FCC TEST REPORT

for

Wireless-N Router

MODEL:RT-N12E

Brand: ASUS

Test Report Number:
SZ110915B10-RP
Issued Date: September 23, 2011

Issued for

ASUSTeK COMPUTER INC.
15, Li-Te Rd., Peitou, Taipei 112, Taiwan

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
FAX: 86-755-28055221

TESTING CERT #2861.01

检 测
CNAS L4818

Note: *This report shall not be reproduced except in full, without the written approval of Compliance Certification Services Inc. This document may be altered or revised by Compliance Certification Services Inc. personnel only, and shall be noted in the revision section of the document. The client should not use it to claim product endorsement by TAF, A2LA, NVLAP, NIST or any government agencies. The test results in the report only apply to the tested sample.*

Revision History

Rev.	Issue No.	Revisions	Effect Page	Revised By
00	SZ110915B10-RP	Initial Issue	ALL	Amay Tang

TABLE OF CONTENTS

1 TEST CERTIFICATION

Product	Wireless-N Router
Model	RT-N12E
Brand	ASUS
Tested	September 15~ 23, 2011
Applicant	**ASUSTeK COMPUTER INC.** 15, Li-Te Rd., Peitou, Taipei 112, Taiwan
Manufacturer	**Shenzhen Gongjin Electronics Co., Ltd** No 2&3 Buildings, Mingwei Factory Area, Songgang Road West, Songgang SUB-District,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	Wireless-N Router
Trade Name	ASUS
Model Number	RT-N12E
Model Discrepancy	N/A
Serial Number	SZ110915B10-RP
Received Date	September 15, 2011
Power Supply	DC12V supplied by the adapter
Adapter Manufacturer / Model No.	1)Adapter 1: RuiDe /RD1200500-C55-8MG I/P: 100-240Vac, 50/60Hz, 0.25A max O/P: 12Vdc, 0.5A max DC Output Cable: Unshielded,1.50m 2)Adapter 2: ShenZhen Gongjin Electronics Co., Ltd S06A22-120A050-PB I/P: 100-240Vac, 50/60Hz, 0.3A max O/P: 12Vdc, 0.5A, DC Output Cable: Unshielded,1.50m
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: 17.40dBm(Antenna 1) IEEE 802.11b mode: 17.53dBm(Antenna 2) IEEE 802.11g mode: 13.78dBm(Antenna 1) IEEE 802.11g mode: 13.83dBm(Antenna 2) IEEE 802.11n HT20 MHz mode: 13.73dBm (Combine with antenna 1 and antenna 2) IEEE 802.11n HT40 MHz mode: 12.46dBm (Combine with antenna 1 and antenna 2)
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	802.11b: 11Mbps(CCK) with fall back rates of 5.5/2/1Mbps 802.11g: 54Mbps with fall back rates of 48/36/24/18/12/11 /6Mbps IEEE 802.11n HT20: 135.0Mbps with fall back rates of 121.5/ 108.0/81.0 /65.0/58.5/54.0/52.0/40.5/39.0/27.0/26.0/19.5/13.5/13.0/6.5 Mbps IEEE 802.11n HT40: 135.0Mbps with fall back rates of 121.5/ 108.0/81.0 /65.0/58.5/54.0/52.0/40.5/39.0/27.0/26.0/19.5/13.5 Mbps
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
Antenna Specification	Dipole Antenna with 2.09dBi 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: **MSQRTN12E** 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 and IEEE 802.11g mode used with antenna 1and antenna 2 but can't work at the same time. for IEEE 802.11n HT20 MHz mode and IEEE 802.11n HT40 MHz mode Combined with antenna 1 and antenna 2 .

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	Notebook	2672	992F2VG	N/A	IBM	Unshielded 1.80m	Shielded 1.80m
2	Notebook	Studio 1435	5315448686549	N/A	DELL	Unshielded 1.80m	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			

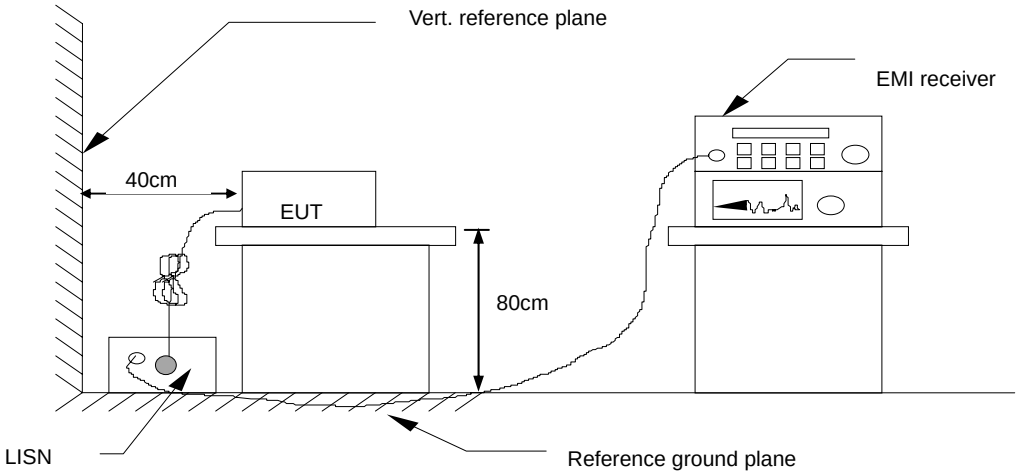
NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

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.	RT-N12E	RBW,VBW	9 kHz
Environmental Conditions	26°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.)

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)
0.4380	33.86	23.87	11.51	45.37	35.38	57.10	47.10	-11.73	-11.72	Pass
1.4580	34.23	14.78	11.54	45.77	26.32	56.00	46.00	-10.23	-19.68	Pass
1.8180	37.53	19.93	11.55	49.08	31.48	56.00	46.00	-6.92	-14.52	Pass
7.6780	21.18	14.50	11.84	33.02	26.34	60.00	50.00	-26.98	-23.66	Pass
11.1340	18.54	7.59	12.07	30.61	19.66	60.00	50.00	-29.39	-30.34	Pass
22.4580	16.84	8.59	12.59	29.43	21.18	60.00	50.00	-30.57	-28.82	Pass

REMARKS: *L1 = Line One (Live Line)*

Model No.	RT-N12E	RBW,VBW	9 kHz
Environmental Conditions	26°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.)

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)
0.4340	35.59	23.62	11.54	47.13	35.16	57.18	47.18	-10.05	-12.02	Pass
0.6020	25.67	11.10	11.53	37.20	22.63	56.00	46.00	-18.80	-23.37	Pass
1.1940	28.15	14.07	11.52	39.67	25.59	56.00	46.00	-16.33	-20.41	Pass
1.8180	34.67	19.45	11.55	46.22	31.00	56.00	46.00	-9.78	-15.00	Pass
3.5620	23.51	8.07	11.62	35.13	19.69	56.00	46.00	-20.87	-26.31	Pass
16.2300	18.97	8.95	12.30	31.27	21.25	60.00	50.00	-28.73	-28.75	Pass

REMARKS: *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)

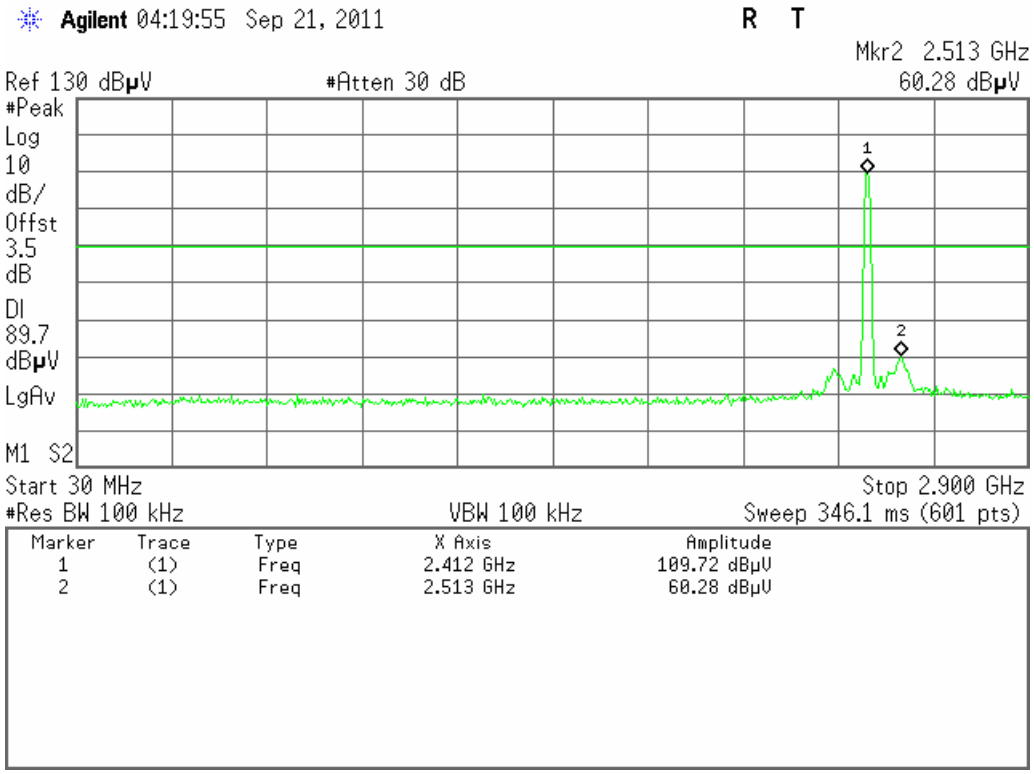
Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.
The transmitter output is connected to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

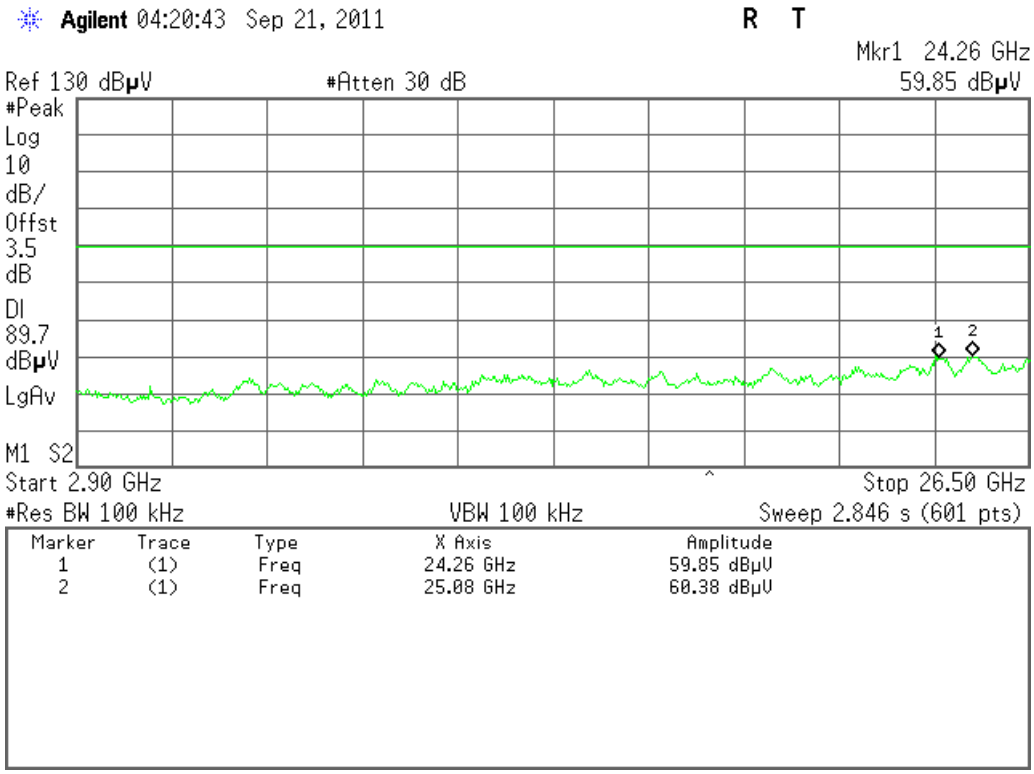
Test Plot

(IEEE 802.11b mode) Antenna 1

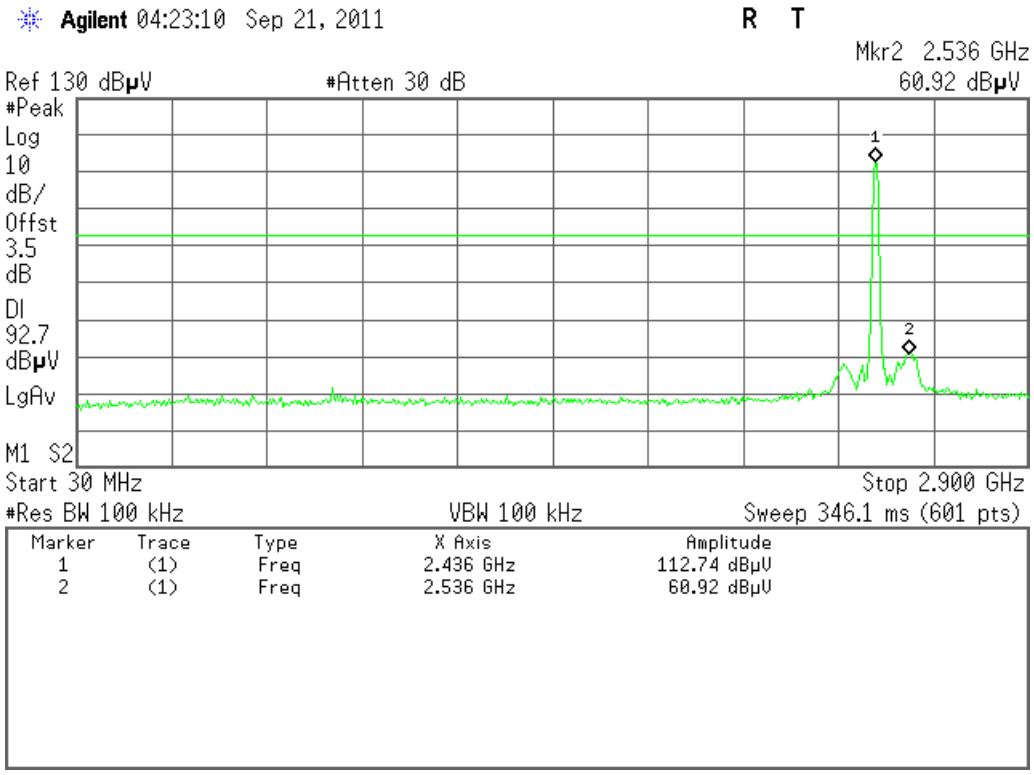
CH Low (30MHz ~2.9GHz)



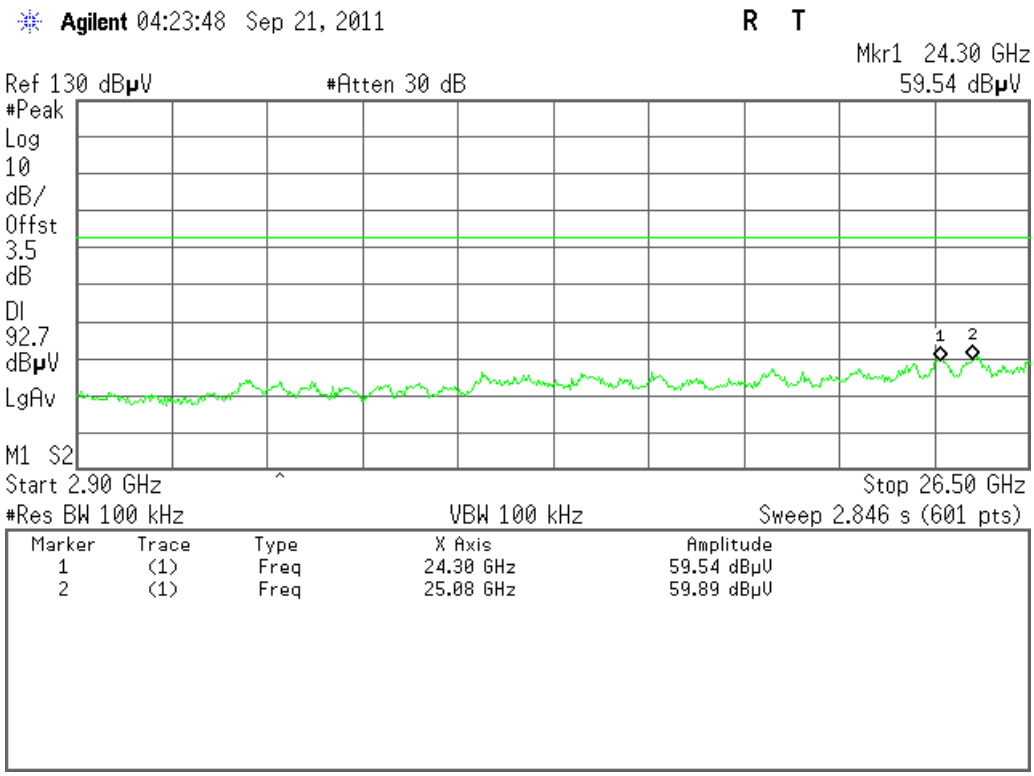
CH Low (2.9GHz ~26.5GHz)



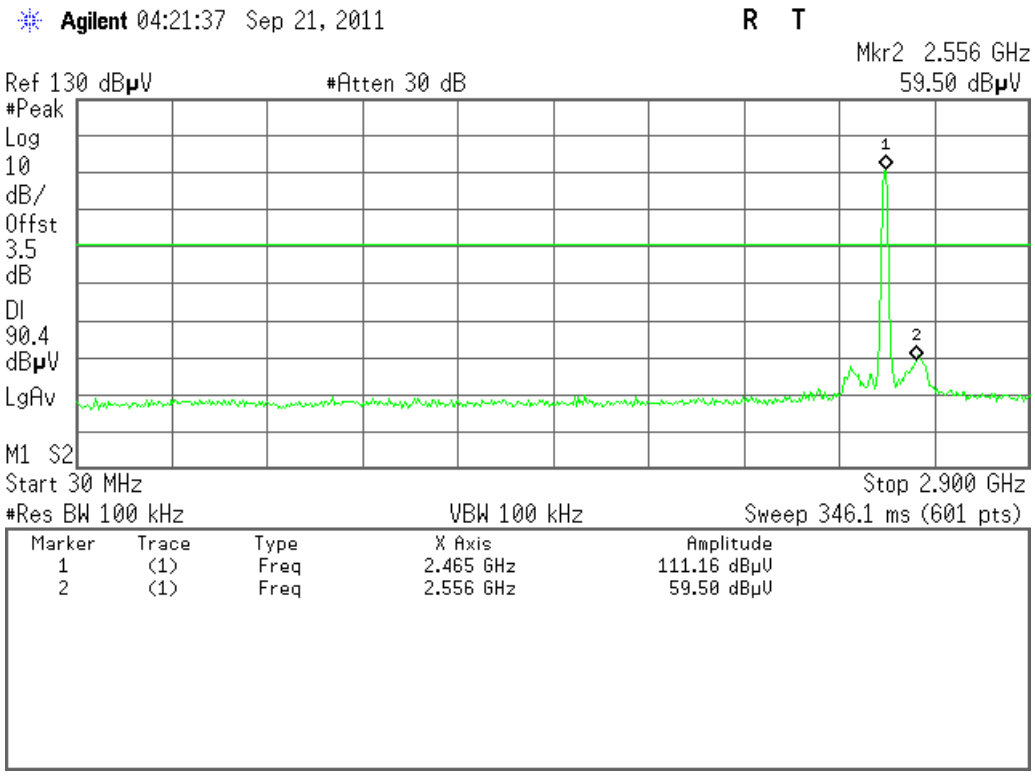
CH Mid (30MHz ~2.9GHz)



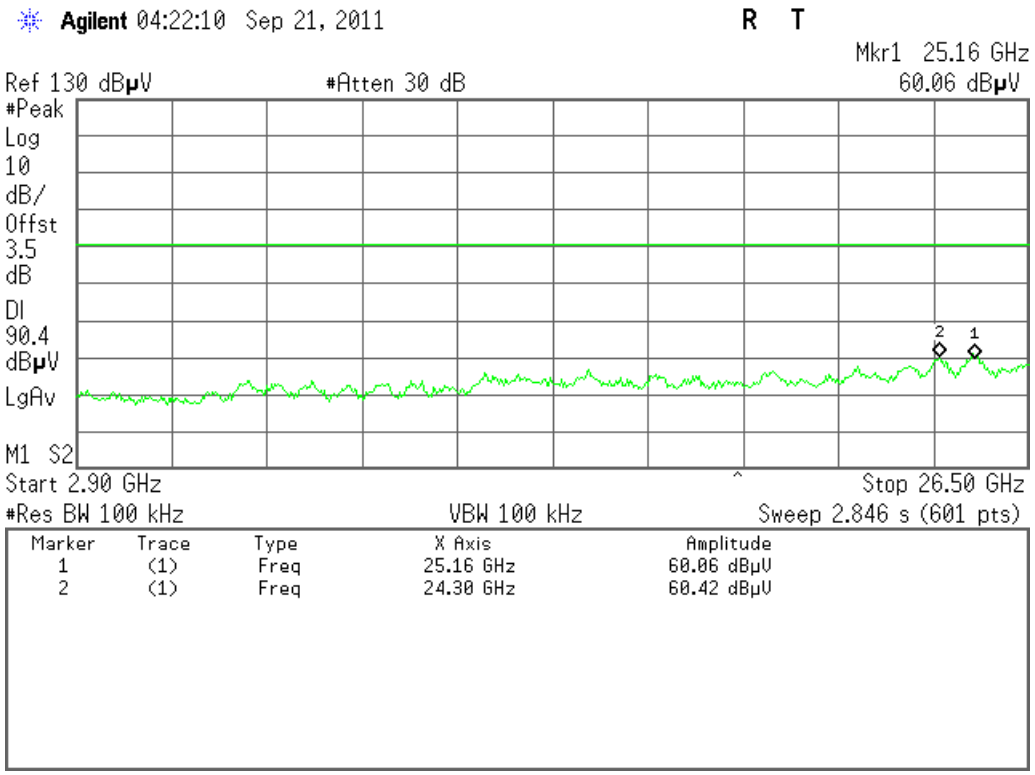
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)

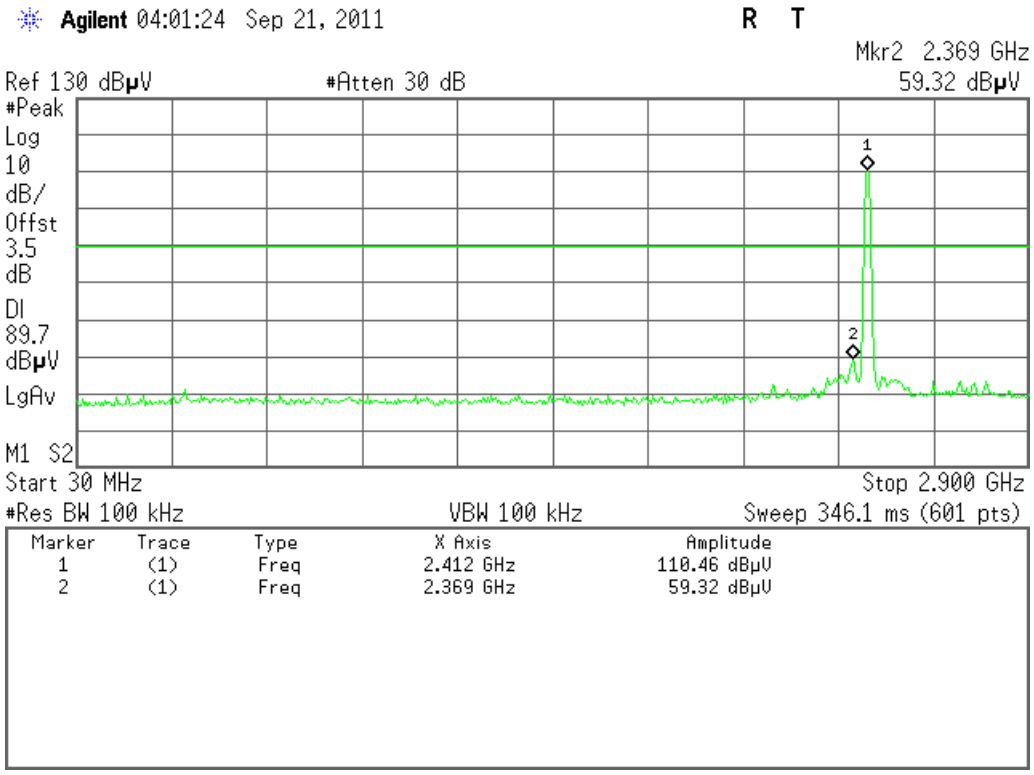


CH High(2.9GHz ~26.5GHz)

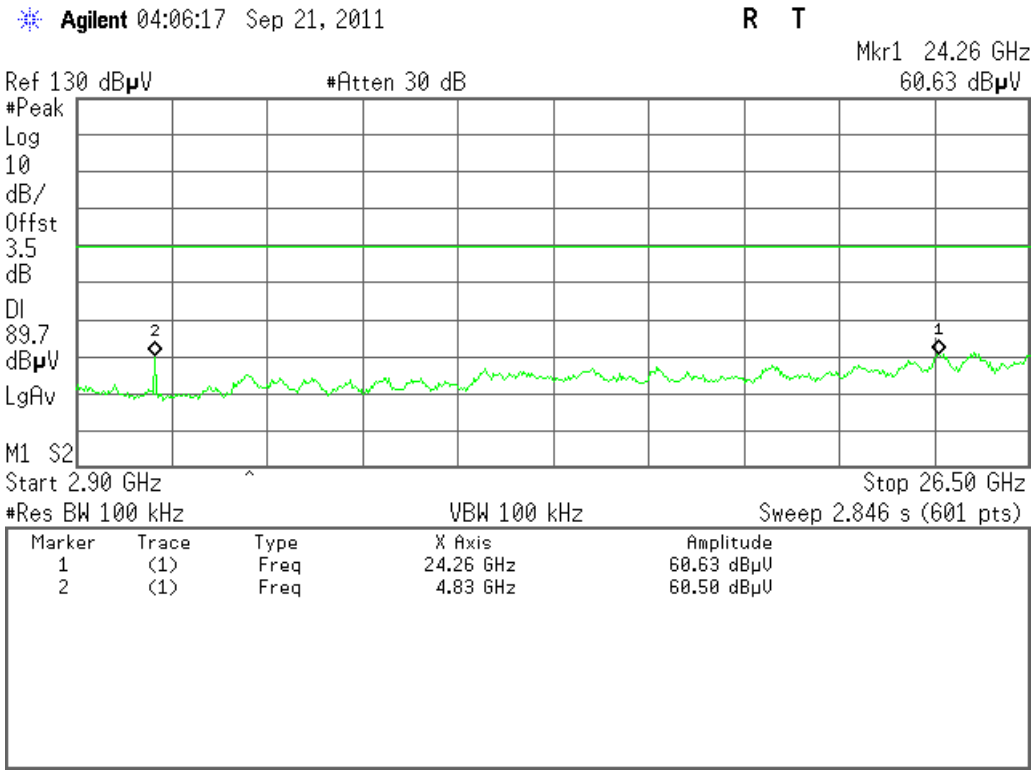


(IEEE 802.11b mode) Antenna 2

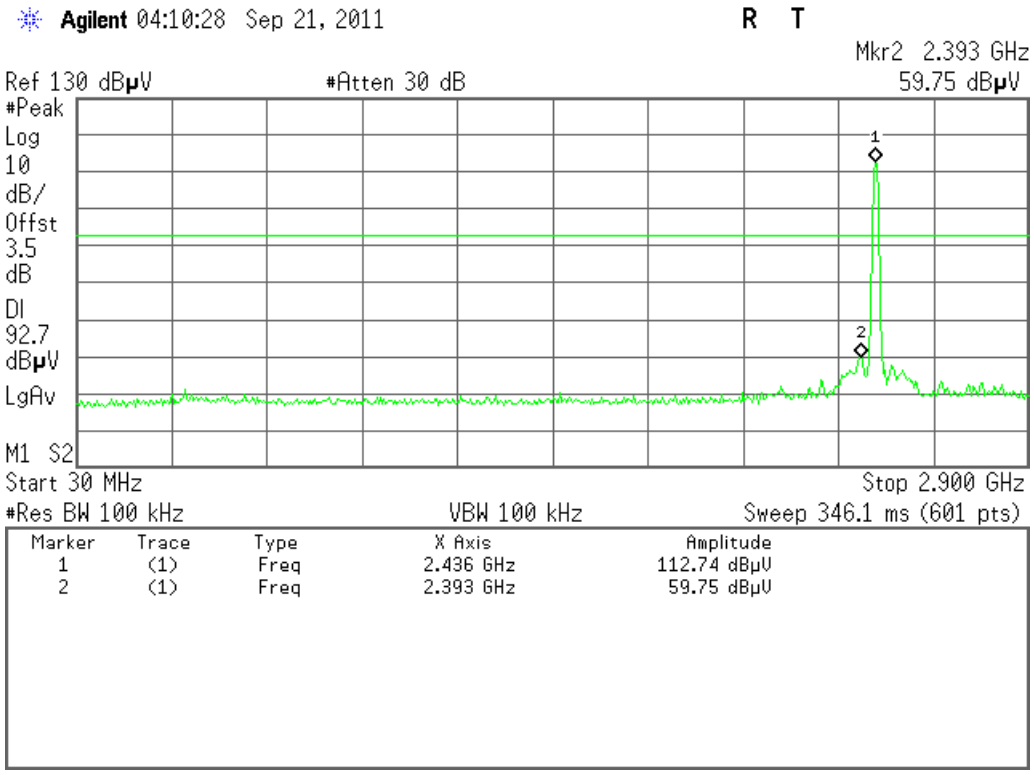
CH Low (30MHz ~2.9GHz)



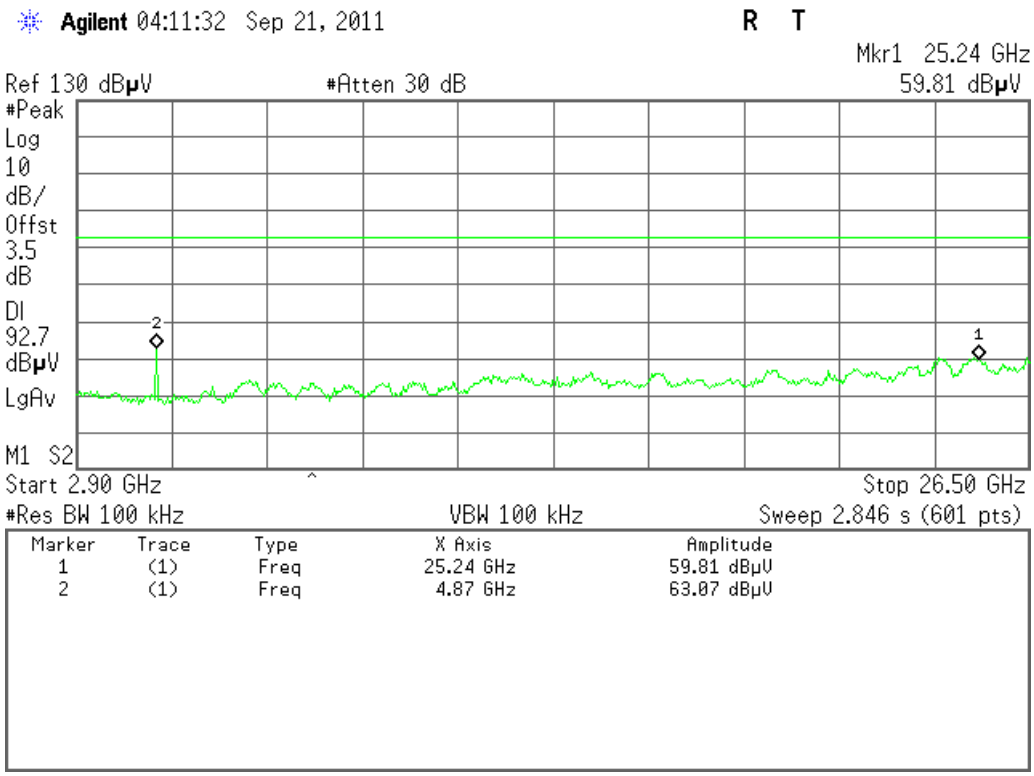
CH Low (2.9GHz ~26.5GHz)



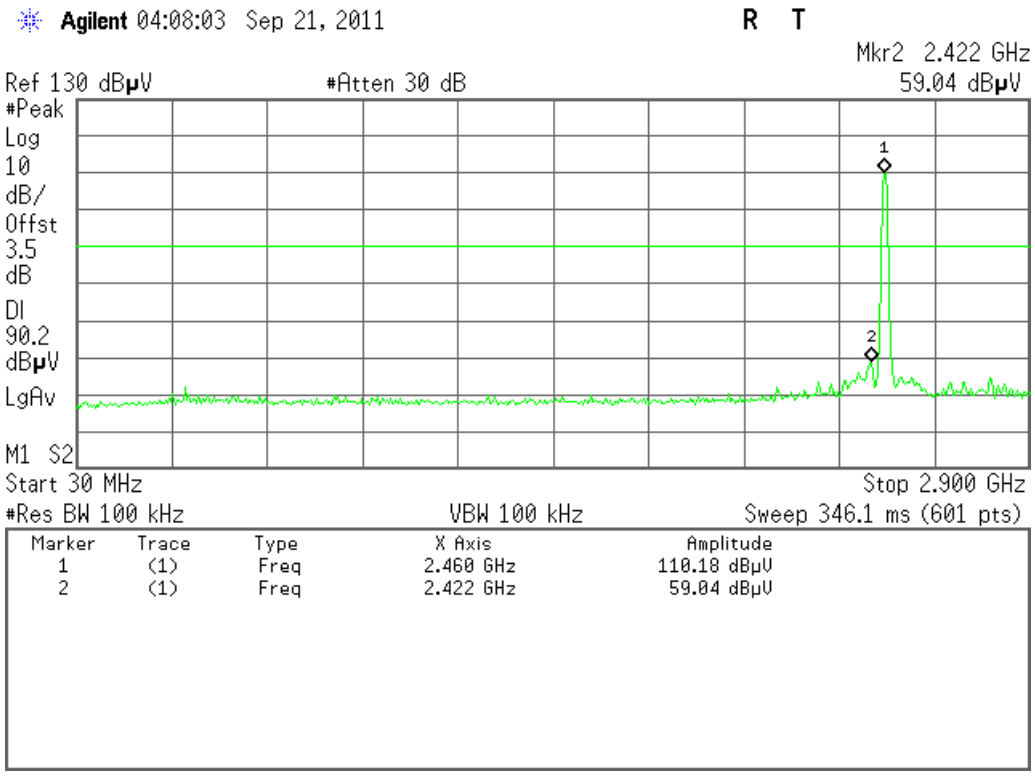
CH Mid (30MHz ~2.9GHz)



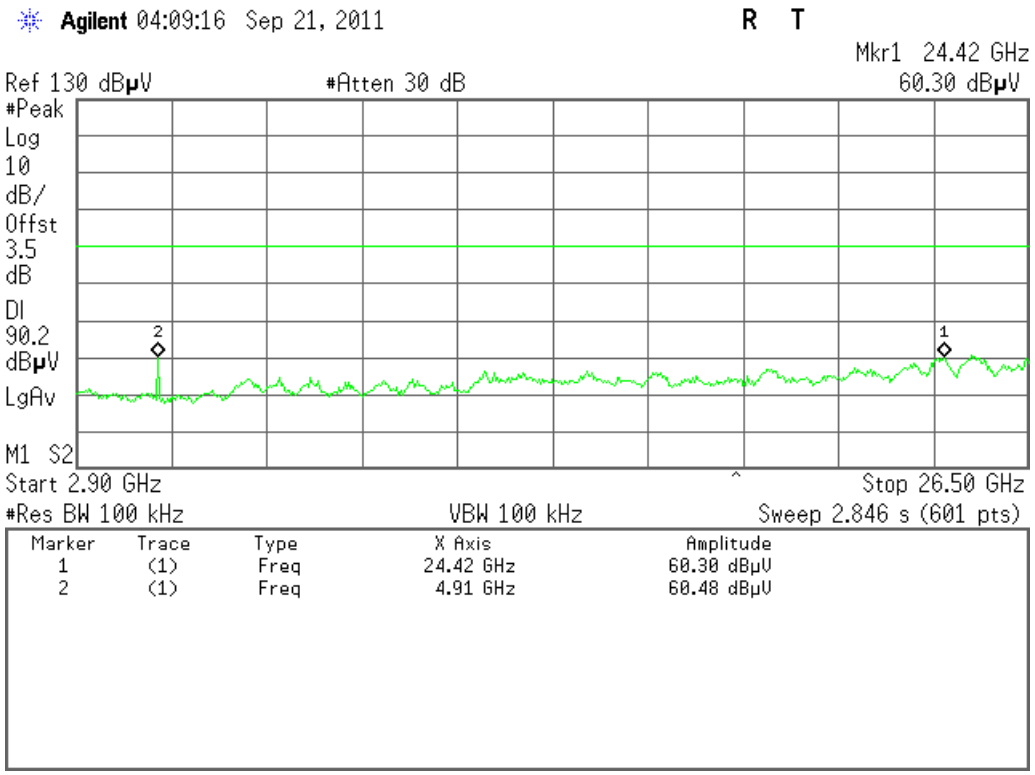
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)

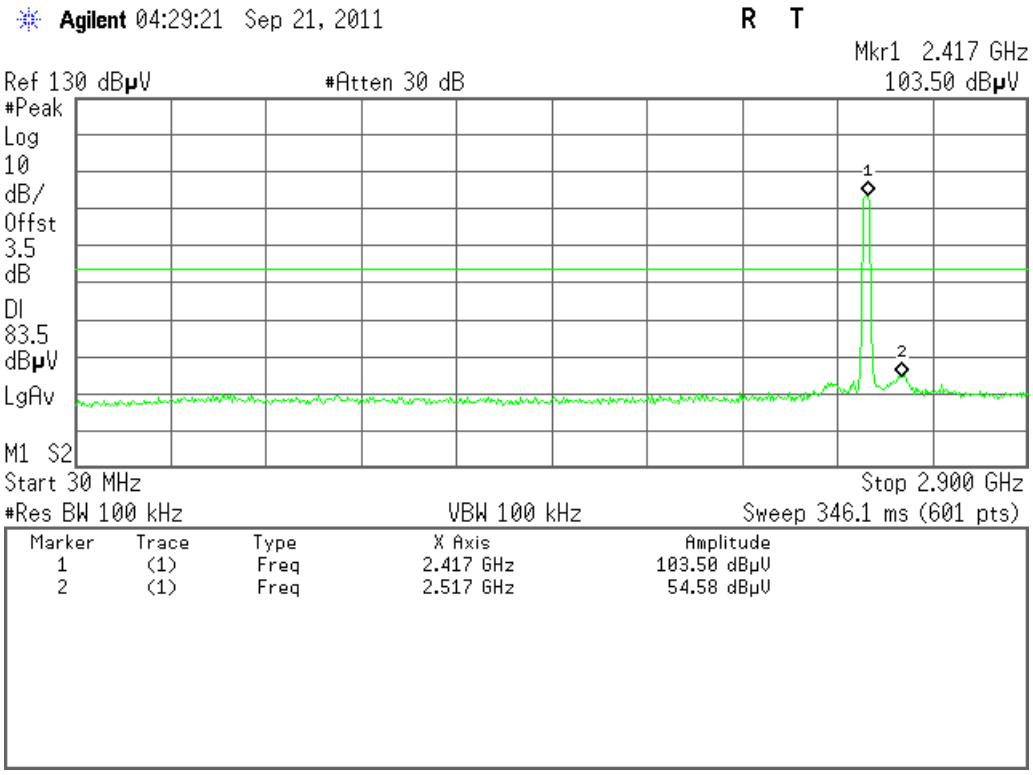


CH High(2.9GHz ~26.5GHz)

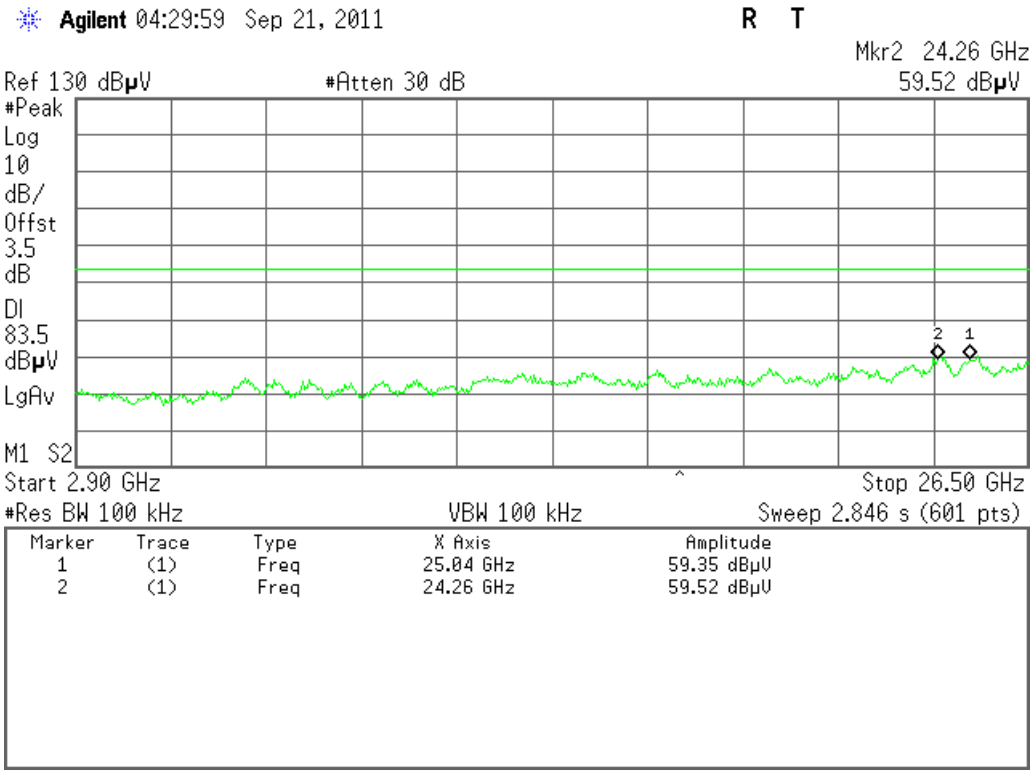


(IEEE 802.11g mode) Atenna 1

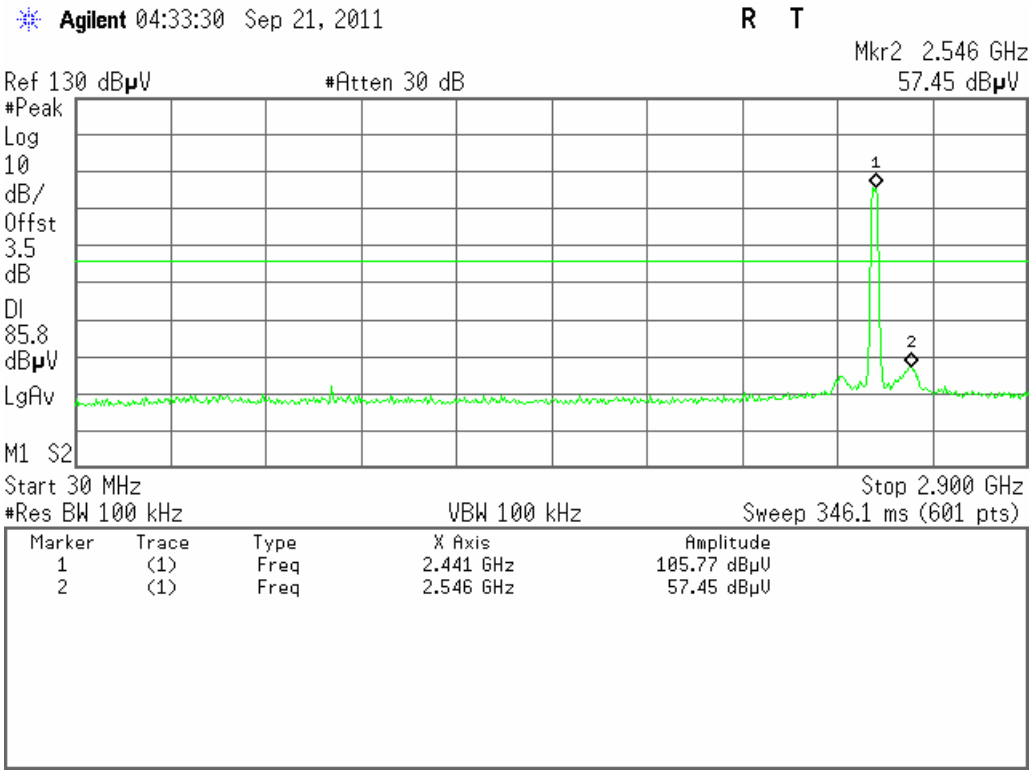
CH Low (30MHz ~2.9GHz)



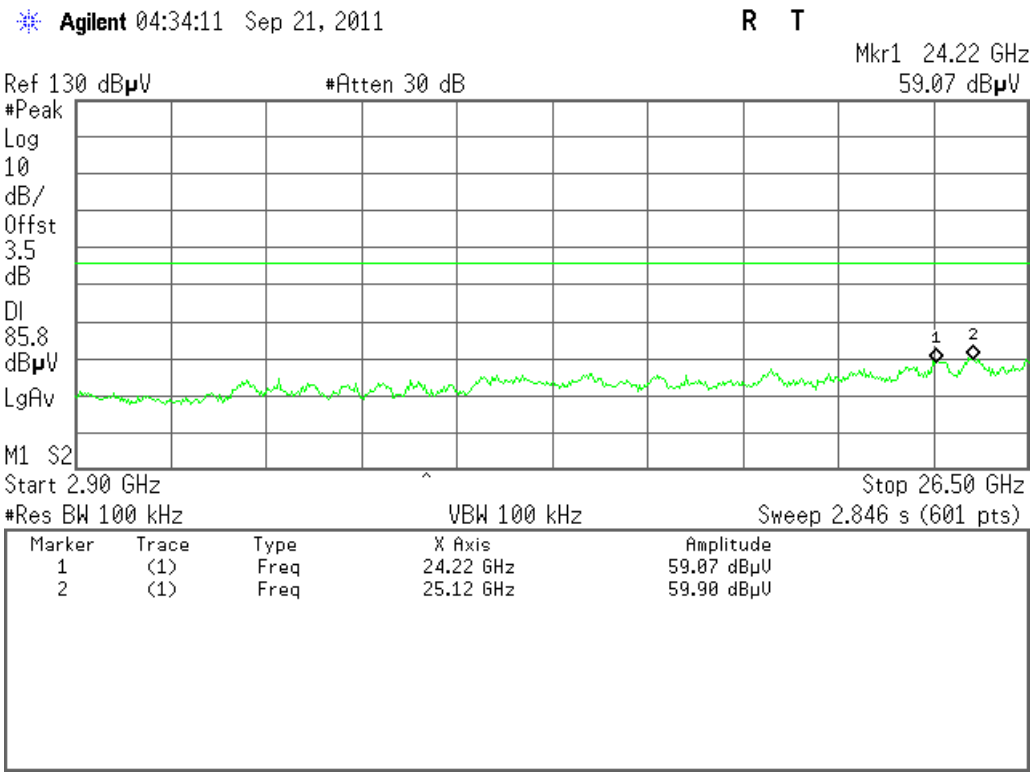
CH Low (2.9GHz ~26.5GHz)



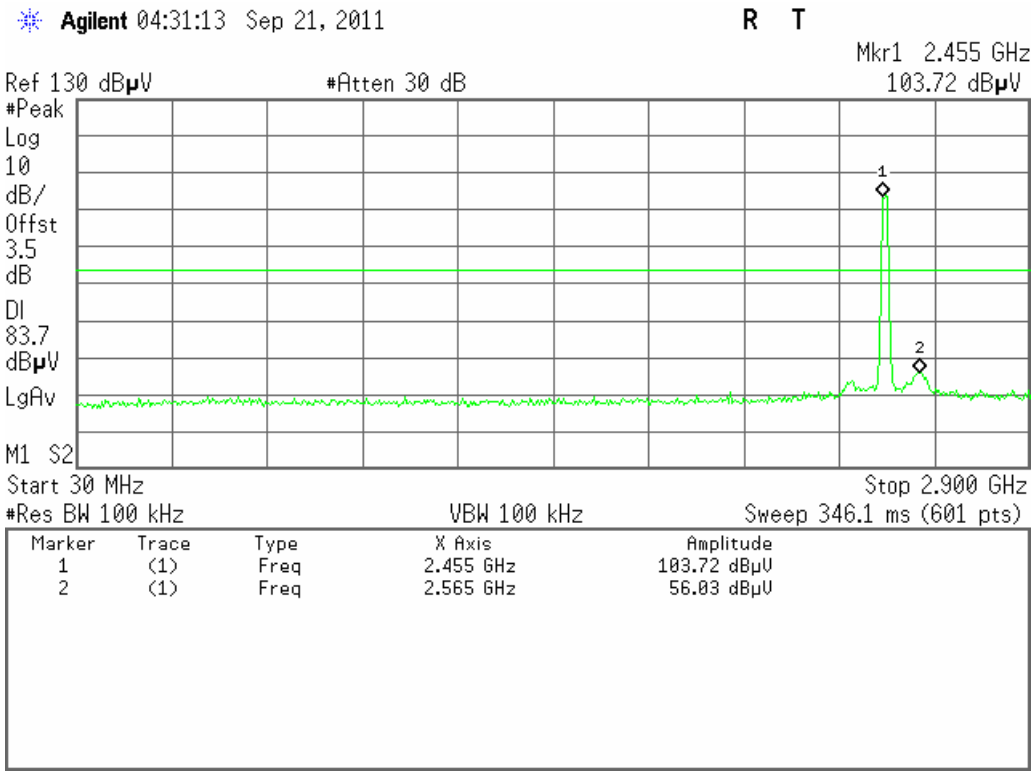
CH Mid (30MHz ~2.9GHz)



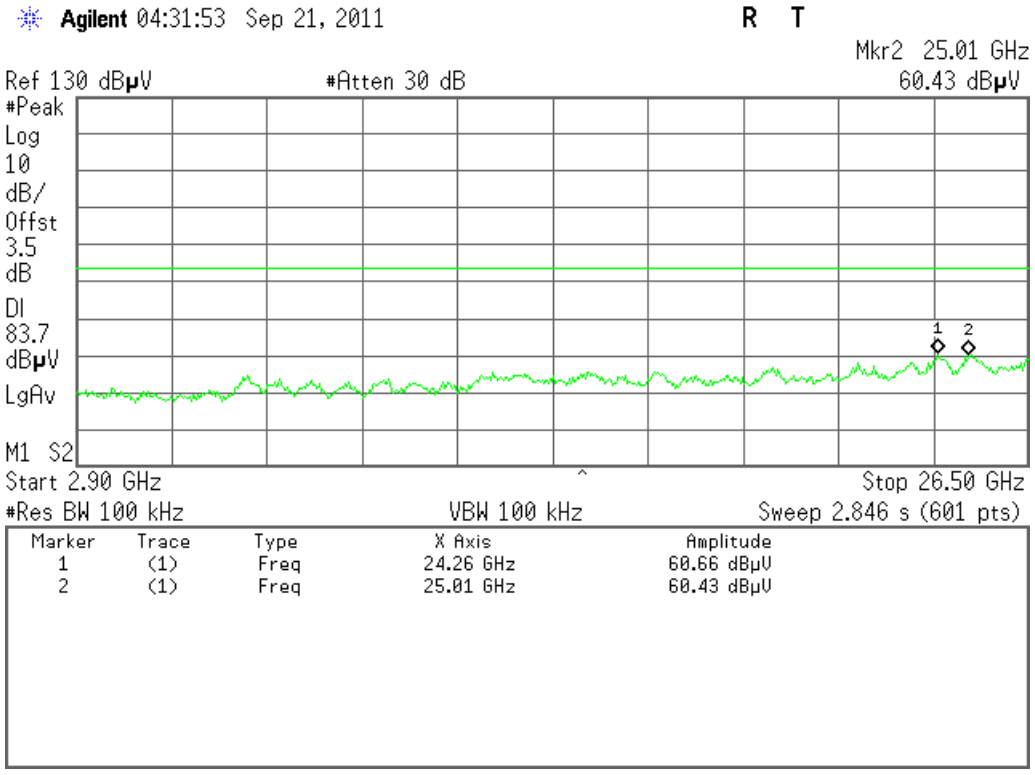
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)

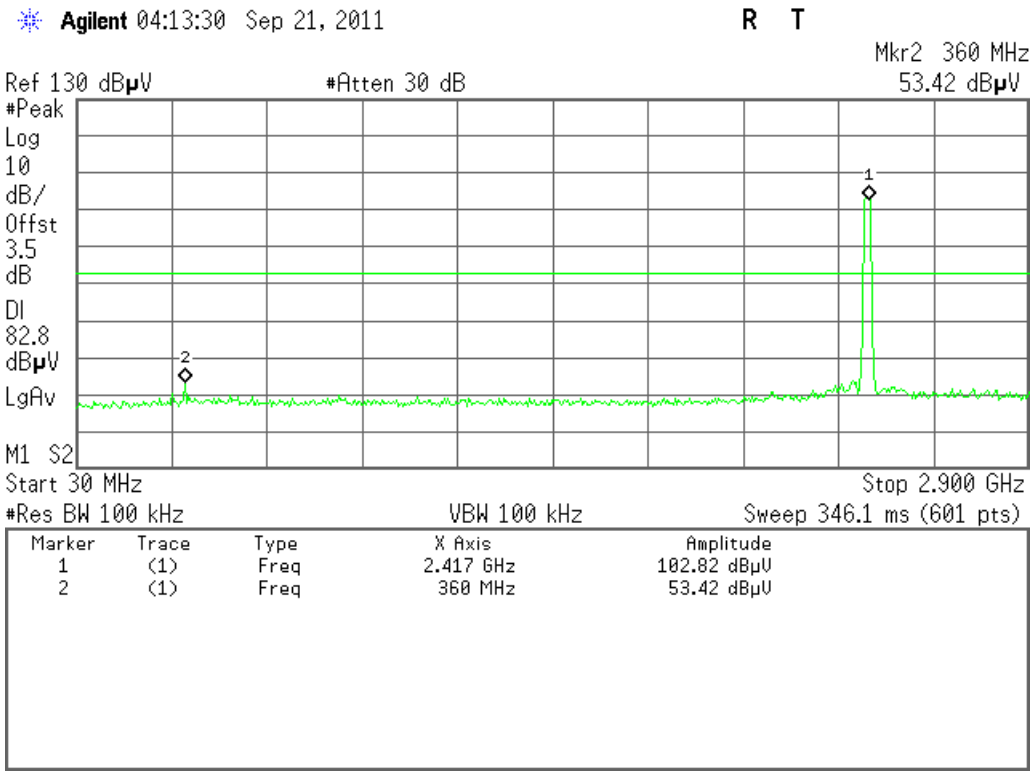


CH High(2.9GHz ~26.5GHz)

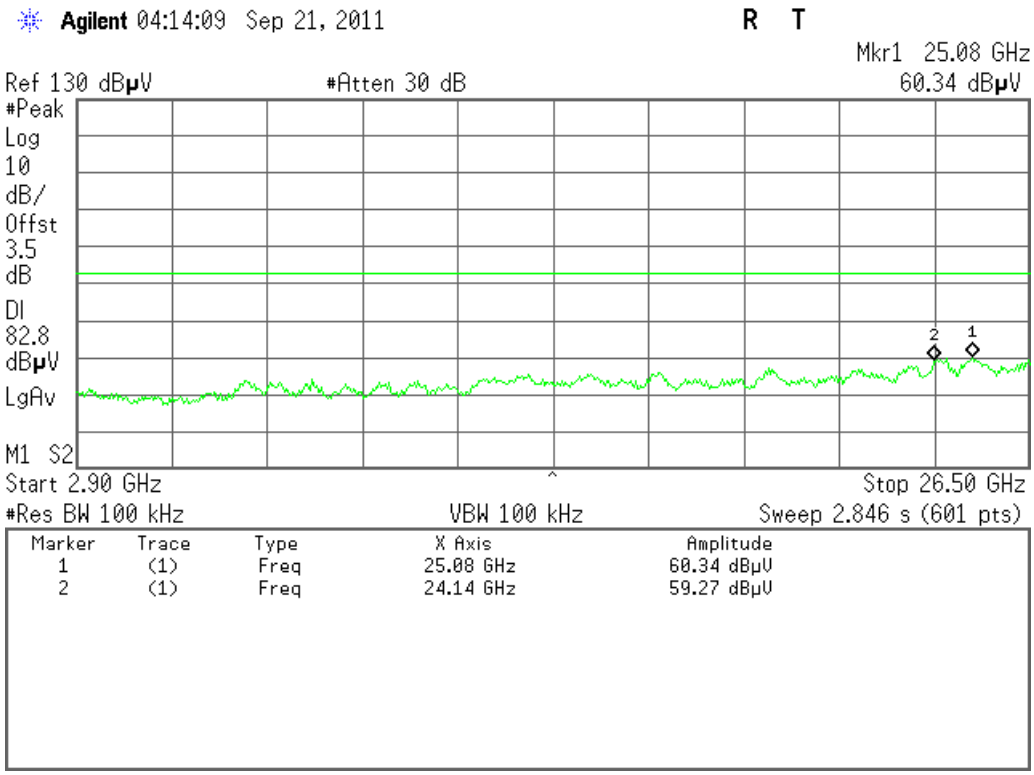


(IEEE 802.11g mode) Atenna 2

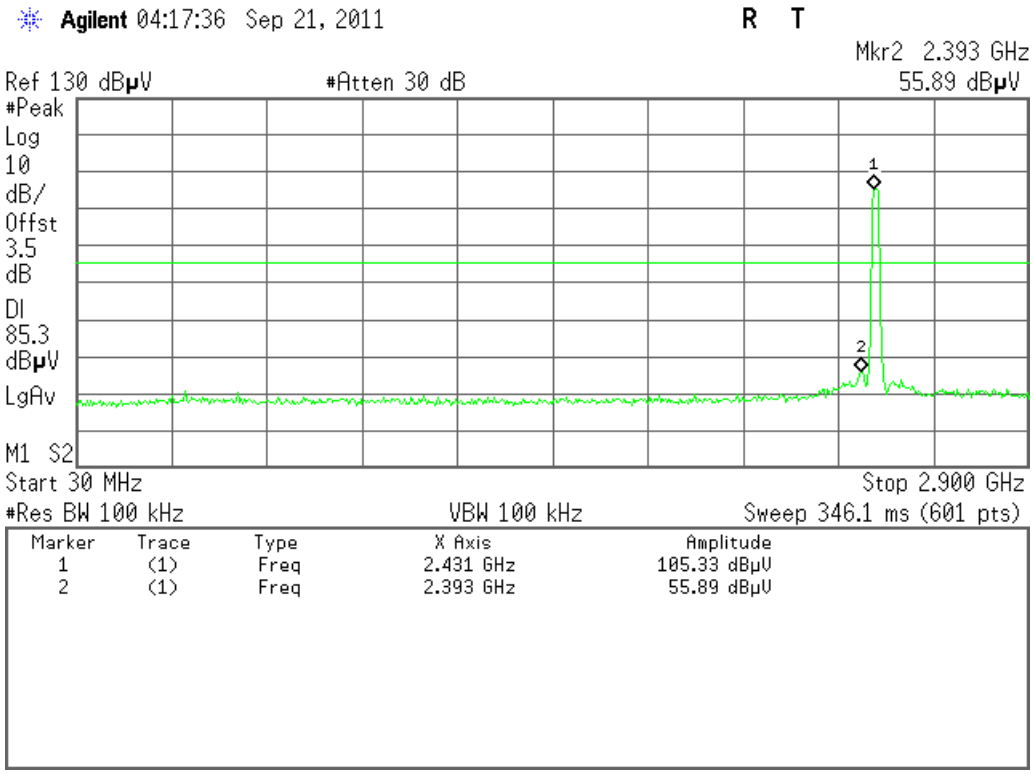
CH Low (30MHz ~2.9GHz)



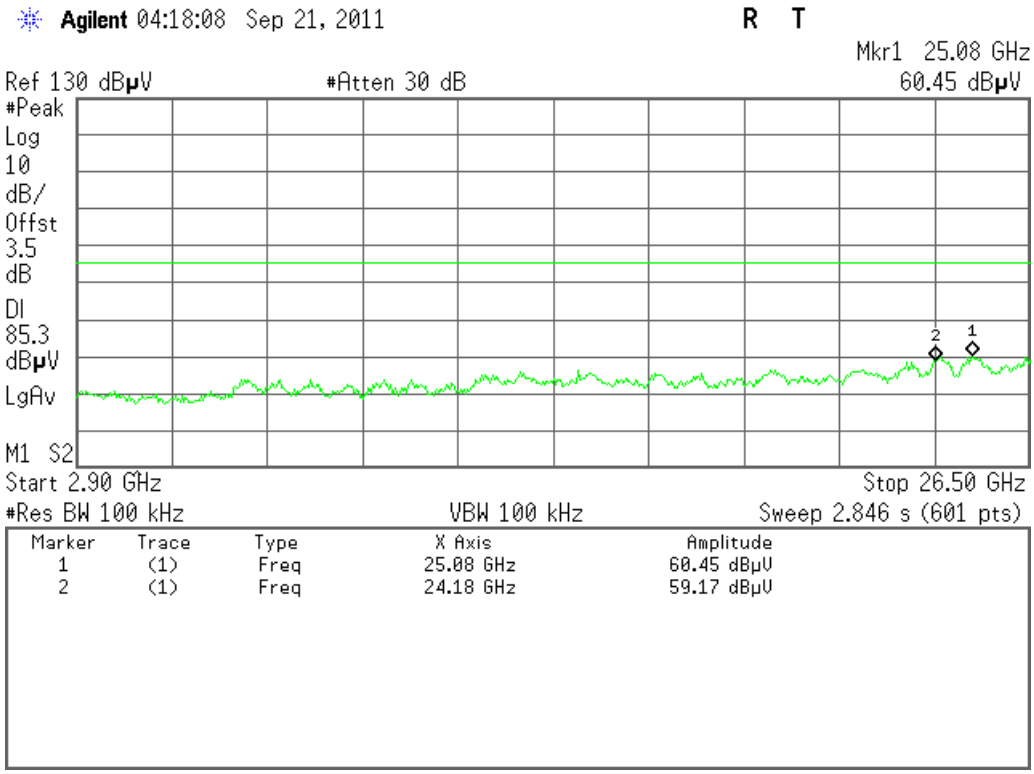
CH Low (2.9GHz ~26.5GHz)



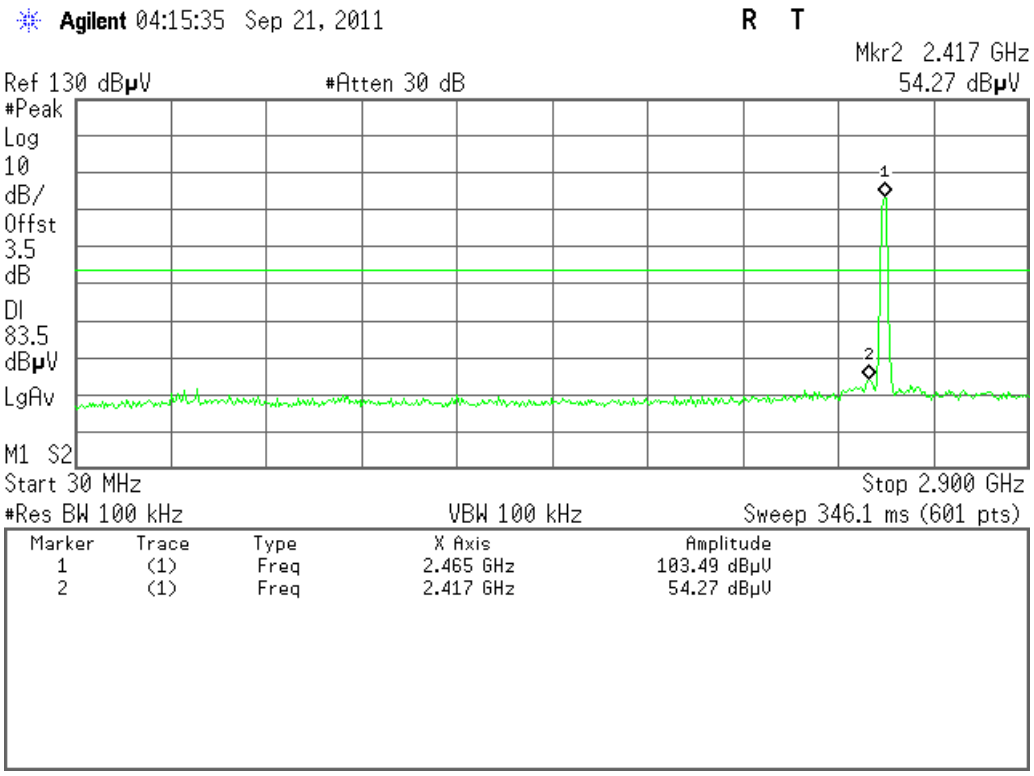
CH Mid (30MHz ~2.9GHz)



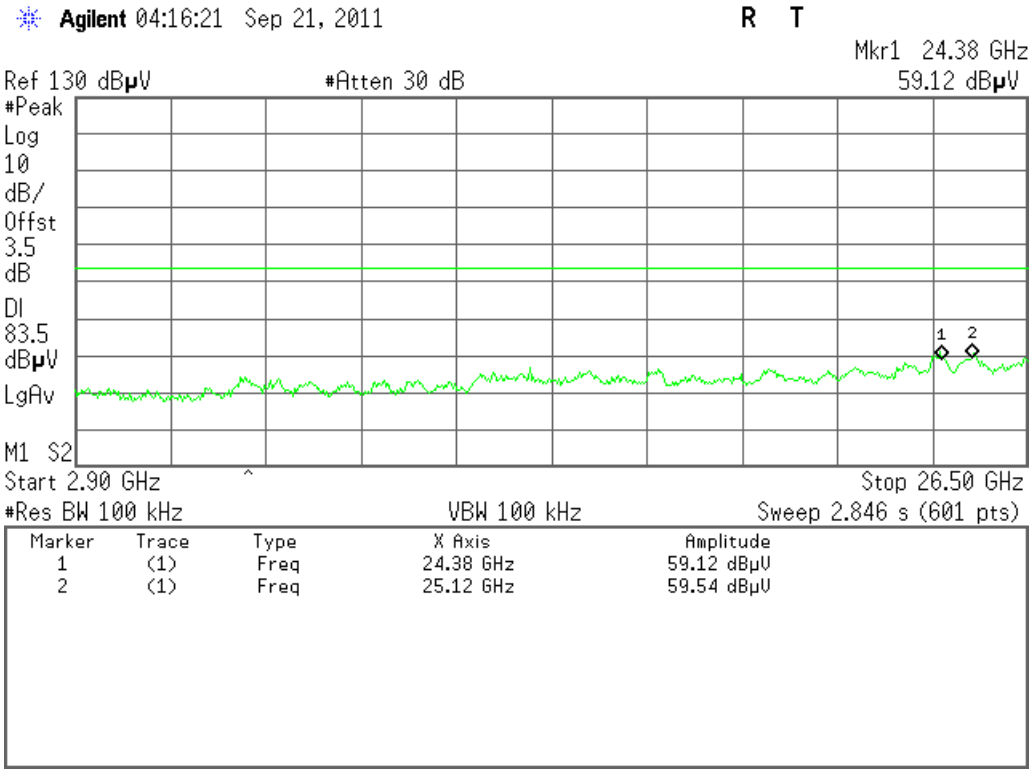
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)



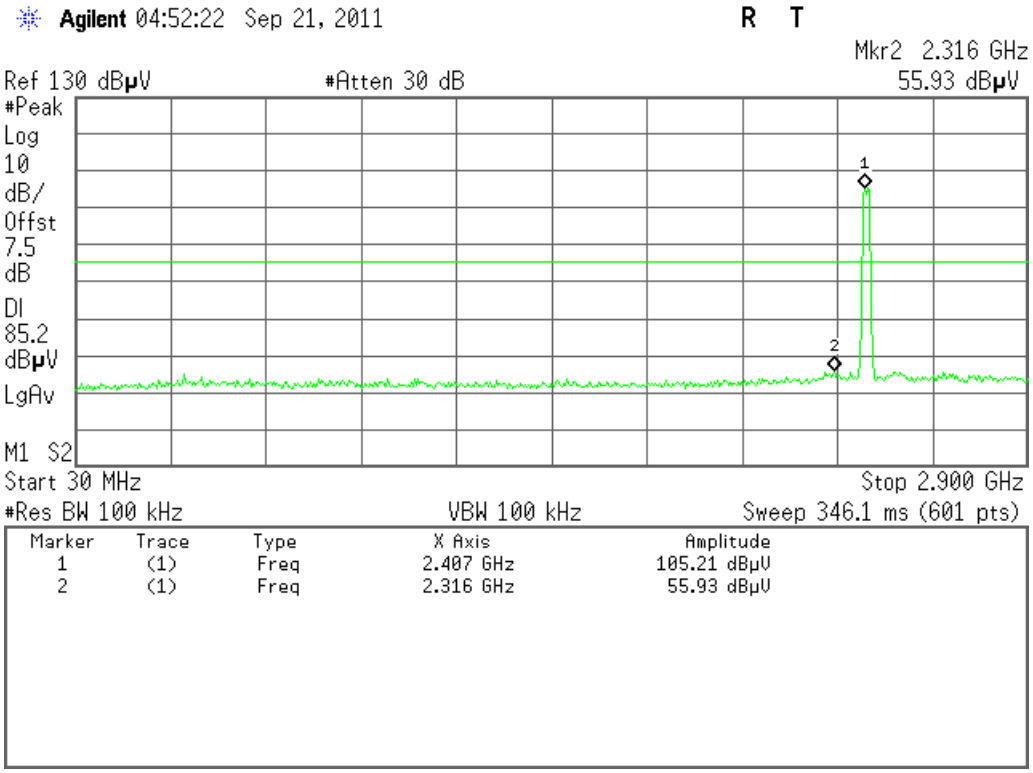
CH High(2.9GHz ~26.5GHz)



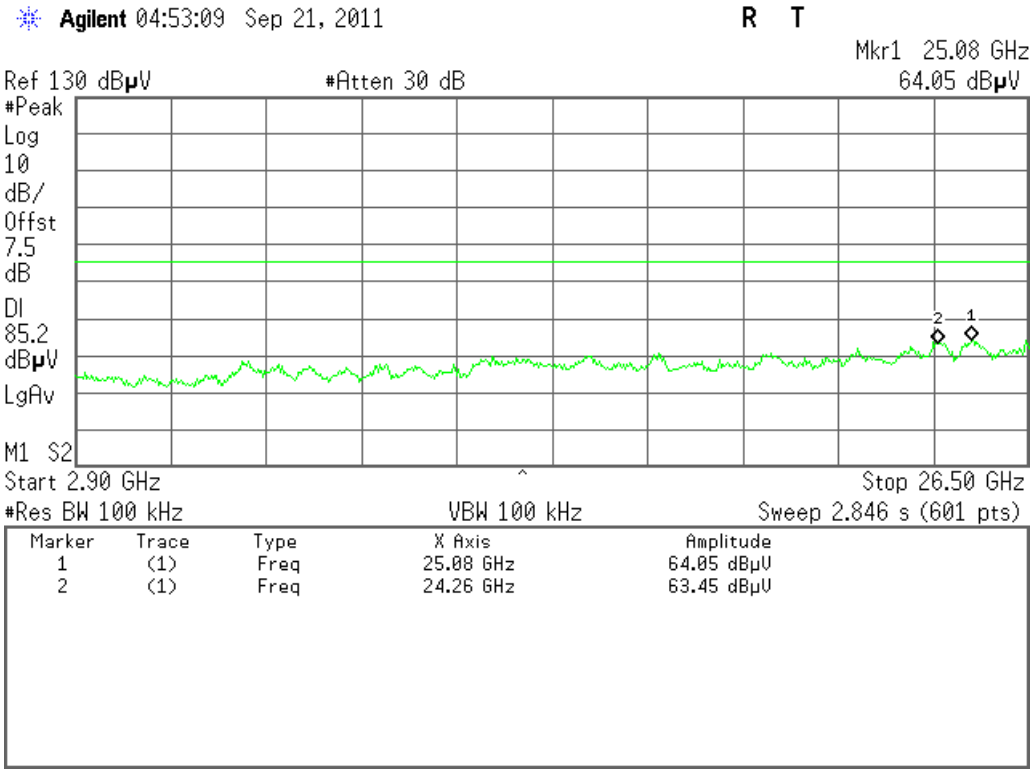
Test Plot

(IEEE 802.11n HT20 MHz mode Combine with antenna 1and antenna 2)

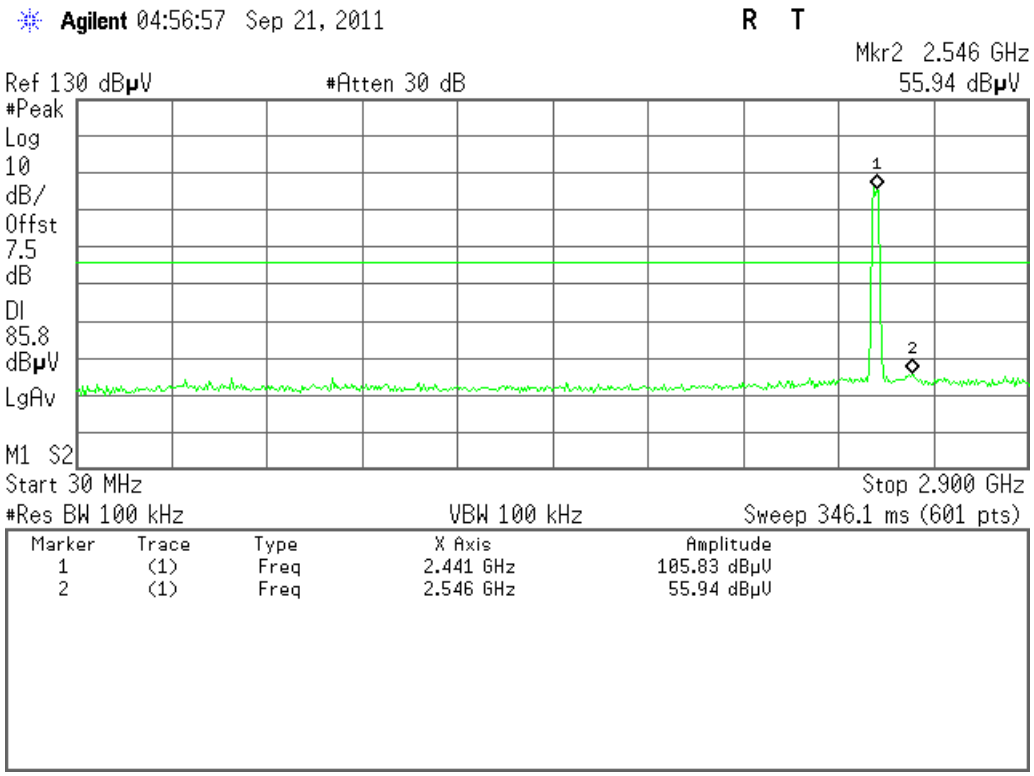
CH Low (30MHz ~2.9GHz)



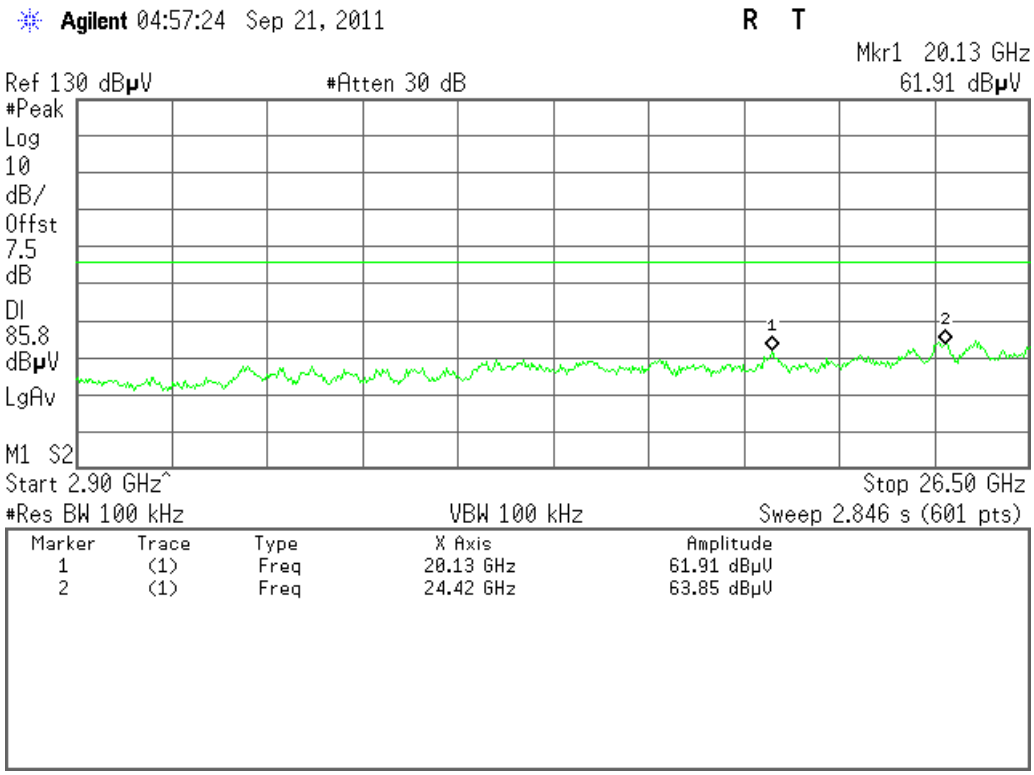
CH Low (2.9GHz ~26.5GHz)



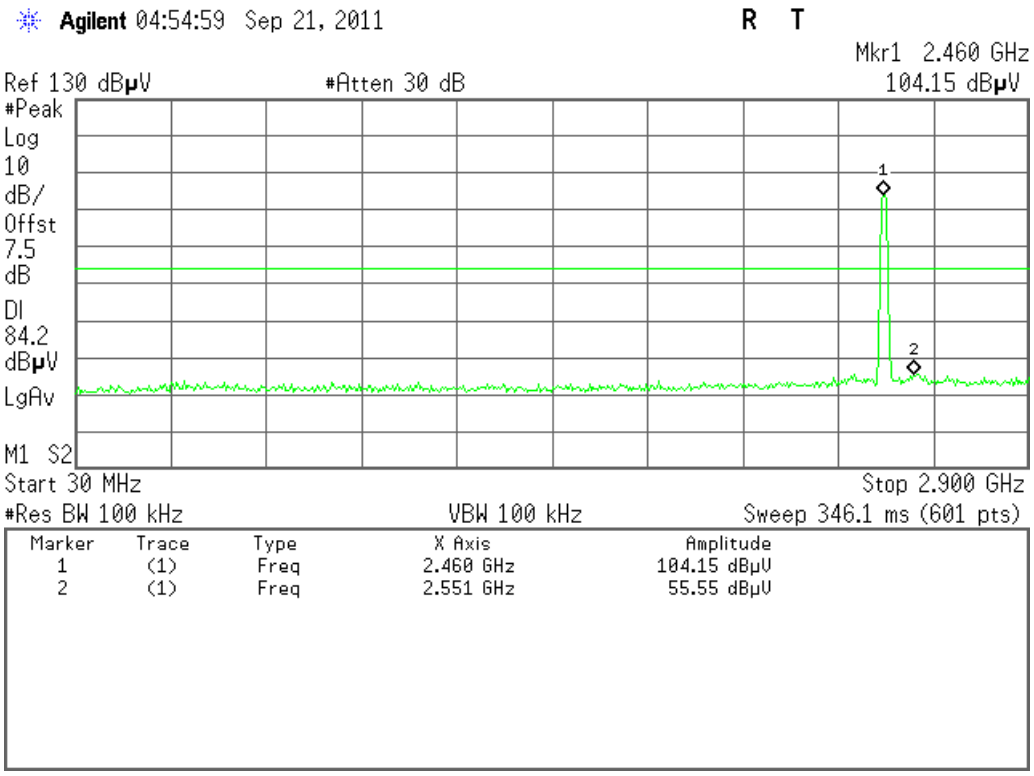
CH Mid (30MHz ~2.9GHz)



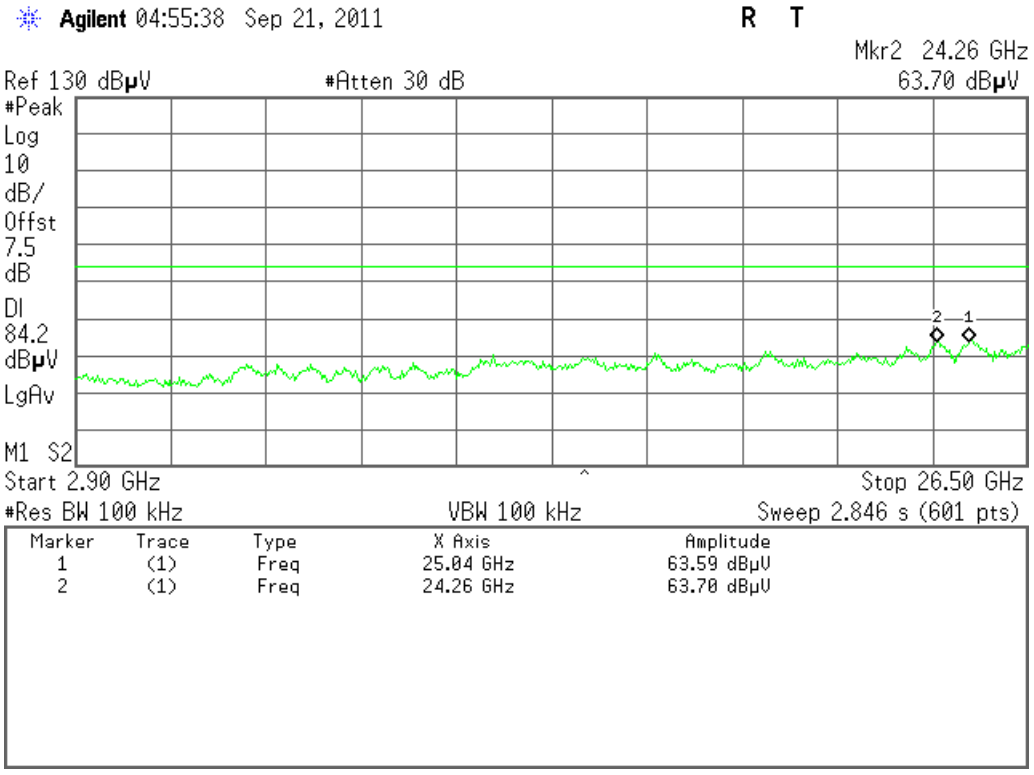
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)

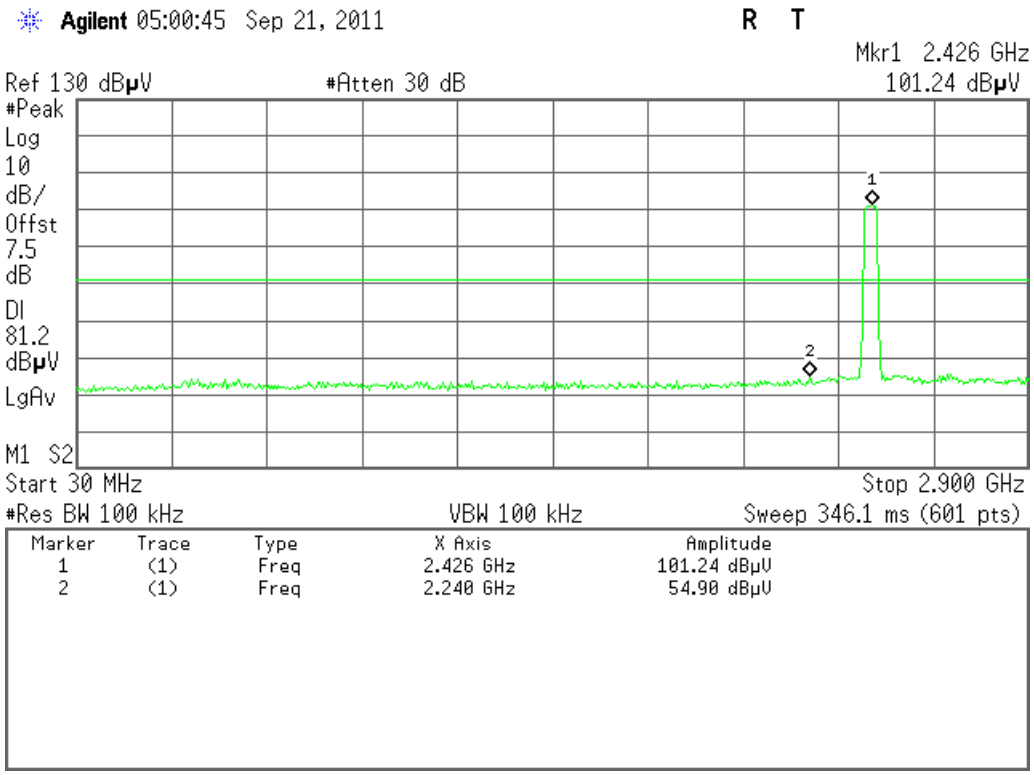


CH High(2.9GHz ~26.5GHz)

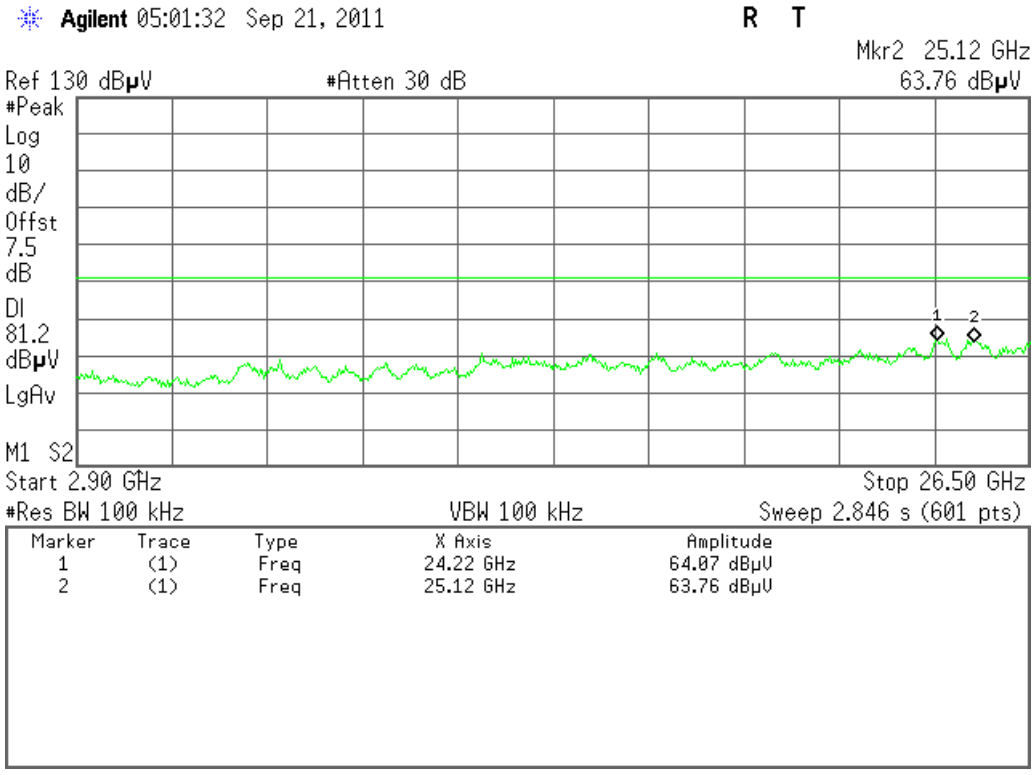


(IEEE 802.11n HT40 MHz mode Combine with antenna 1and antenna 2)

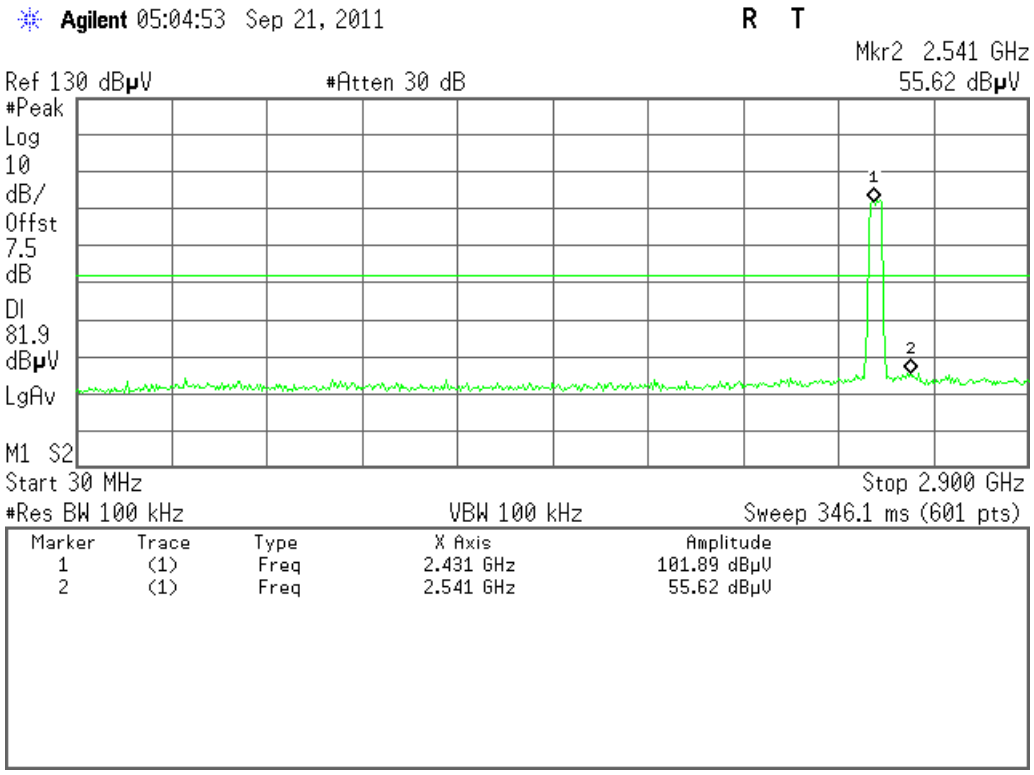
CH Low (30MHz ~2.9GHz)



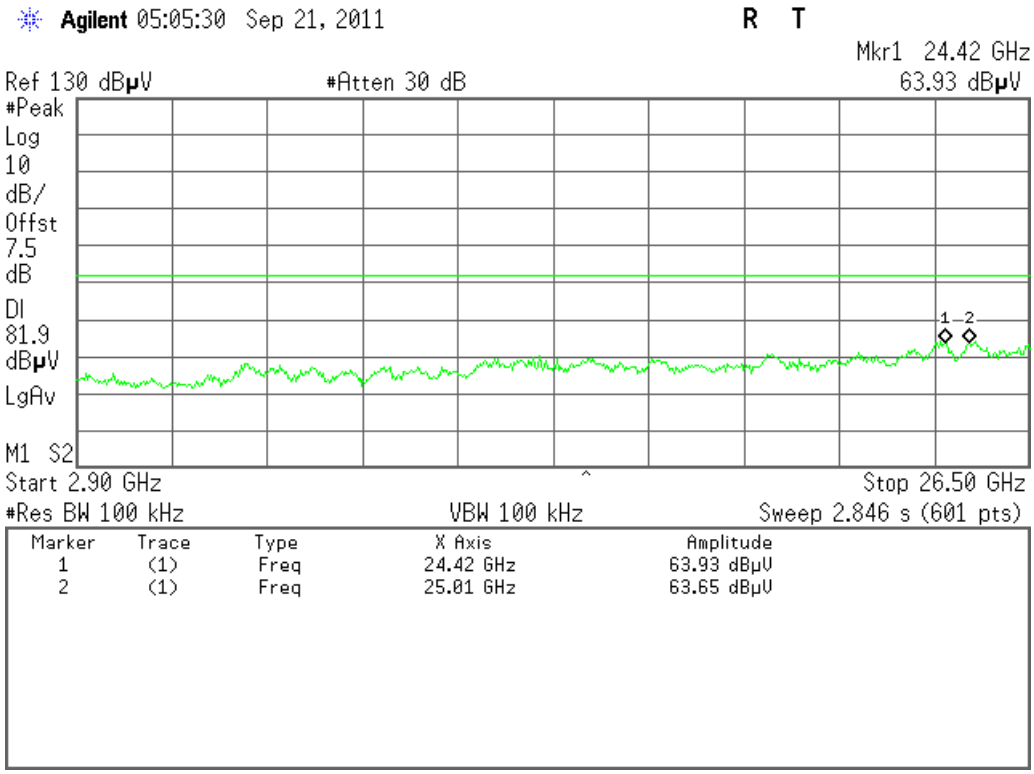
CH Low (2.9GHz ~26.5GHz)



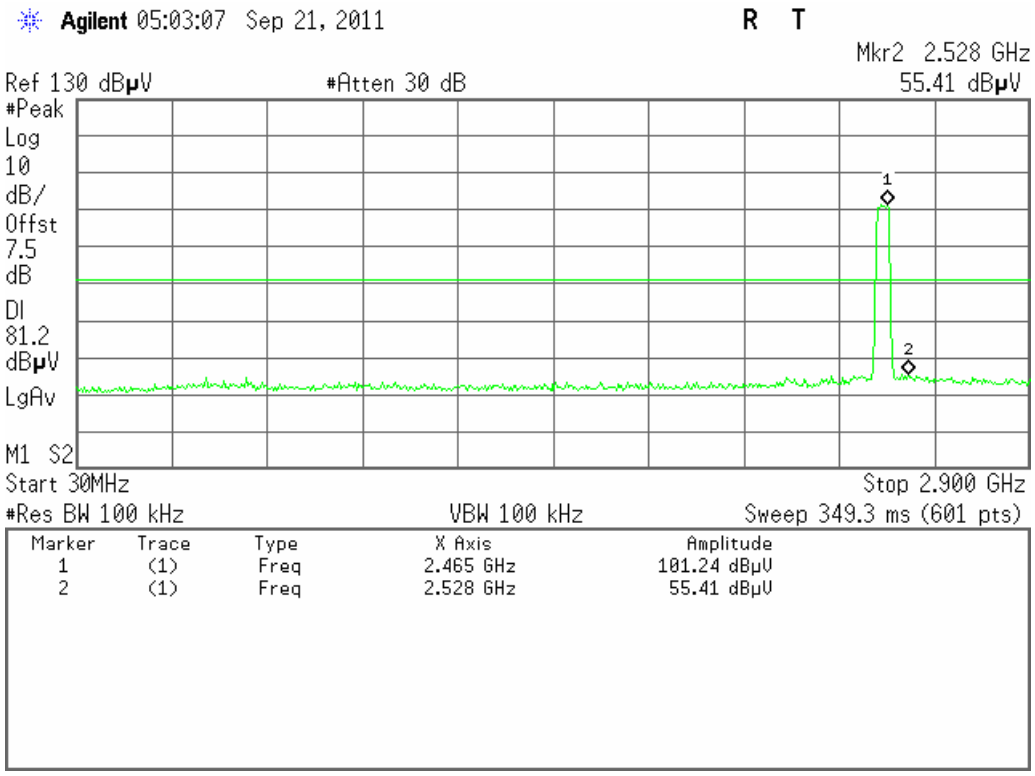
CH Mid (30MHz ~2.9GHz)



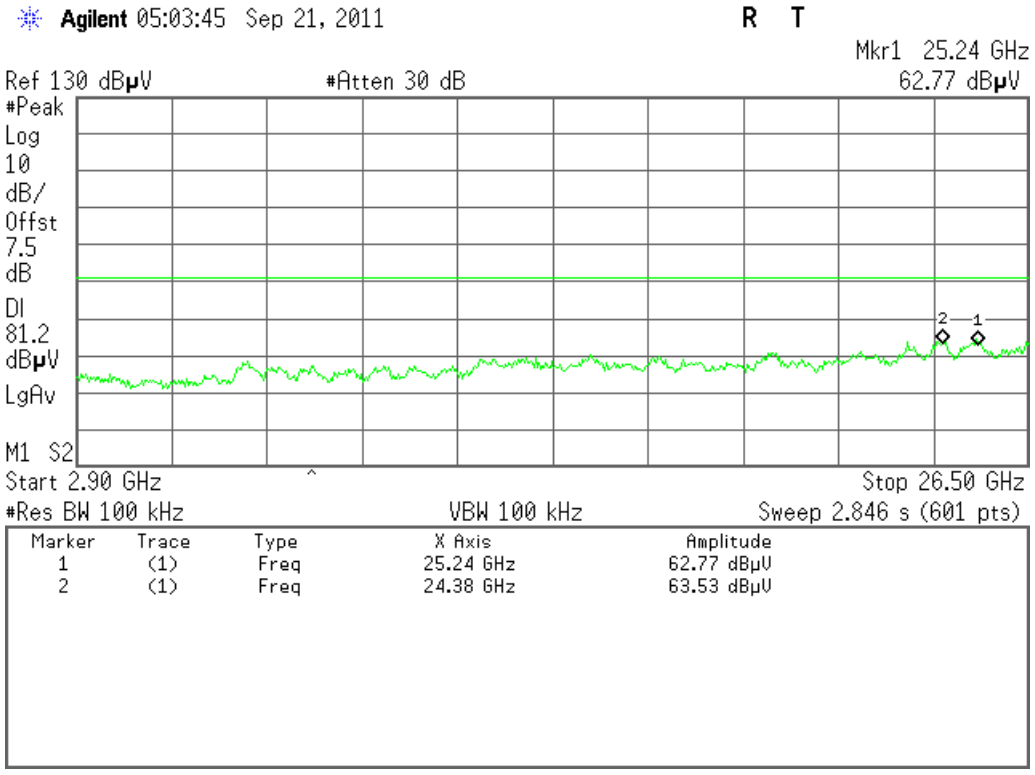
CH Mid (2.9GHz ~26.5GHz)



CH High (30MHz ~2.9GHz)



CH High(2.9GHz ~26.5GHz)



7.2.4.1. LIMITS OF RADIATED EMISSIONS MEASUREMENT

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 (mV/m)	Measurement Distance (m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
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.

1. 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:

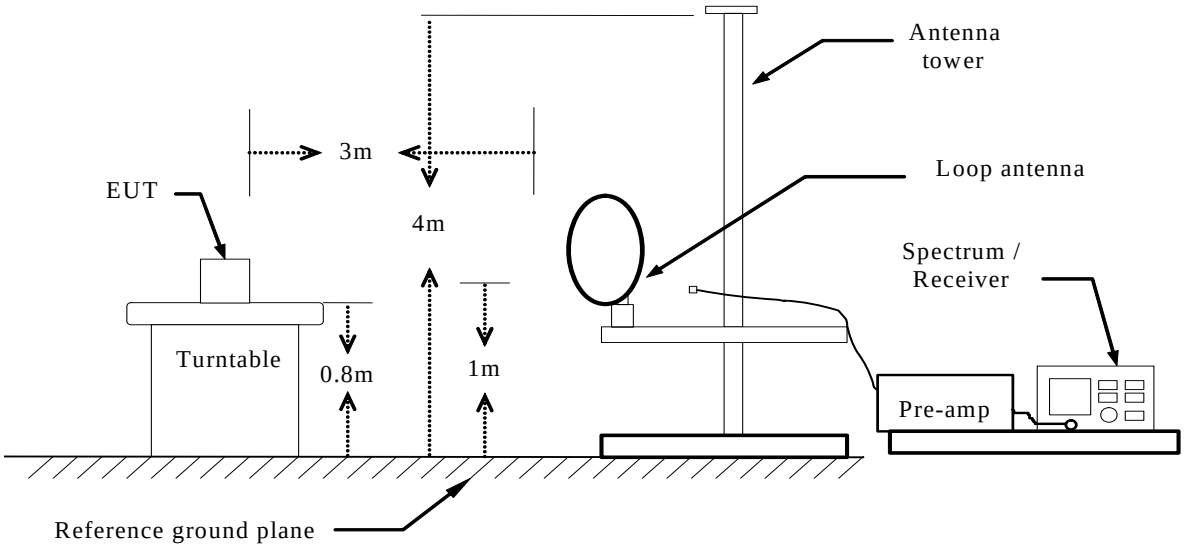
   (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

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

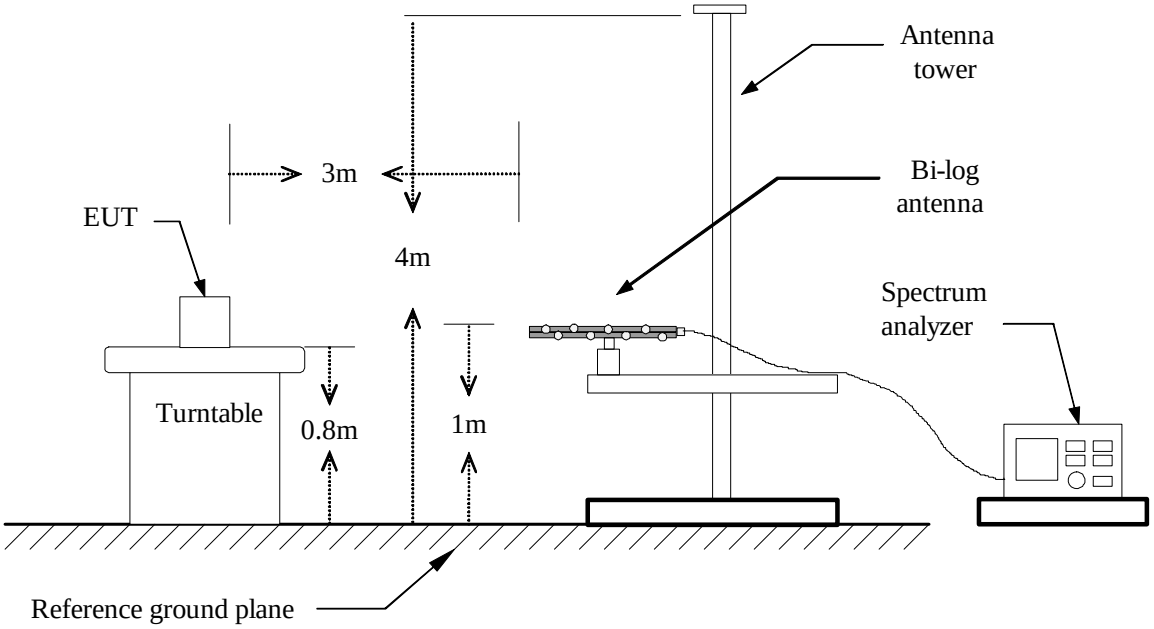
7. Repeat above procedures until the measurements for all frequencies are complete.

7.2.4.4. TEST SETUP

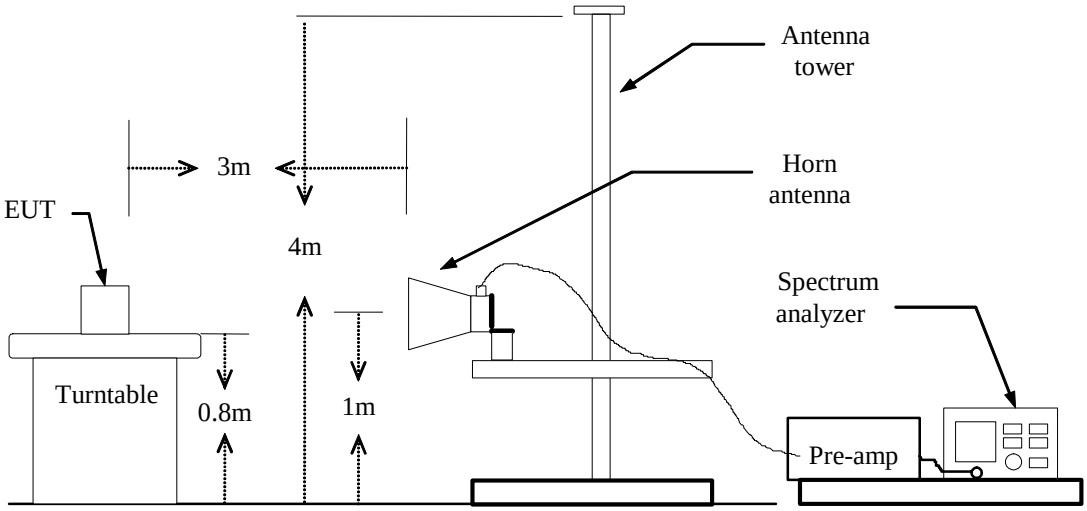
Below 30MHz



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 **Test Date:** September 21, 2011

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

Humidity: 52% RH **Polarity:** Vertical

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

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
364.6500	61.11	-16.60	44.51	46.00	-1.49	QP
416.3833	59.89	-15.36	44.53	46.00	-1.47	QP
519.8500	57.67	-13.15	44.52	46.00	-1.48	QP
573.2000	57.29	-12.51	44.78	46.00	-1.22	QP
730.0167	55.79	-11.16	44.63	46.00	-1.37	QP
885.2167	53.91	-9.40	44.51	46.00	-1.49	QP

***Remark:** No emission found between lowest internal used/generated frequency to 30MHz.*

Notes:

1. Measuring frequencies from 9kHz to the 1GHz.
2. Radiated emissions measured in frequency range from 30MHz to 1GHz were made with an instrument using Peak/Quasi-peak detector mode.
3. *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.*
4. *The IF bandwidth of SPA between 30MHz to 1GHz was 100kHz.*
5. *Frequency (MHz). = Emission frequency in MHz*
   Reading (dBμV/m) = Receiver reading
   Correction Factor (dB) = Antenna factor + Cable loss – Amplifier gain
   Limit (dBμV/m) = Limit stated in standard
   Margin (dB) = Measured (dBμV/m) – Limits (dBμV/m)
   Antenna Pol e(H/V) = Current carrying line of reading

Operation Mode: Normal Link **Test Date:** September 21, 2011

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

Humidity: 52% RH **Polarity:** Horizontal

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

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
312.9166	59.97	-18.26	41.71	46.00	-4.29	QP
364.6500	61.24	-16.60	44.64	46.00	-1.36	QP
416.3833	58.05	-15.36	42.69	46.00	-3.31	QP
521.4667	57.75	-13.14	44.61	46.00	-1.39	QP
833.4833	51.95	-9.68	42.27	46.00	-3.73	QP
885.2167	50.31	-9.40	40.91	46.00	-5.09	QP

***Remark:** No emission found between lowest internal used/generated frequency to 30MHz.*

Notes:

1. Measuring frequencies from 9kHz to the 1GHz.
2. Radiated emissions measured in frequency range from 30MHz to 1GHz were made with an instrument using Peak/Quasi-peak detector mode.
3. *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.*
4. *The IF bandwidth of SPA between 30MHz to 1GHz was 100kHz.*
5. *Frequency (MHz). = Emission frequency in MHz*
   Reading (dBμV/m) = Receiver reading
   Correction Factor (dB) = Antenna factor + Cable loss – Amplifier gain
   Limit (dBμV/m) = Limit stated in standard
   Margin (dB) = Measured (dBμV/m) – Limits (dBμV/m)
   Antenna Pol e(H/V) = Current carrying line of reading

Operation Mode: TX / IEEE 802.11b / CH Mid **Test Date:** September 21, 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
1560.0000	49.44	-10.31	39.13	74.00	-34.87	V	Peak
1735.0000	49.47	-10.20	39.27	74.00	-34.73	V	Peak
3228.3333	46.51	-5.43	41.08	74.00	-32.92	V	Peak
4861.6667	45.93	-0.45	45.48	74.00	-28.52	V	Peak
6261.6667	45.78	3.78	49.56	74.00	-24.44	V	Peak
7603.3333	45.37	5.80	51.17	74.00	-22.83	V	Peak
1140.0000	55.30	-11.58	43.72	74.00	-30.28	H	Peak
1618.3333	53.48	-10.29	43.19	74.00	-30.81	H	Peak
1735.0000	56.24	-10.20	46.04	74.00	-27.96	H	Peak
3228.3333	46.88	-5.43	41.45	74.00	-32.55	H	Peak
5725.0000	45.00	2.18	47.18	74.00	-26.82	H	Peak
7568.3333	46.37	5.75	52.12	74.00	-21.88	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).*

Operation Mode: TX / IEEE 802.11b / CH High **Test Date:** September 21, 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
1151.6667	53.32	-11.55	41.77	74.00	-32.23	V	Peak
1455.0000	54.39	-10.28	44.11	74.00	-29.89	V	Peak
1560.0000	50.74	-10.31	40.43	74.00	-33.57	V	Peak
2843.3333	48.14	-7.03	41.11	74.00	-32.89	V	Peak
4196.6667	46.34	-2.94	43.40	74.00	-30.60	V	Peak
6285.0000	45.08	3.76	48.84	74.00	-25.16	V	Peak
1560.0000	51.19	-10.31	40.88	74.00	-33.12	H	Peak
1956.6667	48.93	-9.46	39.47	74.00	-34.53	H	Peak
2925.0000	47.42	-6.47	40.95	74.00	-33.05	H	Peak
3356.6667	47.04	-5.16	41.88	74.00	-32.12	H	Peak
5760.0000	45.31	2.37	47.68	74.00	-26.32	H	Peak
6786.6667	45.41	4.29	49.70	74.00	-24.30	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).*

(Antenna 2)

Operation Mode:	TX / IEEE 802.11b / CH Low	**Test Date:**	September 21, 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
1151.6667	57.38	-11.55	45.83	74.00	-28.17	V	Peak
1711.6667	50.31	-10.21	40.10	74.00	-33.90	V	Peak
2831.6667	48.13	-7.10	41.03	74.00	-32.97	V	Peak
4826.6667	47.40	-0.56	46.84	74.00	-27.16	V	Peak
5316.6667	45.37	0.84	46.21	74.00	-27.79	V	Peak
6705.0000	45.53	4.25	49.78	74.00	-24.22	V	Peak
1140.0000	56.46	-11.58	44.88	74.00	-29.12	H	Peak
1560.0000	49.61	-10.31	39.30	74.00	-34.70	H	Peak
2878.3333	47.65	-6.79	40.86	74.00	-33.14	H	Peak
4290.0000	45.88	-2.63	43.25	74.00	-30.75	H	Peak
4943.3333	45.90	-0.19	45.71	74.00	-28.29	H	Peak
5970.0000	44.80	2.88	47.68	74.00	-26.32	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).*

Operation Mode: TX / IEEE 802.11b / CH Mid **Test Date:** September 21, 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
1350.0000	54.53	-10.57	43.96	74.00	-30.04	V	Peak
1560.0000	50.82	-10.31	40.51	74.00	-33.49	V	Peak
1711.6667	50.31	-10.21	40.10	74.00	-33.90	V	Peak
2820.0000	48.01	-7.18	40.83	74.00	-33.17	V	Peak
4150.0000	46.48	-3.09	43.39	74.00	-30.61	V	Peak
4873.3333	47.13	-0.42	46.71	74.00	-27.29	V	Peak
1303.3333	51.62	-10.87	40.75	74.00	-33.25	H	Peak
1630.0000	50.94	-10.28	40.66	74.00	-33.34	H	Peak
2843.3333	47.21	-7.03	40.18	74.00	-33.82	H	Peak
6588.3333	45.97	4.16	50.13	74.00	-23.87	H	Peak
6973.3333	45.64	4.39	50.03	74.00	-23.97	H	Peak
7720.0000	45.01	5.95	50.96	74.00	-23.04	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).*

Operation Mode: TX / IEEE 802.11b / CH High **Test Date:** September 21, 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
1046.6667	54.95	-11.82	43.13	74.00	-30.87	V	Peak
1350.0000	52.23	-10.57	41.66	74.00	-32.34	V	Peak
2820.0000	47.86	-7.18	40.68	74.00	-33.32	V	Peak
3006.6667	46.84	-5.94	40.90	74.00	-33.10	V	Peak
4920.0000	47.20	-0.27	46.93	74.00	-27.07	V	Peak
6786.6667	45.32	4.29	49.61	74.00	-24.39	V	Peak
1513.3333	52.12	-10.31	41.81	74.00	-32.19	H	Peak
2855.0000	47.70	-6.95	40.75	74.00	-33.25	H	Peak
4488.3333	45.48	-2.04	43.44	74.00	-30.56	H	Peak
5876.6667	44.19	2.72	46.91	74.00	-27.09	H	Peak
6821.6667	45.17	4.31	49.48	74.00	-24.52	H	Peak
7696.6667	44.68	5.92	50.60	74.00	-23.40	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:**	September 21, 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
1140.0000	60.45	-11.58	48.87	74.00	-25.13	V	Peak
1455.0000	51.18	-10.28	40.90	74.00	-33.10	V	Peak
1770.0000	50.83	-10.18	40.65	74.00	-33.35	V	Peak
2831.6667	47.63	-7.10	40.53	74.00	-33.47	V	Peak
3765.0000	45.98	-3.87	42.11	74.00	-31.89	V	Peak
4535.0000	45.38	-1.92	43.46	74.00	-30.54	V	Peak
1093.3333	59.72	-11.71	48.01	74.00	-25.99	H	Peak
1198.3333	60.85	-11.42	49.43	74.00	-24.57	H	Peak
1513.3333	55.17	-10.31	44.86	74.00	-29.14	H	Peak
1618.3333	56.31	-10.29	46.02	74.00	-27.98	H	Peak
5468.3333	45.62	1.18	46.80	74.00	-27.20	H	Peak
7533.3333	44.93	5.69	50.62	74.00	-23.38	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).*

Operation Mode: TX / IEEE 802.11g / CH Mid **Test Date:** September 21, 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
1046.6667	59.62	-11.82	47.80	74.00	-26.20	V	Peak
1140.0000	58.14	-11.58	46.56	74.00	-27.44	V	Peak
1513.3333	52.58	-10.31	42.27	74.00	-31.73	V	Peak
1665.0000	50.46	-10.25	40.21	74.00	-33.79	V	Peak
4955.0000	45.89	-0.15	45.74	74.00	-28.26	V	Peak
6705.0000	45.20	4.25	49.45	74.00	-24.55	V	Peak
1140.0000	61.63	-11.58	50.05	74.00	-23.95	H	Peak
1198.3333	60.56	-11.42	49.14	74.00	-24.86	H	Peak
1560.0000	50.96	-10.31	40.65	74.00	-33.35	H	Peak
3660.0000	46.32	-3.82	42.50	74.00	-31.50	H	Peak
6296.6667	45.46	3.75	49.21	74.00	-24.79	H	Peak
7428.3333	44.37	5.52	49.89	74.00	-24.11	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).*

Operation Mode: TX / IEEE 802.11g / CH High **Test Date:** September 21, 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
1151.6667	57.94	-11.55	46.39	74.00	-27.61	V	Peak
1198.3333	56.14	-11.42	44.72	74.00	-29.28	V	Peak
1723.3333	52.48	-10.21	42.27	74.00	-31.73	V	Peak
2866.6667	47.52	-6.87	40.65	74.00	-33.35	V	Peak
3870.0000	46.65	-3.77	42.88	74.00	-31.12	V	Peak
6296.6667	45.84	3.75	49.59	74.00	-24.41	V	Peak
1046.6667	55.82	-11.82	44.00	74.00	-30.00	H	Peak
1175.0000	53.47	-11.49	41.98	74.00	-32.02	H	Peak
1455.0000	55.65	-10.28	45.37	74.00	-28.63	H	Peak
1618.3333	53.33	-10.29	43.04	74.00	-30.96	H	Peak
3648.3333	46.89	-3.82	43.07	74.00	-30.93	H	Peak
4885.0000	45.64	-0.38	45.26	74.00	-28.74	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:**	September 21, 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
1198.3333	53.93	-11.42	42.51	74.00	-31.49	V	Peak
1350.0000	53.01	-10.57	42.44	74.00	-31.56	V	Peak
1723.3333	49.21	-10.21	39.00	74.00	-35.00	V	Peak
2143.3333	48.89	-9.33	39.56	74.00	-34.44	V	Peak
4430.0000	44.90	-2.18	42.72	74.00	-31.28	V	Peak
6215.0000	44.69	3.81	48.50	74.00	-25.50	V	Peak
1151.6667	57.31	-11.55	45.76	74.00	-28.24	H	Peak
1198.3333	56.24	-11.42	44.82	74.00	-29.18	H	Peak
1326.6667	54.21	-10.72	43.49	74.00	-30.51	H	Peak
3193.3333	46.87	-5.51	41.36	74.00	-32.64	H	Peak
4441.6667	45.26	-2.16	43.10	74.00	-30.90	H	Peak
6133.3333	44.67	3.52	48.19	74.00	-25.81	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).*

Operation Mode: TX / IEEE 802.11g / CH Mid **Test Date:** September 21, 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
1046.6667	56.75	-11.82	44.93	74.00	-29.07	V	Peak
1140.0000	54.78	-11.58	43.20	74.00	-30.80	V	Peak
1828.3333	51.22	-10.03	41.19	74.00	-32.81	V	Peak
3181.6667	47.28	-5.53	41.75	74.00	-32.25	V	Peak
4208.3333	45.89	-2.90	42.99	74.00	-31.01	V	Peak
6821.6667	45.65	4.31	49.96	74.00	-24.04	V	Peak
1151.6667	56.86	-11.55	45.31	74.00	-28.69	H	Peak
1198.3333	57.10	-11.42	45.68	74.00	-28.32	H	Peak
1303.3333	56.14	-10.87	45.27	74.00	-28.73	H	Peak
1618.3333	50.38	-10.29	40.09	74.00	-33.91	H	Peak
5445.0000	44.61	1.12	45.73	74.00	-28.27	H	Peak
6471.6667	44.68	3.86	48.54	74.00	-25.46	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).*

Operation Mode:	TX / IEEE 802.11g / CH High	**Test Date:**	September 21, 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
1151.6667	55.88	-11.55	44.33	74.00	-29.67	V	Peak
1198.3333	55.70	-11.42	44.28	74.00	-29.72	V	Peak
1513.3333	52.03	-10.31	41.72	74.00	-32.28	V	Peak
1770.0000	52.57	-10.19	42.38	74.00	-31.62	V	Peak
4815.0000	45.81	-0.60	45.21	74.00	-28.79	V	Peak
7055.0000	45.11	4.56	49.67	74.00	-24.33	V	Peak
1046.6667	61.06	-11.82	49.24	74.00	-24.76	H	Peak
1641.6667	56.11	-10.27	45.84	74.00	-28.16	H	Peak
3228.3333	46.80	-5.43	41.37	74.00	-32.63	H	Peak
4371.6667	45.69	-2.35	43.34	74.00	-30.66	H	Peak
6355.0000	45.10	3.71	48.81	74.00	-25.19	H	Peak
7580.0000	45.12	5.77	50.89	74.00	-23.11	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 with antenna 1and antenna 2

Operation Mode: TX / IEEE 802.11n HT20 MHz / CH Low **Test Date:** September 21, 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
1140.0000	54.09	-11.58	42.51	74.00	-31.49	V	Peak
1513.3333	54.66	-10.31	44.35	74.00	-29.65	V	Peak
1560.0000	52.81	-10.31	42.50	74.00	-31.50	V	Peak
4710.0000	45.91	-1.15	44.76	74.00	-29.24	V	Peak
6238.3333	44.97	3.79	48.76	74.00	-25.24	V	Peak
7580.0000	46.14	5.77	51.91	74.00	-22.09	V	Peak
1198.3333	59.35	-11.42	47.93	74.00	-26.07	H	Peak
1455.0000	55.39	-10.28	45.11	74.00	-28.89	H	Peak
1560.0000	52.28	-10.31	41.97	74.00	-32.03	H	Peak
2586.6667	48.64	-8.77	39.87	74.00	-34.13	H	Peak
4955.0000	45.34	-0.15	45.19	74.00	-28.81	H	Peak
5631.6667	45.31	1.67	46.98	74.00	-27.02	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).*

Operation Mode: TX / IEEE 802.11n HT20 MHz / CH Mid **Test Date:** September 21, 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
1198.3333	53.68	-11.42	42.26	74.00	-31.74	V	Peak
1455.0000	52.06	-10.28	41.78	74.00	-32.22	V	Peak
1618.3333	50.80	-10.29	40.51	74.00	-33.49	V	Peak
3041.6667	46.57	-5.86	40.71	74.00	-33.29	V	Peak
5083.3333	45.25	0.24	45.49	74.00	-28.51	V	Peak
6250.0000	45.05	3.79	48.84	74.00	-25.16	V	Peak
1046.6667	61.49	-11.82	49.67	74.00	-24.33	H	Peak
1140.0000	64.29	-11.58	52.71	74.00	-21.29	H	Peak
1303.3333	57.98	-10.87	47.11	74.00	-26.89	H	Peak
1455.0000	55.30	-10.28	45.02	74.00	-28.98	H	Peak
1735.0000	53.98	-10.20	43.78	74.00	-30.22	H	Peak
6156.6667	45.91	3.63	49.54	74.00	-24.46	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).*

Operation Mode: TX / IEEE 802.11n HT20 MHz / CH High **Test Date:** September 21, 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
1140.0000	56.48	-11.58	44.90	74.00	-29.10	V	Peak
1455.0000	52.57	-10.28	42.29	74.00	-31.71	V	Peak
2820.0000	48.28	-7.18	41.10	74.00	-32.90	V	Peak
3566.6667	47.25	-4.01	43.24	74.00	-30.76	V	Peak
4826.6667	45.80	-0.56	45.24	74.00	-28.76	V	Peak
6821.6667	45.99	4.31	50.30	74.00	-23.70	V	Peak
1046.6667	60.51	-11.82	48.69	74.00	-25.31	H	Peak
1198.3333	58.55	-11.42	47.13	74.00	-26.87	H	Peak
1303.3333	55.15	-10.87	44.28	74.00	-29.72	H	Peak
3228.3333	47.54	-5.43	42.11	74.00	-31.89	H	Peak
5596.6667	46.04	1.49	47.53	74.00	-26.47	H	Peak
6670.0000	44.62	4.23	48.85	74.00	-25.15	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 with antenna 1and antenna 2

Operation Mode: TX / IEEE 802.11n HT40 MHz / CH Low **Test Date:** September 21, 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
1140.0000	56.97	-11.58	45.39	74.00	-28.61	V	Peak
1350.0000	52.55	-10.57	41.98	74.00	-32.02	V	Peak
1455.0000	52.27	-10.28	41.99	74.00	-32.01	V	Peak
1618.3333	50.51	-10.29	40.22	74.00	-33.78	V	Peak
2831.6667	47.74	-7.10	40.64	74.00	-33.36	V	Peak
6495.0000	45.30	3.92	49.22	74.00	-24.78	V	Peak
1140.0000	64.09	-11.58	52.51	74.00	-21.49	H	Peak
1198.3333	60.25	-11.42	48.83	74.00	-25.17	H	Peak
1350.0000	56.43	-10.57	45.86	74.00	-28.14	H	Peak
1455.0000	52.86	-10.28	42.58	74.00	-31.42	H	Peak
1665.0000	51.72	-10.25	41.47	74.00	-32.53	H	Peak
2831.6667	48.66	-7.10	41.56	74.00	-32.44	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).*

Operation Mode: TX / IEEE 802.11n HT40 MHz / CH Mid **Test Date:** September 21, 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
1046.6667	57.87	-11.82	46.05	74.00	-27.95	V	Peak
1198.3333	55.97	-11.42	44.55	74.00	-29.45	V	Peak
1408.3333	52.75	-10.25	42.50	74.00	-31.50	V	Peak
4360.0000	44.59	-2.39	42.20	74.00	-31.80	V	Peak
5200.0000	45.11	0.59	45.70	74.00	-28.30	V	Peak
5573.3333	44.56	1.43	45.99	74.00	-28.01	V	Peak
1140.0000	63.84	-11.58	52.26	74.00	-21.74	H	Peak
1303.3333	57.68	-10.87	46.81	74.00	-27.19	H	Peak
1513.3333	54.82	-10.31	44.51	74.00	-29.49	H	Peak
3041.6667	46.51	-5.86	40.65	74.00	-33.35	H	Peak
4255.0000	44.78	-2.75	42.03	74.00	-31.97	H	Peak
5375.0000	45.04	0.96	46.00	74.00	-28.00	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).*

Operation Mode: TX / IEEE 802.11n HT40 MHz / CH High **Test Date:** September 21, 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
1046.6667	53.99	-11.82	42.17	74.00	-31.83	V	Peak
1198.3333	53.29	-11.42	41.87	74.00	-32.13	V	Peak
1303.3333	52.58	-10.87	41.71	74.00	-32.29	V	Peak
3216.6667	47.36	-5.45	41.91	74.00	-32.09	V	Peak
3578.3333	45.95	-3.94	42.01	74.00	-31.99	V	Peak
6250.0000	44.65	3.79	48.44	74.00	-25.56	V	Peak
1046.6667	58.59	-11.82	46.77	74.00	-27.23	H	Peak
1140.0000	57.91	-11.58	46.33	74.00	-27.67	H	Peak
1303.3333	56.63	-10.87	45.76	74.00	-28.24	H	Peak
1560.0000	50.13	-10.31	39.82	74.00	-34.18	H	Peak
2808.3333	48.12	-7.26	40.86	74.00	-33.14	H	Peak
6903.3333	46.61	4.35	50.96	74.00	-23.04	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.

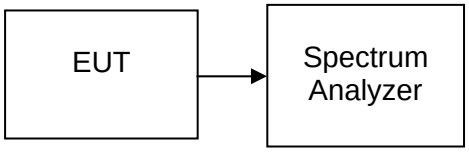
7.3.2. TEST INSTRUMENTS

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 (Antenna 1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	10028	>500	PASS
Mid	2437	9592		PASS
High	2462	10034		PASS

Test mode: IEEE 802.11b (Antenna 2)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	10042	>500	PASS
Mid	2437	10030		PASS
High	2462	9770		PASS

Test mode: IEEE 802.11g(Antenna 1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	16372	>500	PASS
Mid	2437	16372		PASS
High	2462	16369		PASS

Test mode: IEEE 802.11g(Antenna 2)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	16376	>500	PASS
Mid	2437	16371		PASS
High	2462	16369		PASS

Test mode: IEEE 802.11n HT20 MHz (Combine with antenna 1and antenna 2)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	17324	>500	PASS
Mid	2437	16967		PASS
High	2462	17321		PASS

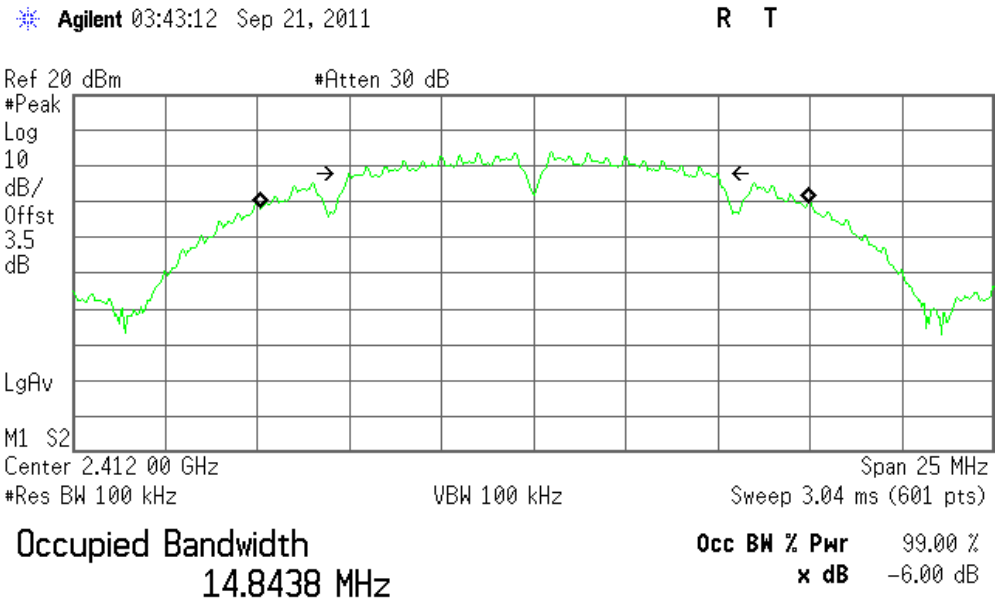
Test mode: IEEE 802.11n HT40 MHz(Combine with antenna 1and antenna 2)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2422	35657	>500	PASS
Mid	2437	35658		PASS
High	2452	35614		PASS

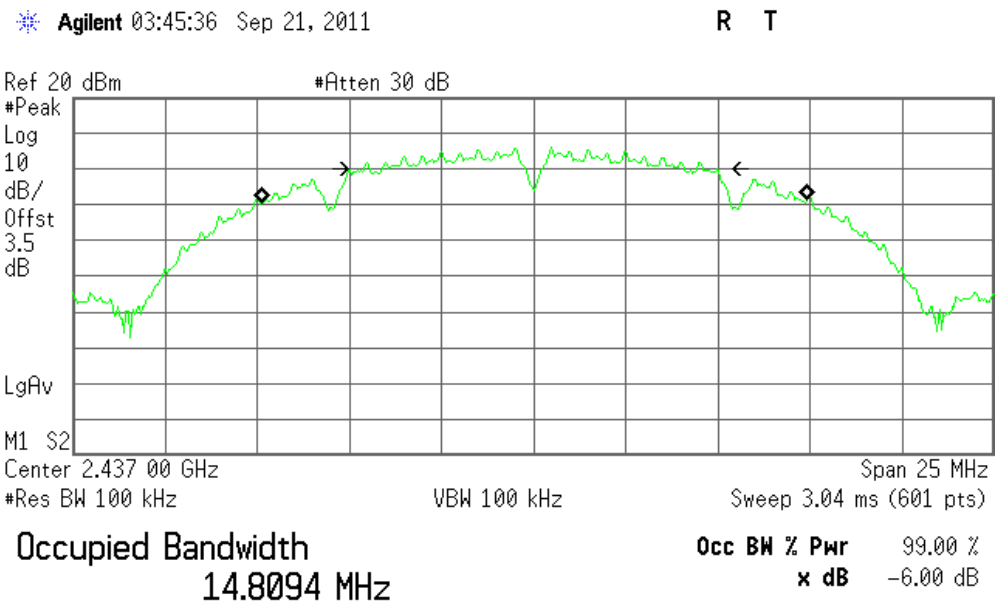
Test Plot

(IEEE 802.11b mode) Antenna 1

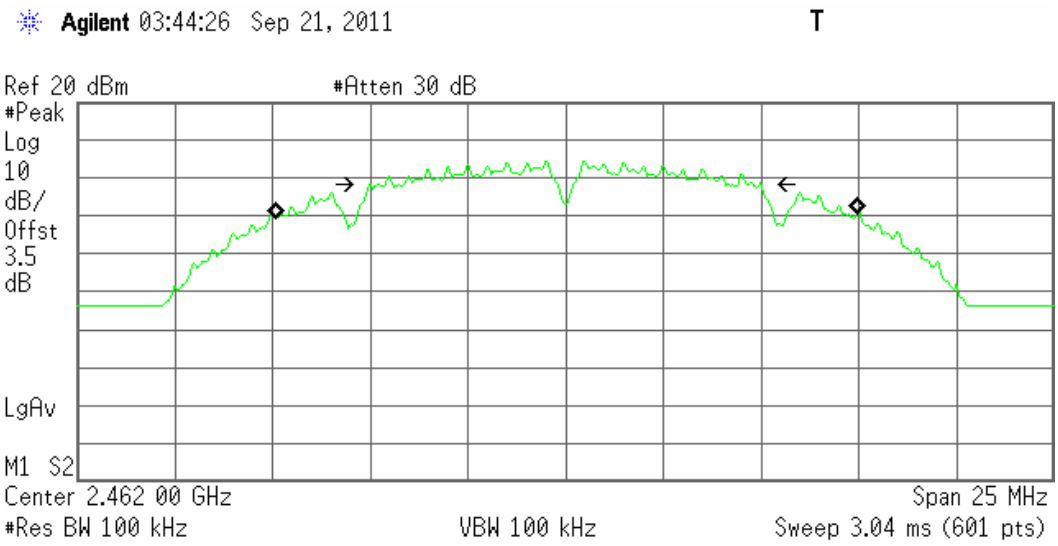
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



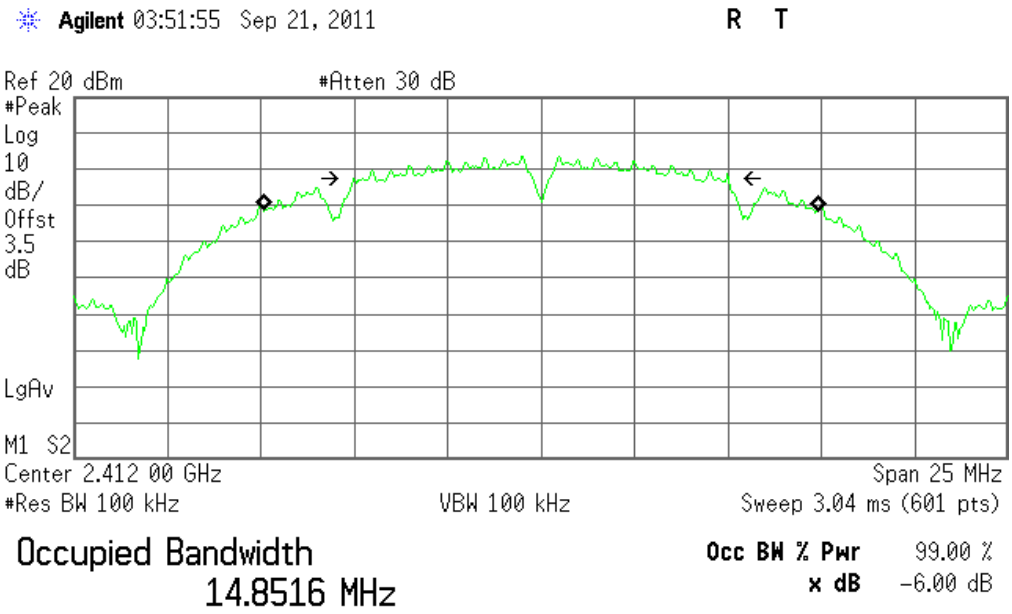
6dB Bandwidth (CH High)



Transmit Freq Error 12.445 kHz
x dB Bandwidth 10.034 MHz

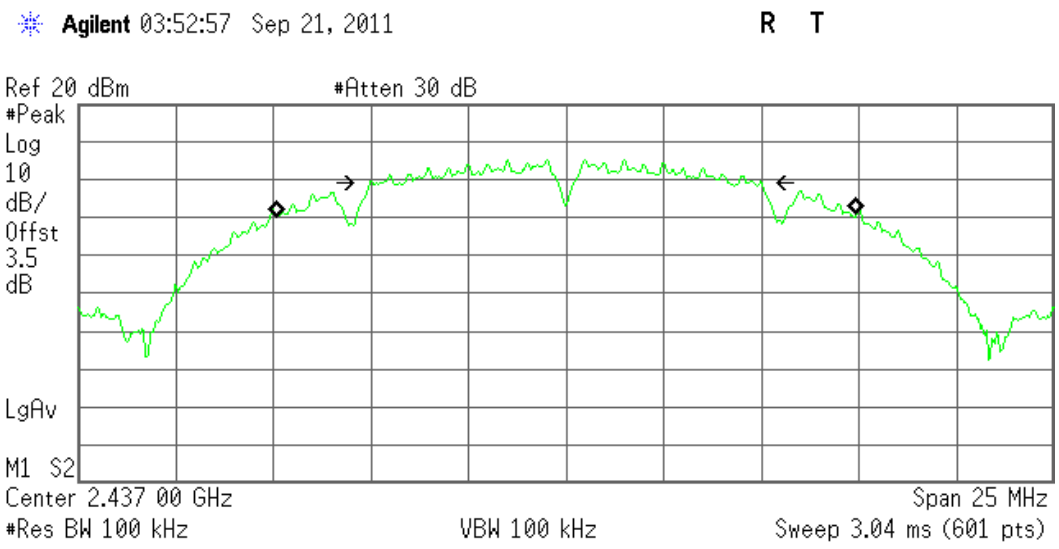
(IEEE 802.11b mode) Antenna 2

6dB Bandwidth (CH Low)



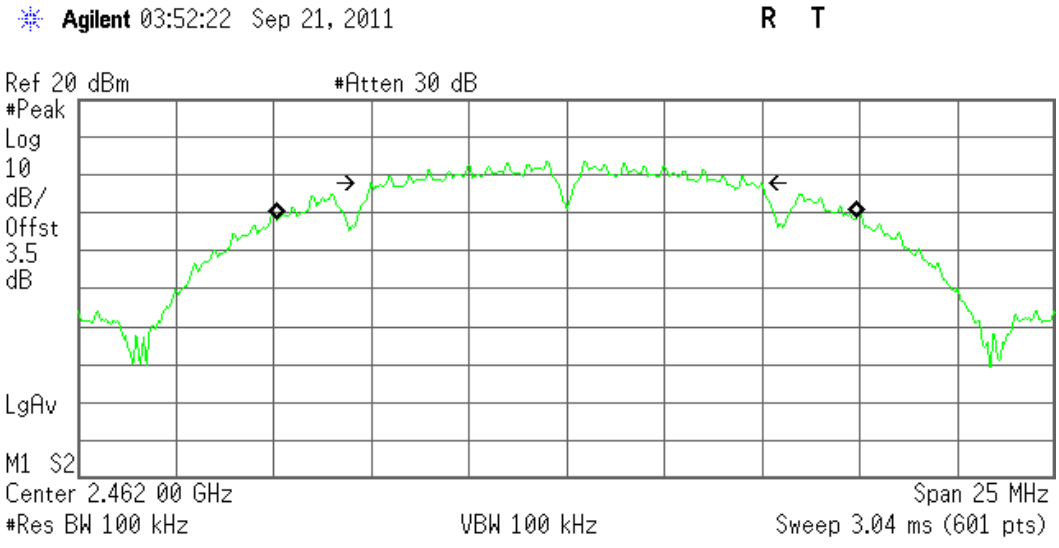
Transmit Freq Error -8.685 kHz
x dB Bandwidth 10.042 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error	4.626 kHz
x dB Bandwidth	10.030 MHz

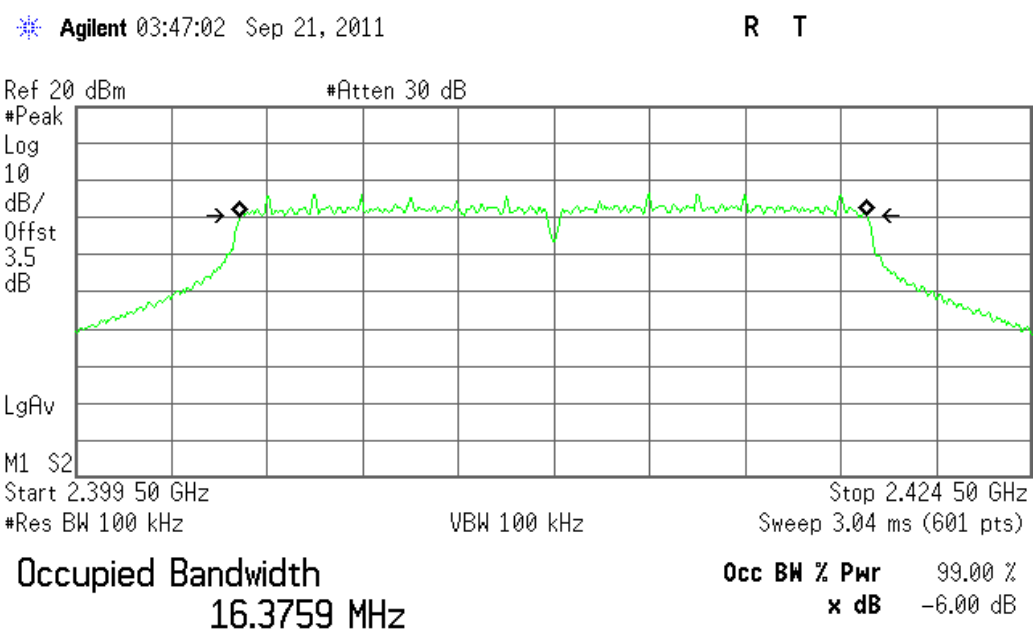
6dB Bandwidth (CH High)



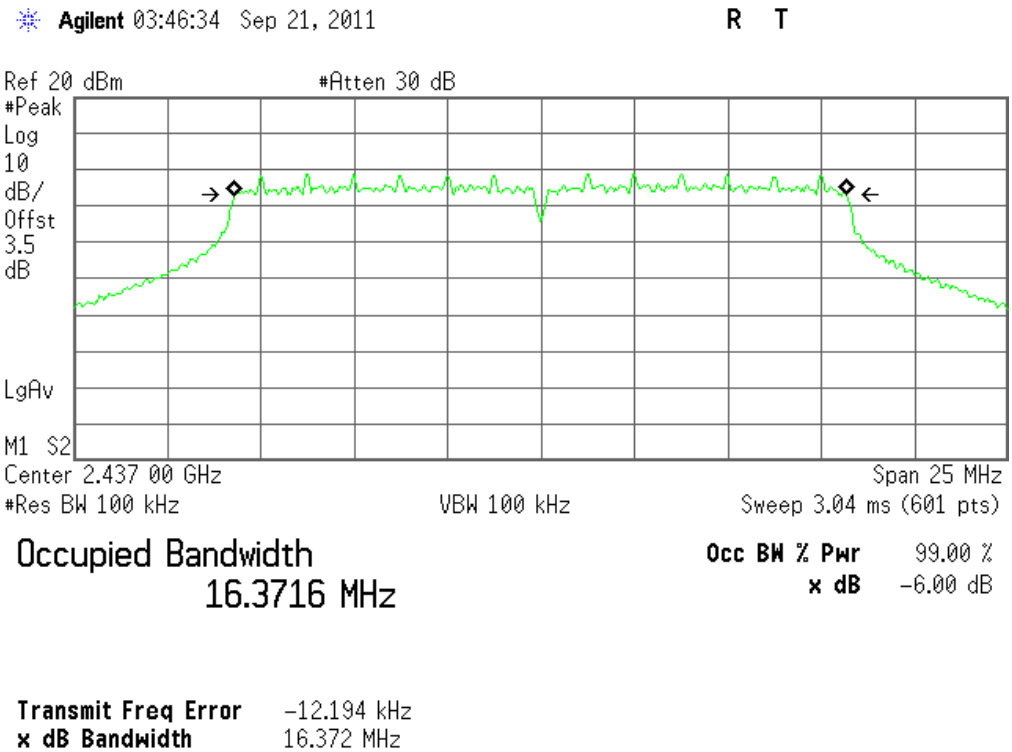
Transmit Freq Error	12.092 kHz
x dB Bandwidth	9.770 MHz

(IEEE 802.11g mode) Antenna 1

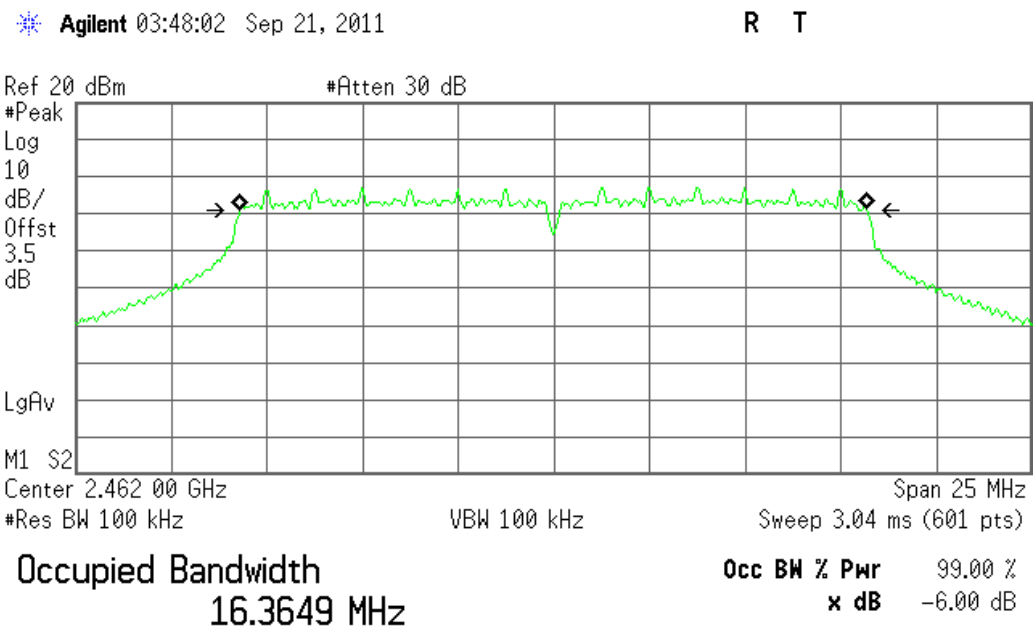
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

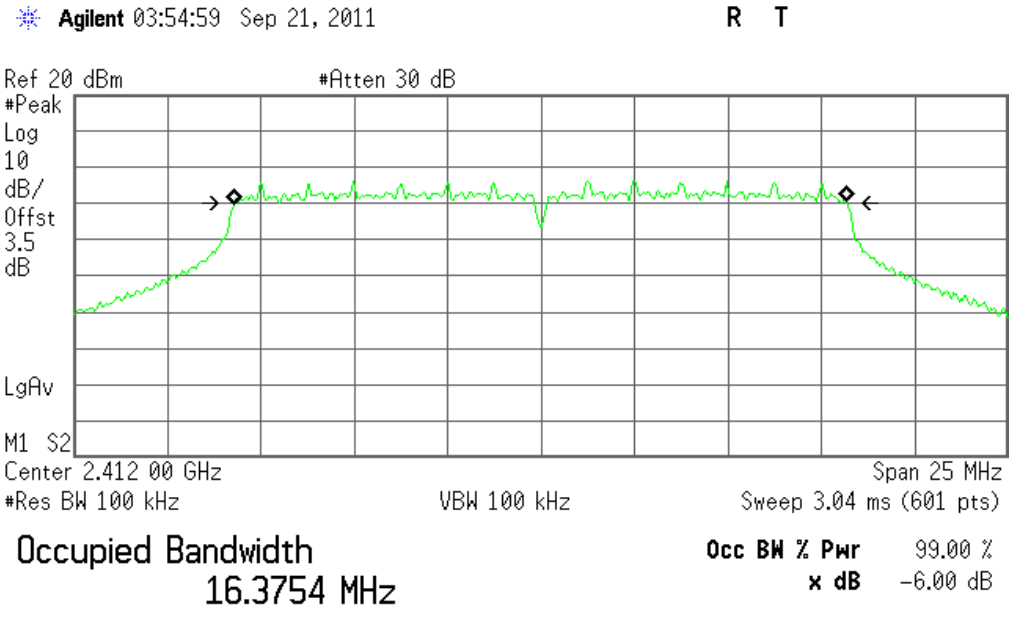


6dB Bandwidth (CH High)

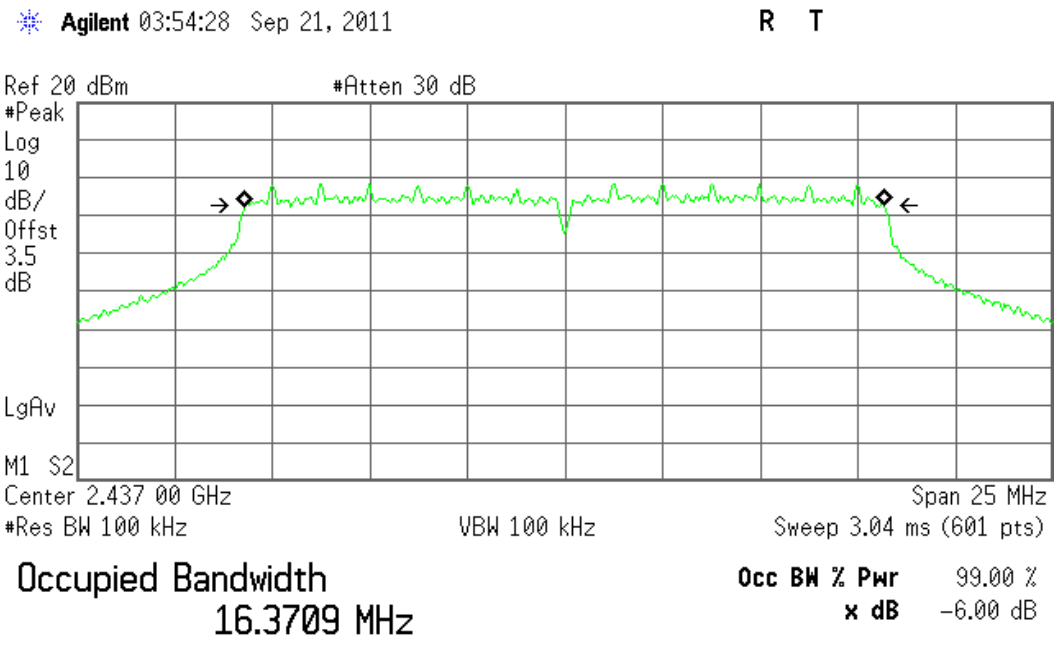


(IEEE 802.11g mode) Antenna 2

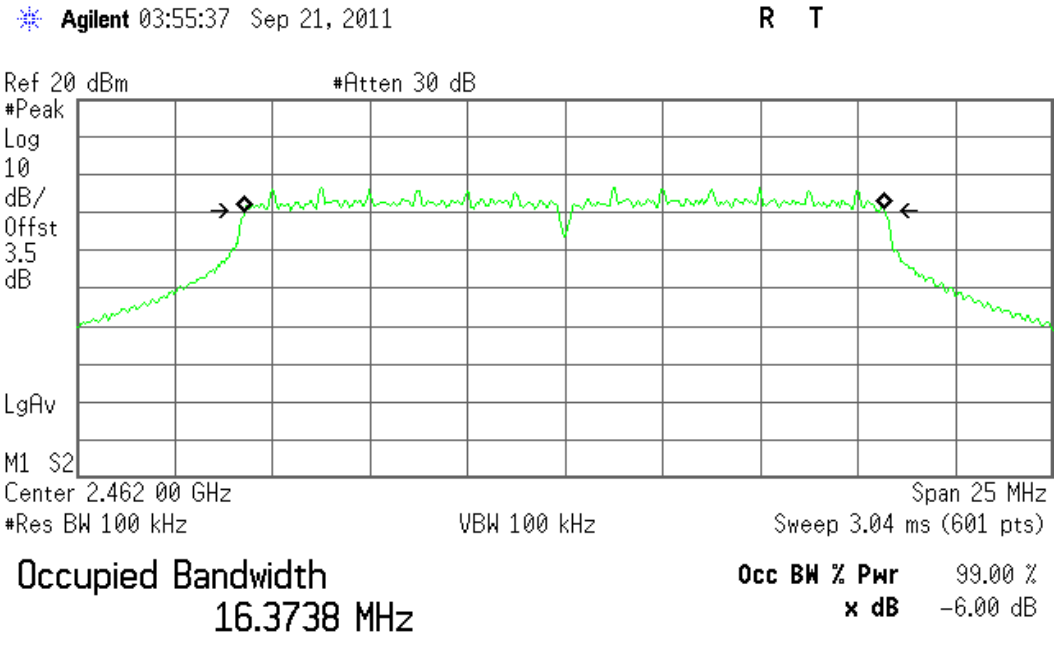
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)

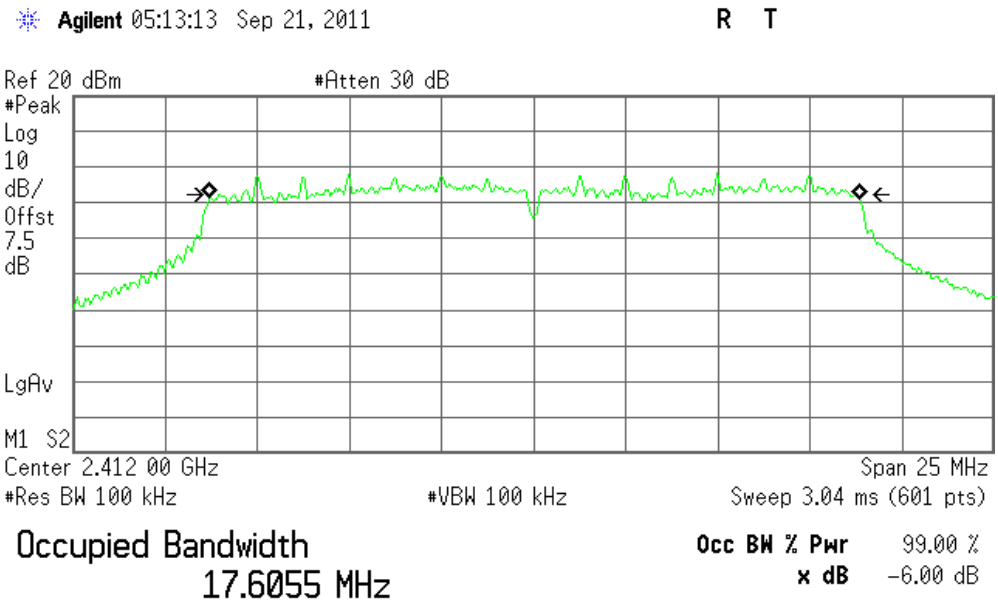


6dB Bandwidth (CH High)



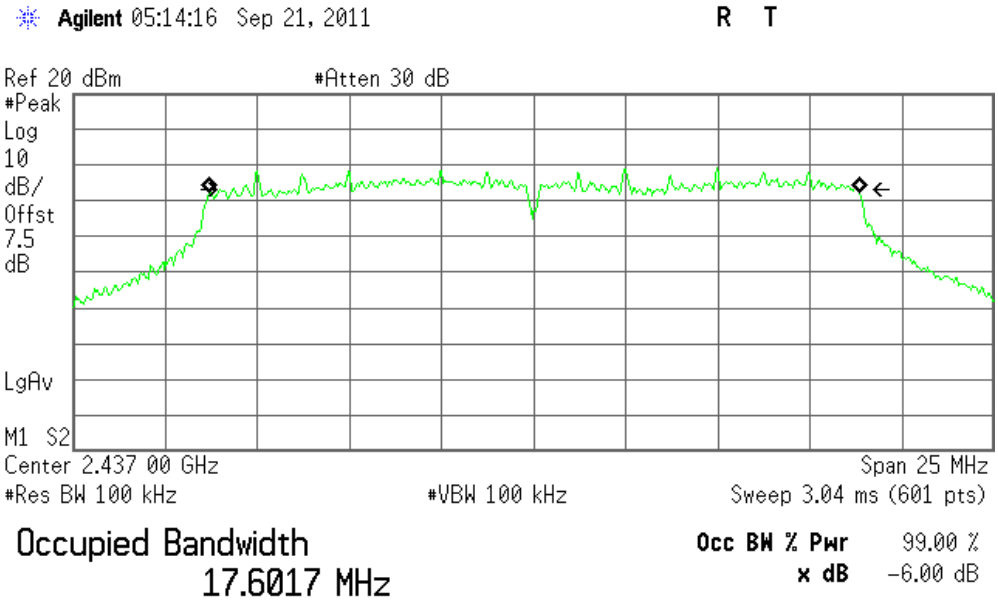
(IEEE 802.11n HT20 MHz mode) Combine with antenna 1and antenna 2

6dB Bandwidth (CH Low)



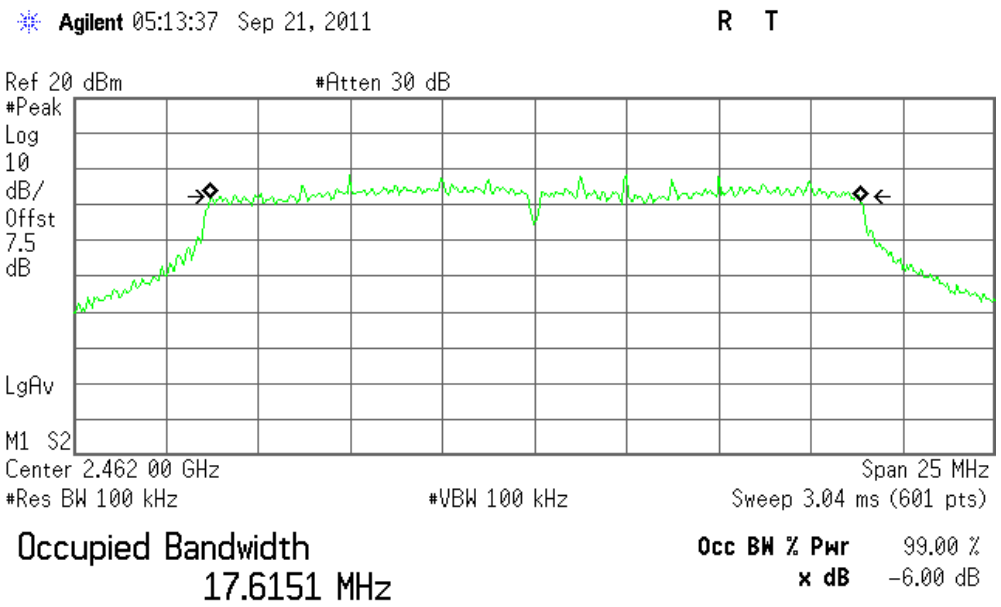
Transmit Freq Error	24.460 kHz
x dB Bandwidth	17.324 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error	20.668 kHz
x dB Bandwidth	16.967 MHz

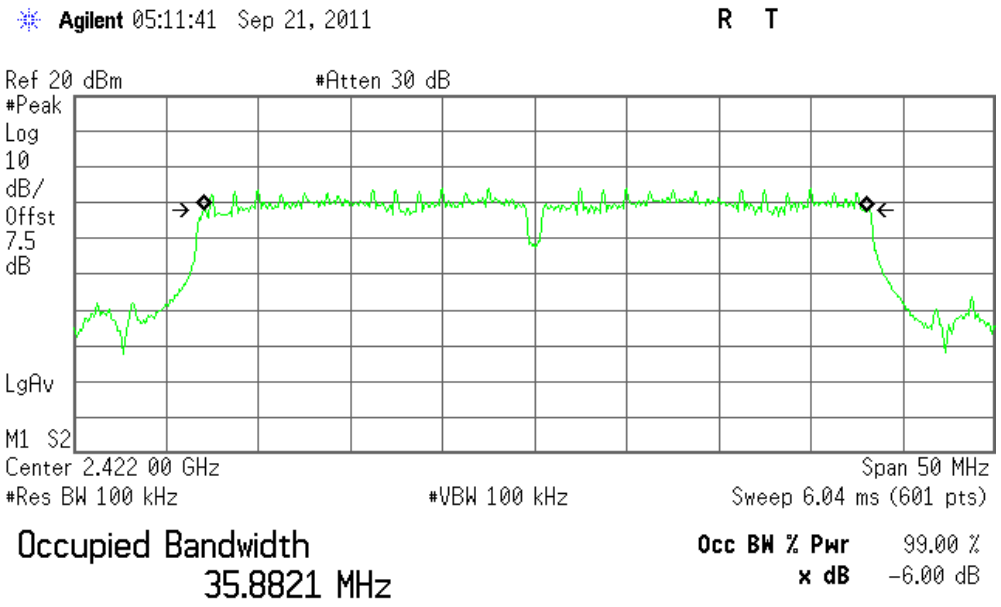
6dB Bandwidth (CH High)



Transmit Freq Error	23.568 kHz
x dB Bandwidth	17.321 MHz

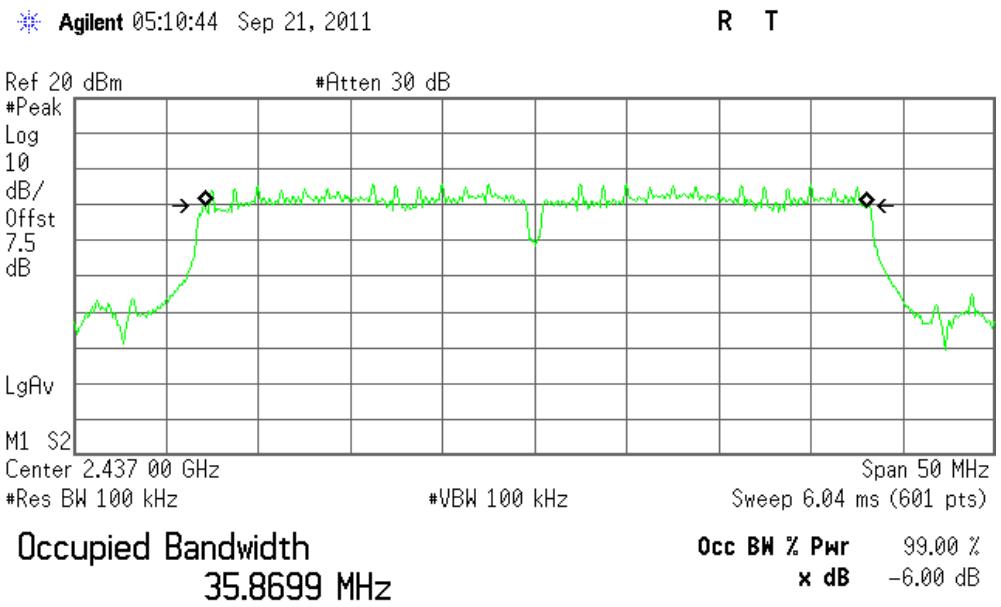
(IEEE 802.11n HT40 MHz mode) Combine with antenna 1and antenna 2

6dB Bandwidth (CH Low)



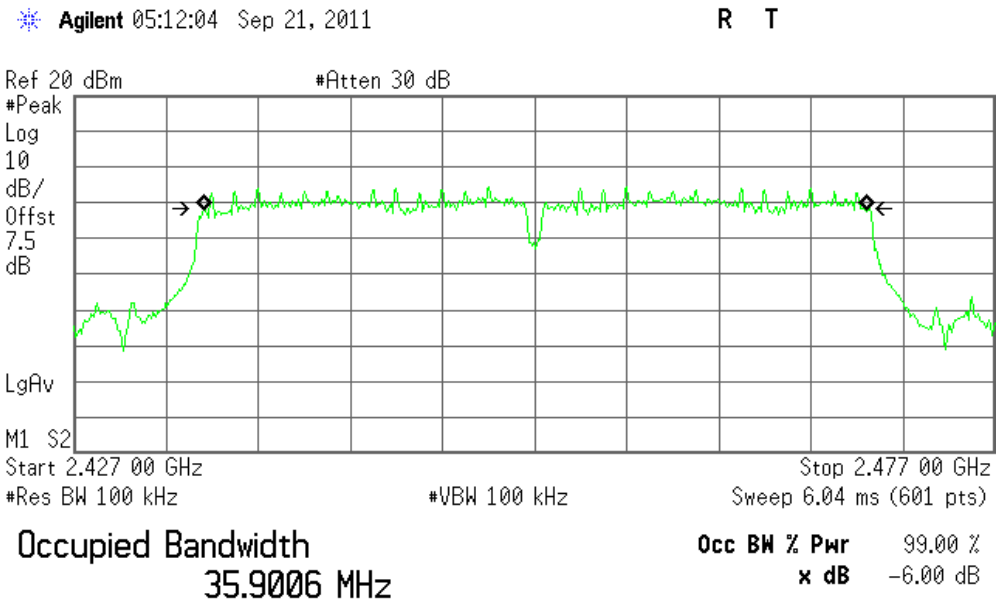
Transmit Freq Error	57.998 kHz
x dB Bandwidth	35.657 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error	60.228 kHz
x dB Bandwidth	35.658 MHz

6dB Bandwidth (CH High)



Transmit Freq Error	62.639 kHz
x dB Bandwidth	35.614 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.

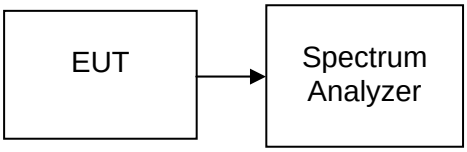
7.4.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US44300399	03/21/2011	03/21/2012

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	15.26	0.03357	1	PASS
Mid	2437	17.40	0.05495		PASS
High	2462	16.00	0.03981		PASS

Test mode: IEEE 802.11b (Antenna 2)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	15.44	0.03499	1	PASS
Mid	2437	17.53	0.05662		PASS
High	2462	15.74	0.03750		PASS

Test mode: IEEE 802.11g (Antenna 1)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	11.26	0.01337	1	PASS
Mid	2437	13.78	0.02388		PASS
High	2462	11.96	0.01570		PASS

Test mode: IEEE 802.11g (Antenna 2)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	11.79	0.01510	1	PASS
Mid	2437	13.83	0.02415		PASS
High	2462	11.86	0.01535		PASS

Test mode: IEEE 802.11n HT20 MHz (Combine with antenna 1and antenna 2)

Channel	Frequency (MHz)	Output Power (dBm)		Output Power Total(dBm)	Output Power (W)	Limit (W)	Result
		Chain 0	Chain 1				
Low	2412	8.36	8.32	11.35	0.01365	1	PASS
Mid	2437	10.89	10.55	13.73	0.02362		PASS
High	2462	8.82	8.40	11.63	0.01454		PASS

Test mode: IEEE 802.11n HT40 MHz (Combine with antenna 1and antenna 2)

Channel	Frequency (MHz)	Output Power (dBm)		Output Power Total(dBm)	Output Power (W)	Limit (W)	Result
		Chain 0	Chain 1				
Low	2422	7.31	7.27	10.30	0.01072	1	PASS
Mid	2437	9.56	9.34	12.46	0.01763		PASS
High	2452	7.51	7.40	10.47	0.01113		PASS

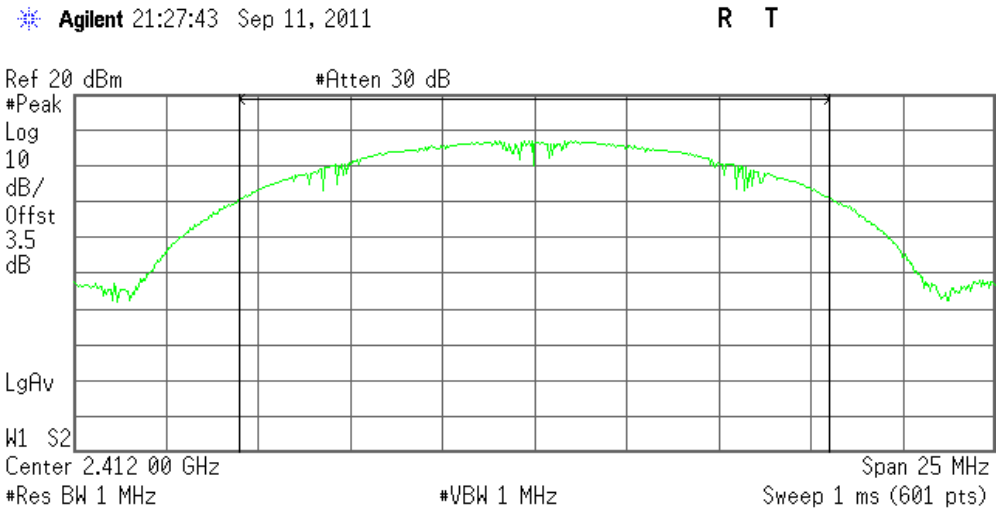
Note : Combine Power Calculation :

Total Power(dBm) =lg (10 $^{(\text{chain 0 power}/10)}$+10 $^{(\text{chain 1 power}/10)}$)*10

Test Plot

(IEEE 802.11b mode) Antenna 1

Peak power (CH Low)



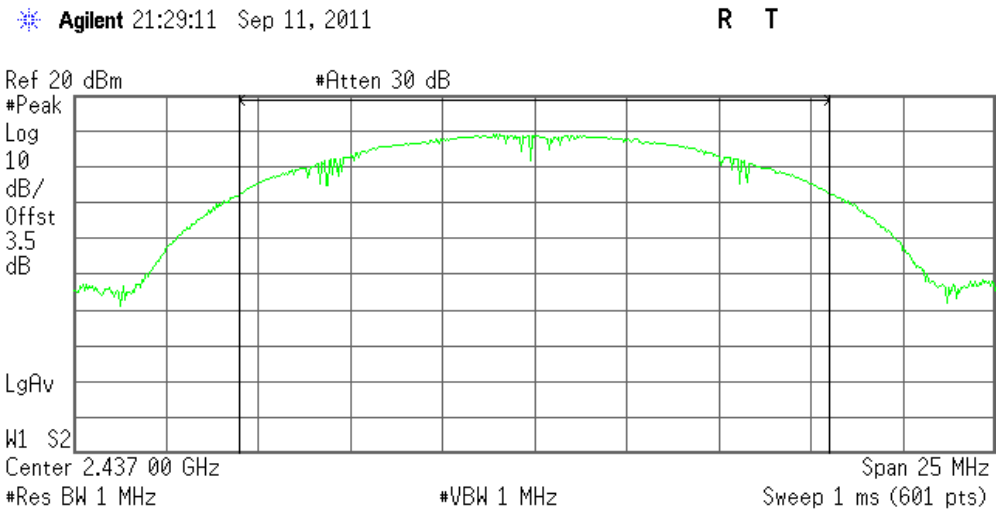
Channel Power

15.26 dBm /16.0000 MHz

Power Spectral Density

-56.78 dBm/Hz

Peak power (CH Mid)



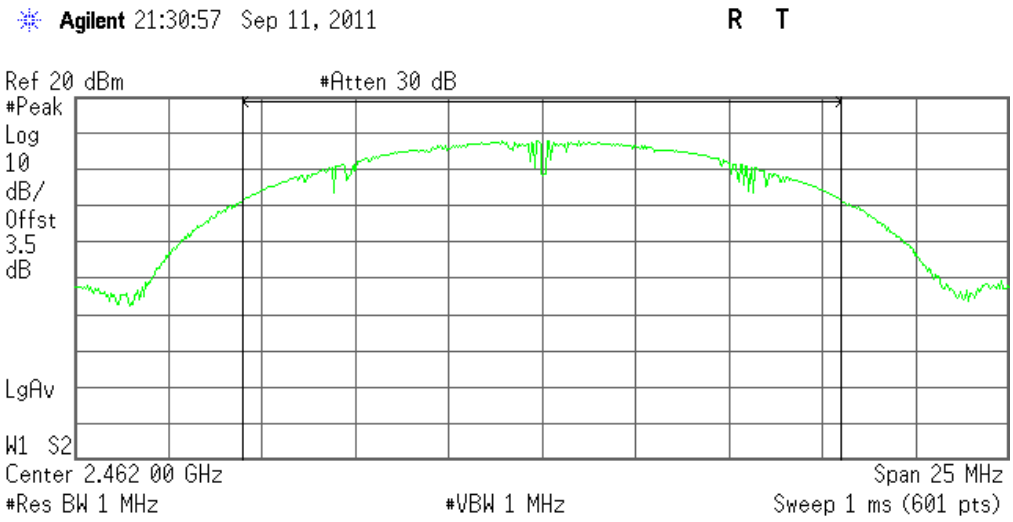
Channel Power

17.40 dBm /16.0000 MHz

Power Spectral Density

-54.64 dBm/Hz

Peak power (CH High)



Channel Power

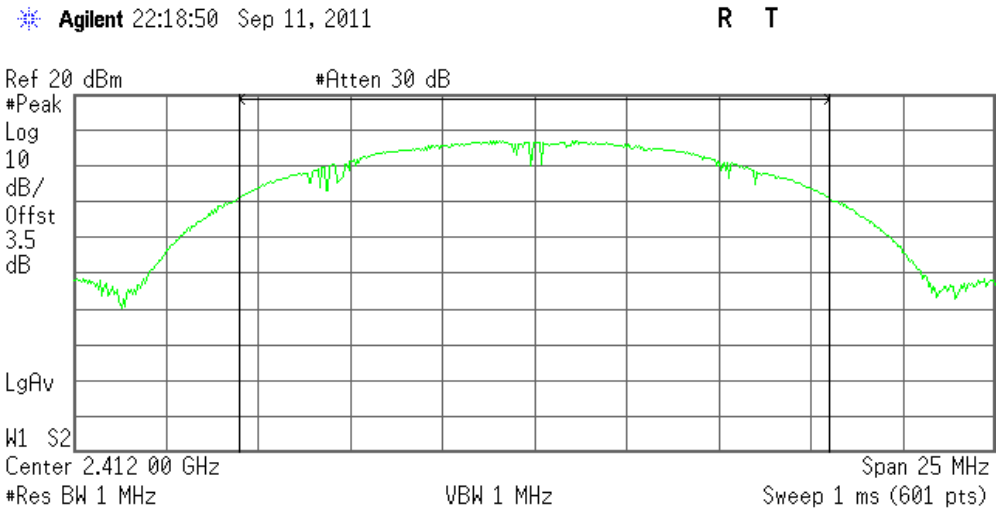
16.00 dBm /16.0000 MHz

Power Spectral Density

-56.04 dBm/Hz

(IEEE 802.11b mode) Antenna 2

Peak power (CH Low)



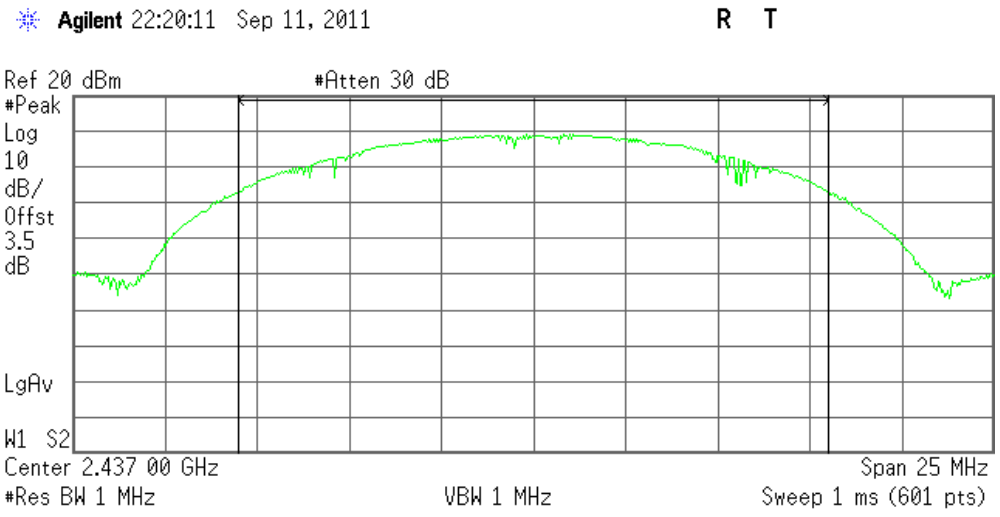
Channel Power

15.44 dBm /16.0000 MHz

Power Spectral Density

-56.61 dBm/Hz

Peak power (CH Mid)



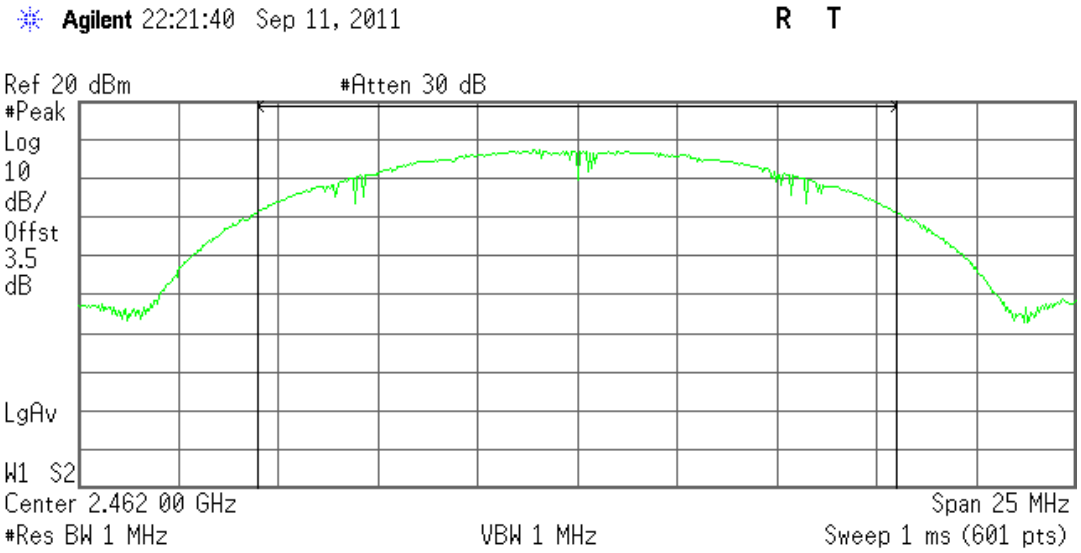
Channel Power

17.53 dBm /16.0000 MHz

Power Spectral Density

-54.51 dBm/Hz

Peak power (CH High)



Channel Power

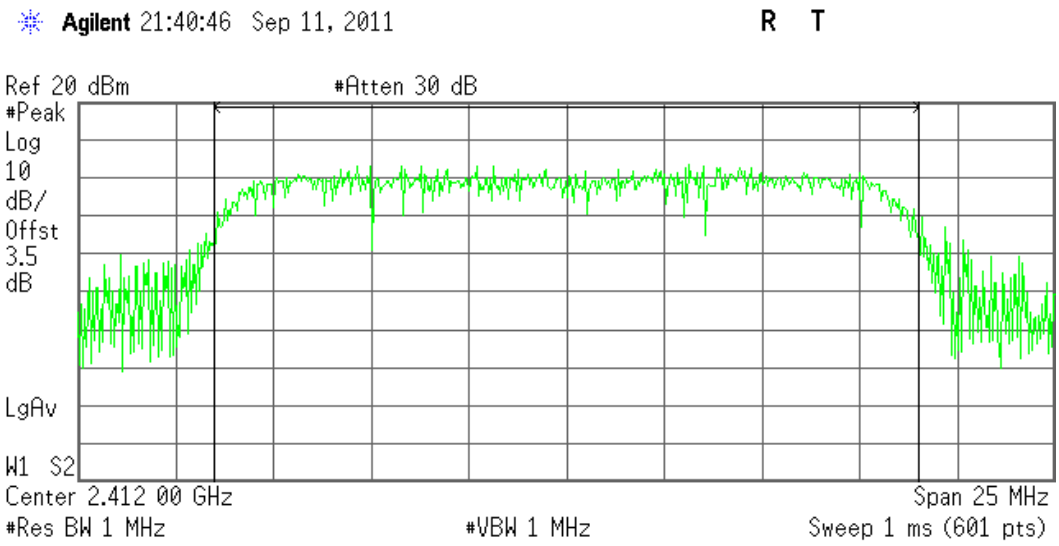
15.74 dBm /16.0000 MHz

Power Spectral Density

-56.30 dBm/Hz

(IEEE 802.11g mode) Antenna 1

Peak power (CH Low)



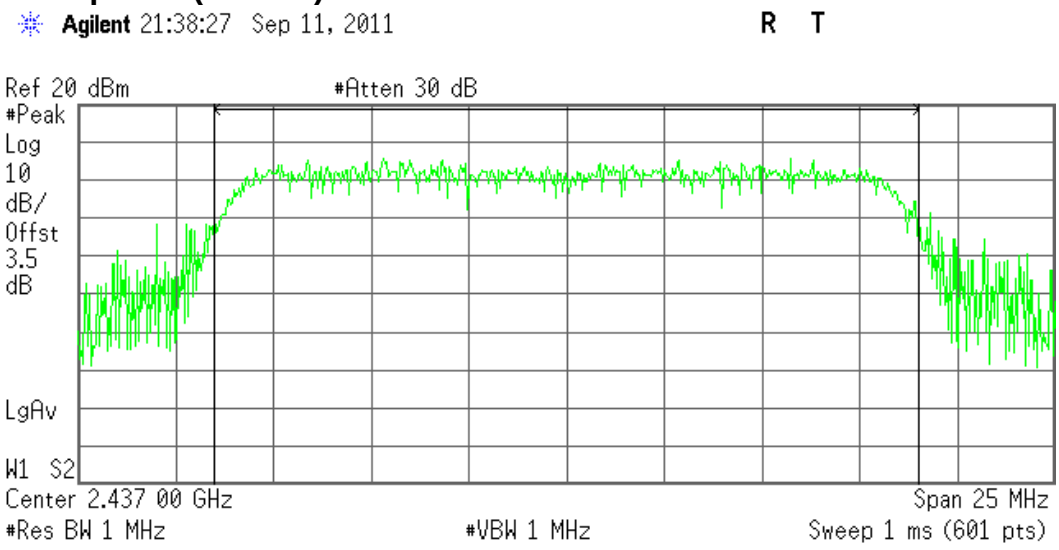
Channel Power

11.26 dBm /18.0000 MHz

Power Spectral Density

-61.30 dBm/Hz

Peak power (CH Mid)



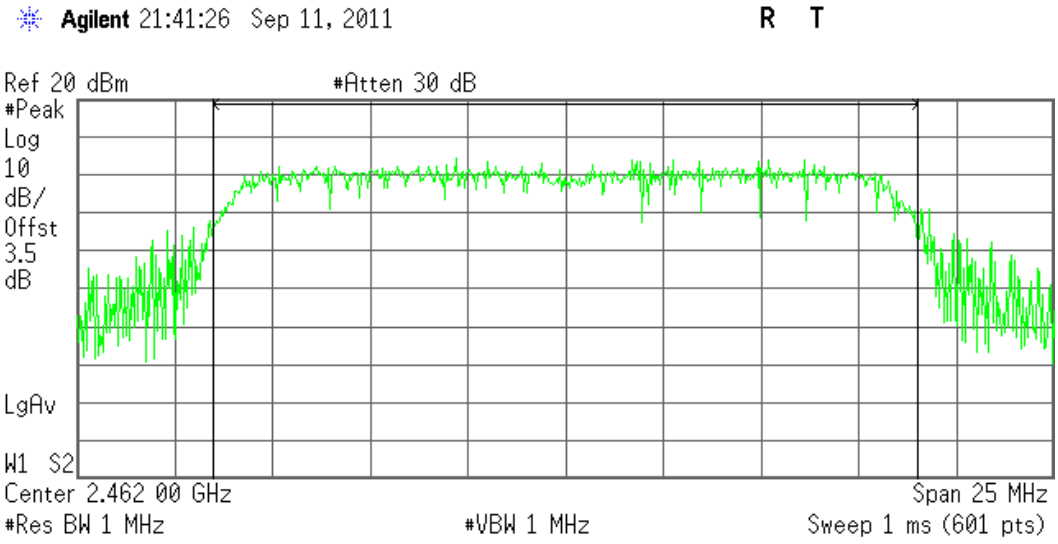
Channel Power

13.78 dBm /18.0000 MHz

Power Spectral Density

-58.77 dBm/Hz

Peak power (CH High)



Channel Power

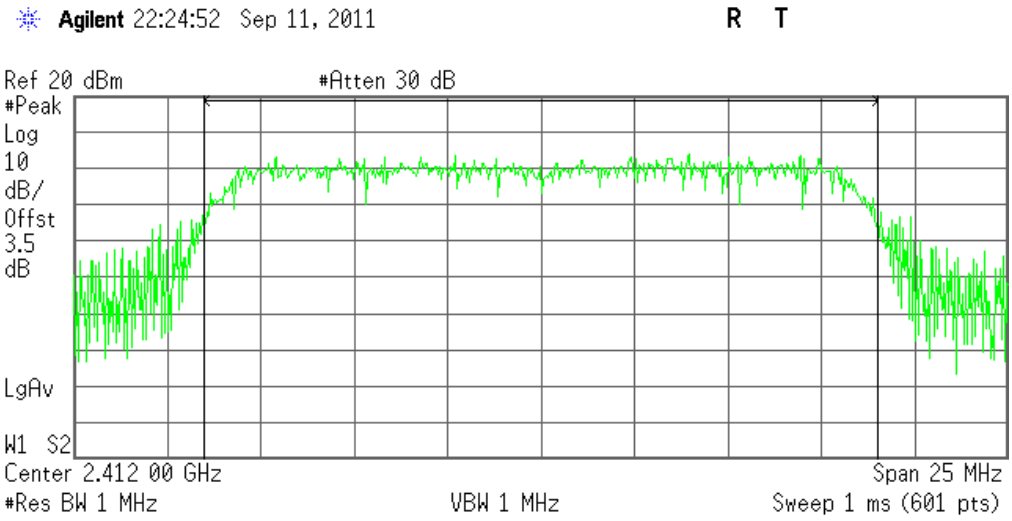
11.96 dBm /18.0000 MHz

Power Spectral Density

-60.59 dBm/Hz

(IEEE 802.11g mode) Antenna 2

Peak power (CH Low)



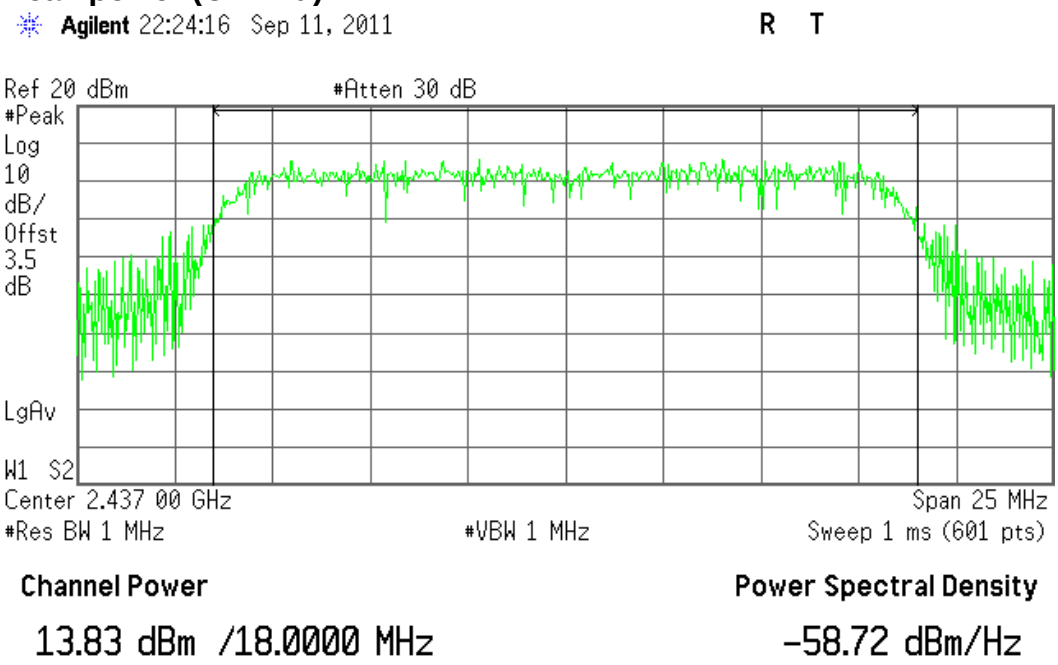
Channel Power

11.79 dBm /18.0000 MHz

Power Spectral Density

-60.76 dBm/Hz

Peak power (CH Mid)



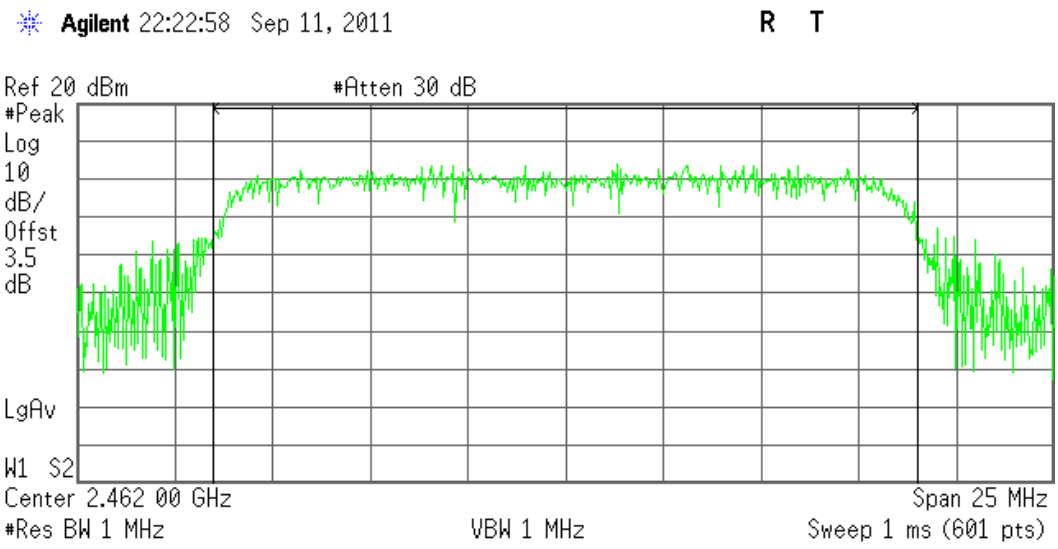
Channel Power

13.83 dBm /18.0000 MHz

Power Spectral Density

-58.72 dBm/Hz

Peak power (CH High)



Channel Power

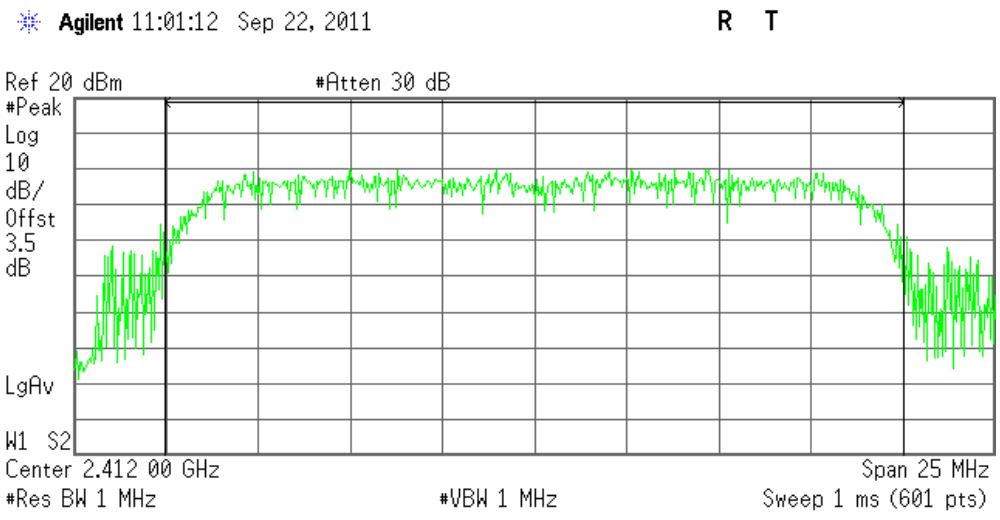
11.86 dBm /18.0000 MHz

Power Spectral Density

-60.69 dBm/Hz

(IEEE 802.11n HT20 MHz mode) Combine with antenna 1 and antena 2:Chain 0

Peak power (CH Low)



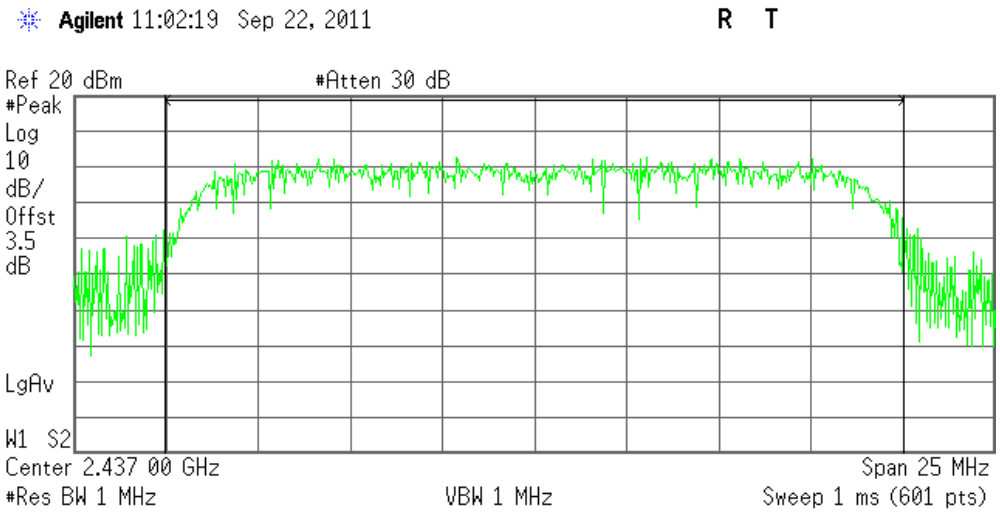
Channel Power

8.36 dBm /20.0000 MHz

Power Spectral Density

-64.65 dBm/Hz

Peak power (CH Mid)



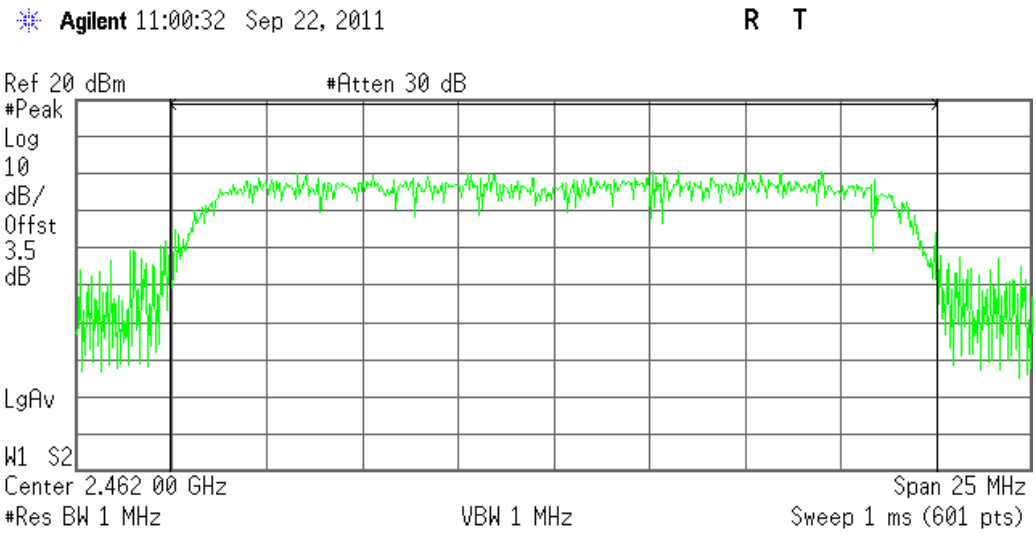
Channel Power

10.89 dBm /20.0000 MHz

Power Spectral Density

-62.12 dBm/Hz

Peak power (CH High)



Channel Power

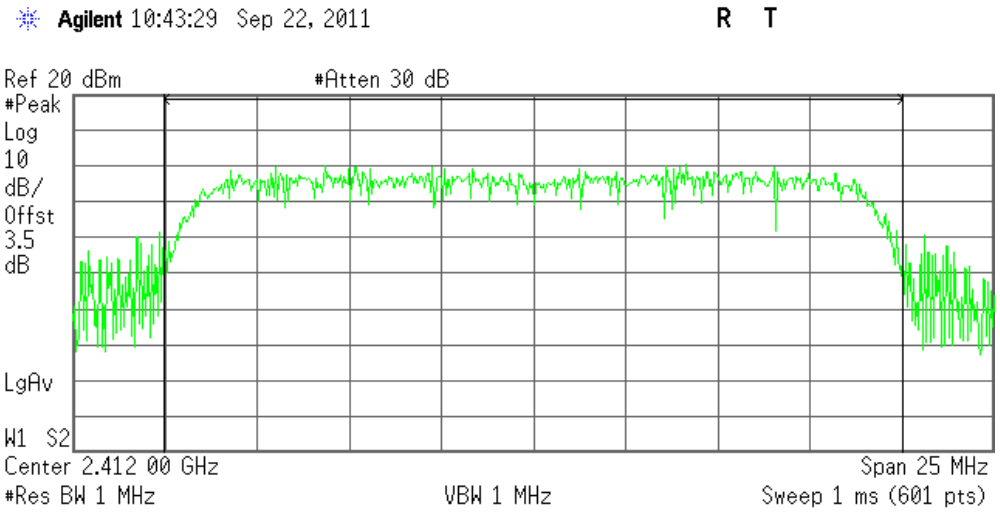
8.82 dBm /20.0000 MHz

Power Spectral Density

-64.19 dBm/Hz

(IEEE 802.11n HT20 MHz mode) Combine with antenna 1 and antena 2:Chain 1

Peak power (CH Low)



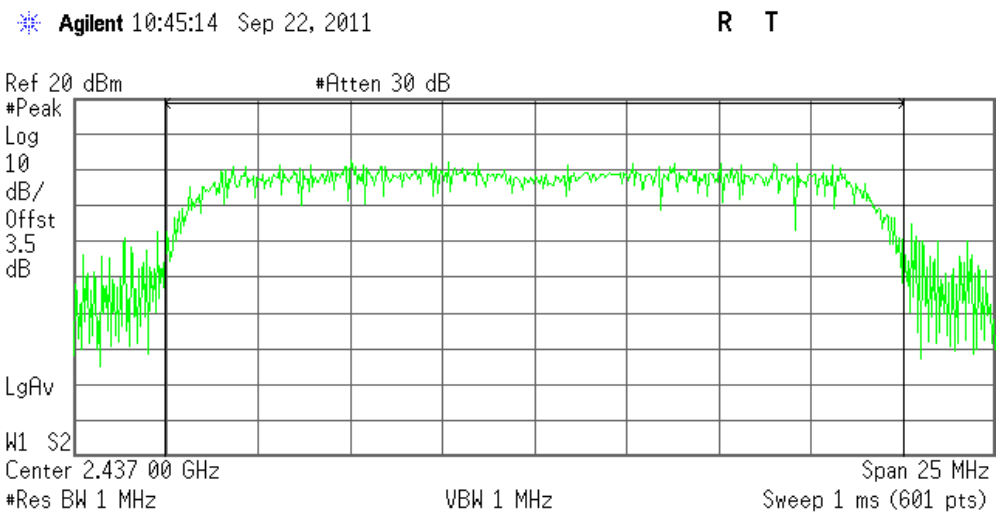
Channel Power

8.32 dBm /20.0000 MHz

Power Spectral Density

-64.69 dBm/Hz

Peak power (CH Mid)



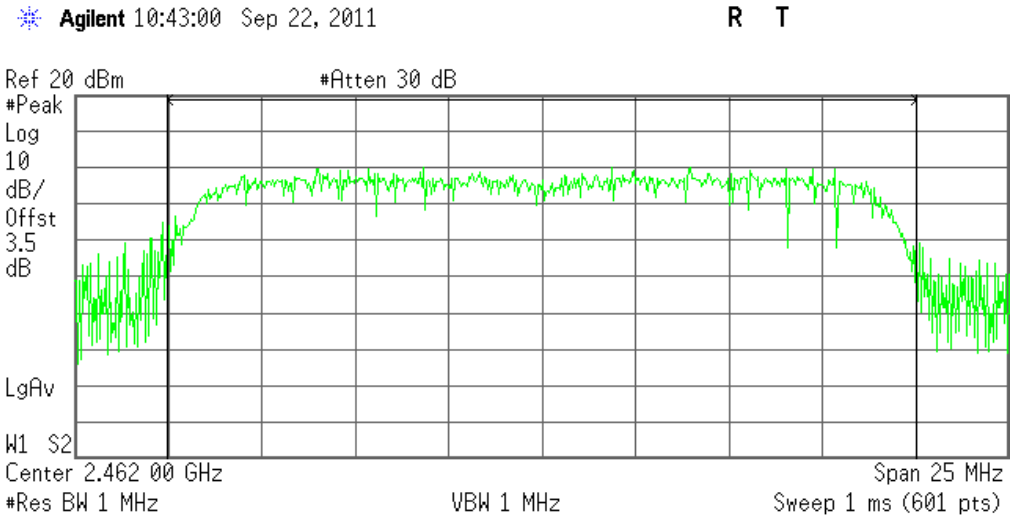
Channel Power

10.55 dBm /20.0000 MHz

Power Spectral Density

-62.46 dBm/Hz

Peak power (CH High)



Channel Power

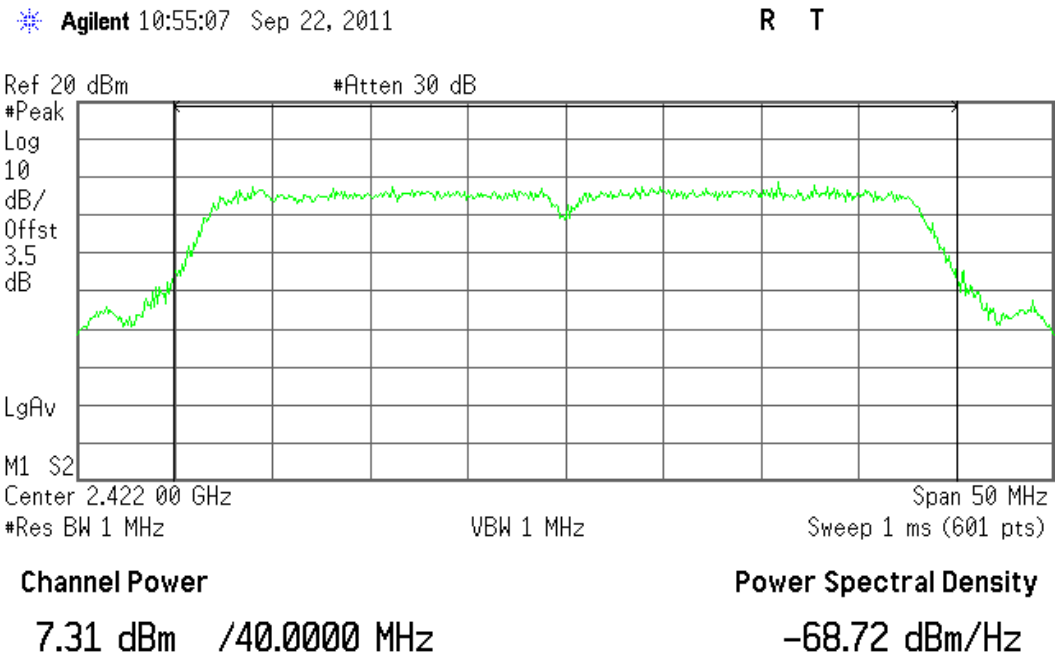
8.40 dBm /20.0000 MHz

Power Spectral Density

-64.61 dBm/Hz

(IEEE 802.11n HT40 MHz mode) Combine with antenna 1 and antena 2:Chain 0

Peak power (CH Low)



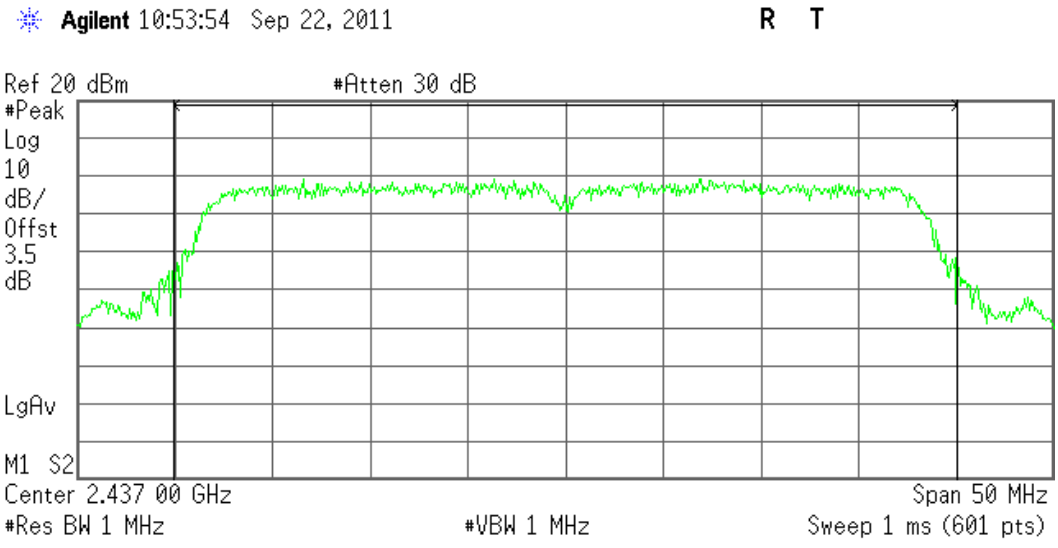
Channel Power

7.31 dBm /40.0000 MHz

Power Spectral Density

-68.72 dBm/Hz

Peak power (CH Mid)



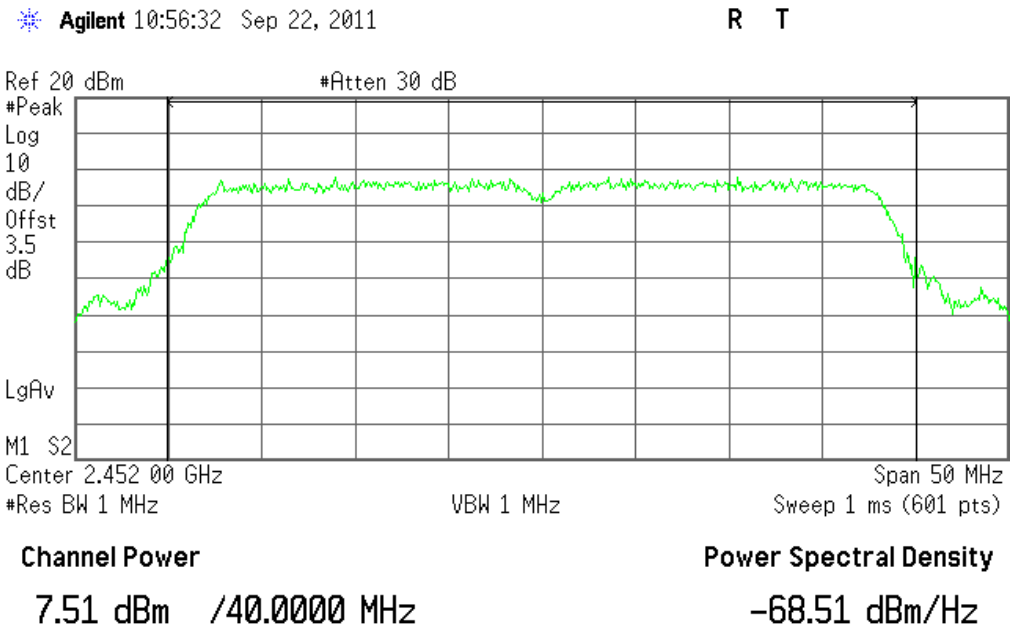
Channel Power

9.56 dBm /40.0000 MHz

Power Spectral Density

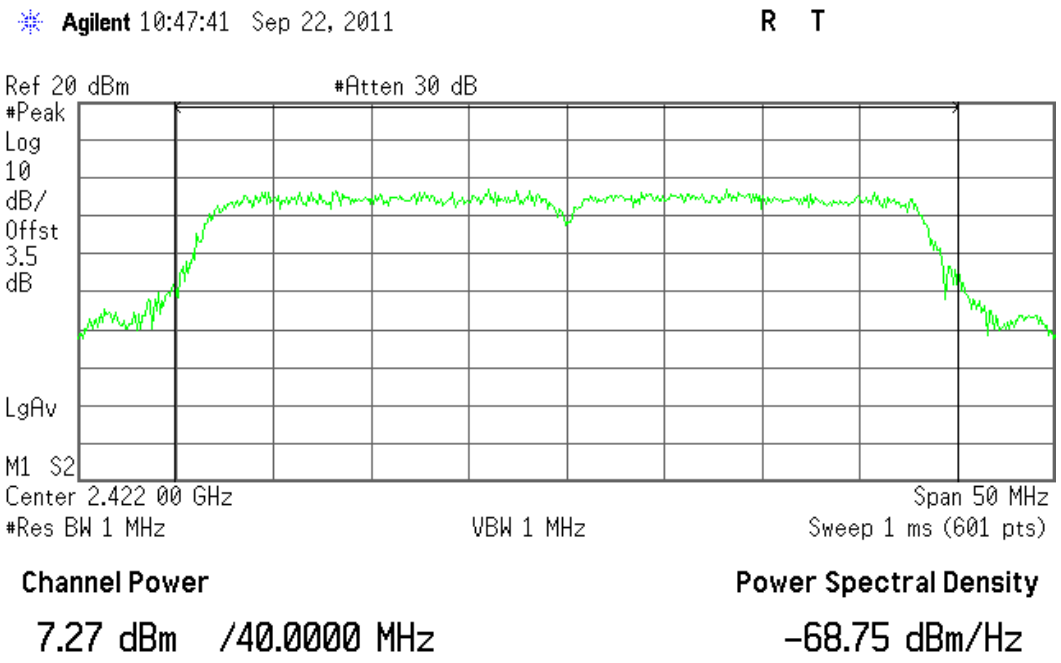
-66.46 dBm/Hz

Peak power (CH High)

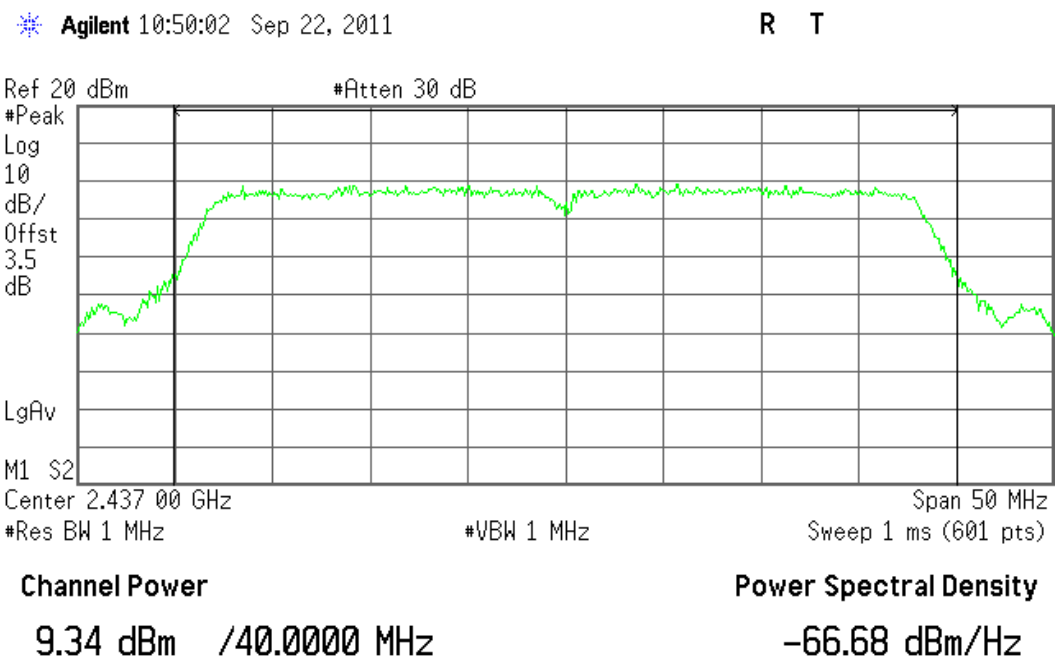


(IEEE 802.11n HT40 MHz mode) Combine with antenna 1 and antena 2:Chain 1)

Peak power (CH Low)



Peak power (CH Mid)



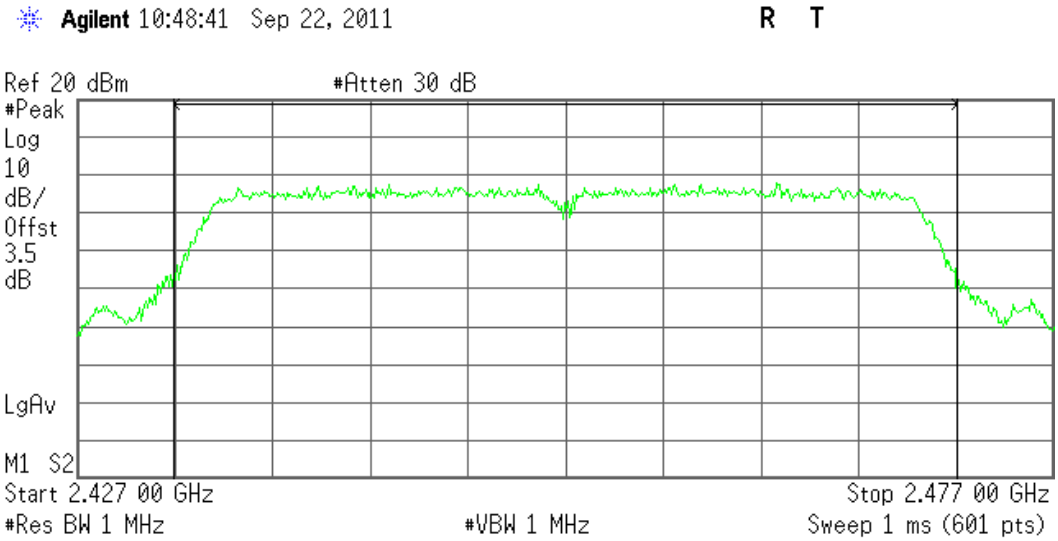
Channel Power

9.34 dBm /40.0000 MHz

Power Spectral Density

-66.68 dBm/Hz

Peak power (CH High)



Channel Power

7.40 dBm /40.0000 MHz

Power Spectral Density

-68.63 dBm/Hz

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.

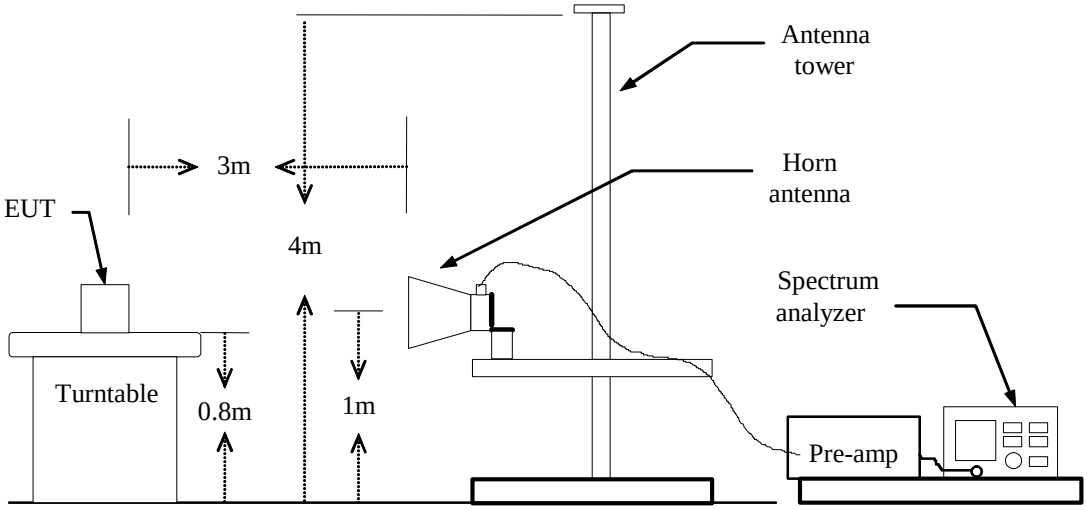
2. The FCC Site Registration number is 101879.

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	61.63	48.11	-9.75	51.88	38.36	74	54	-22.12	-15.64
N/A										
2390.00	H	51.15	39.68	-9.75	41.40	29.93	74	54	-32.60	-24.07
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	57.88	49.24	-9.78	48.10	39.46	74	54	-25.90	-14.54
N/A										
2483.50	H	51.11	39.36	-9.78	41.33	29.58	74	54	-32.67	-24.42
N/A										

(Antenna 2)

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	60.60	45.39	-9.75	50.85	35.64	74	54	-23.15	-18.36
N/A										
2390.00	H	49.37	38.93	-9.75	39.62	29.18	74	54	-34.38	-24.82
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	55.92	46.41	-9.78	46.14	36.63	74	54	-27.86	-17.37
N/A										
2483.50	H	50.21	39.90	-9.78	40.43	30.12	74	54	-33.57	-23.88
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	53.70	43.06	-9.75	43.95	33.31	74	54	-30.05	-20.69
N/A										
2390.00	H	49.04	42.68	-9.75	39.29	28.70	74	54	-34.71	-25.30
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	55.91	44.48	-9.78	46.13	34.70	74	54	-27.87	-19.30
N/A										
2483.50	H	49.48	37.63	-9.78	39.70	27.85	74	54	-34.30	-26.15
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	59.15	45.17	-9.75	49.40	35.42	74	54	-24.60	-18.58
N/A										
2390.00	H	49.93	38.33	-9.75	40.18	28.58	74	54	-33.82	-25.42
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	56.65	43.09	-9.78	46.87	33.31	74	54	-27.13	-20.69
N/A										
2483.50	H	49.10	37.06	-9.78	39.32	27.28	74	54	-34.68	-26.72
N/A										

(Combine with antenna 1 and 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	52.17	41.13	-9.75	42.42	31.38	74	54	-31.58	-22.62
N/A										
2390.00	H	47.65	37.61	-9.75	37.90	27.86	74	54	-36.10	-26.14
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	59.39	42.84	-9.78	49.61	33.06	74	54	-24.39	-20.94
N/A										
2483.50	H	48.37	37.24	-9.78	38.59	27.46	74	54	-35.41	-26.54
N/A										

(Combine with antenna 1 and 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	55.64	42.83	-9.75	45.89	33.08	74	54	-28.11	-20.92
N/A										
2390.00	H	48.85	37.86	-9.75	39.10	28.11	74	54	-34.90	-25.89
N/A										

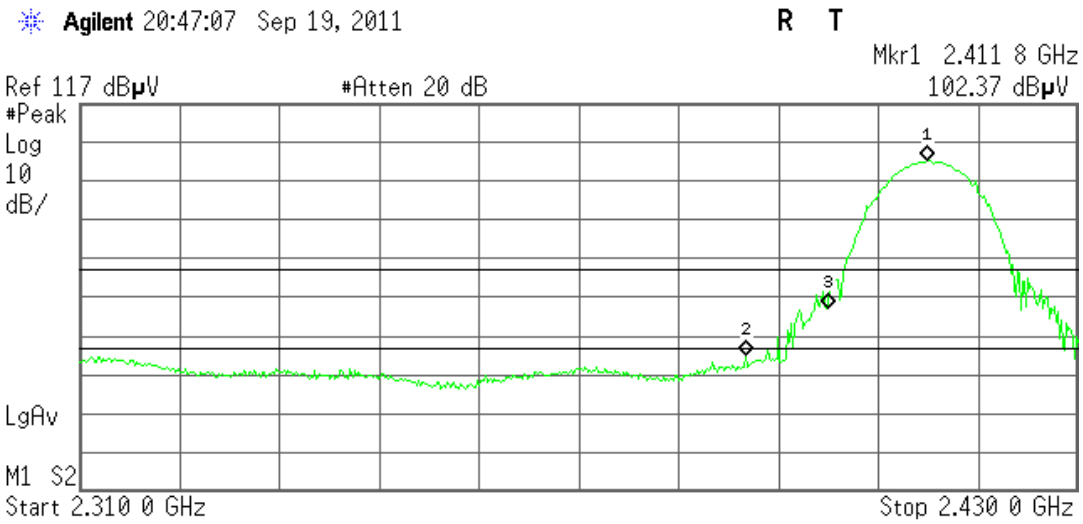
IEEE 802.11n HT40 MHz mode / CH High

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	55.89	43.44	-9.78	46.11	33.66	74	54	-27.89	-20.34
N/A										
2483.50	H	47.82	38.88	-9.78	38.04	27.92	74	54	-35.96	-26.08
N/A										

Test Plot (IEEE 802.11b mode) Antenna 1

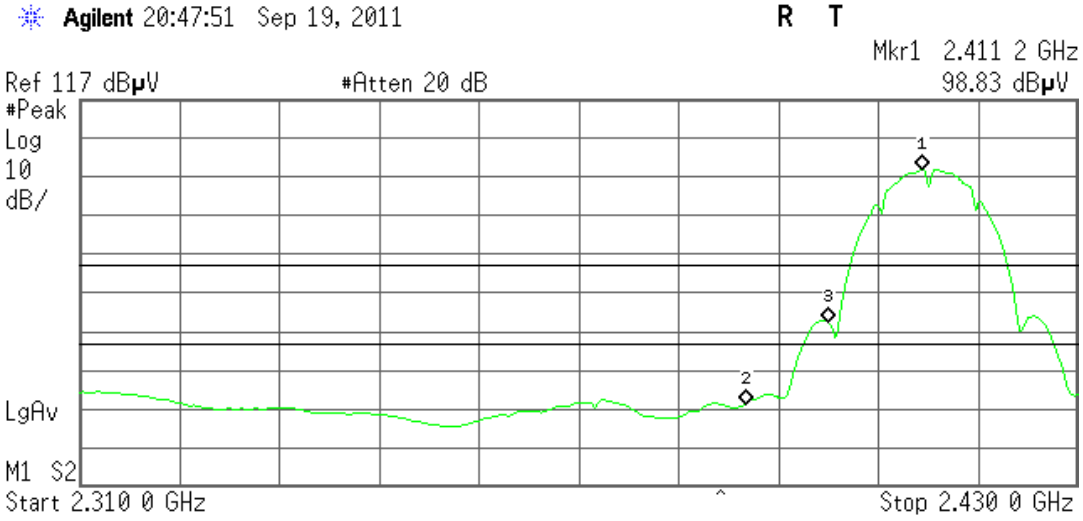
Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**



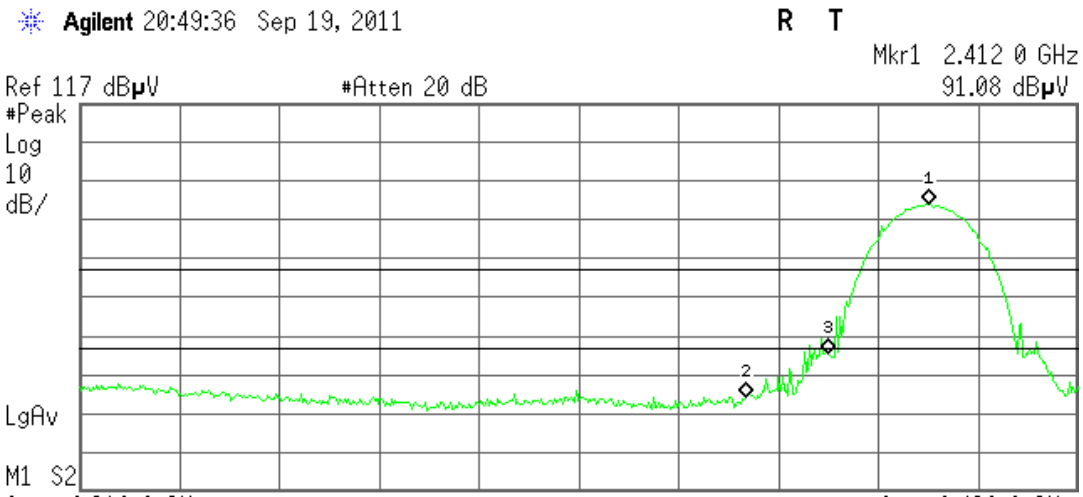
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.411 8 GHz	102.37 dBµV
2	(1)	Freq	2.390 0 GHz	51.88 dBµV
3	(1)	Freq	2.400 0 GHz	64.26 dBµV

Detector mode: Average **Polarity: Vertical**



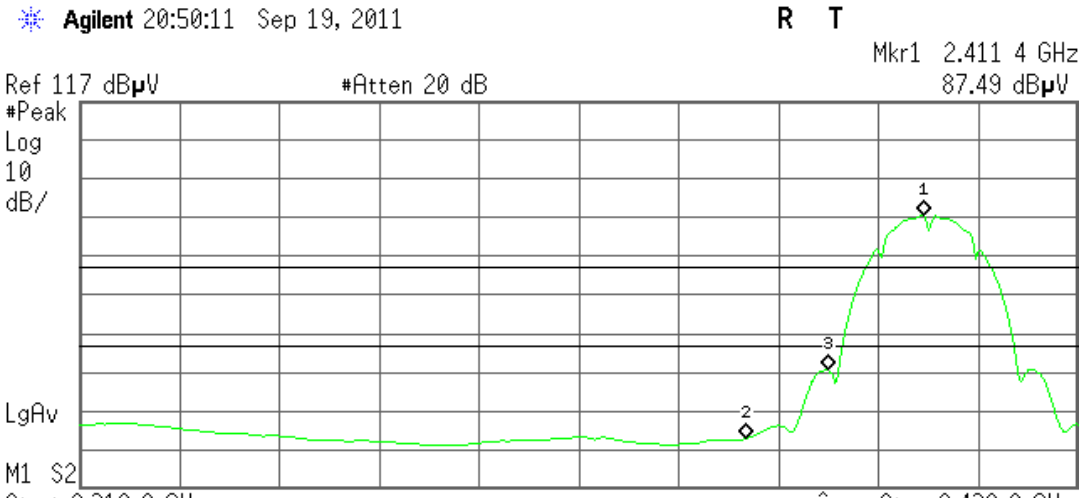
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.411 2 GHz	98.83 dBµV
2	(1)	Freq	2.390 0 GHz	38.36 dBµV
3	(1)	Freq	2.400 0 GHz	59.51 dBµV

Detector mode: Peak **Polarity: Horizontal**



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.412 0 GHz	91.08 dBµV
2	(1)	Freq	2.390 0 GHz	41.40 dBµV
3	(1)	Freq	2.400 0 GHz	52.51 dBµV

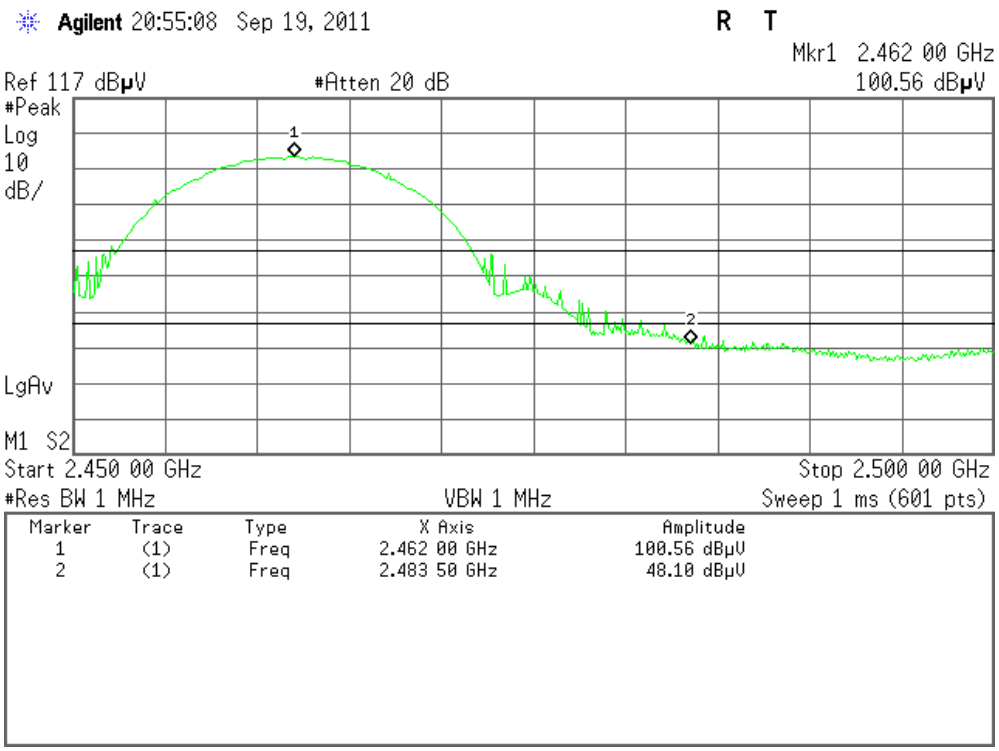
Detector mode: Average **Polarity: Horizontal**



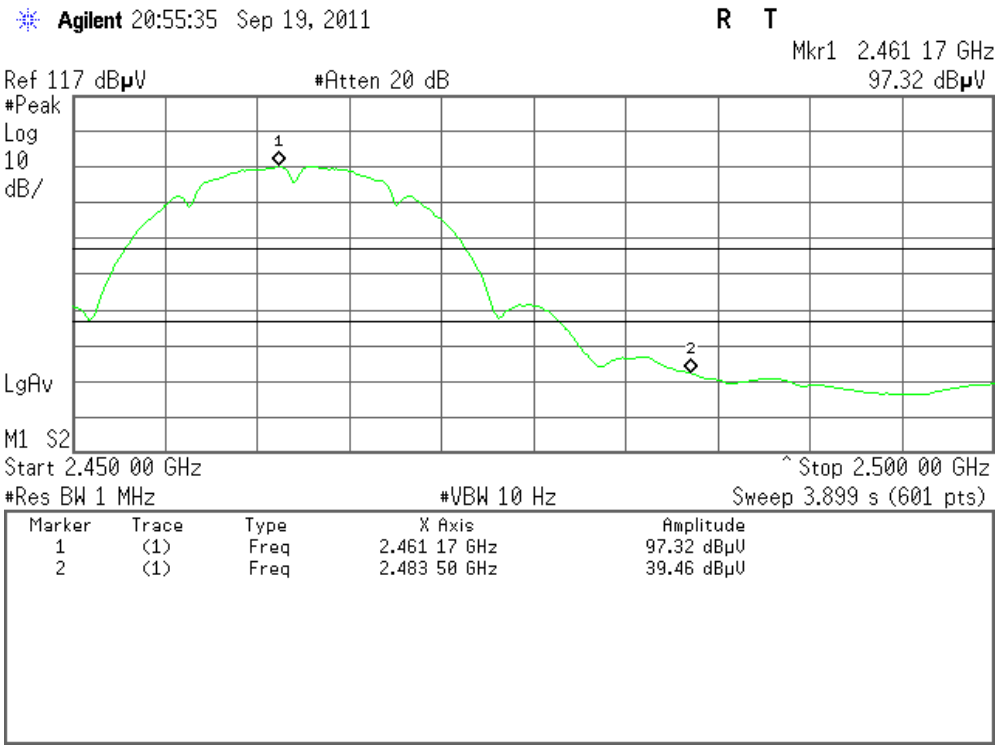
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.411 4 GHz	87.49 dBµV
2	(1)	Freq	2.390 0 GHz	29.93 dBµV
3	(1)	Freq	2.400 0 GHz	47.52 dBµV

Band Edges (CH High)

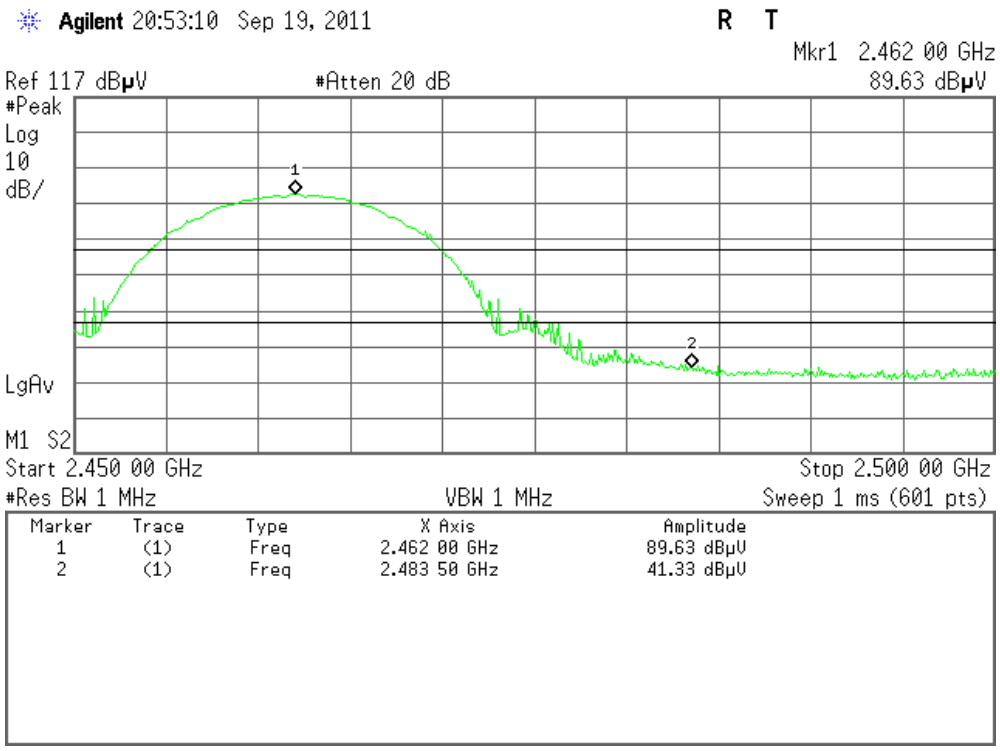
Detector mode: Peak Polarity: Vertical



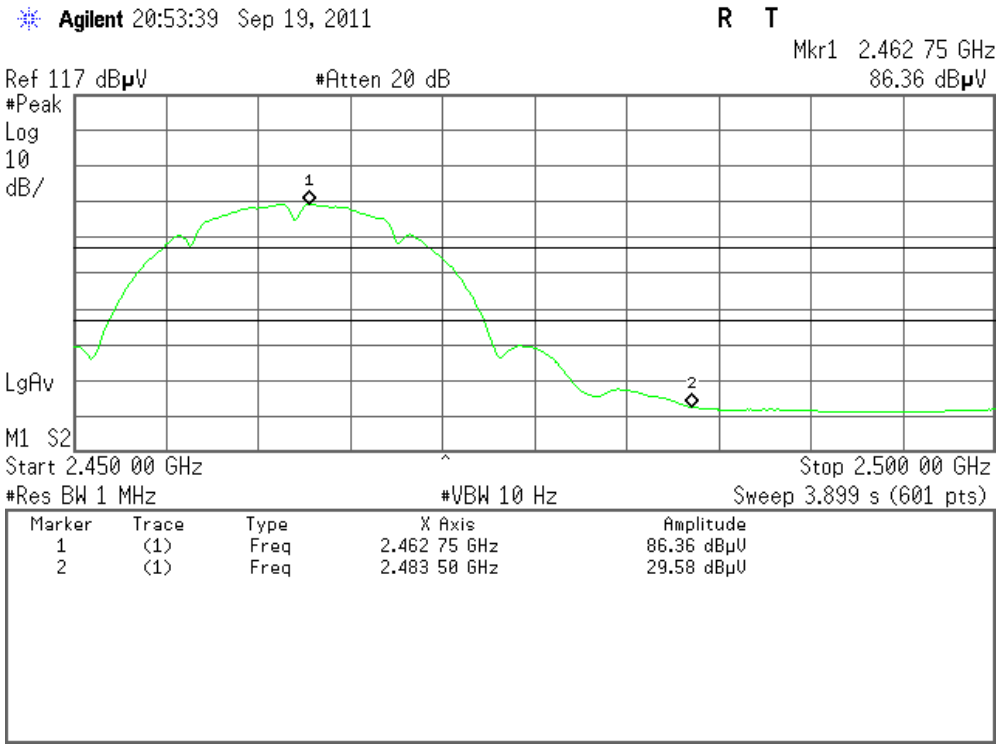
Detector mode: Average Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



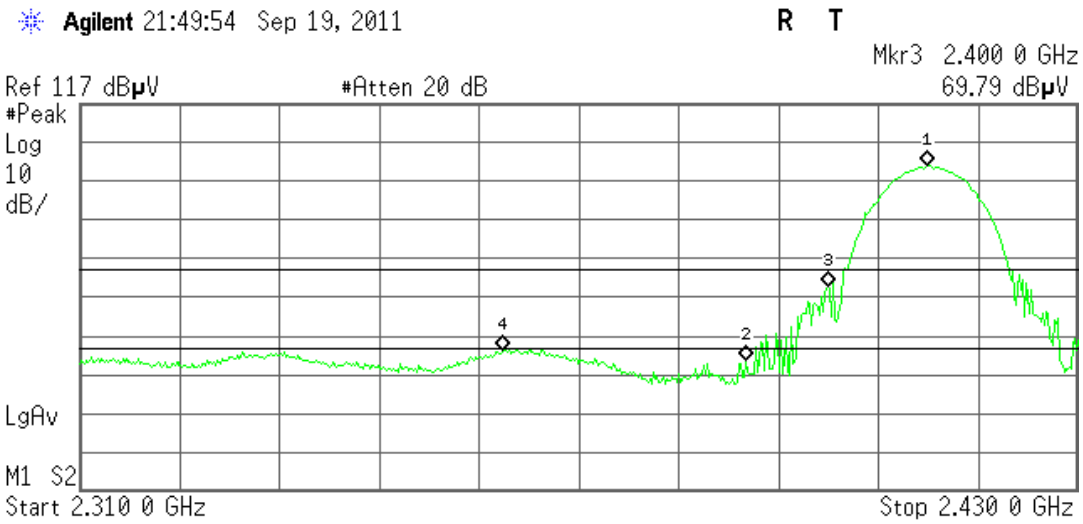
Detector mode: Average **Polarity: Horizontal**



Test Plot (IEEE 802.11b mode) Antenna 2

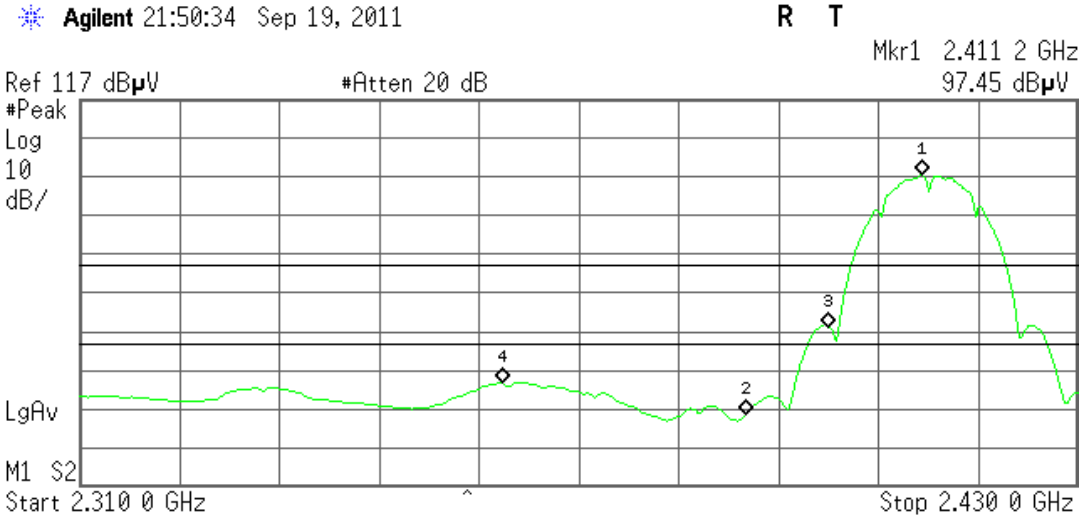
Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**



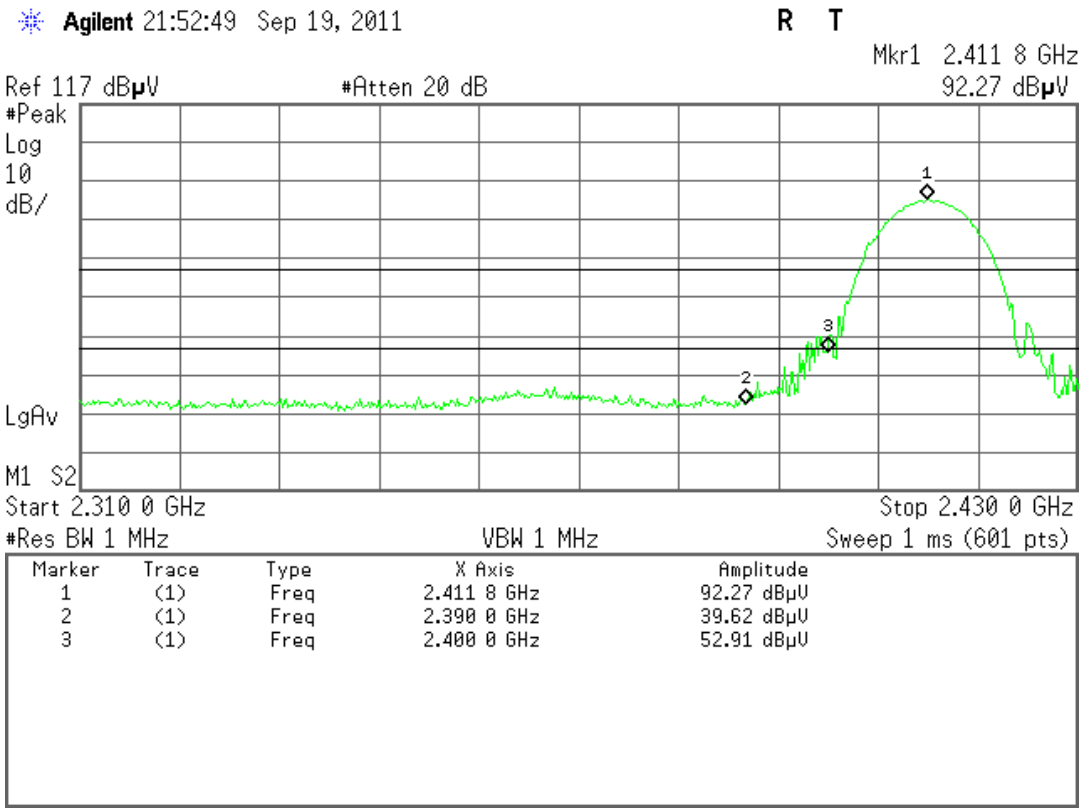
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.411 8 GHz	100.85 dBµV
2	(1)	Freq	2.390 0 GHz	50.85 dBµV
3	(1)	Freq	2.400 0 GHz	69.79 dBµV
4	(1)	Freq	2.360 8 GHz	53.50 dBµV

Detector mode: Average **Polarity: Vertical**



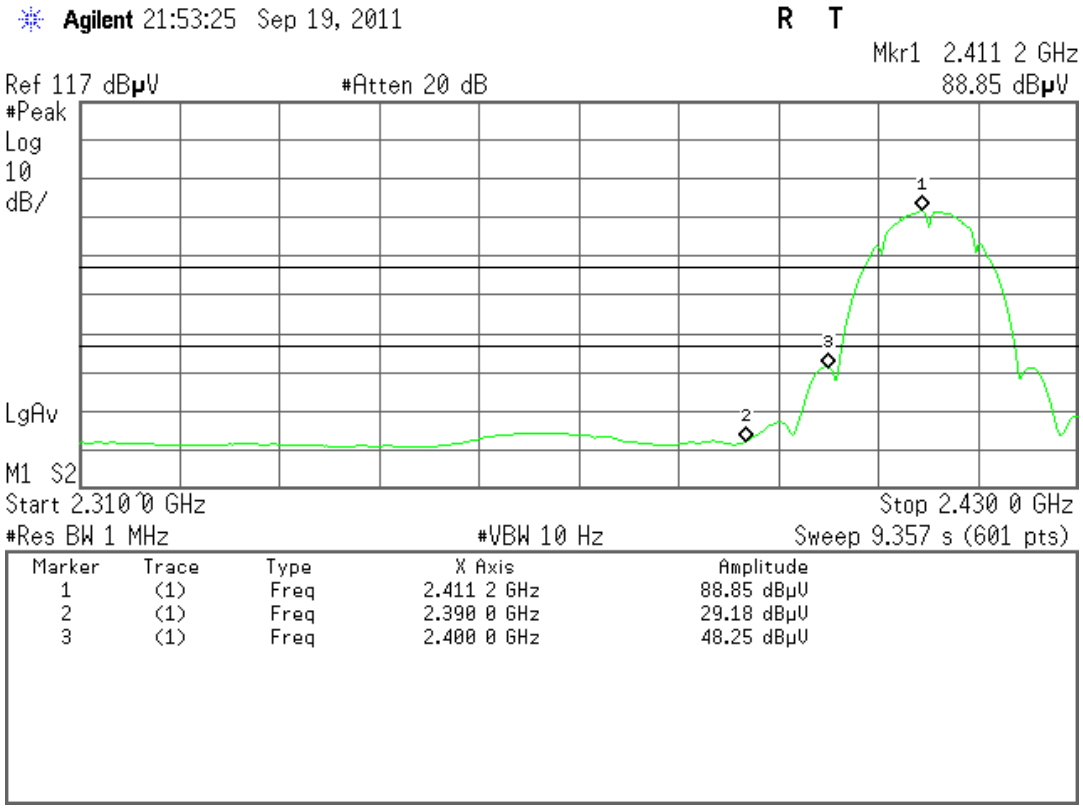
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.411 2 GHz	97.45 dBµV
2	(1)	Freq	2.390 0 GHz	35.64 dBµV
3	(1)	Freq	2.400 0 GHz	58.21 dBµV
4	(1)	Freq	2.360 8 GHz	43.74 dBµV

Detector mode: Peak **Polarity: Horizontal**



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.411 8 GHz	92.27 dBµV
2	(1)	Freq	2.390 0 GHz	39.62 dBµV
3	(1)	Freq	2.400 0 GHz	52.91 dBµV

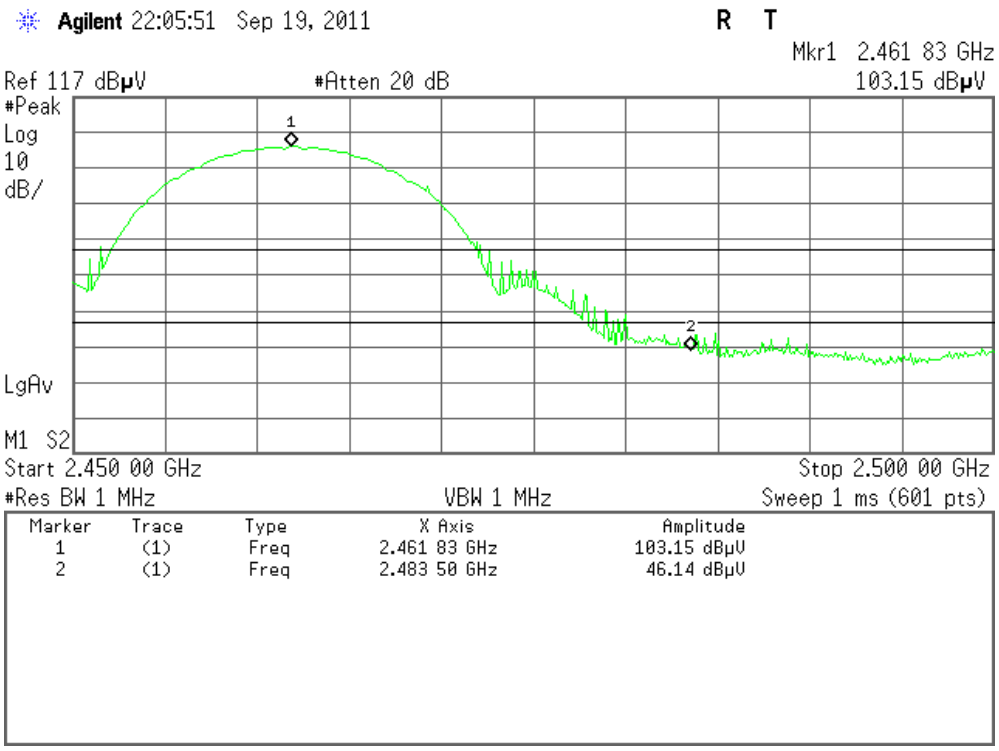
Detector mode: Average **Polarity: Horizontal**



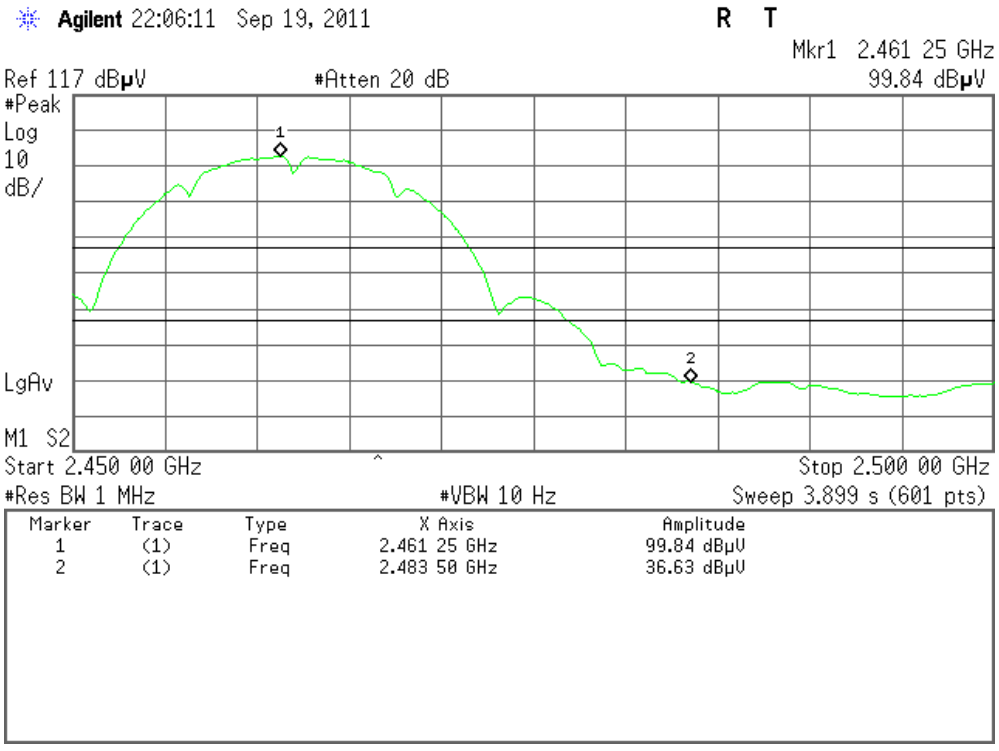
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.411 2 GHz	88.85 dBµV
2	(1)	Freq	2.390 0 GHz	29.18 dBµV
3	(1)	Freq	2.400 0 GHz	48.25 dBµV

Band Edges (CH High)

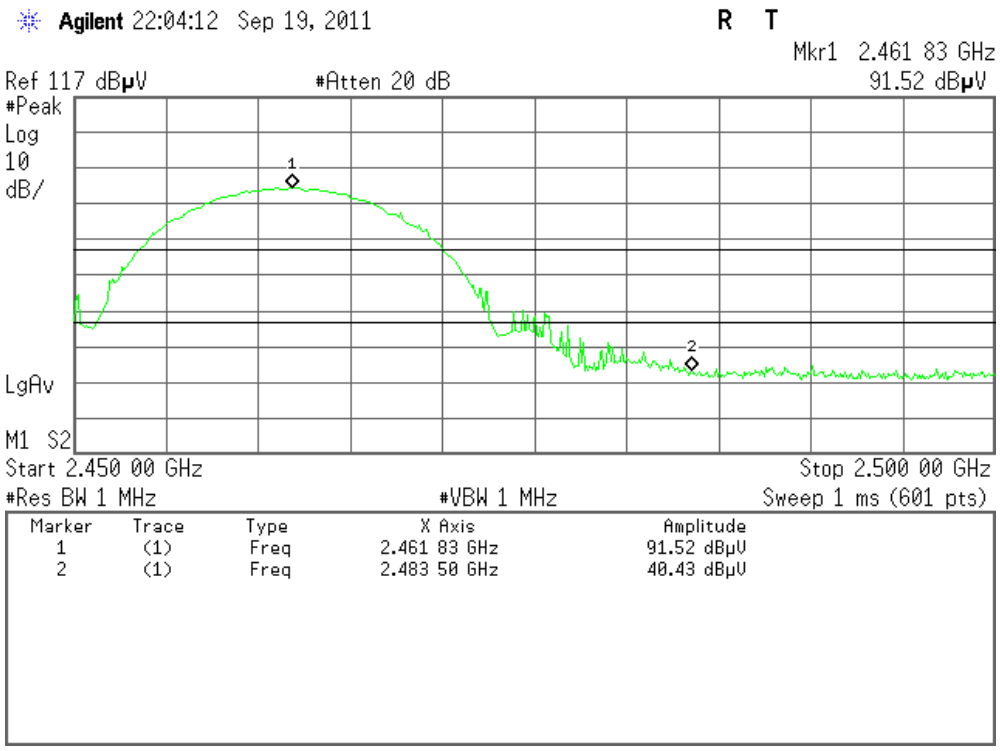
Detector mode: Peak — Polarity: Vertical



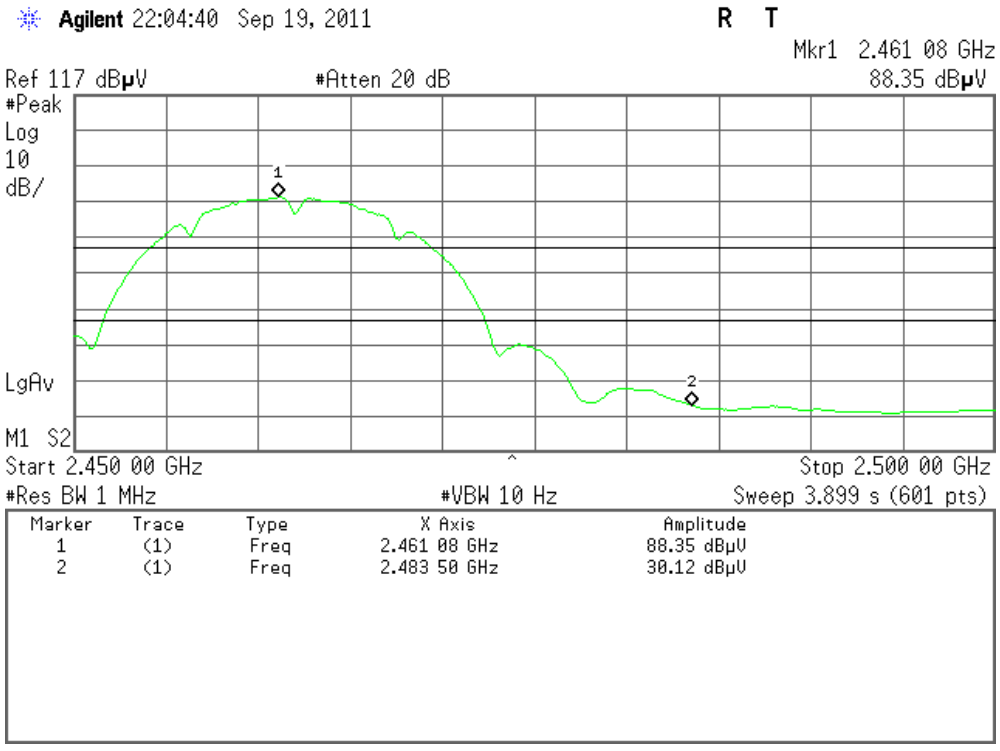
Detector mode: Average — Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



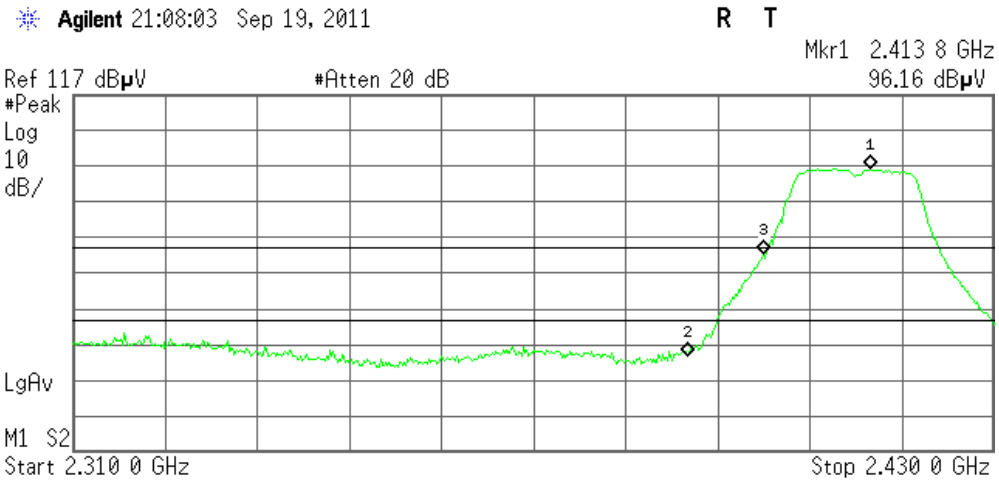
Detector mode: Average **Polarity: Horizontal**



(IEEE 802.11g mode) (Antenna 1)

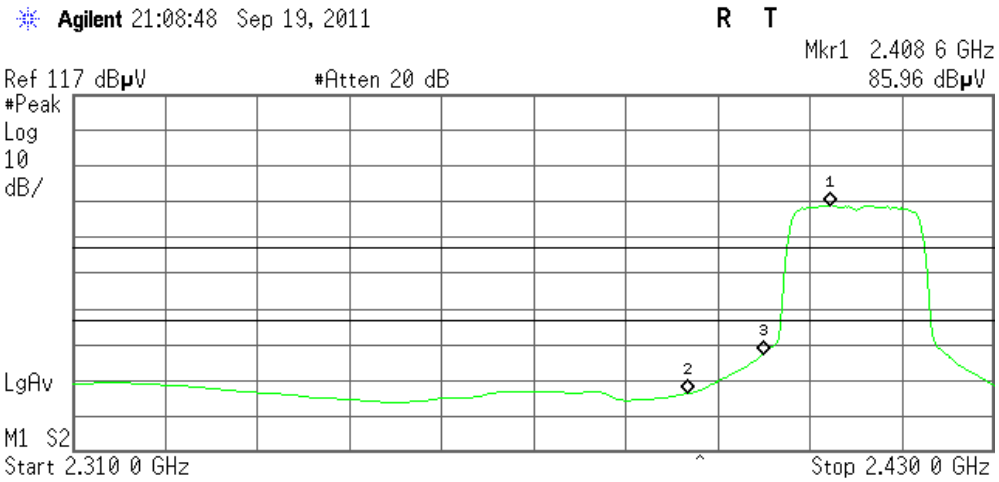
Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**



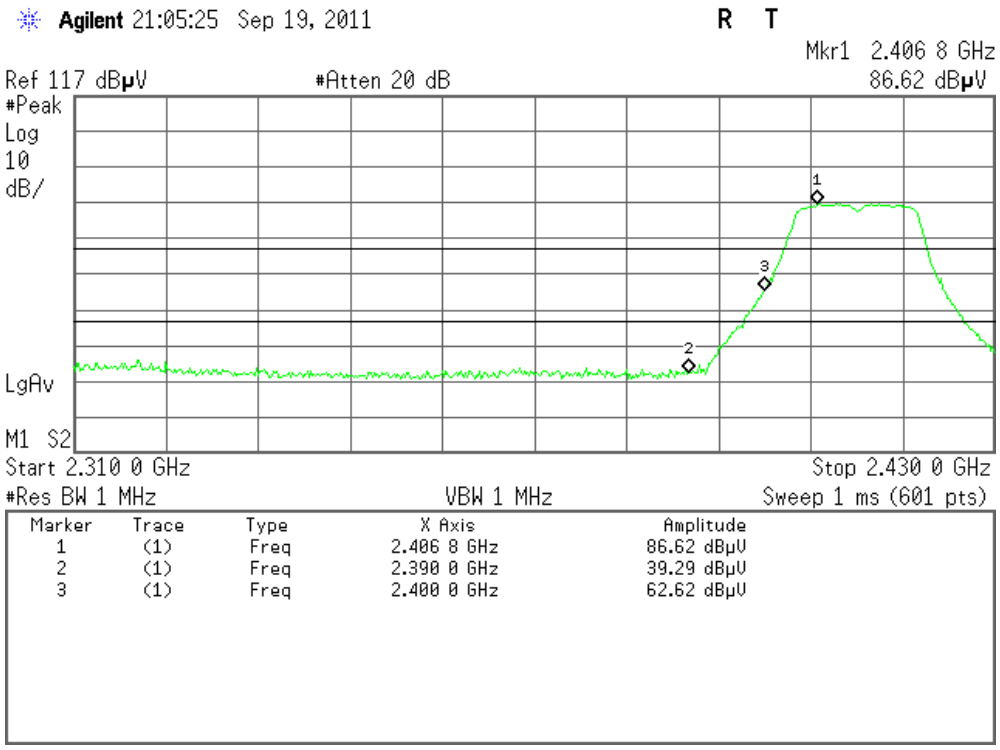
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.413 8 GHz	96.16 dBµV
2	(1)	Freq	2.390 0 GHz	43.95 dBµV
3	(1)	Freq	2.400 0 GHz	72.43 dBµV

Detector mode: Average **Polarity: Vertical**

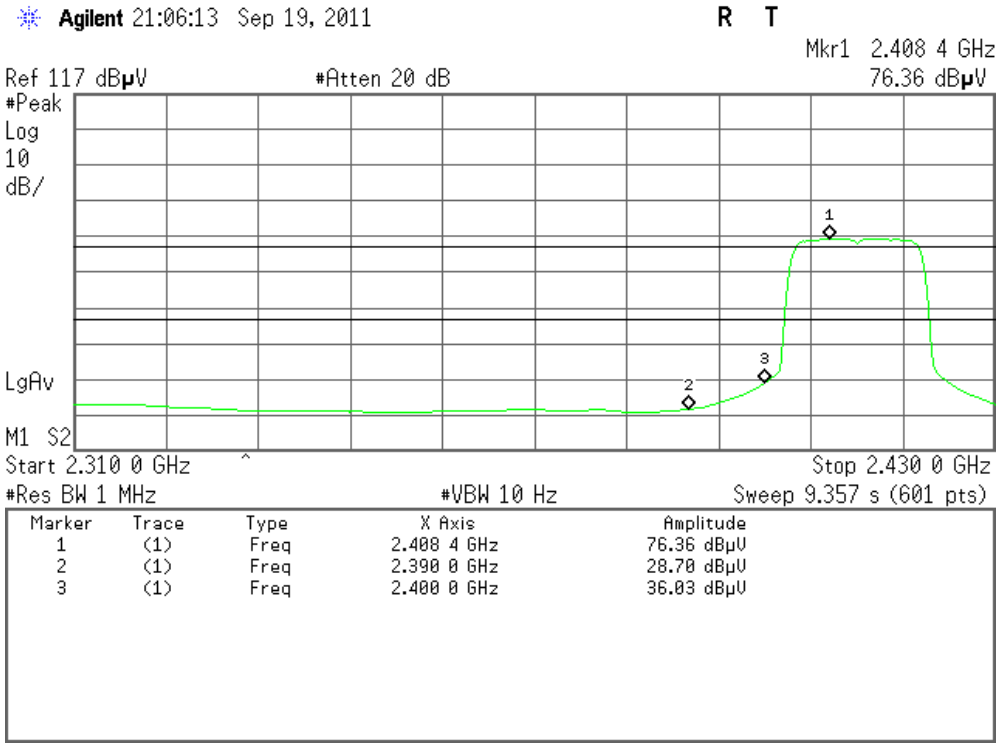


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.408 6 GHz	85.96 dBµV
2	(1)	Freq	2.390 0 GHz	33.31 dBµV
3	(1)	Freq	2.400 0 GHz	44.40 dBµV

Detector mode: Peak **Polarity: Horizontal**

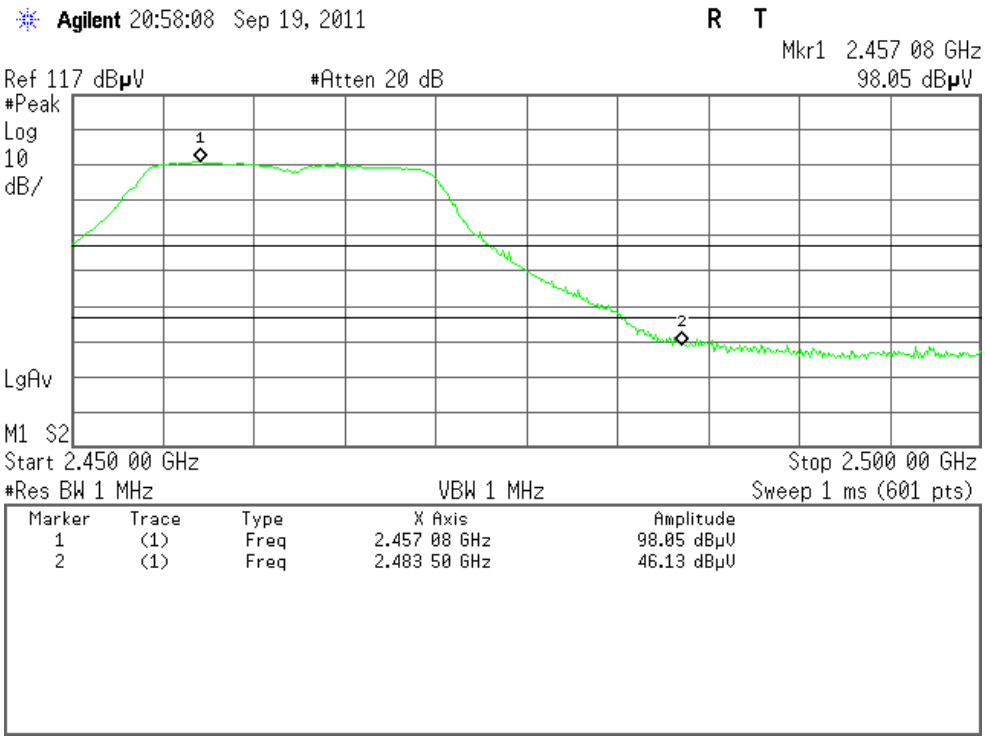


Detector mode: Average **Polarity: Horizontal**

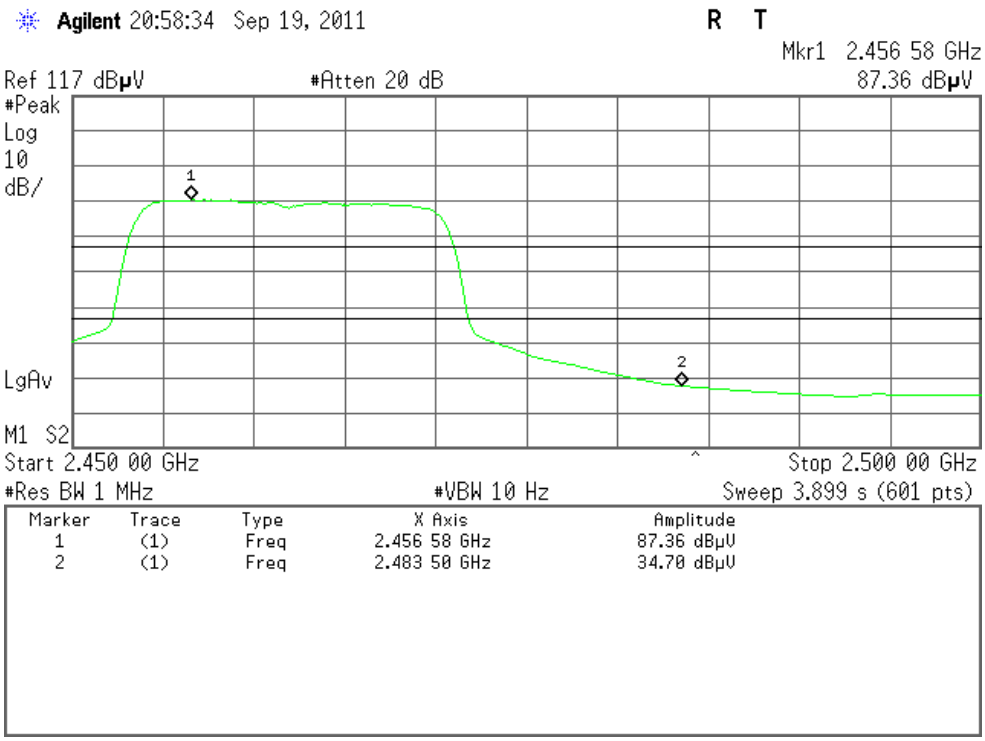


Band Edges (CH High)

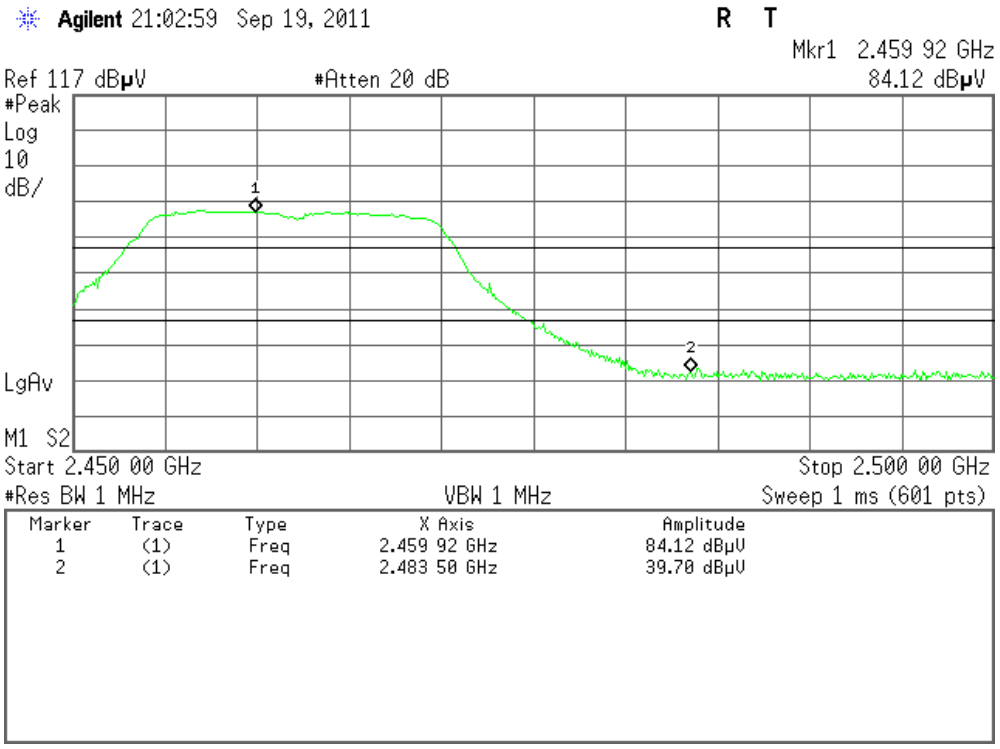
Detector mode: Peak — Polarity: Vertical



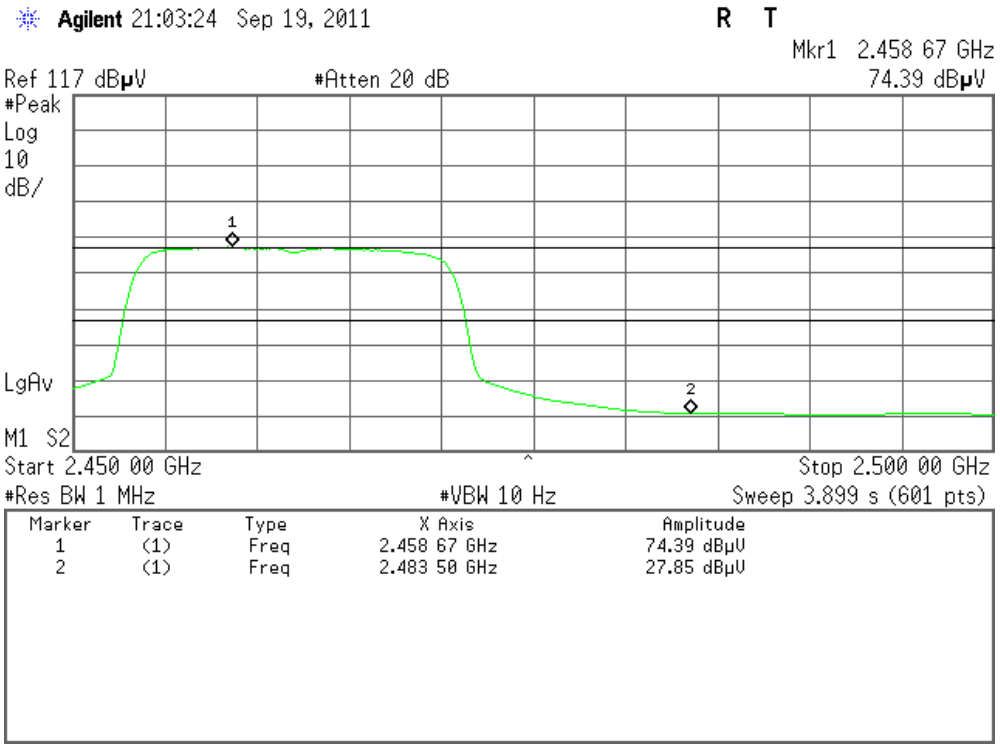
Detector mode: Average — Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



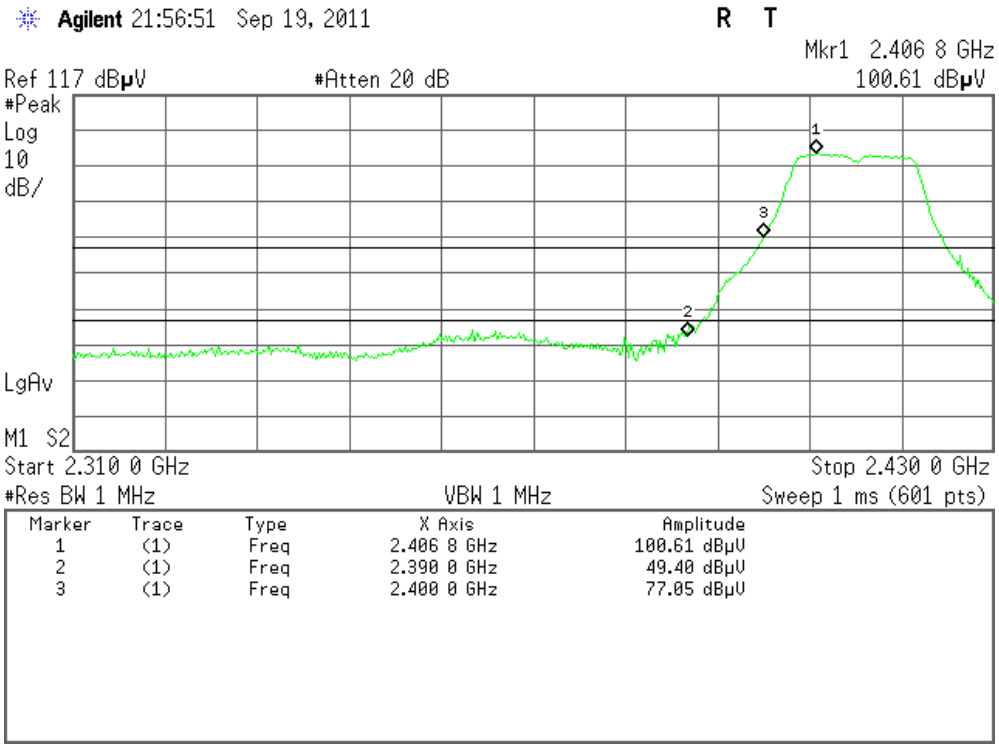
Detector mode: Average **Polarity: Horizontal**



(IEEE 802.11g mode) (Antenna 2)

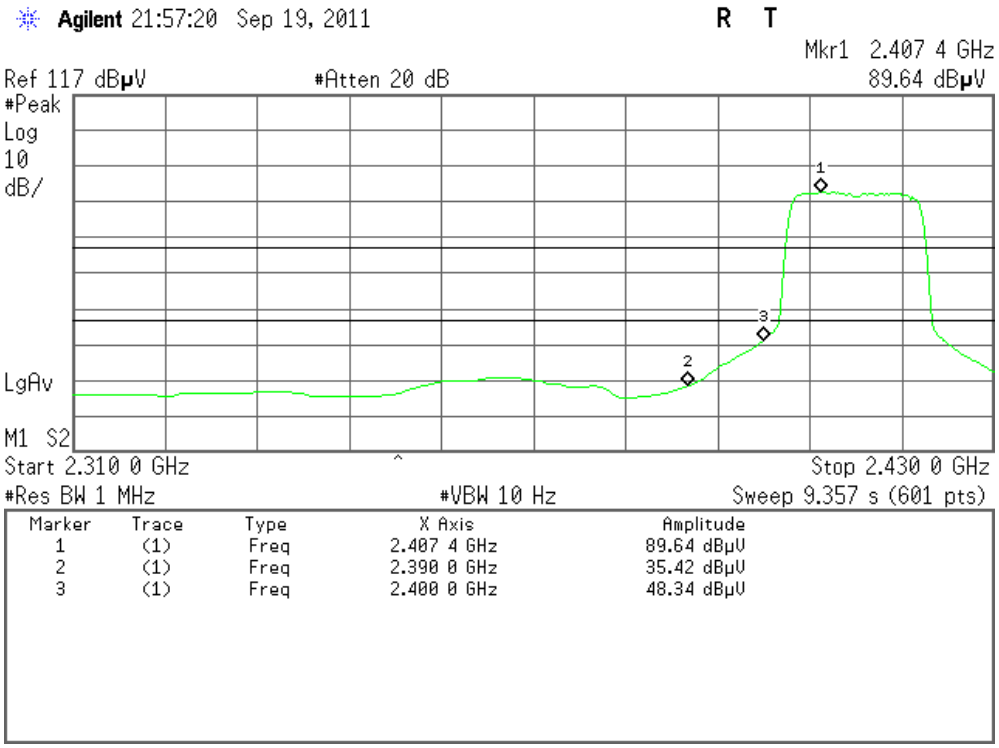
Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**



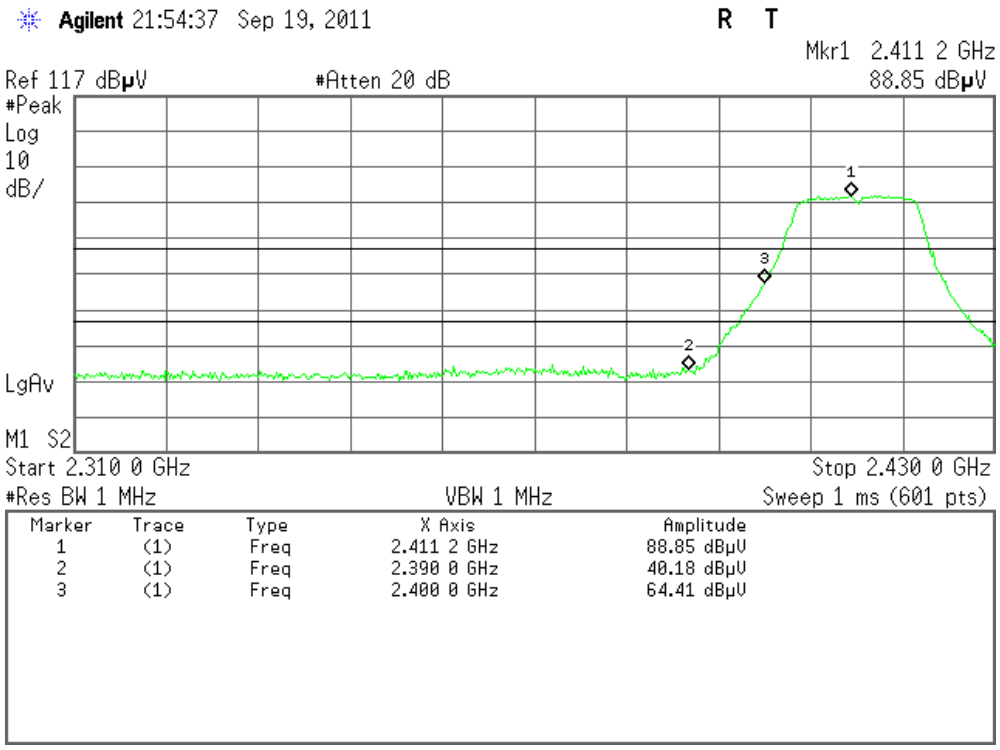
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.406 8 GHz	100.61 dBµV
2	(1)	Freq	2.390 0 GHz	49.40 dBµV
3	(1)	Freq	2.400 0 GHz	77.05 dBµV

Detector mode: Average **Polarity: Vertical**

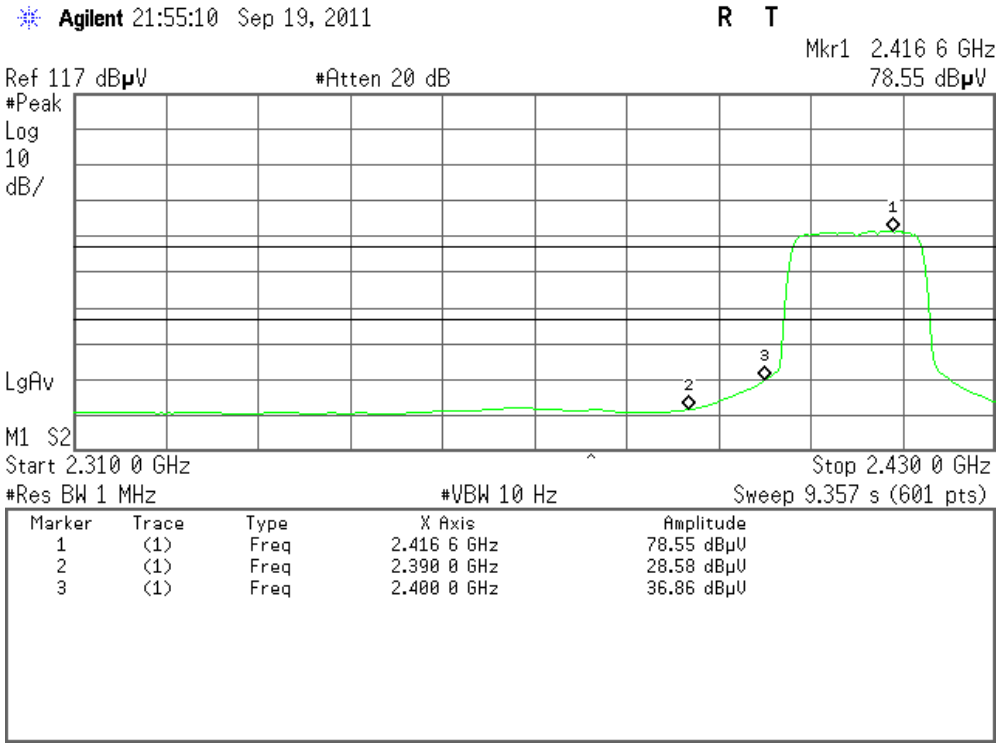


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.407 4 GHz	89.64 dBµV
2	(1)	Freq	2.390 0 GHz	35.42 dBµV
3	(1)	Freq	2.400 0 GHz	48.34 dBµV

Detector mode: Peak **Polarity: Horizontal**

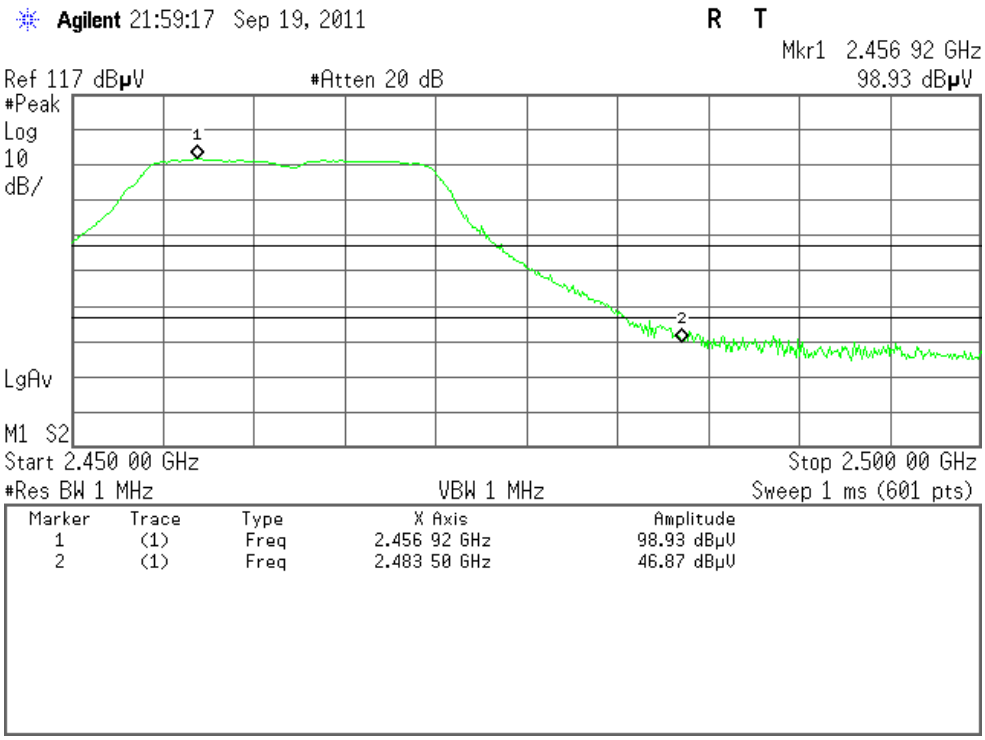


Detector mode: Average **Polarity: Horizontal**

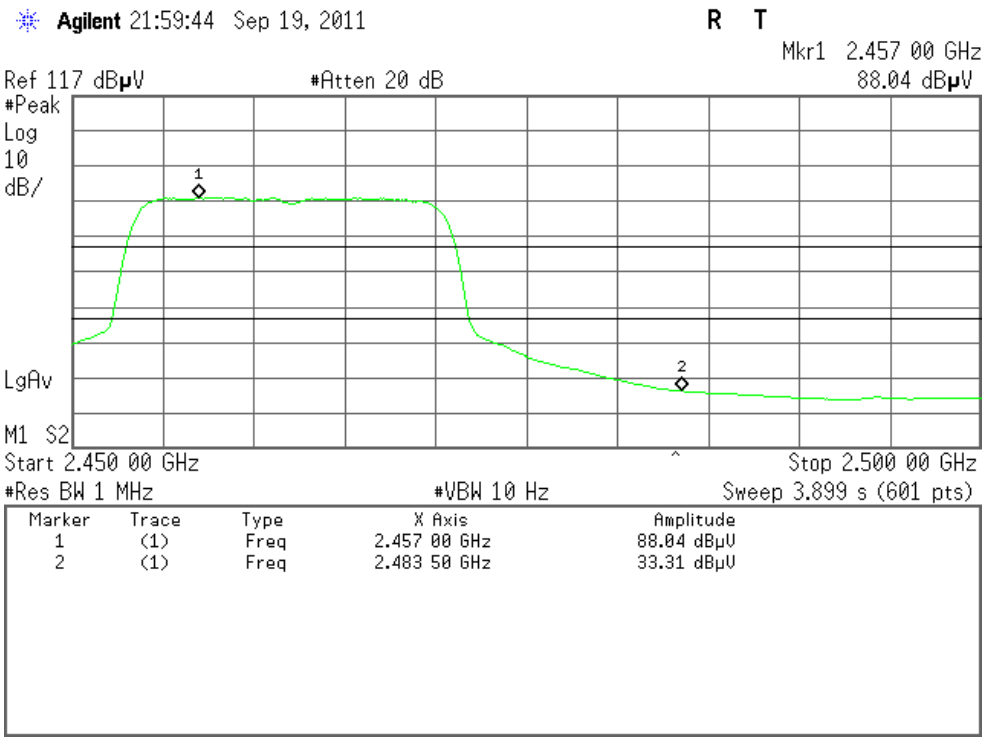


Band Edges (CH High)

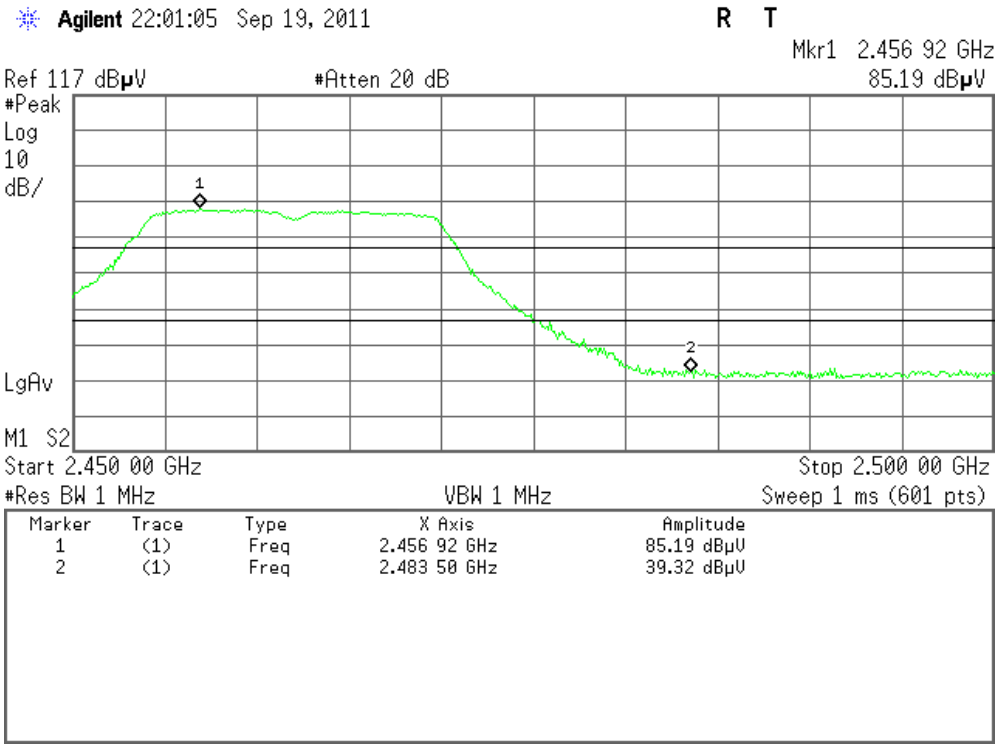
Detector mode: Peak — Polarity: Vertical



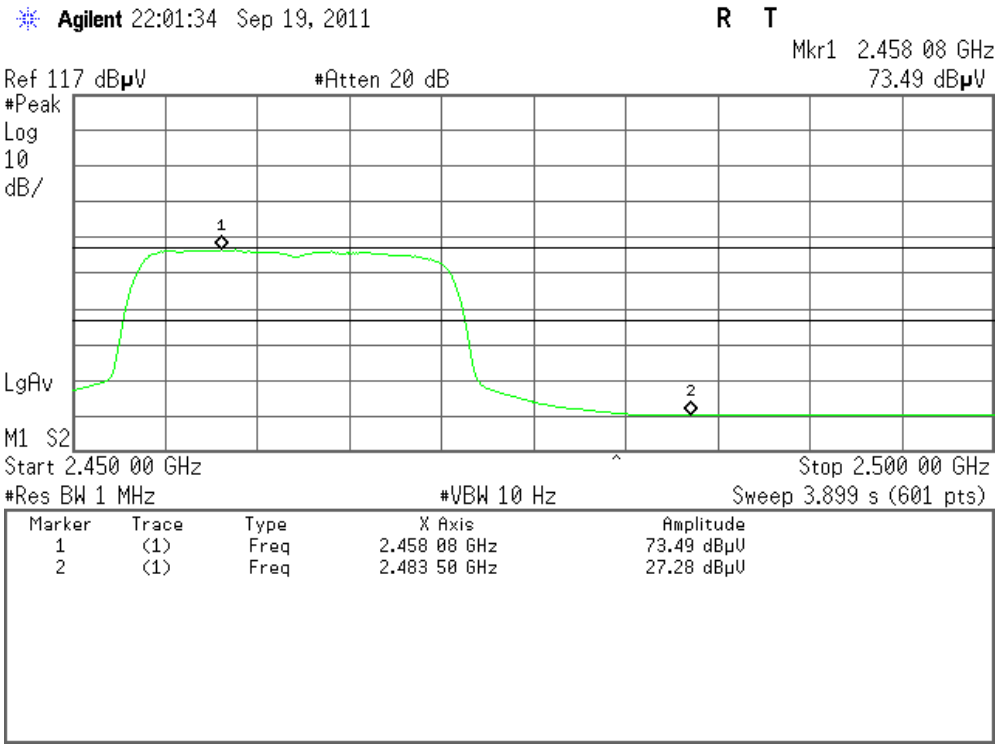
Detector mode: Average — Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



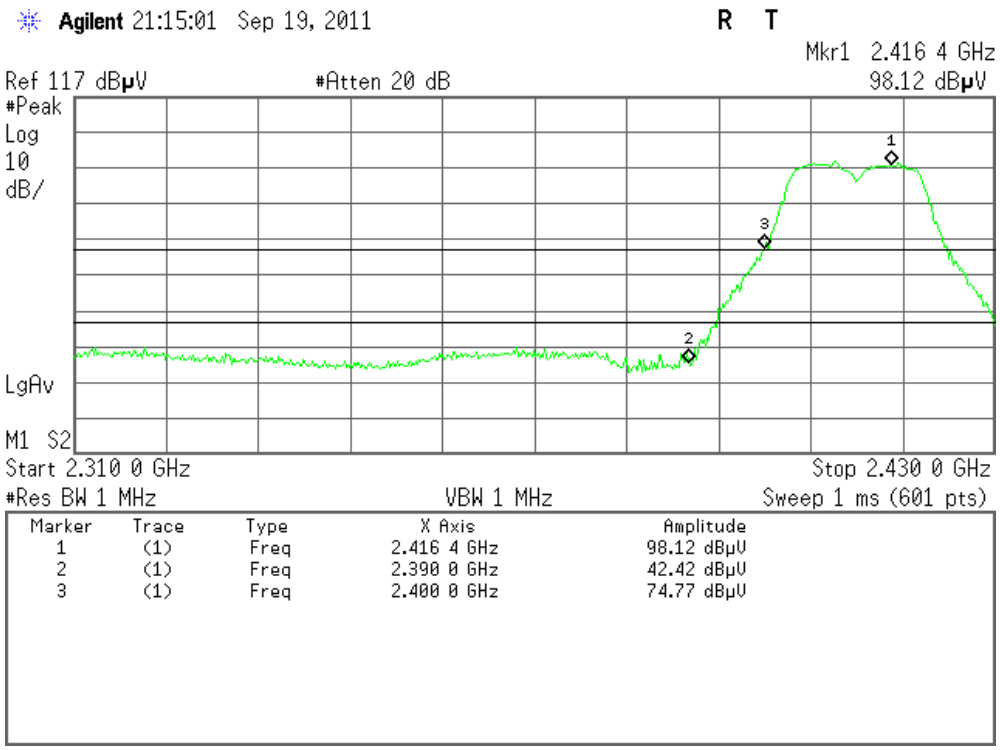
Detector mode: Average **Polarity: Horizontal**



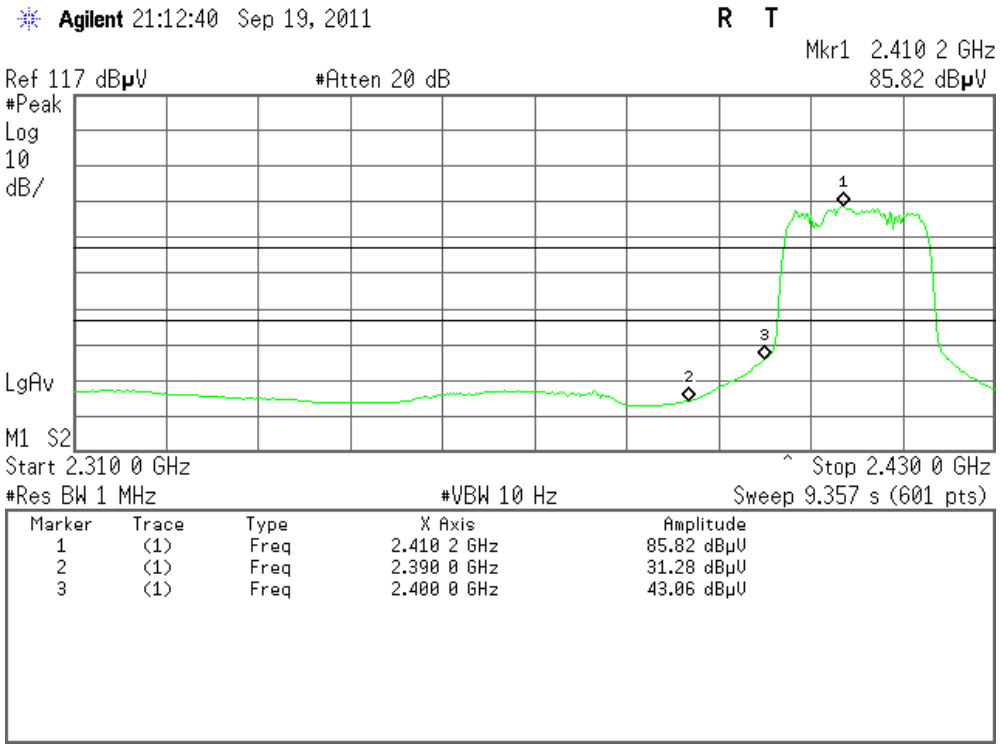
(IEEE 802.11n HT20 MHz mode) Combine with antenna 1 and antenna 2

Band Edges (CH Low)

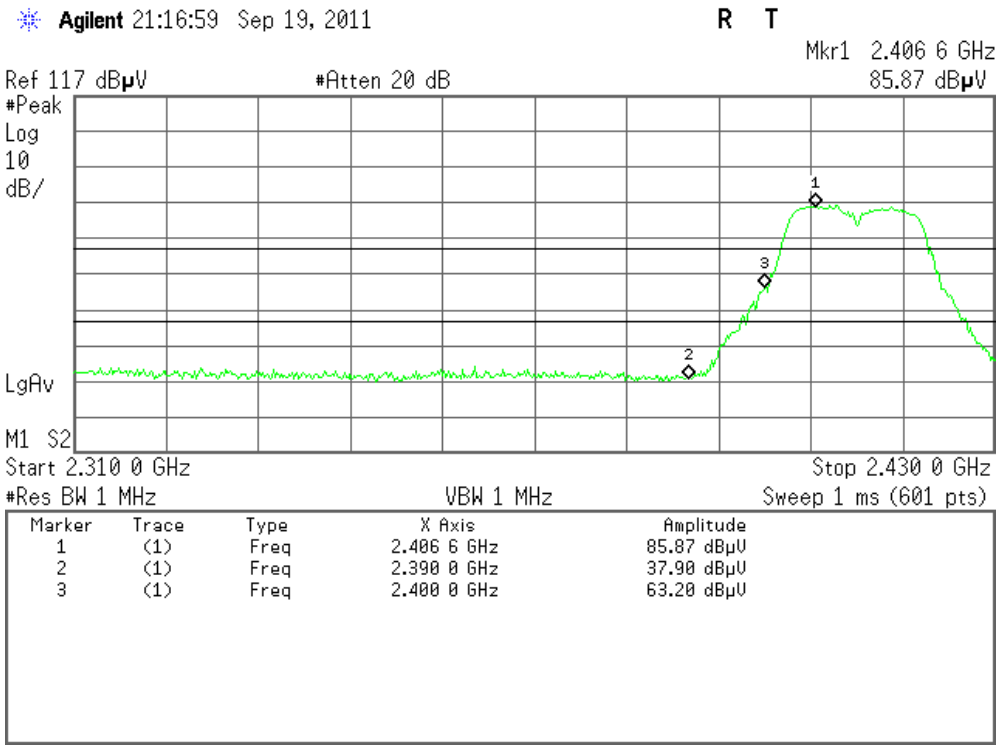
Detector mode: Peak **Polarity: Vertical**



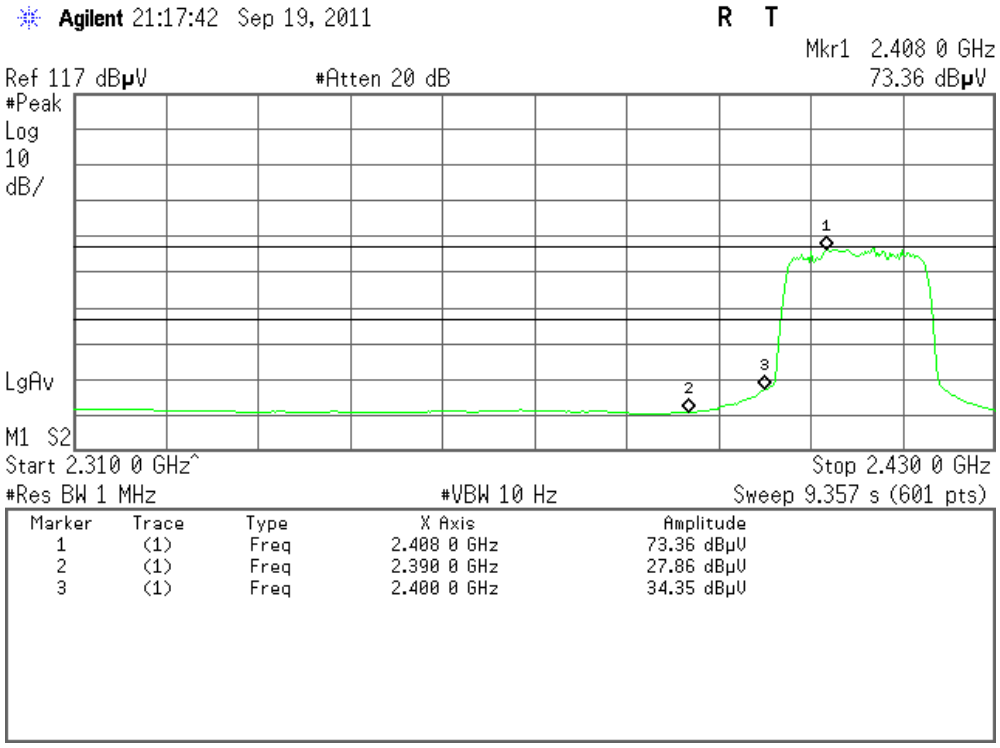
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

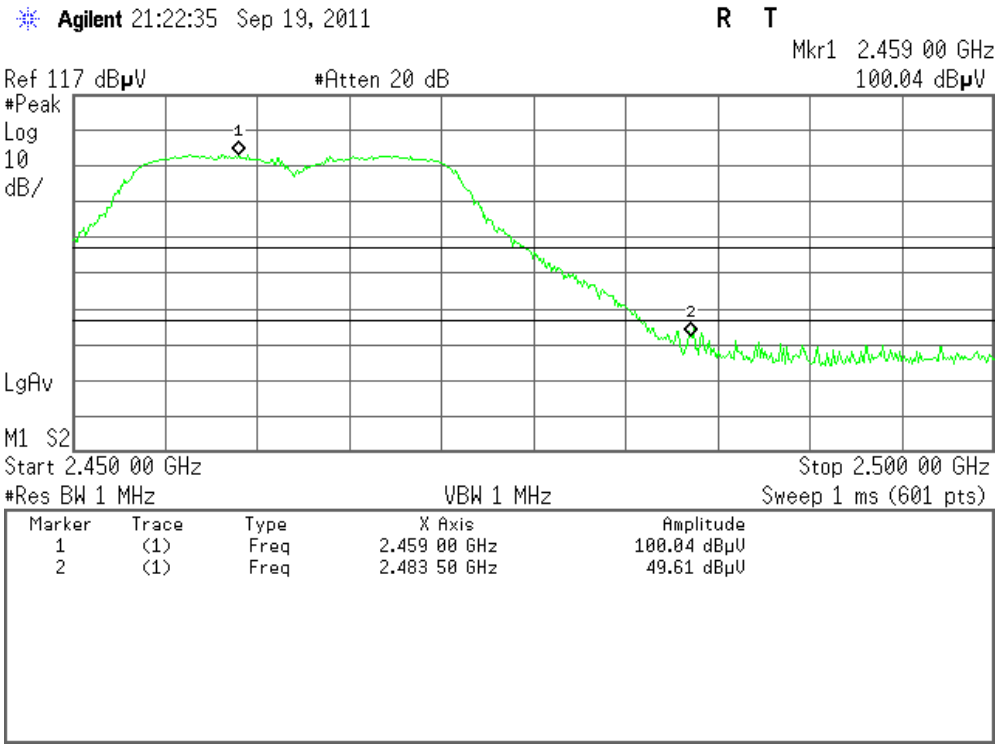


Detector mode: Average **Polarity: Horizontal**

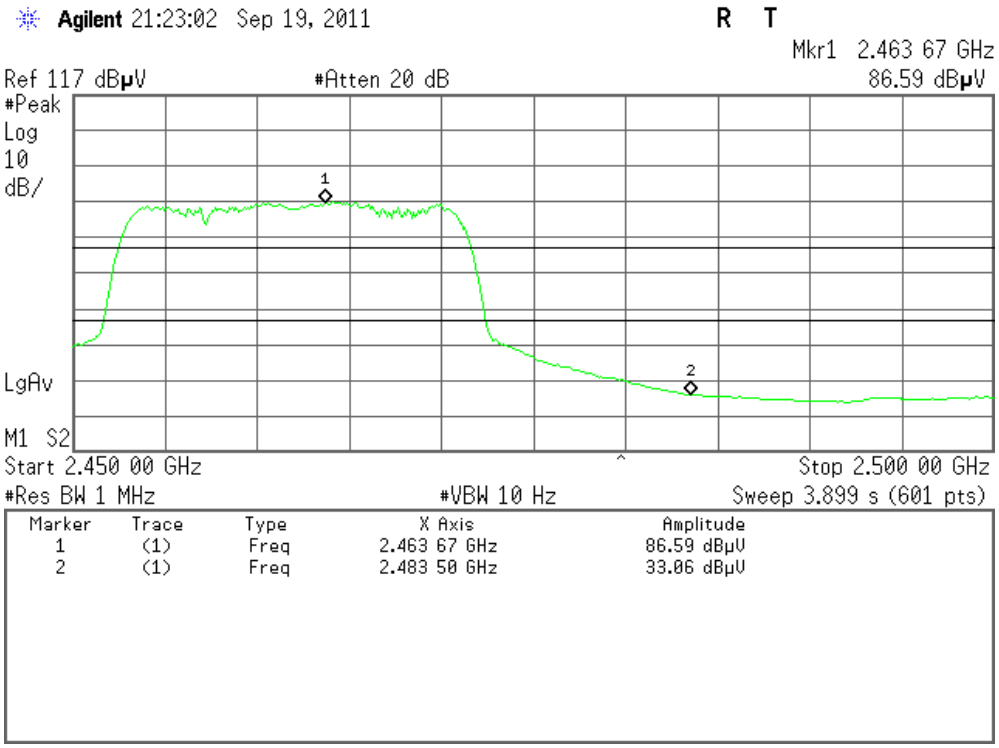


Band Edges (CH High)

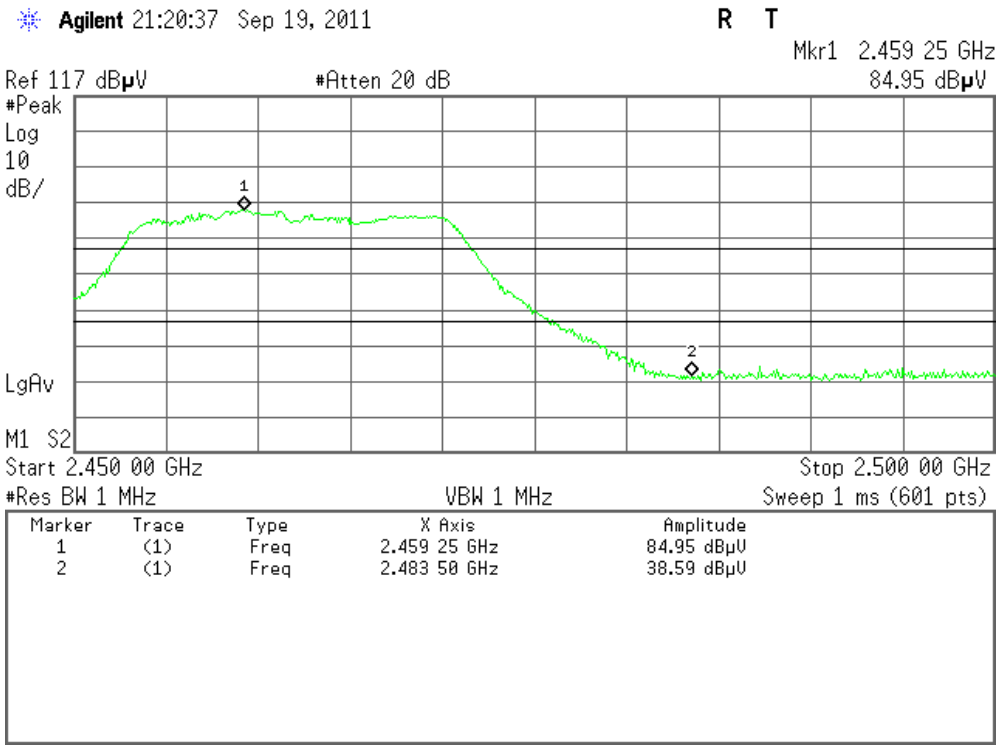
Detector mode: Peak — Polarity: Vertical



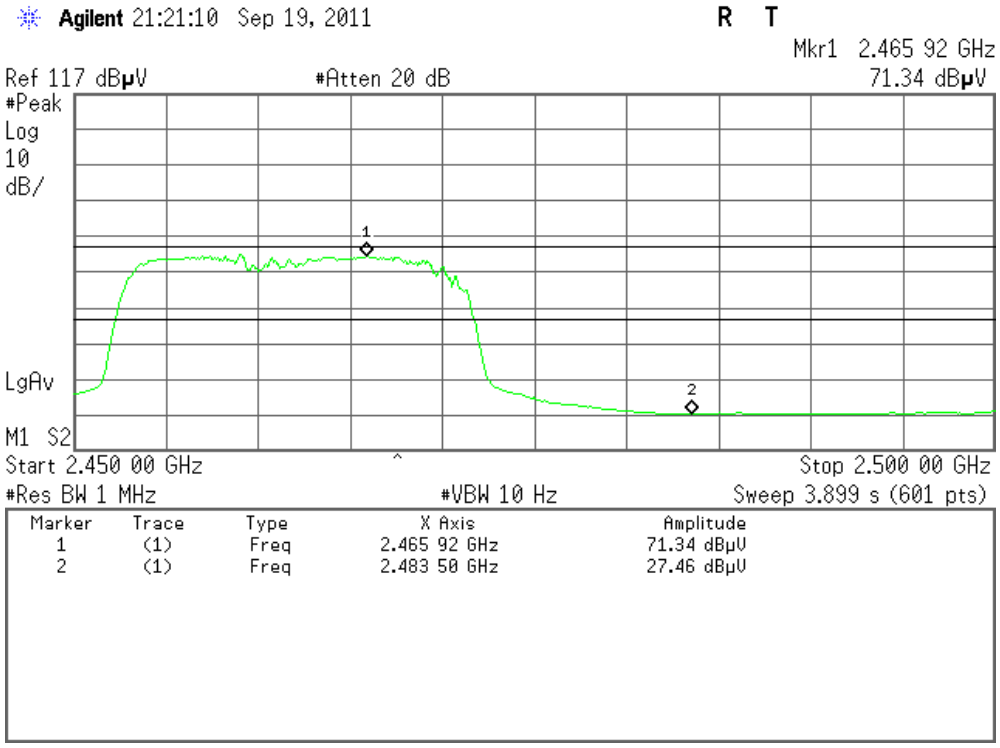
Detector mode: Average — Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



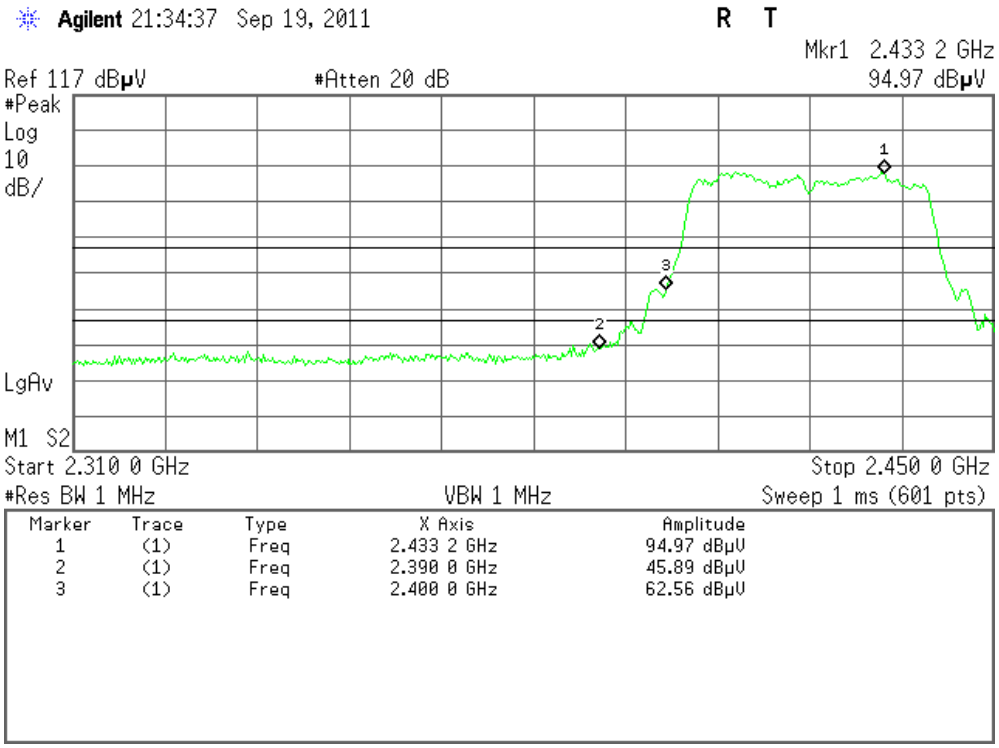
Detector mode: Average **Polarity: Horizontal**



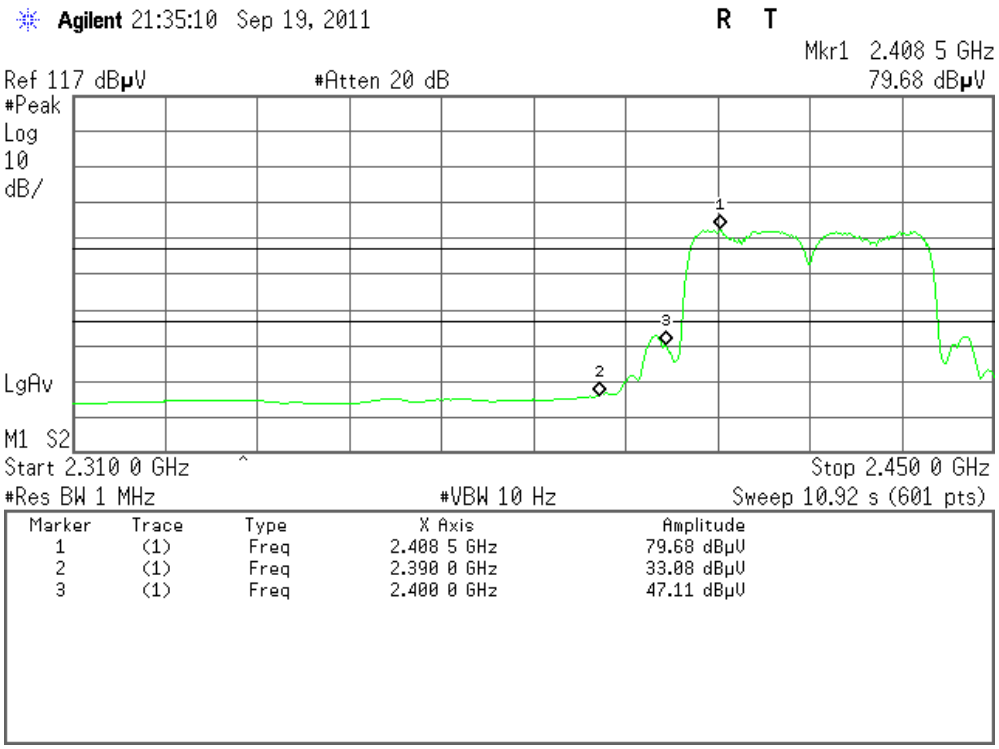
(IEEE 802.11n HT40 MHz mode) Combine with antenna 1 and antenna 2

Band Edges (CH Low)

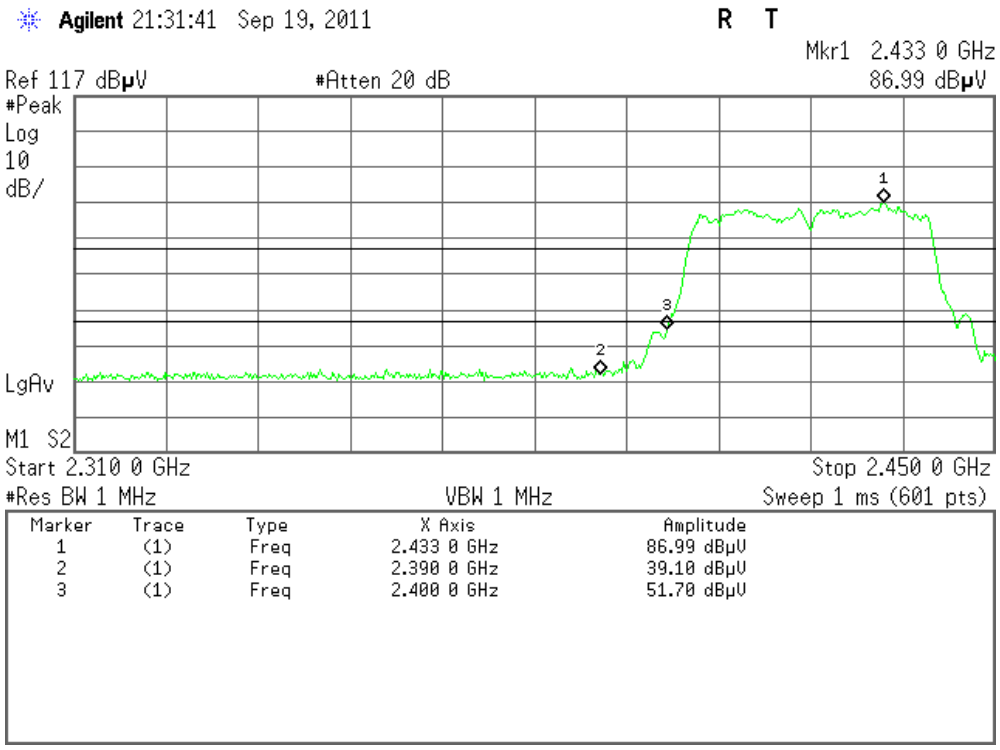
Detector mode: Peak **Polarity: Vertical**



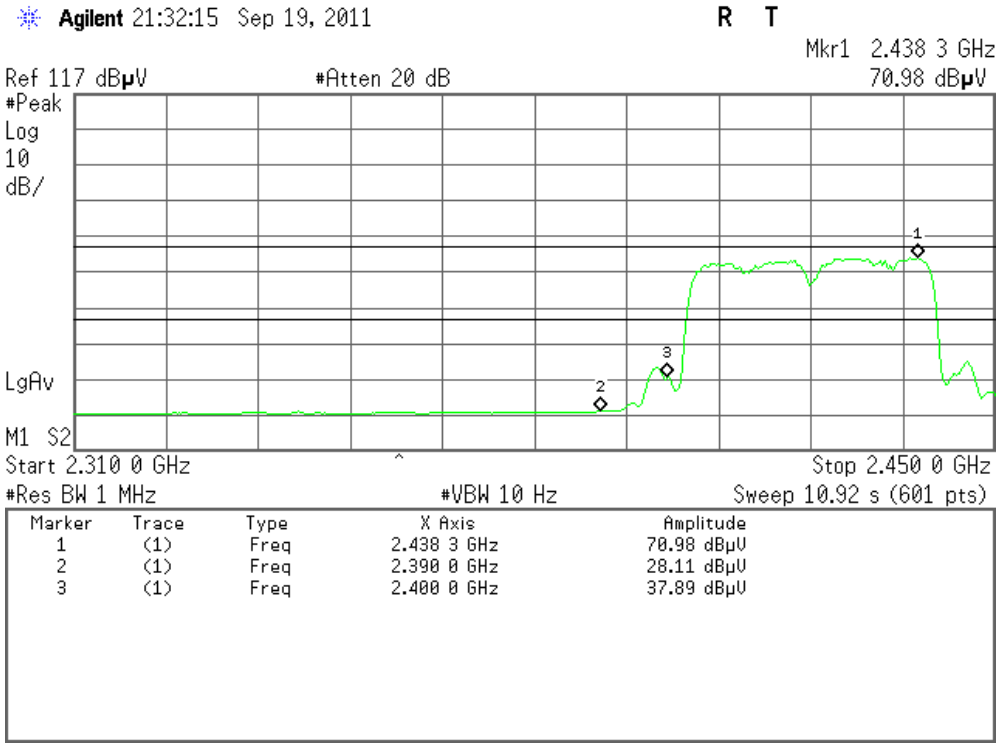
Detector mode: Average **Polarity: Vertical**



Detector mode: Peak **Polarity: Horizontal**

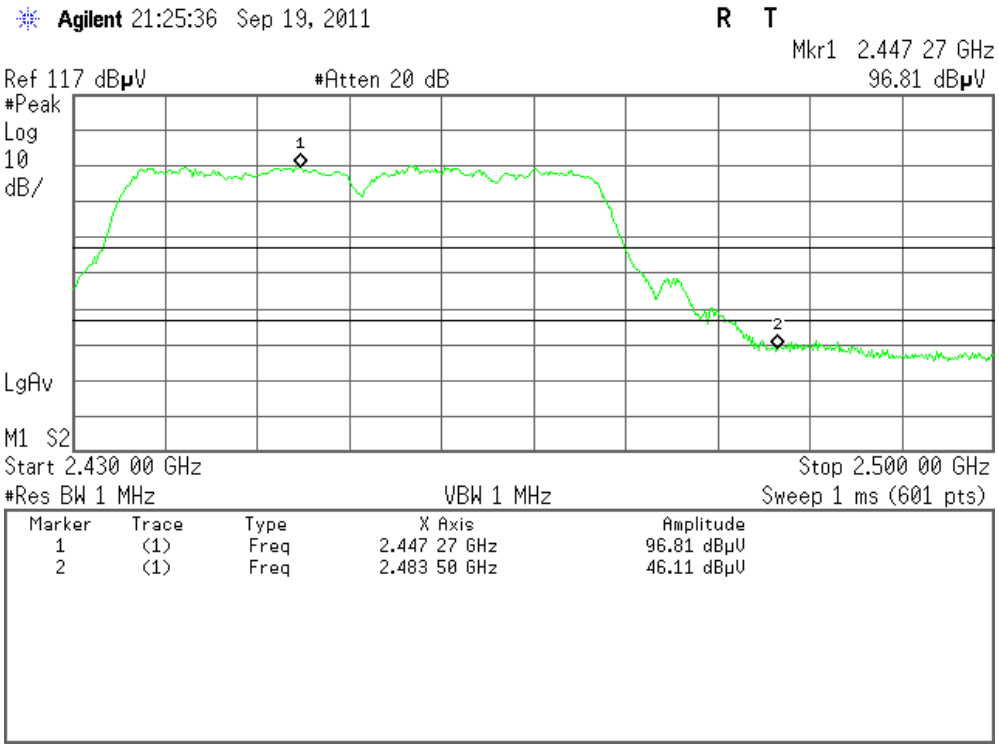


Detector mode: Average **Polarity: Horizontal**

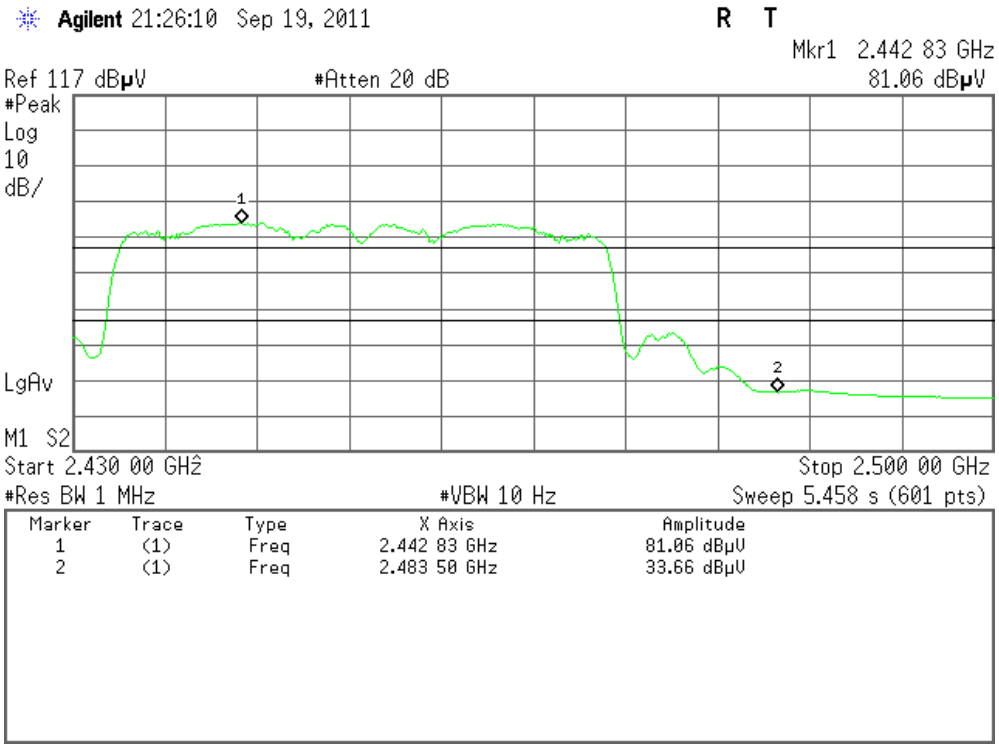


Band Edges (CH High)

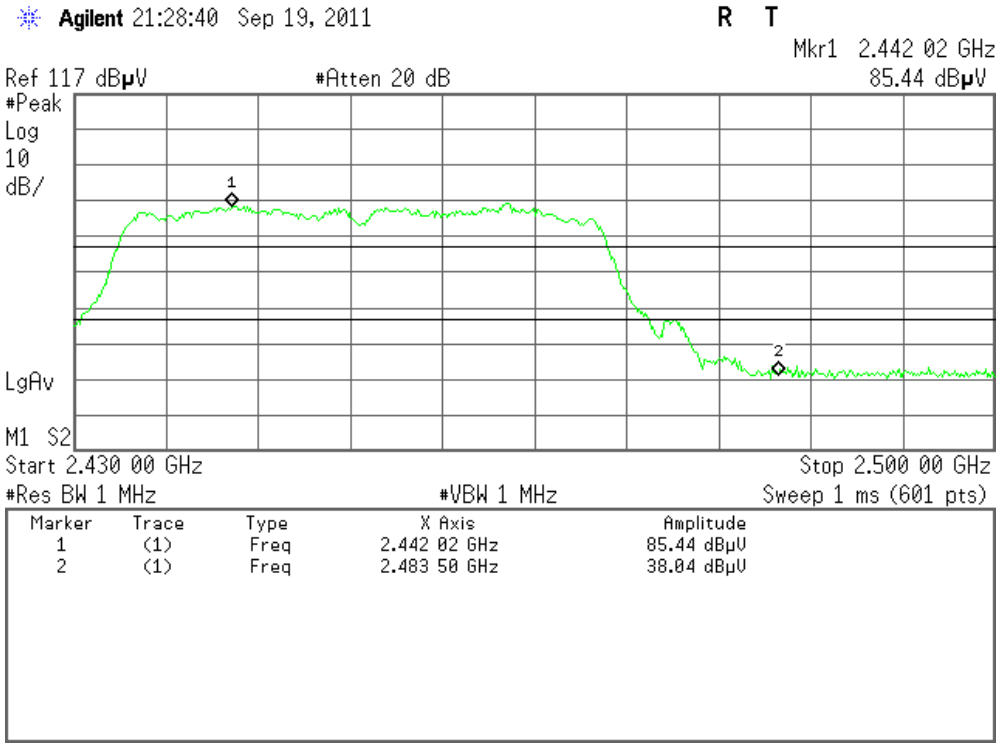
Detector mode: Peak — Polarity: Vertical



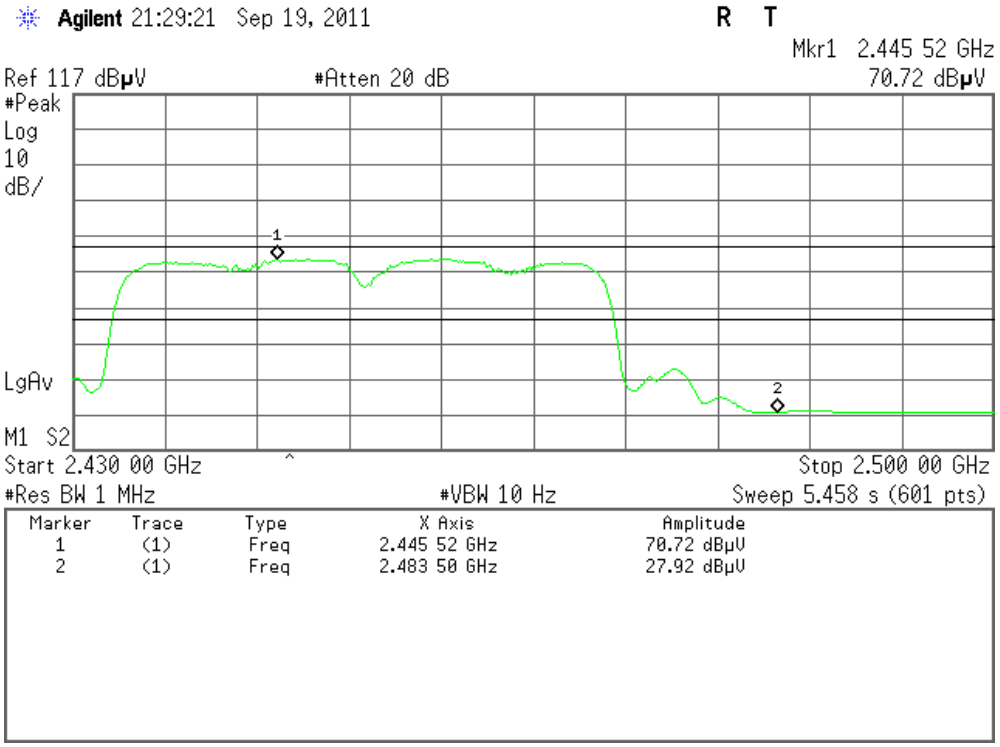
Detector mode: Average — Polarity: Vertical



Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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.

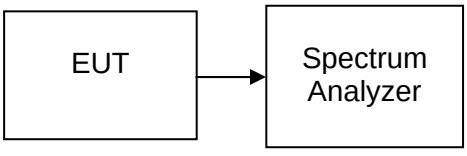
7.6.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US44300399	03/21/2011	03/21/2012

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	-11.56	8.00	PASS
Mid	2437	-3.22		PASS
High	2462	-9.53		PASS

Test mode: IEEE 802.11b (Antenna 2)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-11.07	8.00	PASS
Mid	2437	-7..69		PASS
High	2462	-7.39		PASS

Test mode: IEEE 802.11g (Antenna 1)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-19.85	8.00	PASS
Mid	2437	-17.33		PASS
High	2462	-18.96		PASS

Test mode: IEEE 802.11g (Antenna 2)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-19.56	8.00	PASS
Mid	2437	-17.79		PASS
High	2462	-19.83		PASS

Test mode: IEEE 802.11n HT20 MHz (Combine with antenna 1 and antenna 2)

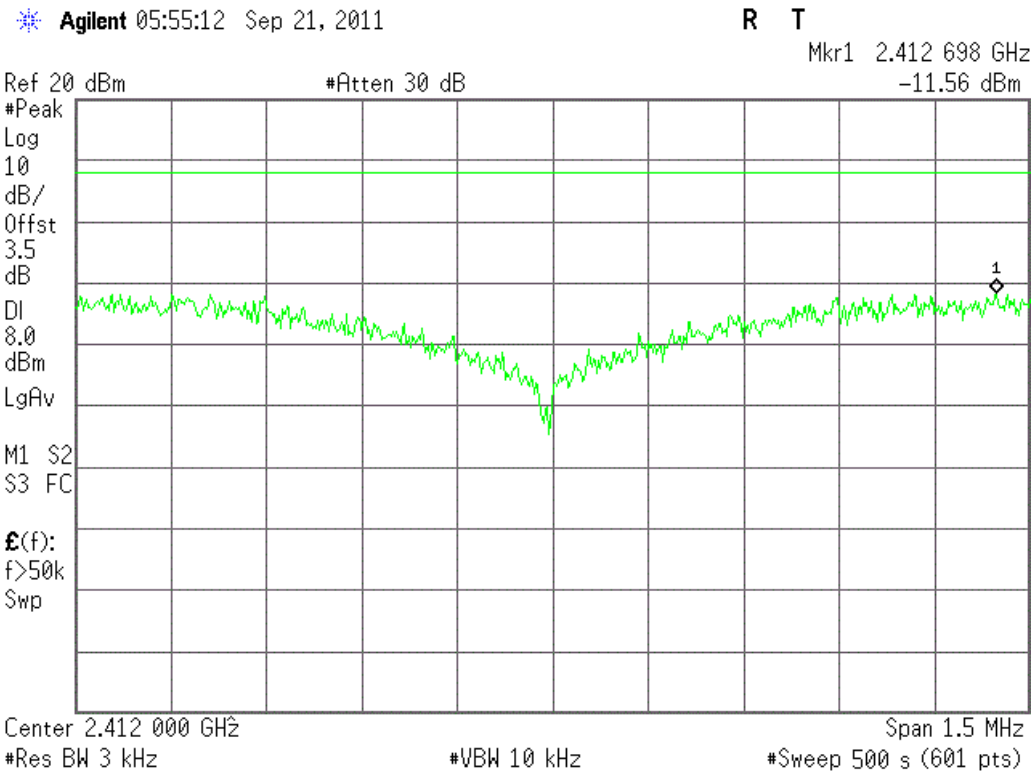
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-17.30	8.00	PASS
Mid	2437	-16.10		PASS
High	2462	-16.95		PASS

Test mode: IEEE 802.11n HT40 MHz (Combine with antenna 1 and antenna 2)

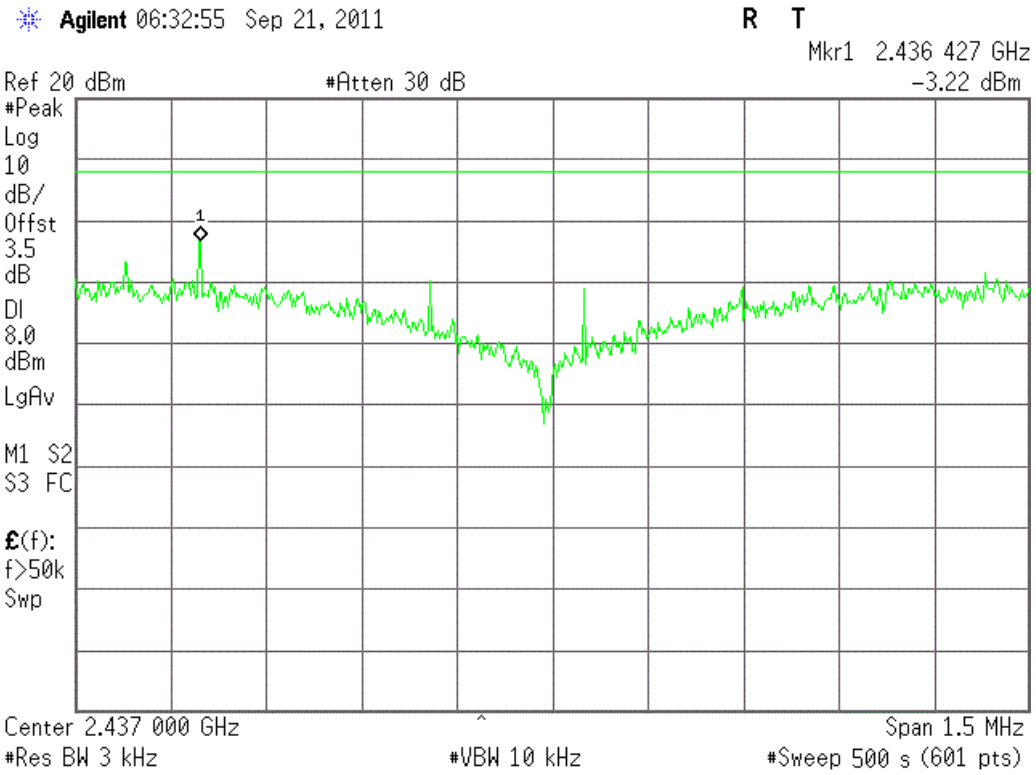
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2422	-22.77	8.00	PASS
Mid	2437	-21.12		PASS
High	2452	-22.61		PASS

Test Plot (IEEE 802.11b mode) Antenna 1

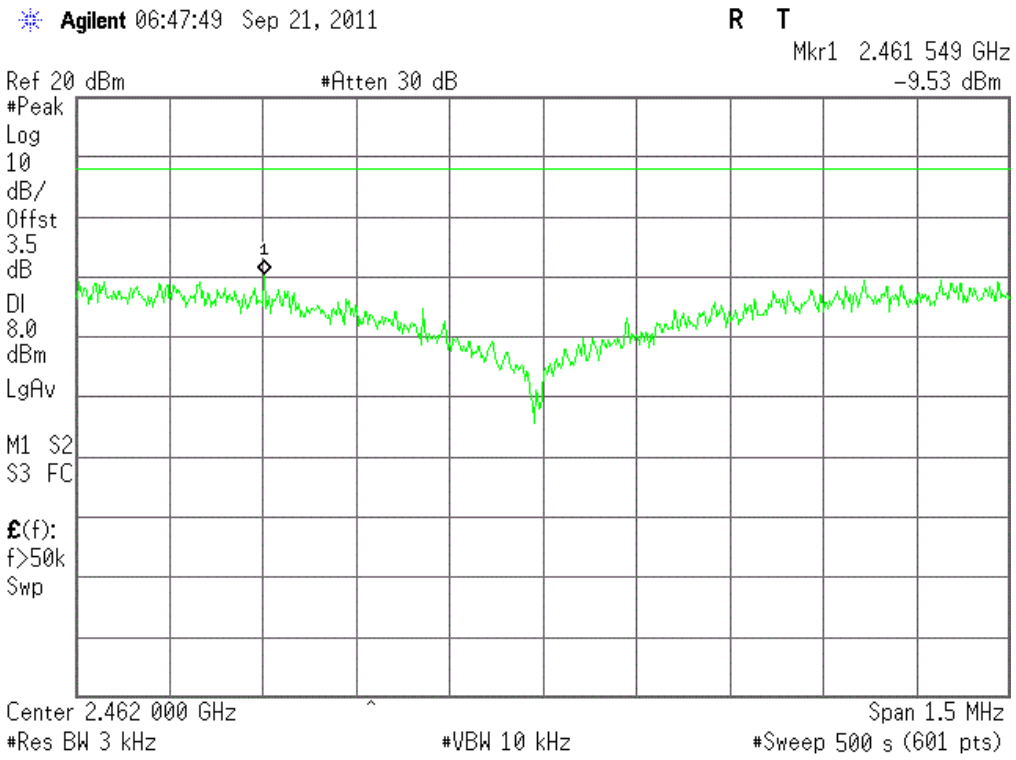
PPSD (CH Low)



PPSD (CH Mid)

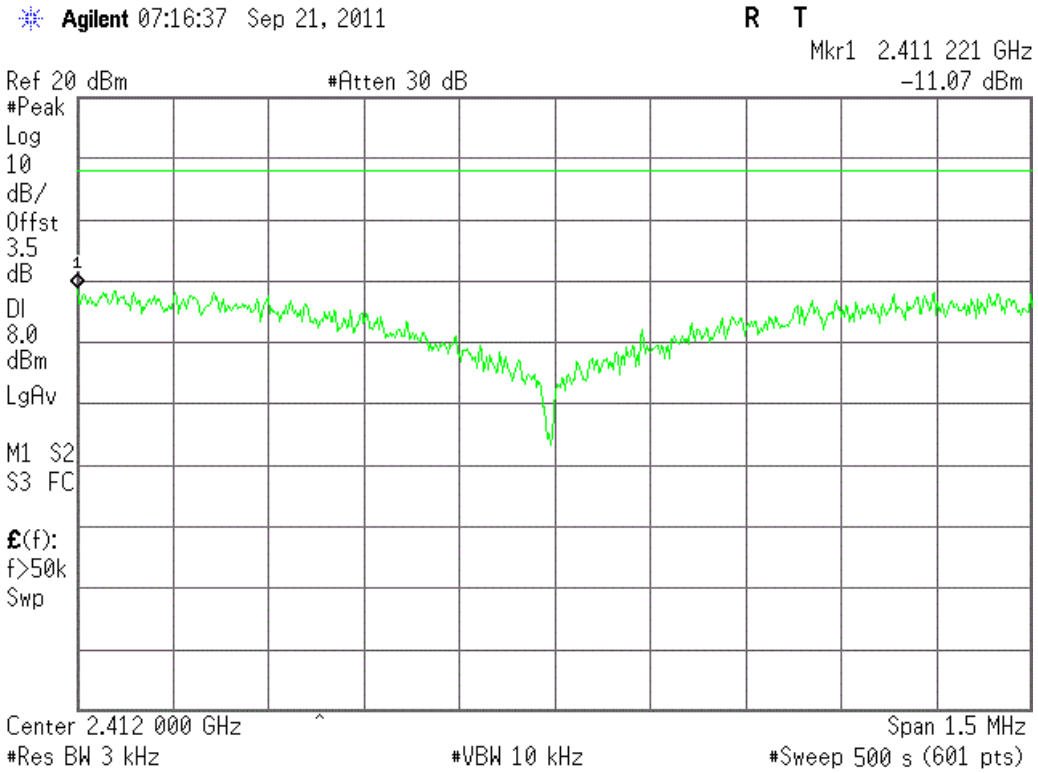


PPSD (CH High)

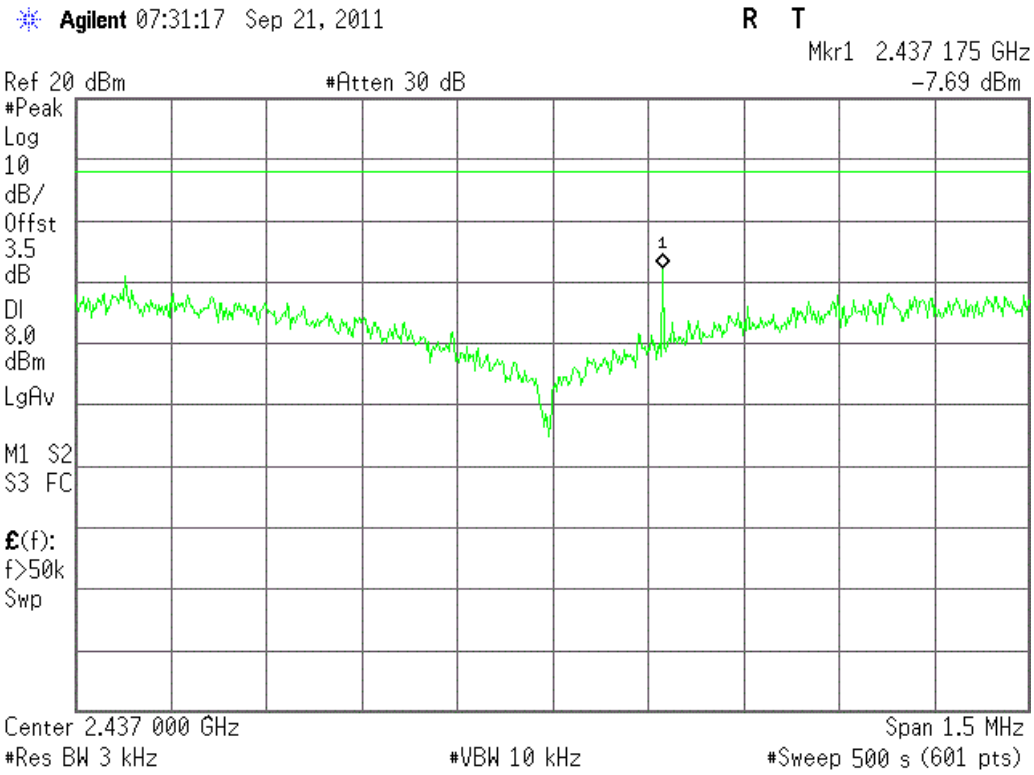


Test Plot (IEEE 802.11b mode) Antenna 2

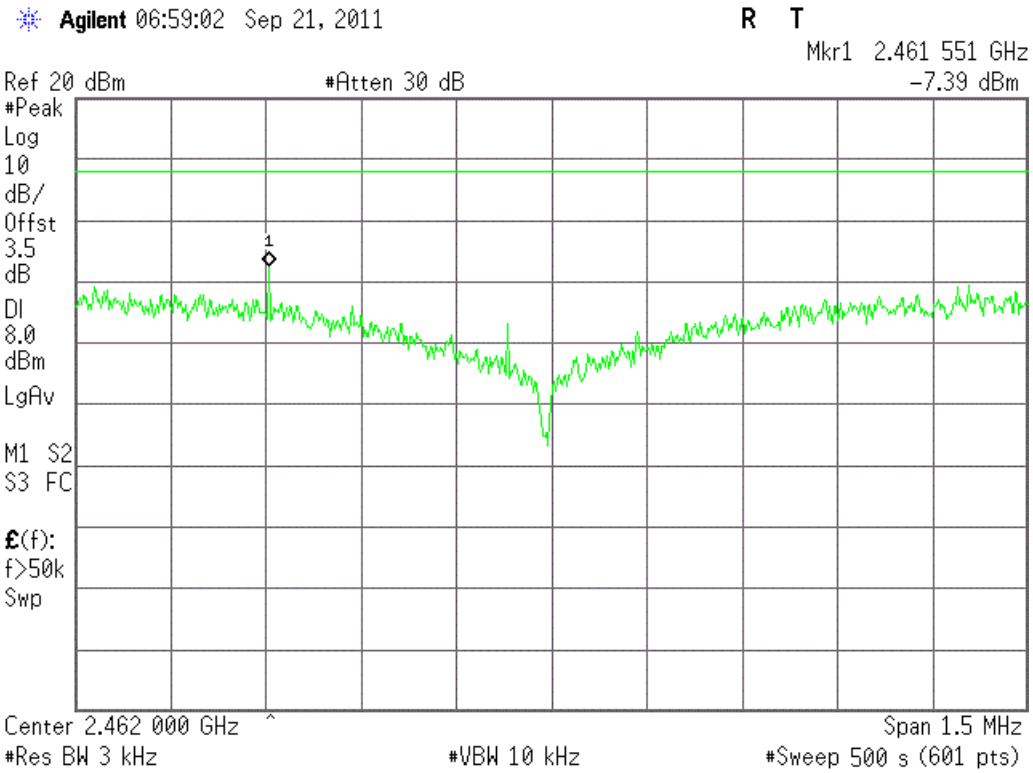
PPSD (CH Low)



PPSD (CH Mid)

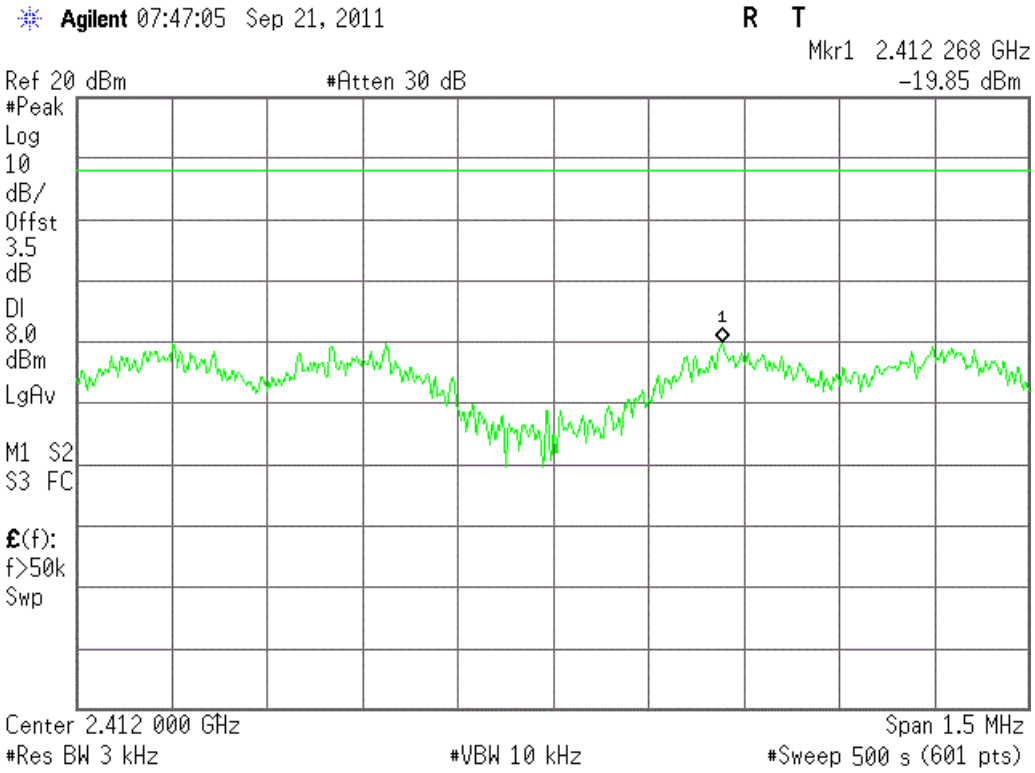


PPSD (CH High)

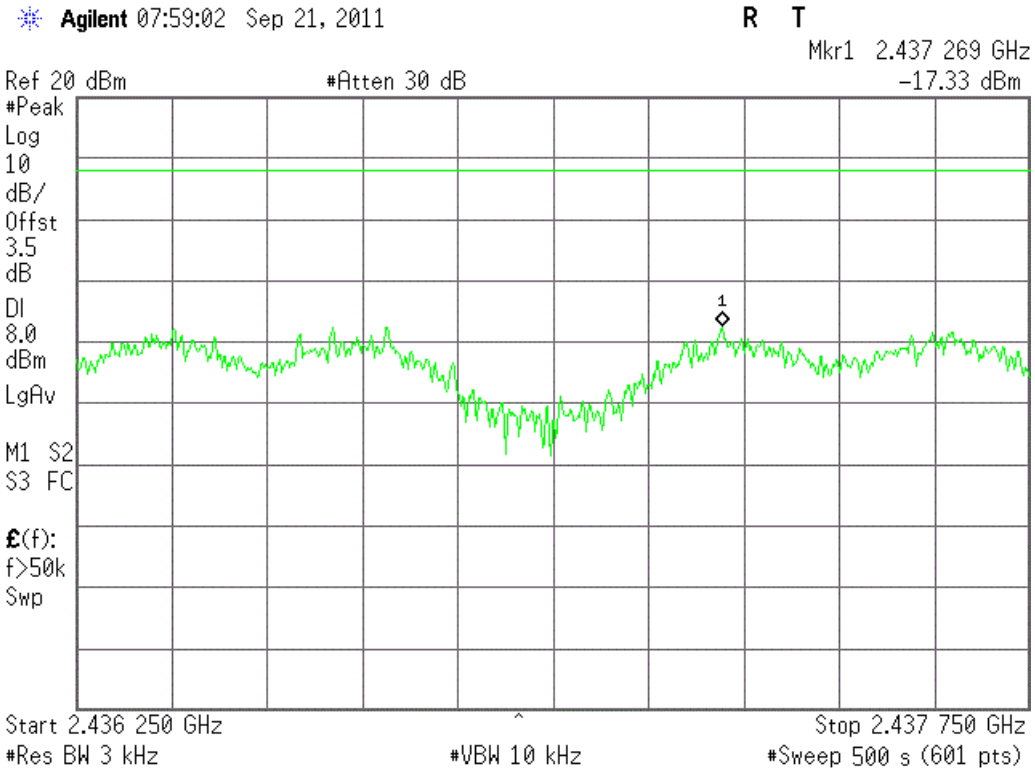


(IEEE 802.11g mode) Antenna 1

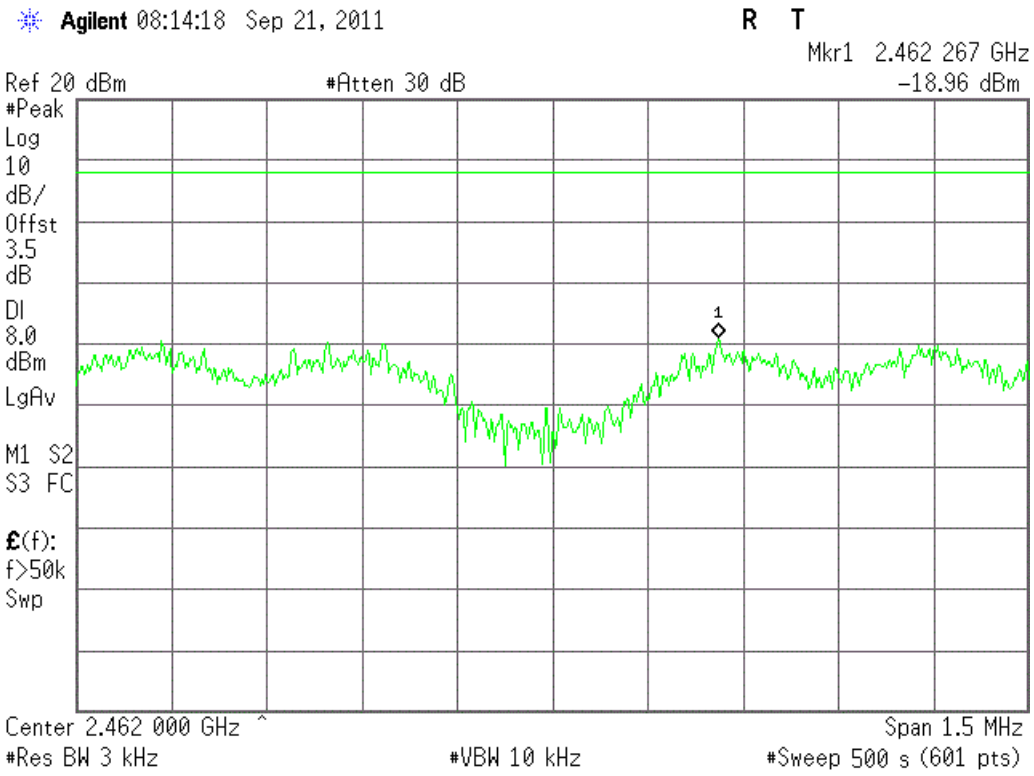
PPSD (CH Low)



PPSD (CH Mid)

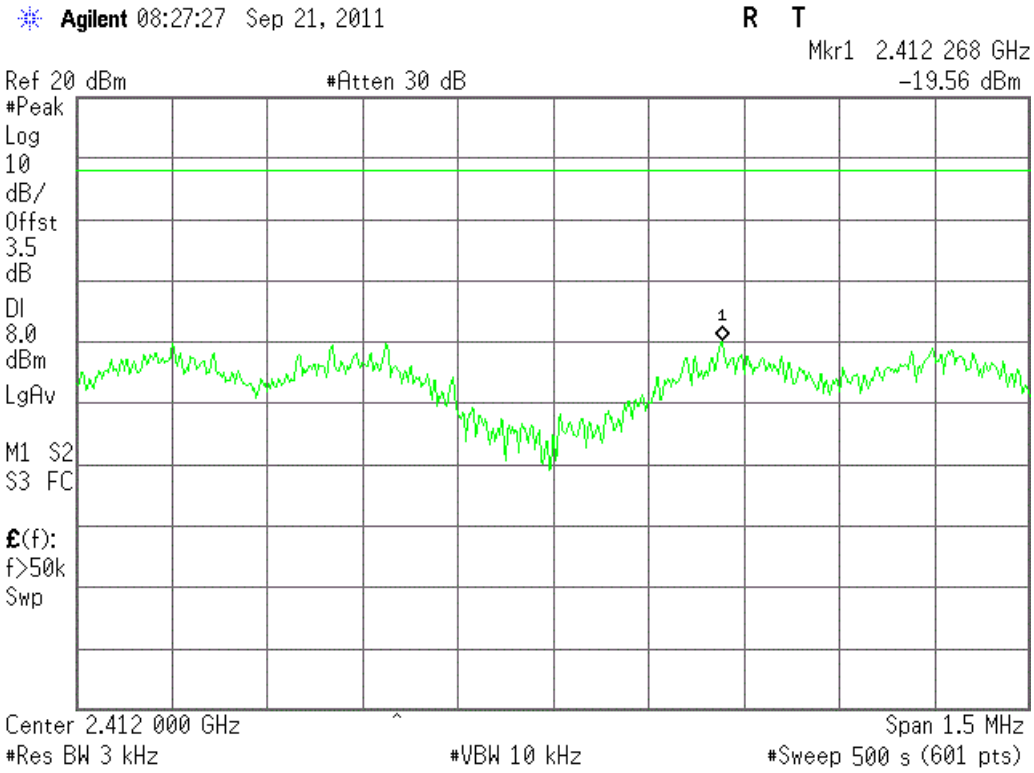


PPSD (CH High)

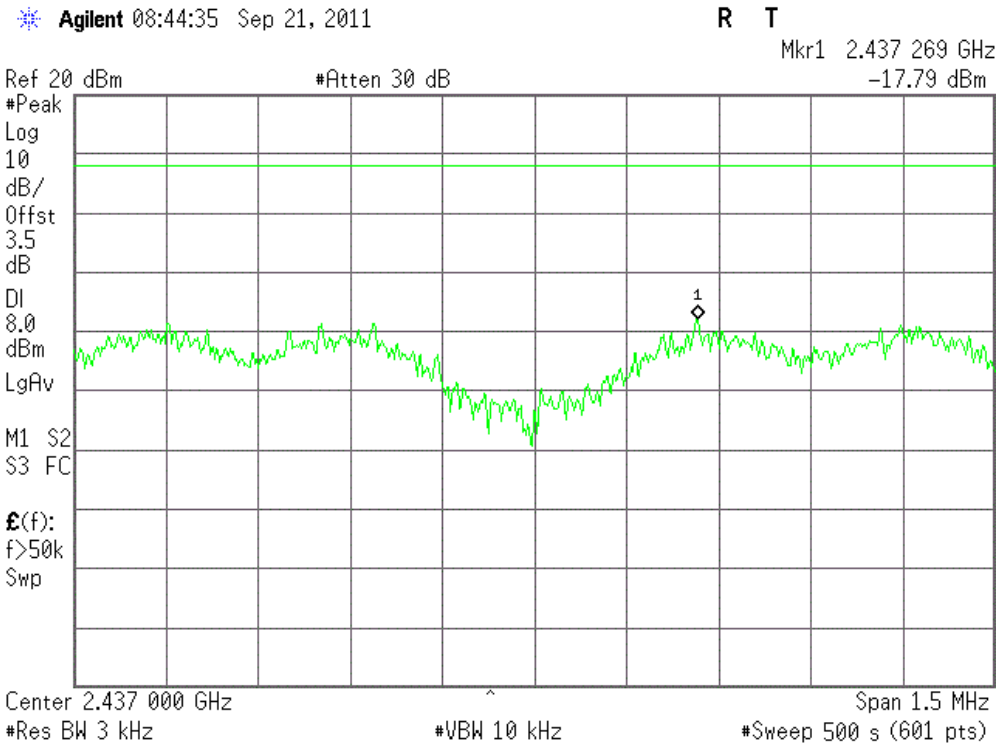


IEEE 802.11g mode) Antenna 2

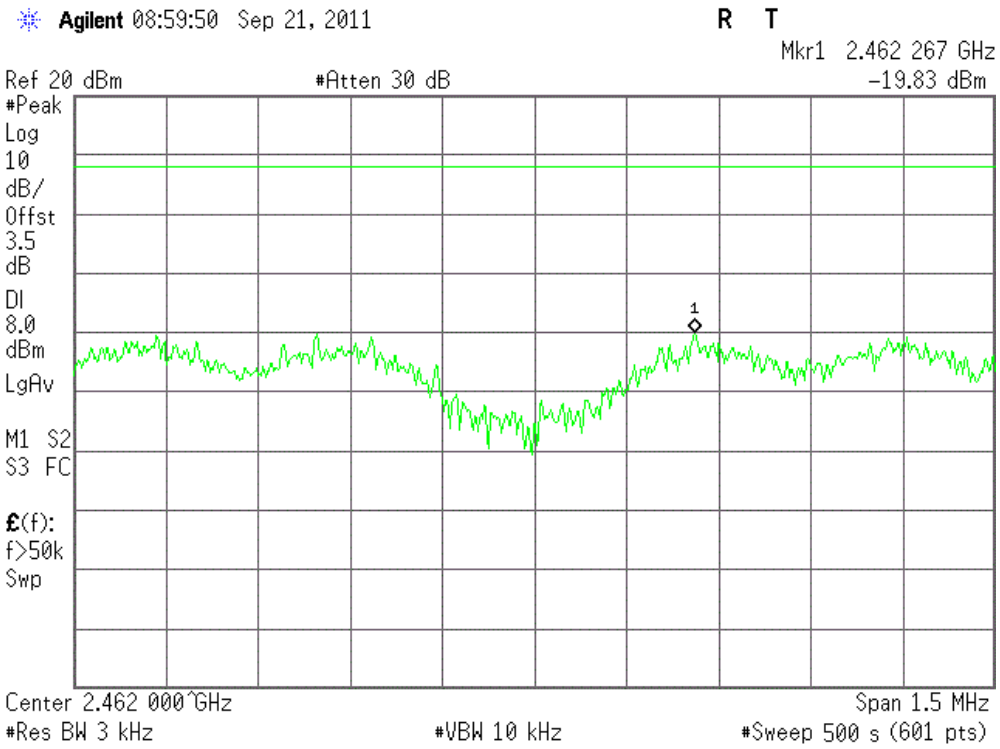
PPSD (CH Low)



PPSD (CH Mid)

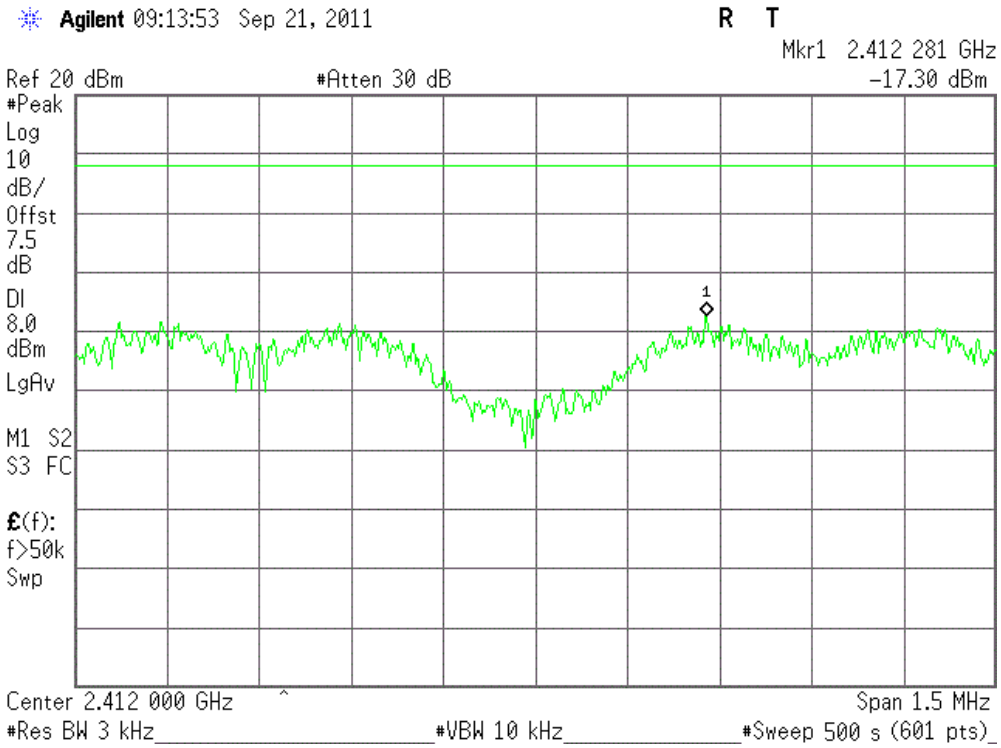


PPSD (CH High)

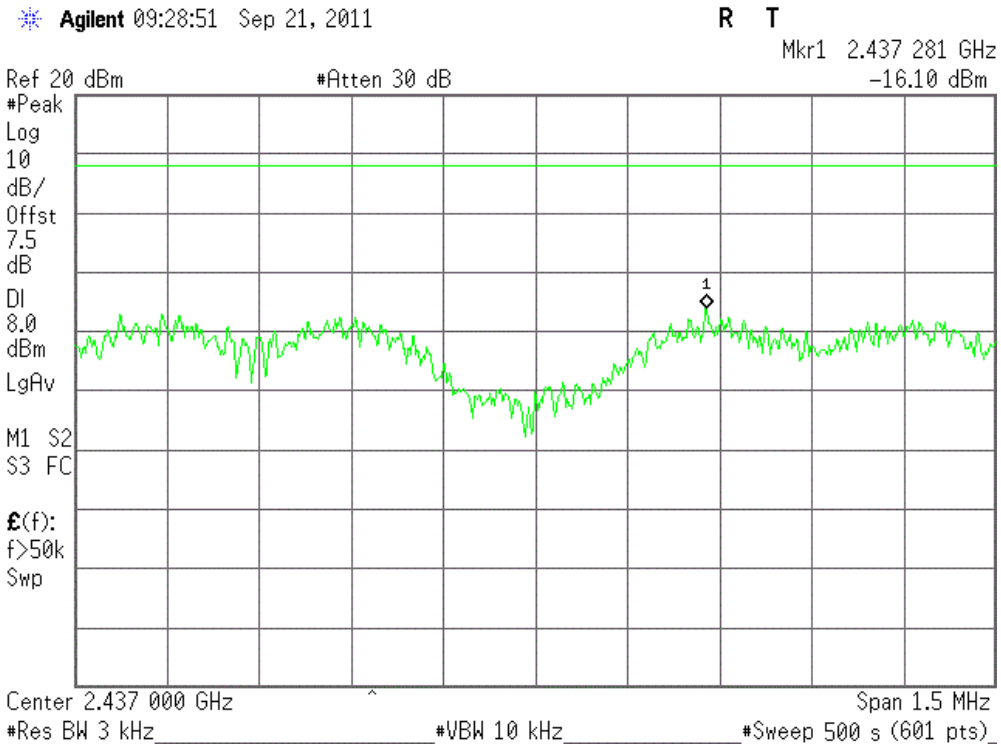


(IEEE 802.11n HT20 MHz mode) Combine with antenna 1 and antenna 2

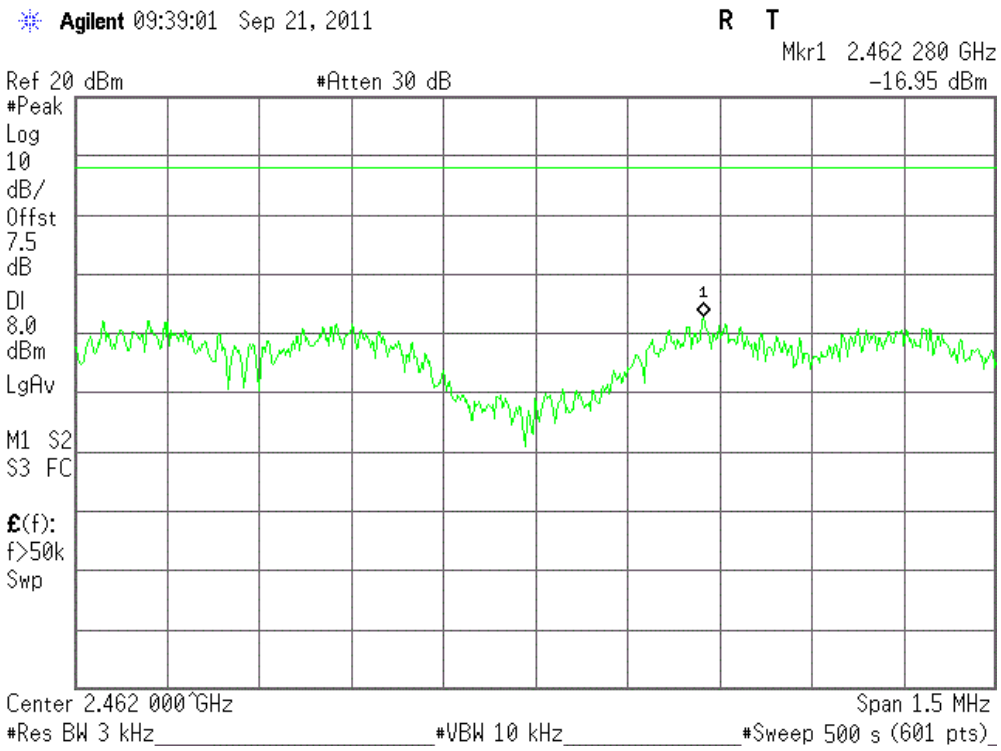
PPSD (CH Low)



PPSD (CH Mid)

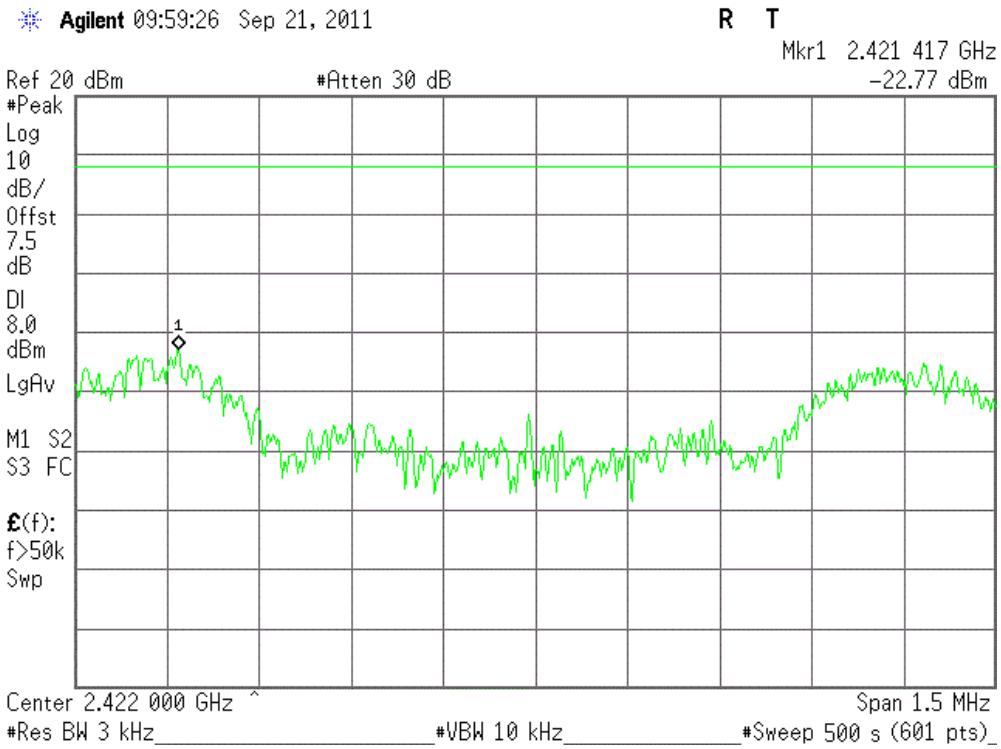


PPSD (CH High)

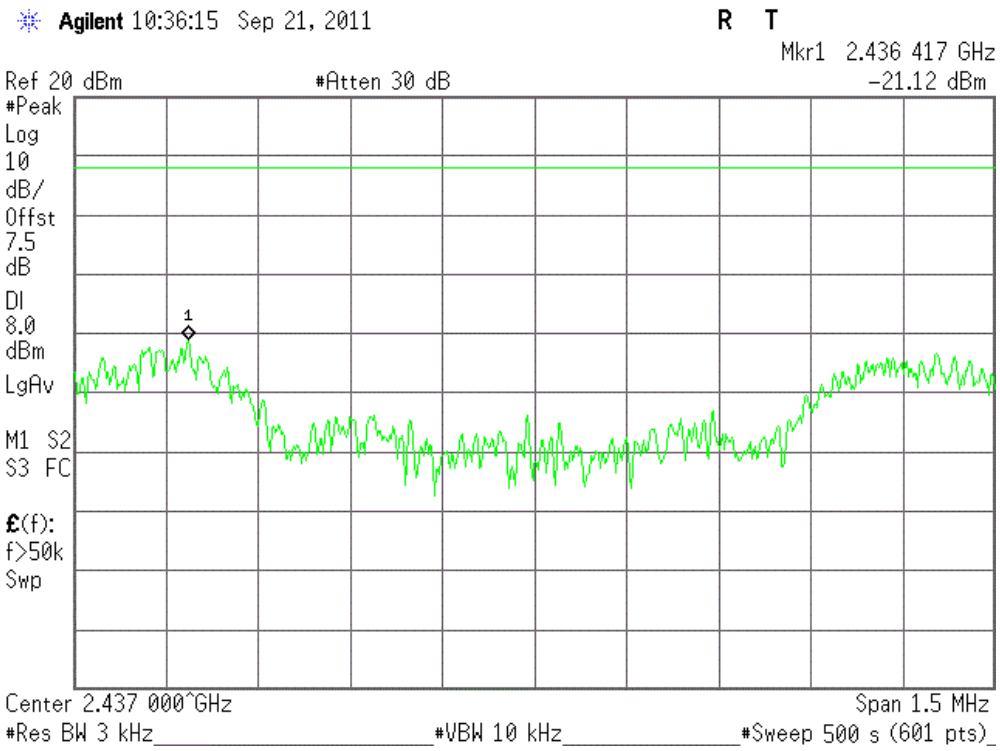


(IEEE 802.11n HT40 MHz mode) Combine with antenna 1 and antenna 2

PPSD (CH Low)



PPSD (CH Mid)



PPSD (CH High)