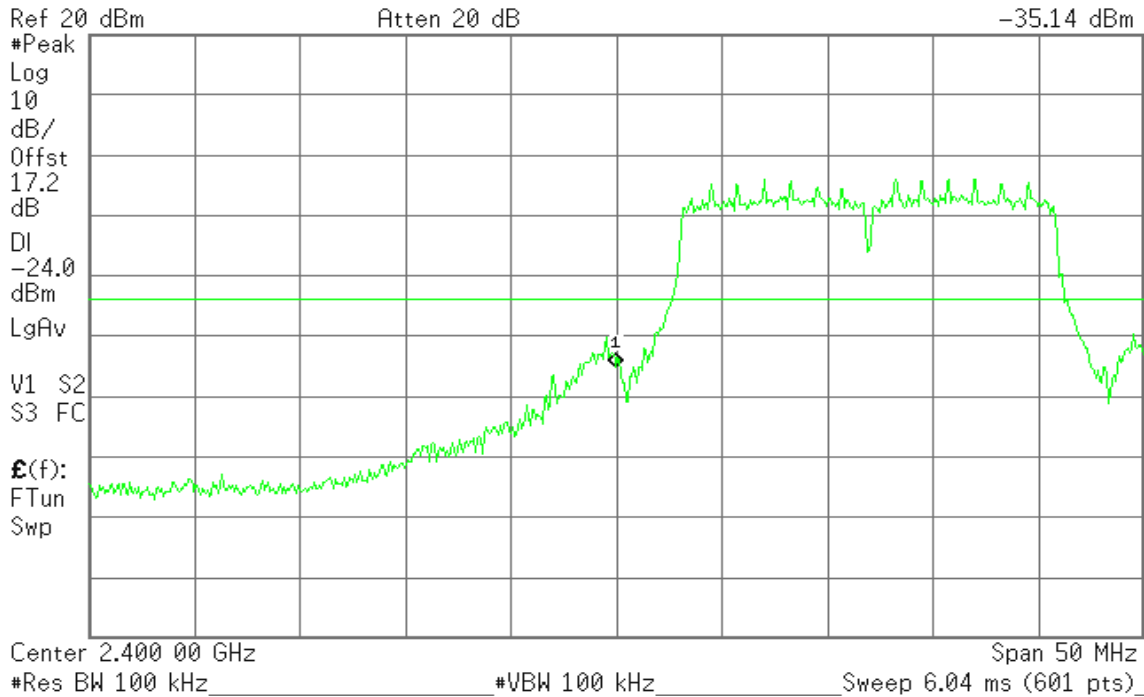
### IEEE 802.11n HT 20 MHz mode / Chain 1

#### (CH Low)

Agilent 14:35:26 May 28, 2012

R T

Mkr1 2.400 00 GHz  
-35.14 dBm

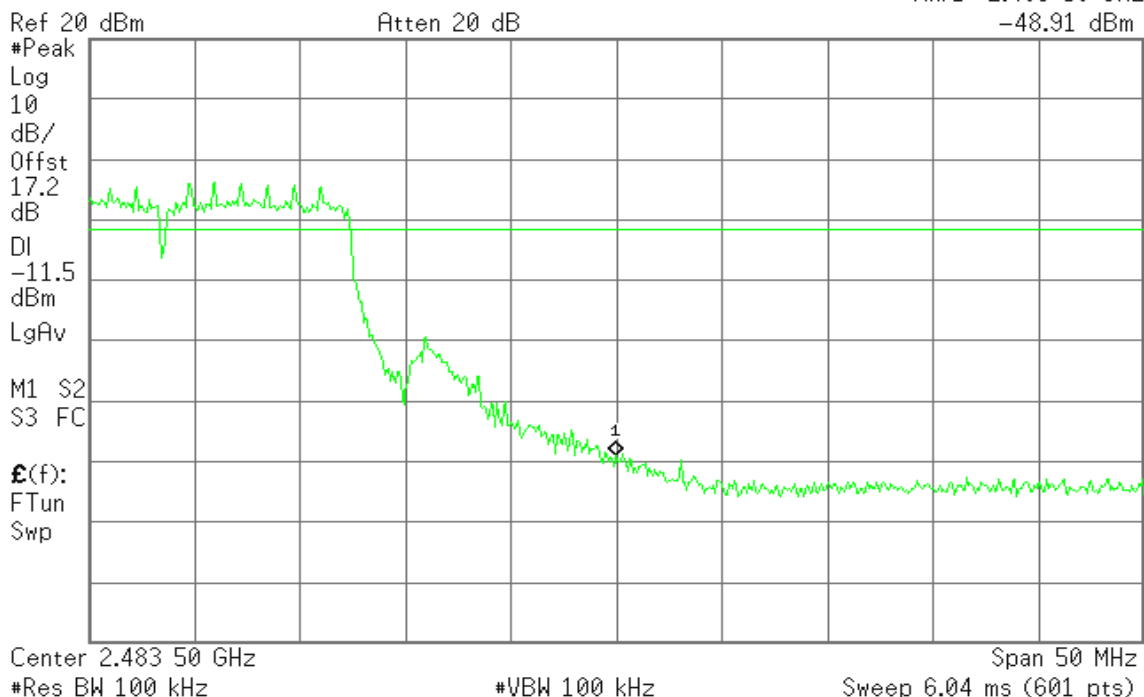


#### (CH High)

Agilent 14:53:20 May 28, 2012

R T

Mkr1 2.483 50 GHz  
-48.91 dBm





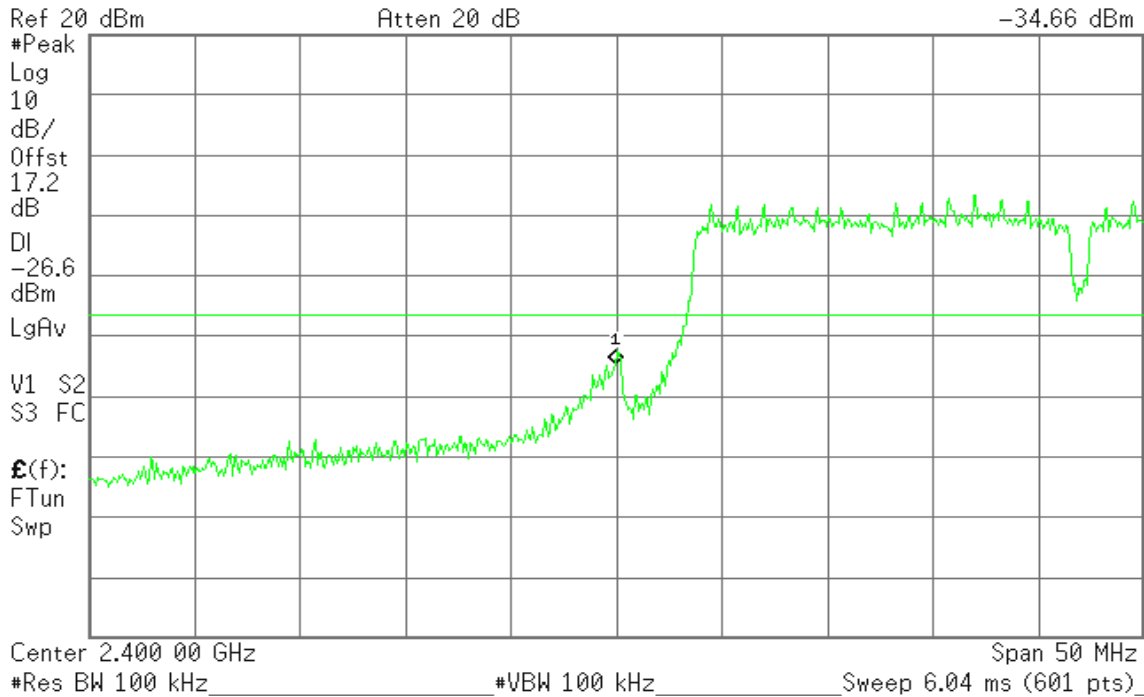
### IEEE 802.11n HT 40 MHz mode / Chain 0

#### (CH Low)

Agilent 15:46:23 May 28, 2012

R T

Mkr1 2.400 00 GHz  
-34.66 dBm

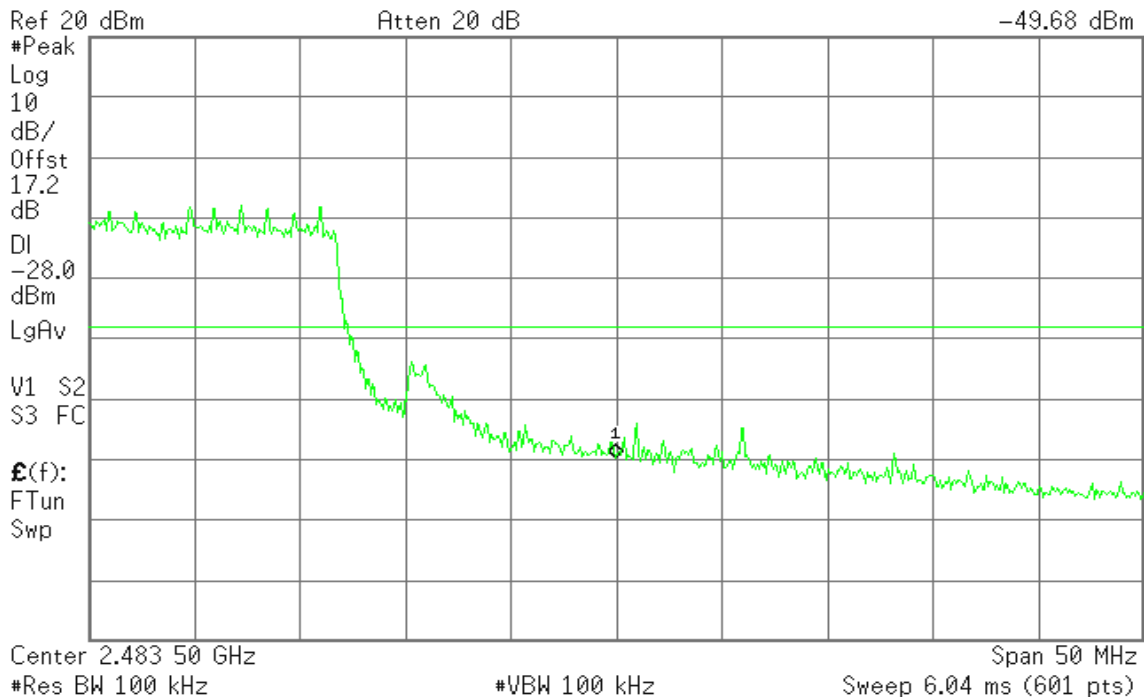


#### (CH High)

Agilent 15:13:09 May 28, 2012

R T

Mkr1 2.483 50 GHz  
-49.68 dBm





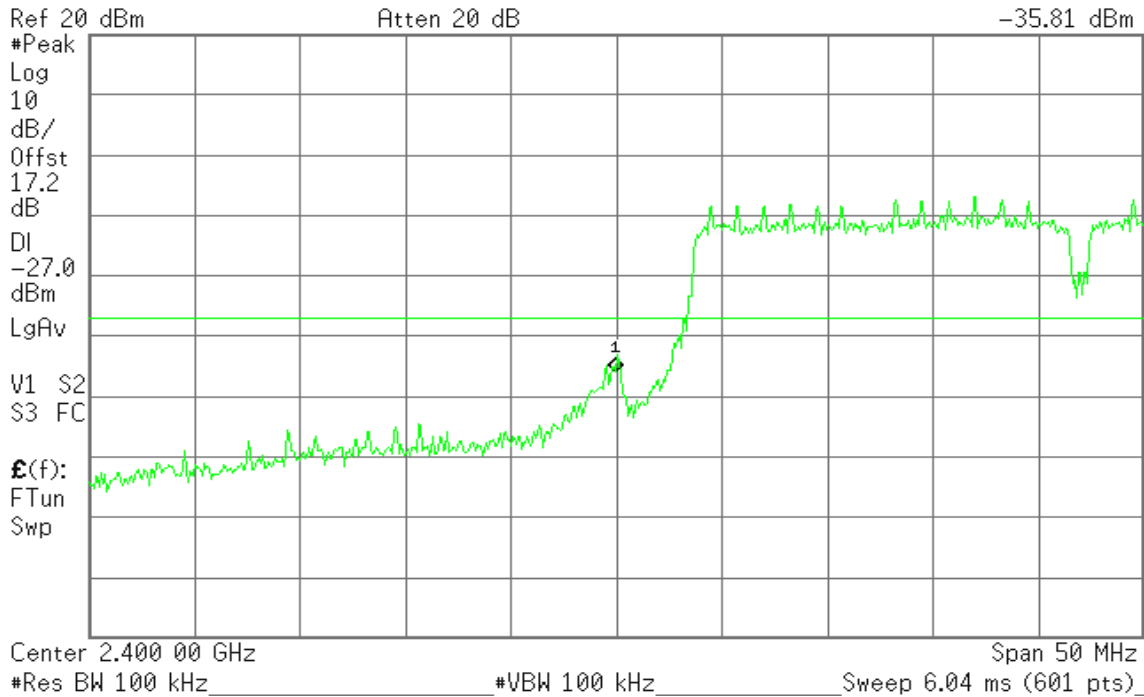
### IEEE 802.11n HT 40 MHz mode / Chain 1

#### (CH Low)

Agilent 14:59:47 May 28, 2012

R T

Mkr1 2.400 00 GHz  
-35.81 dBm

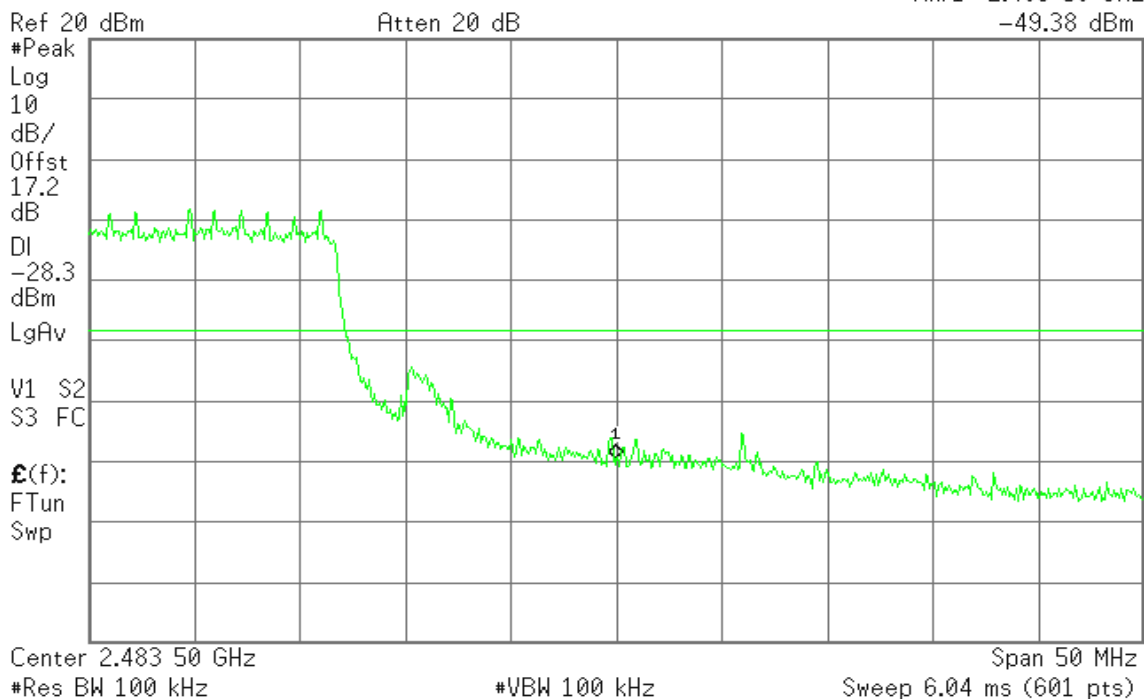


#### (CH High)

Agilent 15:08:41 May 28, 2012

R T

Mkr1 2.483 50 GHz  
-49.38 dBm



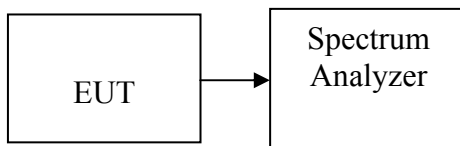


## 7.4 PEAK POWER SPECTRAL DENSITY

### LIMIT

1. According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.
2. According to §15.247(f), the digital modulation operation of the hybrid system, with the frequency hopping turned off, shall comply with the power density requirements of paragraph (d) of this section.

### Test Configuration



### TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. Set the RBW = 100 kHz, VBW  $\geq$  300 kHz, span 5-30% greater than EBW, Detector = peak, Trace mode = max hold, Sweep = auto couple. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3 \text{ kHz}/100 \text{ kHz} = -15.2 \text{ dB})$ . Record the maximum reading. Repeat the above procedure until the measurements for all frequencies are completed

### TEST RESULTS

*No non-compliance noted*

**Test Data****Test mode: IEEE 802.11b mode**

Channel	Frequency (MHz)	100kHz PPSD (dBm)	3kHz PPSD (dBm)	Limit (dBm)	Result
Low	2412	3.51	-11.69	8.00	PASS
Mid	2442	3.54	-11.66		PASS
High	2462	3.68	-11.52		PASS

**Test mode: IEEE 802.11g mode**

Channel	Frequency (MHz)	100kHz PPSD (dBm)	3kHz PPSD (dBm)	Limit (dBm)	Result
Low	2412	1.73	-13.47	8.00	PASS
Mid	2442	1.82	-13.38		PASS
High	2462	0.11	-15.09		PASS

**Test mode: IEEE 802.11n HT 20 MHz mode**

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	100kHz PPSD (dBm)	3kHz PPSD (dBm)	Limit (dBm)	Result
Low	2412	-3.23	-2.98	-0.09	-15.29	8.00	PASS
Mid	2442	0.62	0.49	3.57	-11.63		PASS
High	2462	-3.35	-4.05	-0.68	-15.88		PASS

**Test mode: IEEE 802.11n HT 40 MHz mode**

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	100kHz PPSD (dBm)	3kHz PPSD (dBm)	Limit (dBm)	Result
Low	2422	-6.41	-7.61	-3.96	-19.16	8.00	PASS
Mid	2442	-4.71	-5.84	-2.23	-17.43		PASS
High	2452	-6.47	-7.44	-3.92	-19.12		PASS

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



**Test mode: IEEE 802.11a mode**

Channel	Frequency (MHz)	100kHz PPSD (dBm)	3kHz PPSD (dBm)	Limit (dBm)	Result
Low	5745	3.40	-11.80	8.00	PASS
Mid	5785	3.43	-11.77		PASS
High	5825	3.62	-11.58		PASS

**Test mode: IEEE 802.11n HT 20 MHz mode**

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	100kHz PPSD (dBm)	3kHz PPSD (dBm)	Limit (dBm)	Result
Low	5745	3.87	3.44	6.67	-8.53	8.00	PASS
Mid	5785	3.96	3.65	6.82	-8.38		PASS
High	5825	4.55	3.59	7.11	-8.09		PASS

**Test mode: IEEE 802.11n HT 40 MHz mode**

Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	100kHz PPSD (dBm)	3kHz PPSD (dBm)	Limit (dBm)	Result
Low	5755	0.94	-0.47	3.30	-11.90	8.00	PASS
High	5795	0.62	0.22	3.43	-11.77		PASS

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





### Test Plot

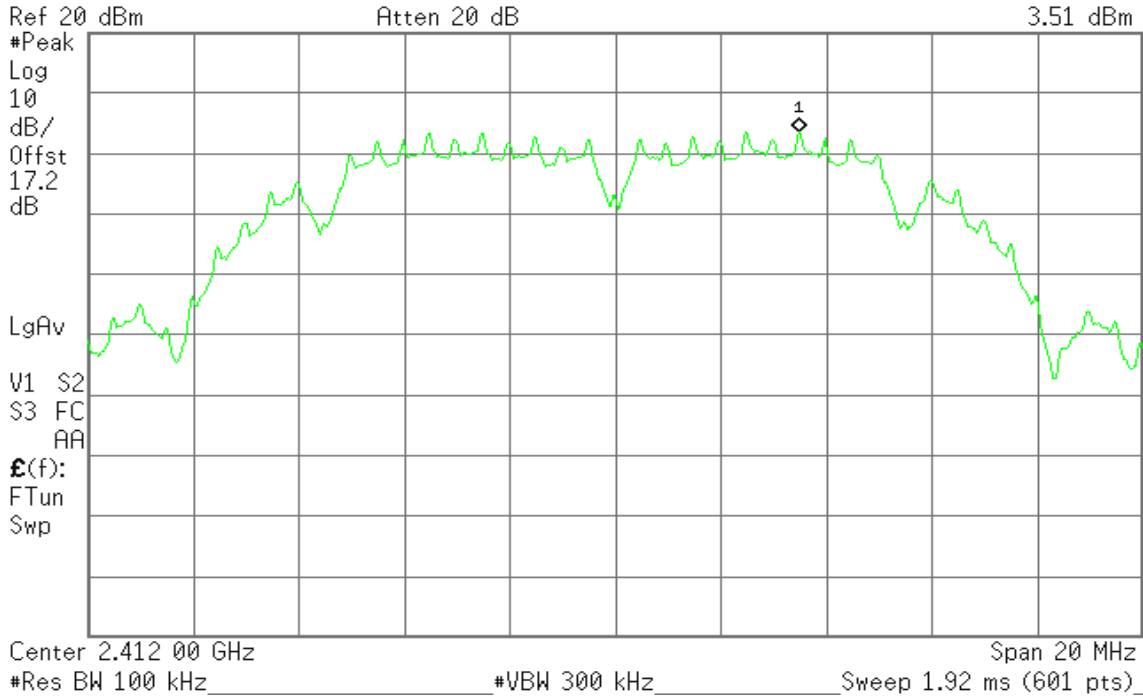
#### IEEE 802.11b mode

#### PPSD (CH Low)

Agilent 16:50:37 May 28, 2012

R T

Mkr1 2.415 47 GHz  
3.51 dBm

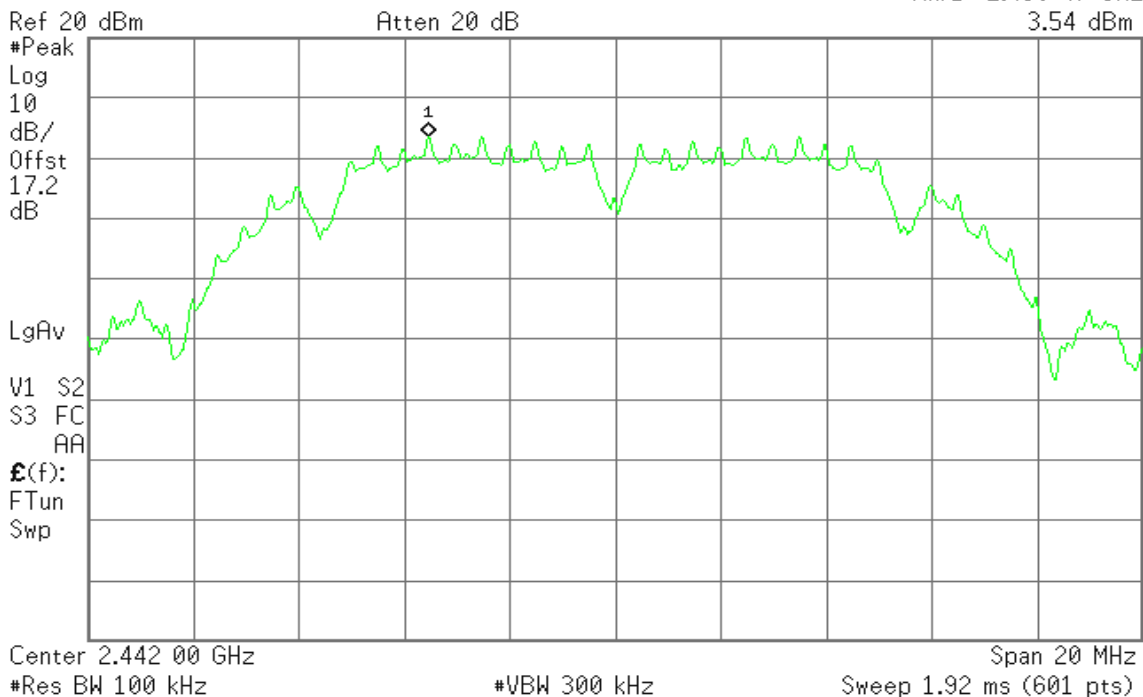


#### PPSD (CH Mid)

Agilent 16:48:39 May 28, 2012

R T

Mkr1 2.438 47 GHz  
3.54 dBm



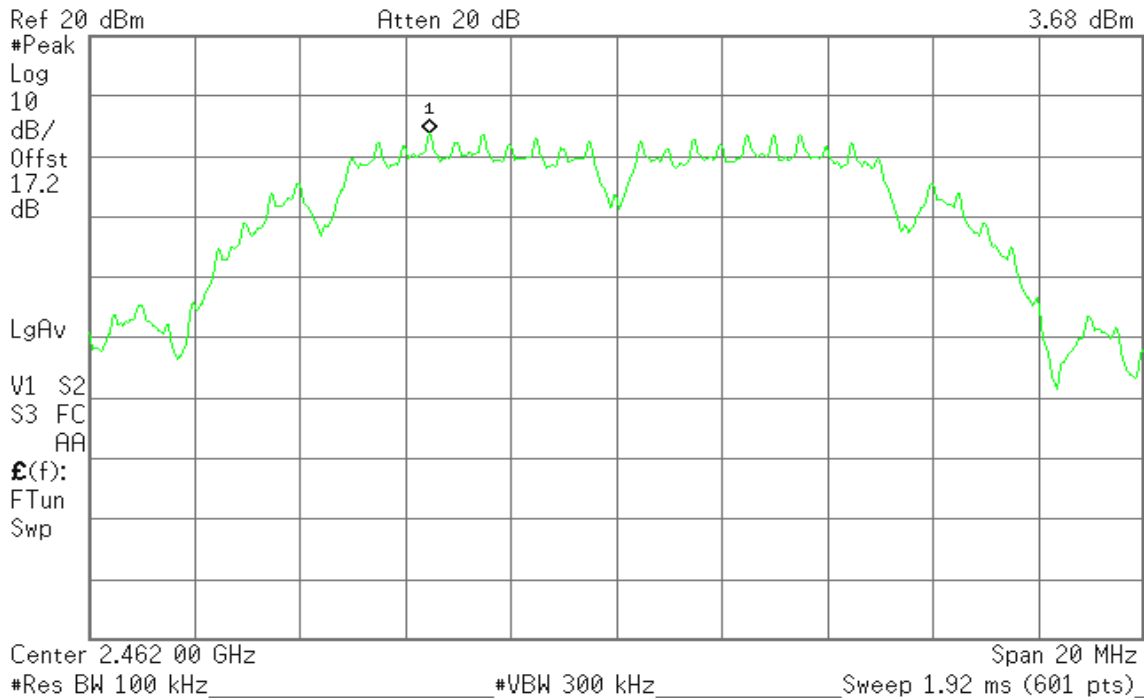


### PPSD (CH High)

Agilent 16:48:00 May 28, 2012

R T

Mkr1 2.458 47 GHz  
3.68 dBm



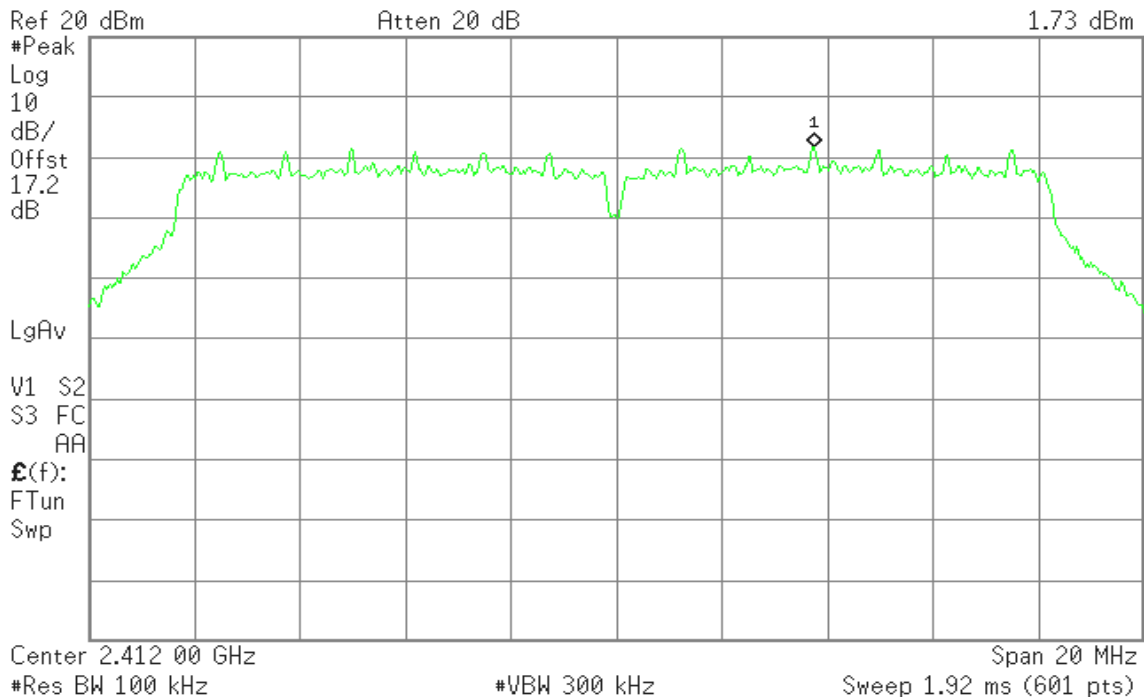
### IEEE 802.11g mode

### PPSD (CH Low)

Agilent 16:50:08 May 28, 2012

R T

Mkr1 2.415 73 GHz  
1.73 dBm



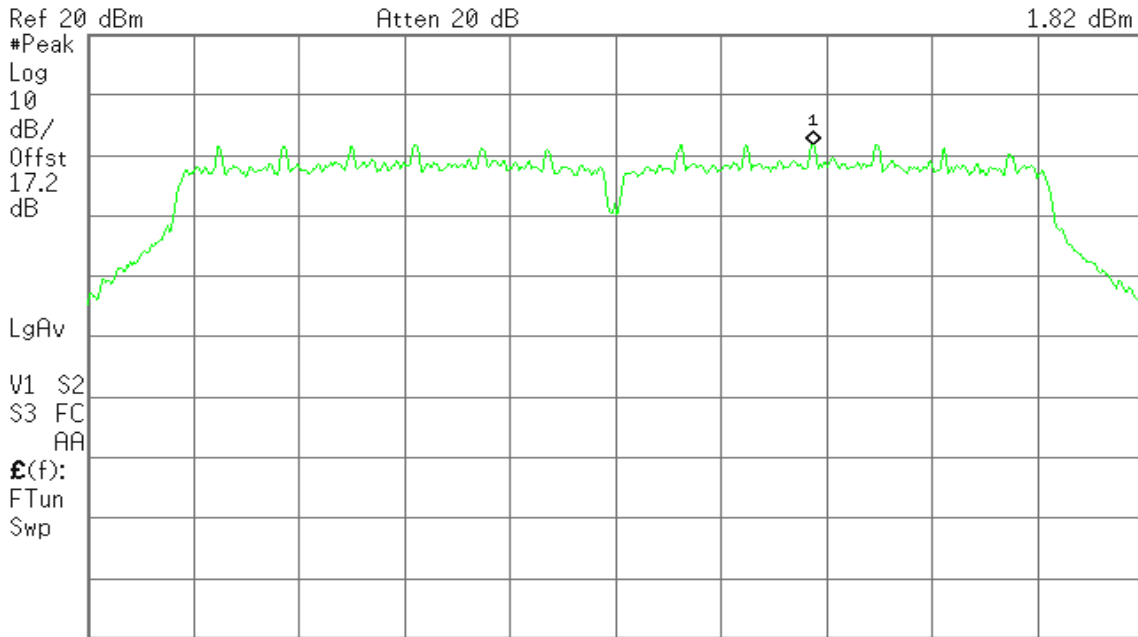


### PPSD (CH Mid)

Agilent 16:49:32 May 28, 2012

R T

Mkr1 2.445 73 GHz  
1.82 dBm



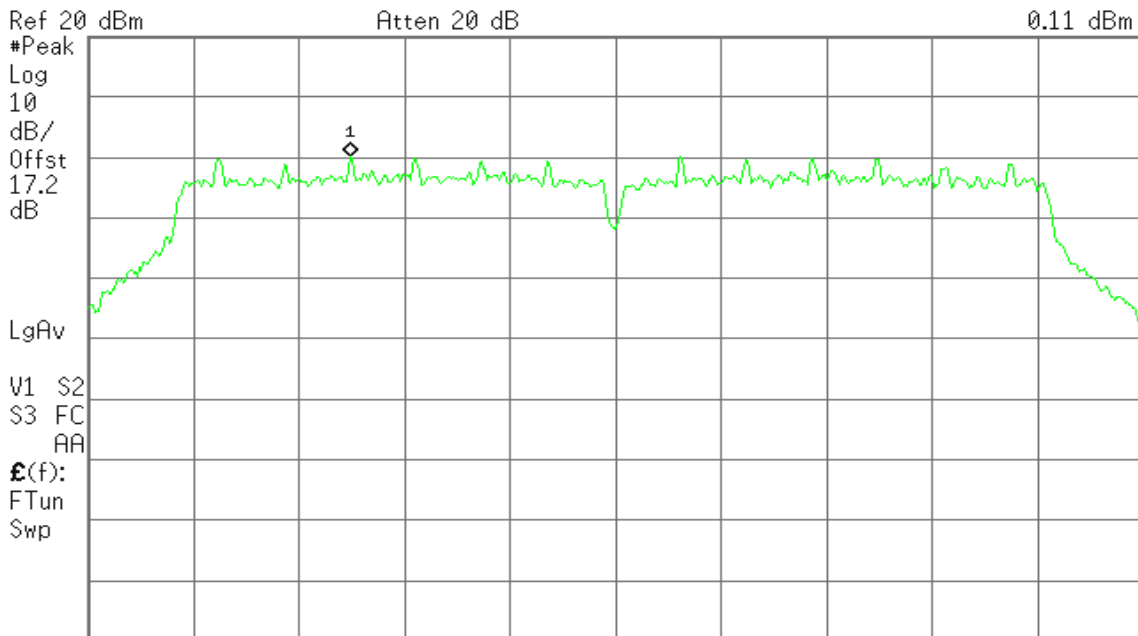
Center 2.442 00 GHz Span 20 MHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 1.92 ms (601 pts)

### PPSD (CH High)

Agilent 16:47:27 May 28, 2012

R T

Mkr1 2.456 97 GHz  
0.11 dBm



Center 2.462 00 GHz Span 20 MHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 1.92 ms (601 pts)



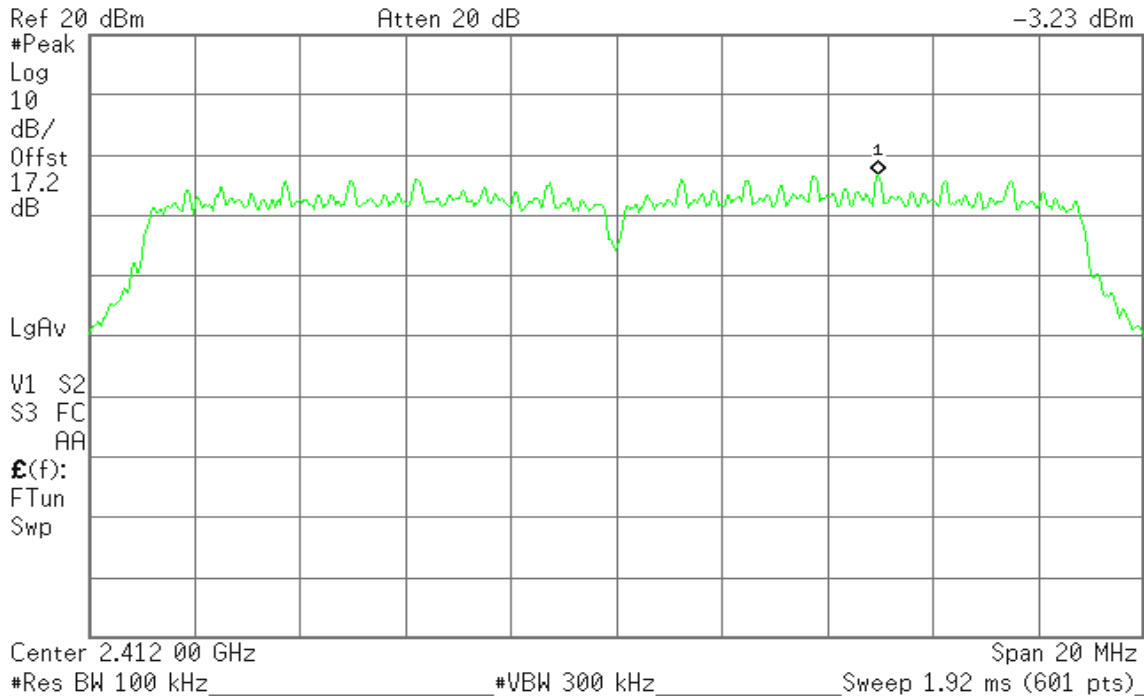
### IEEE 802.11n HT 20 MHz mode / Chain 0

#### PPSD (CH Low)

Agilent 16:44:31 May 28, 2012

R T

Mkr1 2.416 97 GHz  
-3.23 dBm

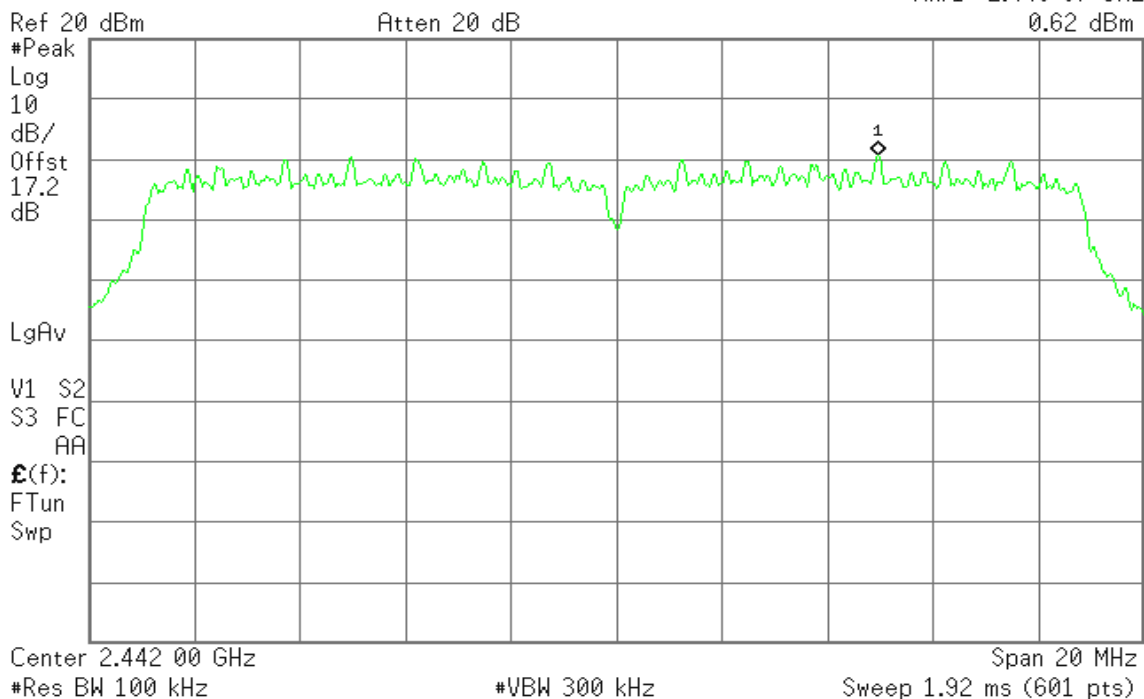


#### PPSD (CH Mid)

Agilent 16:45:15 May 28, 2012

R T

Mkr1 2.446 97 GHz  
0.62 dBm



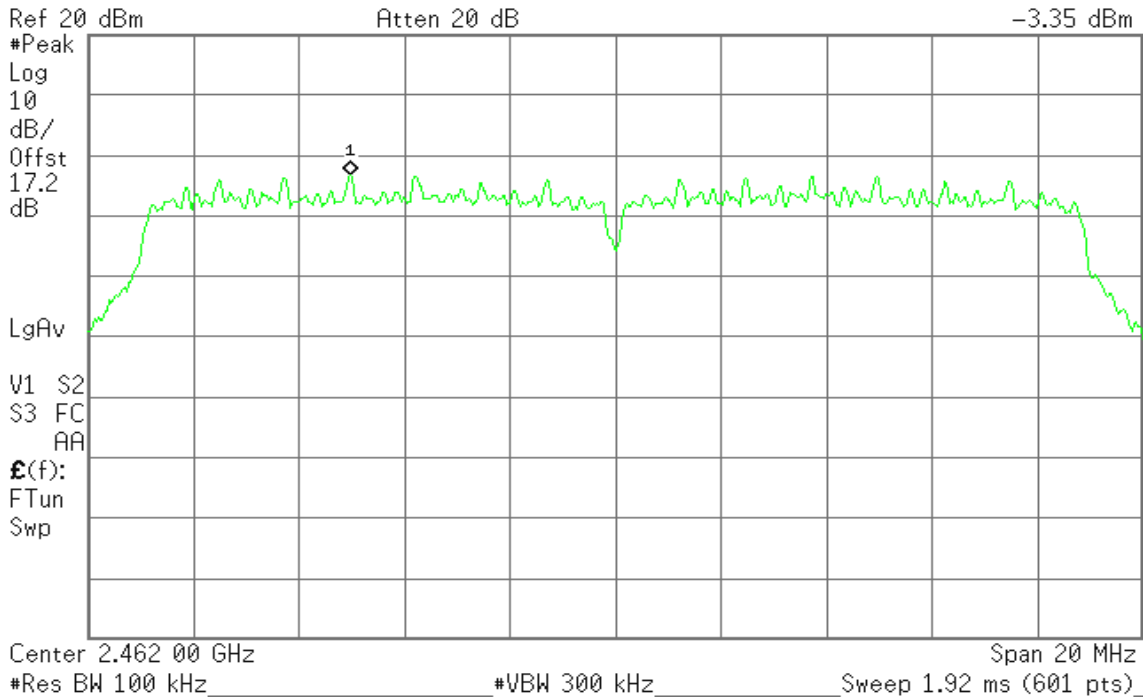


### PPSD (CH High)

Agilent 16:46:01 May 28, 2012

R T

Mkr1 2.456 97 GHz  
-3.35 dBm



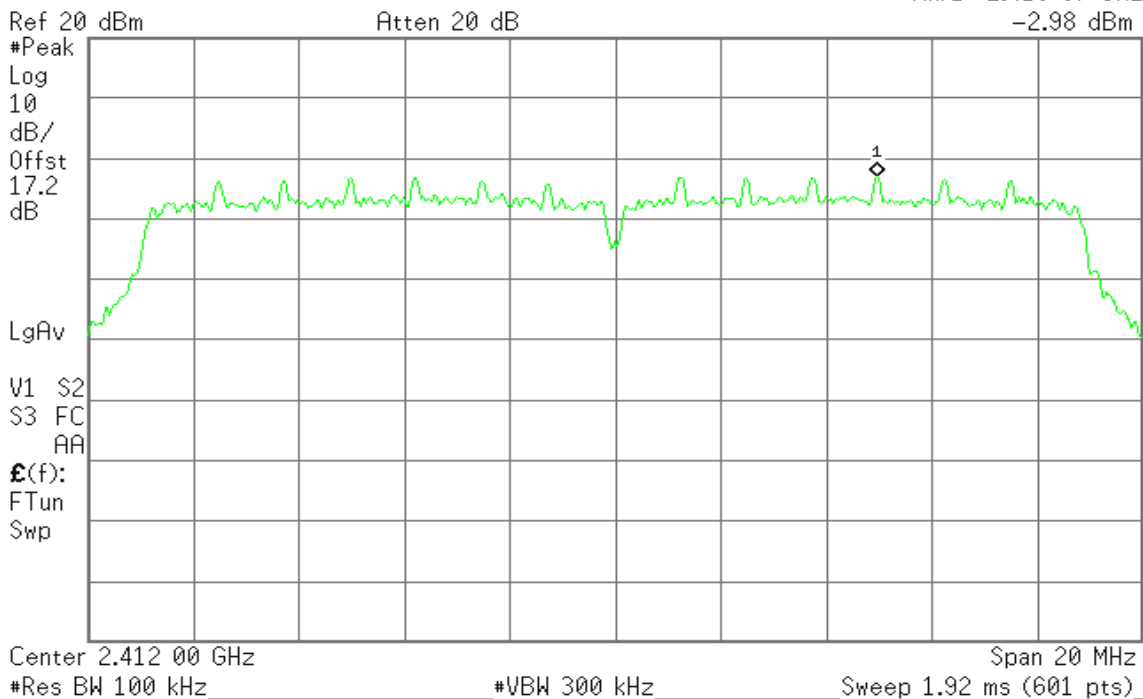
### IEEE 802.11n HT 20 MHz mode / Chain 1

#### PPSD (CH Low)

Agilent 16:42:09 May 28, 2012

R T

Mkr1 2.416 97 GHz  
-2.98 dBm



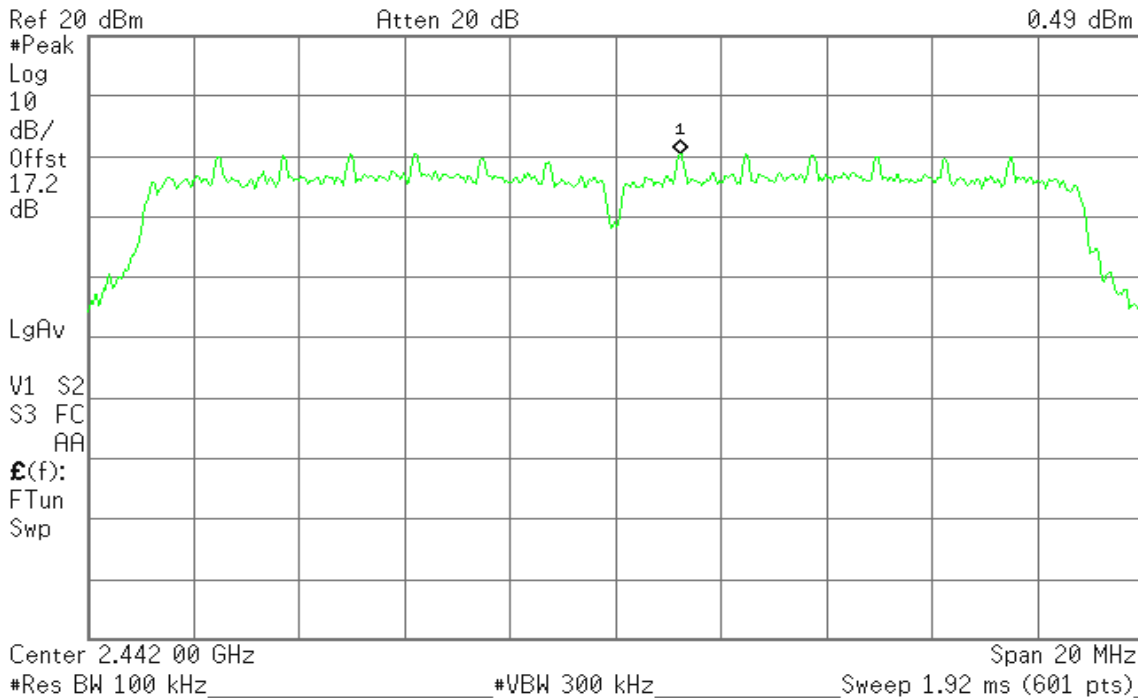


### PPSD (CH Mid)

Agilent 16:40:58 May 28, 2012

R T

Mkr1 2.443 23 GHz  
0.49 dBm

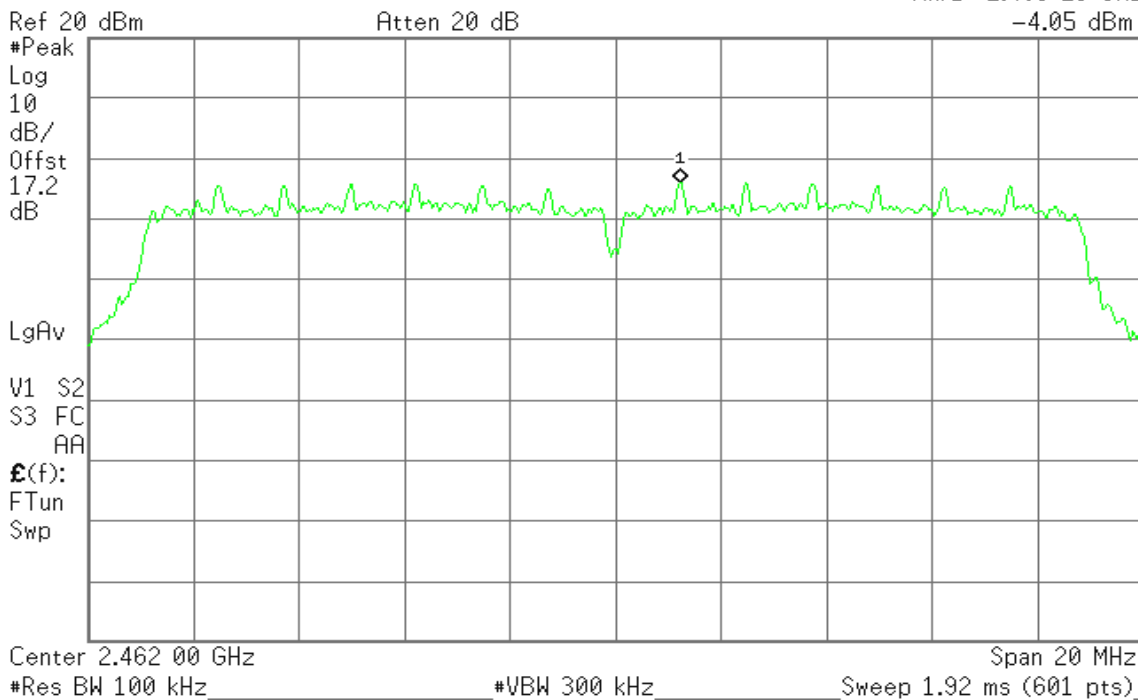


### PPSD (CH High)

Agilent 16:40:22 May 28, 2012

R T

Mkr1 2.463 23 GHz  
-4.05 dBm





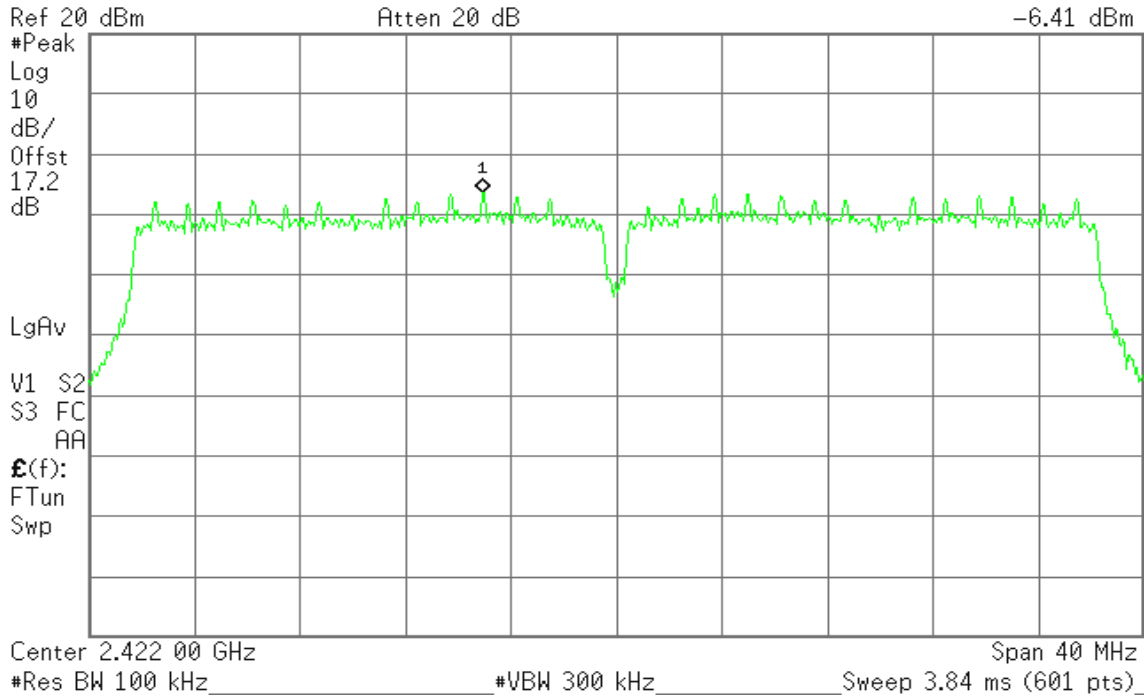
### IEEE 802.11n HT 40 MHz mode / Chain 0

#### PPSD (CH Low)

Agilent 16:36:36 May 28, 2012

R T

Mkr1 2.416 93 GHz  
-6.41 dBm

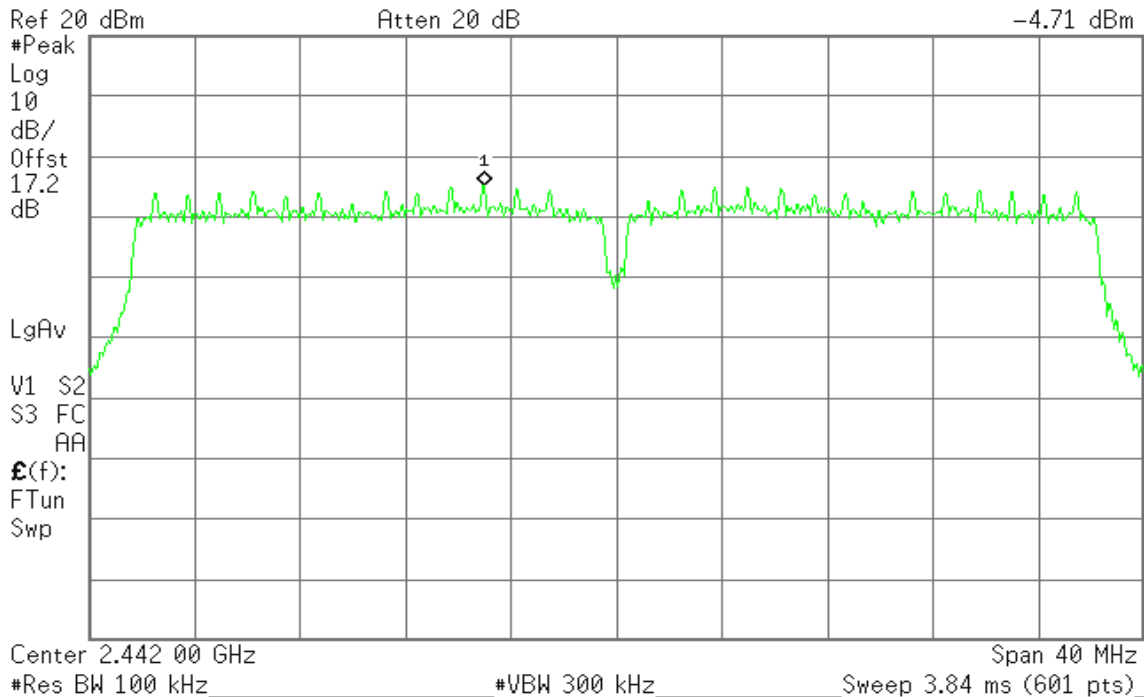


#### PPSD (CH Mid)

Agilent 16:35:55 May 28, 2012

R T

Mkr1 2.437 00 GHz  
-4.71 dBm



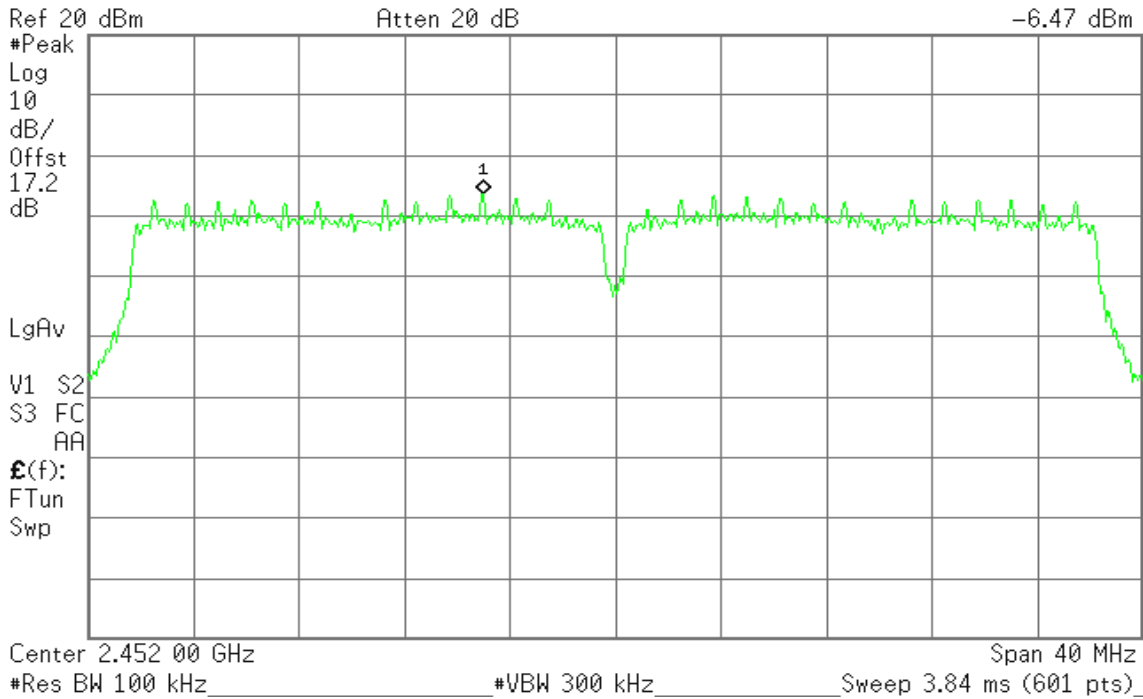


### PPSD (CH High)

Agilent 16:35:00 May 28, 2012

R T

Mkr1 2.447 00 GHz  
-6.47 dBm



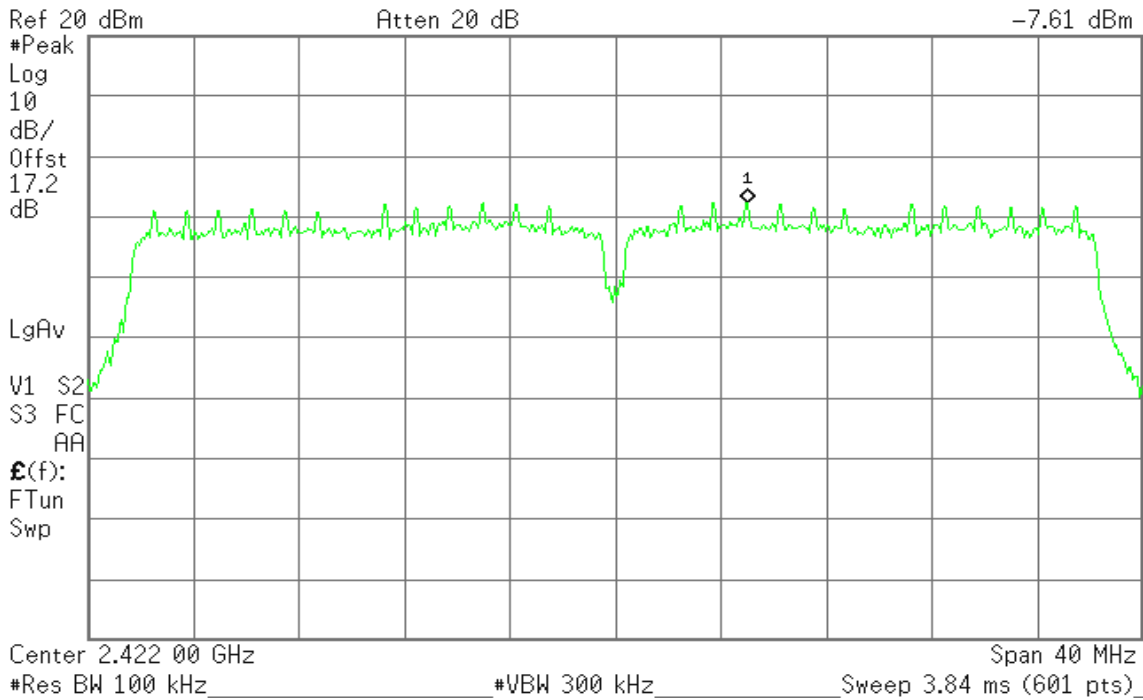
### IEEE 802.11n HT 40 MHz mode / Chain 1

#### PPSD (CH Low)

Agilent 16:37:36 May 28, 2012

R T

Mkr1 2.427 00 GHz  
-7.61 dBm





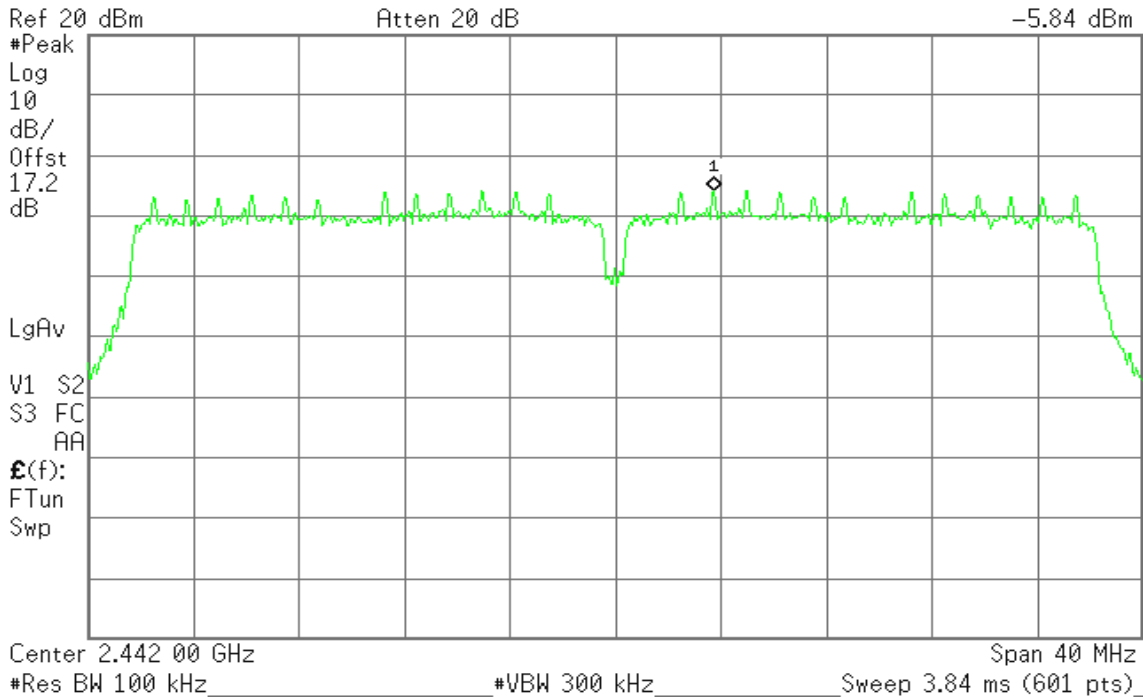


### PPSD (CH Mid)

Agilent 16:38:26 May 28, 2012

R T

Mkr1 2.445 73 GHz  
-5.84 dBm

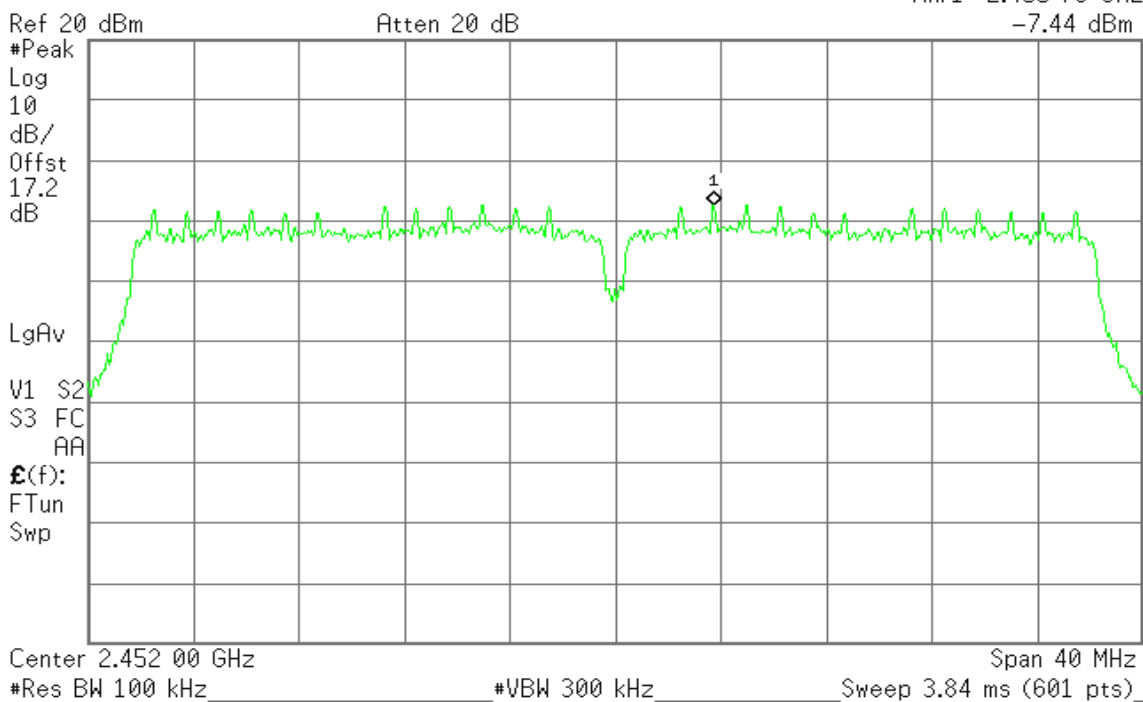


### PPSD (CH High)

Agilent 16:39:13 May 28, 2012

R T

Mkr1 2.455 73 GHz  
-7.44 dBm





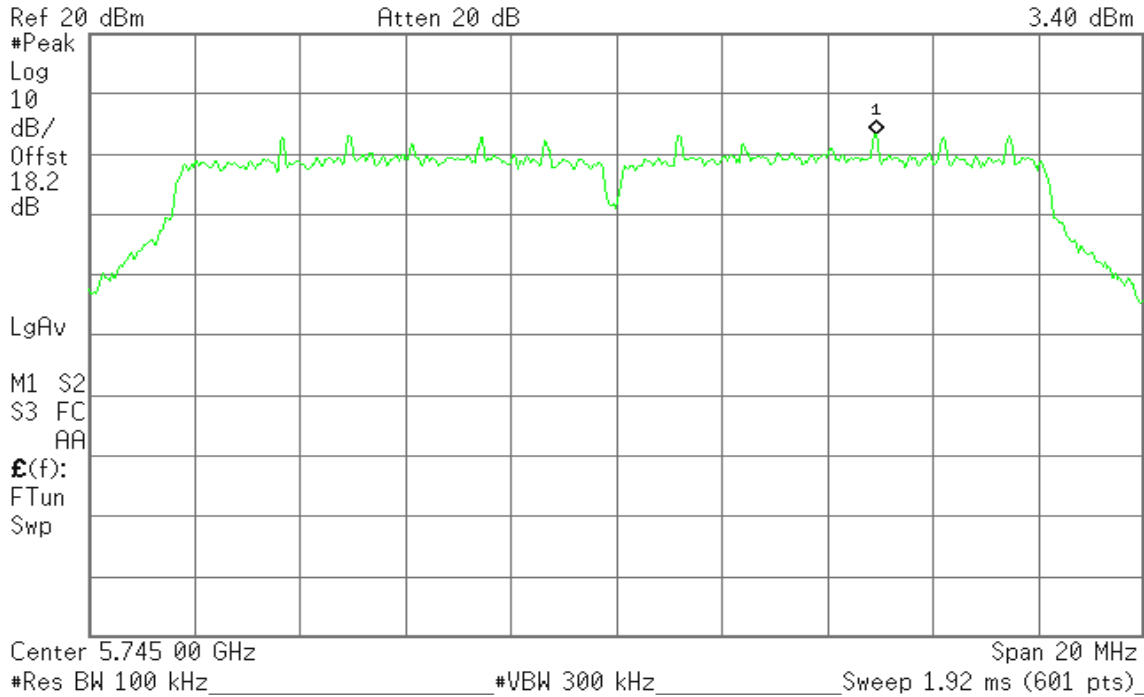
### IEEE 802.11a mode

### PPSD (CH Low)

Agilent 15:29:09 Jun 6, 2012

R T

Mkr1 5.749 93 GHz  
3.40 dBm

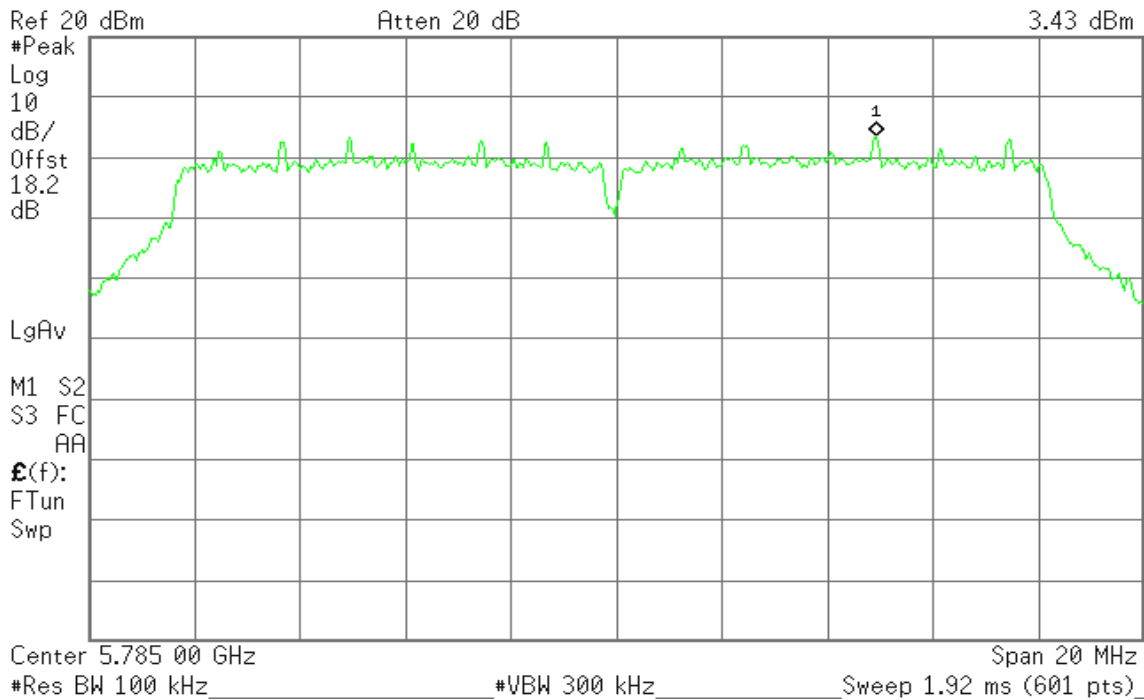


### PPSD (CH Mid)

Agilent 15:30:02 Jun 6, 2012

R T

Mkr1 5.789 93 GHz  
3.43 dBm



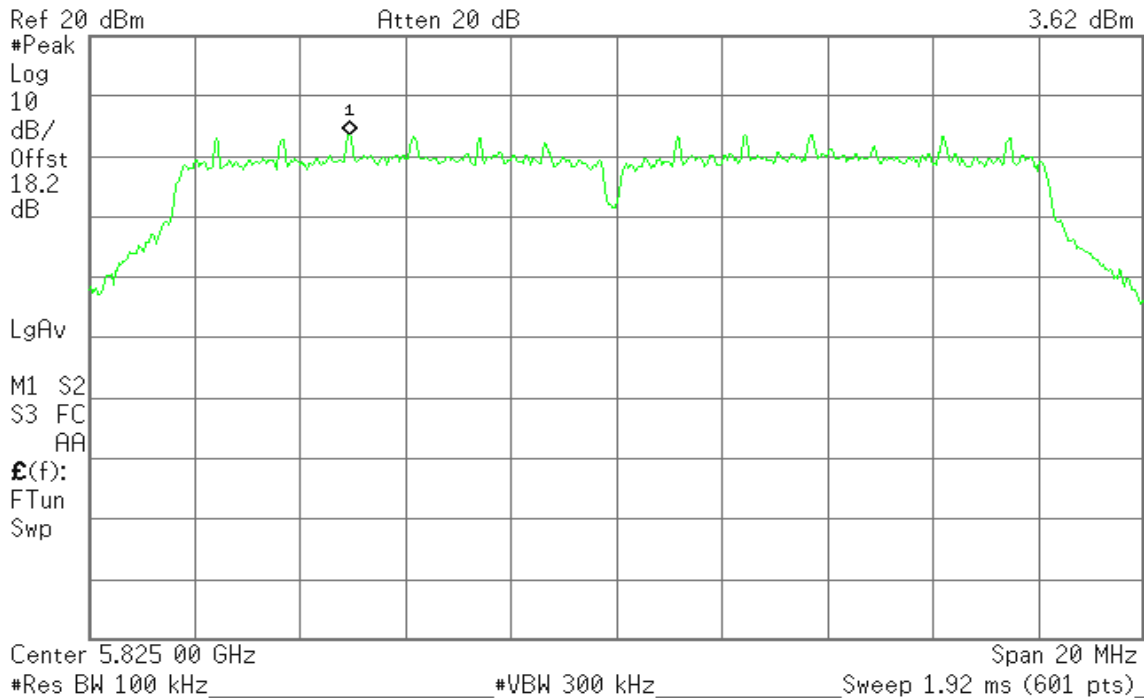


### PPSD (CH High)

Agilent 15:31:32 Jun 6, 2012

R T

Mkr1 5.819 93 GHz  
3.62 dBm



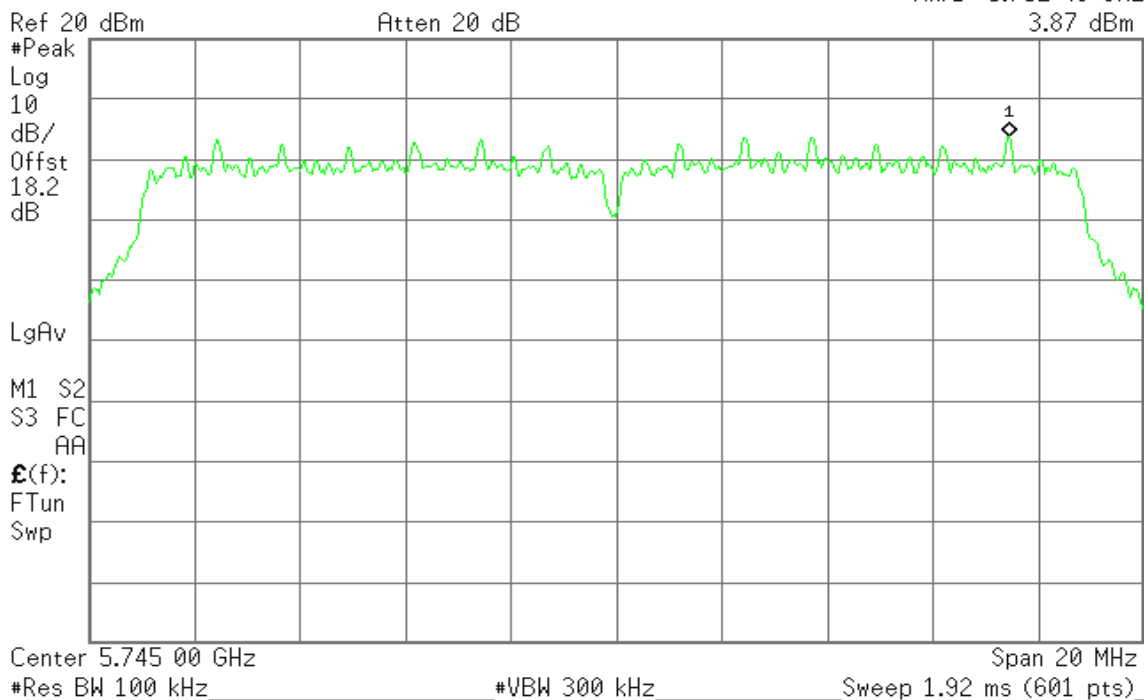
### IEEE 802.11n HT 20 MHz mode / Chain 0

### PPSD (CH Low)

Agilent 15:28:15 Jun 6, 2012

R T

Mkr1 5.752 43 GHz  
3.87 dBm



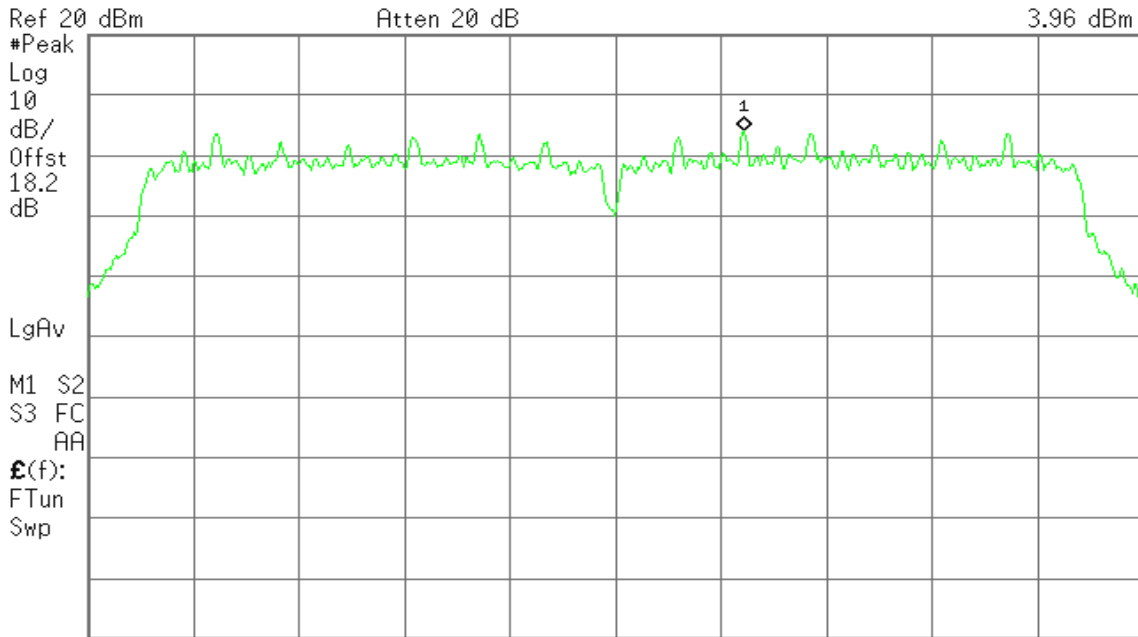


### PPSD (CH Mid)

Agilent 15:26:54 Jun 6, 2012

R T

Mkr1 5.787 43 GHz  
3.96 dBm



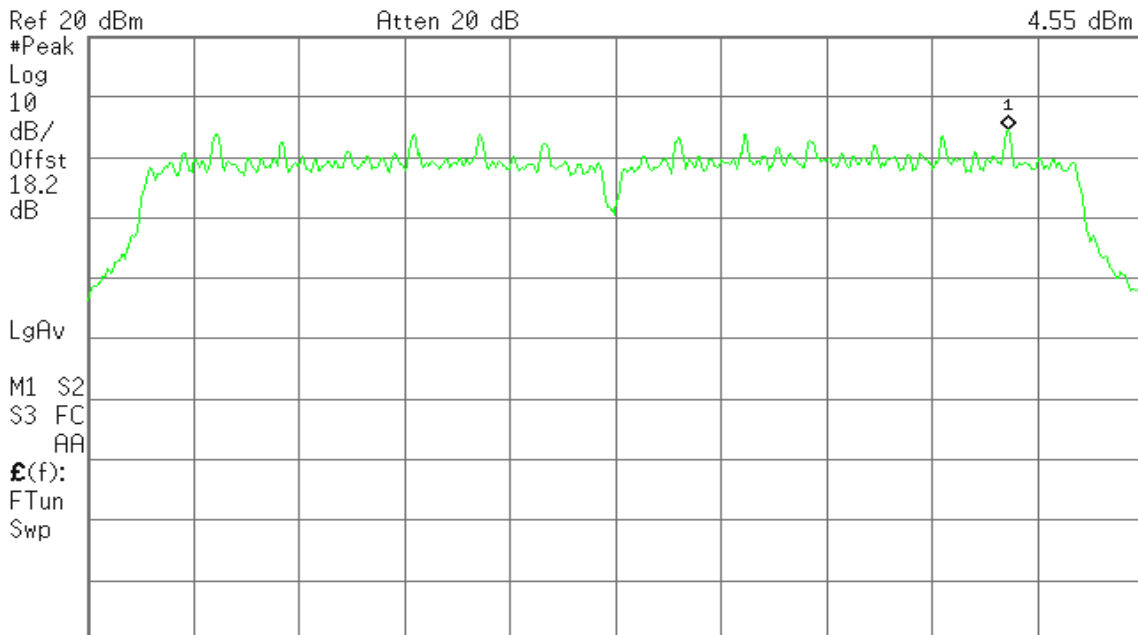
Center 5.785 00 GHz Span 20 MHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 1.92 ms (601 pts)

### PPSD (CH High)

Agilent 15:25:55 Jun 6, 2012

R T

Mkr1 5.832 43 GHz  
4.55 dBm



Center 5.825 00 GHz Span 20 MHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 1.92 ms (601 pts)



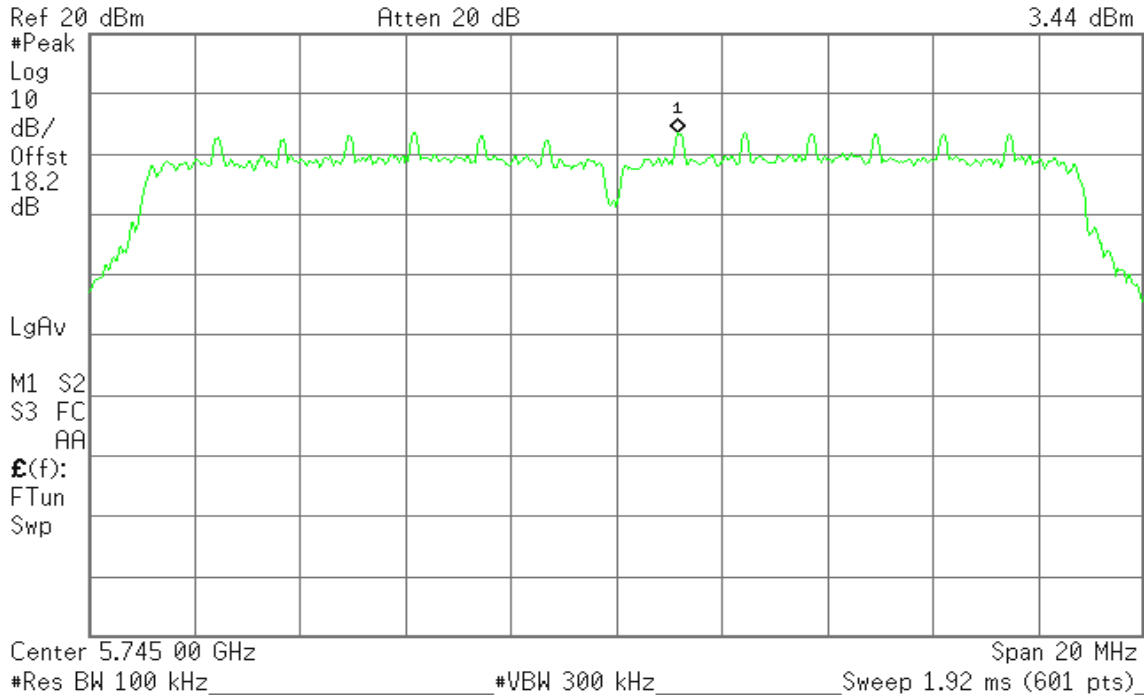
### IEEE 802.11n HT 20 MHz mode / Chain 1

#### PPSD (CH Low)

Agilent 15:21:47 Jun 6, 2012

R T

Mkr1 5.746 17 GHz  
3.44 dBm

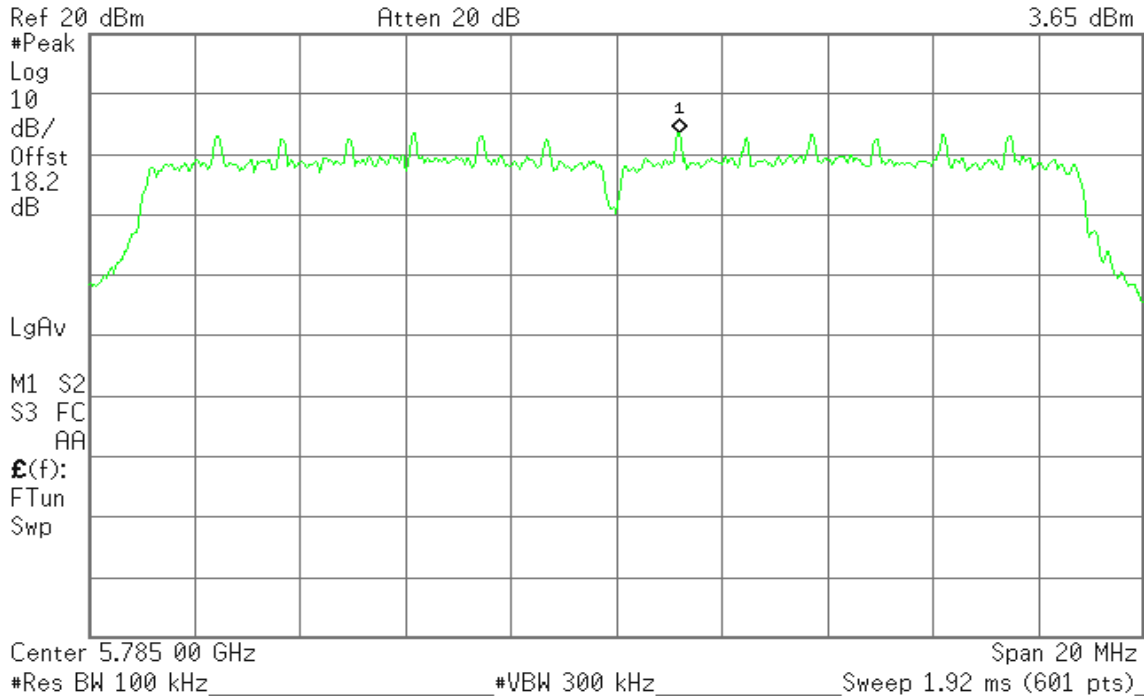


#### PPSD (CH Mid)

Agilent 15:24:06 Jun 6, 2012

R T

Mkr1 5.786 20 GHz  
3.65 dBm



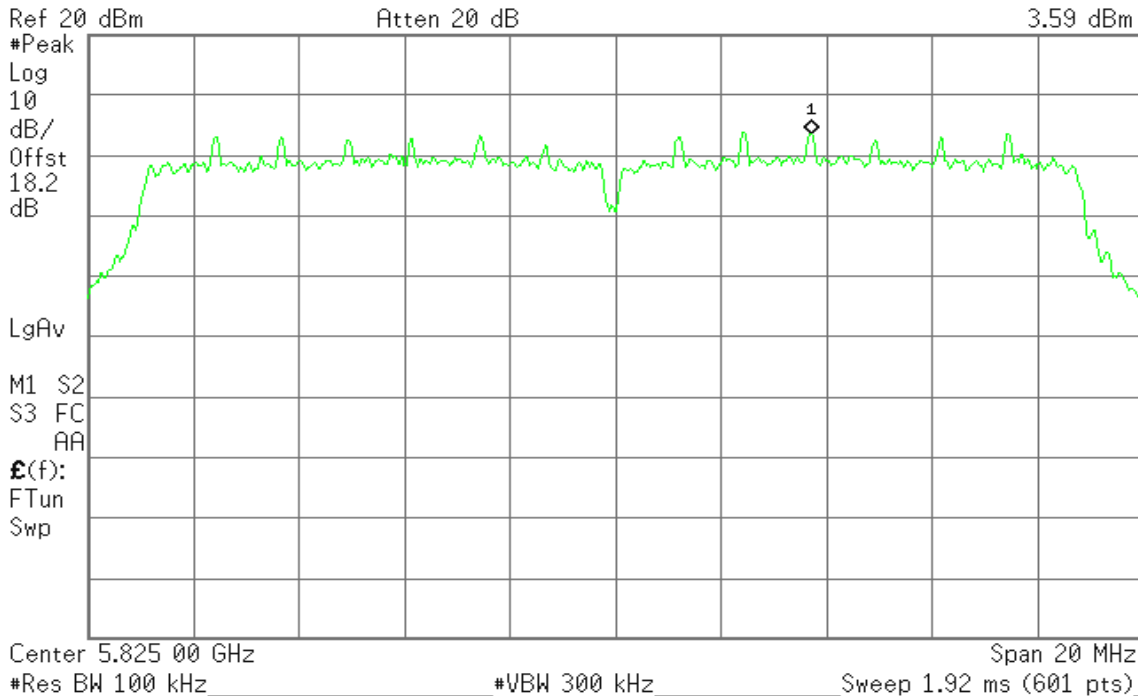


### PPSD (CH High)

Agilent 15:25:05 Jun 6, 2012

R T

Mkr1 5.828 70 GHz  
3.59 dBm



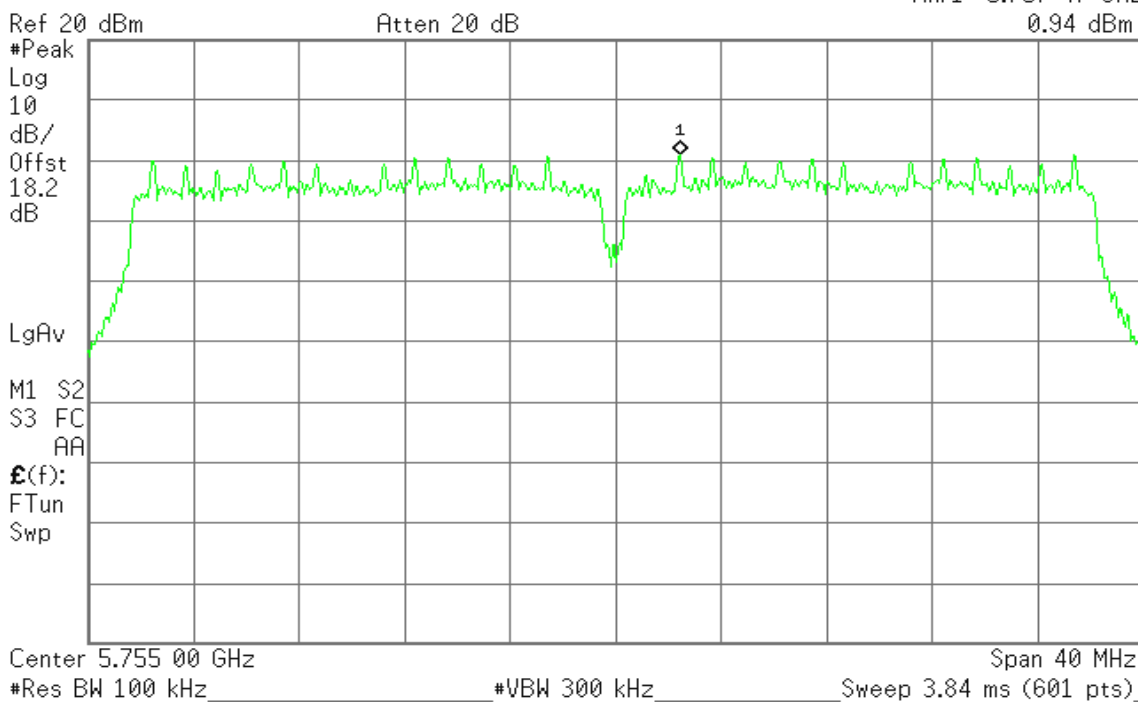
### IEEE 802.11n HT 40 MHz mode / Chain 0

### PPSD (CH Low)

Agilent 15:33:42 Jun 6, 2012

R T

Mkr1 5.757 47 GHz  
0.94 dBm



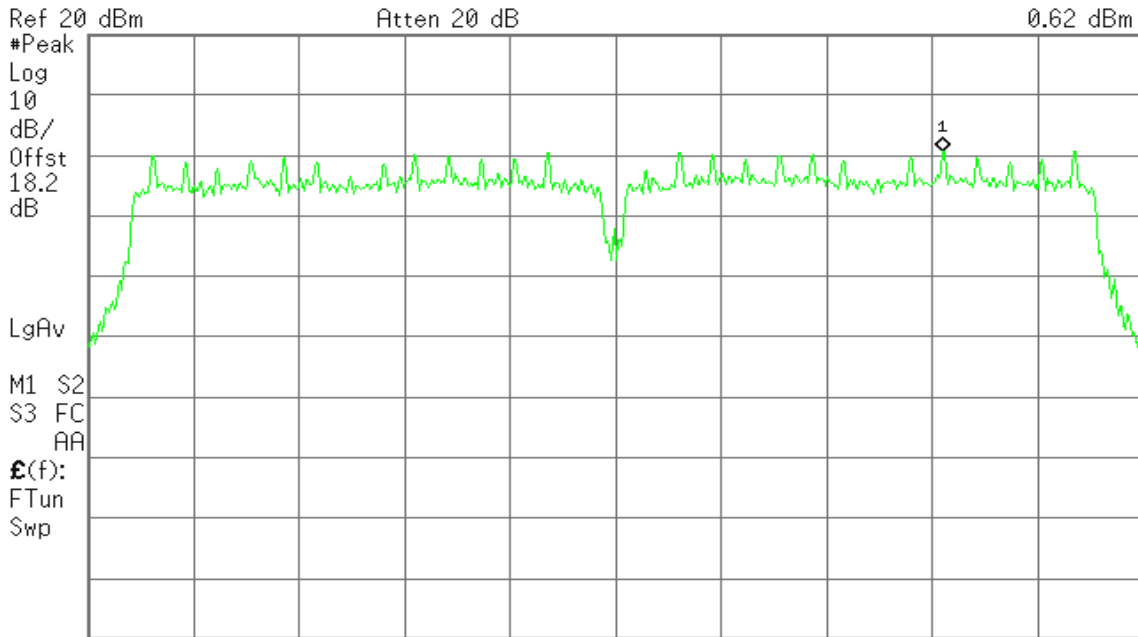


### PPSD (CH High)

Agilent 15:38:11 Jun 6, 2012

R T

Mkr1 5.807 40 GHz  
0.62 dBm



Center 5.795 00 GHz Span 40 MHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 3.84 ms (601 pts)

### IEEE 802.11n HT 40 MHz mode / Chain 1

### PPSD (CH Low)

Agilent 15:35:12 Jun 6, 2012

R T

Mkr1 5.766 20 GHz  
-0.47 dBm



Center 5.755 00 GHz Span 40 MHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 3.84 ms (601 pts)

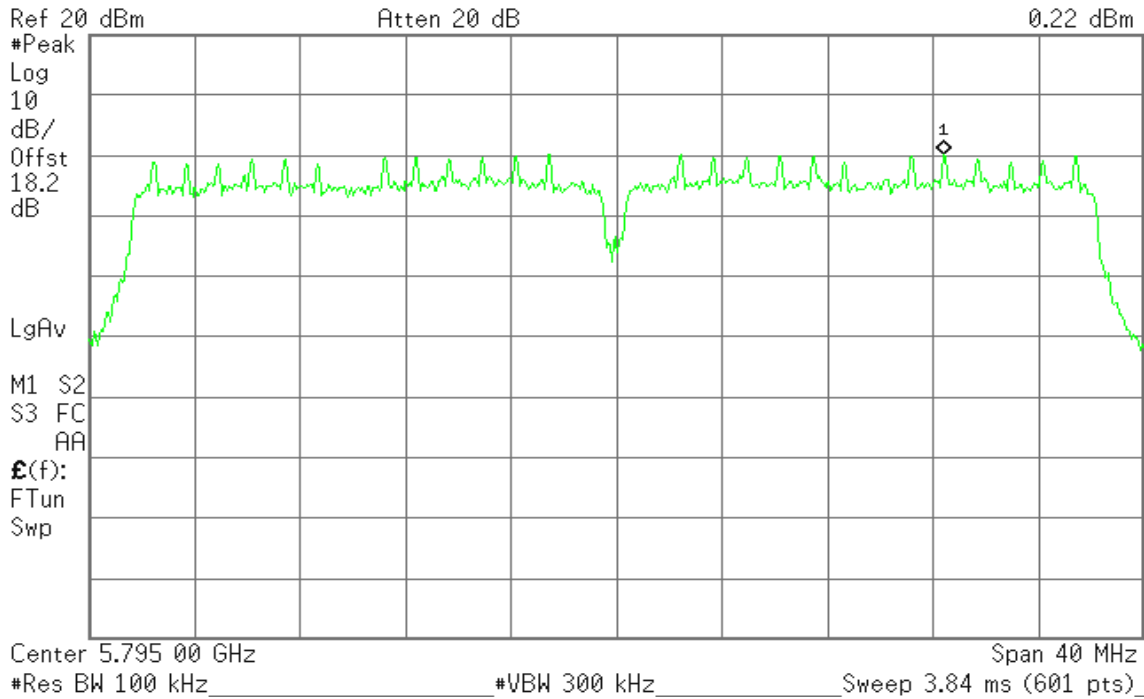


### PPSD (CH High)

Agilent 15:37:04 Jun 6, 2012

R T

Mkr1 5.807 40 GHz  
0.22 dBm







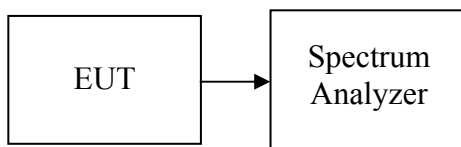
## 7.5 SPURIOUS EMISSIONS

### 7.5.1 Conducted Measurement

#### LIMIT

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

#### Test Configuration



#### TEST PROCEDURE

##### Reference Level Measurement

The transmitter output is connected to the spectrum analyzer. Set the RBW = 100 kHz, VBW  $\geq$  300 kHz, span = 5-30 % greater than the EBW. Detector = Peak, Trace mode = max hold, Sweep = auto couple.

##### Unwanted Emissions Level Measurement

The transmitter output is connected to the spectrum analyzer. Set the RBW = 100 kHz, VBW  $\geq$  300 kHz, span = 30MHz to 25GHz. Detector = Peak, Trace mode = max hold, Sweep = auto couple.

#### TEST RESULTS

*No non-compliance noted.*



**Test Plot**

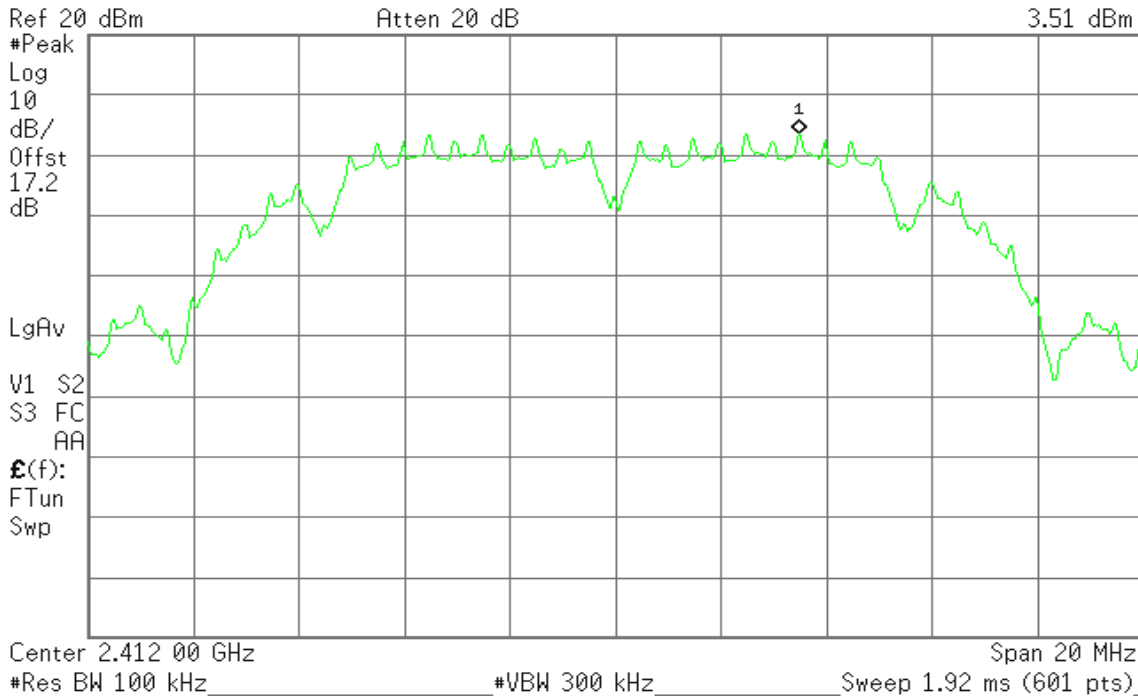
**IEEE 802.11b mode**

**CH Low**

Agilent 16:50:37 May 28, 2012

R T

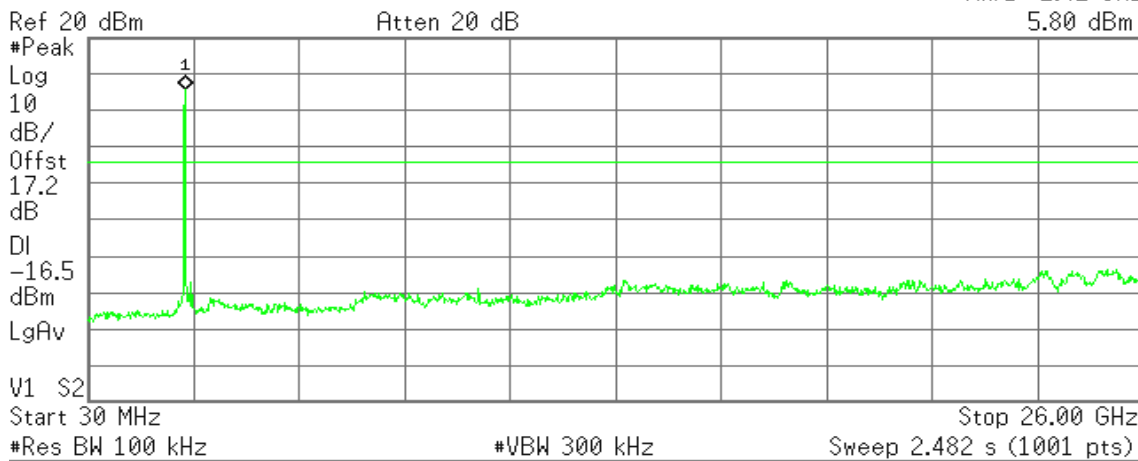
Mkr1 2.415 47 GHz  
3.51 dBm



Agilent 13:52:32 May 28, 2012

R T

Mkr1 2.42 GHz  
5.80 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.42 GHz	5.80 dBm

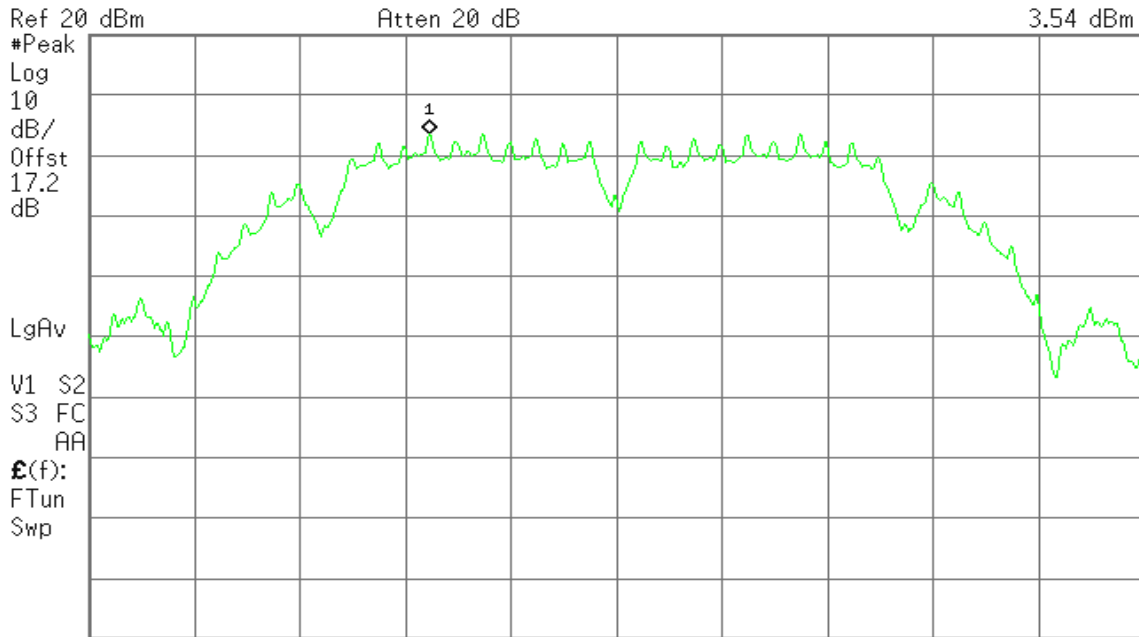


CH Mid

Agilent 16:48:39 May 28, 2012

R T

Mkr1 2.438 47 GHz  
3.54 dBm

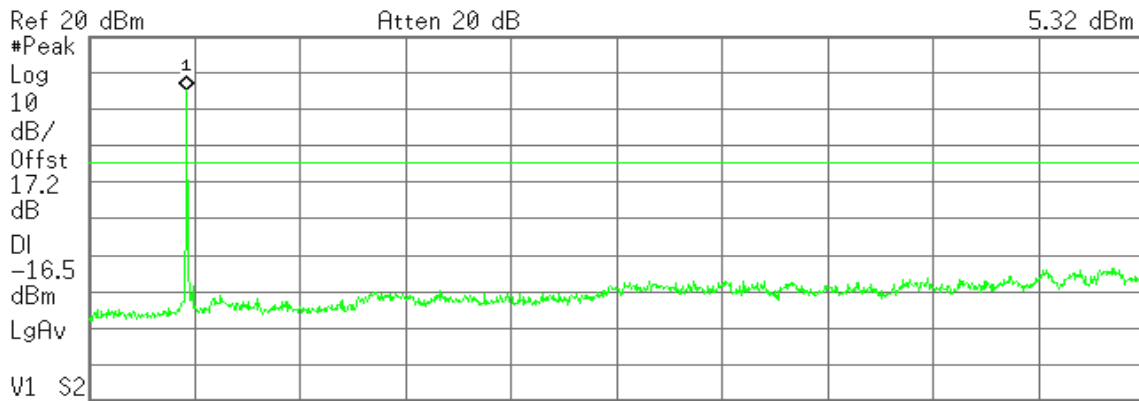


Center 2.442 00 GHz Span 20 MHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 1.92 ms (601 pts)

Agilent 13:56:06 May 28, 2012

R T

Mkr1 2.45 GHz  
5.32 dBm



Start 30 MHz Stop 26.00 GHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (1001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.45 GHz	5.32 dBm

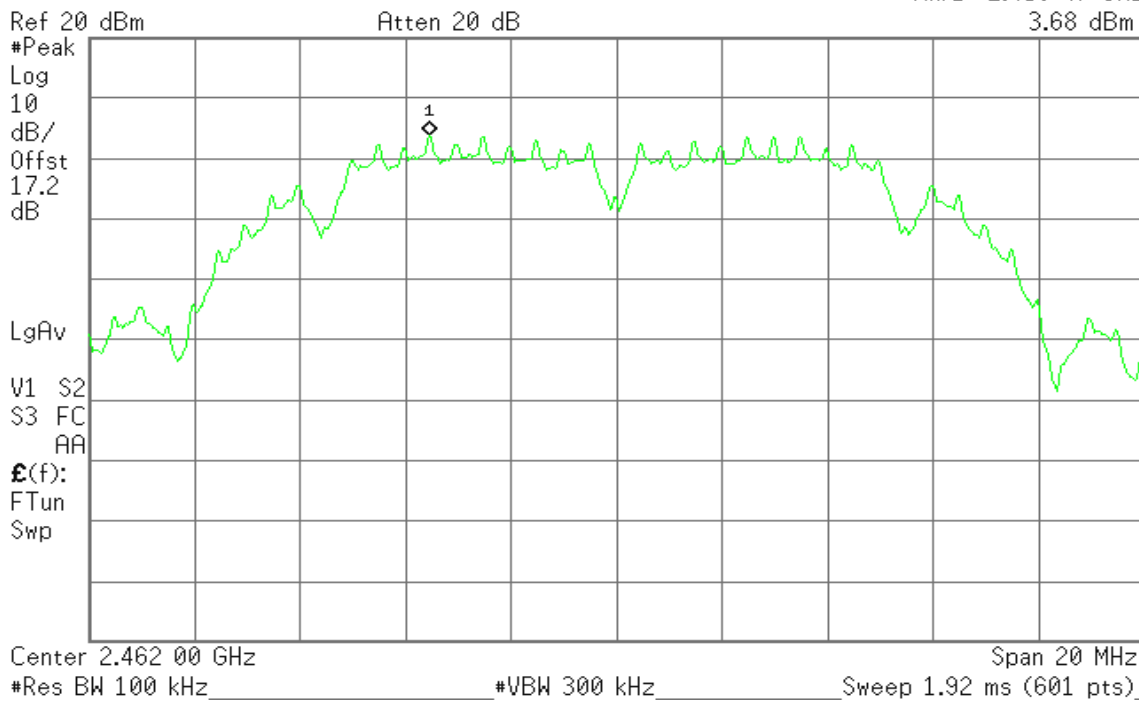


### CH High

Agilent 16:48:00 May 28, 2012

R T

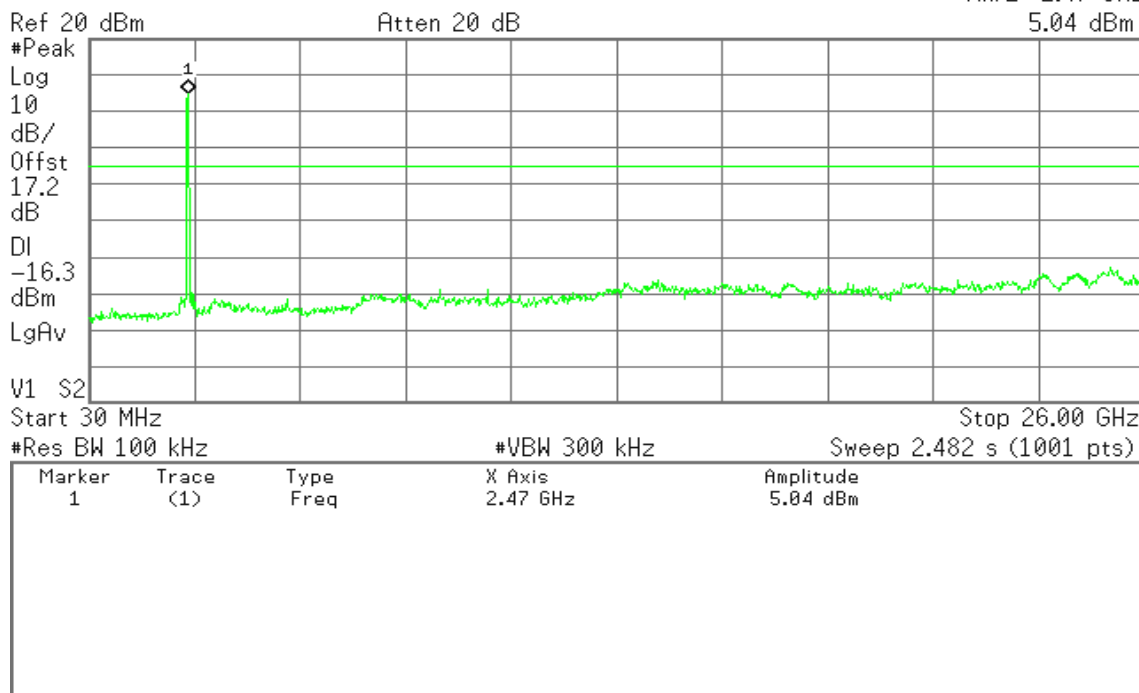
Mkr1 2.458 47 GHz  
3.68 dBm



Agilent 14:01:26 May 28, 2012

R T

Mkr2 2.47 GHz  
5.04 dBm





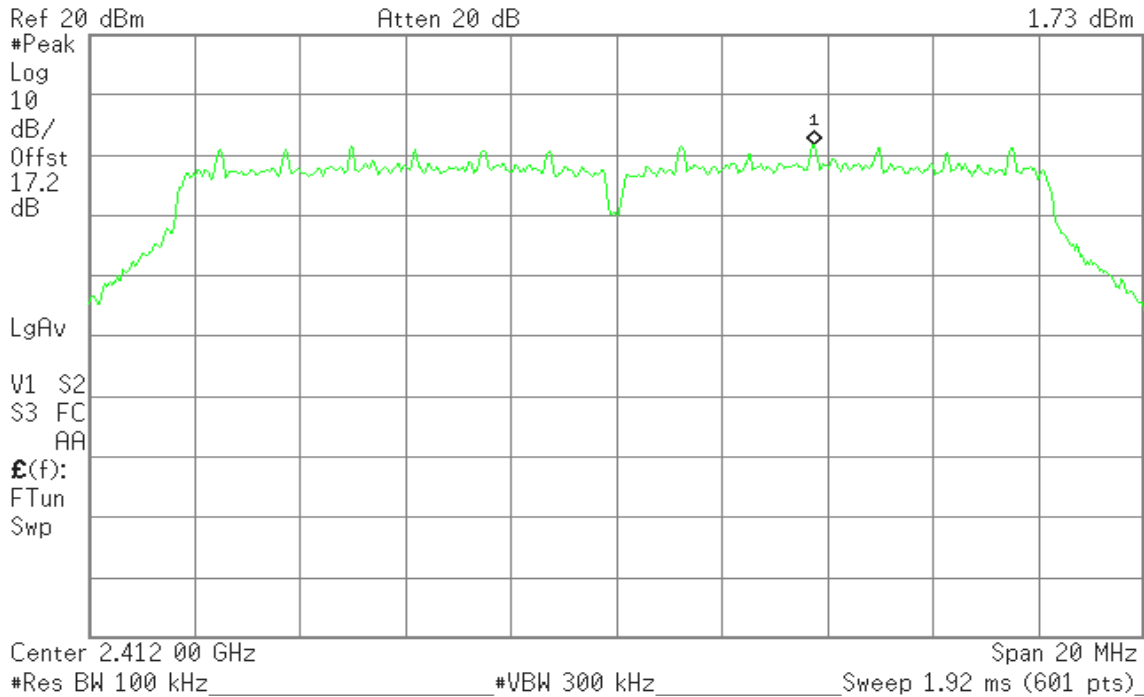
### IEEE 802.11g mode

#### CH Low

Agilent 16:50:08 May 28, 2012

R T

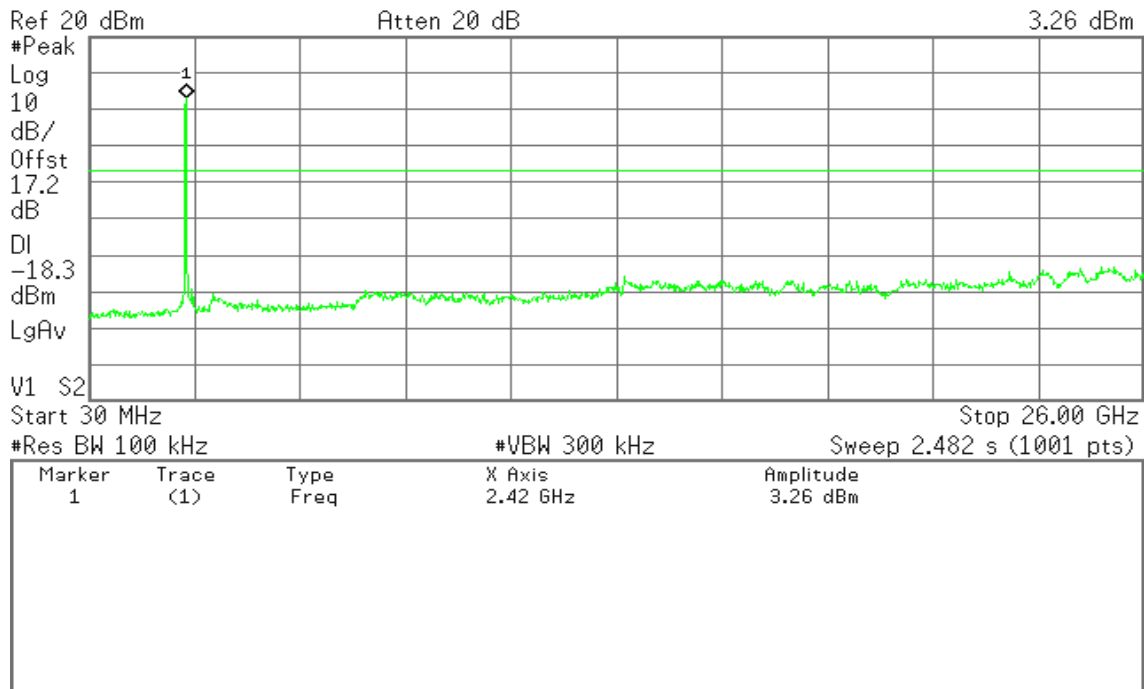
Mkr1 2.415 73 GHz  
1.73 dBm



Agilent 14:06:03 May 28, 2012

R T

Mkr1 2.42 GHz  
3.26 dBm



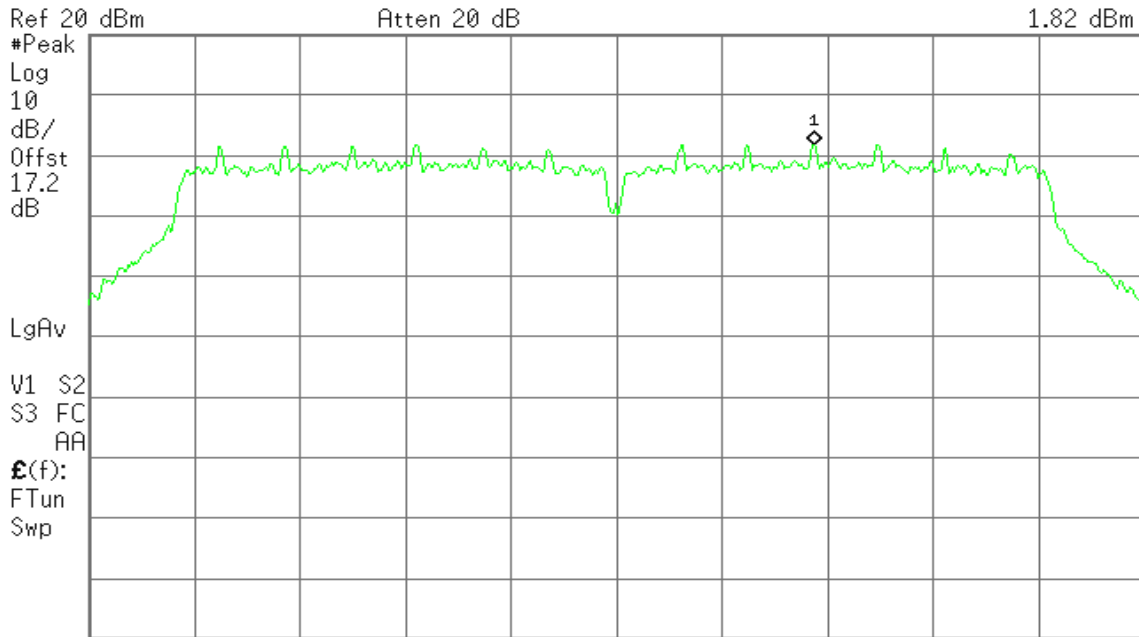


### CH Mid

Agilent 16:49:32 May 28, 2012

R T

Mkr1 2.445 73 GHz  
1.82 dBm

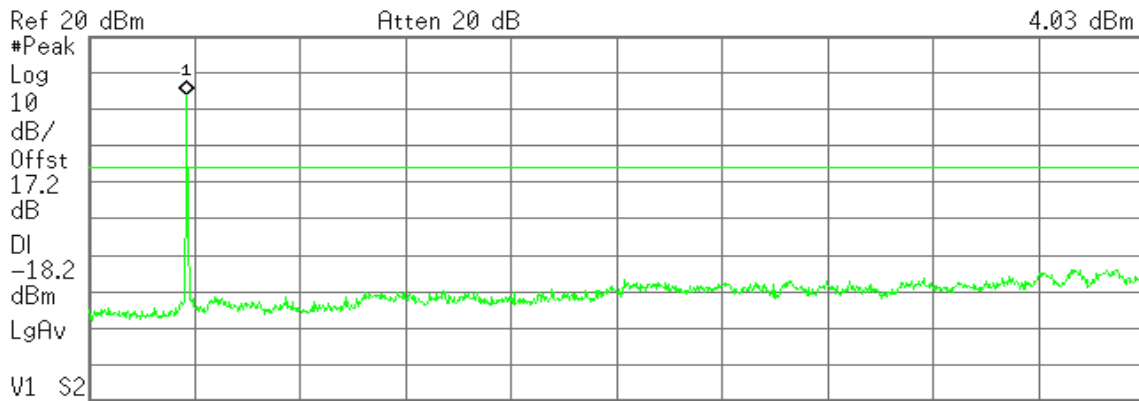


Center 2.442 00 GHz      Span 20 MHz  
#Res BW 100 kHz      #VBW 300 kHz      Sweep 1.92 ms (601 pts)

Agilent 14:11:42 May 28, 2012

R T

Mkr1 2.45 GHz  
4.03 dBm



Start 30 MHz      Stop 26.00 GHz  
#Res BW 100 kHz      #VBW 300 kHz      Sweep 2.482 s (1001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.45 GHz	4.03 dBm

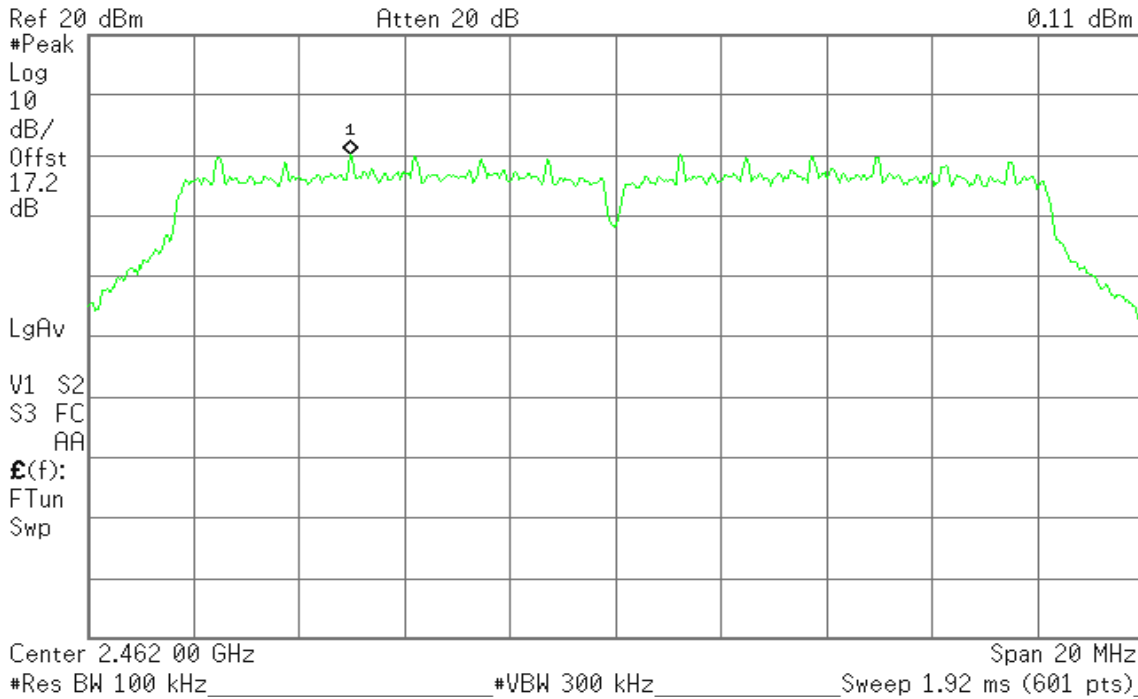


### CH High

Agilent 16:47:27 May 28, 2012

R T

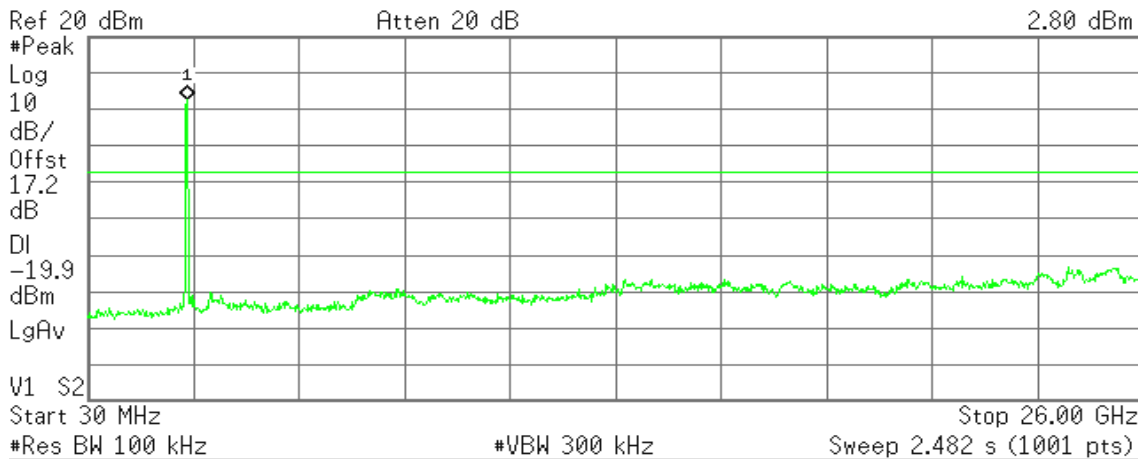
Mkr1 2.456 97 GHz  
0.11 dBm



Agilent 14:14:51 May 28, 2012

R T

Mkr1 2.47 GHz  
2.80 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.47 GHz	2.80 dBm



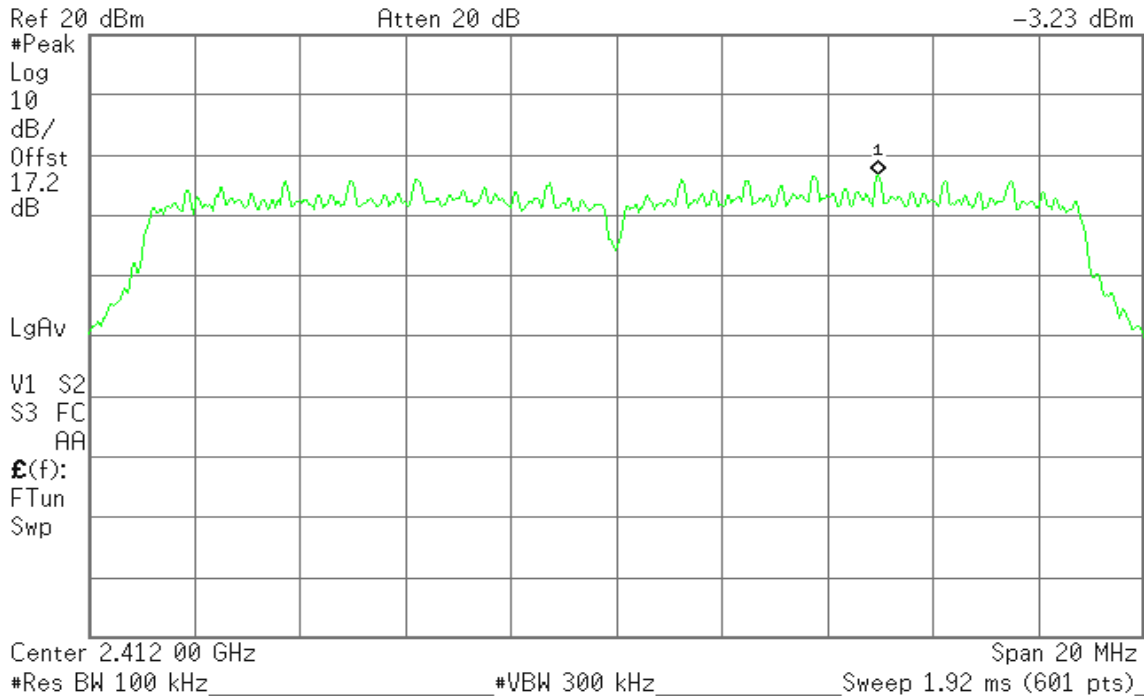
### IEEE 802.11n HT 20 MHz mode / Chain 0

#### CH Low

Agilent 16:44:31 May 28, 2012

R T

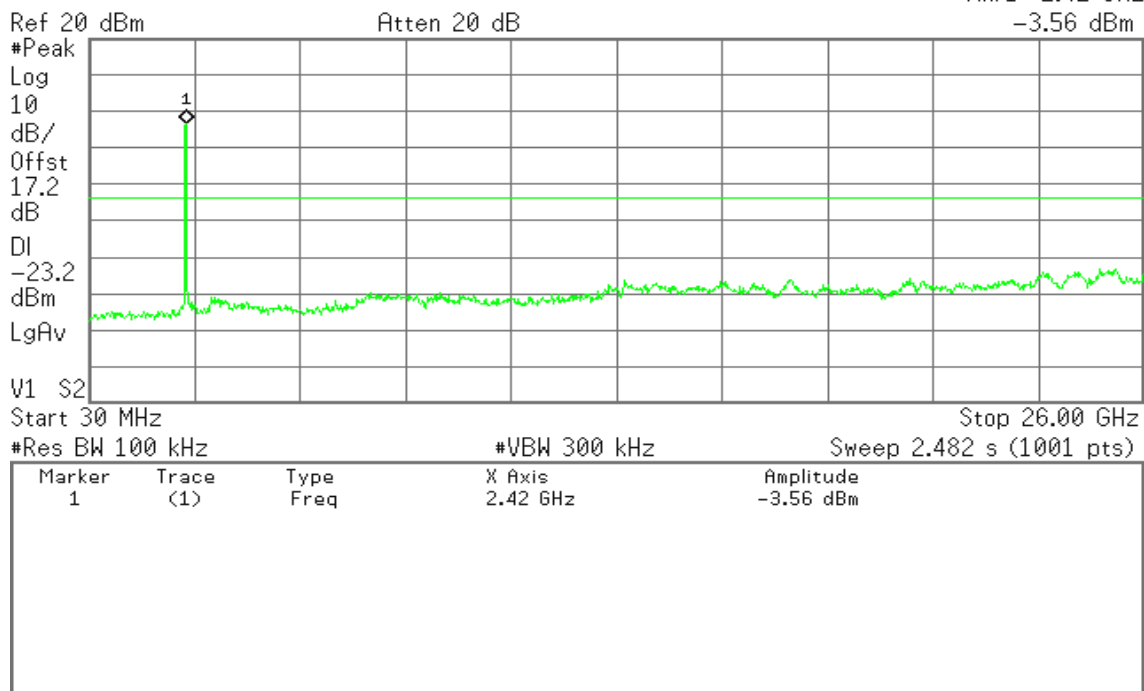
Mkr1 2.416 97 GHz  
-3.23 dBm



Agilent 14:20:28 May 28, 2012

R T

Mkr1 2.42 GHz  
-3.56 dBm





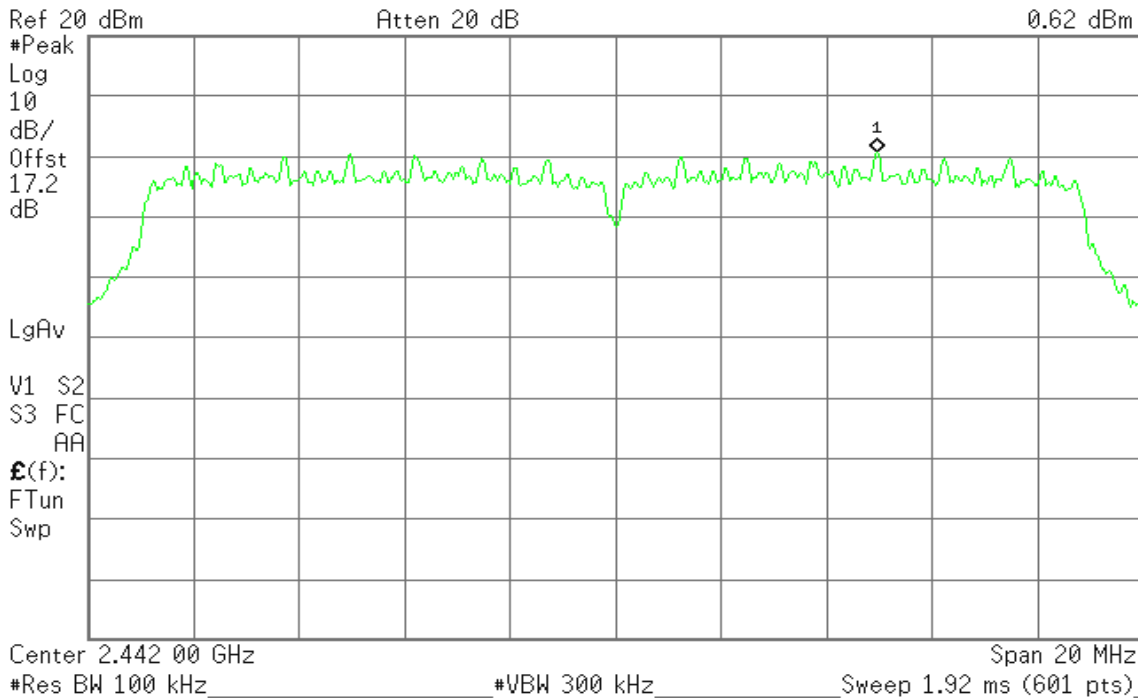


### CH Mid

Agilent 16:45:15 May 28, 2012

R T

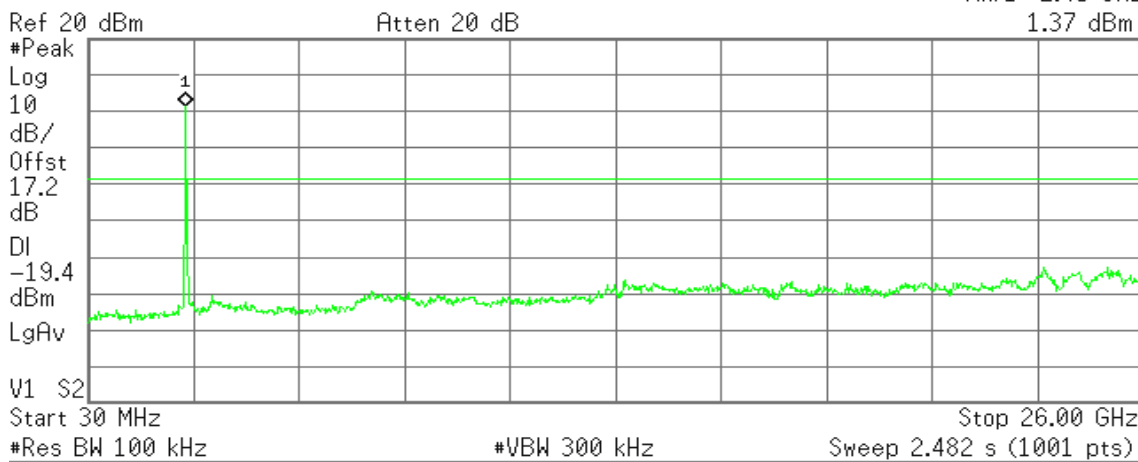
Mkr1 2.446 97 GHz  
0.62 dBm



Agilent 14:23:30 May 28, 2012

R T

Mkr1 2.45 GHz  
1.37 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.45 GHz	1.37 dBm





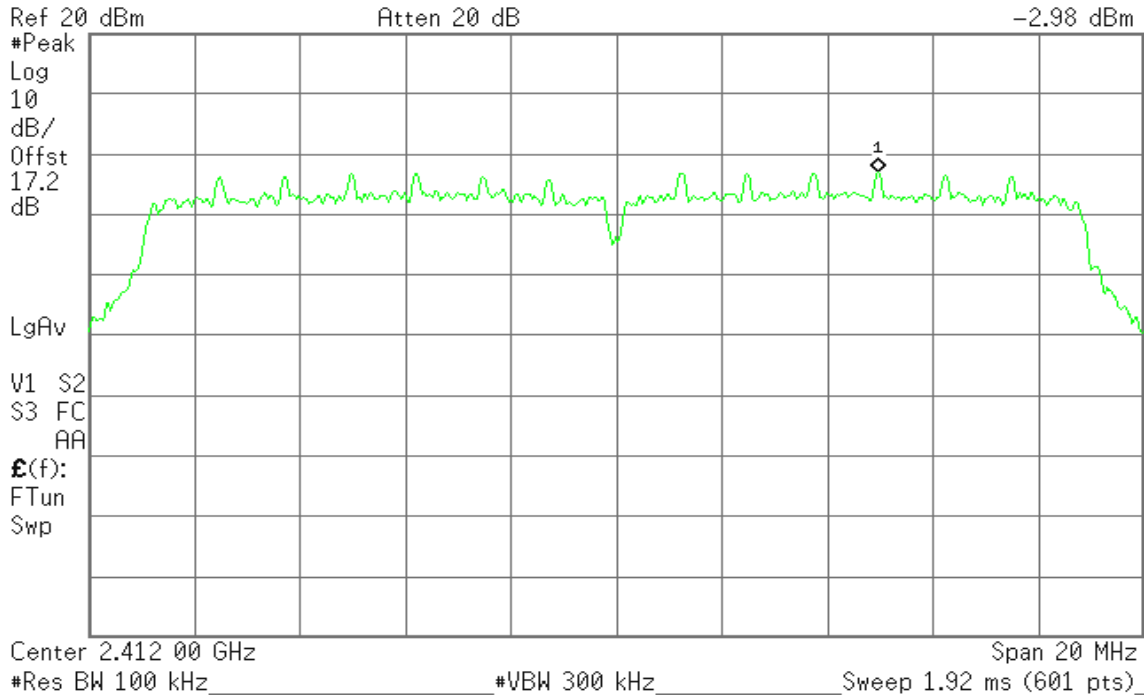
### IEEE 802.11n HT 20 MHz mode / Chain 1

#### CH Low

Agilent 16:42:09 May 28, 2012

R T

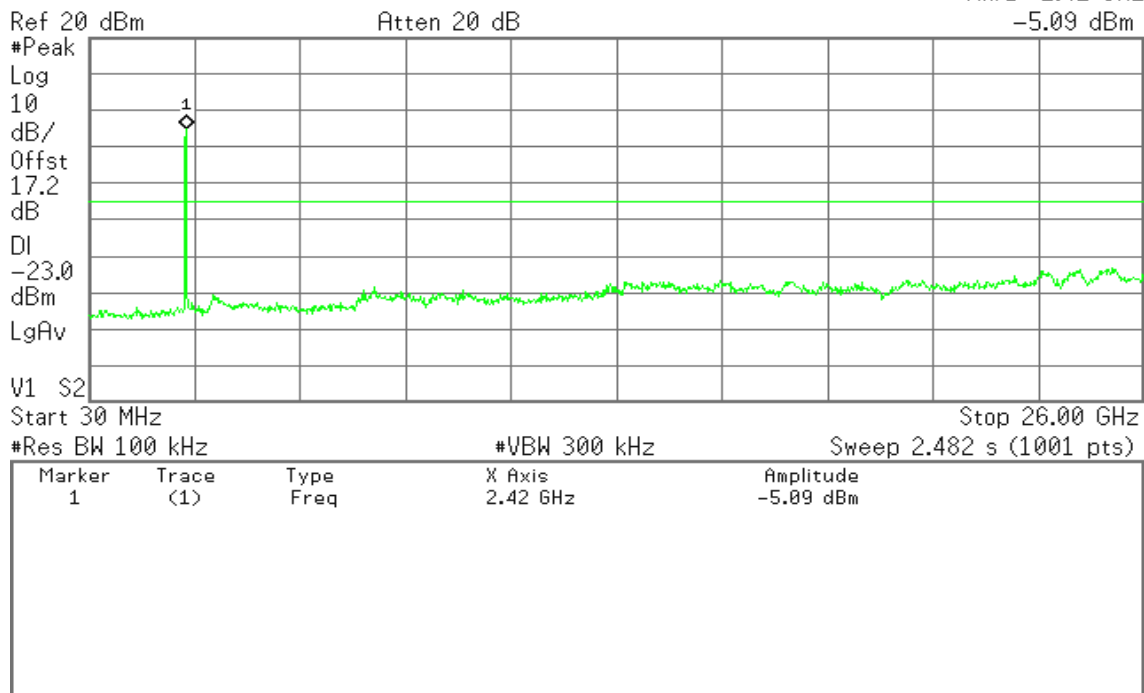
Mkr1 2.416 97 GHz  
-2.98 dBm



Agilent 14:36:29 May 28, 2012

R T

Mkr1 2.42 GHz  
-5.09 dBm



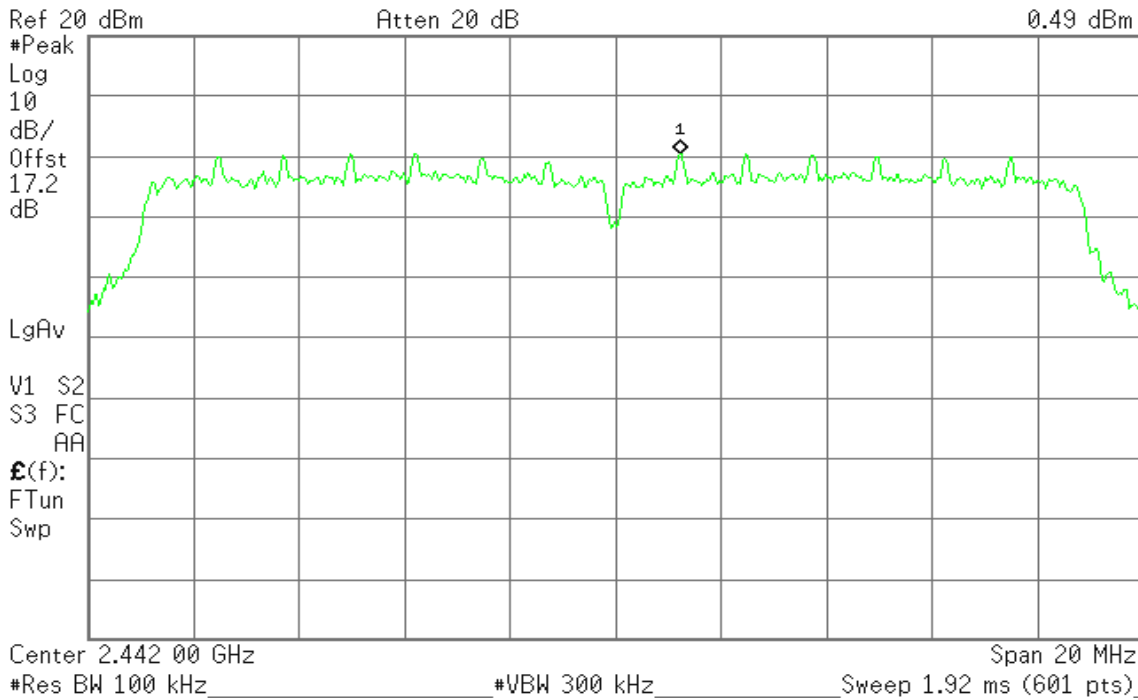


### CH Mid

Agilent 16:40:58 May 28, 2012

R T

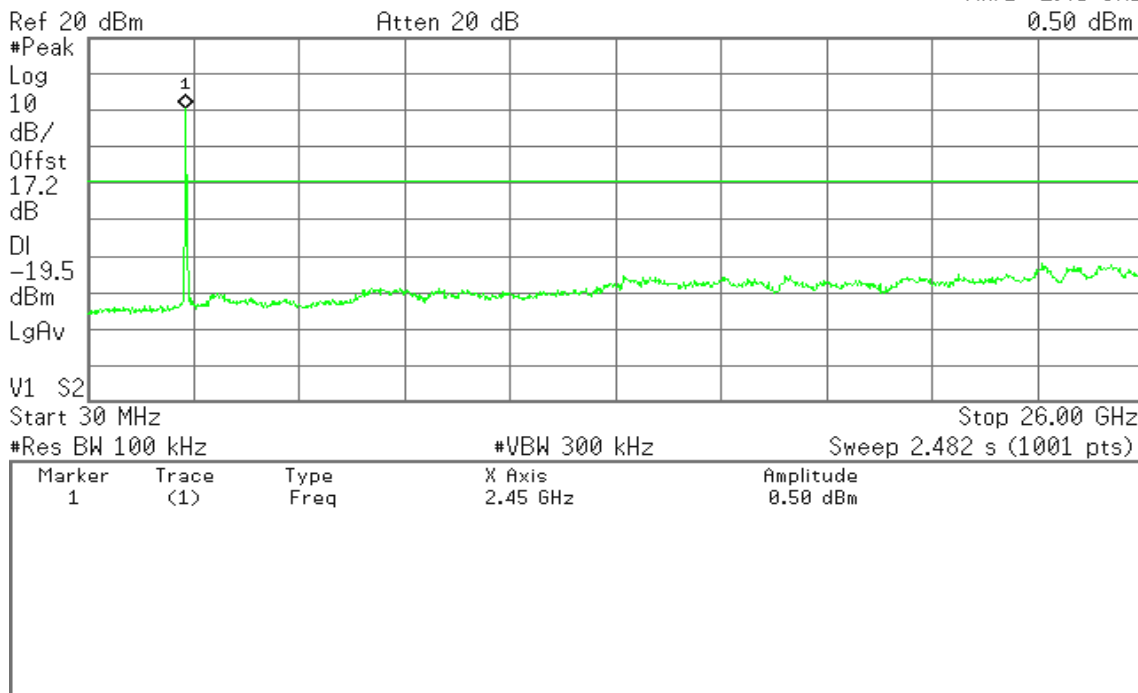
Mkr1 2.443 23 GHz  
0.49 dBm



Agilent 14:50:46 May 28, 2012

R T

Mkr1 2.45 GHz  
0.50 dBm



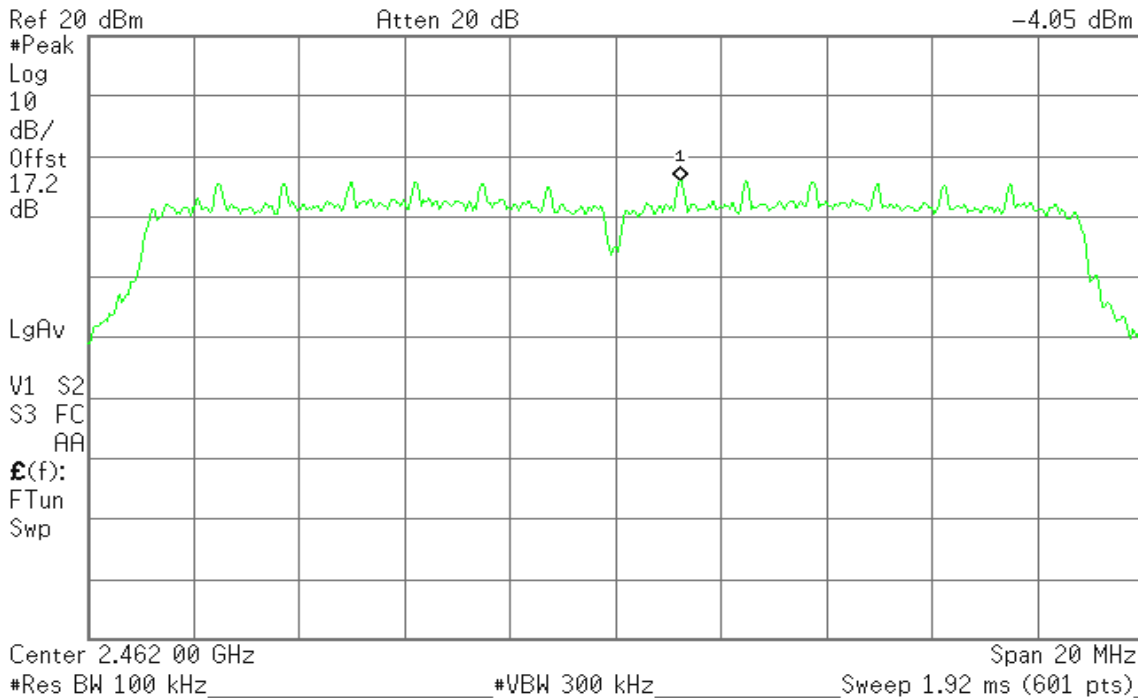


### CH High

Agilent 16:40:22 May 28, 2012

R T

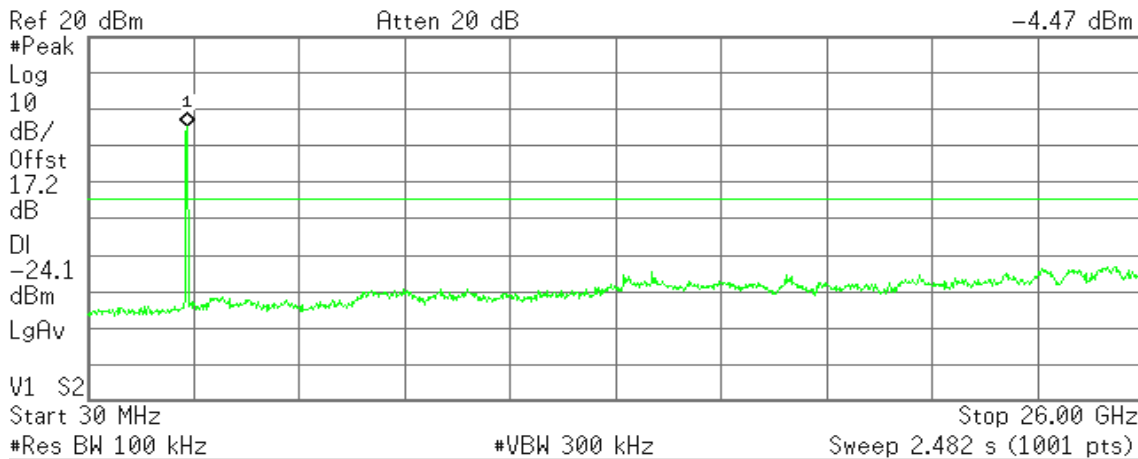
Mkr1 2.463 23 GHz  
-4.05 dBm



Agilent 14:55:11 May 28, 2012

R T

Mkr1 2.47 GHz  
-4.47 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.47 GHz	-4.47 dBm



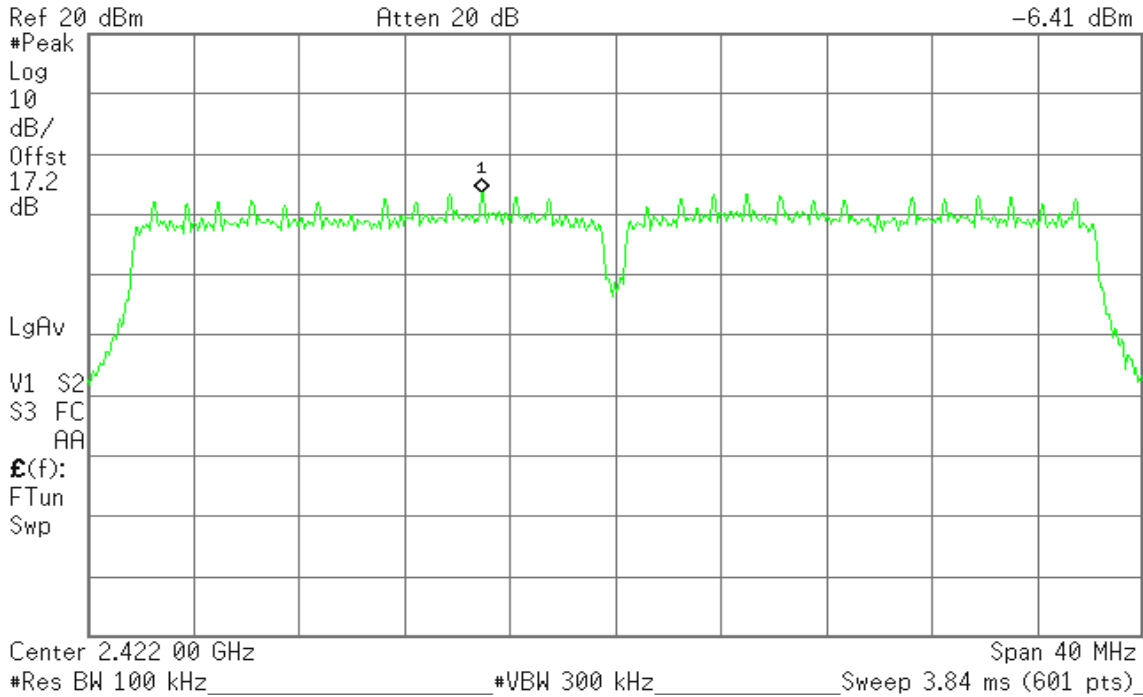
### IEEE 802.11n HT 40 MHz mode / Chain 0

#### CH Low

Agilent 16:36:36 May 28, 2012

R T

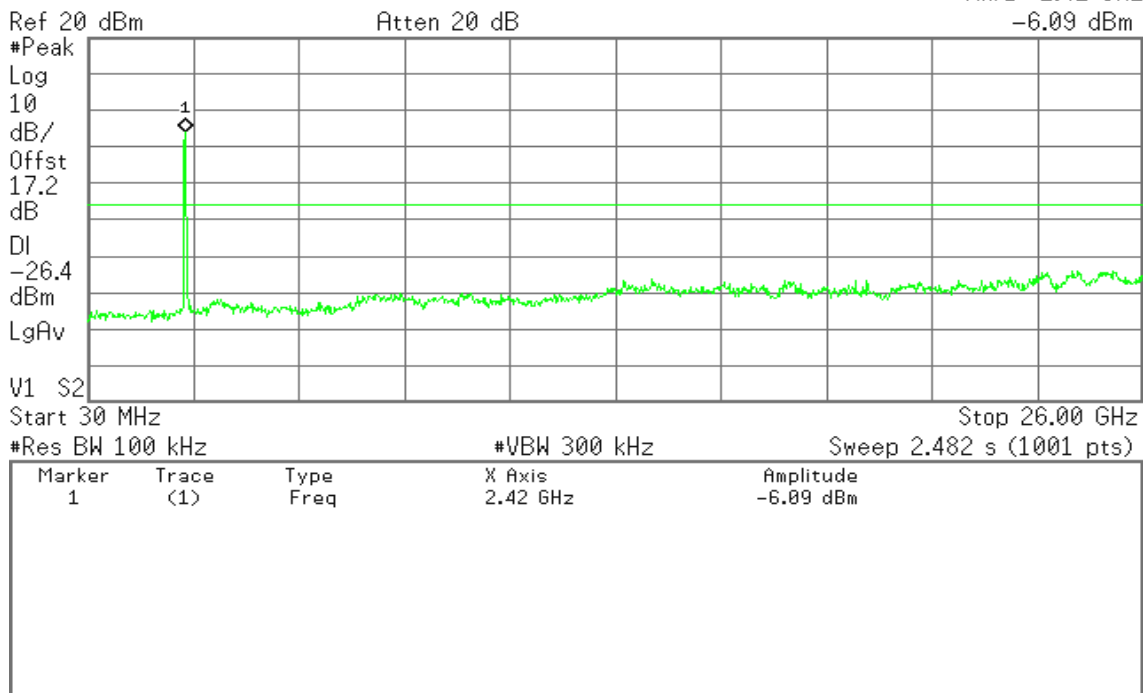
Mkr1 2.416 93 GHz  
-6.41 dBm



Agilent 15:47:17 May 28, 2012

R T

Mkr1 2.42 GHz  
-6.09 dBm



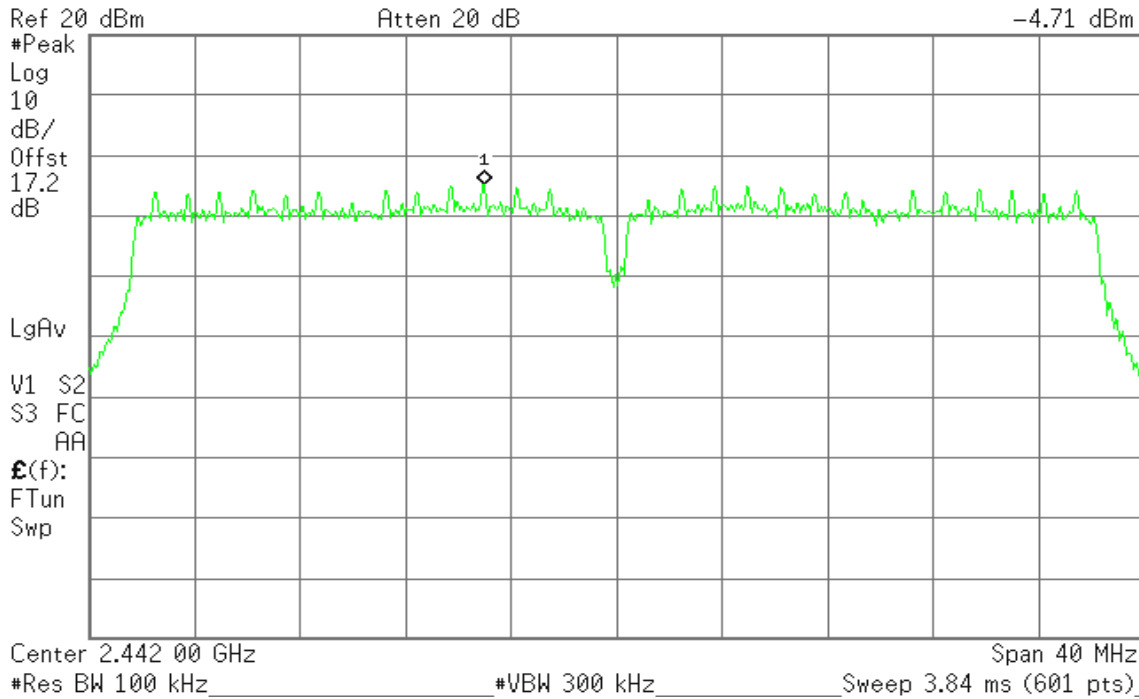


### CH Mid

Agilent 16:35:55 May 28, 2012

R T

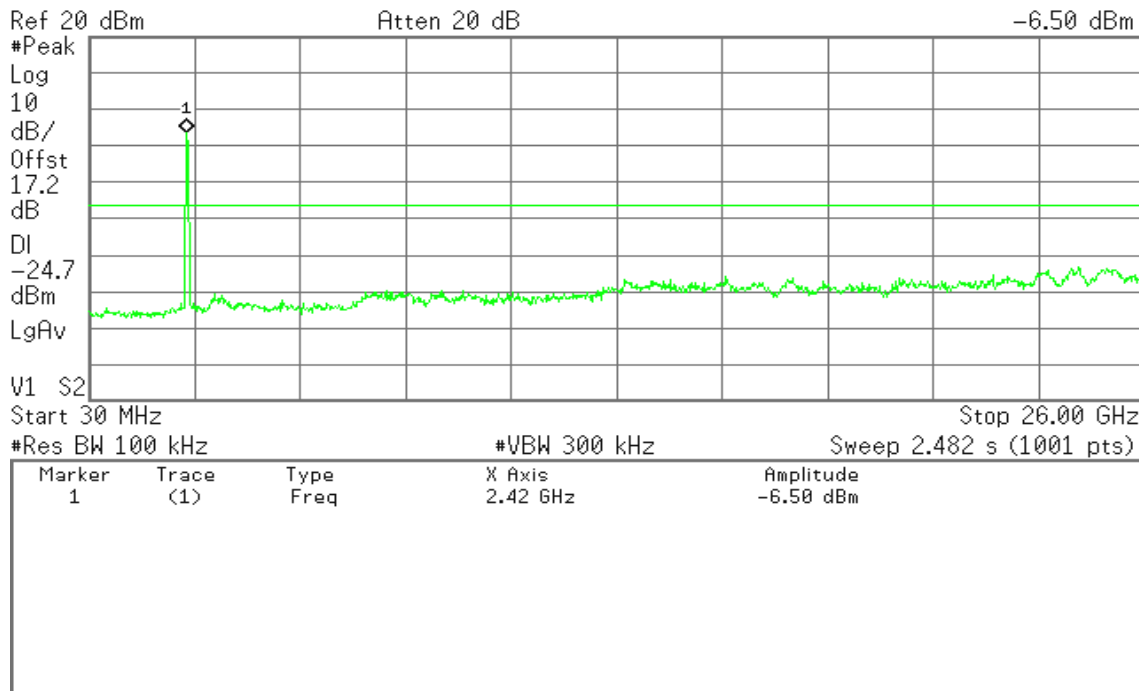
Mkr1 2.437 00 GHz  
-4.71 dBm



Agilent 15:20:58 May 28, 2012

R T

Mkr1 2.42 GHz  
-6.50 dBm



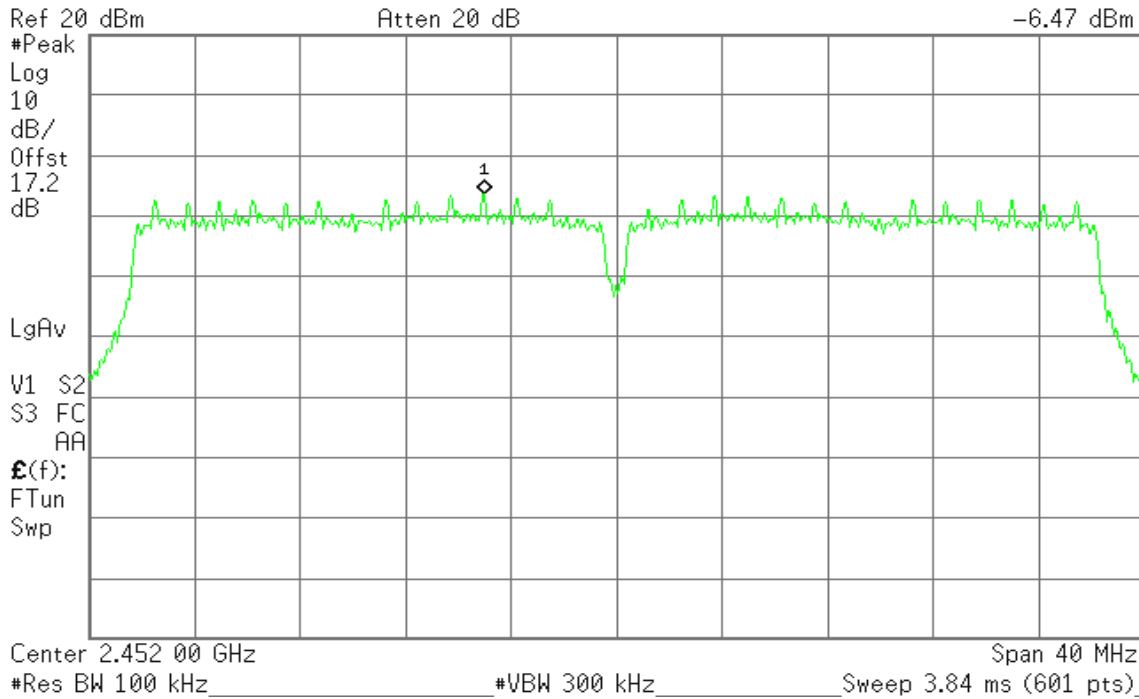


### CH High

Agilent 16:35:00 May 28, 2012

R T

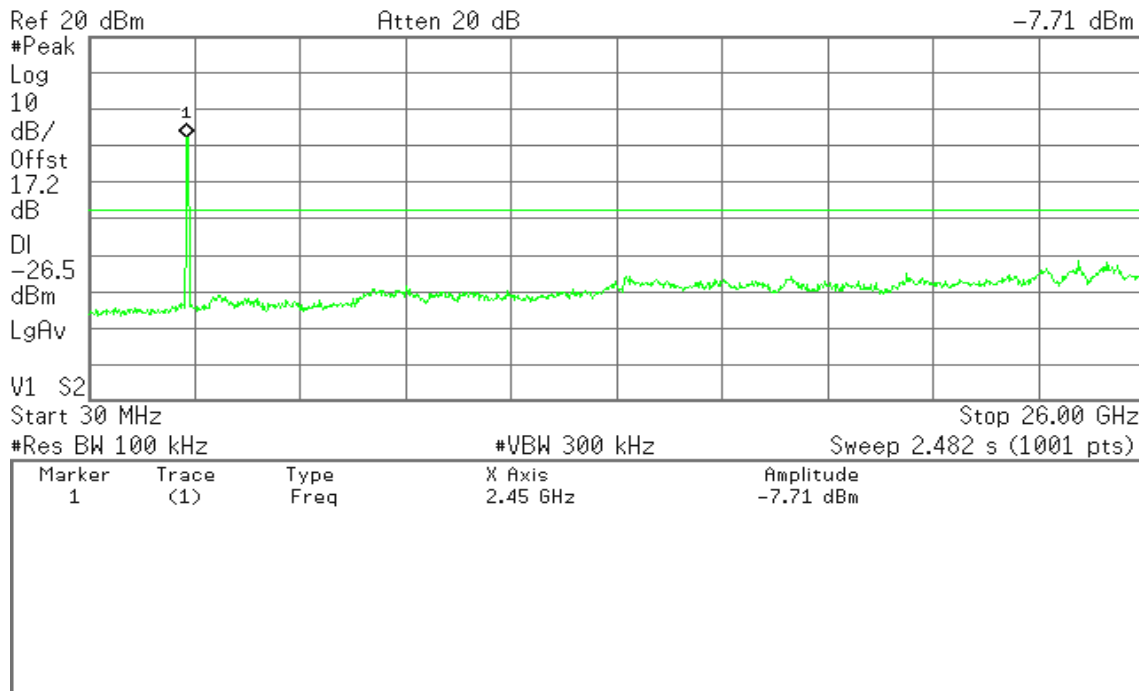
Mkr1 2.447 00 GHz  
-6.47 dBm



Agilent 15:15:14 May 28, 2012

R T

Mkr1 2.45 GHz  
-7.71 dBm







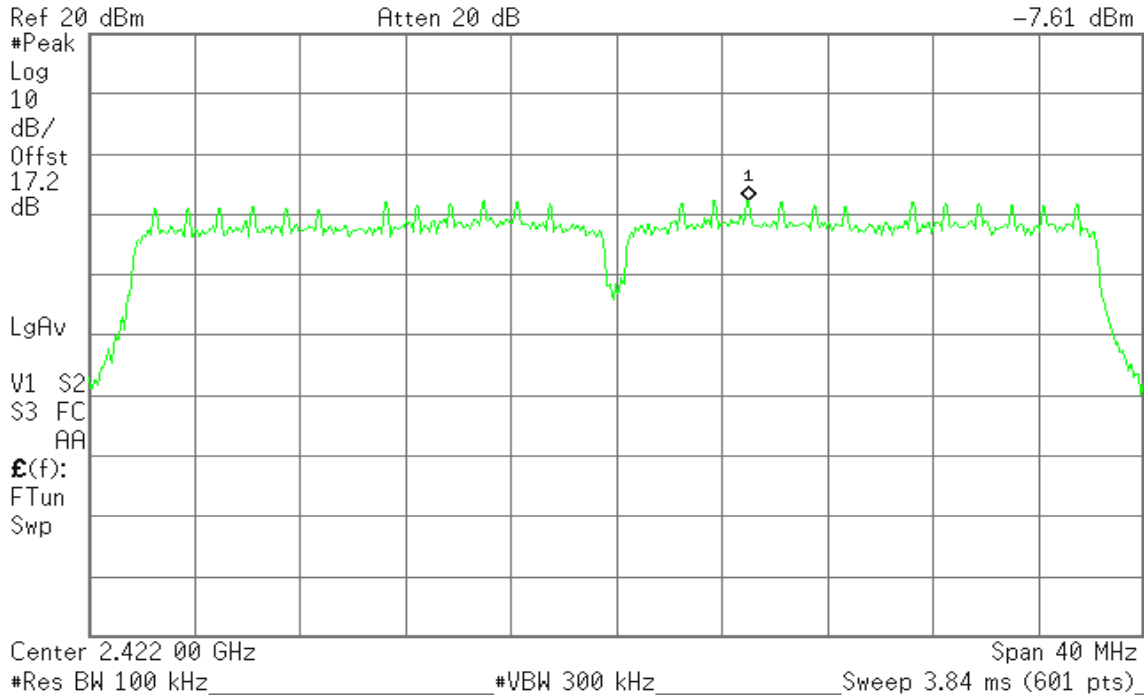
### IEEE 802.11n HT 40 MHz mode / Chain 1

#### CH Low

Agilent 16:37:36 May 28, 2012

R T

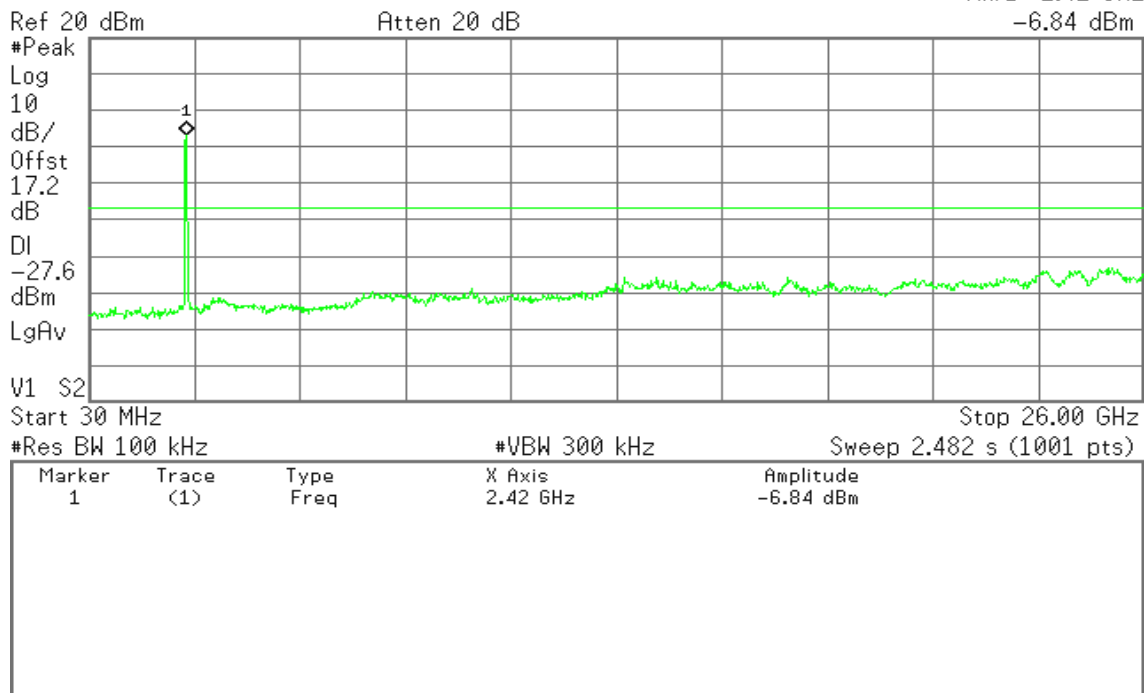
Mkr1 2.427 00 GHz  
-7.61 dBm



Agilent 15:01:03 May 28, 2012

R T

Mkr1 2.42 GHz  
-6.84 dBm



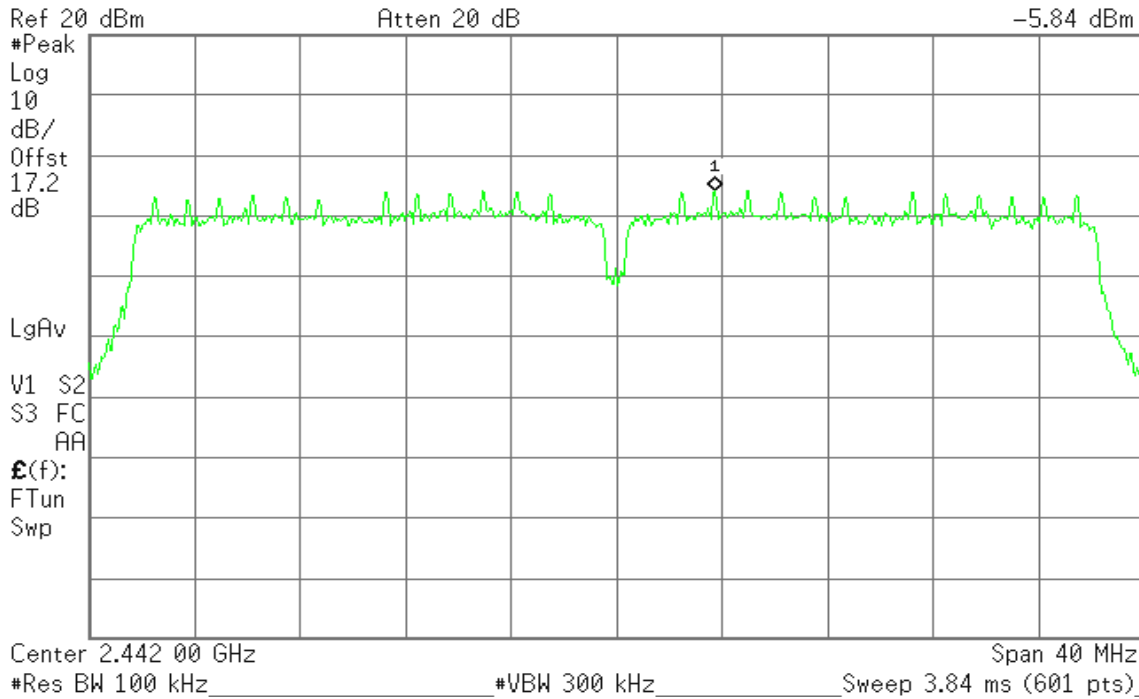


### CH Mid

Agilent 16:38:26 May 28, 2012

R T

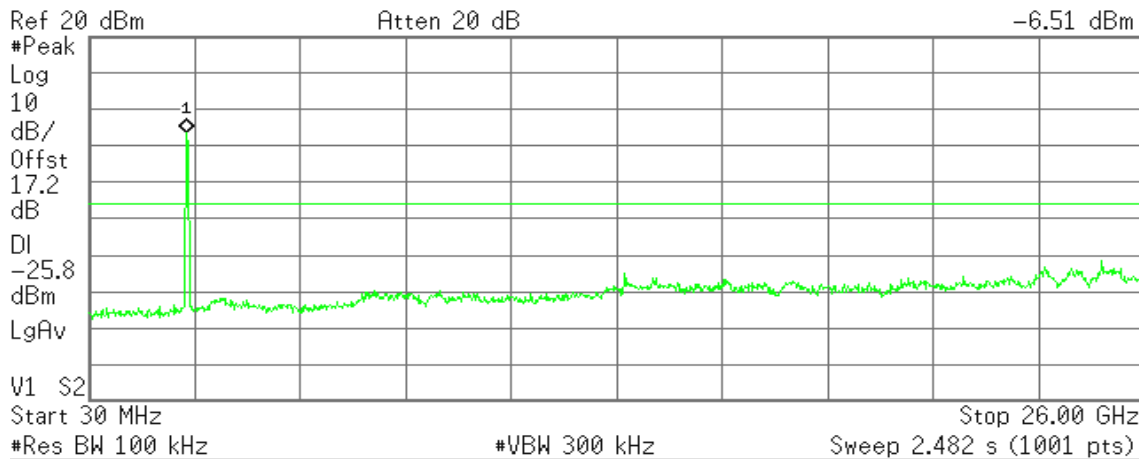
Mkr1 2.445 73 GHz  
-5.84 dBm



Agilent 15:06:05 May 28, 2012

R T

Mkr1 2.45 GHz  
-6.51 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.45 GHz	-6.51 dBm

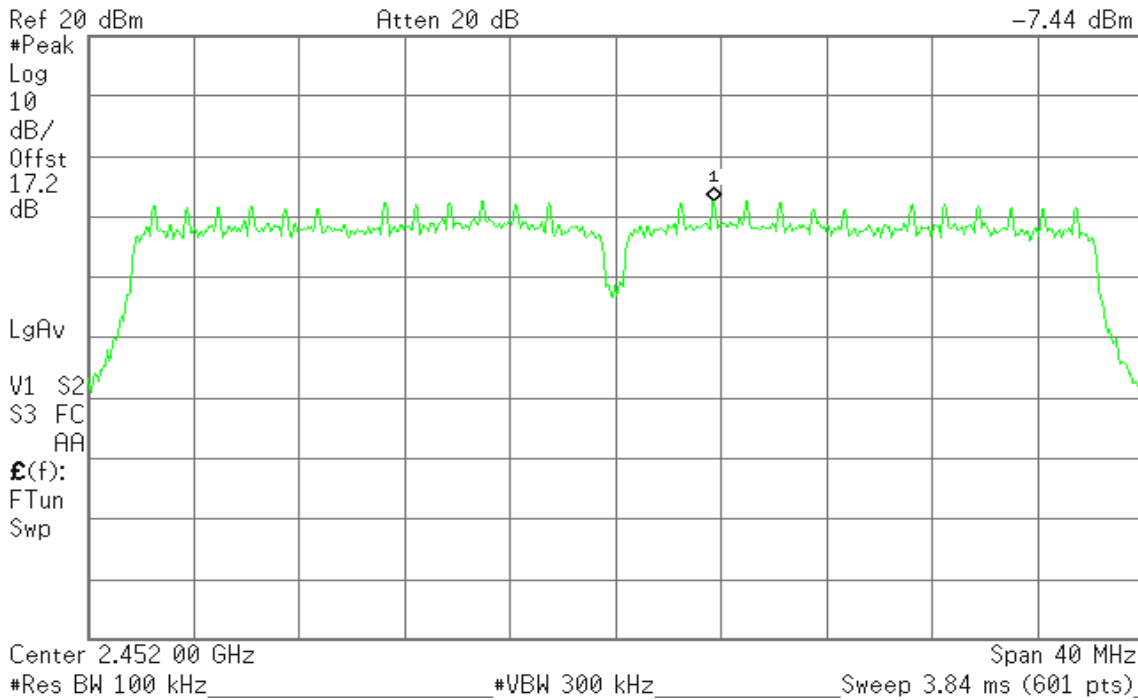


### CH High

Agilent 16:39:13 May 28, 2012

R T

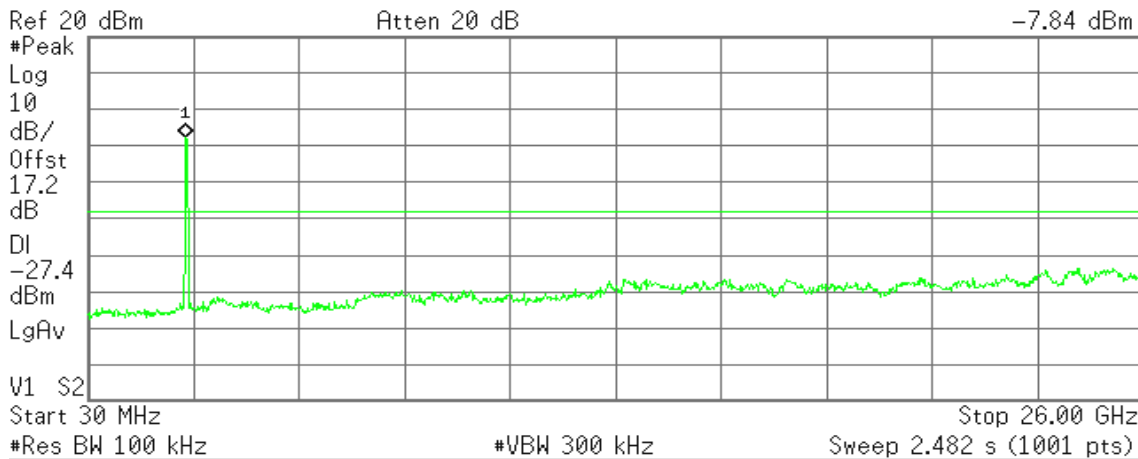
Mkr1 2.455 73 GHz  
-7.44 dBm



Agilent 15:10:08 May 28, 2012

R T

Mkr1 2.45 GHz  
-7.84 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.45 GHz	-7.84 dBm



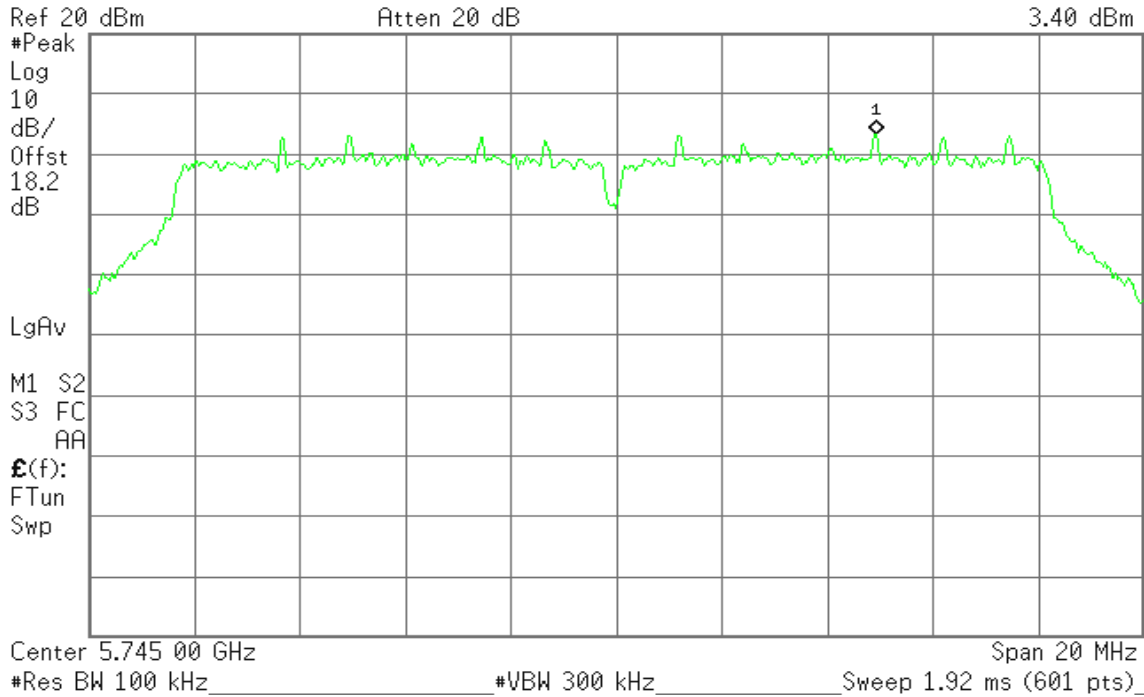
### IEEE 802.11a mode

### CH Low

Agilent 15:29:09 Jun 6, 2012

R T

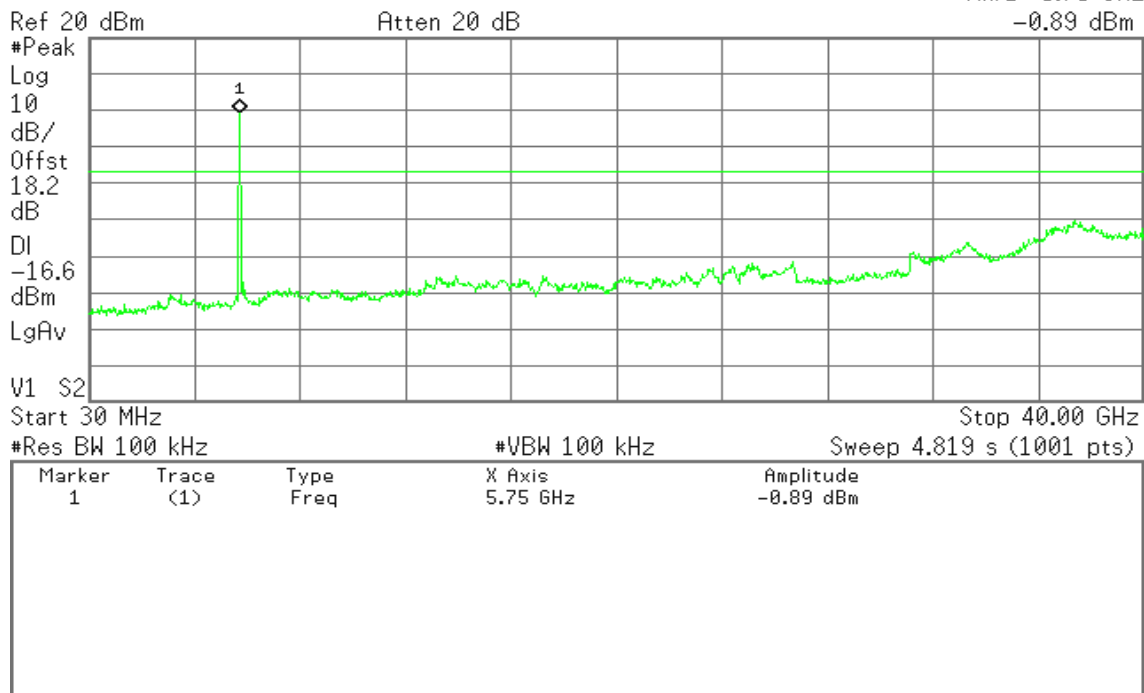
Mkr1 5.749 93 GHz  
3.40 dBm



Agilent 16:47:55 Jun 6, 2012

R T

Mkr1 5.75 GHz  
-0.89 dBm



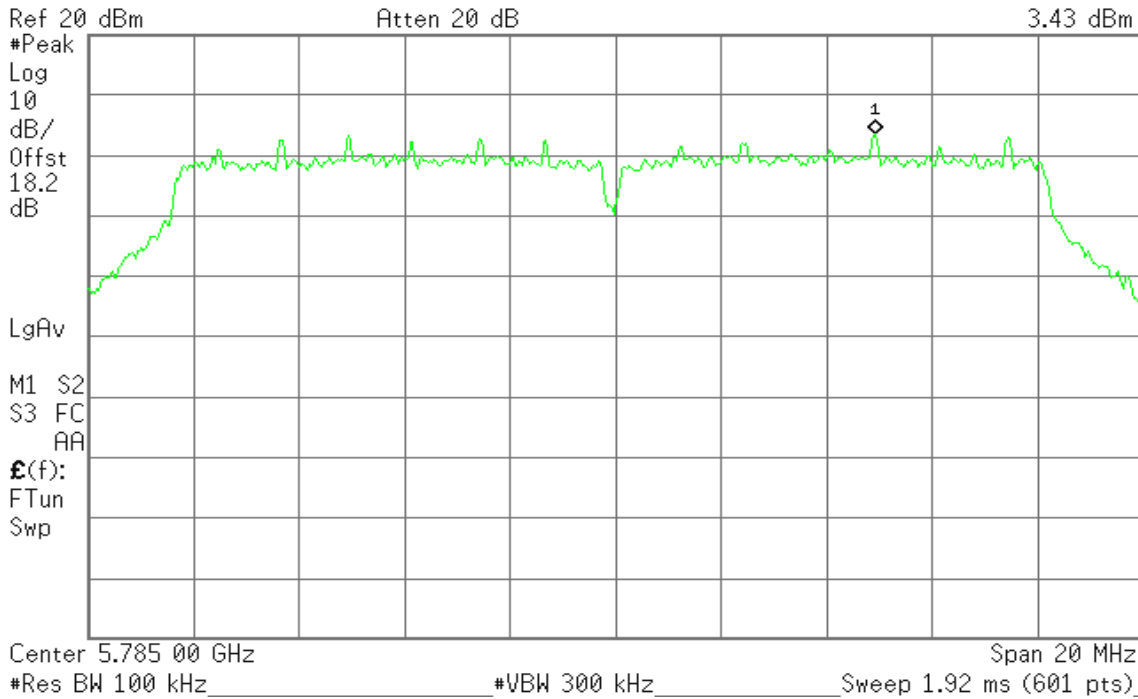


### CH Mid

Agilent 15:30:02 Jun 6, 2012

R T

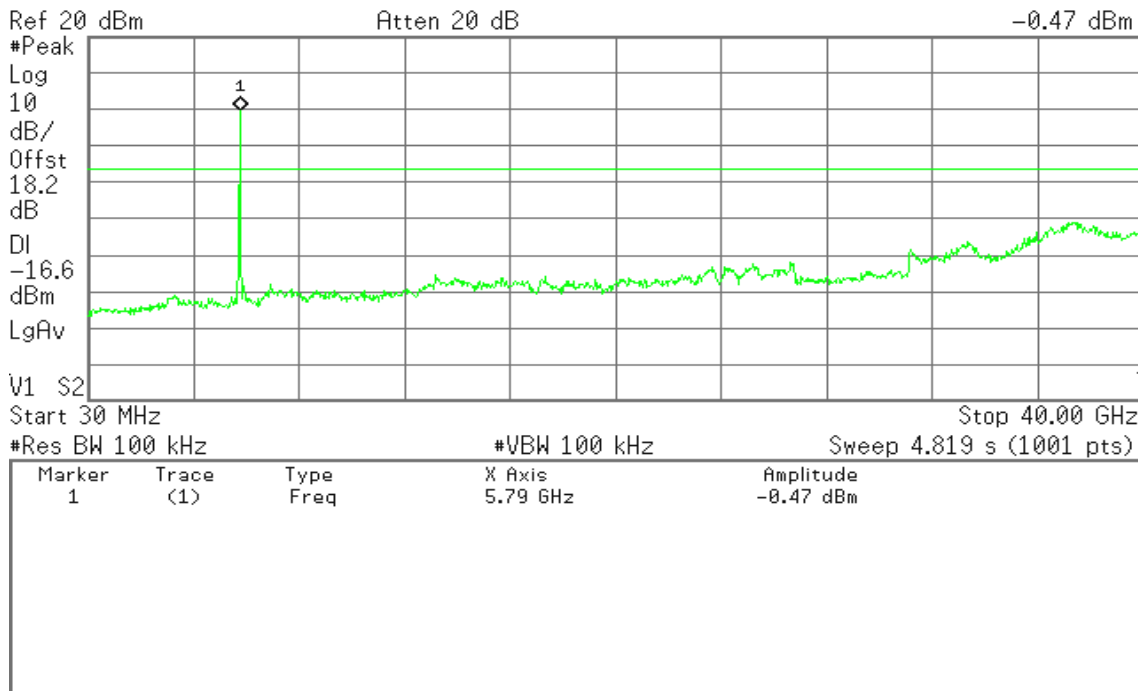
Mkr1 5.789 93 GHz  
3.43 dBm



Agilent 16:50:08 Jun 6, 2012

R T

Mkr1 5.79 GHz  
-0.47 dBm



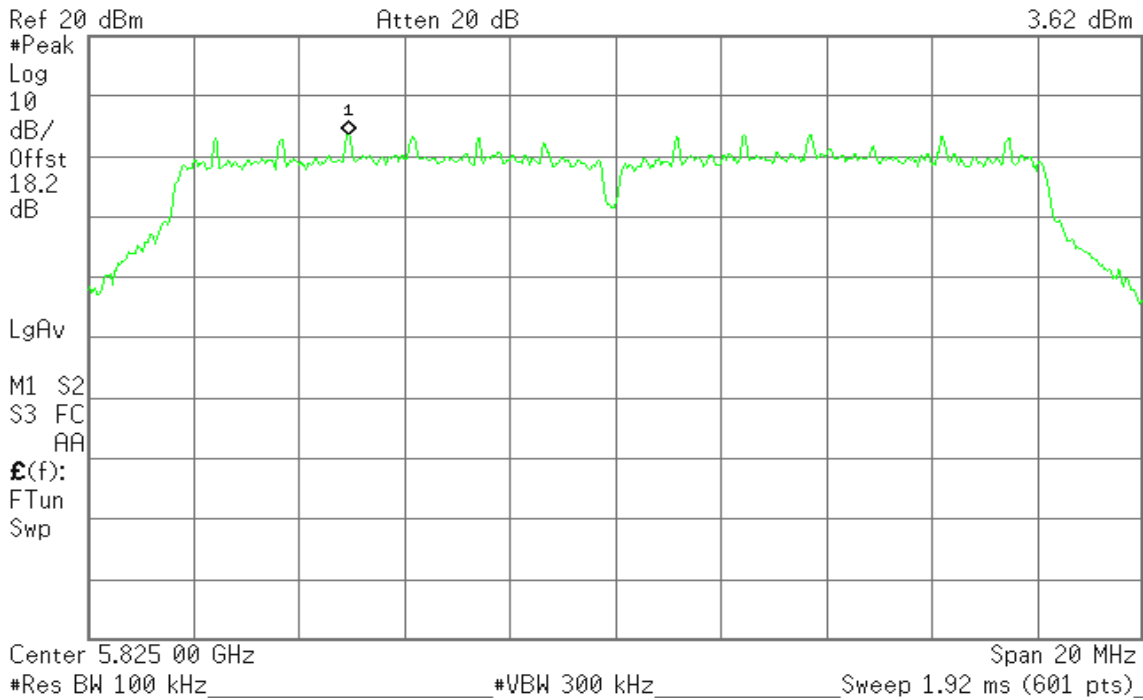


### CH High

Agilent 15:31:32 Jun 6, 2012

R T

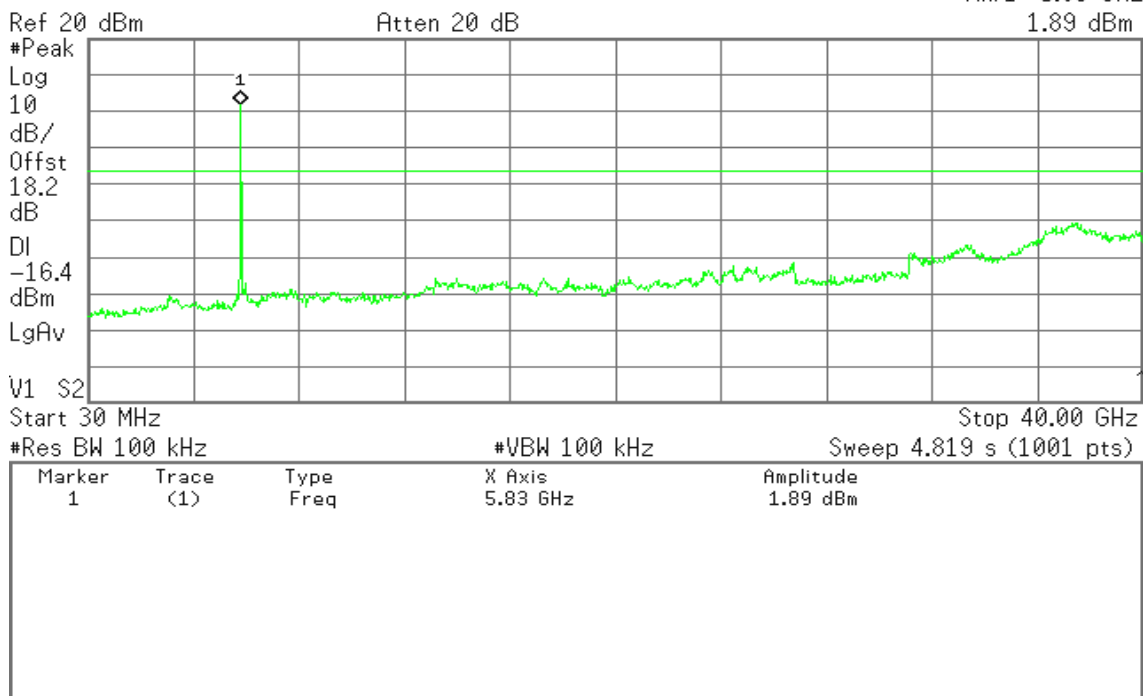
Mkr1 5.819 93 GHz  
3.62 dBm



Agilent 16:52:02 Jun 6, 2012

R T

Mkr1 5.83 GHz  
1.89 dBm





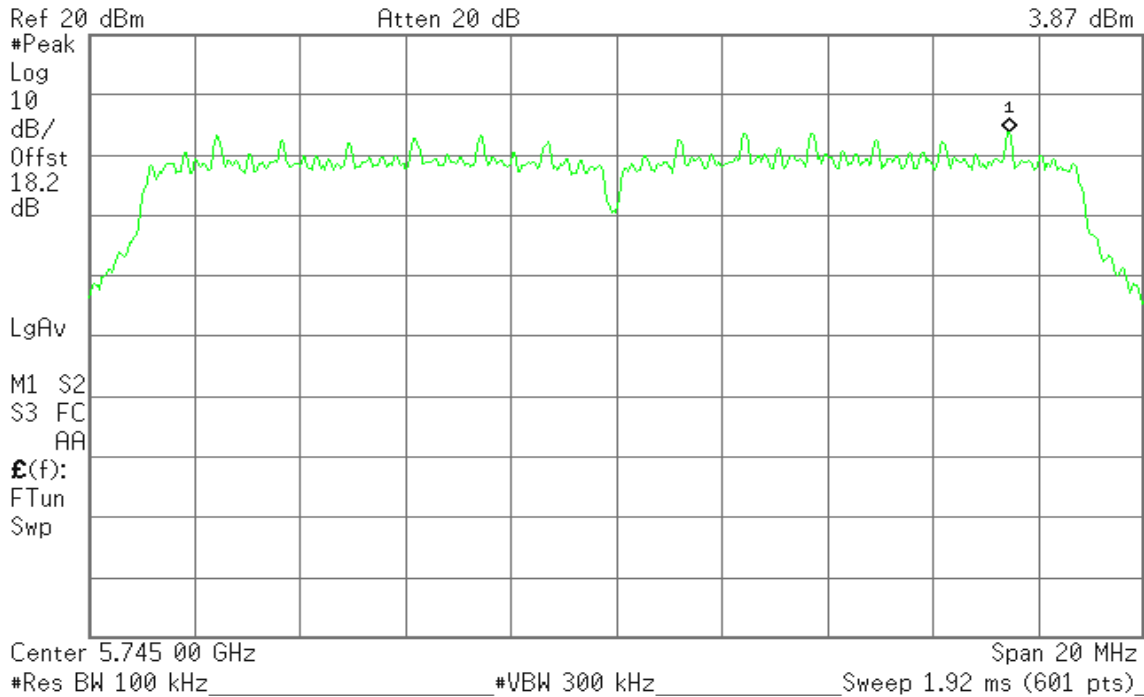
### IEEE 802.11n HT 20 MHz mode / Chain 0

#### CH Low

Agilent 15:28:15 Jun 6, 2012

R T

Mkr1 5.752 43 GHz  
3.87 dBm



Agilent 17:00:26 Jun 6, 2012

R T

Mkr1 5.75 GHz  
-0.43 dBm



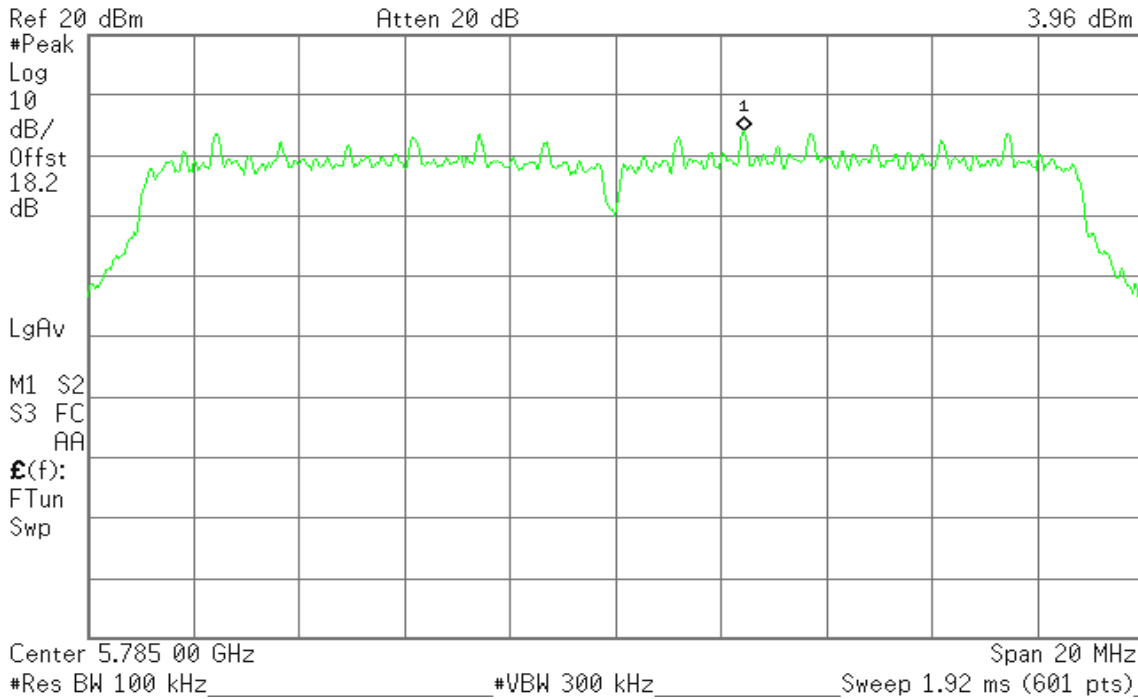


### CH Mid

Agilent 15:26:54 Jun 6, 2012

R T

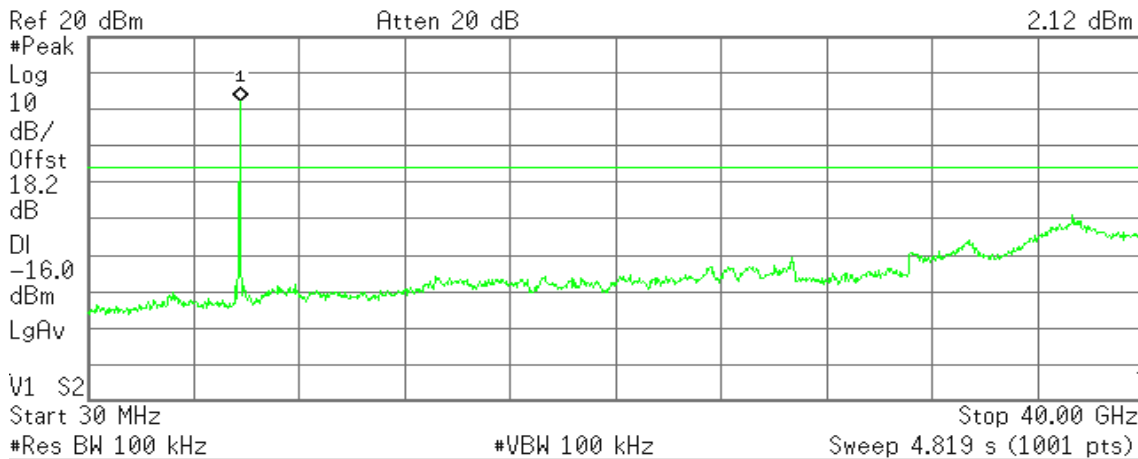
Mkr1 5.787 43 GHz  
3.96 dBm



Agilent 17:02:16 Jun 6, 2012

R T

Mkr1 5.79 GHz  
2.12 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.79 GHz	2.12 dBm



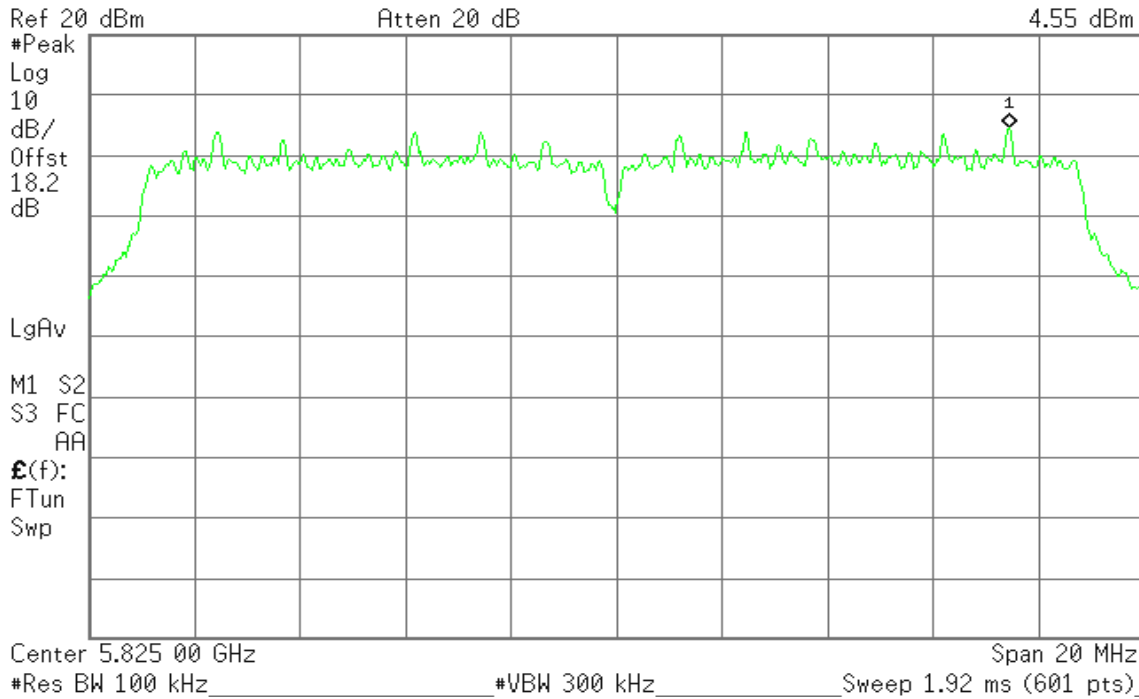


### CH High

Agilent 15:25:55 Jun 6, 2012

R T

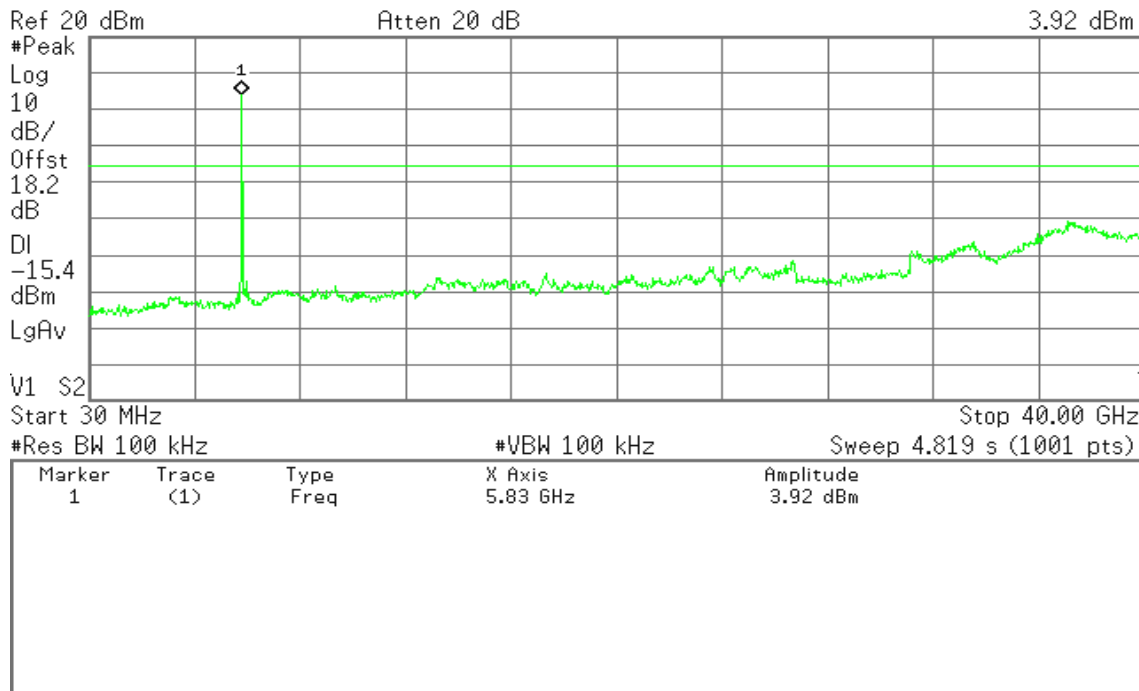
Mkr1 5.832 43 GHz  
4.55 dBm



Agilent 17:03:16 Jun 6, 2012

R T

Mkr1 5.83 GHz  
3.92 dBm





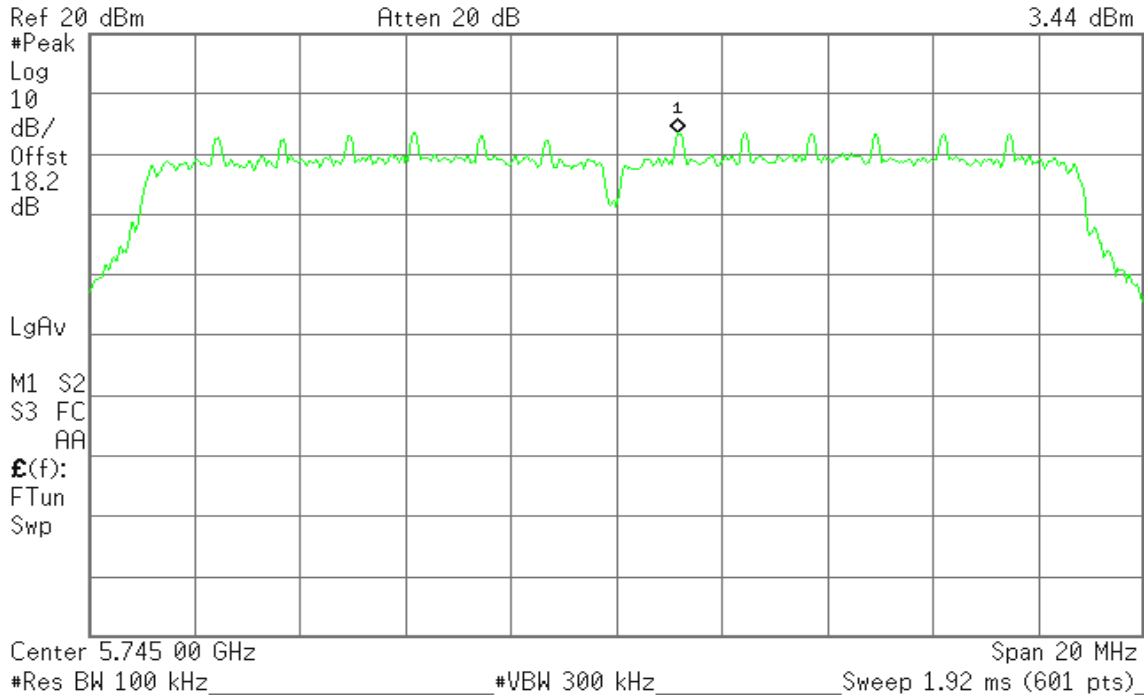
### IEEE 802.11n HT 20 MHz mode / Chain 1

#### CH Low

Agilent 15:21:47 Jun 6, 2012

R T

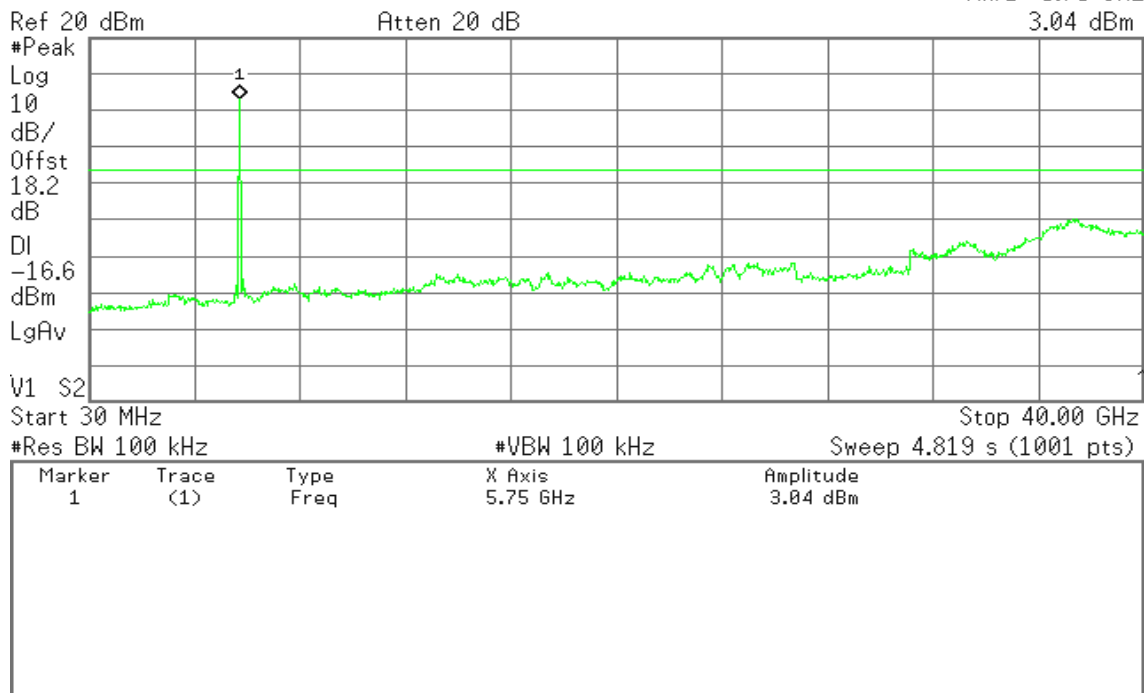
Mkr1 5.746 17 GHz  
3.44 dBm



Agilent 17:14:30 Jun 6, 2012

R T

Mkr1 5.75 GHz  
3.04 dBm



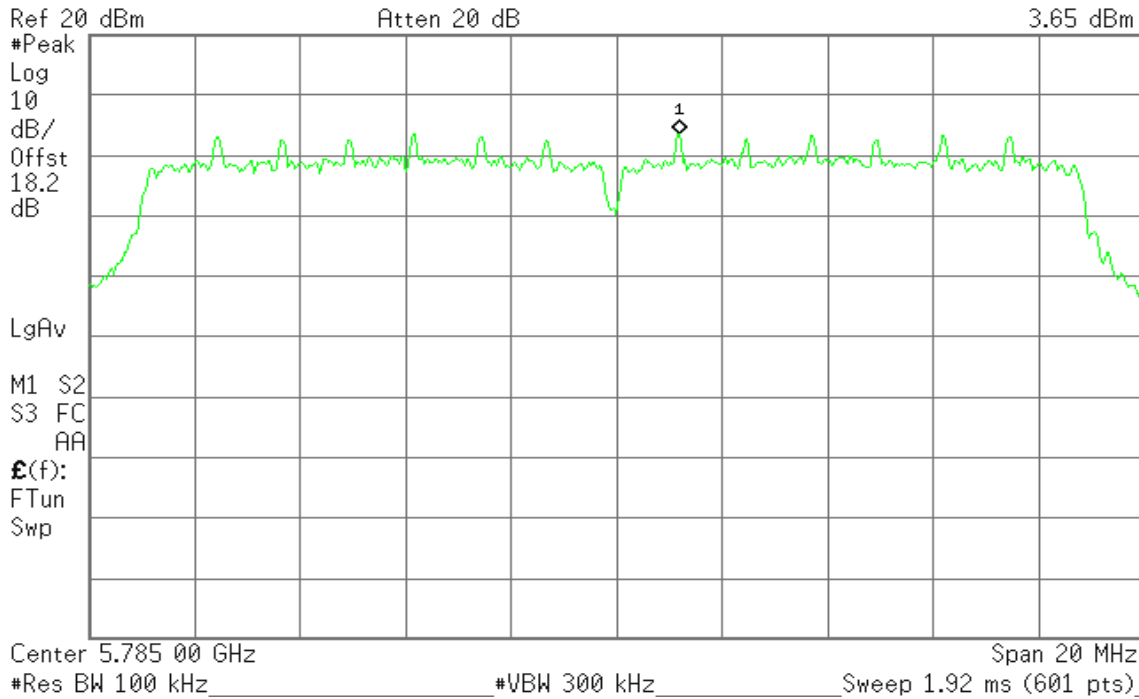


### CH Mid

Agilent 15:24:06 Jun 6, 2012

R T

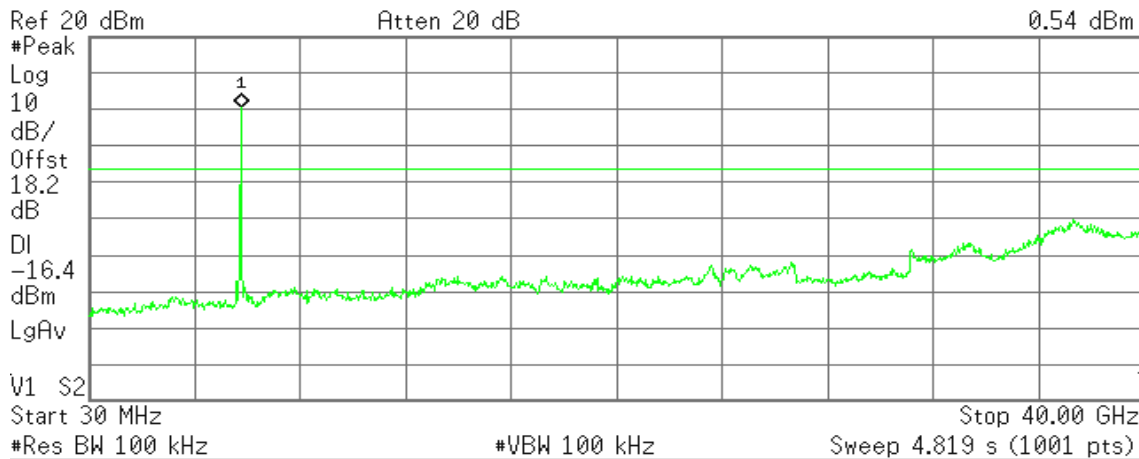
Mkr1 5.786 20 GHz  
3.65 dBm



Agilent 17:05:20 Jun 6, 2012

R T

Mkr1 5.79 GHz  
0.54 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.79 GHz	0.54 dBm

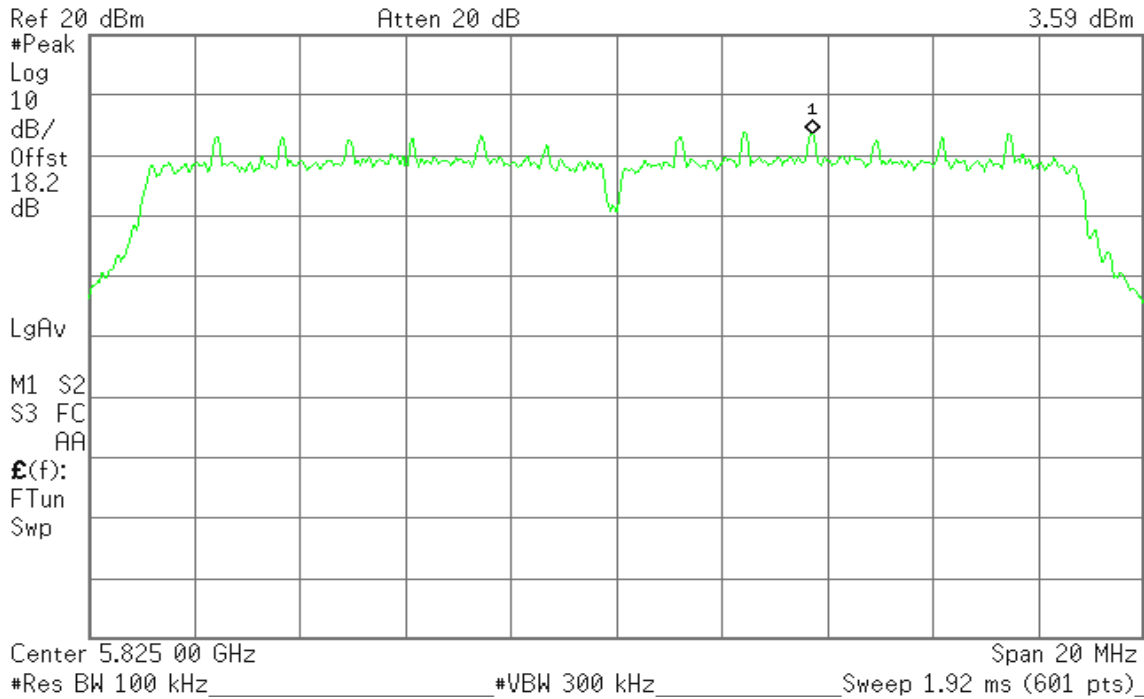


### CH High

Agilent 15:25:05 Jun 6, 2012

R T

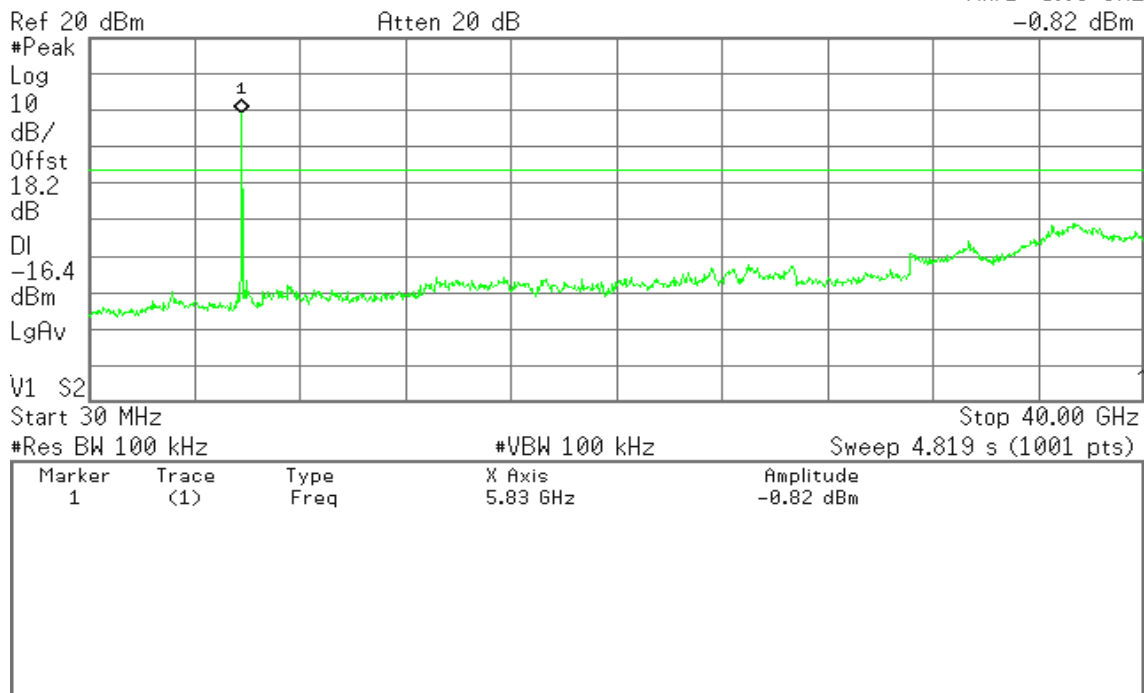
Mkr1 5.828 70 GHz  
3.59 dBm



Agilent 17:04:16 Jun 6, 2012

R T

Mkr1 5.83 GHz  
-0.82 dBm





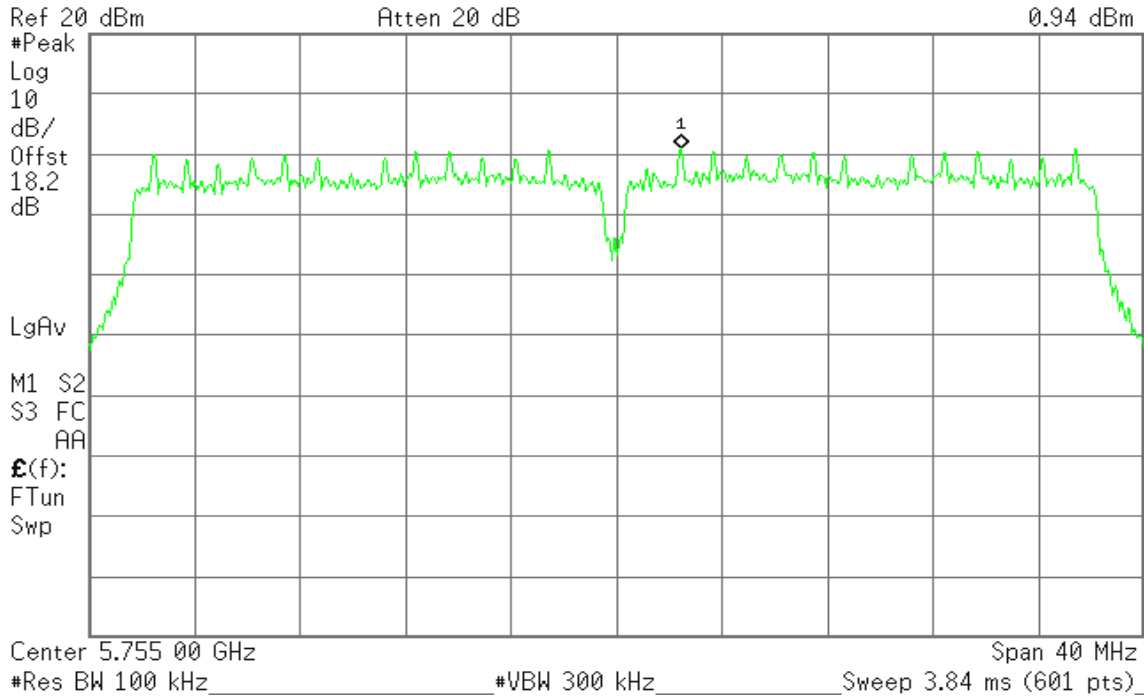
### IEEE 802.11n HT 40 MHz mode / Chain 0

#### CH Low

Agilent 15:33:42 Jun 6, 2012

R T

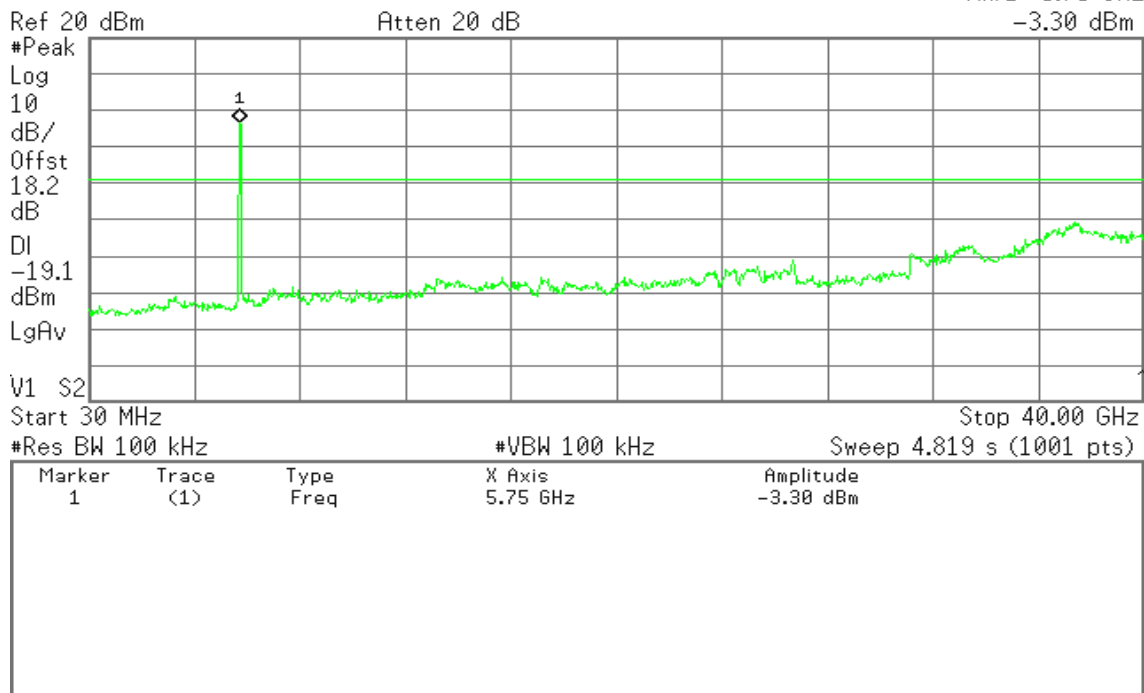
Mkr1 5.757 47 GHz  
0.94 dBm



Agilent 17:18:02 Jun 6, 2012

R T

Mkr1 5.75 GHz  
-3.30 dBm



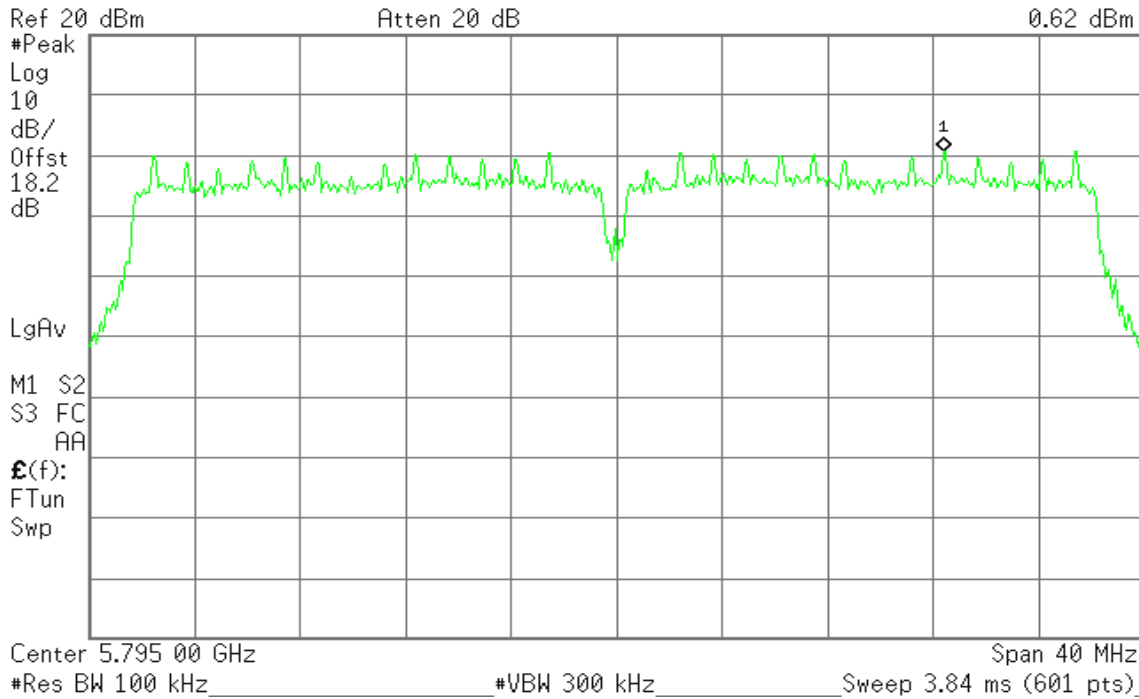


### CH High

Agilent 15:38:11 Jun 6, 2012

R T

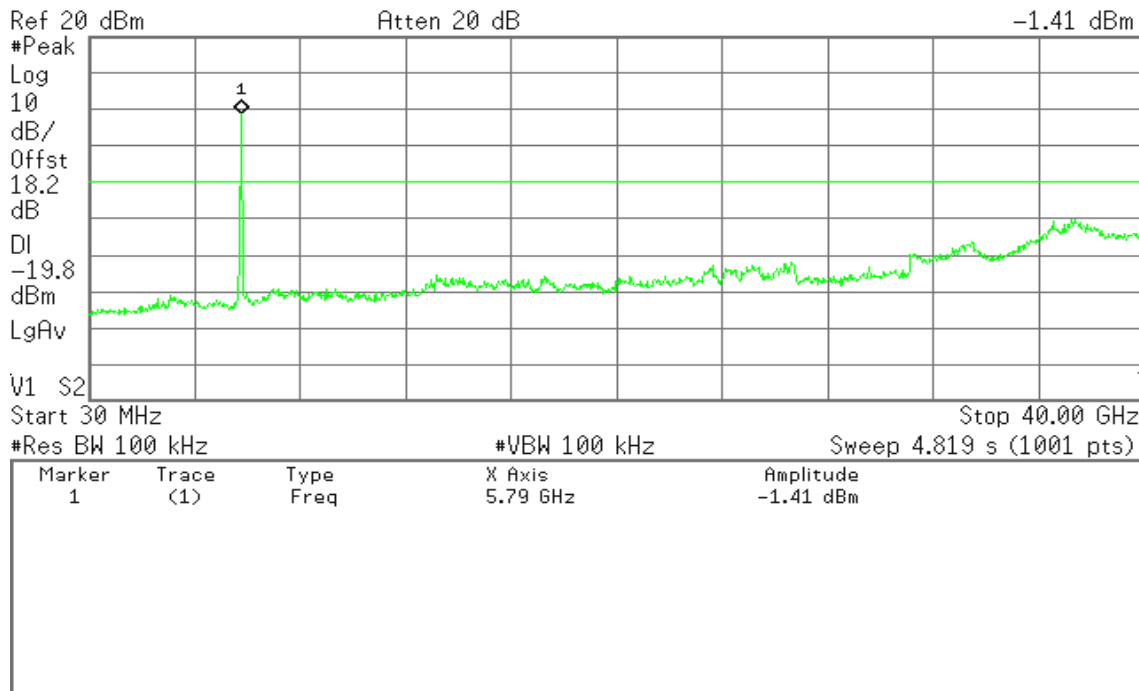
Mkr1 5.807 40 GHz  
0.62 dBm



Agilent 17:19:02 Jun 6, 2012

R T

Mkr1 5.79 GHz  
-1.41 dBm





### IEEE 802.11n HT 40 MHz mode / Chain 1

#### CH Low

Agilent 15:35:12 Jun 6, 2012

R T

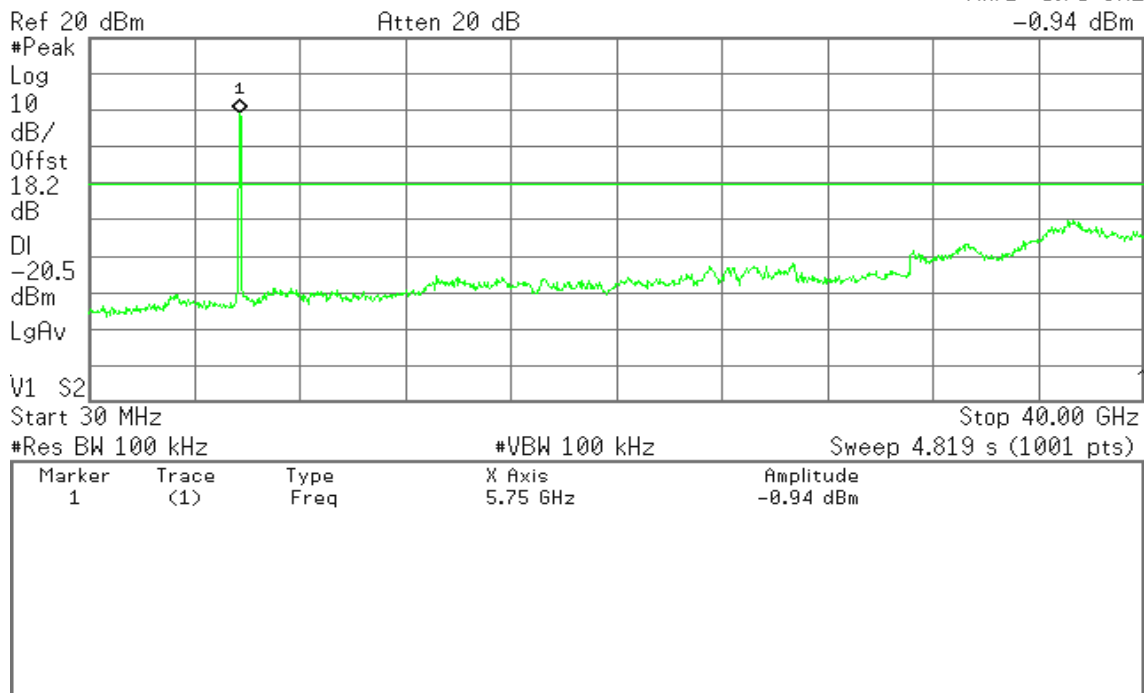
Mkr1 5.766 20 GHz  
-0.47 dBm



Agilent 17:17:01 Jun 6, 2012

R T

Mkr1 5.75 GHz  
-0.94 dBm



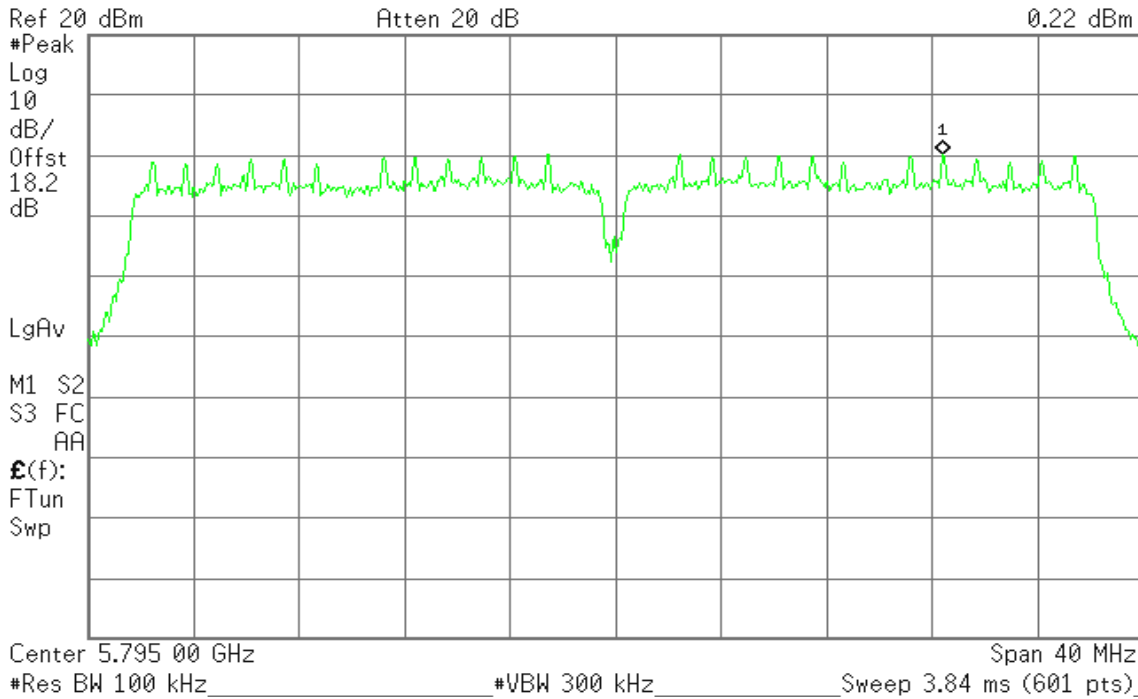


### CH High

Agilent 15:37:04 Jun 6, 2012

R T

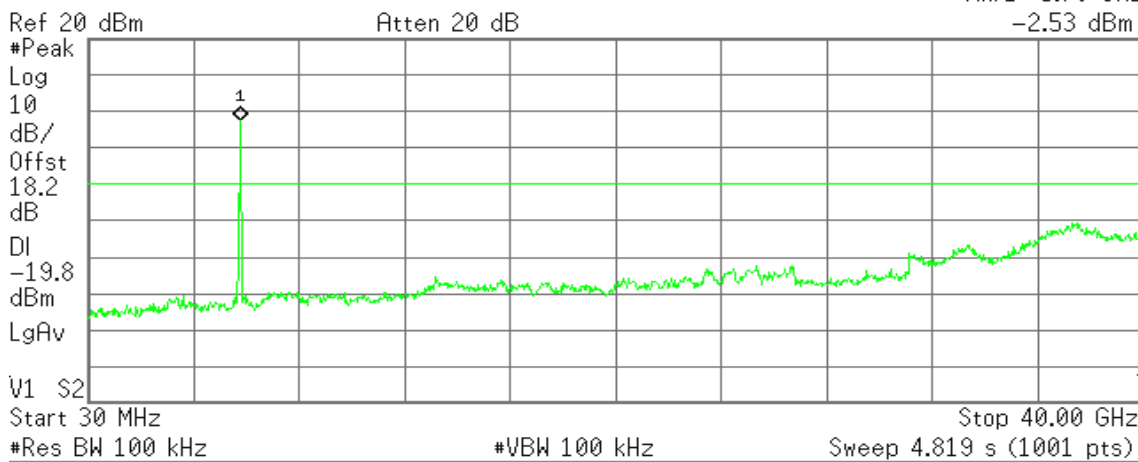
Mkr1 5.807 40 GHz  
0.22 dBm



Agilent 17:20:03 Jun 6, 2012

R T

Mkr1 5.79 GHz  
-2.53 dBm



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	5.79 GHz	-2.53 dBm





## 7.5.2 Radiated Emissions

### LIMIT

1. 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.

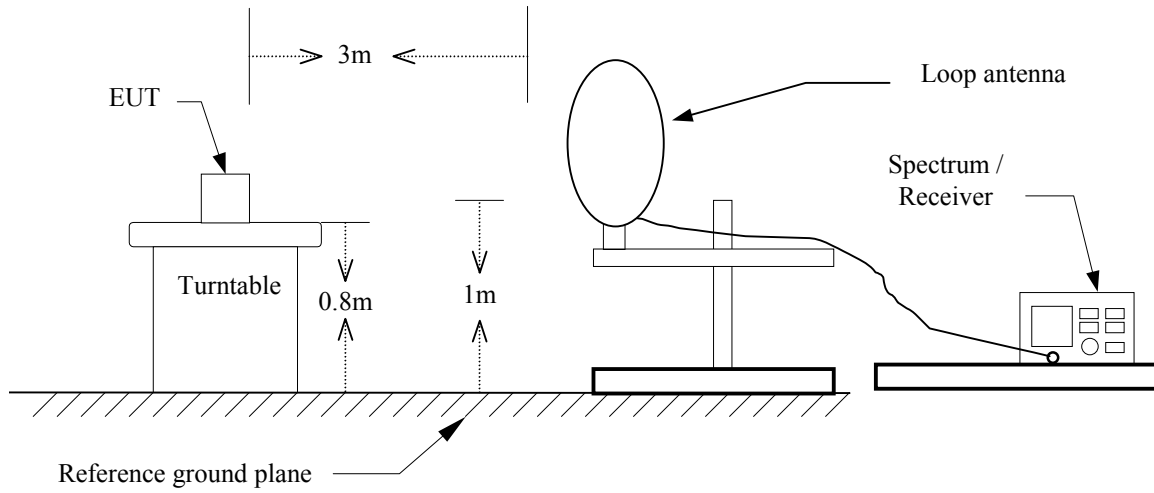
2. In the above emission table, the tighter limit applies at the band edges.

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

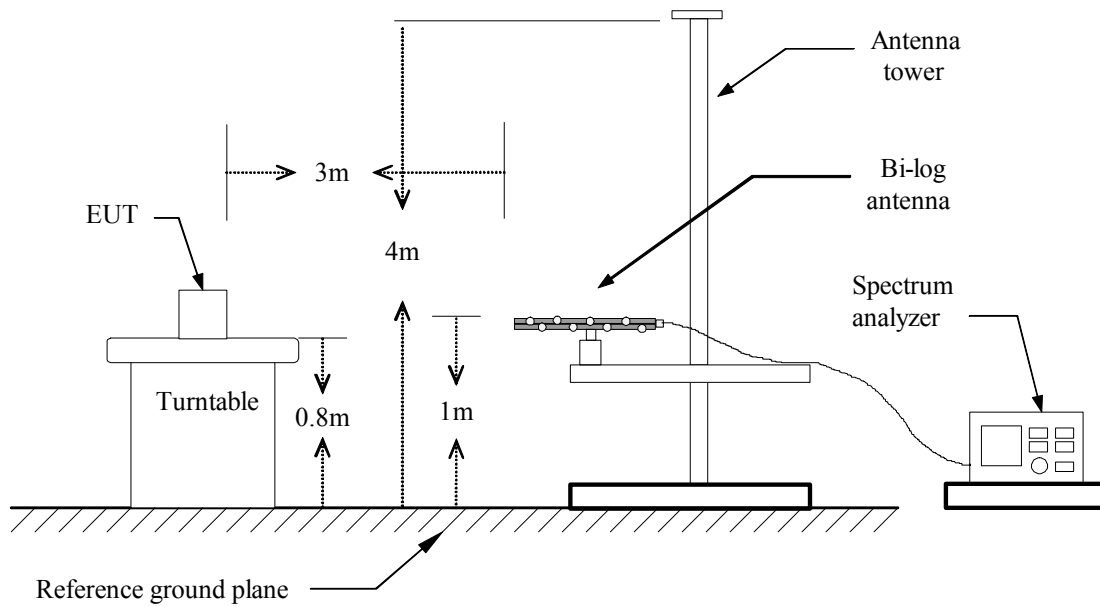


**Test Configuration**

**9kHz ~ 30MHz**

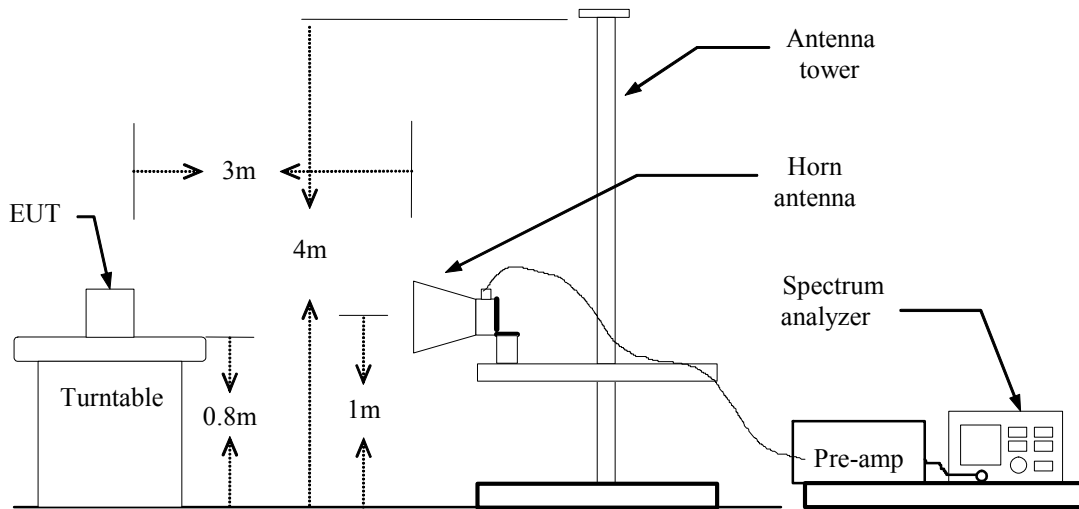


**30MHz ~ 1 GHz**





Above 1 GHz





## **TEST PROCEDURE**

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:  
Below 1GHz:  
RBW=100kHz / VBW=300kHz / Sweep=AUTO  
Above 1GHz:  
(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO  
(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
7. Repeat above procedures until the measurements for all frequencies are complete.

**Below 1 GHz**

**Operation Mode:** Normal Link      **Test Date:** January 11, 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)
199.75	44.77	-11.99	32.78	43.50	-10.72	Peak	V
432.55	43.01	-8.84	34.17	46.00	-11.83	Peak	V
500.45	41.52	-8.04	33.48	46.00	-12.52	Peak	V
739.72	41.91	-4.49	37.43	46.00	-8.57	Peak	V
796.30	41.40	-3.91	37.49	46.00	-8.51	QP	V
852.88	41.57	-2.82	38.75	46.00	-7.25	Peak	V
146.40	50.81	-12.33	38.48	43.50	-5.02	Peak	H
199.75	49.60	-11.99	37.61	43.50	-5.89	QP	H
220.77	43.84	-13.48	30.36	46.00	-15.64	QP	H
699.30	45.33	-5.21	40.13	46.00	-5.87	Peak	H
757.50	43.88	-4.24	39.64	46.00	-6.36	Peak	H
796.30	43.44	-3.91	39.53	46.00	-6.47	QP	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. 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) – Quasi-peak limit (dBuV/m).



**Above 1 GHz**

**Operation Mode:** Tx / IEEE 802.11b mode / CH Low

**Test Date:** January 9, 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)
2490.00	59.39	48.60	-3.91	55.48	44.69	74.00	54.00	-9.31	AVG	V
2570.00	60.12	51.78	-3.63	56.49	48.15	74.00	54.00	-5.85	AVG	V
N/A										
2563.33	58.09	43.66	-3.65	54.44	40.01	74.00	54.00	-13.99	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 802.11b mode / CH Mid

Test Date: January 9, 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)
2520.00	58.53	46.92	-3.80	54.73	43.12	74.00	54.00	-10.88	AVG	V
N/A										
1783.33	58.21	---	-7.67	50.54	---	74.00	54.00	-3.46	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 802.11b mode / CH High

Test Date: January 9, 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)
2500.00	61.38	51.78	-3.87	57.51	47.91	74.00	54.00	-6.09	AVG	V
2540.00	59.48	47.71	-3.73	55.75	43.98	74.00	54.00	-10.02	AVG	v
2620.00	58.23	48.12	-3.46	54.76	44.66	74.00	54.00	-9.34	AVG	v
4958.33	47.32	---	2.88	50.20	---	74.00	54.00	-3.80	Peak	v
N/A										
1903.33	57.96	---	-6.45	51.51	---	74.00	54.00	-2.49	Peak	H
4908.33	47.58	---	2.78	50.36	---	74.00	54.00	-3.64	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 802.11g mode / CH Low

Test Date: January 9, 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)
2576.67	59.96	48.97	-3.61	56.35	45.36	74.00	54.00	-8.64	AVG	V
N/A										
1890.00	58.04	---	-6.59	51.45	---	74.00	54.00	-2.55	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 802.11g mode/ CH Mid

Test Date: January 9, 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)
2526.67	58.49	46.63	-3.78	54.71	42.85	74.00	54.00	-11.15	AVG	V
2600.00	58.42	46.11	-3.53	54.89	42.58	74.00	54.00	-11.42	AVG	V
N/A										
2033.33	57.32	---	-5.38	51.94	---	74.00	54.00	-2.06	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 802.11g mode/ CH High

Test Date: January 9, 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)
2546.67	58.53	46.77	-3.71	54.82	43.06	74.00	54.00	-10.94	AVG	V
2620.00	58.41	45.95	-3.46	54.94	42.49	74.00	54.00	-11.51	AVG	V
N/A										
1920.00	58.18	---	-6.28	51.90	---	74.00	54.00	-2.10	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 mode / CH Low Test Date: January 9, 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)
2496.67	59.76	47.17	-3.88	55.88	43.29	74.00	54.00	-10.71	AVG	V
2533.33	58.65	45.17	-3.76	54.89	41.41	74.00	54.00	-12.59	AVG	V
2576.67	59.43	47.04	-3.61	55.82	43.43	74.00	54.00	-10.57	AVG	V
N/A										
1943.33	57.16	---	-6.05	51.11	---	74.00	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 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 mode / CH Mid Test Date: January 9, 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)
2606.67	60.31	47.91	-3.51	56.80	44.40	74.00	54.00	-9.60	AVG	V
N/A										
1900.00	57.99	---	-6.49	51.51	---	74.00	54.00	-2.49	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 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 mode / CH High Test Date: January 9, 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)
2550.00	58.89	47.08	-3.70	55.19	43.38	74.00	54.00	-10.62	AVG	V
N/A										
1816.67	57.66	---	-7.33	50.33	---	74.00	54.00	-3.67	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  
/ CH Low

**Temperature:** 25°C

**Humidity:** 50% RH

**Test Date:** January 9, 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)
2390.00	69.08	51.23	-4.32	64.76	46.91	74.00	54.00	-7.09	AVG	V
2503.33	59.15	46.01	-3.86	55.29	42.15	74.00	54.00	-11.85	AVG	V
N/A										
1920.00	57.91	---	-6.28	51.63	---	74.00	54.00	-2.37	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 / CH Mid

**Test Date:** January 9, 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)
1923.33	57.00	---	-6.25	50.75	---	74.00	54.00	-3.25	Peak	V
4891.67	48.26	---	2.74	51.00	---	74.00	54.00	-3.00	Peak	V
N/A										
1966.67	56.81	---	-5.81	51.00	---	74.00	54.00	-3.00	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 / CH High

Test Date: January 9, 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)
1853.33	57.81	---	-6.96	50.85	---	74.00	54.00	-3.15	Peak	V
N/A										
2000.00	57.27	---	-5.47	51.80	---	74.00	54.00	-2.20	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 802.11a mode/ CH Low

Test Date: January 9, 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)
1945.00	57.44	---	-6.03	51.41	---	74.00	54.00	-2.59	Peak	V
N/A										
2050.00	56.74	---	-5.34	51.40	---	74.00	54.00	-2.60	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/ CH Mid

Test Date: January 9, 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)
1758.33	57.42	---	-7.93	49.50	---	74.00	54.00	-4.50	Peak	V
N/A										
1933.33	57.85	---	-6.15	51.70	---	74.00	54.00	-2.30	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 mode / CH Low Test Date: January 9, 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)
1886.67	57.37	---	-6.62	50.75	---	74.00	54.00	-3.25	Peak	V
N/A										
1793.33	57.47	---	-7.57	49.90	---	74.00	54.00	-4.10	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 mode / CH Mid Test Date: January 9, 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	57.24	---	-5.55	51.69	---	74.00	54.00	-2.31	Peak	V
N/A										
1863.33	57.61	---	-6.86	50.76	---	74.00	54.00	-3.24	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 mode / CH High Test Date: January 9, 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)
1105.00	61.17	---	-10.96	50.21	---	74.00	54.00	-3.79	Peak	V
11683.33	40.70	27.26	23.23	63.93	50.49	74.00	54.00	-3.51	AVG	V
N/A										
1886.67	57.08	---	-6.62	50.46	---	74.00	54.00	-3.54	Peak	H
11683.33	41.84	27.27	23.23	65.07	50.50	74.00	54.00	-3.50	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 802.11n HT 40 MHz mode / CH Low

Test Date: January 9, 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	57.19	---	-5.55	51.64	---	74.00	54.00	-2.36	Peak	V
N/A										
1968.33	56.90	---	-5.79	51.11	---	74.00	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 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 / CH High

Test Date: January 9, 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)
1886.67	57.16	---	-6.62	50.54	---	74.00	54.00	-3.46	Peak	V
N/A										
1980.00	57.41	---	-5.67	51.74	---	74.00	54.00	-2.26	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).



## 7.6 POWERLINE CONDUCTED EMISSIONS

### LIMIT

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50  $\mu$ 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 $\mu$ 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 1 for the actual connections between EUT and support equipment.

### TEST PROCEDURE

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

### TEST RESULTS

Not applicable, because EUT does not connect to AC Main Source direct.