



## FCC 47 CFR PART 15 SUBPART C

for

**Screeneo**

**Model: HDP1590, HDP1690**

**Brand: PHILIPS**

**Test Report Number:**  
**C140310Z02-RP1**

**Issued Date: April 28, 2014**

Issued for

**SAGEMCOM SAS**

**250 Route de l' Empereur - 92848 RUEIL MALMAISON  
CEDEX- FRANCE**

Issued by:

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## Revision History

Rev.	Issue No.	Revisions	Effect Page	Revised By
00	C140310Z02-RP1	Initial Issue	ALL	Sabrina Wang



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## 1 TEST CERTIFICATION

<b>Product</b>	Screeneo
<b>Model</b>	HDP1590, HDP1690
<b>Brand</b>	PHILIPS
<b>Tested</b>	March 10~April 28, 2014
<b>Applicant</b>	<b>SAGEMCOM SAS</b> 250 Route de l' Empereur - 92848 RUEIL MALMAISON CEDEX- FRANCE
<b>Manufacturer</b>	<b>SAGEMCOM DOCUMENTS SAS</b> 250 Route de l' Empereur - 92848 RUEIL MALMAISON CEDEX- FRANCE

### APPLICABLE STANDARDS

<b>Standard</b>	<b>Test Type</b>	<b>Standard</b>	<b>Test Type</b>
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:**

Sunday Hu  
Supervisor of EMC Dept.  
Compliance Certification Service Inc.

**Reviewed by:**

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)	● 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

<b>Product</b>	Screeneo
<b>Model Number</b>	HDP1590, HDP1690
<b>Brand</b>	PHILIPS
<b>Model Discrepancy</b>	1. HDP1590 is a typical model for full functions which is embedded with Wi-Fi 2.4G/5G and Bluetooth modules; 2. HDP1690 is a upgraded version based on HDP1590,The same HW,Mechanical and Radio modules design as HDP1590 ,except that Light engine changed from 500 Lum to 800 Lum and Fan changed the manufacturer.
<b>Serial Number</b>	C140310Z02-RP1
<b>Received Date</b>	March 10, 2014
<b>Power Supply</b>	AC100-240V,50/60Hz,150mA
<b>Transmit Power</b>	IEEE 802.11b mode: 16.88dBm (Antenna 0) IEEE 802.11b mode: 16.71dBm (Antenna 1) IEEE 802.11g mode: 21.54dBm (Antenna 0) IEEE 802.11g mode: 21.63dBm (Antenna 1) IEEE 802.11n HT20 MHz mode: 24.18dBm (Combine with Antenna 0 and Antenna 1) IEEE 802.11n HT20 MHz mode: 23.84dBm (Combine with Antenna 0 and Antenna 1)
<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>	IEEE 802.11b: 11Mbps(CCK) with fall back rates of 5.5/2/1Mbps IEEE 802.11g: 54Mbps with fall back rates of 48/36/24/18/12/9 /6Mbps IEEE 802.11n HT20: 130Mbps 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: 7 Channels
<b>Antenna Specification</b>	Embedded Type Antenna with 1.5dBi gain (Max)
<b>Channels Spacing</b>	IEEE 802.11b/g ,802.11n HT20/HT40 : 5MHz
<b>Temperature Range</b>	5°C ~ 35°C
<b>Hardware Version</b>	Motherboard: 8446C V6.0 Driver board: 8631C V5.0 power board: NER-SPM00-290A-J,Ver A8
<b>Software Version</b>	V1.18_2014_04_10

**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: **VW3HDP1590** 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> HDMI Play	<b>Mode 1</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: 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	Brand	Data Cable	Power Cord
1	PC	Dcsmif	805CV2X	DoC	DELL	Unshielded, 1.50m (VGA Cable) Unshielded, 1.50m (HDMI Cable)	Unshielded, 1.80m
2	Keyboard	SK-8115	CN-0DJ313-71616 -82P-0YTB	DoC	DELL	Unshielded, 1.50m	N/A
3	Mouse	MS111-P	J1101ANN	DoC	DELL	Unshielded, 1.45m	N/A
4	Modem	Modem1414	9013592	DoC	ACEEX	Unshielded, 1.20m	Unshielded, 2.00m
5	Printer	P310B	DLRE217030	DoC	EPSON	Unshielded, 1.20m	Unshielded, 2.00m
6	Headset	ST908	N/A	DoC	SENIC	Unshielded, 2.20m	N/A
7	DVD 1#	DV-410V-G	HKKD010577CN	DoC	PIONEE R	Unshielded, 1.50m (HDMI Cable)	Unshielded, 2.00m
8	DVD 2#	DV-410V-G	HKKD010577CN	DoC	PIONEE R	Unshielded, 1.50m (HDMI Cable)	Unshielded, 2.00m
9	USB 2.0 1#	RD1000	B9DJ4K1	DoC	DELL	Unshielded, 0.50m	N/A
10	USB 2.0 2#	RD1000	C9DJ4K1	DoC	DELL	Unshielded, 0.50m	N/A
11	USB 2.0 3#	RD1000	59DJ4K1	DoC	DELL	Unshielded, 0.50m	N/A
12	Speaker 1#	MF4105	N/A	DoC	CREATI VE	Unshielded, 2.00m	N/A
13	Speaker 2#	MF4105	N/A	DoC	CREATI VE	Unshielded, 2.00m	N/A
14	Speaker 3#	N/A	N/A	DoC	N/A	Unshielded, 2.00m	N/A
15	SD Card	N/A	N/A	DoC	Kingston	N/A	N/A
16	Wireless Router	TL-WR740N	12714462932	DoC	TP-LINK	Unshielded 1.50m	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.

USA	A2LA
China	CNAS

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

USA	FCC
Japan	VCCI(C-3478, R-3135, T-652, G-624)
Canada	INDUSTRY CANADA
Taiwan	BSMI

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:

Parameter	Uncertainty
Radiated Emission, 30 to 200 MHz Test Site : 966(2)	+/-3.6880dB
Radiated Emission, 200 to 1000 MHz Test Site : 966(2)	+/-3.6695dB
Radiated Emission, 1 to 8 GHz	+/-5.1782dB
Radiated Emission, 8 to 18 GHz	+/-5.2173dB
Conducted Emissions	+/-3.6836dB
Band Width	178kHz
Peak Output Power MU	+/-1.906dB
Band Edge MU	+/-0.182dB
Channel Separation MU	416.178Hz
Duty Cycle MU	0.054ms
Frequency Stability MU	226Hz

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 (dB $\mu$ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

**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
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	03/09/2014	03/08/2015
LISN(EUT)	ROHDE&SCHWARZ	ENV216	101543-WX	04/20/2014	04/19/2015
LISN	EMCO	3825/2	8901-1459	03/09/2014	03/08/2015
Temp. / Humidity Meter	VICTOR	HTC-1	N/A	03/17/2014	03/17/2015
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.

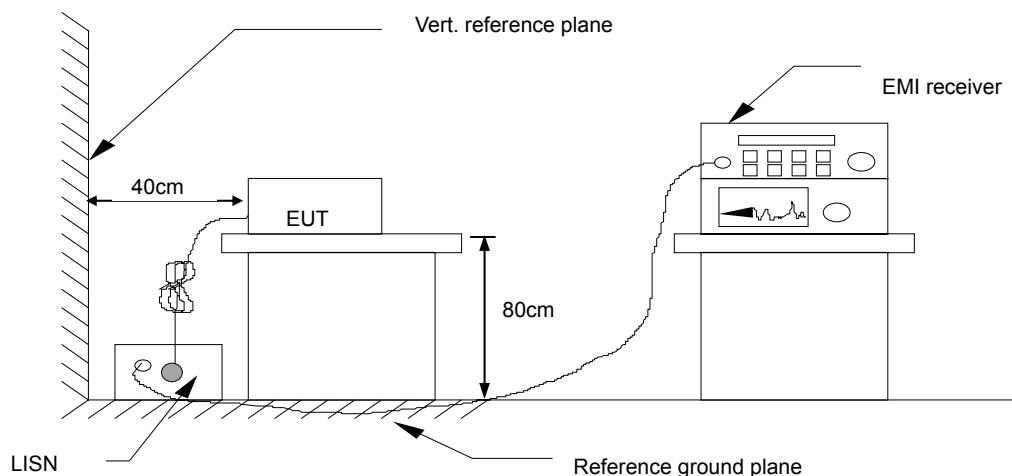


## 7.1.3. TEST PROCEDURES (please refer to measurement standard)

- 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.	HDP1590			RBW,VBW	9 kHz		
Environmental Conditions	22°C, 45% RH			Test Mode	Mode 1		
Tested by	Sun Guo			Line	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)	Line (L1/L2)
0.1500	26.28	5.28	9.58	35.86	14.86	65.99	56.00	-30.13	-41.14	Pass	L1
0.2940	27.91	11.44	9.69	37.60	21.13	60.41	50.41	-22.81	-29.28	Pass	L1
0.5220	26.08	8.33	9.69	35.77	18.02	56.00	46.00	-20.23	-27.98	Pass	L1
1.0740	25.16	7.68	9.71	34.87	17.39	56.00	46.00	-21.13	-28.61	Pass	L1
9.2380	32.57	13.93	9.84	42.41	23.77	60.00	50.00	-17.59	-26.23	Pass	L1
21.7620	31.02	13.81	9.85	40.87	23.66	60.00	50.00	-19.13	-26.34	Pass	L1
0.3020	27.94	15.60	9.76	37.70	25.36	60.19	50.19	-22.49	-24.83	Pass	L2
0.5299	29.02	14.30	9.68	38.70	23.98	56.00	46.00	-17.30	-22.02	Pass	L2
0.9940	26.01	6.15	9.81	35.82	15.96	56.00	46.00	-20.18	-30.04	Pass	L2
3.5780	25.43	17.54	9.76	35.19	27.30	56.00	46.00	-20.81	-18.70	Pass	L2
8.9500	34.03	13.20	9.83	43.86	23.03	60.00	50.00	-16.14	-26.97	Pass	L2
21.2700	30.84	14.76	9.75	40.59	24.51	60.00	50.00	-19.41	-25.49	Pass	L2

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

L2 = Line Two (Neutral Line)



## 7.2. SPURIOUS EMISSIONS MEASUREMENT

### 7.2.1. CONDUCTED EMISSIONS MEASUREMENT

#### 7.2.1.1. 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)).

#### 7.2.1.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	E4446A	US44300399	03/01/2014	03/01/2015

#### 7.2.1.3. TEST PROCEDURE (please refer to measurement standard)

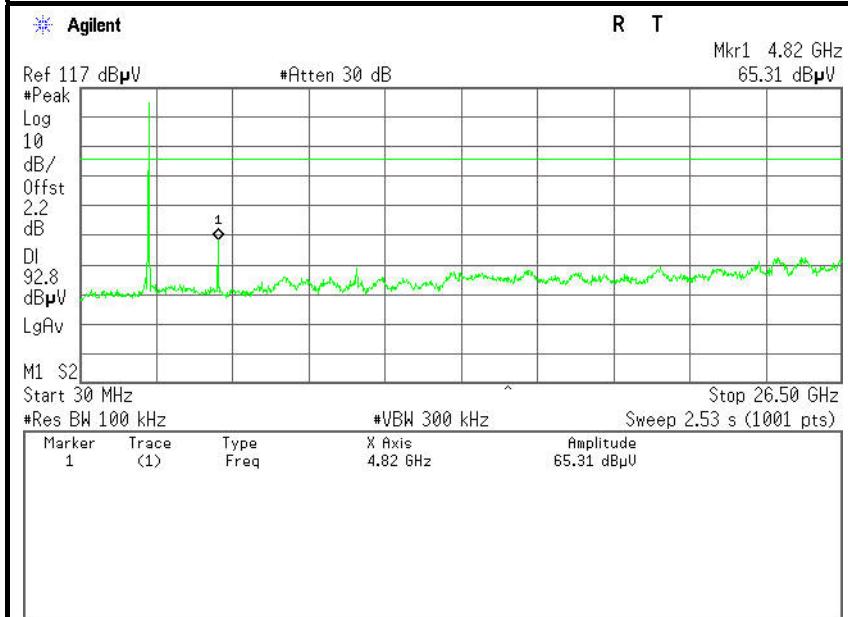
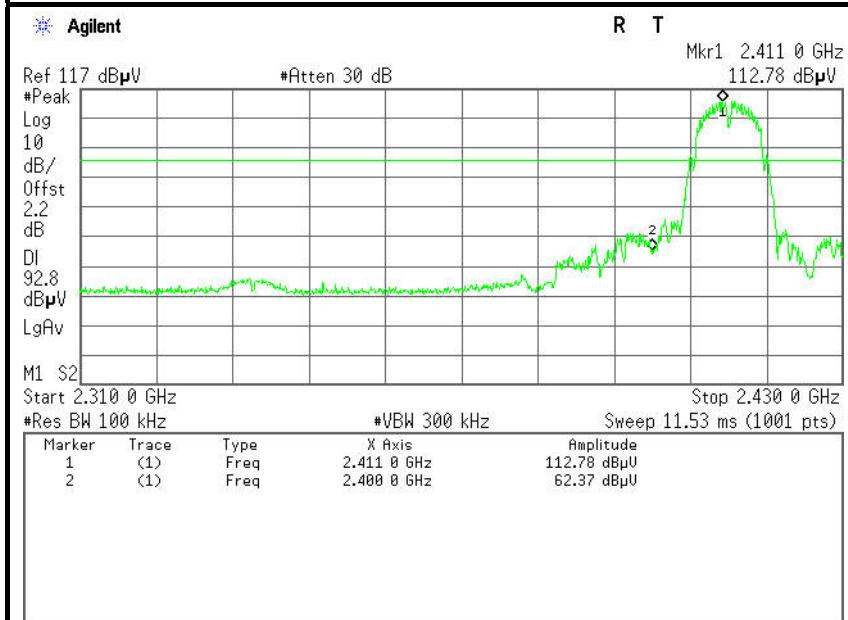
Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

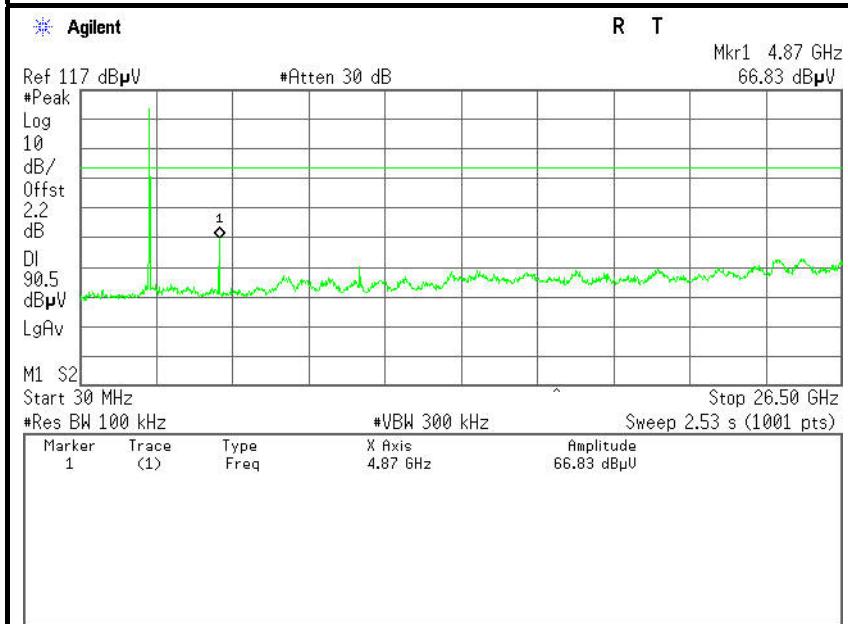
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

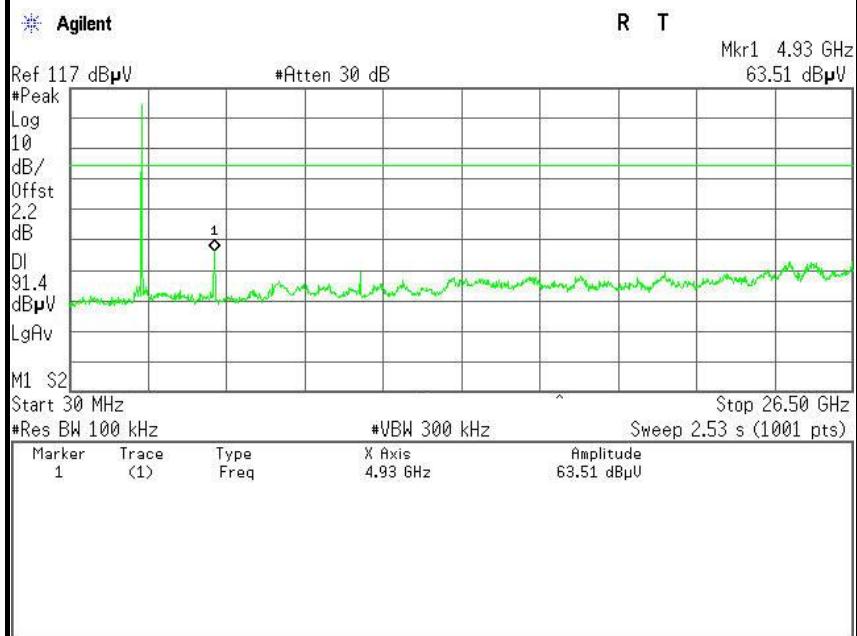
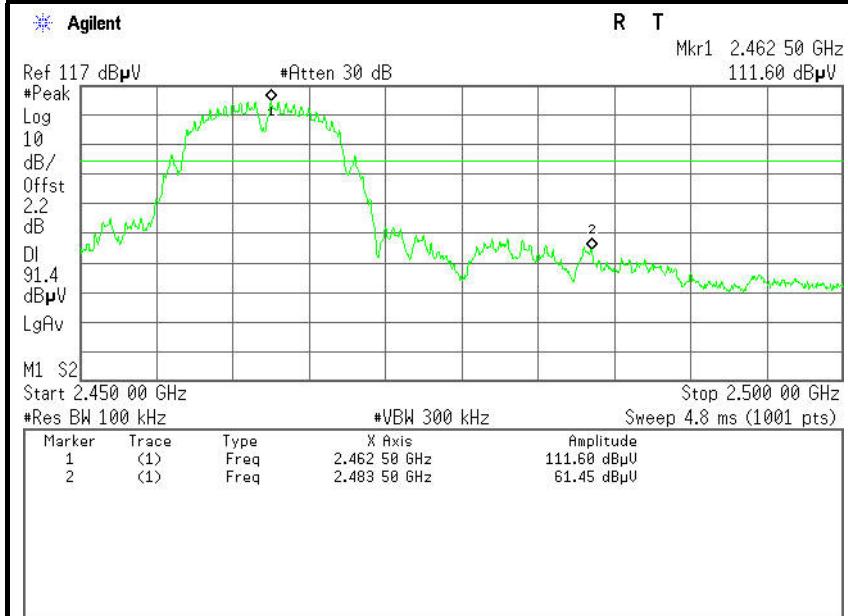
Measurements are made over the 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

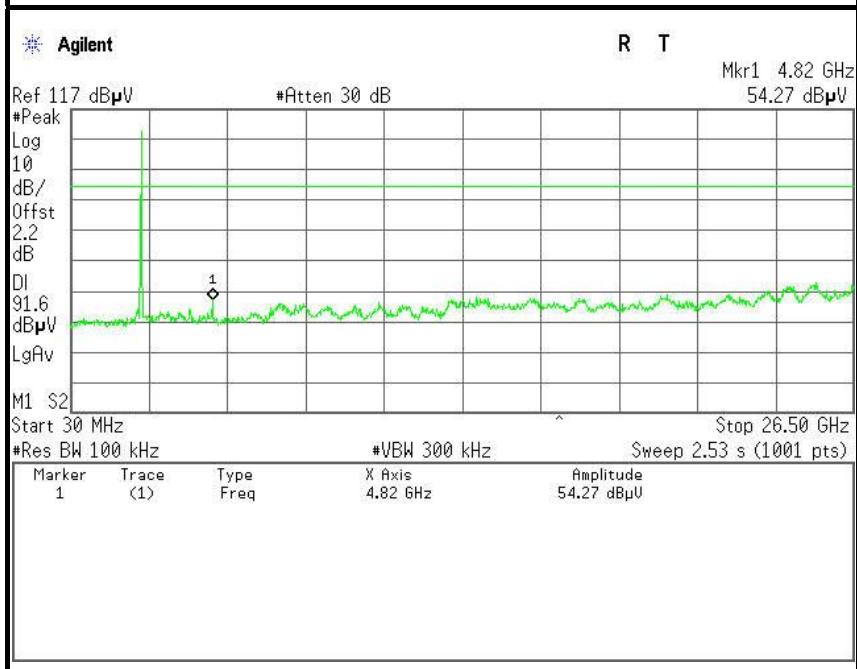
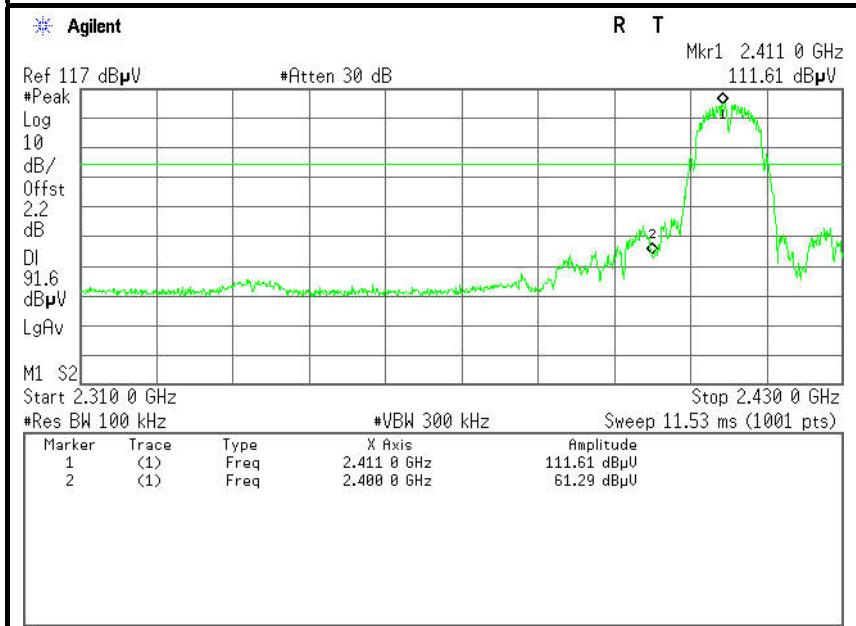


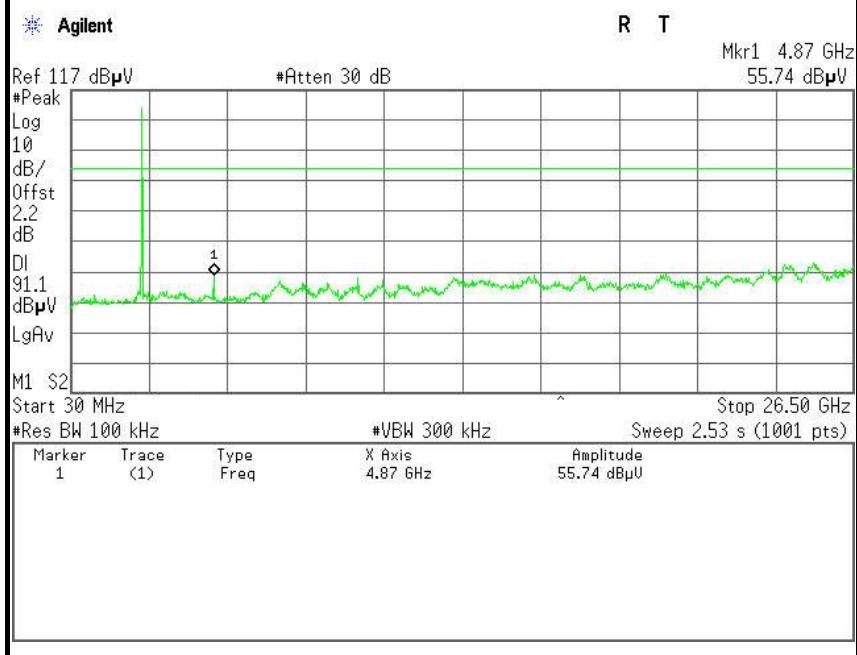
## 7.2.1.4. TEST RESULTS

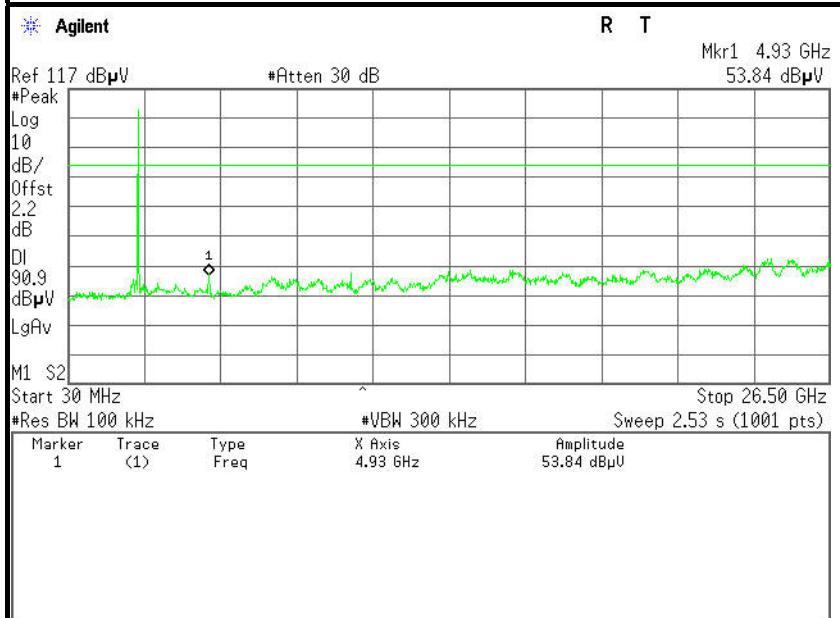
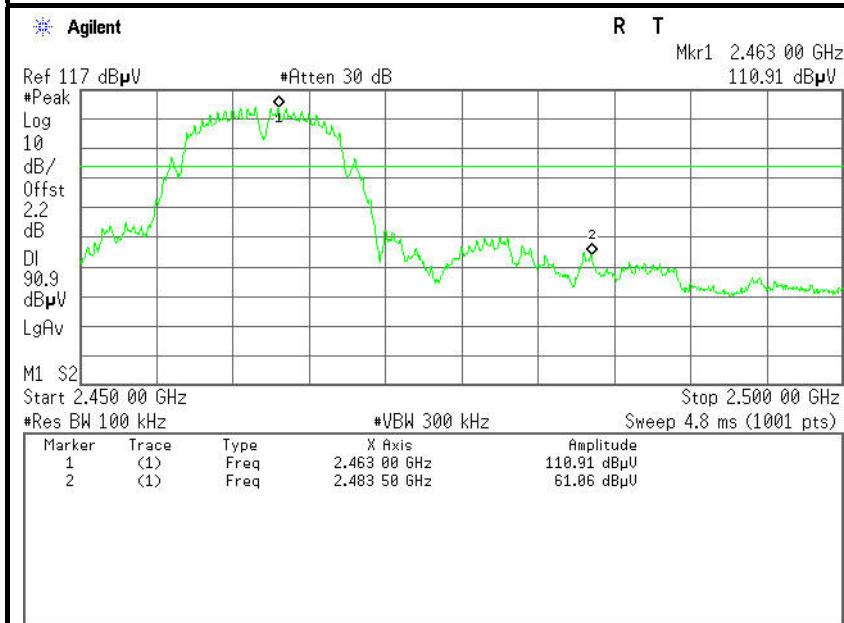
Test PlotIEEE 802.11b mode (Antenna 0)**CH Low (30MHz ~26.5GHz)****CH Low (2.31GHz ~2.43GHz)**

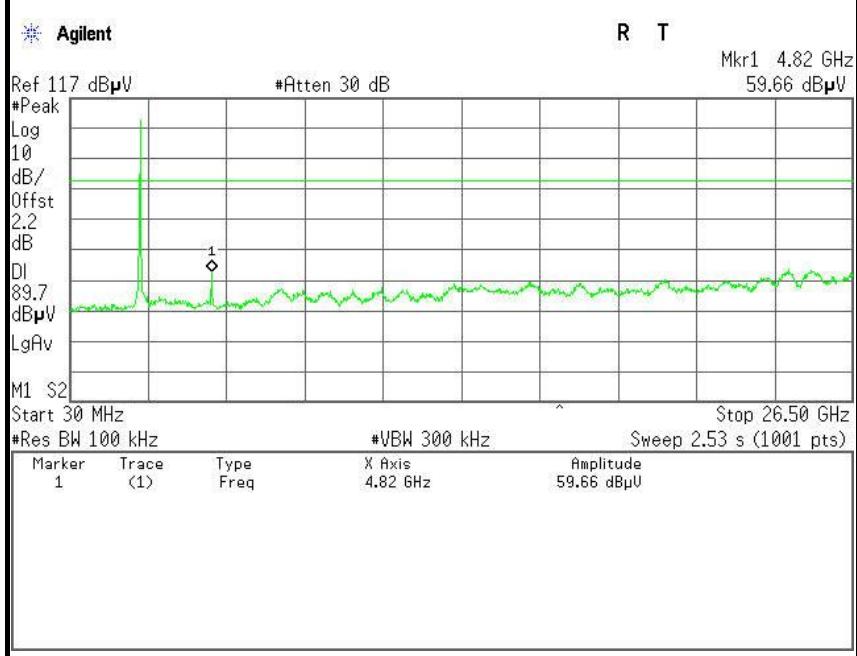
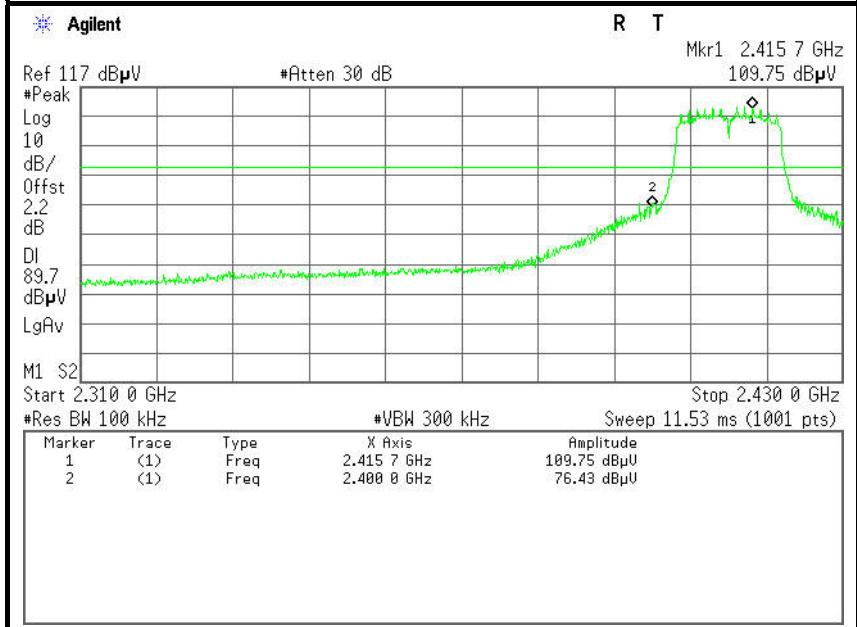
**CH Mid (30MHz ~26.5GHz)**

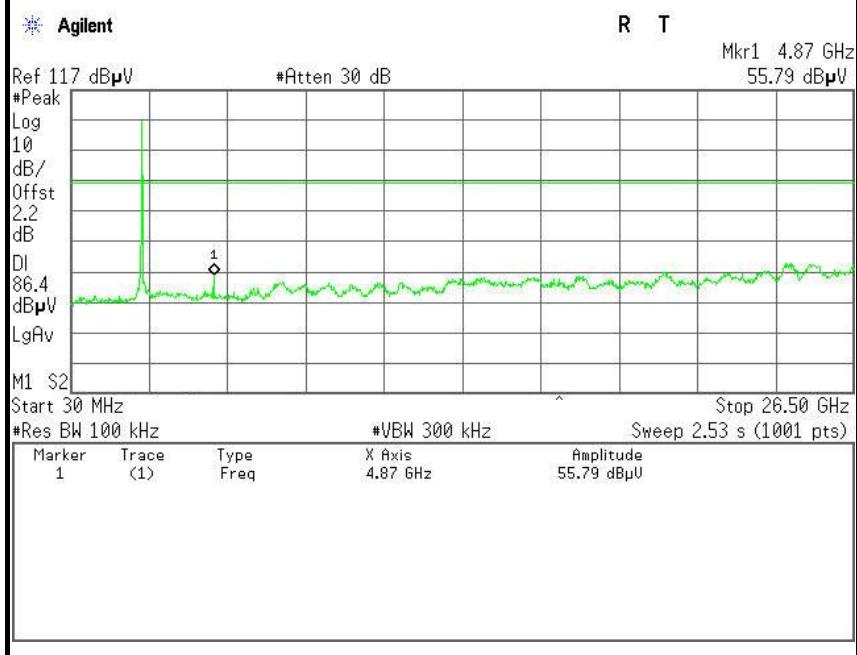
**CH High (30MHz ~26.5GHz)****CH High (2.45GHz ~2.5GHz)**

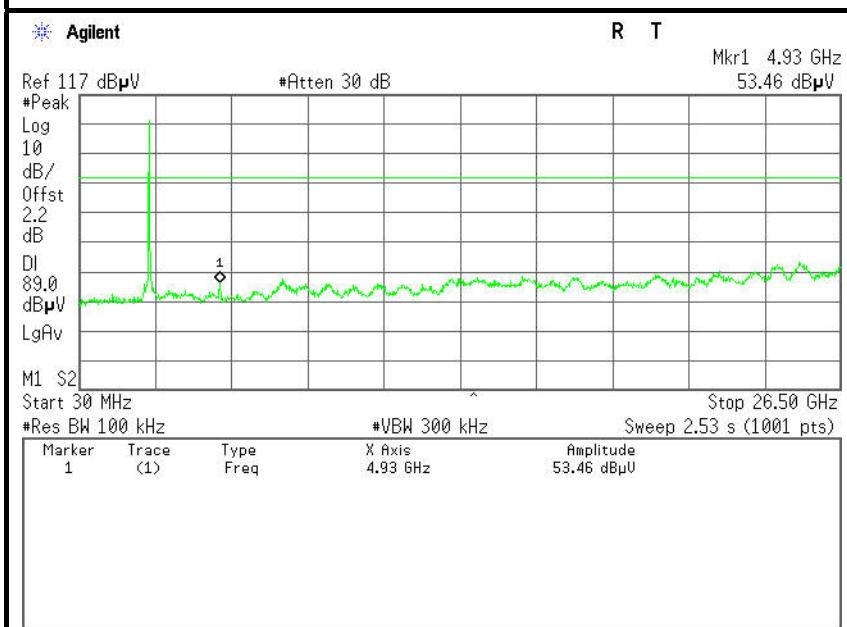
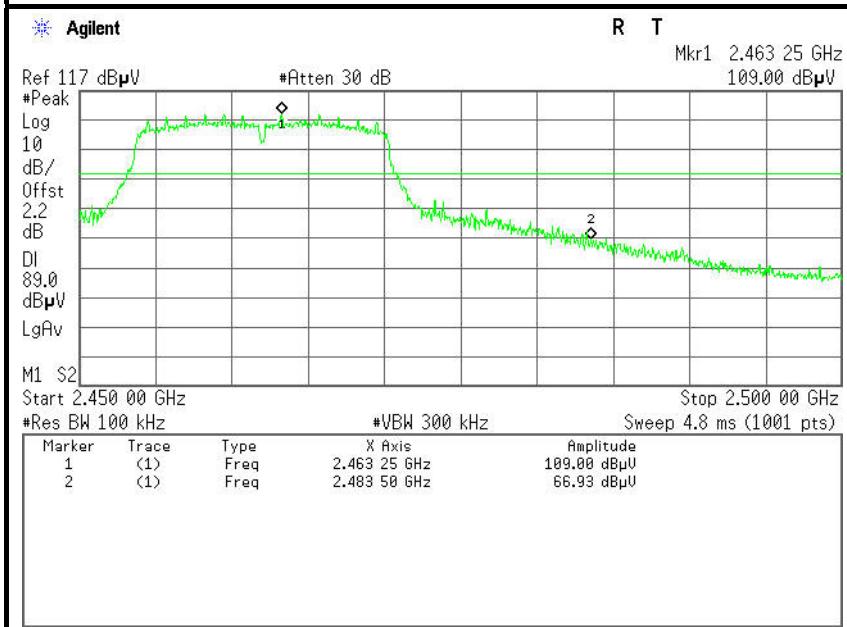
IEEE 802.11b mode (Antenna 1)**CH Low (30MHz ~26.5GHz)****CH Low (2.31GHz ~2.43GHz)**

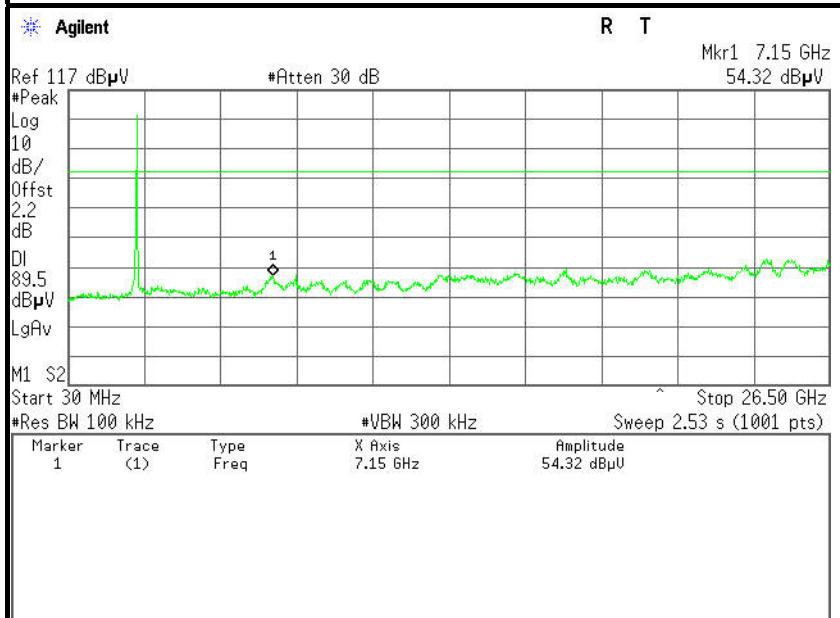
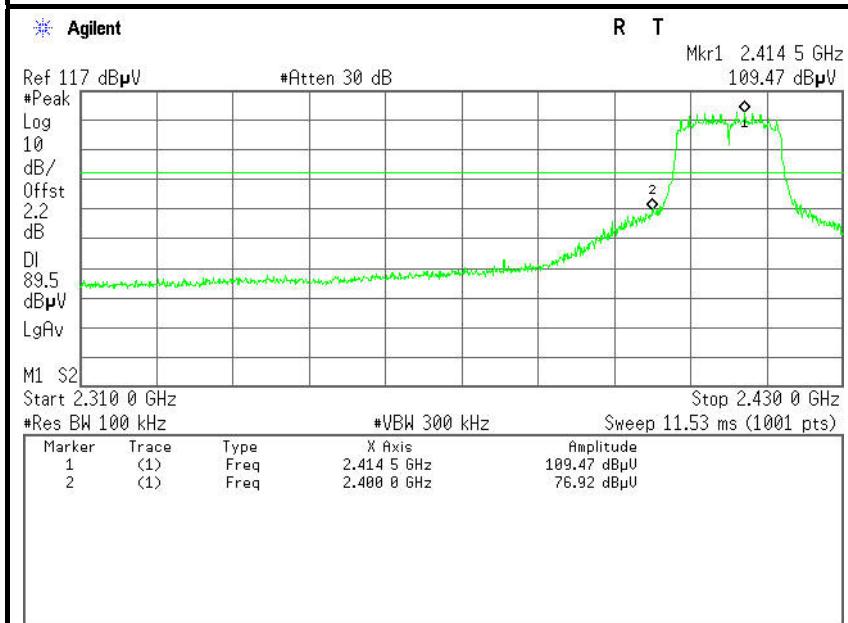
**CH Mid (30MHz ~26.5GHz)**

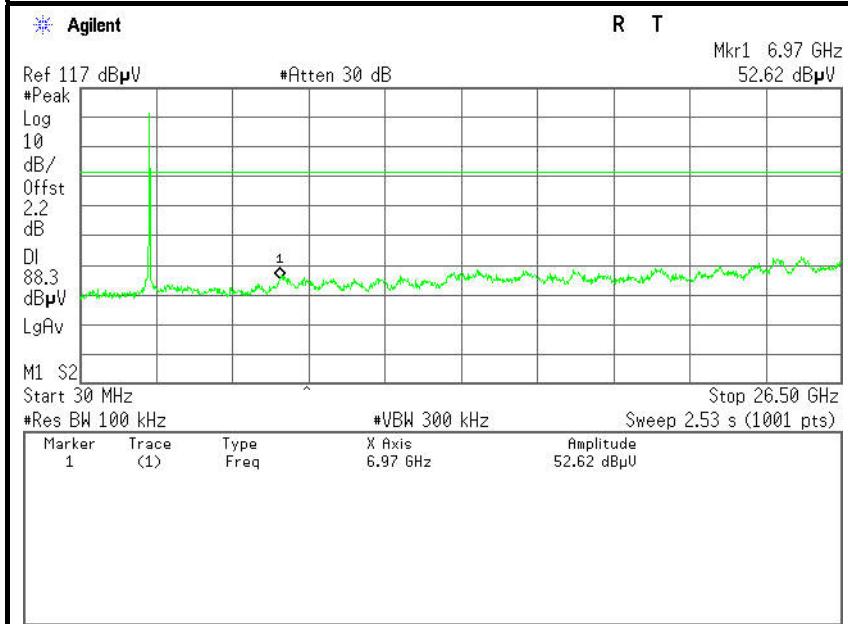
**CH High (30MHz ~26.5GHz)****CH High (2.45GHz ~2.5GHz)**

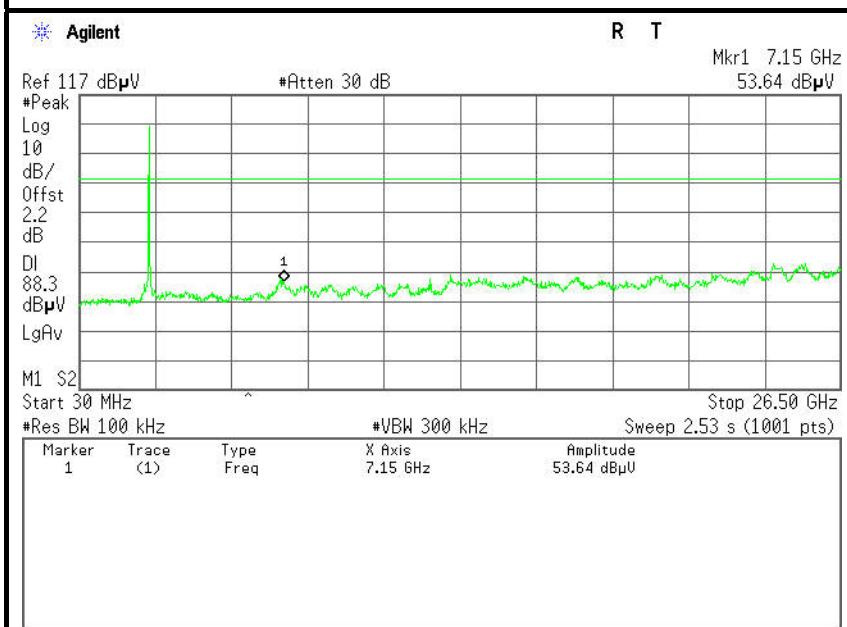
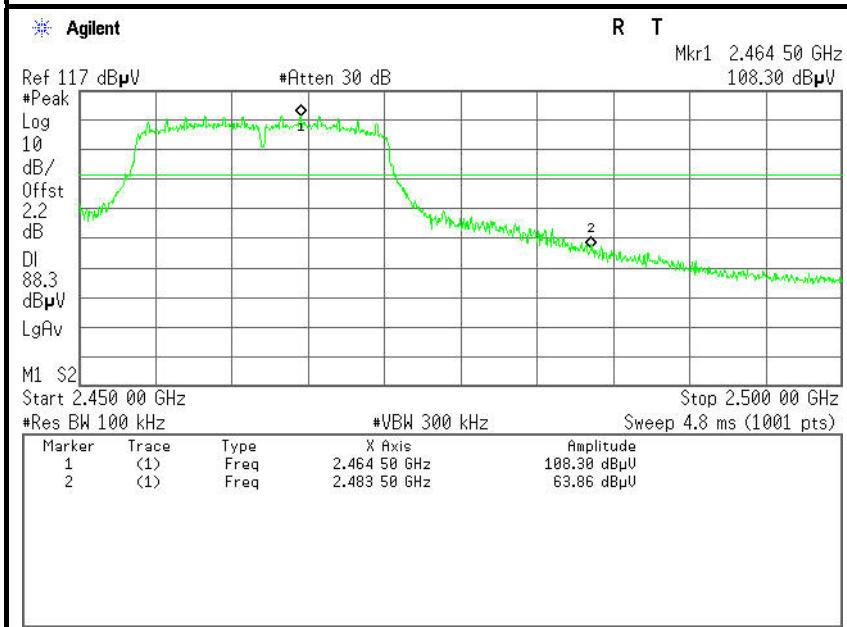
IEEE 802.11g mode (Antenna 0)**CH Low (30MHz ~26.5GHz)****CH Low (2.31GHz ~2.43GHz)**

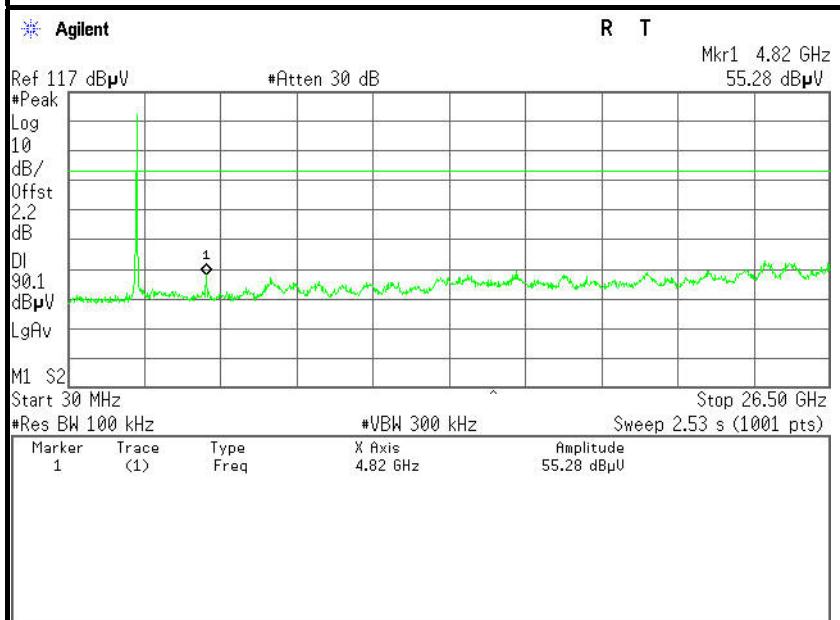
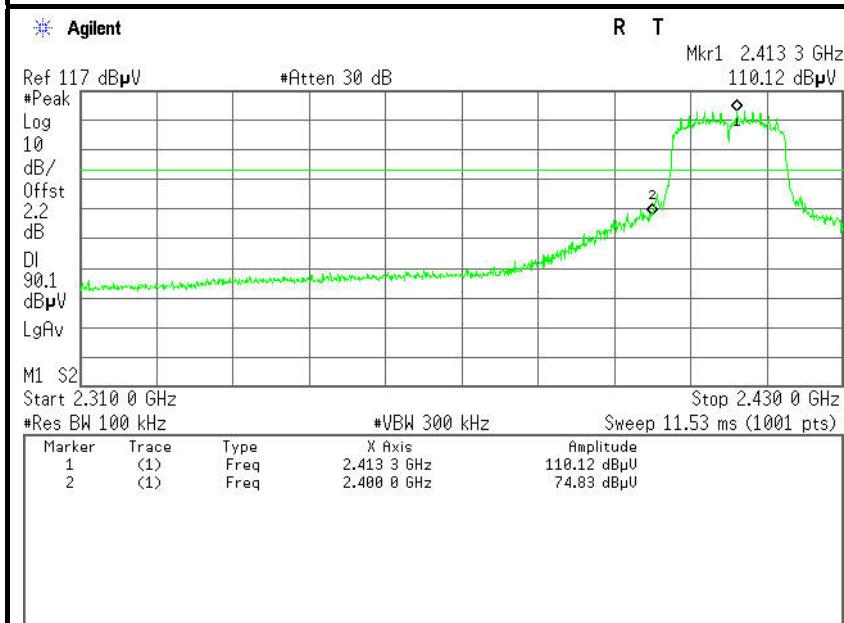
**CH Mid (30MHz ~26.5GHz)**

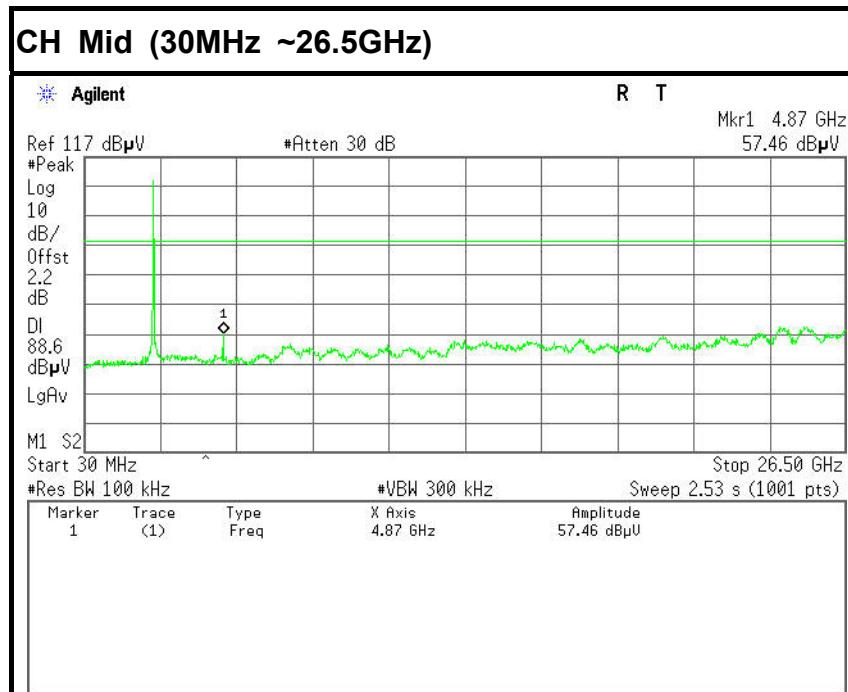
**CH High (30MHz ~26.5GHz)****CH High (2.45GHz ~2.5GHz)**

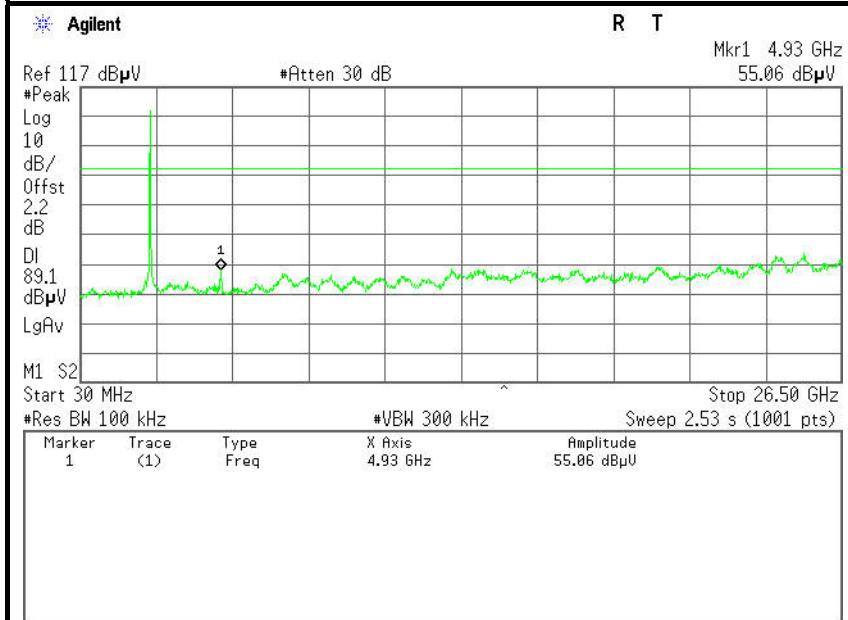
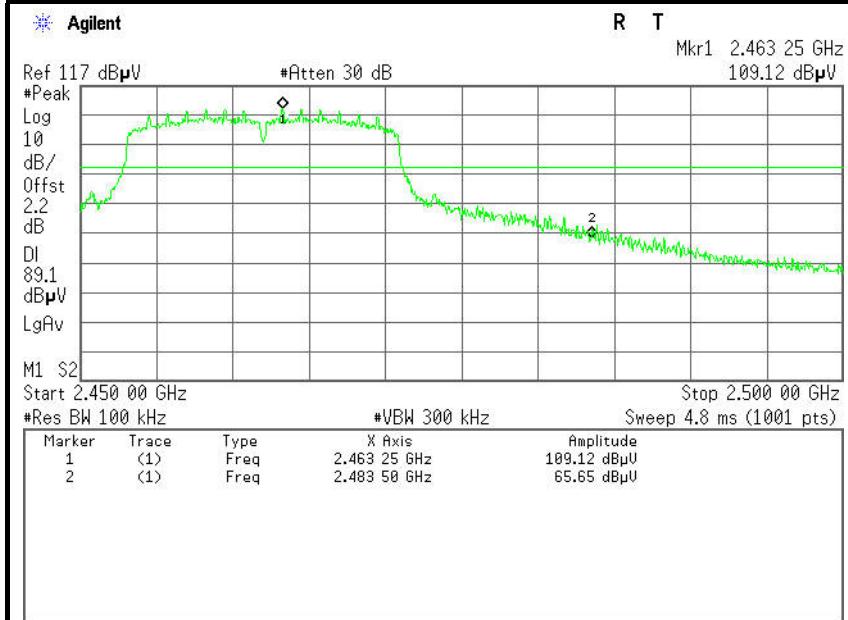
IEEE 802.11g mode (Antenna 1)**CH Low (30MHz ~26.5GHz)****CH Low (2.31GHz ~2.43GHz)**

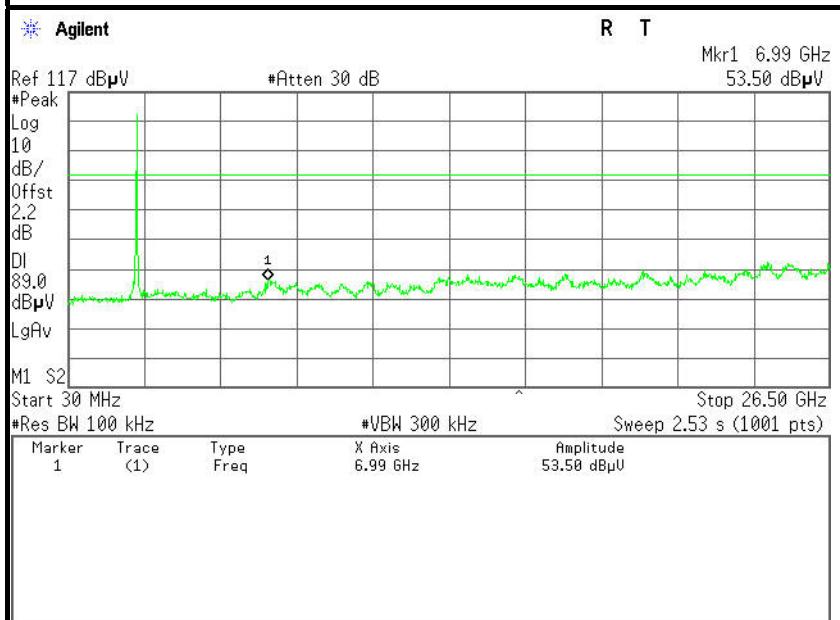
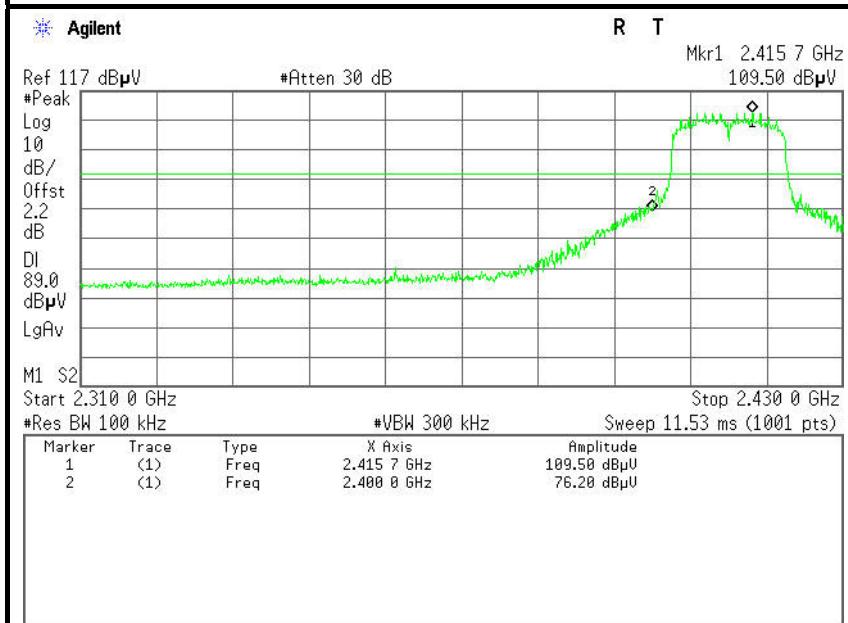
**CH Mid (30MHz ~26.5GHz)**

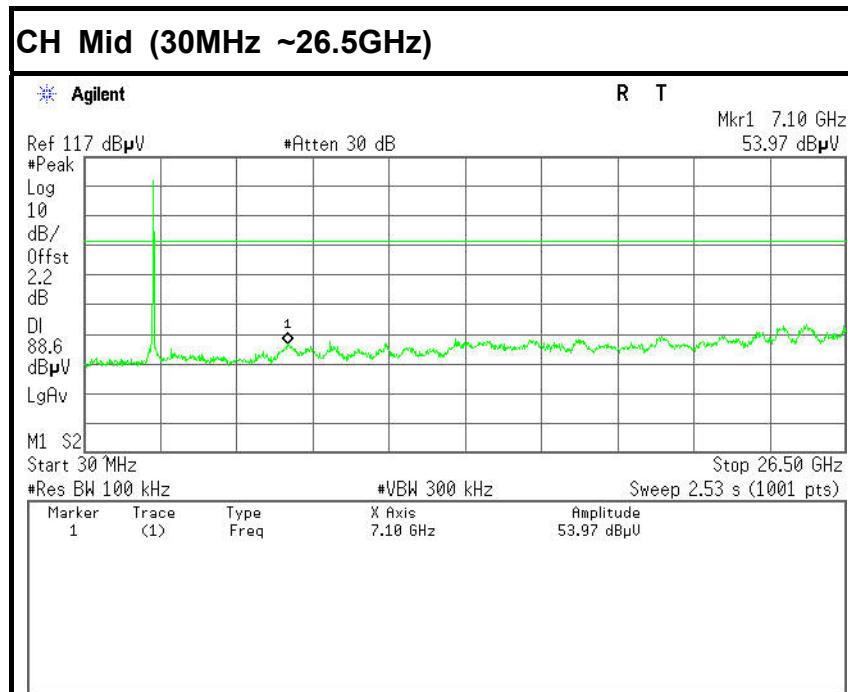
**CH High (30MHz ~26.5GHz)****CH High (2.45GHz ~2.5GHz)**

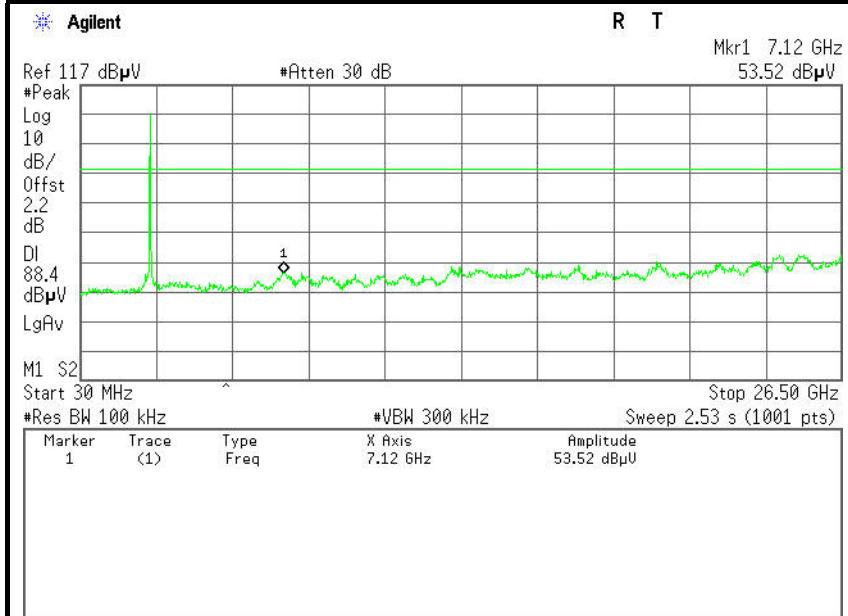
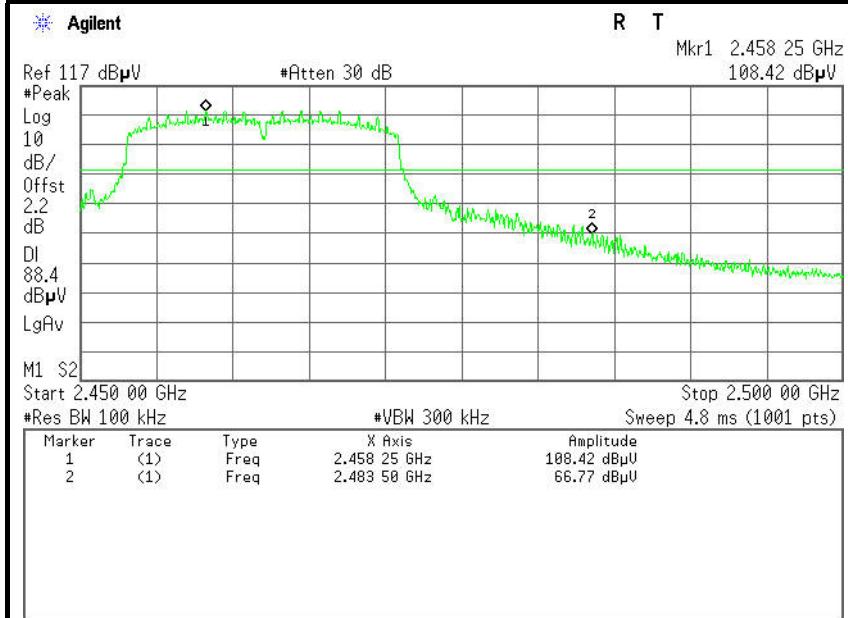
IEEE 802.11n HT20 MHz mode (Antenna 0)**CH Low (30MHz ~26.5GHz)****CH Low (2.31GHz ~2.43GHz)**

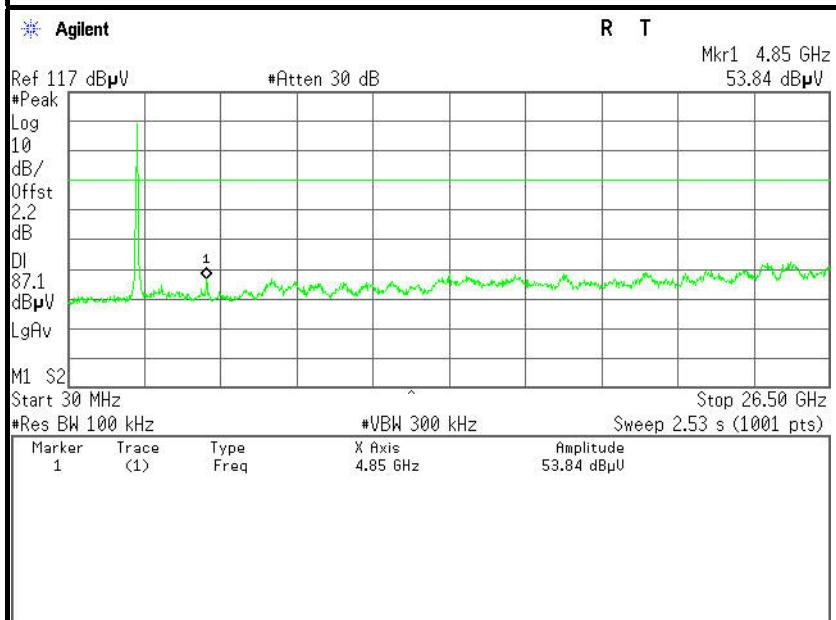
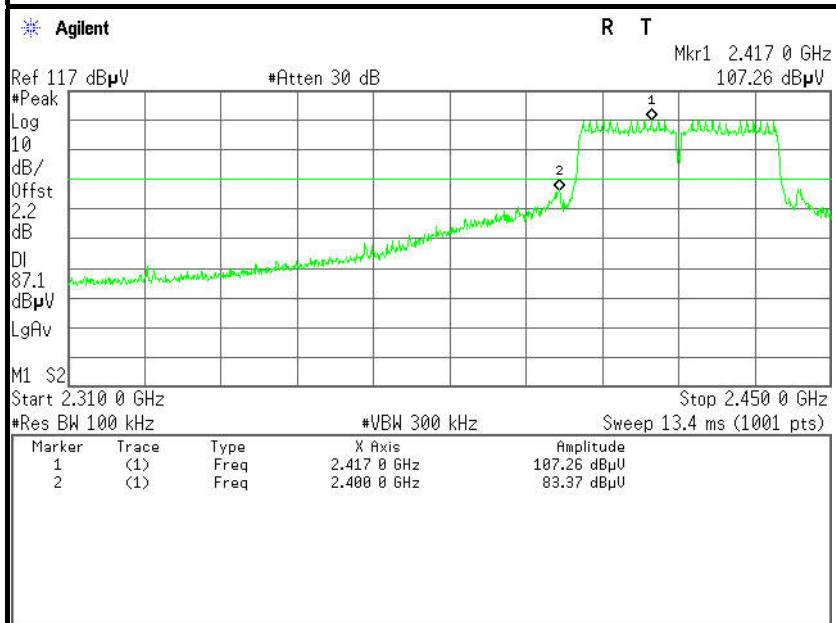


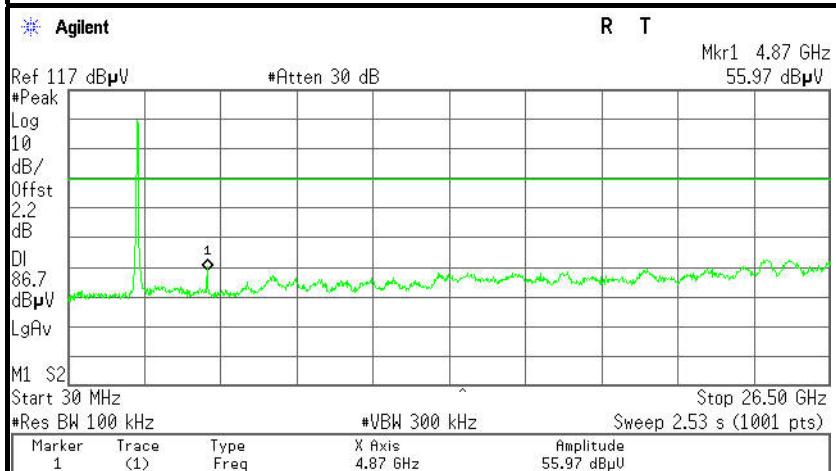
**CH High (30MHz ~26.5GHz)****CH High (2.45GHz ~2.5GHz)**

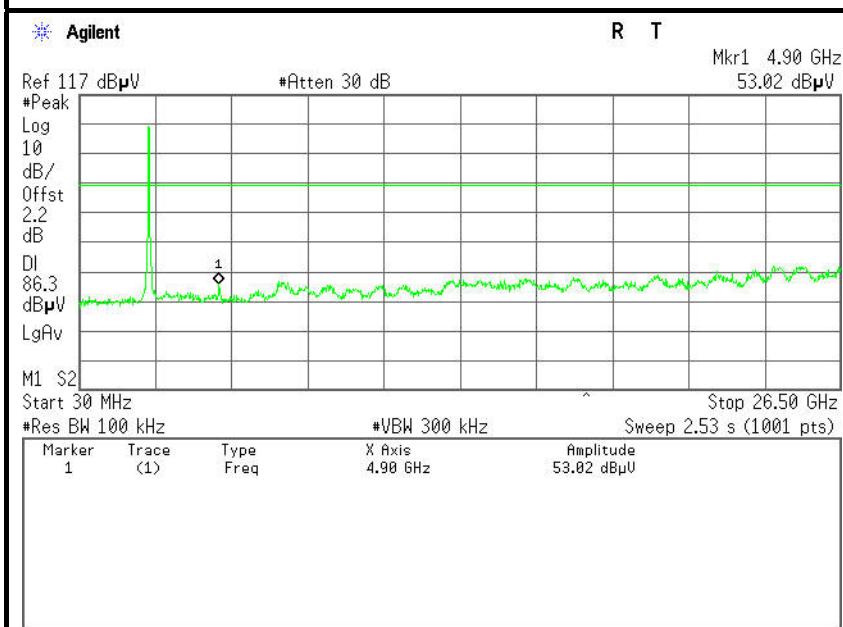
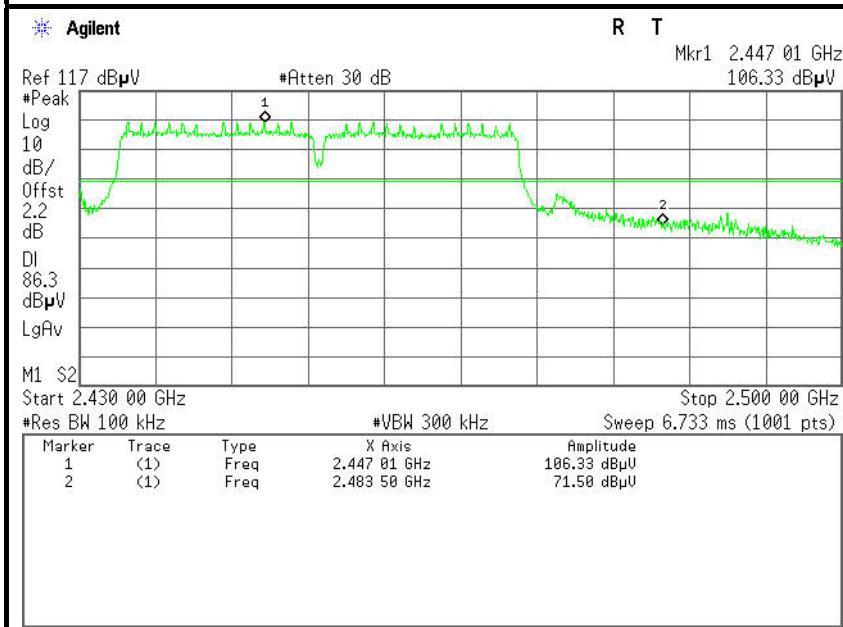
IEEE 802.11n HT20 MHz mode (Antenna 1)**CH Low (30MHz ~26.5GHz)****CH Low (2.31GHz ~2.43GHz)**

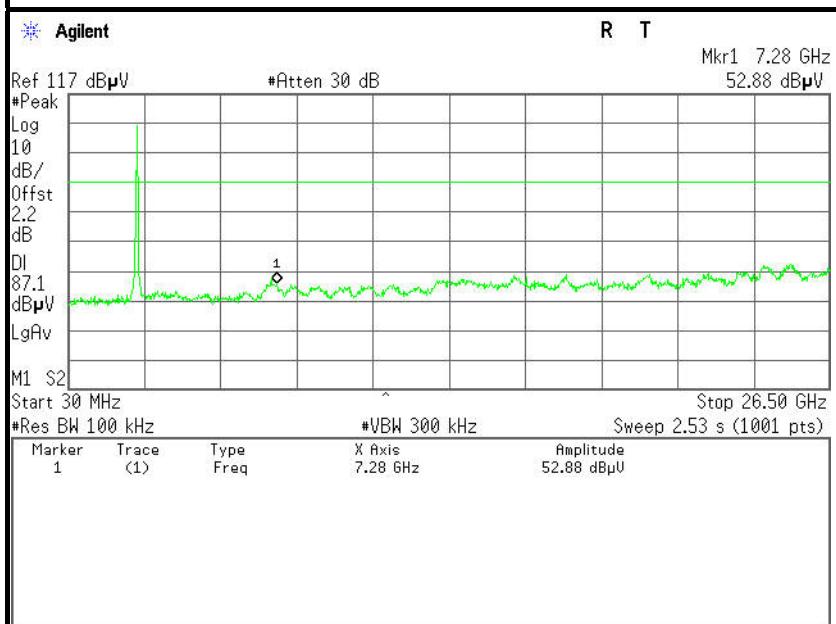
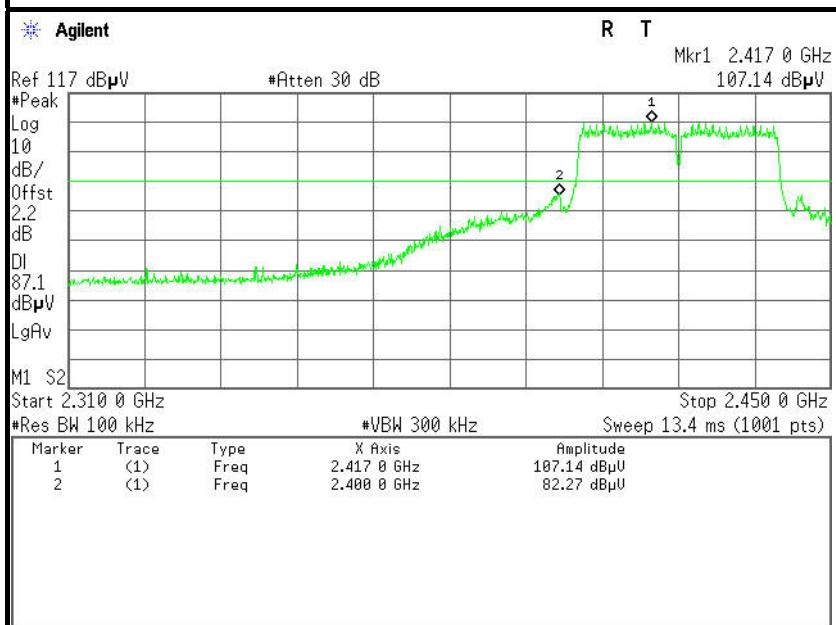


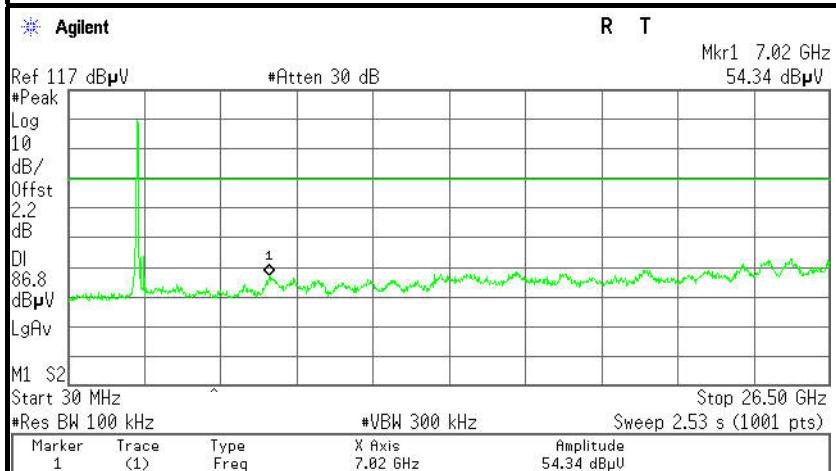
**CH High (30MHz ~26.5GHz)****CH High (2.45GHz ~2.5GHz)**

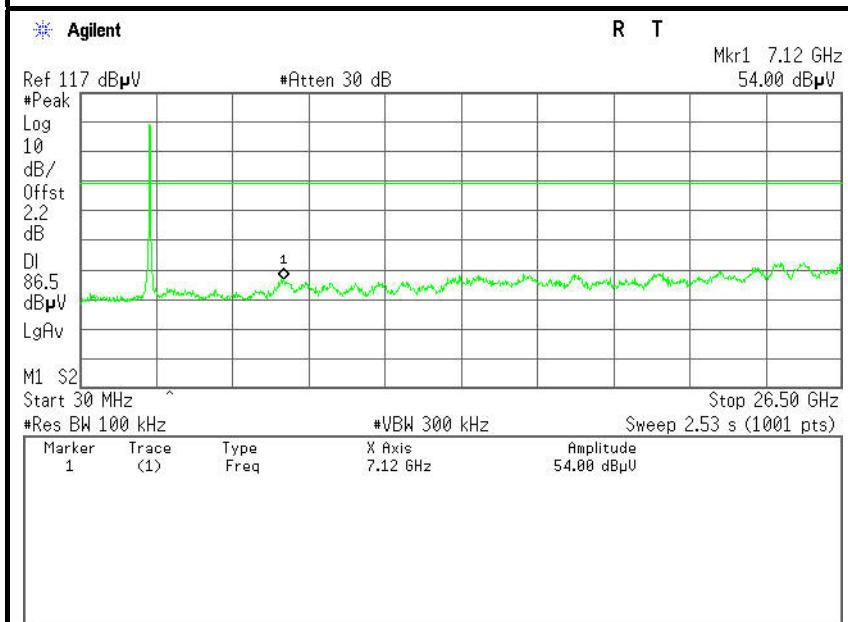
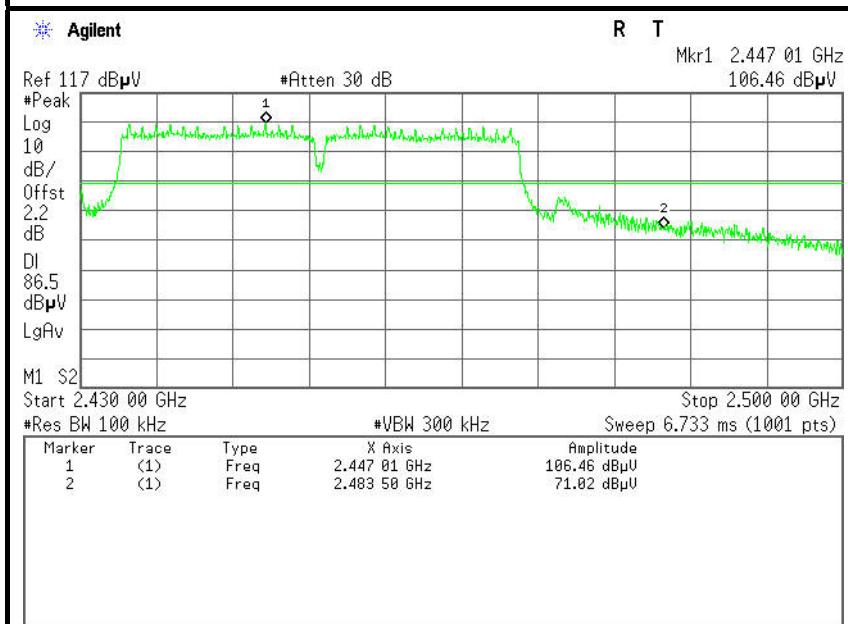
IEEE 802.11n HT40 MHz mode (Antenna 0)**CH Low (30MHz ~26.5GHz)****CH Low (2.31GHz ~2.45GHz)**

**CH Mid (30MHz ~26.5GHz)**

**CH High (30MHz ~26.5GHz)****CH High (2.43GHz ~2.5GHz)**

**IEEE 802.11n HT40 MHz mode (Antenna 1)****CH Low (30MHz ~26.5GHz)****CH Low (2.31GHz ~2.45GHz)**

**CH Mid (30MHz ~26.5GHz)**

**CH High (30MHz ~26.5GHz)****CH High (2.43GHz ~2.5GHz)**



## 7.2.2. RADIATED EMISSIONS MEASUREMENT

### 7.2.2.1. 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 ( $\mu$ V/m at 3-meter)	Field Strength (dB $\mu$ V/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 (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m).



## 7.2.2.2. 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	03/01/2014	03/01/2015
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	03/09/2014	03/08/2015
Amplifier	MITEQ	AM-1604-3000	1123808	03/18/2015	03/18/2015
High Noise Amplifier	Agilent	8449B	3008A01838	03/18/2015	03/18/2015
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	07/10/2013	07/09/2014
Bilog Antenna	SCHAFFNER	CBL6143	5082	03/01/2014	03/01/2015
Horn Antenna	SCHWARZBECK	BBHA9120	D286	03/01/2014	03/01/2015
Loop Antenna	COM-POWER	AL-130	121044	09/27/2013	09/26/2014
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/28/2014	02/28/2015
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.



### 7.2.2.3. 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=1MHz,VBW=3MHz / Sweep=AUTO

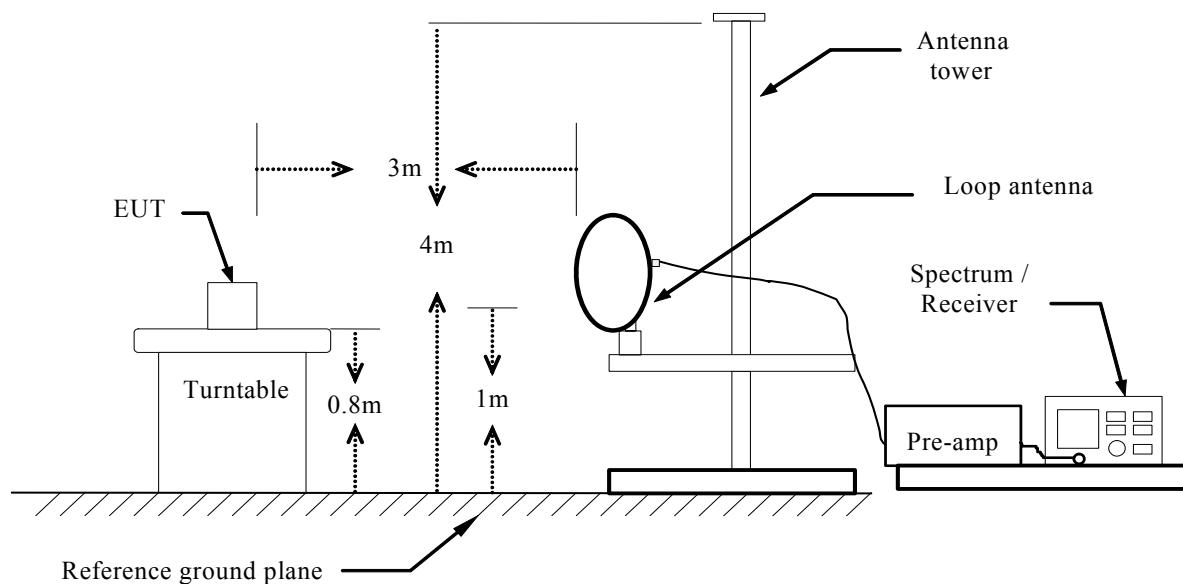
(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

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

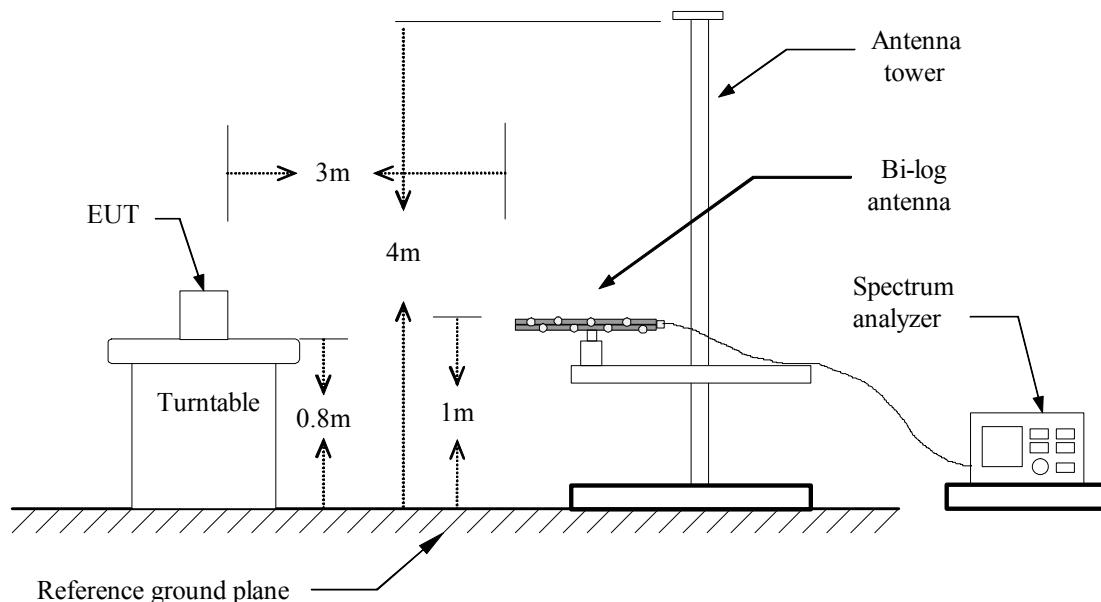


#### 7.2.2.4. TEST SETUP

##### Below 30MHz

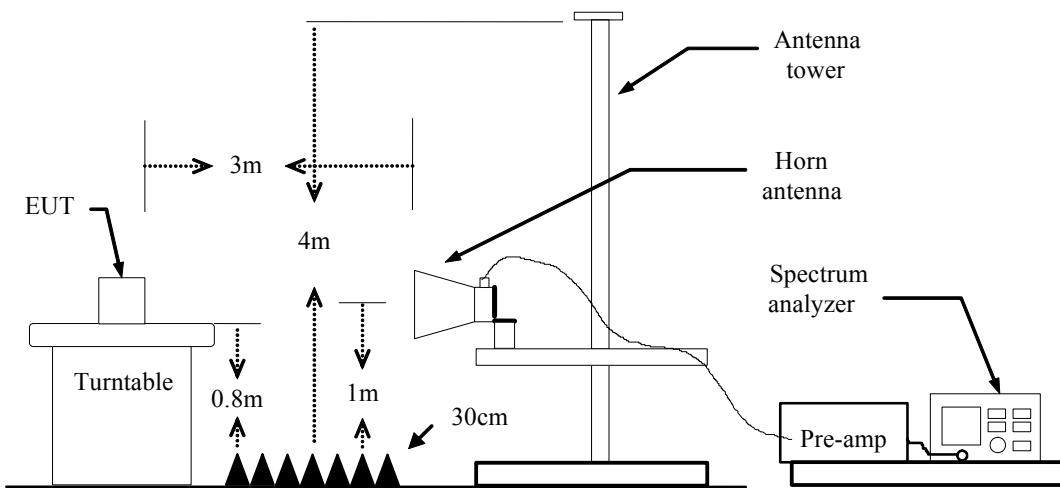


##### Below 1 GHz





## Above 1 GHz



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



### 7.2.2.5. 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



## 7.2.2.6. TEST RESULTS

### Below 1 GHz

**Test Mode:** TX

**Tested by:** Sun Guo

**Ambient temperature:** 24°C

**Relative humidity:** 52% RH

**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
47.4600	52.66	-16.13	36.53	40.00	-3.47	V	QP
241.4600	51.96	-17.79	34.17	46.00	-11.83	V	QP
424.7900	52.02	-14.99	37.03	46.00	-8.97	V	QP
664.3800	46.37	-11.63	34.74	46.00	-11.26	V	QP
723.5500	44.55	-10.76	33.79	46.00	-12.21	V	QP
909.7900	40.29	-9.35	30.94	46.00	-15.06	V	QP
99.8400	60.68	-22.65	38.03	43.50	-5.47	H	QP
188.1100	57.65	-18.73	38.92	43.50	-4.58	H	QP
233.7000	52.36	-17.76	34.60	46.00	-11.40	H	QP
424.7900	50.50	-14.99	35.51	46.00	-10.49	H	QP
613.9400	43.56	-12.41	31.15	46.00	-14.85	H	QP
666.3200	43.80	-11.44	32.36	46.00	-13.64	H	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 (dB $\mu$ V/m) = Receiver reading  
Correction Factor (dB) = Antenna factor + Cable loss – Amplifier gain  
Limit (dB $\mu$ V/m) = Limit stated in standard  
Margin (dB) = Measured (dB $\mu$ V/m) – Limits (dB $\mu$ V/m)  
Antenna Pole(H/V) = Current carrying line of reading

Above 1 GHzAntenna 0

Test Mode: TX / IEEE 802.11b(CH Low)

Tested by: Sun Guo

Ambient temperature: 24°C      Relative humidity: 52% RH

Date: April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1085.0000	53.28	-11.07	42.21	74.00	-31.79	V	peak
1493.0000	54.24	-9.74	44.50	74.00	-29.50	V	peak
1731.0000	51.29	-8.35	42.94	74.00	-31.06	V	peak
2003.0000	51.35	-6.60	44.75	74.00	-29.25	V	peak
5743.0000	40.77	5.93	46.70	74.00	-27.30	V	peak
8395.0000	40.33	8.09	48.42	74.00	-25.58	V	peak
2003.0000	46.02	-6.60	39.42	74.00	-34.58	H	Peak
3907.0000	42.41	-0.62	41.79	74.00	-32.21	H	Peak
4995.0000	40.19	3.89	44.08	74.00	-29.92	H	Peak
6321.0000	40.49	7.44	47.93	74.00	-26.07	H	peak
7783.0000	40.38	7.63	48.01	74.00	-25.99	H	peak
11319.0000	40.30	13.04	53.34	74.00	-20.66	H	peak

**REMARKS:**

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

**Test Mode:** TX / IEEE 802.11b (CH Mid)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
2003.0000	50.46	-6.60	43.86	74.00	-30.14	V	Peak
3907.0000	42.28	-0.62	41.66	74.00	-32.34	V	Peak
6015.0000	39.30	7.58	46.88	74.00	-27.12	V	Peak
6814.0000	39.98	7.22	47.20	74.00	-26.80	V	Peak
8395.0000	40.26	8.09	48.35	74.00	-25.65	V	Peak
9024.0000	40.45	8.52	48.97	74.00	-25.03	V	Peak
2003.0000	47.63	-6.60	41.03	74.00	-32.97	H	Peak
3788.0000	43.61	-0.74	42.87	74.00	-31.13	H	Peak
5386.0000	40.44	4.27	44.71	74.00	-29.29	H	Peak
5845.0000	39.07	6.59	45.66	74.00	-28.34	H	Peak
8769.0000	39.73	8.39	48.12	74.00	-25.88	H	Peak
10945.0000	39.23	12.98	52.21	74.00	-21.79	H	Peak

**REMARKS:**

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

**Test Mode:** TX / IEEE 802.11b (CH High)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1085.0000	54.97	-11.07	43.90	74.00	-30.10	V	Peak
1204.0000	53.89	-10.19	43.70	74.00	-30.30	V	Peak
1493.0000	52.97	-9.74	43.23	74.00	-30.77	V	Peak
2003.0000	51.62	-6.60	45.02	74.00	-28.98	V	Peak
4927.0000	41.72	3.48	45.20	74.00	-28.80	V	Peak
8888.0000	39.67	8.49	48.16	74.00	-25.84	V	Peak
1085.0000	48.70	-11.07	37.63	74.00	-36.37	H	Peak
1731.0000	49.17	-8.35	40.82	74.00	-33.18	H	Peak
2003.0000	47.70	-6.60	41.10	74.00	-32.90	H	Peak
3261.0000	44.09	-3.33	40.76	74.00	-33.24	H	Peak
4774.0000	41.25	2.55	43.80	74.00	-30.20	H	Peak
6304.0000	40.18	7.45	47.63	74.00	-26.37	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****Test Mode:** TX / IEEE 802.11b(CH Low)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1204.0000	50.63	-10.19	40.44	74.00	-33.56	V	peak
1816.0000	55.60	-8.20	47.40	74.00	-26.60	V	peak
2003.0000	51.49	-6.60	44.89	74.00	-29.11	V	peak
4825.0000	41.97	2.86	44.83	74.00	-29.17	V	peak
5845.0000	40.55	6.59	47.14	74.00	-26.86	V	peak
7613.0000	40.71	7.52	48.23	74.00	-25.77	V	peak
1799.0000	48.76	-8.34	40.42	74.00	-33.58	H	Peak
1986.0000	48.60	-6.72	41.88	74.00	-32.12	H	Peak
2513.0000	45.47	-7.28	38.19	74.00	-35.81	H	Peak
5862.0000	40.22	6.70	46.92	74.00	-27.08	H	peak
6967.0000	41.22	7.15	48.37	74.00	-25.63	H	peak
8565.0000	40.25	8.23	48.48	74.00	-25.52	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).

**Test Mode:** TX / IEEE 802.11b (CH Mid)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1085.0000	52.31	-11.07	41.24	74.00	-32.76	V	Peak
1799.0000	55.35	-8.34	47.01	74.00	-26.99	V	Peak
2003.0000	51.96	-6.60	45.36	74.00	-28.64	V	Peak
3703.0000	42.78	-0.83	41.95	74.00	-32.05	V	Peak
4655.0000	41.53	1.82	43.35	74.00	-30.65	V	Peak
9058.0000	40.04	8.44	48.48	74.00	-25.52	V	Peak
2003.0000	48.45	-6.60	41.85	74.00	-32.15	H	Peak
4876.0000	42.20	3.17	45.37	74.00	-28.63	H	Peak
6134.0000	40.07	7.53	47.60	74.00	-26.40	H	Peak
7579.0000	40.51	7.50	48.01	74.00	-25.99	H	Peak
8395.0000	40.05	8.09	48.14	74.00	-25.86	H	Peak
10418.0000	40.62	9.15	49.77	74.00	-24.23	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).

**Test Mode:** TX / IEEE 802.11b (CH High)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1561.0000	47.48	-8.88	38.60	74.00	-35.40	V	Peak
1799.0000	56.01	-8.34	47.67	74.00	-26.33	V	Peak
1986.0000	52.59	-6.72	45.87	74.00	-28.13	V	Peak
3465.0000	43.02	-1.37	41.65	74.00	-32.35	V	Peak
5964.0000	40.40	7.36	47.76	74.00	-26.24	V	Peak
8922.0000	39.78	8.52	48.30	74.00	-25.70	V	Peak
2003.0000	50.74	-6.60	44.14	74.00	-29.86	H	Peak
3907.0000	42.35	-0.62	41.73	74.00	-32.27	H	Peak
5403.0000	40.53	4.28	44.81	74.00	-29.19	H	Peak
6015.0000	40.39	7.58	47.97	74.00	-26.03	H	Peak
7188.0000	40.52	7.25	47.77	74.00	-26.23	H	Peak
8463.0000	40.49	8.15	48.64	74.00	-25.36	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 0****Test Mode:** TX / IEEE 802.11g(CH Low)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1204.0000	50.73	-10.19	40.54	74.00	-33.46	V	Peak
1799.0000	56.75	-8.34	48.41	74.00	-25.59	V	Peak
2003.0000	52.11	-6.60	45.51	74.00	-28.49	V	Peak
3805.0000	42.57	-0.72	41.85	74.00	-32.15	V	Peak
6491.0000	40.55	7.36	47.91	74.00	-26.09	V	Peak
10928.0000	39.29	12.86	52.15	74.00	-21.85	V	Peak
2003.0000	48.39	-6.60	41.79	74.00	-32.21	H	Peak
3720.0000	42.47	-0.81	41.66	74.00	-32.34	H	Peak
5165.0000	40.07	4.07	44.14	74.00	-29.86	H	Peak
6202.0000	40.58	7.50	48.08	74.00	-25.92	H	Peak
7766.0000	39.91	7.62	47.53	74.00	-26.47	H	Peak
9160.0000	40.74	8.18	48.92	74.00	-25.08	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).

**Test Mode:** TX / IEEE 802.11g (CH Mid)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1204.0000	51.46	-10.19	41.27	74.00	-32.73	V	Peak
1799.0000	55.73	-8.34	47.39	74.00	-26.61	V	Peak
2003.0000	52.25	-6.60	45.65	74.00	-28.35	V	Peak
3618.0000	42.29	-0.91	41.38	74.00	-32.62	V	Peak
4876.0000	41.07	3.17	44.24	74.00	-29.76	V	Peak
8429.0000	40.17	8.12	48.29	74.00	-25.71	V	Peak
1986.0000	48.52	-6.72	41.80	74.00	-32.20	H	Peak
3788.0000	42.06	-0.74	41.32	74.00	-32.68	H	Peak
4366.0000	41.93	0.50	42.43	74.00	-31.57	H	Peak
6134.0000	39.86	7.53	47.39	74.00	-26.61	H	Peak
7188.0000	40.41	7.25	47.66	74.00	-26.34	H	Peak
8412.0000	41.43	8.10	49.53	74.00	-24.47	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).

**Test Mode:** TX / IEEE 802.11g (CH High)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1204.0000	51.74	-10.19	41.55	74.00	-32.45	V	Peak
1799.0000	55.87	-8.34	47.53	74.00	-26.47	V	Peak
2003.0000	51.23	-6.60	44.63	74.00	-29.37	V	Peak
5080.0000	41.43	3.99	45.42	74.00	-28.58	V	Peak
7681.0000	40.05	7.57	47.62	74.00	-26.38	V	Peak
11115.0000	38.57	13.26	51.83	74.00	-22.17	V	Peak
2003.0000	48.43	-6.60	41.83	74.00	-32.17	H	Peak
3380.0000	43.99	-2.18	41.81	74.00	-32.19	H	Peak
6083.0000	40.54	7.55	48.09	74.00	-25.91	H	Peak
7664.0000	40.14	7.55	47.69	74.00	-26.31	H	Peak
8633.0000	40.56	8.28	48.84	74.00	-25.16	H	Peak
9126.0000	39.99	8.27	48.26	74.00	-25.74	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 1****Test Mode:** TX / IEEE 802.11g(CH Low)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1816.0000	55.80	-8.20	47.60	74.00	-26.40	V	Peak
2003.0000	50.51	-6.60	43.91	74.00	-30.09	V	Peak
3329.0000	43.74	-2.67	41.07	74.00	-32.93	V	Peak
5896.0000	40.85	6.92	47.77	74.00	-26.23	V	Peak
7732.0000	40.48	7.60	48.08	74.00	-25.92	V	Peak
8531.0000	40.94	8.20	49.14	74.00	-24.86	V	Peak
2003.0000	49.51	-6.60	42.91	74.00	-31.09	H	Peak
2547.0000	46.08	-7.18	38.90	74.00	-35.10	H	Peak
2853.0000	44.54	-6.28	38.26	74.00	-35.74	H	Peak
3669.0000	42.38	-0.86	41.52	74.00	-32.48	H	Peak
6967.0000	41.18	7.15	48.33	74.00	-25.67	H	Peak
9126.0000	40.91	8.27	49.18	74.00	-24.82	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).

**Test Mode:** TX / IEEE 802.11g (CH Mid)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1187.0000	51.94	-10.28	41.66	74.00	-32.34	V	Peak
1799.0000	55.68	-8.34	47.34	74.00	-26.66	V	Peak
2003.0000	50.90	-6.60	44.30	74.00	-29.70	V	Peak
6134.0000	40.81	7.53	48.34	74.00	-25.66	V	Peak
6967.0000	40.79	7.15	47.94	74.00	-26.06	V	Peak
8361.0000	40.82	8.06	48.88	74.00	-25.12	V	Peak
2003.0000	47.49	-6.60	40.89	74.00	-33.11	H	Peak
3431.0000	43.41	-1.69	41.72	74.00	-32.28	H	Peak
4757.0000	41.61	2.44	44.05	74.00	-29.95	H	Peak
5318.0000	41.48	4.21	45.69	74.00	-28.31	H	Peak
5964.0000	40.15	7.36	47.51	74.00	-26.49	H	Peak
9058.0000	40.54	8.44	48.98	74.00	-25.02	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).

**Test Mode:** TX / IEEE 802.11g (CH High)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1204.0000	52.16	-10.19	41.97	74.00	-32.03	V	Peak
1799.0000	55.55	-8.34	47.21	74.00	-26.79	V	Peak
1986.0000	52.13	-6.72	45.41	74.00	-28.59	V	Peak
3329.0000	44.14	-2.67	41.47	74.00	-32.53	V	Peak
6032.0000	40.92	7.58	48.50	74.00	-25.50	V	Peak
6916.0000	41.45	7.17	48.62	74.00	-25.38	V	Peak
2003.0000	48.88	-6.60	42.28	74.00	-31.72	H	Peak
3499.0000	42.64	-1.04	41.60	74.00	-32.40	H	Peak
5114.0000	40.96	4.02	44.98	74.00	-29.02	H	Peak
6066.0000	39.53	7.56	47.09	74.00	-26.91	H	Peak
7749.0000	40.64	7.61	48.25	74.00	-25.75	H	Peak
9160.0000	40.61	8.18	48.79	74.00	-25.21	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 0 and Antenna 1****Test Mode:** TX / IEEE 802.11n HT20 MHz (CH Low)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1187.0000	52.99	-10.28	42.71	74.00	-31.29	V	Peak
1799.0000	54.83	-8.34	46.49	74.00	-27.51	V	Peak
2003.0000	50.83	-6.60	44.23	74.00	-29.77	V	Peak
6134.0000	41.71	7.53	49.24	74.00	-24.76	V	Peak
7749.0000	40.41	7.61	48.02	74.00	-25.98	V	Peak
9126.0000	40.79	8.27	49.06	74.00	-24.94	V	Peak
2003.0000	48.22	-6.60	41.62	74.00	-32.38	H	Peak
3499.0000	42.72	-1.04	41.68	74.00	-32.32	H	Peak
4995.0000	39.77	3.89	43.66	74.00	-30.34	H	Peak
6151.0000	39.78	7.52	47.30	74.00	-26.70	H	Peak
7188.0000	40.62	7.25	47.87	74.00	-26.13	H	Peak
8446.0000	40.74	8.13	48.87	74.00	-25.13	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).

**Test Mode:** TX / IEEE 802.11n HT20 MHz (CH Mid)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1187.0000	56.30	-10.28	46.02	74.00	-27.98	V	Peak
1799.0000	55.94	-8.34	47.60	74.00	-26.40	V	Peak
2003.0000	51.21	-6.60	44.61	74.00	-29.39	V	Peak
3329.0000	45.82	-2.67	43.15	74.00	-30.85	V	Peak
4995.0000	42.01	3.89	45.90	74.00	-28.10	V	Peak
6576.0000	40.97	7.33	48.30	74.00	-25.70	V	Peak
1986.0000	48.17	-6.72	41.45	74.00	-32.55	H	Peak
3499.0000	44.14	-1.04	43.10	74.00	-30.90	H	Peak
5896.0000	40.33	6.92	47.25	74.00	-26.75	H	Peak
6916.0000	40.20	7.17	47.37	74.00	-26.63	H	Peak
7766.0000	39.76	7.62	47.38	74.00	-26.62	H	Peak
8565.0000	39.61	8.23	47.84	74.00	-26.16	H	Peak

**REMARKS:**

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

**Test Mode:** TX / EEE 802.11n HT20 MHz (CH High)**Tested by:** Sun Guo**Ambient temperature:** 24°C**Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1187.0000	52.47	-10.28	42.19	74.00	-31.81	V	Peak
1816.0000	54.50	-8.20	46.30	74.00	-27.70	V	Peak
2003.0000	50.92	-6.60	44.32	74.00	-29.68	V	Peak
3499.0000	43.66	-1.04	42.62	74.00	-31.38	V	Peak
5114.0000	41.20	4.02	45.22	74.00	-28.78	V	Peak
9160.0000	40.27	8.18	48.45	74.00	-25.55	V	Peak
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2003.0000	48.37	-6.60	41.77	74.00	-32.23	H	Peak
3720.0000	41.93	-0.81	41.12	74.00	-32.88	H	Peak
5199.0000	40.94	4.10	45.04	74.00	-28.96	H	Peak
6236.0000	40.48	7.48	47.96	74.00	-26.04	H	Peak
8548.0000	40.12	8.21	48.33	74.00	-25.67	H	Peak
10622.0000	40.02	10.63	50.65	74.00	-23.35	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).

**Combine with Antenna 0 and Antenna 1****Test Mode:** TX/ IEEE 802.11n HT40 MHz (CH Low)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1187.0000	53.02	-10.28	42.74	74.00	-31.26	V	Peak
1799.0000	54.98	-8.34	46.64	74.00	-27.36	V	Peak
2003.0000	52.15	-6.60	45.55	74.00	-28.45	V	Peak
3329.0000	44.73	-2.67	42.06	74.00	-31.94	V	Peak
6168.0000	40.60	7.51	48.11	74.00	-25.89	V	Peak
8803.0000	40.58	8.42	49.00	74.00	-25.00	V	Peak
<hr/>							
2003.0000	49.45	-6.60	42.85	74.00	-31.15	H	Peak
3499.0000	42.81	-1.04	41.77	74.00	-32.23	H	Peak
5879.0000	40.74	6.81	47.55	74.00	-26.45	H	Peak
6984.0000	40.88	7.14	48.02	74.00	-25.98	H	Peak
8395.0000	40.13	8.09	48.22	74.00	-25.78	H	Peak
9007.0000	39.35	8.56	47.91	74.00	-26.09	H	Peak

**REMARKS:**

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

**Test Mode:** TX / IEEE 802.11n HT40 MHz (CH Mid)**Tested by:** Sun Guo**Ambient temperature:** 24°C**Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1187.0000	53.06	-10.28	42.78	74.00	-31.22	V	Peak
1799.0000	54.40	-8.34	46.06	74.00	-27.94	V	Peak
2003.0000	51.50	-6.60	44.90	74.00	-29.10	V	Peak
3499.0000	42.95	-1.04	41.91	74.00	-32.09	V	Peak
7800.0000	41.23	7.64	48.87	74.00	-25.13	V	Peak
8480.0000	40.71	8.16	48.87	74.00	-25.13	V	Peak
2003.0000	48.26	-6.60	41.66	74.00	-32.34	H	Peak
3924.0000	41.84	-0.61	41.23	74.00	-32.77	H	Peak
5369.0000	40.40	4.25	44.65	74.00	-29.35	H	Peak
6253.0000	40.20	7.47	47.67	74.00	-26.33	H	Peak
7783.0000	40.34	7.63	47.97	74.00	-26.03	H	Peak
9160.0000	39.98	8.18	48.16	74.00	-25.84	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).

**Test Mode:** TX/ IEEE 802.11n HT40 MHz (CH High)**Tested by:** Sun Guo**Ambient temperature:** 24°C    **Relative humidity:** 52% RH**Date:** April 27, 2014

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1816.0000	54.73	-8.20	46.53	74.00	-27.47	V	Peak
2003.0000	51.71	-6.60	45.11	74.00	-28.89	V	Peak
3329.0000	44.45	-2.67	41.78	74.00	-32.22	V	Peak
4961.0000	41.47	3.68	45.15	74.00	-28.85	V	Peak
6134.0000	40.43	7.53	47.96	74.00	-26.04	V	Peak
9364.0000	40.75	7.68	48.43	74.00	-25.57	V	Peak
1986.0000	48.03	-6.72	41.31	74.00	-32.69	H	Peak
3839.0000	43.24	-0.69	42.55	74.00	-31.45	H	Peak
4893.0000	41.04	3.27	44.31	74.00	-29.69	H	Peak
5998.0000	40.27	7.58	47.85	74.00	-26.15	H	Peak
7749.0000	40.72	7.61	48.33	74.00	-25.67	H	Peak
9194.0000	40.31	8.10	48.41	74.00	-25.59	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

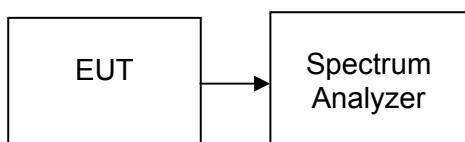
Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US44300399	03/01/2014	03/01/2015

### 7.3.3. TEST PROCEDURES (please refer to measurement standard)

#### 8.1 Option 1:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

### 7.3.4. TEST SETUP





### 7.3.5. TEST RESULTS

No non-compliance noted

#### Test Data

##### Test mode: IEEE 802.11b (Antenna 0)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	8111	>500	PASS
Mid	2437	8095		PASS
High	2462	8079		PASS

##### Test mode: IEEE 802.11b (Antenna 1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	8121	>500	PASS
Mid	2437	8123		PASS
High	2462	8120		PASS

##### Test mode: IEEE 802.11g (Antenna 0)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	15485	>500	PASS
Mid	2437	15539		PASS
High	2462	15414		PASS

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

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	15350	>500	PASS
Mid	2437	15323		PASS
High	2462	15118		PASS

##### Test mode: IEEE 802.11n HT20 MHz (Antenna 0)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	15153	>500	PASS
Mid	2437	15470		PASS
High	2462	15308		PASS

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

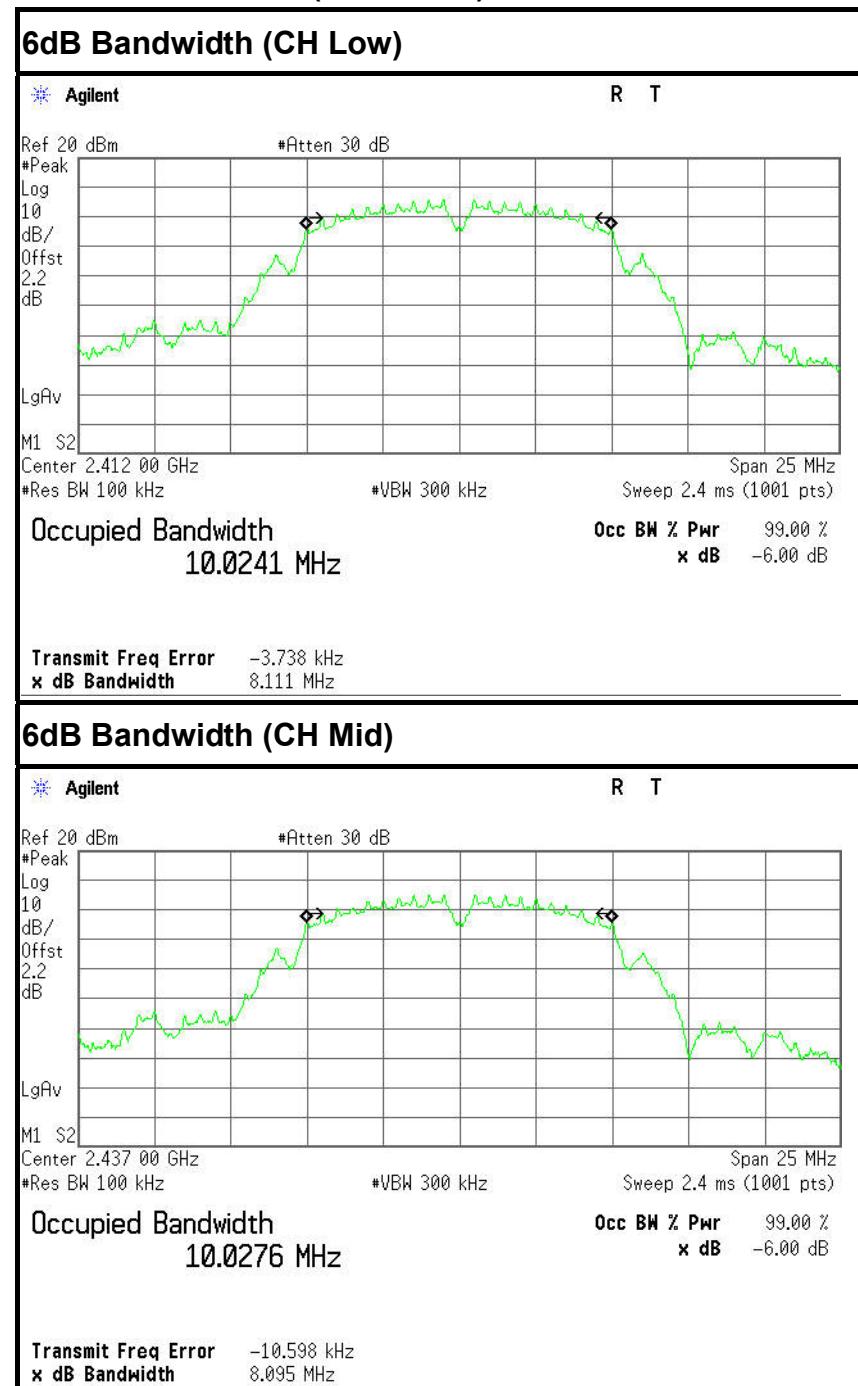
Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	16321	>500	PASS
Mid	2437	16320		PASS
High	2462	15917		PASS

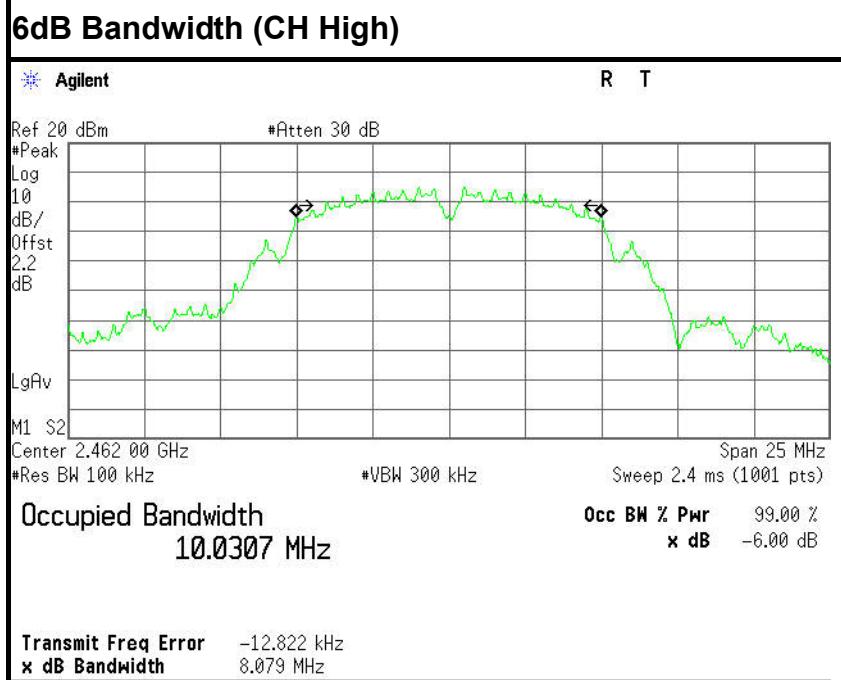
**Test mode: IEEE 802.11n HT40 MHz (Antenna 0)**

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2422	36333	>500	PASS
Mid	2437	36358		PASS
High	2452	36343		PASS

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

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2422	36353	>500	PASS
Mid	2437	36330		PASS
High	2452	36110		PASS

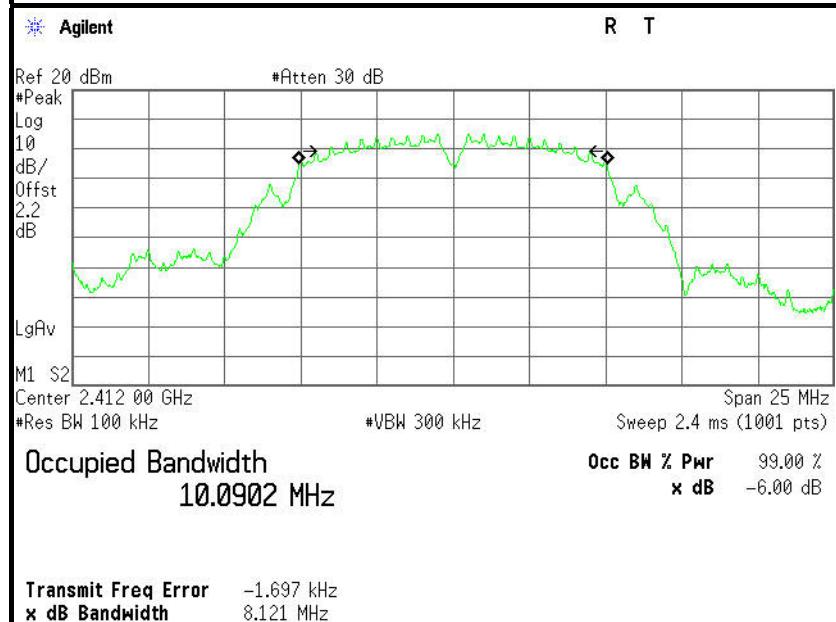
**Test Plot****IEEE 802.11b mode (Antenna 0)**



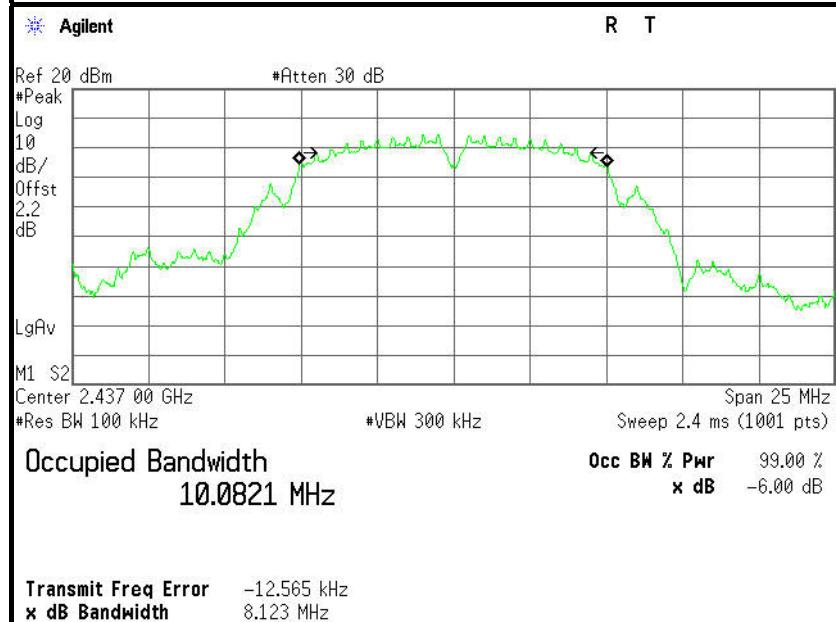


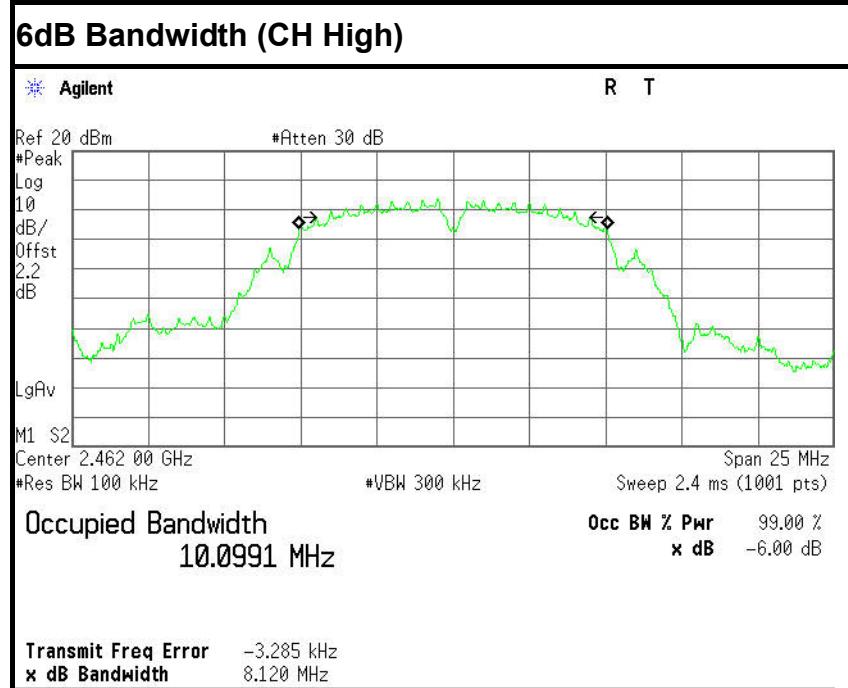
## IEEE 802.11b mode (Antenna 1)

## 6dB Bandwidth (CH Low)



## 6dB Bandwidth (CH Mid)

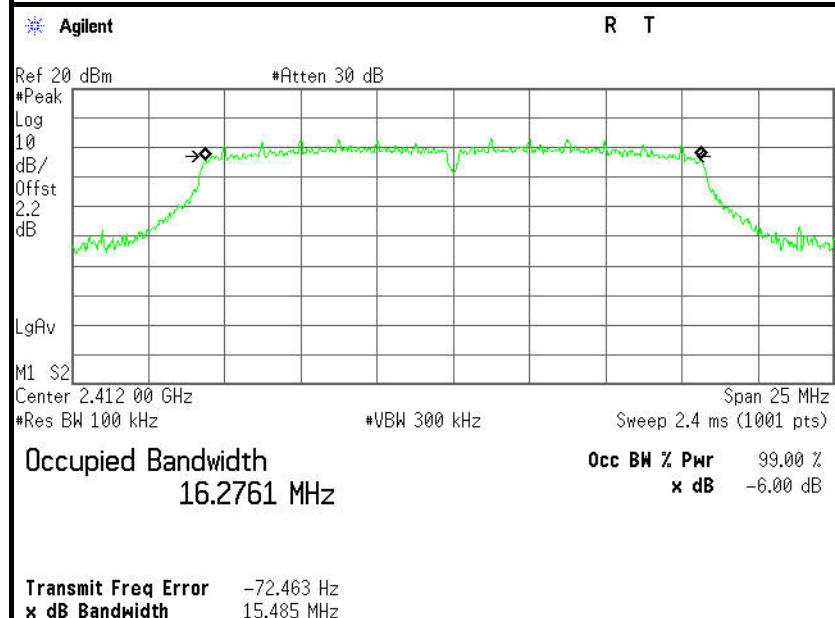




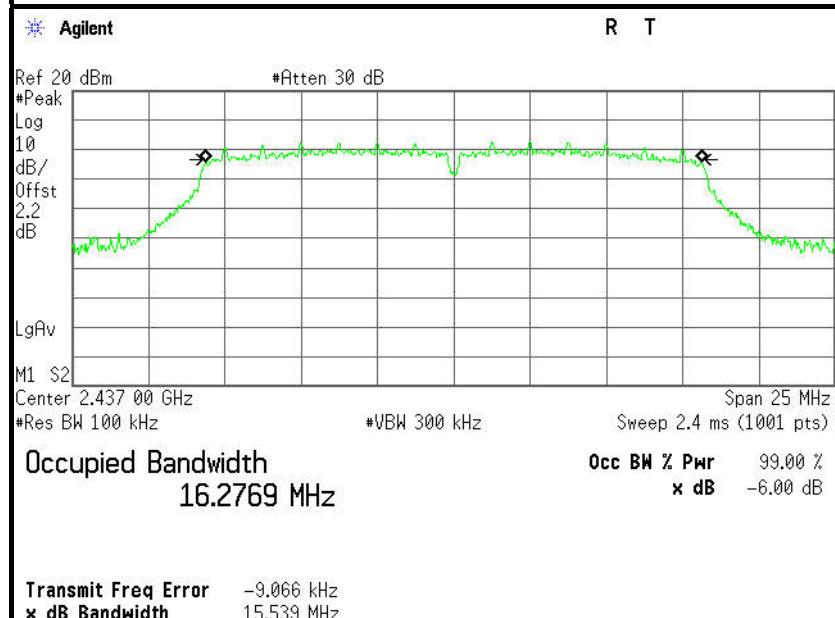


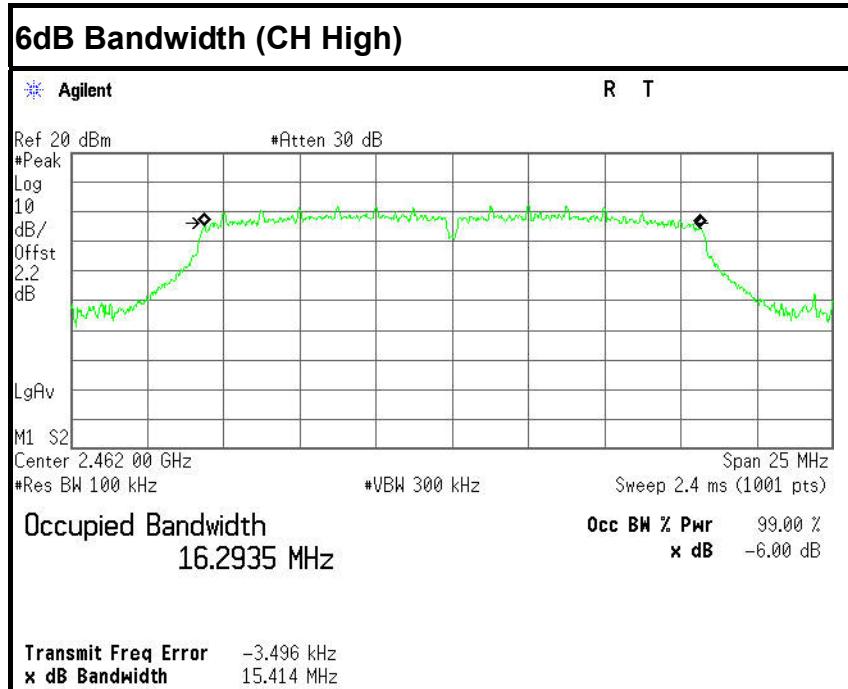
## IEEE 802.11g mode (Antenna 0)

## 6dB Bandwidth (CH Low)



## 6dB Bandwidth (CH Mid)

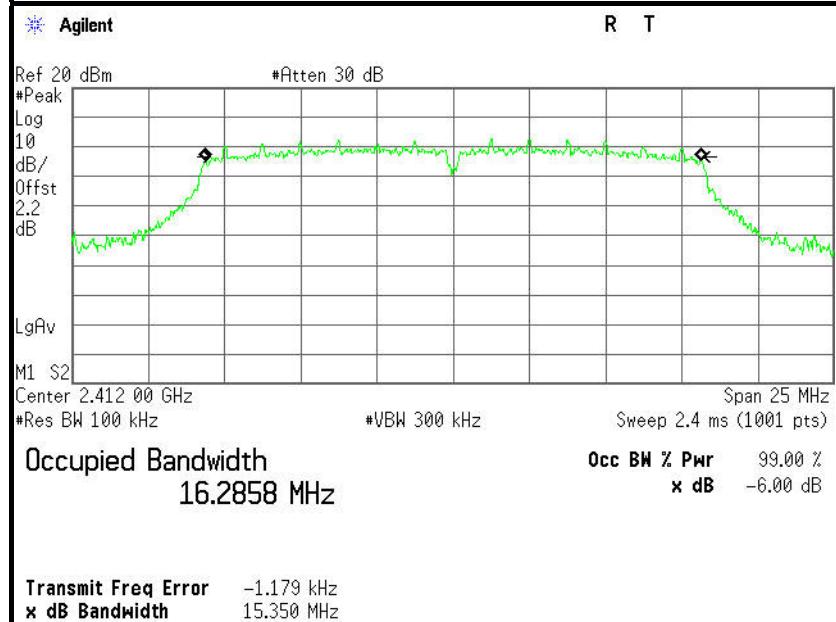




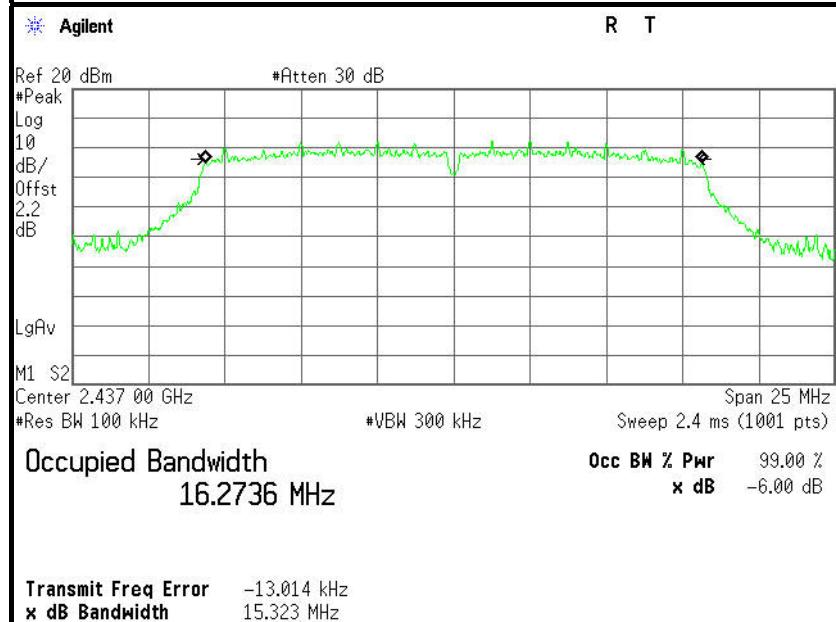


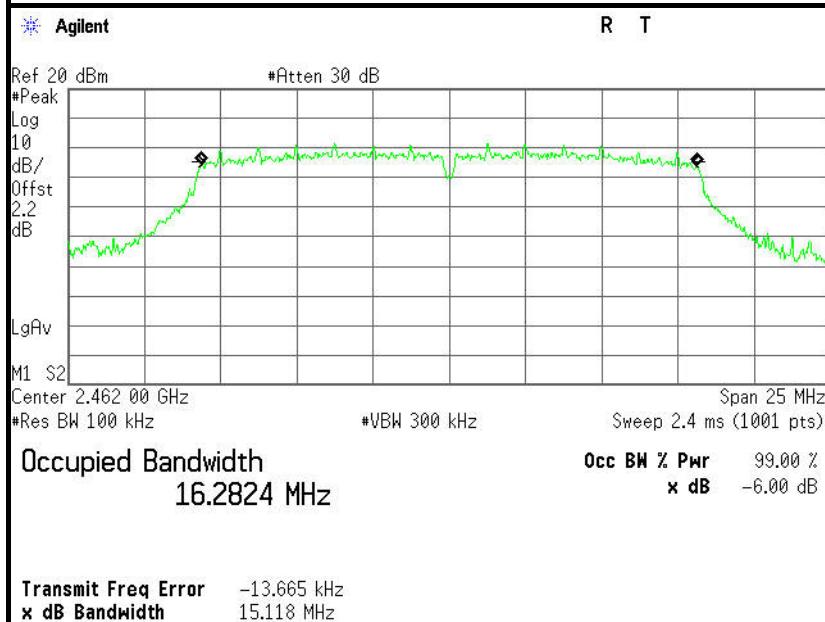
## IEEE 802.11g mode (Antenna 1)

## 6dB Bandwidth (CH Low)



## 6dB Bandwidth (CH Mid)

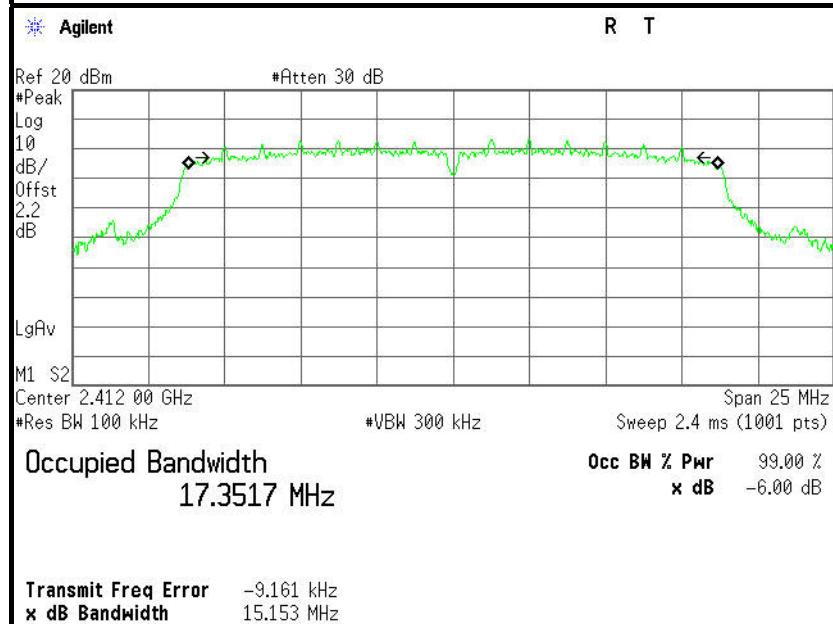


**6dB Bandwidth (CH High)**

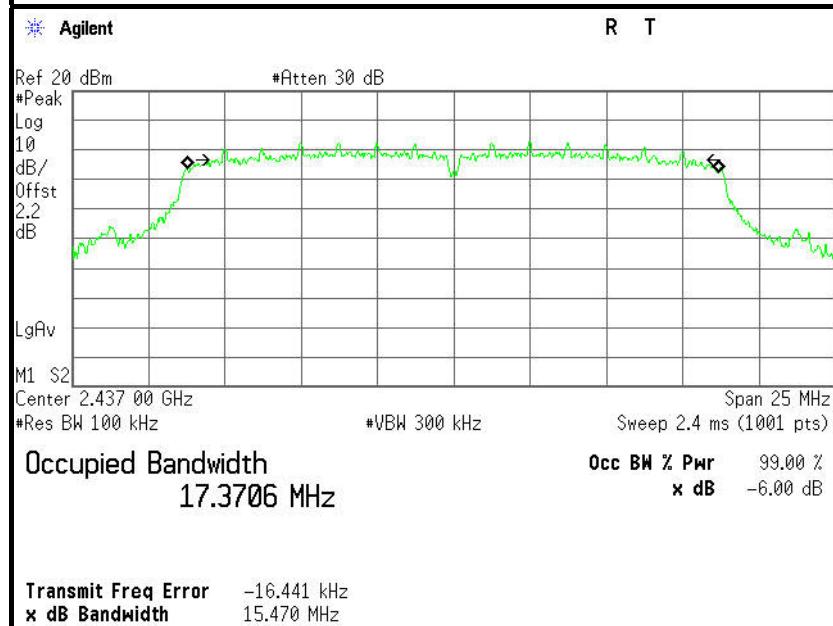


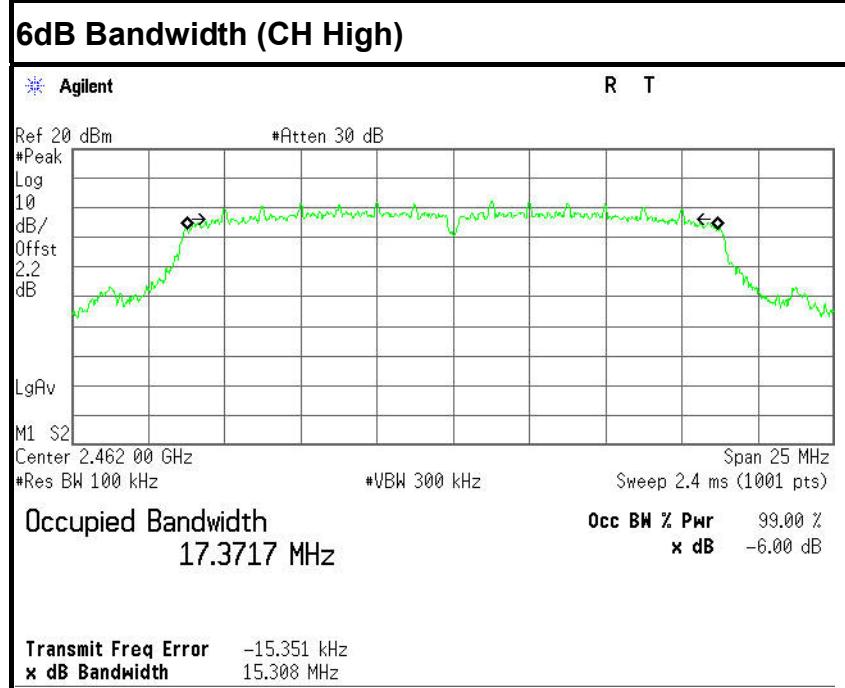
## IEEE 802.11n HT20 MHz mode (Antenna 0)

## 6dB Bandwidth (CH Low)



## 6dB Bandwidth (CH Mid)

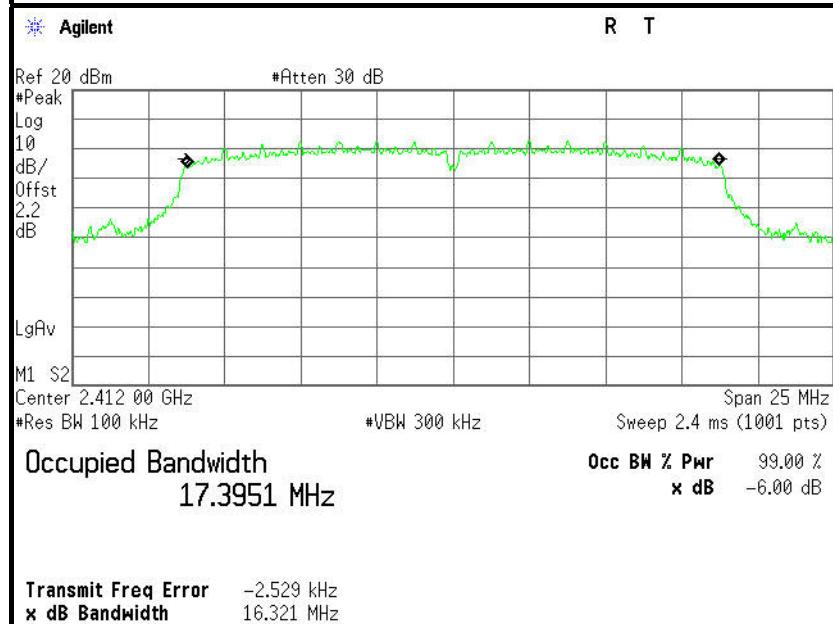




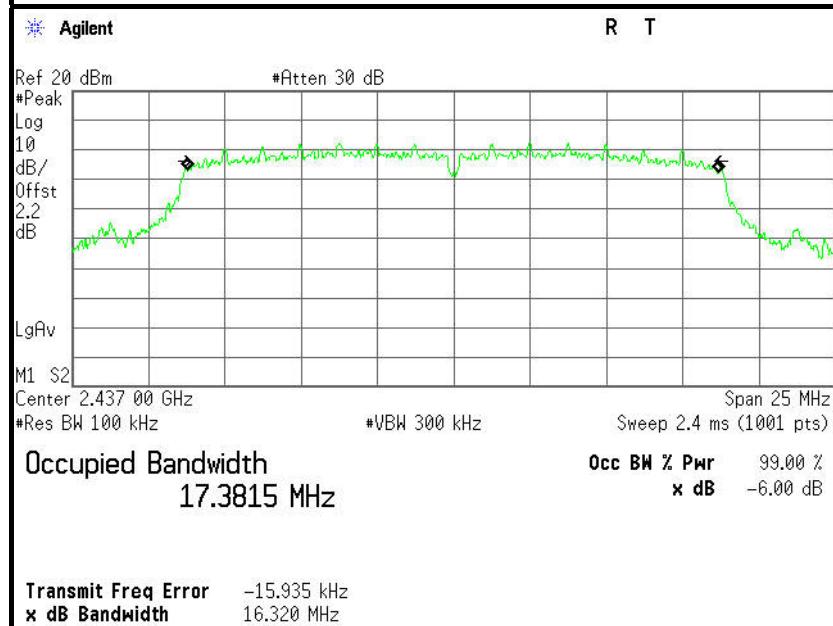


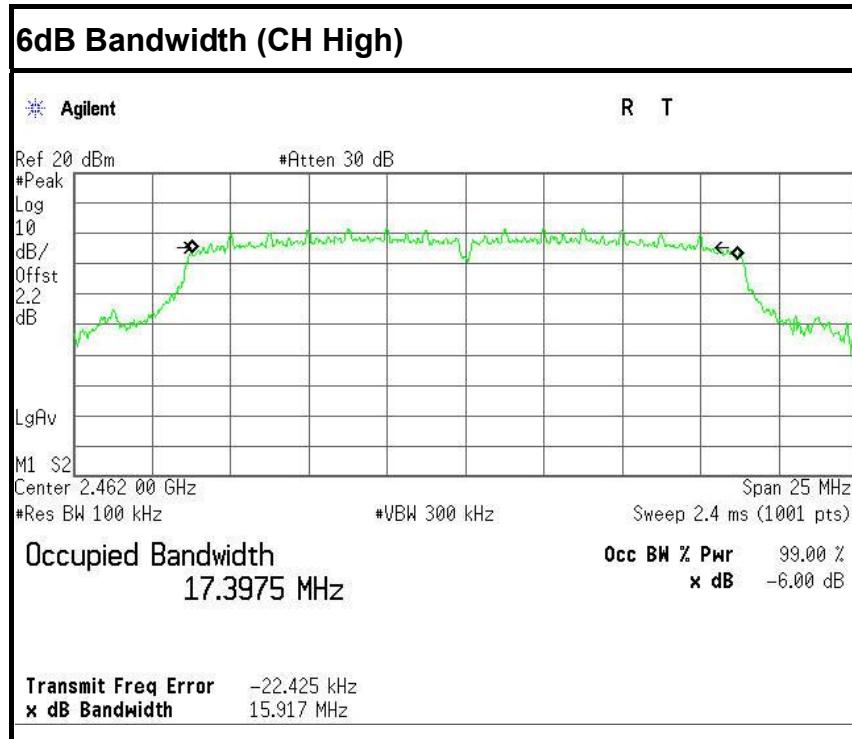
## IEEE 802.11n HT20 MHz mode (Antenna 1)

## 6dB Bandwidth (CH Low)



## 6dB Bandwidth (CH Mid)

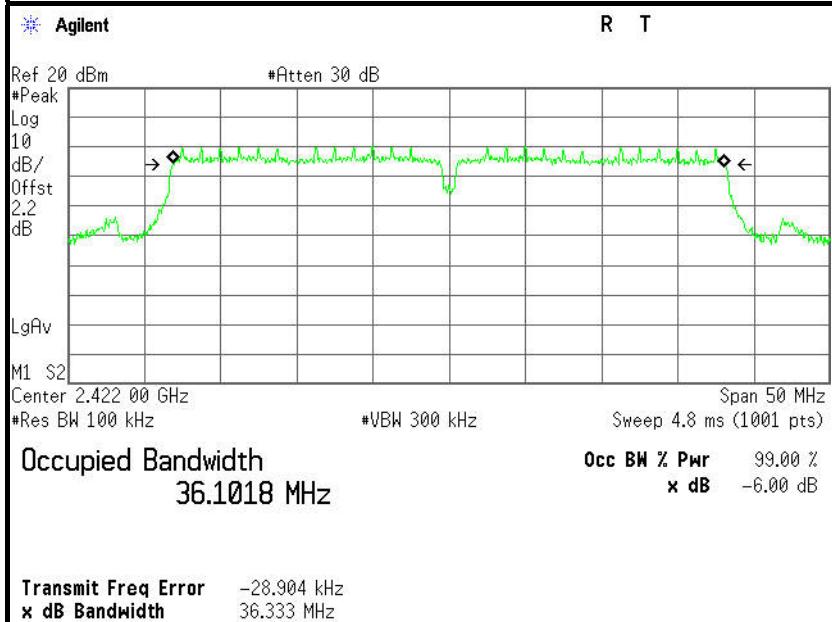






## IEEE 802.11n HT40 MHz mode (Antenna 0)

## 6dB Bandwidth (CH Low)



## 6dB Bandwidth (CH Mid)

