FCC TEST REPORT

for

GPON ONT
Model: ZNID-GPON-2427-*, ZNID-GPON-2426-***, ZNID-GE-2426-*****
(The "*" can be 0-9 or A-Z or Blank. The suffix represents abbreviation of sales religion or customers. The possible difference is just software.)**
Brand: Zhone

Test Report Number:
SZ110721B05-RP
Issued Date: August 18, 2011

Issued for

Zhone Technologies, Inc
7195 Oakport Street Oakland, CA 94621 USA

Issued by:

Compliance Certification Services (Shenzhen) Inc.
No.10-1, Mingkeda Logistics Park, No.18 Huanguan South RD.
Guan Lan Town, Baoan District, Shenzhen, China
TEL: 86-755-28055000
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TESTING CERT #2861.01

CNAS L4818

Revision History

Rev.	Issue No.	Revisions	Effect Page	Revised By
00	SZ110721B05-RP	Initial Issue	ALL	Amay Tang

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1 TEST CERTIFICATION

Product	GPON ONT
Model	ZNID-GPON-2427-***, ZNID-GPON-2426-***, ZNID-GE-2426-*** (The "***" can be 0-9 or A-Z or Blank. The suffix represents abbreviation of sales religion or customers. The possible difference is just software.)
Brand	Zhone
Tested	July21~ August 17, 2011
Applicant	**Zhone Technologies, Inc** 7195 Oakport Street Oakland, CA 94621 USA
Manufacturer	**Shenzhen Gongjin Electronics Co., Ltd** B116, B118, A211-A213,B201-B213,A311-313 and B411-413,Nanshan Medical Instrument Industry Park, 1019# Nanhai RD, Shenzhen, Guangdong, China

APPLICABLE STANDARDS			
Standard	**Test Type**	**Standard**	**Test Type**
15.207(a)	Power Line Conducted Emissions	15.247(d) 15.209(a)	● Spurious Emissions ● Conducted Measurement ● Radiated Emissions
15.247(a)(2)	6dB Bandwidth Measurement	15.247(b)(3) 15.247(b)(4)	Peak Power Measurement
15.247(d)	Band Edges Measurement	15.247(e)	Peak Power Spectral Density

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: 2009** 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:

Tom Gan.

Tom Gan
Supervisor of EMC Dept.
Compliance Certification Service Inc.

Reviewed by:

Aven zhou

Aven Zhou
Supervisor of Report Dept.
Compliance Certification Service Inc.

2 TEST RESULT SUMMARY

APPLICABLE STANDARDS			
Standard	**Test Type**	**Result**	**Remark**
15.247(a)(2)	6dB Bandwidth Measurement	Pass	Meet the requirement of limit.
15.247(b)(3) 15.247(b)(4)	Peak Power Measurement	Pass	Meet the requirement of limit.
15.247(d)	Band Edges Measurement	Pass	Meet the requirement of limit.
15.247(e)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.247(d) 15.209(a)	● Spurious Emissions ● Conducted Measurement ● Radiated Emissions	Pass	Meet the requirement of limit.
15.207(a)	Power line Conducted Emissions	Pass	Meet the requirement of limit.

Note: 1. The statements of test result on the above are decided by the request of test standard only; the measurement uncertainties are not factored into this compliance determination.
2. The information of measurement uncertainty is available upon the customer's request.

3 EUT DESCRIPTION

Product	GPON ONT
Trade Name	Zhone
Model Number	ZNID-GPON-2427-***, ZNID-GPON-2426-***, ZNID-GE-2426-*** (The "***" can be 0-9 or A-Z or Blank. The suffix represents abbreviation of sales religion or customers. The possible difference is just software.)
Model Discrepancy	See Next Page Announce about the Difference in Zhone GPON HGU series
Serial Number	SZ110721B05-RP
Received Date	July 22, 2011
Power Supply	DC12V supplied by the adapter
EUT Power Rating	(1) Manufacturer: ShenZhen Gongjin Electronics Co., Ltd S24B12-120A150-04 I/P: 100-240Vac, 50/60Hz, 0.70A max O/P: 12Vdc, 1.5A DC Output Cable: Unshielded,1.50m (2) Manufacturer: ShenZhen Flypower Technology Co., Ltd PS18K1201500UE I/P: 100-240Vac, 50/60Hz, 0.50A max O/P: 12Vdc, 1.5A DC Output Cable: Unshielded,1.50m (3) Manufacturer:OEM S24B17-120A150-04 I/P: 100-240Vac, 50/60Hz, 0.50A max O/P: 12Vdc, 1.5A DC Output Cable: Unshielded,1.50m (4) Manufacturer:Cyber Power Systems Inc. CS24C12V2-E I/P: 100-240Vac, 50/60Hz, 0.75A max S/N:LBC0T2001438 O/P: 12Vdc, 24W
Frequency Range	IEEE 802.11b/g: 2412 ~ 2462 MHz IEEE 802.11n HT20 : 2412 ~ 2462 MHz IEEE 802.11n HT40 : 2422MHz~ 2452MHz
Transmit Power	IEEE 802.11b mode: 14.68dBm (Antenna1) IEEE 802.11g mode: 15.97dBm (Antenna1) IEEE 802.11g mode: 14.17dBm (Antenna 2) IEEE 802.11n HT20 MHz mode: 15.97dBm (Antenna1) IEEE 802.11n HT20 MHz mode: 14.21dBm (Antenna 2) IEEE 802.11n HT20 MHz mode: 19.60dBm (Combine with Antenna 1 and Antenna2) IEEE 802.11n HT40 MHz mode: 15.50dBm (Antenna1) IEEE 802.11n HT40 MHz mode: 14.22dBm (Antenna 2) IEEE 802.11n HT40 MHz mode: 17.90dBm (Combine with Antenna 1 and Antenna2)
Modulation Technique	IEEE 802.11b mode: DSSS(CCK,QPSK, BPSK) IEEE 802.11g mode: OFDM (BPSK/QPSK/16QAM/64QAM) IEEE 802.11n HT20 MHz mode: OFDM (BPSK/QPSK/16QAM/64QAM) IEEE 802.11n HT40 MHz mode: OFDM (BPSK/QPSK/16QAM/64QAM)

Transmit Data Rate	IEEE 802.11b: 11Mbps(CCK) with fall back rates of 5.5/2/1Mbps IEEE 802.11g: 54Mbps with fall back rates of 48/36/24/18/12/9 /6Mbps IEEE 802.11n HT20: 65.0Mbps with fall back rates of 65.0/58.5/52.0/ 39.0/26.0/19.5/13.0/6.5 Mbps (Antenna 1, Antenna 2) IEEE 802.11n HT40: 135.0Mbps with fall back rates of 121.5/ 108.0/ 81.0/54.0/40.5/27.0/13.5 Mbps (Antenna 1, Antenna 2) IEEE 802.11n HT20: 130.0Mbps with fall back rates of 130.0/117.0/104.0/ 78.0/52.0/39.0/26.0/13.0 Mbps (Combine with antenna 1 and antenna2) IEEE 802.11n HT40: 270.0Mbps with fall back rates of 243.0 /216.0/162.0/108.0/81.0/54.0/ 27.0Mbps (Combine with antenna 1 and antenna2)
Number of Channels	IEEE 802.11b mode: 11 Channels IEEE 802.11g mode: 11 Channels IEEE 802.11n HT20 MHz mode: 11 Channels IEEE 802.11n HT40 MHz mode: 7 Channels
Antenna1 and Antenna 2 Specification	Dipole Antenna with 5.0dBi gain (Max)

Note: *1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*

*2. This submittal(s) (test report) is intended for FCC ID: **PJZ242X** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.*

3. The EUT had been tested under operating condition:
For IEEE 802.11b mode only antenna 1 can work, IEEE 802.11g mode: antenna1 and antenna 2 can work, but can't work at the same time. IEEE 802.11n HT20 MHz mode: antenna 1, antenna 2 and combine with antenna 1 and antenna 2 can work. IEEE 802.11n HT40 MHz mode: antenna 1, antenna 2 and combine with antenna 1 and antenna 2 can work.

Announce about the Difference in Zhone GPON HGU series

In every model, the mechanical material is the same.

In every model, the electrical connections and PCB are the same. GPON-2427 is the most complex model with the full functions, others model differ with some functions removed or modified. These differences are list in the following form.

The "*" can be 0-9 or A-Z or Blank. The suffix represents abbreviation of sales religion or customers. The possible difference is just software.**

The xxx suffix is applicable for all Zhone certificated products.

Model	GPON/AE	CATV	GE1	GE2	GE3	GE4	POTS1	POTS2	USB	WiFi	UPS
GPON-2426-***	GPON	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
GE-2426-***	AE	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
GPON-2427-***	GPON	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

4 TEST METHODOLOGY

4.1. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Test Item	Test mode	Worse mode
Conducted Emission	**Mode 1:** Normal Link	☒
Radiated Emission	**Mode 1:** Normal Link	☒

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

IEEE802.11b mode: Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High(2462MHz) with 1Mbps data rate were chosen for full testing.

IEEE802.11g mode: Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT20 MHz mode: Channel Low (2412MHz), Channel Mid(2437MHz) and Channel High (2462MHz) with 6.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT40 MHz mode: Channel Low (2422MHz), Channel Mid (2437MHz) and Channel High (2452MHz) with 13.5Mbps data rate were chosen for full testing.

5 SETUP OF EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Equipment	Model No.	Serial No.	FCC ID	Trade Name	Data Cable	Power Cord
1	nustreams	Nustreams-6001	OKNS06C00024	Doc	N/A	Unshielded, 1.8m	Unshielded, 1.8m
2	ZHONE OLT	MXK-Chassis-319	N/A	Doc	Zhone	N/A	Unshielded, 1.8m
3	DVD	GK-3301	6934742502123	Doc	GIEC	Shielded, 1.8m	Unshielded, 1.8m
4	Modulation	C78C	20090527	N/A	N/A	Shielded, 1.8m	Unshielded, 1.8m
5	Telephone	HCD007(172)TSDL	AK2NJC040666	N/A	BBK	Unshielded, 10.0m	N/A
6	Telephone	HCD007(172)TSDL	AK2NJ0042807	N/A	BBK	Unshielded, 10.0m	N/A
7	transmitter	SXT1527	090518014293	N/A	N/A	Shielded 1.8m	Unshielded, 1.8m
8	Notebook	2672	992F2VG	N/A	IBM	Unshielded 13.0m(reticle)	Shielded 1.80m

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

5.2. CONFIGURATION OF SYSTEM UNDER TEST

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

6 FACILITIES AND ACCREDITATIONS

6.1. FACILITIES

All measurement facilities used to collect the measurement data are located at **No10-1, Mingkeda Logistics Park, No.18 Huanguan South RD. Guan lan Town, Baoan District, Shenzhen China**
The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

6.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

USA	**A2LA**
China	**CNAS**

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

USA	**FCC**
Japan	**VCCI**
Canada	**INDUSTRY CANADA**
Taiwan	**BSMI**
Norway	**Nemko**

Copies of granted accreditation certificates are available for downloading from our web site, http://www.ccsrf.com

6.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Uncertainty
Conducted emissions	9kHz~30MHz	+/- 3.18dB
Radiated emissions	30MHz ~ 200MHz	+/- 3.79dB
	200MHz ~1000MHz	+/- 3.62dB
	Above 1000MHz	+/- 5.04dB
Band Edges	+/-0.182 dB	

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
The measured result is above (below) the specification limit by a margin less than the measurement uncertainty; it is therefore not possible to state compliance based on the 95% level of confidence. However, the result indicates that compliance (non-compliance) is more probable than non-compliance) with the specification limit.

7 FCC PART 15.247 REQUIREMENTS

7.1. POWER LINE CONDUCTED EMISSIONS MEASUREMENT

7.1.1. LIMITS OF CONDUCTED EMISSIONS MEASUREMENT

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

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

NOTE:
(1) The lower limit shall apply at the transition frequencies.
(2) The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
(3) All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

7.1.2. TEST INSTRUMENTS

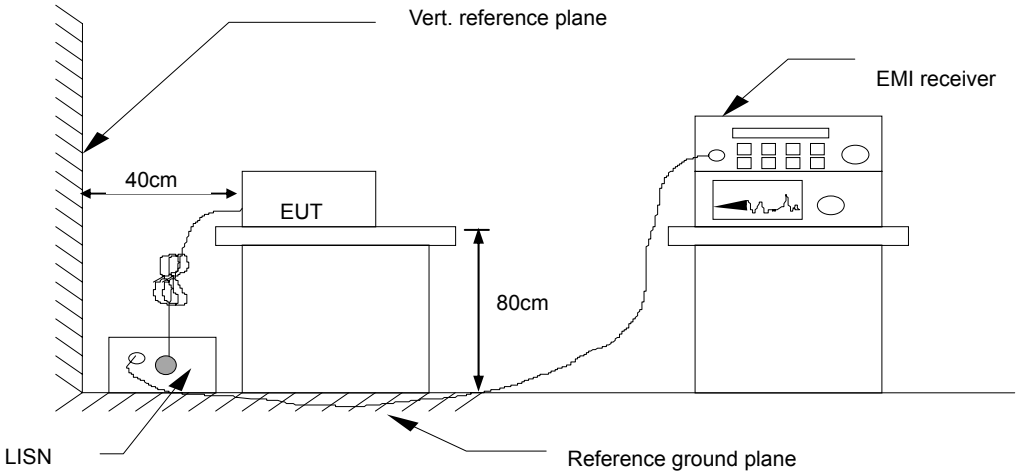
Conducted Emission Test Site					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
ESCI EMI TEST RECEIVE.ESCI	ROHDE&SCHWARZ	ESCI	100783	03/19/2011	03/19/2012
LISN	SCHAFFNER	NNB42	2001/001	05/26/2011	05/26/2012
LISN	EMCO	3825/2	8901-1459	03/19/2011	03/19/2012
Temp. / Humidity Meter	VICTOR	VC230	N/A	03/31/2011	03/31/2012
Test S/W	FARAD	EZ-EMC/ CCS-3A1-CE			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. N.C.R = No Calibration Request.

7.1.3. TEST PROCEDURES (please refer to measurement standard)

- The EUT and Support equipment, if needed, was placed on a non-conducted table, which is 0.8m above the ground plane and 0.4m away from the conducted wall.
- The test equipment EUT installed received AC main power, through a Line Impedance Stabilization Network (LISN), which supplied power source and was grounded to the ground plane. All support equipment power received from a second LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- The EUT test program was started. Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
- The frequency range from 150 kHz to 30 MHz was searched. The test data of the worst-case condition(s) was recorded. Emission levels under limit 20dB were not recorded.

7.1.4. TEST SETUP



- For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

7.1.5. Data Sample:

Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor = Insertion loss of LISN + Cable Loss
Result = Quasi-peak Reading/ Average Reading + Factor
Limit = Limit stated in standard
Margin = Result (dBuV) – Limit (dBuV)

7.1.6. TEST RESULTS

Model No.	ZNID-GPON-2427	RBW,VBW	9 kHz
Environmental Conditions	26deg°C, 60% RH	Test Mode	Mode 1
Tested by	Sunday Hu	Line	L1

(The chart below shows the highest readings taken from the final data.)

No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.2216	40.15	35.55	10.14	50.29	45.69	62.76	52.76	-12.47	-7.07	Pass
2	0.4418	32.30	27.40	10.58	42.88	37.98	57.03	47.03	-14.15	-9.05	Pass
3	0.4761	33.17	23.05	10.72	43.89	33.77	56.41	46.41	-12.52	-12.64	Pass
4	2.9664	32.94	25.66	11.11	44.05	36.77	56.00	46.00	-11.95	-9.23	Pass
5*	4.8928	35.40	29.18	11.19	46.59	40.37	56.00	46.00	-9.41	-5.63	Pass
6	5.8900	37.82	32.02	11.19	49.01	43.21	60.00	50.00	-10.99	-6.79	Pass

Note: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

Model No.	ZNID-GPON-2427	RBW,VBW	9 kHz
Environmental Conditions	26deg°C, 60% RH	Test Mode	Mode 1
Tested by	Sunday Hu	Line	L2

(The chart below shows the highest readings taken from the final data.)

No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1708	45.10	35.91	10.16	55.26	46.07	64.92	54.92	-9.66	-8.85	Pass
2	0.2100	43.52	35.88	10.18	53.70	46.06	63.21	53.21	-9.51	-7.15	Pass
3	0.6460	31.92	26.00	10.14	42.06	36.14	56.00	46.00	-13.94	-9.86	Pass
4	2.9636	34.19	26.68	10.75	44.94	37.43	56.00	46.00	-11.06	-8.57	Pass
5	4.9157	34.81	27.27	10.92	45.73	38.19	56.00	46.00	-10.27	-7.81	Pass
6*	6.7300	39.89	32.57	11.03	50.92	43.60	60.00	50.00	-9.08	-6.40	Pass

Note: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

7.2.SPURIOUS EMISSIONS MEASUREMENT

7.2.1. LIMITS OF CONDUCTED EMISSIONS MEASUREMENT

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in 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)).

7.2.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	E4446A	US44300399	03/19/2011	03/19/2012

7.2.3. TEST PROCEDURE (please refer to measurement standard)

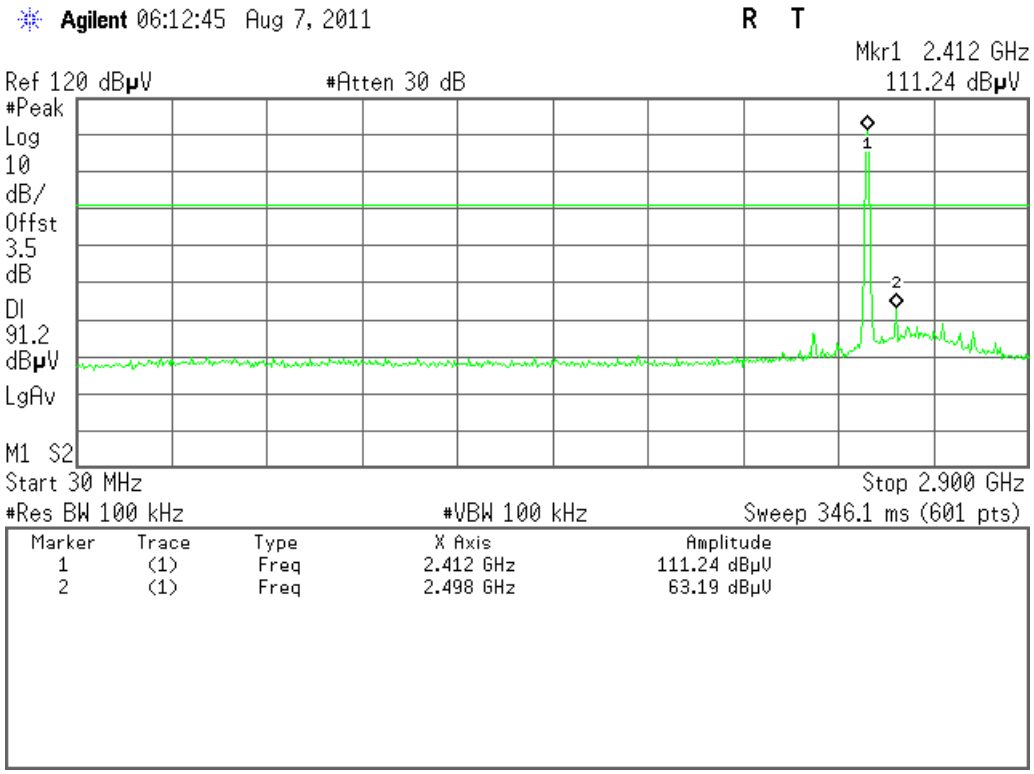
Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 100 kHz.
Measurements are made over the 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

7.2.4. TEST RESULTS

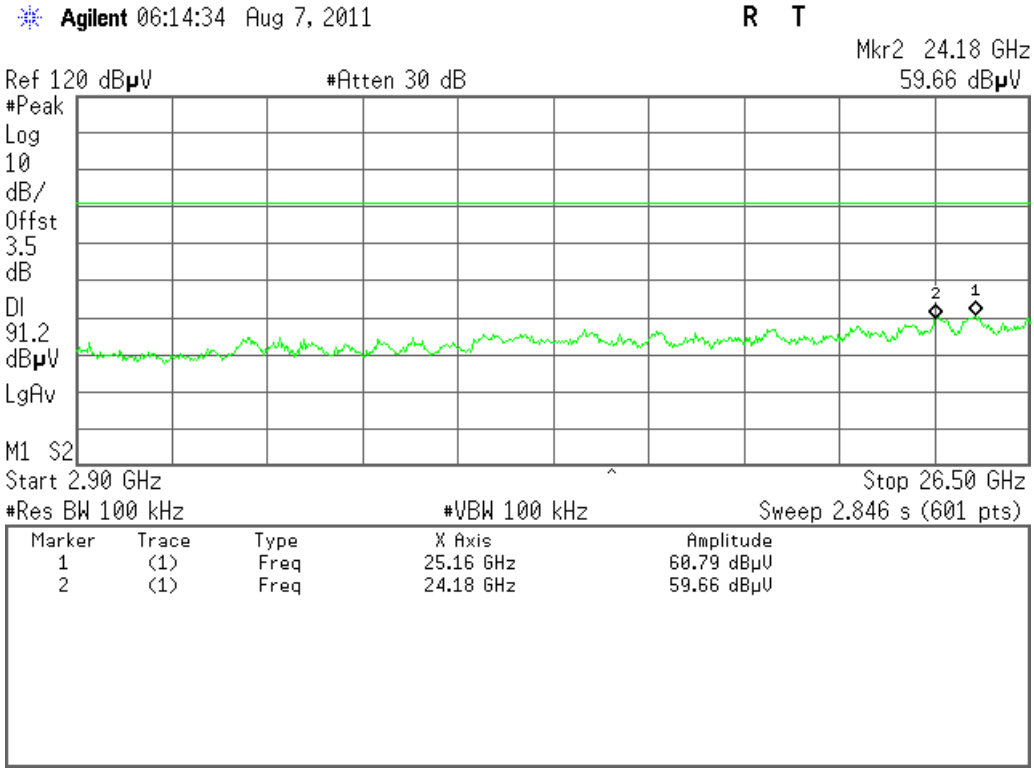
Test Plot

(IEEE 802.11b mode Antenna1)

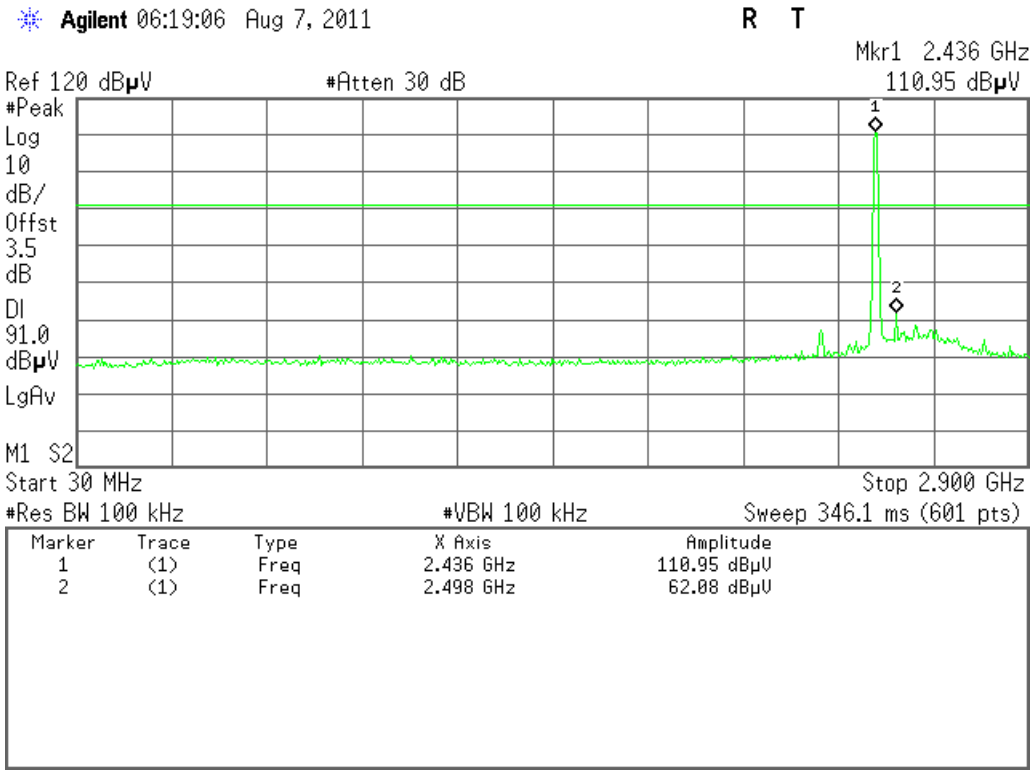
CH Low (30MHz ~2.9GHz)



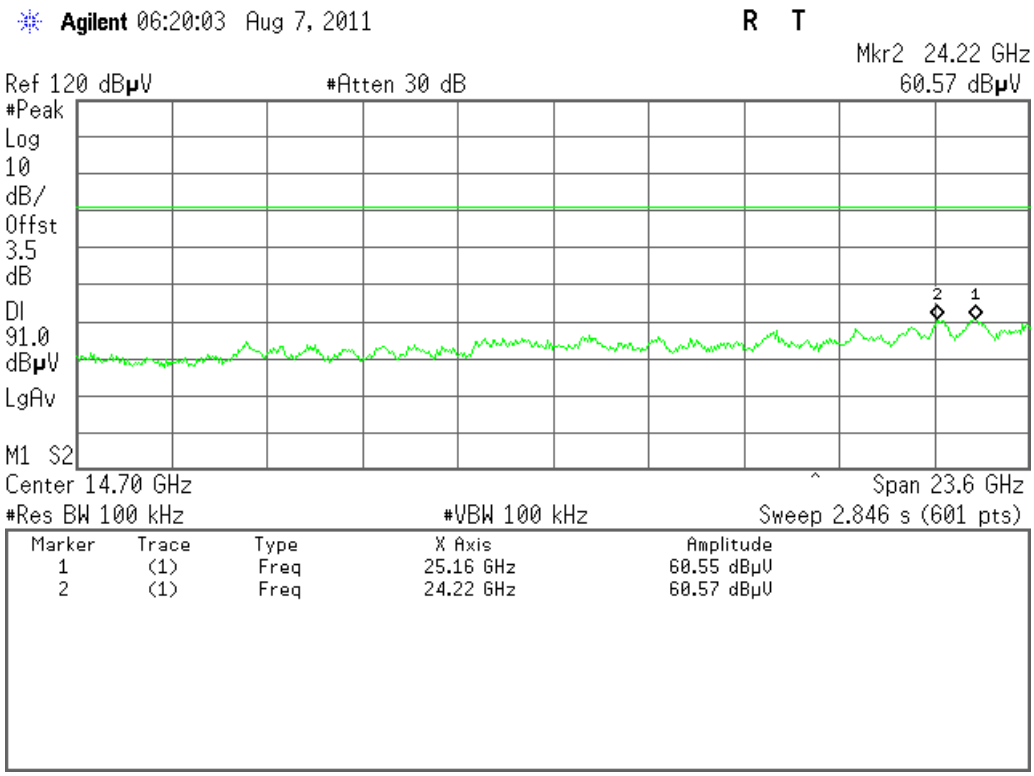
CH Low (2.9GHz ~26.5GHz)



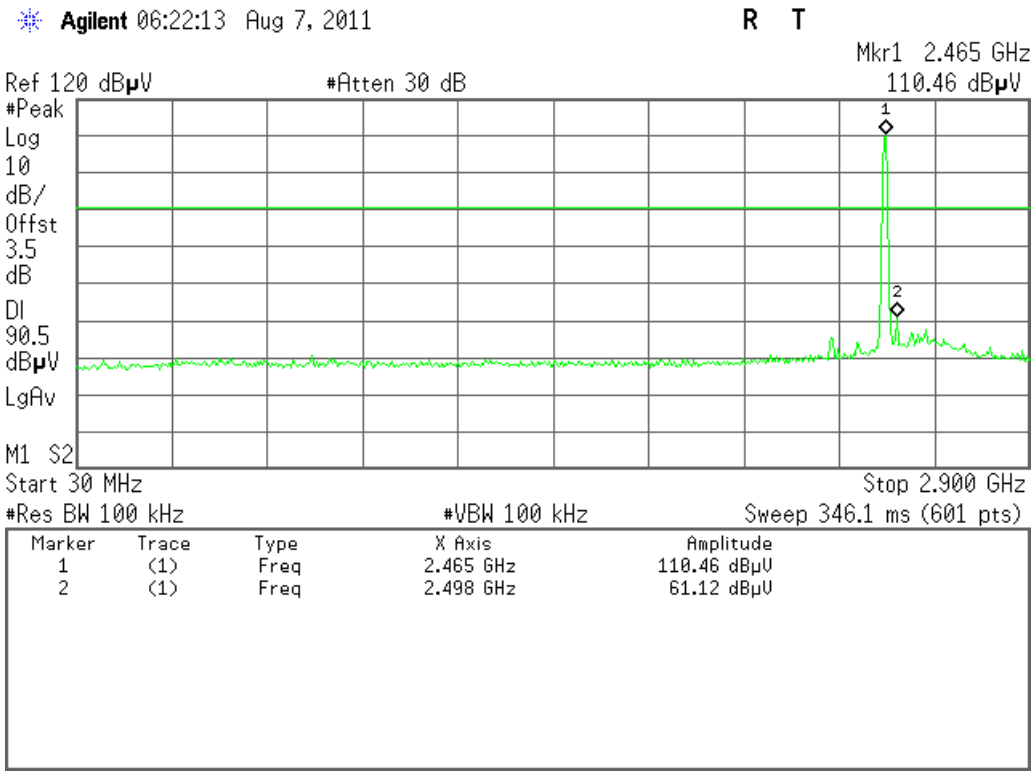
CH Mid (30MHz ~2.9GHz)



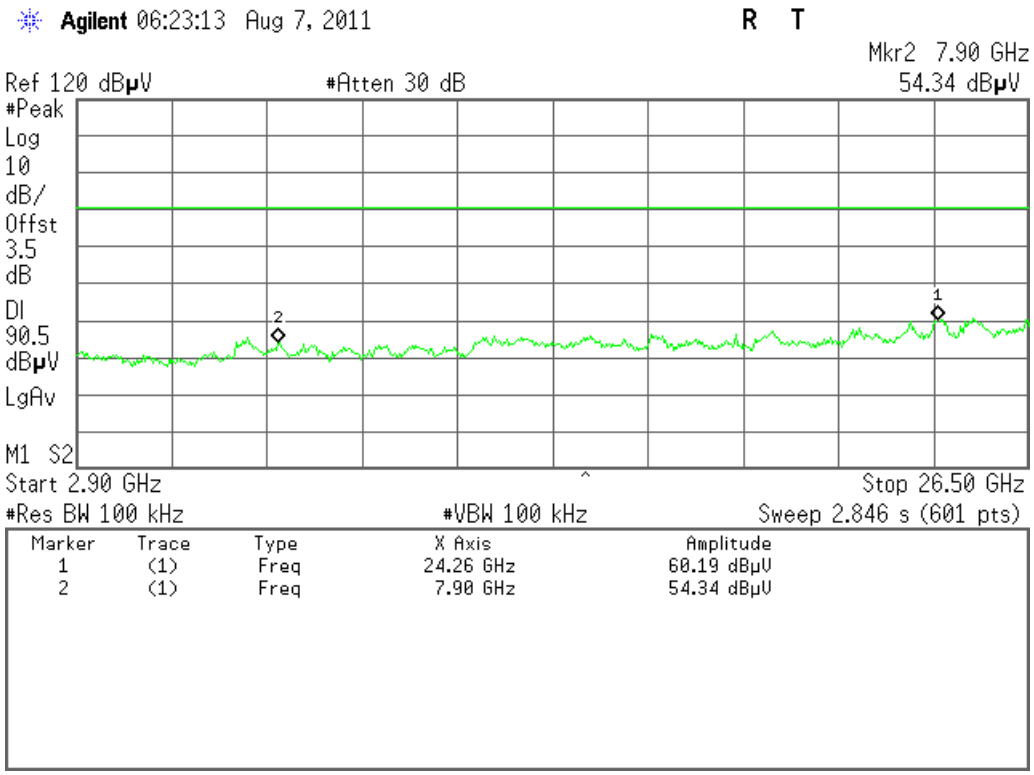
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)

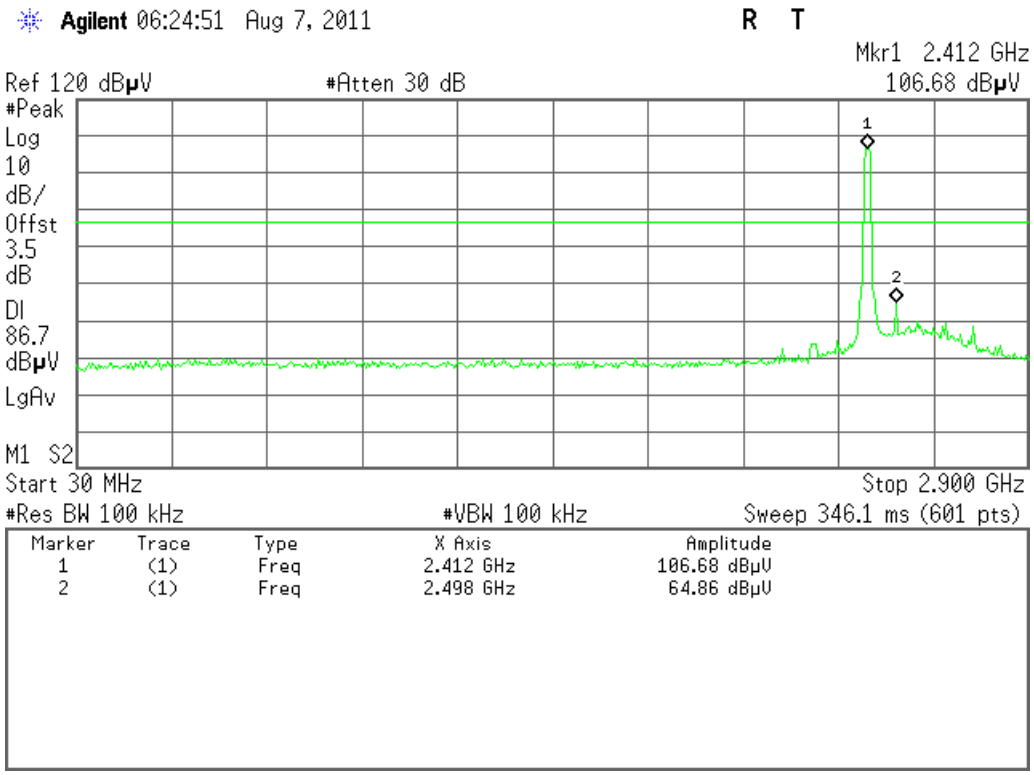


CH High(2.9GHz ~26.5GHz)

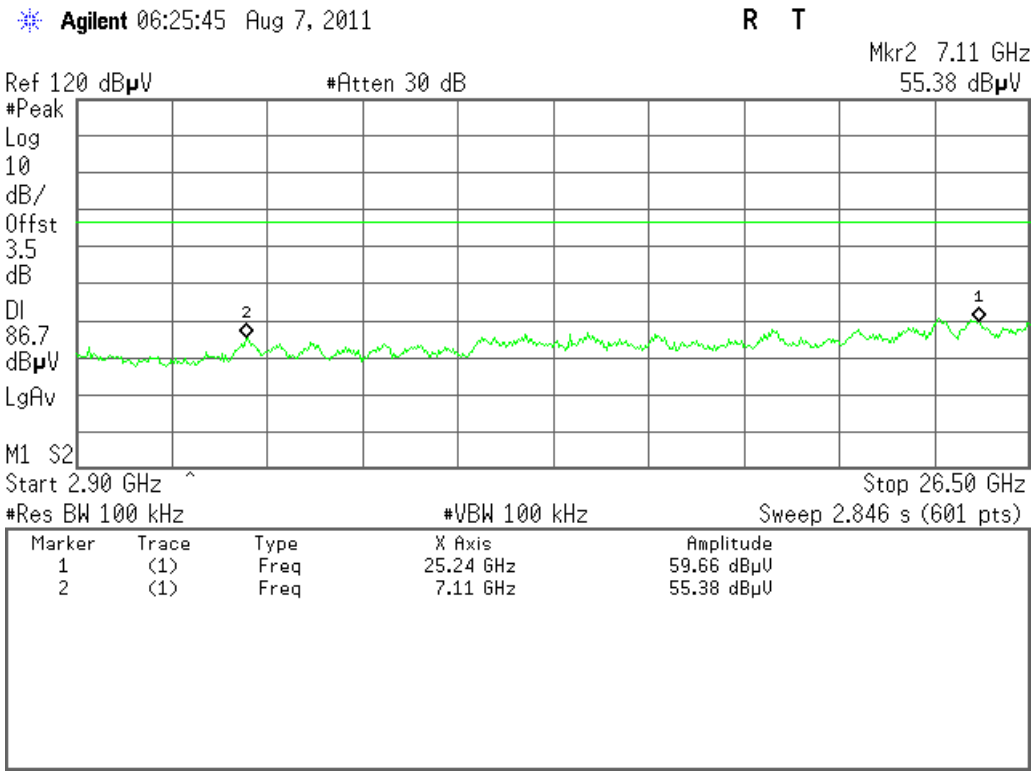


(IEEE 802.11g mode Antenna 1)

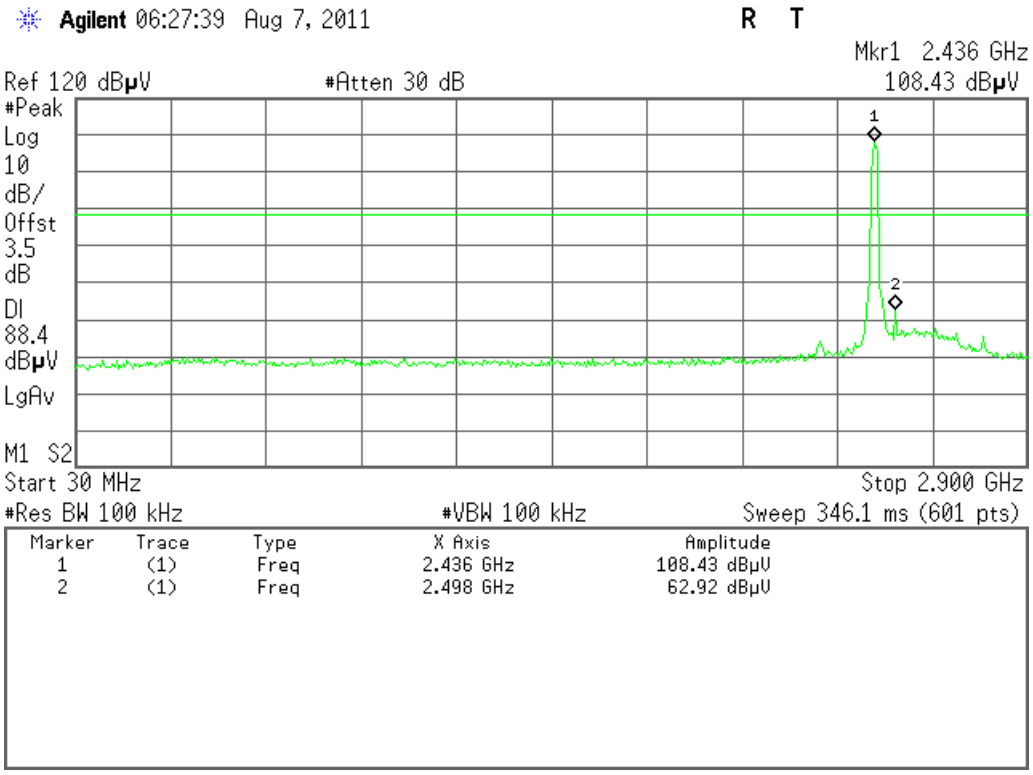
CH Low (30MHz ~2.9GHz)



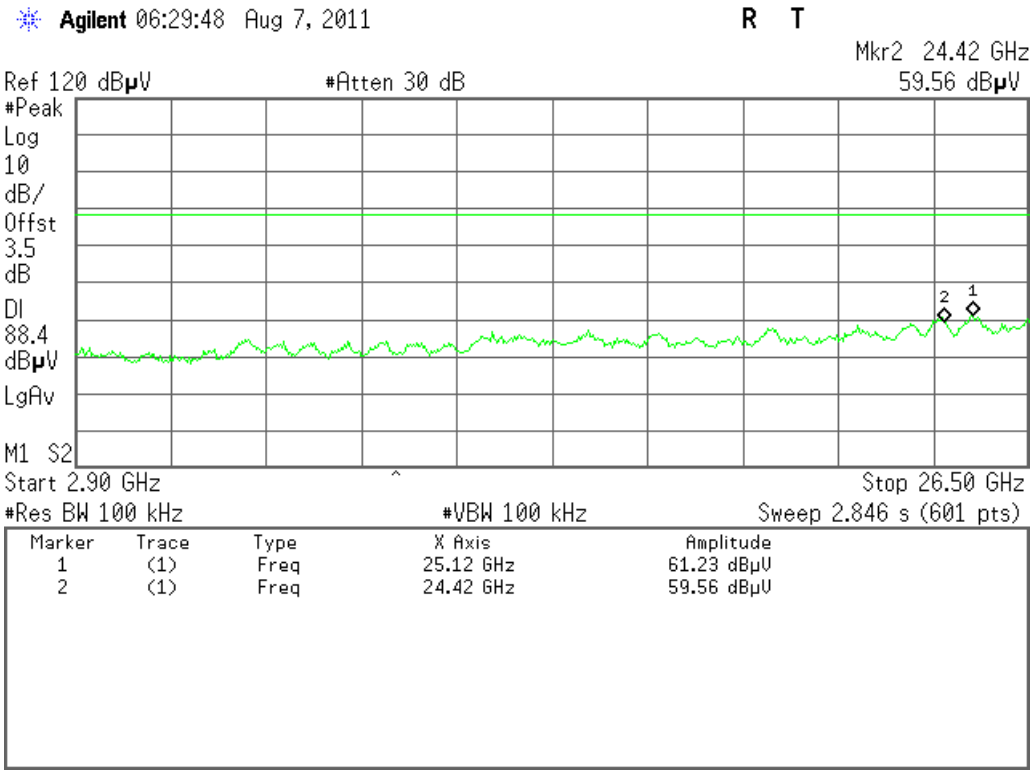
CH Low (2.9GHz ~26.5GHz)



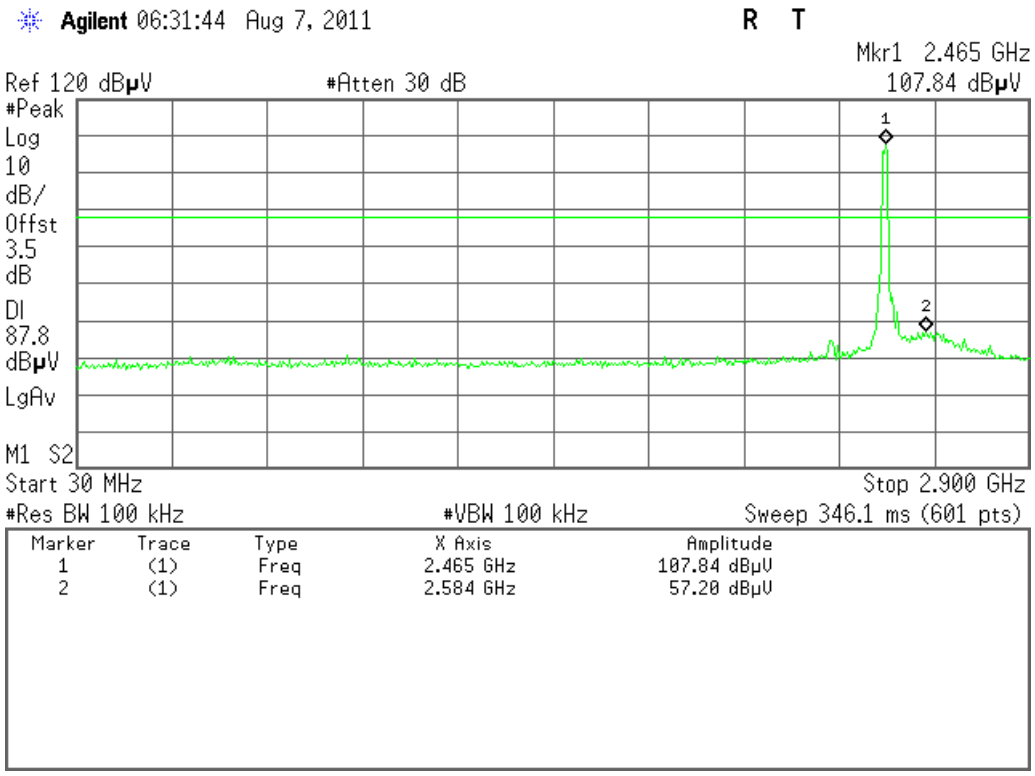
CH Mid (30MHz ~2.9GHz)



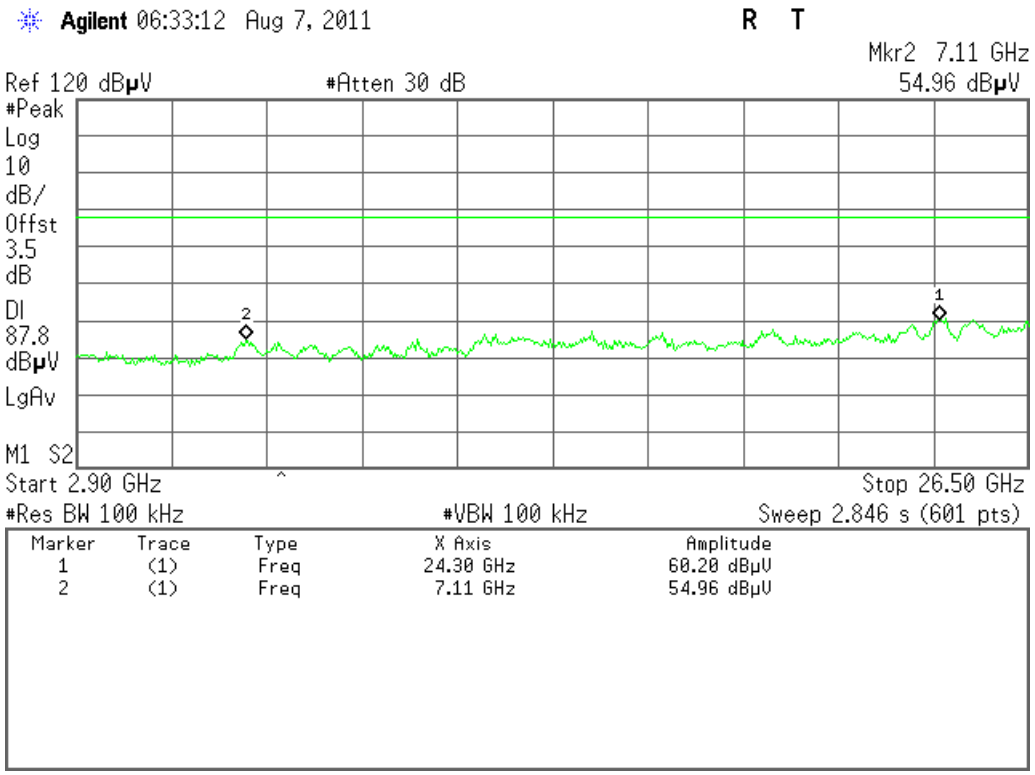
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)

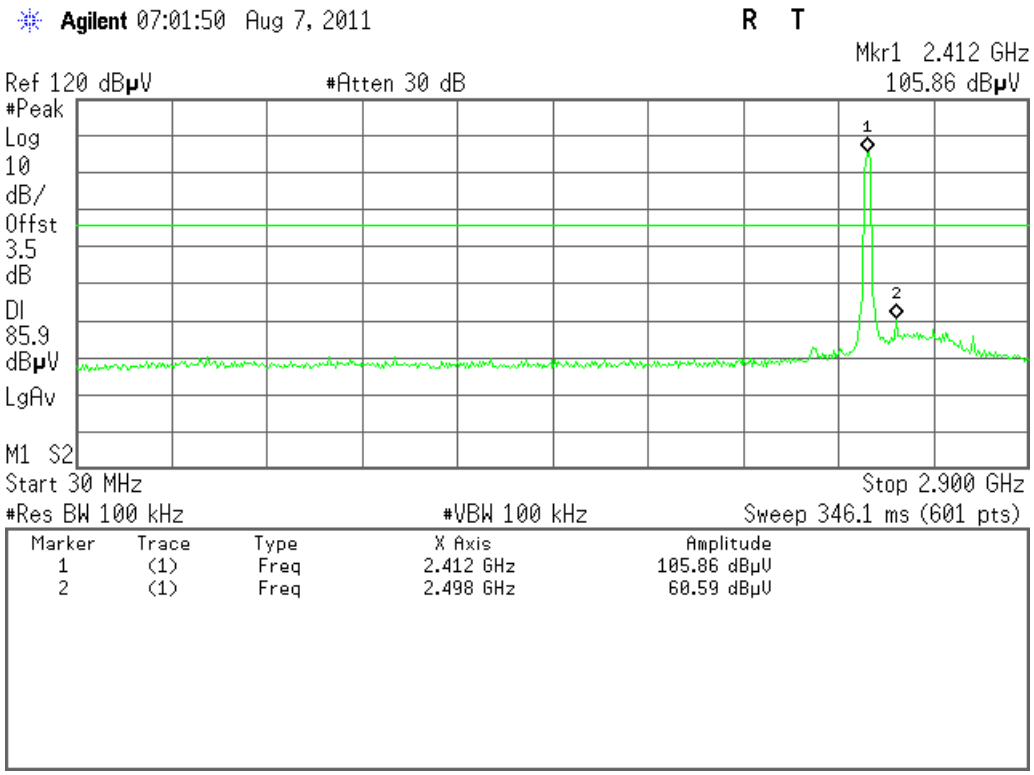


CH High(2.9GHz ~26.5GHz)

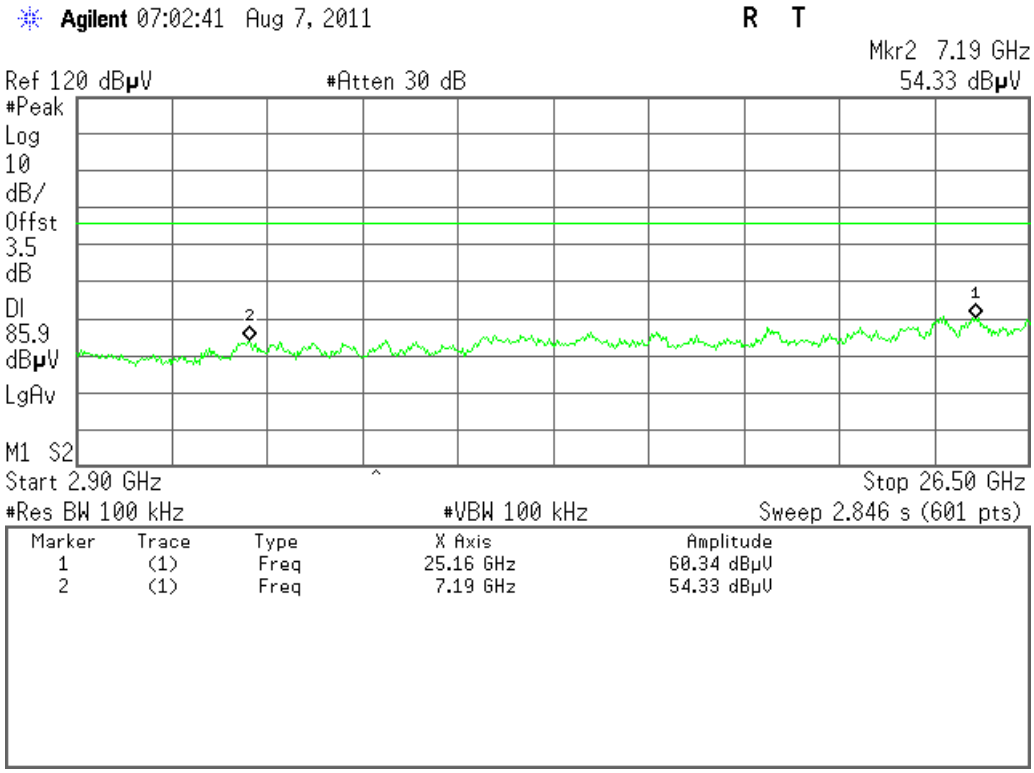


(IEEE 802.11g mode Antenna 2)

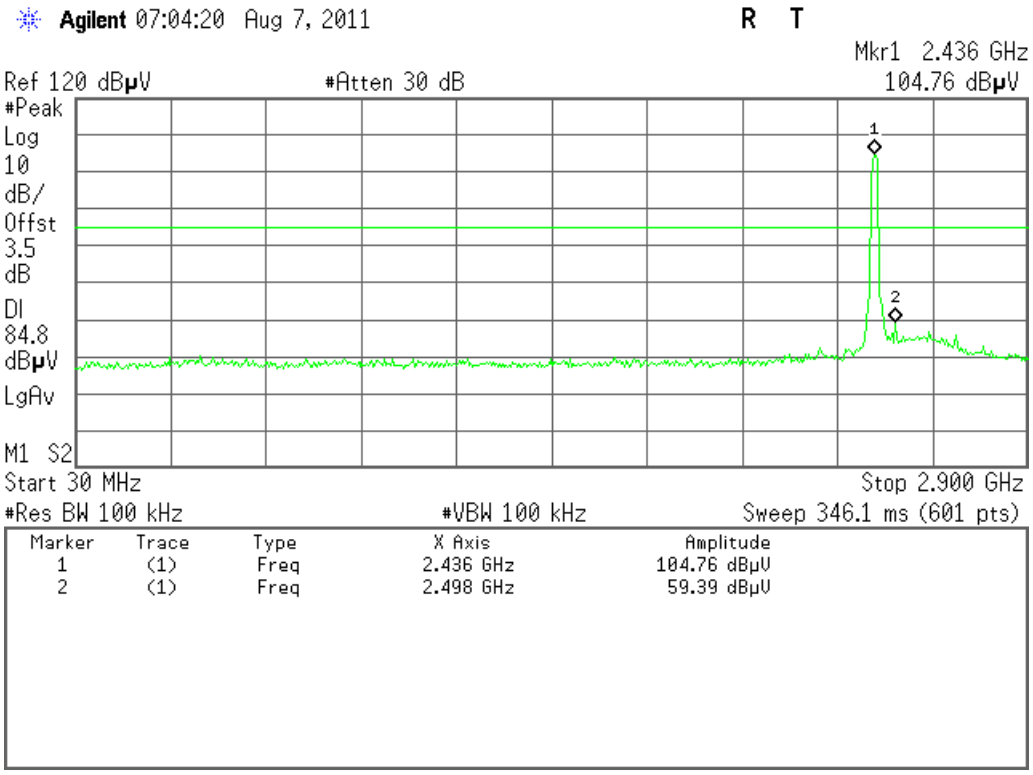
CH Low (30MHz ~2.9GHz)



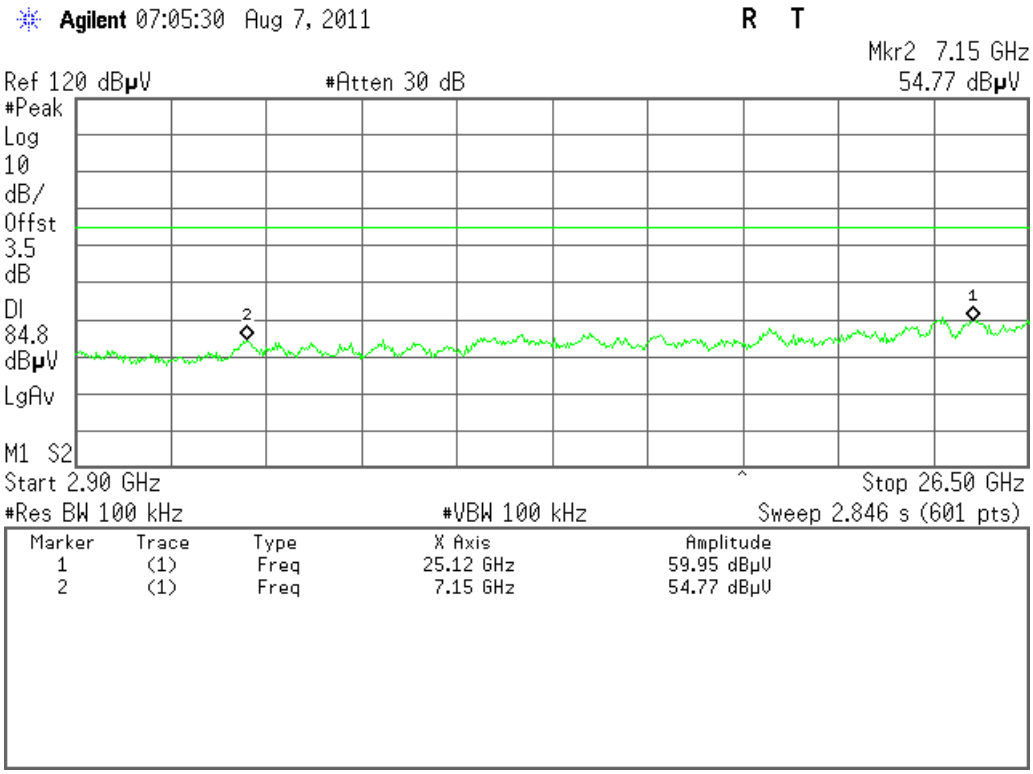
CH Low (2.9GHz ~26.5GHz)



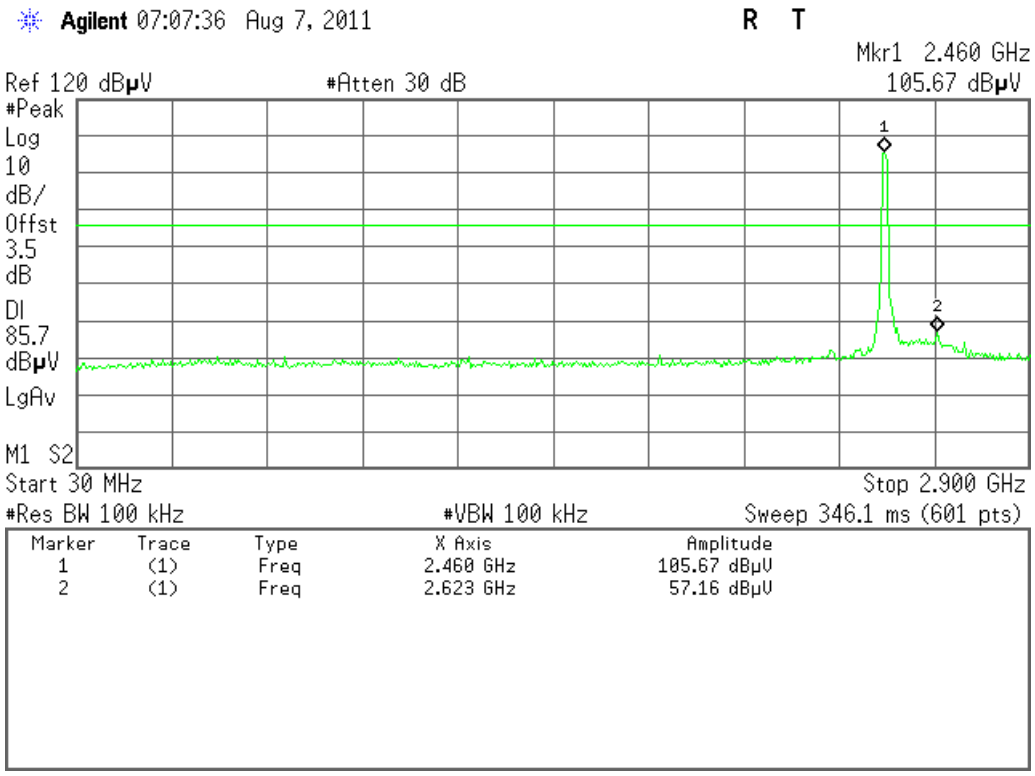
CH Mid (30MHz ~2.9GHz)



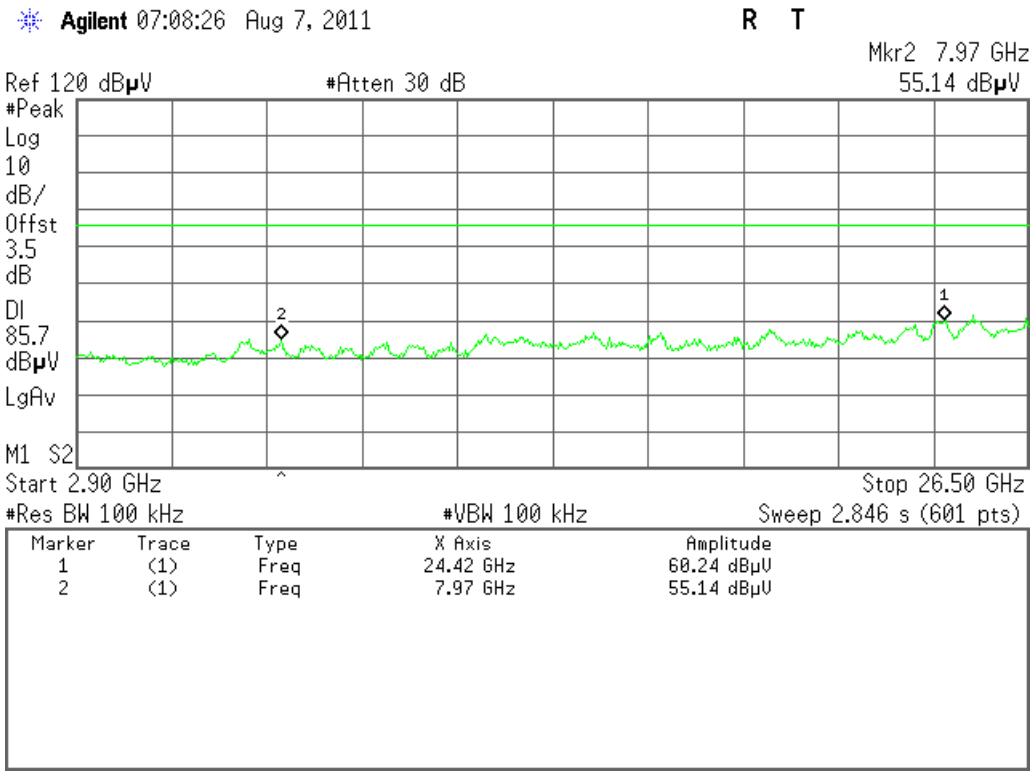
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)

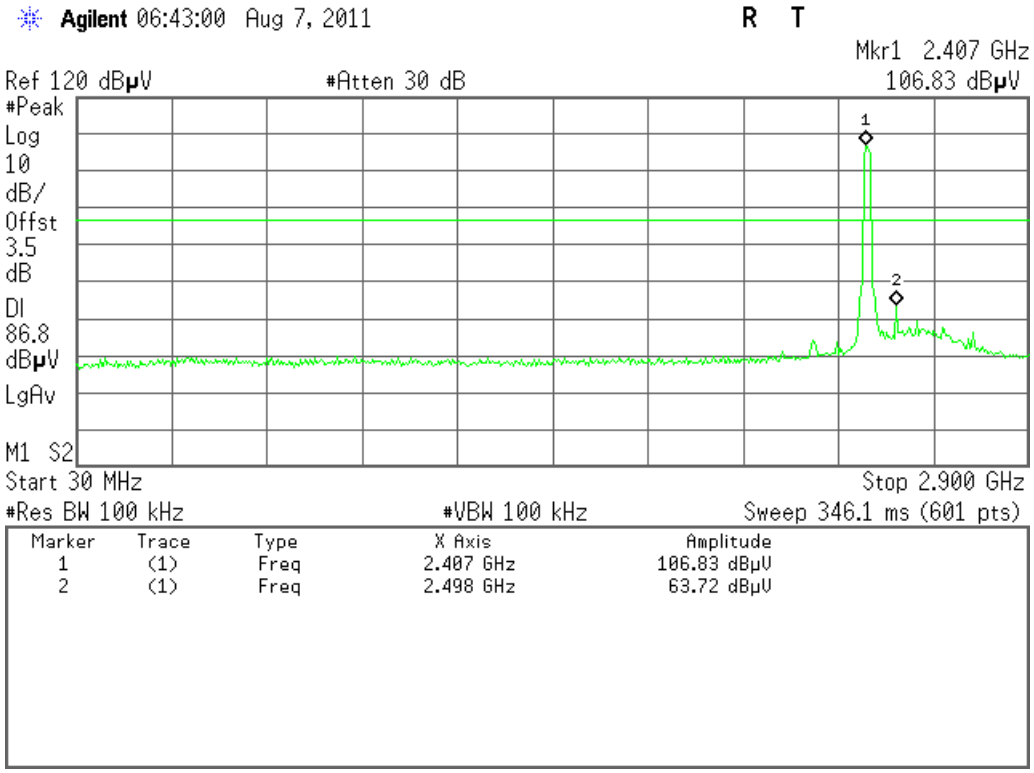


CH High(2.9GHz ~26.5GHz)

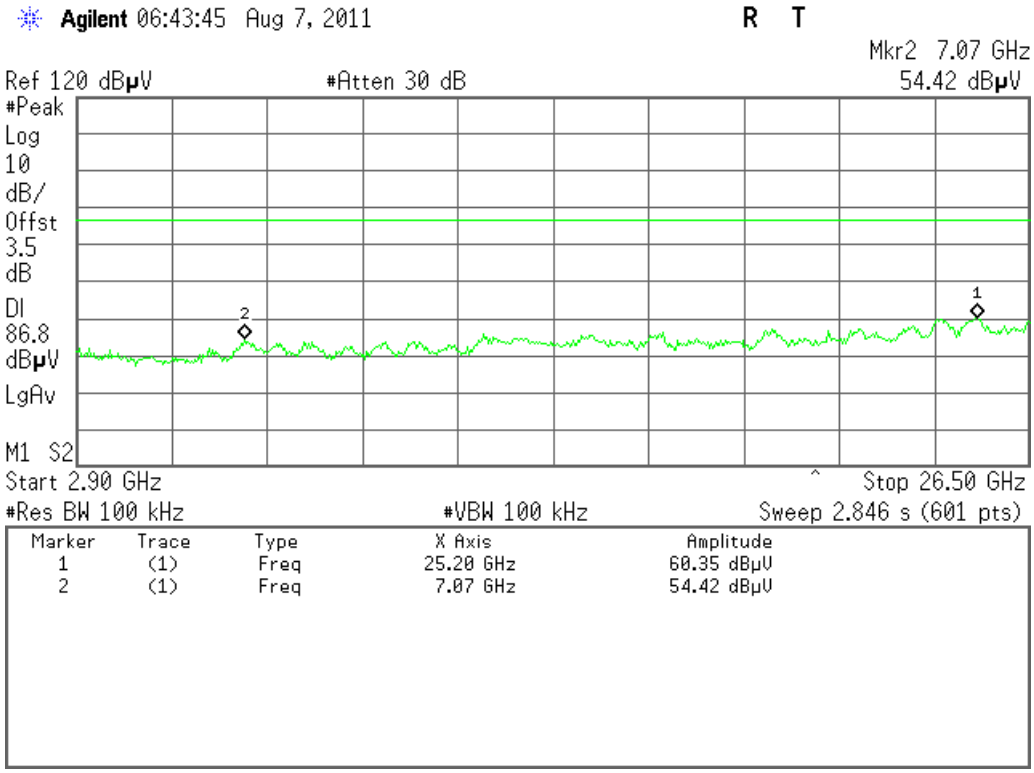


Test Plot
(IEEE 802.11n HT20 MHz mode Antenna1)

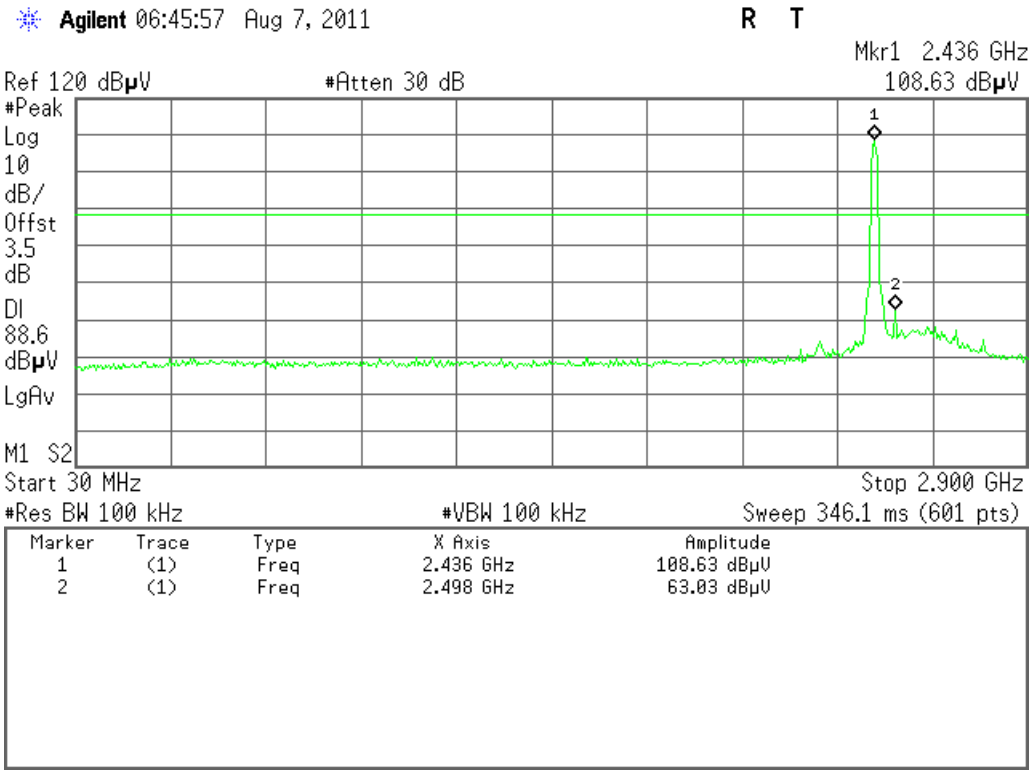
CH Low (30MHz ~2.9GHz)



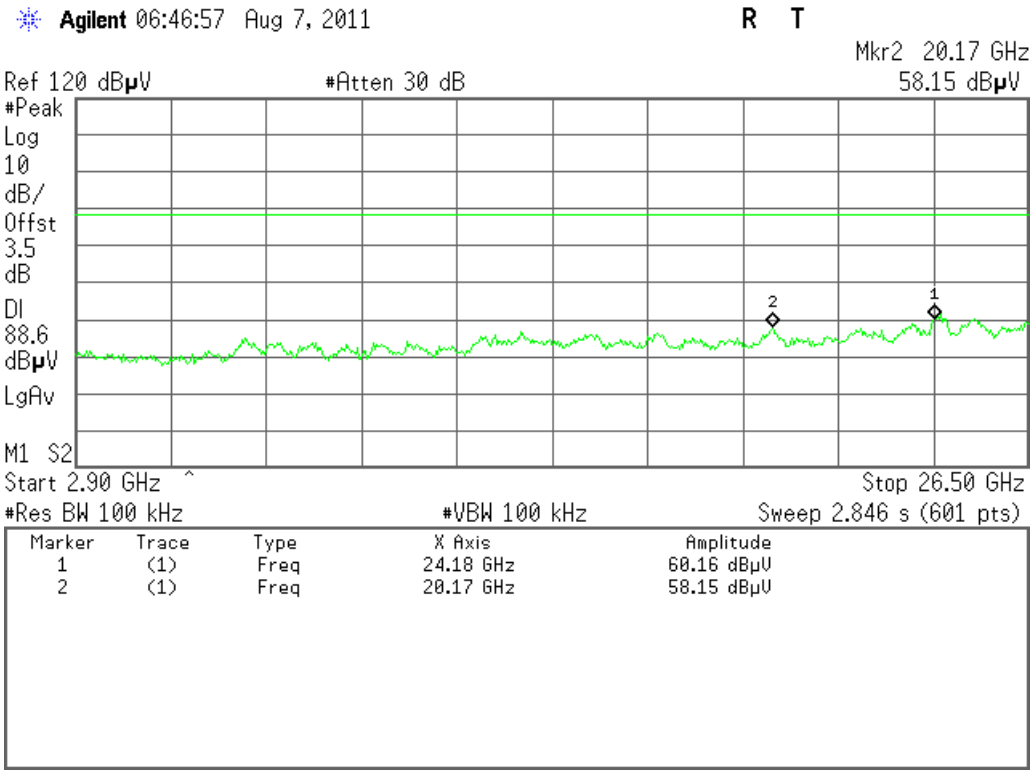
CH Low (2.9GHz ~26.5GHz)



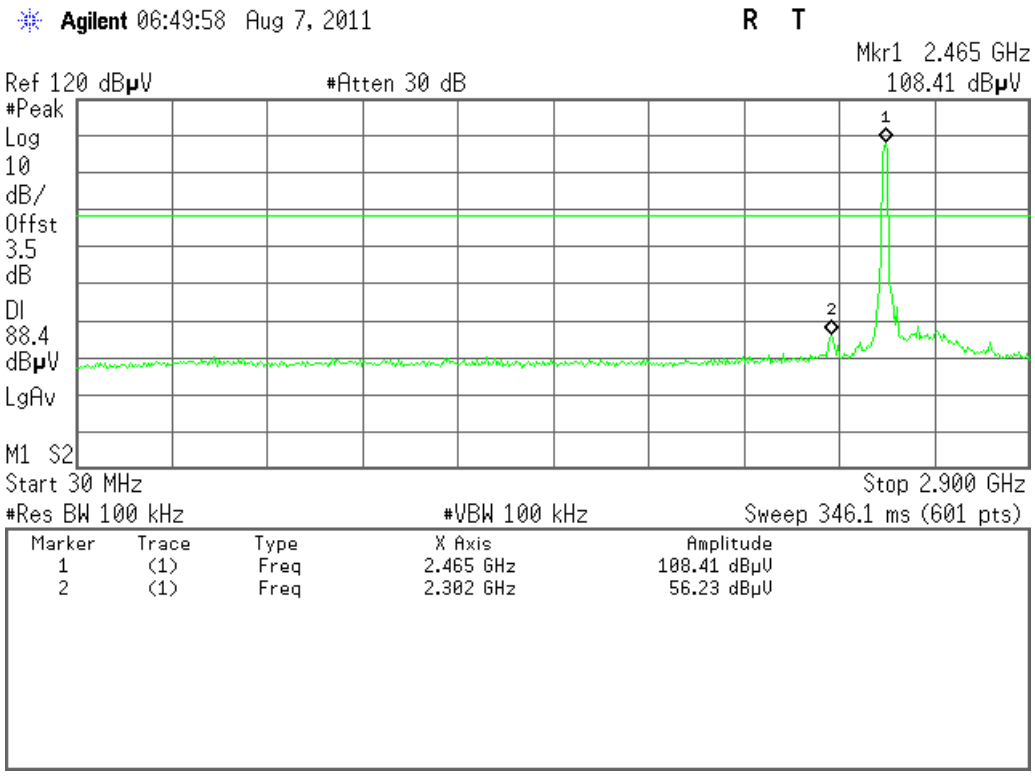
CH Mid (30MHz ~2.9GHz)



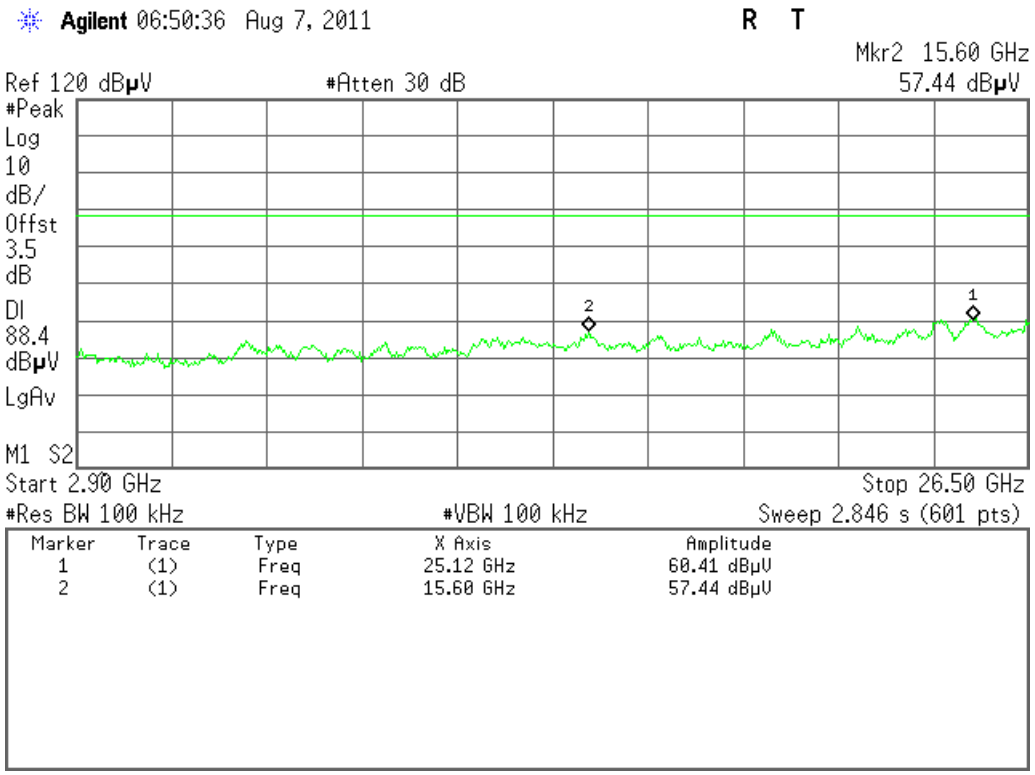
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)

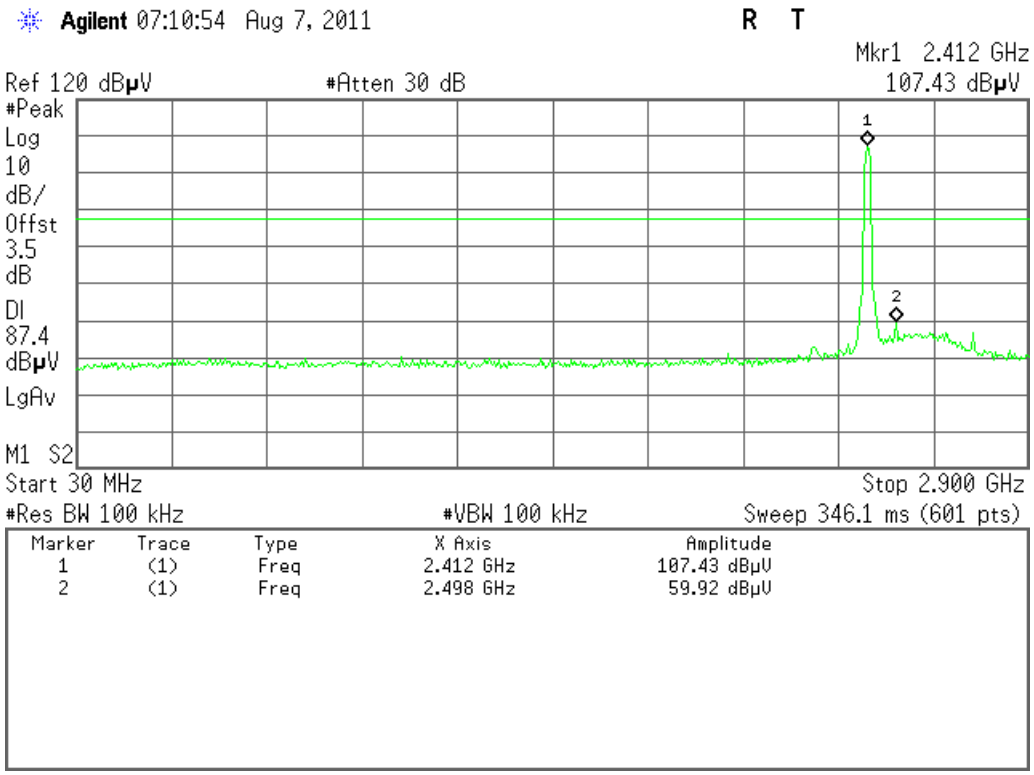


CH High(2.9GHz ~26.5GHz)

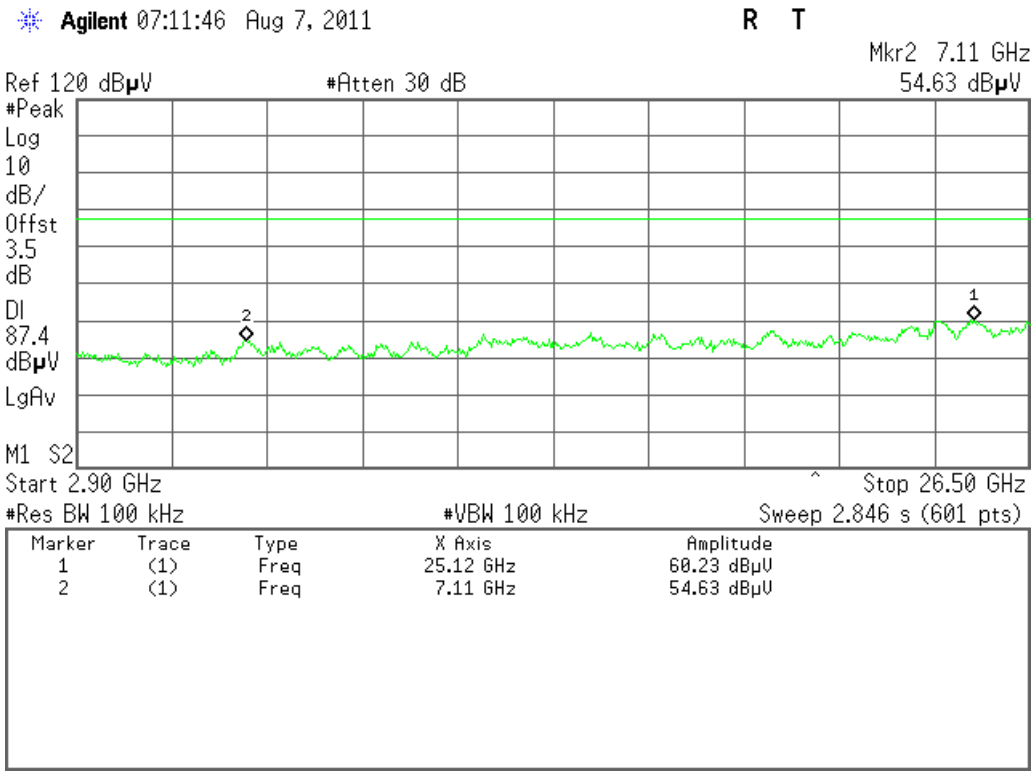


(IEEE 802.11n HT20 MHz mode Antenna 2)

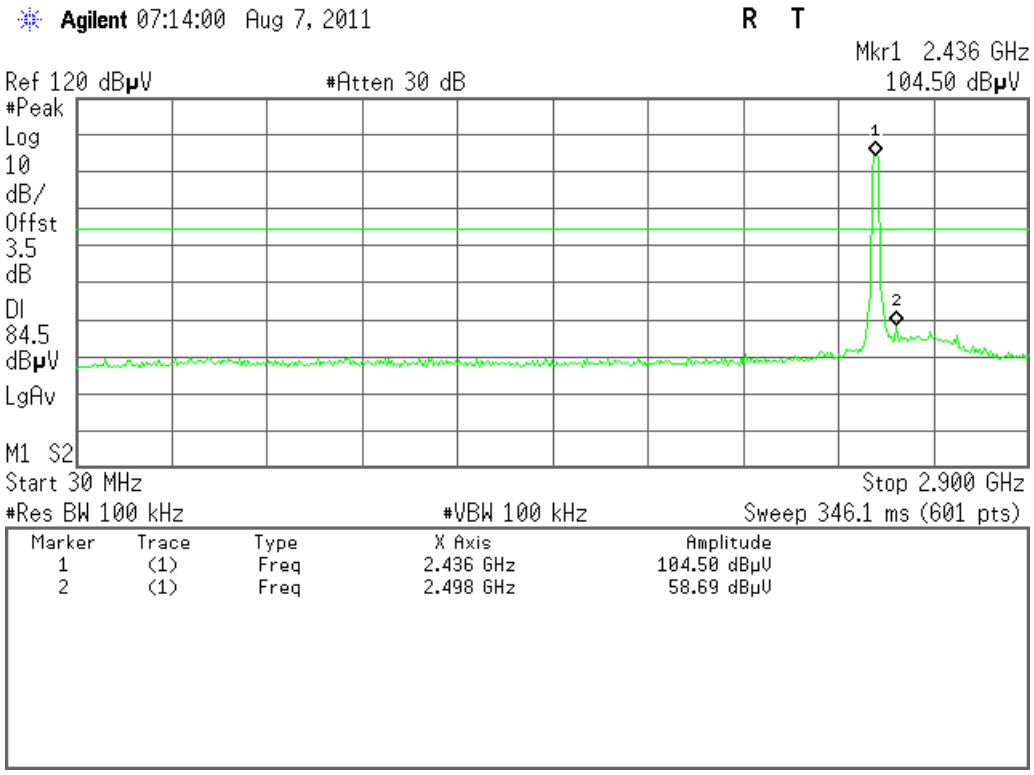
CH Low (30MHz ~2.9GHz)



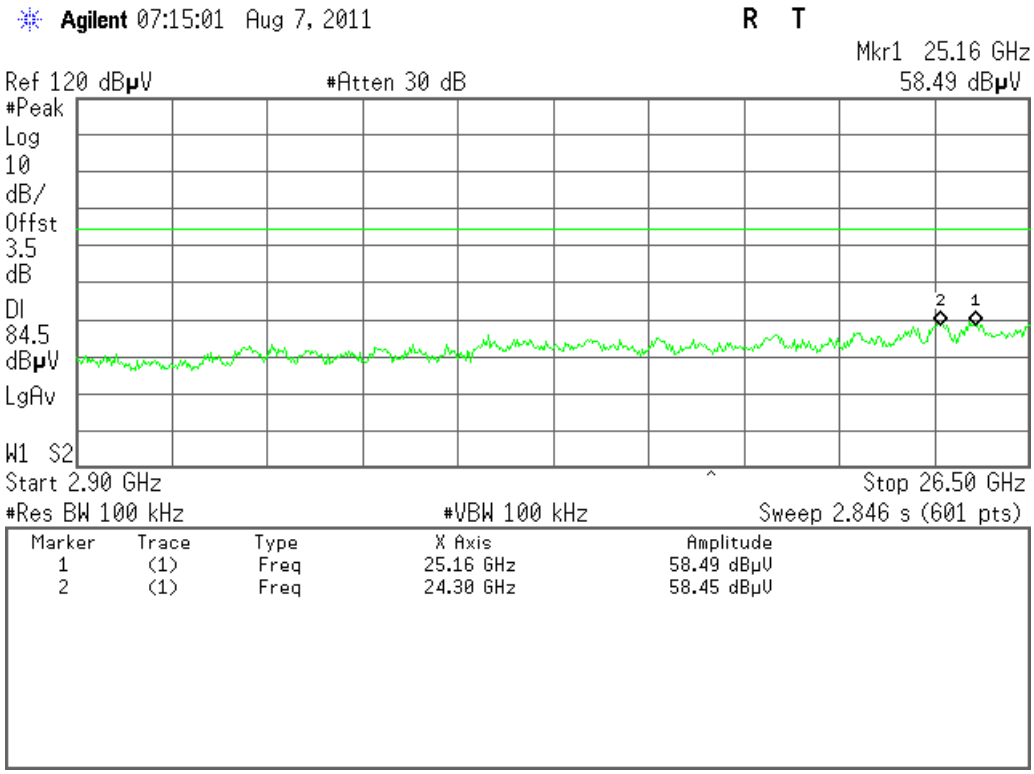
CH Low (2.9GHz ~26.5GHz)



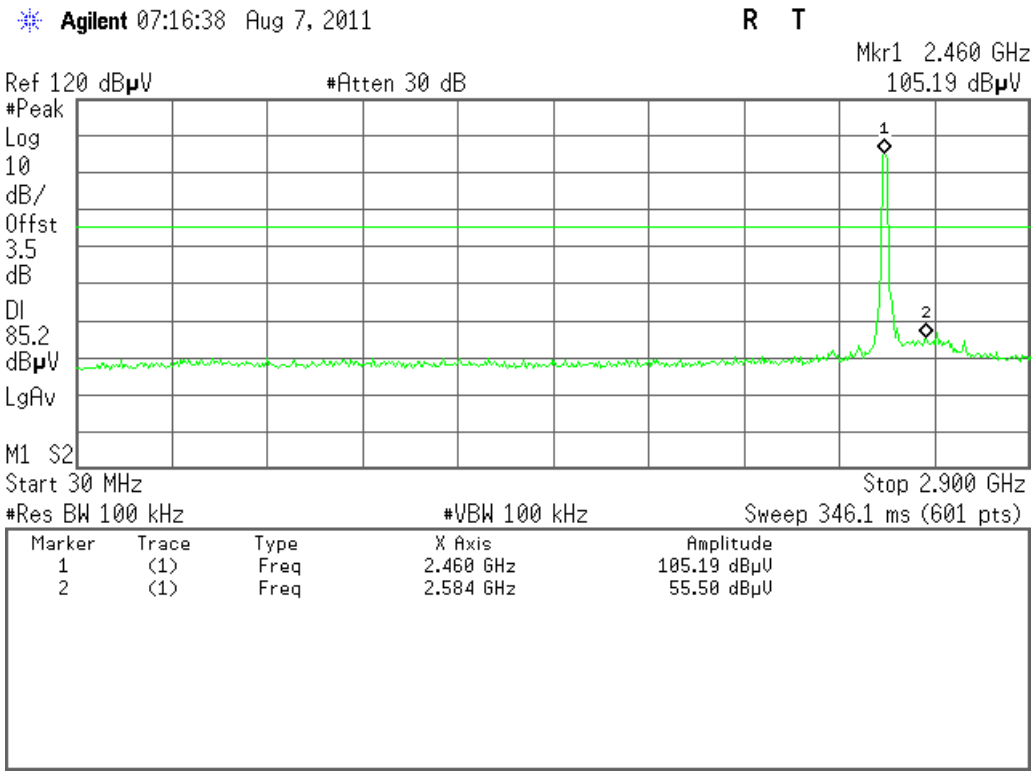
CH Mid (30MHz ~2.9GHz)



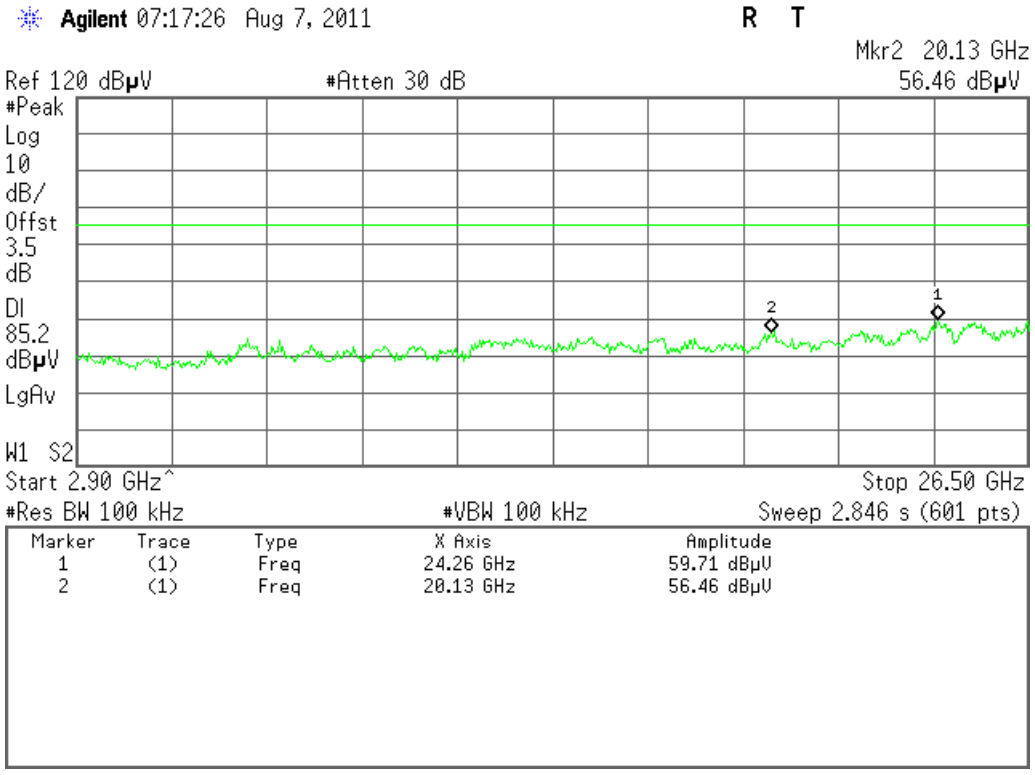
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)

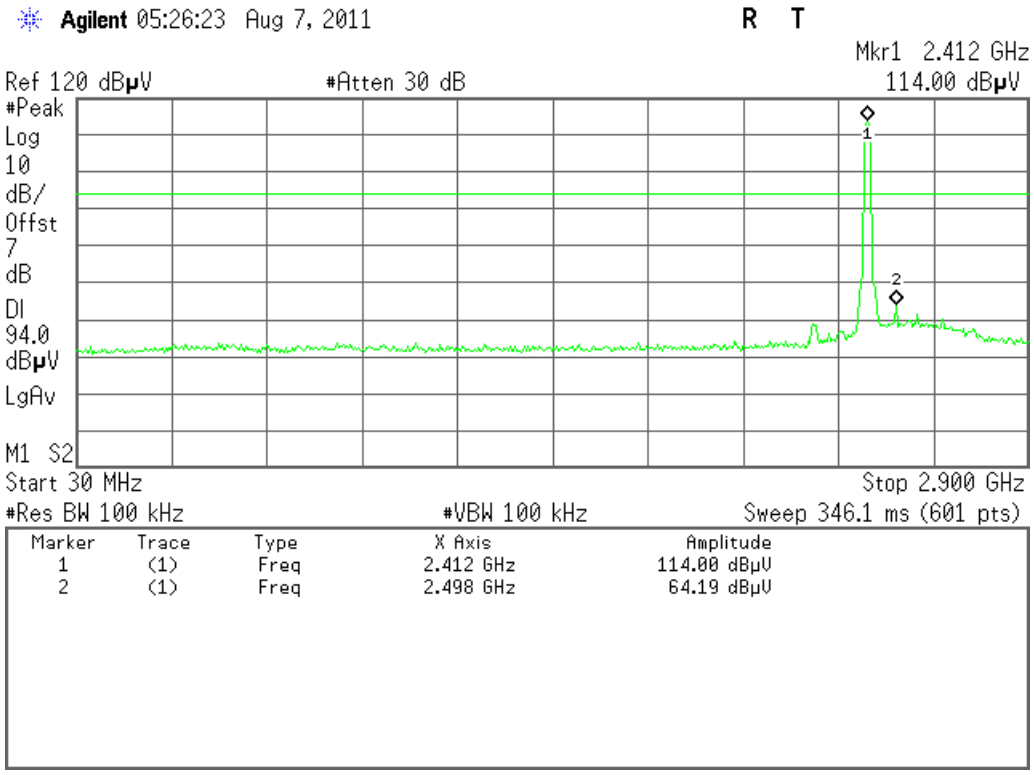


CH High(2.9GHz ~26.5GHz)

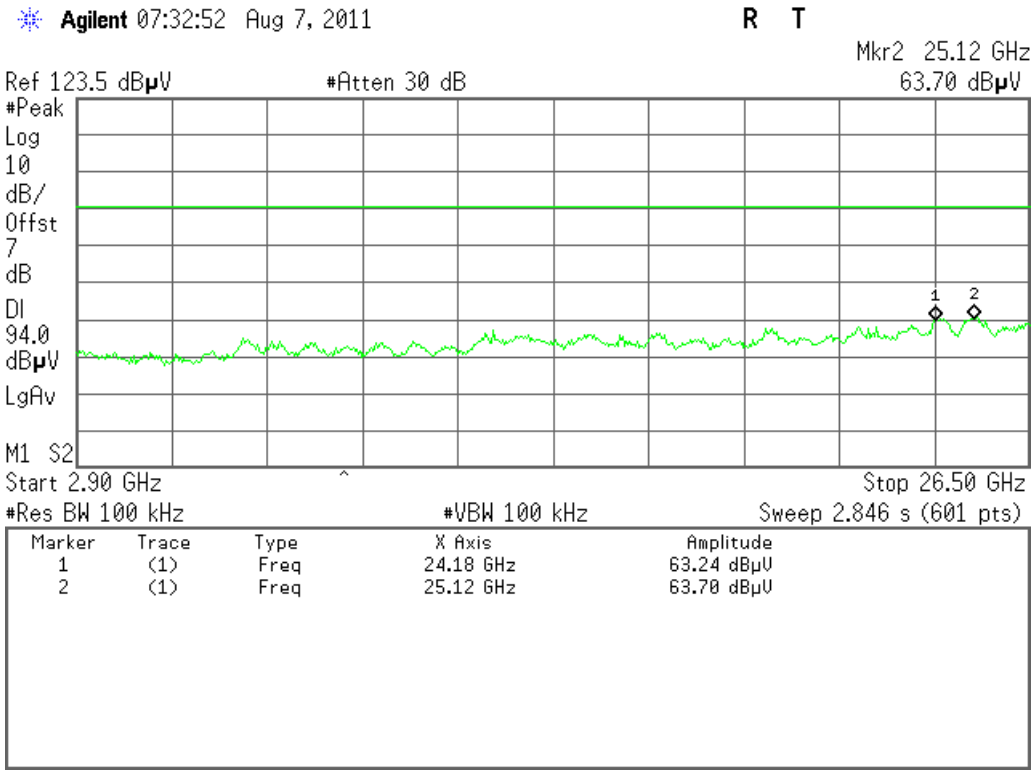


(IEEE 802.11n HT20 MHz mode Combine)

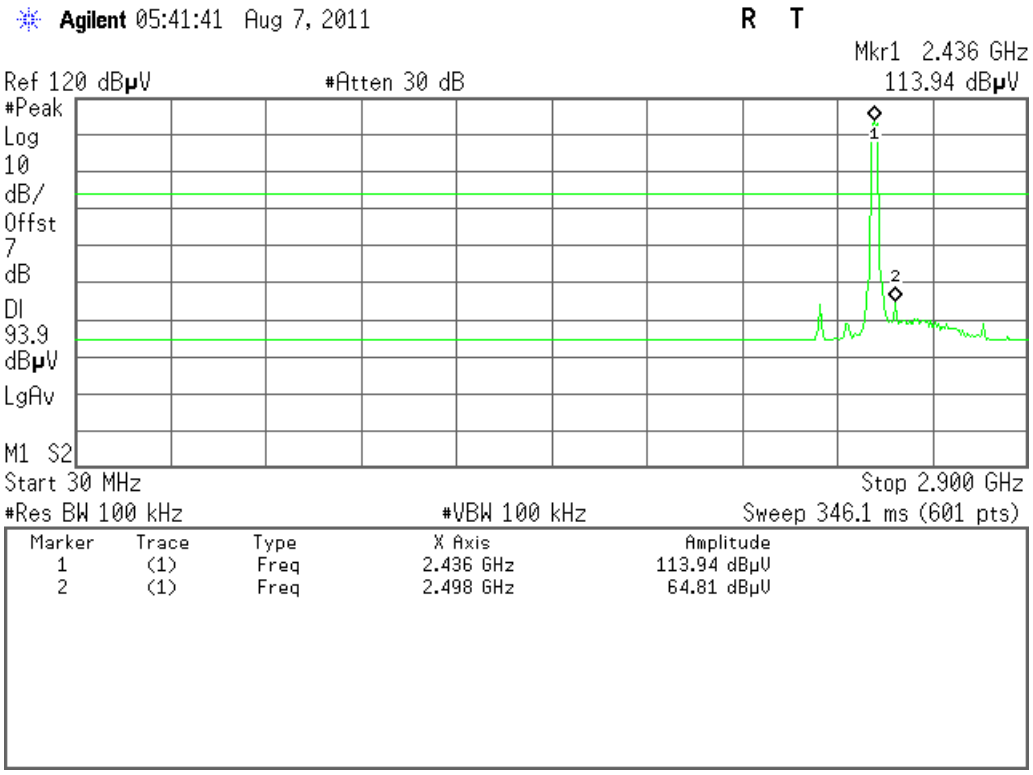
CH Low (30MHz ~2.9GHz)



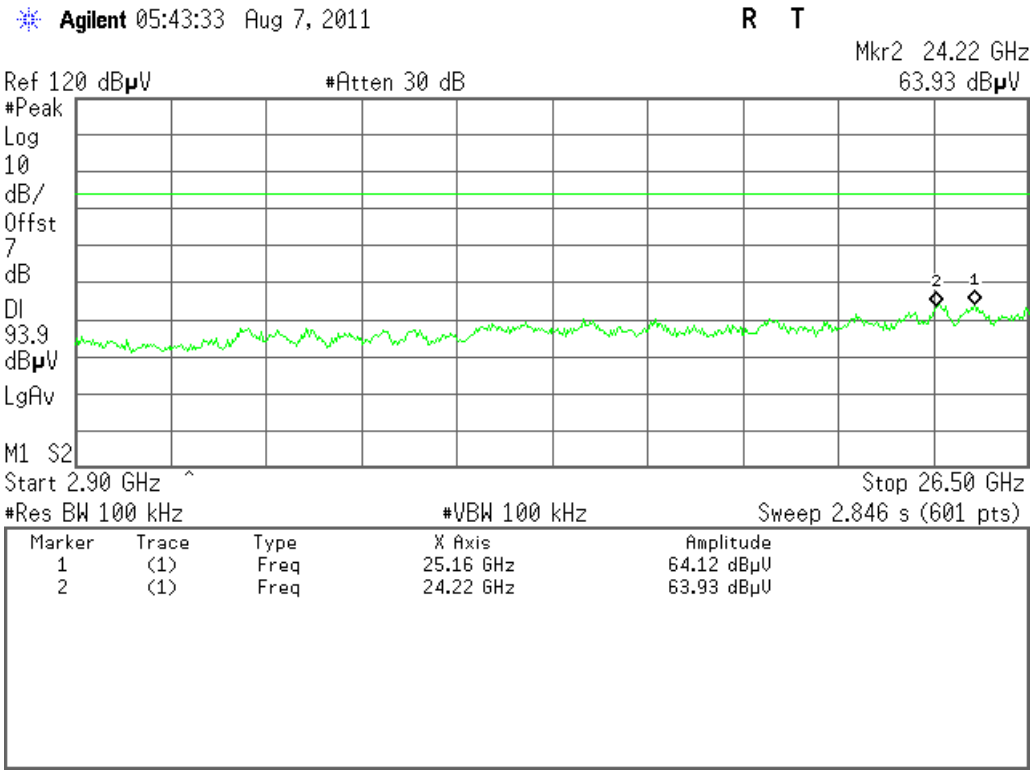
CH Low (2.9GHz ~26.5GHz)



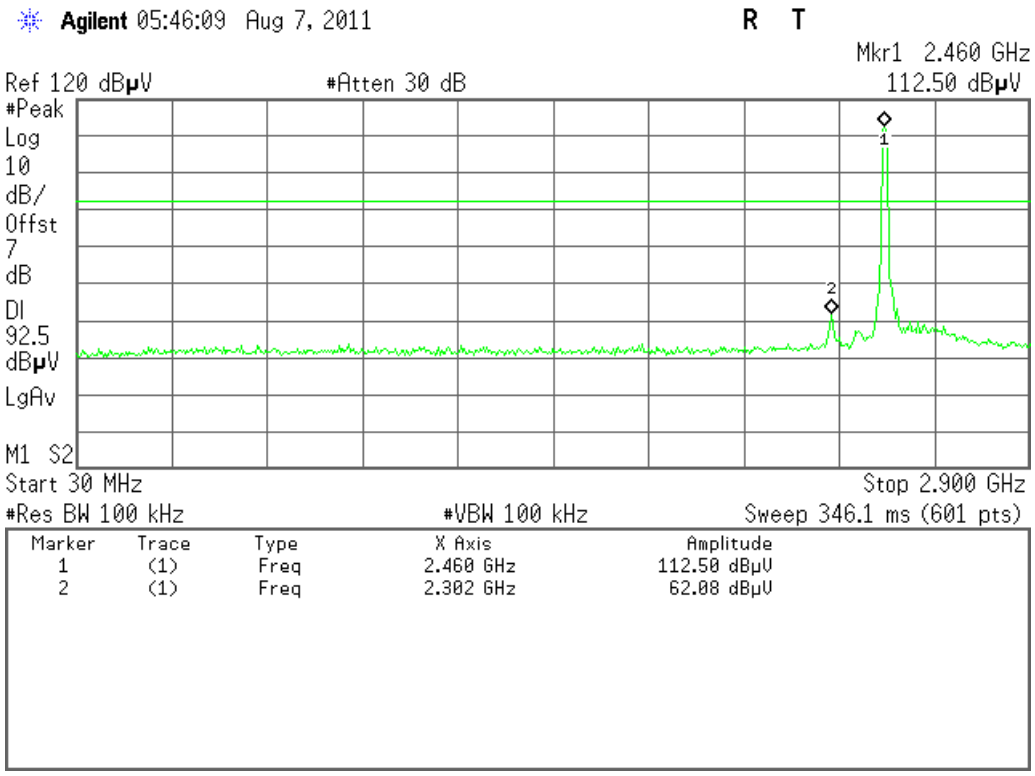
CH Mid (30MHz ~2.9GHz)



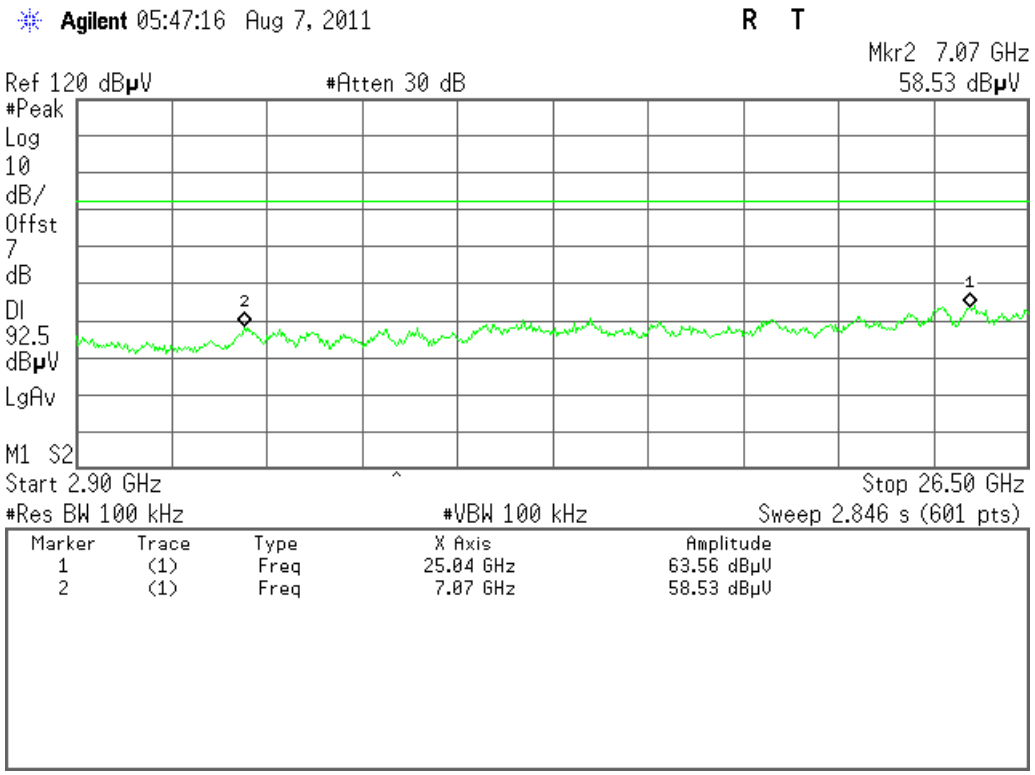
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)

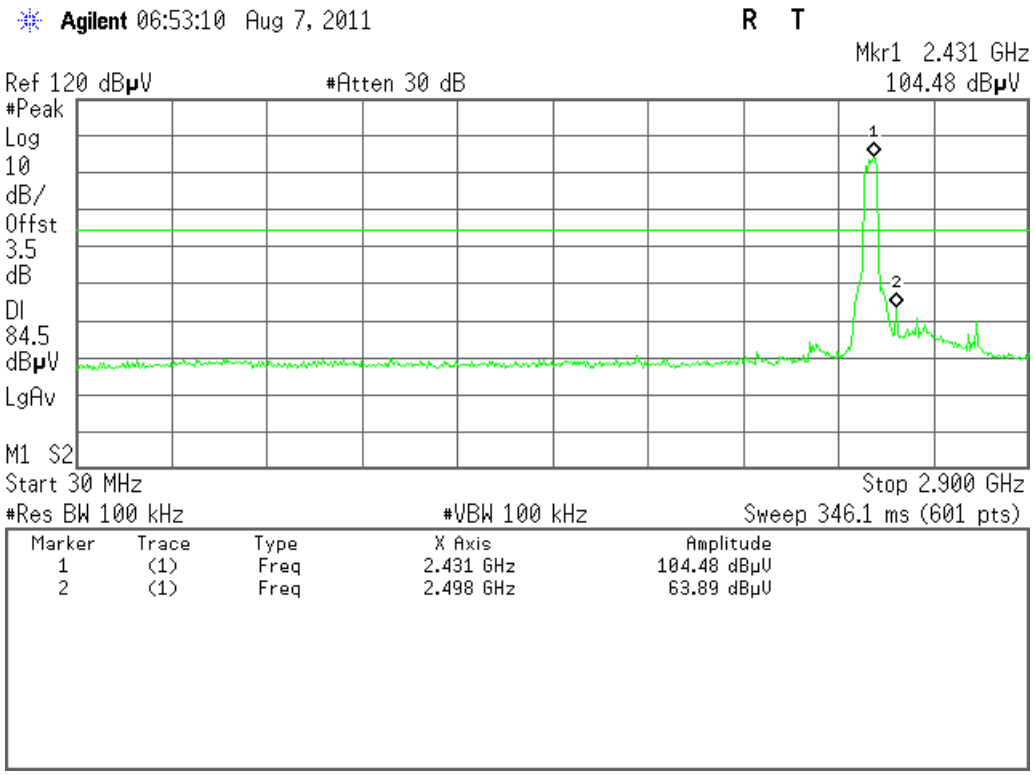


CH High(2.9GHz ~26.5GHz)

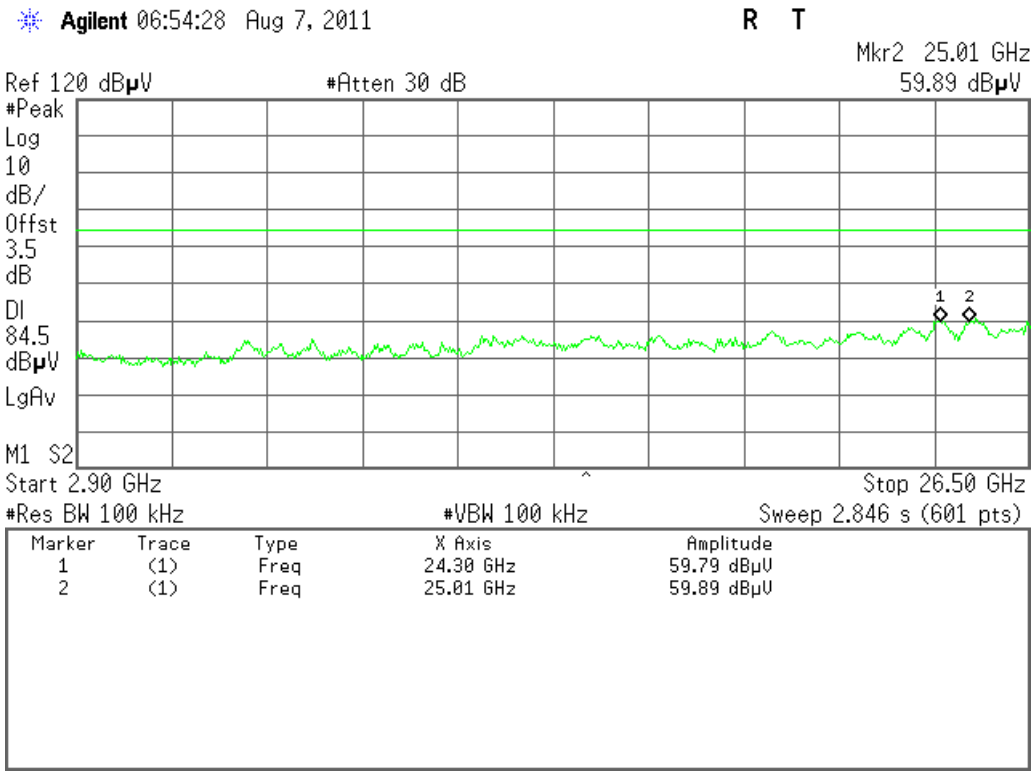


(IEEE 802.11n HT40 MHz mode Antenna1)

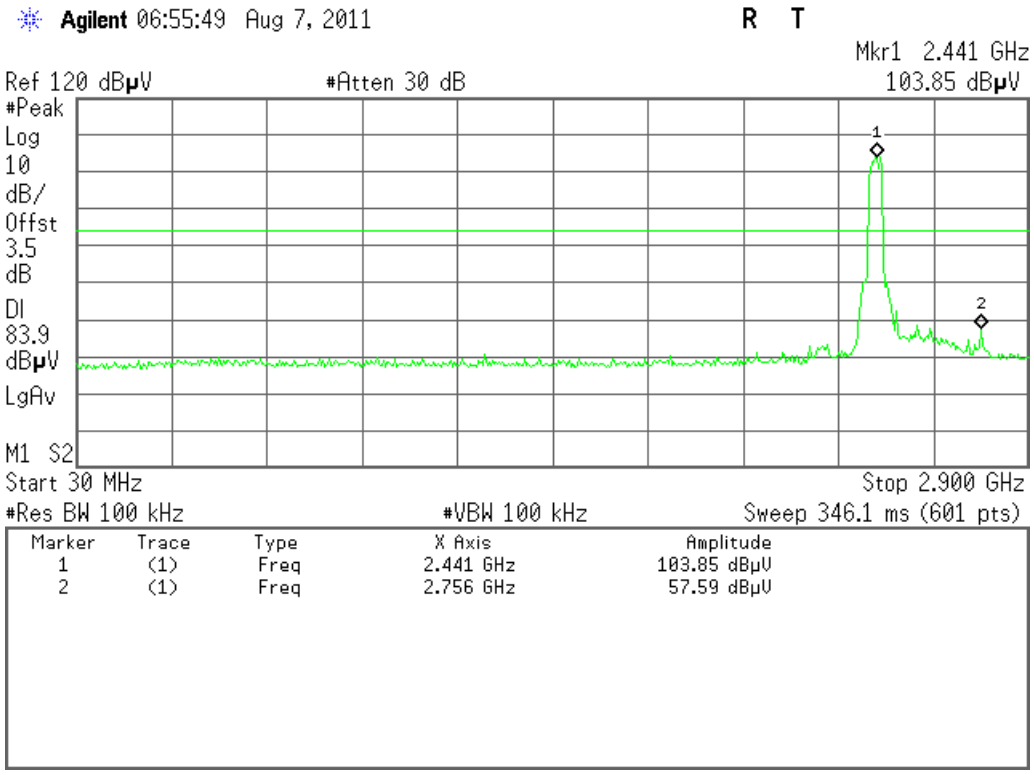
CH Low (30MHz ~2.9GHz)



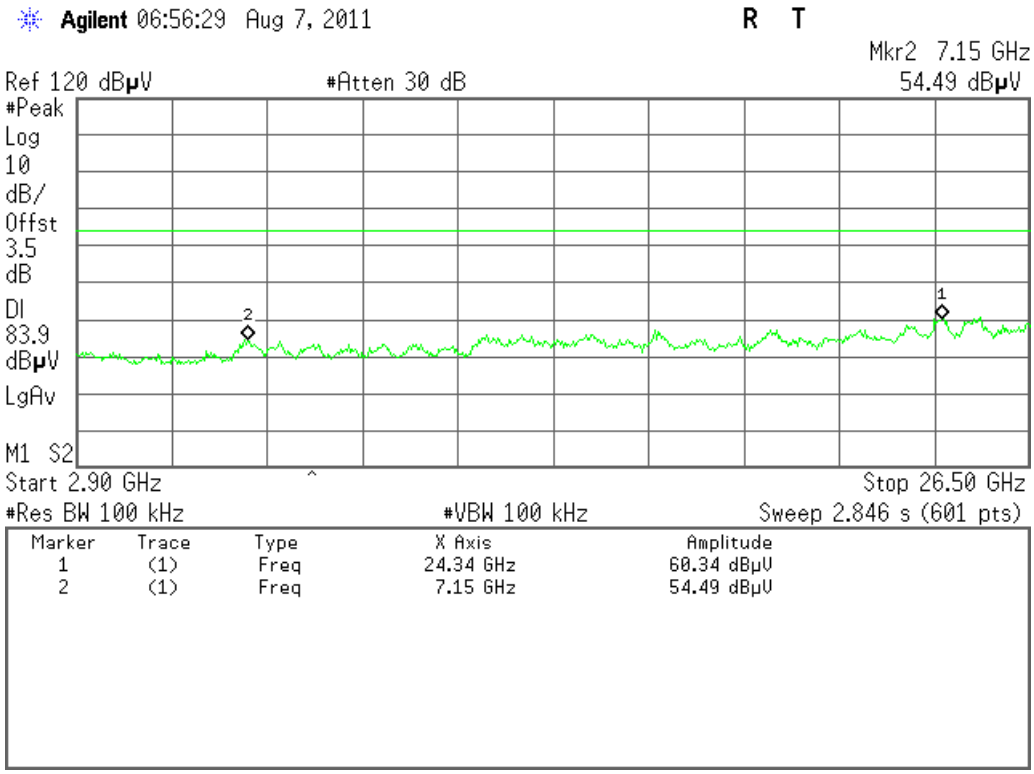
CH Low (2.9GHz ~26.5GHz)



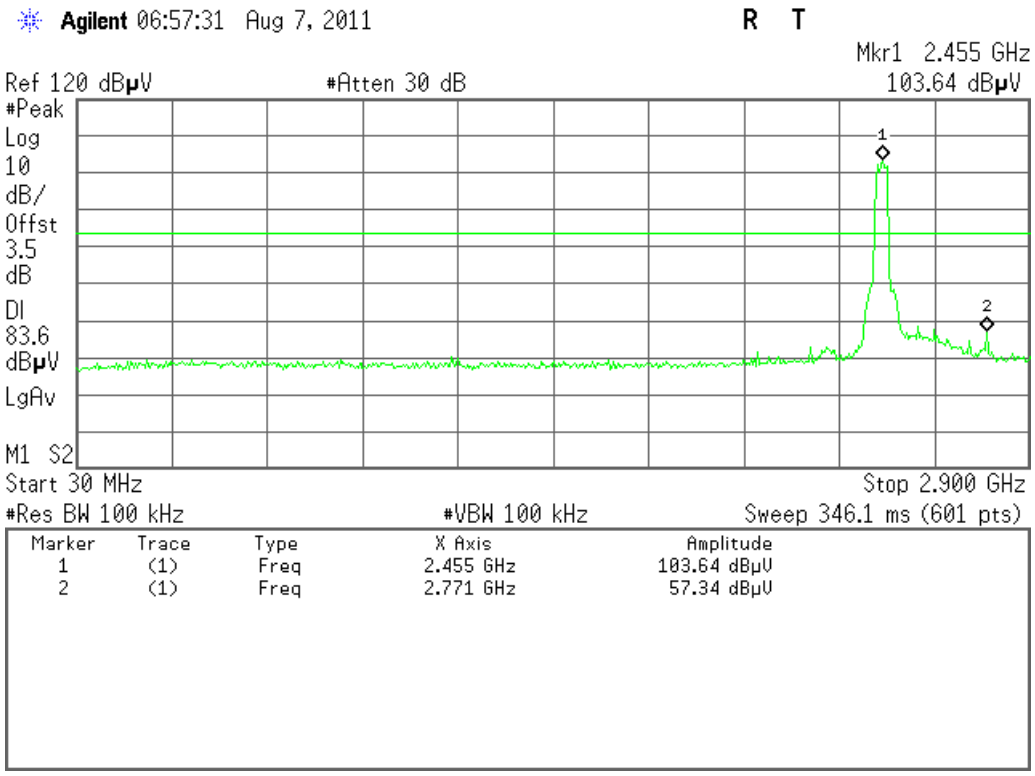
CH Mid (30MHz ~2.9GHz)



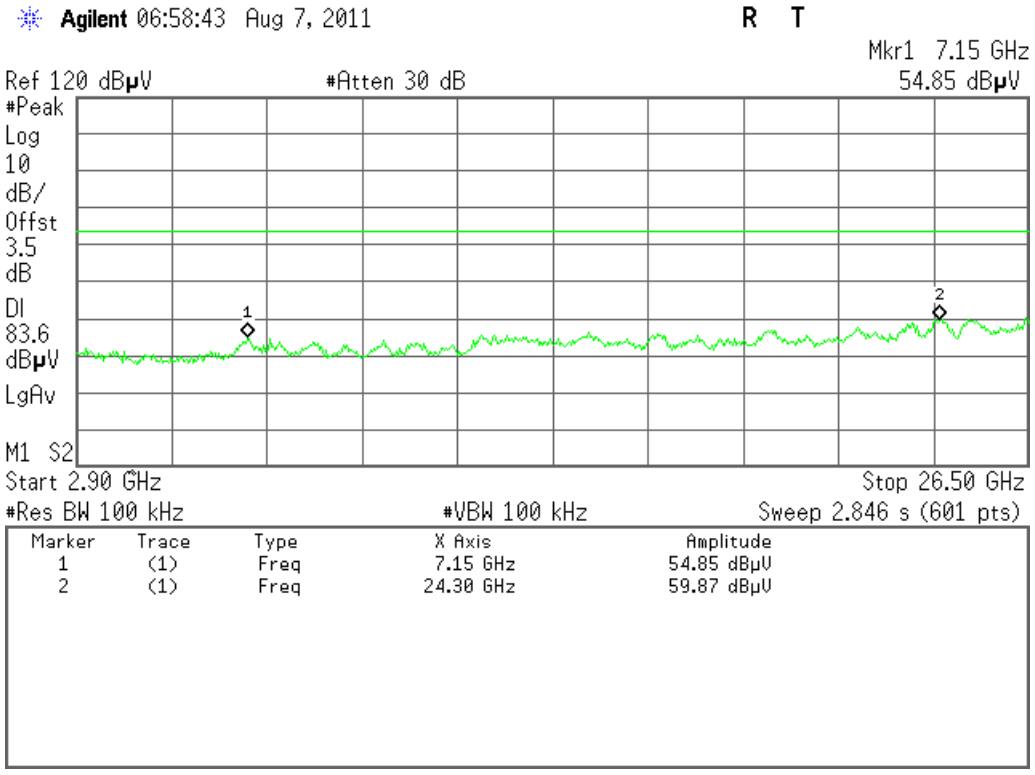
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)

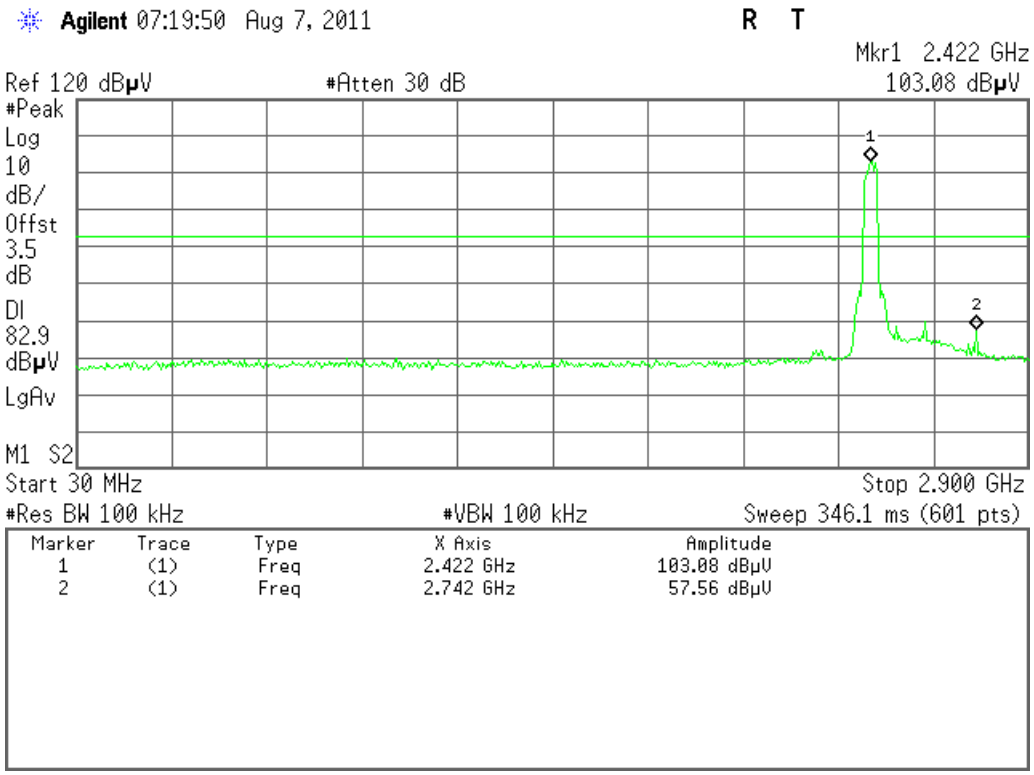


CH High(2.9GHz ~26.5GHz)

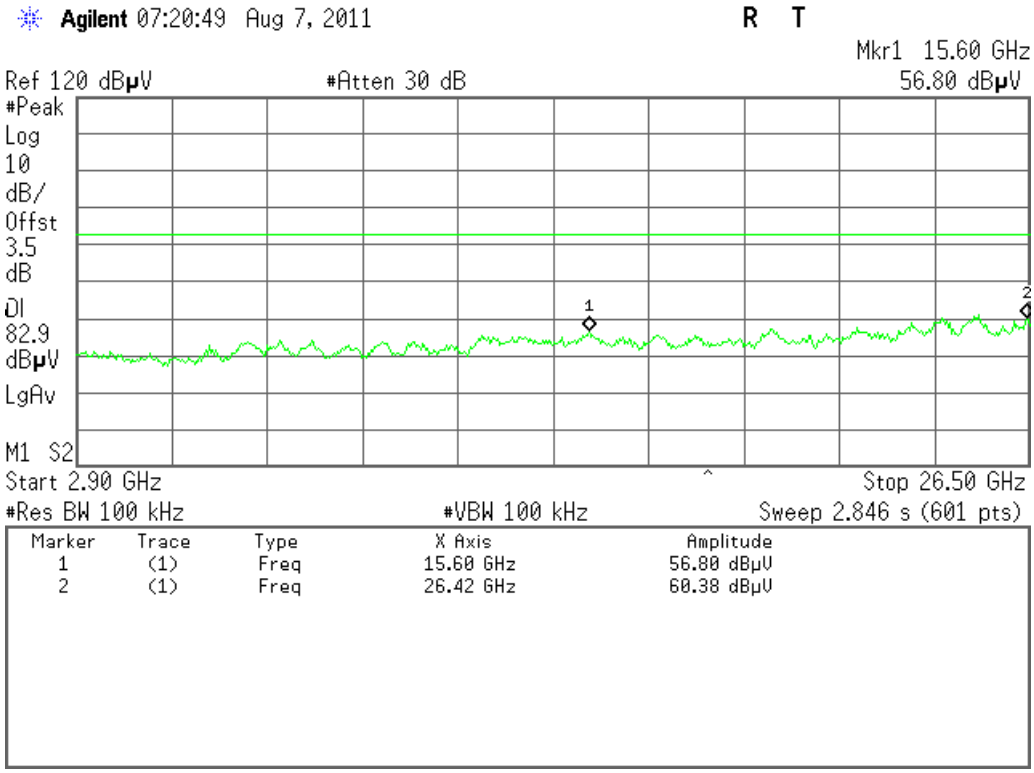


(IEEE 802.11n HT40 MHz mode Antenna 2)

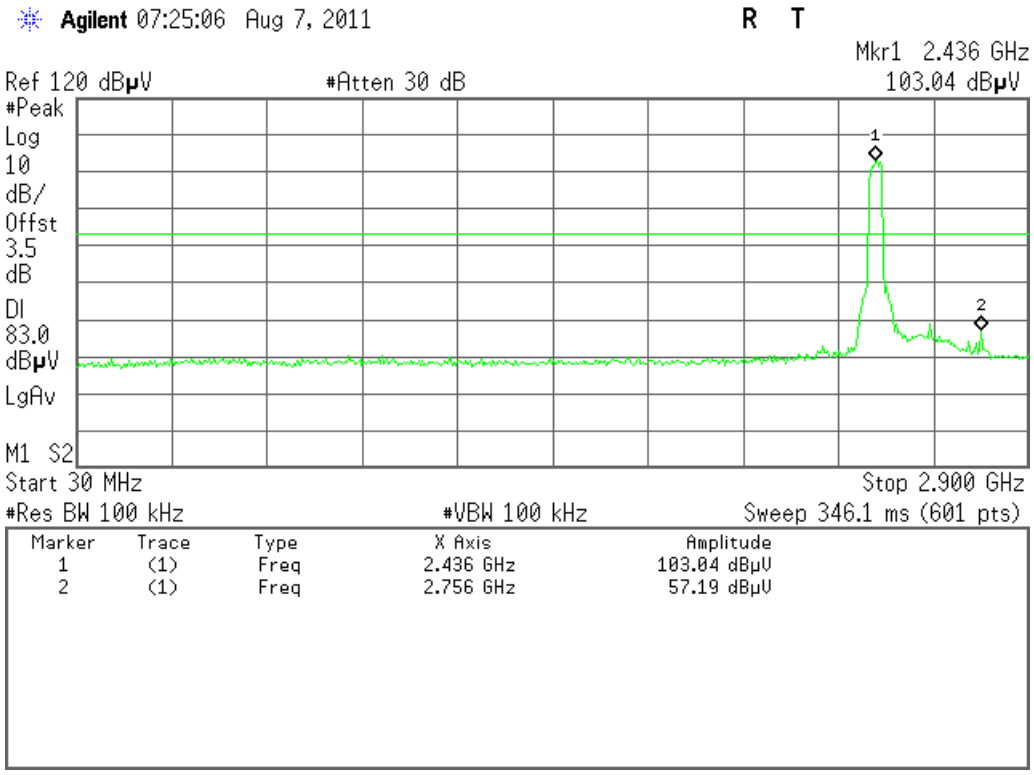
CH Low (30MHz ~2.9GHz)



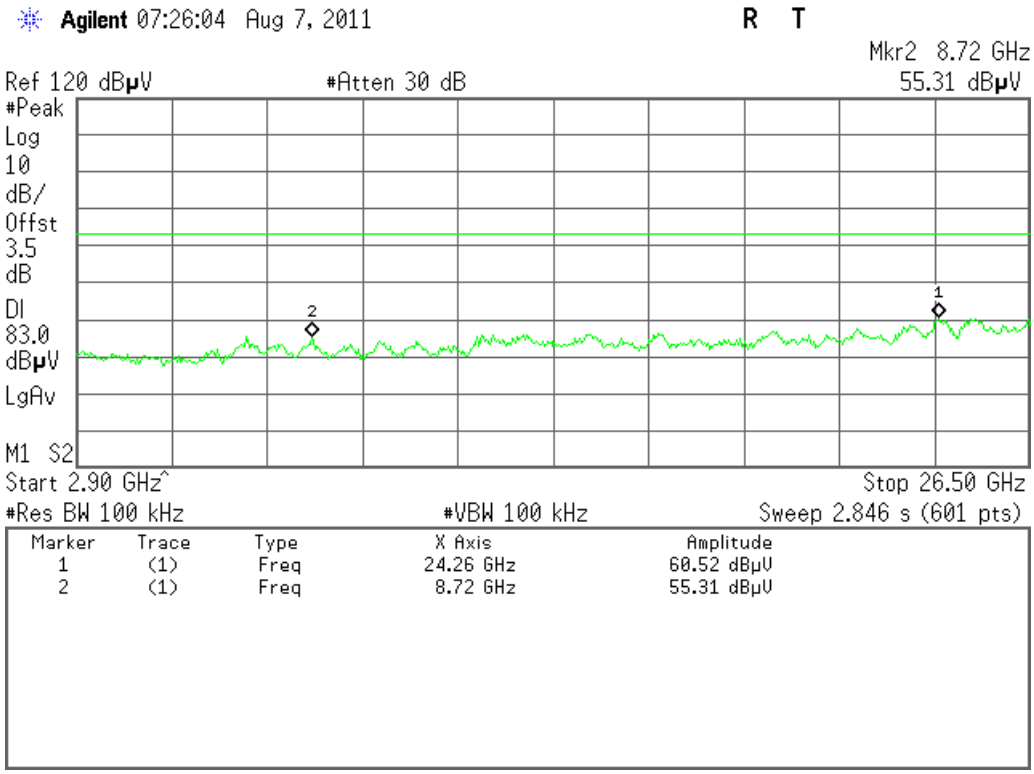
CH Low (2.9GHz ~26.5GHz)



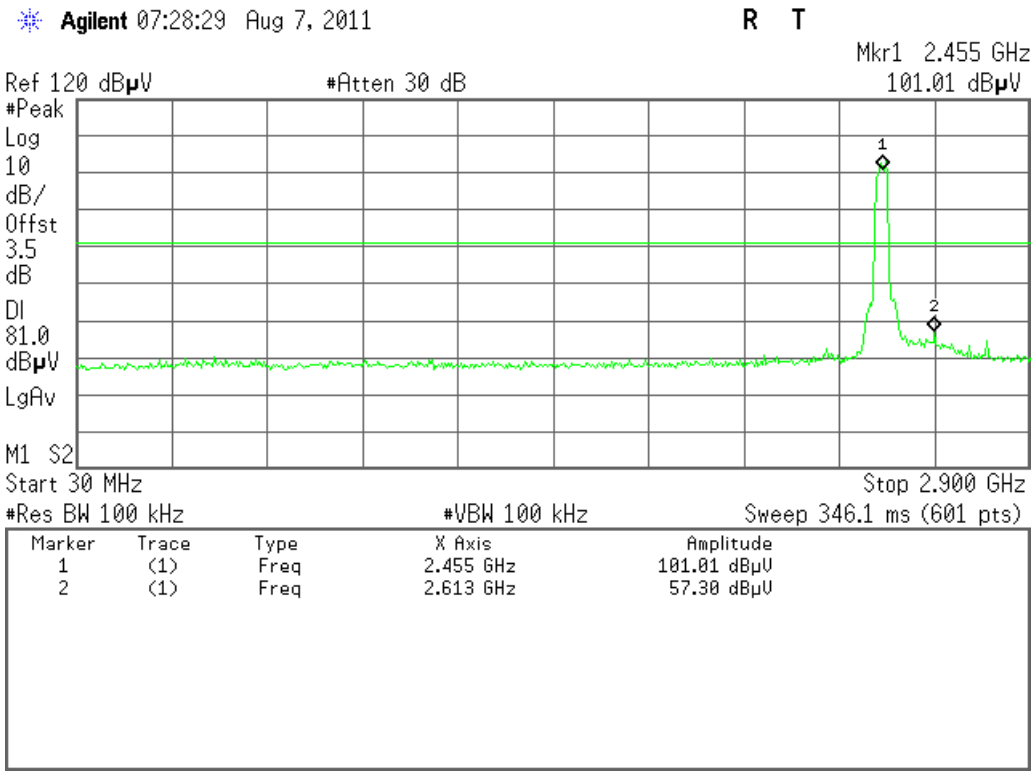
CH Mid (30MHz ~2.9GHz)



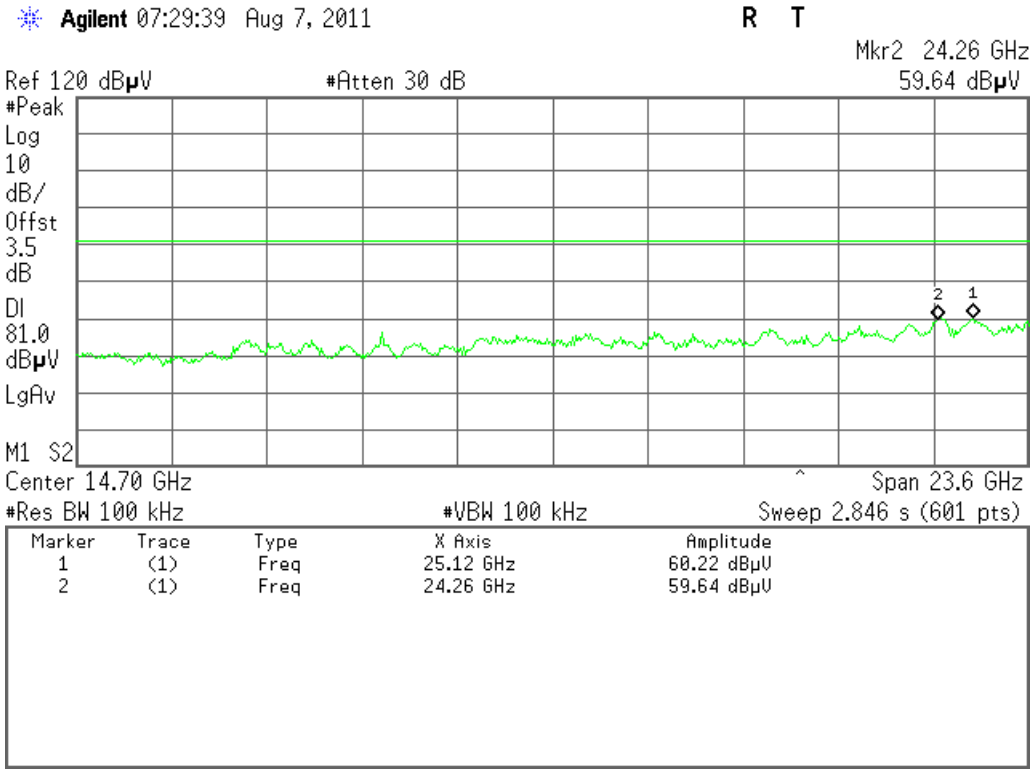
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)

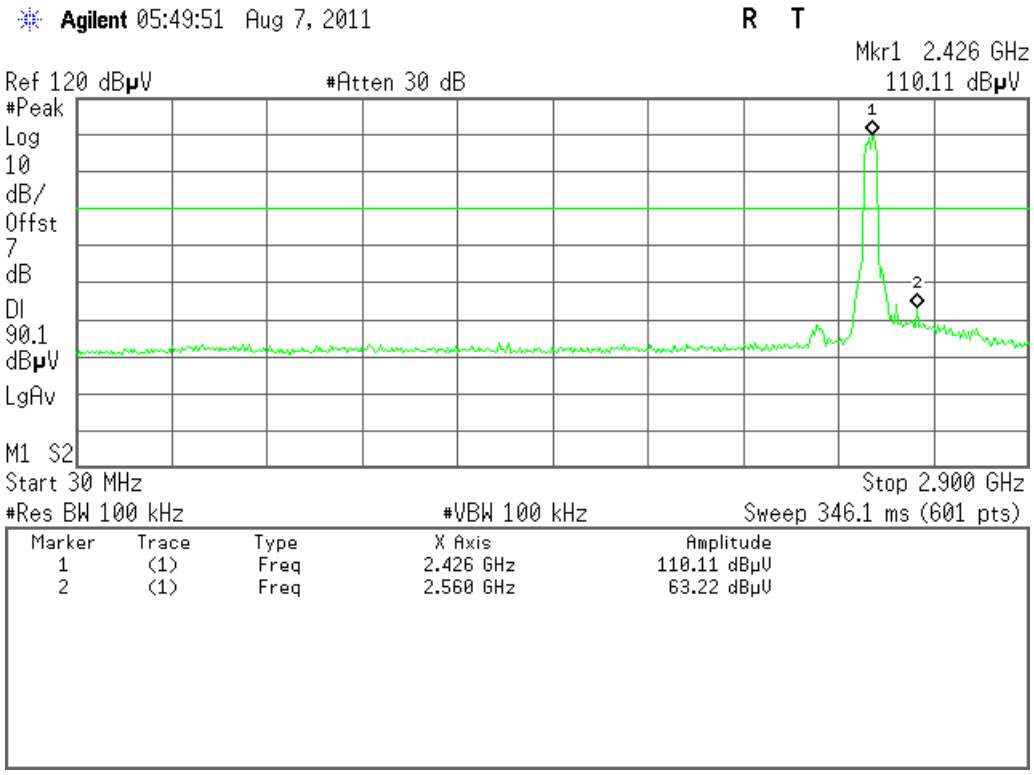


CH High(2.9GHz ~26.5GHz)

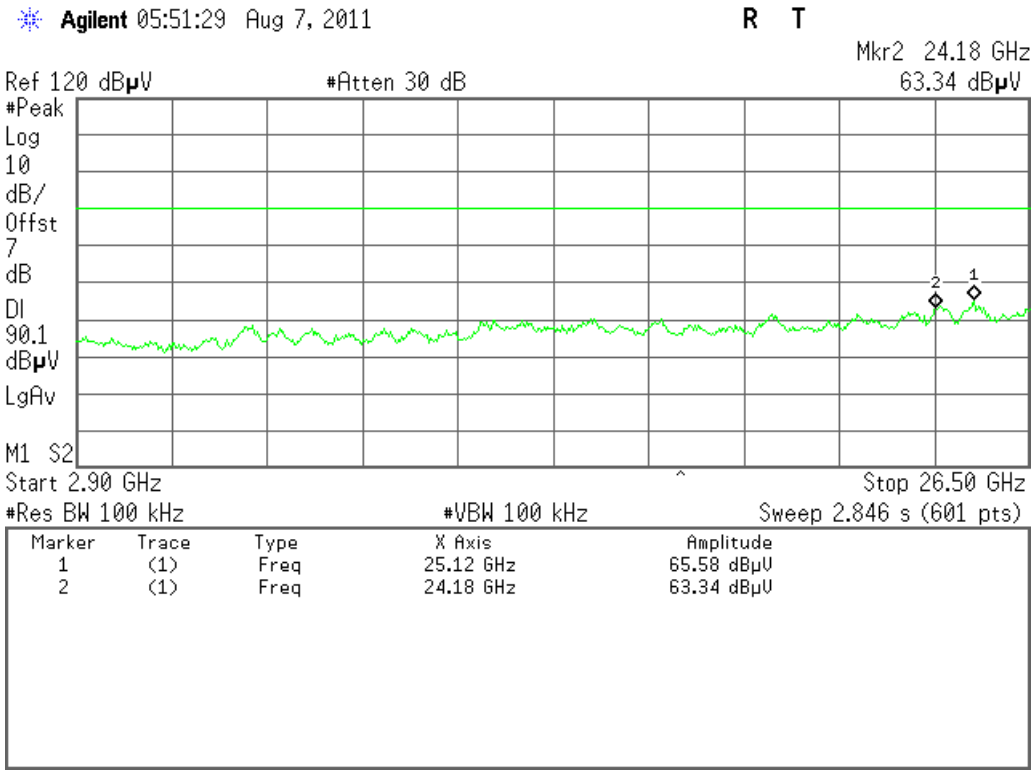


(IEEE 802.11n HT40 MHz mode Combine)

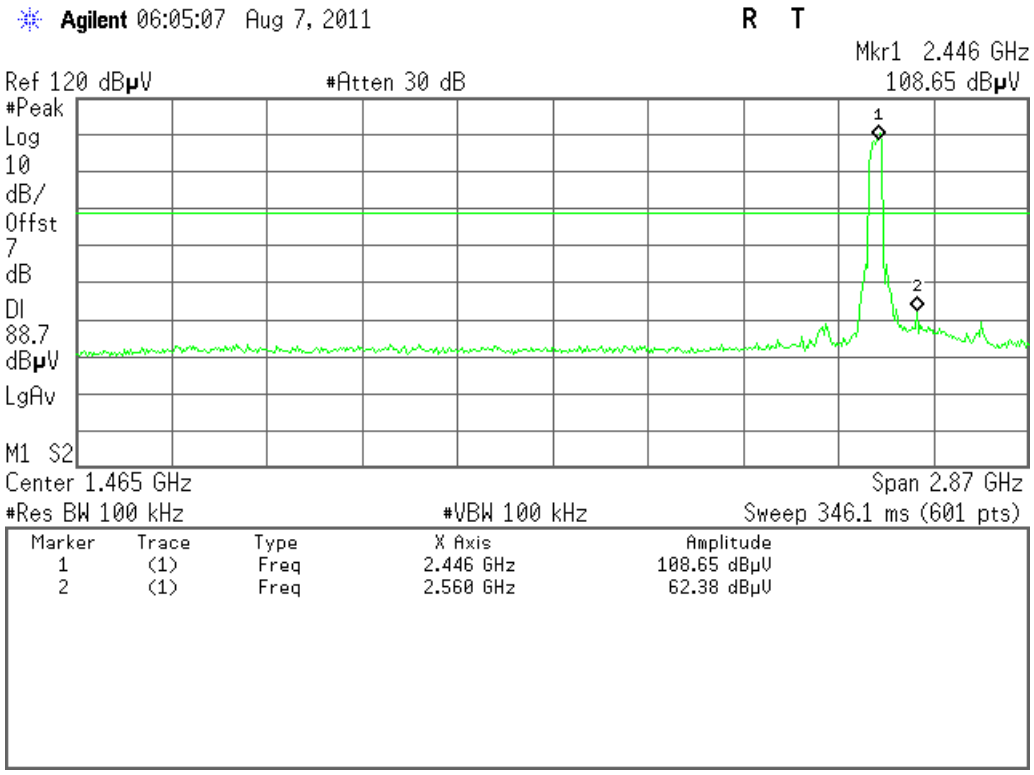
CH Low (30MHz ~2.9GHz)



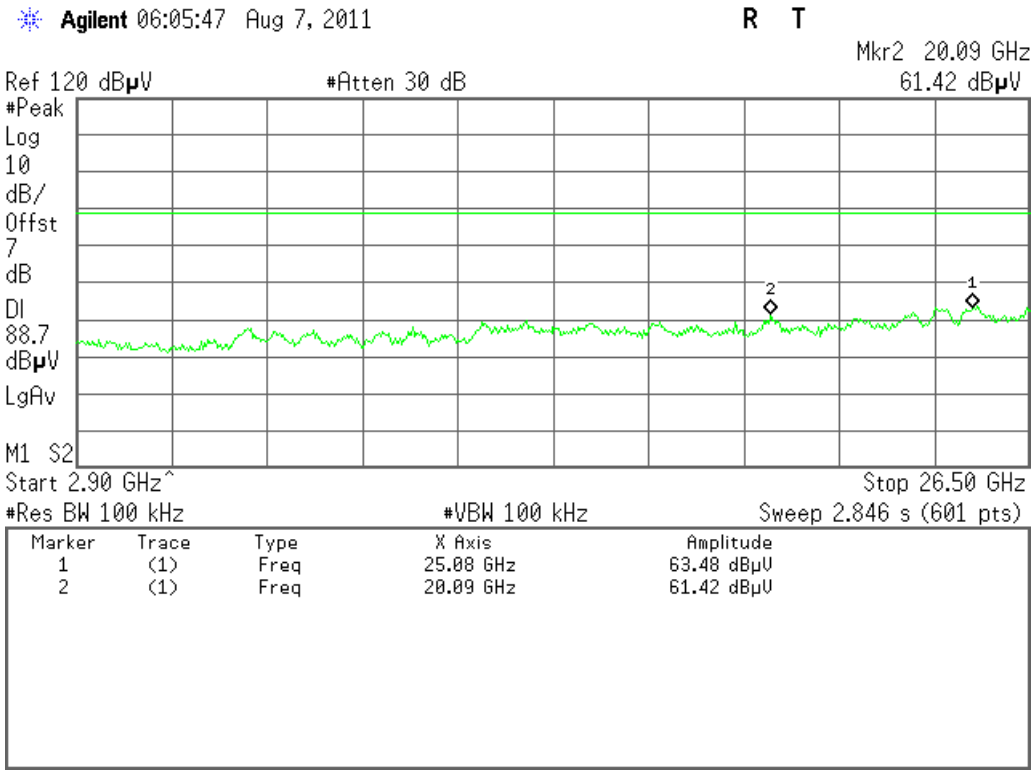
CH Low (2.9GHz ~26.5GHz)



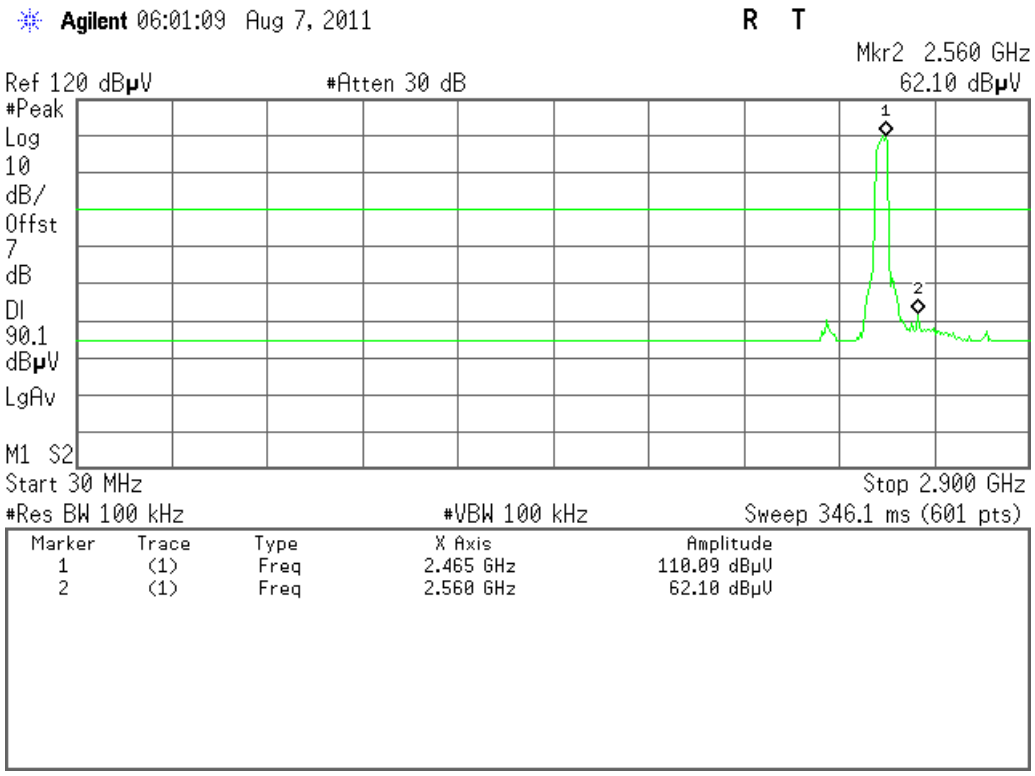
CH Mid (30MHz ~2.9GHz)



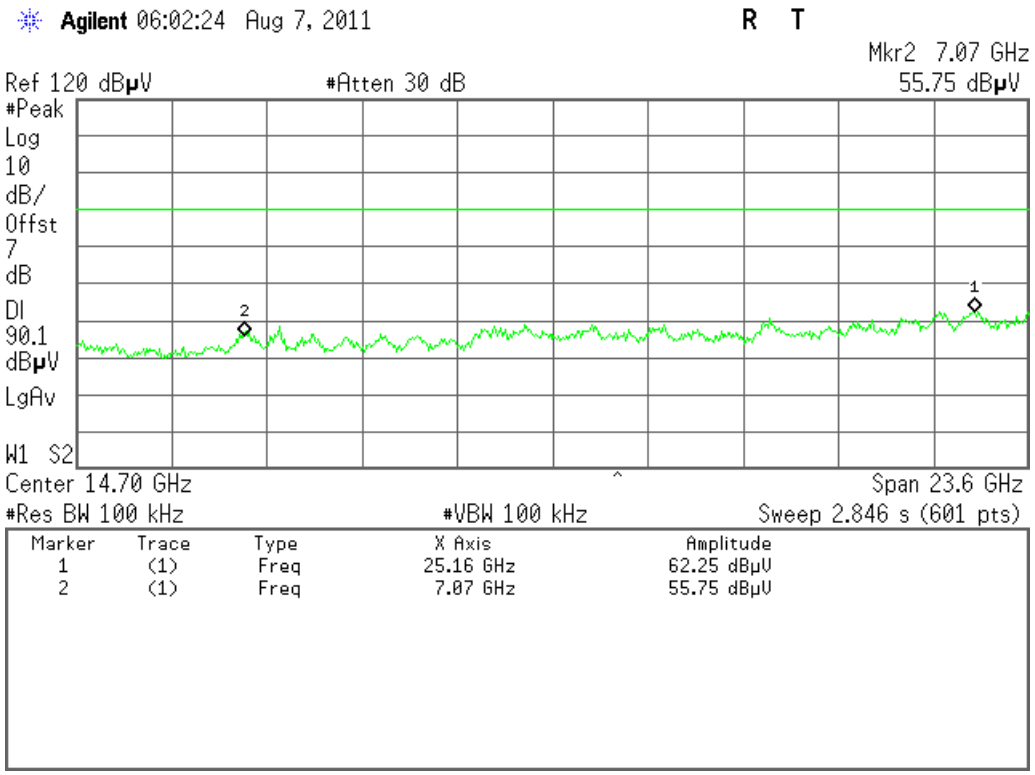
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)



CH High(2.9GHz ~26.5GHz)



7.2.4.1. LIMITS OF RADIATED EMISSIONS MEASUREMENT

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

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

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

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

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

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

7.2.4.2. TEST INSTRUMENTS

Radiated Emission Test Site 966（2）					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	03/19/2011	03/19/2012
Amplifier	MITEQ	AM-1604-3000	1411843	03/18/2011	03/18/2012
Turn Table	EMCO	2081-1.21	N/A	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
High Noise Amplifier	Agilent	8449B	3008A01838	03/18/2011	03/18/2012
Bilog Antenna	SCHAFFNER	CBL6143	5082	06/03/2011	06/03/2012
Horn Antenna	SCHWARZBECK	BBHA9120D	D286	03/19/2011	03/19/2012
Loop Antenna	A、R、A	PLA-1030/B	1029	03/19/2011	03/19/2012
Temp. / Humidity Meter	VICTOR	VC230	N/A	03/31/2011	03/31/2012
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Test S/W	FARAD	LZ-RF / CCS-SZ-3A2			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The FCC Site Registration number is 101879.

3. N.C.R = No Calibration Required.

7.2.4.3. TEST PROCEDURE (please refer to measurement standard)

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:

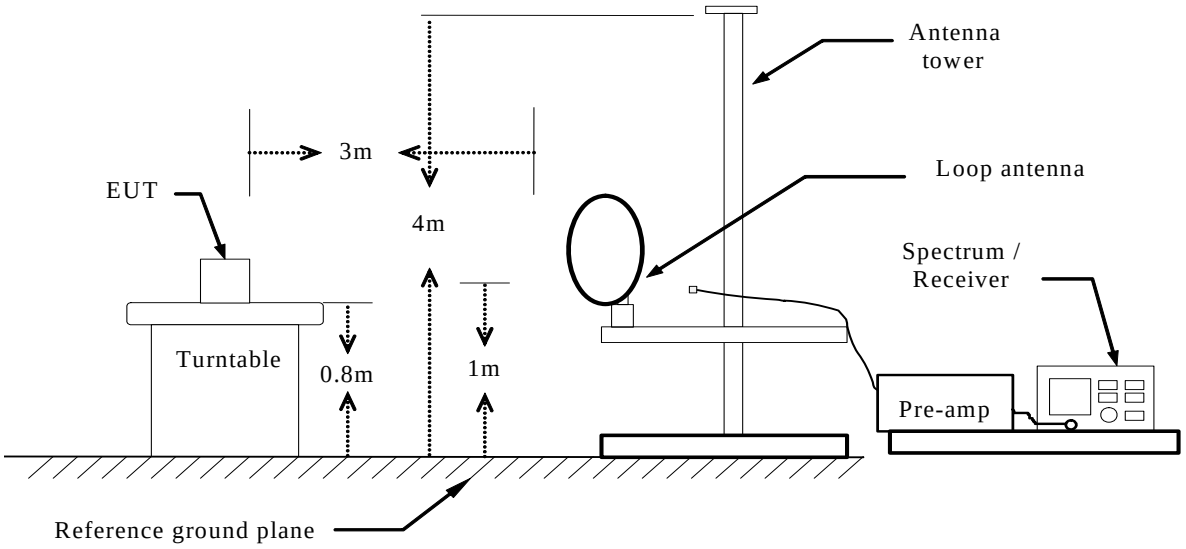
   (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

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

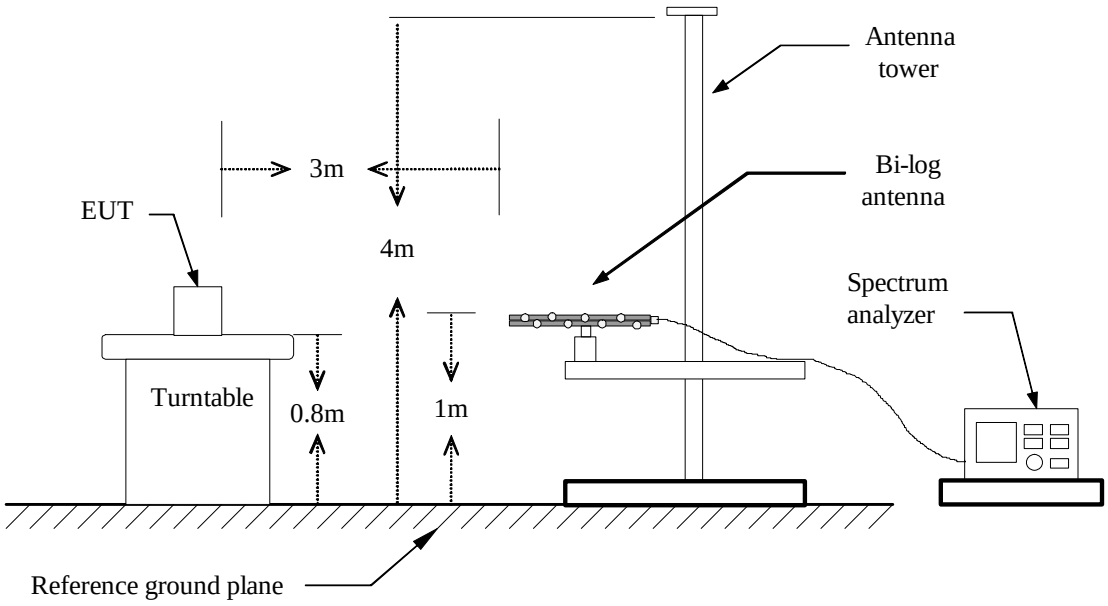
7. Repeat above procedures until the measurements for all frequencies are complete.

7.2.4.4. TEST SETUP

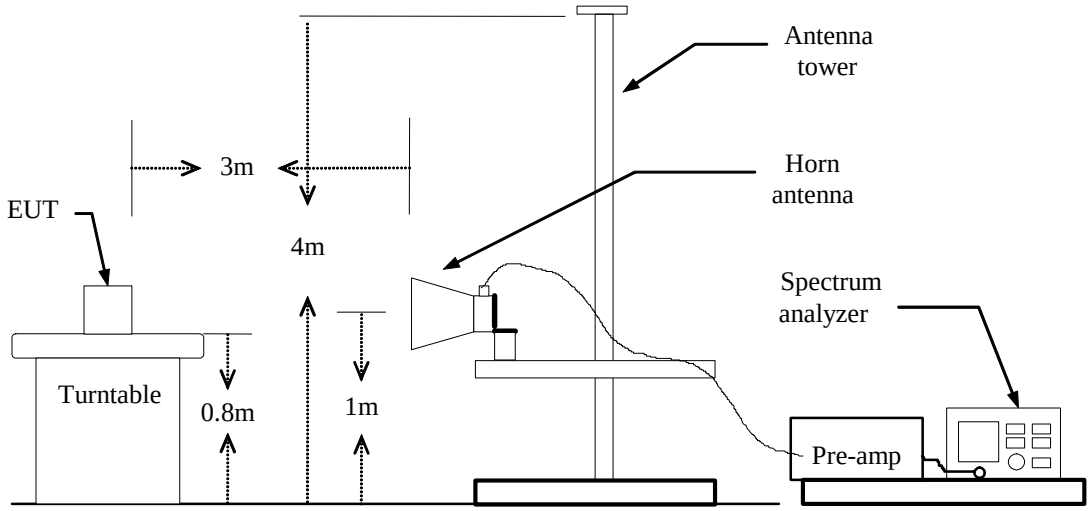
Below 30MHz



Below 1 GHz



Above 1 GHz



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

7.2.4.5. Data Sample:

Below 1GHz

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
XXX.XXXX	36.37	-12.20	24.17	40.00	-15.83	V	QP

Frequency (MHz) = Emission frequency in MHz
Reading (dBuV) = Uncorrected Analyzer / Receiver reading
Correct Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain
Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)
Limit (dBuV/m) = Limit stated in standard
Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)
Q.P. = Quasi-peak Reading

Above 1GHz

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
XXXX.XXXX	62.09	-11.42	50.67	74.00	-23.33	V	Peak
XXXX.XXXX	49.78	-11.42	38.36	54.00	-15.64	V	AVG

Frequency (MHz) = Emission frequency in MHz
Reading (dBuV) = Uncorrected Analyzer / Receiver reading
Correction Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain
Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)
Limit (dBuV/m) = Limit stated in standard
Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)
Peak = Peak Reading
AVG = Average Reading

Calculation Formula

Margin (dB) = Result (dBuV/m) – Limits (dBuV/m)
Result (dBuV/m) = Reading (dBuV) + Correction Factor

7.2.4.6. TEST RESULTS

Below 1 GHz

Operation Mode: Normal Link
Temperature: 24°C
Humidity: 52% RH

Test Date: July 28, 2011
Tested by: Sunday Hu
Polarity: Vertical

(The chart below shows the highest readings taken from the final data.)

No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	91.1100	36.09	-13.55	22.54	30.00	-7.46	366	101	QP
2	250.1900	41.36	-8.55	32.81	37.00	-4.19	238	100	QP
3	375.3200	32.19	-5.19	27.00	37.00	-10.00	315	100	QP
4	500.4500	33.92	-1.88	32.04	37.00	-4.96	247	300	QP
5	625.5800	26.92	0.27	27.19	37.00	-9.81	118	300	QP
6	875.8400	25.76	4.06	29.82	37.00	-7.18	146	200	QP

Note: 1. The other emission levels were very low against the limit.

Operation Mode: Normal Link
Temperature: 24°C
Humidity: 52% RH

Test Date: July 28, 2011
Tested by: Sunday Hu
Polarity: Horizontal

No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	250.1900	41.93	-9.80	32.13	37.00	-4.87	164	300	QP
2	375.3200	36.27	-6.18	30.09	37.00	-6.91	258	300	QP
3	500.0300	39.40	-4.08	35.32	37.00	-1.68	350	200	QP
4	600.3600	32.18	-2.27	29.91	37.00	-7.09	119	291	QP
5	750.7100	28.18	-0.11	28.07	37.00	-8.93	170	291	QP
6	875.8400	30.67	1.86	32.53	37.00	-4.47	168	300	QP

Note: 1. The other emission levels were very low against the limit.

Above 1 GHz

(Antenna 1)

Operation Mode:	TX / IEEE 802.11b / CH Low	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	48.75	-10.42	38.33	74.00	-35.67	V	Peak
1630.0000	49.79	-10.28	39.51	74.00	-34.49	V	Peak
2166.6667	48.02	-9.37	38.65	74.00	-35.35	V	Peak
2936.6667	47.42	-6.39	41.03	74.00	-32.97	V	Peak
3730.0000	46.61	-3.85	42.76	74.00	-31.24	V	Peak
5596.6667	45.24	1.49	46.73	74.00	-27.27	V	Peak
1128.3333	50.61	-11.61	39.00	74.00	-35.00	H	Peak
1373.3333	50.30	-10.42	39.88	74.00	-34.12	H	Peak
1630.0000	48.92	-10.28	38.64	74.00	-35.36	H	Peak
2843.3333	48.26	-7.03	41.23	74.00	-32.77	H	Peak
4826.6667	48.12	-0.56	47.56	74.00	-26.44	H	Peak
6471.6667	46.47	3.86	50.33	74.00	-23.67	H	Peak

REMARKS:

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

(Antenna 1)

Operation Mode:	TX / IEEE 802.11b / CH Mid	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	48.13	-10.42	37.71	74.00	-36.29	V	Peak
1630.0000	48.88	-10.28	38.60	74.00	-35.40	V	Peak
2108.3333	47.67	-9.26	38.41	74.00	-35.59	V	Peak
2528.3333	48.49	-9.46	39.03	74.00	-34.97	V	Peak
2995.0000	47.84	-5.99	41.85	74.00	-32.15	V	Peak
3846.6667	46.25	-3.81	42.44	74.00	-31.56	V	Peak
1373.3333	50.55	-10.42	40.13	74.00	-33.87	H	Peak
2166.6667	48.01	-9.37	38.64	74.00	-35.36	H	Peak
2843.3333	47.52	-7.03	40.49	74.00	-33.51	H	Peak
3695.0000	45.37	-3.84	41.53	74.00	-32.47	H	Peak
4535.0000	44.68	-1.92	42.76	74.00	-31.24	H	Peak
4908.3333	45.62	-0.30	45.32	74.00	-28.68	H	Peak

REMARKS:

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

(Antenna 1)

Operation Mode:	TX / IEEE 802.11b / CH High	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1501.6667	48.06	-10.31	37.75	74.00	-36.25	V	Peak
1630.0000	49.52	-10.28	39.24	74.00	-34.76	V	Peak
2108.3333	47.79	-9.26	38.53	74.00	-35.47	V	Peak
2831.6667	48.37	-7.10	41.27	74.00	-32.73	V	Peak
3228.3333	46.55	-5.43	41.12	74.00	-32.88	V	Peak
4640.0000	44.66	-1.54	43.12	74.00	-30.88	V	Peak
1128.3333	48.99	-11.61	37.38	74.00	-36.62	H	Peak
1373.3333	50.55	-10.42	40.13	74.00	-33.87	H	Peak
1630.0000	49.47	-10.28	39.19	74.00	-34.81	H	Peak
1991.6667	47.08	-9.31	37.77	74.00	-36.23	H	Peak
2808.3333	47.30	-7.26	40.04	74.00	-33.96	H	Peak
3718.3333	46.60	-3.85	42.75	74.00	-31.25	H	Peak

REMARKS:

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

(Antenna 1)

Operation Mode:	TX / IEEE 802.11g / CH Low	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	48.01	-10.42	37.59	74.00	-36.41	V	Peak
1630.0000	49.79	-10.28	39.51	74.00	-34.49	V	Peak
2003.3333	47.09	-9.28	37.81	74.00	-36.19	V	Peak
2843.3333	47.33	-7.03	40.30	74.00	-33.70	V	Peak
3216.6667	46.90	-5.45	41.45	74.00	-32.55	V	Peak
5153.3333	44.25	0.45	44.70	74.00	-29.30	V	Peak
1128.3333	48.85	-11.61	37.24	74.00	-36.76	H	Peak
1373.3333	49.48	-10.42	39.06	74.00	-34.94	H	Peak
1630.0000	48.65	-10.28	38.37	74.00	-35.63	H	Peak
2155.0000	47.95	-9.35	38.60	74.00	-35.40	H	Peak
2831.6667	46.71	-7.10	39.61	74.00	-34.39	H	Peak
3228.3333	47.02	-5.43	41.59	74.00	-32.41	H	Peak

REMARKS:

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

(Antenna 1)

Operation Mode: TX / IEEE 802.11g / CH Mid **Test Date:** July 28, 2011

Temperature: 24°C **Tested by:** Sunday Hu

Humidity: 52 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1280.0000	47.31	-11.00	36.31	74.00	-37.69	V	Peak
1630.0000	49.49	-10.28	39.21	74.00	-34.79	V	Peak
2003.3333	47.33	-9.28	38.05	74.00	-35.95	V	Peak
2446.6667	49.18	-9.75	39.43	74.00	-34.57	V	Peak
3298.3333	46.96	-5.28	41.68	74.00	-32.32	V	Peak
3998.3333	46.51	-3.57	42.94	74.00	-31.06	V	Peak
1128.3333	48.67	-11.61	37.06	74.00	-36.94	H	Peak
1373.3333	51.37	-10.42	40.95	74.00	-33.05	H	Peak
1630.0000	47.79	-10.28	37.51	74.00	-36.49	H	Peak
2155.0000	47.24	-9.35	37.89	74.00	-36.11	H	Peak
2528.3333	48.44	-9.46	38.98	74.00	-35.02	H	Peak
2820.0000	47.76	-7.18	40.58	74.00	-33.42	H	Peak

REMARKS:

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

(Antenna 1)

Operation Mode:	TX / IEEE 802.11g / CH High	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	47.88	-10.42	37.46	74.00	-36.54	V	Peak
1525.0000	47.31	-10.31	37.00	74.00	-37.00	V	Peak
2166.6667	47.40	-9.37	38.03	74.00	-35.97	V	Peak
2948.3333	46.43	-6.31	40.12	74.00	-33.88	V	Peak
3228.3333	46.05	-5.43	40.62	74.00	-33.38	V	Peak
4126.6667	45.28	-3.16	42.12	74.00	-31.88	V	Peak
1128.3333	48.19	-11.61	36.58	74.00	-37.42	H	Peak
1373.3333	49.46	-10.42	39.04	74.00	-34.96	H	Peak
1630.0000	48.91	-10.28	38.63	74.00	-35.37	H	Peak
2003.3333	47.53	-9.28	38.25	74.00	-35.75	H	Peak
2796.6667	47.93	-7.34	40.59	74.00	-33.41	H	Peak
3835.0000	46.14	-3.83	42.31	74.00	-31.69	H	Peak

REMARKS:

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

(Antenna 2)

Operation Mode:	TX / IEEE 802.11g / CH Low	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1268.3333	48.81	-11.06	37.75	74.00	-36.25	V	Peak
1373.3333	49.42	-10.42	39.00	74.00	-35.00	V	Peak
1630.0000	48.28	-10.28	38.00	74.00	-36.00	V	Peak
2003.3333	48.35	-9.28	39.07	74.00	-34.93	V	Peak
2843.3333	47.48	-7.03	40.45	74.00	-33.55	V	Peak
3753.3333	45.92	-3.86	42.06	74.00	-31.94	V	Peak
1373.3333	47.02	-10.42	36.60	74.00	-37.40	H	Peak
1898.3333	46.47	-9.70	36.77	74.00	-37.23	H	Peak
2166.6667	46.70	-9.37	37.33	74.00	-36.67	H	Peak
2540.0000	47.52	-9.32	38.20	74.00	-35.80	H	Peak
2831.6667	47.20	-7.10	40.10	74.00	-33.90	H	Peak
6238.3333	45.40	3.79	49.19	74.00	-24.81	H	Peak

REMARKS:

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

(Antenna 2)

Operation Mode: TX / IEEE 802.11g / CH Mid **Test Date:** July 28, 2011

Temperature: 24°C **Tested by:** Sunday Hu

Humidity: 52 % RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	48.48	-10.42	38.06	74.00	-35.94	V	Peak
1630.0000	50.03	-10.28	39.75	74.00	-34.25	V	Peak
2003.3333	48.73	-9.28	39.45	74.00	-34.55	V	Peak
2995.0000	45.78	-5.99	39.79	74.00	-34.21	V	Peak
3613.3333	45.67	-3.81	41.86	74.00	-32.14	V	Peak
4780.0000	45.88	-0.76	45.12	74.00	-28.88	V	Peak
1373.3333	50.15	-10.42	39.73	74.00	-34.27	H	Peak
1630.0000	48.61	-10.28	38.33	74.00	-35.67	H	Peak
2178.3333	47.79	-9.39	38.40	74.00	-35.60	H	Peak
2843.3333	47.20	-7.03	40.17	74.00	-33.83	H	Peak
3893.3333	45.46	-3.74	41.72	74.00	-32.28	H	Peak
4523.3333	45.97	-1.95	44.02	74.00	-29.98	H	Peak

REMARKS:

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

(Antenna 2)

Operation Mode:	TX / IEEE 802.11g / CH High	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52 % RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	47.86	-10.42	37.44	74.00	-36.56	V	Peak
1630.0000	49.85	-10.28	39.57	74.00	-34.43	V	Peak
2003.3333	48.70	-9.28	39.42	74.00	-34.58	V	Peak
2995.0000	45.82	-5.99	39.83	74.00	-34.17	V	Peak
3613.3333	45.75	-3.81	41.94	74.00	-32.06	V	Peak
5060.0000	45.10	0.17	45.27	74.00	-28.73	V	Peak
1373.3333	49.74	-10.42	39.32	74.00	-34.68	H	Peak
1630.0000	48.42	-10.28	38.14	74.00	-35.86	H	Peak
2166.6667	47.92	-9.37	38.55	74.00	-35.45	H	Peak
2785.0000	46.90	-7.42	39.48	74.00	-34.52	H	Peak
3170.0000	46.33	-5.56	40.77	74.00	-33.23	H	Peak
4873.3333	45.96	-0.42	45.54	74.00	-28.46	H	Peak

REMARKS:

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

(Antenna 1)

Operation Mode:	TX / IEEE 802.11n HT20 MHz / CH Low	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	47.09	-10.42	36.67	74.00	-37.33	V	Peak
2155.0000	47.62	-9.35	38.27	74.00	-35.73	V	Peak
2540.0000	49.20	-9.32	39.88	74.00	-34.12	V	Peak
4768.3333	45.63	-0.83	44.80	74.00	-29.20	V	Peak
6215.0000	45.36	3.81	49.17	74.00	-24.83	V	Peak
6495.0000	44.61	3.92	48.53	74.00	-25.47	V	Peak
1128.3333	49.34	-11.61	37.73	74.00	-36.27	H	Peak
1373.3333	49.46	-10.42	39.04	74.00	-34.96	H	Peak
1630.0000	49.13	-10.28	38.85	74.00	-35.15	H	Peak
2155.0000	47.75	-9.35	38.40	74.00	-35.60	H	Peak
2586.6667	48.02	-8.77	39.25	74.00	-34.75	H	Peak
3228.3333	46.72	-5.43	41.29	74.00	-32.71	H	Peak

REMARKS:

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

(Antenna 1)

Operation Mode:	TX / IEEE 802.11n HT20 MHz / CH Mid	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	48.42	-10.42	38.00	74.00	-36.00	V	Peak
1630.0000	49.69	-10.28	39.41	74.00	-34.59	V	Peak
2003.3333	48.01	-9.28	38.73	74.00	-35.27	V	Peak
2540.0000	48.28	-9.32	38.96	74.00	-35.04	V	Peak
3193.3333	45.71	-5.51	40.20	74.00	-33.80	V	Peak
4266.6667	44.69	-2.71	41.98	74.00	-32.02	V	Peak
1128.3333	49.49	-11.61	37.88	74.00	-36.12	H	Peak
1373.3333	49.12	-10.42	38.70	74.00	-35.30	H	Peak
1630.0000	48.58	-10.28	38.30	74.00	-35.70	H	Peak
2120.0000	47.64	-9.29	38.35	74.00	-35.65	H	Peak
2563.3333	48.19	-9.05	39.14	74.00	-34.86	H	Peak
3765.0000	46.71	-3.87	42.84	74.00	-31.16	H	Peak

REMARKS:

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

(Antenna 1)

Operation Mode:	TX / IEEE 802.11n HT20 MHz / CH High	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	48.02	-10.42	37.60	74.00	-36.40	V	Peak
1630.0000	49.56	-10.28	39.28	74.00	-34.72	V	Peak
2551.6667	48.49	-9.19	39.30	74.00	-34.70	V	Peak
3298.3333	46.31	-5.28	41.03	74.00	-32.97	V	Peak
3613.3333	46.66	-3.81	42.85	74.00	-31.15	V	Peak
4325.0000	46.49	-2.51	43.98	74.00	-30.02	V	Peak
1128.3333	48.78	-11.61	37.17	74.00	-36.83	H	Peak
1373.3333	49.11	-10.42	38.69	74.00	-35.31	H	Peak
1630.0000	49.77	-10.28	39.49	74.00	-34.51	H	Peak
2843.3333	47.28	-7.03	40.25	74.00	-33.75	H	Peak
3205.0000	46.93	-5.48	41.45	74.00	-32.55	H	Peak
3741.6667	45.72	-3.86	41.86	74.00	-32.14	H	Peak

REMARKS:

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

(Antenna 2)

Operation Mode:	TX / IEEE 802.11n HT20 MHz / CH Low	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1268.3333	49.31	-11.06	38.25	74.00	-35.75	V	Peak
1373.3333	50.92	-10.42	40.50	74.00	-33.50	V	Peak
1630.0000	49.28	-10.28	39.00	74.00	-35.00	V	Peak
2003.3333	49.35	-9.28	40.07	74.00	-33.93	V	Peak
2528.3332	48.96	-9.46	39.50	74.00	-34.50	V	Peak
2995.0000	47.90	-5.99	41.91	74.00	-32.09	V	Peak
1373.3333	47.02	-10.42	36.60	74.00	-37.40	H	Peak
2166.6667	46.20	-9.37	36.83	74.00	-37.17	H	Peak
2831.6667	47.20	-7.10	40.10	74.00	-33.90	H	Peak
3753.3332	47.34	-3.86	43.48	74.00	-30.52	H	Peak
4535.0000	44.85	-1.92	42.93	74.00	-31.07	H	Peak
5048.3333	44.78	0.13	44.91	74.00	-29.09	H	Peak

REMARKS:

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

(Antenna 2)

Operation Mode:	TX / IEEE 802.11n HT20 MHz / CH Mid	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	49.98	-10.42	39.56	74.00	-34.44	V	Peak
1630.0000	50.03	-10.28	39.75	74.00	-34.25	V	Peak
2003.3333	50.23	-9.28	40.95	74.00	-33.05	V	Peak
2831.6667	47.83	-7.10	40.73	74.00	-33.27	V	Peak
3380.0000	46.85	-5.11	41.74	74.00	-32.26	V	Peak
4780.0000	45.88	-0.76	45.12	74.00	-28.88	V	Peak
1630.0000	49.61	-10.28	39.33	74.00	-34.67	H	Peak
2178.3332	47.79	-9.39	38.40	74.00	-35.60	H	Peak
3006.6667	45.38	-5.94	39.44	74.00	-34.56	H	Peak
4220.0000	44.66	-2.86	41.80	74.00	-32.20	H	Peak
4896.6665	45.06	-0.34	44.72	74.00	-29.28	H	Peak
5538.3333	44.79	1.35	46.14	74.00	-27.86	H	Peak

REMARKS:

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

(Antenna 2)

Operation Mode:	TX / IEEE 802.11n HT20 MHz / CH High	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1268.3333	47.80	-11.06	36.74	74.00	-37.26	V	Peak
1630.0000	48.35	-10.28	38.07	74.00	-35.93	V	Peak
2003.3333	49.20	-9.28	39.92	74.00	-34.08	V	Peak
2563.3332	49.09	-9.05	40.04	74.00	-33.96	V	Peak
3228.3332	46.55	-5.43	41.12	74.00	-32.88	V	Peak
4138.3333	45.25	-3.13	42.12	74.00	-31.88	V	Peak
1373.3333	48.24	-10.42	37.82	74.00	-36.18	H	Peak
1630.0000	48.42	-10.28	38.14	74.00	-35.86	H	Peak
2166.6667	46.92	-9.37	37.55	74.00	-36.45	H	Peak
3076.6667	45.98	-5.78	40.20	74.00	-33.80	H	Peak
3730.0000	46.55	-3.85	42.70	74.00	-31.30	H	Peak
4873.3333	46.96	-0.42	46.54	74.00	-27.46	H	Peak

REMARKS:

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).*

(Combine)

Operation Mode:	TX / IEEE 802.11n HT20 MHz / CH Low	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	47.93	-10.42	37.51	74.00	-36.49	V	Peak
1501.6667	49.32	-10.31	39.01	74.00	-34.99	V	Peak
1630.0000	49.20	-10.28	38.92	74.00	-35.08	V	Peak
2843.3333	47.55	-7.03	40.52	74.00	-33.48	V	Peak
3986.6667	46.66	-3.59	43.07	74.00	-30.93	V	Peak
4325.0000	45.77	-2.51	43.26	74.00	-30.74	V	Peak
1128.3333	48.93	-11.61	37.32	74.00	-36.68	H	Peak
1373.3333	48.71	-10.42	38.29	74.00	-35.71	H	Peak
1630.0000	48.37	-10.28	38.09	74.00	-35.91	H	Peak
2843.3333	46.75	-7.03	39.72	74.00	-34.28	H	Peak
3730.0000	46.68	-3.85	42.83	74.00	-31.17	H	Peak
4780.0000	45.22	-0.76	44.46	74.00	-29.54	H	Peak

REMARKS:

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).*

(Combine)

Operation Mode:	TX / IEEE 802.11n HT20 MHz / CH Mid	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	49.13	-10.42	38.71	74.00	-35.29	V	Peak
1630.0000	49.04	-10.28	38.76	74.00	-35.24	V	Peak
2003.3333	48.59	-9.28	39.31	74.00	-34.69	V	Peak
2831.6667	47.50	-7.10	40.40	74.00	-33.60	V	Peak
3298.3333	47.40	-5.28	42.12	74.00	-31.88	V	Peak
4966.6667	45.15	-0.12	45.03	74.00	-28.97	V	Peak
1373.3333	50.72	-10.42	40.30	74.00	-33.70	H	Peak
1630.0000	48.45	-10.28	38.17	74.00	-35.83	H	Peak
2166.6667	47.05	-9.37	37.68	74.00	-36.32	H	Peak
2820.0000	47.35	-7.18	40.17	74.00	-33.83	H	Peak
3741.6667	45.98	-3.86	42.12	74.00	-31.88	H	Peak
3870.0000	46.28	-3.77	42.51	74.00	-31.49	H	Peak

REMARKS:

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).*

(Combine)

Operation Mode:	TX / IEEE 802.11n HT20 MHz / CH High	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	49.79	-10.42	39.37	74.00	-34.63	V	Peak
1630.0000	49.56	-10.28	39.28	74.00	-34.72	V	Peak
2003.3333	47.80	-9.28	38.52	74.00	-35.48	V	Peak
2995.0000	46.75	-5.99	40.76	74.00	-33.24	V	Peak
5596.6667	45.09	1.49	46.58	74.00	-27.42	V	Peak
6215.0000	44.93	3.81	48.74	74.00	-25.26	V	Peak
1128.3333	48.65	-11.61	37.04	74.00	-36.96	H	Peak
1373.3333	51.03	-10.42	40.61	74.00	-33.39	H	Peak
2166.6667	48.18	-9.37	38.81	74.00	-35.19	H	Peak
2831.6667	47.16	-7.10	40.06	74.00	-33.94	H	Peak
3216.6667	46.48	-5.45	41.03	74.00	-32.97	H	Peak
5445.0000	45.22	1.12	46.34	74.00	-27.66	H	Peak

REMARKS:

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

(Antenna 1)

Operation Mode:	TX / IEEE 802.11n HT40 MHz / CH Low	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1128.3333	47.89	-11.61	36.28	74.00	-37.72	V	Peak
1373.3333	48.90	-10.42	38.48	74.00	-35.52	V	Peak
1630.0000	50.01	-10.28	39.73	74.00	-34.27	V	Peak
2155.0000	47.60	-9.35	38.25	74.00	-35.75	V	Peak
2831.6667	47.53	-7.10	40.43	74.00	-33.57	V	Peak
3228.3333	47.95	-5.43	42.52	74.00	-31.48	V	Peak
1128.3333	49.69	-11.61	38.08	74.00	-35.92	H	Peak
1373.3333	49.98	-10.42	39.56	74.00	-34.44	H	Peak
1630.0000	49.88	-10.28	39.60	74.00	-34.40	H	Peak
2785.0000	47.78	-7.42	40.36	74.00	-33.64	H	Peak
3636.6667	45.63	-3.81	41.82	74.00	-32.18	H	Peak
4768.3333	45.30	-0.83	44.47	74.00	-29.53	H	Peak

REMARKS:

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

(Antenna 1)

Operation Mode:	TX / IEEE 802.11n HT40 MHz / CH Mid	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	48.33	-10.42	37.91	74.00	-36.09	V	Peak
1630.0000	50.66	-10.28	40.38	74.00	-33.62	V	Peak
2003.3333	48.04	-9.28	38.76	74.00	-35.24	V	Peak
2843.3333	48.39	-7.03	41.36	74.00	-32.64	V	Peak
3858.3333	46.39	-3.79	42.60	74.00	-31.40	V	Peak
5305.0000	44.58	0.81	45.39	74.00	-28.61	V	Peak
1128.3333	49.56	-11.61	37.95	74.00	-36.05	H	Peak
1373.3333	50.38	-10.42	39.96	74.00	-34.04	H	Peak
1630.0000	50.53	-10.28	40.25	74.00	-33.75	H	Peak
2166.6667	47.32	-9.37	37.95	74.00	-36.05	H	Peak
2540.0000	48.37	-9.32	39.05	74.00	-34.95	H	Peak
6250.0000	44.96	3.79	48.75	74.00	-25.25	H	Peak

REMARKS:

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

(Antenna 1)

Operation Mode:	TX / IEEE 802.11n HT40 MHz / CH High	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	48.39	-10.42	37.97	74.00	-36.03	V	Peak
1630.0000	49.16	-10.28	38.88	74.00	-35.12	V	Peak
2003.3333	47.22	-9.28	37.94	74.00	-36.06	V	Peak
2948.3333	46.87	-6.31	40.56	74.00	-33.44	V	Peak
3298.3333	48.11	-5.28	42.83	74.00	-31.17	V	Peak
6215.0000	45.71	3.81	49.52	74.00	-24.48	V	Peak
1128.3333	48.89	-11.61	37.28	74.00	-36.72	H	Peak
1373.3333	49.97	-10.42	39.55	74.00	-34.45	H	Peak
1630.0000	48.22	-10.28	37.94	74.00	-36.06	H	Peak
2003.3333	47.48	-9.28	38.20	74.00	-35.80	H	Peak
2948.3333	46.09	-6.31	39.78	74.00	-34.22	H	Peak
6495.0000	46.30	3.92	50.22	74.00	-23.78	H	Peak

REMARKS:

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

(Antenna 2)

Operation Mode:	TX / IEEE 802.11n HT40 MHz / CH Low	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	47.92	-10.42	37.50	74.00	-36.50	V	Peak
1630.0000	47.78	-10.28	37.50	74.00	-36.50	V	Peak
2166.6667	47.97	-9.37	38.60	74.00	-35.40	V	Peak
2820.0000	46.12	-7.18	38.94	74.00	-35.06	V	Peak
3625.0000	45.08	-3.81	41.27	74.00	-32.73	V	Peak
4803.3333	44.67	-0.64	44.03	74.00	-29.97	V	Peak
1373.3333	48.02	-10.42	37.60	74.00	-36.40	H	Peak
1630.0000	47.63	-10.28	37.35	74.00	-36.65	H	Peak
2551.6667	47.92	-9.19	38.73	74.00	-35.27	H	Peak
2831.6667	46.70	-7.10	39.60	74.00	-34.40	H	Peak
3345.0000	45.88	-5.19	40.69	74.00	-33.31	H	Peak
4103.3333	45.93	-3.24	42.69	74.00	-31.31	H	Peak

REMARKS:

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

(**Antenna 2)**

Operation Mode:	TX / IEEE 802.11n HT40 MHz / CH Mid	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	48.48	-10.42	38.06	74.00	-35.94	V	Peak
1630.0000	48.53	-10.28	38.25	74.00	-35.75	V	Peak
2003.3333	47.23	-9.28	37.95	74.00	-36.05	V	Peak
3298.3332	46.29	-5.28	41.01	74.00	-32.99	V	Peak
4138.3333	45.61	-3.13	42.48	74.00	-31.52	V	Peak
5188.3333	44.58	0.55	45.13	74.00	-28.87	V	Peak
1373.3333	47.65	-10.42	37.23	74.00	-36.77	H	Peak
1630.0000	48.11	-10.28	37.83	74.00	-36.17	H	Peak
2178.3332	47.29	-9.39	37.90	74.00	-36.10	H	Peak
3216.6667	46.22	-5.45	40.77	74.00	-33.23	H	Peak
3893.3332	45.46	-3.74	41.72	74.00	-32.28	H	Peak
4523.3333	45.47	-1.95	43.52	74.00	-30.48	H	Peak

REMARKS:

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

(Antenna 2)

Operation Mode:	TX / IEEE 802.11n HT40 MHz / CH High	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1630.0000	48.85	-10.28	38.57	74.00	-35.43	V	Peak
2003.3333	48.20	-9.28	38.92	74.00	-35.08	V	Peak
2435.0000	49.24	-9.74	39.50	74.00	-34.50	V	Peak
3496.6667	45.82	-4.46	41.36	74.00	-32.64	V	Peak
5060.0000	45.10	0.17	45.27	74.00	-28.73	V	Peak
5748.3333	43.90	2.31	46.21	74.00	-27.79	V	Peak
1128.3333	50.02	-11.61	38.41	74.00	-35.59	H	Peak
1373.3333	49.24	-10.42	38.82	74.00	-35.18	H	Peak
1630.0000	49.92	-10.28	39.64	74.00	-34.36	H	Peak
2563.3332	48.64	-9.05	39.59	74.00	-34.41	H	Peak
3170.0000	46.83	-5.56	41.27	74.00	-32.73	H	Peak
3730.0000	46.55	-3.85	42.70	74.00	-31.30	H	Peak

REMARKS:

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).*

(Combine)

Operation Mode:	TX / IEEE 802.11n HT40 MHz / CH Low	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	48.52	-10.42	38.10	74.00	-35.90	V	Peak
1630.0000	50.00	-10.28	39.72	74.00	-34.28	V	Peak
2551.6667	47.79	-9.19	38.60	74.00	-35.40	V	Peak
2936.6667	46.90	-6.39	40.51	74.00	-33.49	V	Peak
3636.6667	45.59	-3.81	41.78	74.00	-32.22	V	Peak
5585.0000	46.01	1.46	47.47	74.00	-26.53	V	Peak
1128.3333	49.34	-11.61	37.73	74.00	-36.27	H	Peak
1373.3333	50.58	-10.42	40.16	74.00	-33.84	H	Peak
1630.0000	49.52	-10.28	39.24	74.00	-34.76	H	Peak
2108.3333	47.20	-9.26	37.94	74.00	-36.06	H	Peak
2831.6667	47.48	-7.10	40.38	74.00	-33.62	H	Peak
5736.6667	46.00	2.24	48.24	74.00	-25.76	H	Peak

REMARKS:

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).*

(Combine)

Operation Mode:	TX / IEEE 802.11n HT40 MHz / CH Mid	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1268.3333	47.73	-11.06	36.67	74.00	-37.33	V	Peak
1373.3333	49.55	-10.42	39.13	74.00	-34.87	V	Peak
1630.0000	50.02	-10.28	39.74	74.00	-34.26	V	Peak
2936.6667	46.88	-6.39	40.49	74.00	-33.51	V	Peak
3298.3333	46.85	-5.28	41.57	74.00	-32.43	V	Peak
5340.0000	45.39	0.88	46.27	74.00	-27.73	V	Peak
1128.3333	49.27	-11.61	37.66	74.00	-36.34	H	Peak
1373.3333	49.79	-10.42	39.37	74.00	-34.63	H	Peak
1630.0000	48.77	-10.28	38.49	74.00	-35.51	H	Peak
2843.3333	46.77	-7.03	39.74	74.00	-34.26	H	Peak
3228.3333	46.72	-5.43	41.29	74.00	-32.71	H	Peak
4266.6667	45.92	-2.71	43.21	74.00	-30.79	H	Peak

REMARKS:

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).*

(Combine)

Operation Mode:	TX / IEEE 802.11n HT40 MHz / CH High	**Test Date:**	July 28, 2011
Temperature:	24°C	**Tested by:**	Sunday Hu
Humidity:	52% RH	**Polarity:**	Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1373.3333	48.97	-10.42	38.55	74.00	-35.45	V	Peak
1630.0000	51.41	-10.28	41.13	74.00	-32.87	V	Peak
2995.0000	47.18	-5.99	41.19	74.00	-32.81	V	Peak
3298.3333	46.68	-5.28	41.40	74.00	-32.60	V	Peak
3741.6667	46.30	-3.86	42.44	74.00	-31.56	V	Peak
6215.0000	46.61	3.81	50.42	74.00	-23.58	V	Peak
1128.3333	49.39	-11.61	37.78	74.00	-36.22	H	Peak
1373.3333	49.24	-10.42	38.82	74.00	-35.18	H	Peak
1630.0000	48.25	-10.28	37.97	74.00	-36.03	H	Peak
2155.0000	47.69	-9.35	38.34	74.00	-35.66	H	Peak
3228.3333	46.49	-5.43	41.06	74.00	-32.94	H	Peak
6226.6667	46.26	3.80	50.06	74.00	-23.94	H	Peak

REMARKS:

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).*

7.3.6dB BANDWIDTH MEASUREMENT

7.3.1. LIMITS

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 6 dB bandwidth shall be at least 500 kHz.

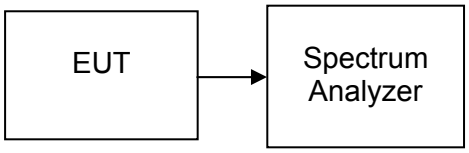
7.3.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US44300399	03/19/2011	03/19/2012

7.3.3. TEST PROCEDURES (please refer to measurement standard)

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 100kHz, VBW = 300kHz, Span = 25MHz, Sweep = auto.
4. Mark the peak frequency and –6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

7.3.4. TEST SETUP



7.3.5. TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b (Antenna1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	8107	>500	PASS
Mid	2437	8109		PASS
High	2462	8100		PASS

Test Data

Test mode: IEEE 802.11g(Antenna 1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	15130	>500	PASS
Mid	2437	15685		PASS
High	2462	14818		PASS

Test Data

Test mode: IEEE 802.11g(Antenna 2)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	15136	>500	PASS
Mid	2437	15060		PASS
High	2462	15110		PASS

Test Data

Test mode: IEEE 802.11n HT20 MHz (Antenna 1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	15112	>500	PASS
Mid	2437	15111		PASS
High	2462	16049		PASS

Test Data

Test mode: IEEE 802.11n HT20 MHz (Antenna 2)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	15090	>500	PASS
Mid	2437	16113		PASS
High	2462	15086		PASS

Test Data

Test mode: IEEE 802.11n HT20 MHz (Combine)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	12743	>500	PASS
Mid	2437	12955		PASS
High	2462	12734		PASS

Test Data

Test mode: IEEE 802.11n HT40 MHz(Antenna 1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2422	35774	>500	PASS
Mid	2437	36096		PASS
High	2452	35795		PASS

Test Data

Test mode: IEEE 802.11n HT40 MHz(Antenna 2)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2422	35810	>500	PASS
Mid	2437	36330		PASS
High	2452	36015		PASS

Test Data

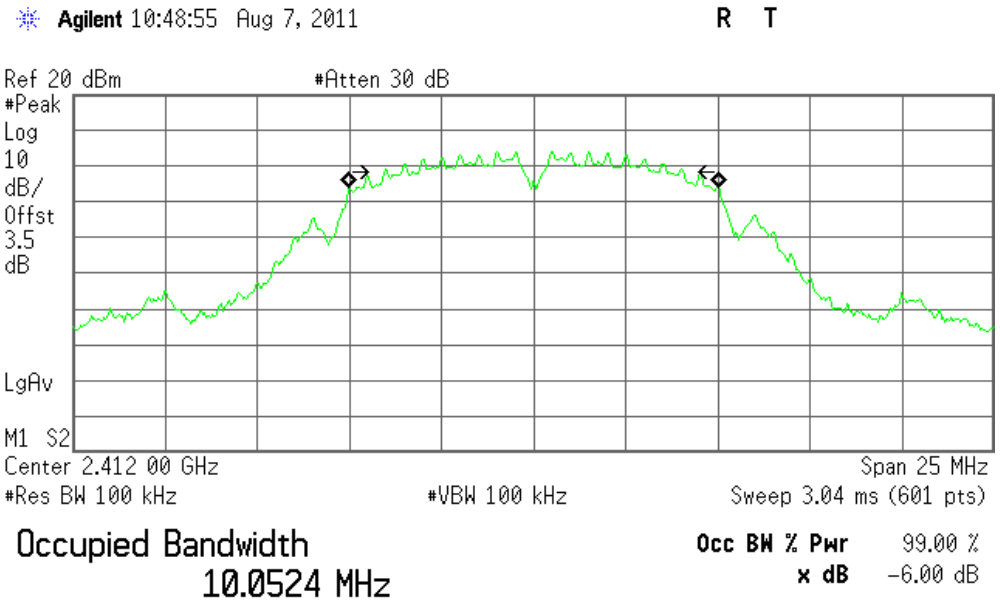
Test mode: IEEE 802.11n HT40 MHz(Combine)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2422	34260	>500	PASS
Mid	2437	33847		PASS
High	2452	33885		PASS

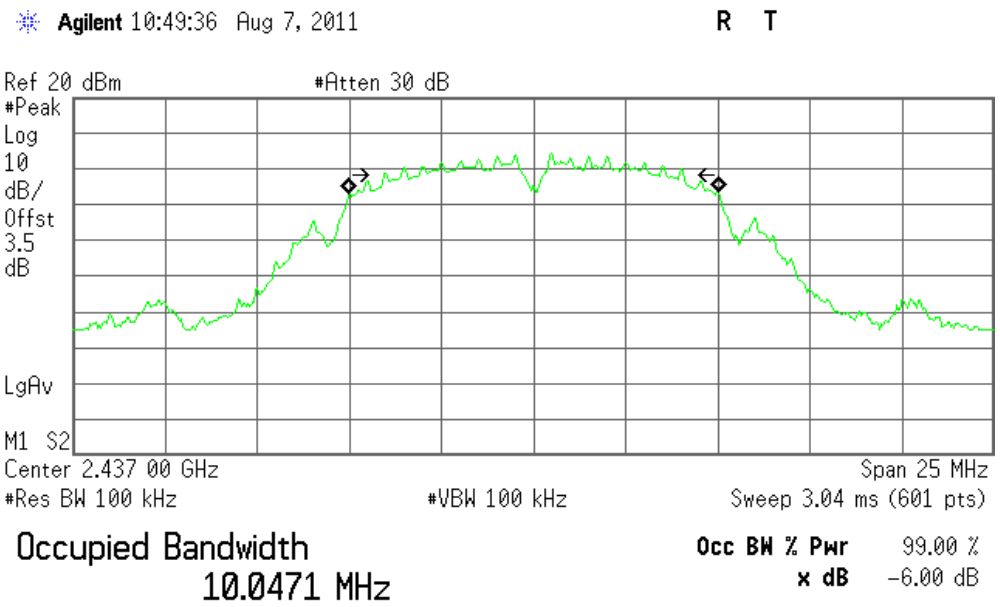
Test Plot

(IEEE 802.11b mode Antenna 1)

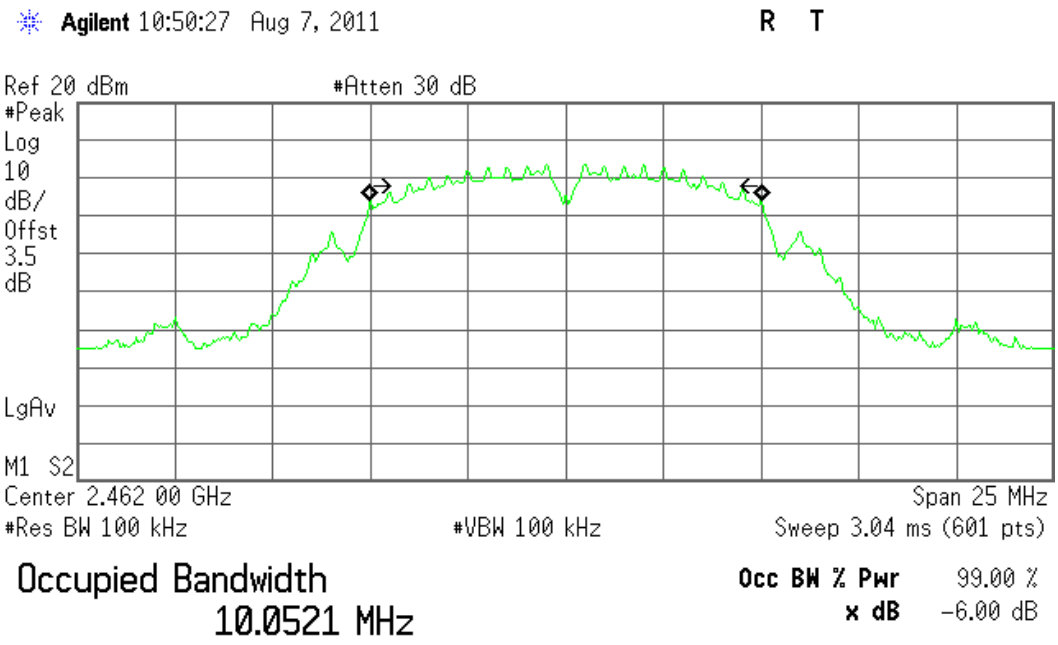
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



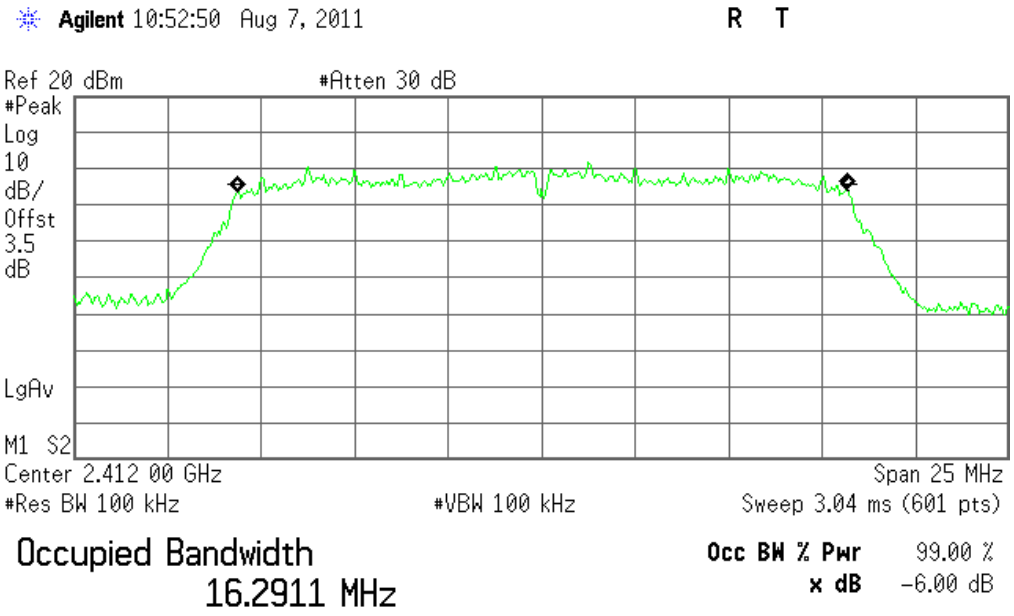
6dB Bandwidth (CH High)



Transmit Freq Error 19.959 kHz
x dB Bandwidth 8.100 MHz

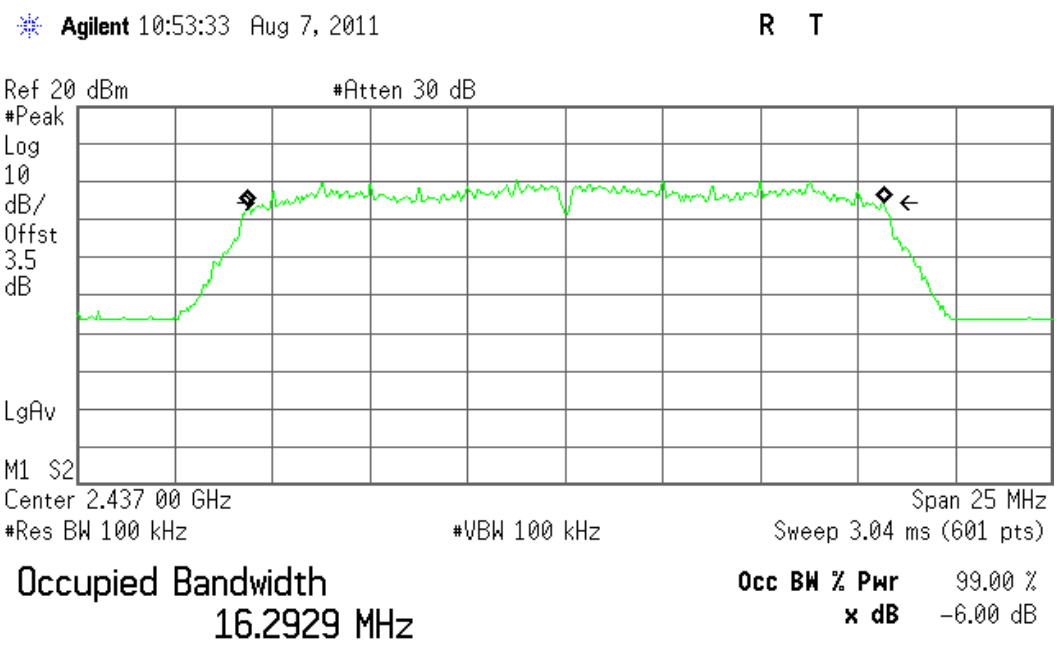
(IEEE 802.11g mode Antenna 1)

6dB Bandwidth (CH Low)



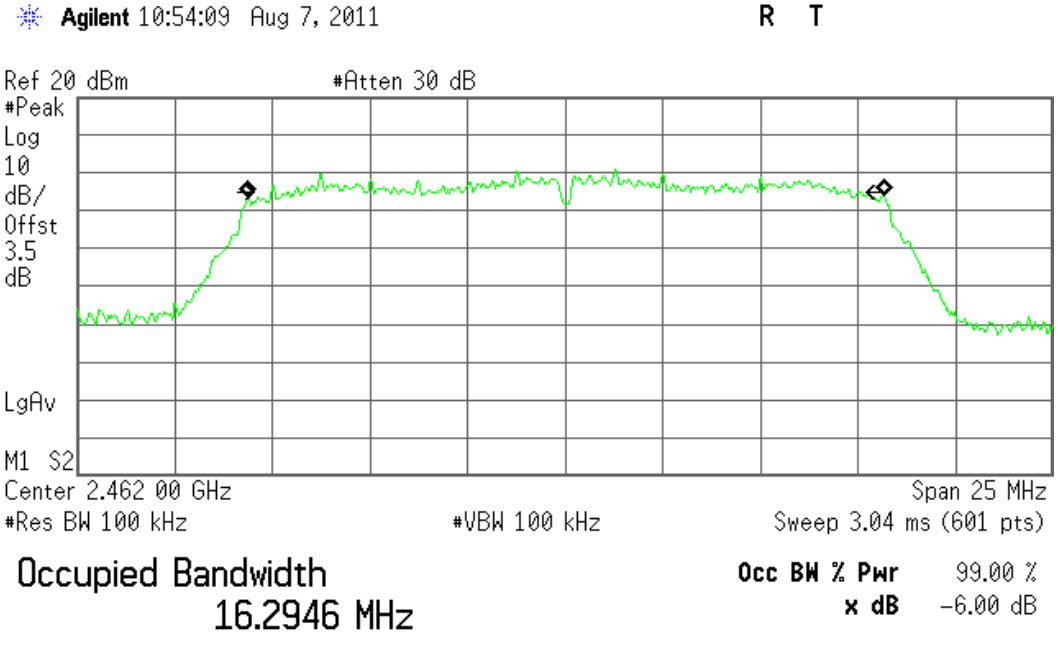
Transmit Freq Error 21.632 kHz
x dB Bandwidth 15.130 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error	24.193 kHz
x dB Bandwidth	15.685 MHz

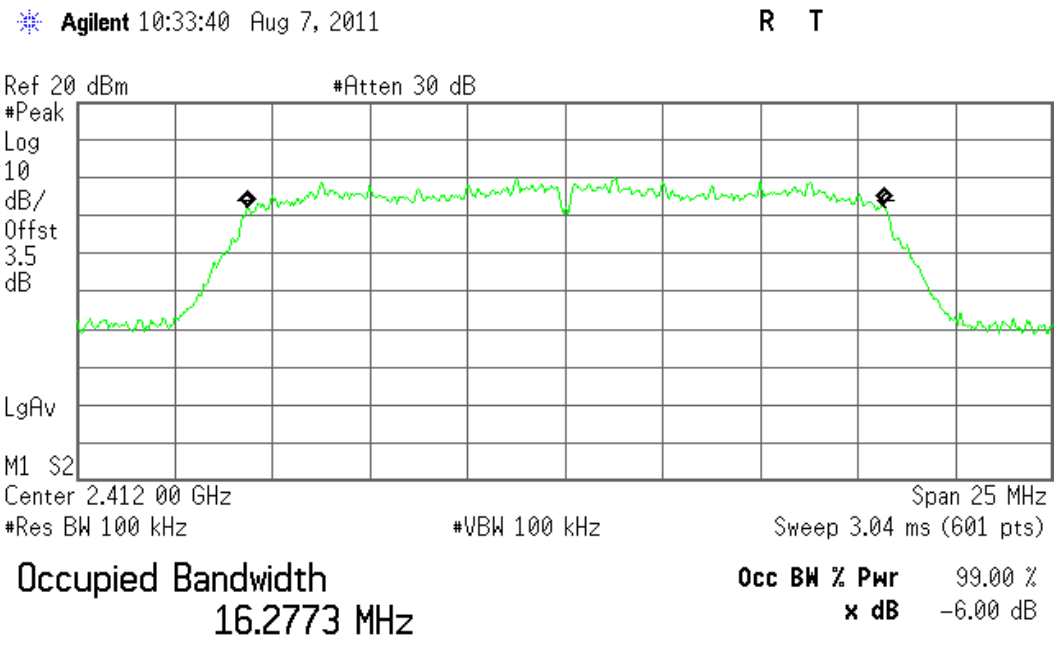
6dB Bandwidth (CH High)



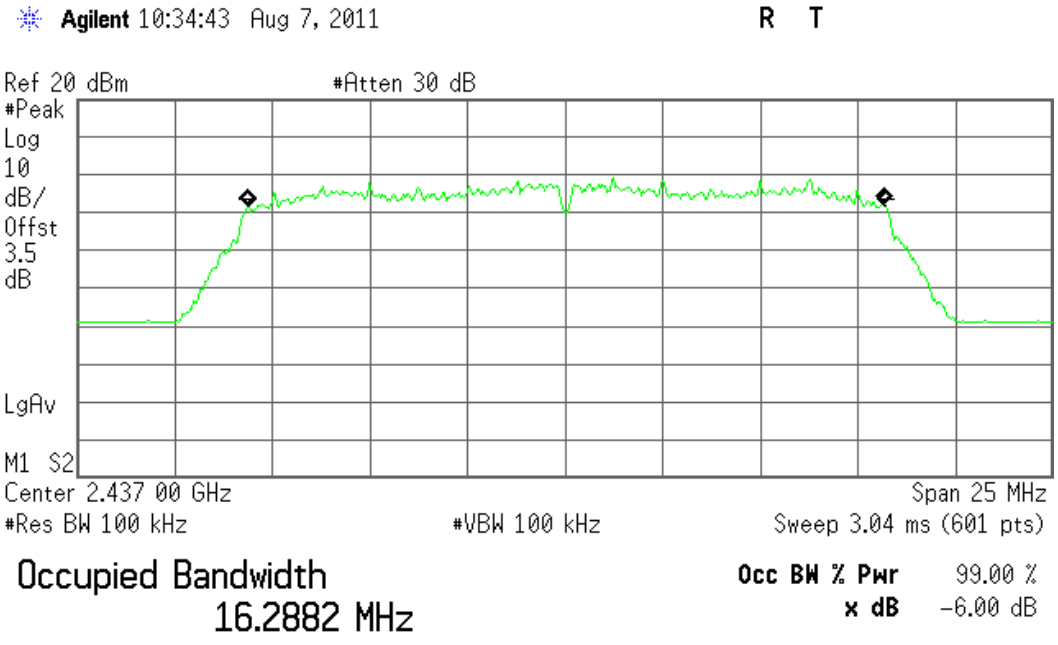
Transmit Freq Error	25.267 kHz
x dB Bandwidth	14.818 MHz

(IEEE 802.11g mode Antenna 2)

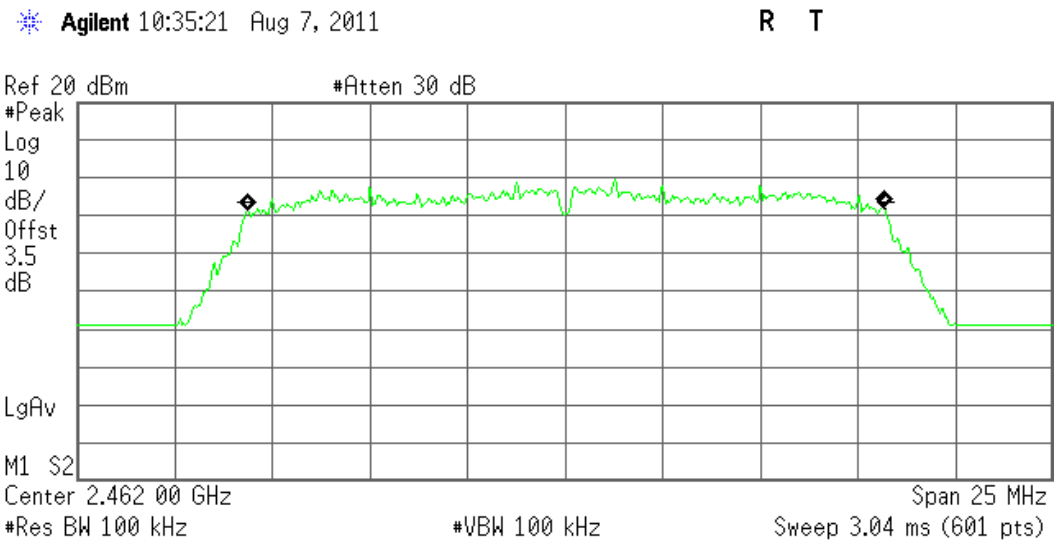
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



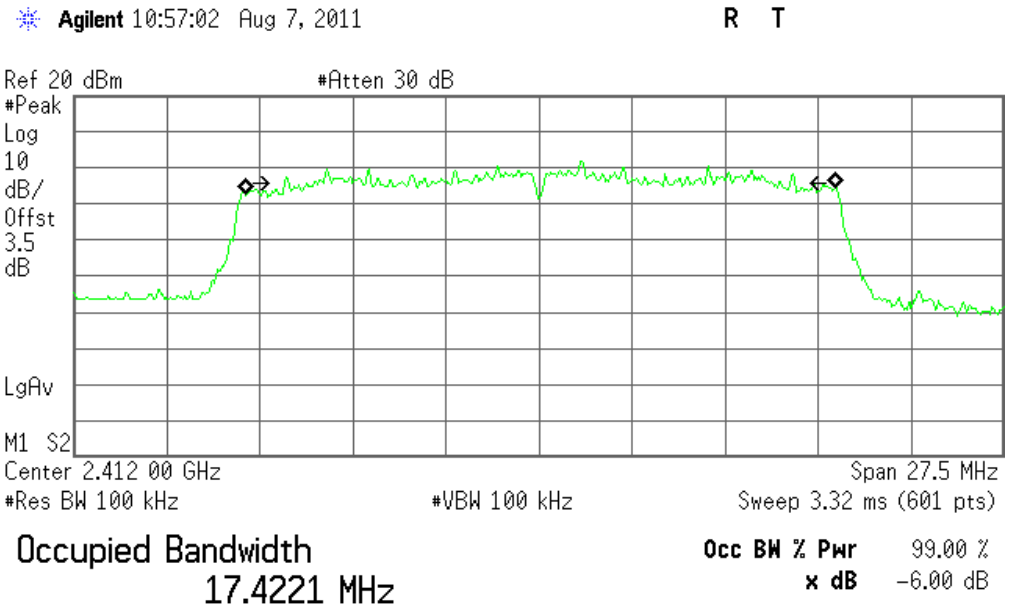
6dB Bandwidth (CH High)



Transmit Freq Error 21.761 kHz
x dB Bandwidth 15.110 MHz

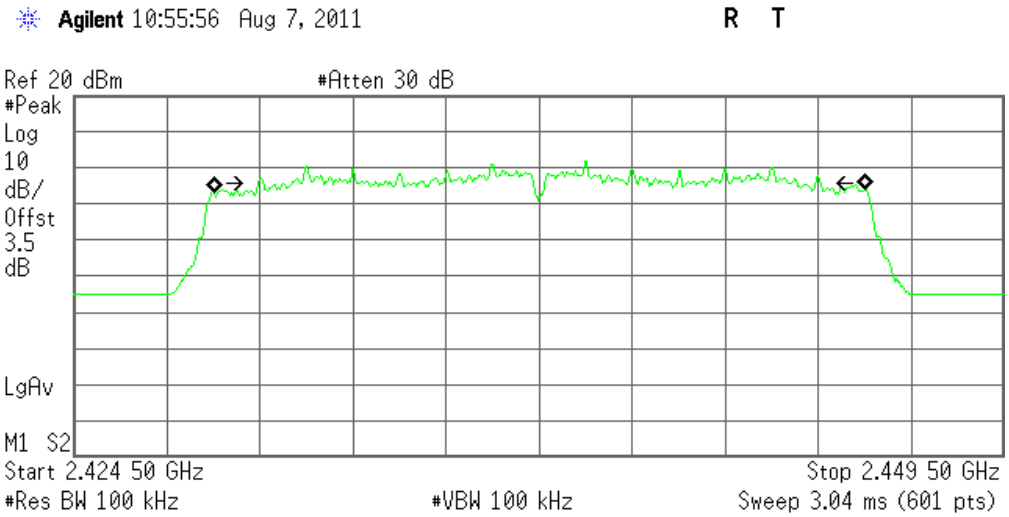
(IEEE 802.11n HT20 MHz mode Antenna 1)

6dB Bandwidth (CH Low)



Transmit Freq Error 29.326 kHz
x dB Bandwidth 15.112 MHz

6dB Bandwidth (CH Mid)

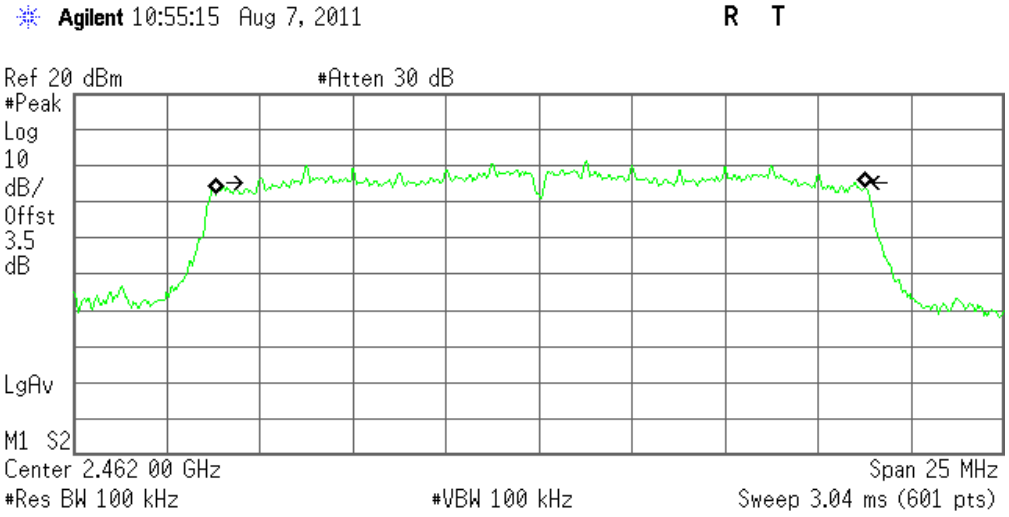


Occupied Bandwidth
17.4331 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 15.897 kHz
x dB Bandwidth 15.111 MHz

6dB Bandwidth (CH High)



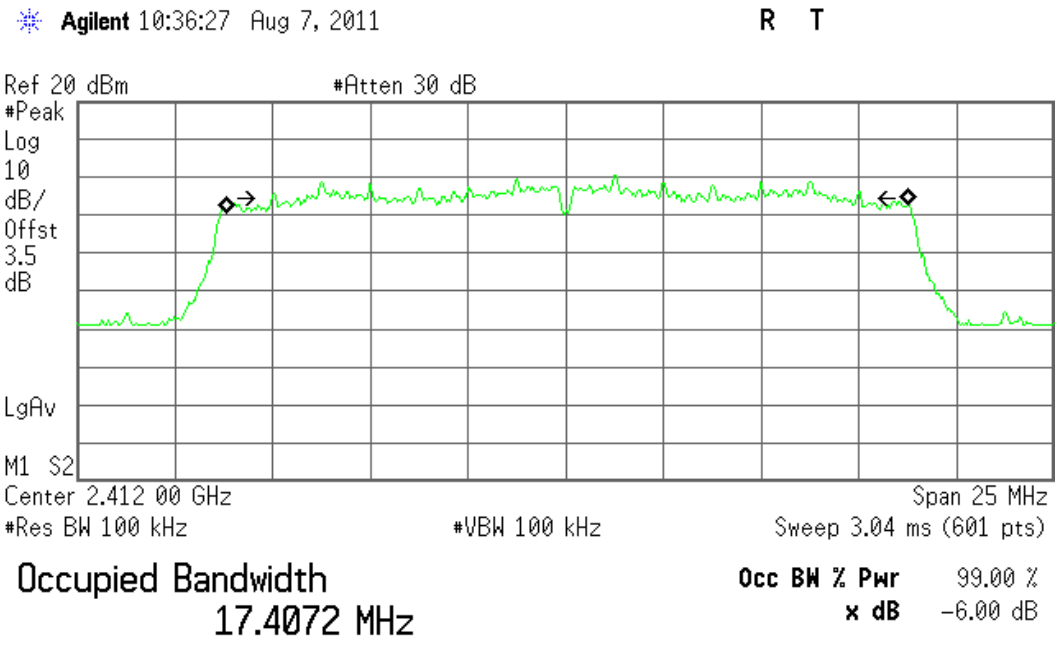
Occupied Bandwidth
17.4193 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 22.981 kHz
x dB Bandwidth 16.049 MHz

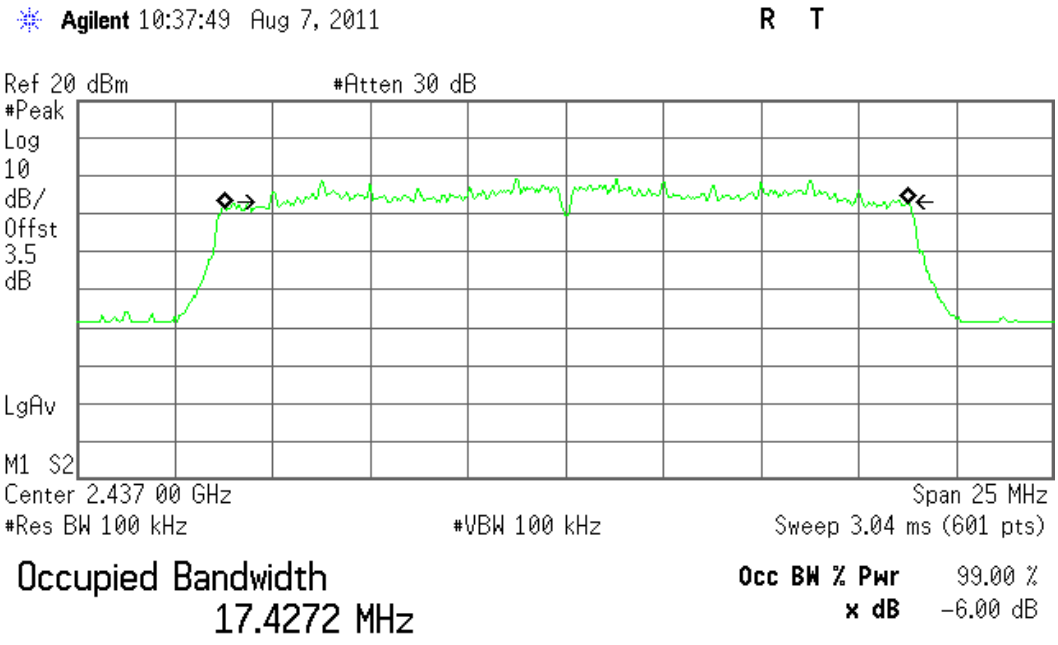
(IEEE 802.11n HT20 MHz mode Antenna 2)

6dB Bandwidth (CH Low)



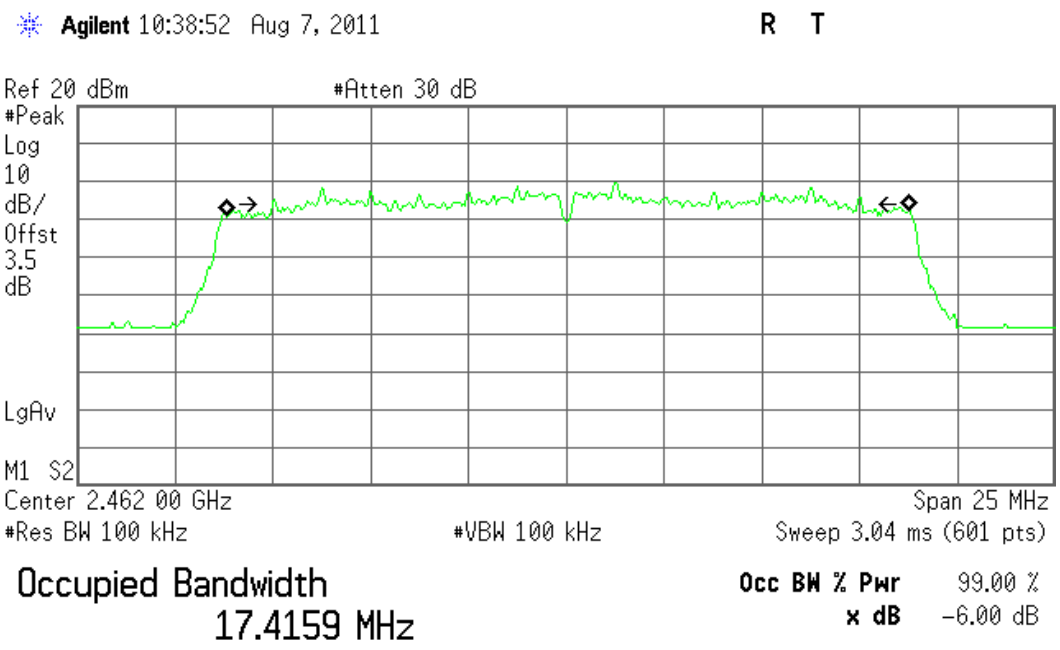
Transmit Freq Error 26.849 kHz
x dB Bandwidth 15.090 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error 21.134 kHz
x dB Bandwidth 16.113 MHz

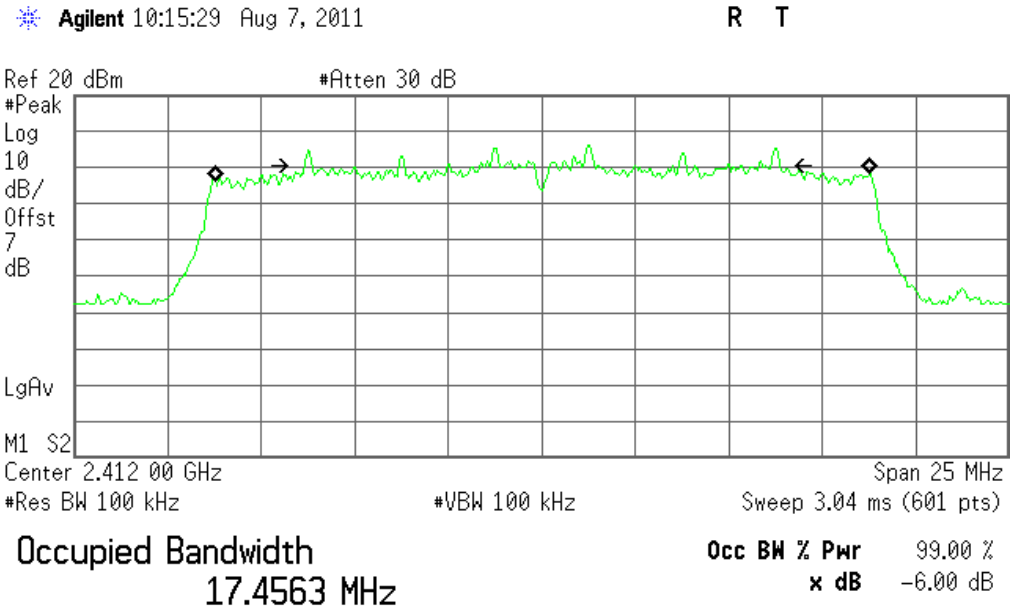
6dB Bandwidth (CH High)



Transmit Freq Error	23.718 kHz
x dB Bandwidth	15.086 MHz

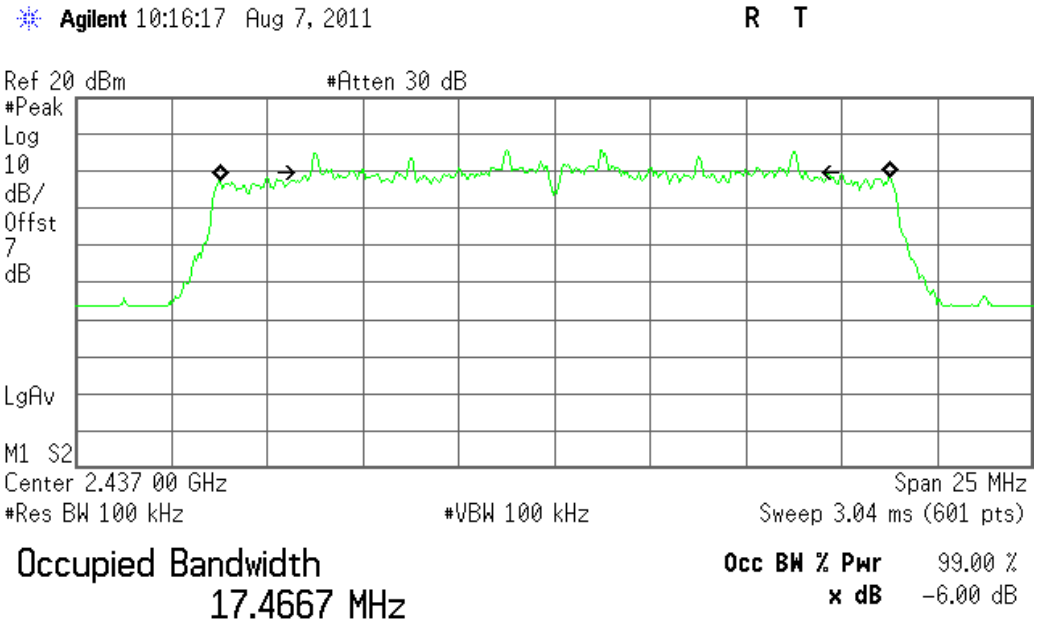
(IEEE 802.11n HT20 MHz mode Combine)

6dB Bandwidth (CH Low)



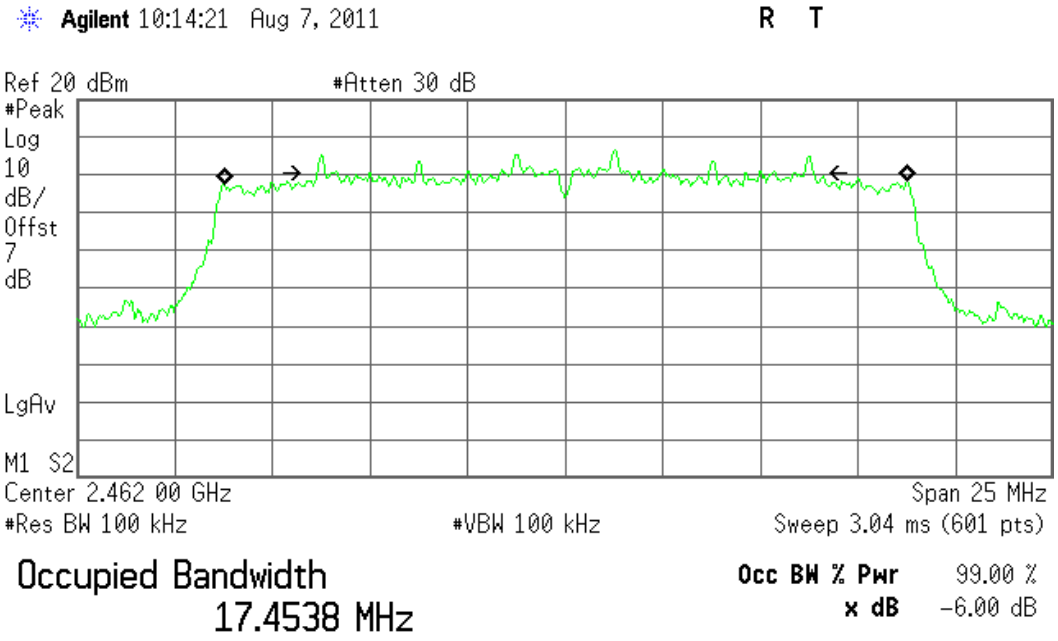
Transmit Freq Error	27.162 kHz
x dB Bandwidth	12.743 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error	16.266 kHz
x dB Bandwidth	12.955 MHz

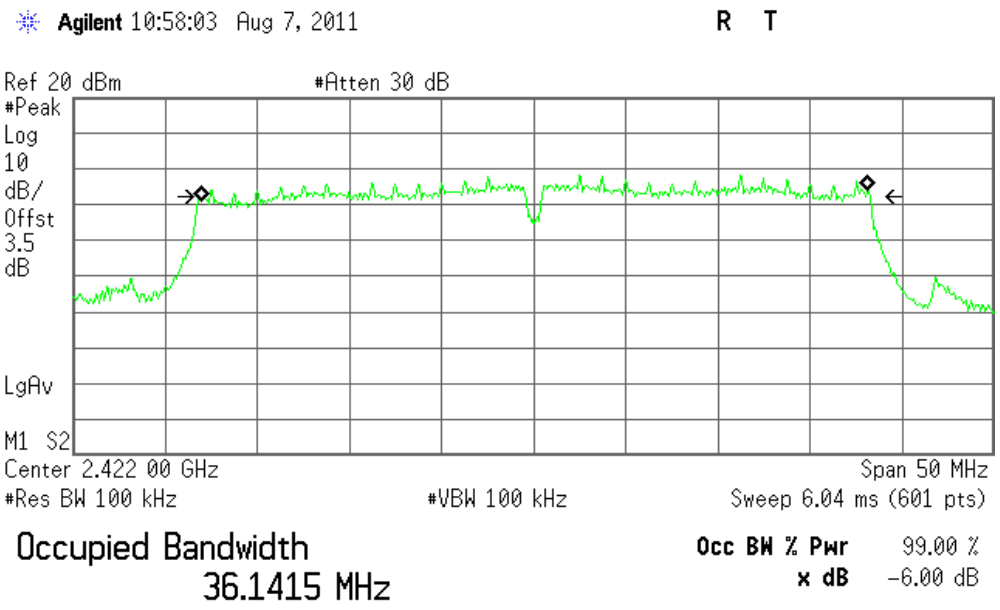
6dB Bandwidth (CH High)



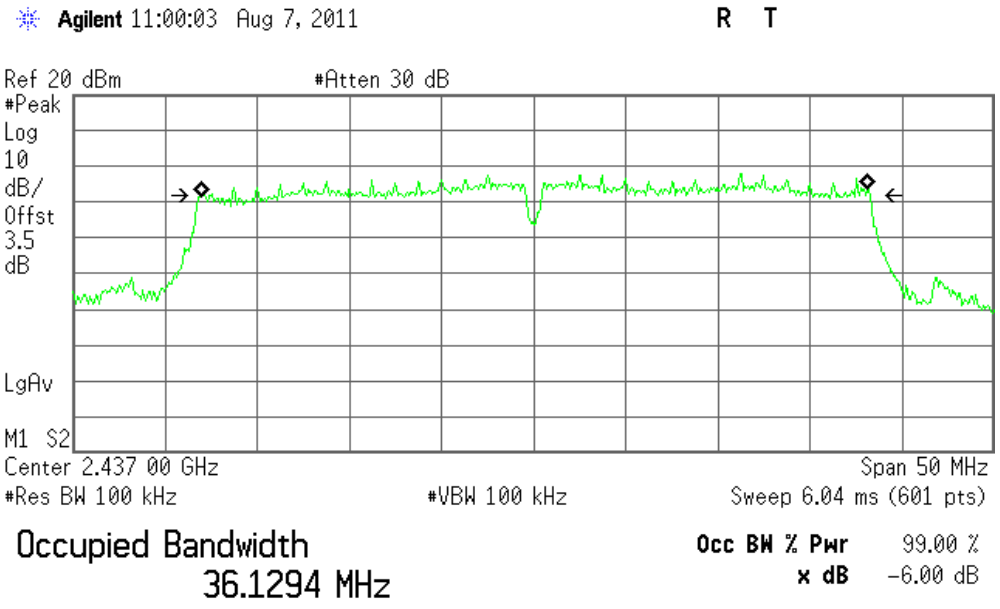
Transmit Freq Error	15.703 kHz
x dB Bandwidth	12.734 MHz

(IEEE 802.11n HT40 MHz mode Antenna 1)

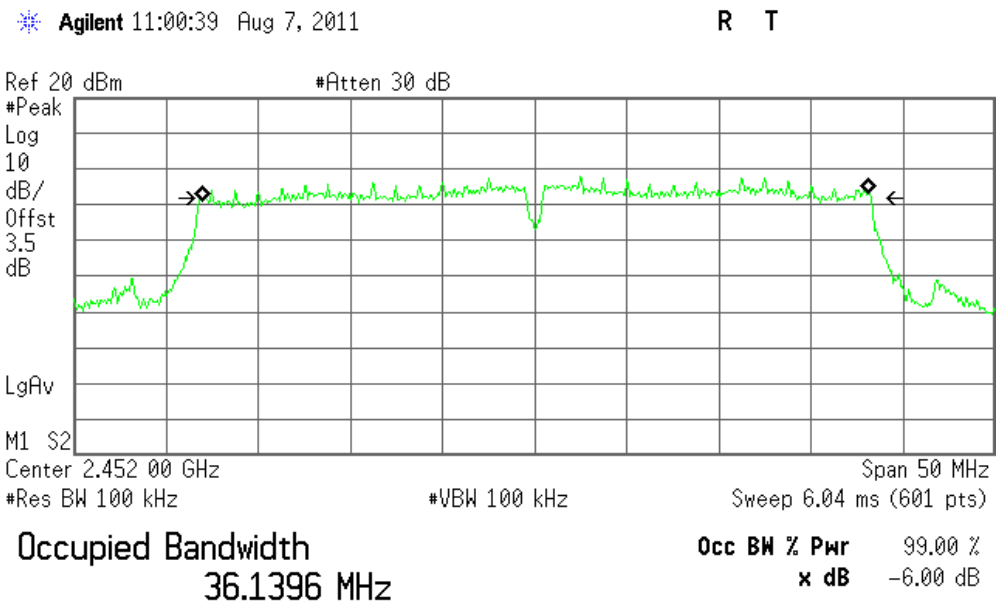
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



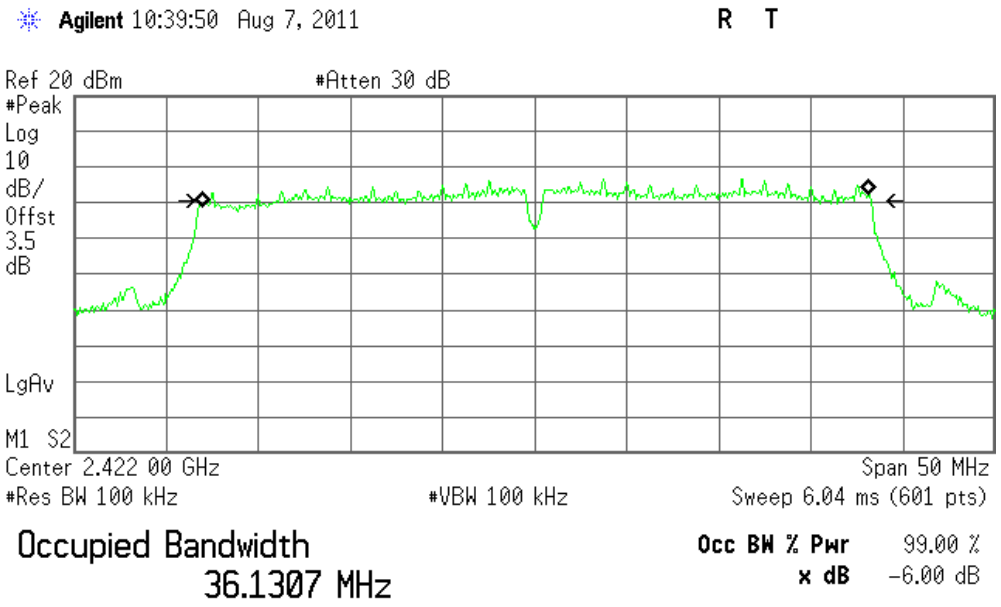
6dB Bandwidth (CH High)



Transmit Freq Error	47.677 kHz
x dB Bandwidth	35.795 MHz

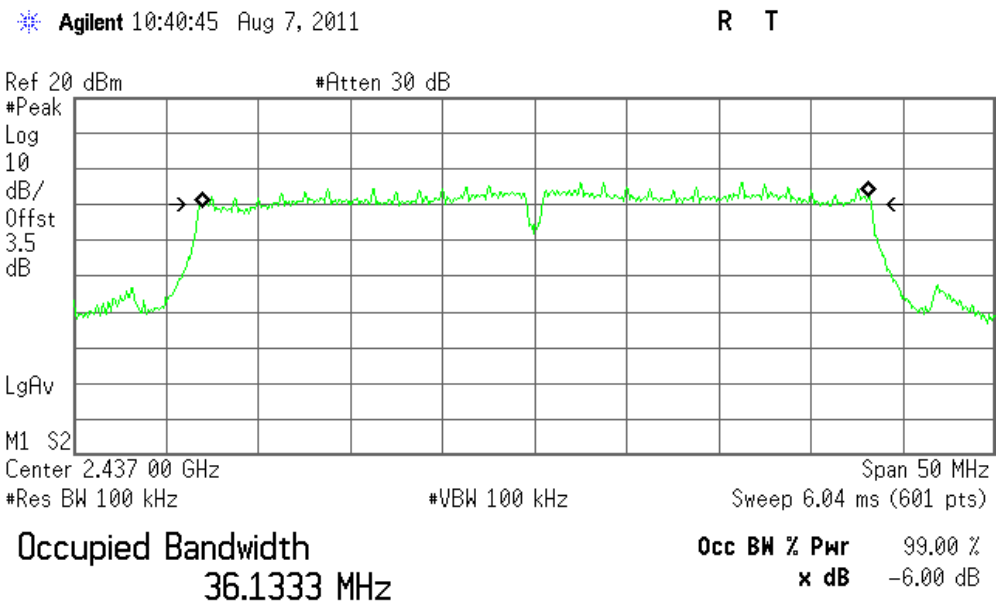
(IEEE 802.11n HT40 MHz mode Antena 2)

6dB Bandwidth (CH Low)



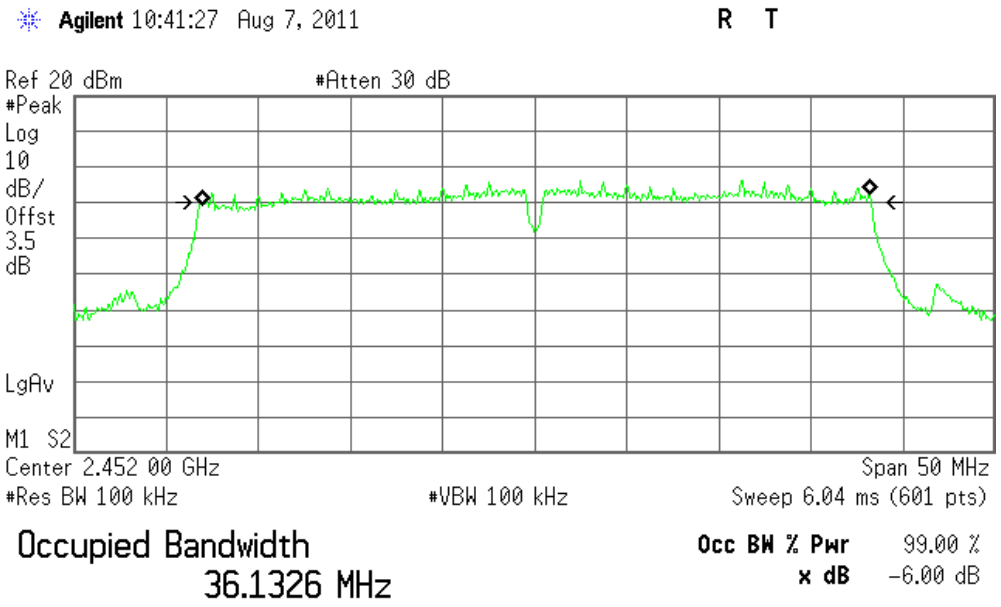
Transmit Freq Error	56.150 kHz
x dB Bandwidth	35.810 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error	53.975 kHz
x dB Bandwidth	36.330 MHz

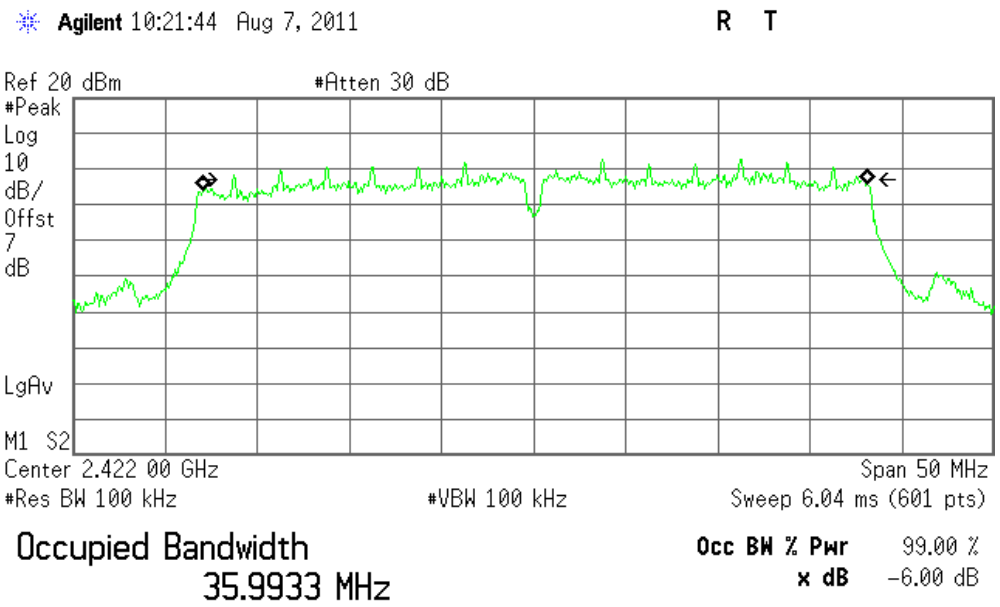
6dB Bandwidth (CH High)



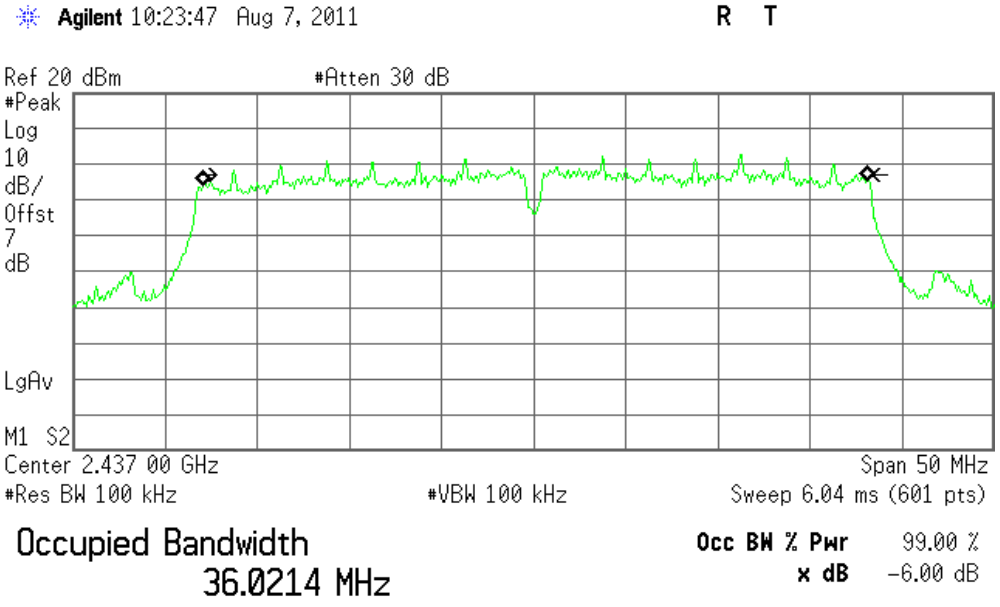
Transmit Freq Error	63.416 kHz
x dB Bandwidth	36.015 MHz

(IEEE 802.11n HT40 MHz mode Combine)

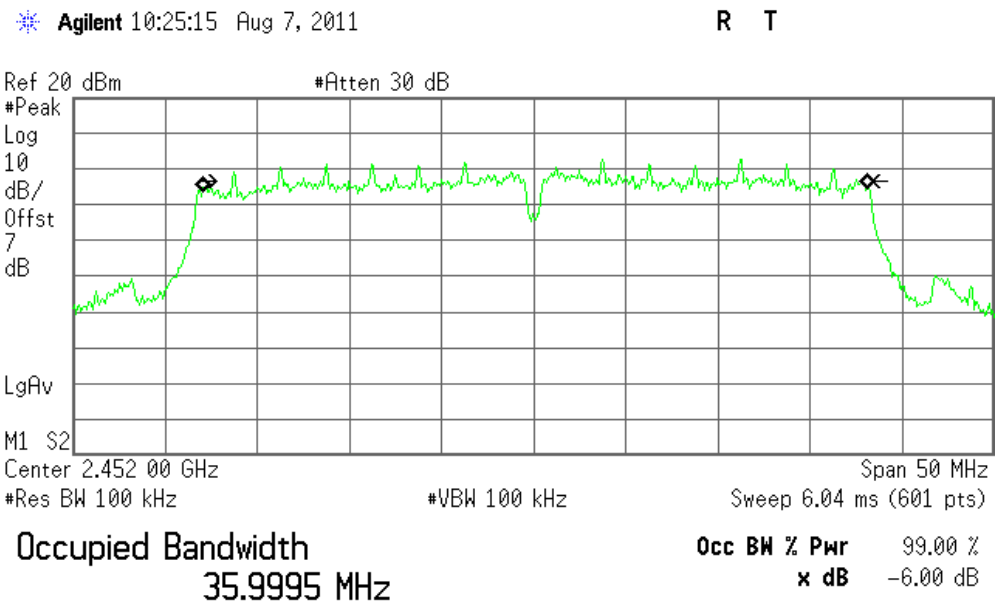
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High)



Transmit Freq Error	43.414 kHz
x dB Bandwidth	33.885 MHz

7.4. PEAK OUTPUT POWER

7.4.1. LIMITS

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.

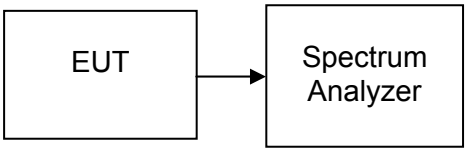
7.4.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US44300399	03/19/2011	03/19/2012

7.4.3. TEST PROCEDURES (please refer to measurement standard)

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz.
3. Set VBW ≥ 3 MHz.
4. Use sample detector mode if bin width (i.e., span/number of points in spectrum display) < 0.5 RBW. Otherwise use peak detector mode.
5. Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power intervals, the trigger may be set to “free run”.
6. Trace average 100 traces in power averaging mode.
7. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer’s band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

7.4.4. TEST SETUP



7.4.5. TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b(Antenna 1)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	14.50	0.02818	1	PASS
Mid	2437	14.68	0.02938		PASS
High	2462	14.35	0.02723		PASS

Test mode: IEEE 802.11g(Antenna 1)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	15.97	0.03954	1	PASS
Mid	2437	15.85	0.03846		PASS
High	2462	15.87	0.03864		PASS

Test mode: IEEE 802.11g(Antenna 2)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	14.17	0.02612	1	PASS
Mid	2437	14.06	0.02547		PASS
High	2462	13.97	0.02495		PASS

Test mode: IEEE 802.11n HT20 MHz (Antenna 1)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	15.84	0.03837	1	PASS
Mid	2437	15.97	0.03954		PASS
High	2462	15.48	0.03532		PASS

Test mode: IEEE 802.11n HT20 MHz (Antenna 2)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	14.18	0.02618	1	PASS
Mid	2437	14.17	0.02612		PASS
High	2462	14.21	0.02636		PASS

Test mode: IEEE 802.11n HT20 MHz (Combine)

Channel	Power	Frequency (MHz)	Output Power (dBm)		Output Power Total(dBm)	Output Power (W)	Limit (W)	Result
			Chain 0	Chain 1				
Low	20.00	2412	14.83	13.80	17.36	0.05440	1	PASS
Mid	19.00	2437	14.55	13.89	17.24	0.05300		PASS
High	18.00	2462	14.79	13.59	17.24	0.05299		PASS

Test mode: IEEE 802.11n HT40 MHz (Antenna 1)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2422	15.43	0.03491	1	PASS
Mid	2437	15.50	0.03548		PASS
High	2452	15.02	0.03177		PASS

Test mode: IEEE 802.11n HT40 MHz(Antenna 2)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2422	14.22	0.02642	1	PASS
Mid	2437	14.11	0.02576		PASS
High	2452	14.16	0.02606		PASS

Test mode: IEEE 802.11n HT40 MHz (Combine)

Channal	Power	Frequency (MHz)	Output Power (dBm)		Output Power Total(dBm)	Output Power (W)	Limit (W)	Result
			Chain 0	Chain 1				
Low	20.00	2412	14.27	12.91	16.65	0.04627	1	PASS
Mid	19.00	2437	13.30	12.81	16.07	0.04048		PASS
High	18.00	2462	13.34	12.57	15.98	0.03965		PASS

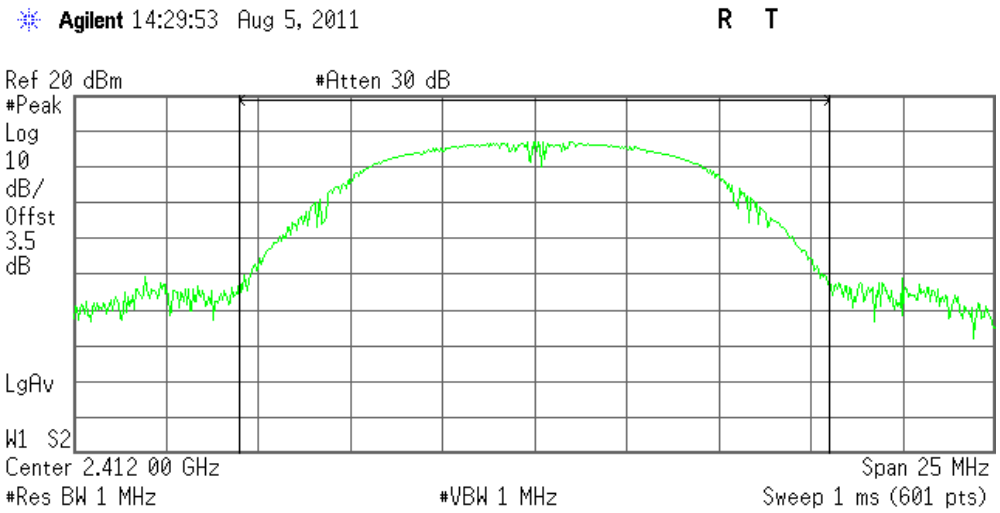
Note : Combine Power Calculation :

Total Power(dBm) =lg (10 $^{(\text{chain 0 power}/10)}$+10 $^{(\text{chain 0 power}/10)}$)*10

Test Plot

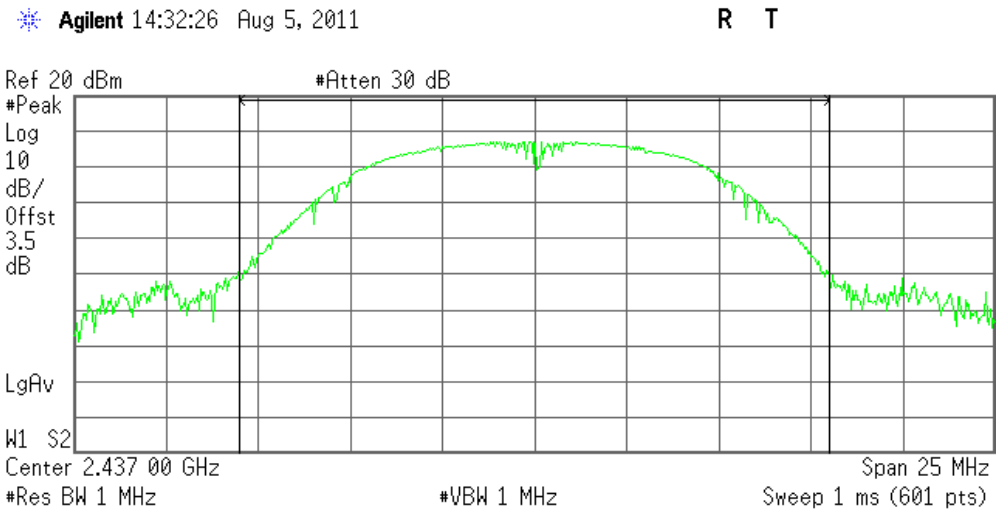
(IEEE 802.11b mode Antenna 1)

Peak power (CH Low)



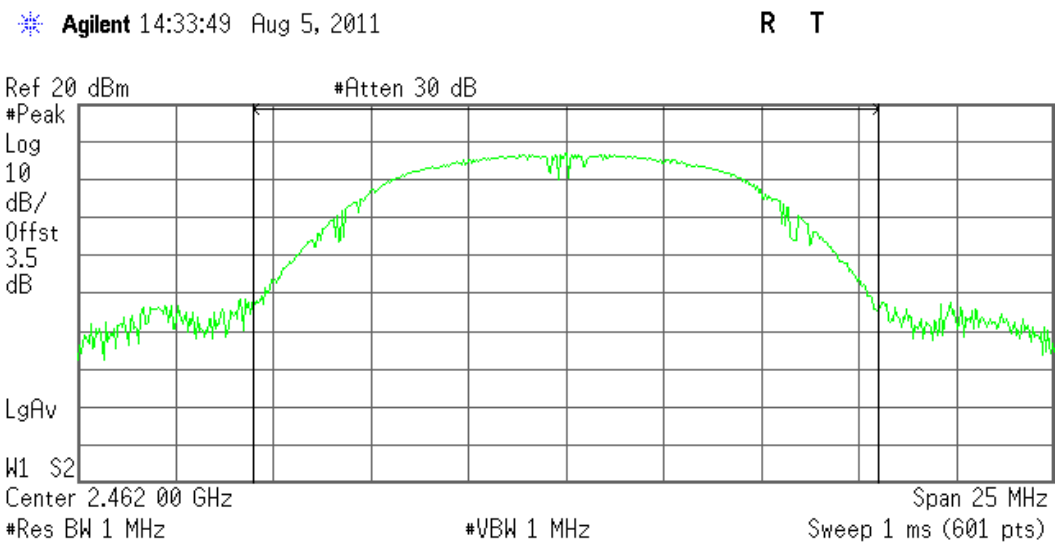
Channel Power	Power Spectral Density
14.50 dBm /16.0000 MHz	-57.54 dBm/Hz

Peak power (CH Mid)



Channel Power	Power Spectral Density
14.68 dBm /16.0000 MHz	-57.36 dBm/Hz

Peak power (CH High)



Channel Power

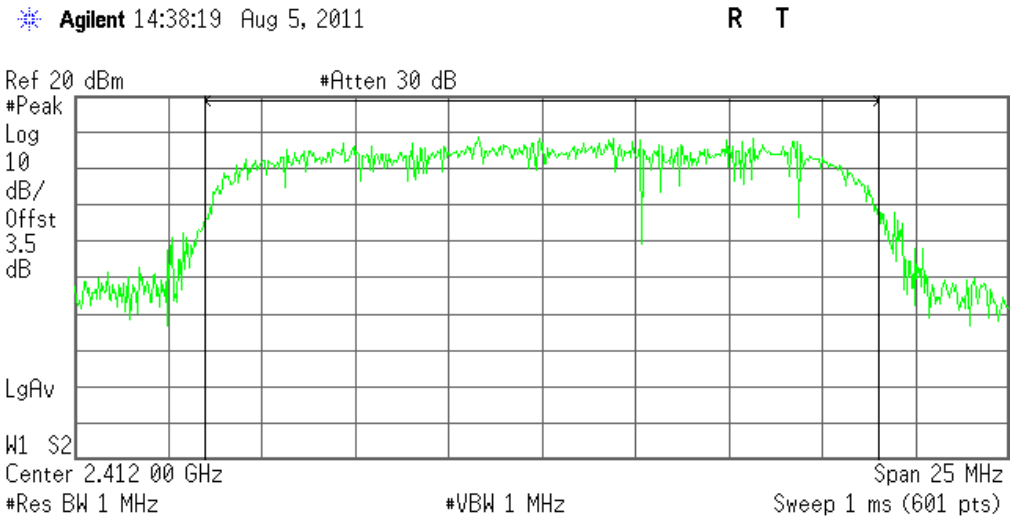
14.35 dBm /16.0000 MHz

Power Spectral Density

-57.69 dBm/Hz

(IEEE 802.11g mode Antenna 1)

Peak power (CH Low)



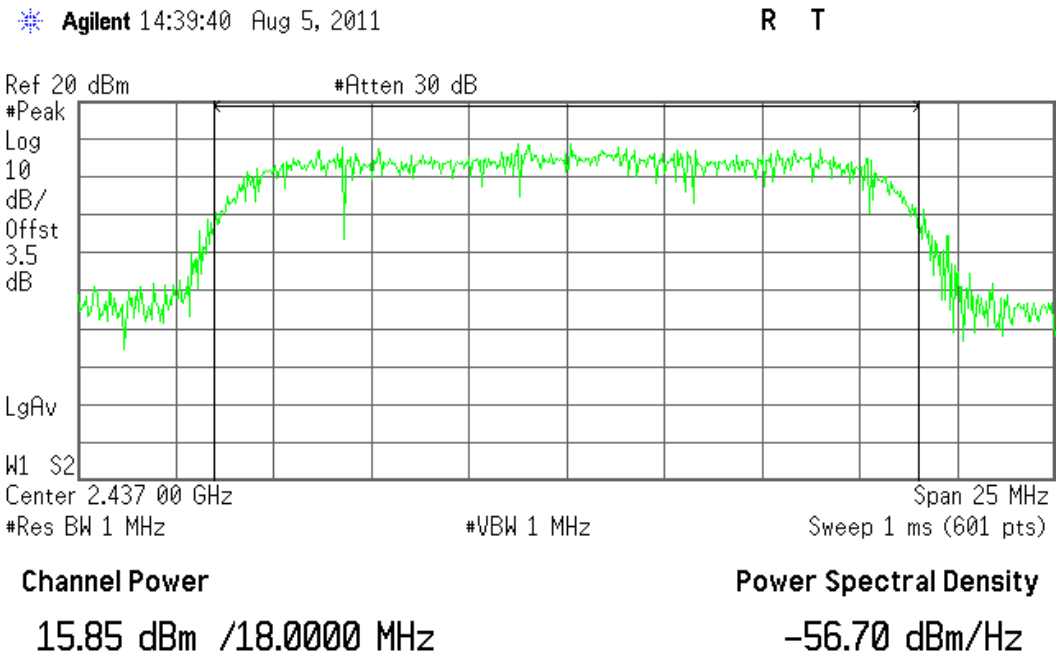
Channel Power

15.97 dBm /18.0000 MHz

Power Spectral Density

-56.58 dBm/Hz

Peak power (CH Mid)



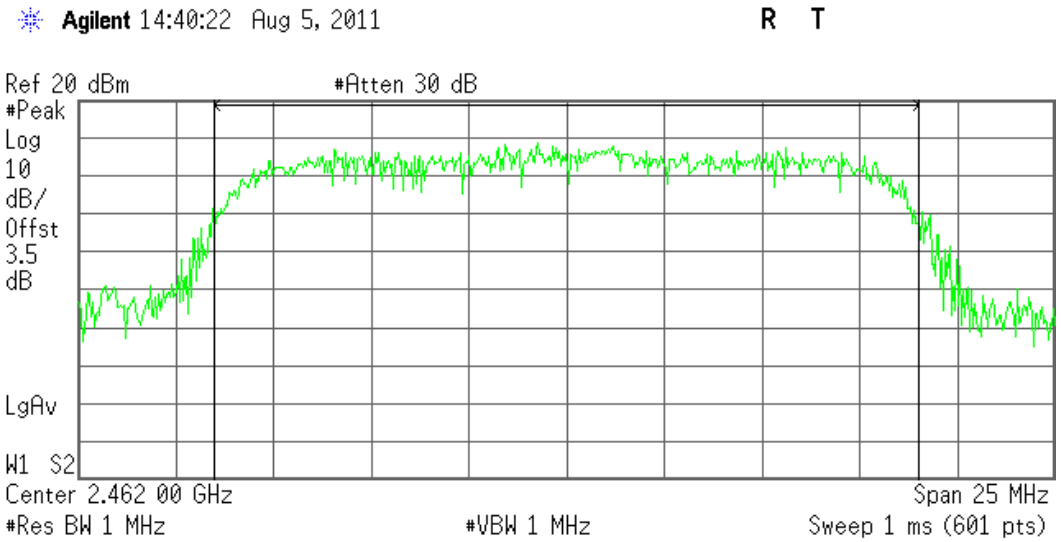
Channel Power

15.85 dBm /18.0000 MHz

Power Spectral Density

-56.70 dBm/Hz

Peak power (CH High)



Channel Power

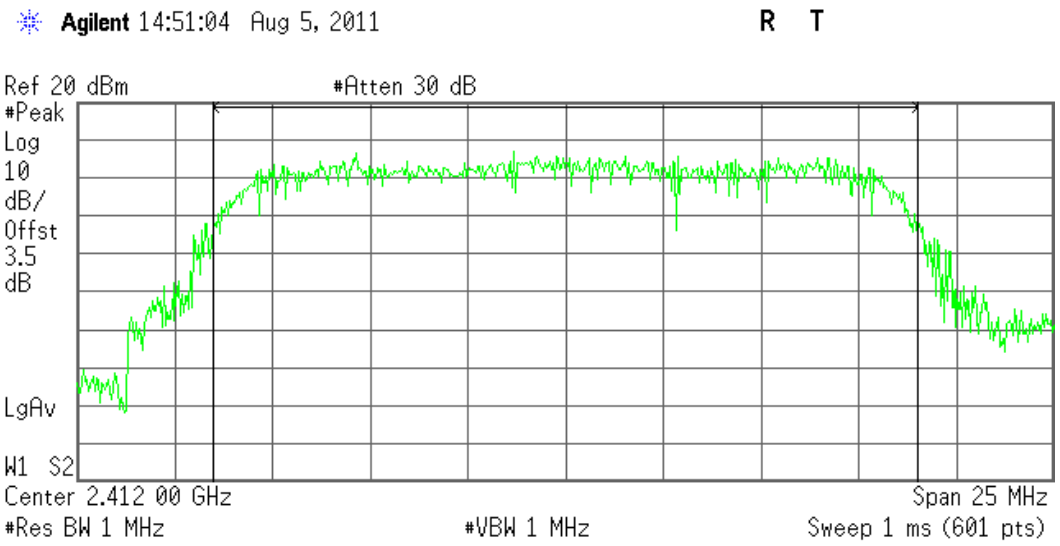
15.87 dBm /18.0000 MHz

Power Spectral Density

-56.68 dBm/Hz

(IEEE 802.11g mode Antenna 2)

Peak power (CH Low)



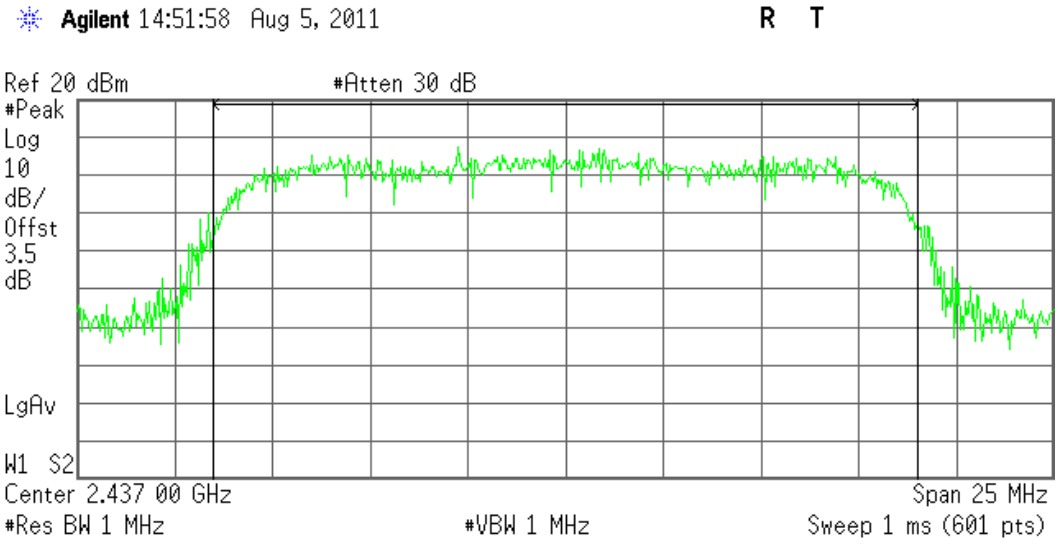
Channel Power

14.17 dBm /18.0000 MHz

Power Spectral Density

-58.38 dBm/Hz

Peak power (CH Mid)



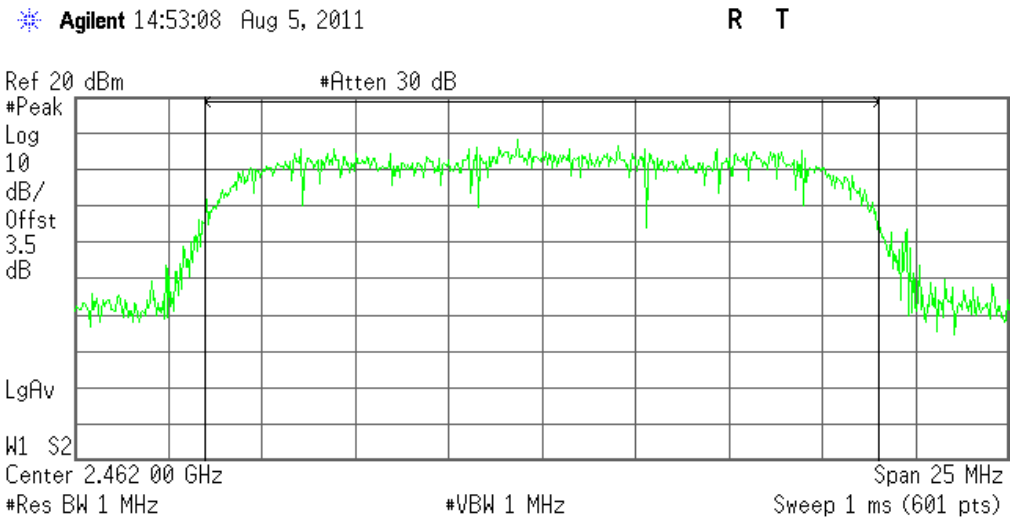
Channel Power

14.06 dBm /18.0000 MHz

Power Spectral Density

-58.49 dBm/Hz

Peak power (CH High)



Channel Power

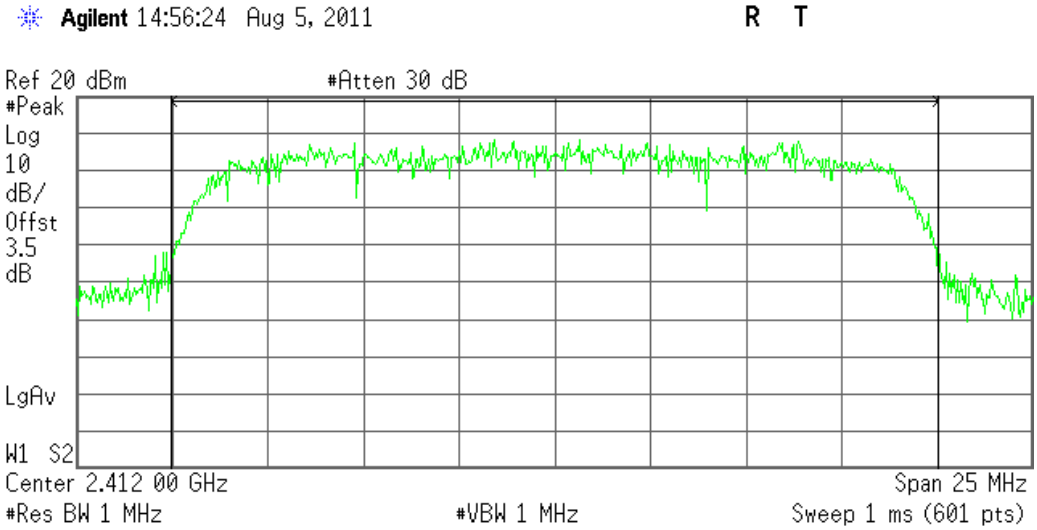
13.97 dBm /18.0000 MHz

Power Spectral Density

-58.59 dBm/Hz

(IEEE 802.11n HT20 MHz mode Antenna 1)

Peak power (CH Low)



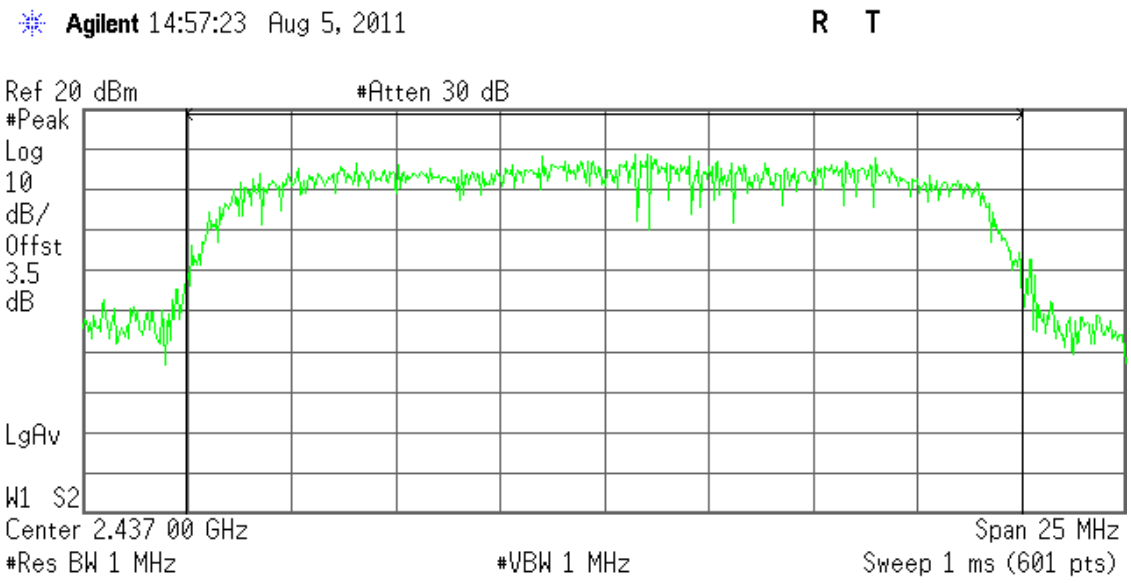
Channel Power

15.84 dBm /20.0000 MHz

Power Spectral Density

-57.17 dBm/Hz

Peak power (CH Mid)



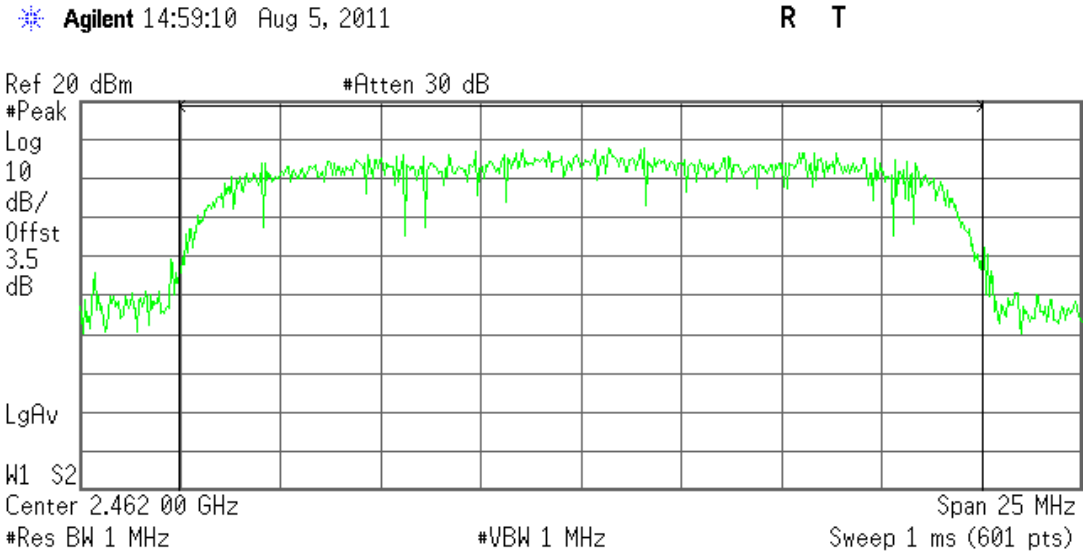
Channel Power

15.97 dBm /20.0000 MHz

Power Spectral Density

-57.04 dBm/Hz

Peak power (CH High)



Channel Power

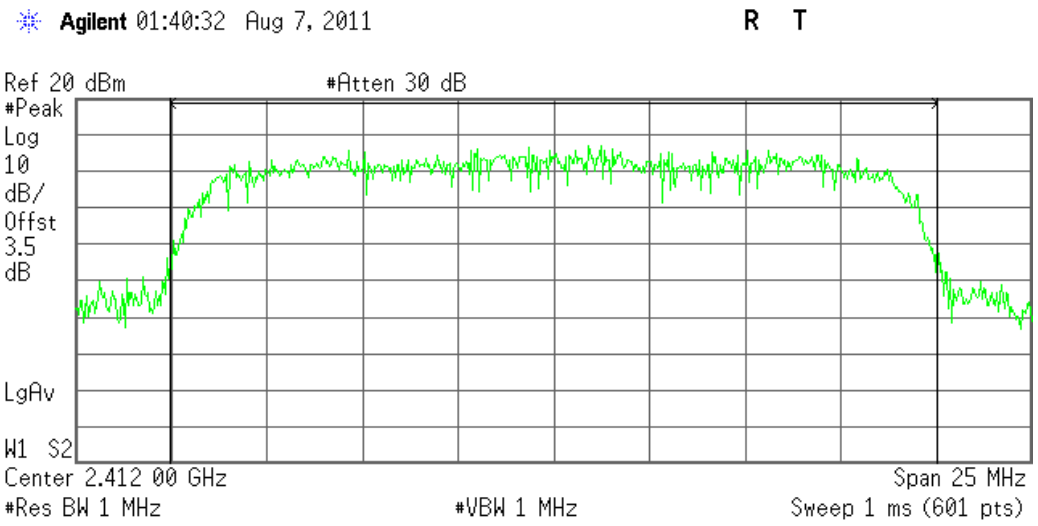
15.48 dBm /20.0000 MHz

Power Spectral Density

-57.54 dBm/Hz

(IEEE 802.11n HT20 MHz mode Antenna 2)

Peak power (CH Low)



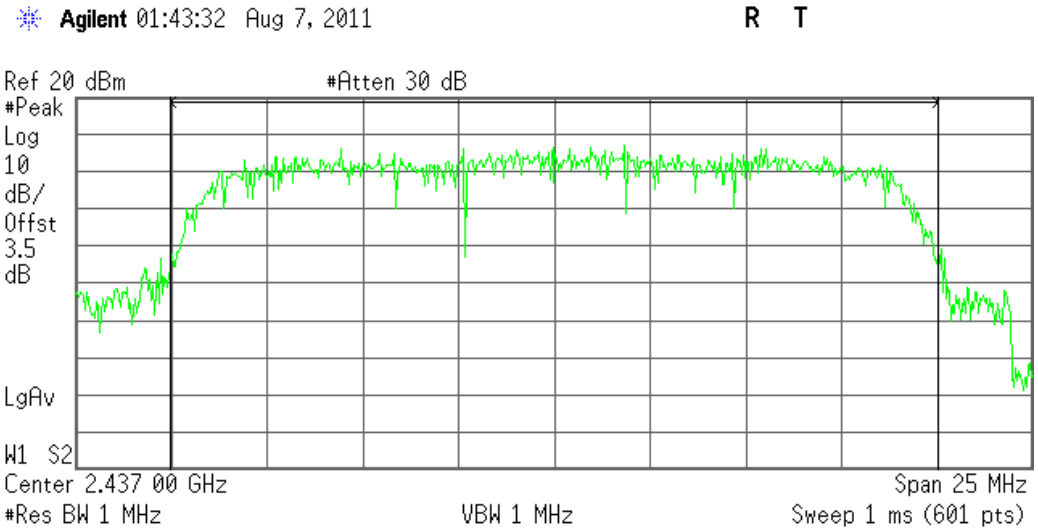
Channel Power

14.18 dBm /20.0000 MHz

Power Spectral Density

-58.83 dBm/Hz

Peak power (CH Mid)



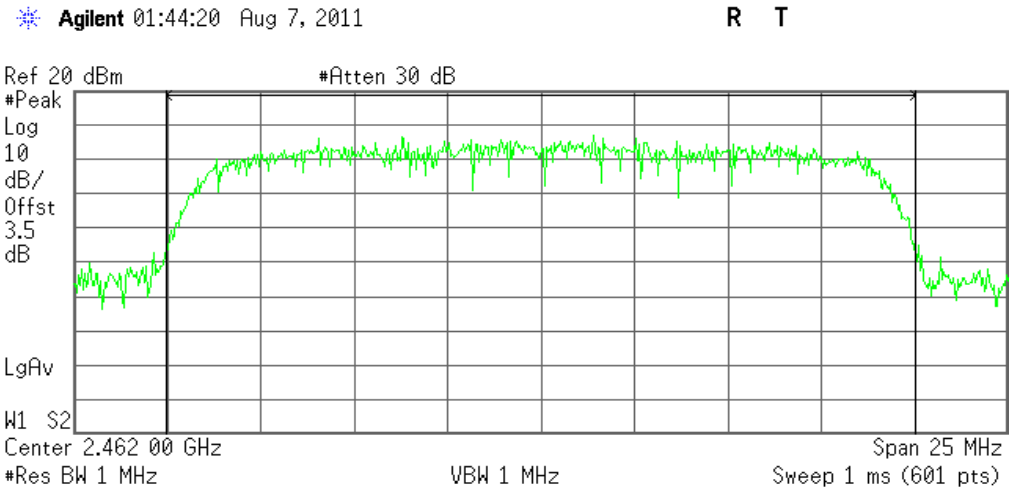
Channel Power

14.17 dBm /20.0000 MHz

Power Spectral Density

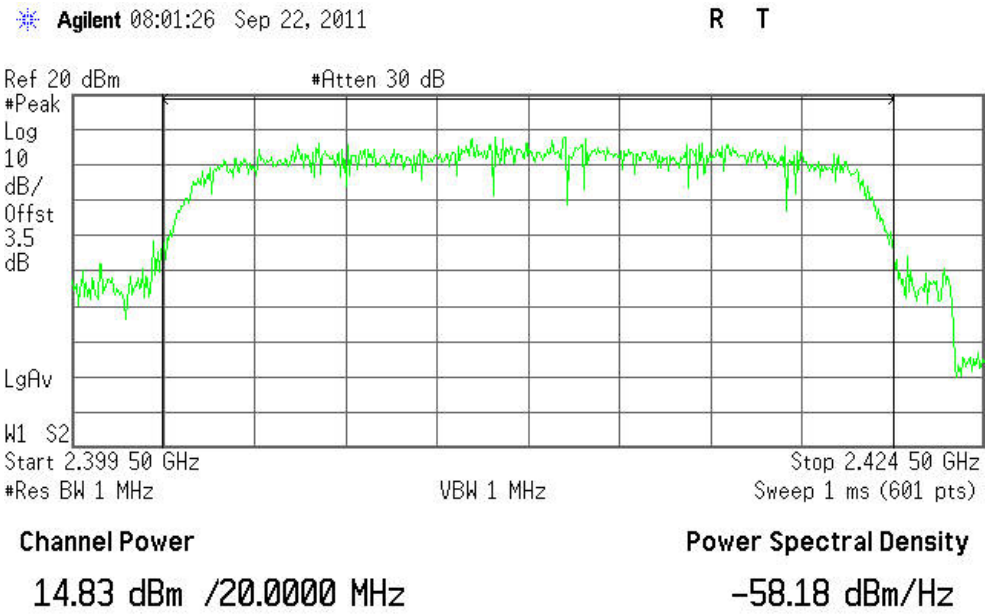
-58.84 dBm/Hz

Peak power (CH High)

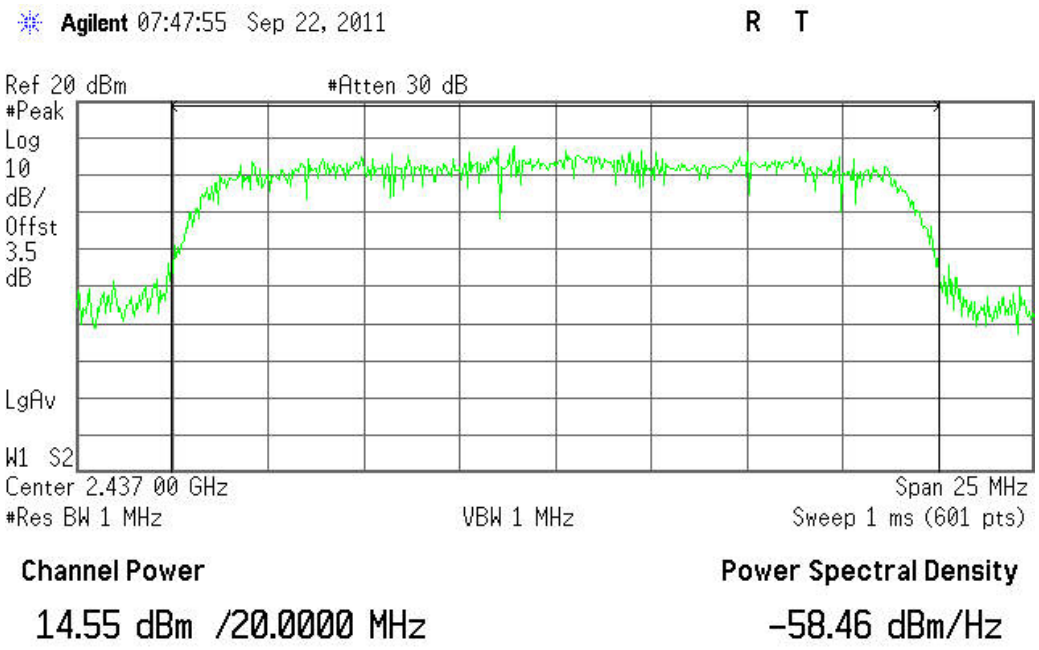


(IEEE 802.11n HT20 MHz mode Combine with antenna 1)

Peak power (CH Low)



Peak power (CH Mid)



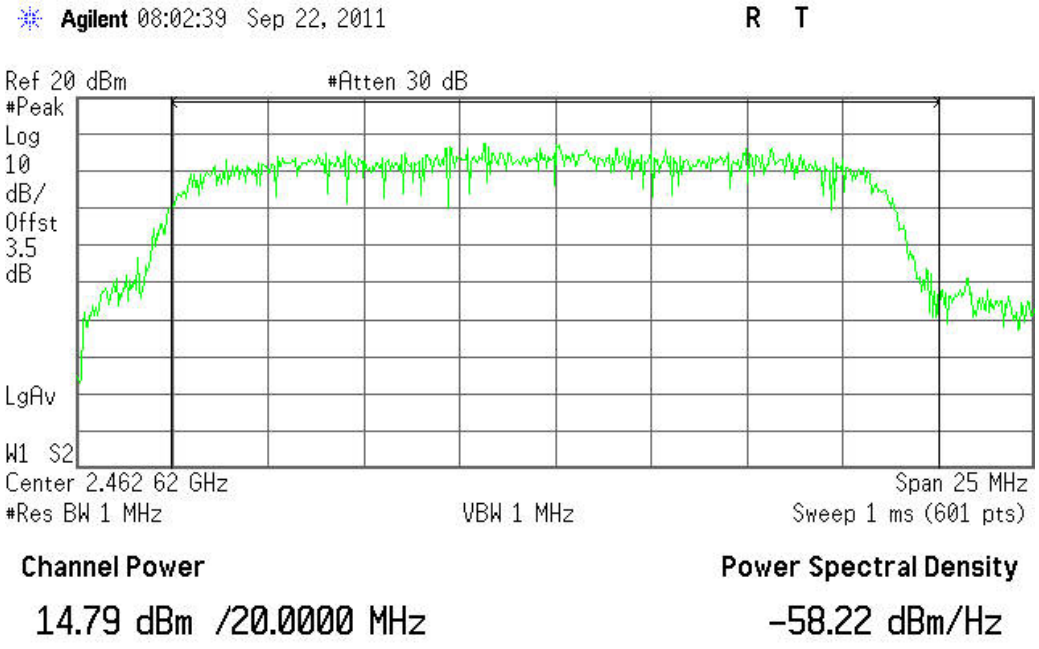
Channel Power

14.55 dBm /20.0000 MHz

Power Spectral Density

-58.46 dBm/Hz

Peak power (CH High)



Channel Power

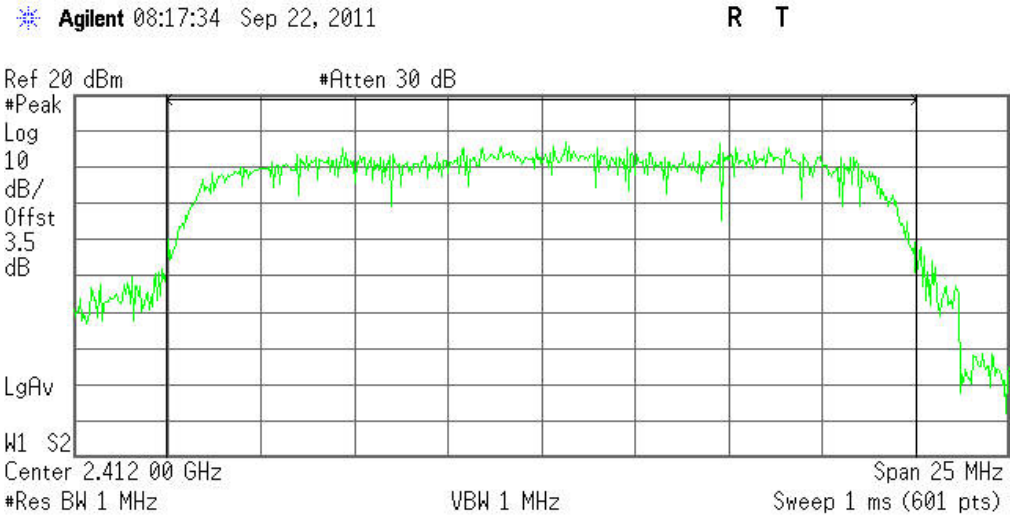
14.79 dBm /20.0000 MHz

Power Spectral Density

-58.22 dBm/Hz

(IEEE 802.11n HT20 MHz mode Combine with antenna 2)

Peak power (CH Low)



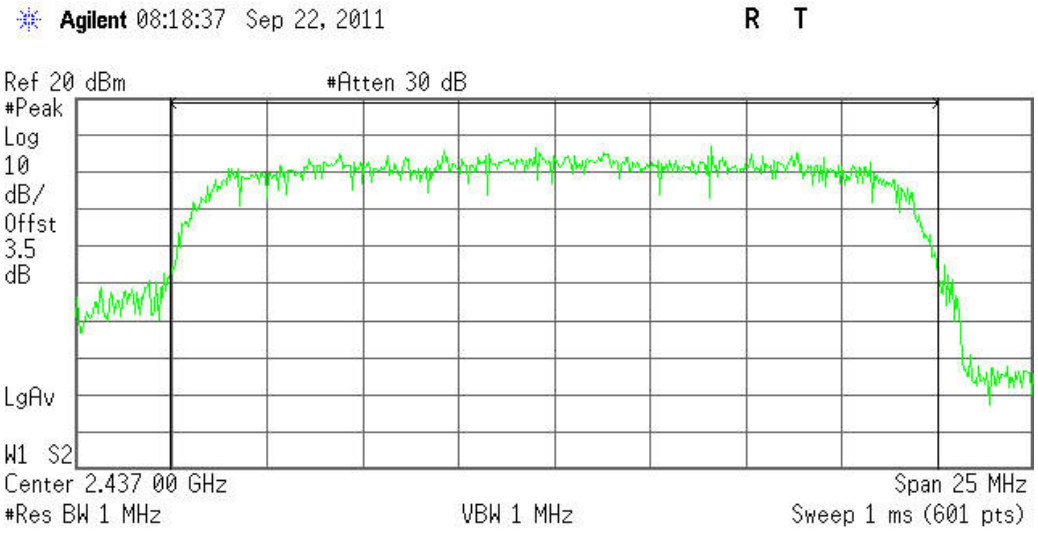
Channel Power

13.80 dBm /20.0000 MHz

Power Spectral Density

-59.21 dBm/Hz

Peak power (CH Mid)



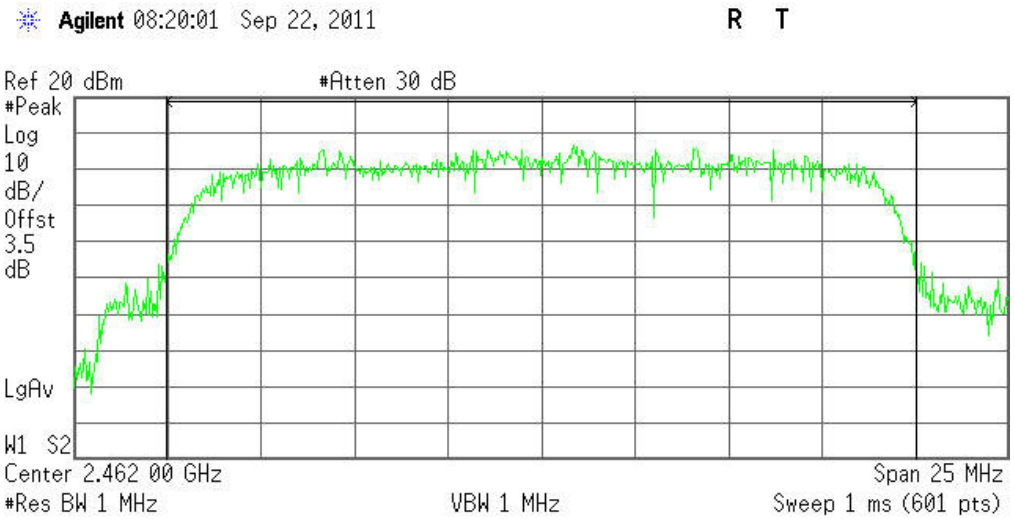
Channel Power

13.89 dBm /20.0000 MHz

Power Spectral Density

-59.12 dBm/Hz

Peak power (CH High)



Channel Power

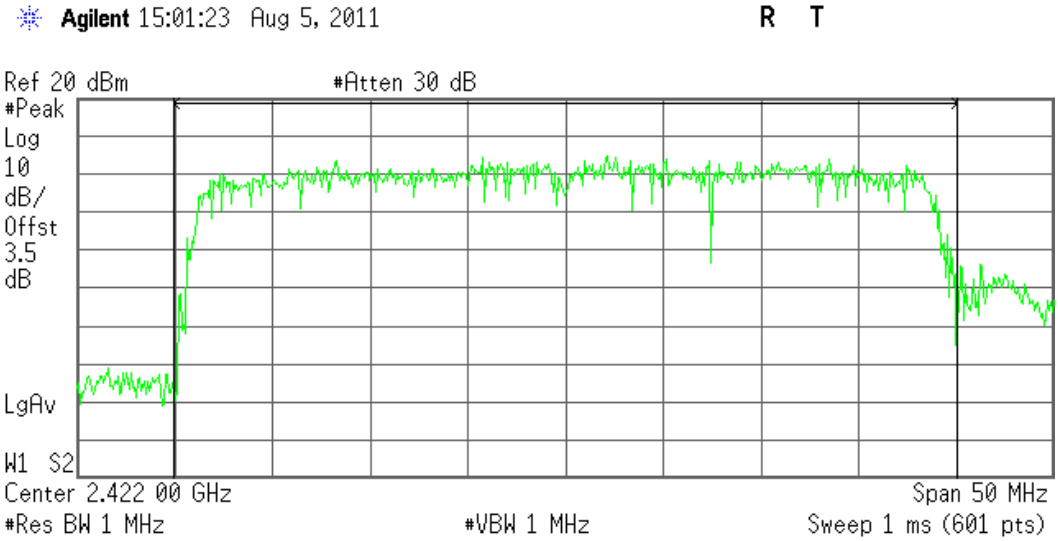
13.59 dBm /20.0000 MHz

Power Spectral Density

-59.43 dBm/Hz

(IEEE 802.11n HT40 MHz mode Antenna 1)

Peak power (CH Low)



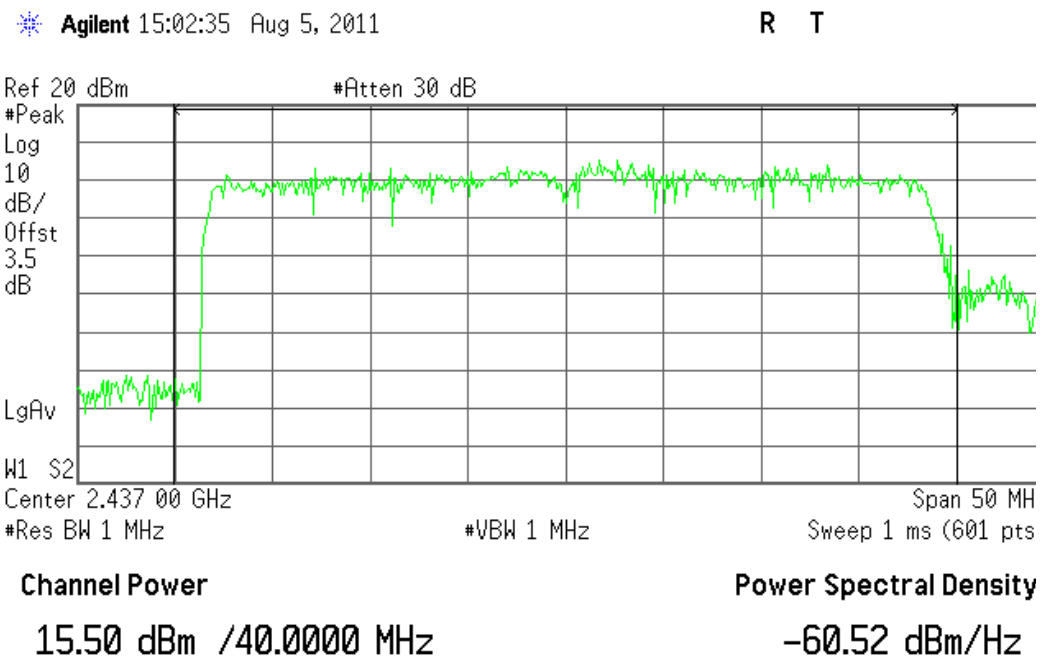
Channel Power

15.43 dBm /40.0000 MHz

Power Spectral Density

-60.59 dBm/Hz

Peak power (CH Mid)



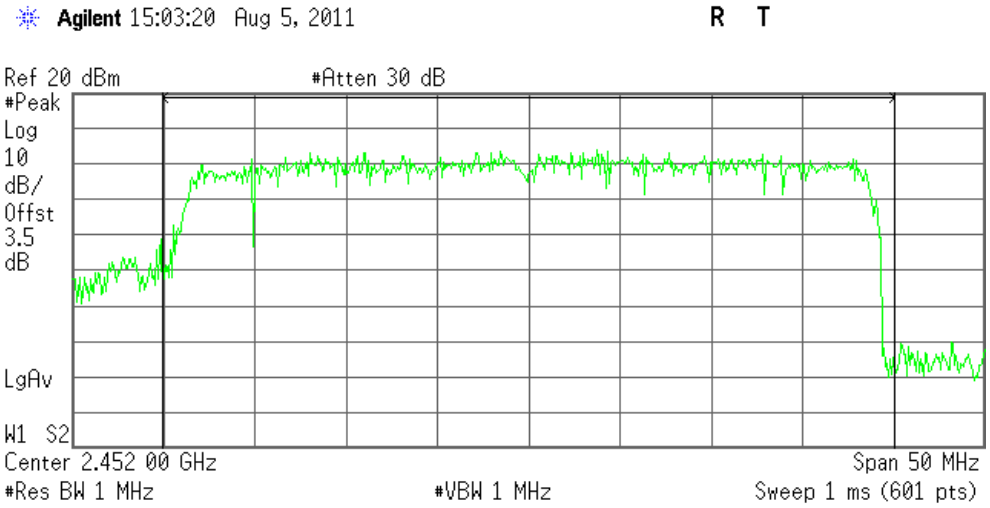
Channel Power

15.50 dBm /40.0000 MHz

Power Spectral Density

-60.52 dBm/Hz

Peak power (CH High)



Channel Power

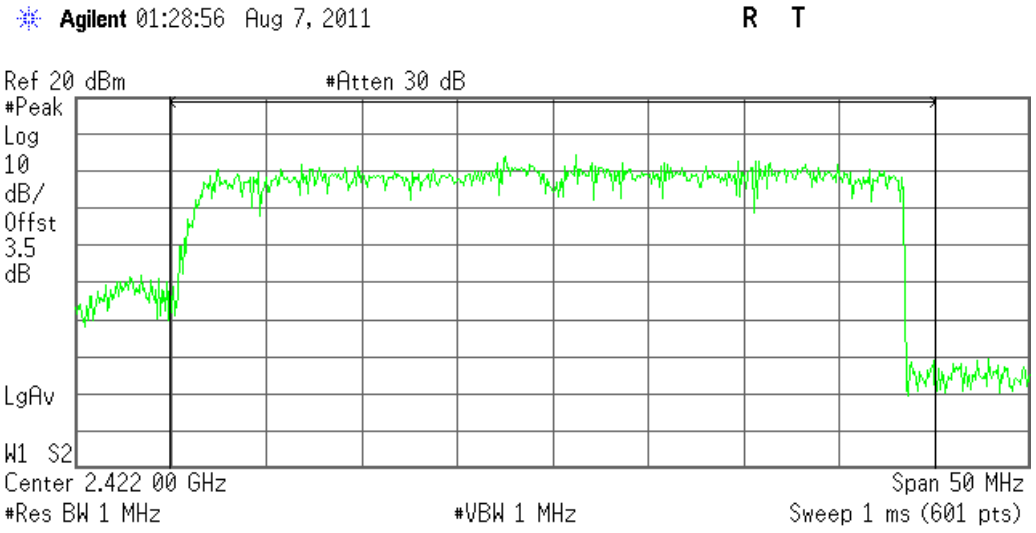
15.02 dBm /40.0000 MHz

Power Spectral Density

-61.00 dBm/Hz

(IEEE 802.11n HT40 MHz mode Antenna 2)

Peak power (CH Low)



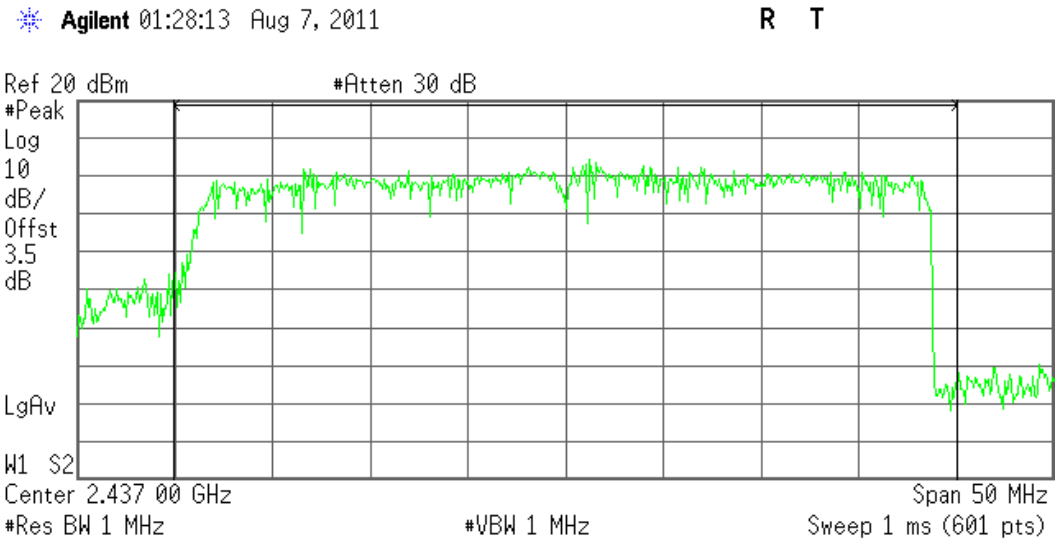
Channel Power

14.22 dBm /40.0000 MHz

Power Spectral Density

-61.80 dBm/Hz

Peak power (CH Mid)



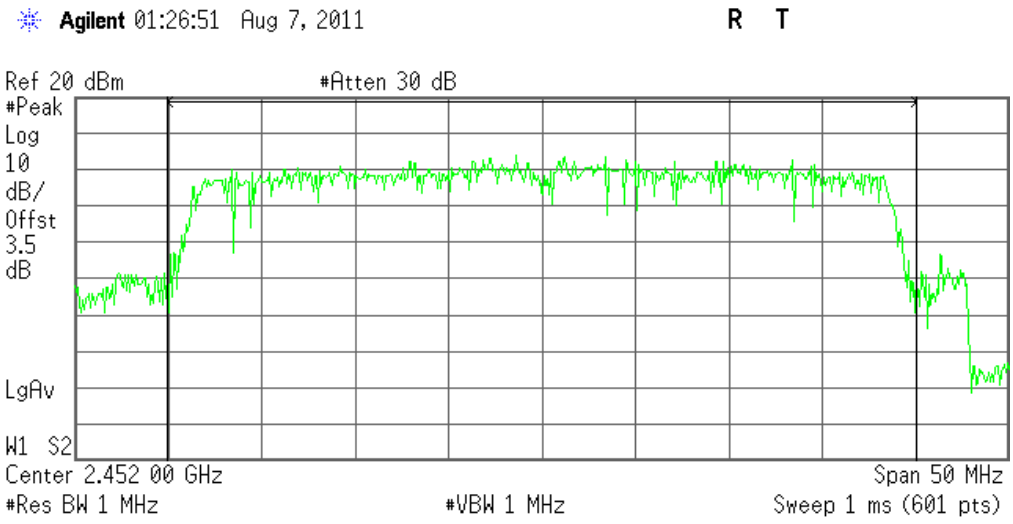
Channel Power

14.11 dBm /40.0000 MHz

Power Spectral Density

-61.91 dBm/Hz

Peak power (CH High)



Channel Power

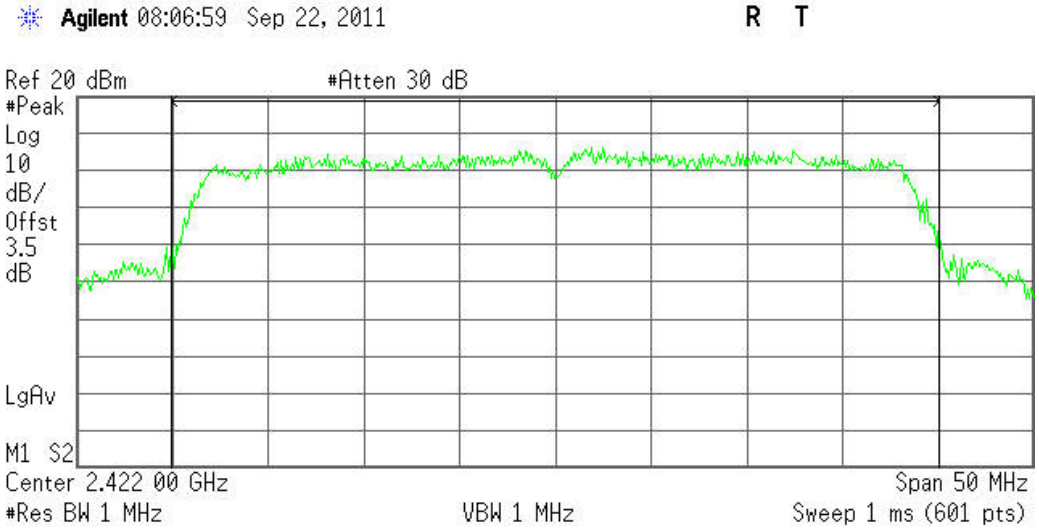
14.16 dBm /40.0000 MHz

Power Spectral Density

-61.86 dBm/Hz

(IEEE 802.11n HT40 MHz mode Combine with antenna 1)

Peak power (CH Low)



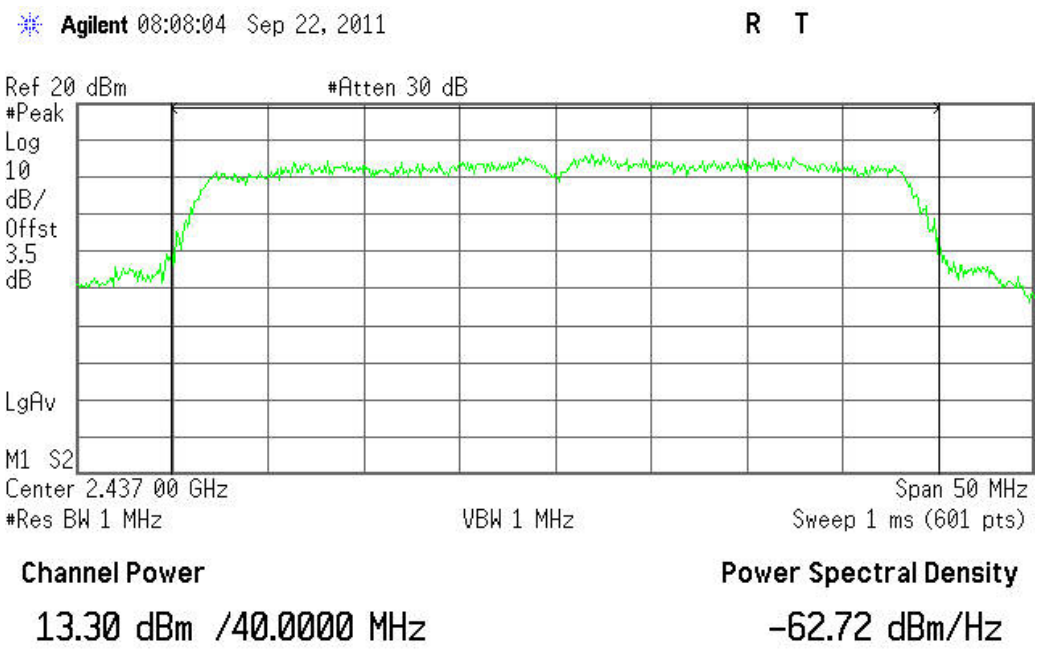
Channel Power

14.27 dBm /40.0000 MHz

Power Spectral Density

-61.75 dBm/Hz

Peak power (CH Mid)



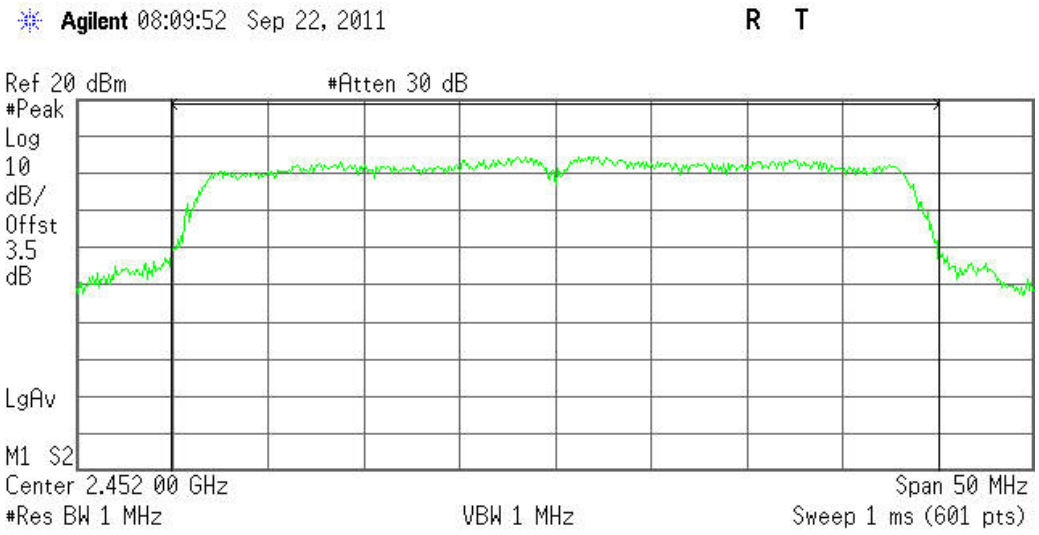
Channel Power

13.30 dBm /40.0000 MHz

Power Spectral Density

-62.72 dBm/Hz

Peak power (CH High)



Channel Power

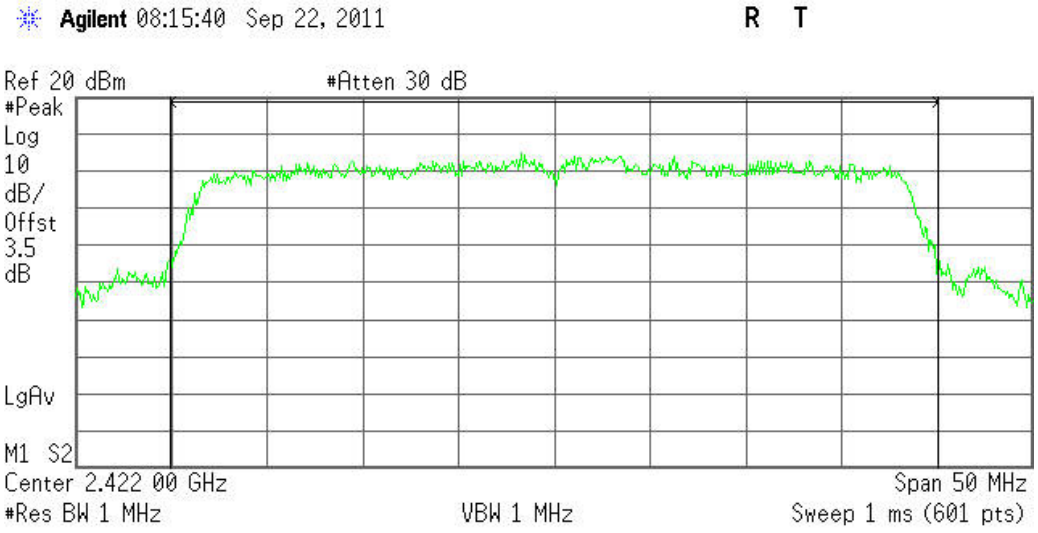
13.34 dBm /40.0000 MHz

Power Spectral Density

-62.68 dBm/Hz

(IEEE 802.11n HT40 MHz mode Combine with antenna 2)

Peak power (CH Low)



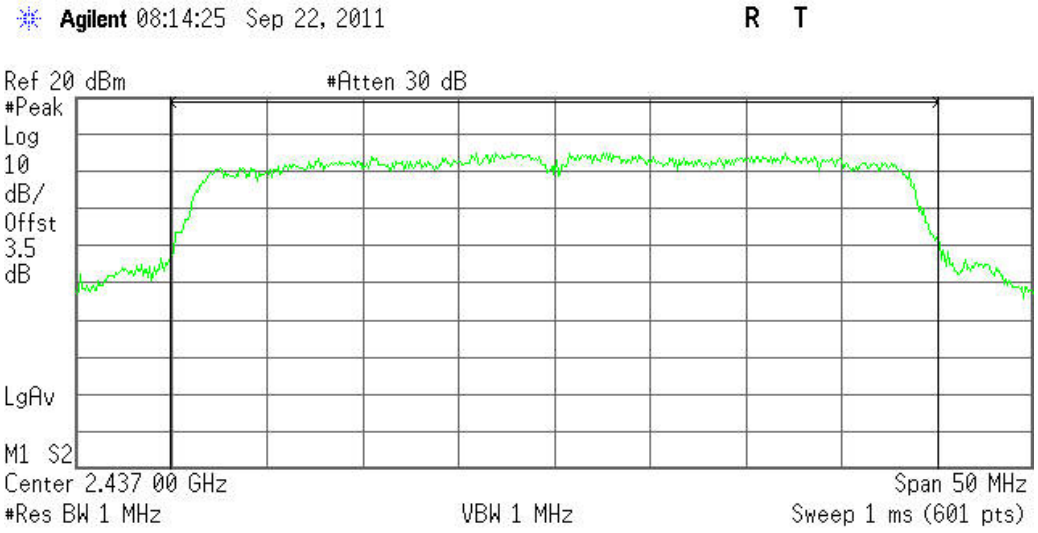
Channel Power

12.91 dBm /40.0000 MHz

Power Spectral Density

-63.12 dBm/Hz

Peak power (CH Mid)



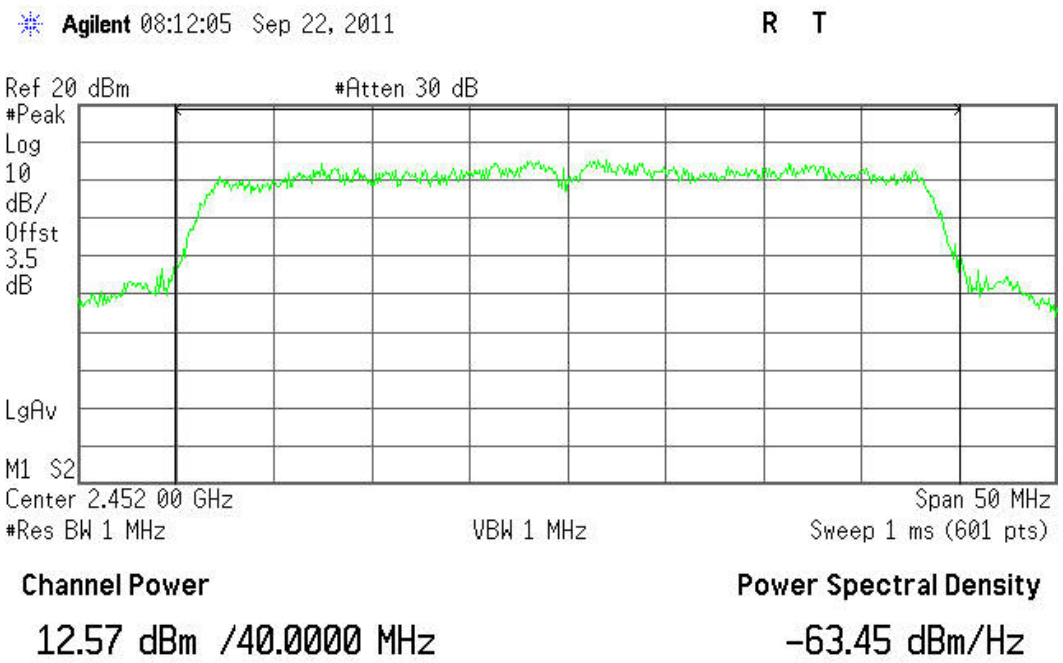
Channel Power

12.81 dBm /40.0000 MHz

Power Spectral Density

-63.21 dBm/Hz

Peak power (CH High)



7.5. BAND EDGES MEASUREMENT

7.5.1. LIMITS

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in 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)).

7.5.2. TEST INSTRUMENTS

Radiated Emission Test Site 966（2）					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	03/21/2011	03/21/2012
Amplifier	MITEQ	AM-1604-3000	1411843	03/21/2011	03/21/2012
Turn Table	EMCO	2081-1.21	N/A	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
High Noise Amplifier	Agilent	8449B	3008A01838	06/18/2011	06/18/2012
Site NSA	C&C	N/A	N/A	N.C.R	N.C.R
Bilog Antenna	SCHAFFNER	CBL6143	5082	06/18/2011	06/18/2012
Horn Antenna	SCHWARZBECK	BBHA9120D	D286	03/19/2011	03/19/2012
Signal Generator	Anritsu	MG3694A	#050125	03/21/2011	03/21/2012
Horn Antenna	TRC	HA0301	N/A	03/19/2011	03/19/2012
Loop Antenna	A.R.A	PLA-1030/B	1029	03/19/2011	03/19/2012
Power Sensor	Anritsu	MA2491A	030619	06/18/2011	06/18/2012
Power Meter	Anritsu	ML2487A	6K00001491	06/18/2011	06/18/2012
Temp. / Humidity Meter	VICTOR	VC230	N/A	03/30/2011	03/30/2012

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

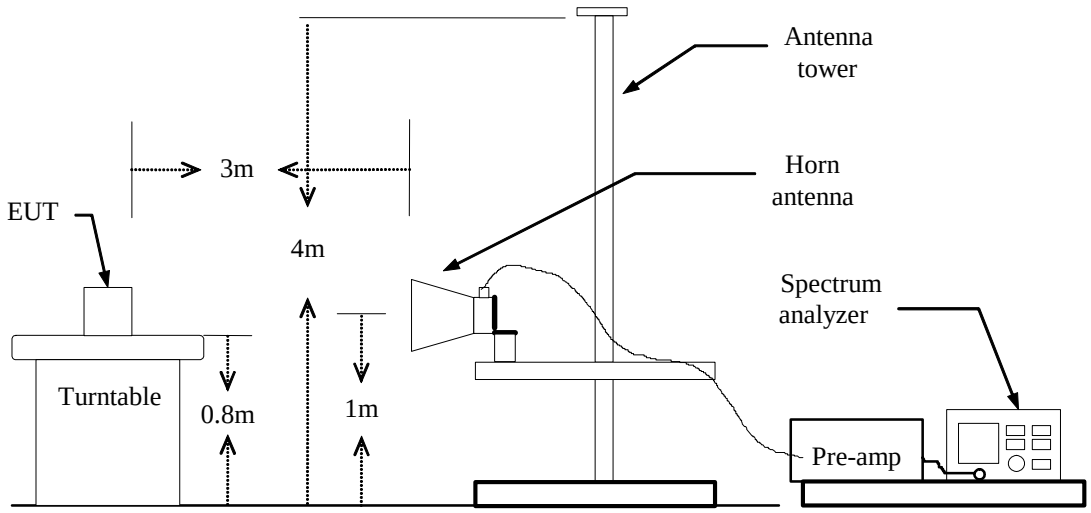
2. The FCC Site Registration number is 101879.

3. N.C.R = No Calibration Required.

7.5.3. TEST PROCEDURES (please refer to measurement standard)

1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
   (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
   (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are

7.5.4. TEST SETUP



7.5.5. TEST RESULTS

(Antenna 1)IEEE 802.11b mode/ CH Low

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2390.00	V	52.43	42.38	-9.75	42.68	32.63	74	54	-31.32	-21.37
N/A										
2390.00	H	48.36	37.33	-9.75	38.61	27.58	74	54	-35.39	-26.42
N/A										

IEEE 802.11b mode / CH High

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2483.50	V	59.05	46.33	-9.78	49.27	36.55	74	54	-24.73	-17.45
N/A										
2483.50	H	50.68	37.34	-9.78	40.90	27.56	74	54	-33.10	-26.44
N/A										

(Antenna 1) IEEE 802.11g mode / CH Low

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2390.00	V	66.49	48.75	-9.75	56.74	39.00	74	54	-17.26	-15.00
N/A										
2390.00	H	54.73	42.68	-9.75	44.98	31.25	74	54	-29.02	-22.75
N/A										

IEEE 802.11g mode / CH High

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2483.50	V	71.92	51.72	-9.78	62.14	41.94	74	54	-11.86	-12.06
N/A										
2483.50	H	55.18	42.00	-9.78	45.40	32.22	74	54	-28.60	-21.78
N/A										

(Antenna 2) IEEE 802.11g mode / CH Low

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2390.00	V	69.04	50.12	-9.75	59.29	40.37	74	54	-14.71	-13.63
N/A										
2390.00	H	54.28	40.82	-9.75	44.53	31.07	74	54	-29.47	-22.93
N/A										

IEEE 802.11g mode / CH High

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2483.50	V	68.17	50.38	-9.78	58.39	40.60	74	54	-15.61	-13.40
N/A										
2483.50	H	53.75	41.12	-9.78	43.97	31.34	74	54	-30.03	-22.66
N/A										

(Antenna 1)IEEE 802.11n HT20 MHz mode / CH Low

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2390.00	V	70.52	50.60	-9.75	60.77	40.85	74	54	-13.23	-13.15
N/A										
2390.00	H	58.86	41.71	-9.75	49.11	31.96	74	54	-24.89	-22.04
N/A										

IEEE 802.11n HT20 MHz mode / CH High

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2483.50	V	74.85	51.79	-9.78	65.07	42.01	74	54	-8.93	-11.99
N/A										
2483.50	H	57.04	42.27	-9.78	47.26	32.49	74	54	-26.74	-21.51
N/A										

(Antenna 2)IEEE 802.11n HT20 MHz mode / CH Low

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2390.00	V	68.29	50.57	-9.75	58.54	40.82	74	54	-15.46	-13.18
N/A										
2390.00	H	58.53	41.46	-9.75	48.78	31.71	74	54	-25.22	-22.29
N/A										

IEEE 802.11n HT20 MHz mode / CH High

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2483.50	V	68.02	51.29	-9.78	58.24	41.51	74	54	-15.76	-12.49
N/A										
2483.50	H	54.62	42.39	-9.78	44.84	32.61	74	54	-29.16	-21.39
N/A										

(Combine)IEEE 802.11n HT20 MHz mode / CH Low

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2390.00	V	F5-E5	52.21	-9.75	65.14	42.46	74	54	-8.86	-11.54
N/A										
2390.00	H	56.43	41.18	-9.75	46.68	31.43	74	54	-27.32	-22.57
N/A										

IEEE 802.11n HT20 MHz mode / CH High

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2483.50	V	70.86	52.41	-9.78	61.08	42.63	74	54	-12.92	-11.37
N/A										
2483.50	H	60.23	46.89	-9.78	50.45	37.11	74	54	-23.55	-16.89
N/A										

(Antenna 1)IEEE 802.11n HT40 MHz mode / CH Low

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2390.00	V	77.81	12.80	-9.75	68.06	3.05	74	54	-5.94	-50.95
N/A										
2390.00	H	65.65	44.43	-9.75	55.90	34.68	74	54	-18.10	-19.32
N/A										

IEEE 802.11n HT40 MHz mode / CH High

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2483.50	V	79.15	52.03	-9.78	69.37	42.25	74	54	-4.63	-11.75
N/A										
2483.50	H	61.41	44.01	-9.78	51.63	34.23	74	54	-22.37	-19.77
N/A										

(Antenna 2)IEEE 802.11n HT40 MHz mode / CH Low

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2390.00	V	76.29	50.33	-9.75	66.54	40.58	74	54	-7.46	-13.42
N/A										
2390.00	H	60.73	40.83	-9.75	50.98	31.08	74	54	-23.02	-22.92
N/A										

IEEE 802.11n HT40 MHz mode / CH High

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2483.50	V	78.39	52.48	-9.78	68.61	42.70	74	54	-5.39	-11.30
N/A										
2483.50	H	61.76	43.81	-9.78	51.98	34.03	74	54	-22.02	-19.97
N/A										

(Combine)IEEE 802.11n HT40 MHz mode / CH Low

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2390.00	V	81.61	47.89	-9.75	71.86	38.14	74	54	-2.14	-15.86
N/A										
2390.00	H	66.12	42.54	-9.75	56.37	32.79	74	54	-17.63	-21.21
N/A										

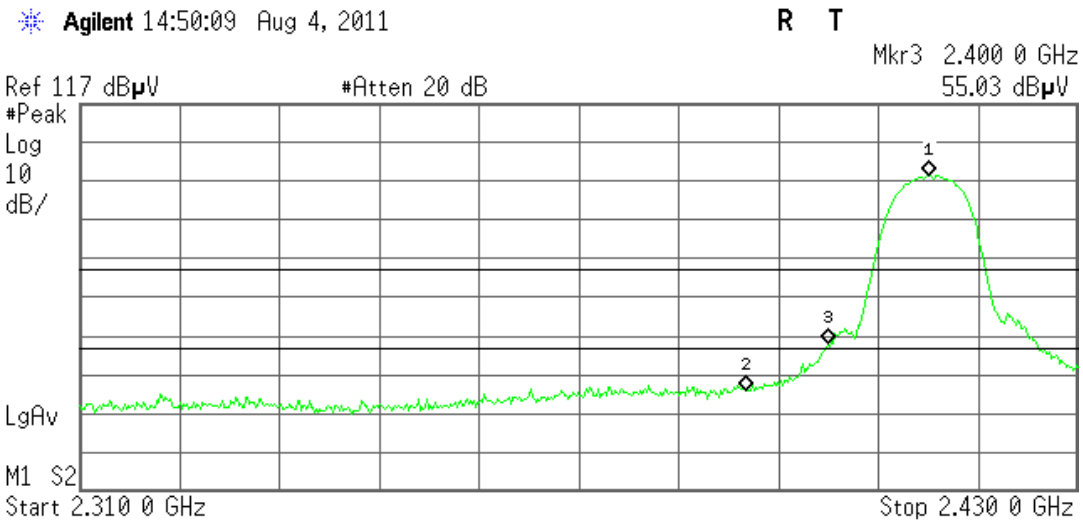
IEEE 802.11n HT40 MHz mode / CH High

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Peak Margin (dB)	AV Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)				
2483.50	V	77.84	47.33	-9.78	68.06	37.55	74	54	-5.94	-16.45
N/A										
2483.50	H	60.38	38.88	-9.78	50.60	31.83	74	54	-23.40	-22.17
N/A										

Test Plot (IEEE 802.11b mode Antenna 1)

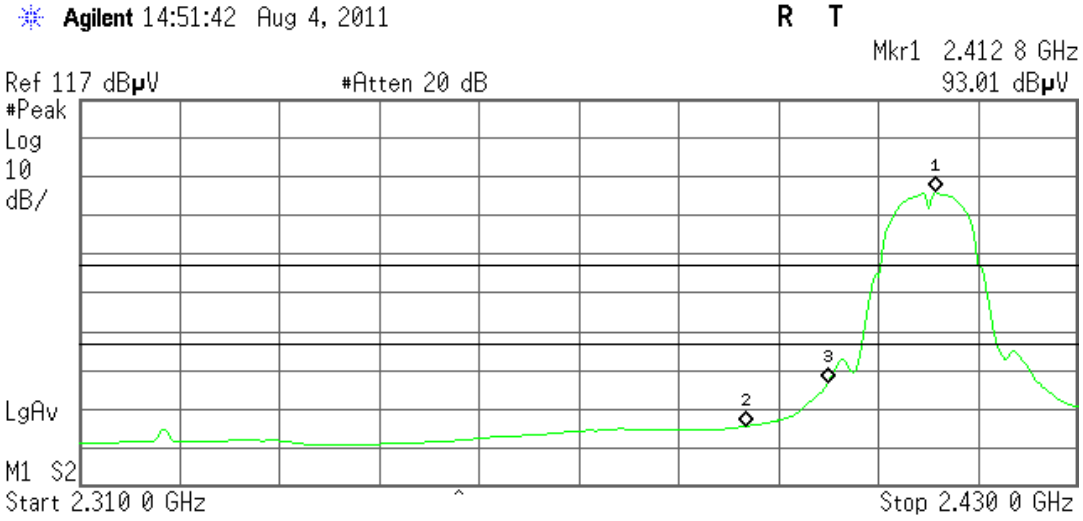
Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**



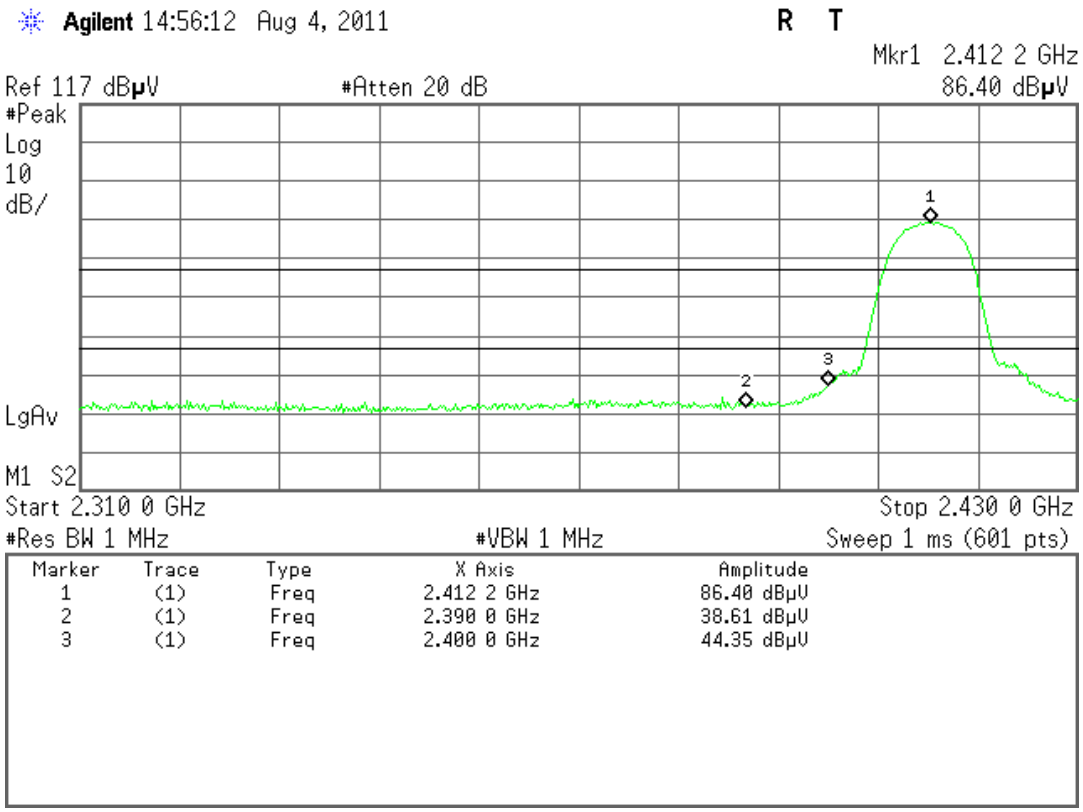
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.412 0 GHz	98.30 dBµV
2	(1)	Freq	2.390 0 GHz	42.86 dBµV
3	(1)	Freq	2.400 0 GHz	55.03 dBµV

Detector mode: Average **Polarity: Vertical**



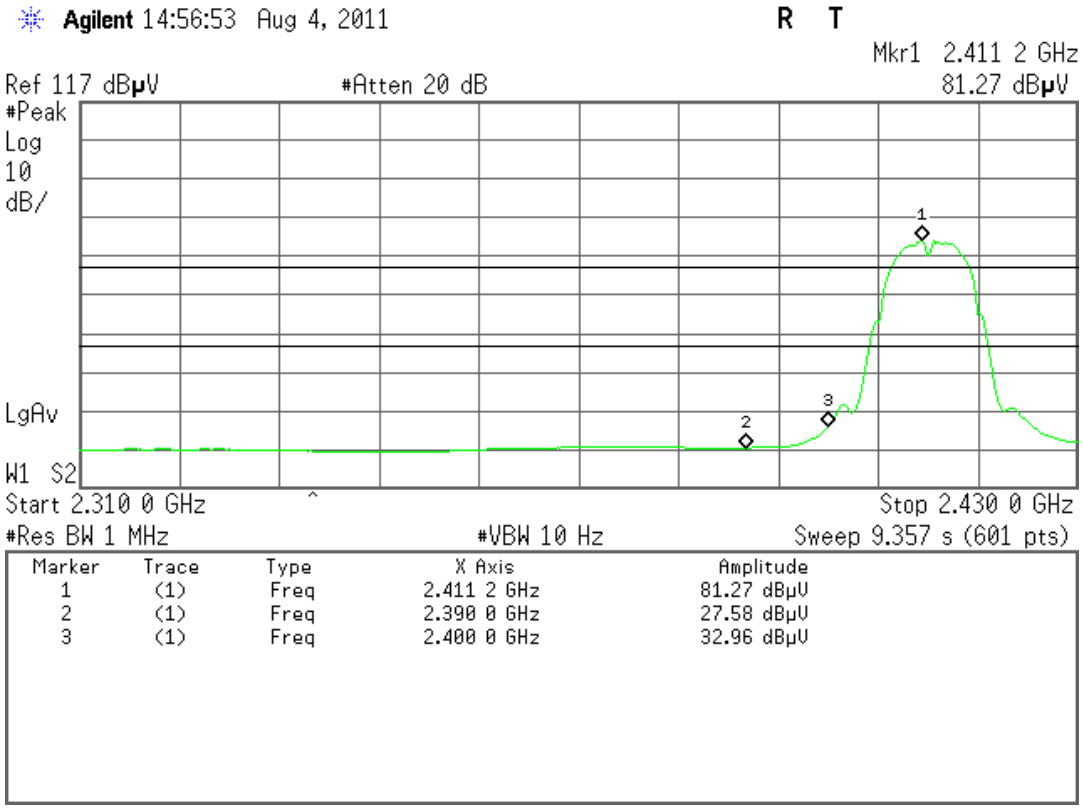
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.412 8 GHz	93.01 dBµV
2	(1)	Freq	2.390 0 GHz	32.63 dBµV
3	(1)	Freq	2.400 0 GHz	44.02 dBµV

Detector mode: Peak **Polarity: Horizontal**



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.412 2 GHz	86.40 dBµV
2	(1)	Freq	2.390 0 GHz	38.61 dBµV
3	(1)	Freq	2.400 0 GHz	44.35 dBµV

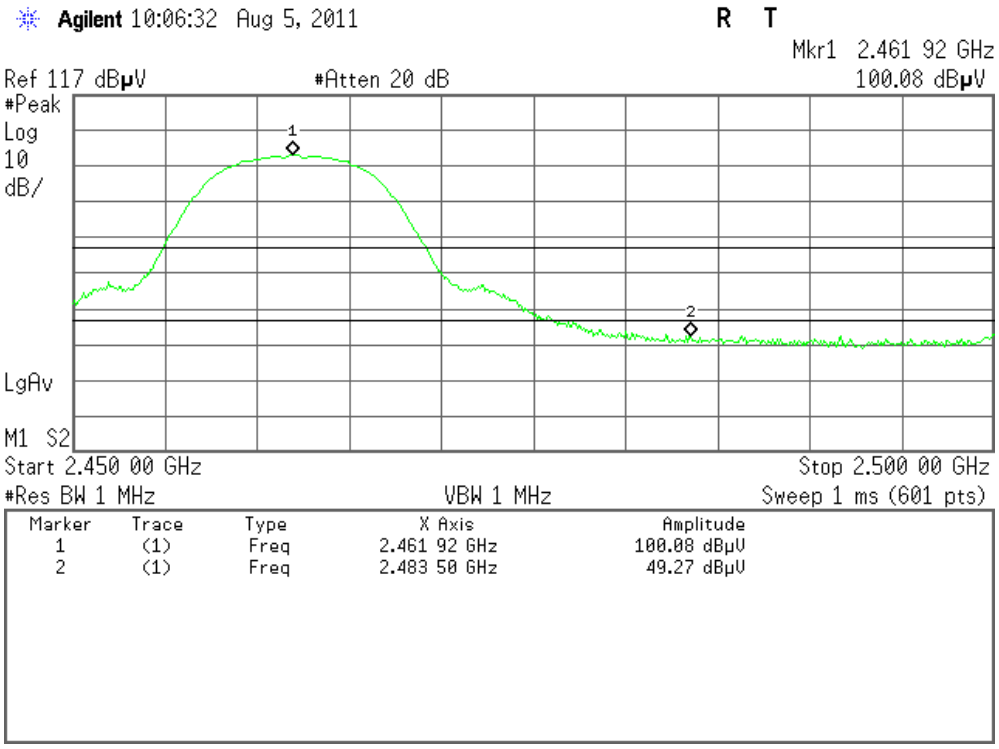
Detector mode: Average **Polarity: Horizontal**



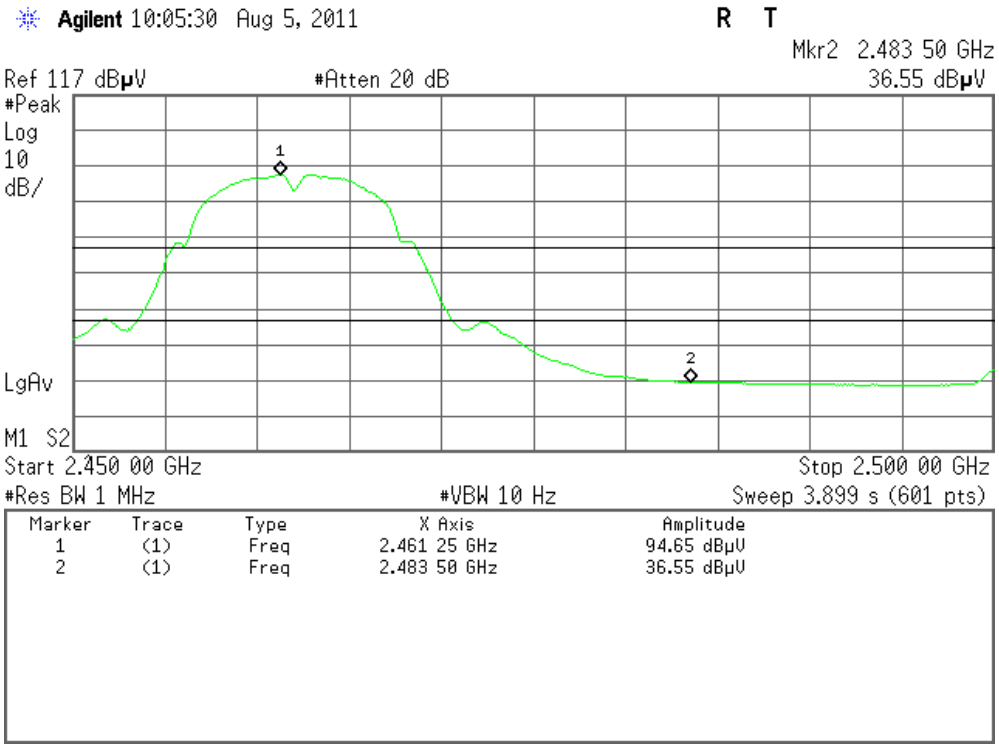
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.411 2 GHz	81.27 dBµV
2	(1)	Freq	2.390 0 GHz	27.58 dBµV
3	(1)	Freq	2.400 0 GHz	32.96 dBµV

Band Edges (CH High)

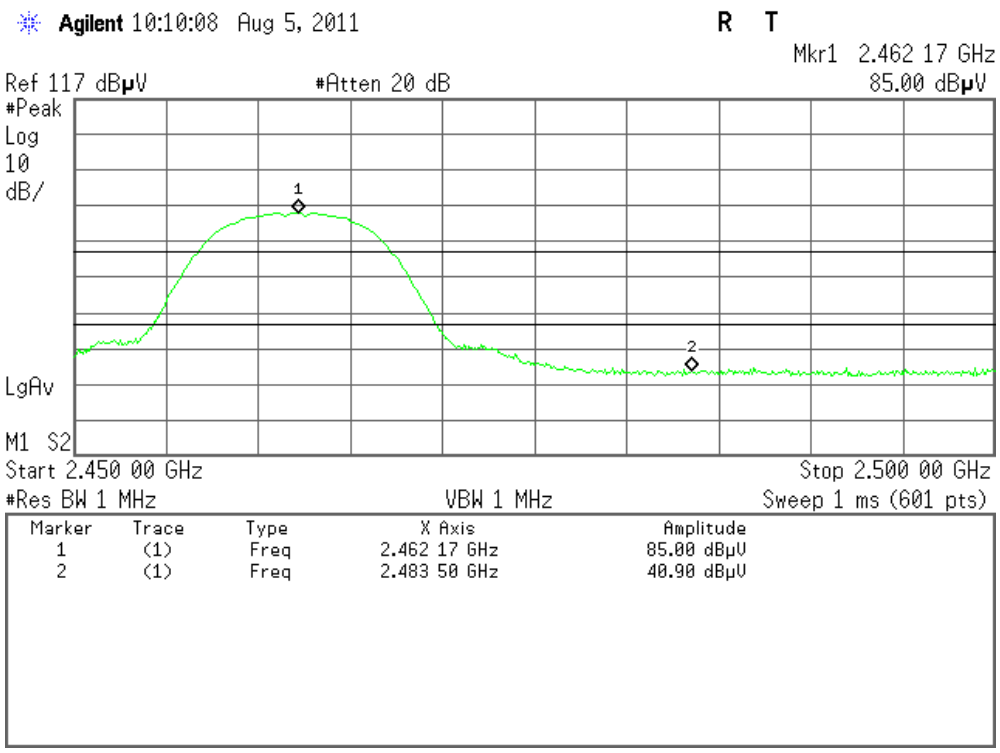
Detector mode: Peak — Polarity: Vertical



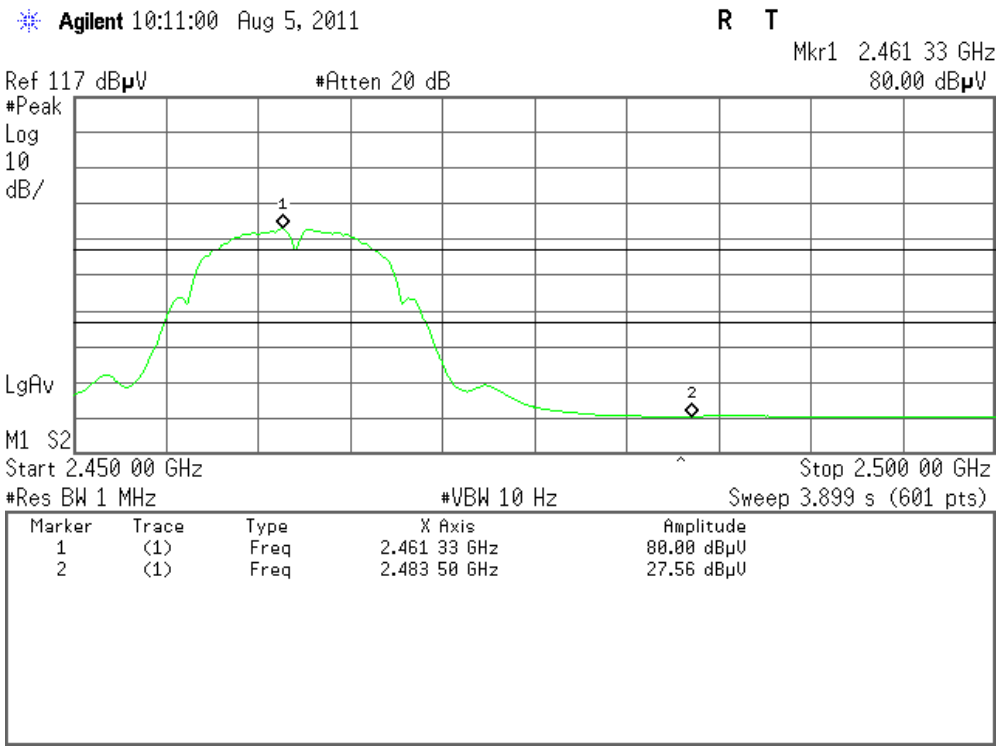
Detector mode: Average — Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



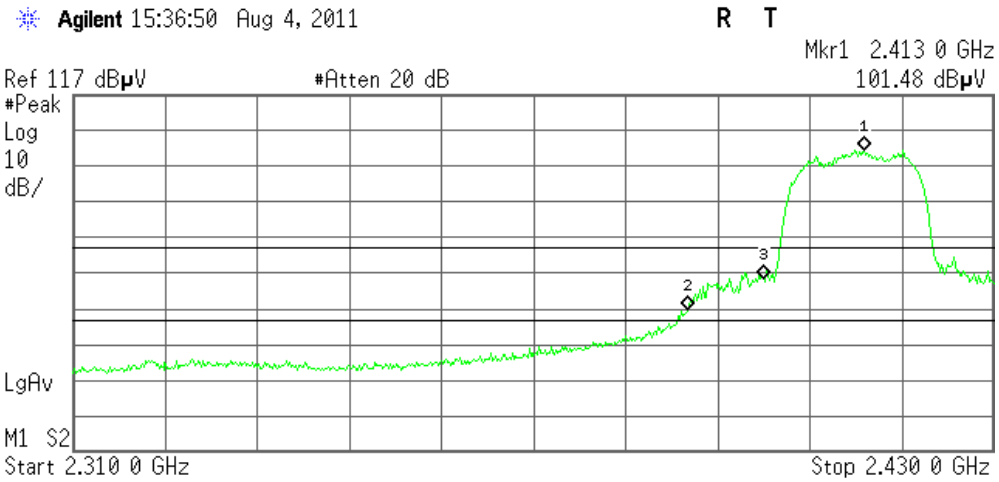
Detector mode: Average **Polarity: Horizontal**



(IEEE 802.11g mode Antenna 1)

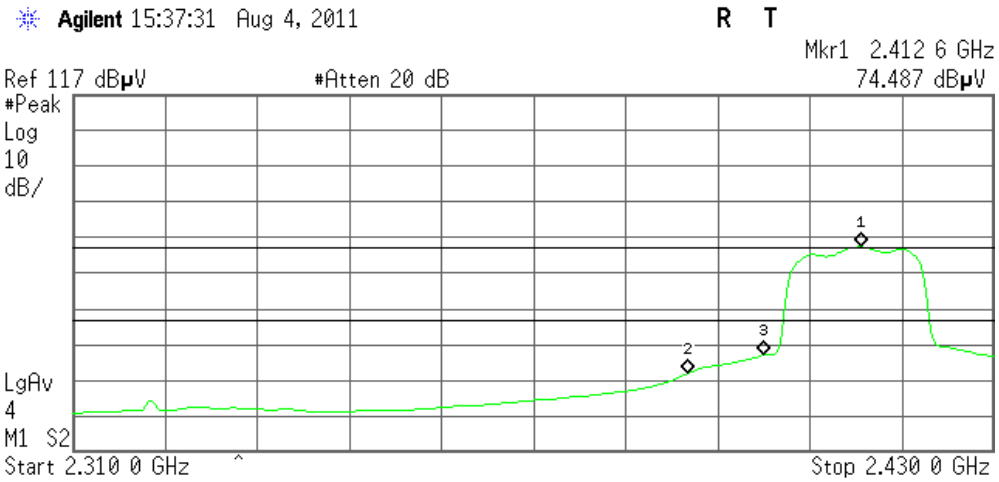
Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**



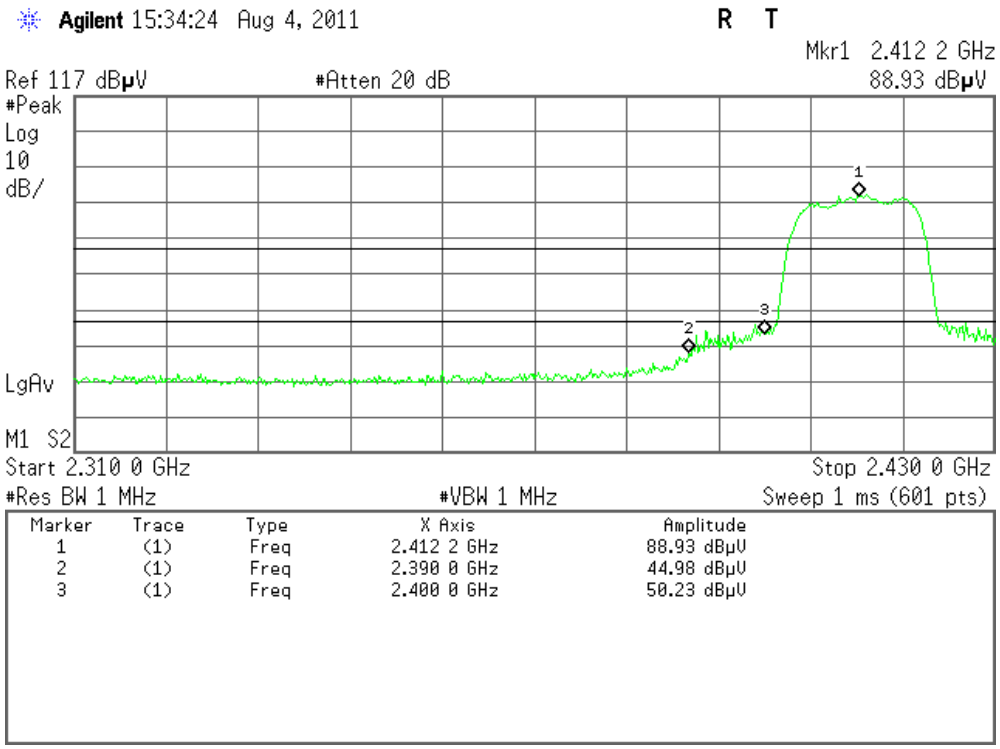
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.413 0 GHz	101.48 dBµV
2	(1)	Freq	2.390 0 GHz	56.74 dBµV
3	(1)	Freq	2.400 0 GHz	65.68 dBµV

Detector mode: Average **Polarity: Vertical**

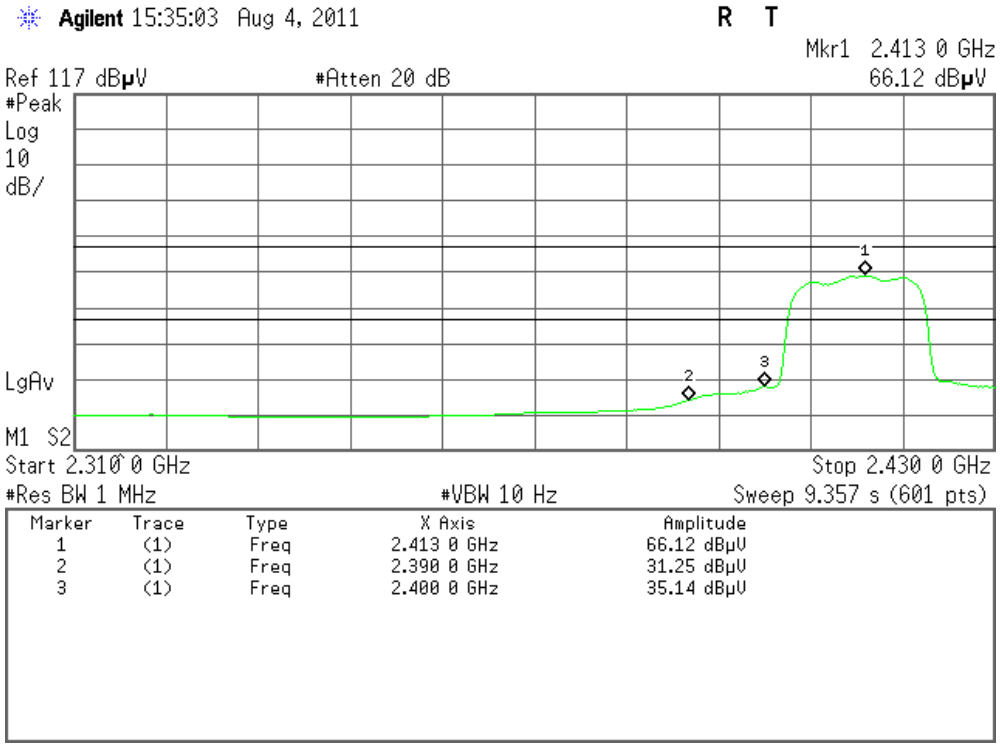


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.412 6 GHz	74.49 dBµV
2	(1)	Freq	2.390 0 GHz	39.00 dBµV
3	(1)	Freq	2.400 0 GHz	44.29 dBµV

Detector mode: Peak **Polarity: Horizontal**

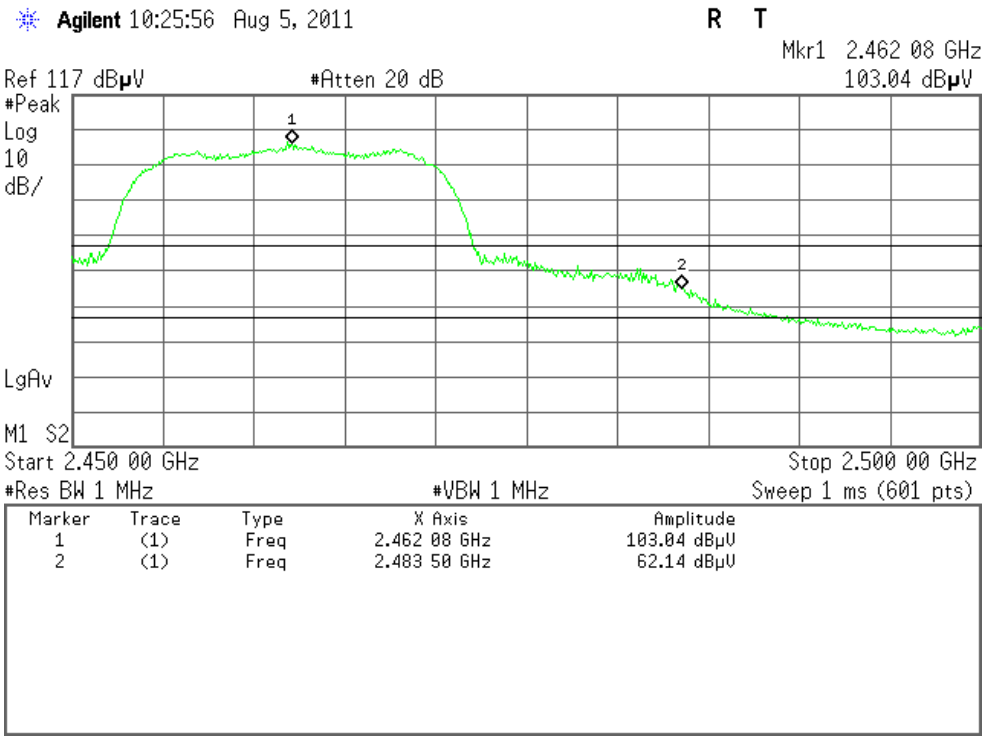


Detector mode: Average **Polarity: Horizontal**

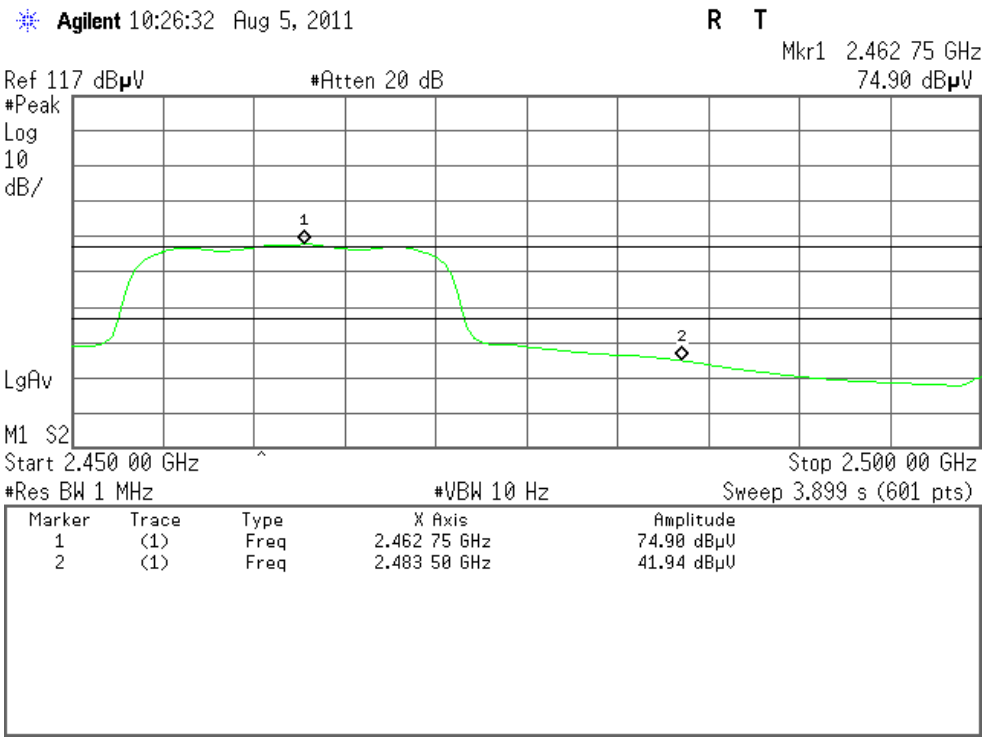


Band Edges (CH High)

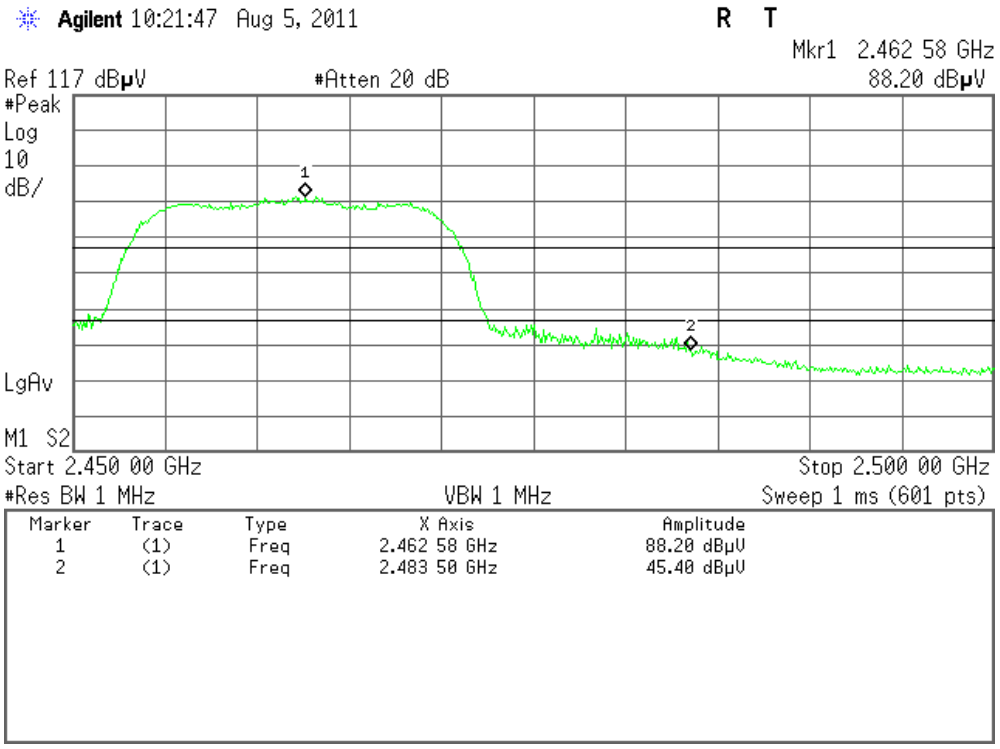
Detector mode: Peak — Polarity: Vertical



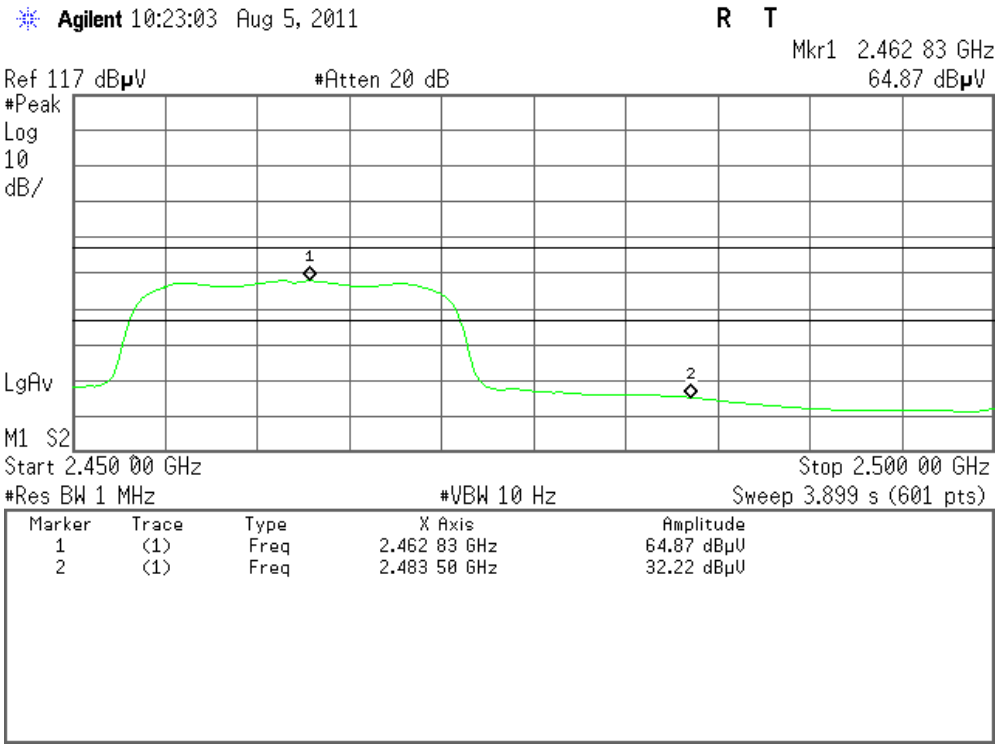
Detector mode: Average — Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



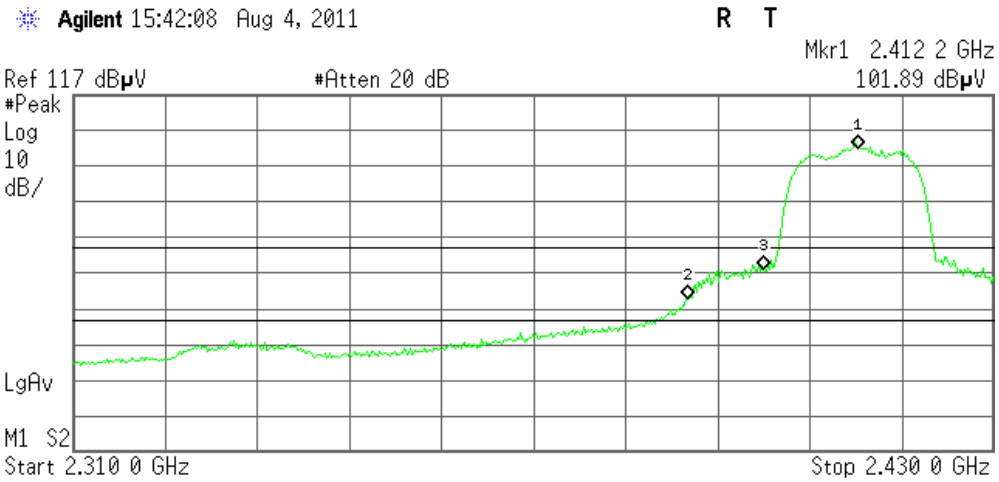
Detector mode: Average **Polarity: Horizontal**



(IEEE 802.11g mode Antenna 2)

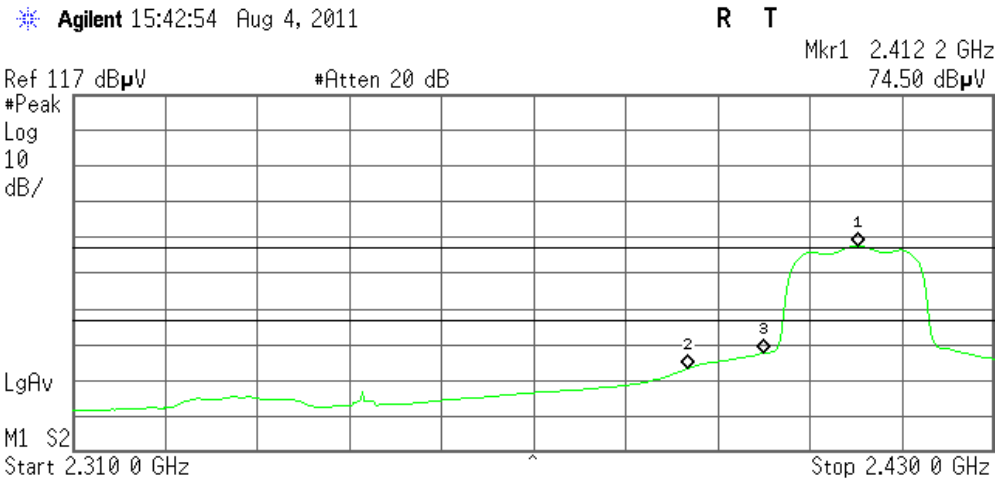
Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**



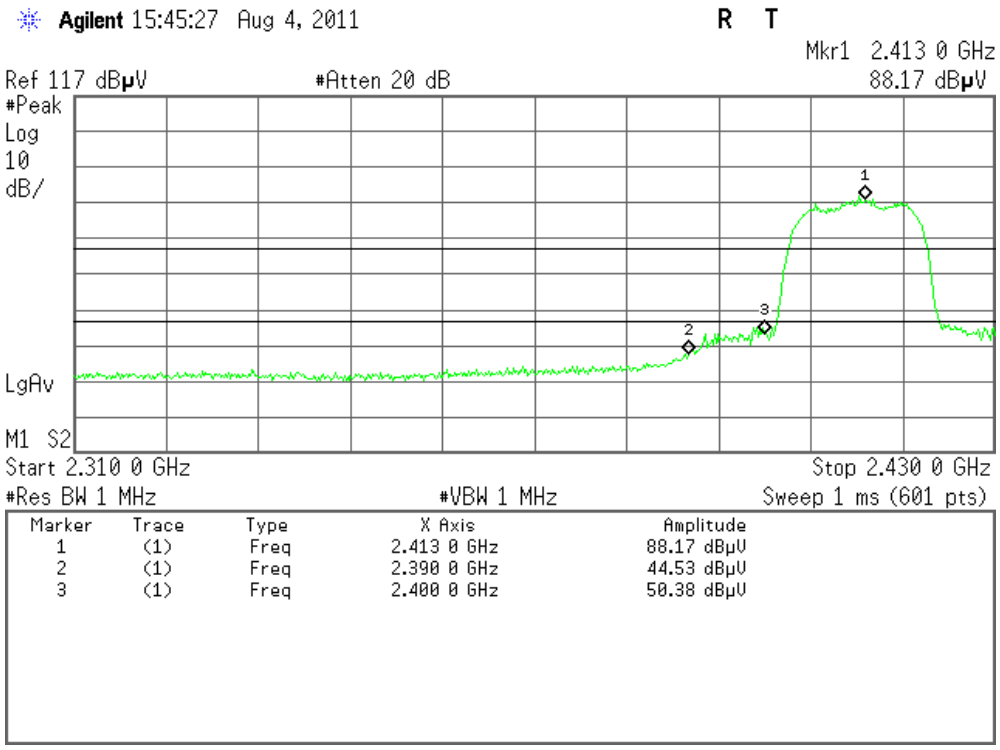
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.412 2 GHz	101.89 dBµV
2	(1)	Freq	2.390 0 GHz	59.29 dBµV
3	(1)	Freq	2.400 0 GHz	68.21 dBµV

Detector mode: Average **Polarity: Vertical**

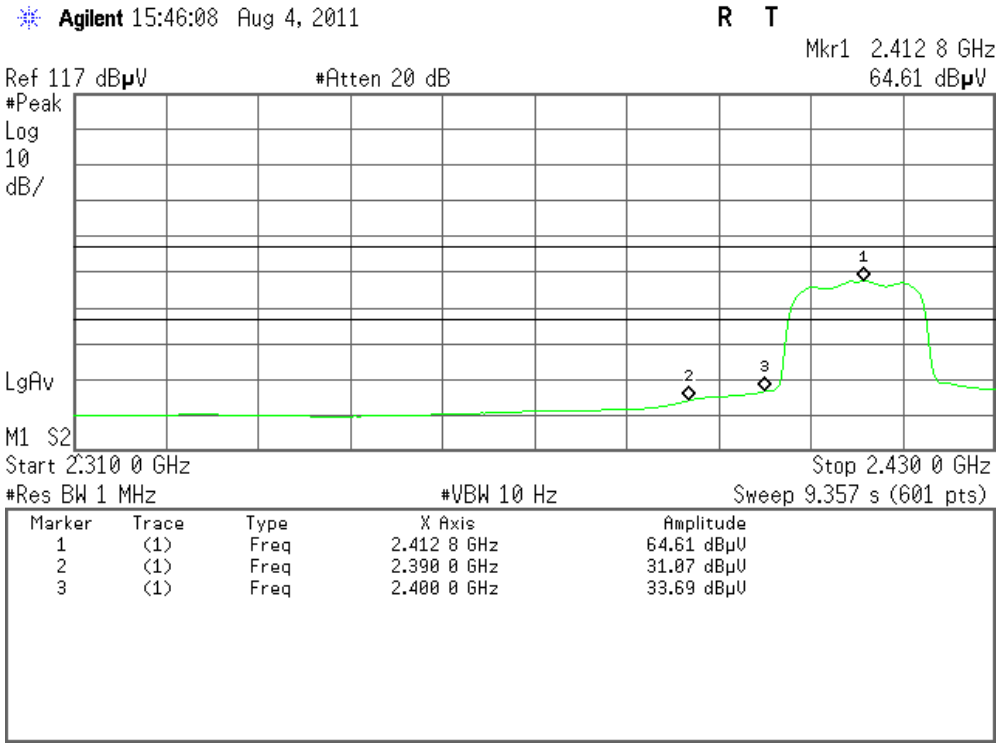


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.412 2 GHz	74.50 dBµV
2	(1)	Freq	2.390 0 GHz	40.37 dBµV
3	(1)	Freq	2.400 0 GHz	44.72 dBµV

Detector mode: Peak **Polarity: Horizontal**

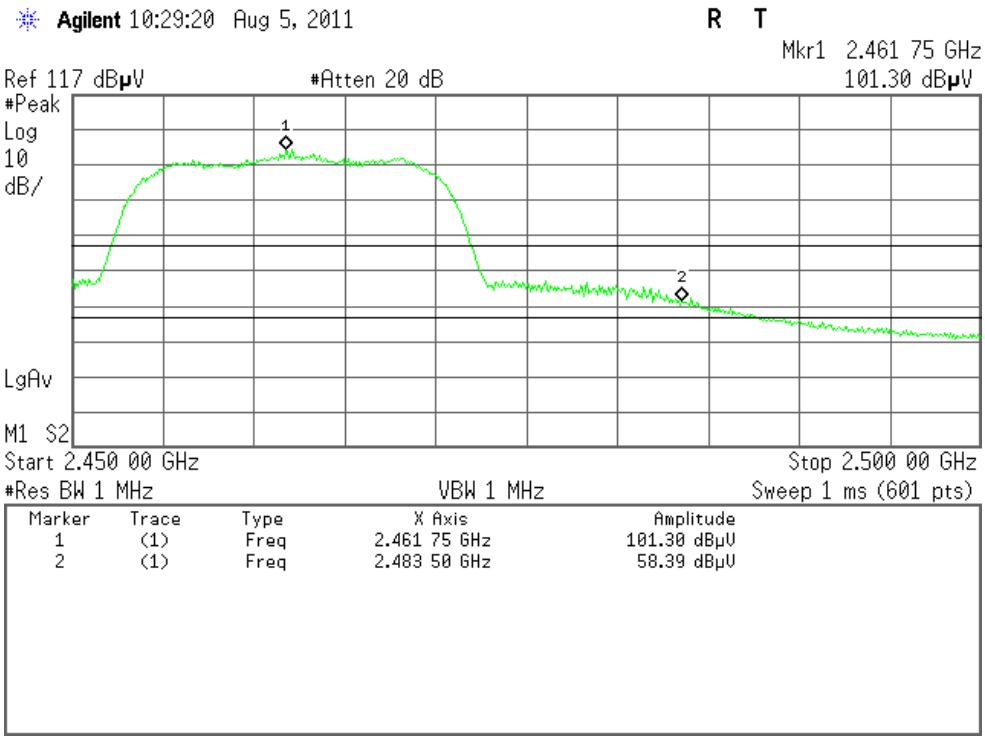


Detector mode: Average **Polarity: Horizontal**

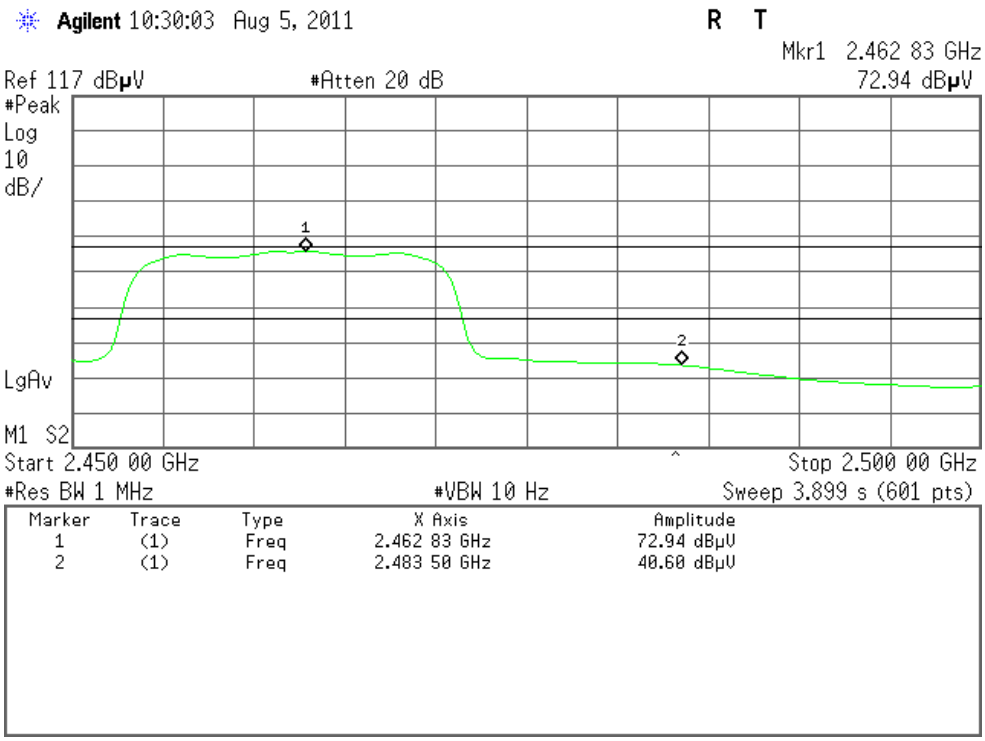


Band Edges (CH High)

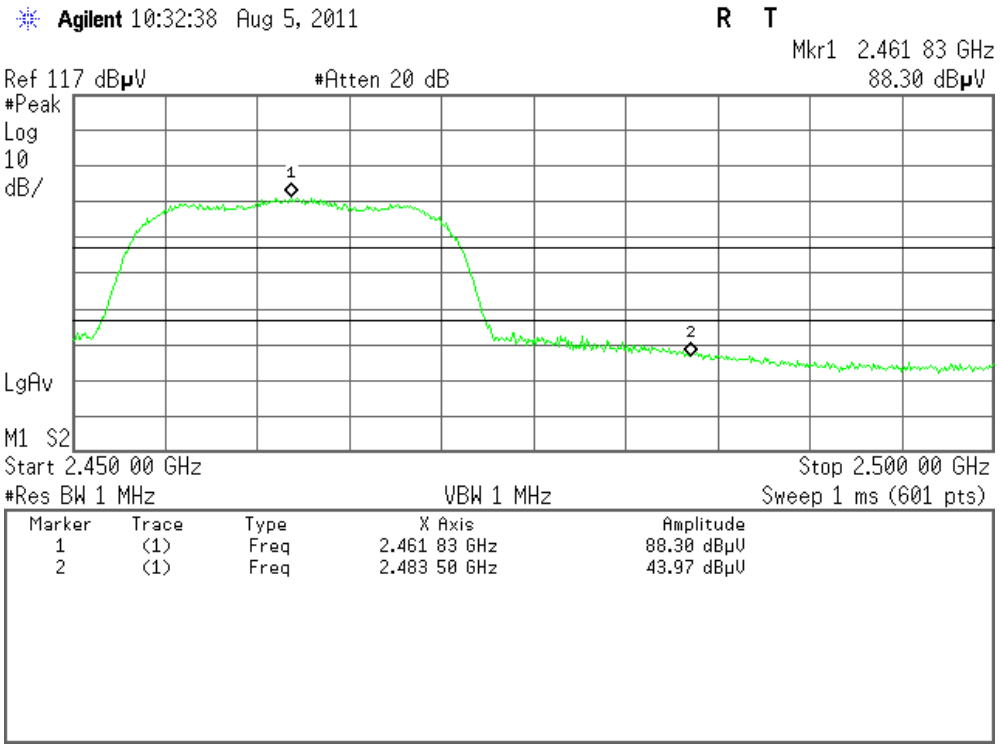
Detector mode: Peak **Polarity: Vertical**



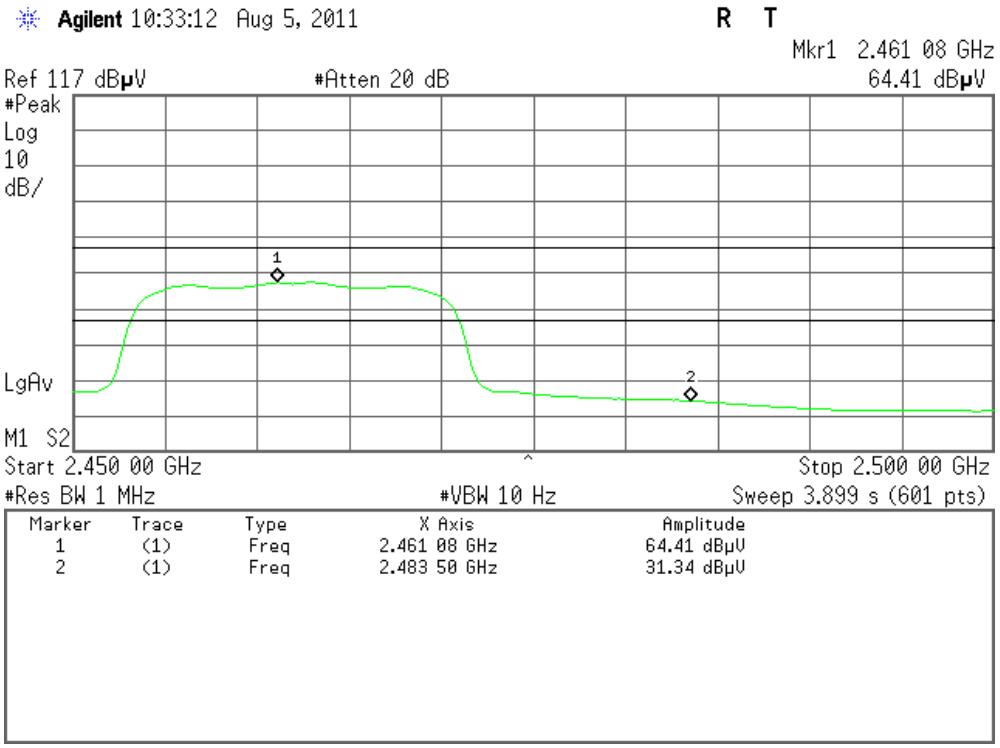
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**



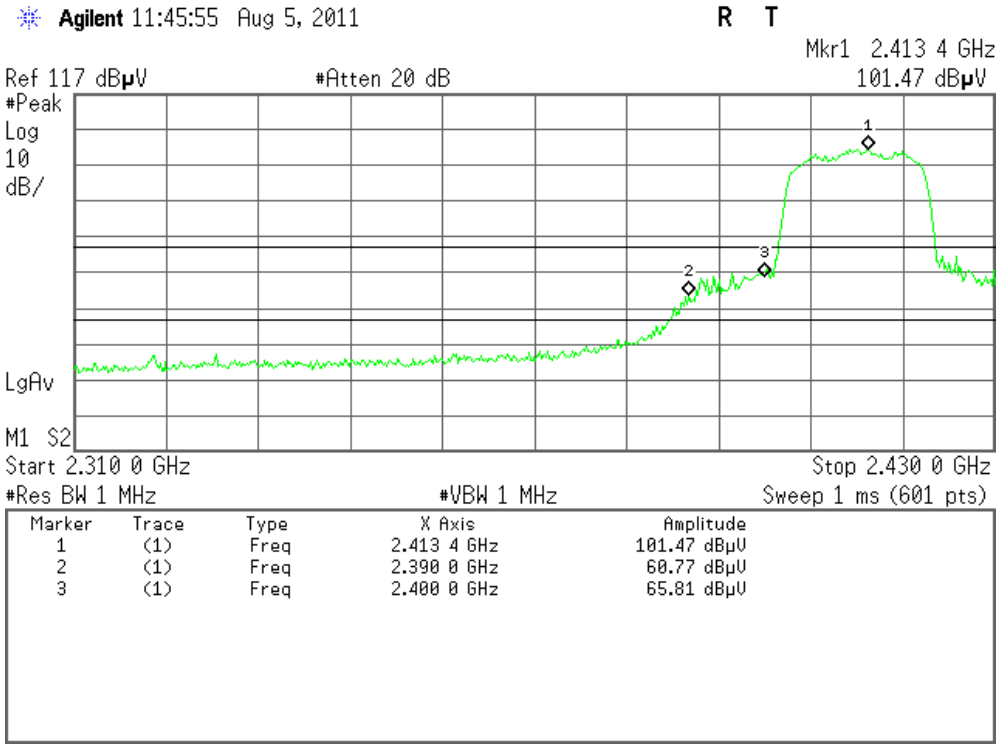
Detector mode: Average **Polarity: Horizontal**



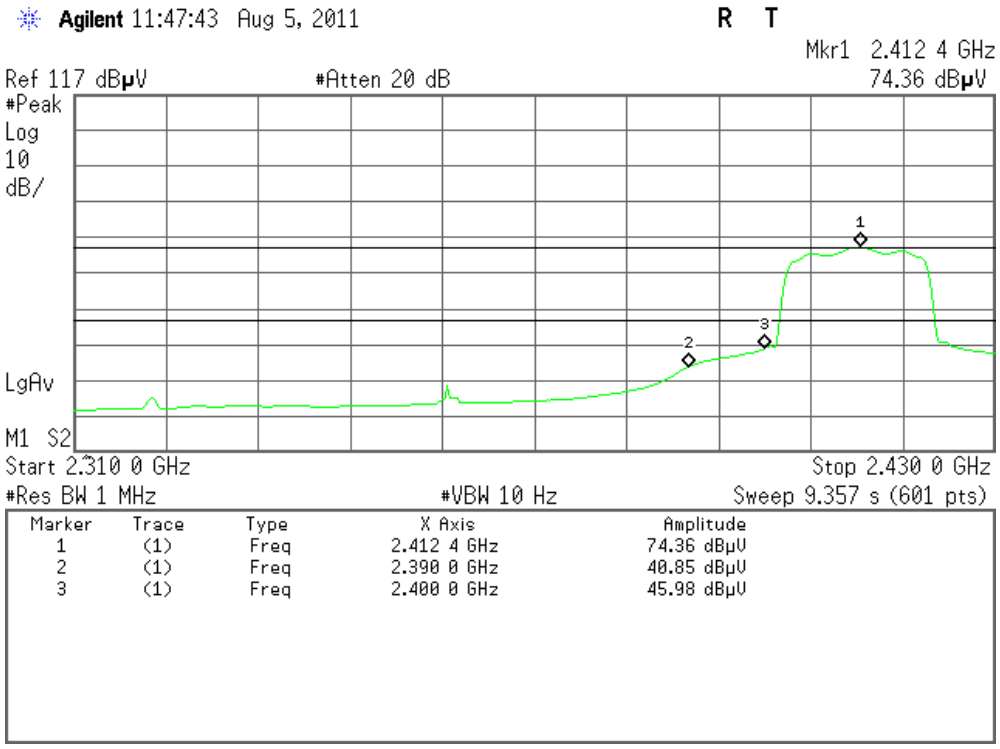
(IEEE 802.11n HT20 MHz mode Antenna 1)

Band Edges (CH Low)

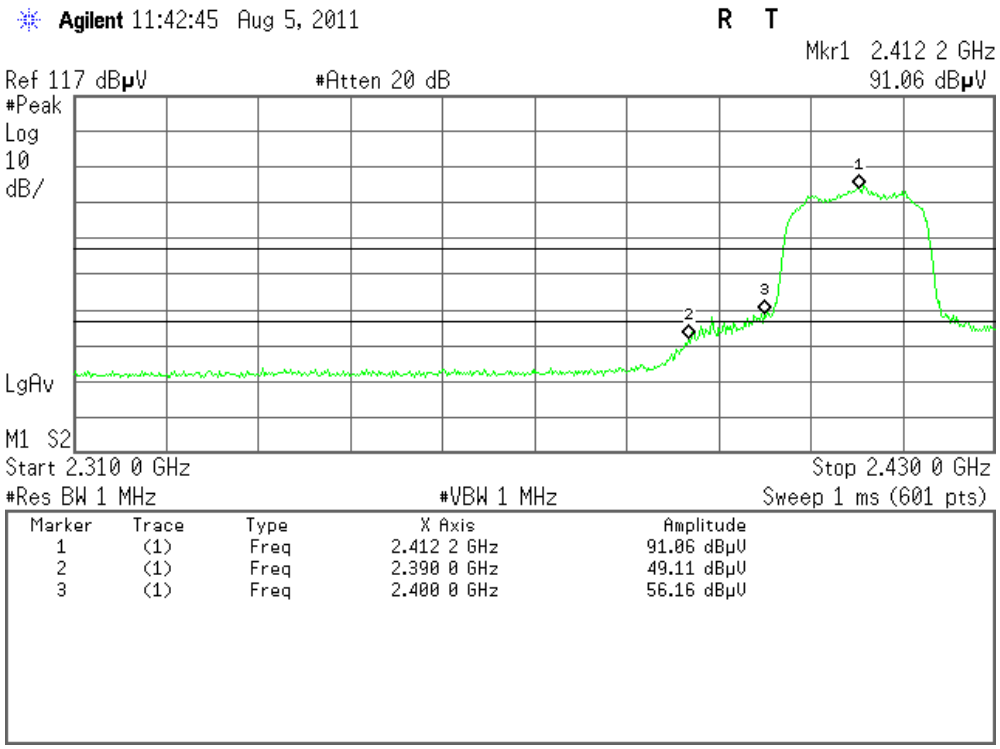
Detector mode: Peak **Polarity: Vertical**



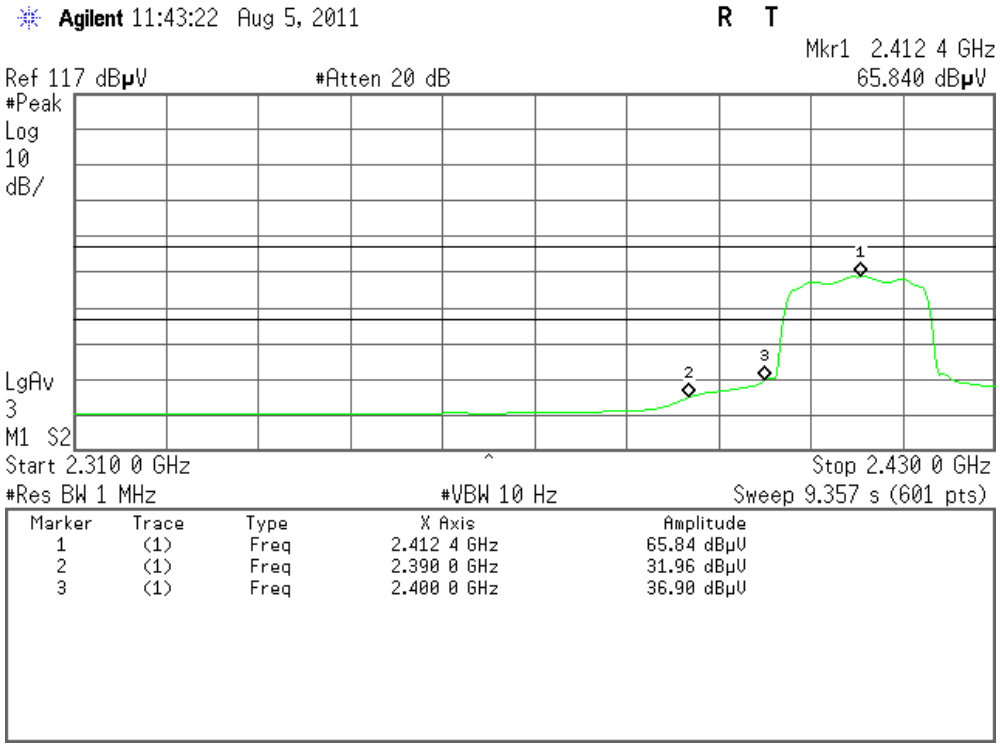
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

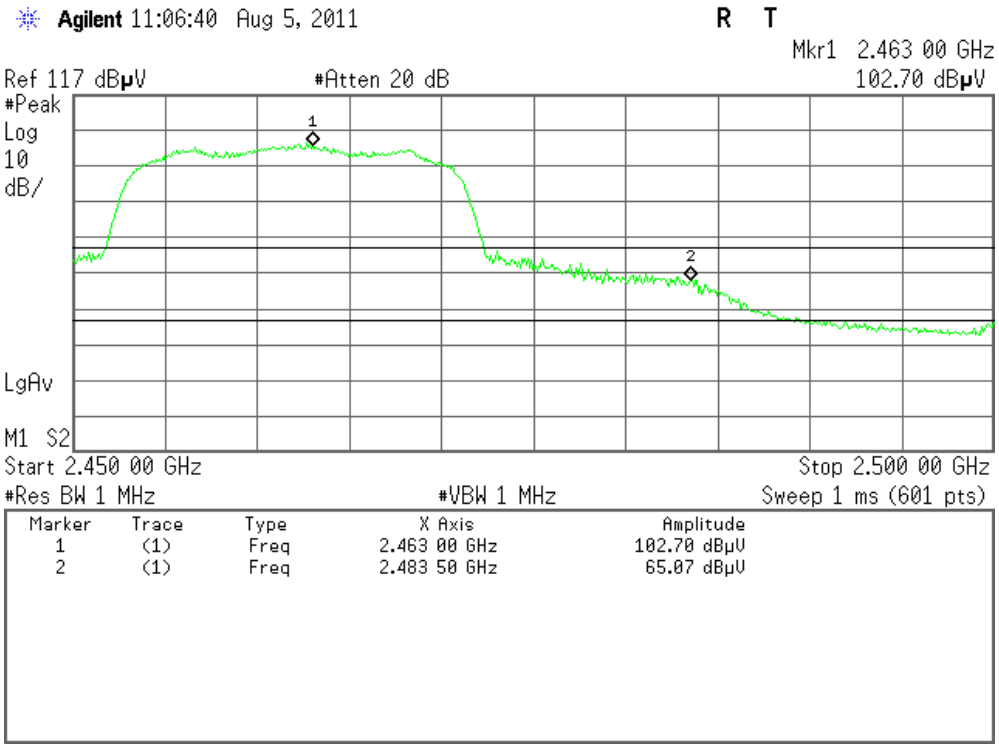


Detector mode: Average **Polarity: Horizontal**

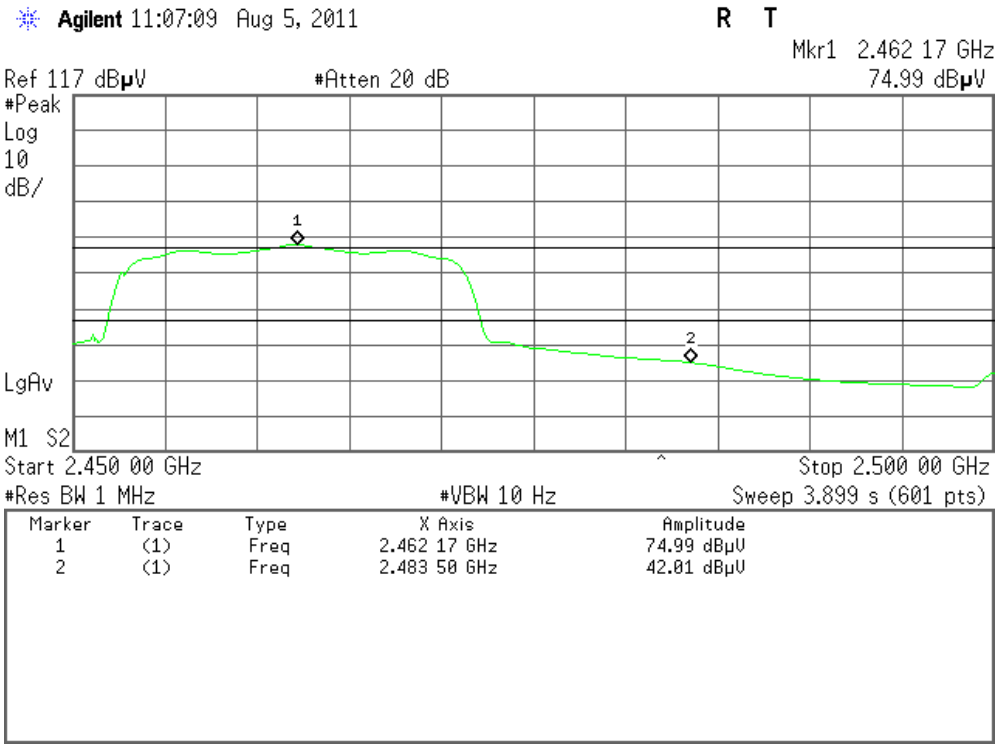


Band Edges (CH High)

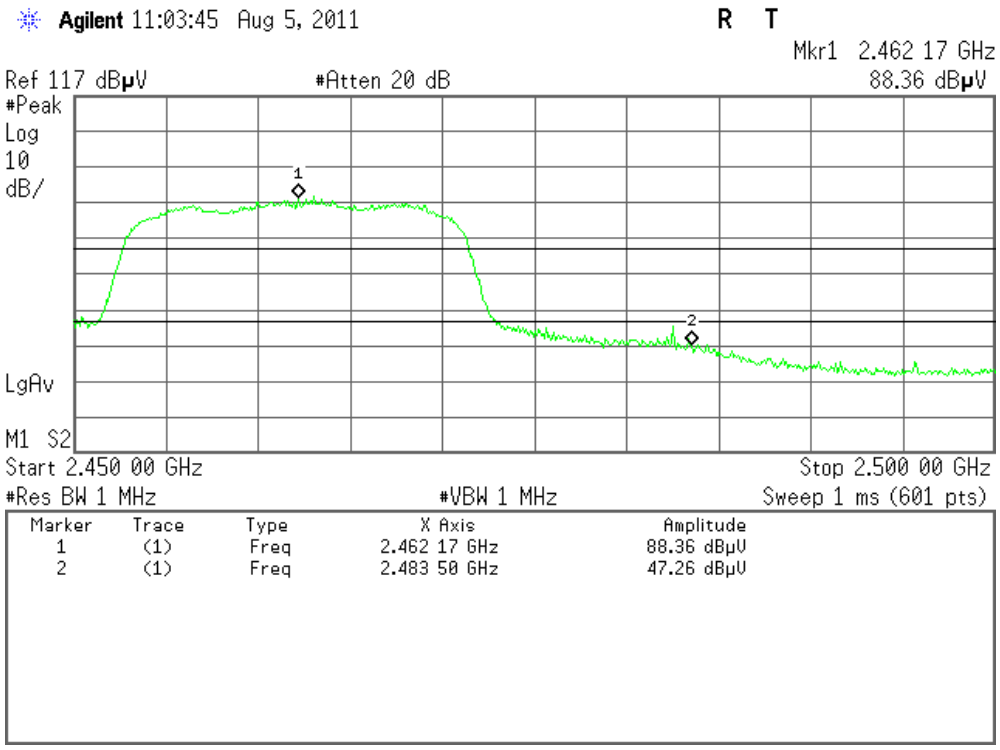
Detector mode: Peak — Polarity: Vertical



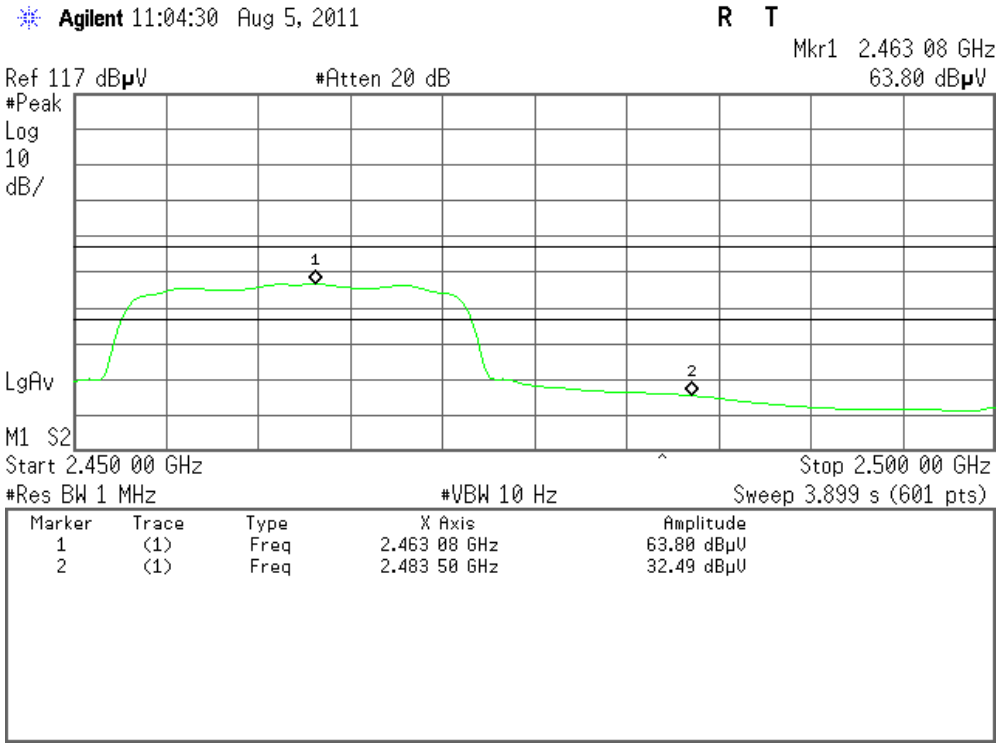
Detector mode: Average — Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



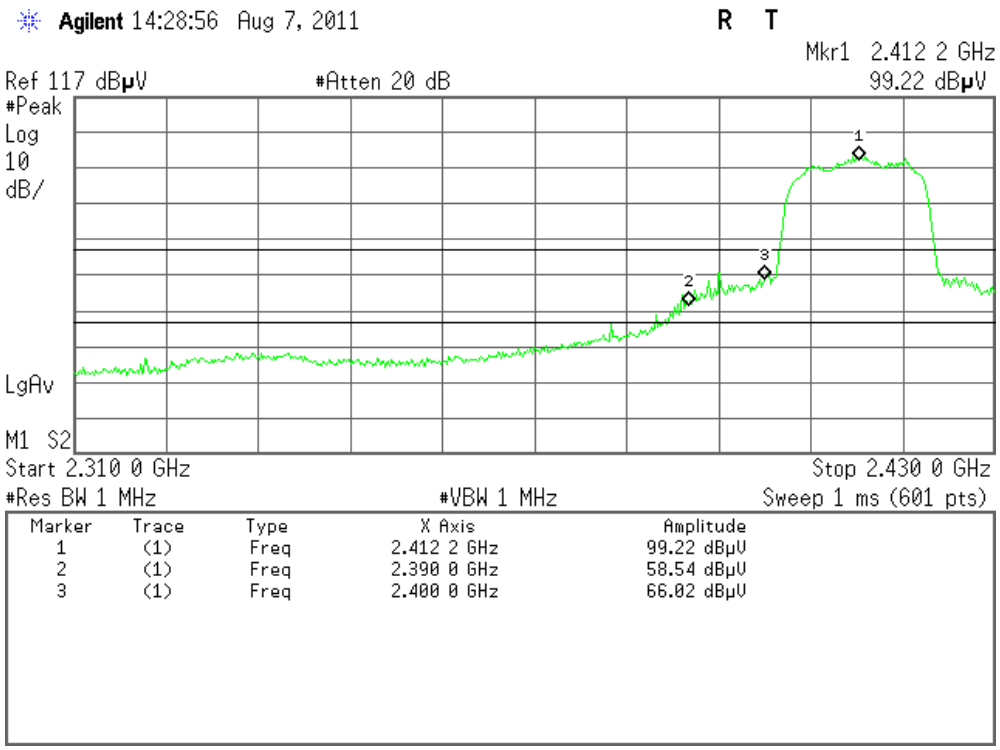
Detector mode: Average **Polarity: Horizontal**



(IEEE 802.11n HT20 MHz mode Antenna 2)

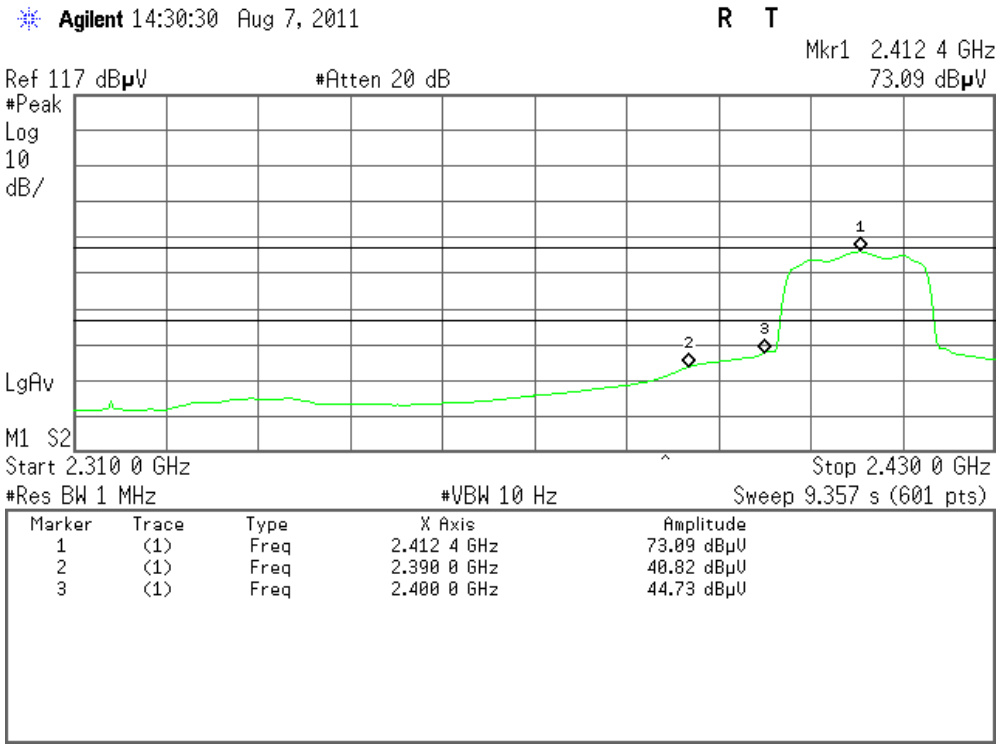
Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**



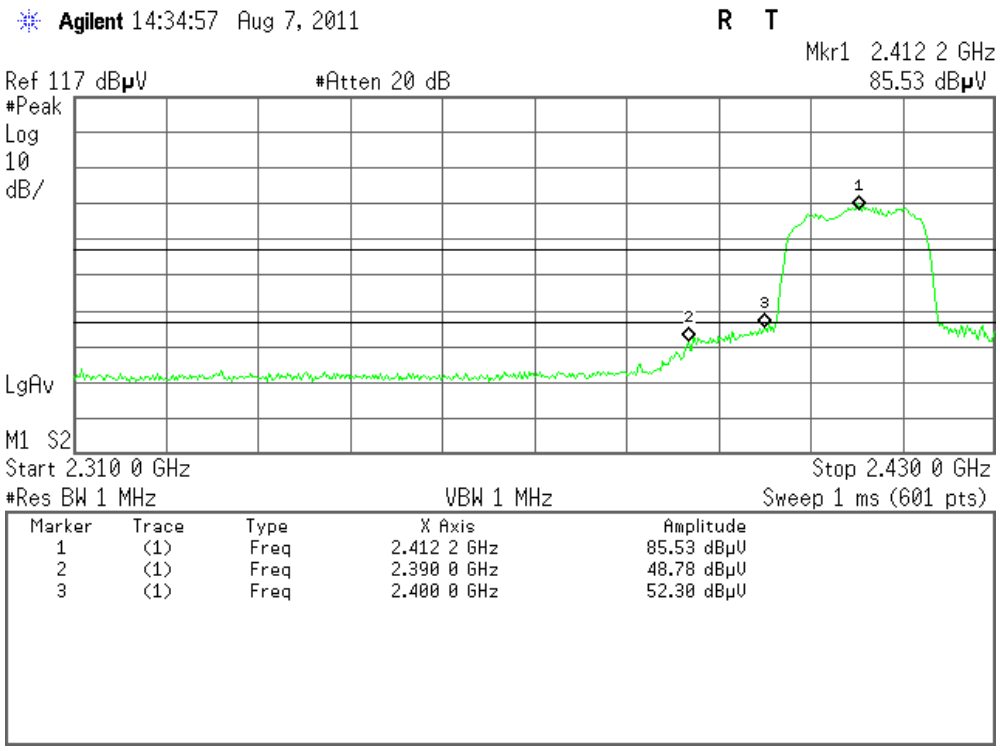
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.412 2 GHz	99.22 dBµV
2	(1)	Freq	2.390 0 GHz	58.54 dBµV
3	(1)	Freq	2.400 0 GHz	66.02 dBµV

Detector mode: Average **Polarity: Vertical**

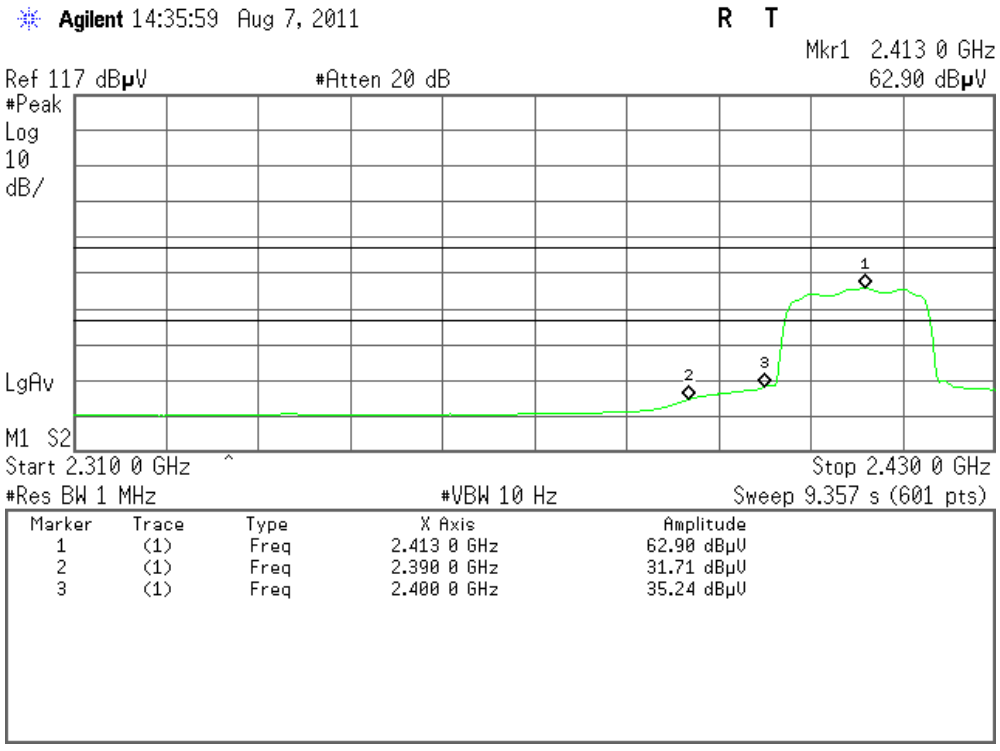


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.412 4 GHz	73.09 dBµV
2	(1)	Freq	2.390 0 GHz	40.82 dBµV
3	(1)	Freq	2.400 0 GHz	44.73 dBµV

Detector mode: Peak **Polarity: Horizontal**

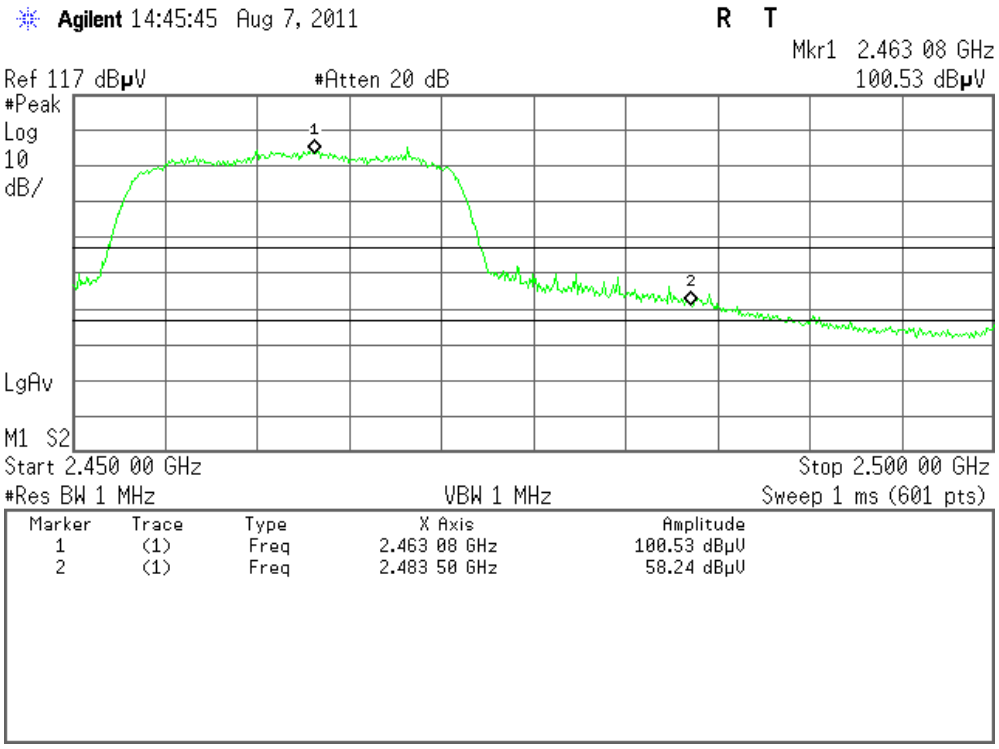


Detector mode: Average **Polarity: Horizontal**

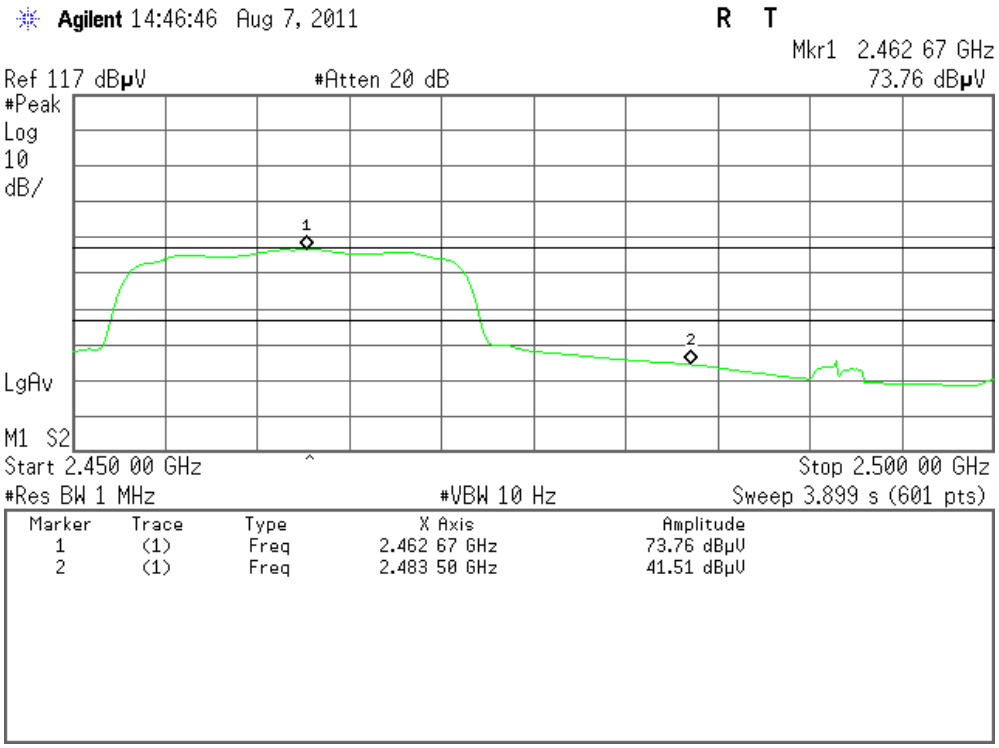


Band Edges (CH High)

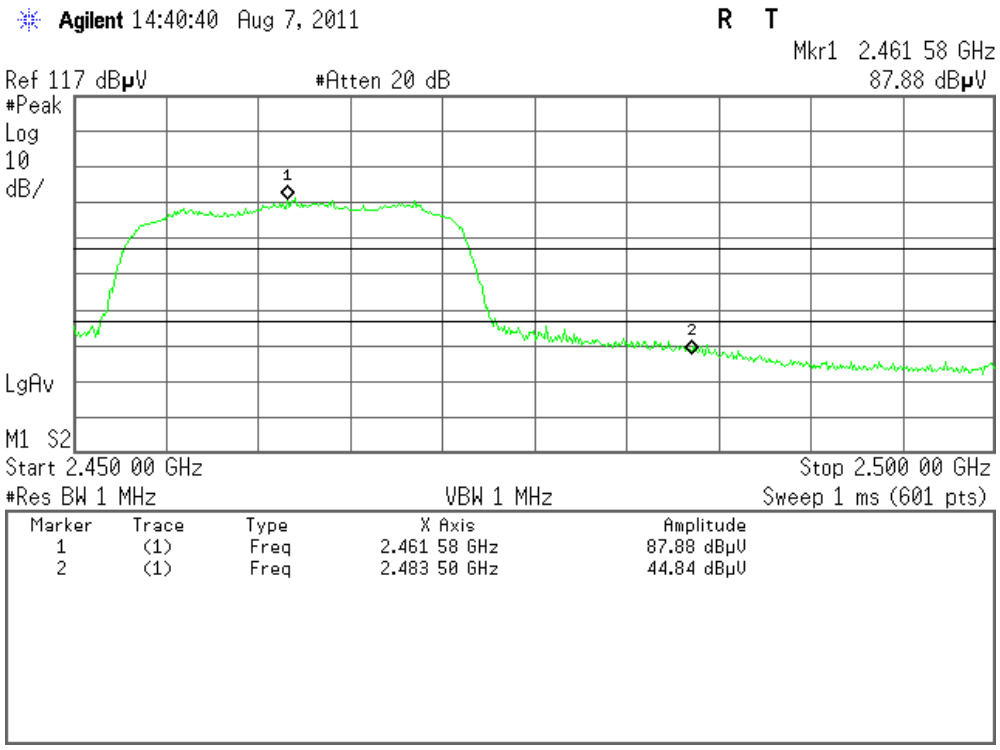
Detector mode: Peak — Polarity: Vertical



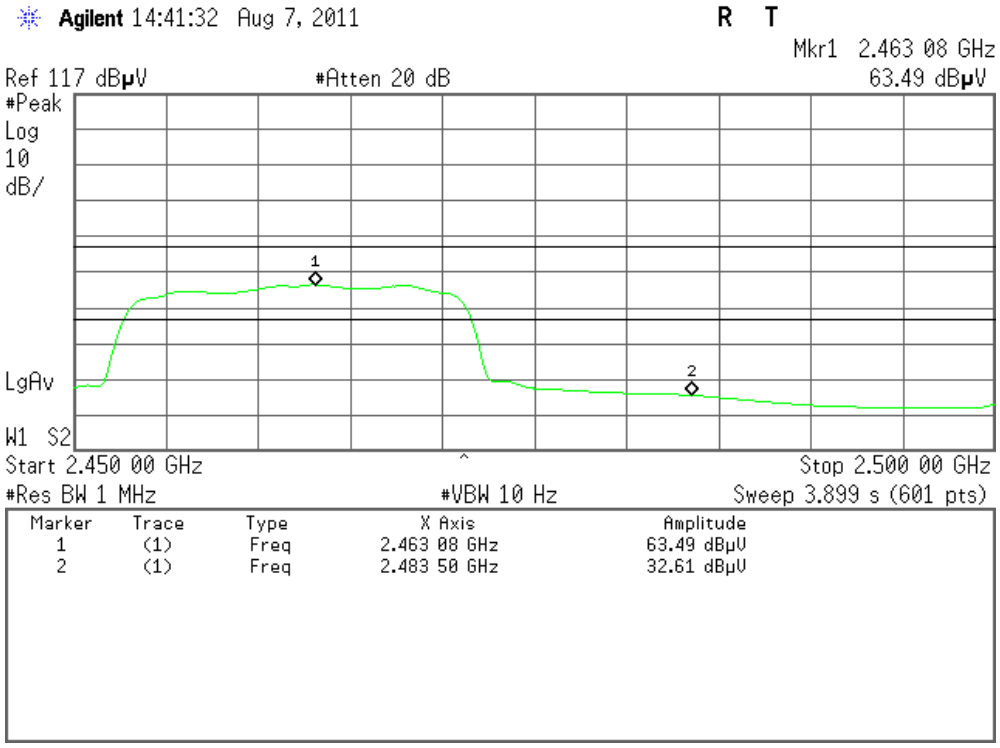
Detector mode: Average — Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



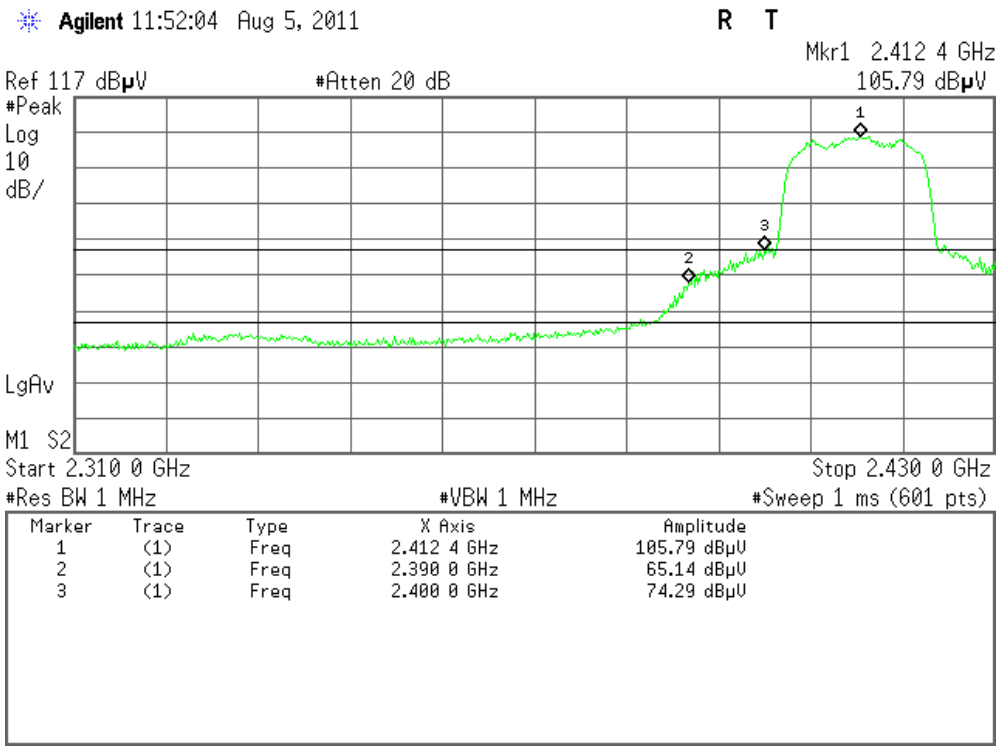
Detector mode: Average **Polarity: Horizontal**



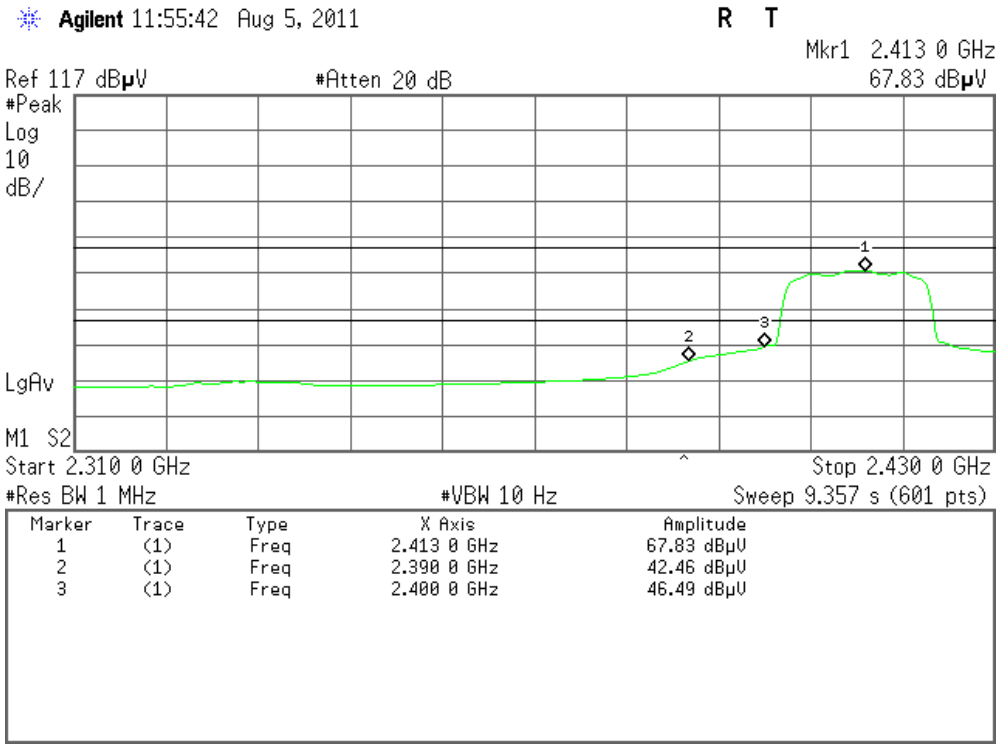
(IEEE 802.11n HT20 MHz mode Combine)

Band Edges (CH Low)

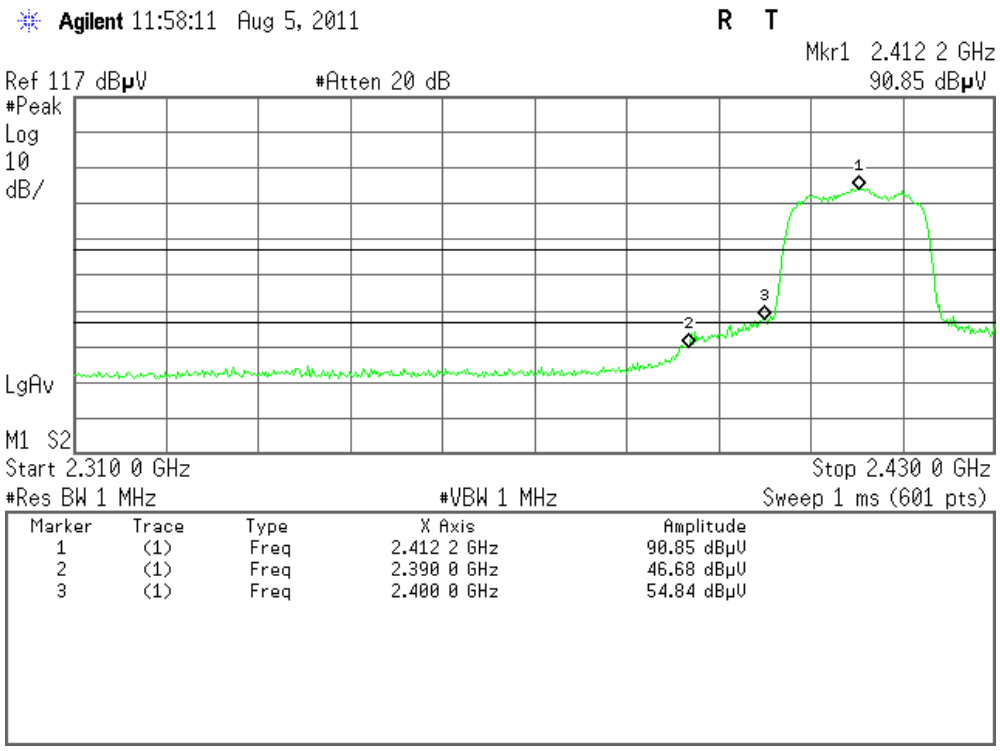
Detector mode: Peak **Polarity: Vertical**



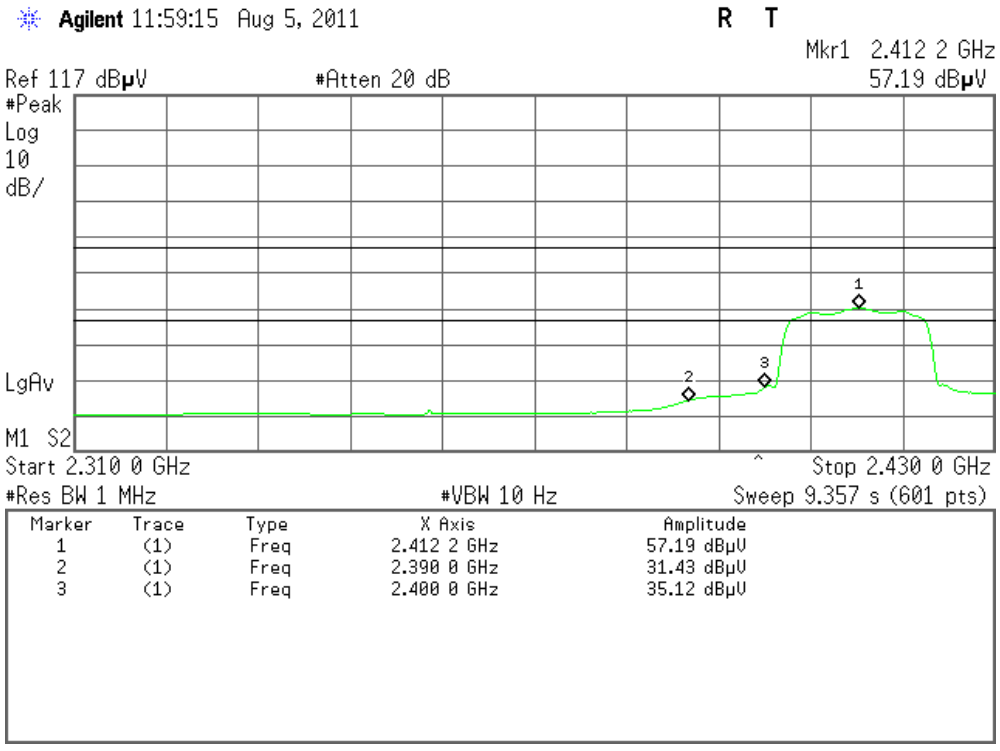
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

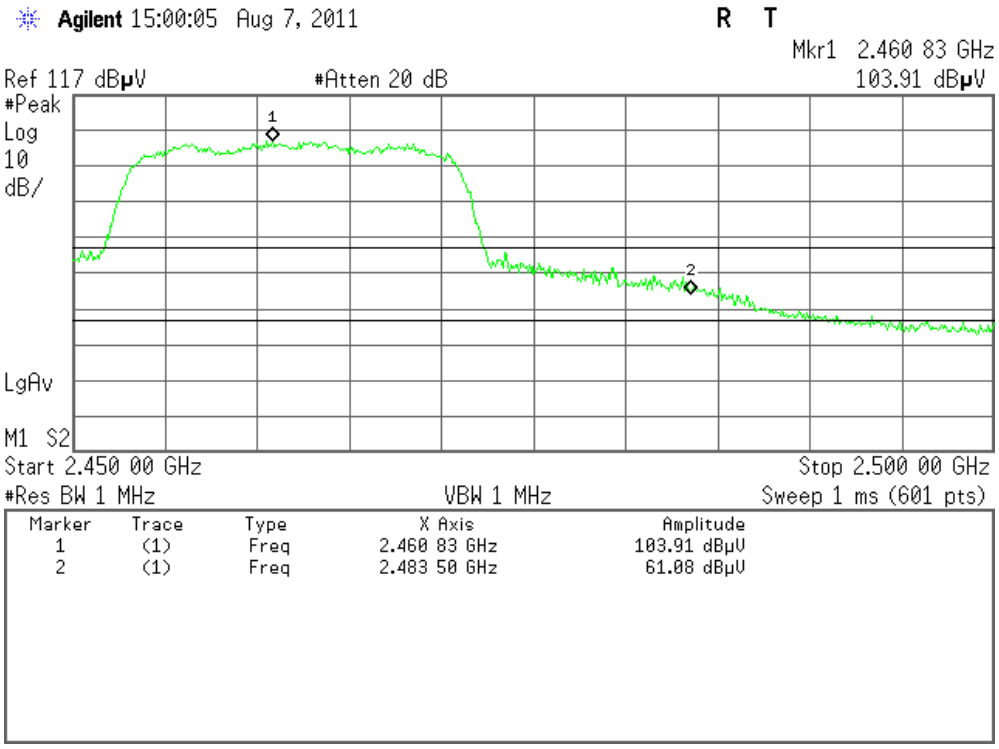


Detector mode: Average **Polarity: Horizontal**

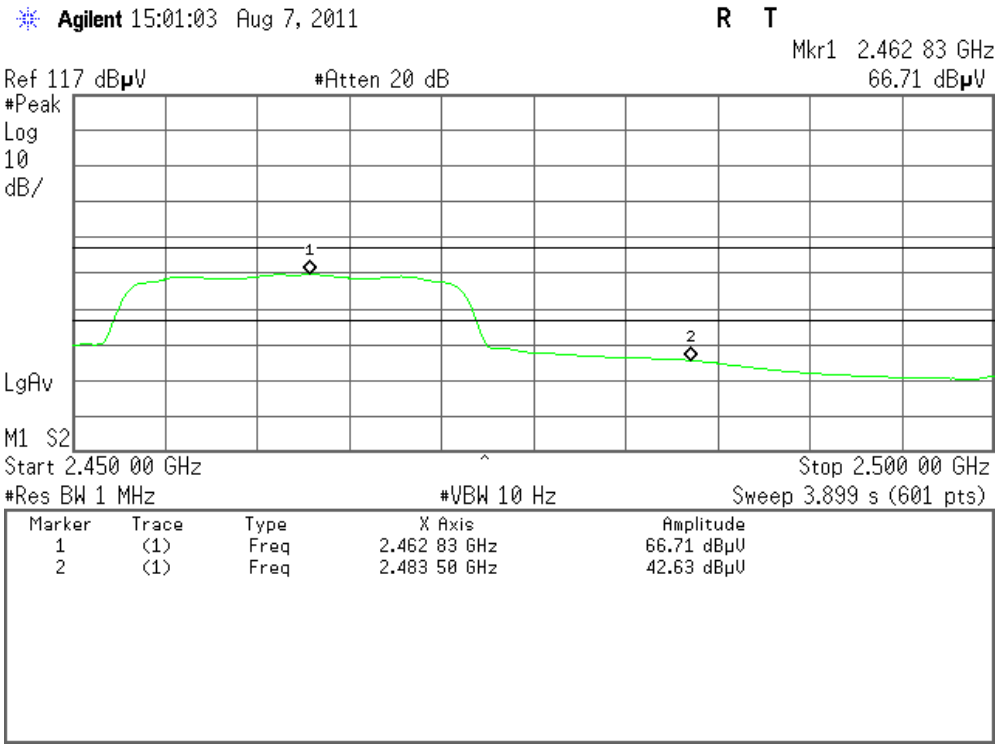


Band Edges (CH High)

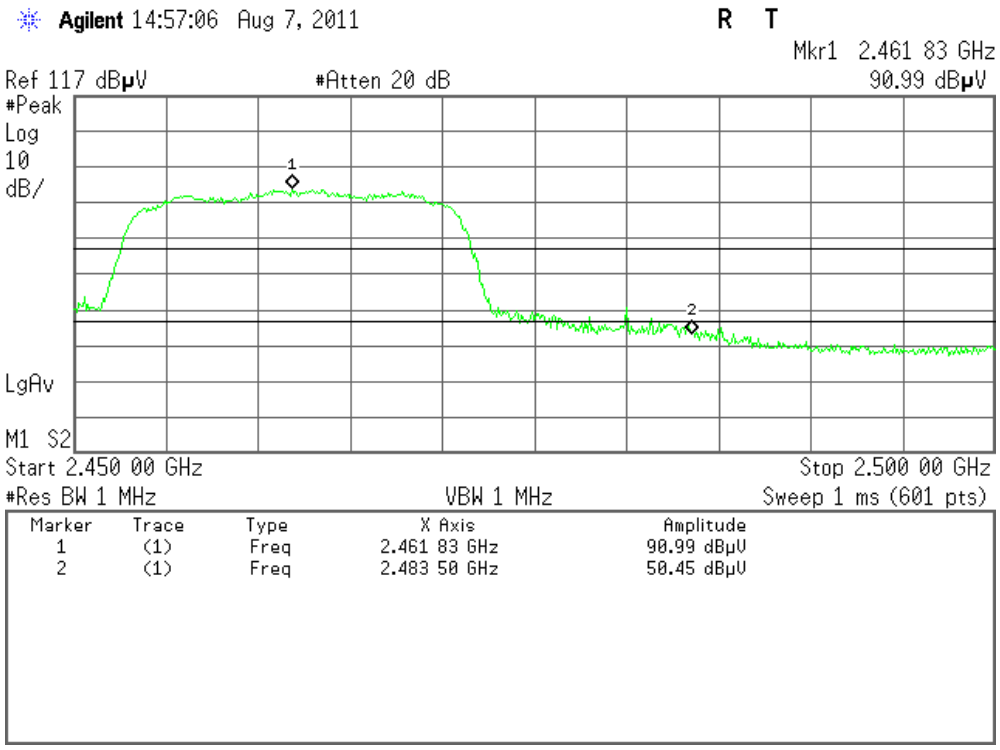
Detector mode: Peak — Polarity: Vertical



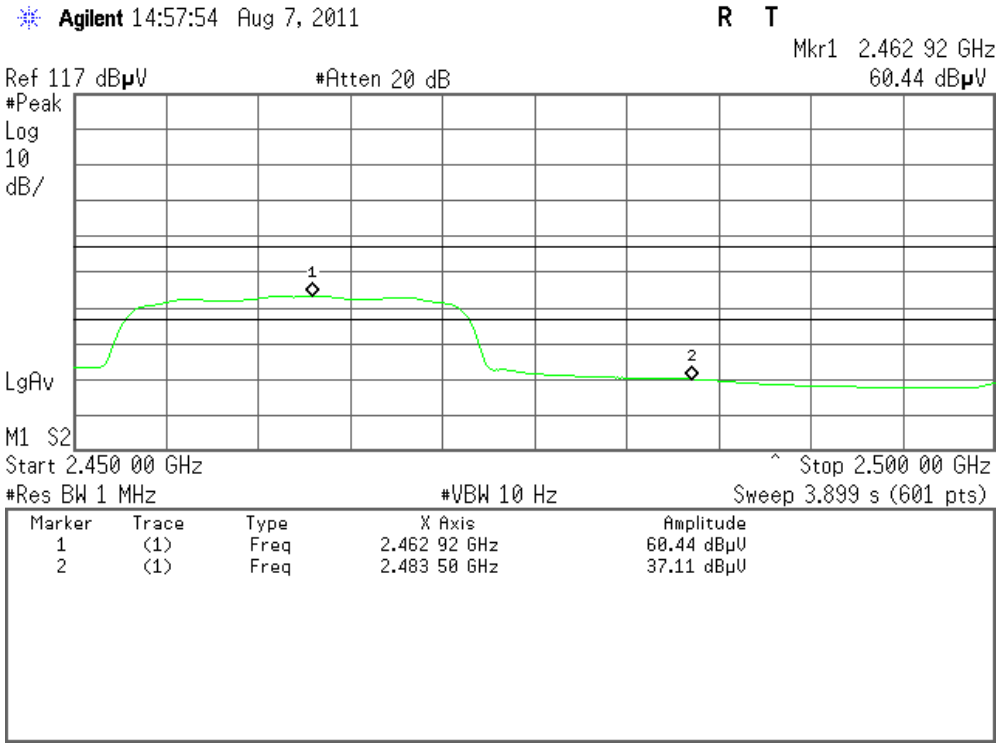
Detector mode: Average — Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



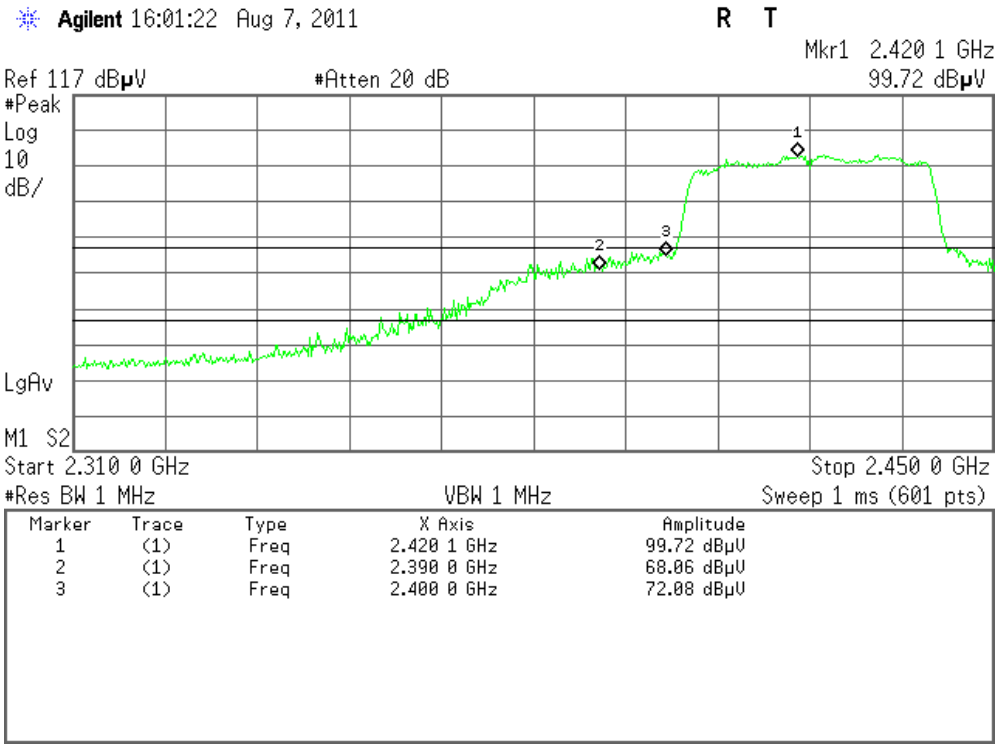
Detector mode: Average **Polarity: Horizontal**



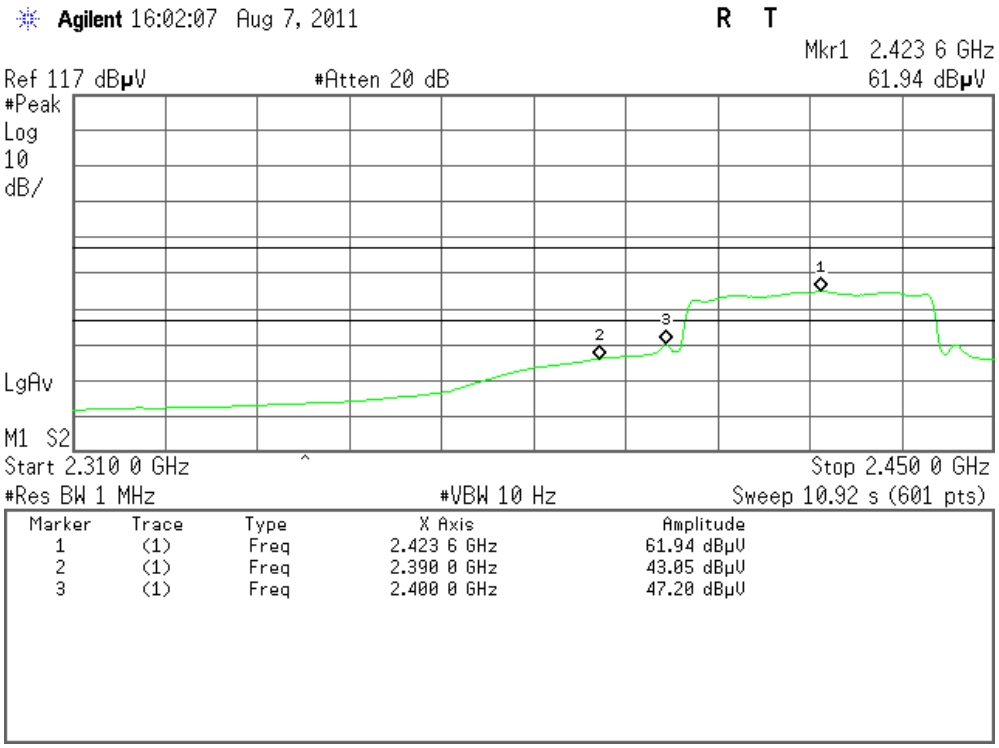
(IEEE 802.11n HT40 MHz mode Antenna 1)

Band Edges (CH Low)

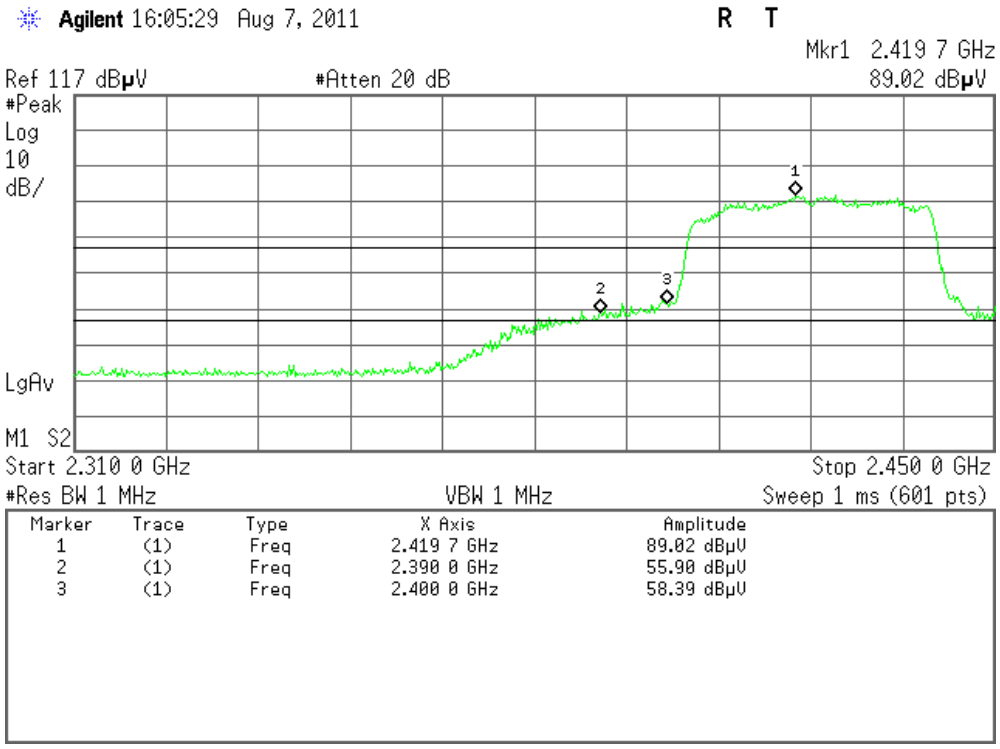
Detector mode: Peak **Polarity: Vertical**



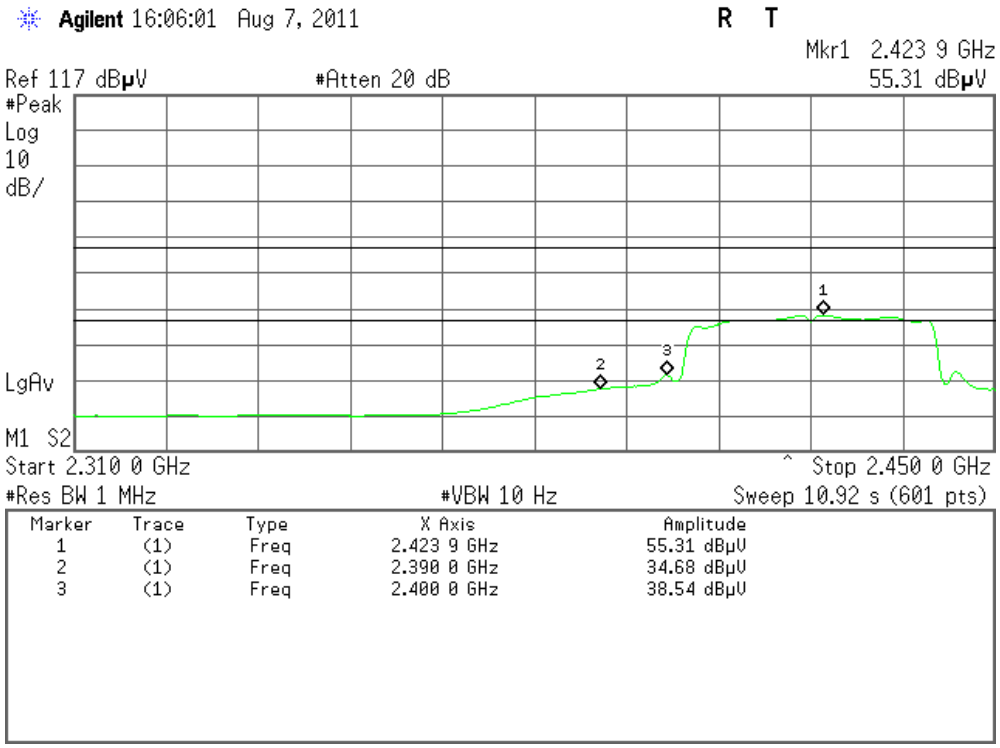
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

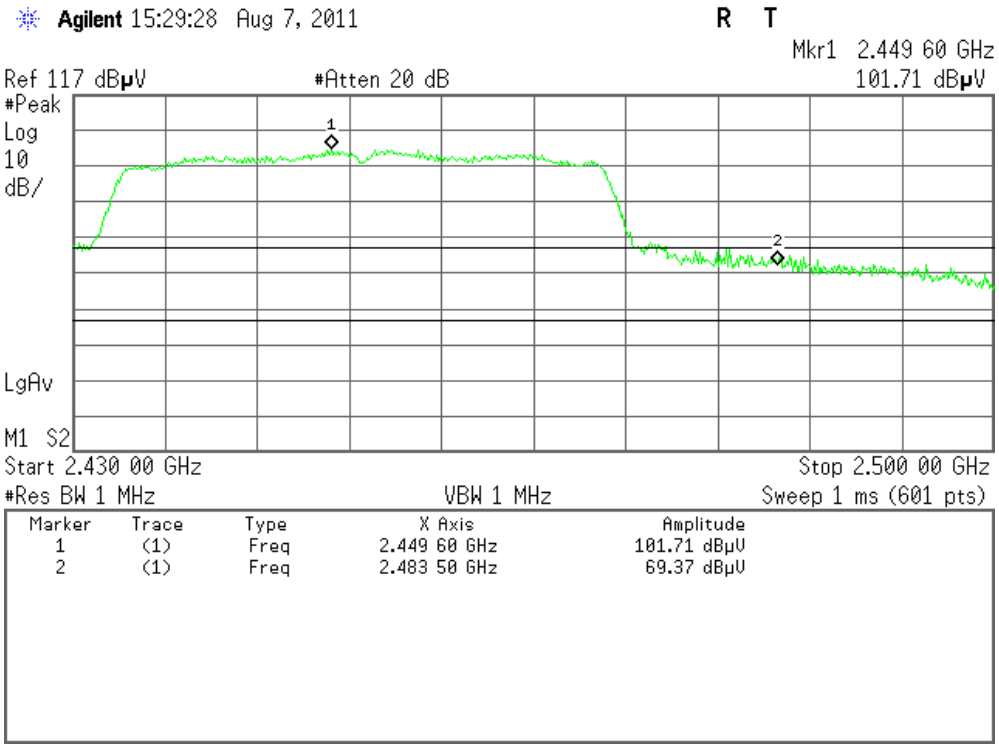


Detector mode: Average **Polarity: Horizontal**

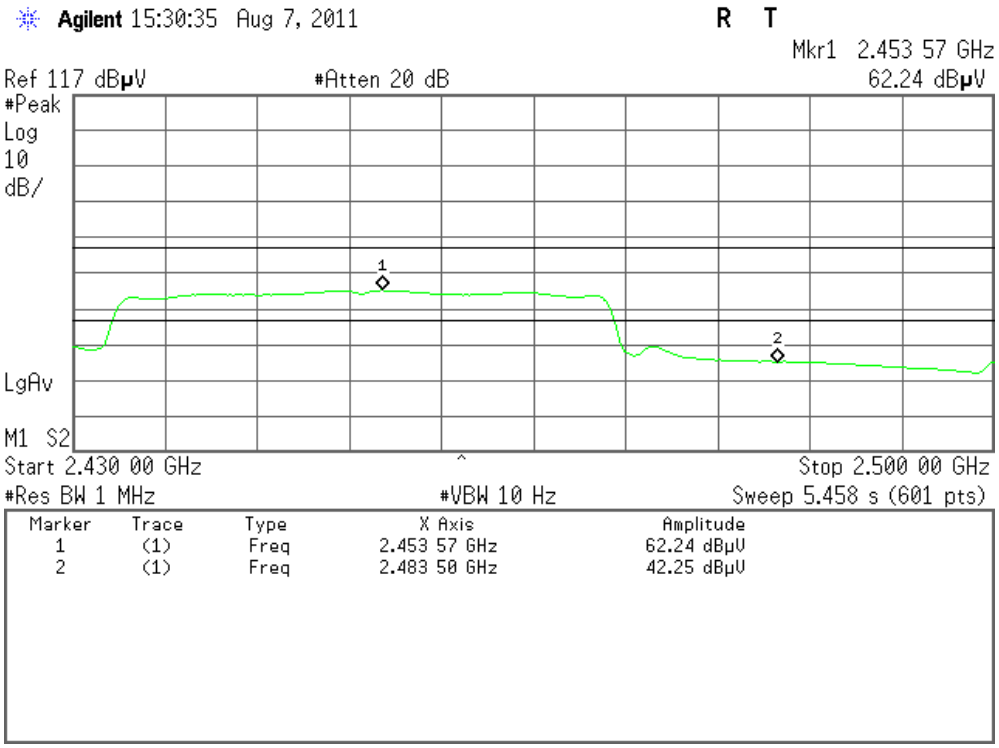


Band Edges (CH High)

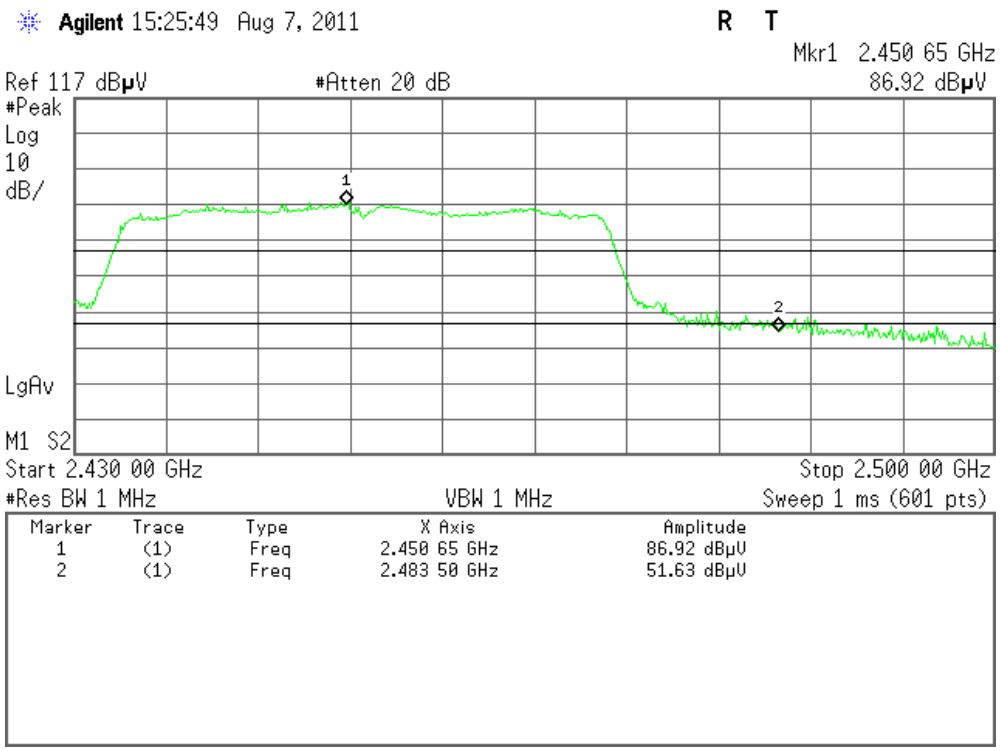
Detector mode: Peak — Polarity: Vertical



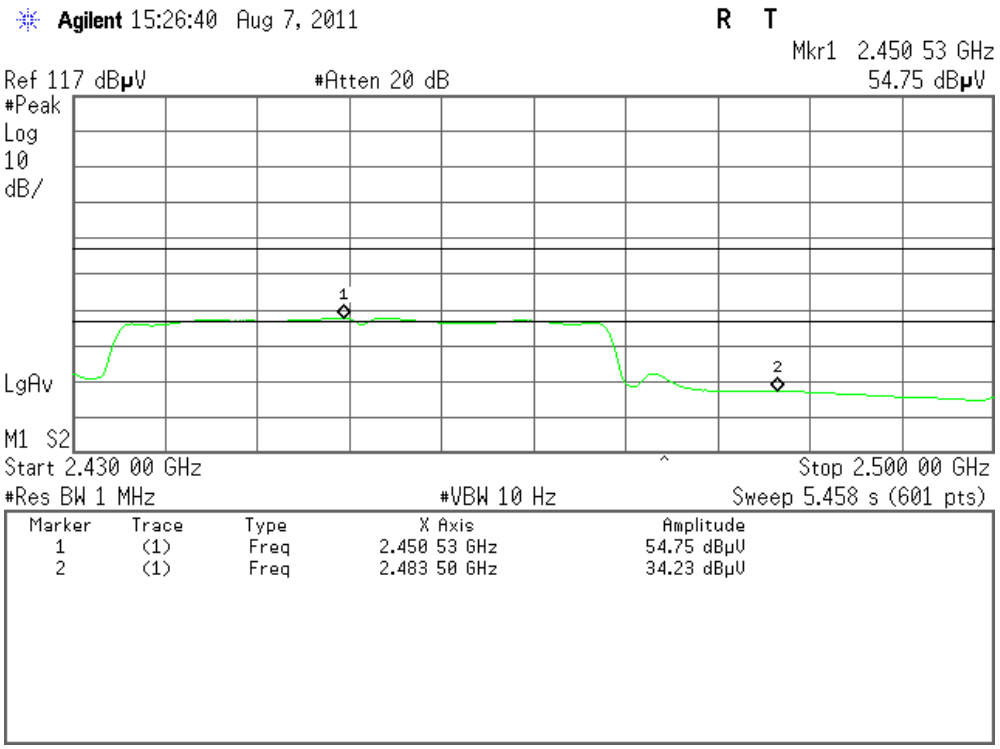
Detector mode: Average — Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



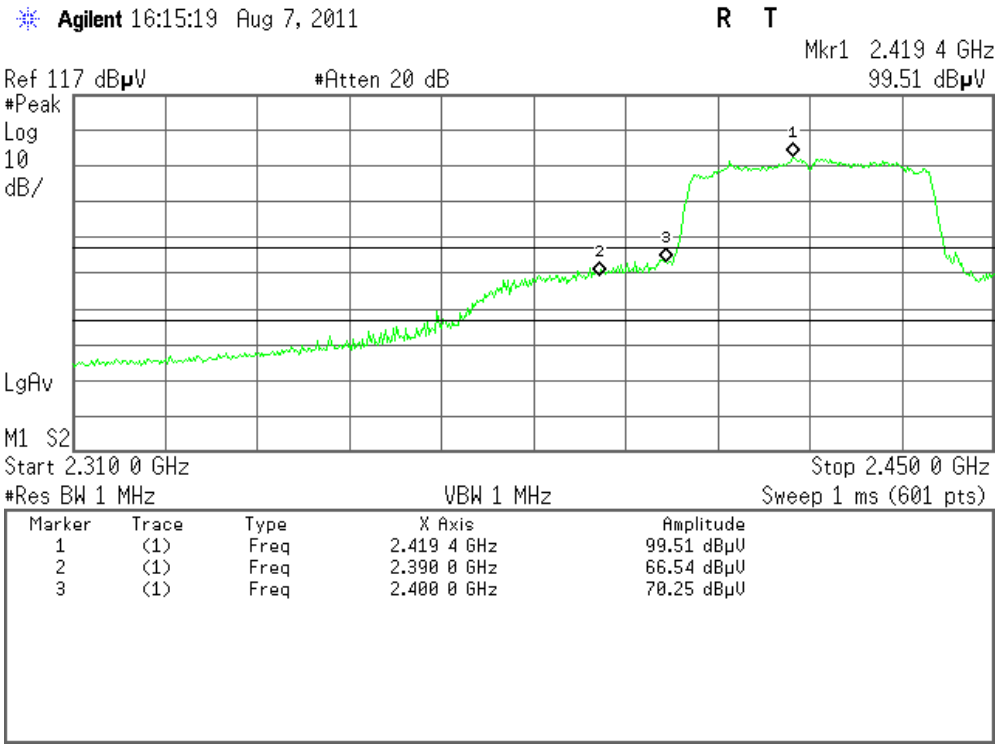
Detector mode: Average **Polarity: Horizontal**



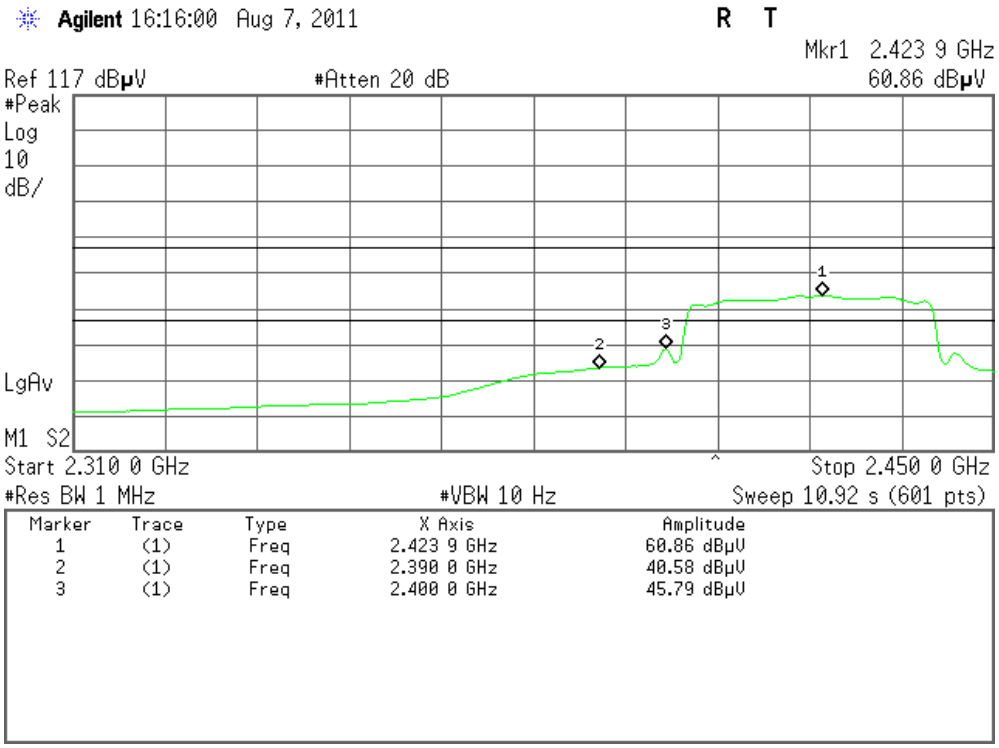
(IEEE 802.11n HT40 MHz mode Antenna 2)

Band Edges (CH Low)

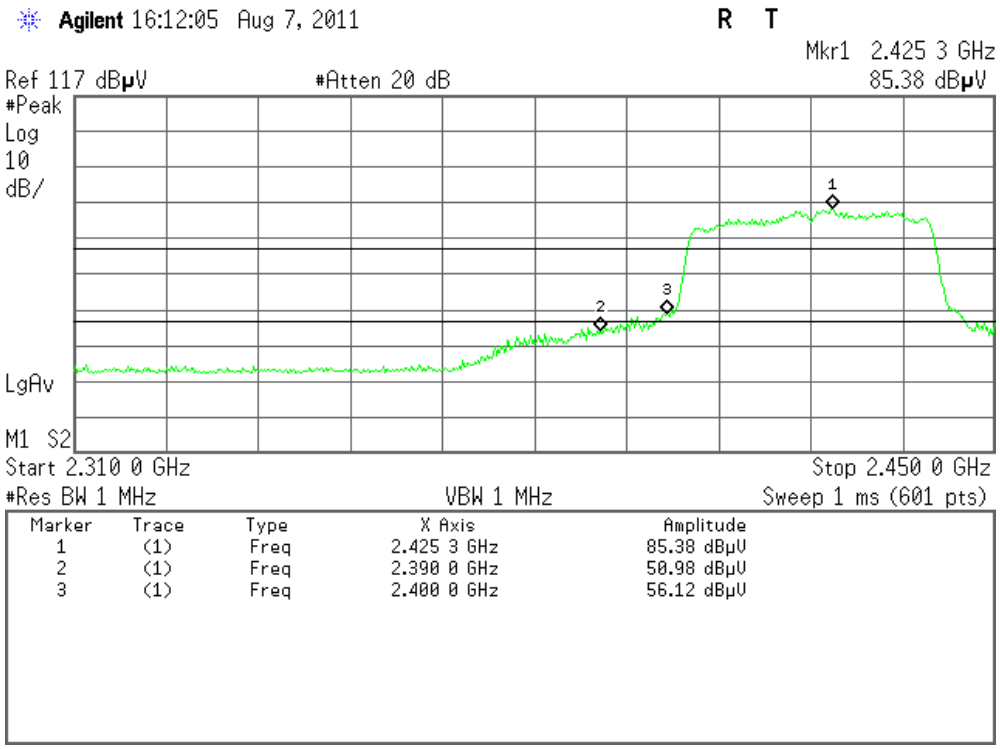
Detector mode: Peak **Polarity: Vertical**



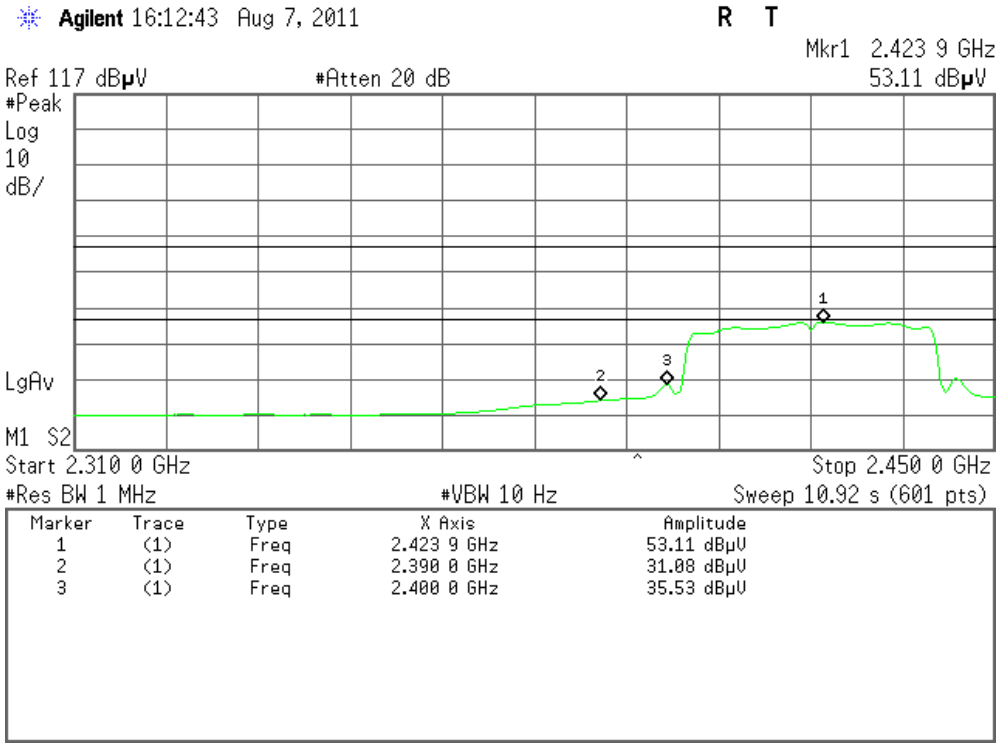
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

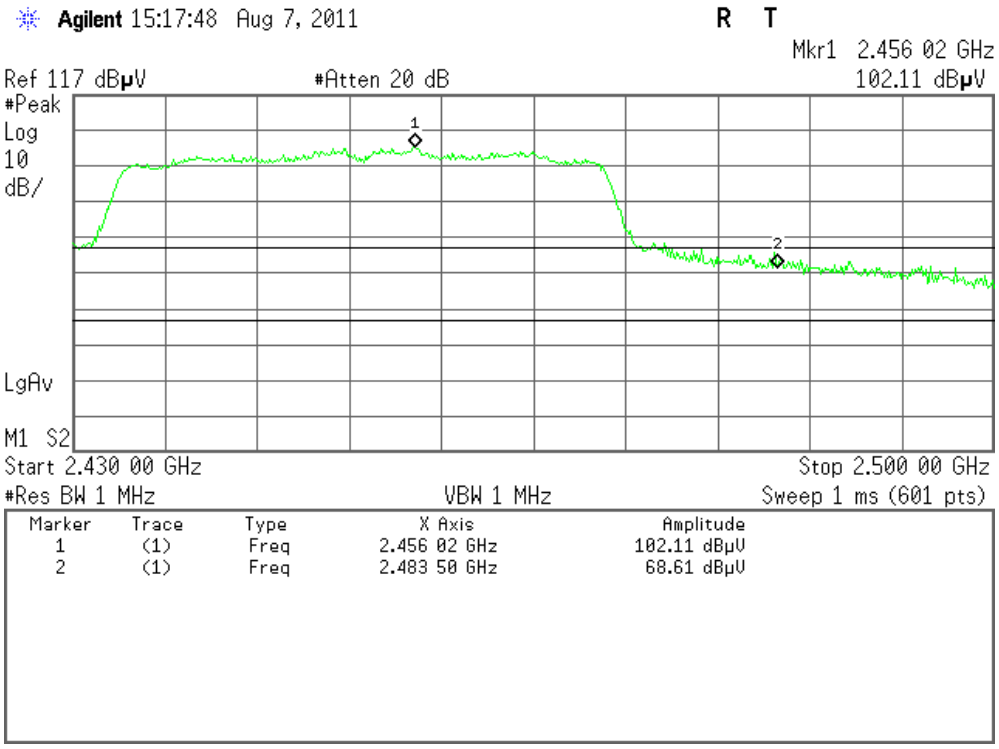


Detector mode: Average **Polarity: Horizontal**

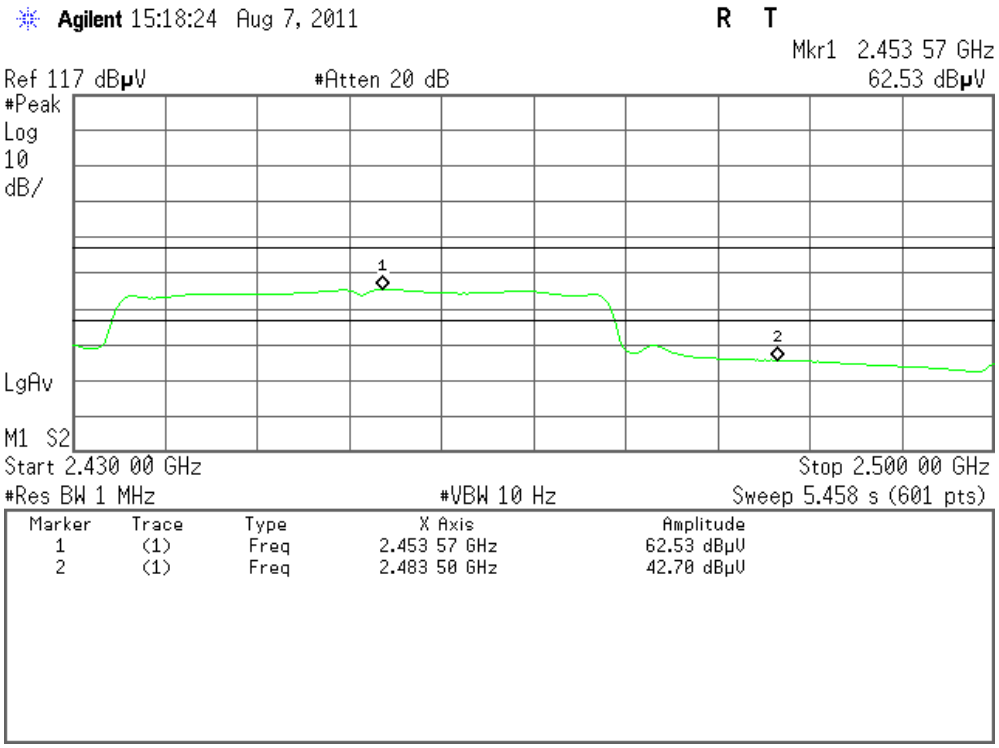


Band Edges (CH High)

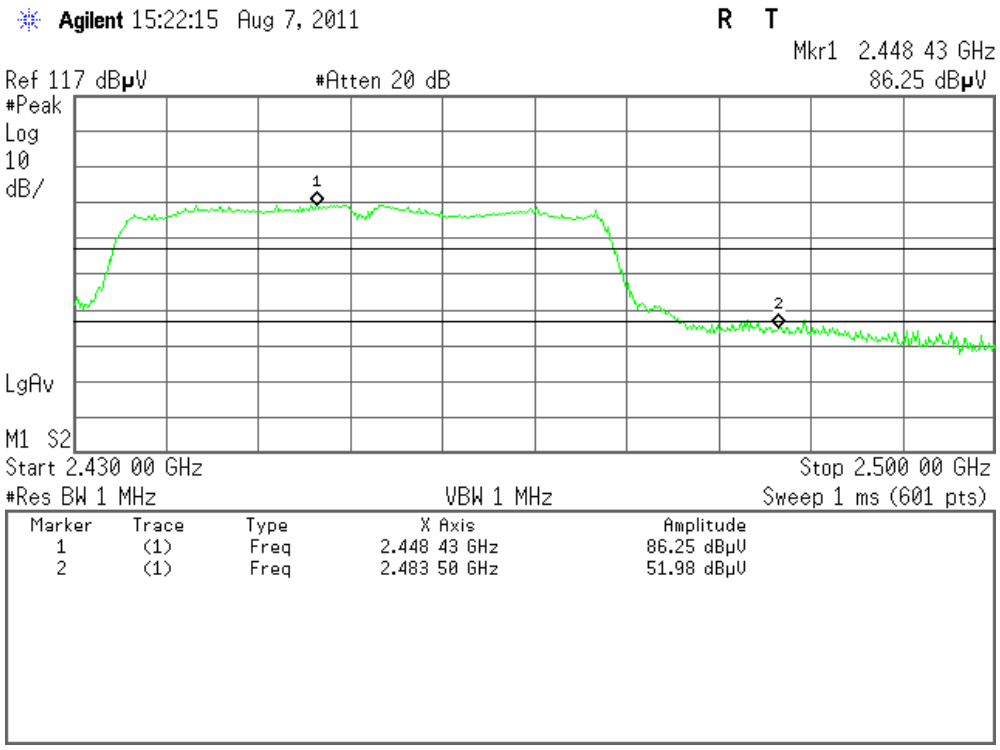
Detector mode: Peak — Polarity: Vertical



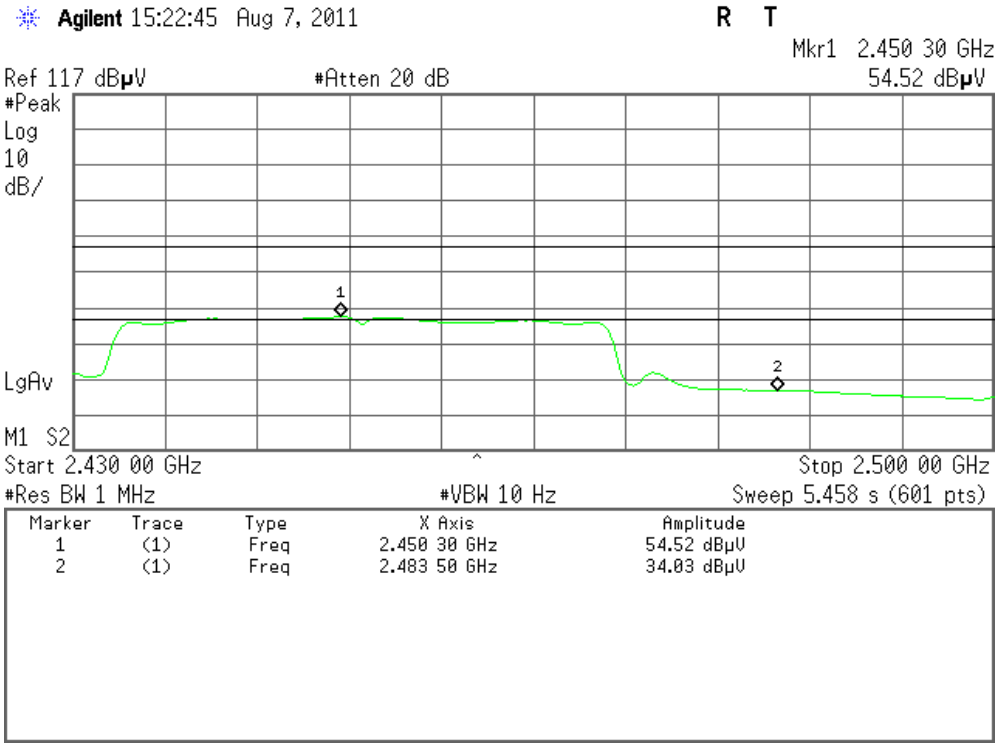
Detector mode: Average — Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



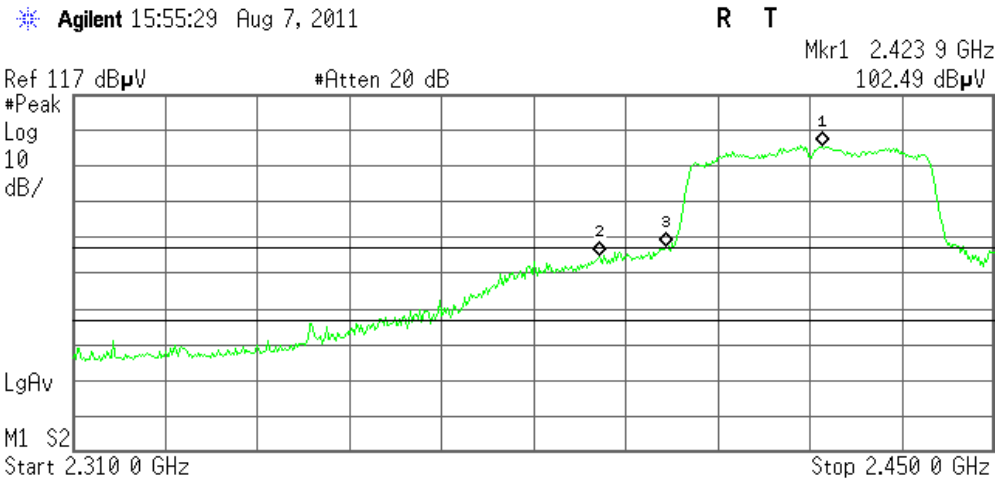
Detector mode: Average **Polarity: Horizontal**



(IEEE 802.11n HT40 MHz mode Combine)

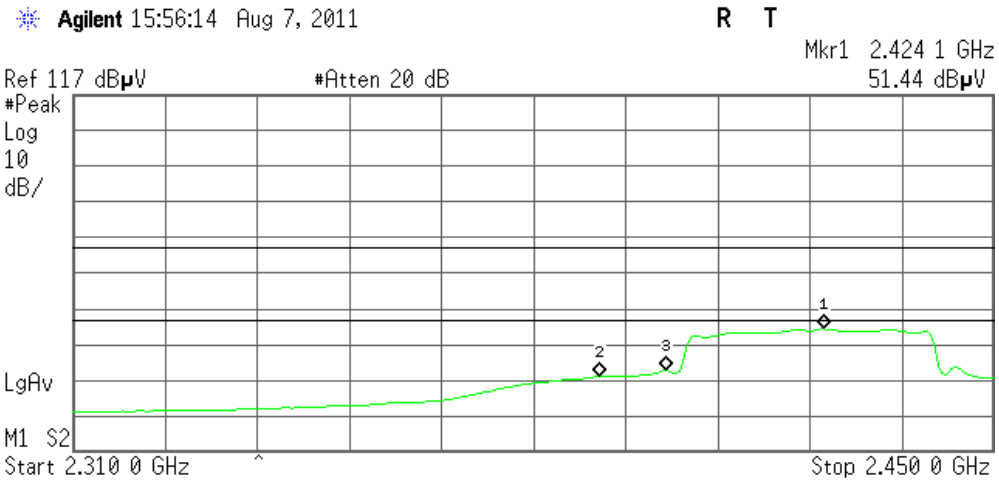
Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**



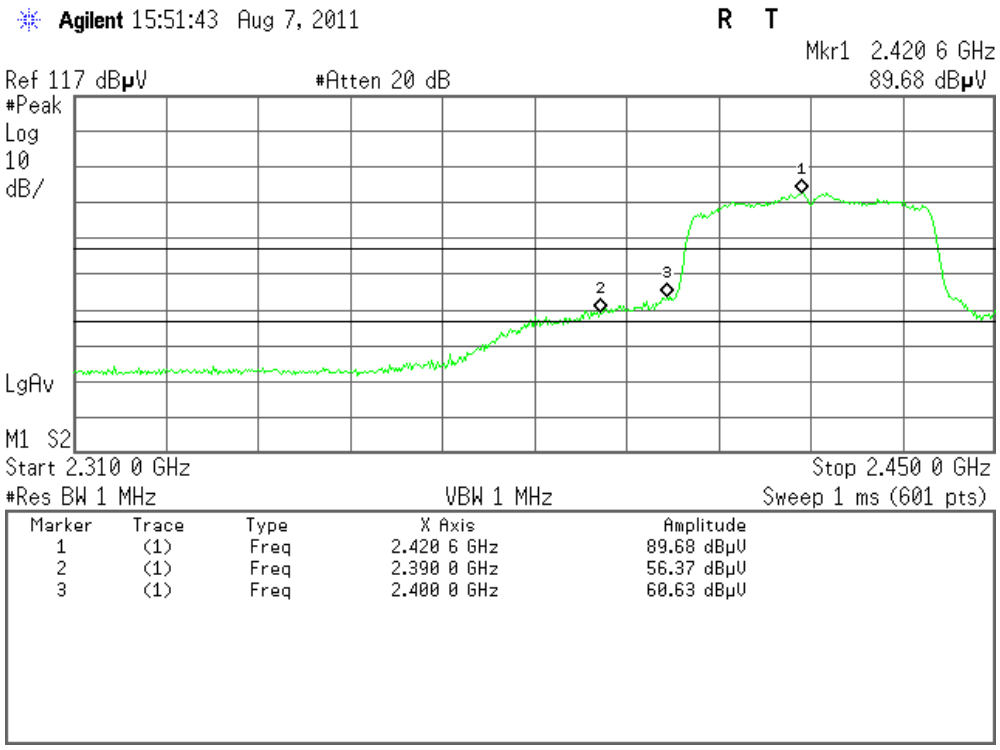
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.423 9 GHz	102.49 dBµV
2	(1)	Freq	2.390 0 GHz	71.86 dBµV
3	(1)	Freq	2.400 0 GHz	74.47 dBµV

Detector mode: Average **Polarity: Vertical**

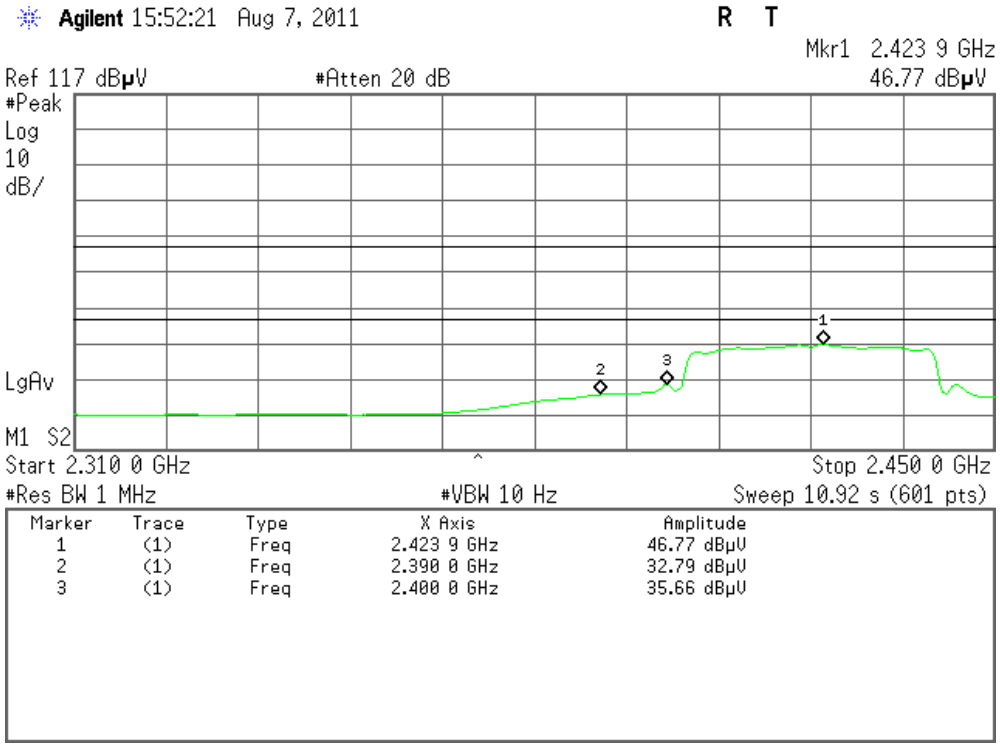


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.424 1 GHz	51.44 dBµV
2	(1)	Freq	2.390 0 GHz	38.14 dBµV
3	(1)	Freq	2.400 0 GHz	39.89 dBµV

Detector mode: Peak **Polarity: Horizontal**

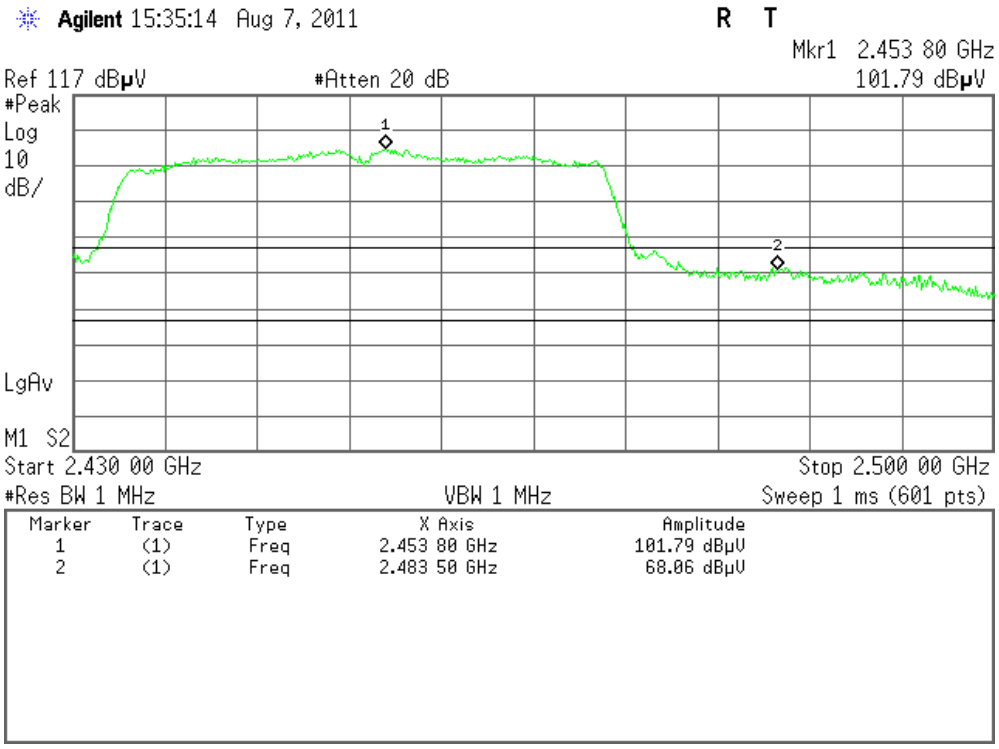


Detector mode: Average **Polarity: Horizontal**

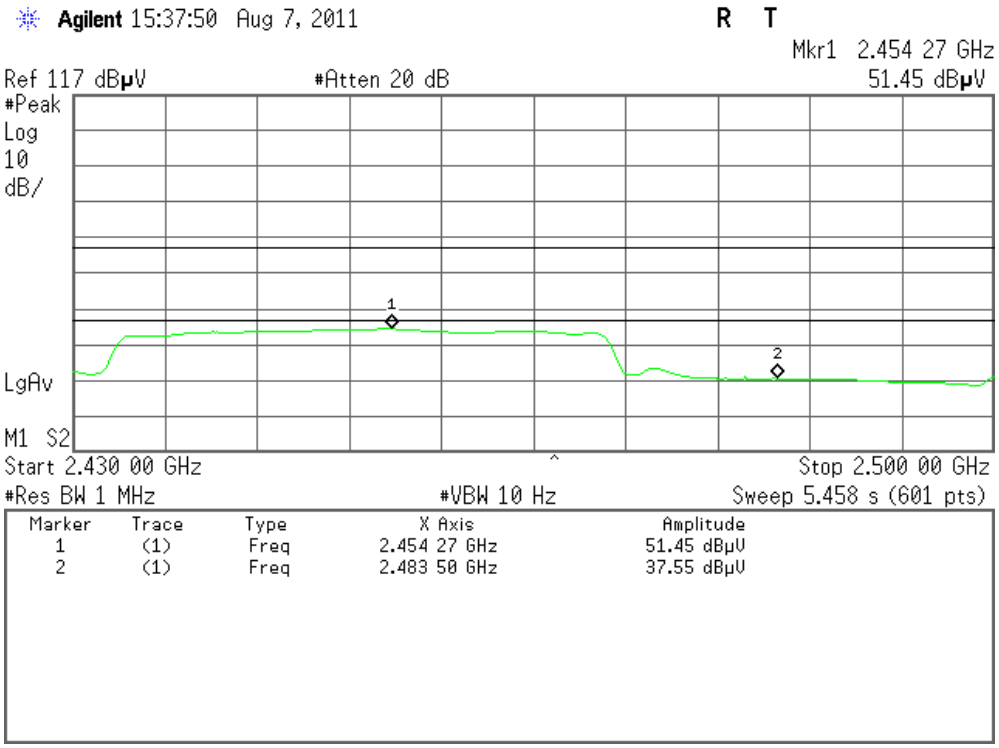


Band Edges (CH High)

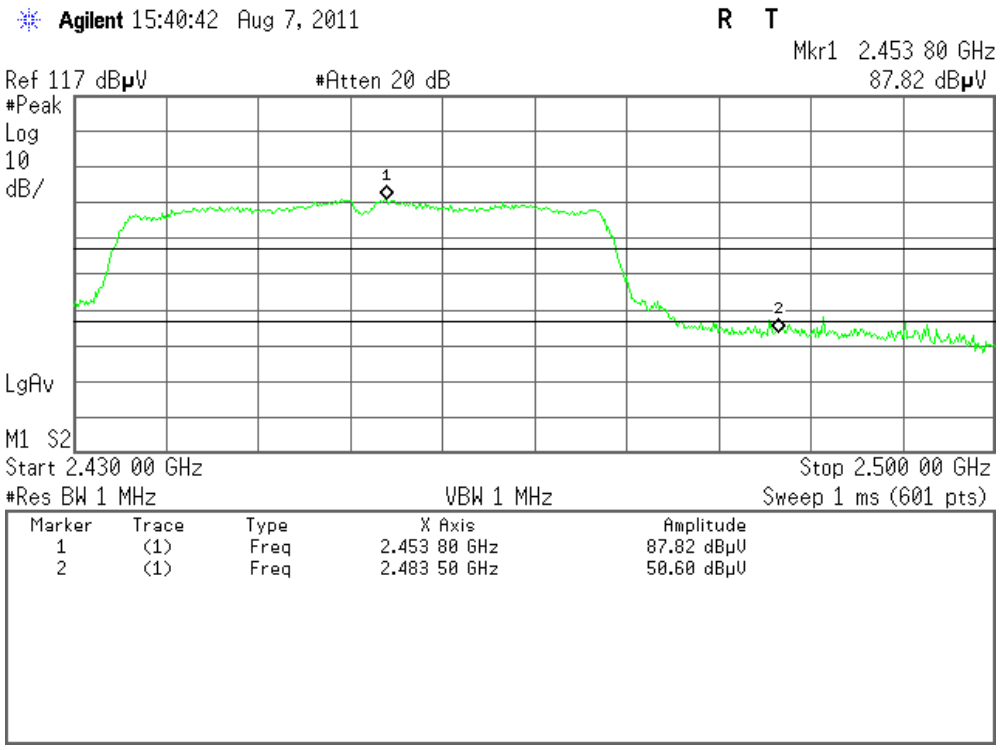
Detector mode: Peak — Polarity: Vertical



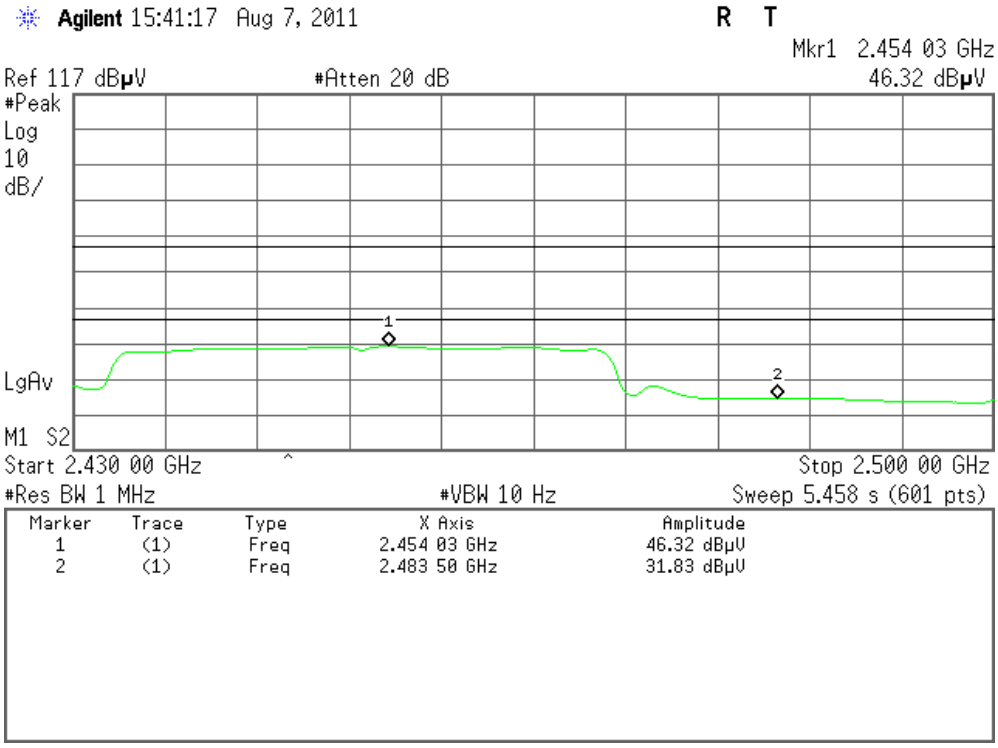
Detector mode: Average — Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



7.6.PEAK POWER SPECTRAL DENSITY MEASUREMENT

7.6.1. LIMITS

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.

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.

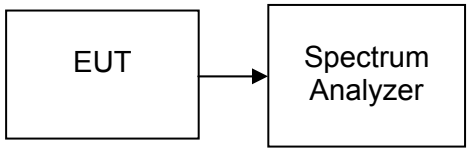
7.6.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US44300399	03/19/2011	03/19/2012

7.6.3. TEST PROCEDURES (please refer to measurement standard)

1. Place the EUT on the table and set it in transmitting mode.
   Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW = 3kHz, VBW = 10kHz, Span = 500kHz, Sweep=100s
3. Record the max. reading.
4. Repeat the above procedure until the measurements for all frequencies are completed.

7.6.4. TEST SETUP



7.6.5. TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b(Antenna 1)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-8.34	8.00	PASS
Mid	2437	-8.49		PASS
High	2462	-9.48		PASS

Test mode: IEEE 802.11g (Antenna 1)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-11.29	8.00	PASS
Mid	2437	-11.63		PASS
High	2462	-11.47		PASS

Test mode: IEEE 802.11g (Antenna 2)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-12.89	8.00	PASS
Mid	2437	-12.98		PASS
High	2462	-13.75		PASS

Test mode: IEEE 802.11n HT20 MHz (Antenna 1)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-11.05	8.00	PASS
Mid	2437	-11.10		PASS
High	2462	-10.75		PASS

Test mode: IEEE 802.11n HT20 MHz (Antenna 2)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-12.89	8.00	PASS
Mid	2437	-12.41		PASS
High	2462	-13.24		PASS

Test mode: IEEE 802.11n HT20 MHz (Combine)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	--8.88	8.00	PASS
Mid	2437	-8.56		PASS
High	2462	-8.72		PASS

Test mode: IEEE 802.11n HT40 MHz (Antenna 1)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2422	-14.16	8.00	PASS
Mid	2437	-14.95		PASS
High	2452	-14.88		PASS

Test mode: IEEE 802.11n HT40 MHz (Antenna 2)

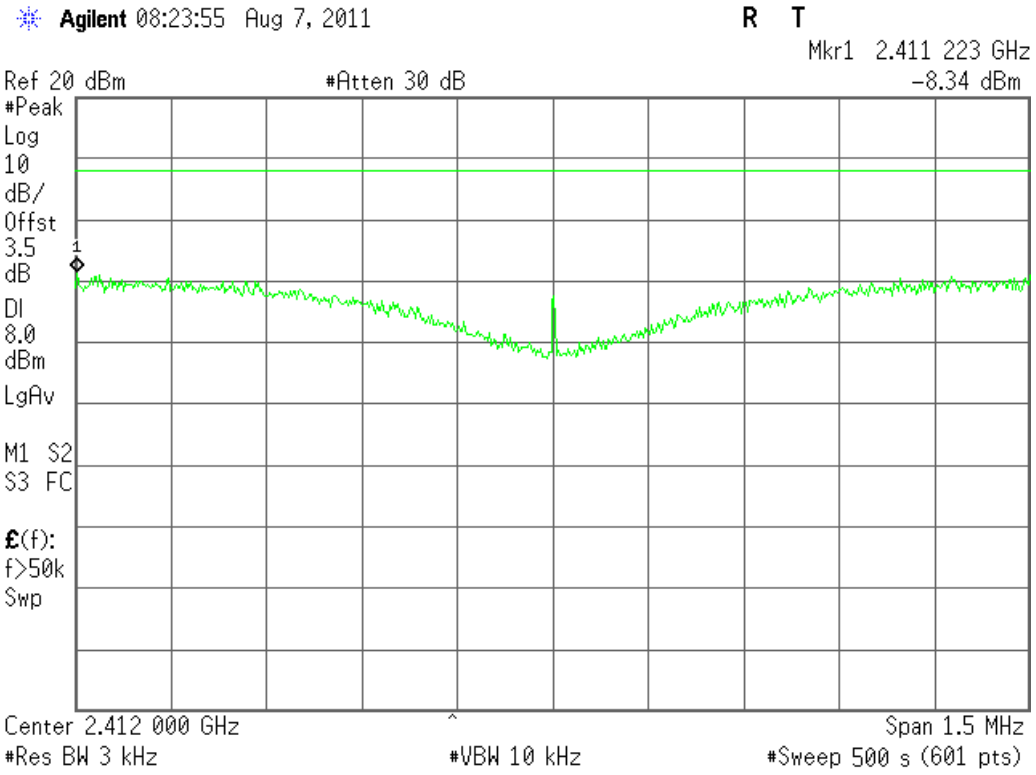
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2422	-15.71	8.00	PASS
Mid	2437	-16.11		PASS
High	2452	-15.87		PASS

Test mode: IEEE 802.11n HT40 MHz (Combine)

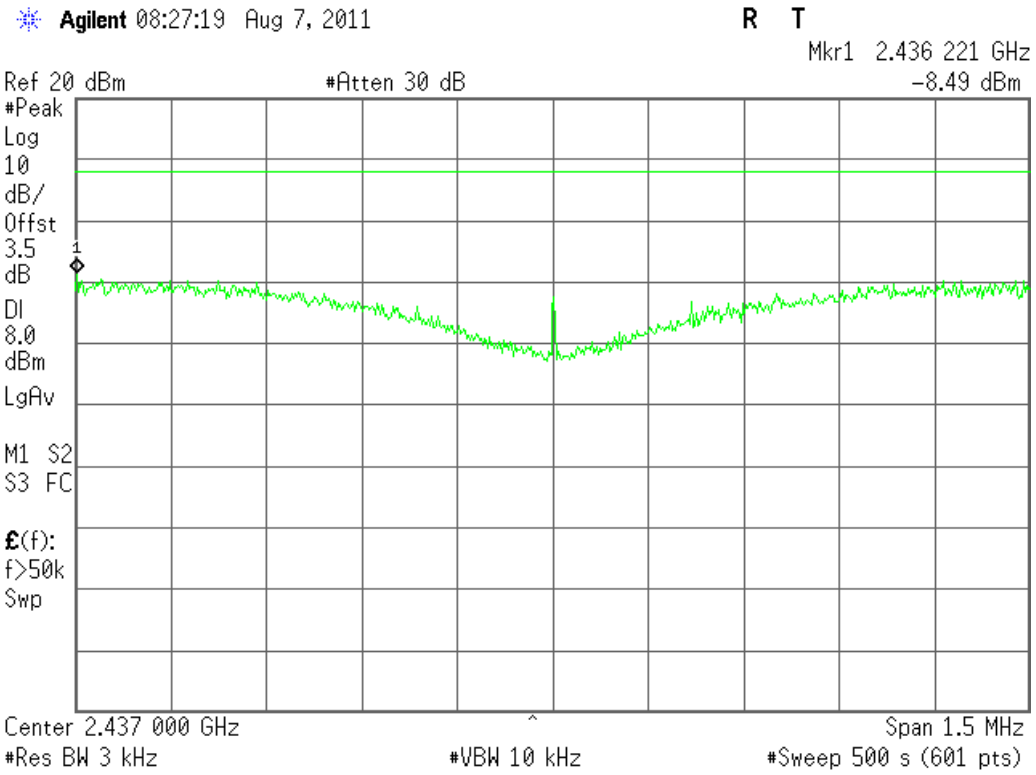
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2422	-13.91	8.00	PASS
Mid	2437	-13.32		PASS
High	2452	-13.13		PASS

Test Plot (IEEE 802.11b mode Antenna 1)

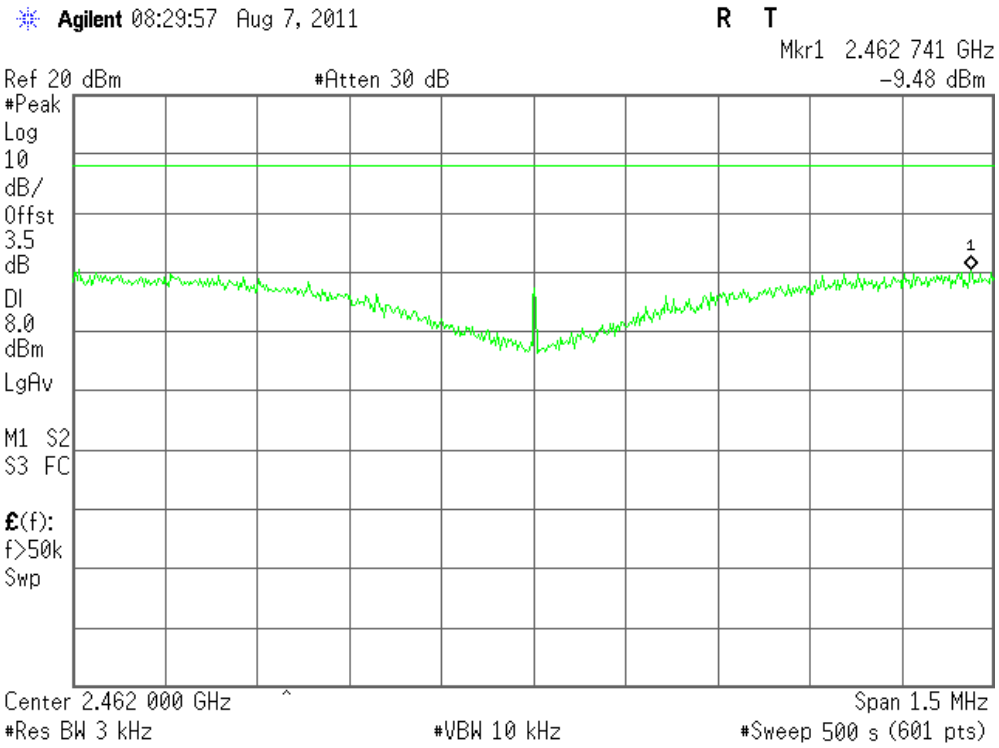
PPSD (CH Low)



PPSD (CH Mid)

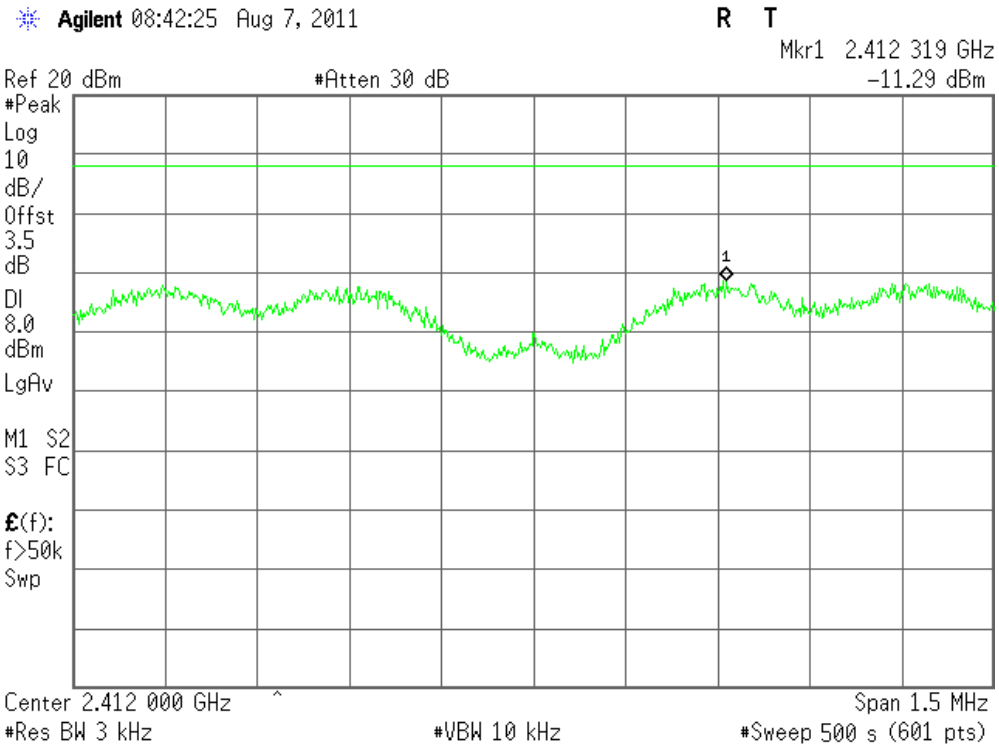


PPSD (CH High)

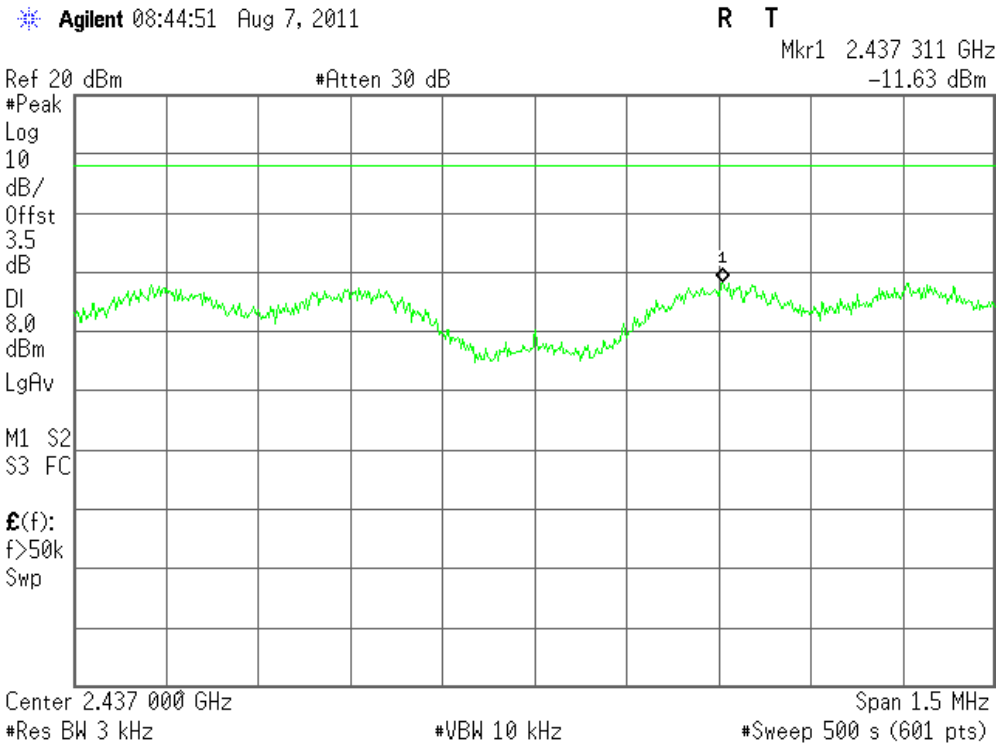


(IEEE 802.11g mode Antenna 1)

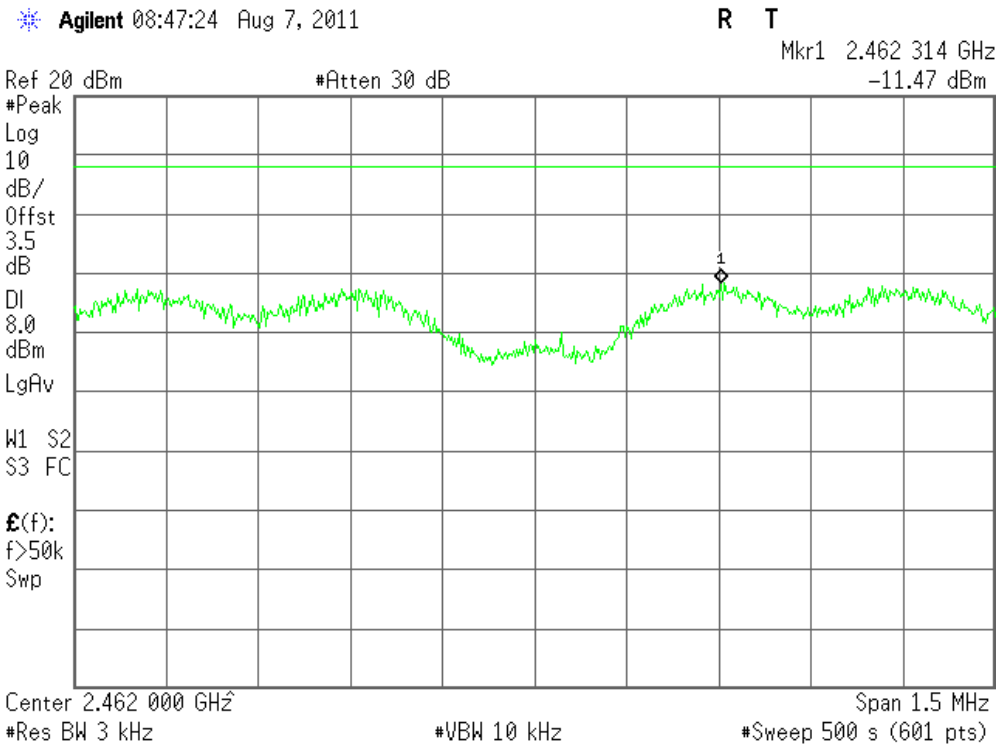
PPSD (CH Low)



PPSD (CH Mid)

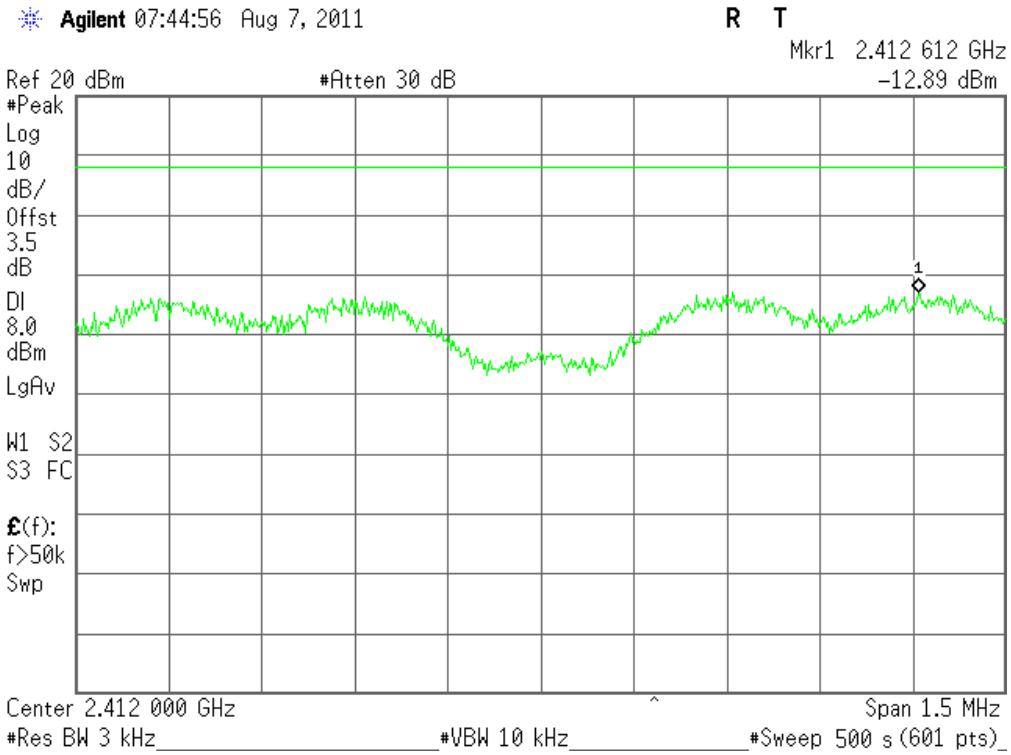


PPSD (CH High)

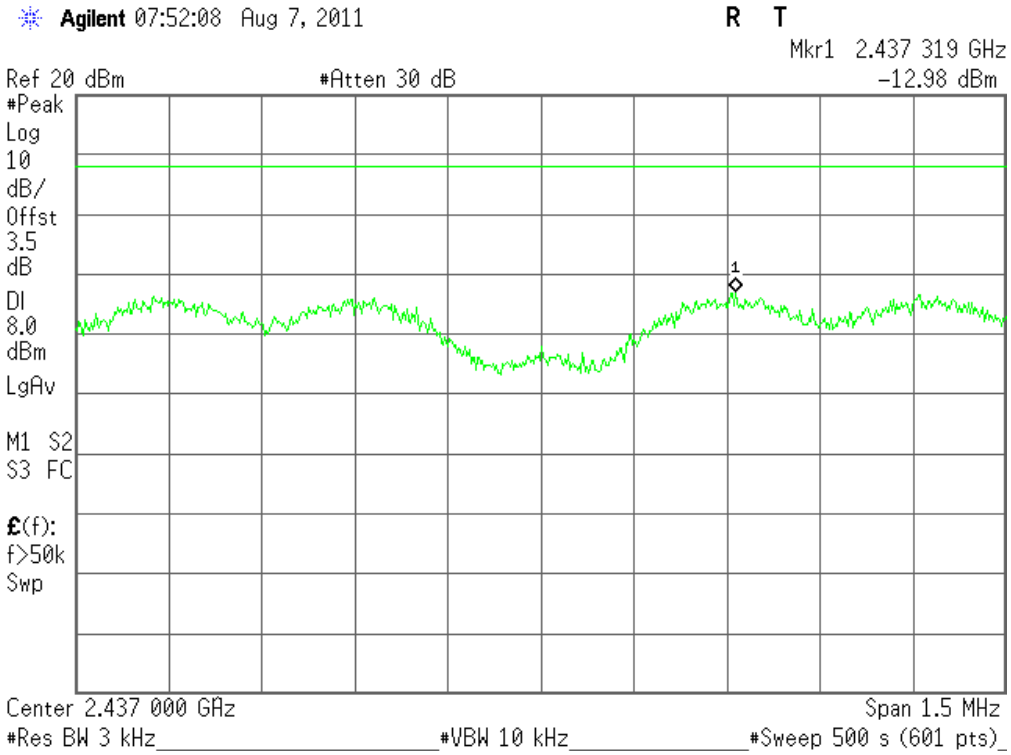


(IEEE 802.11g mode Antenna 2)

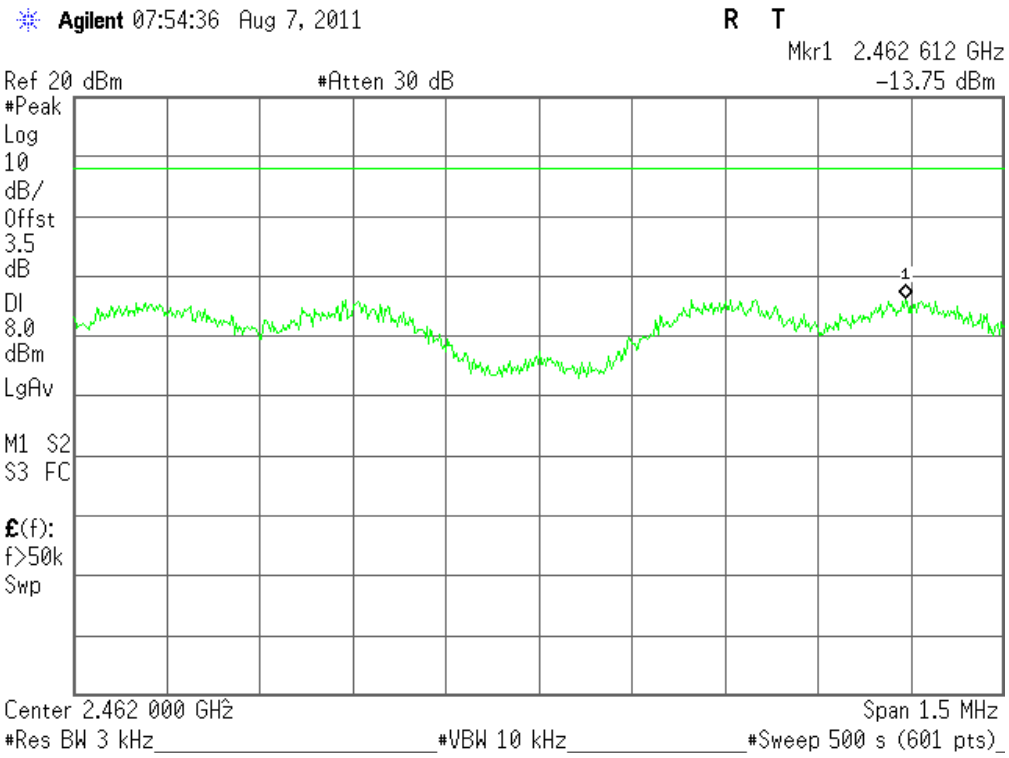
PPSD (CH Low)



PPSD (CH Mid)

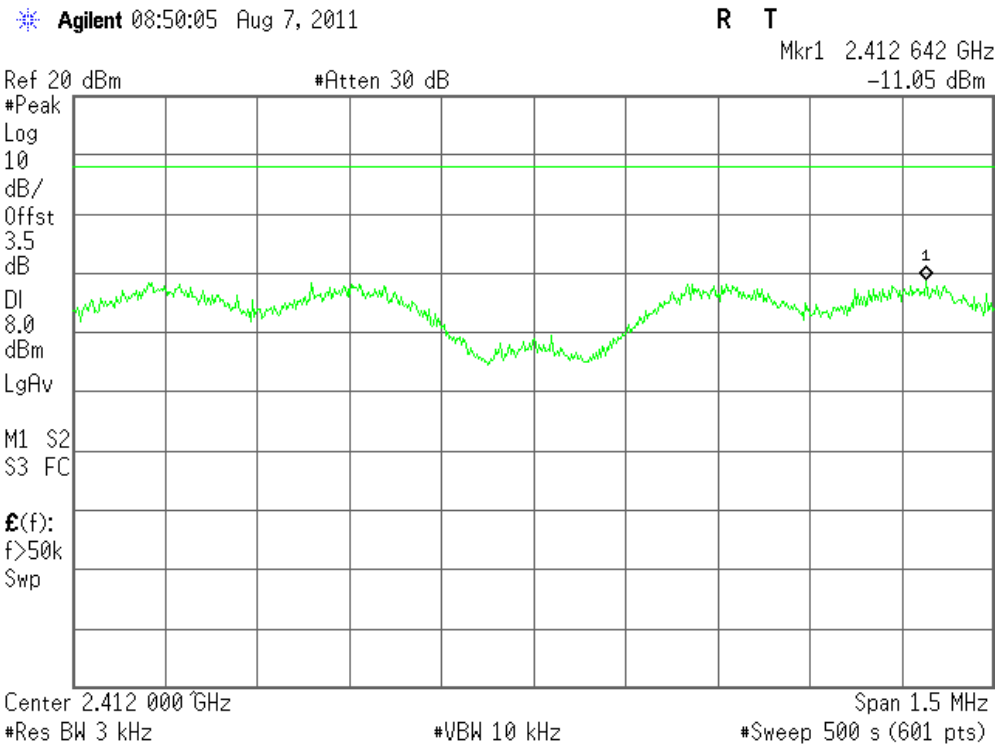


PPSD (CH High)

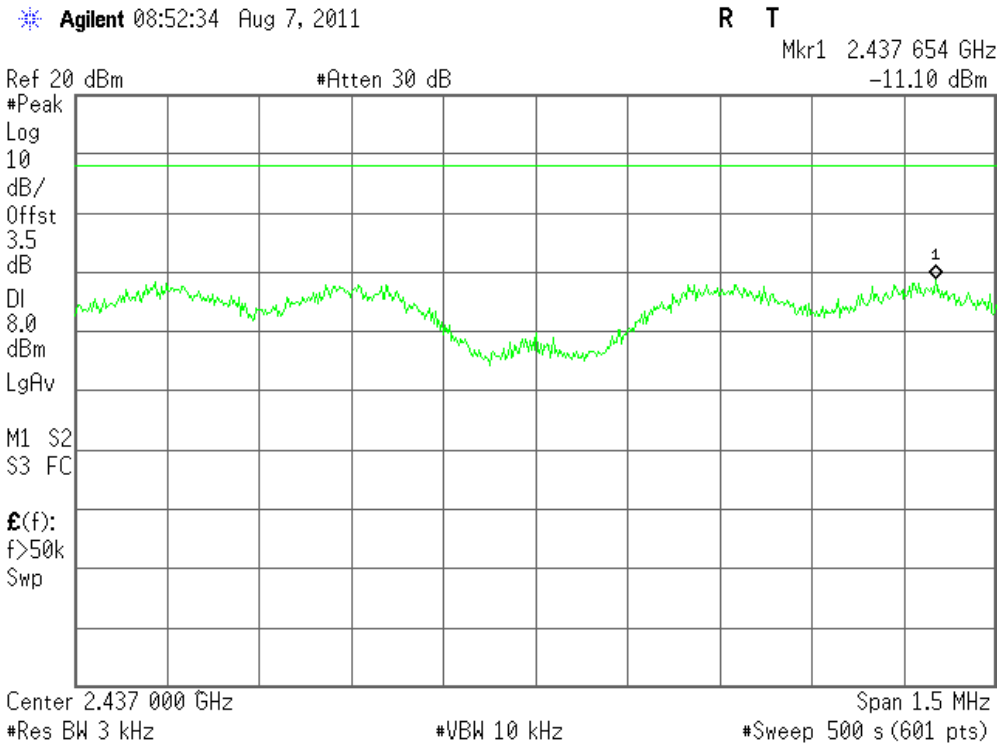


(IEEE 802.11n HT20 MHz mode Atenna 1)

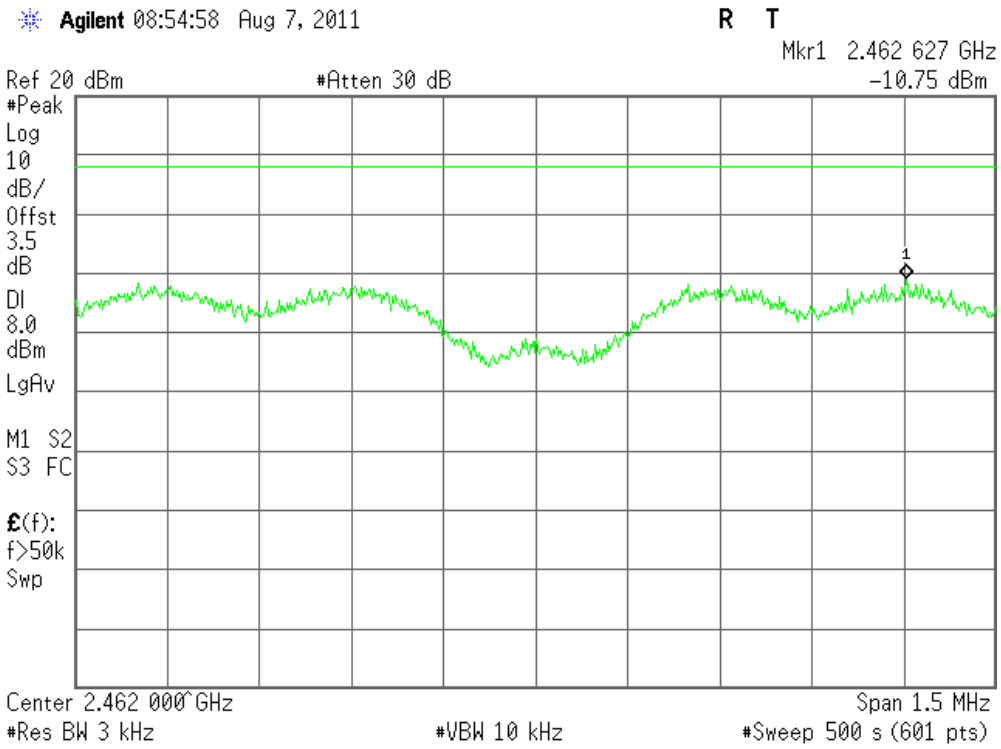
PPSD (CH Low)



PPSD (CH Mid)

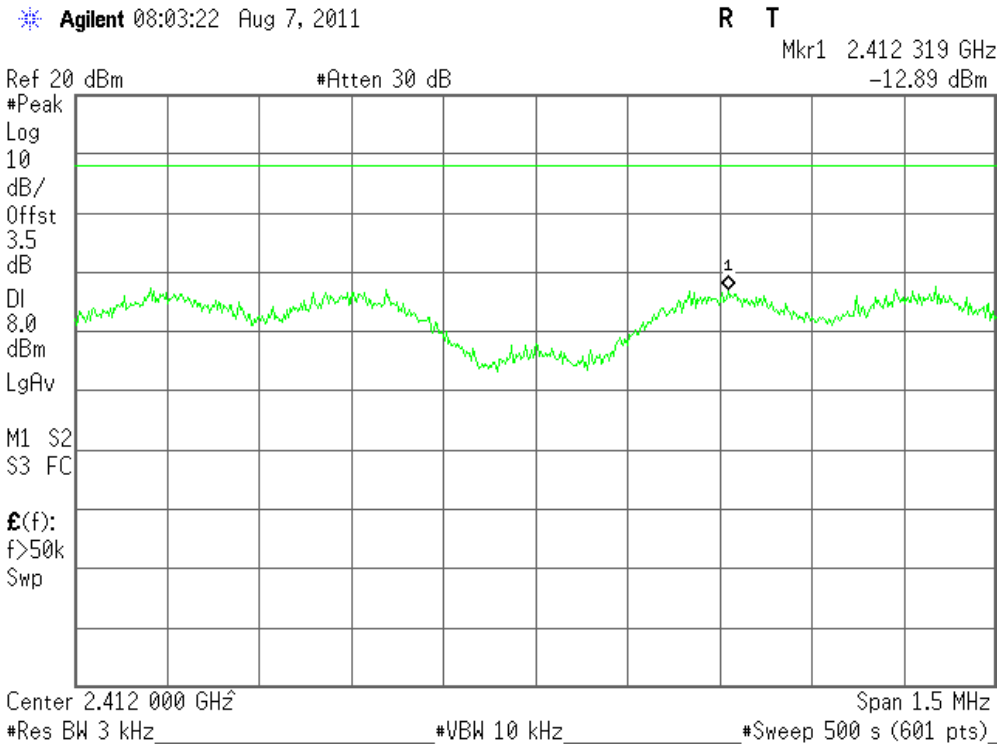


PPSD (CH High)

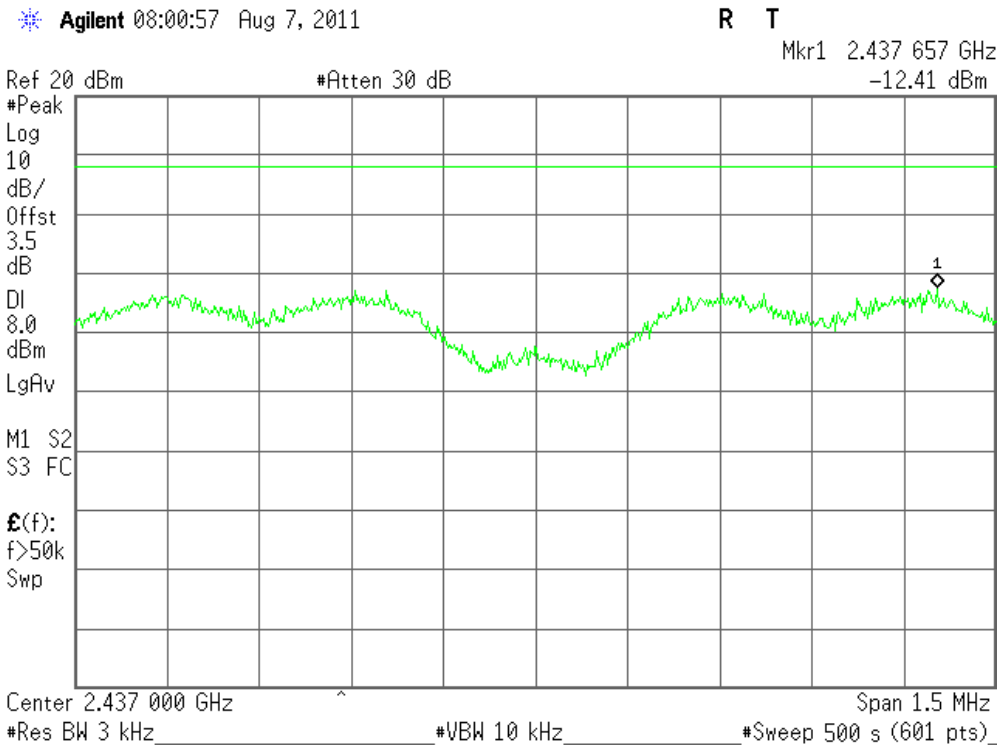


(IEEE 802.11n HT20 MHz mode Atenna 2)

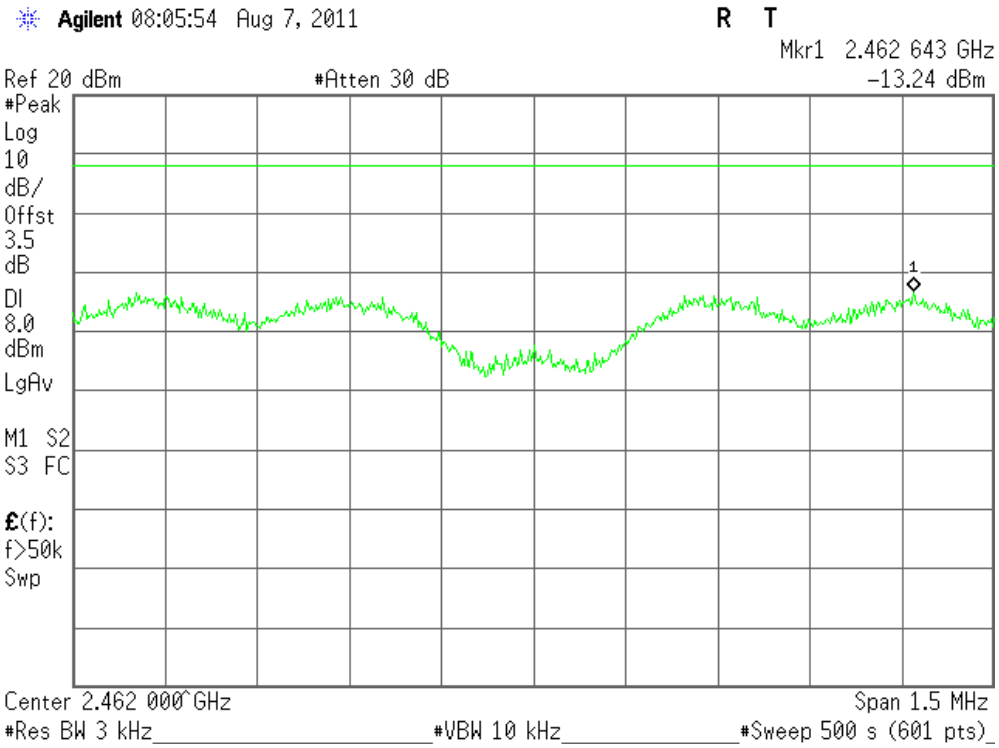
PPSD (CH Low)



PPSD (CH Mid)

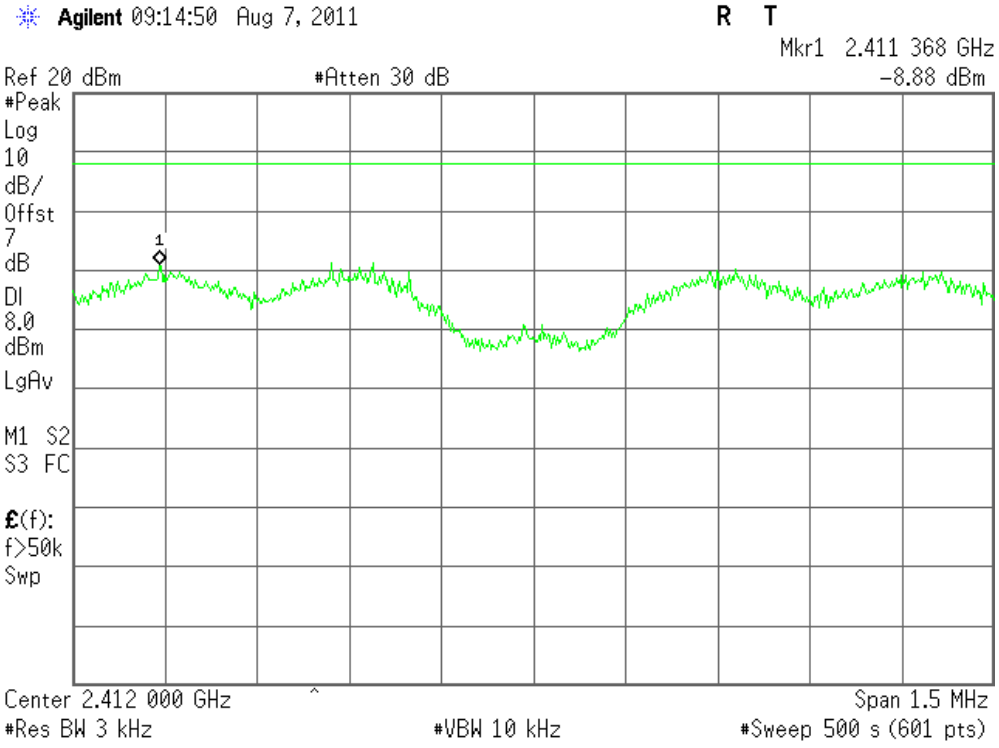


PPSD (CH High)

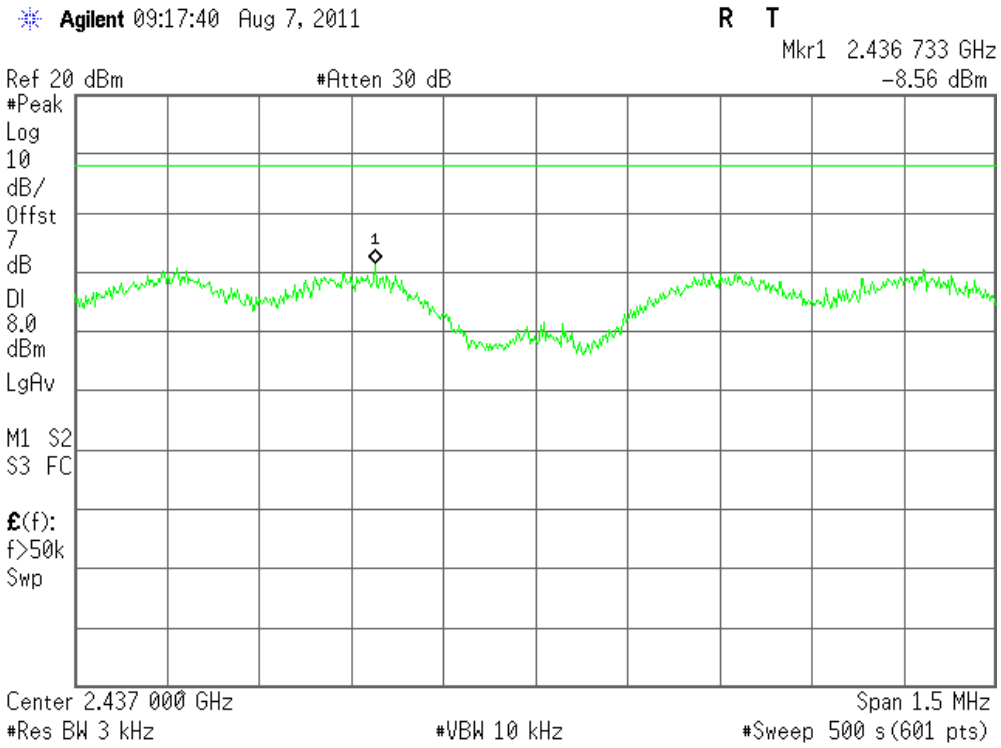


(IEEE 802.11n HT20 MHz mode Combine)

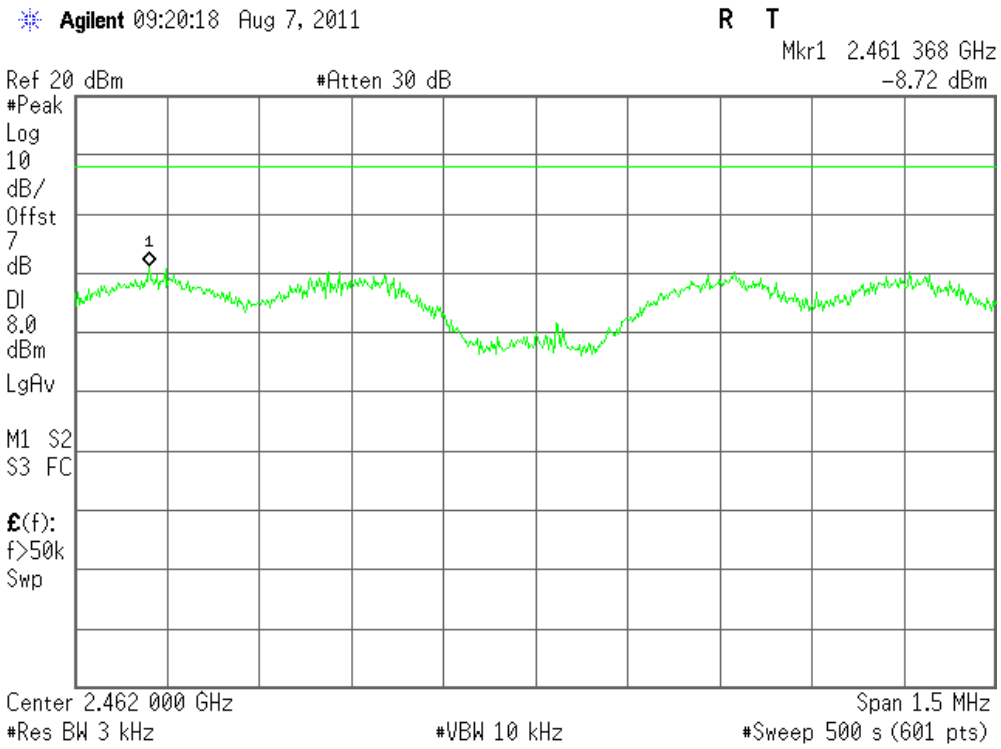
PPSD (CH Low)



PPSD (CH Mid)

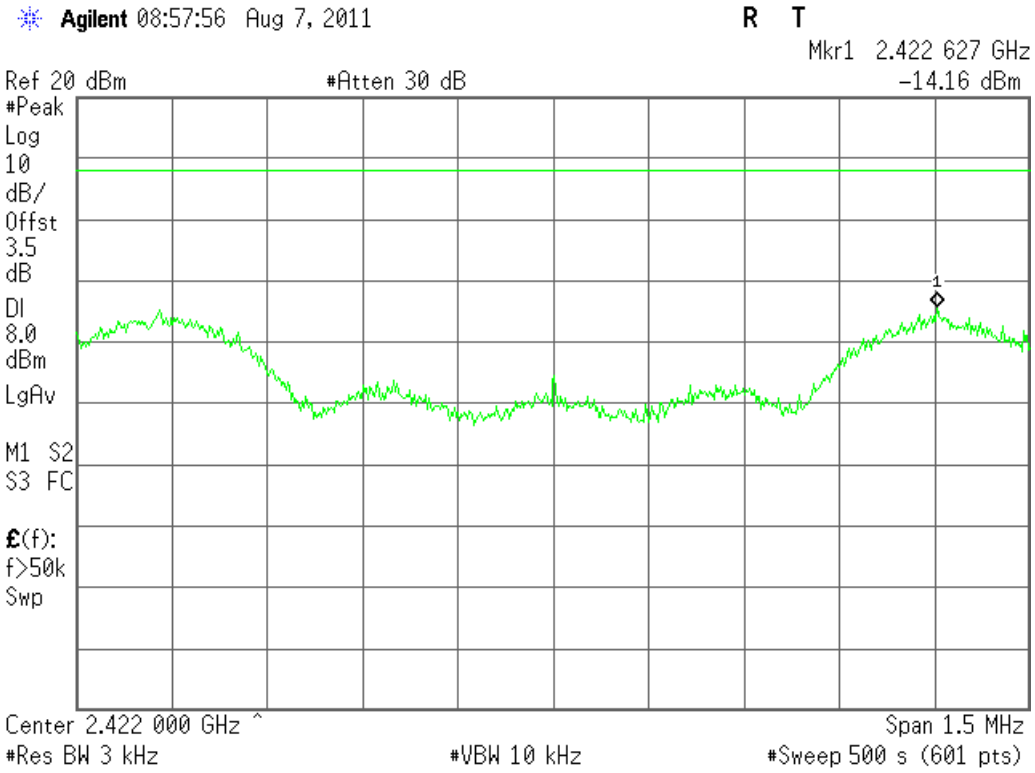


PPSD (CH High)

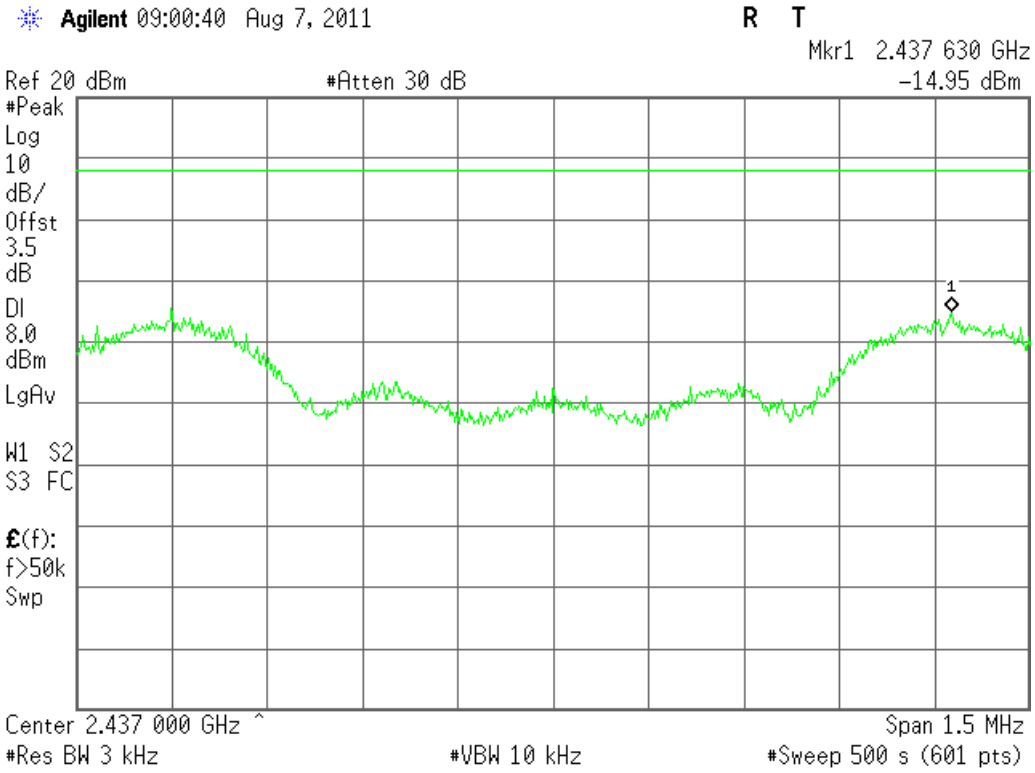


(IEEE 802.11n HT40 MHz mode Antenna 1)

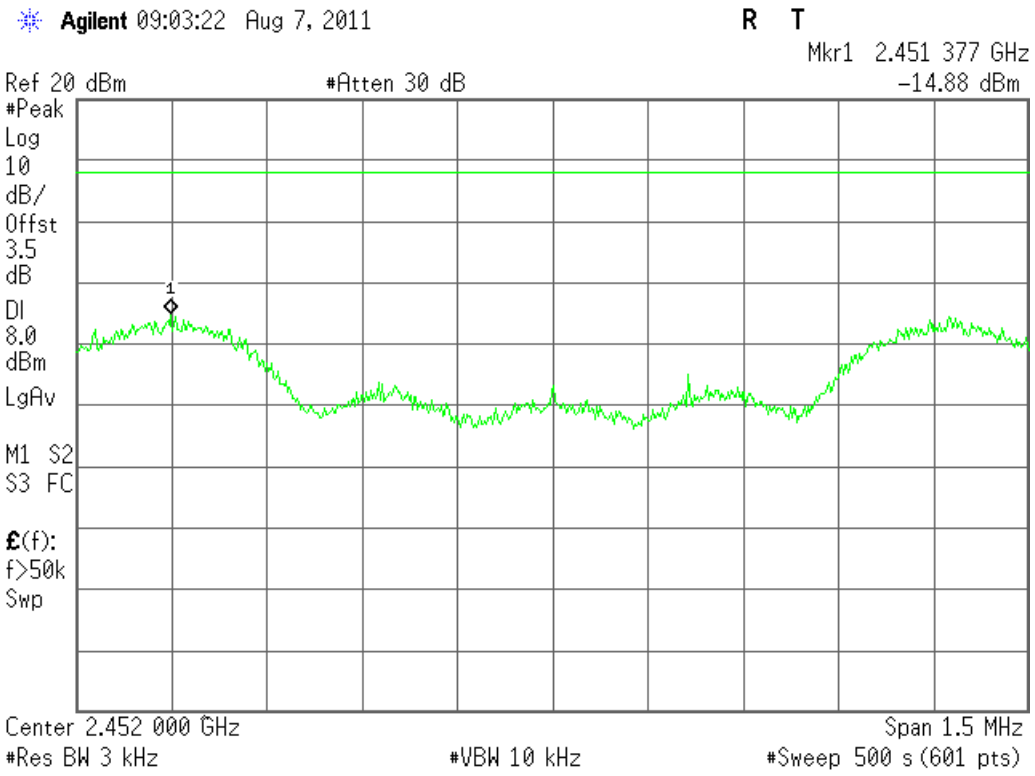
PPSD (CH Low)



PPSD (CH Mid)

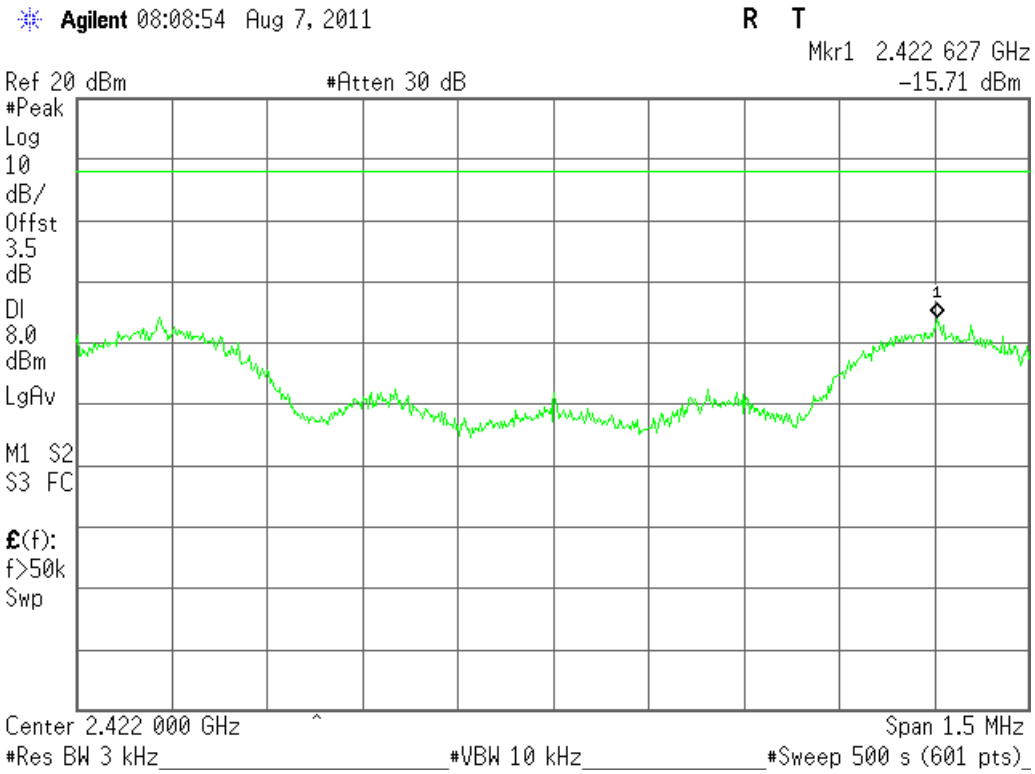


PPSD (CH High)

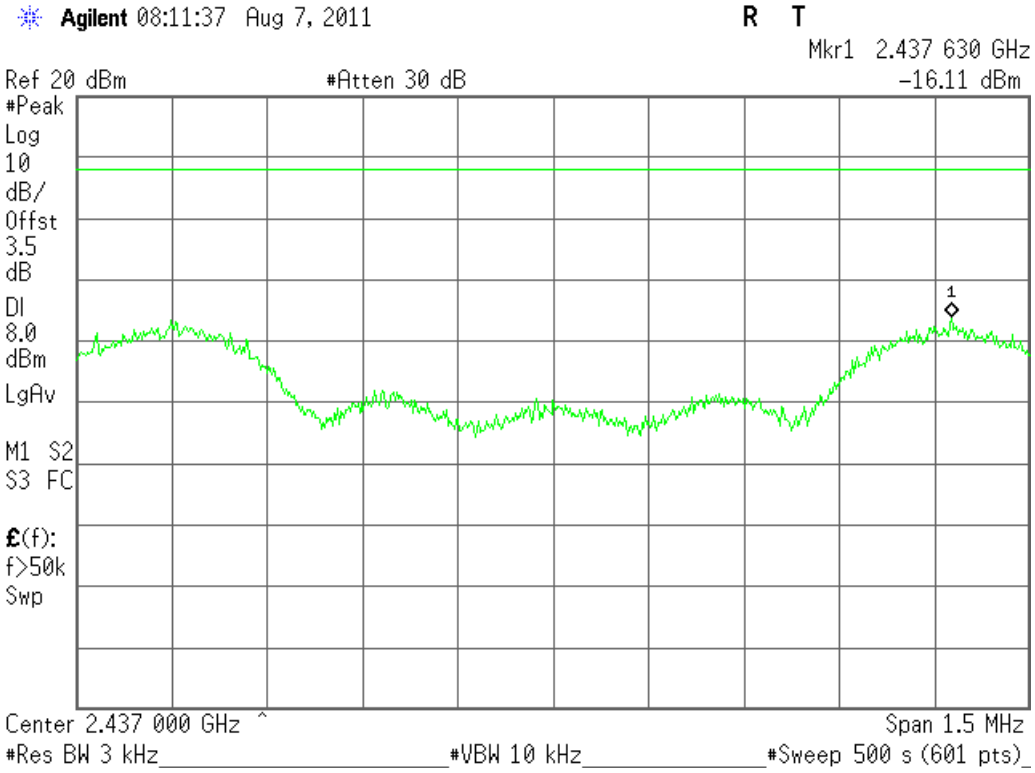


(IEEE 802.11n HT40 MHz mode Antenna 2)

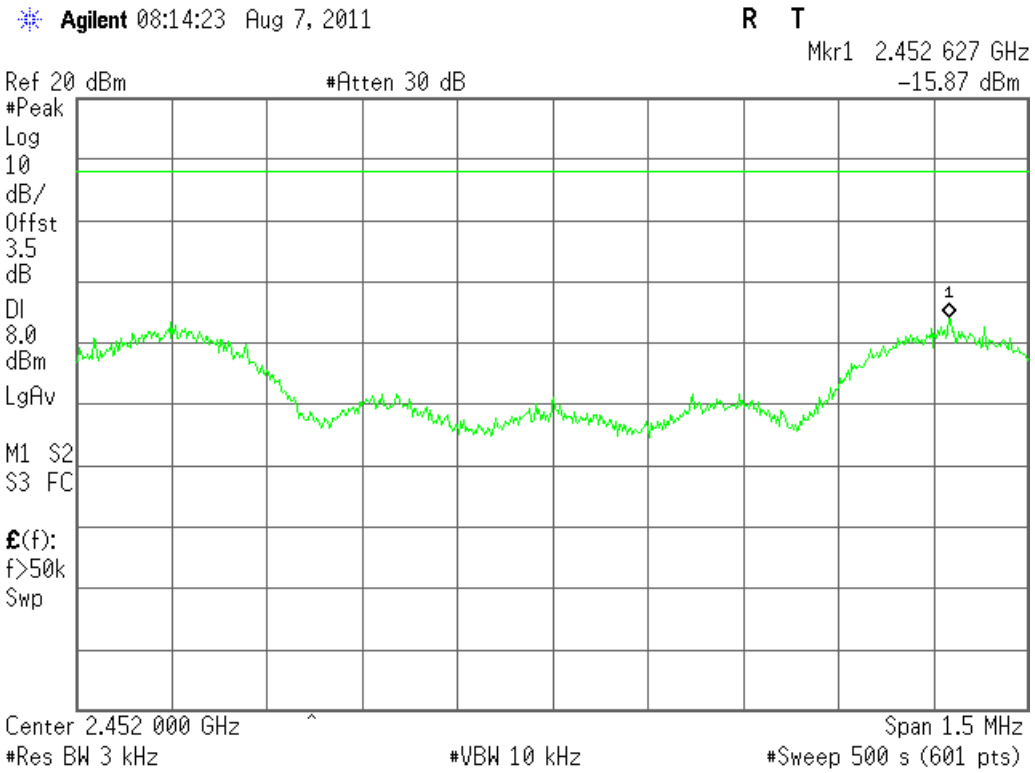
PPSD (CH Low)



PPSD (CH Mid)

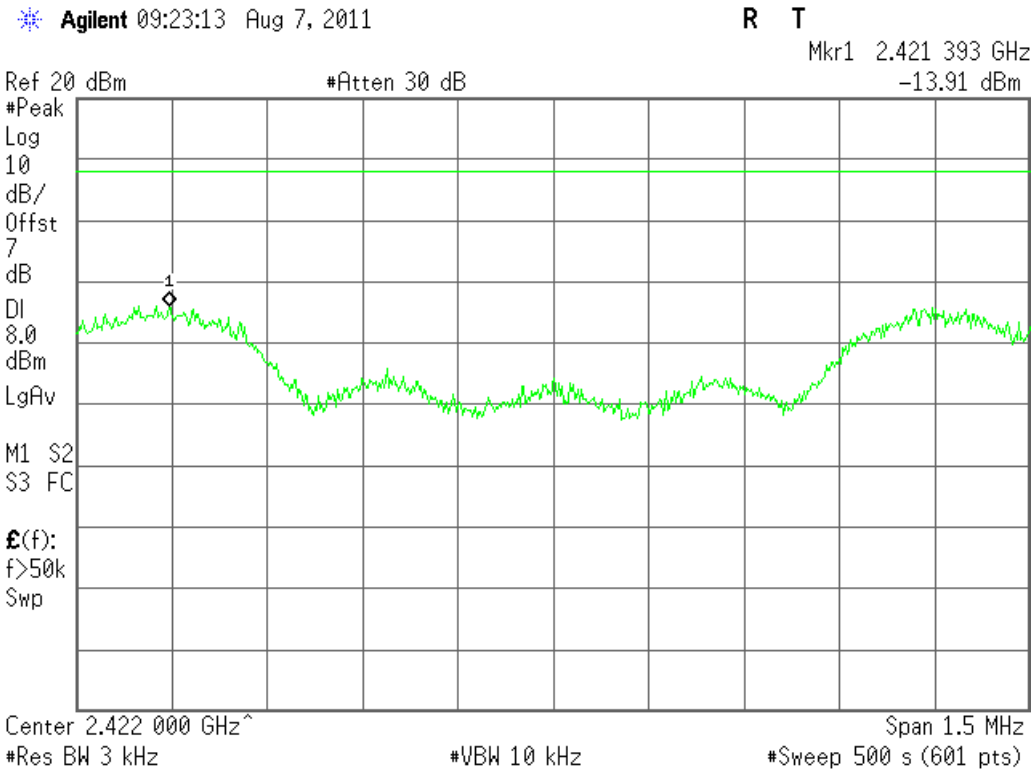


PPSD (CH High)

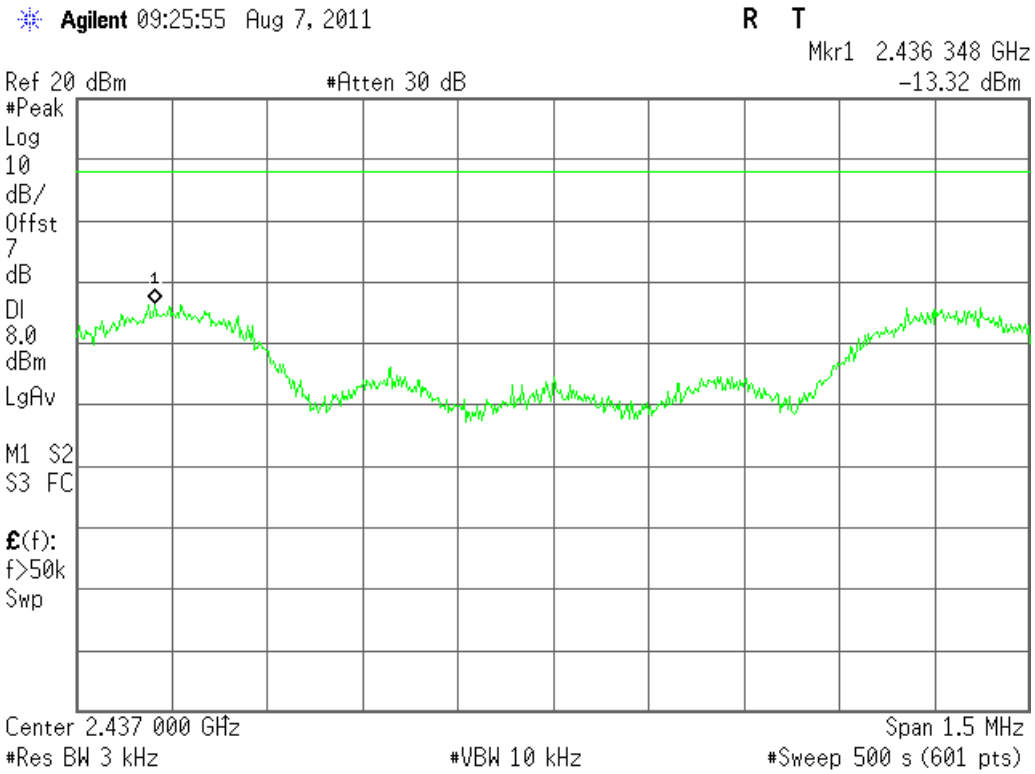


(IEEE 802.11n HT40 MHz mode Combine)

PPSD (CH Low)



PPSD (CH Mid)



PPSD (CH High)