



## FCC 47 CFR PART 15 SUBPART C

for

**Wireless-N Router**

**Model: RT-N12**

**Brand: ASUS**

**Test Report Number:**

**C121026Z01-RP1**

**Issued Date: November 25, 2012**

Issued for

**ASUSTeK COMPUTER INC.**

**4F, No. 150, 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

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Revision History

Rev.	Issue No.	Revisions	Effect Page	Revised By
00	C121026Z01-RP1	Initial Issue	ALL	Amay Tang



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# 1 TEST CERTIFICATION

<b>Product</b>	Wireless-N Router
<b>Model</b>	RT-N12
<b>Brand</b>	ASUS
<b>Tested</b>	October 26~November 24, 2012
<b>Applicant</b>	<b>ASUSTeK COMPUTER INC.</b> 4F, No. 150, Li-Te Rd. Peitou, Taipei 112, Taiwan
<b>Manufacturer</b>	<b>Shenzhen Gongjin Electronics Co., Ltd</b> B116, B118, A211-A213, B201-B213, A311-A313, B411-413, BF08-09 Nanshan Medical Instrument Industry Park, 1019# Nanhai Road, Nanshan District, Shenzhen, Guangdong, 518067, P.R.China
<b>Factory #1</b>	<b>Shenzhen Gongjin Electrics Co., Ltd.</b> No2&3 Buildings, Mingwei Factory Area, Songgang Road West, No. A Building, 1#Songgang Road Songgang Sub-Disrtrict, Shenzhen, Guangdong, 518105, P.R.China
<b>Factory #2</b>	<b>TAICANG T&amp;W ELECTRONICS CO., LTD</b> Jiangnan Road 89, Ludu Town, Taicang, Jiangsu, 215412, P.R. China

APPLICABLE STANDARDS			
Standard	Test Type	Standard	Test Type
15.207(a)	Power Line Conducted Emissions	15.247(d) 15.209(a)	<ul style="list-style-type: none"> <li>● Spurious Emissions</li> <li>● Conducted Measurement</li> <li>● Radiated Emissions</li> </ul>
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:**

**Reviewed by:**

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

**Ruby Zhang**  
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)	<ul style="list-style-type: none"><li>● Spurious Emissions</li><li>● Conducted Measurement</li><li>● Radiated Emissions</li></ul>	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

<b>Product</b>	Wireless-N Router
<b>Model Number</b>	RT-N12
<b>Brand</b>	ASUS
<b>Model Discrepancy</b>	N/A
<b>Serial Number</b>	C121026Z01-RP1
<b>Received Date</b>	October 26, 2012
<b>Power Supply</b>	DC 12V supplied by the adapter
<b>Adapter Manufacturer / Model No.</b>	Adapter1: Shenzhen Gongjin Electronics Co., Ltd. S06A22-120A050-PB I/P: 100-240Vac, 50/60Hz, 0.30A max O/P: 12Vdc, 500mA, DC Output Cable: Unshielded, 1.50m Adapter2: RUIDE RD1200500-C55-8MG I/P: 100-240Vac, 50/60Hz, 250mA max O/P: 12Vdc, 500mA, DC Output Cable: Unshielded, 1.50m
<b>Frequency Range</b>	IEEE 802.11b/g: 2412 ~ 2462 MHz IEEE 802.11n HT20 : 2412 ~ 2462 MHz IEEE 802.11n HT40 : 2422MHz~ 2452MHz
<b>Transmit Power</b>	IEEE 802.11b mode: 17.69dBm (Antenna 1) IEEE 802.11g mode: 15.55dBm (Antenna 1) IEEE 802.11n HT20 MHz mode: 15.65dBm (Antenna 1) IEEE 802.11n HT20 MHz mode: 18.69dBm (Combine with antenna 1 and antenna 2) IEEE 802.11n HT40 MHz mode: 14.68dBm (Antenna 1) IEEE 802.11n HT40 MHz mode: 17.35dBm (Combine with antenna 1 and antenna 2)
<b>Modulation Technique</b>	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)
<b>Transmit Data Rate</b>	802.11b: 11Mbps(CCK) with fall back rates of 5.5/2/1Mbps 802.11g: 54Mbps with fall back rates of 48/36/24/18/12/9/6Mbps IEEE 802.11n HT20: 130.0Mbps with fall back rates of 130/ 117/104/78/52/39/26/13Mbps IEEE 802.11n HT40: 270Mbps with fall back rates of 270/ 243/216/162/108/81/54/27Mbps
<b>Number of Channels</b>	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: 9 Channels
<b>Antenna Specification</b>	Dipole Antenna with 5.0dBi gain (Max)

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

2. This submittal(s) (test report) is intended for FCC ID: **MSQ-RTN12D** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.



## 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	<b>Mode 1:</b> Normal Link+ Adapter 1 <b>Mode 2:</b> Normal Link+ Adapter 2	<b>Mode 1</b> <b>Mode 2</b>
Radiated Emission	<b>Mode 1:</b> TX	<b>Mode 1</b>

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

IEEE802.11g mode (Antenna 1): Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT20 MHz (Antenna 1) mode: Channel Low (2412MHz), Channel Mid(2437MHz) and Channel High (2462MHz) with 6.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT20 MHz (Combine with antenna 1 and antenna 2) 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 (Antenna 1) mode: Channel Low (2422MHz), Channel Mid (2437MHz) and Channel High (2452MHz) with 13.5Mbps data rate were chosen for full testing.

IEEE 802.11n HT40 MHz (Combine with antenna 1 and antenna 1) 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	Brand	Data Cable	Power Cord
1	NOTEBOOK	B475	WB04861612	N/A	Lenovo	Unshielded 1.80m	N/A
2	NOTEBOOK	2672	992F2VG	N/A	IBM	Unshielded 1.80m	N/A

**Note:**

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 **No.10-1 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.

<b>USA</b>	<b>A2LA</b>
<b>China</b>	<b>CNAS</b>

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

<b>USA</b>	<b>FCC</b>
<b>Japan</b>	<b>VCCI(C-3478, R-3135, T-652)</b>
<b>Canada</b>	<b>INDUSTRY CANADA</b>
<b>Taiwan</b>	<b>BSMI</b>
<b>Norway</b>	<b>Nemko</b>

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 RECEIVER.ESCI	ROHDE&SCHWARZ	ESCI	100783	03/17/2012	03/17/2013
LISN	ROHDE&SCHWARZ	ENV216	101543	03/20/2012	03/20/2013
LISN	EMCO	3825/2	8901-1459	03/19/2012	03/19/2013
Temp. / Humidity Meter	VICTOR	HTC-1	2	03/20/2012	03/20/2013
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.

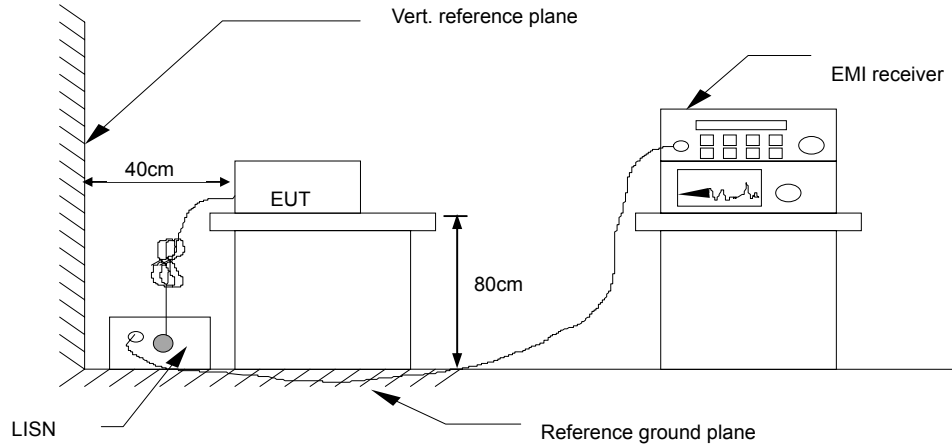


**7.1.3. TEST PROCEDURES** (please refer to measurement standard)

- 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

<b>Model No.</b>	RT-N12	<b>RBW,VBW</b>	9 kHz
<b>Environmental Conditions</b>	22°C, 45% RH	<b>Test Mode</b>	Mode 1(S06A22-120A050-PB)
<b>Tested by</b>	Leevin Li	<b>Line</b>	L1

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)
0.1580	54.87	36.37	0.48	55.35	36.85	65.56	55.57	-10.21	-18.72	Pass
0.3420	44.87	29.07	0.34	45.21	29.41	59.15	49.15	-13.94	-19.74	Pass
2.2780	38.57	22.84	0.46	39.03	23.30	56.00	46.00	-16.97	-22.70	Pass
3.8900	39.52	24.06	0.50	40.02	24.56	56.00	46.00	-15.98	-21.44	Pass
7.8700	46.70	28.59	0.61	47.31	29.20	60.00	50.00	-12.69	-20.80	Pass
9.4500	46.33	30.69	0.89	47.22	31.58	60.00	50.00	-12.78	-18.42	Pass

REMARKS: L1 = Line One (Live Line)

<b>Model No.</b>	RT-N12	<b>RBW,VBW</b>	9 kHz
<b>Environmental Conditions</b>	22°C, 45% RH	<b>Test Mode</b>	Mode 1 (S06A22-120A050-PB)
<b>Tested by</b>	Leevin Li	<b>Line</b>	L2

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)
0.1620	54.24	37.33	0.46	54.70	37.79	65.36	55.36	-10.66	-17.57	Pass
0.3420	46.08	35.52	0.54	46.62	36.06	59.15	49.15	-12.53	-13.09	Pass
1.1340	41.37	30.48	0.57	41.94	31.05	56.00	46.00	-14.06	-14.95	Pass
2.1099	42.85	29.42	0.76	43.61	30.18	56.00	46.00	-12.39	-15.82	Pass
4.8140	43.50	29.37	0.46	43.96	29.83	56.00	46.00	-12.04	-16.17	Pass
7.9140	48.66	33.72	0.50	49.16	34.22	60.00	50.00	-10.84	-15.78	Pass

REMARKS: L2 = Line Two (Neutral Line)



<b>Model No.</b>	RT-N12	<b>RBW,VBW</b>	9 kHz
<b>Environmental Conditions</b>	22°C, 45% RH	<b>Test Mode</b>	Mode 2(RD1200500-C55-8MG)
<b>Tested by</b>	Leevin Li	<b>Line</b>	L1

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)
0.1500	50.31	36.96	0.52	50.83	37.48	65.99	56.00	-15.16	-18.52	Pass
0.3460	43.81	33.25	0.34	44.15	33.59	59.06	49.06	-14.91	-15.47	Pass
0.6940	35.96	17.23	0.41	36.37	17.64	56.00	46.00	-19.63	-28.36	Pass
1.7900	37.01	20.76	0.44	37.45	21.20	56.00	46.00	-18.55	-24.80	Pass
2.9539	39.99	24.28	0.48	40.47	24.76	56.00	46.00	-15.53	-21.24	Pass
5.8100	34.26	22.56	0.50	34.76	23.06	60.00	50.00	-25.24	-26.94	Pass

REMARKS: L1 = Line One (Live Line)

<b>Model No.</b>	RT-N12	<b>RBW,VBW</b>	9 kHz
<b>Environmental Conditions</b>	22°C, 45% RH	<b>Test Mode</b>	Mode 2 (RD1200500-C55-8MG)
<b>Tested by</b>	Leevin Li	<b>Line</b>	L2

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)
0.1500	51.27	38.94	0.45	51.72	39.39	65.99	56.00	-14.27	-16.61	Pass
0.1700	48.72	37.53	0.46	49.18	37.99	64.96	54.96	-15.78	-16.97	Pass
0.1980	45.57	33.37	0.49	46.06	33.86	63.69	53.69	-17.63	-19.83	Pass
0.3420	40.73	35.90	0.54	41.27	36.44	59.15	49.15	-17.88	-12.71	Pass
0.7820	33.29	20.76	0.55	33.84	21.31	56.00	46.00	-22.16	-24.69	Pass
3.0780	40.26	26.12	0.65	40.91	26.77	56.00	46.00	-15.09	-19.23	Pass

REMARKS: L2 = Line Two (Neutral Line)



## 7.2. SPURIOUS EMISSIONS MEASUREMENT

### 7.2.1. LIMITS OF CONDUCTED EMISSIONS MEASUREMENT

§15.247(d) specifies that in any 100 kHz bandwidth outside of the authorized frequency band, the power shall be attenuated according to the following conditions:

If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to 15.247(b)(3) requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to 15.247(b)(3) requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

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	03/19/2012	03/19/2013

### 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 300 kHz.

Measurements are made over the 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

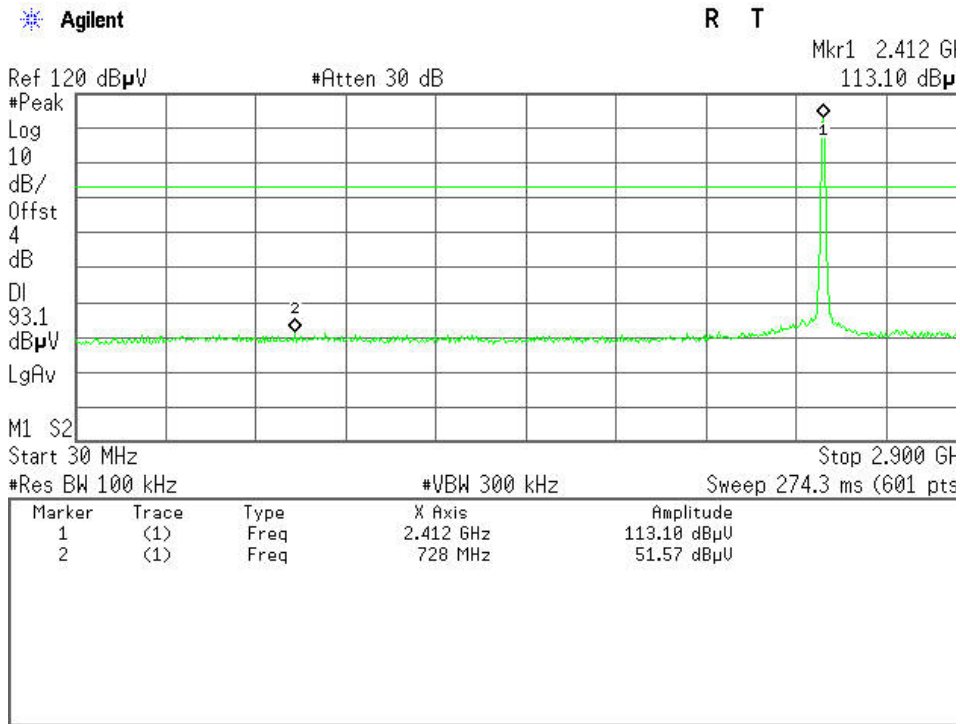


7.2.4. TEST RESULTS

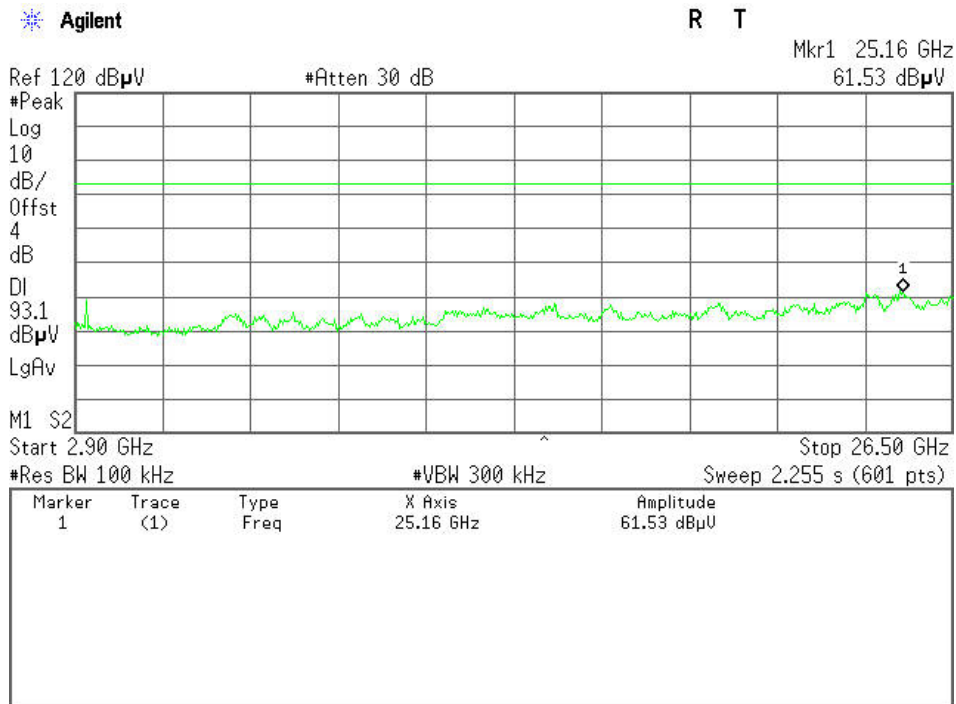
Test Plot

IEEE 802.11b (Antenna 1) mode

CH Low (30MHz ~2.9GHz)



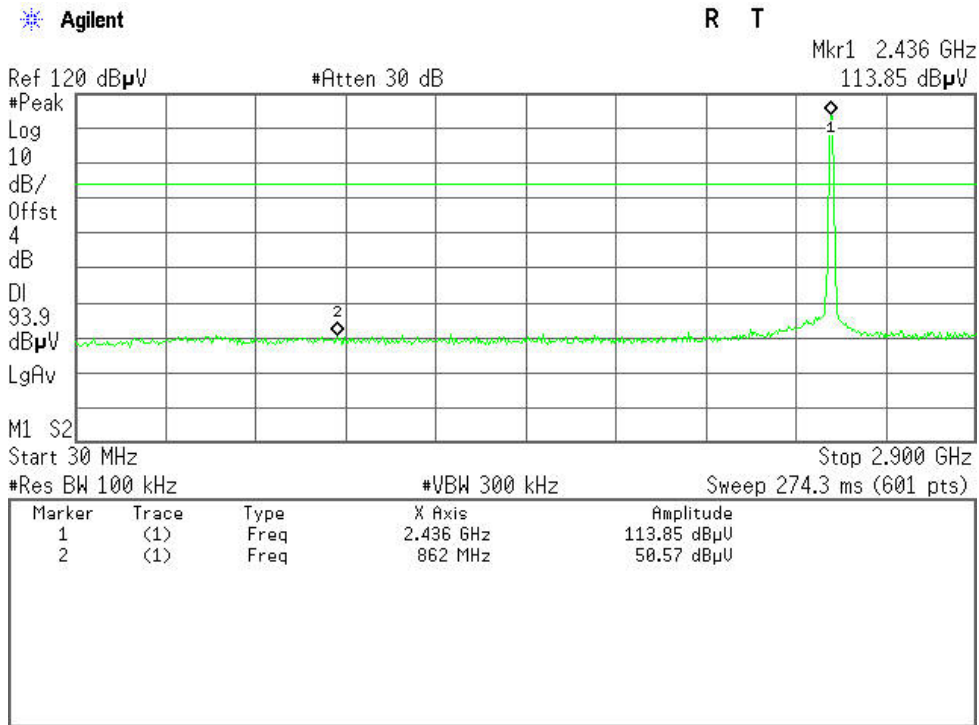
CH Low (2.9GHz ~26.5GHz)



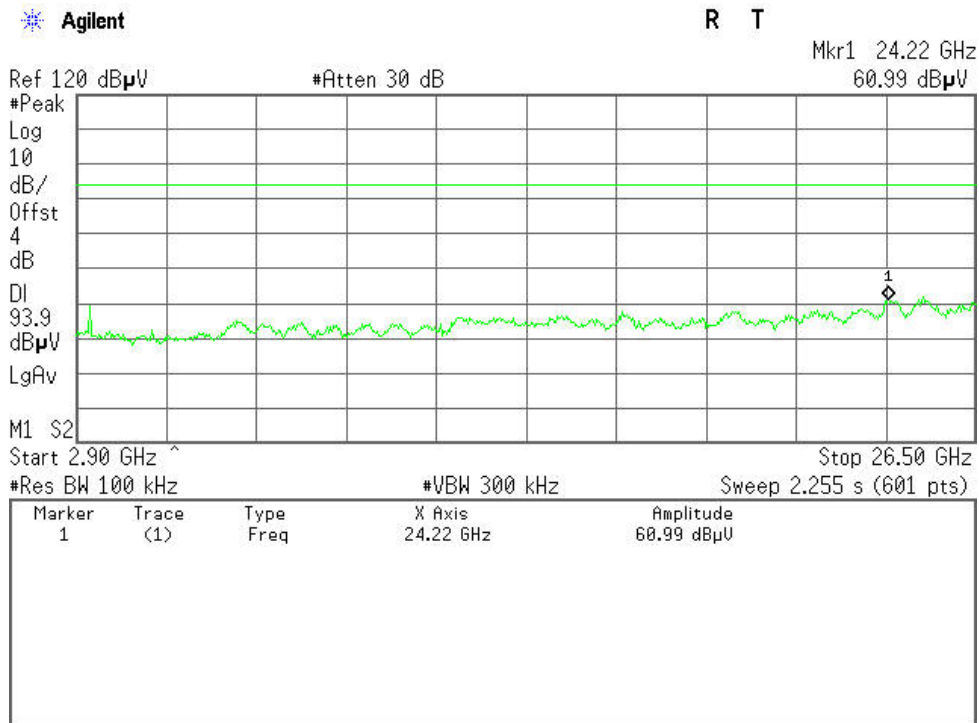




CH Mid (30MHz ~2.9GHz)

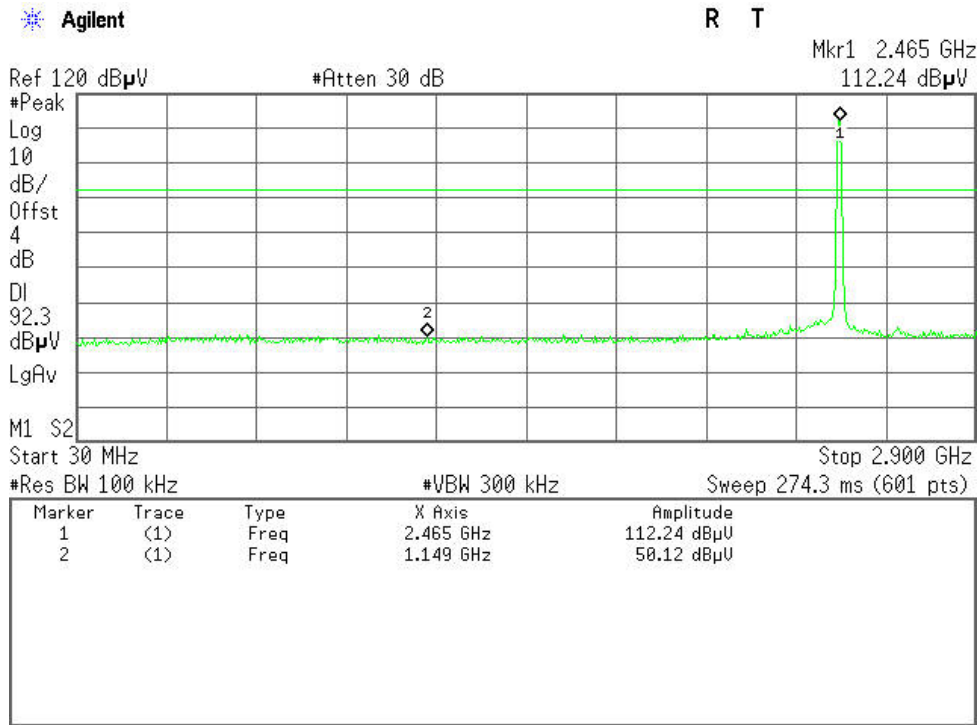


CH Mid (2.9GHz ~26.5GHz)

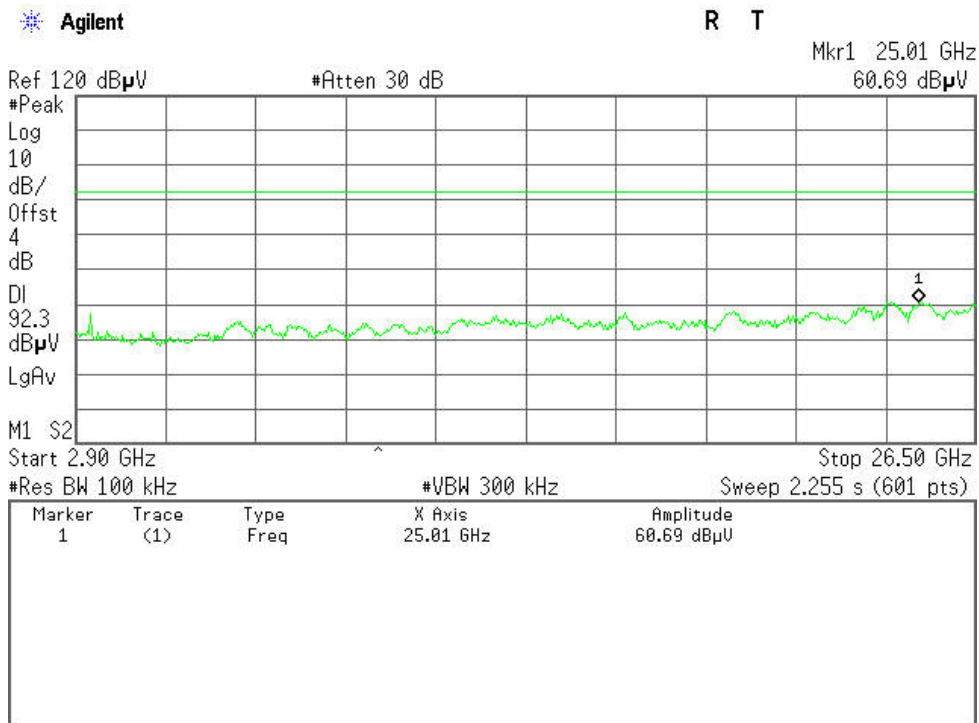




CH High (30MHz ~2.9GHz)

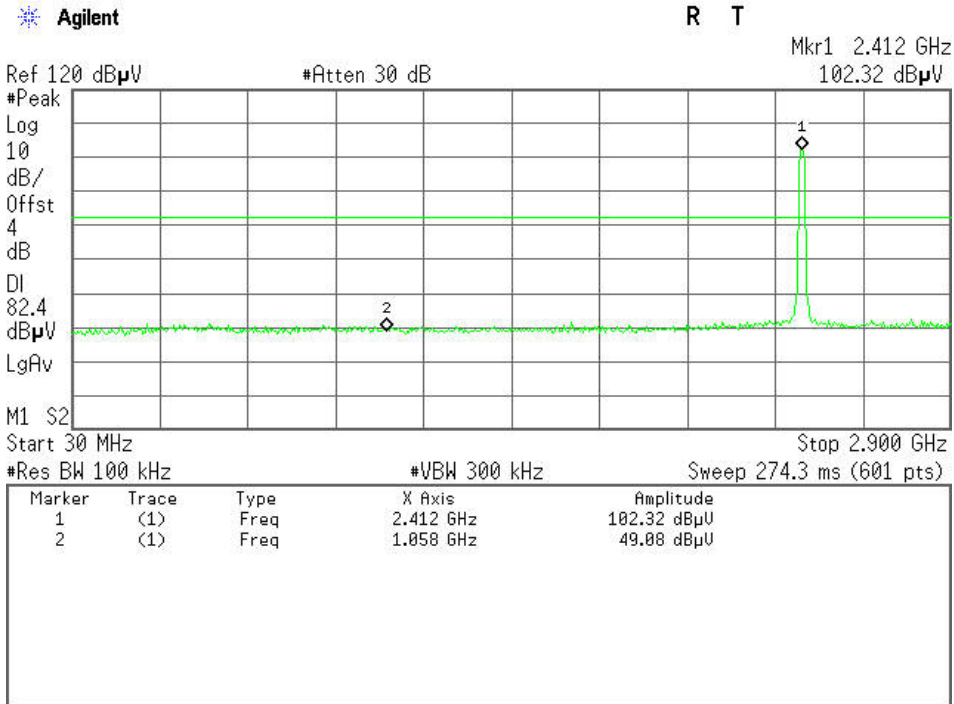


CH High( 2.9GHz ~26.5GHz)

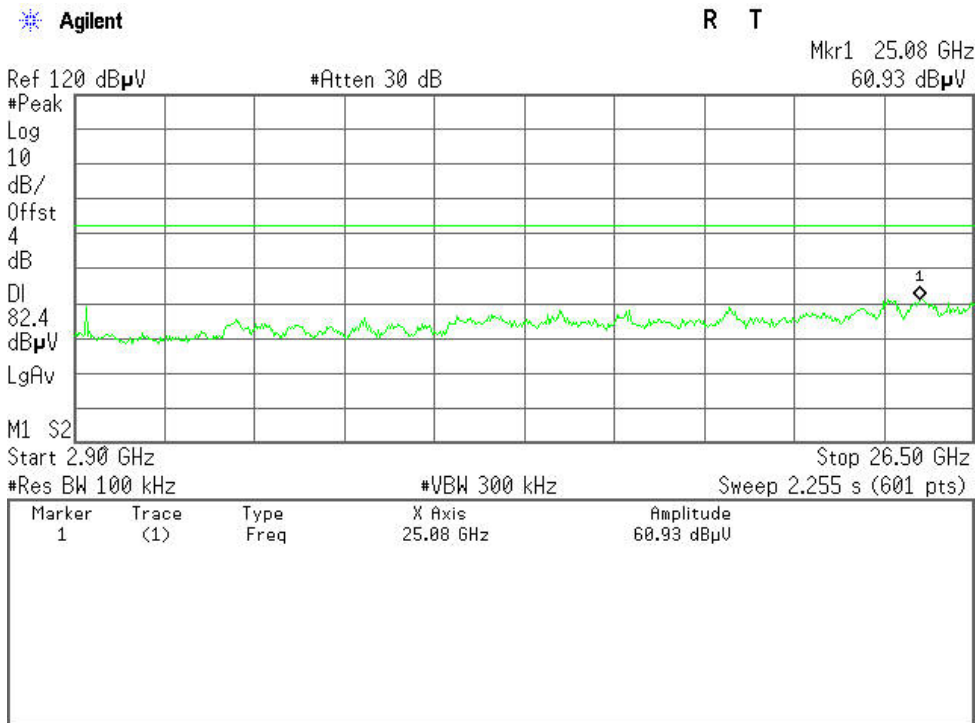




IEEE 802.11g (Antenna 1)mode  
CH Low (30MHz ~2.9GHz)

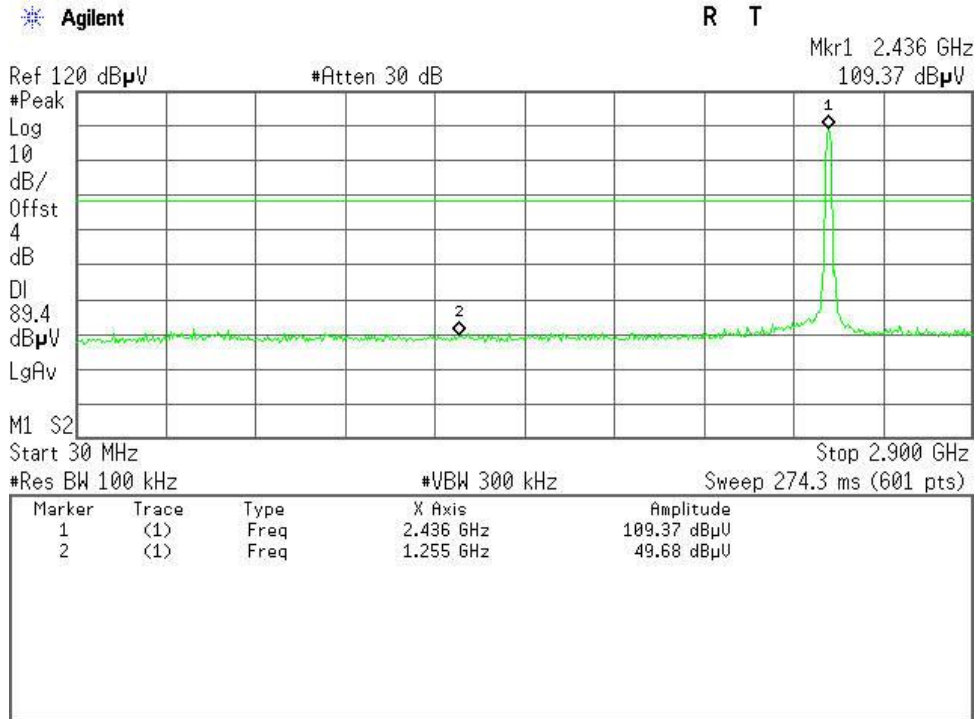


CH Low (2.9GHz ~26.5GHz)

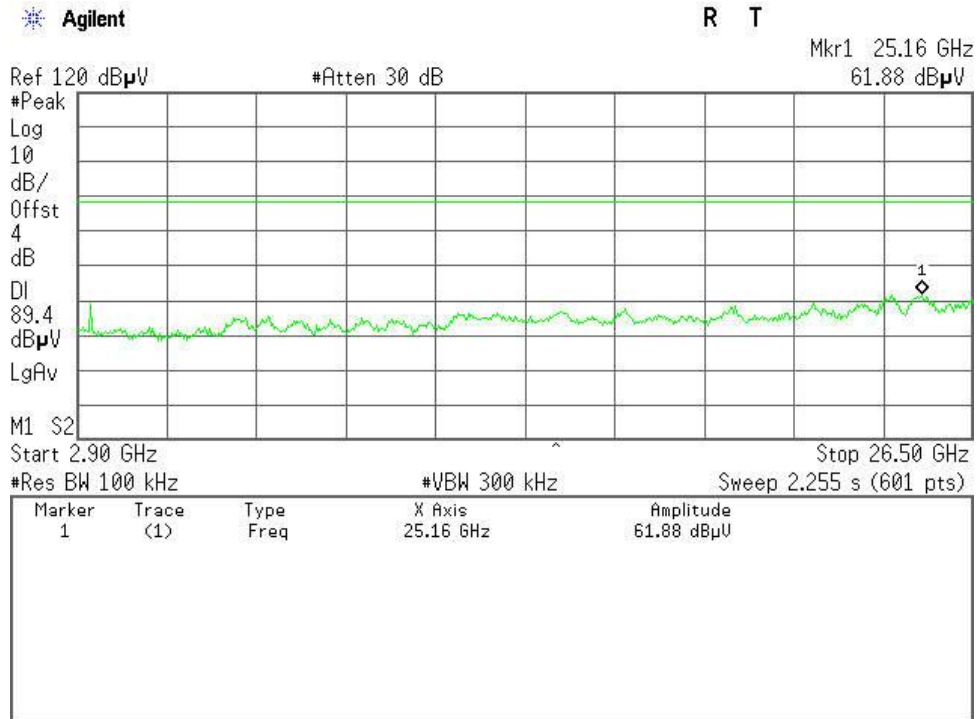




CH Mid (30MHz ~2.9GHz)

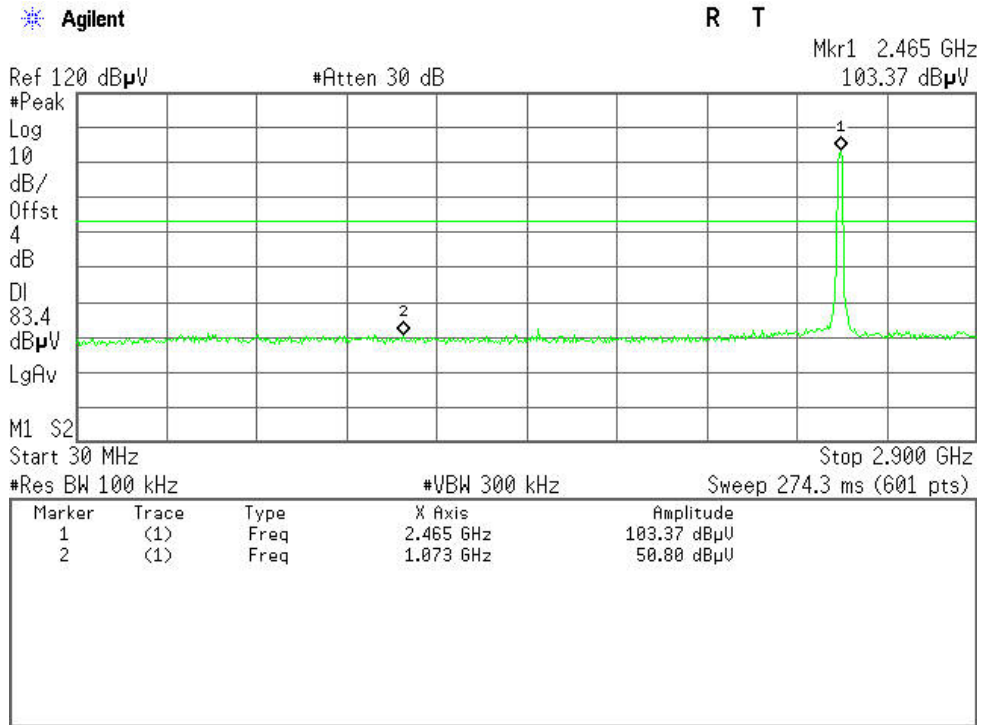


CH Mid (2.9GHz ~26.5GHz)

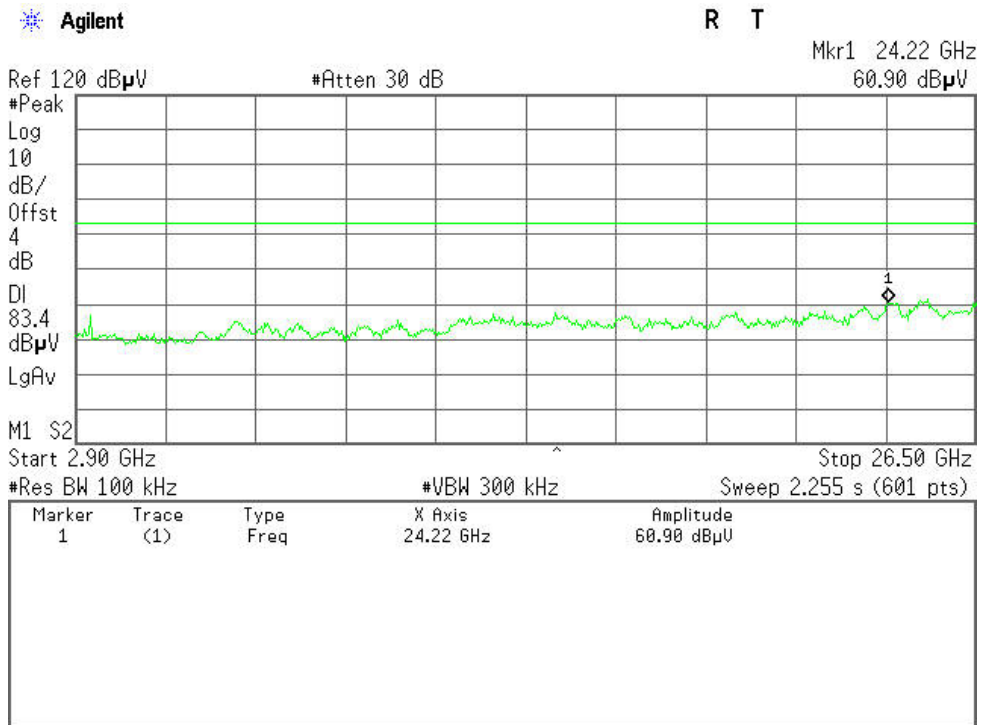




CH High (30MHz ~2.9GHz)

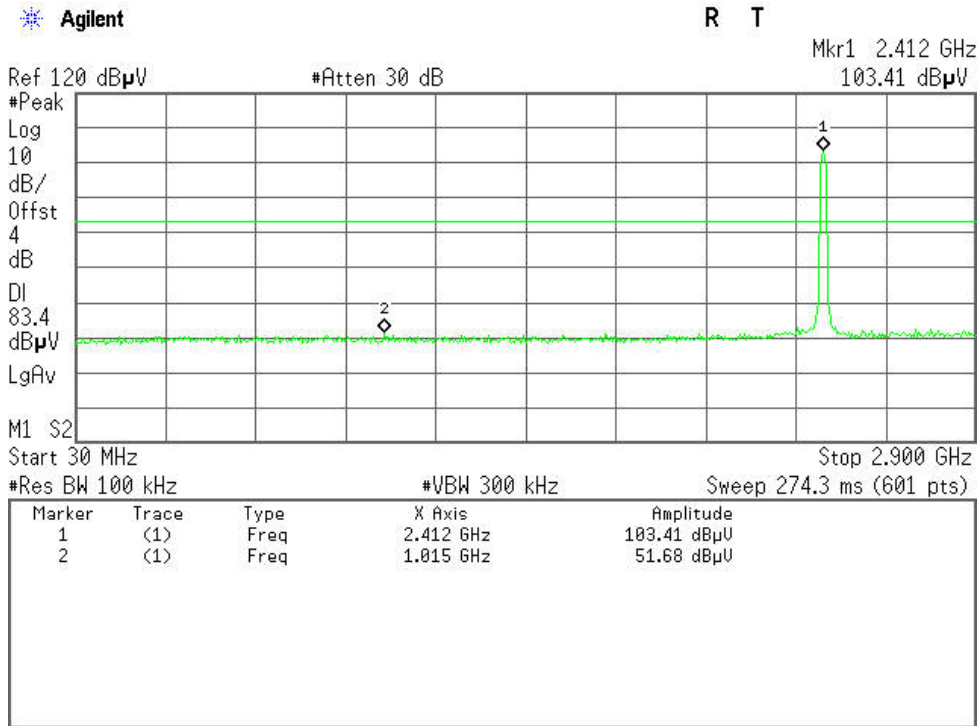


CH High( 2.9GHz ~26.5GHz)

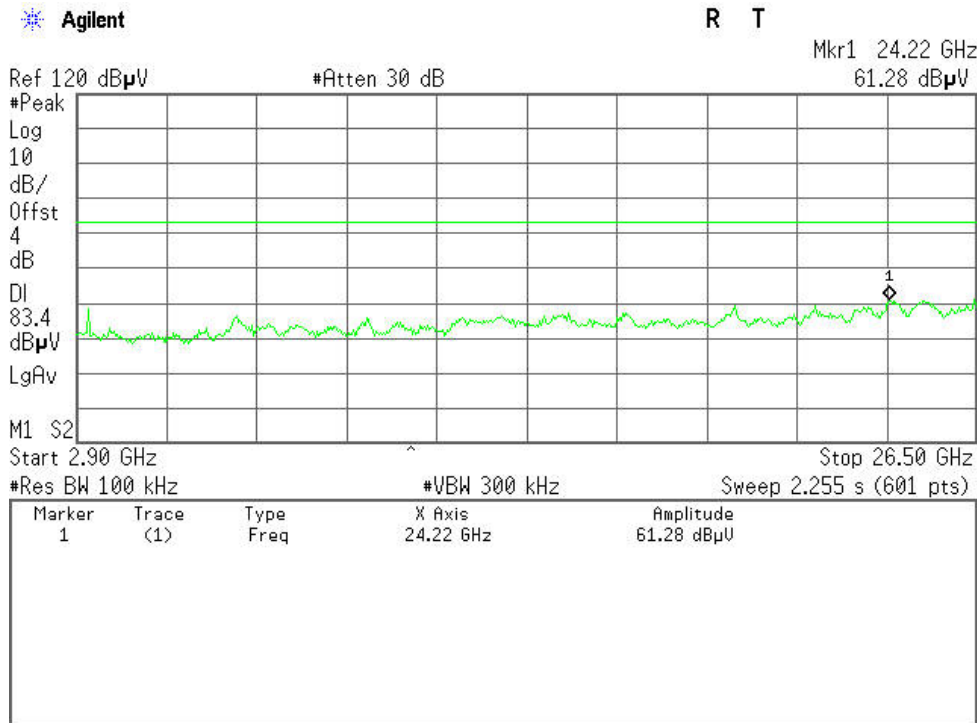




IEEE 802.11n HT20 MHz (Antenna 1) mode  
CH Low (30MHz ~2.9GHz)

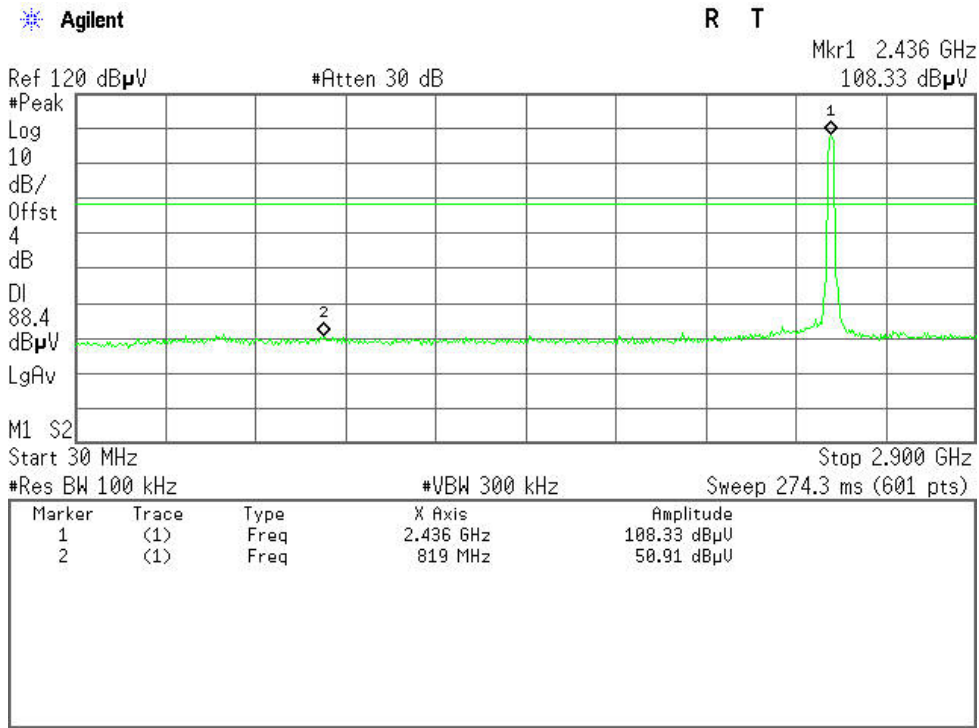


CH Low (2.9GHz ~26.5GHz)

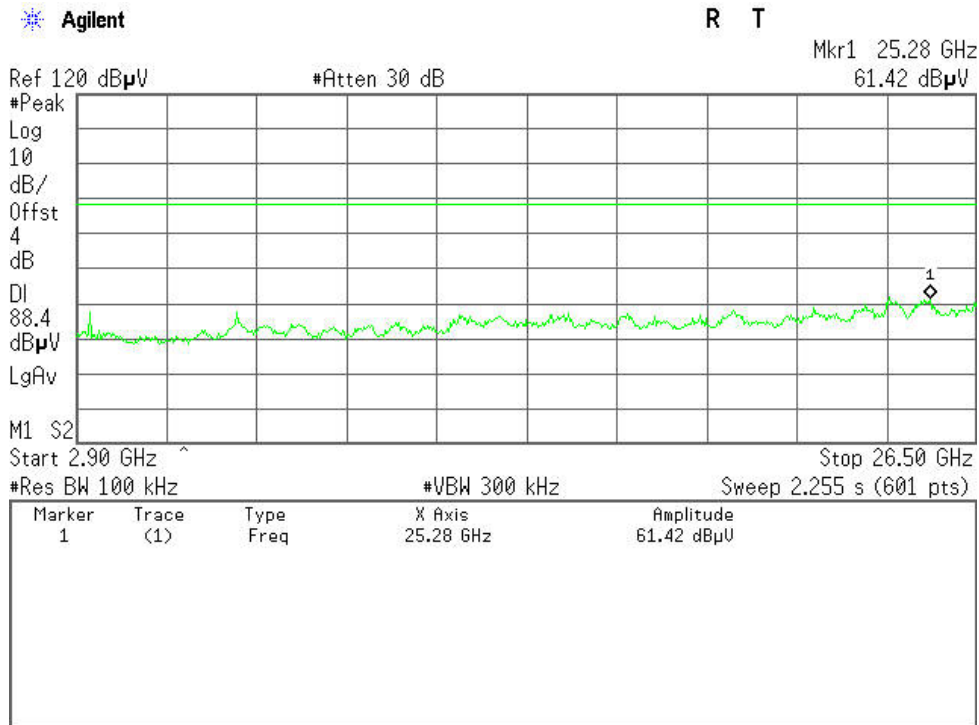




CH Mid (30MHz ~2.9GHz)

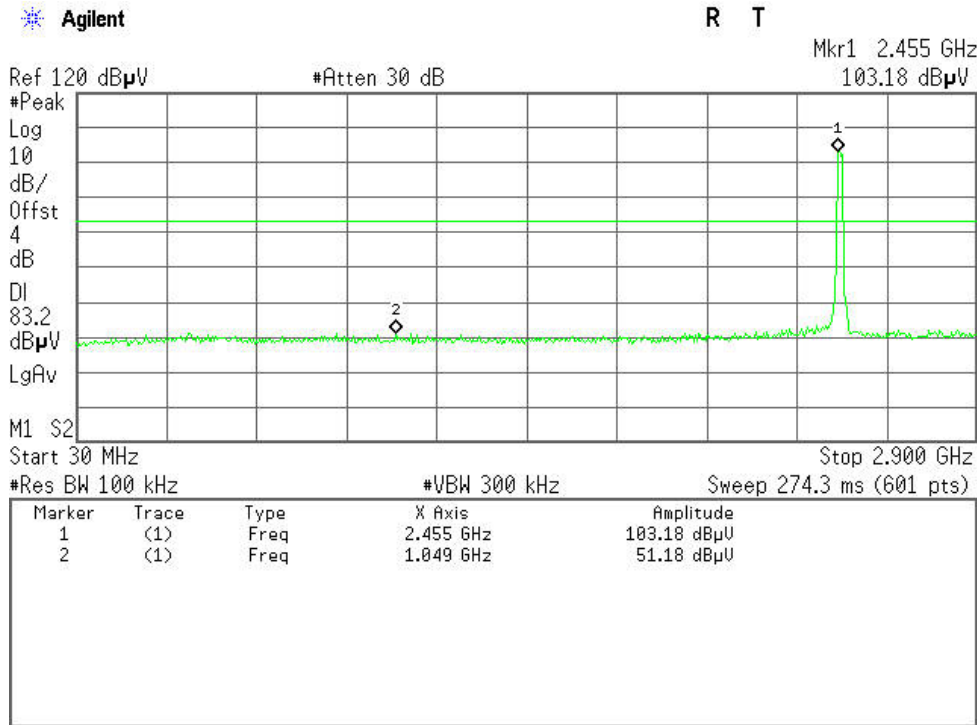


CH Mid (2.9GHz ~26.5GHz)

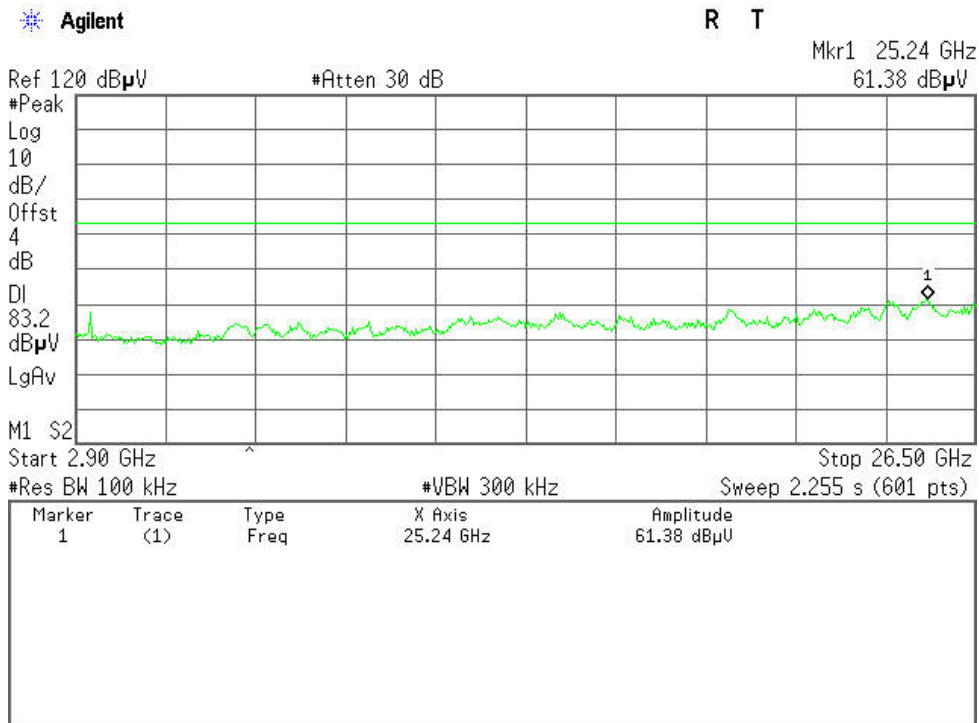




CH High (30MHz ~2.9GHz)



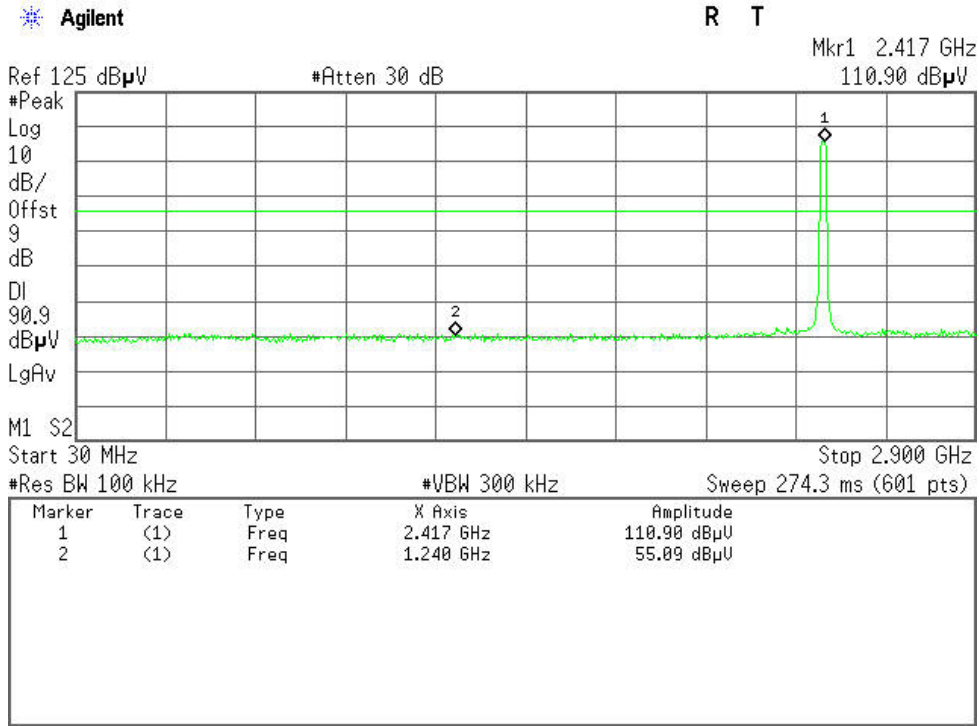
CH High( 2.9GHz ~26.5GHz)



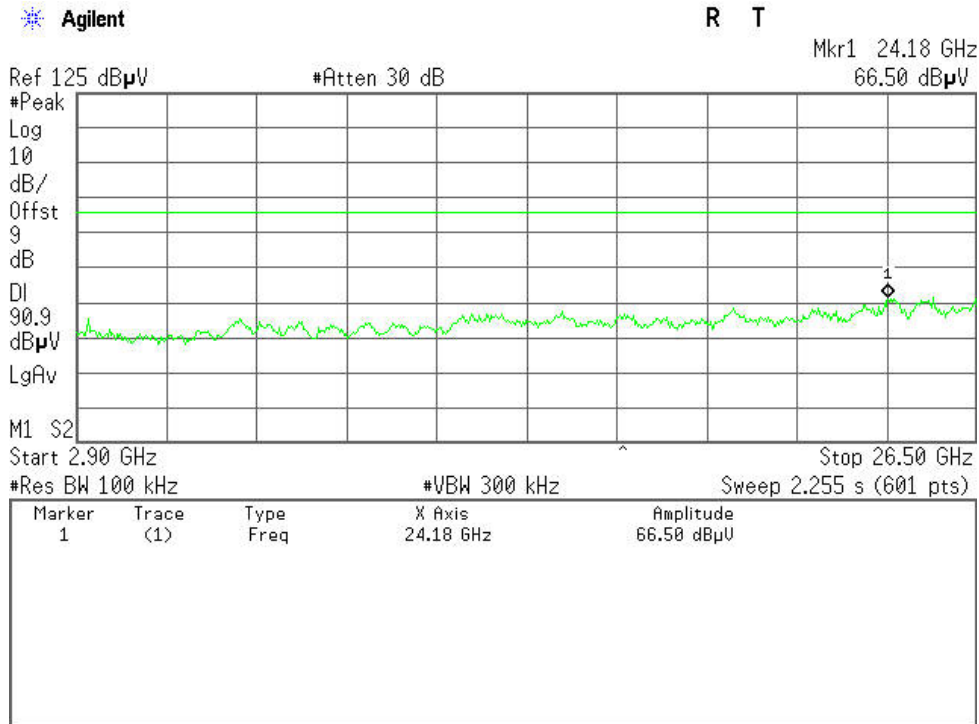




IEEE 802.11n HT20 MHz (Combine with antenna 1 and antenna 2) mode  
CH Low (30MHz ~2.9GHz)

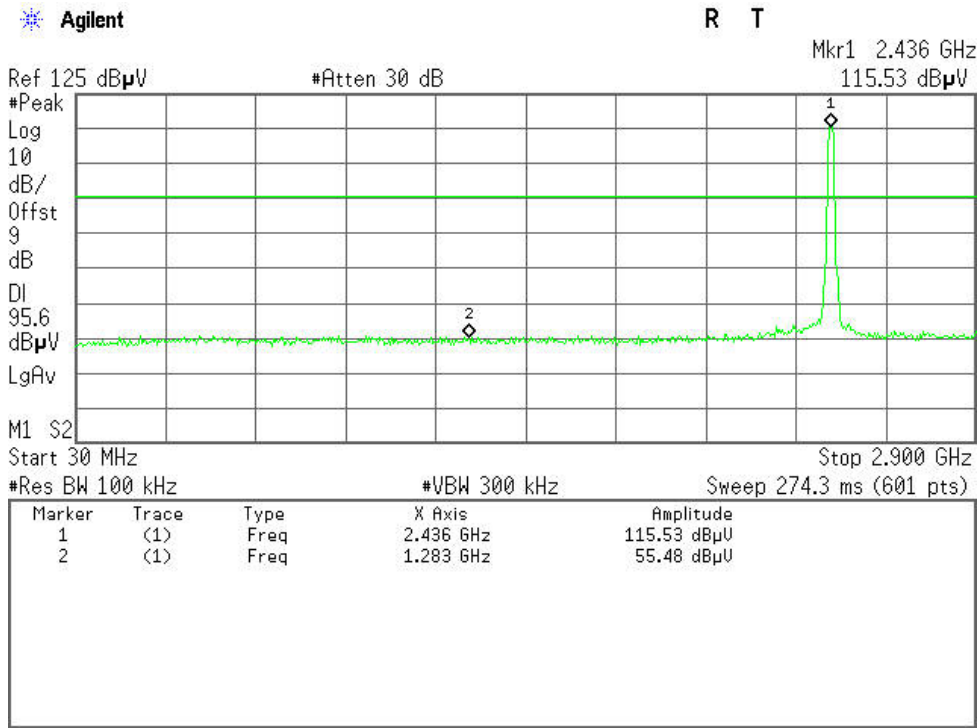


CH Low (2.9GHz ~26.5GHz)

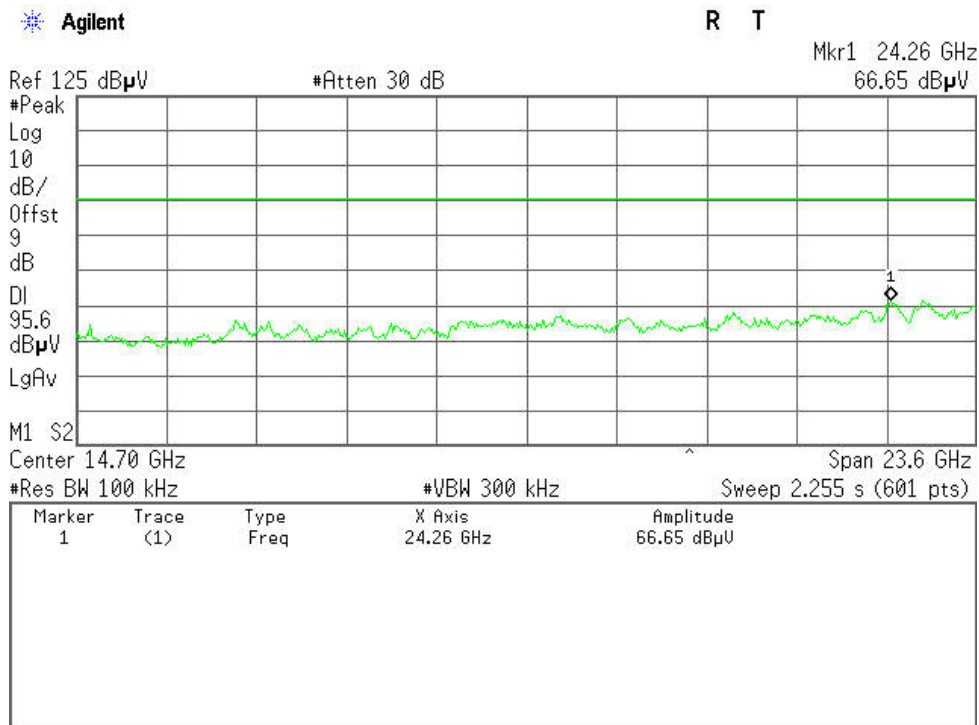




CH Mid (30MHz ~2.9GHz)

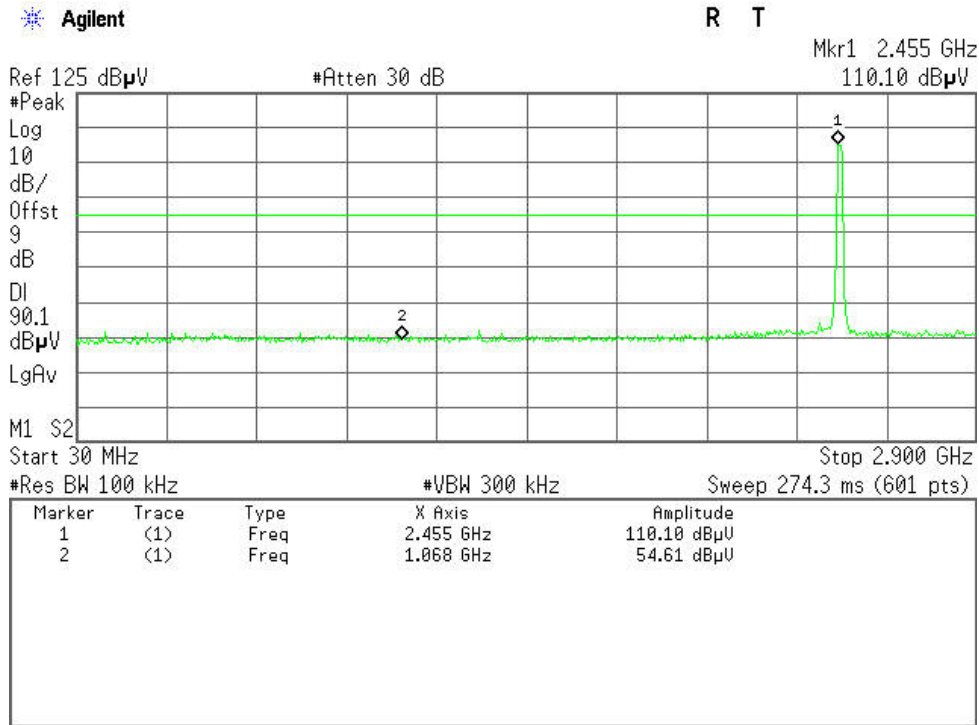


CH Mid (2.9GHz ~26.5GHz)

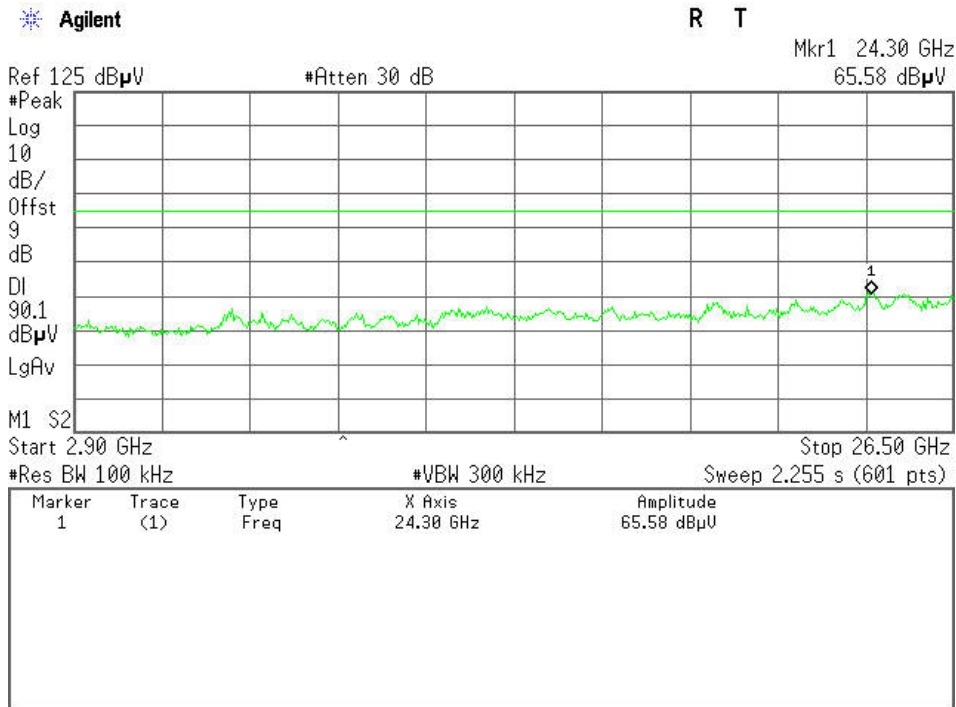




CH High (30MHz ~2.9GHz)

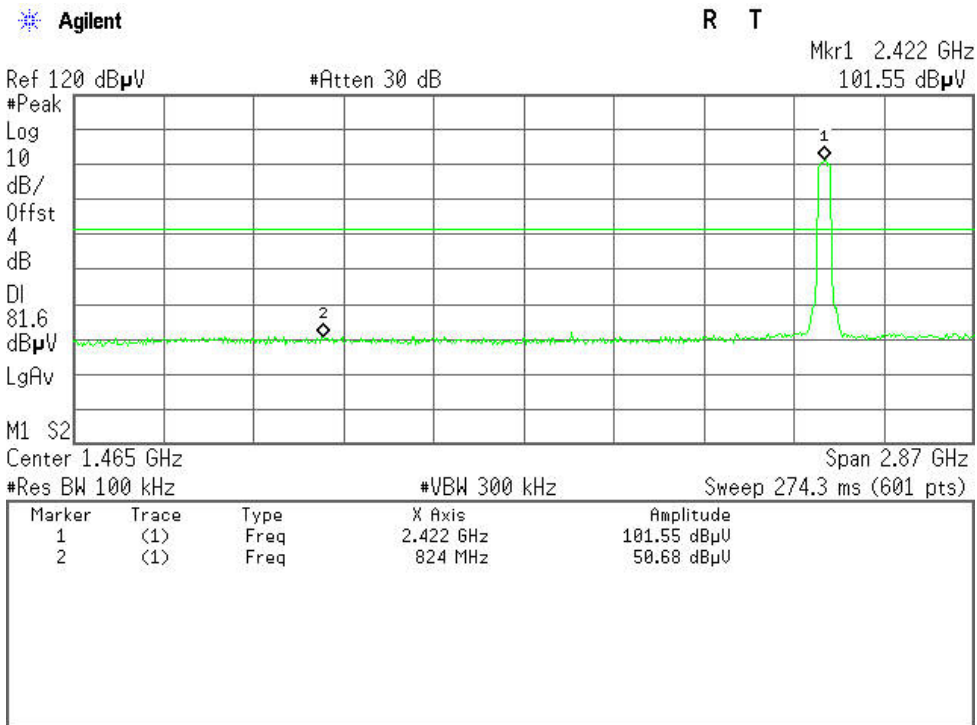


CH High( 2.9GHz ~26.5GHz)

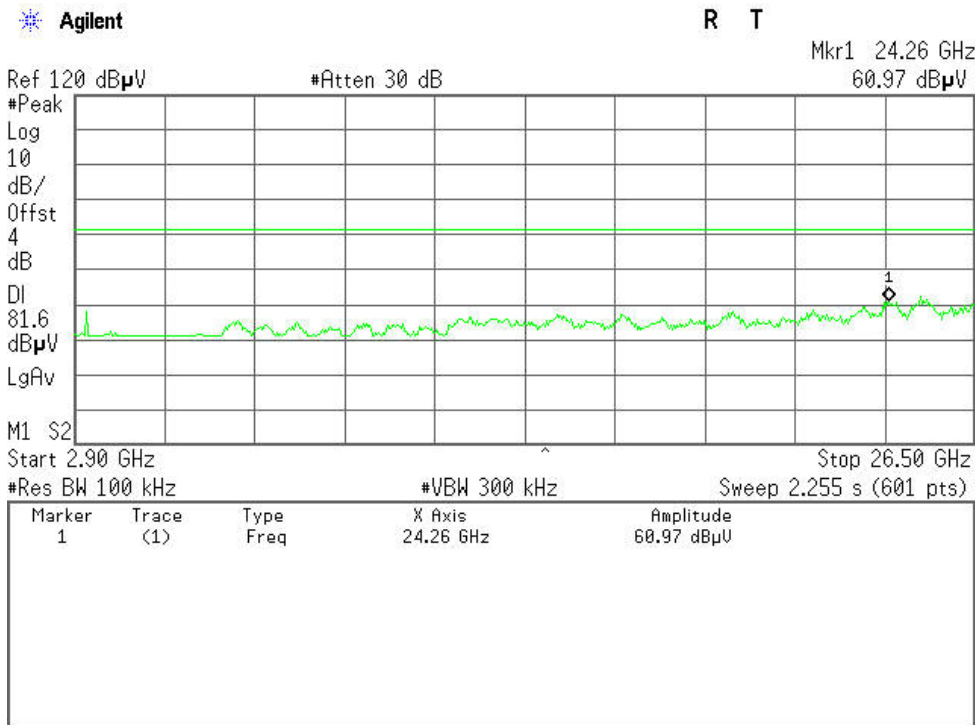




IEEE 802.11n HT40 MHz (Antenna 1) mode  
CH Low (30MHz ~2.9GHz)

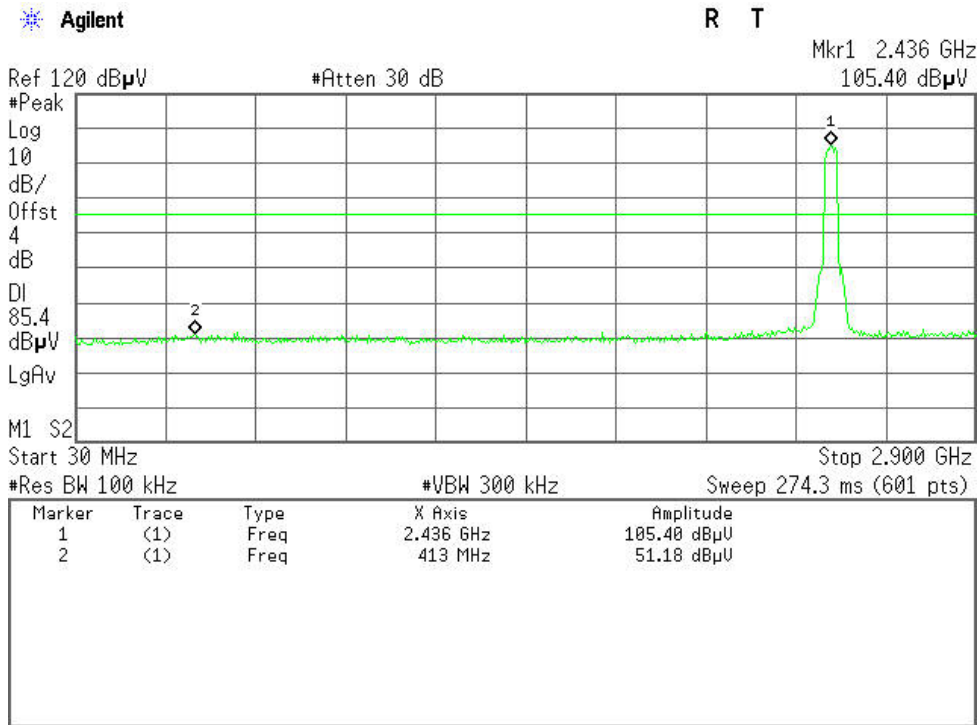


CH Low (2.9GHz ~26.5GHz)

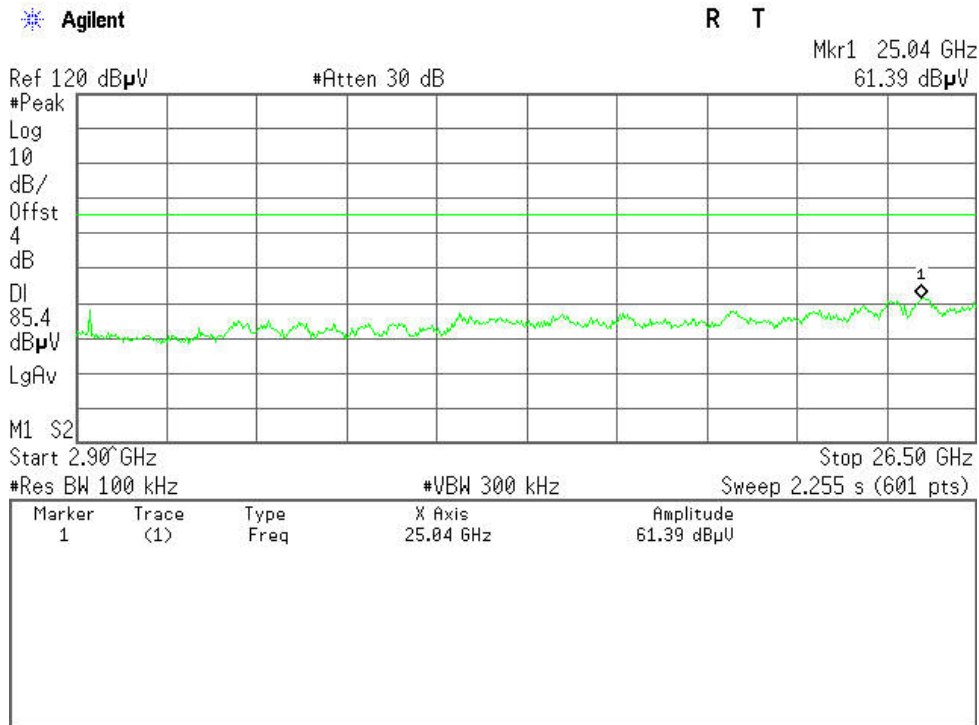




CH Mid (30MHz ~2.9GHz)

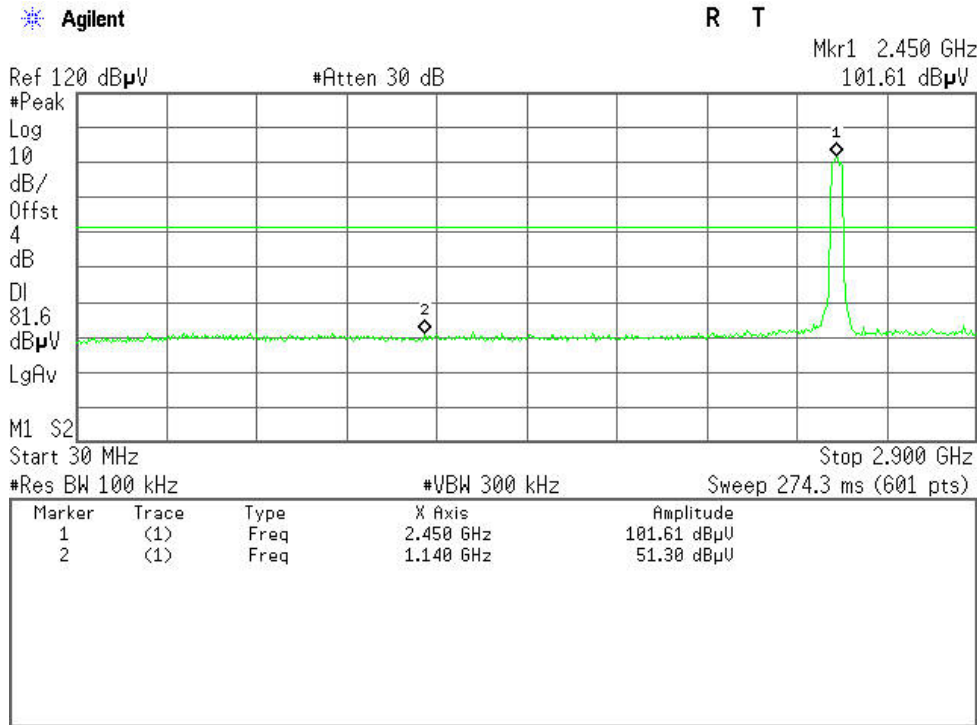


CH Mid (2.9GHz ~26.5GHz)

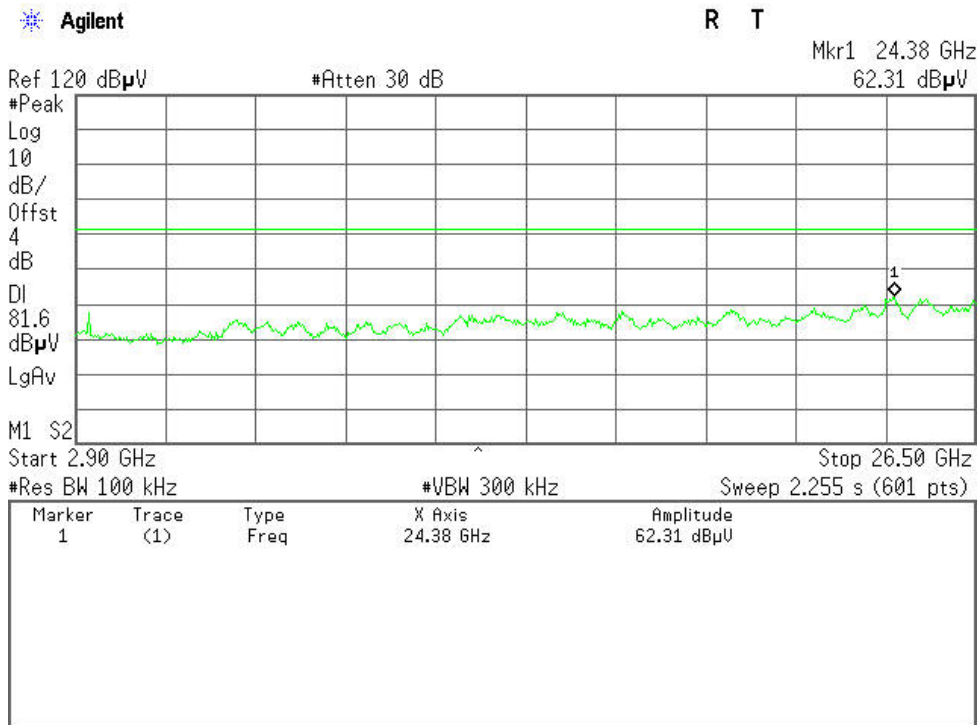




CH High (30MHz ~2.9GHz)

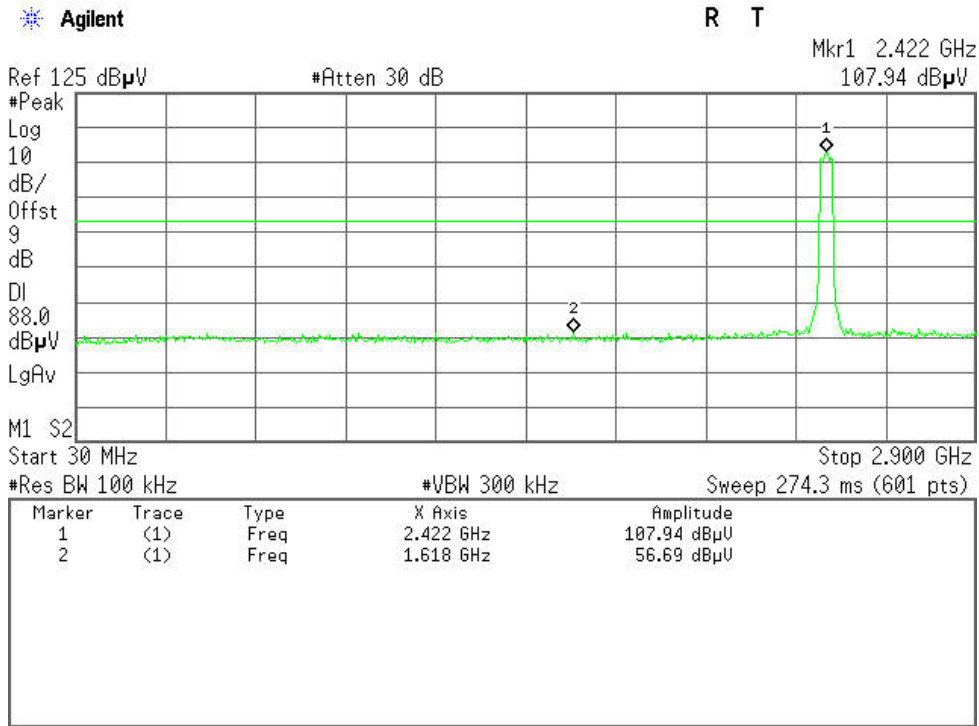


CH High( 2.9GHz ~26.5GHz)

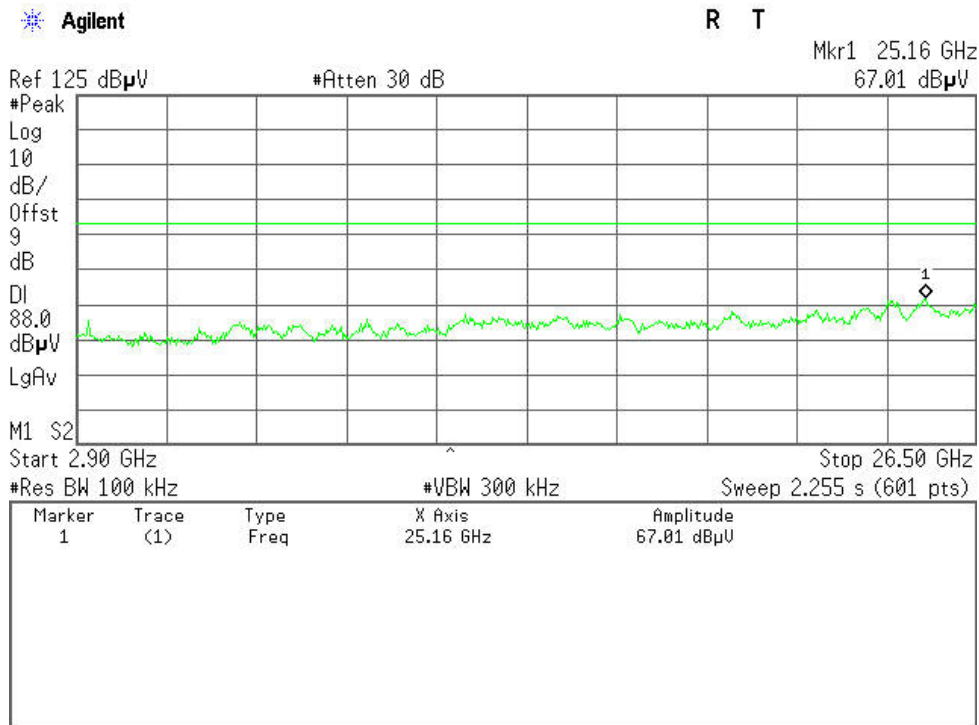




IEEE 802.11n HT40 MHz (Combine with antenna 1 and antenna 2) mode  
CH Low (30MHz ~2.9GHz)

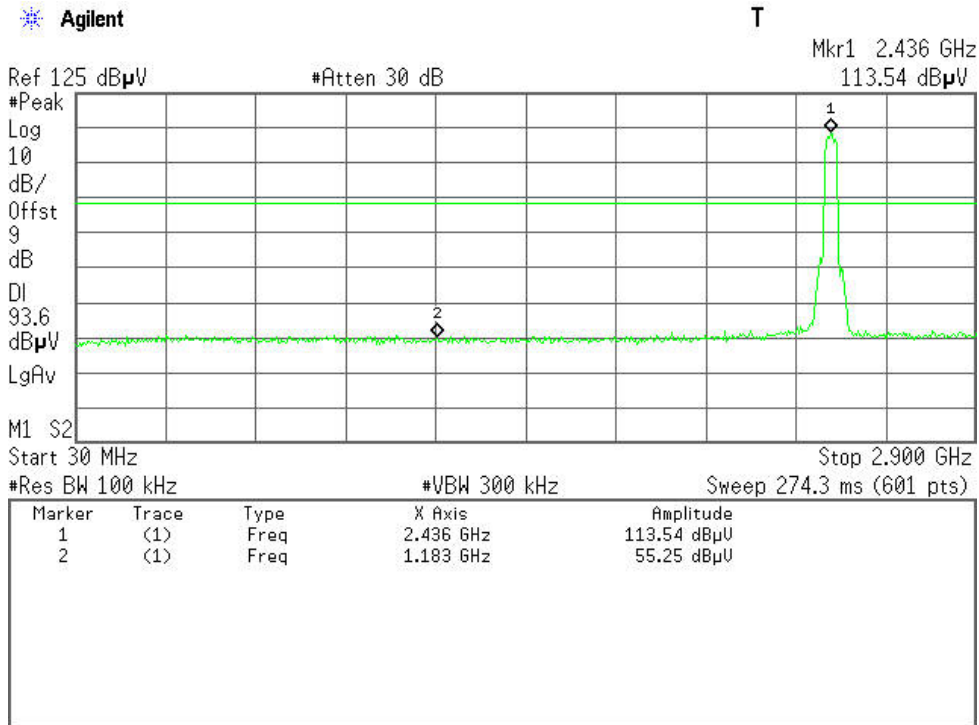


CH Low (2.9GHz ~26.5GHz)

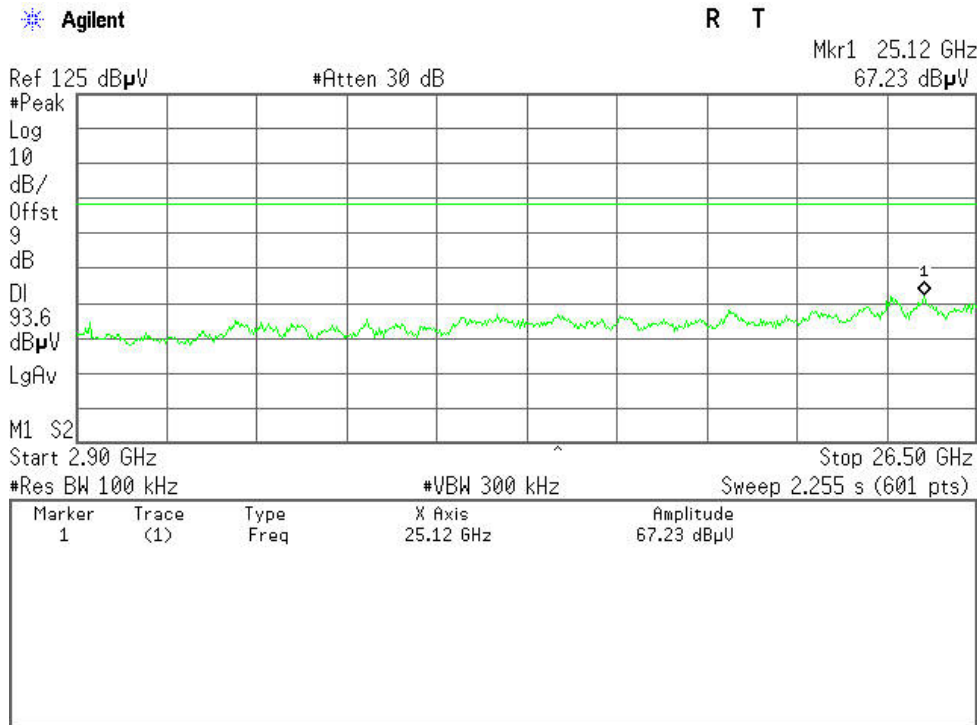




CH Mid (30MHz ~2.9GHz)



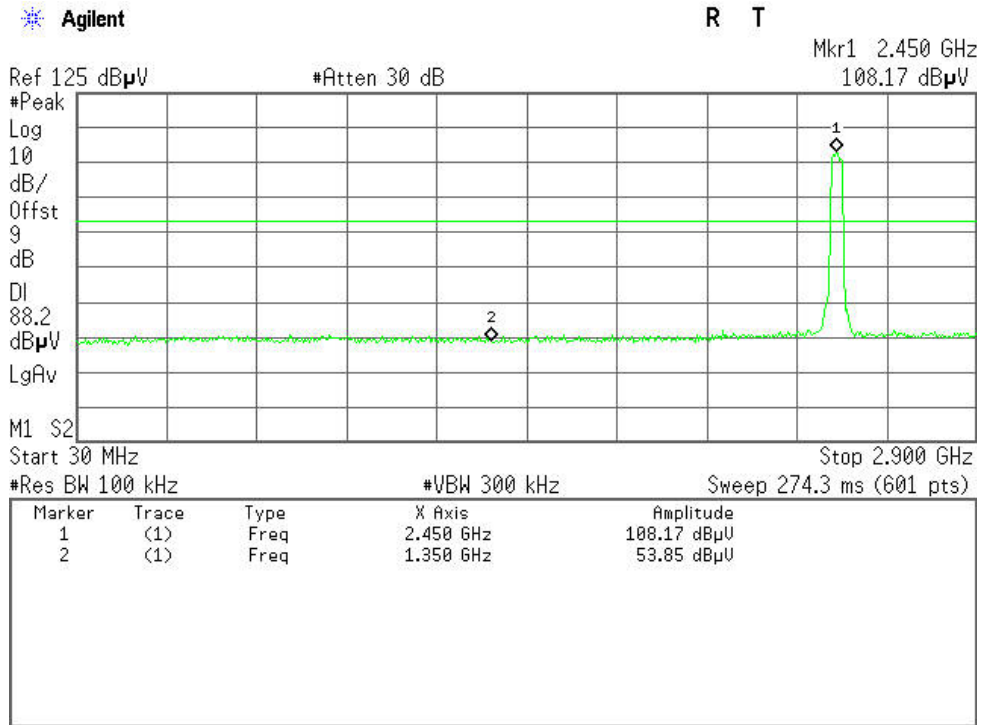
CH Mid (2.9GHz ~26.5GHz)



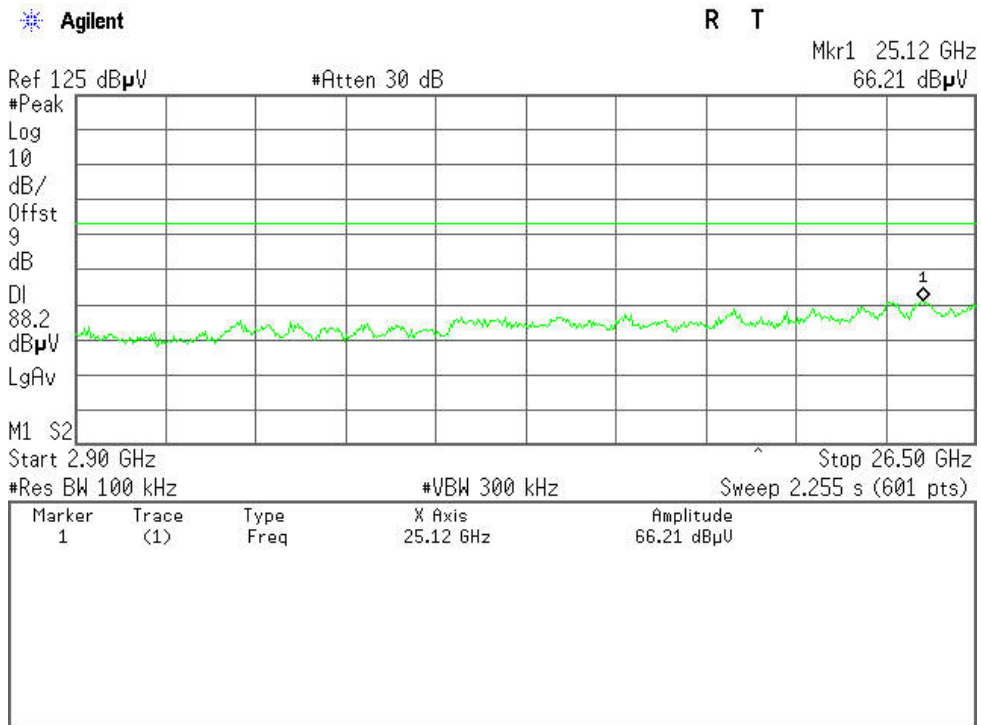




CH High (30MHz ~2.9GHz)



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	03/19/2012	03/19/2013
ESCI EMI TEST RECEIVER.ESCI	ROHDE&SCHWARZ	ESCI	100783	03/17/2012	03/17/2013
Amplifier	MITEQ	AM-1604-3000	1123808	03/18/2012	03/18/2013
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	03/18/2012	03/18/2013
Bilog Antenna	SCHAFFNER	CBL6143	5082	03/17/2012	03/17/2013
Horn Antenna	SCHWARZBECK	BBHA9120	D286	03/17/2012	03/17/2013
Loop Antenna	A、 R、 A	PLA-1030/B	1029	03/23/2012	03/23/2013
Temp. / Humidity Meter	VICTOR	VC230	N/A	03/19/2012	03/19/2013
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.

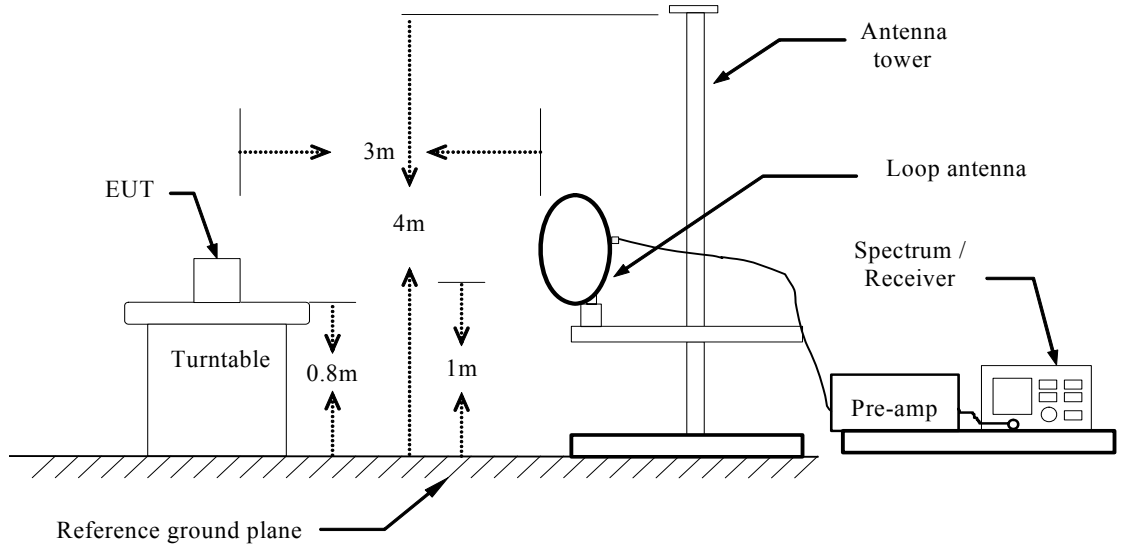
7.2.4.3. TEST PROCEDURE (please refer to measurement standard)

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

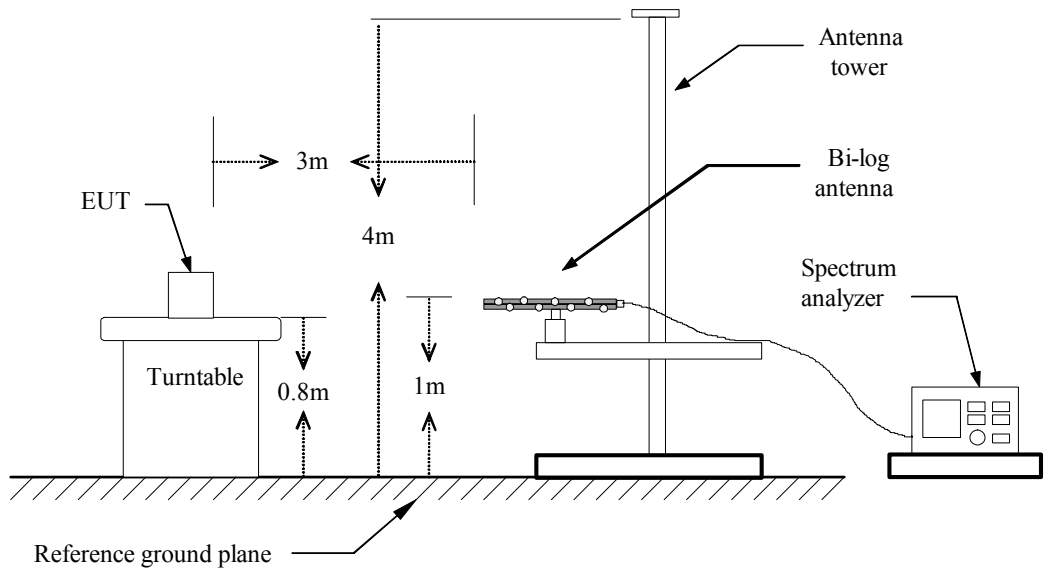


7.2.4.4. TEST SETUP

**Below 30MHz**

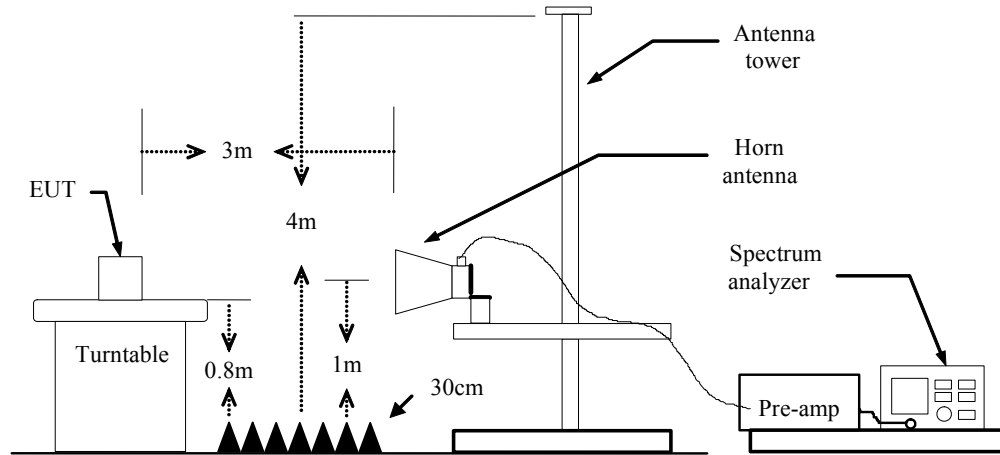


**Below 1 GHz**





Above 1 GHz



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



7.2.4.5. DATA SAPLE

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

Test Mode: TX

Test Date: November 19, 2012

Temperature: 24°C

Tested by: Leevin Li

Humidity: 52% RH

Polarity: Vertical

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
102.7500	56.40	-21.86	34.54	43.50	-8.96	QP
249.8667	47.42	-17.77	29.65	46.00	-16.35	QP
374.3500	49.43	-16.77	32.66	46.00	-13.34	QP
450.3333	45.86	-15.35	30.51	46.00	-15.49	QP
500.4500	47.50	-14.06	33.44	46.00	-12.56	QP
749.4167	42.79	-11.36	31.43	46.00	-14.57	QP

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

Notes:

1. Radiated emissions measured in frequency range from 9kHz to 1GHz were made with an instrument using Quasi-peak detector mode.
2. 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.
3. The IF bandwidth of Receiver between 30MHz to 1GHz was 120kHz.
4. 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



**Test Mode:** TX  
**Temperature:** 24°C  
**Humidity:** 52% RH

**Test Date:** November 19, 2012  
**Tested by:** Leevin Li  
**Polarity:** Horizontal

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
249.8667	49.63	-17.77	31.86	46.00	-14.14	QP
280.5833	50.69	-18.59	32.10	46.00	-13.90	QP
299.9833	50.96	-18.35	32.61	46.00	-13.39	QP
374.3500	50.70	-16.77	33.93	46.00	-12.07	QP
500.4500	48.40	-14.06	34.34	46.00	-11.66	QP
249.8667	49.63	-17.77	31.86	46.00	-14.14	QP

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

**Notes:**

1. Radiated emissions measured in frequency range from 9kHz to 1GHz were made with an instrument using Quasi-peak detector mode.
2. 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.
3. The IF bandwidth of Receiver between 30MHz to 1GHz was 120kHz.
4. 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





**Above 1 GHz**

**Antenna 1**

**Operation Mode:** TX / IEEE 802.11b / CH Low

**Test Date:** November 22, 2012

**Temperature:** 24°C

**Tested by:** Leevin Li

**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
1255.0000	48.38	-10.39	37.99	74.00	-36.01	V	Peak
1595.0000	48.34	-8.44	39.90	74.00	-34.10	V	Peak
3210.0000	52.45	-3.82	48.63	74.00	-25.37	V	Peak
4173.3333	45.85	-0.04	45.81	74.00	-28.19	V	Peak
4825.0000	47.98	2.86	50.84	74.00	-23.16	V	Peak
5788.3333	44.68	6.23	50.91	74.00	-23.09	V	Peak
1595.0000	50.70	-8.44	42.26	74.00	-31.74	H	Peak
3210.0000	51.29	-3.82	47.47	74.00	-26.53	H	Peak
4003.3333	45.48	-0.52	44.96	74.00	-29.04	H	Peak
5221.6667	45.19	4.12	49.31	74.00	-24.69	H	Peak
5788.3333	44.70	6.23	50.93	74.00	-23.07	H	Peak
6581.6667	45.13	7.32	52.45	74.00	-21.55	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  
Temperature: 24°C  
Humidity: 52% RH

Test Date: November 22, 2012  
Tested by: Leevin Li  
Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1283.3333	48.41	-10.49	37.92	74.00	-36.08	V	peak
2133.3333	47.98	-6.79	41.19	74.00	-32.81	V	peak
3238.3333	50.68	-3.55	47.13	74.00	-26.87	V	peak
4230.0000	45.47	0.12	45.59	74.00	-28.41	V	peak
4881.6667	49.99	3.20	53.19	74.00	-20.81	V	peak
4881.6667	47.59	3.20	50.79	54.00	-3.21	V	AVG
6156.6667	44.25	7.52	51.77	74.00	-22.23	V	peak
1623.3333	50.27	-8.38	41.89	74.00	-32.11	H	Peak
3238.3333	50.12	-3.55	46.57	74.00	-27.43	H	Peak
3833.3333	46.70	-0.70	46.00	74.00	-28.00	H	Peak
4740.0000	44.32	2.34	46.66	74.00	-27.34	H	Peak
5051.6667	44.80	3.97	48.77	74.00	-25.23	H	Peak
5646.6667	44.13	5.31	49.44	74.00	-24.56	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:** November 22, 2012  
**Temperature:** 24°C      **Tested by:** Leevin Li  
**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
1595.0000	48.11	-8.44	39.67	74.00	-34.33	V	peak
2161.6667	48.13	-6.83	41.30	74.00	-32.70	V	peak
3295.0000	50.40	-3.00	47.40	74.00	-26.60	V	peak
3805.0000	46.00	-0.72	45.28	74.00	-28.72	V	peak
4910.0000	51.40	3.37	54.77	74.00	-19.23	V	peak
4910.0000	46.20	3.37	49.57	54.00	-4.43	V	AVG
5930.0000	44.41	7.14	51.55	74.00	-22.45	V	peak
1226.6667	48.28	-10.28	38.00	74.00	-36.00	H	Peak
2530.0000	50.01	-7.23	42.78	74.00	-31.22	H	Peak
3295.0000	49.19	-3.00	46.19	74.00	-27.81	H	Peak
3918.3333	46.77	-0.61	46.16	74.00	-27.84	H	Peak
4910.0000	45.13	3.37	48.50	74.00	-25.50	H	Peak
6071.6667	44.48	7.56	52.04	74.00	-21.96	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: November 22, 2012
Temperature: 24°C Tested by: Leevin Li
Humidity: 52% RH Polarity: Ver. / Hor.

Table with 8 columns: Frequency (MHz), Reading (dBuV), Correction Factor (dB/m), Result (dBuV/m), Limit (dBuV/m), Margin (dB), Antenna Pole (V/H), Remark. Contains 14 rows of measurement data.

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  
Temperature: 24°C  
Humidity: 52 % RH

Test Date: November 22, 2012  
Tested by: Leevin Li  
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	48.35	-10.19	38.16	74.00	-35.84	V	Peak
2133.3333	48.47	-6.79	41.68	74.00	-32.32	V	Peak
3238.3333	51.00	-3.55	47.45	74.00	-26.55	V	Peak
4286.6667	46.17	0.28	46.45	74.00	-27.55	V	Peak
4881.6667	46.10	3.20	49.30	74.00	-24.70	V	Peak
6241.6667	44.60	7.48	52.08	74.00	-21.92	V	Peak
1283.3333	49.80	-10.49	39.31	74.00	-34.69	H	Peak
3238.3333	48.90	-3.55	45.35	74.00	-28.65	H	Peak
4400.0000	44.73	0.60	45.33	74.00	-28.67	H	Peak
5221.6667	45.48	4.12	49.60	74.00	-24.40	H	Peak
5901.6667	43.85	6.96	50.81	74.00	-23.19	H	Peak
6978.3333	45.79	7.14	52.93	74.00	-21.07	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:** November 22, 2012  
**Temperature:** 24°C      **Tested by:** Leevin Li  
**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
3280.0000	48.47	-3.15	45.32	74.00	-28.68	V	Peak
3985.0000	46.63	-0.55	46.08	74.00	-27.92	V	Peak
4915.0000	47.18	3.40	50.58	74.00	-23.42	V	Peak
5695.0000	44.52	5.63	50.15	74.00	-23.85	V	Peak
6145.0000	45.22	7.52	52.74	74.00	-21.26	V	Peak
6565.0000	45.17	7.33	52.50	74.00	-21.50	V	Peak
1975.0000	47.37	-6.82	40.55	74.00	-33.45	H	Peak
2110.0000	48.61	-6.76	41.85	74.00	-32.15	H	Peak
3505.0000	46.38	-1.03	45.35	74.00	-28.65	H	Peak
4855.0000	44.84	3.04	47.88	74.00	-26.12	H	Peak
5590.0000	46.13	4.95	51.08	74.00	-22.92	H	Peak
6280.0000	46.11	7.46	53.57	74.00	-20.43	H	Peak

**REMARKS:**

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



Antenna 1

Operation Mode: TX / IEEE 802.11n HT20 MHz / CH Low Test Date: November 22, 2012

Temperature: 24°C

Tested by: Leevin Li

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
3210.0000	52.26	-3.82	48.44	74.00	-25.56	V	Peak
4145.0000	46.27	-0.12	46.15	74.00	-27.85	V	Peak
5051.6667	45.11	3.97	49.08	74.00	-24.92	V	Peak
5986.6667	44.43	7.50	51.93	74.00	-22.07	V	Peak
6836.6667	44.01	7.21	51.22	74.00	-22.78	V	Peak
7743.3333	44.83	7.61	52.44	74.00	-21.56	V	Peak
1198.3333	48.53	-10.19	38.34	74.00	-35.66	H	Peak
2105.0000	47.77	-6.75	41.02	74.00	-32.98	H	Peak
3210.0000	50.77	-3.82	46.95	74.00	-27.05	H	Peak
4230.0000	45.73	0.12	45.85	74.00	-28.15	H	Peak
4825.0000	45.12	2.86	47.98	74.00	-26.02	H	Peak
6270.0000	44.50	7.47	51.97	74.00	-22.03	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:** November 22, 2012  
**Temperature:** 24°C **Tested by:** Leevin Li  
**Humidity:** 52% RH **Polarity:** Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1630.0000	48.88	-8.37	40.51	74.00	-33.49	V	Peak
3250.0000	48.76	-3.43	45.33	74.00	-28.67	V	Peak
3655.0000	46.95	-0.88	46.07	74.00	-27.93	V	Peak
4105.0000	46.31	-0.23	46.08	74.00	-27.92	V	Peak
5035.0000	45.87	3.95	49.82	74.00	-24.18	V	Peak
6010.0000	44.63	7.59	52.22	74.00	-21.78	V	Peak
1720.0000	49.42	-8.36	41.06	74.00	-32.94	H	Peak
3790.0000	46.38	-0.74	45.64	74.00	-28.36	H	Peak
4435.0000	45.77	0.70	46.47	74.00	-27.53	H	Peak
4900.0000	45.66	3.31	48.97	74.00	-25.03	H	Peak
5080.0000	45.05	3.99	49.04	74.00	-24.96	H	Peak
5785.0000	45.54	6.21	51.75	74.00	-22.25	H	Peak

**REMARKS:**

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





Operation Mode: TX / IEEE 802.11n HT20 MHz / CH High Test Date: November 22, 2012

Temperature: 24°C

Tested by: Leevin Li

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
3295.0000	50.68	-3.00	47.68	74.00	-26.32	V	Peak
4711.6667	44.86	2.17	47.03	74.00	-26.97	V	Peak
5760.0000	43.64	6.04	49.68	74.00	-24.32	V	Peak
6015.0000	44.39	7.58	51.97	74.00	-22.03	V	Peak
6950.0000	44.99	7.15	52.14	74.00	-21.86	V	Peak
7771.6667	45.21	7.62	52.83	74.00	-21.17	V	Peak
1226.6667	47.98	-10.28	37.70	74.00	-36.30	H	Peak
1963.3333	46.28	-6.92	39.36	74.00	-34.64	H	Peak
3295.0000	48.70	-3.00	45.70	74.00	-28.30	H	Peak
4003.3333	45.32	-0.52	44.80	74.00	-29.20	H	Peak
4938.3333	45.77	3.55	49.32	74.00	-24.68	H	Peak
5618.3333	45.00	5.13	50.13	74.00	-23.87	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 1 and antenna 2

Operation Mode: TX / IEEE 802.11n HT20 MHz / CH Low Test Date: November 22, 2012

Temperature: 24°C

Tested by: Leevin Li

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
1623.3333	48.48	-8.38	40.10	74.00	-33.90	V	Peak
2246.6667	48.60	-6.96	41.64	74.00	-32.36	V	Peak
3210.0000	51.31	-3.82	47.49	74.00	-26.51	V	Peak
5335.0000	45.30	4.22	49.52	74.00	-24.48	V	Peak
6100.0000	44.07	7.54	51.61	74.00	-22.39	V	Peak
6950.0000	45.29	7.15	52.44	74.00	-21.56	V	Peak
3210.0000	49.98	-3.82	46.16	74.00	-27.84	H	Peak
4003.3333	45.32	-0.52	44.80	74.00	-29.20	H	Peak
4966.6667	44.24	3.72	47.96	74.00	-26.04	H	Peak
6071.6667	44.39	7.56	51.95	74.00	-22.05	H	Peak
6780.0000	44.55	7.23	51.78	74.00	-22.22	H	Peak
7715.0000	44.47	7.59	52.06	74.00	-21.94	H	Peak

REMARKS:

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



**Operation Mode:** TX / IEEE 802.11n HT20 MHz / CH Mid    **Test Date:** November 22, 2012  
**Temperature:** 24°C    **Tested by:** Leevin Li  
**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
1270.0000	49.58	-10.44	39.14	74.00	-34.86	V	Peak
1630.0000	47.97	-8.37	39.60	74.00	-34.40	V	Peak
3445.0000	45.75	-1.56	44.19	74.00	-29.81	V	Peak
4360.0000	45.59	0.49	46.08	74.00	-27.92	V	Peak
4870.0000	46.75	3.13	49.88	74.00	-24.12	V	Peak
5995.0000	44.97	7.56	52.53	74.00	-21.47	V	Peak
3655.0000	46.61	-0.88	45.73	74.00	-28.27	H	Peak
3910.0000	46.40	-0.62	45.78	74.00	-28.22	H	Peak
4930.0000	44.42	3.49	47.91	74.00	-26.09	H	Peak
5275.0000	45.71	4.17	49.88	74.00	-24.12	H	Peak
6130.0000	44.64	7.53	52.17	74.00	-21.83	H	Peak
6940.0000	46.11	7.16	53.27	74.00	-20.73	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: November 22, 2012

Temperature: 24°C

Tested by: Leevin Li

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
1566.6667	48.50	-8.80	39.70	74.00	-34.30	V	Peak
3295.0000	49.63	-3.00	46.63	74.00	-27.37	V	Peak
4626.6667	43.97	1.65	45.62	74.00	-28.38	V	Peak
5873.3333	44.83	6.77	51.60	74.00	-22.40	V	Peak
6128.3333	44.86	7.53	52.39	74.00	-21.61	V	Peak
7488.3333	44.82	7.44	52.26	74.00	-21.74	V	Peak
3295.0000	48.89	-3.00	45.89	74.00	-28.11	H	Peak
4031.6667	45.37	-0.44	44.93	74.00	-29.07	H	Peak
5051.6667	44.95	3.97	48.92	74.00	-25.08	H	Peak
5646.6667	44.01	5.31	49.32	74.00	-24.68	H	Peak
6071.6667	44.42	7.56	51.98	74.00	-22.02	H	Peak
7233.3333	44.80	7.28	52.08	74.00	-21.92	H	Peak

REMARKS:

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



Antenna 1

Operation Mode: TX / IEEE 802.11n HT40 MHz / CH Low Test Date: November 22, 2012

Temperature: 24°C

Tested by: Leevin Li

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
3238.3333	51.67	-3.55	48.12	74.00	-25.88	V	Peak
4938.3333	44.73	3.55	48.28	74.00	-25.72	V	Peak
6156.6667	44.74	7.52	52.26	74.00	-21.74	V	Peak
6978.3333	45.32	7.14	52.46	74.00	-21.54	V	Peak
7488.3333	45.21	7.44	52.65	74.00	-21.35	V	Peak
8196.6666	44.67	7.93	52.60	74.00	-21.40	V	Peak
1651.6667	47.89	-8.37	39.52	74.00	-34.48	H	Peak
2133.3333	47.61	-6.79	40.82	74.00	-33.18	H	Peak
3238.3333	52.54	-3.55	48.99	74.00	-25.01	H	Peak
4173.3333	46.38	-0.04	46.34	74.00	-27.66	H	Peak
5221.6667	44.56	4.12	48.68	74.00	-25.32	H	Peak
6071.6667	44.79	7.56	52.35	74.00	-21.65	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: November 22, 2012

Temperature: 24°C

Tested by: Leevin Li

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
1623.3333	48.49	-8.38	40.11	74.00	-33.89	V	Peak
3238.3333	50.32	-3.55	46.77	74.00	-27.23	V	Peak
4371.6667	44.83	0.52	45.35	74.00	-28.65	V	Peak
4938.3333	44.97	3.55	48.52	74.00	-25.48	V	Peak
5901.6667	44.90	6.96	51.86	74.00	-22.14	V	Peak
6978.3333	45.24	7.14	52.38	74.00	-21.62	V	Peak
1255.0000	48.27	-10.39	37.88	74.00	-36.12	H	Peak
2105.0000	47.97	-6.75	41.22	74.00	-32.78	H	Peak
3238.3333	49.70	-3.55	46.15	74.00	-27.85	H	Peak
4371.6667	45.31	0.52	45.83	74.00	-28.17	H	Peak
5391.6667	44.89	4.27	49.16	74.00	-24.84	H	Peak
5958.3333	44.50	7.32	51.82	74.00	-22.18	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: November 22, 2012

Temperature: 24°C

Tested by: Leevin Li

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
3266.6667	51.09	-3.27	47.82	74.00	-26.18	V	Peak
3861.6667	46.37	-0.67	45.70	74.00	-28.30	V	Peak
4485.0000	45.52	0.84	46.36	74.00	-27.64	V	Peak
4938.3333	45.36	3.55	48.91	74.00	-25.09	V	Peak
6156.6667	43.96	7.52	51.48	74.00	-22.52	V	Peak
7205.0000	44.54	7.26	51.80	74.00	-22.20	V	Peak
1680.0000	47.27	-8.36	38.91	74.00	-35.09	H	Peak
2133.3333	47.94	-6.79	41.15	74.00	-32.85	H	Peak
3266.6667	49.85	-3.27	46.58	74.00	-27.42	H	Peak
4173.3333	45.57	-0.04	45.53	74.00	-28.47	H	Peak
4938.3333	44.76	3.55	48.31	74.00	-25.69	H	Peak
6468.3333	44.46	7.37	51.83	74.00	-22.17	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: November 22, 2012

Temperature: 24°C

Tested by: Leevin Li

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
1360.0000	52.76	-8.01	44.75	74.00	-29.25	V	Peak
1495.0000	53.64	-8.23	45.41	74.00	-28.59	V	Peak
1990.0000	56.06	-11.21	44.85	74.00	-29.15	V	Peak
3325.0000	47.43	-4.03	43.40	74.00	-30.60	V	Peak
4135.0000	46.28	-1.89	44.39	74.00	-29.61	V	Peak
5050.0000	44.50	1.38	45.88	74.00	-28.12	V	Peak
1495.0000	52.07	-8.23	43.84	74.00	-30.16	H	Peak
3235.0000	46.62	-4.07	42.55	74.00	-31.45	H	Peak
3610.0000	47.28	-2.98	44.30	74.00	-29.70	H	Peak
4345.0000	45.20	-1.03	44.17	74.00	-29.83	H	Peak
5005.0000	45.05	1.33	46.38	74.00	-27.62	H	Peak
5695.0000	44.65	2.33	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 HT40 MHz / CH Mid    **Test Date:** November 22, 2012  
**Temperature:** 24°C    **Tested by:** Leevin Li  
**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
1481.6667	48.89	-9.89	39.00	74.00	-35.00	V	Peak
2105.0000	47.50	-6.75	40.75	74.00	-33.25	V	Peak
3238.3333	51.42	-3.55	47.87	74.00	-26.13	V	Peak
4031.6667	45.49	-0.44	45.05	74.00	-28.95	V	Peak
4598.3333	44.18	1.48	45.66	74.00	-28.34	V	Peak
5391.6667	44.62	4.27	48.89	74.00	-25.11	V	Peak
1623.3333	54.22	-8.38	45.84	74.00	-28.16	H	Peak
3238.3333	51.14	-3.55	47.59	74.00	-26.41	H	Peak
3691.6667	46.44	-0.84	45.60	74.00	-28.40	H	Peak
5051.6667	44.29	3.97	48.26	74.00	-25.74	H	Peak
5590.0000	45.17	4.95	50.12	74.00	-23.88	H	Peak
6468.3333	44.39	7.37	51.76	74.00	-22.24	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: November 22, 2012

Temperature: 24°C

Tested by: Leevin Li

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
1736.6667	51.38	-8.35	43.03	74.00	-30.97	V	Peak
3266.6667	51.51	-3.27	48.24	74.00	-25.76	V	Peak
3833.3333	46.72	-0.70	46.02	74.00	-27.98	V	Peak
4258.3333	45.97	0.20	46.17	74.00	-27.83	V	Peak
5080.0000	45.54	3.99	49.53	74.00	-24.47	V	Peak
5675.0000	44.91	5.50	50.41	74.00	-23.59	V	Peak
1623.3333	47.87	-8.38	39.49	74.00	-34.51	H	Peak
3266.6667	50.23	-3.27	46.96	74.00	-27.04	H	Peak
4145.0000	46.43	-0.12	46.31	74.00	-27.69	H	Peak
4740.0000	45.06	2.34	47.40	74.00	-26.60	H	Peak
5731.6667	45.23	5.86	51.09	74.00	-22.91	H	Peak
5986.6667	44.15	7.50	51.65	74.00	-22.35	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.

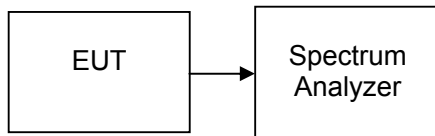
#### 7.3.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US44300399	03/19/2012	03/19/2013

#### 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 = 1-5 % of the emission bandwidth (EBW), VBW =  $\geq 3 \times$  RBW, 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	8249	>500	PASS
Mid	2437	8265		PASS
High	2462	8246		PASS

**Test mode: IEEE 802.11g (Antenna 1)**

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	15025	>500	PASS
Mid	2437	15399		PASS
High	2462	14656		PASS

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

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	17176	>500	PASS
Mid	2437	16672		PASS
High	2462	17069		PASS

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

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	17456	>500	PASS
Mid	2437	17233		PASS
High	2462	17109		PASS