



**FCC 47 CFR PART 15 SUBPART C AND ANSI C63.4:2003  
TEST REPORT**

**For**

**Wireless Cable Router**

**Model : CDW-30235XXXXXXXXX**

**(Where XXXXXXXX = any alpha character "a" - "z", "A" - "Z", or numeric character "0" - "9", or combination of alpha and numeric characters.)**

**Trade Name : Hitron**

**Issued for**

**Hitron Technologies,Inc.**

**No. 1-8,Lihsin 1st Rd.,HsinChu Science Park,  
HishChu,Taiwan 300,R.O.C.**

**Issued by**

**Compliance Certification Services Inc.  
Hsinchu Lab.**

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**Issued Date: August 02, 2011**



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## Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	08/02/2011	Initial Issue	All Page 120	Winnie Chen



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1. TEST REPORT CERTIFICATION

Applicant : Hitron Technologies, Inc.
Address : No. 1-8, Lihsin 1st Rd., HsinChu Science Park, HishChu, Taiwan 300, R.O.C.
Equipment Under Test : Wireless Cable Router
Model : CDW-30235XXXXXXXXX
Trade Name : Hitron
Tested Date : May19 ~ July 29, 2011

Table with 2 columns: Standard, Test Result. Row 1: FCC Part 15 Subpart C AND ANSI C63.4:2003, PASS

WE HEREBY CERTIFY THAT: The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above.

Approved by:

Handwritten signature of Sb Lu

Sb Lu
Sr. Engineer

Reviewed by:

Handwritten signature of Gundam Lin

Gundam Lin
Sr. Engineer



2. EUT DESCRIPTION

<b>Product Name</b>	Wireless Cable Router
<b>Model Number</b>	CDW-30235XXXXXXXXX (Where XXXXXXXX = any alpha character "a" - "z", "A" - "Z", or numeric character "0" - "9", or combination of alpha and numeric characters.)
<b>Identify Number</b>	T110519301
<b>Received Date</b>	May 19, 2011
<b>Frequency Range</b>	IEEE 802.11b/g, 802.11n HT20 : 2412MHz~2462MHz IEEE 802.11n HT40 : 2422MHz~2452MHz
<b>Transmit Power</b>	IEEE 802.11b : 22.92 dBm (0.1959W) IEEE 802.11g : 21.07 dBm (0.1279W) IEEE 802.11n HT20 : 20.90 dBm (0.1232W) IEEE 802.11n HT40 : 21.93 dBm (0.1560W)
<b>Channel Spacing</b>	IEEE 802.11b/g, 802.11n HT20/HT40 : 5MHz
<b>Channel Number</b>	IEEE 802.11b/g, 802.11n HT20 : 11 Channels IEEE 802.11n HT40 : 7 Channels
<b>Transmit Data Rate</b>	IEEE 802.11b : 11, 5.5, 2, 1 Mbps IEEE 802.11g : 54, 48, 36, 24, 18, 12, 9, 6 Mbps IEEE 802.11n HT20 : 144.44, 130, 117, 115.56, 104, 86.67, 78, 72.2, 65, 58.5, 57.78, 52, 43.33, 39, 28.89, 26, 21.7, 19.5, 14.44, 13, 7.2, 6.5 Mbps IEEE 802.11n HT40 : 300, 270, 243, 240, 216, 180, 162, 150, 135, 121.5, 120, 108, 90, 81, 60, 54, 45, 40.5, 30, 27, 15, 13.5Mbps
<b>Type of Modulation</b>	IEEE 802.11b : DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g : OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20/40 : OFDM (64QAM, 16QAM, QPSK, BPSK)
<b>Antenna Type</b>	Antenna 1 (Chain 0) : Print Antenna x 1, Antenna Gain 0.5dBi Antenna 2 (Chain 1) : Dipole Antenna x 1, Antenna Gain 2.18dBi
<b>DC Power Cord Type</b>	Unshielded cable 1.5 m (no detachable)
<b>Power Rating</b>	5Vdc, 1.5A
<b>Test Voltage</b>	120Vac, 60Hz
<b>I/O Port</b>	RJ-45 Port x 1, Power Port x 1, (Coaxial Cable) RF Port x 1

Power Adapter :

No.	Manufacturer	Model No.	Power Input	Power Output
1	SPEC LIN	SL-0106-5V1.5A-C	100-240Vac, 0.3A, 50/60Hz	5Vdc, 1.5A

Remark :

1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.
2. For more details, please refer to the User's manual of the EUT.
3. This submittal(s) (test report) is intended for FCC ID: U4P30235 filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.
4. Client consigns only one sample to test (model number: CDW-3023510519301). Therefore, the testing Lab. just guarantees the unit, which has been tested.



### 3. DESCRIPTION OF TEST MODES

The EUT is an 802.11n MIMO transceiver in Wireless Cable Router form factor. It has two transmitter chains and two receive chains (2 x 2 configurations). 11b/g mode, only Chain 0 transmitter.

#### Conducted Emission / Radiated Emission Test (Below 1 GHz)

1. The following test modes were scanned during the preliminary test:

No.	Pre-Test Mode
1	Normal Operating

2. After the preliminary scan, the following test mode was found to produce the highest emission level.

Final Test Mode		
Emission	Radiated Emission	Normal Operating
	Conducted Emission	Normal Operating

*Remark : Then, the above highest emission mode of the configuration of the EUT and cable was chosen for all final test items.*

#### Conducted / Radiated Emission Test (Above 1 GHz)

##### IEEE 802.11b, 802.11g, 802.11n HT20 mode

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	2412
Middle	2437
High	2462

IEEE 802.11b mode : 1Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11g mode : 6Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11n HT20 mode : 6.5Mbps data rate (worst case) were chosen for full testing.

##### IEEE 802.11n HT40 mode

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	2422
Middle	2437
High	2452

IEEE 802.11n HT40 mode : 13.5Mbps data rate (worst case) were chosen for full testing.



## 4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4: 2003 and FCC CFR 47, 15.207, 15.209 and 15.247.

## 5. FACILITIES AND ACCREDITATION

### 5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

NO. 989-1 Wen Shan Rd., Shang Shan Village,  
Qionglin Shiang Hsinchu County 30741, Taiwan, R.O.C

The sites are constructed in conformance with the requirements of ANSI C63.4:2003 and CISPR 22. All receiving equipment conforms to CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-3, CISPR 16-1-4, CISPR 16-1-5.

### 5.2 ACCREDITATIONS

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

<b>Taiwan</b>	TAF
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The measuring facility of laboratories has been authorized or registered by the following approval agencies.

<b>Canada</b>	INDUSTRY CANADA
<b>Japan</b>	VCCI
<b>Taiwan</b>	BSMI
<b>USA</b>	FCC MRA

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



### 5.3 MEASUREMENT UNCERTAINTY

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4-2.

PARAMETER	UNCERTAINTY
Semi Anechoic Chamber (966 Chamber_A) / Radiated Emission, 30 to 1000 MHz	+/- 3.0371
Semi Anechoic Chamber (966 Chamber_A) / Radiated Emission, 1 to 18GHz	+/- 2.5258
Semi Anechoic Chamber (966 Chamber_A) / Radiated Emission, 18 to 26 GHz	+/- 2.5012
Semi Anechoic Chamber (966 Chamber_A) / Radiated Emission, 26 to 40 GHz	+/- 2.7846
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 30 to 1000 MHz	+/- 3.5189
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 1 to 18GHz	+/- 2.5164
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 18 to 26 GHz	+/- 2.4967
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 26 to 40 GHz	+/- 2.7655
Conducted Emission (Mains Terminals), 9kHz to 30MHz	+/- 1.5923

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

Consistent with industry standard (e.g. CISPR 22: 2006, clause 11, Measurement Uncertainty) determining compliance with the limits shall be base on the results of the compliance measurement. Consequently the measure emissions being less than the maximum allowed emission result in this be a compliant test or passing test.

The acceptable measurement uncertainty value without requiring revision of the compliance statement is base on conducted and radiated emissions being less than  $U_{CISPR}$  which is 3.6dB and 5.2dB respectively. CCS values (called  $U_{Lab}$  in CISPR 16-4-2) is less than  $U_{CISPR}$  as shown in the table above. Therefore, MU need not be considered for compliance.





## 6. SETUP OF EQUIPMENT UNDER TEST

### SUPPORT EQUIPMENT

No.	Product	Manufacturer	Model No.	Serial No.	FCC ID
1	Notebook PC	DELL	Latitude D610	CN-0C4708-48643-625-5565	DoC
2	Notebook PC	HP	ProBook 4421s	CNF03242PJ	DoC
3	CMTS	ARRIS	C3 CMTS DOCSIS2. OS/N 5157 5186	---	---

No.	Signal Cable Description
1	Unshielded RJ-45 cable, 12m x 1
2	Shielded coaxial cable, 10m x 1

### SETUP DIAGRAM FOR TESTS

EUT & peripherals setup diagram is shown in appendix setup photos.

### EUT OPERATING CONDITION

#### **RF Mode**

1. Set up all computers like the setup diagram.
2. Telnet 192.168.1.1
3. pw: admin
4. password:admin
5. main>prod cbccm
6. type iwpriv eth0 set QAEnable=1
7. Start QA
8. The "Ralink QA Test Program for RT 3052 ver1.0.2.0" software was used for testing.
9. All of the functions are under run.
10. Start test.

#### **Normal Mode**

1. Setup whole system for test as shown on diagram.
2. Power on all equipments.
3. Coaxial Cable link Headend-CMTS.  
CMTS set DOWN STREAM : -10 dBmV, UP STREAM: + 40 dBmV.
4. Notebook PC ping EUT IP through LAN connected by RJ45 cable.
5. Notebook PC ping EUT IP through wireless LAN.
6. EUT and laptop connection transfer rate appears as 1Gbps.
7. Start the test.



## 7. FCC PART 15.247 REQUIREMENTS

### 7.1 6dB BANDWIDTH

#### LIMITS

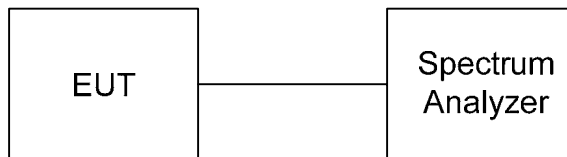
§ 15.247(a) (2) For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz.

#### TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4407B	US41443108	08/12/2011

*Remark: Each piece of equipment is scheduled for calibration once a year.*

#### TEST SETUP



#### TEST PROCEDURE

The transmitter output was connected to a spectrum analyzer. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 KHz RBW and 300 KHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.



**TEST RESULTS**

**IEEE 802.11b Mode**

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (kHz)	Pass / Fail
Low	2412	10.00	500	PASS
Middle	2437	10.00	500	PASS
High	2462	10.25	500	PASS

**IEEE 802.11g Mode**

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (kHz)	Pass / Fail
Low	2412	16.25	500	PASS
Middle	2437	16.17	500	PASS
High	2462	16.25	500	PASS

**IEEE 802.11n HT20 Mode (Two TX)**

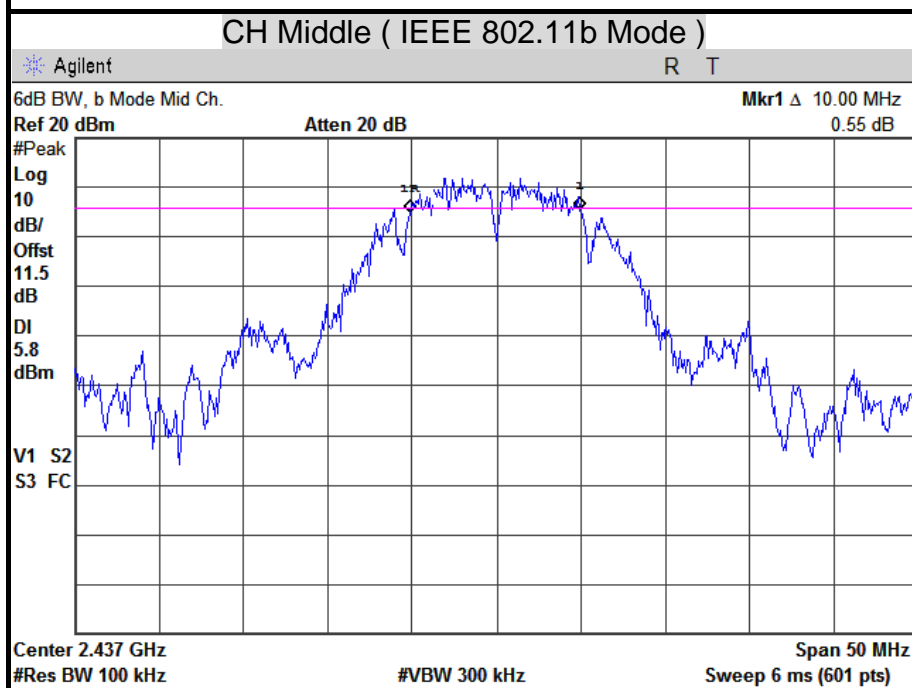
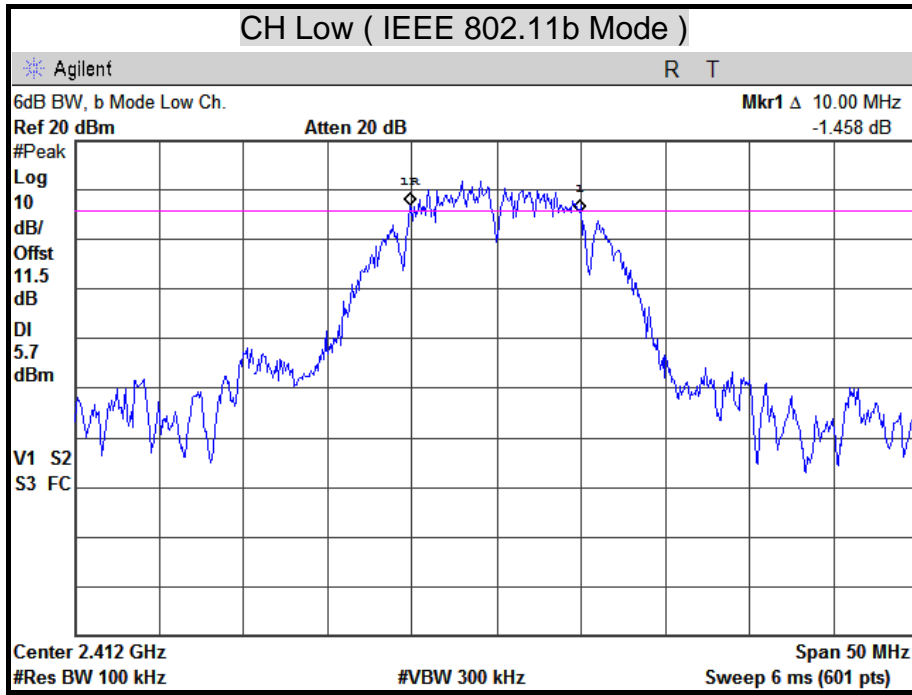
Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1		
Low	2412	17.25	17.50	500	PASS
Middle	2437	17.25	16.92	500	PASS
High	2462	17.42	17.42	500	PASS

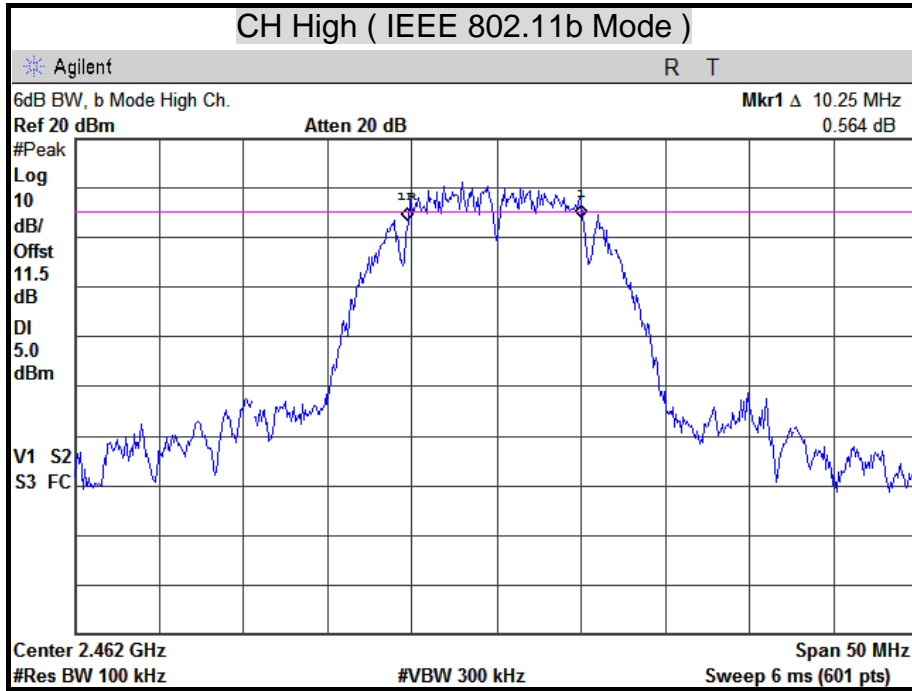
**IEEE 802.11n HT40 Mode (Two TX)**

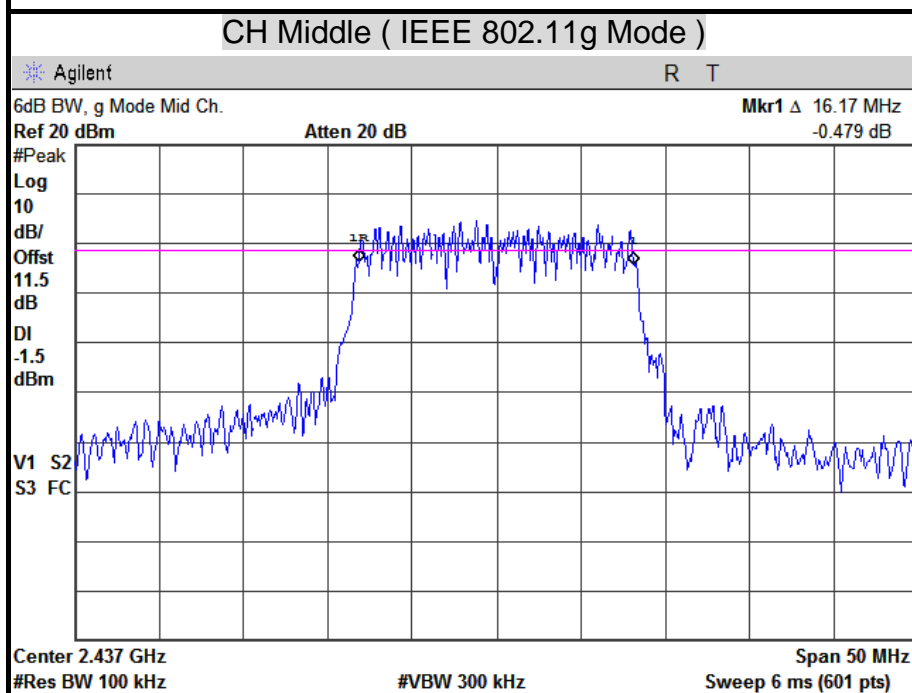
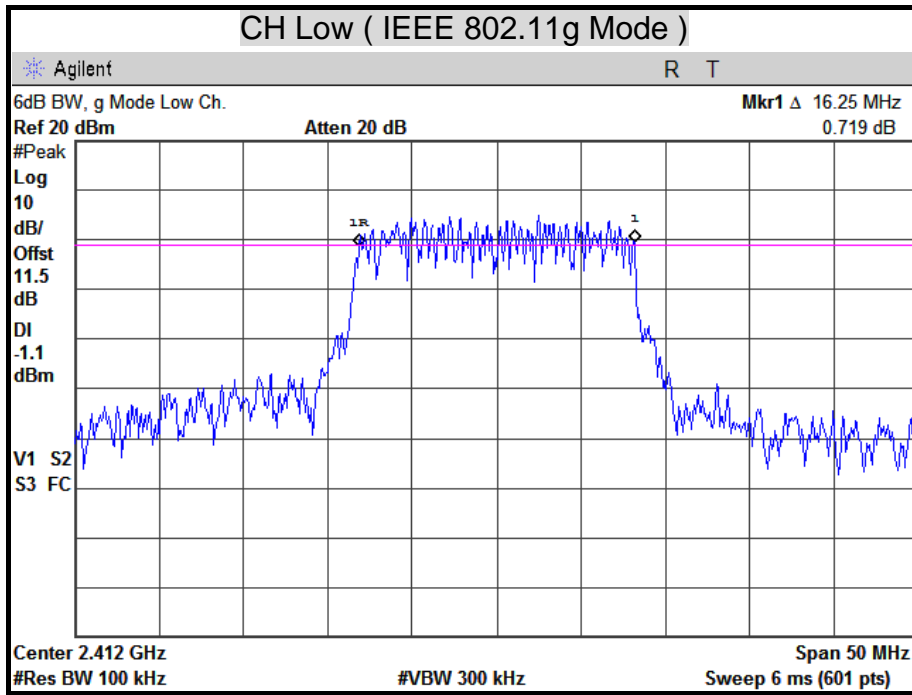
Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1		
Low	2422	35.83	35.42	500	PASS
Middle	2437	35.08	35.17	500	PASS
High	2452	34.75	35.17	500	PASS

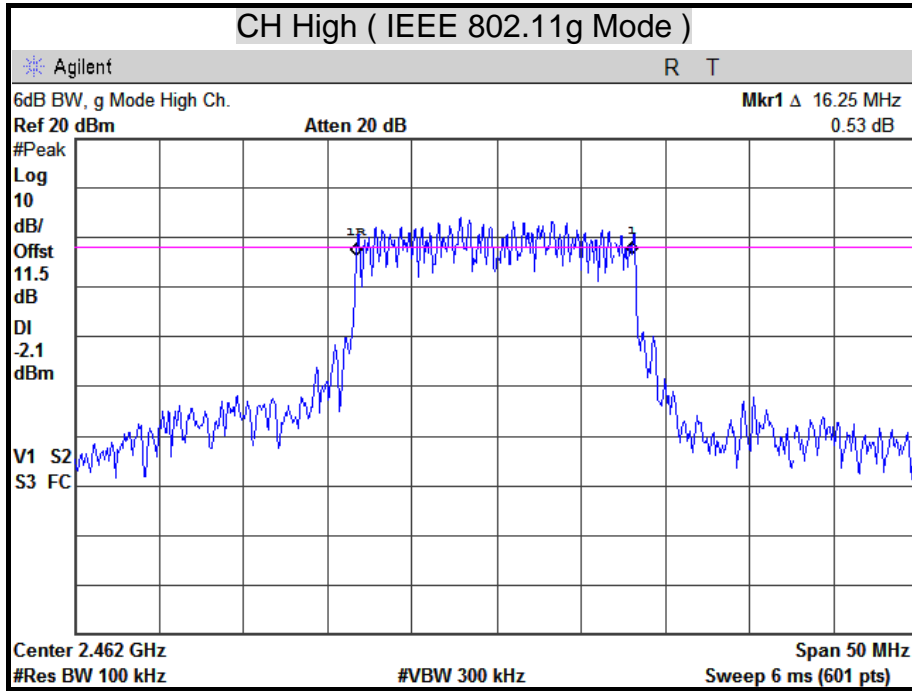


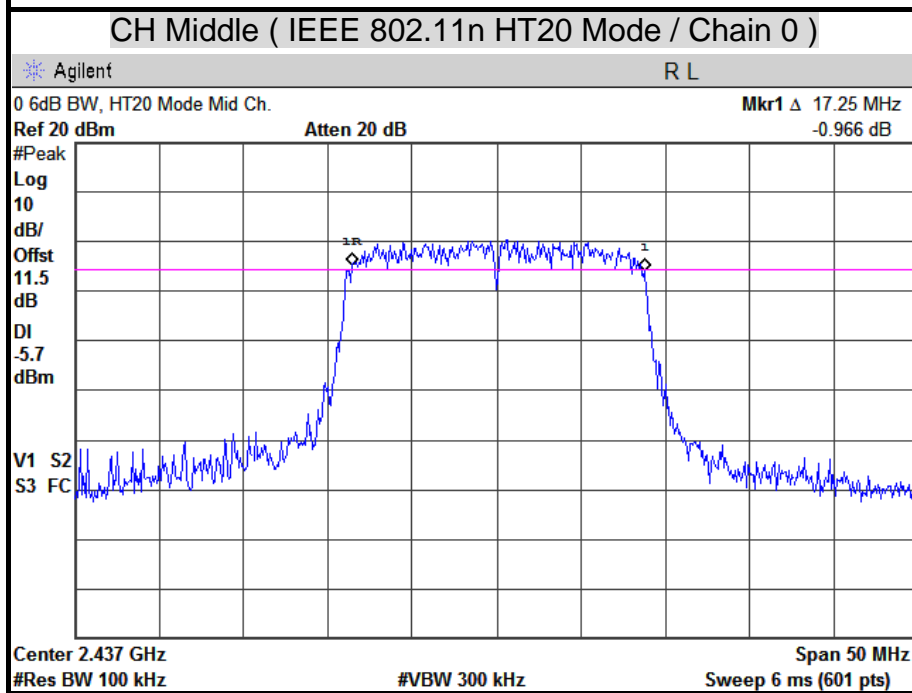
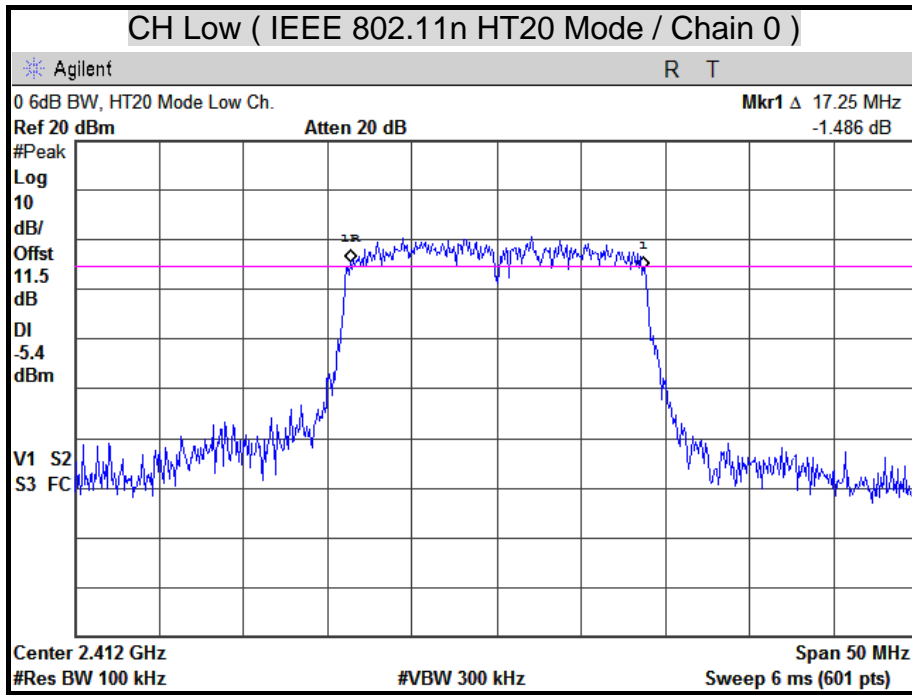
**6dB BANDWIDTH**



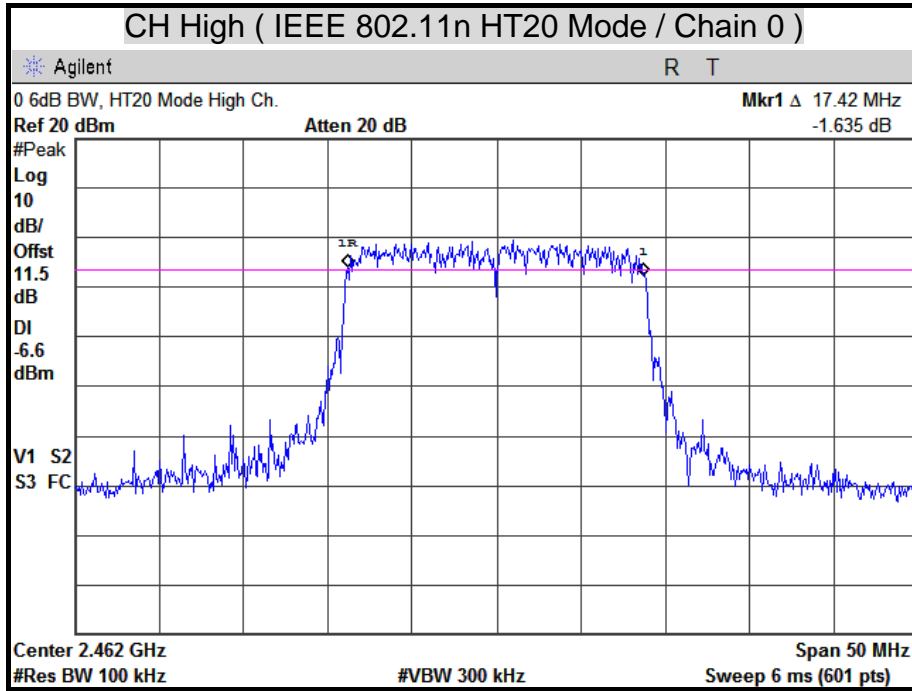


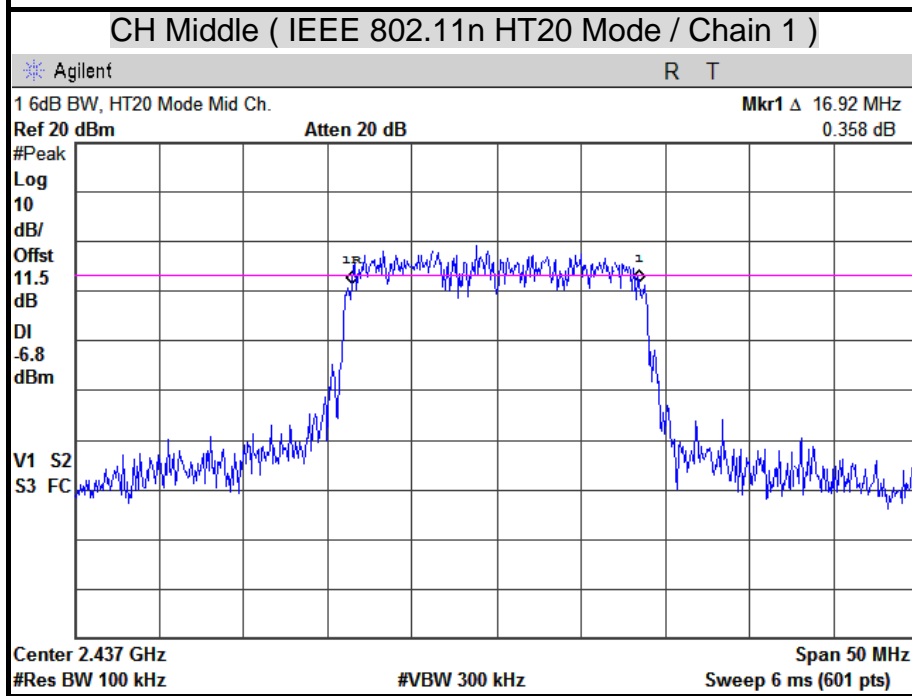
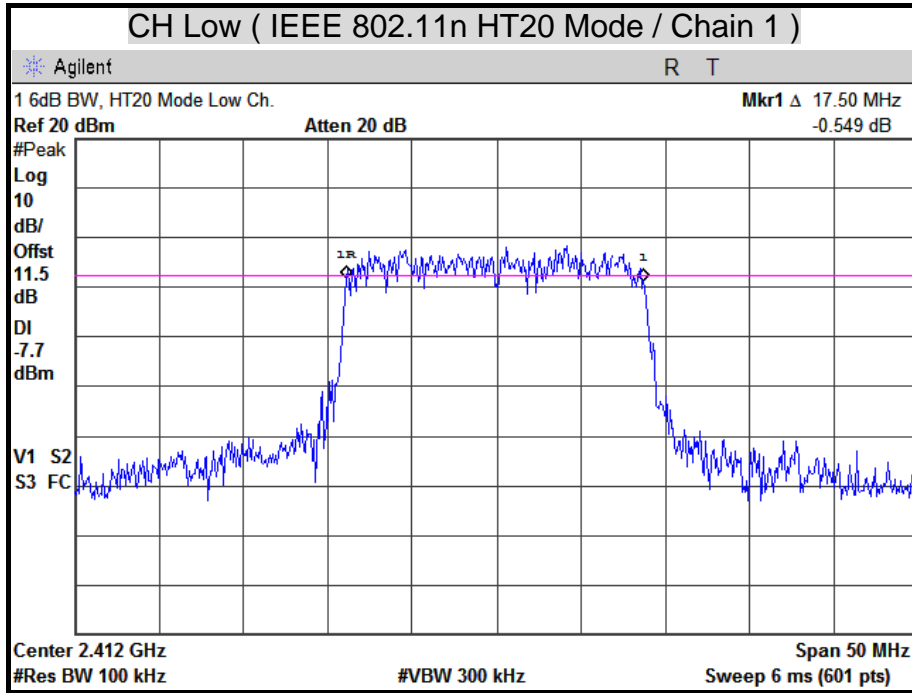


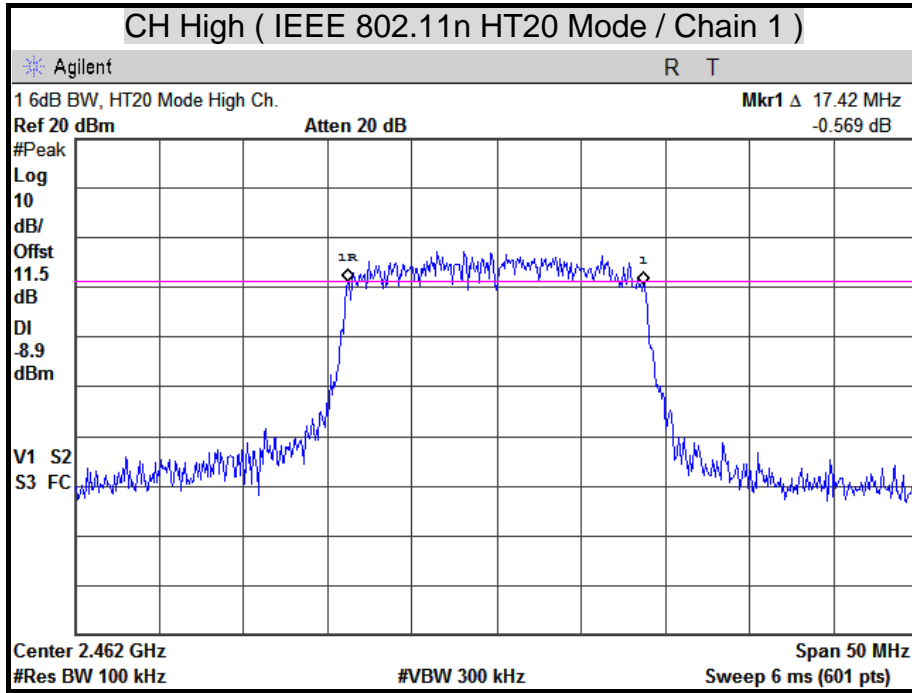


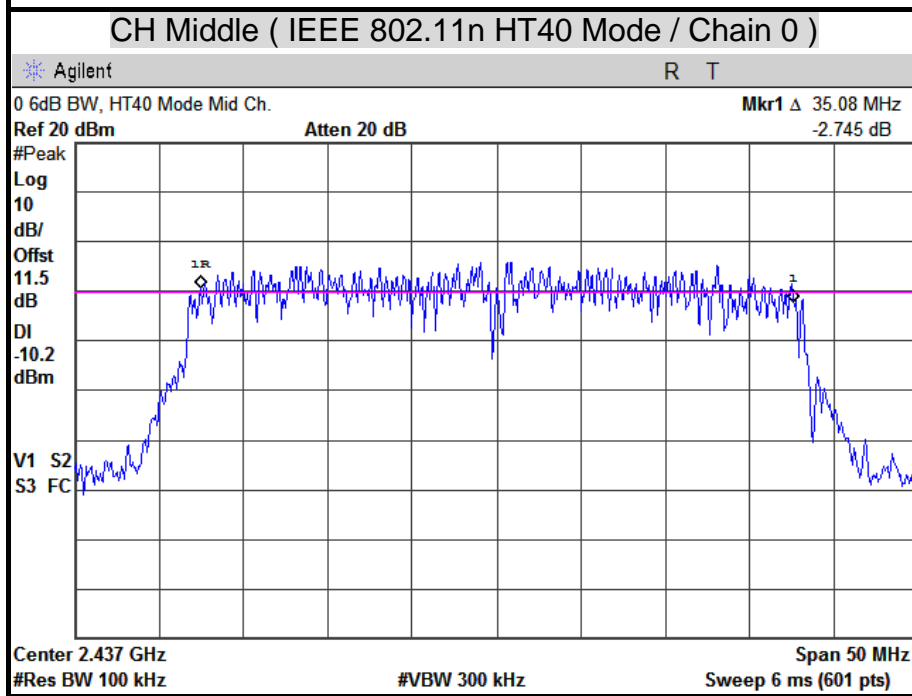
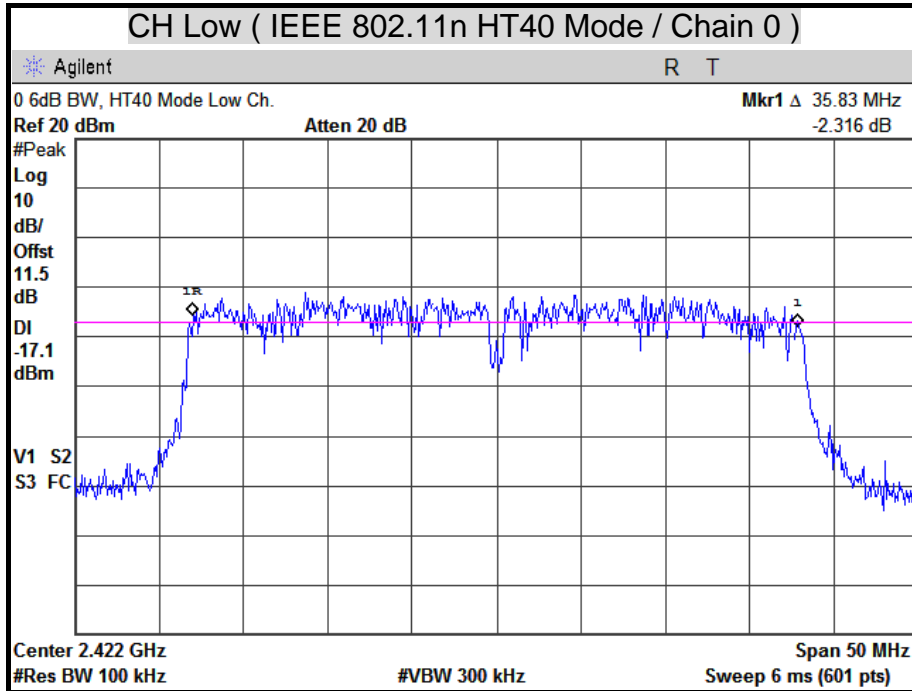


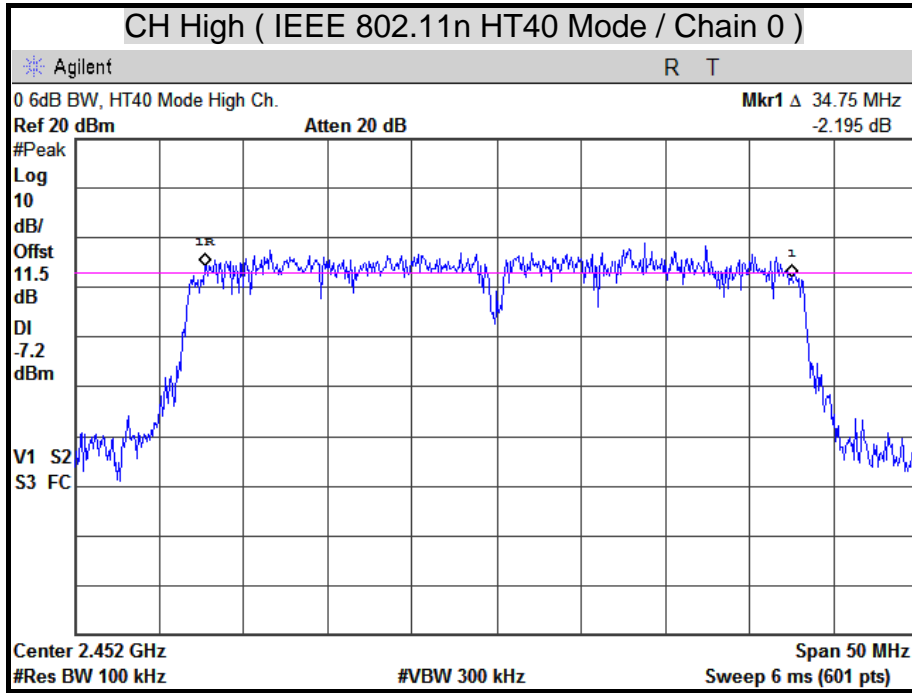


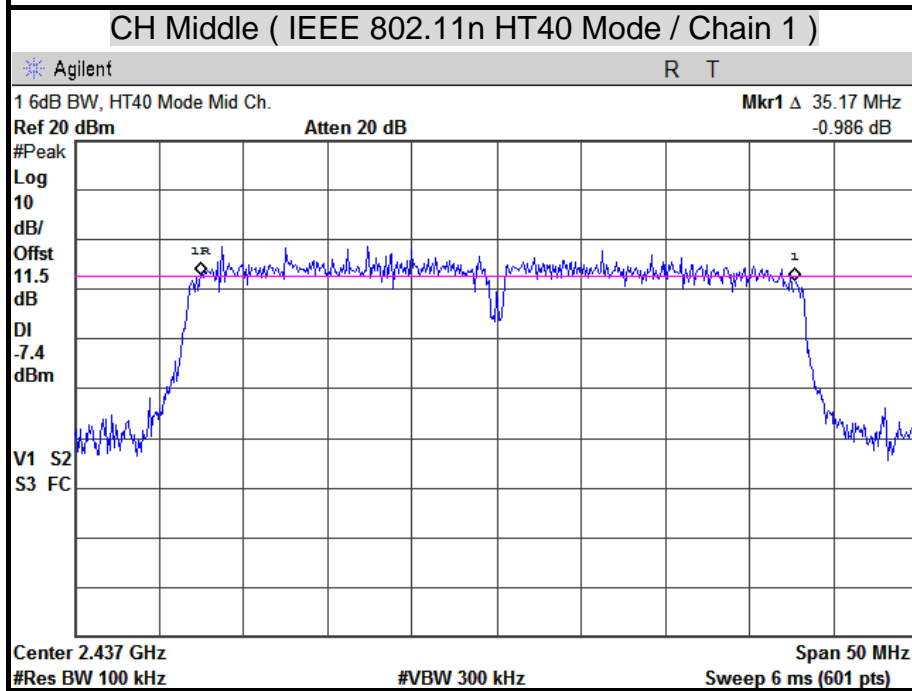
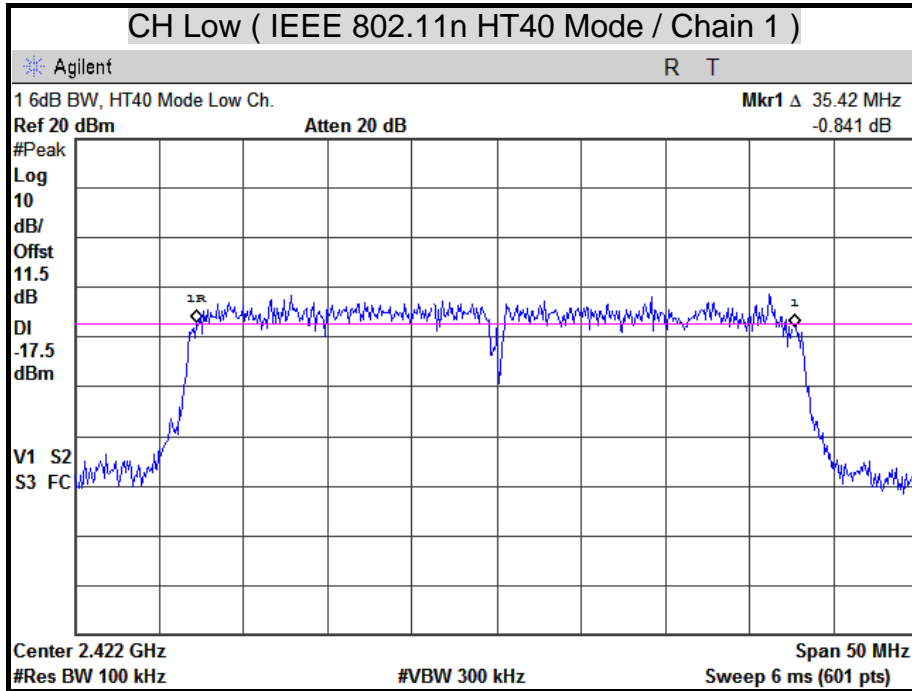


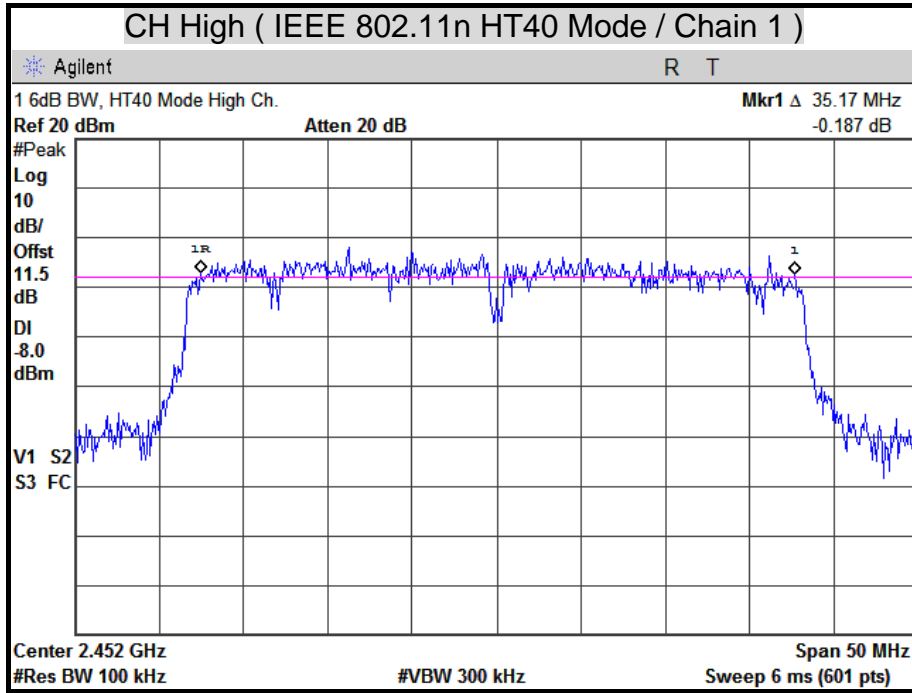














## 7.2 MAXIMUM PEAK OUTPUT POWER

### LIMITS

§ 15.247(b) The maximum peak output power of the intentional radiator shall not exceed the following :

§ 15.247(b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands : 1 watt.

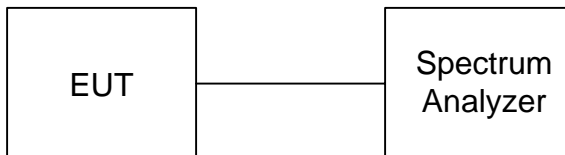
§ 15.247(b) (4) Except as shown in paragraphs (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY46180323	04/24/2012

*Remark: Each piece of equipment is scheduled for calibration once a year.*

### TEST SETUP



### TEST PROCEDURE

- The spectrum shall be set as follows :  
 Span : 1.5 times channel integration bandwidth.  
 RBW : 1MHz  
 VBW : 3MHz  
 Detector : Peak  
 Sweep : Single trace
- Compute the combined power of all signal responses contained in the trace by covering all the data points.
- The peak output power is the channel power integrated over 26dB bandwidth.





**TEST RESULTS**

Total peak power calculation formula:

$10 \log (10^{\text{(Chain 0 Power / 10)}} + 10^{\text{(Chain 1 Power / 10)}})$

**IEEE 802.11b Mode**

Channel	Channel Frequency (MHz)	Peak Power		Peak Power Limit		Pass / Fail
		(dBm)	(W)	(dBm)	(W)	
Low	2412	21.39	0.1377	30	1	PASS
Middle	2437	22.92	0.1959	30	1	PASS
High	2462	19.79	0.0953	30	1	PASS

**Remark:**

1. At final test to get the worst-case emission at 1Mbps.
2. The cable assembly insertion loss of 11dB (including 10 dB pad and 1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

**IEEE 802.11g Mode**

Channel	Channel Frequency (MHz)	Peak Power		Peak Power Limit		Pass / Fail
		(dBm)	(W)	(dBm)	(W)	
Low	2412	20.28	0.1067	30	1	PASS
Middle	2437	21.07	0.1279	30	1	PASS
High	2462	20.97	0.1250	30	1	PASS

**Remark:**

1. At final test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 11dB (including 10 dB pad and 1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.



IEEE 802.11n HT20 Mode (Two TX)

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total		Peak Power Limit		Pass / Fail
		Chain 0	Chain 1	(dBm)	(W)	(dBm)	(W)	
Low	2412	15.96	18.02	20.12	0.1028	30	1	PASS
Middle	2437	16.06	19.18	20.90	0.1232	30	1	PASS
High	2462	14.75	18.29	19.88	0.0973	30	1	PASS

Remark:

1. At final test to get the worst-case emission at 6.5Mbps.
2. The cable assembly insertion loss of 11dB (including 10 dB pad and 1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 Mode (Two TX)

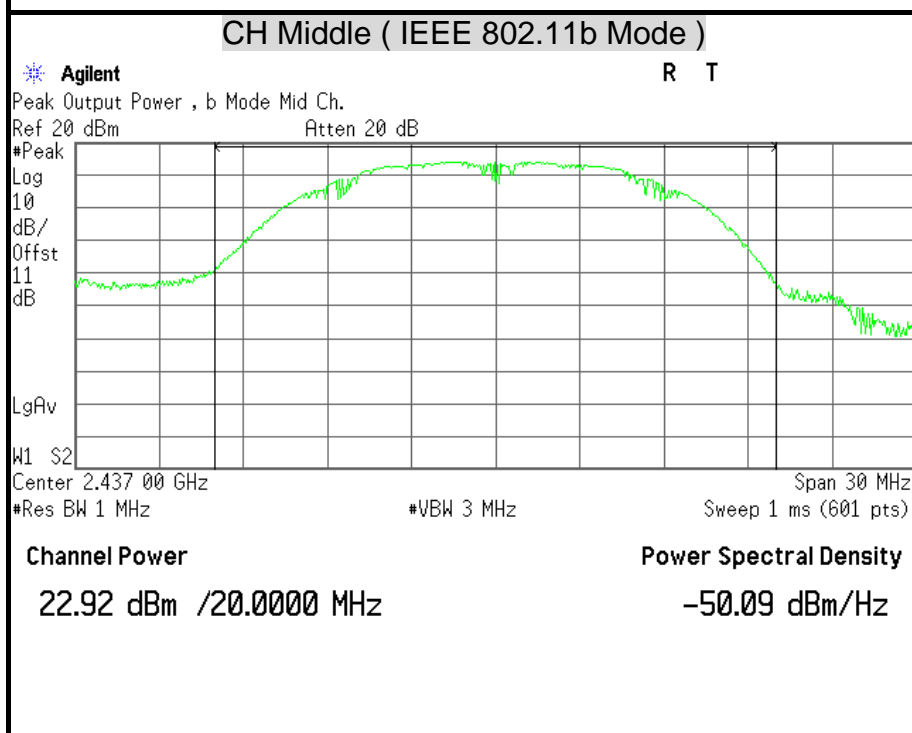
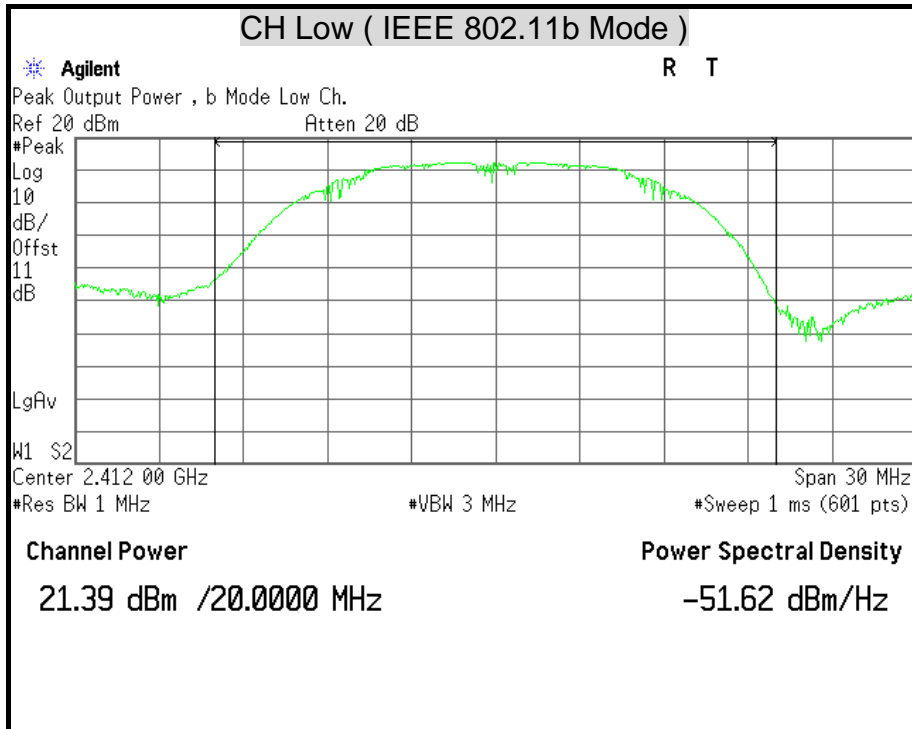
Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total		Peak Power Limit		Pass / Fail
		Chain 0	Chain 1	(dBm)	(W)	(dBm)	(W)	
Low	2422	9.62	13.26	14.82	0.0303	30	1	PASS
Middle	2437	16.84	20.32	21.93	0.1560	30	1	PASS
High	2452	16.50	18.26	20.48	0.1117	30	1	PASS

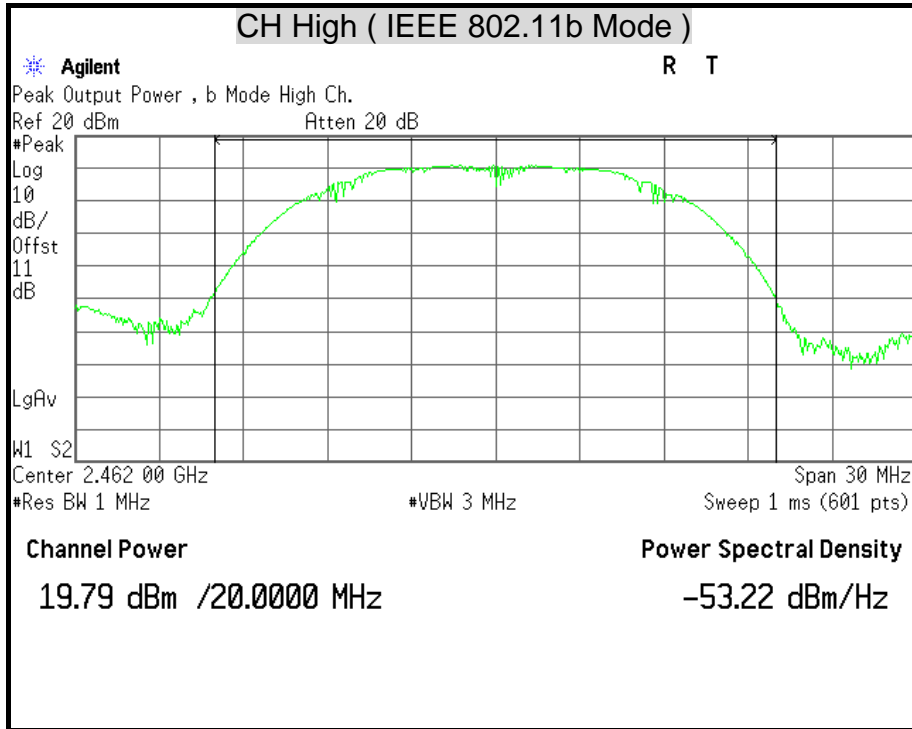
Remark:

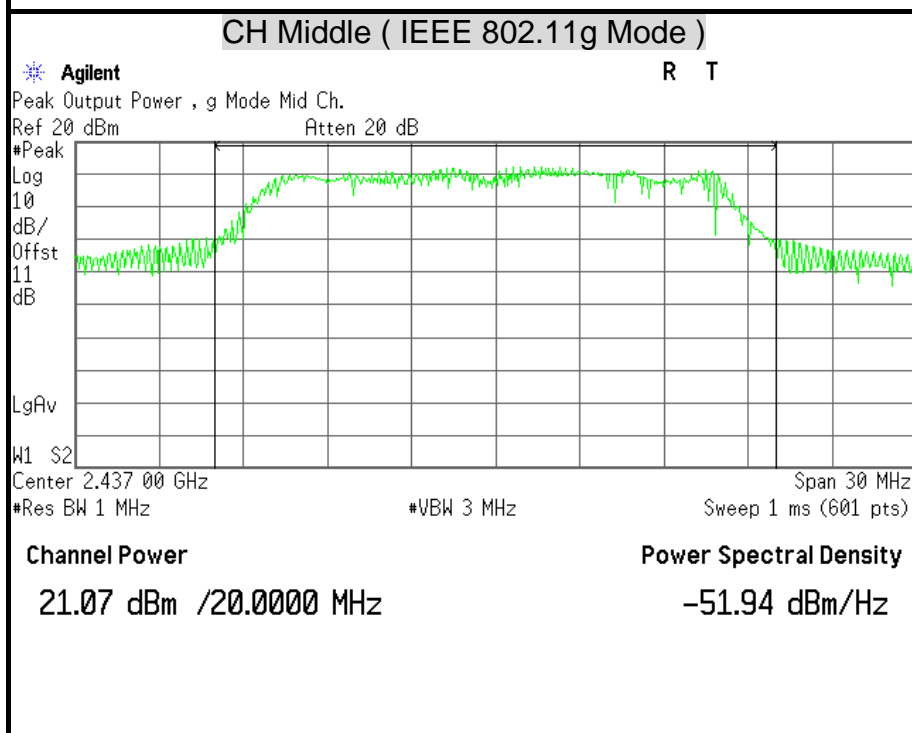
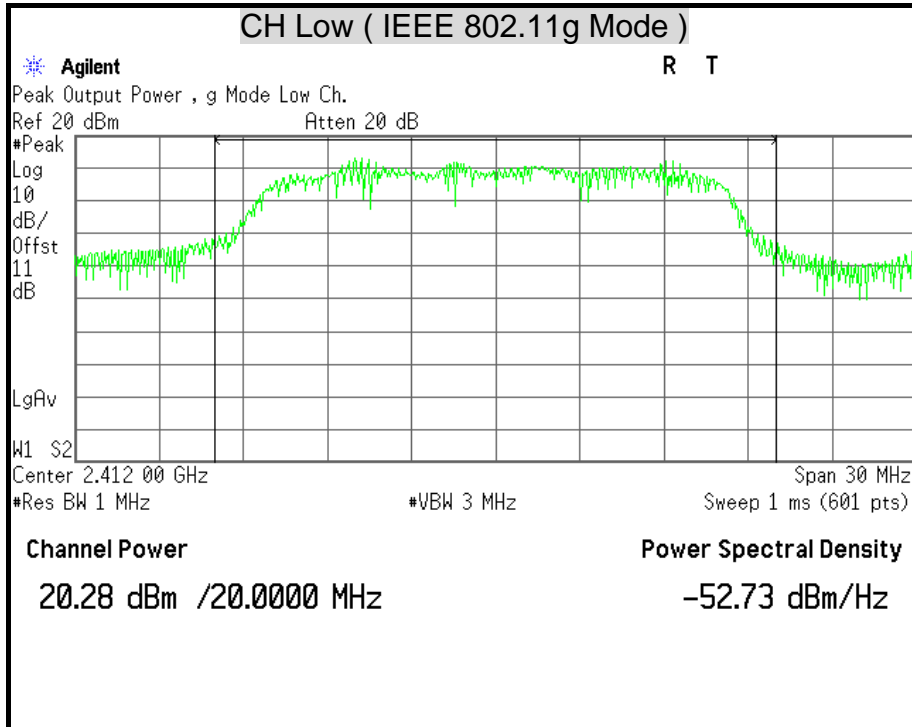
1. At final test to get the worst-case emission at 13.5Mbps.
2. The cable assembly insertion loss of 11dB (including 10 dB pad and 1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

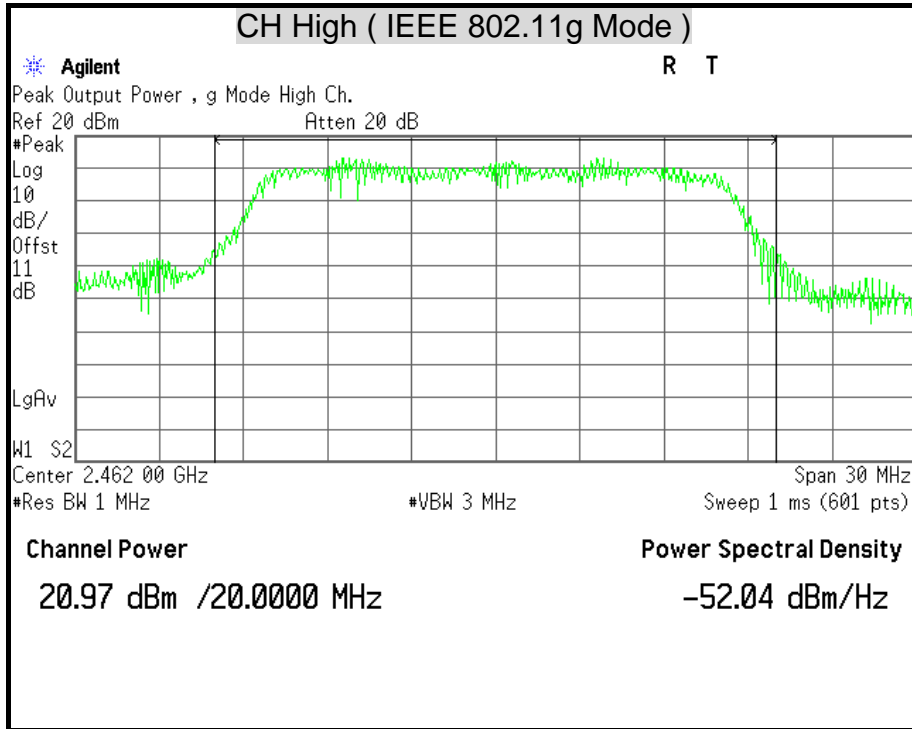


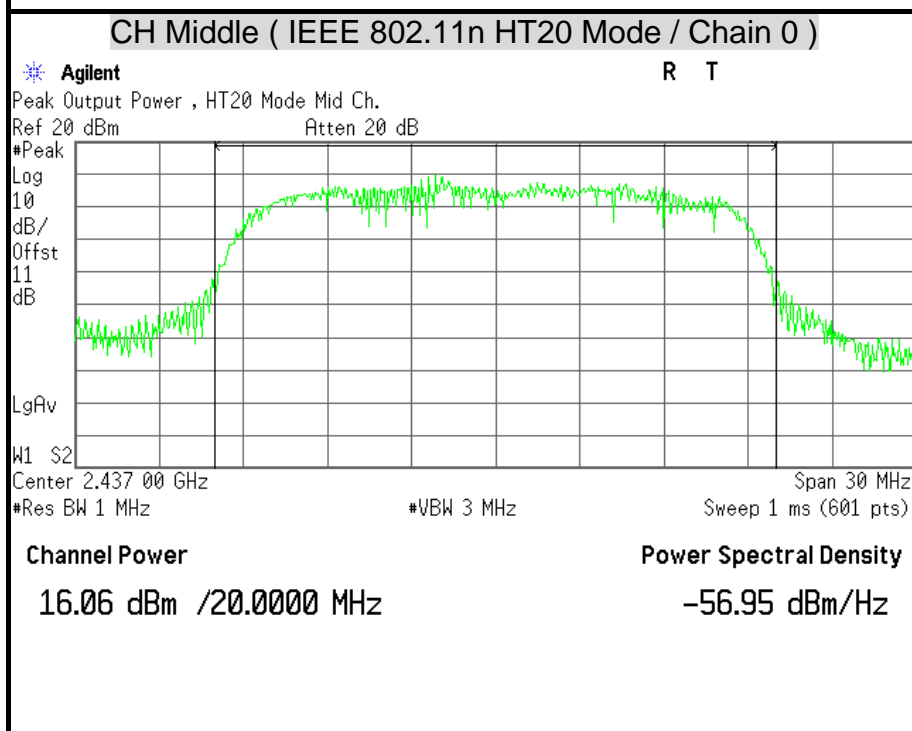
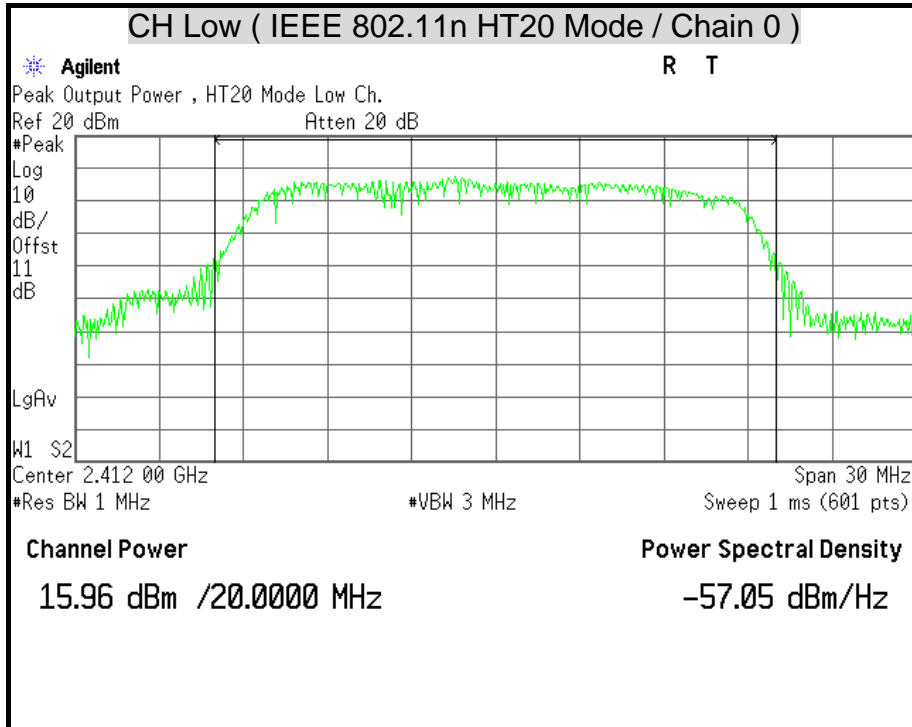
**MAXIMUM PEAK OUTPUT POWER**

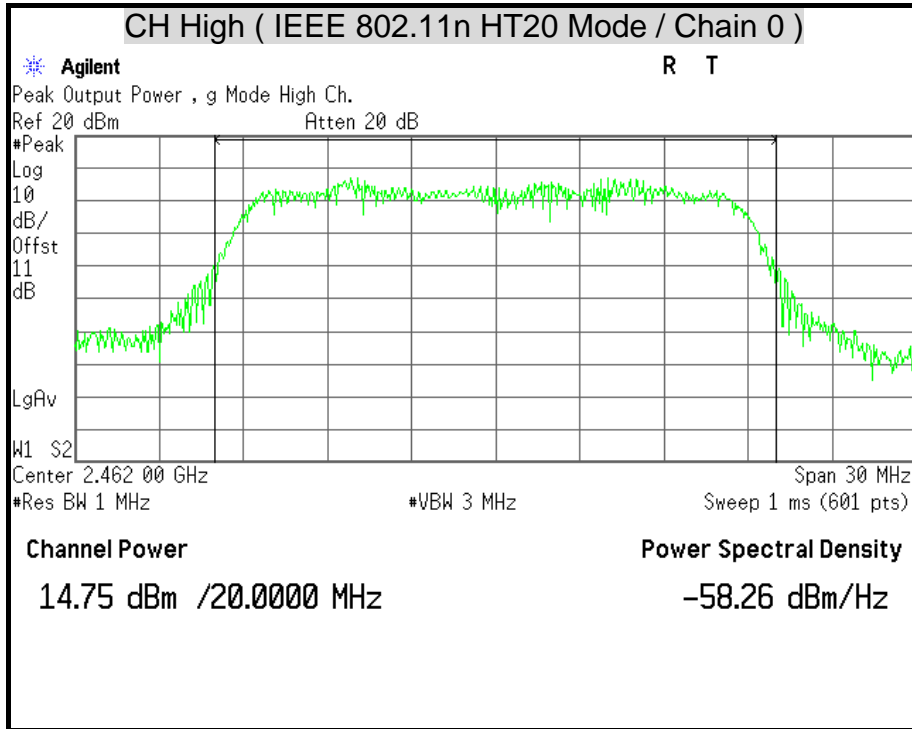




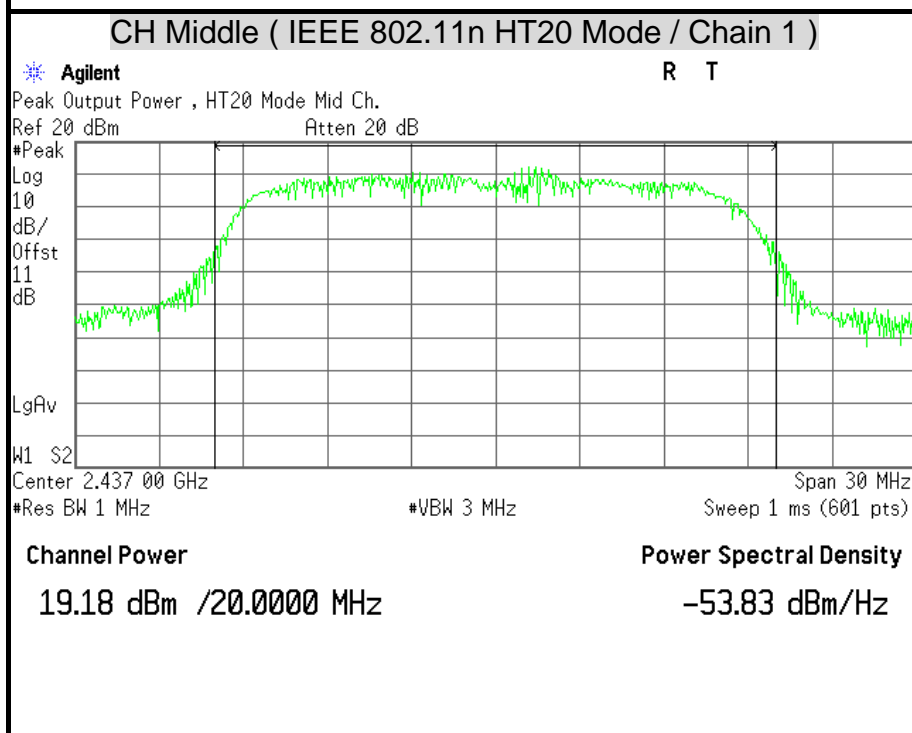
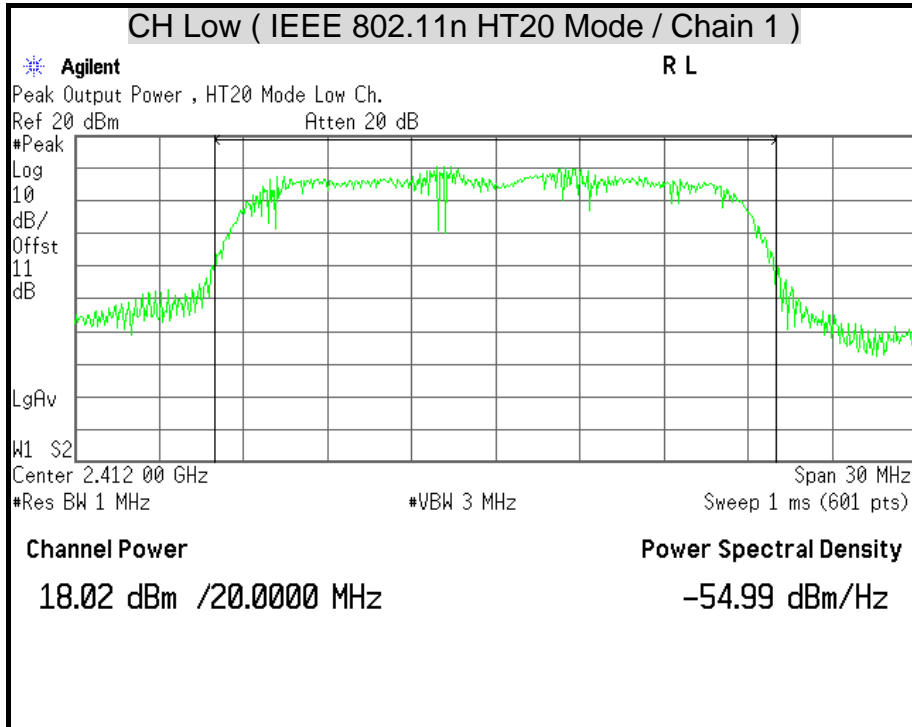


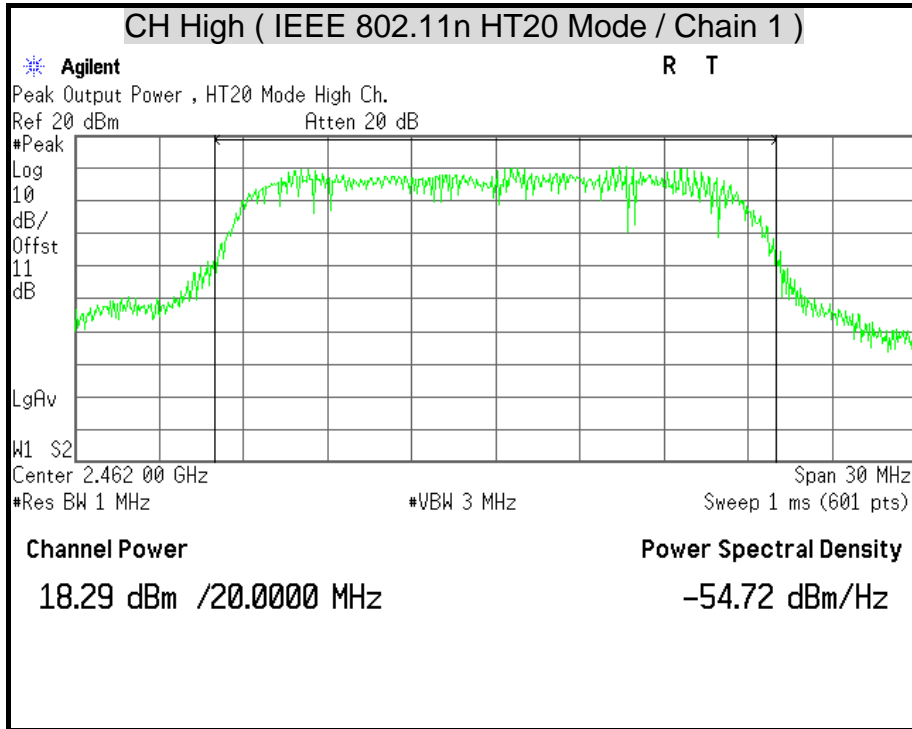


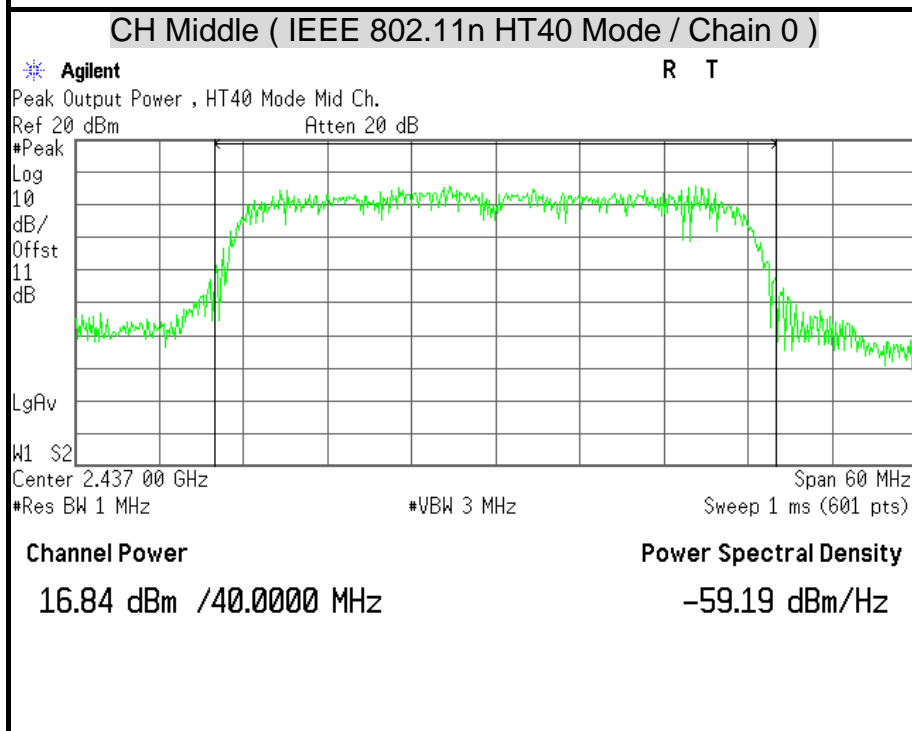
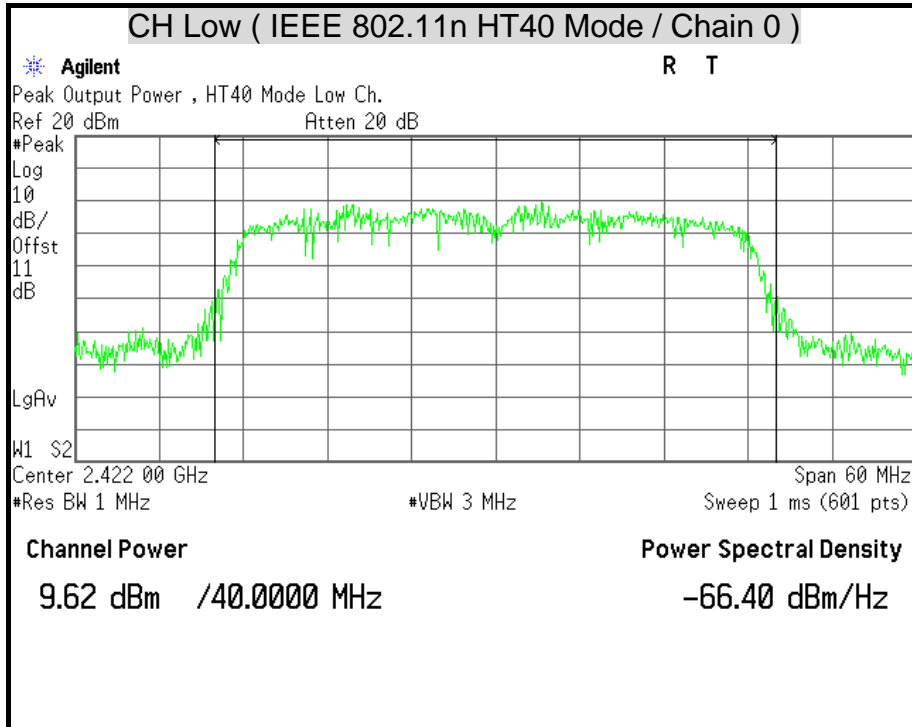


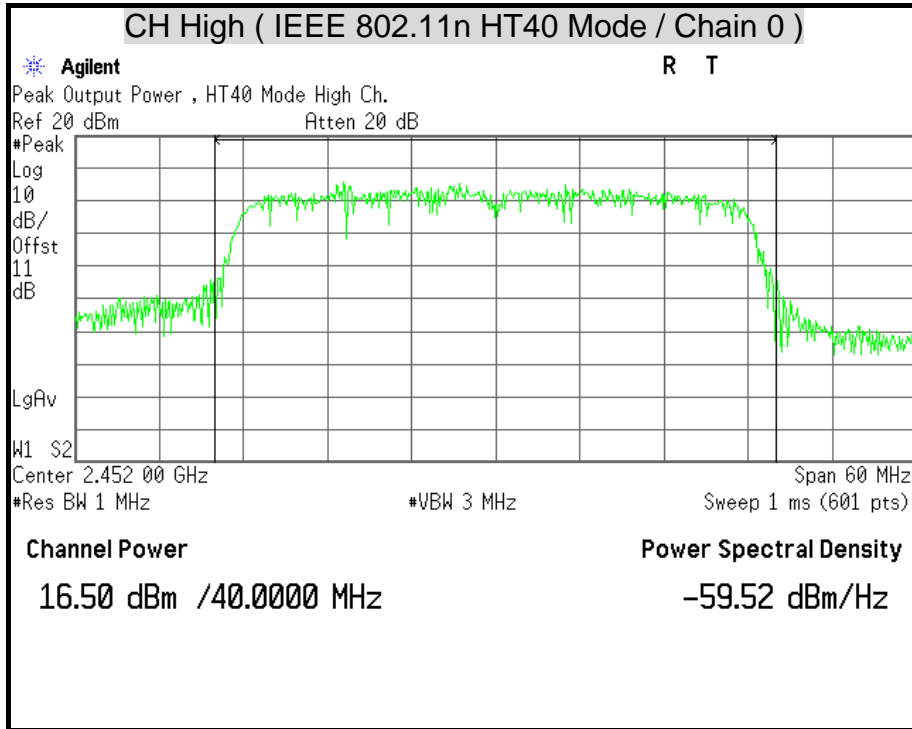


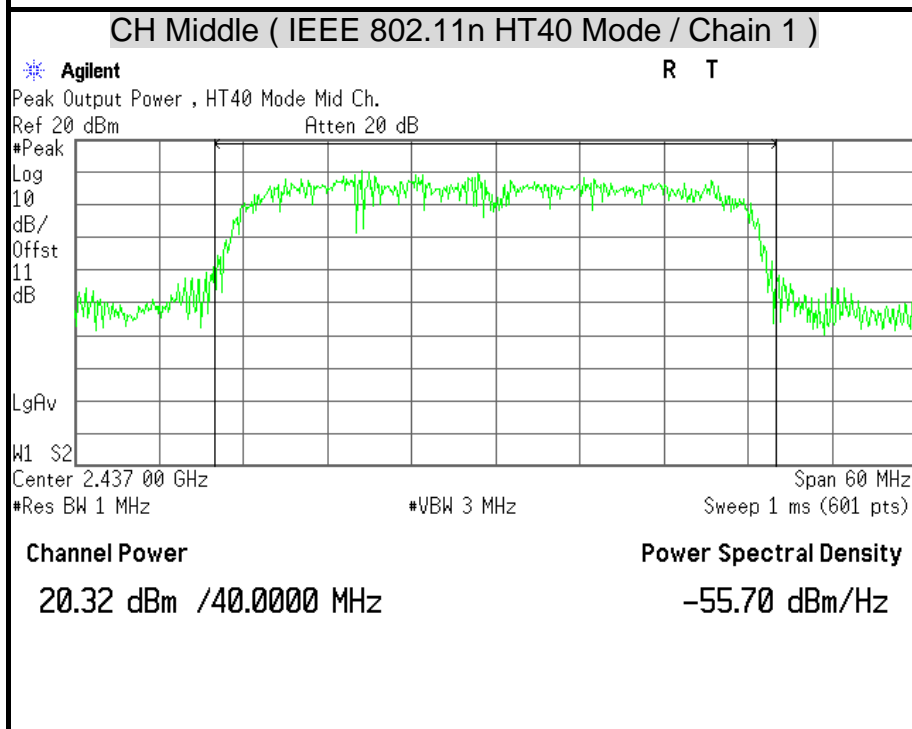
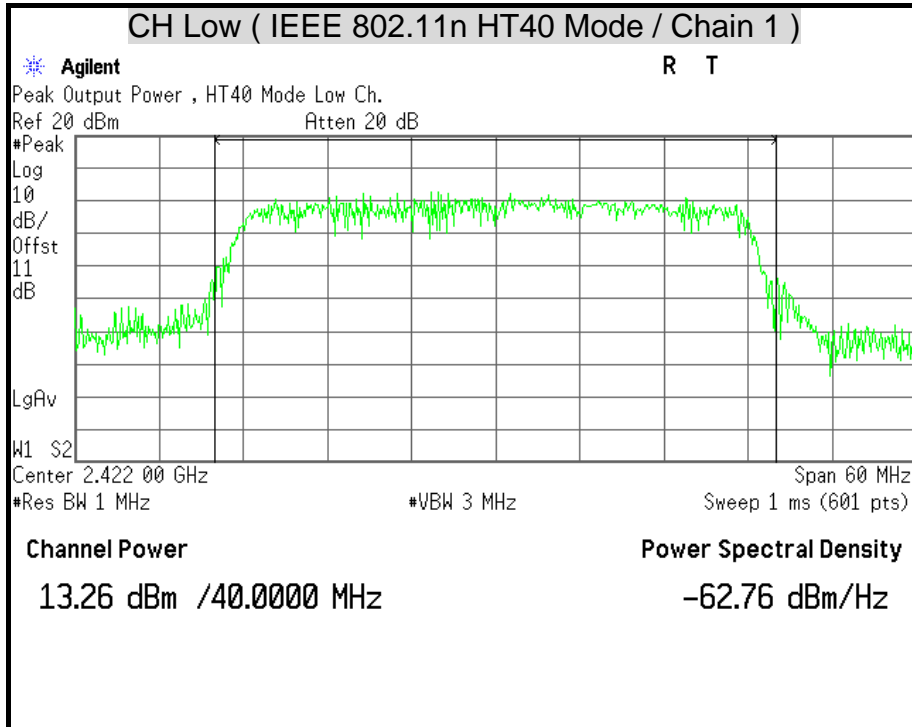


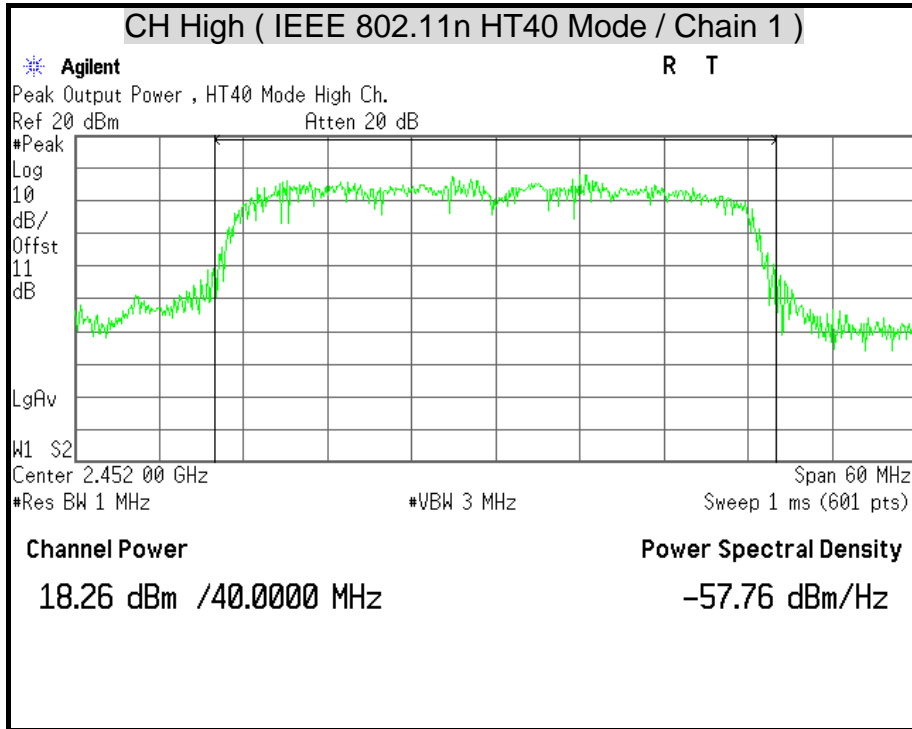














### 7.3 AVERAGE POWER

#### LIMITS

None; for reporting purposes only.

#### TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY46180323	04/24/2012

*Remark: Each piece of equipment is scheduled for calibration once a year.*

#### TEST SETUP



#### TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The Spectrum analyzer is set to the average power detection.



**TEST RESULTS**

Total average power calculation formula:  
 $10 \log (10^{\text{Chain 0 Power} / 10} + 10^{\text{Chain 1 Power} / 10})$ .

**IEEE 802.11b Mode**

Channel	Channel Frequency (MHz)	Average Power Output (dBm)
Low	2412	19.23
Middle	2437	20.24
High	2462	17.24

**Remark:**

1. At final test to get the worst-case emission at 1Mbps.
2. The cable assembly insertion loss of 11dB (including 10 dB pad and 1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

**IEEE 802.11g Mode**

Channel	Channel Frequency (MHz)	Average Power Output (dBm)
Low	2412	16.62
Middle	2437	17.45
High	2462	17.42

**Remark:**

1. At final test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 11dB (including 10 dB pad and 1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.





**IEEE 802.11n HT20 Mode (Two TX)**

Channel	Channel Frequency (MHz)	Average Power Output (dBm)		Average Power Total (dBm)
		Chain 0	Chain 1	
Low	2412	12.13	14.56	16.52
Middle	2437	12.38	15.76	17.40
High	2462	11.24	14.31	16.05

**Remark:**

1. At final test to get the worst-case emission at 6.5Mbps.
2. The cable assembly insertion loss of 11dB (including 10 dB pad and 1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

**IEEE 802.11n HT40 Mode (Two TX)**

Channel	Channel Frequency (MHz)	Average Power Output (dBm)		Average Power Total (dBm)
		Chain 0	Chain 1	
Low	2422	6.25	10.18	11.66
Middle	2437	13.13	16.57	18.19
High	2452	12.78	14.85	16.95

**Remark:**

1. At final test to get the worst-case emission at 13.5Mbps.
2. The cable assembly insertion loss of 11dB (including 10 dB pad and 1 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.



## 7.4 POWER SPECTRAL DENSITY

### LIMITS

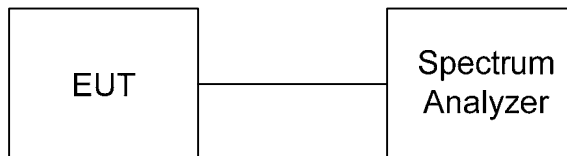
§ 15.247(e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

### TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4407B	US41443108	08/12/2011

*Remark: Each piece of equipment is scheduled for calibration once a year.*

### TEST SETUP



### TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using RBW = 3KHz and VBW RBW, set sweep time = span / 3KHz.

The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span / 3KHz for a full response of the mixer in the spectrum analyzer.



**TEST RESULTS**

Total power spectral density calculation formula:  
10 log (10<sup>^</sup> (Chain 0 PSD / 10) + 10<sup>^</sup> (Chain 1 PSD / 10)).

**IEEE 802.11b Mode**

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Minimum Limit (dBm)	Pass / Fail
Low	2412	-5.04	8	PASS
Middle	2437	-6.33	8	PASS
High	2462	-9.17	8	PASS

**Remark:**

1. At final test to get the worst-case emission at 1Mbps.
2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

**IEEE 802.11g Mode**

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Minimum Limit (dBm)	Pass / Fail
Low	2412	-6.98	8	PASS
Middle	2437	-5.88	8	PASS
High	2462	-6.66	8	PASS

**Remark:**

1. At final test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.



IEEE 802.11n HT20 Mode (Two TX)

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)		PSD Total (dBm)	Minimum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	2412	-12.37	-12.81	-9.57	8	PASS
Middle	2437	-12.50	-12.28	-9.38	8	PASS
High	2462	-12.97	-13.60	-10.26	8	PASS

Remark:

1. At final test to get the worst-case emission at 6.5Mbps.
2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 Mode (Two TX)

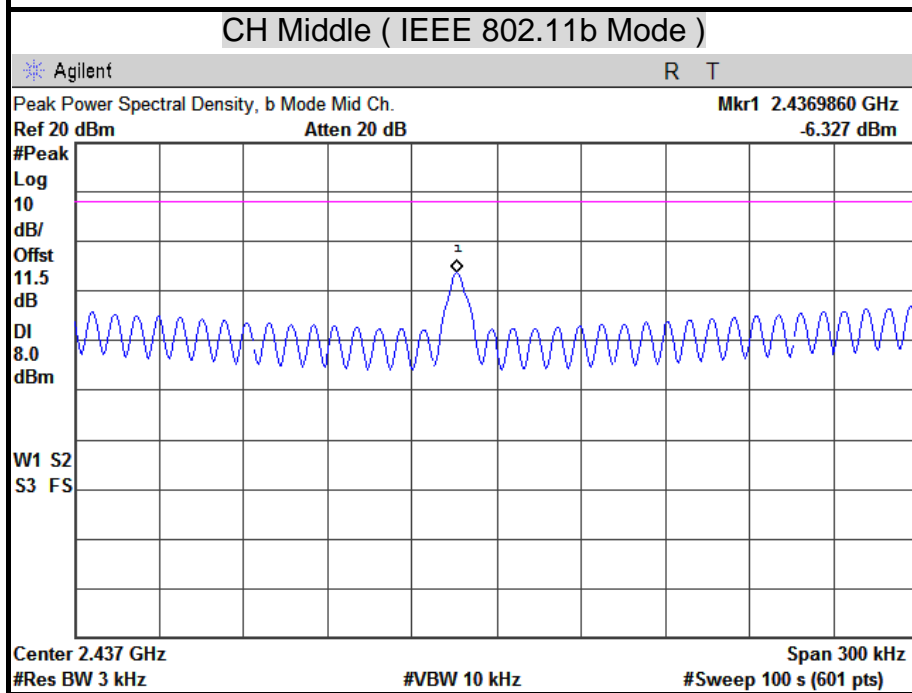
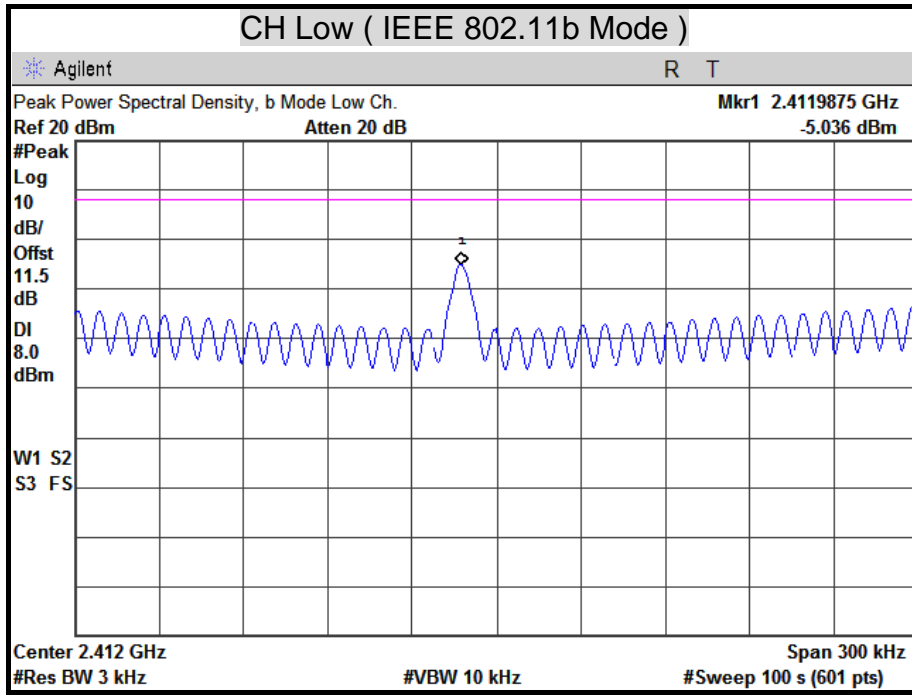
Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)		PSD Total (dBm)	Minimum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	2422	-19.99	-21.43	-17.64	8	PASS
Middle	2437	-11.99	-13.04	-9.47	8	PASS
High	2452	-12.72	-14.09	-10.34	8	PASS

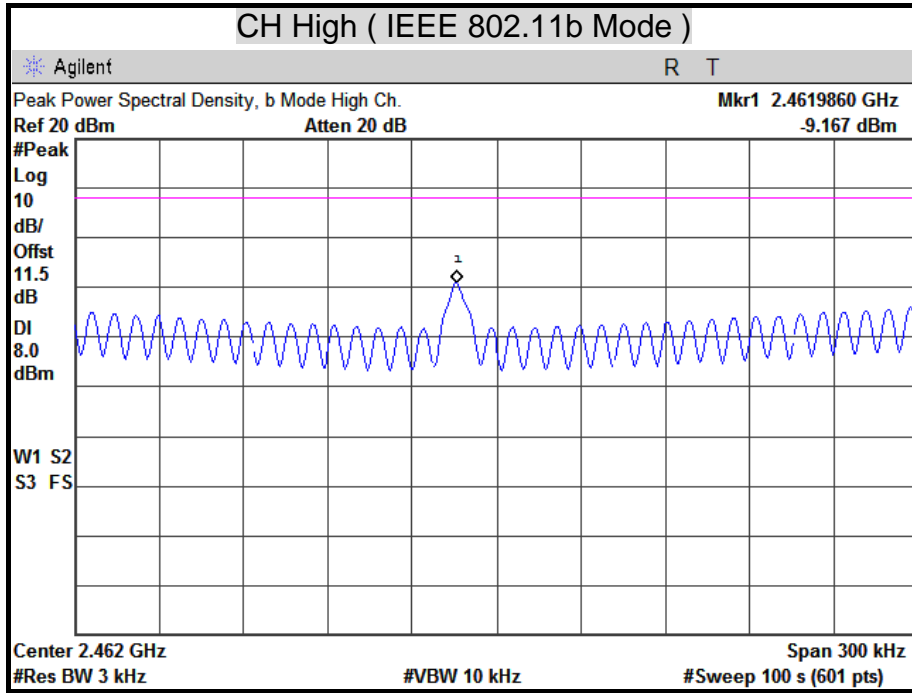
Remark:

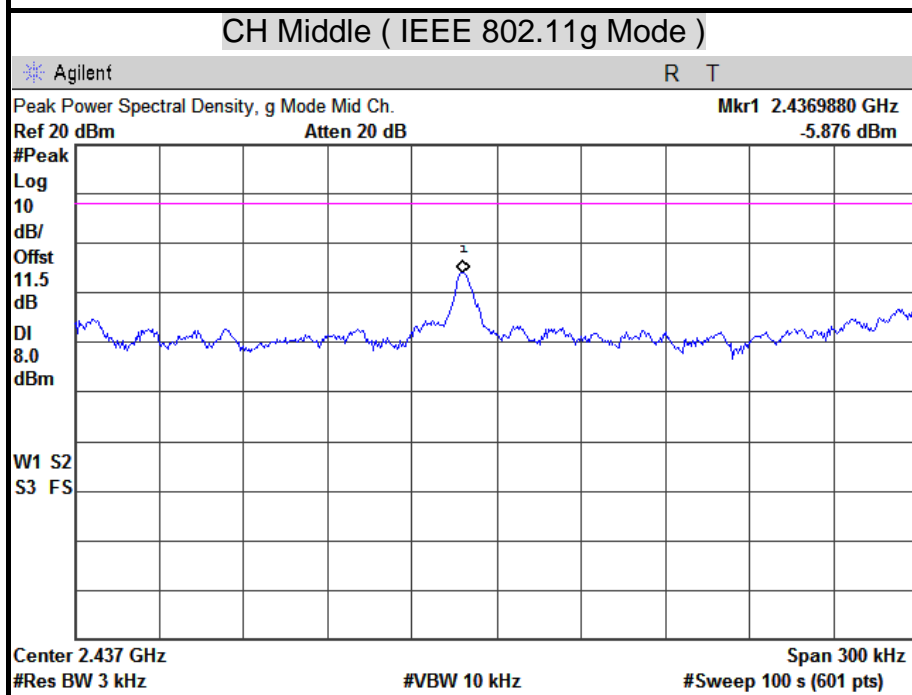
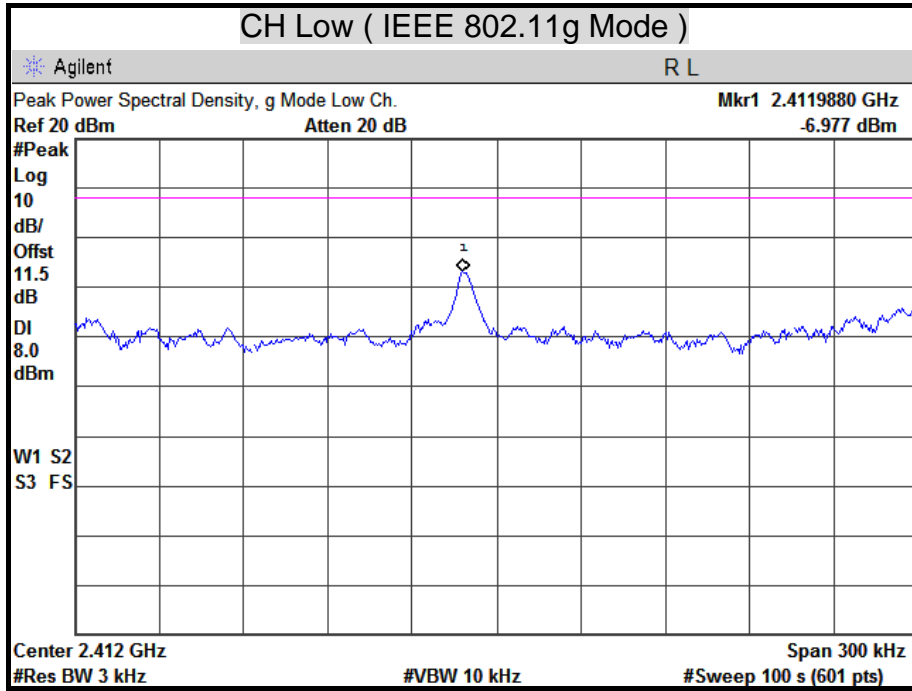
1. At final test to get the worst-case emission at 13.5Mbps.
2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

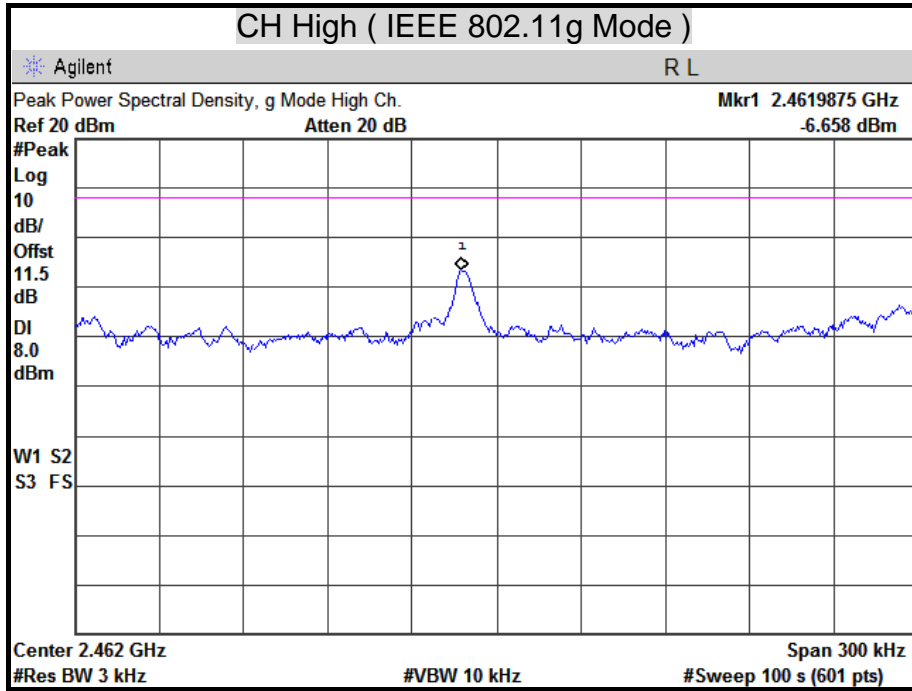


**POWER SPECTRAL DENSITY**

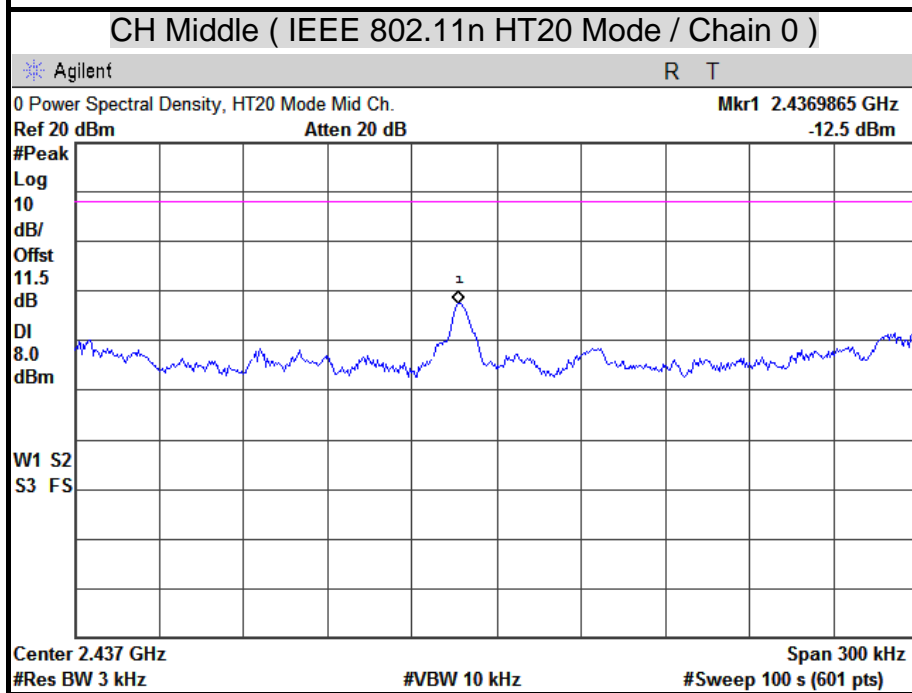
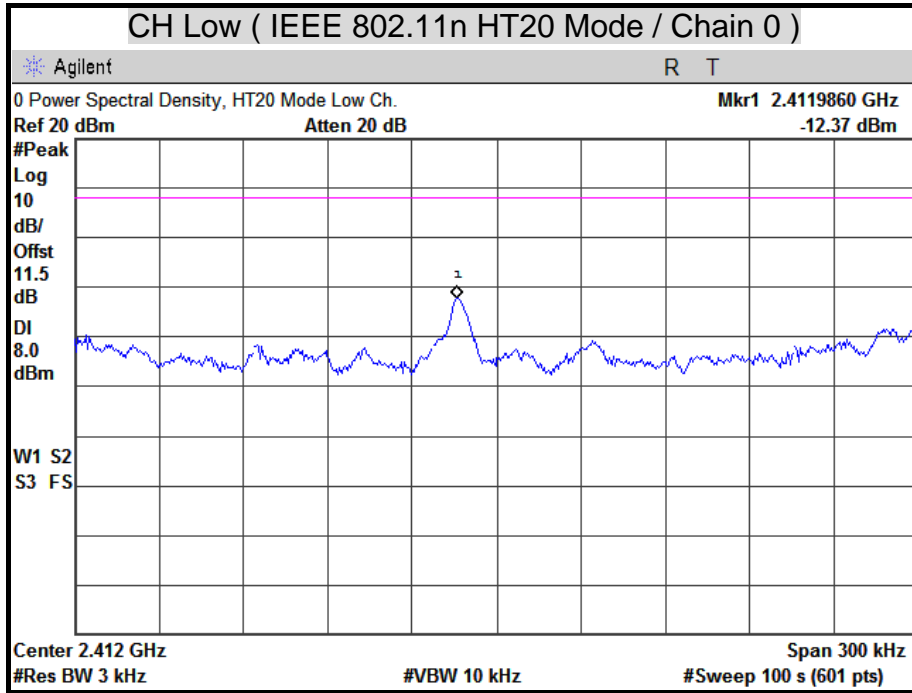


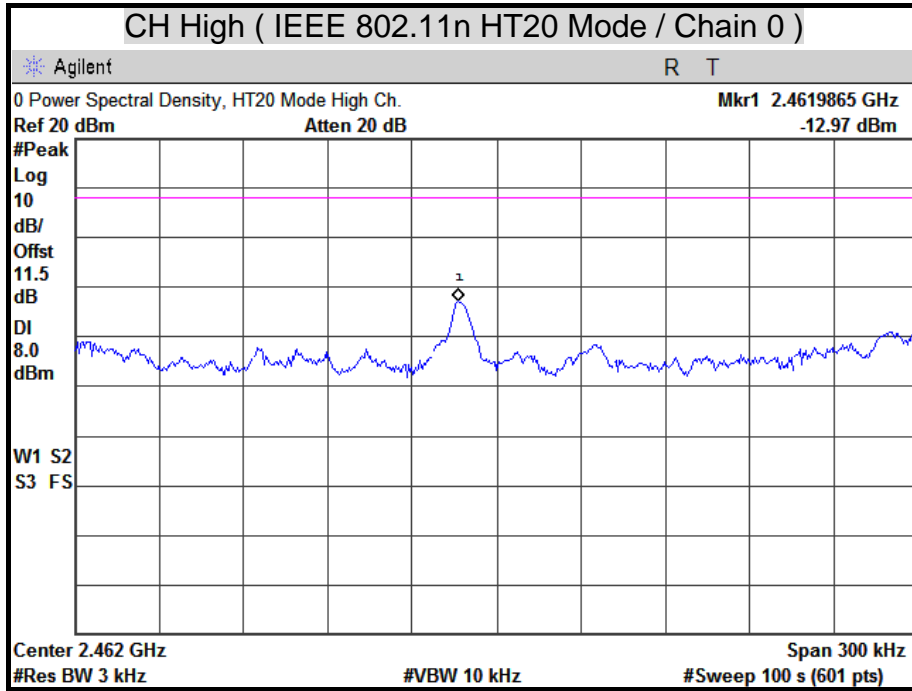


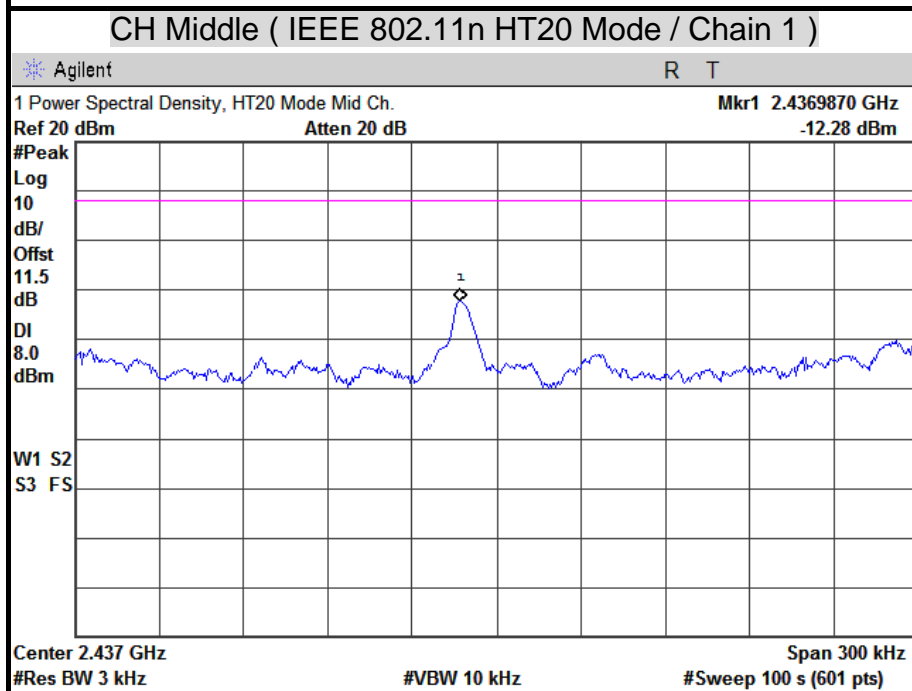
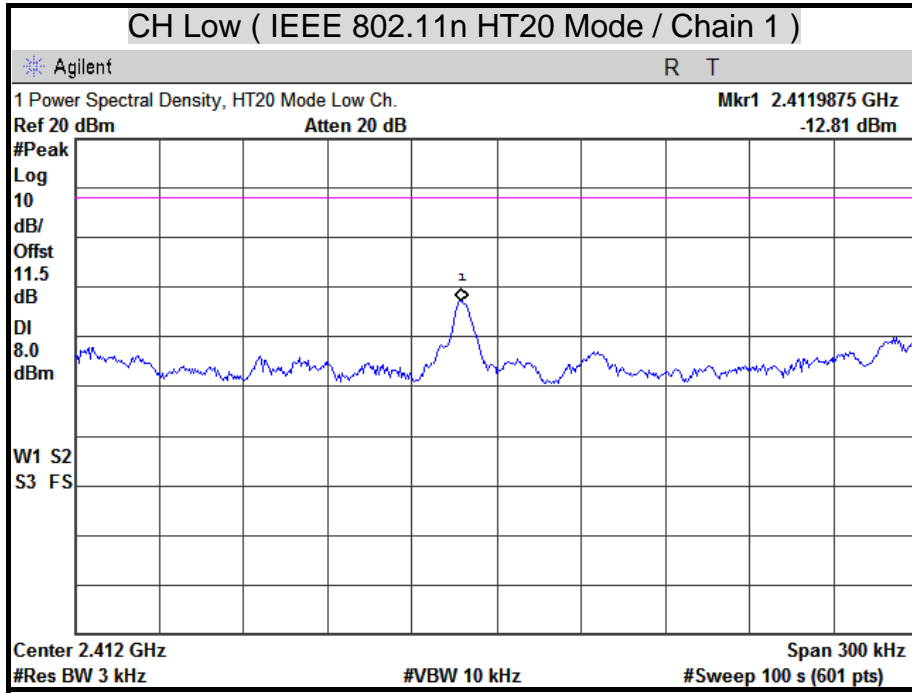


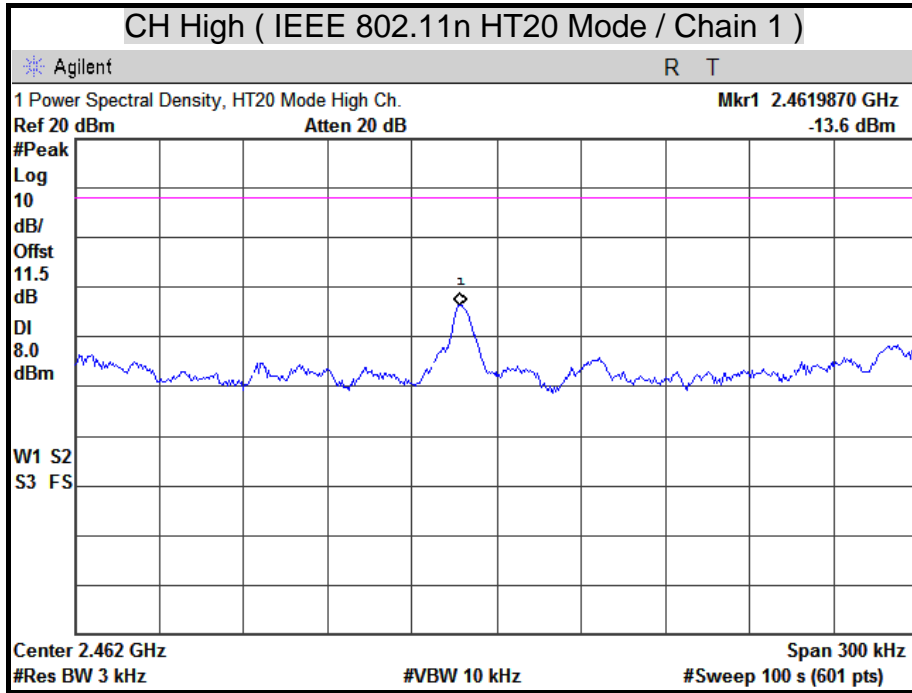


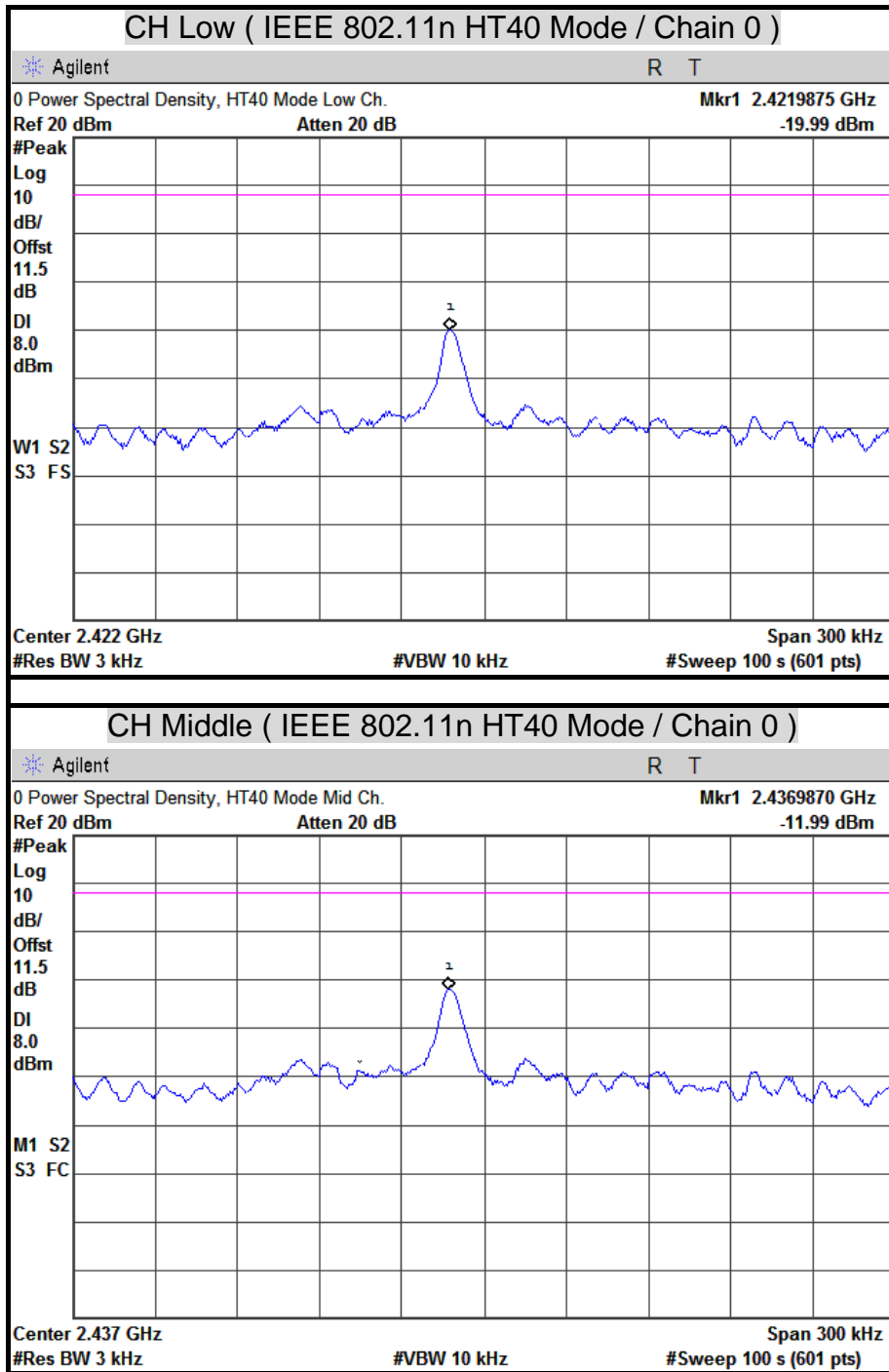


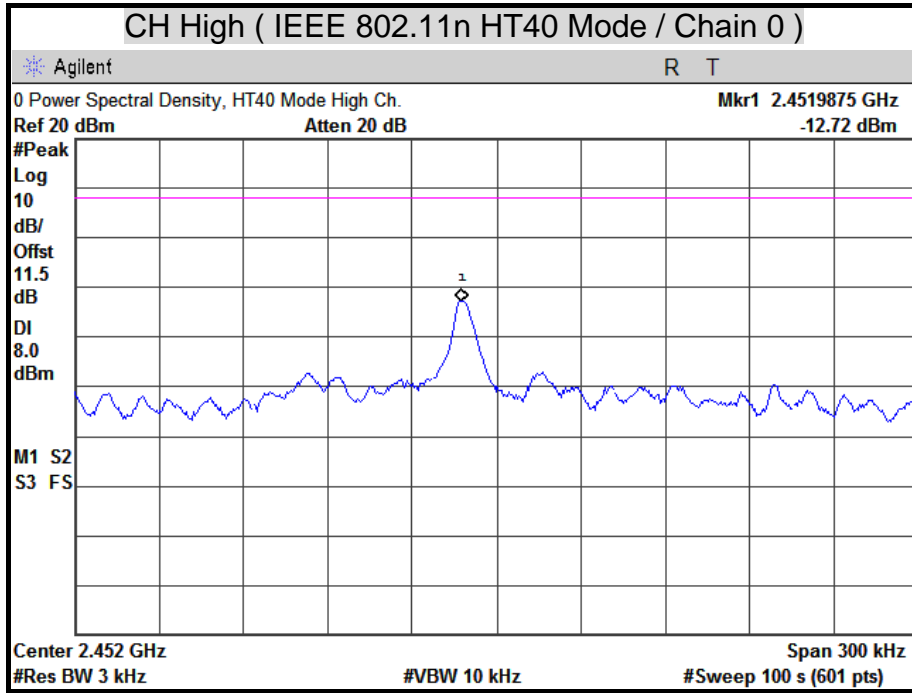


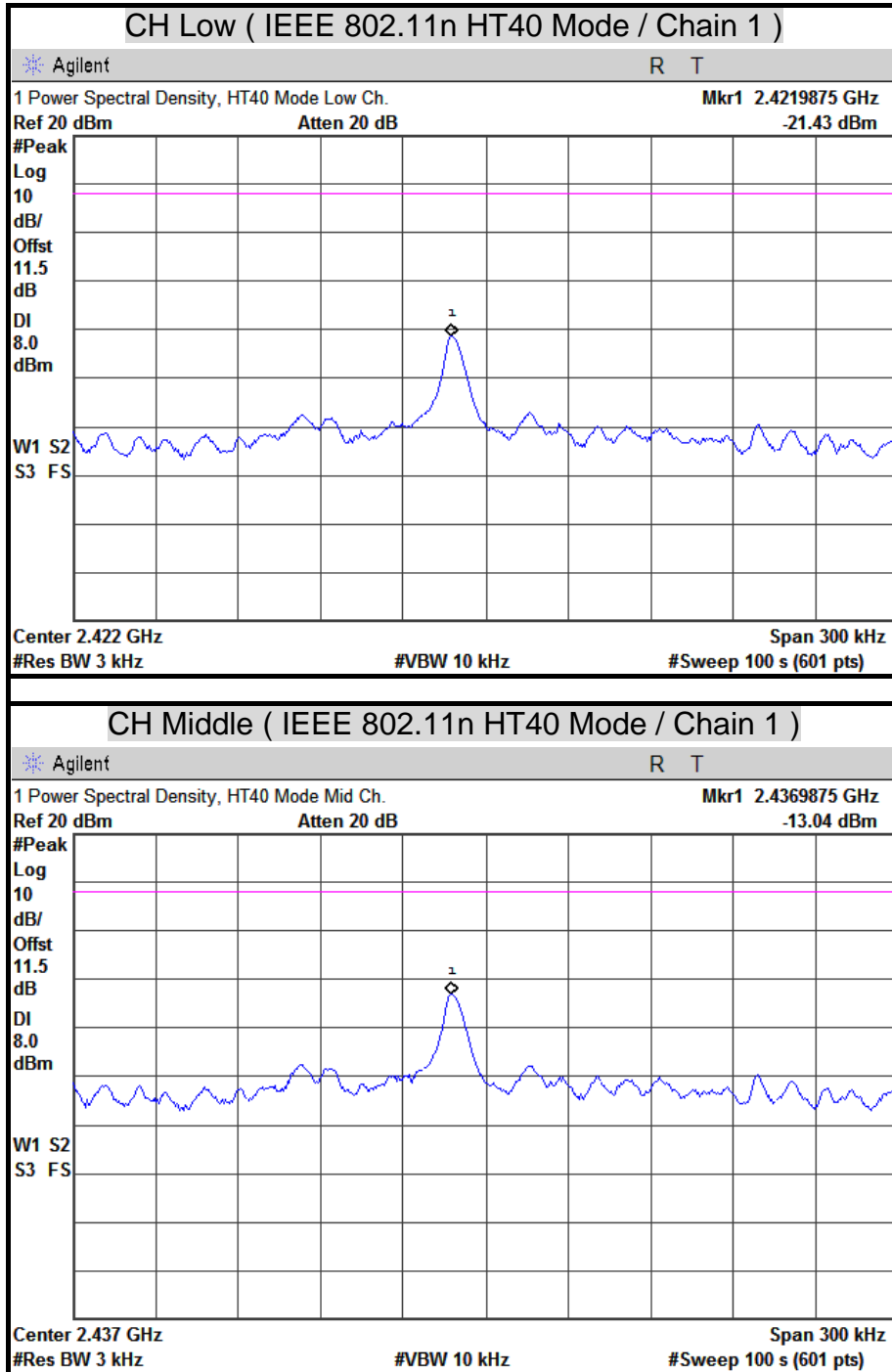


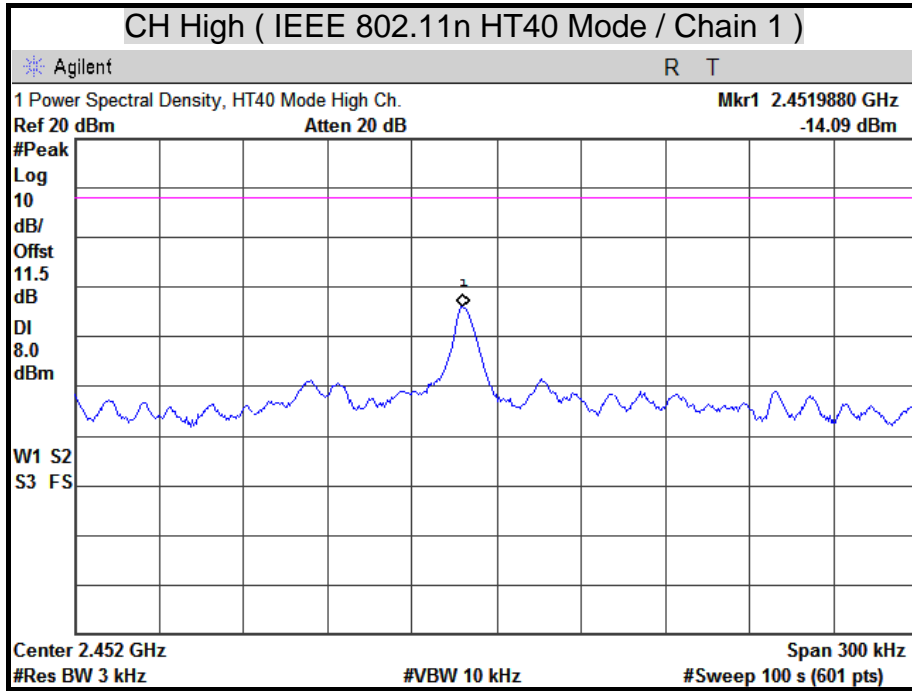
















### 7.5 CONDUCTED SPURIOUS EMISSION

#### LIMITS

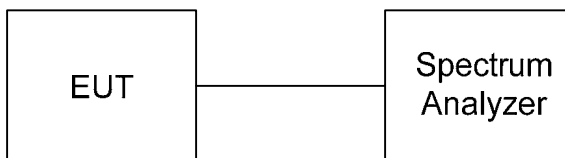
§ 15.247(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the and that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required. 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 § 15.205(c)).

#### TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4407B	US41443108	08/12/2011

*Remark: Each piece of equipment is scheduled for calibration once a year.*

#### TEST SETUP



#### TEST PROCEDURE

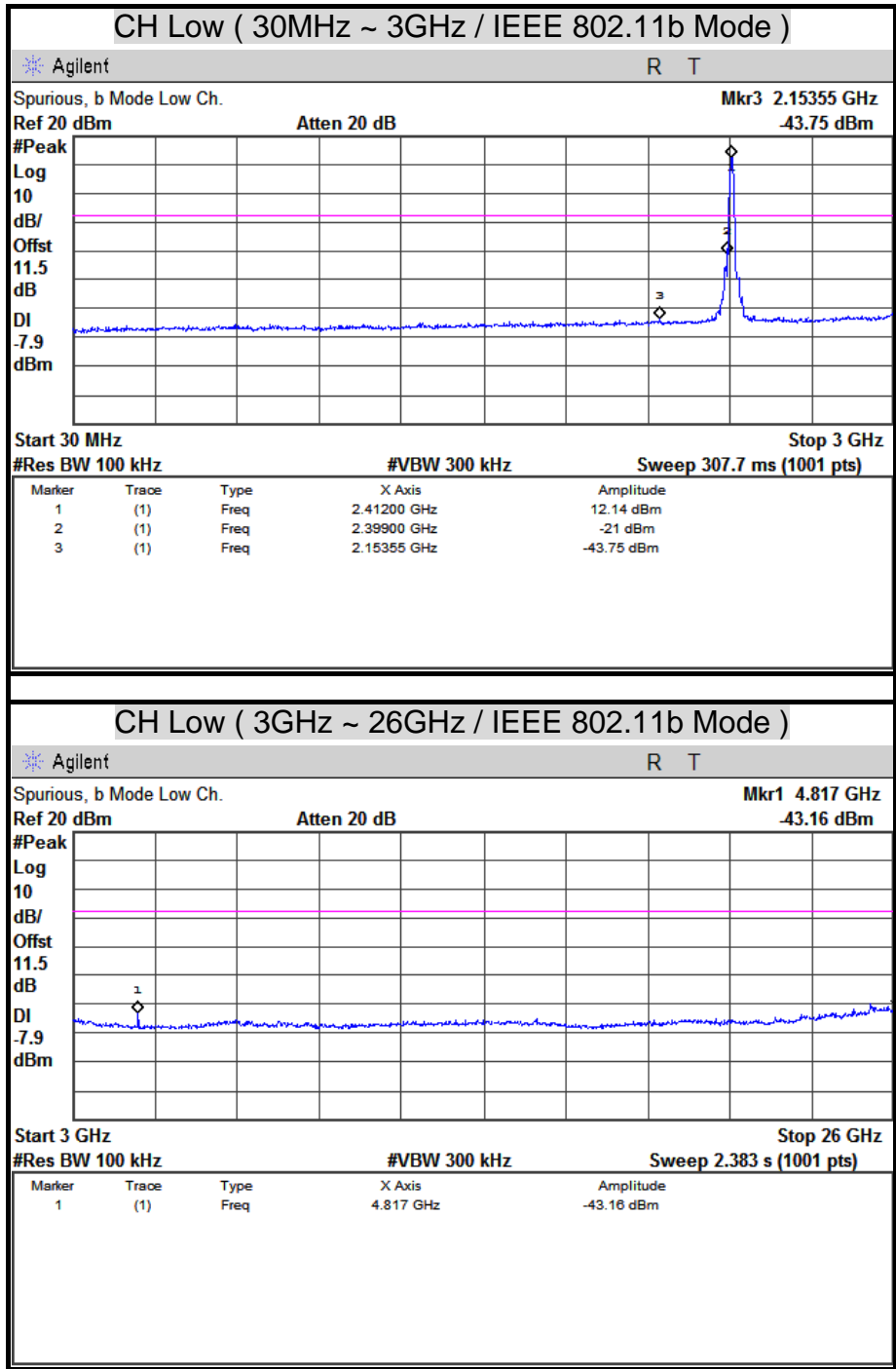
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

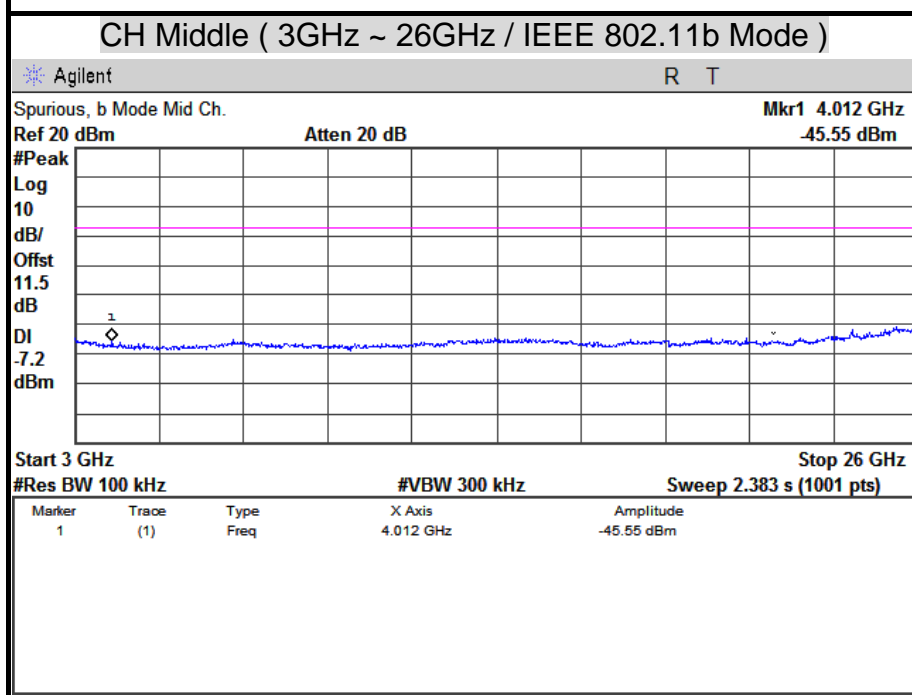
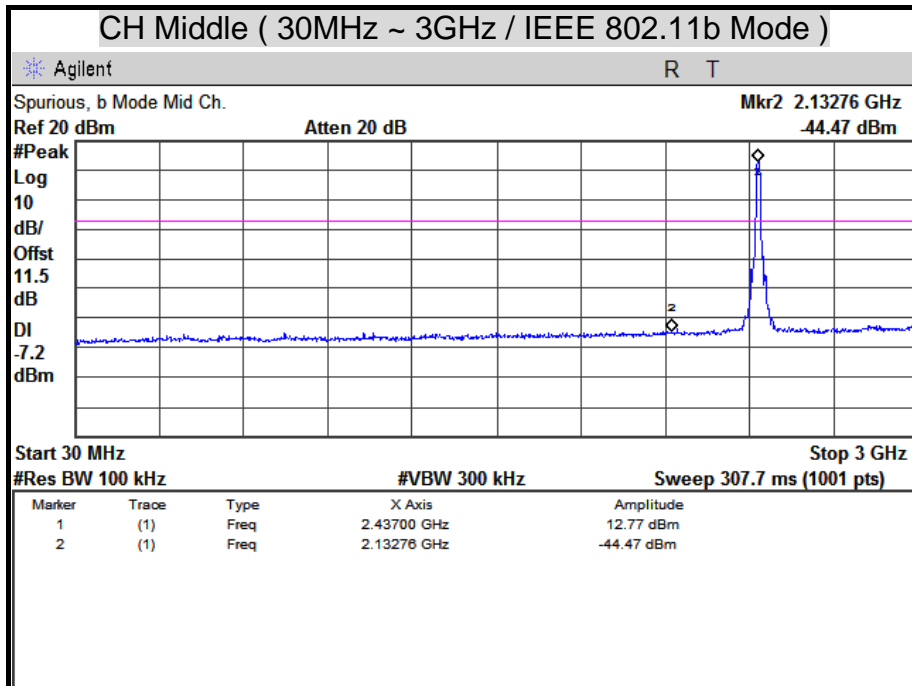
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

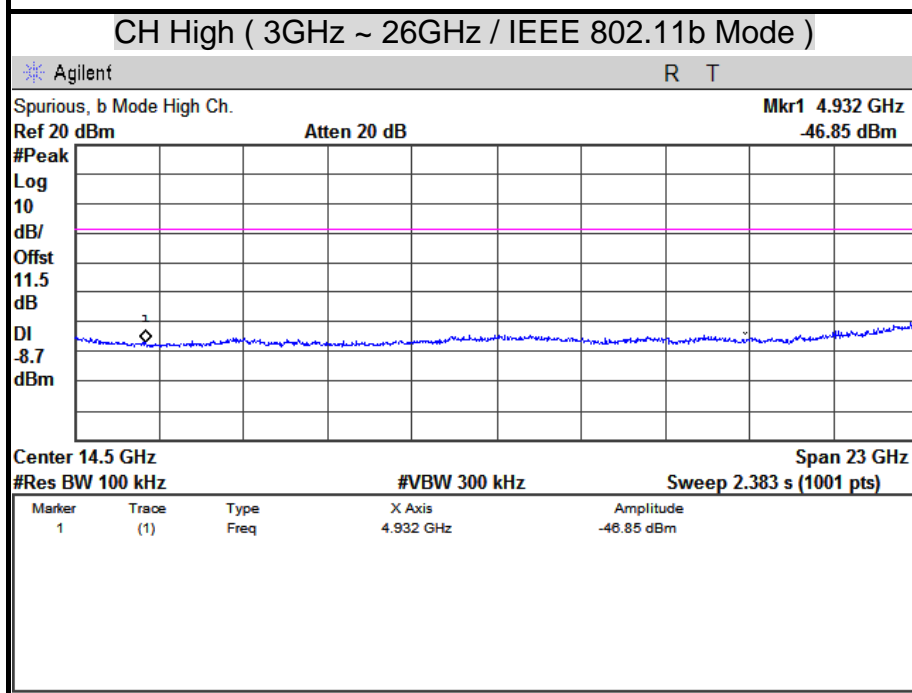
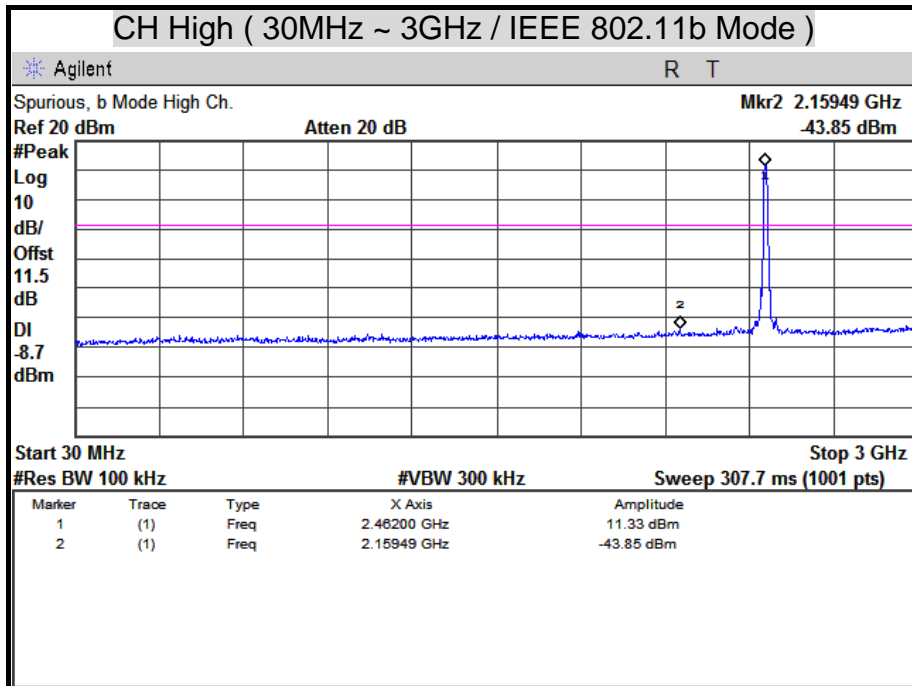


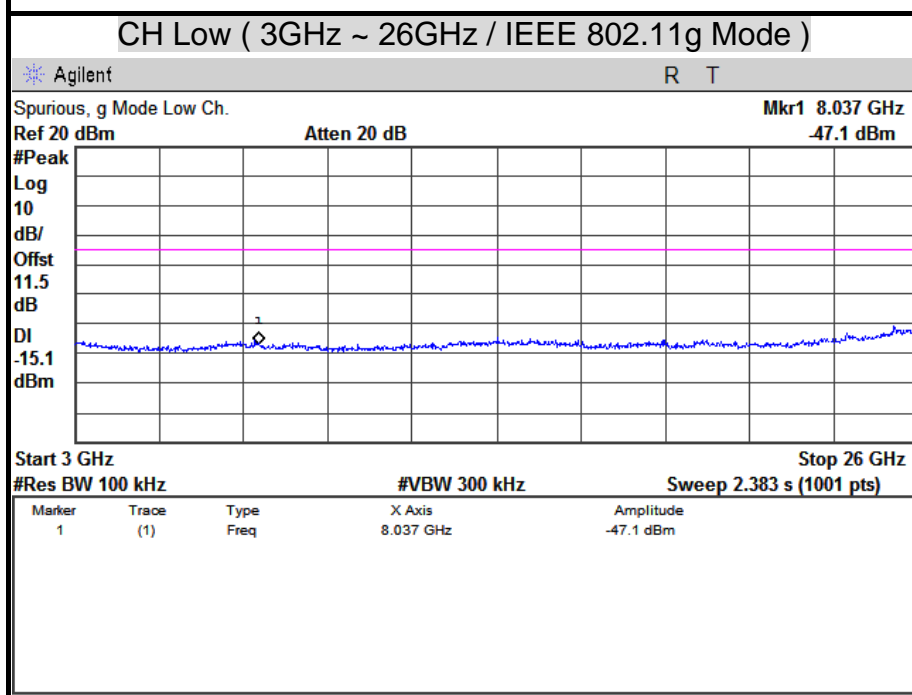
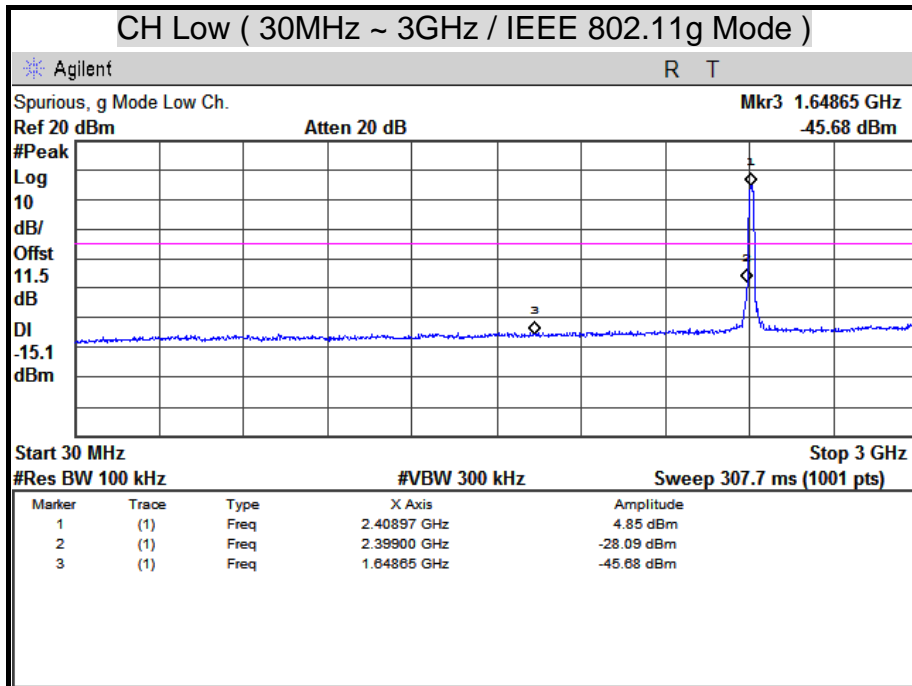
**TEST RESULTS**

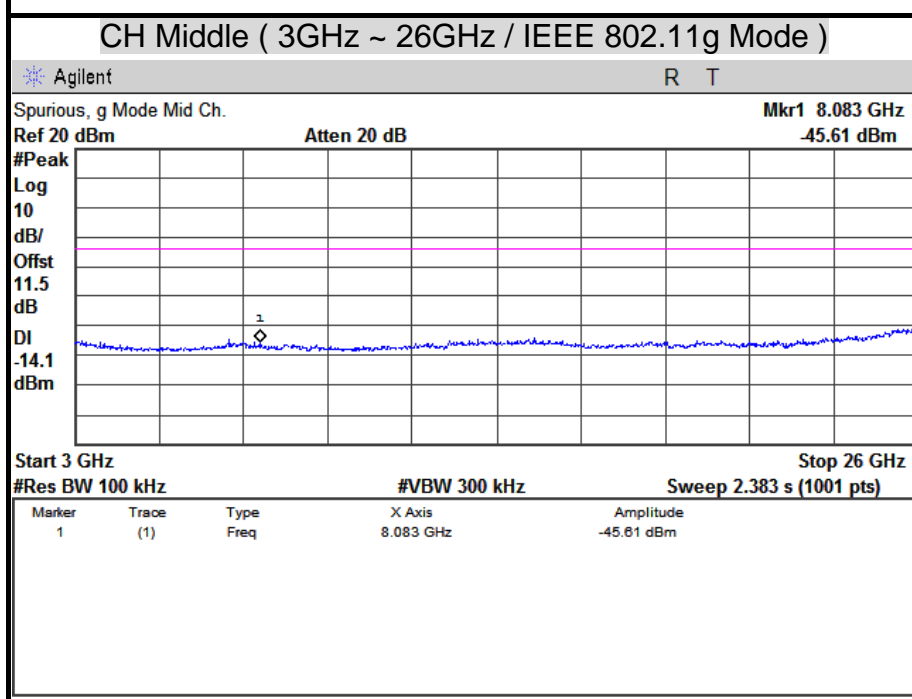
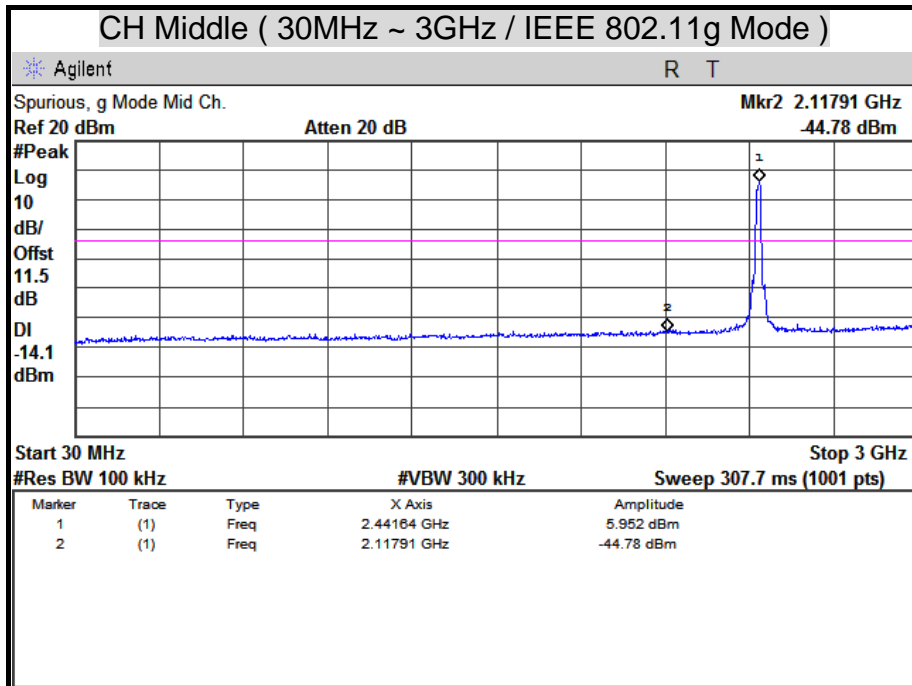
**OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT**

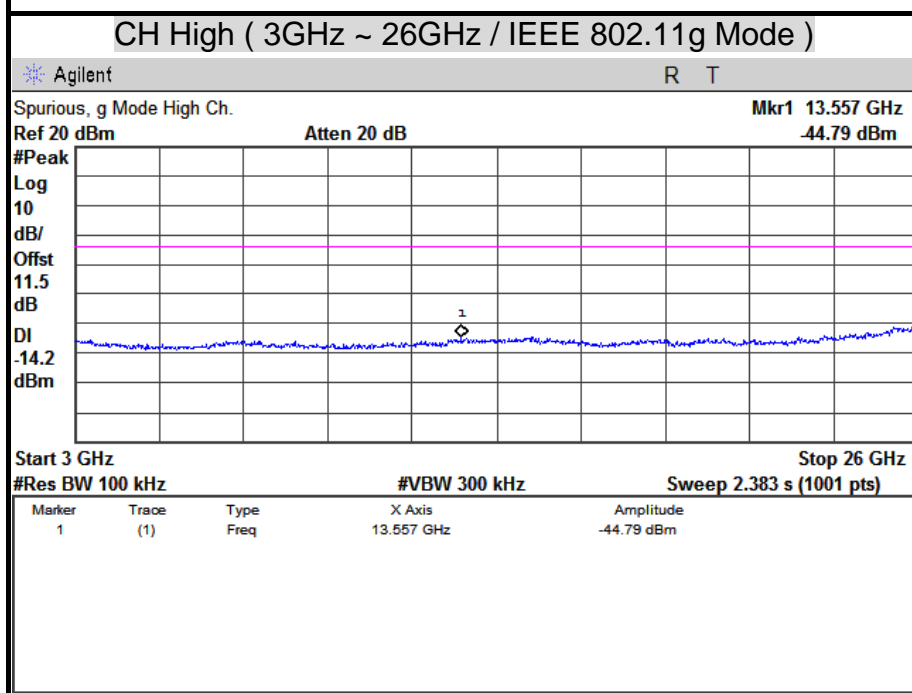
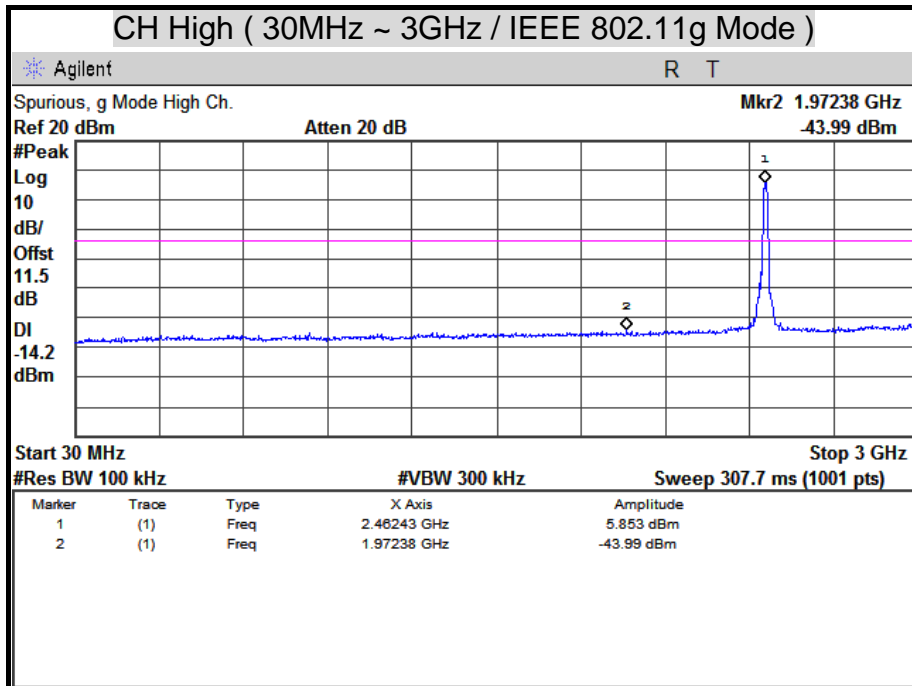


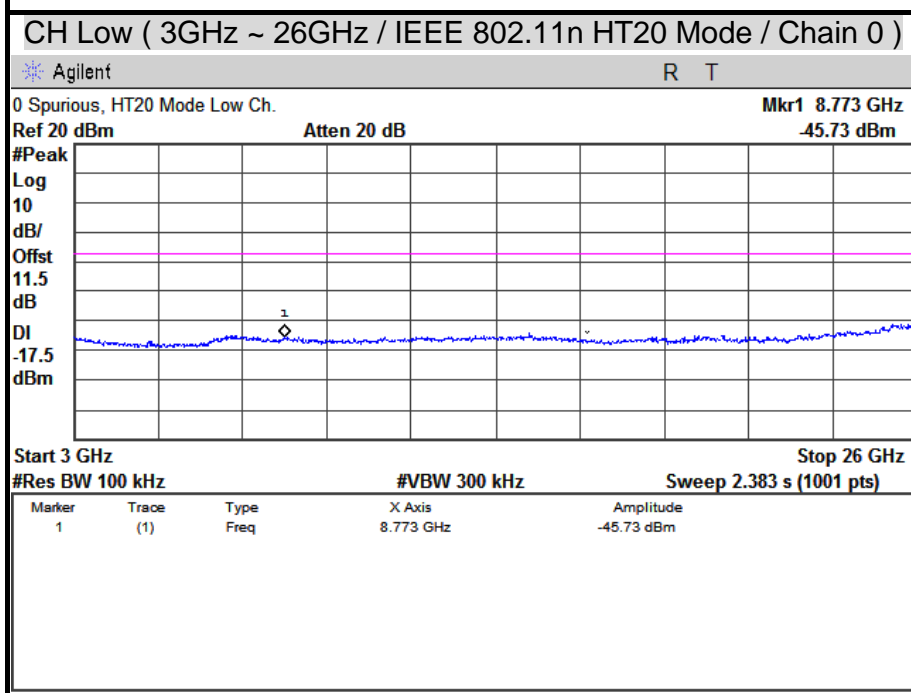
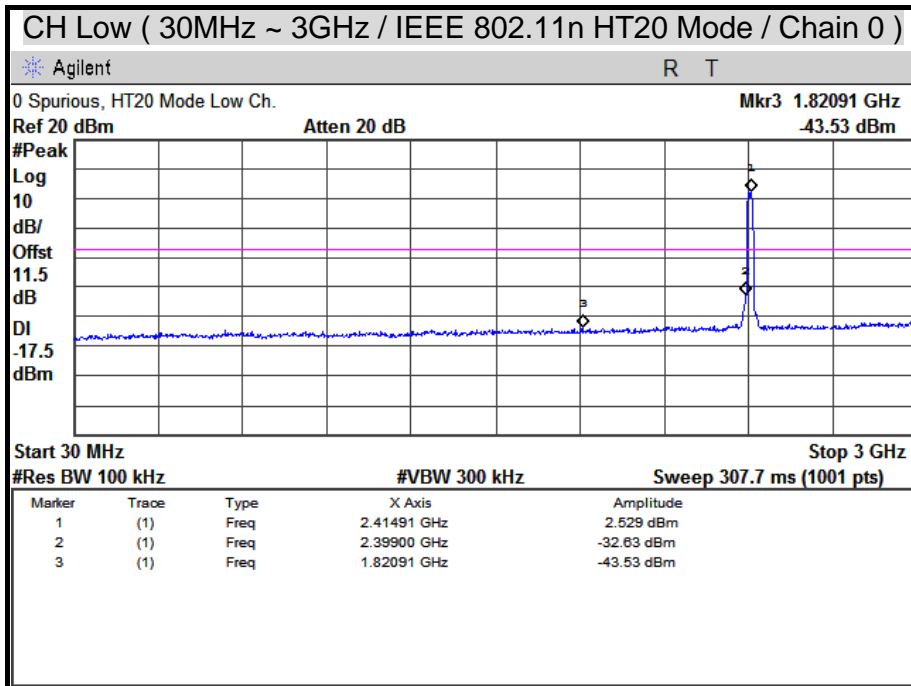




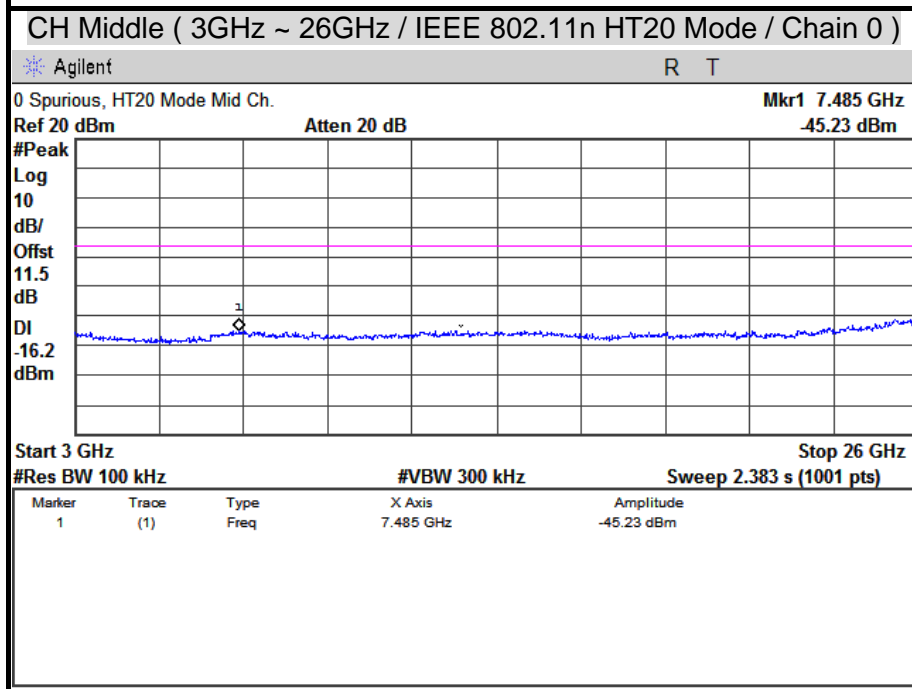
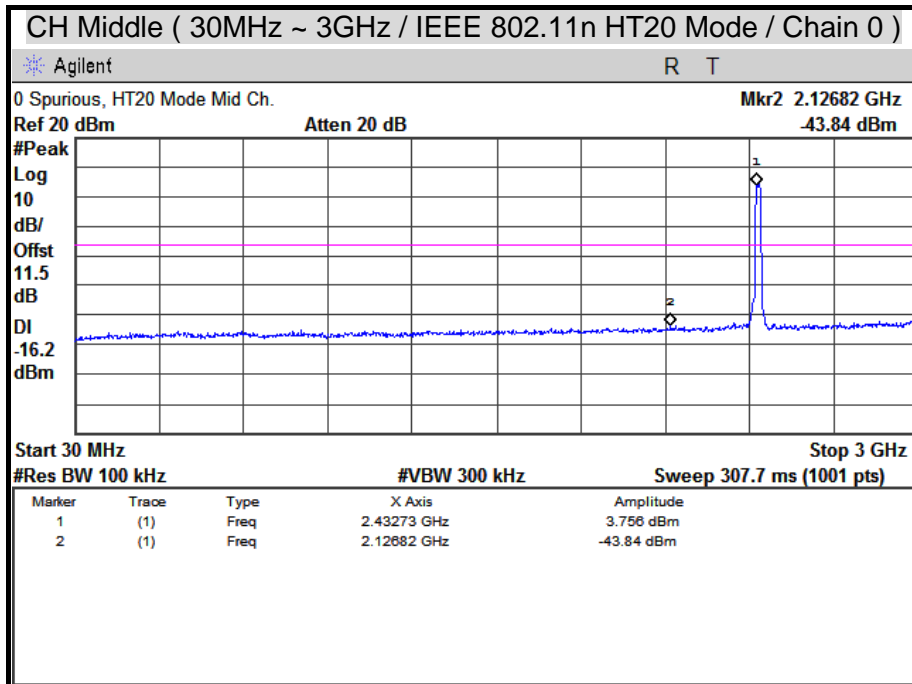


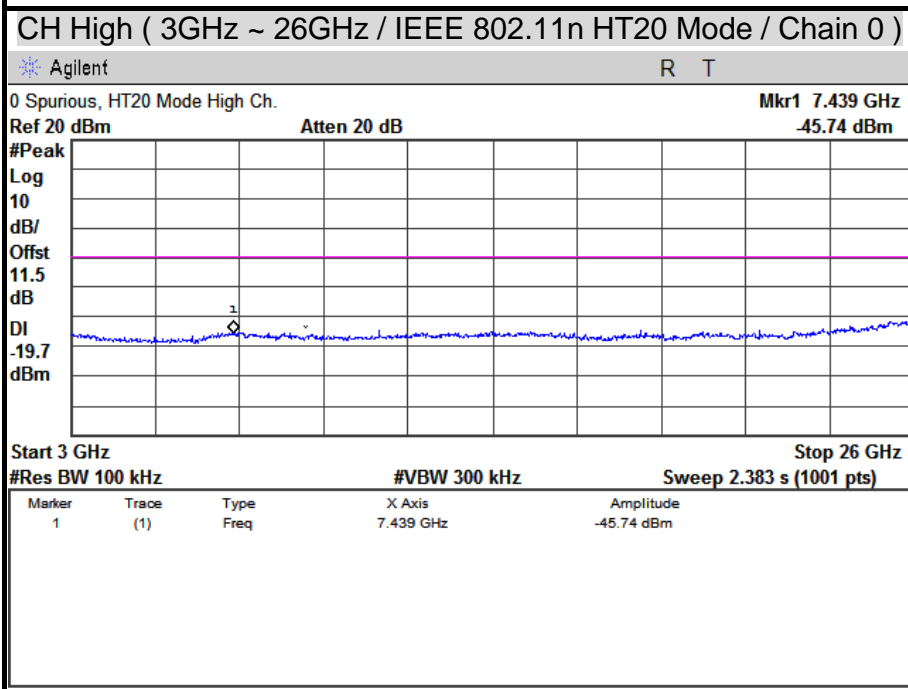
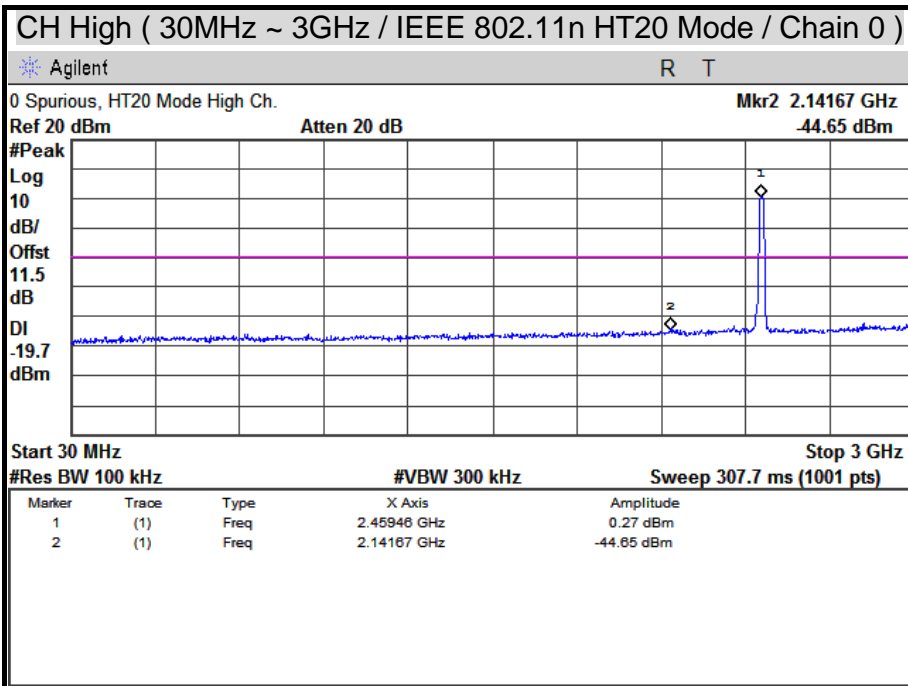


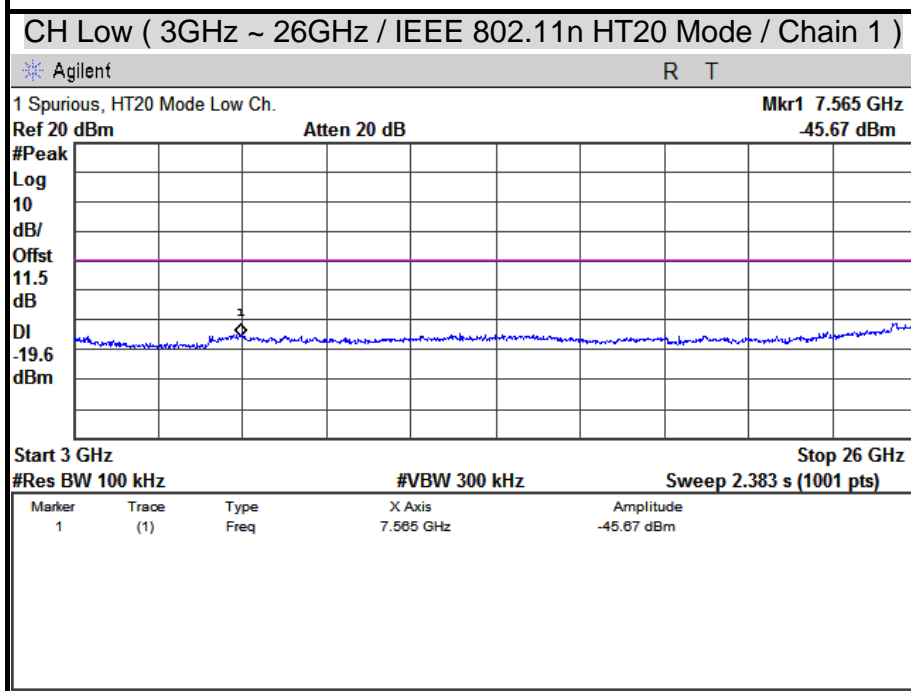
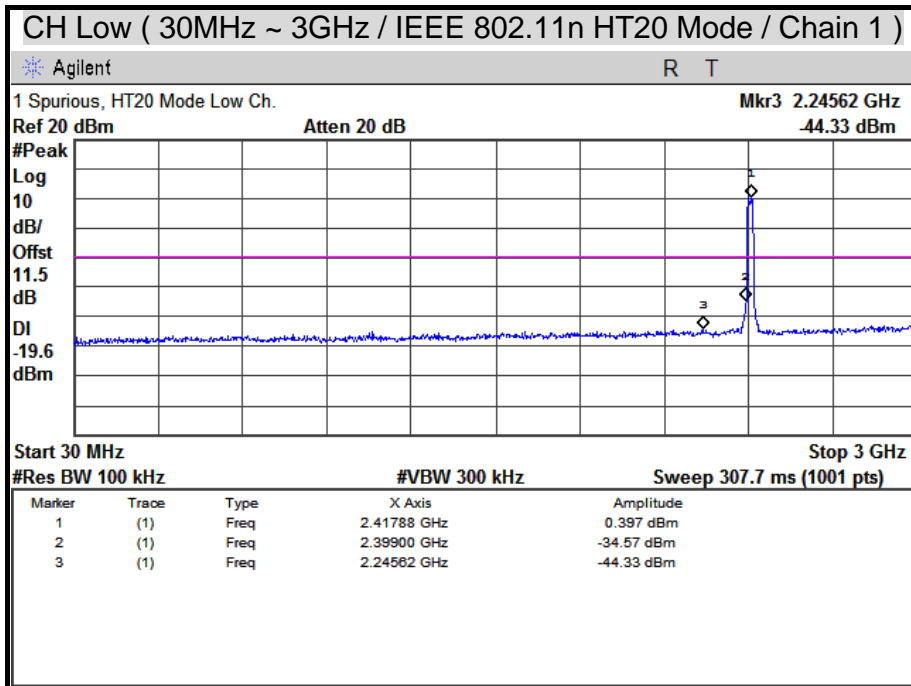


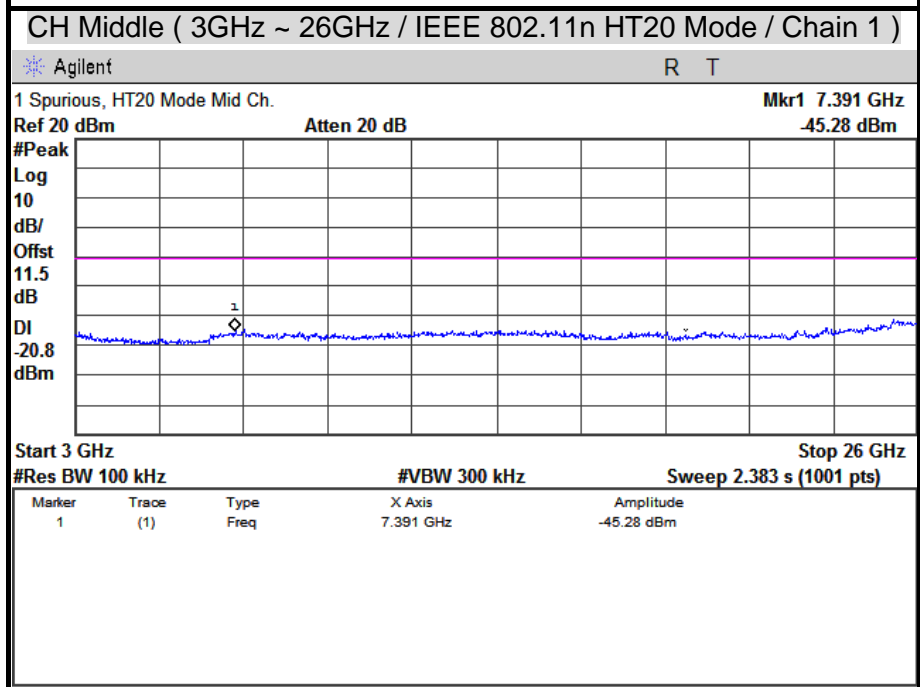
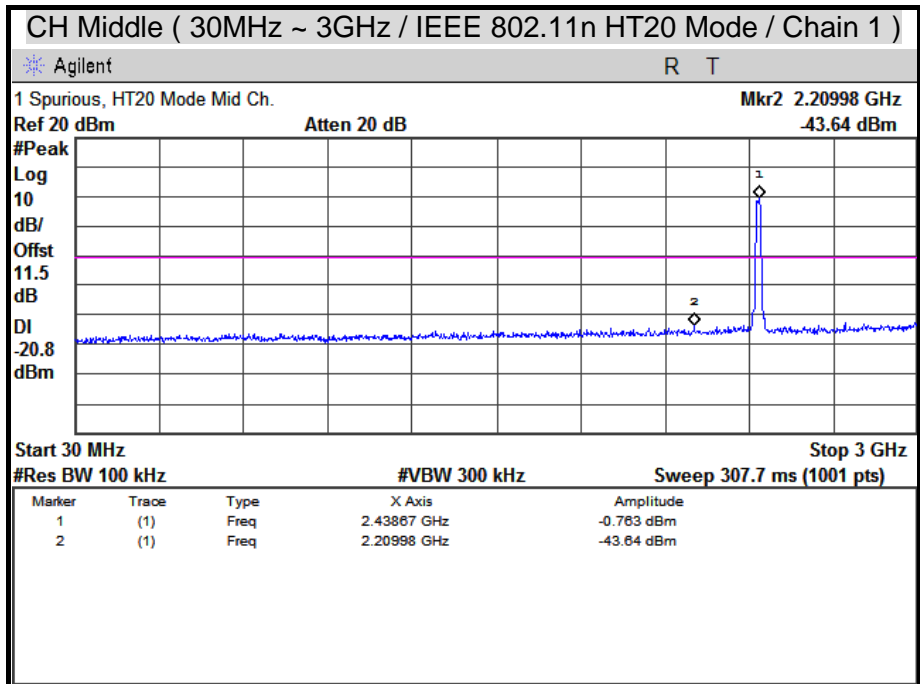


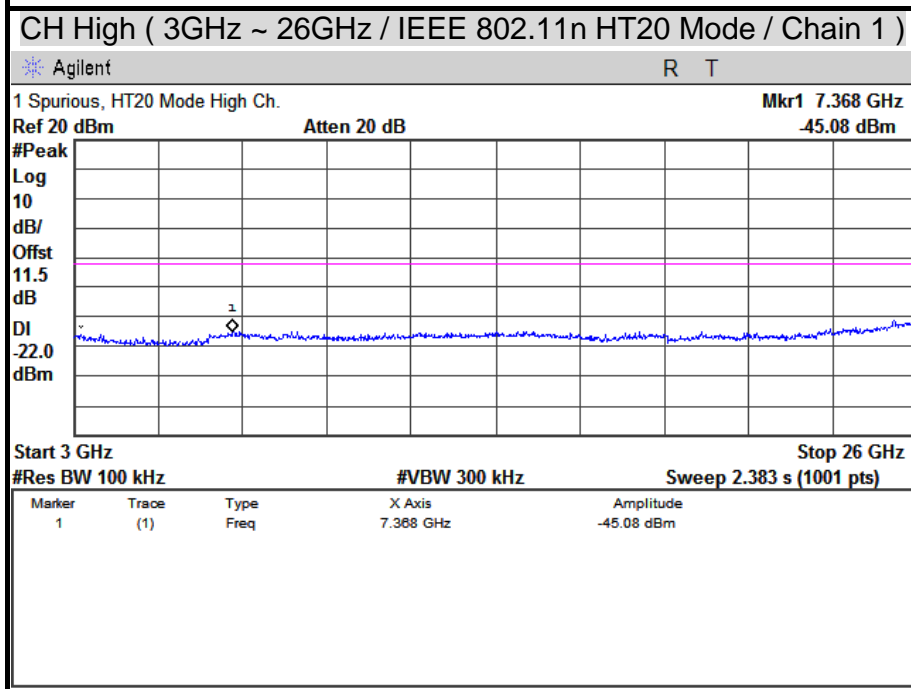
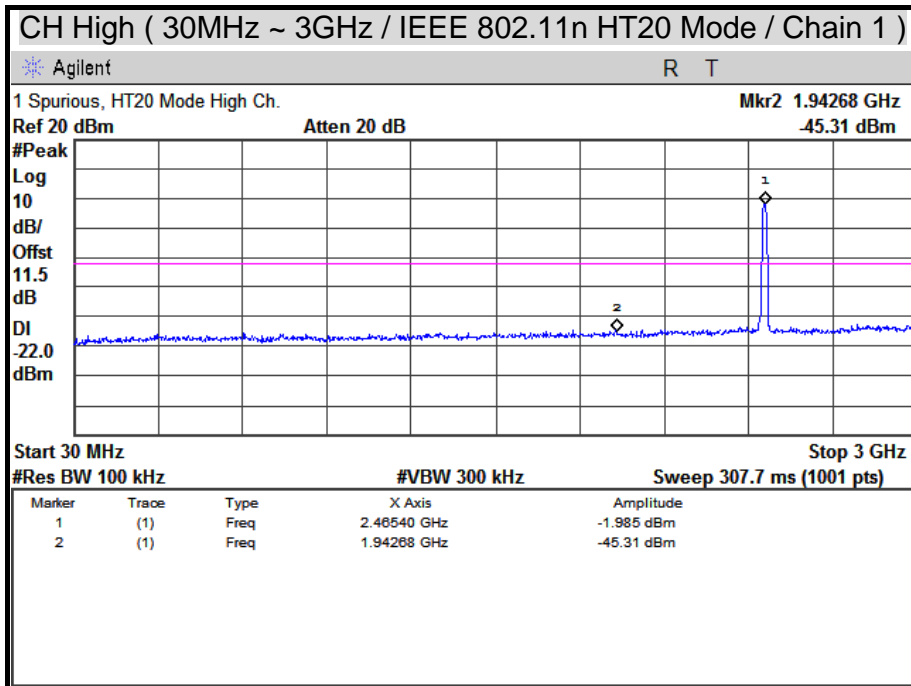


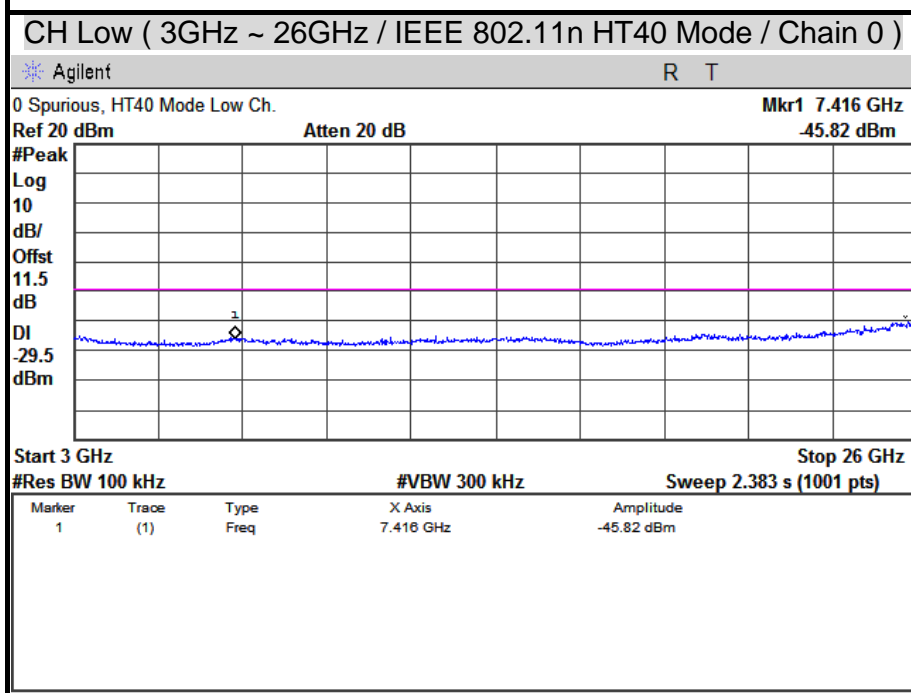
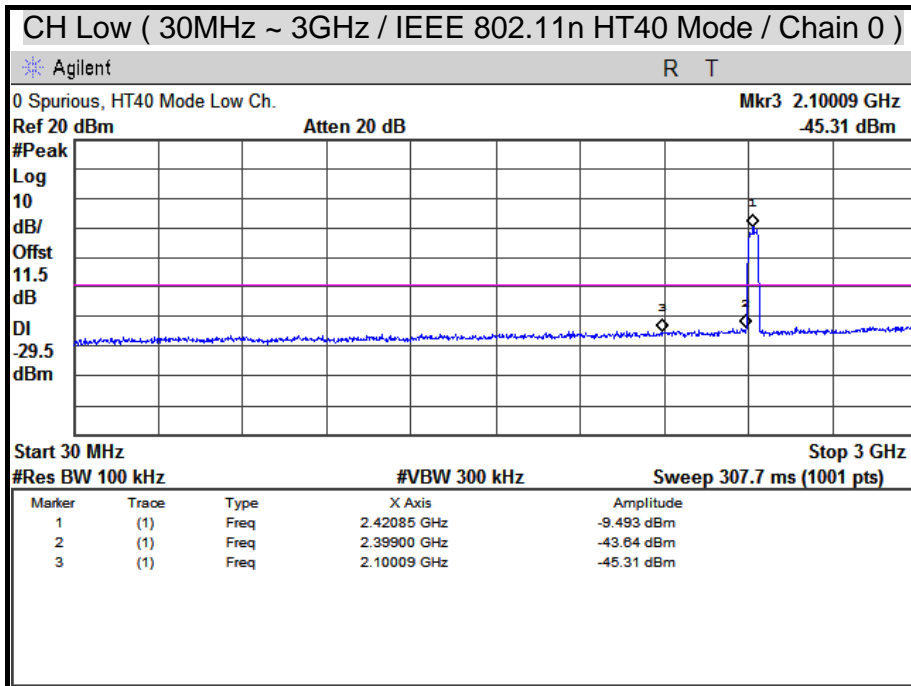


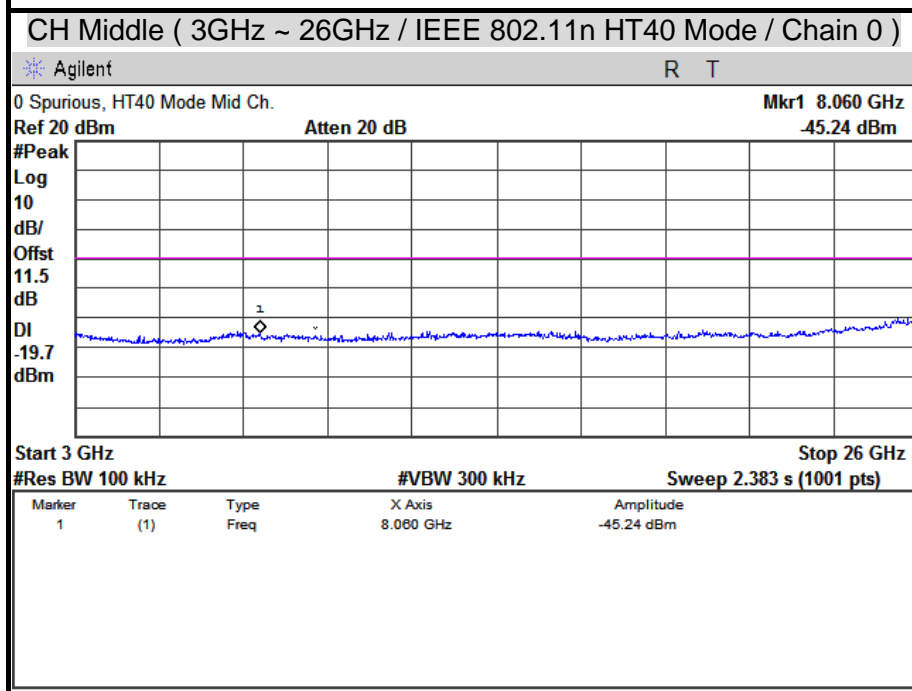
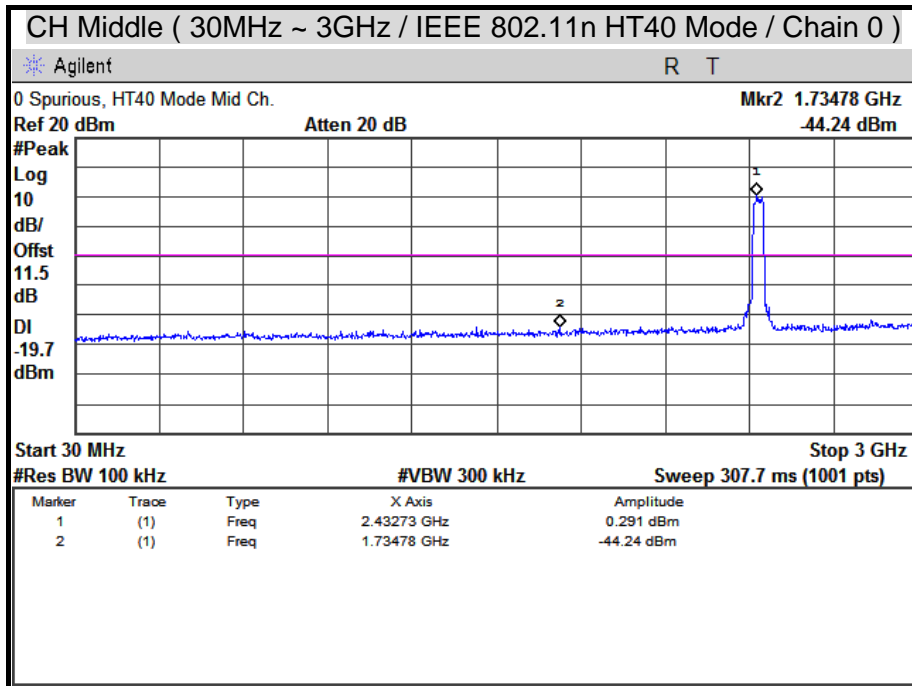


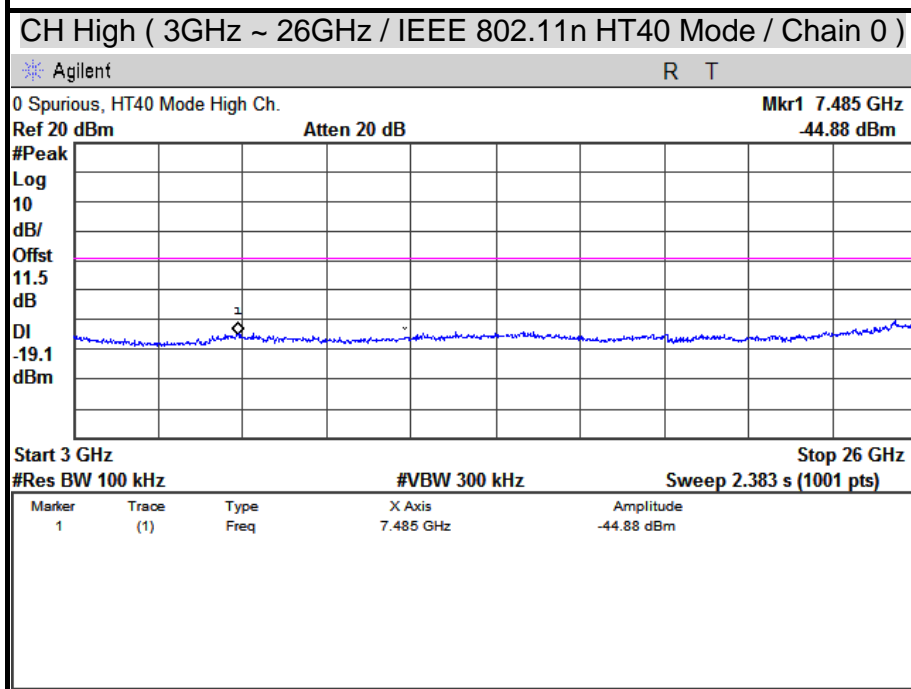
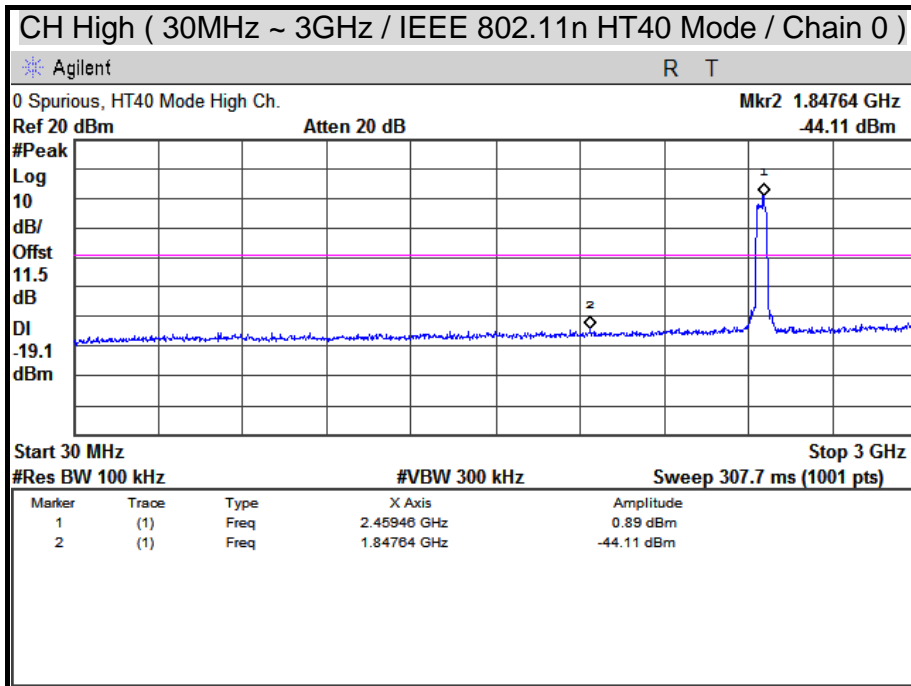




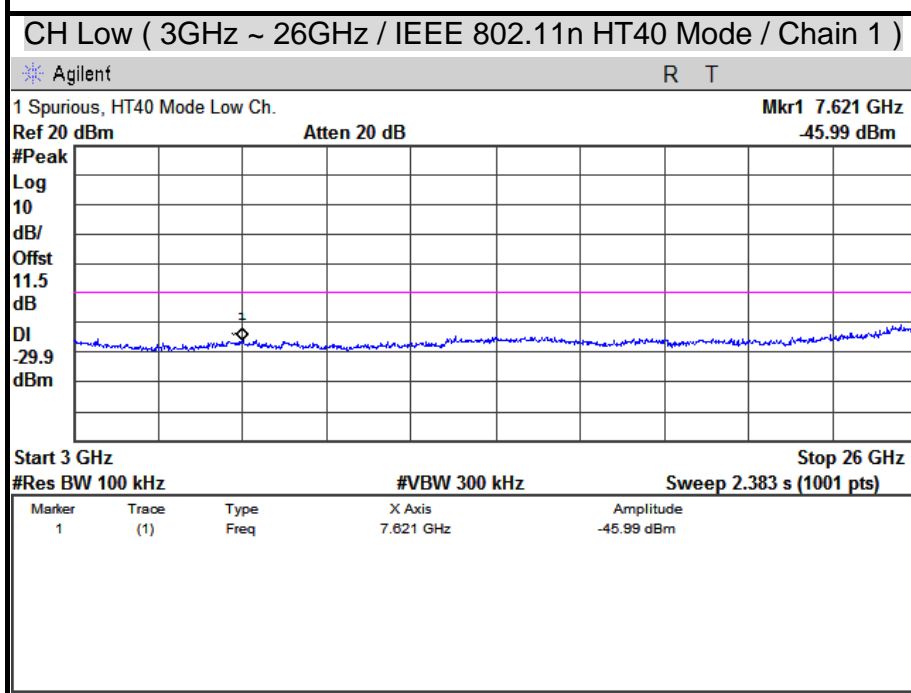
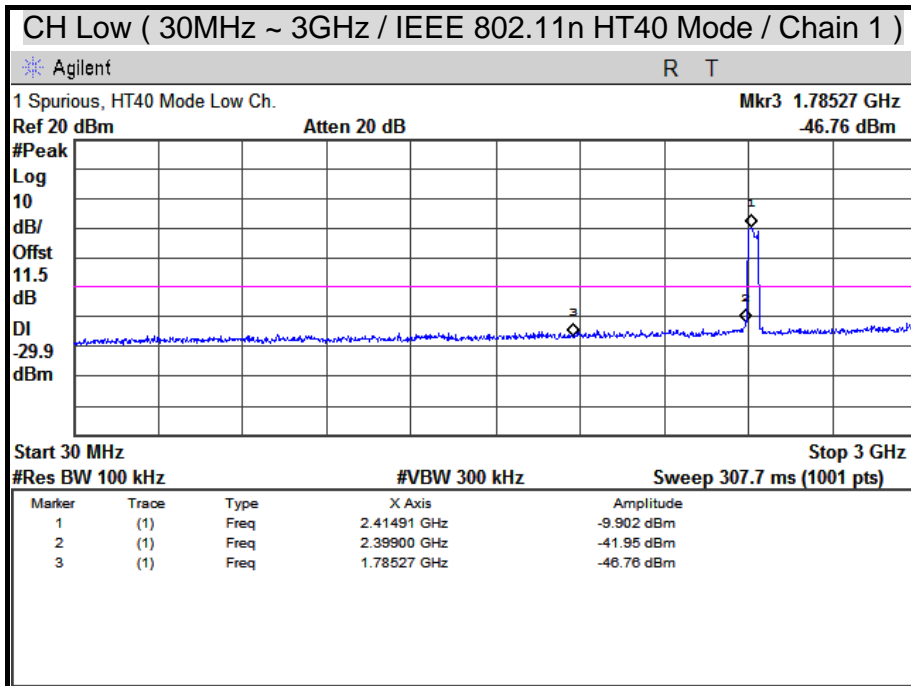


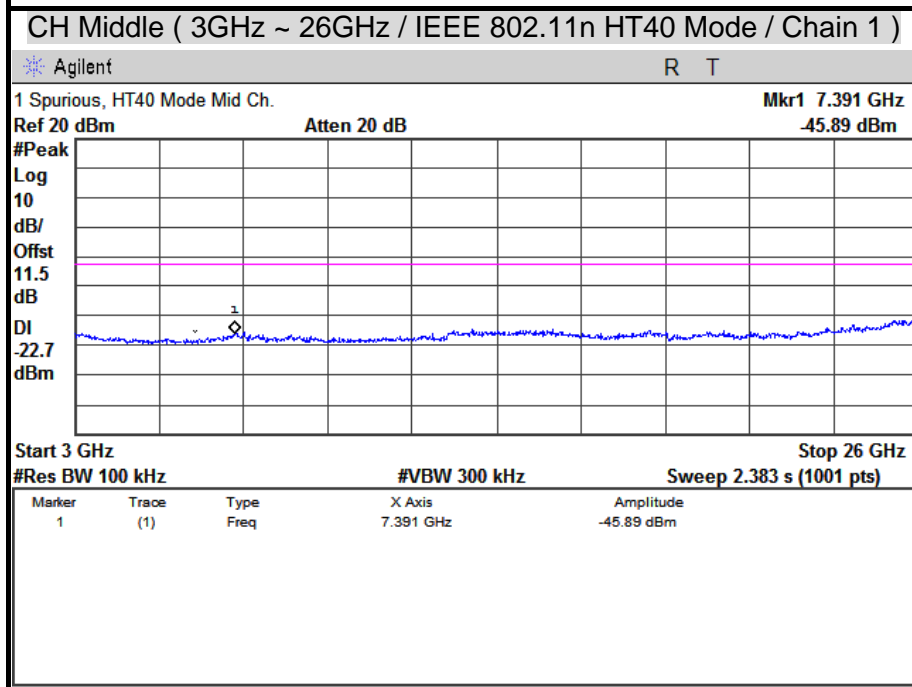
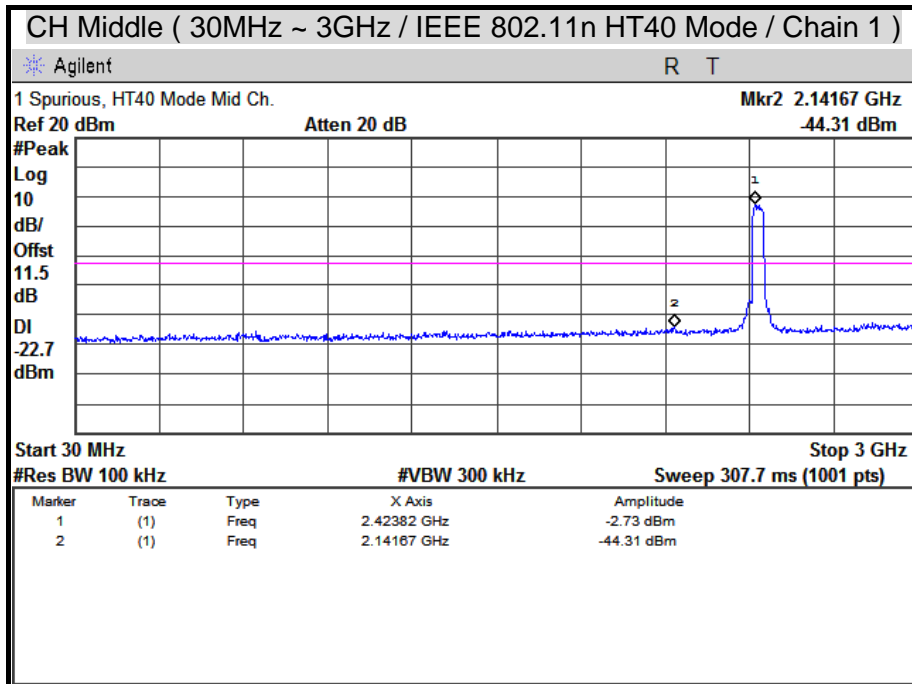


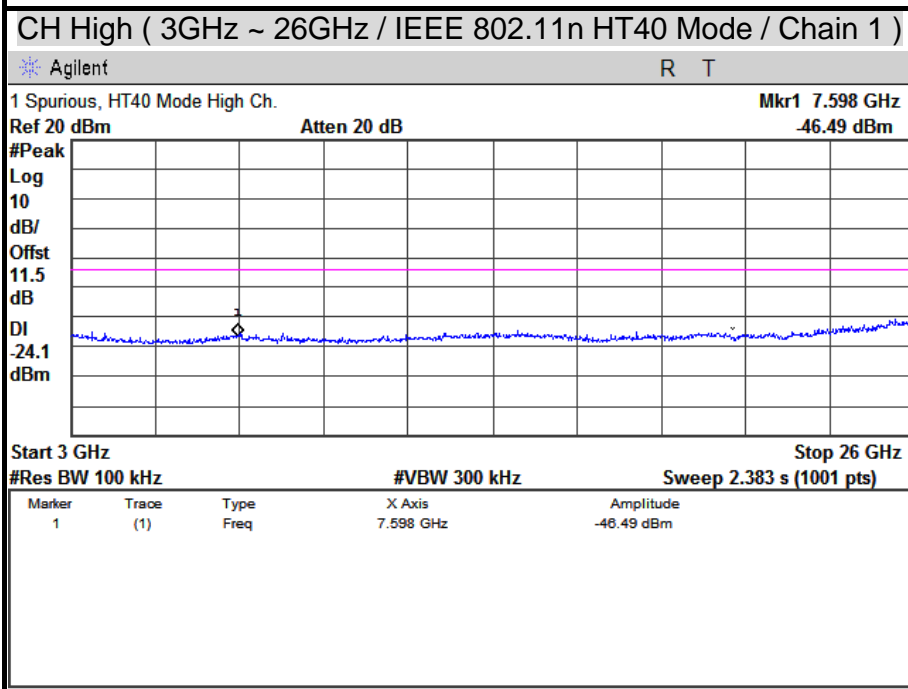
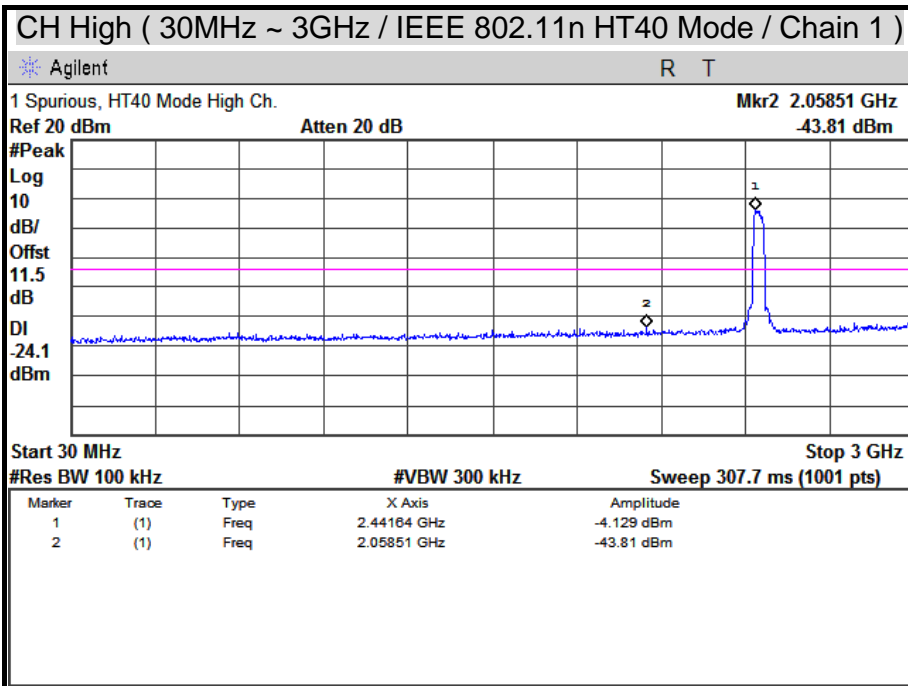














7.6 RADIATED EMISSION

LIMITS

(1) According to § 15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

Table with 4 columns: MHz, MHz, MHz, GHz. It lists various frequency ranges and their corresponding GHz values.

Remark:

- 1. 1 Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
2. 2 Above 38.6

(2) According to § 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.



(3) 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 (microvolts/meter)	Measurement Distance (meters)
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.

(4) According to § 15.209 (b) In the emission table above, the tighter limit applies at the band edges.

**TEST EQUIPMENT**

**Radiated Emission below 1GHz / 966Chamber\_A**

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY46180323	04/24/2012
EMI Receiver	ROHDE & SCHWARZ	ESCI	100221	04/24/2012
Bi-log Antenna	SCHWARZBECK	VULB 9168	9168-249	10/04/2011
Broad-Band Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-778	09/06/2011
Pre-Amplifier	Agilent	8449B	3008A01471	07/24/2012
Pre-Amplifier	HP	8447F	2944A03748	09/23/2011
LOOP Antenna	EMCO	6502	8905-2356	06/10/2012
Band Reject Notch Filter	Micro-Tronics	BRM05702-01	009	N.C.R

**Remark:** 1. Each piece of equipment is scheduled for calibration once a year.  
2. N.C.R = No Calibration Request.



Radiated Emission above 1GHz / 966Chamber\_B

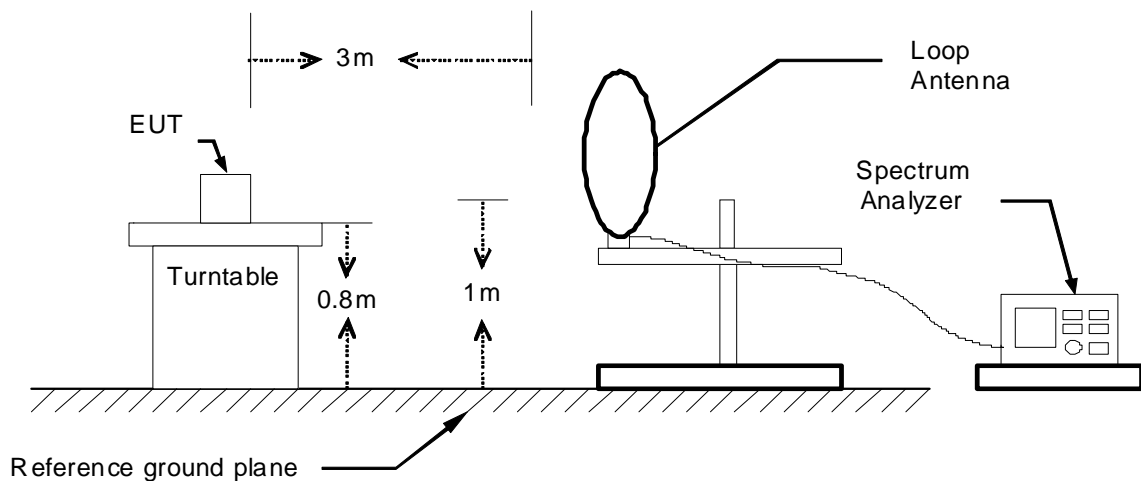
Name of Equipment	Manufacture	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY43360132	06/19/2012
EMI Receiver	ROHDE & SCHWARZ	ESCI	101131	01/13/2012
Broadband Hybrid Bi-Log Antenna	Sunol Sciences	JB1	A100209-4	10/07/2011
Double-Ridged Waveguide Horn	ETS-LINDGREN	3117	00078732	07/03/2012
Pre-Amplifier	Agilent	8447D	2944A10052	07/19/2012
Pre-Amplifier	Agilent	8449B	3008A01916	09/21/2011
Notch Filters Band Reject	Micro-Tronics	BRM05702-01	026	N.C.R

**Remark:** 1. Each piece of equipment is scheduled for calibration once a year.  
 2. N.C.R = No Calibration Request.

**TEST SETUP**

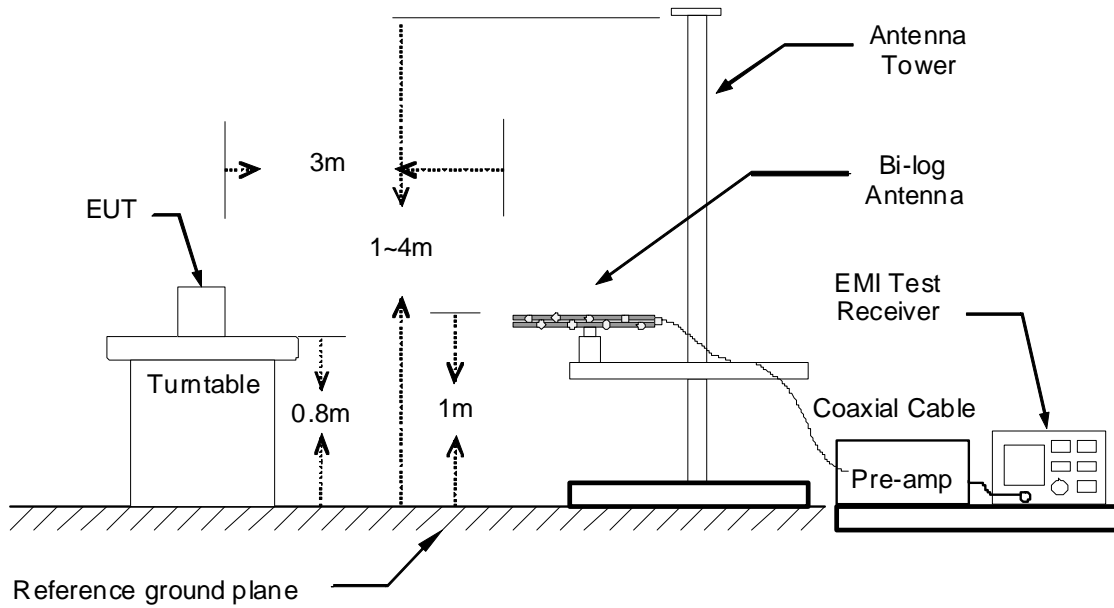
The diagram below shows the test setup that is utilized to make the measurements for emission from below 1GHz.

**9kHz ~ 30MHz**

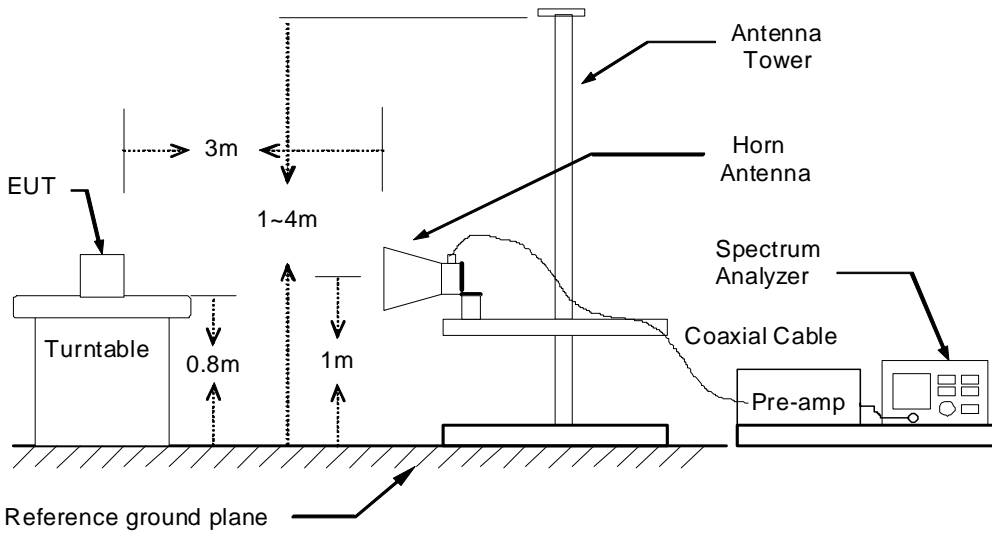




30MHz ~ 1GHz



The diagram below shows the test setup that is utilized to make the measurements for emission above 1GHz.





## **TEST PROCEDURE**

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
2. While measuring the radiated emission below 1GHz, the EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. While measuring the radiated emission above 1GHz, the EUT was set 3 meters away from the interference-receiving antenna.
3. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarization of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

### **Remark :**

1. *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.*
2. *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection and frequency above 1GHz.*
3. *The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.*





**TEST RESULTS**

**Below 1 GHz (9kHz ~ 30MHz)**

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

**Below 1 GHz (30MHz ~ 1GHz)**

<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Bell Huang
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/23
<b>Test Mode</b>	Normal Operating	<b>TEMP &amp; Humidity</b>	24°C, 58%

966 Chamber_A at 3Meter / Horizontal						
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark
125.06	50.56	-12.08	38.48	43.50	-5.02	Peak
156.10	48.51	-9.98	38.53	43.50	-4.97	Peak
250.19	54.04	-10.83	43.21	46.00	-2.79	Peak
320.03	48.66	-8.38	40.28	46.00	-5.72	Peak
375.32	51.62	-6.96	44.66	46.00	-1.34	QP
500.45	48.24	-3.95	44.29	46.00	-1.71	Peak
640.13	39.22	-1.15	38.07	46.00	-7.93	Peak
749.74	43.85	0.86	44.71	46.00	-1.29	QP

966 Chamber_A at 3Meter / Vertical						
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark
54.25	46.82	-9.88	36.94	40.00	-3.06	Peak
106.63	53.66	-14.11	39.54	43.50	-3.96	Peak
125.06	54.71	-12.08	42.63	43.50	-0.87	QP
143.49	48.99	-10.36	38.64	43.50	-4.86	Peak
250.19	55.48	-10.83	44.65	46.00	-1.35	Peak
375.32	47.65	-6.96	40.70	46.00	-5.30	Peak
500.45	48.59	-3.95	44.64	46.00	-1.36	Peak
640.13	37.45	-1.15	36.30	46.00	-9.70	Peak
749.74	42.63	0.86	43.49	46.00	-2.51	Peak

**Remark:**

1. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit.
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. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) – PreAmp.Gain (dB)
4. Result (dBµV/m) = Reading (dBµV) + Correction Factor (dB/m)
5. Margin (dB) = Remark result (dBµV/m) - Quasi-peak limit (dBµV/m).



Above 1 GHz

<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Leon Cheng
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/30
<b>Test Mode</b>	IEEE 802.11b TX / CH Low	<b>TEMP &amp; Humidity</b>	26°C, 58%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1564.00	53.71	---	-3.01	50.70	---	74.00	54.00	-3.30	Peak
1710.00	53.33	---	-1.62	51.70	---	74.00	54.00	-2.30	Peak
2412.00	108.94	---	2.09	111.03	---	---	---	---	Carrier
4830.00	42.66	---	8.25	50.92	---	74.00	54.00	-3.08	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1518.00	54.42	---	-3.45	50.97	---	74.00	54.00	-3.03	Peak
1754.00	53.10	---	-1.21	51.89	---	74.00	54.00	-2.11	Peak
2412.00	105.12	---	2.09	107.21	---	---	---	---	Carrier
4830.00	48.62	45.04	8.25	56.87	53.29	74.00	54.00	-0.71	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. 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.
5. In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
6. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)



<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Leon Cheng
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/30
<b>Test Mode</b>	IEEE 802.11b TX / CH Middle	<b>TEMP &amp; Humidity</b>	26°C, 58%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1516.00	54.57	---	-3.47	51.10	---	74.00	54.00	-2.90	Peak
1630.00	54.02	---	-2.38	51.64	---	74.00	54.00	-2.36	Peak
2437.00	109.31	---	2.15	111.46	---	---	---	---	Carrier
4875.00	43.28	---	8.35	51.63	---	74.00	54.00	-2.37	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1492.00	54.13	---	-3.65	50.48	---	74.00	54.00	-3.52	Peak
1630.00	54.89	---	-2.38	52.50	---	74.00	54.00	-1.50	Peak
2437.00	106.21	---	2.15	108.36	---	---	---	---	Carrier
4875.00	48.43	44.62	8.35	56.78	52.97	74.00	54.00	-1.03	AVG

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. 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.
5. In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
6. Result = Reading + Correction Factor  
Margin = Result - Limit  
Remark Peak = Result(PK) - Limit(AV)  
Remark AVG = Result(AV) - Limit(AV)



<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Leon Cheng
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/30
<b>Test Mode</b>	IEEE 802.11b TX / CH High	<b>TEMP &amp; Humidity</b>	26°C, 58%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1478.00	54.54	---	-3.70	50.84	---	74.00	54.00	-3.16	Peak
1584.00	54.36	---	-2.82	51.54	---	74.00	54.00	-2.46	Peak
2462.00	106.54	---	2.21	108.76	---	---	---	---	Carrier
4920.00	41.50	---	8.44	49.94	---	74.00	54.00	-4.06	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1560.00	53.71	---	-3.05	50.66	---	74.00	54.00	-3.34	Peak
1692.00	54.31	---	-1.80	52.51	---	74.00	54.00	-1.49	Peak
2462.00	105.53	---	2.21	107.75	---	---	---	---	Carrier
4920.00	49.89	44.58	8.44	58.33	53.02	74.00	54.00	-0.98	AVG

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. 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.
5. In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
6. Result = Reading + Correction Factor  
Margin = Result - Limit  
Remark Peak = Result(PK) - Limit(AV)  
Remark AVG = Result(AV) - Limit(AV)



<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Leon Cheng
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/30
<b>Test Mode</b>	IEEE 802.11g TX / CH Low	<b>TEMP &amp; Humidity</b>	26°C, 58%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1352.00	54.53	---	-4.16	50.37	---	74.00	54.00	-3.63	Peak
1520.00	54.23	---	-3.43	50.80	---	74.00	54.00	-3.20	Peak
2412.00	107.36	---	2.08	109.44	---	---	---	---	Carrier
4635.00	39.76	---	7.86	47.62	---	74.00	54.00	-6.38	Peak
4830.00	40.52	---	8.25	48.77	---	74.00	54.00	-5.23	Peak
5880.00	39.64	---	9.91	49.55	---	74.00	54.00	-4.45	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1466.00	54.31	---	-3.74	50.56	---	74.00	54.00	-3.44	Peak
1612.00	53.93	---	-2.56	51.37	---	74.00	54.00	-2.63	Peak
2412.00	102.30	---	2.09	104.39	---	---	---	---	Carrier
4830.00	40.44	---	8.25	48.69	---	74.00	54.00	-5.31	Peak
6030.00	39.33	---	10.19	49.52	---	74.00	54.00	-4.48	Peak
6480.00	38.93	---	11.17	50.10	---	74.00	54.00	-3.90	Peak

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. 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.
5. In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
6. Result = Reading + Correction Factor  
Margin = Result - Limit  
Remark Peak = Result(PK) - Limit(AV)  
Remark AVG = Result(AV) - Limit(AV)



<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Leon Cheng
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/30
<b>Test Mode</b>	IEEE 802.11g TX / CH Middle	<b>TEMP &amp; Humidity</b>	26°C, 58%

**966 Chamber\_B at 3Meter / Horizontal**

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1618.00	53.97	---	-2.50	51.47	---	74.00	54.00	-2.53	Peak
1652.00	54.05	---	-2.18	51.87	---	74.00	54.00	-2.13	Peak
2437.00	107.28	---	2.15	109.44	---	---	---	---	Carrier
4860.00	39.88	---	8.31	48.20	---	74.00	54.00	-5.80	Peak
6525.00	38.84	---	11.23	50.07	---	74.00	54.00	-3.93	Peak
7005.00	38.73	---	11.54	50.27	---	74.00	54.00	-3.73	Peak

**966 Chamber\_B at 3Meter / Vertical**

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1638.00	53.41	---	-2.31	51.10	---	74.00	54.00	-2.90	Peak
1772.00	53.42	---	-1.04	52.38	---	74.00	54.00	-1.62	Peak
2437.00	104.71	---	2.15	106.86	---	---	---	---	Carrier
4875.00	39.58	---	8.35	47.92	---	74.00	54.00	-6.08	Peak
5250.00	40.22	---	8.91	49.13	---	74.00	54.00	-4.87	Peak
6555.00	39.29	---	11.25	50.53	---	74.00	54.00	-3.47	Peak

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. 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.
5. In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
6. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)



<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Leon Cheng
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/30
<b>Test Mode</b>	IEEE 802.11g TX / CH High	<b>TEMP &amp; Humidity</b>	26°C, 58%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1566.00	53.28	---	-2.99	50.29	---	74.00	54.00	-3.71	Peak
1666.00	53.18	---	-2.04	51.13	---	74.00	54.00	-2.87	Peak
2462.00	105.81	---	2.21	108.01	---	---	---	---	Carrier
4455.00	40.21	---	7.39	47.61	---	74.00	54.00	-6.39	Peak
4920.00	39.14	---	8.44	47.58	---	74.00	54.00	-6.42	Peak
6570.00	38.80	---	11.26	50.05	---	74.00	54.00	-3.95	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1580.00	53.86	---	-2.86	51.00	---	74.00	54.00	-3.00	Peak
1824.00	53.29	---	-0.54	52.75	---	74.00	54.00	-1.25	Peak
2462.00	108.63	---	2.21	110.84	---	---	---	---	Carrier
4335.00	41.07	---	6.90	47.97	---	74.00	54.00	-6.03	Peak
4515.00	41.19	---	7.61	48.80	---	74.00	54.00	-5.20	Peak
4920.00	41.26	---	8.44	49.69	---	74.00	54.00	-4.31	Peak

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. 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.
5. In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
6. Result = Reading + Correction Factor  
Margin = Result - Limit  
Remark Peak = Result(PK) - Limit(AV)  
Remark AVG = Result(AV) - Limit(AV)



<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Leon Cheng
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/30
<b>Test Mode</b>	IEEE 802.11n HT20 TX / CH Low	<b>TEMP &amp; Humidity</b>	26°C, 58%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1628.00	54.07	---	-2.40	51.66	---	74.00	54.00	-2.34	Peak
1764.00	53.86	---	-1.11	52.75	---	74.00	54.00	-1.25	Peak
2412.00	103.66	---	2.08	105.74	---	---	---	---	Carrier
4860.00	39.06	---	8.31	47.38	---	74.00	54.00	-6.62	Peak
6510.00	39.18	---	11.22	50.40	---	74.00	54.00	-3.60	Peak
6915.00	38.94	---	11.48	50.43	---	74.00	54.00	-3.57	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1666.00	53.12	---	-2.04	51.08	---	74.00	54.00	-2.92	Peak
1774.00	53.77	---	-1.02	52.75	---	74.00	54.00	-1.25	Peak
2412.00	107.00	---	2.08	109.08	---	---	---	---	Carrier
4815.00	39.50	---	8.22	47.72	---	74.00	54.00	-6.28	Peak
6540.00	38.60	---	11.24	49.84	---	74.00	54.00	-4.16	Peak
6750.00	39.03	---	11.37	50.40	---	74.00	54.00	-3.60	Peak

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. 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.
5. In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
6. Result = Reading + Correction Factor  
Margin = Result - Limit  
Remark Peak = Result(PK) - Limit(AV)  
Remark AVG = Result(AV) - Limit(AV)





<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Leon Cheng
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/30
<b>Test Mode</b>	IEEE 802.11n HT20 TX / CH Middle	<b>TEMP &amp; Humidity</b>	26°C, 58%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1548.00	53.96	---	-3.16	50.80	---	74.00	54.00	-3.20	Peak
1632.00	53.40	---	-2.37	51.04	---	74.00	54.00	-2.96	Peak
2437.00	103.57	---	2.15	105.71	---	---	---	---	Carrier
4905.00	39.09	---	8.41	47.50	---	74.00	54.00	-6.50	Peak
6555.00	38.79	---	11.25	50.04	---	74.00	54.00	-3.96	Peak
7560.00	39.41	---	11.76	51.17	---	74.00	54.00	-2.83	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1530.00	54.01	---	-3.33	50.68	---	74.00	54.00	-3.32	Peak
1776.00	53.78	---	-1.00	52.79	---	74.00	54.00	-1.21	Peak
2437.00	107.84	---	2.15	109.99	---	---	---	---	Carrier
4875.00	38.82	---	8.35	47.17	---	74.00	54.00	-6.83	Peak
5940.00	39.04	---	10.02	49.06	---	74.00	54.00	-4.94	Peak
6495.00	38.79	---	11.20	49.99	---	74.00	54.00	-4.01	Peak

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. 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.
5. In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
6. Result = Reading + Correction Factor  
Margin = Result - Limit  
Remark Peak = Result(PK) - Limit(AV)  
Remark AVG = Result(AV) - Limit(AV)



<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Leon Cheng
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/30
<b>Test Mode</b>	IEEE 802.11n HT20 TX / CH High	<b>TEMP &amp; Humidity</b>	26°C, 58%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1516.00	55.46	---	-3.47	51.99	---	74.00	54.00	-2.01	Peak
1580.00	54.27	---	-2.86	51.41	---	74.00	54.00	-2.59	Peak
2462.00	104.18	---	2.22	106.39	---	---	---	---	Carrier
4980.00	39.54	---	8.56	48.10	---	74.00	54.00	-5.90	Peak
6660.00	39.00	---	11.32	50.32	---	74.00	54.00	-3.68	Peak
7740.00	40.18	---	11.93	52.11	---	74.00	54.00	-1.89	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1472.00	54.35	---	-3.72	50.63	---	74.00	54.00	-3.37	Peak
1566.00	54.14	---	-2.99	51.14	---	74.00	54.00	-2.86	Peak
2462.00	107.87	---	2.22	110.08	---	---	---	---	Carrier
4920.00	39.97	---	8.44	48.41	---	74.00	54.00	-5.59	Peak
5595.00	39.87	---	9.39	49.27	---	74.00	54.00	-4.73	Peak
6150.00	40.06	---	10.45	50.51	---	74.00	54.00	-3.49	Peak

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. 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.
5. In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
6. Result = Reading + Correction Factor  
Margin = Result - Limit  
Remark Peak = Result(PK) - Limit(AV)  
Remark AVG = Result(AV) - Limit(AV)



<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Leon Cheng
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/30
<b>Test Mode</b>	IEEE 802.11n HT40 TX / CH Low	<b>TEMP &amp; Humidity</b>	26°C, 58%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1592.00	54.37	---	-2.75	51.63	---	74.00	54.00	-2.37	Peak
1652.00	54.16	---	-2.18	51.99	---	74.00	54.00	-2.01	Peak
2422.00	93.41	---	2.09	95.50	---	---	---	---	Carrier
4920.00	39.90	---	8.44	48.34	---	74.00	54.00	-5.66	Peak
5640.00	40.10	---	9.47	49.57	---	74.00	54.00	-4.43	Peak
6750.00	39.09	---	11.37	50.47	---	74.00	54.00	-3.53	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1584.00	54.02	---	-2.82	51.20	---	74.00	54.00	-2.80	Peak
1730.00	53.33	---	-1.43	51.89	---	74.00	54.00	-2.11	Peak
2422.00	97.16	---	2.09	99.25	---	---	---	---	Carrier
4860.00	39.26	---	8.31	47.58	---	74.00	54.00	-6.42	Peak
5895.00	39.48	---	9.94	49.41	---	74.00	54.00	-4.59	Peak
6525.00	38.58	---	11.23	49.81	---	74.00	54.00	-4.19	Peak

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. 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.
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6. Result = Reading + Correction Factor  
Margin = Result - Limit  
Remark Peak = Result(PK) - Limit(AV)  
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<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Leon Cheng
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/30
<b>Test Mode</b>	IEEE 802.11n HT40 TX / CH Middle	<b>TEMP &amp; Humidity</b>	26°C, 58%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1576.00	54.18	---	-2.90	51.28	---	74.00	54.00	-2.72	Peak
1696.00	53.68	---	-1.76	51.92	---	74.00	54.00	-2.08	Peak
2437.00	101.81	---	2.14	103.95	---	---	---	---	Carrier
4890.00	39.99	---	8.38	48.36	---	74.00	54.00	-5.64	Peak
7215.00	38.70	---	11.61	50.32	---	74.00	54.00	-3.68	Peak
8580.00	39.13	---	12.63	51.76	---	74.00	54.00	-2.24	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1696.00	53.72	---	-1.76	51.96	---	74.00	54.00	-2.04	Peak
1752.00	53.28	---	-1.23	52.06	---	74.00	54.00	-1.94	Peak
2437.00	105.75	---	2.16	107.91	---	---	---	---	Carrier
4545.00	40.47	---	7.67	48.14	---	74.00	54.00	-5.86	Peak
4875.00	39.44	---	8.35	47.79	---	74.00	54.00	-6.21	Peak
6570.00	38.87	---	11.26	50.13	---	74.00	54.00	-3.87	Peak

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. 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.
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6. Result = Reading + Correction Factor  
Margin = Result - Limit  
Remark Peak = Result(PK) - Limit(AV)  
Remark AVG = Result(AV) - Limit(AV)



<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Leon Cheng
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/30
<b>Test Mode</b>	IEEE 802.11n HT40 TX / CH High	<b>TEMP &amp; Humidity</b>	26°C, 58%

**966 Chamber\_B at 3Meter / Horizontal**

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1404.00	55.08	---	-3.97	51.11	---	74.00	54.00	-2.89	Peak
1622.00	53.53	---	-2.46	51.07	---	74.00	54.00	-2.93	Peak
2452.00	99.30	---	2.17	101.47	---	---	---	---	Carrier
4920.00	39.83	---	8.44	48.27	---	74.00	54.00	-5.73	Peak
6375.00	38.59	---	10.94	49.53	---	74.00	54.00	-4.47	Peak
6945.00	38.54	---	11.50	50.04	---	74.00	54.00	-3.96	Peak

**966 Chamber\_B at 3Meter / Vertical**

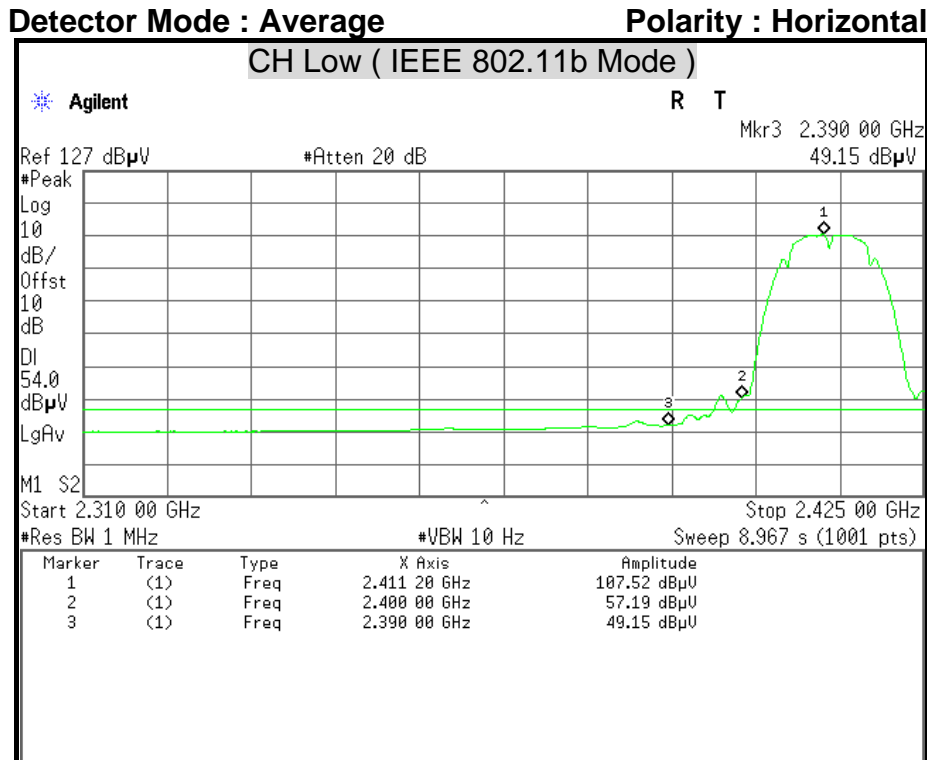
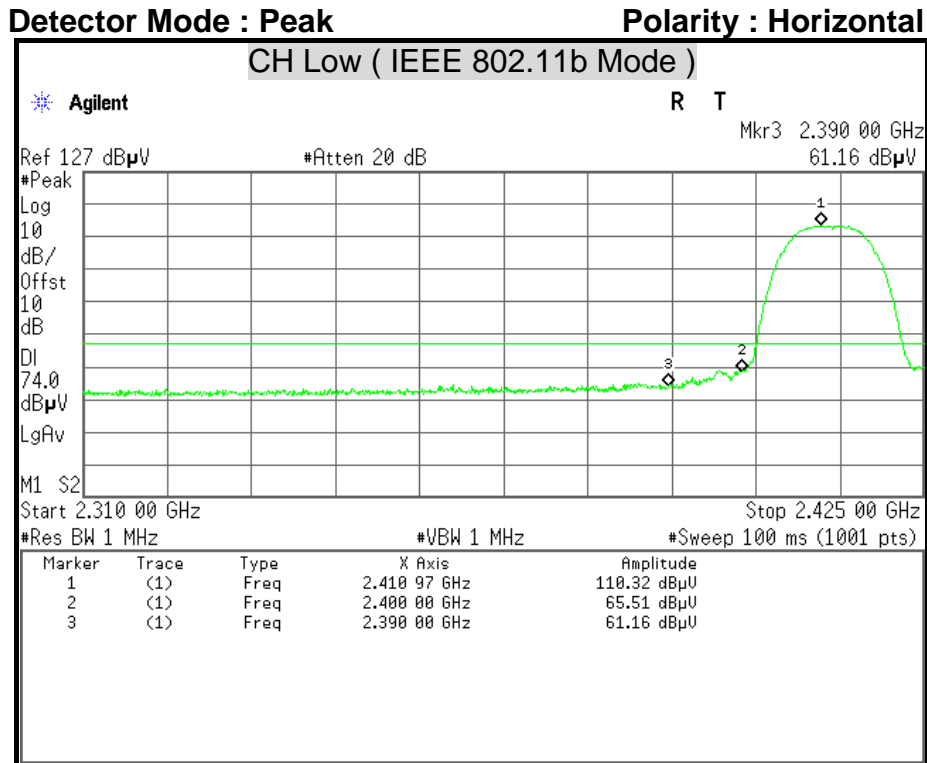
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1452.00	54.63	---	-3.80	50.83	---	74.00	54.00	-3.17	Peak
1592.00	54.39	---	-2.75	51.64	---	74.00	54.00	-2.36	Peak
2452.00	105.91	---	2.16	108.07	---	---	---	---	Carrier
4905.00	40.61	---	8.41	49.02	---	74.00	54.00	-4.98	Peak
6525.00	38.89	---	11.23	50.12	---	74.00	54.00	-3.88	Peak
6690.00	40.10	---	11.34	51.44	---	74.00	54.00	-2.56	Peak

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. 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.
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6. Result = Reading + Correction Factor  
Margin = Result - Limit  
Remark Peak = Result(PK) - Limit(AV)  
Remark AVG = Result(AV) - Limit(AV)



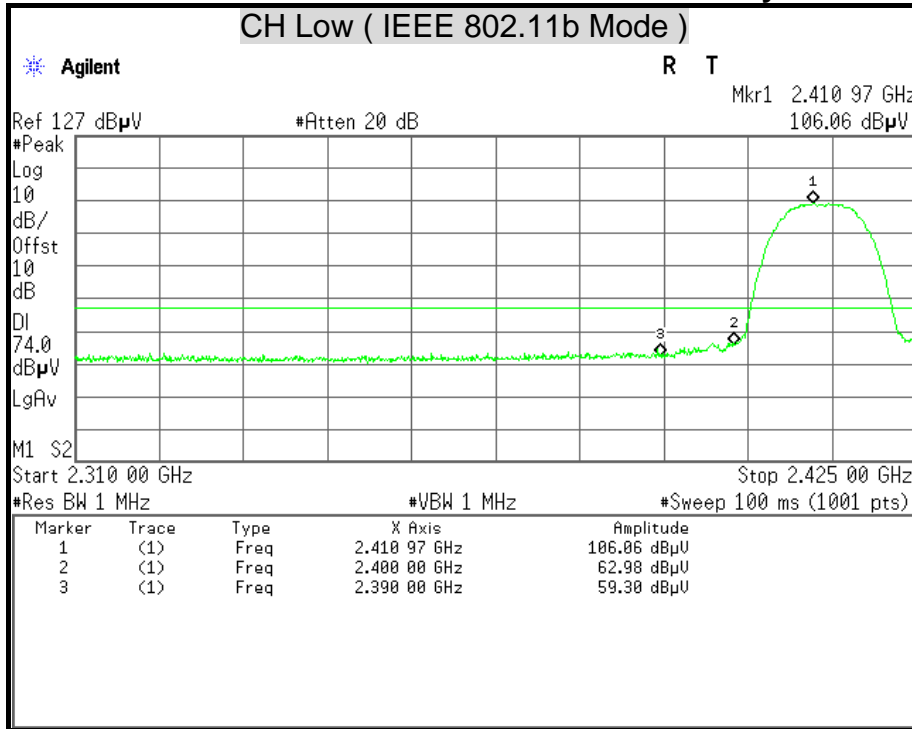
Restricted Band Edges





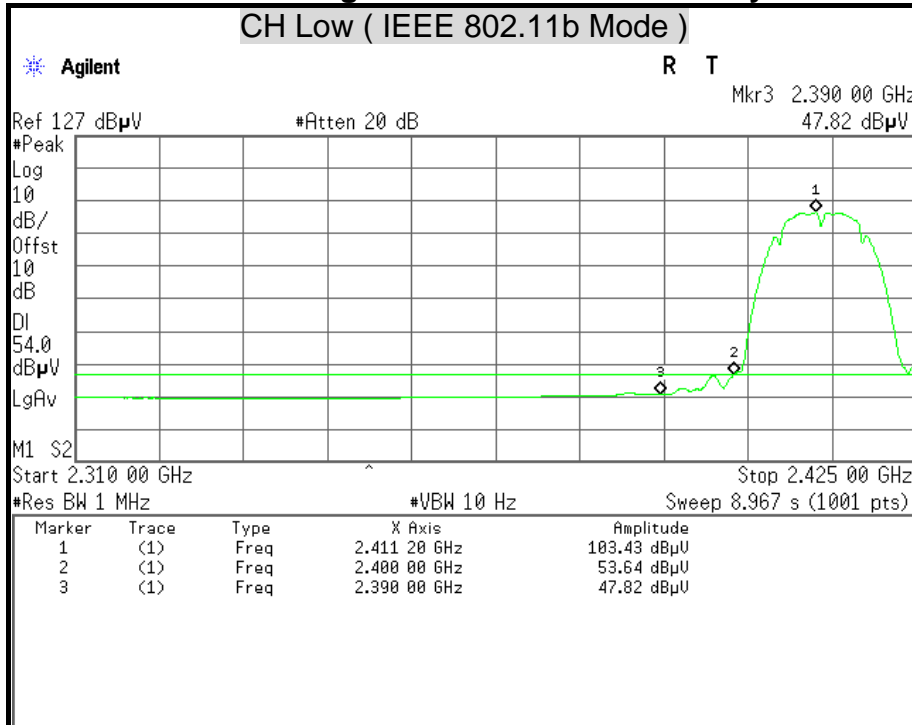
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

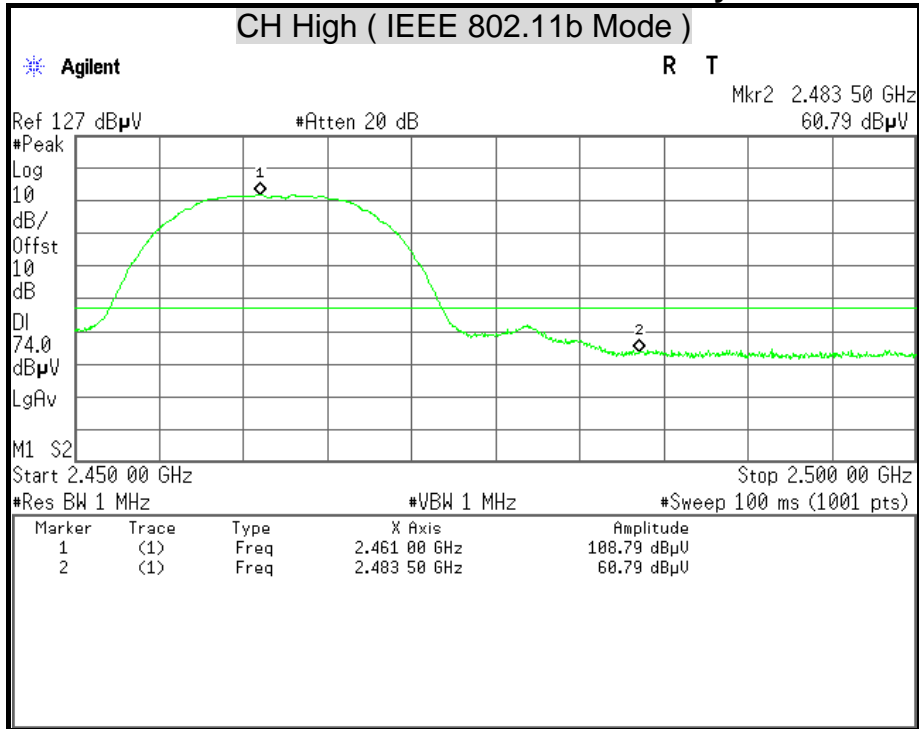
Polarity : Vertical





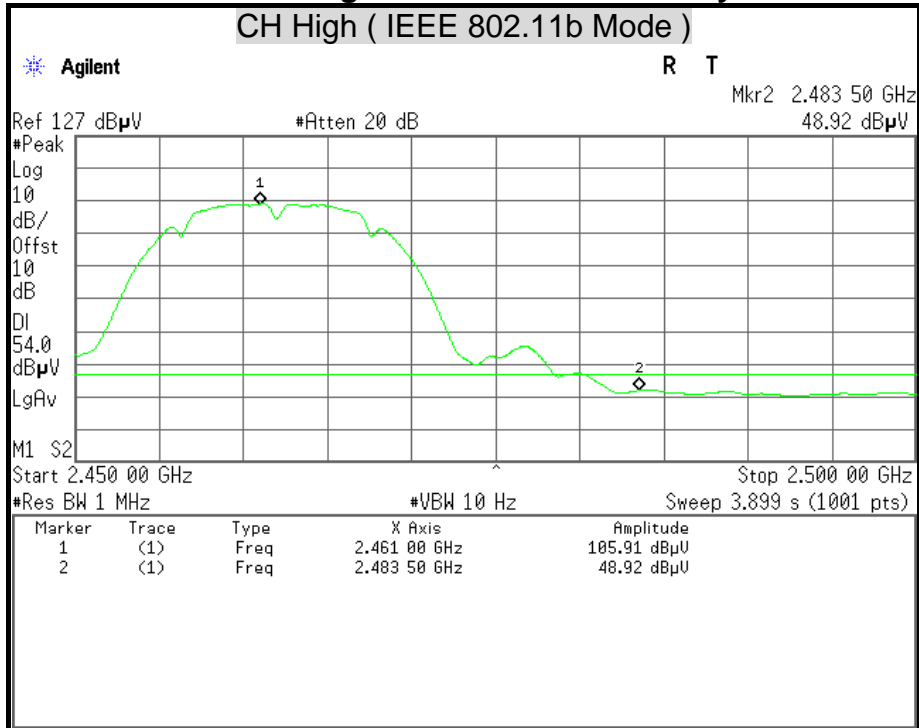
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

Polarity : Horizontal

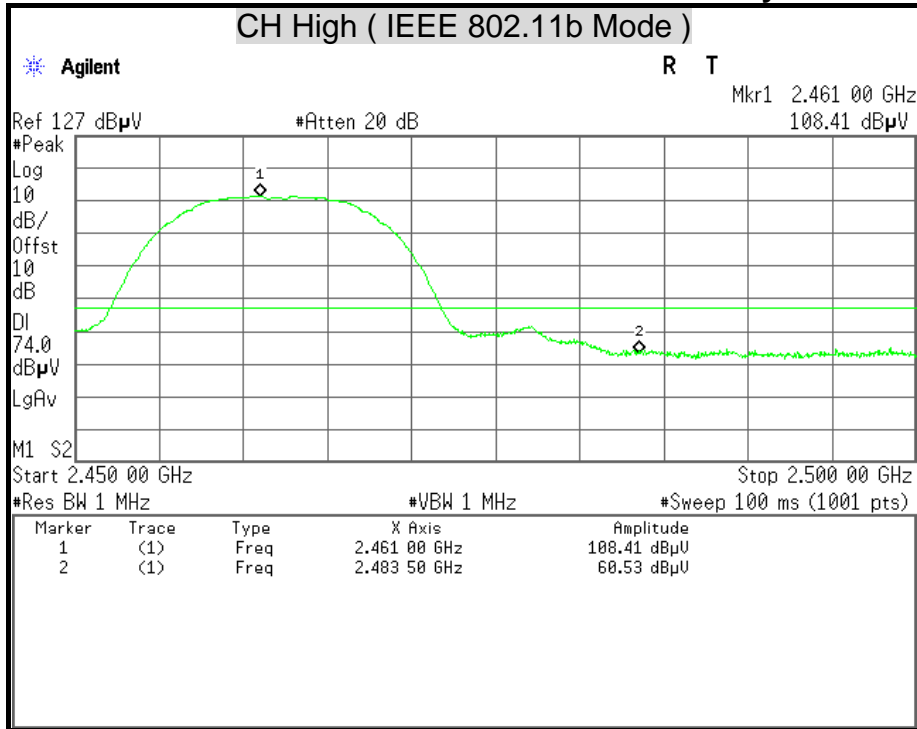






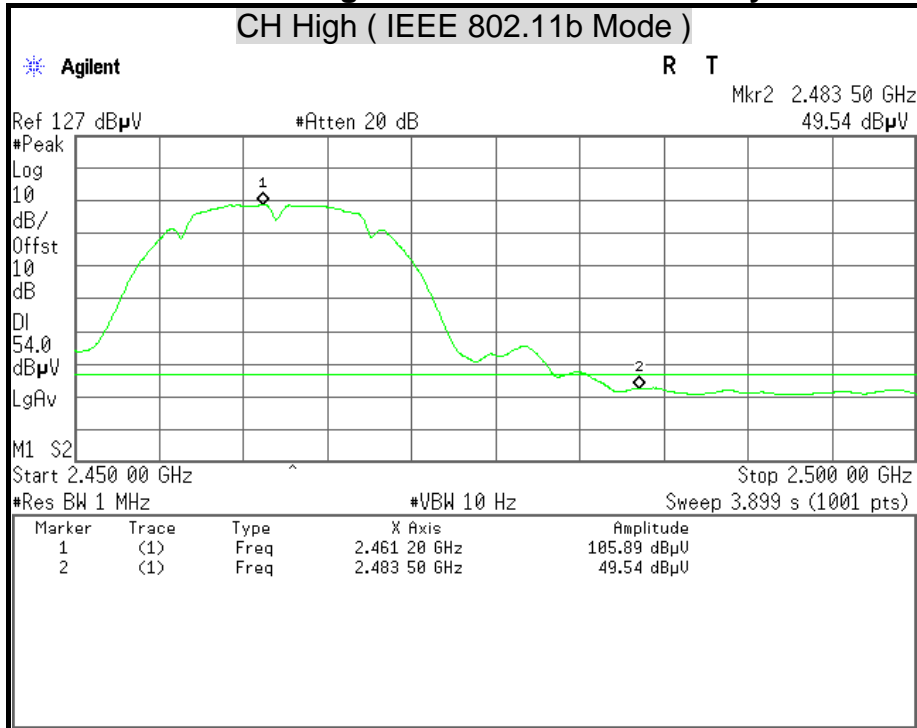
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

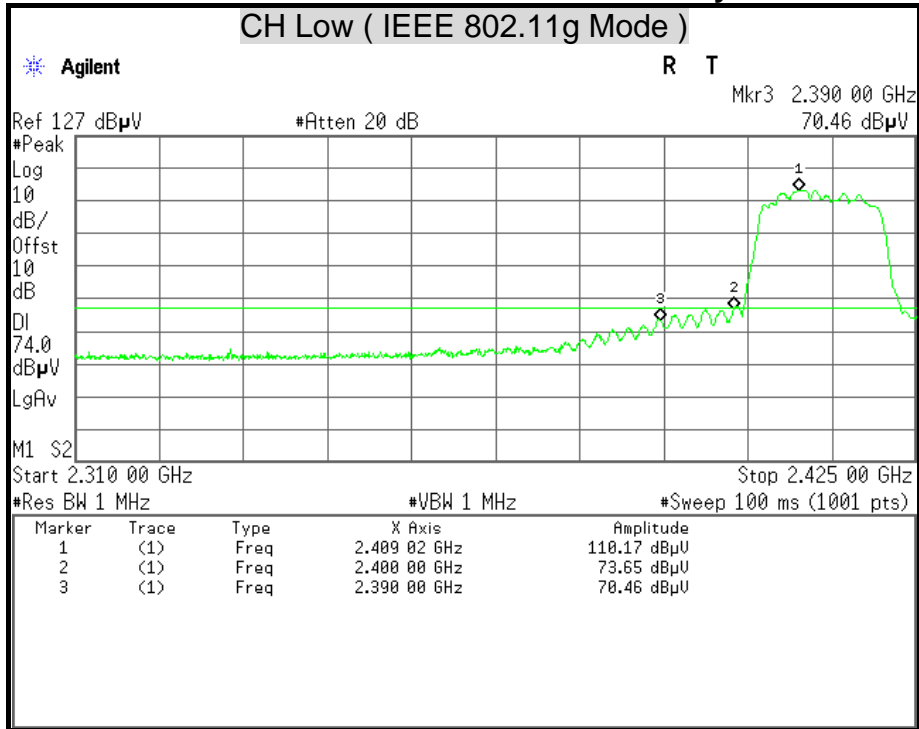
Polarity : Vertical





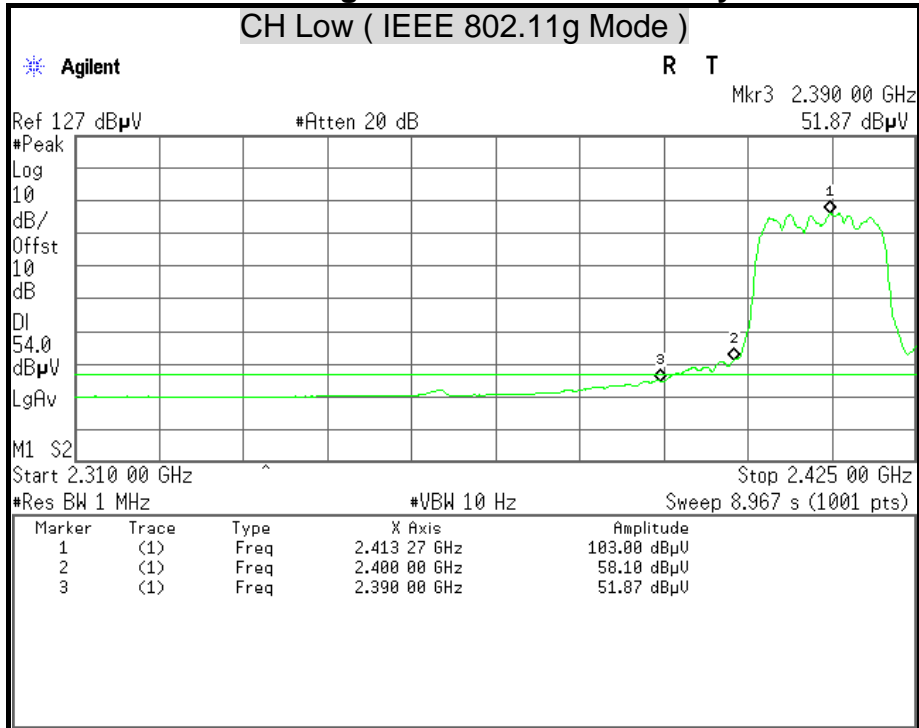
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

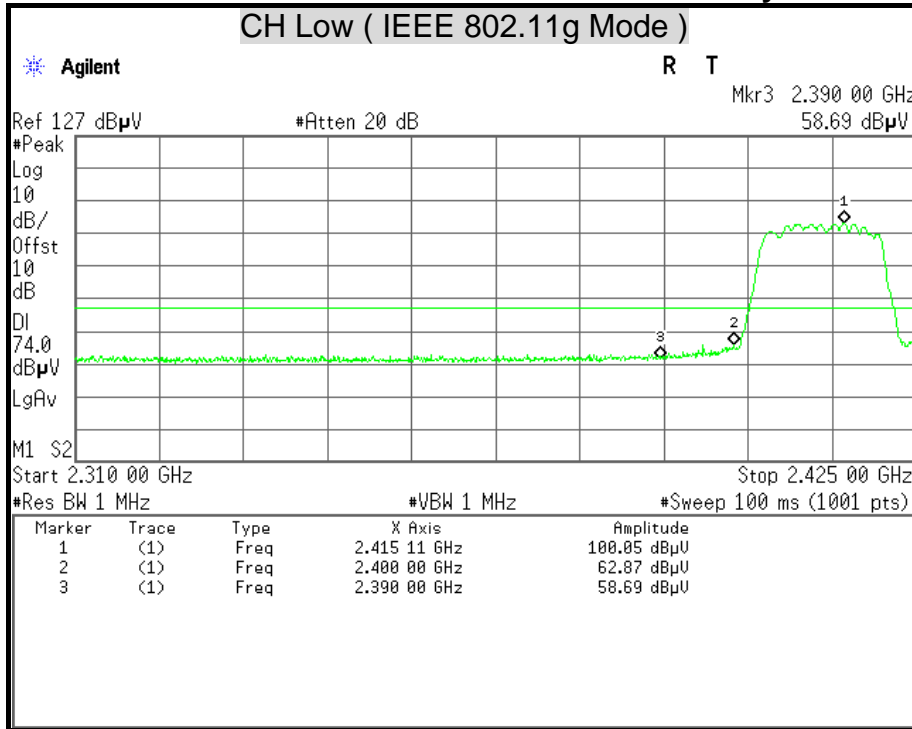
Polarity : Horizontal





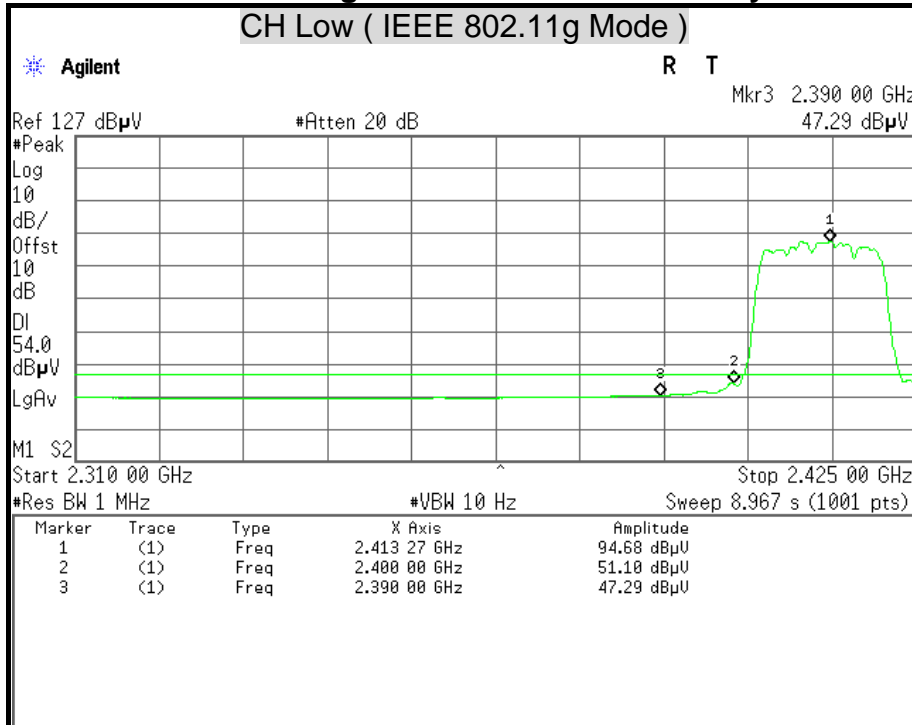
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

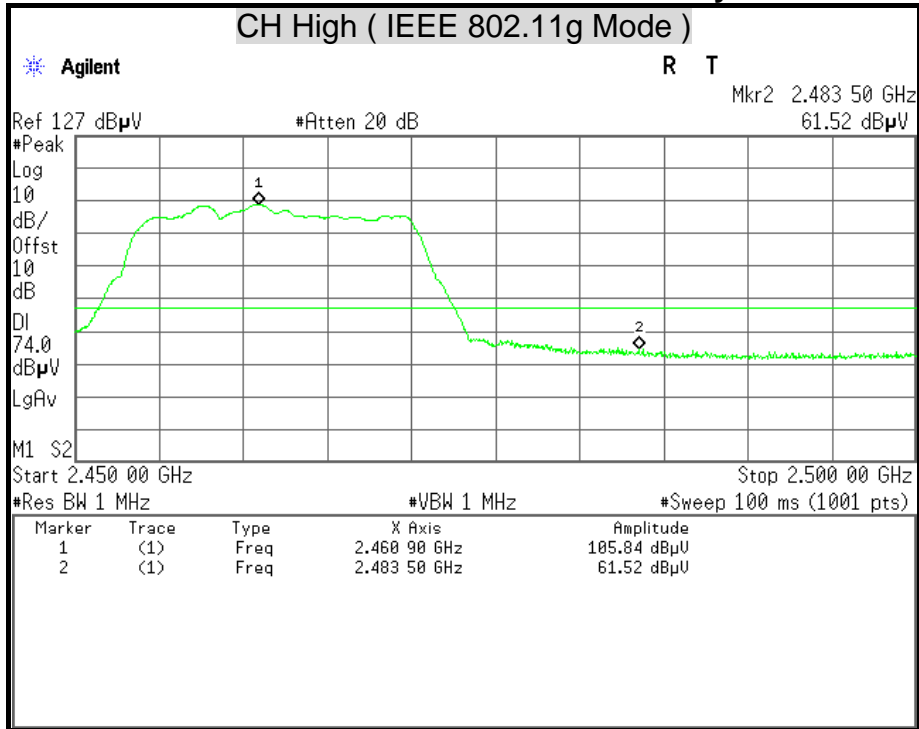
Polarity : Vertical





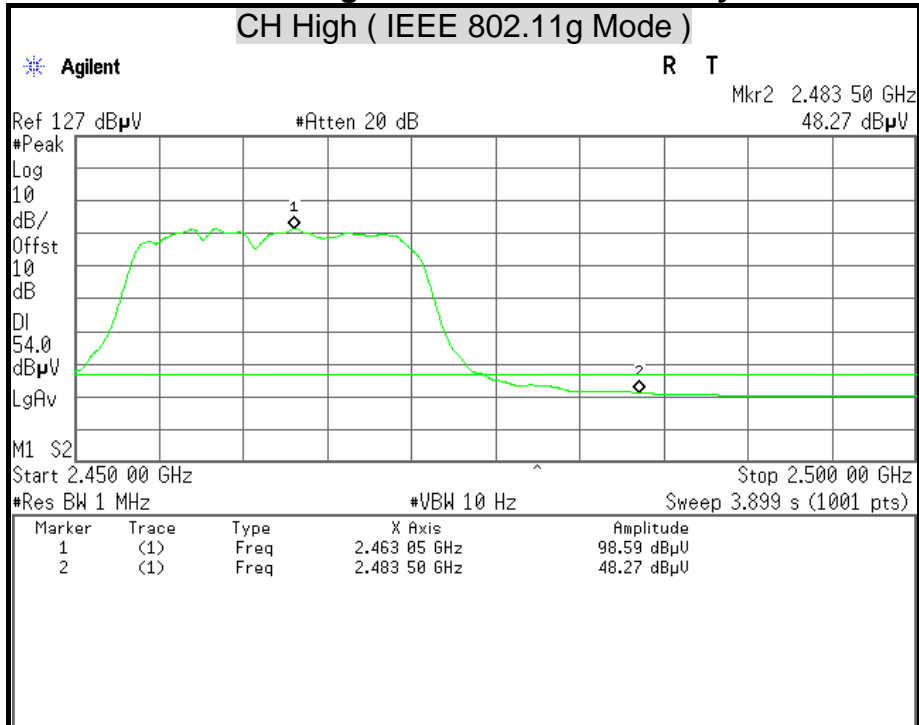
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

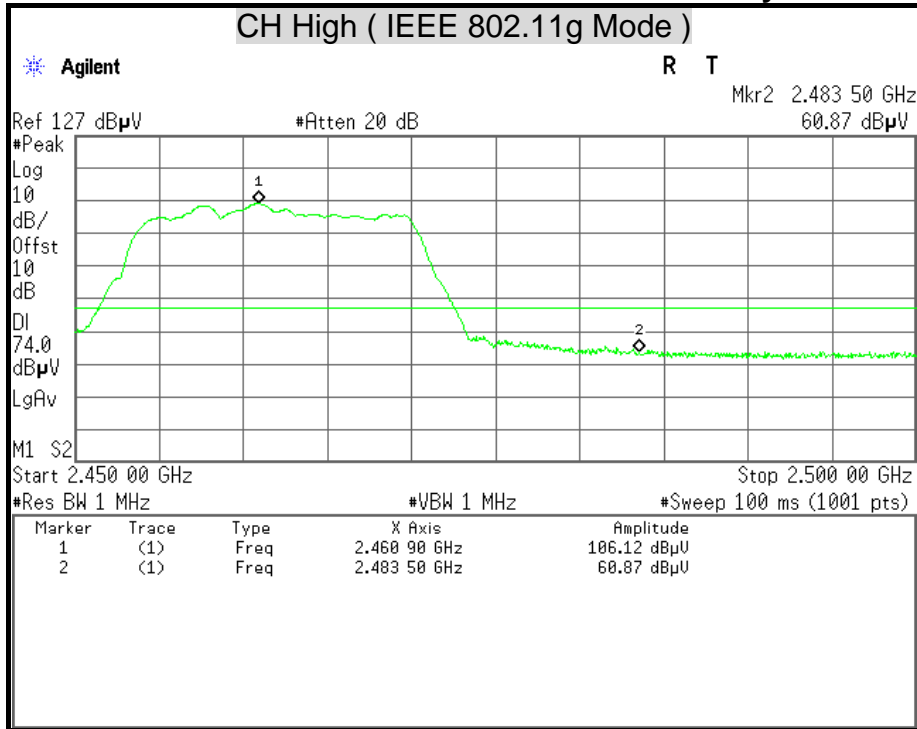
Polarity : Horizontal





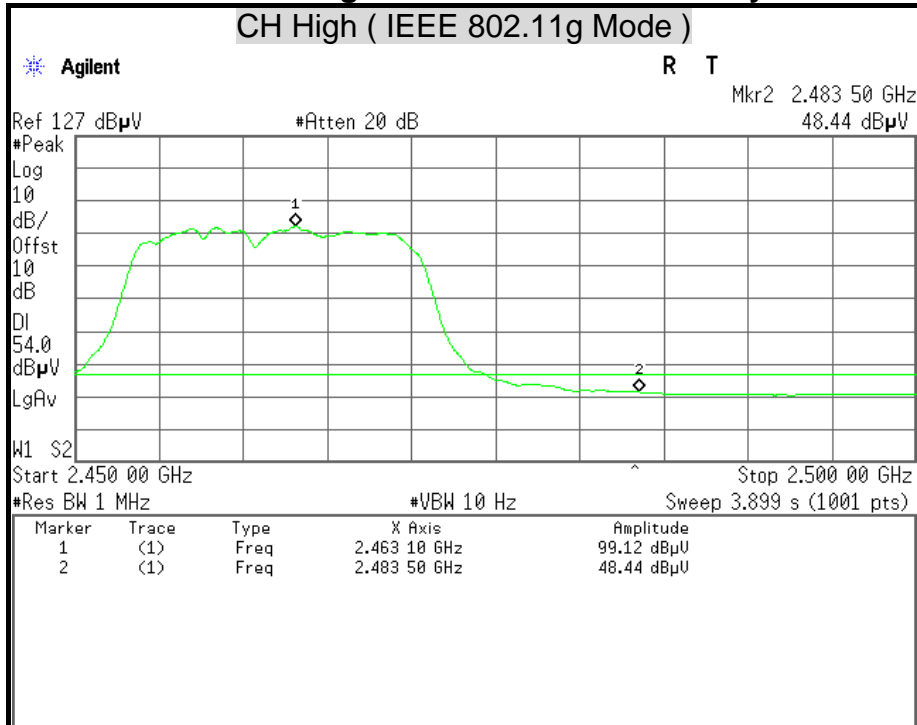
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

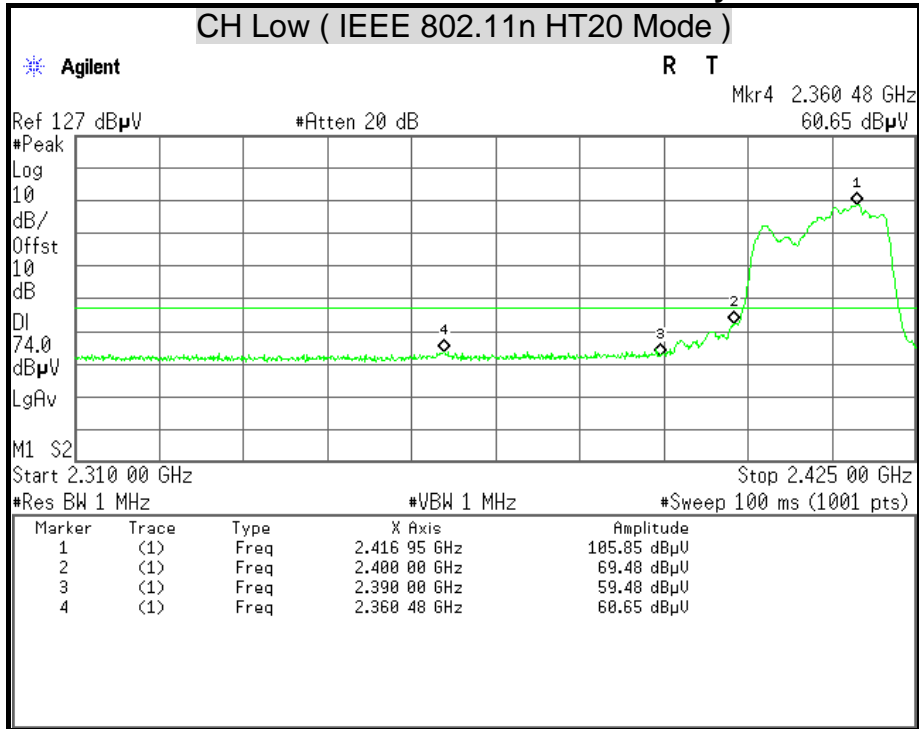
Polarity : Vertical





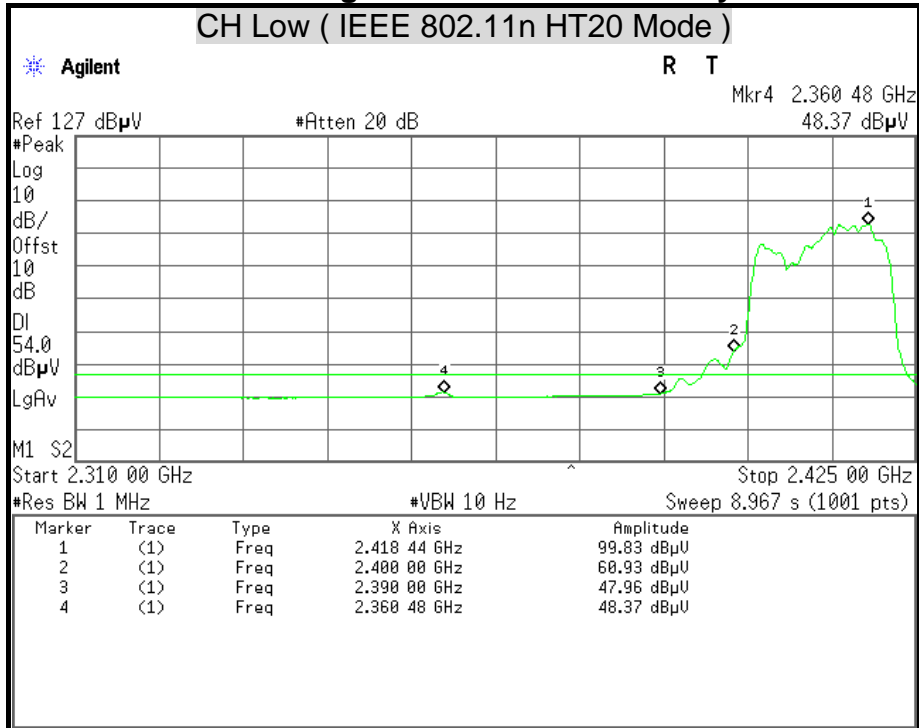
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

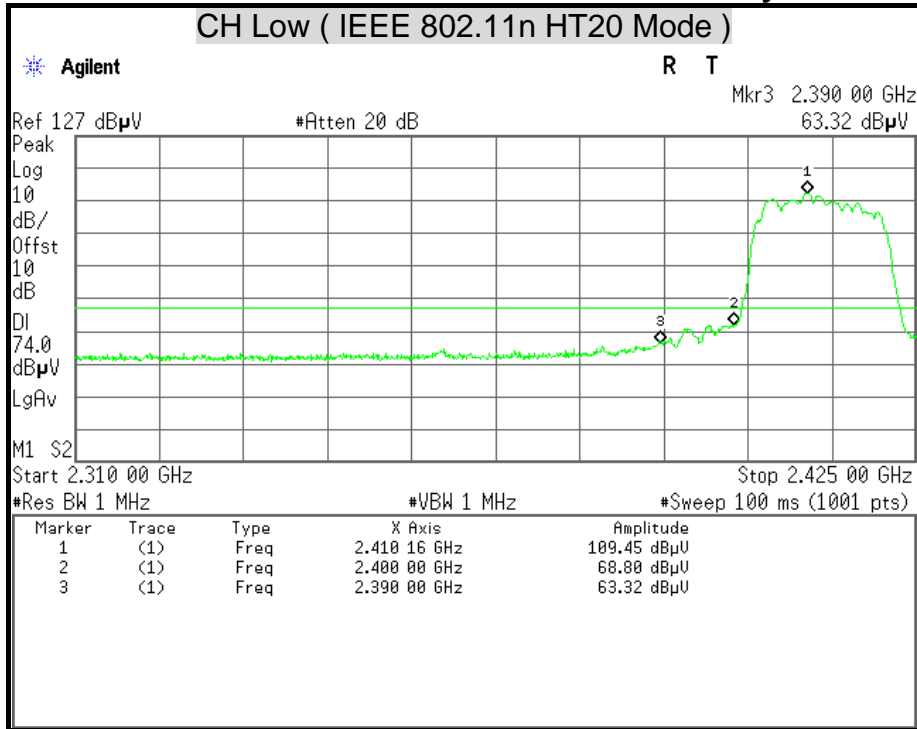
Polarity : Horizontal





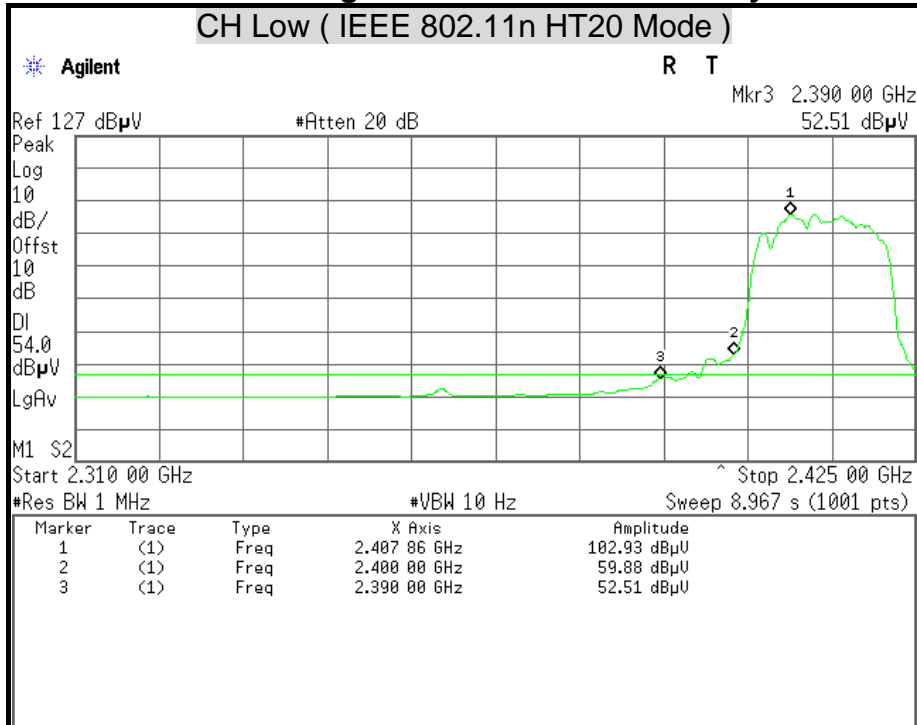
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

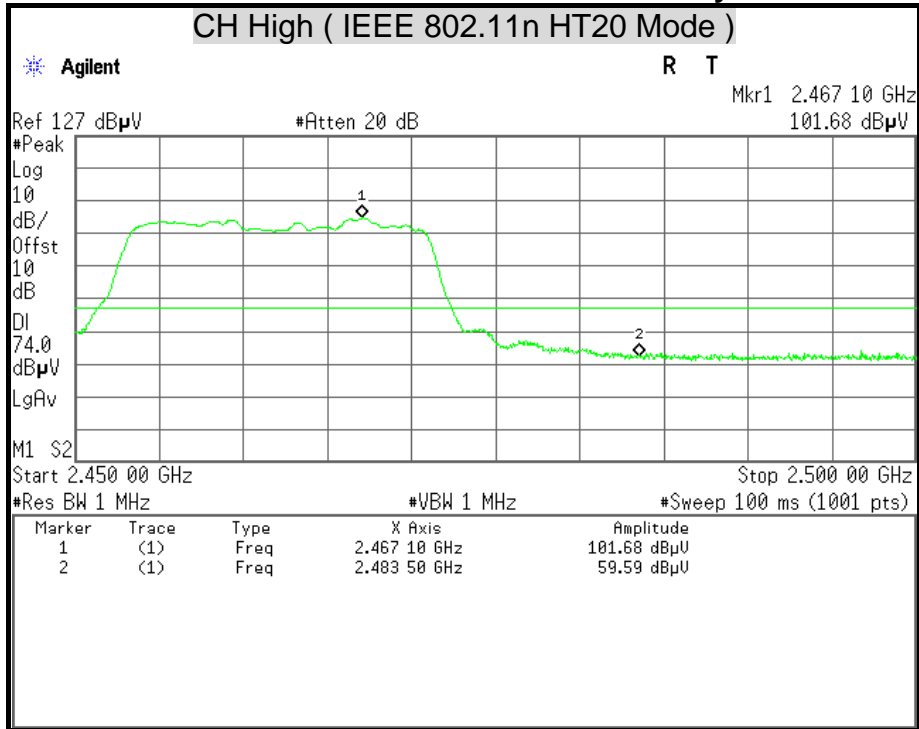
Polarity : Vertical





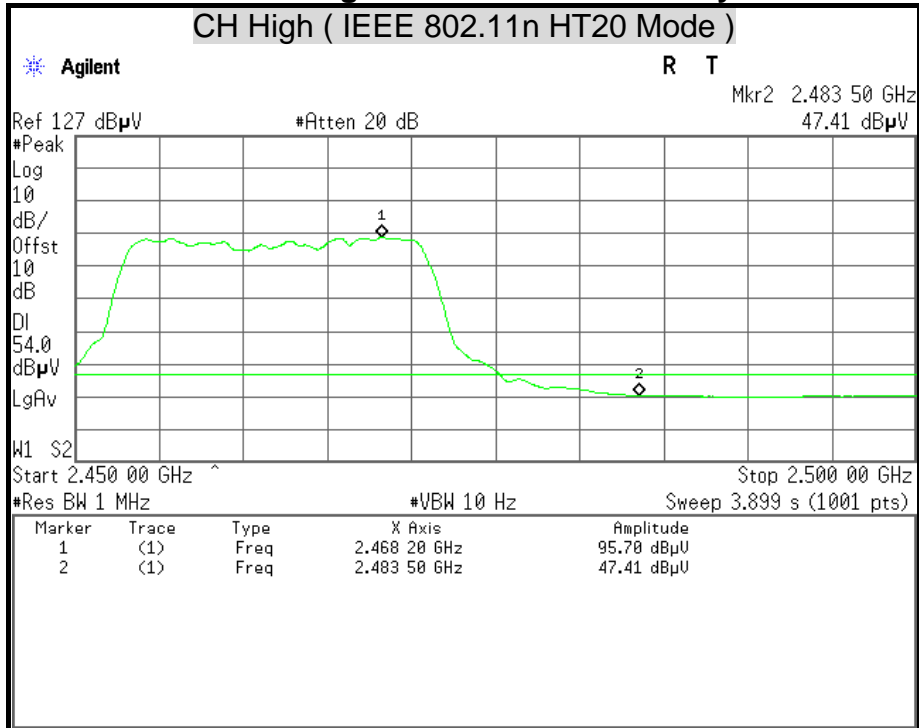
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

Polarity : Horizontal

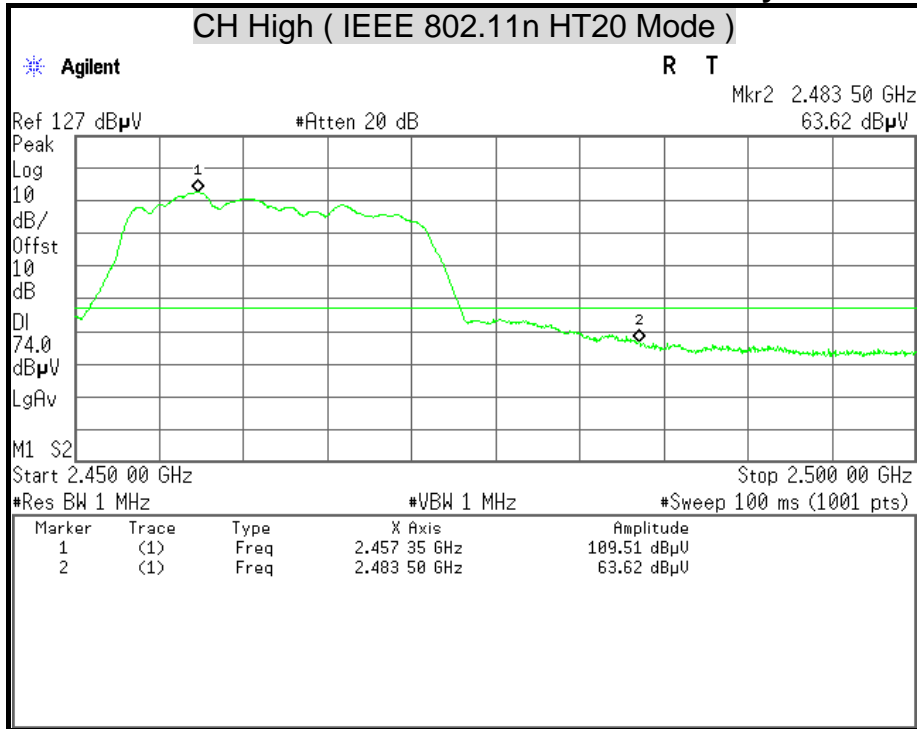






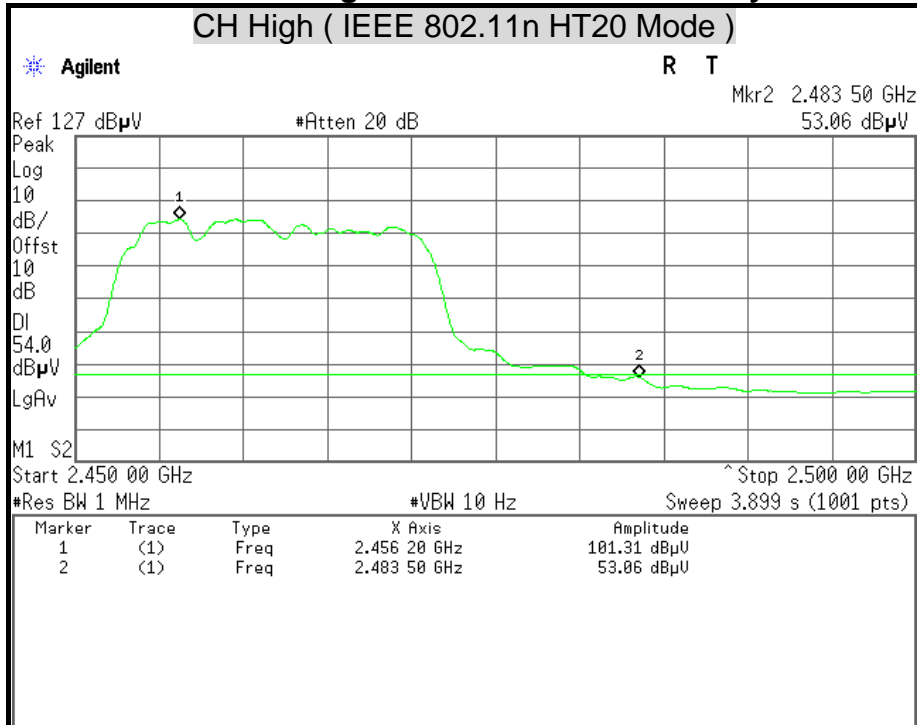
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

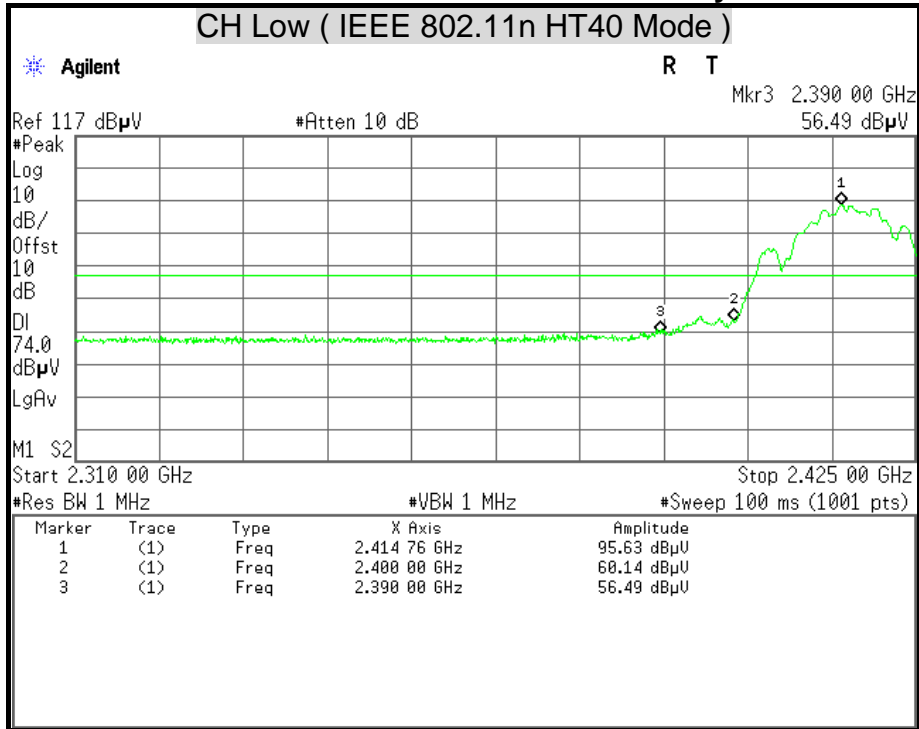
Polarity : Vertical





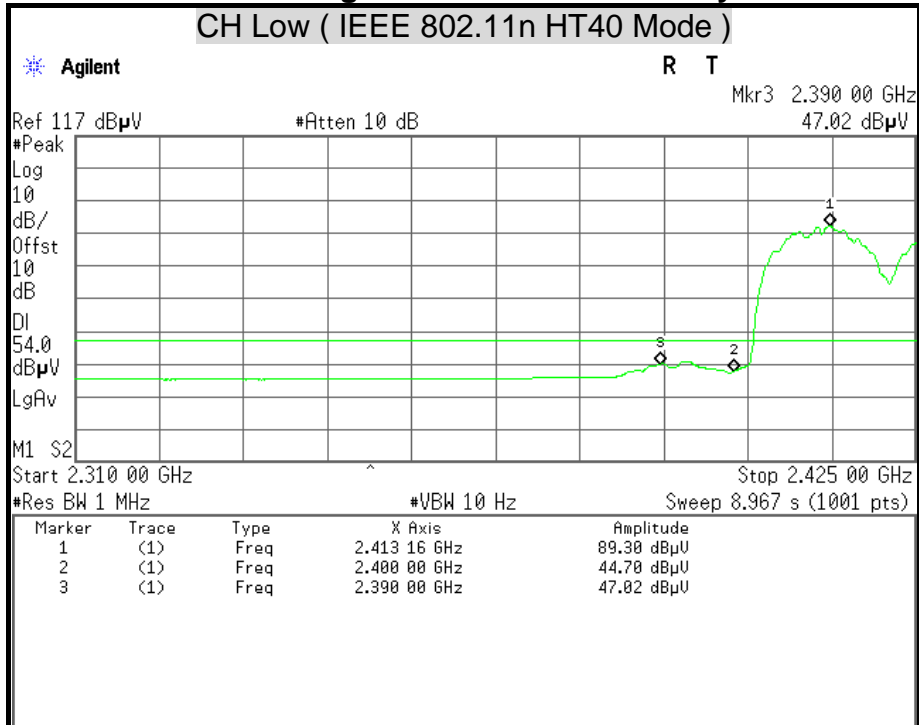
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

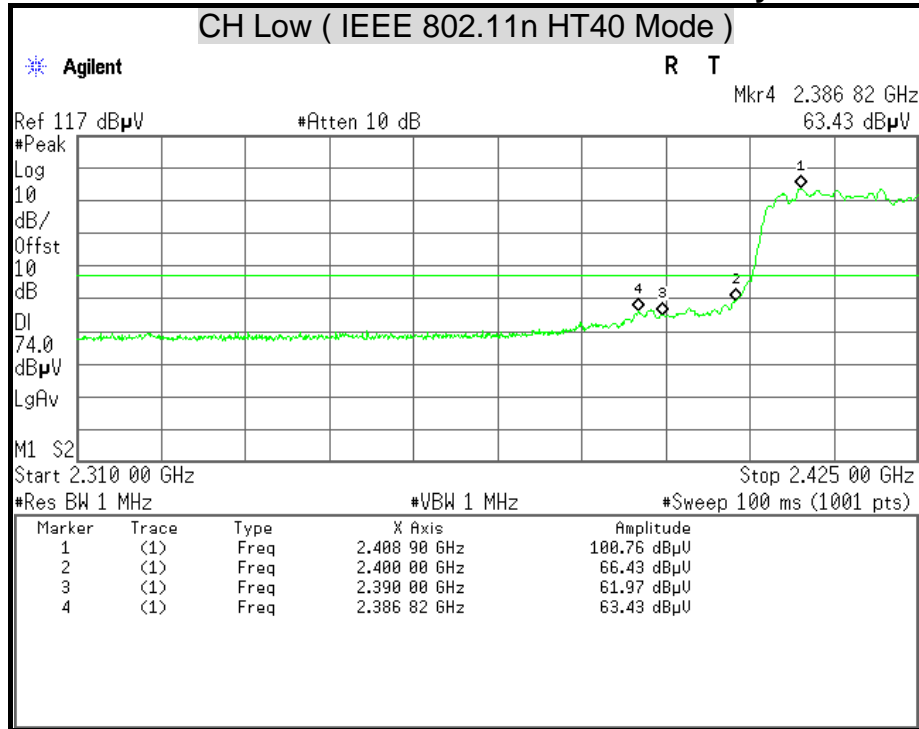
Polarity : Horizontal





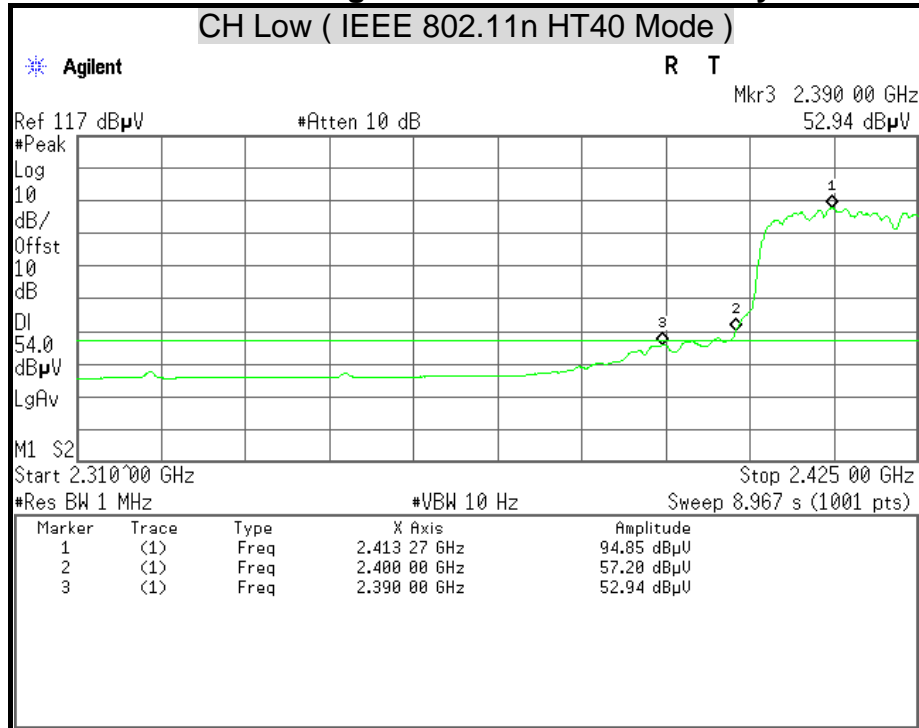
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

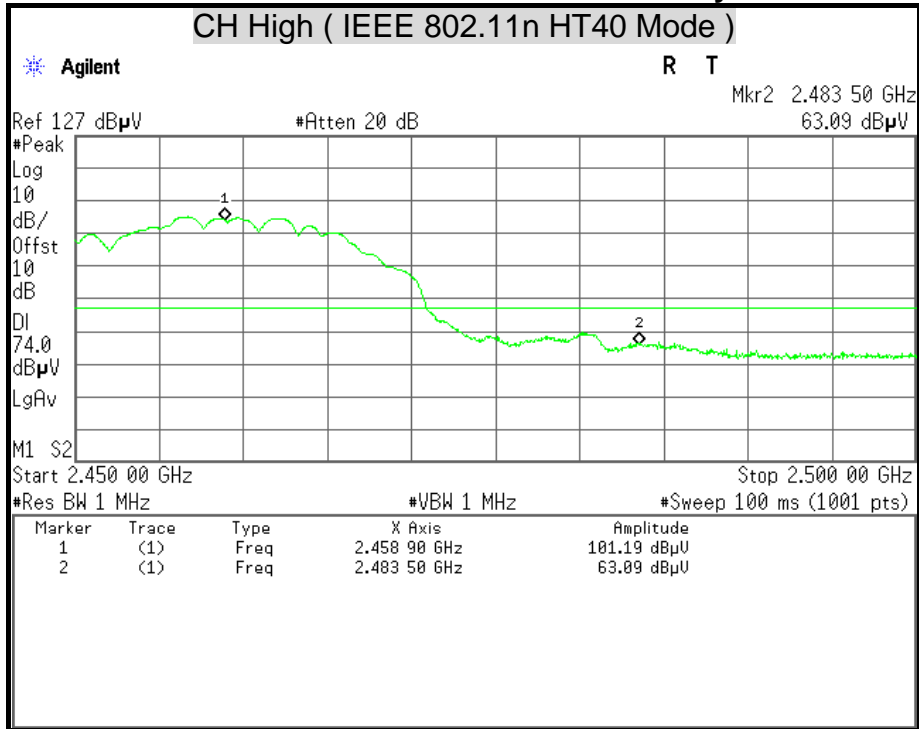
Polarity : Vertical





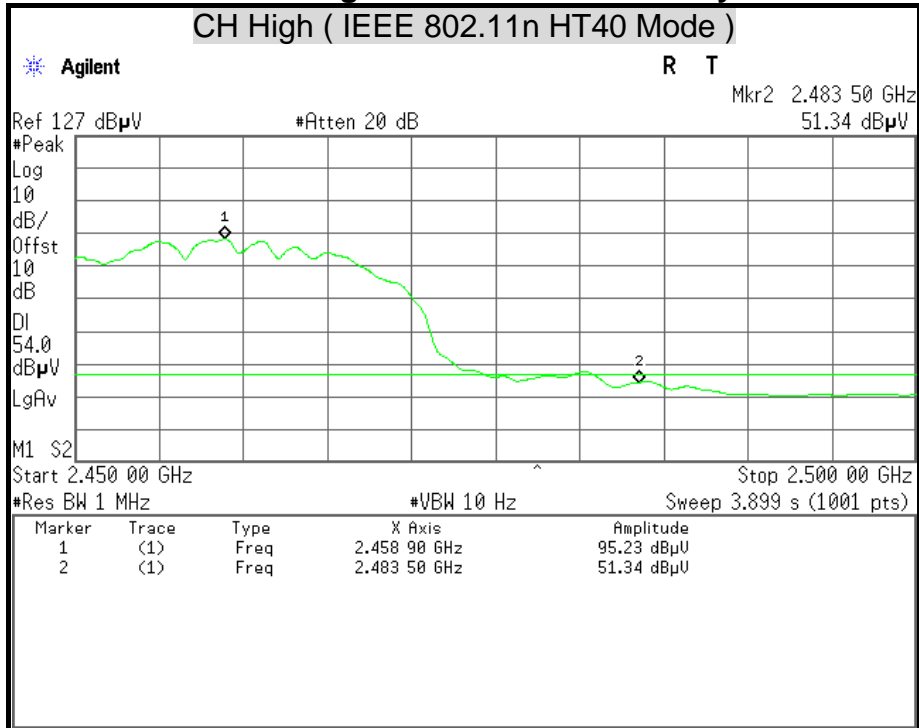
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

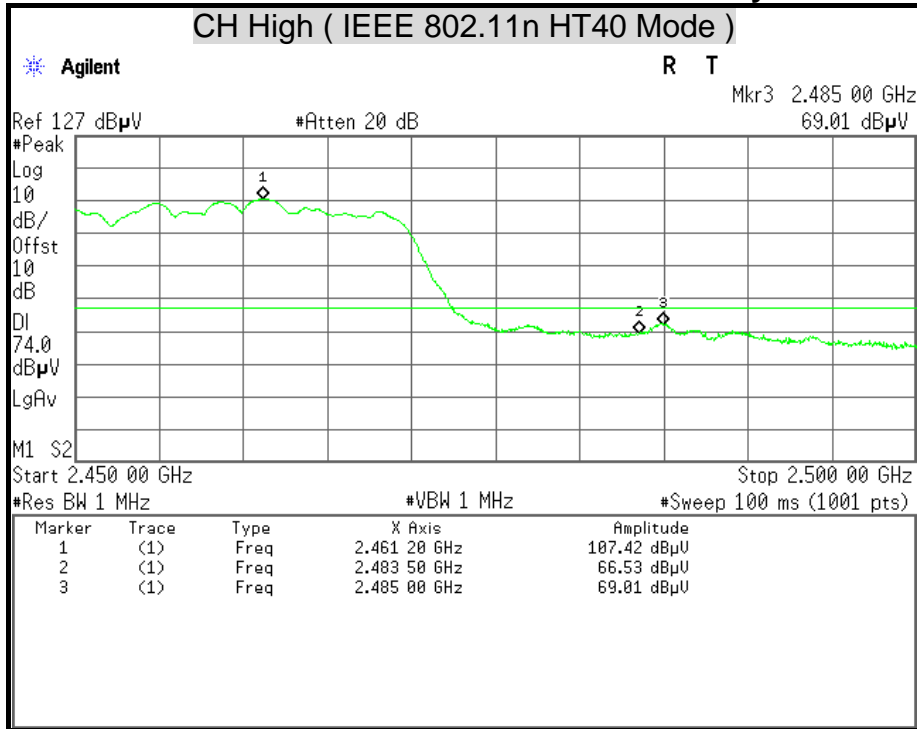
Polarity : Horizontal





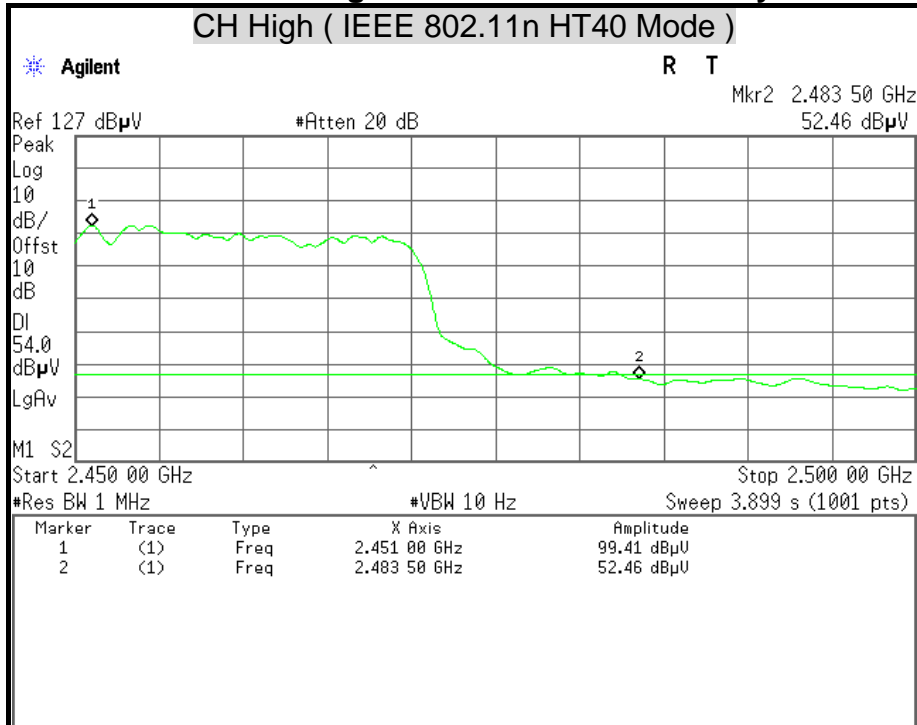
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

Polarity : Vertical





## 7.7 CONDUCTED EMISSION

### LIMITS

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

Frequency Range (MHz)	Conducted Limit (dB $\mu$ v)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5.00	56	46
5.00 - 30.0	60	50

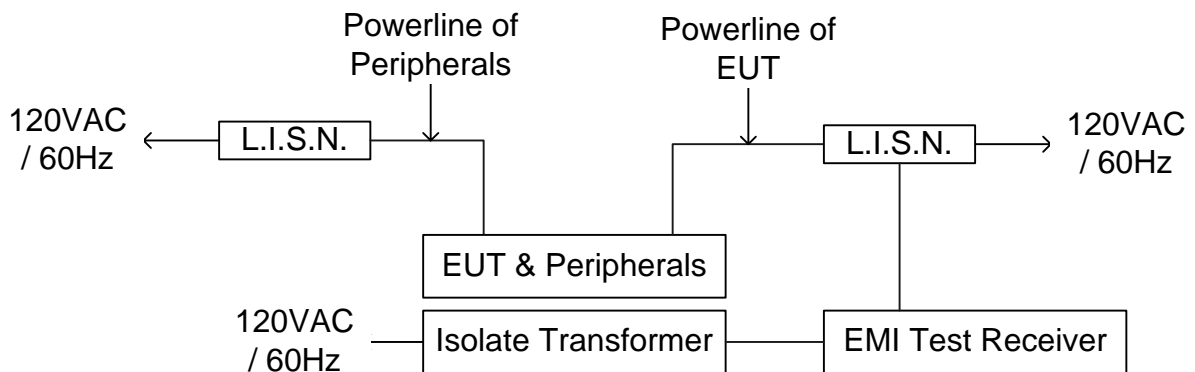
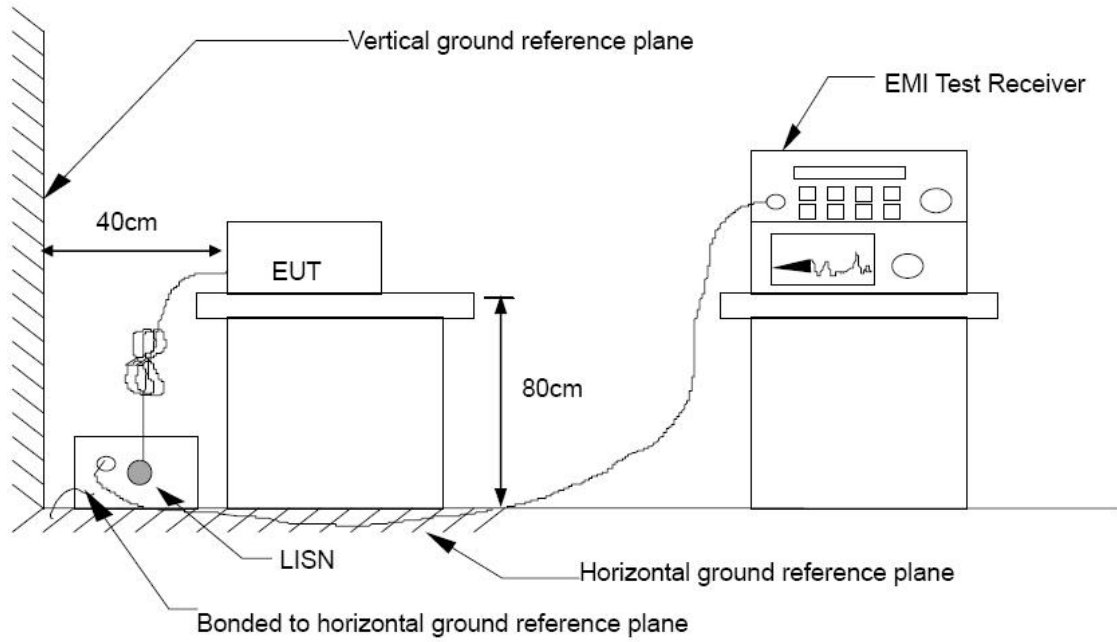
### TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
L.I.S.N	SCHWARZBECK	NSLK 8127	8127-465	08/08/2011
L.I.S.N	SCHWARZBECK	NSLK 8127	8127-473	03/14/2012
EMI Receiver	ROHDE & SCHWARZ	ESCS 30	835418/008	10/24/2011
Pulse Limit	ROHDE & SCHWARZ	ESH3-Z2	100117	09/17/2011

*Remark: Each piece of equipment is scheduled for calibration once a year.*



**TEST SETUP**





## **TEST PROCEDURE**

The basic test procedure was in accordance with ANSI C63.4:2003.

The test procedure is performed in a 4m x 3m x 2.4m (LxWxH) shielded room.

The EUT along with its peripherals were placed on a 1.0m (W) x 1.5m (L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.

The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.

The EUT was located so that the distance between the boundary of the EUT and the closest surface of the LISN is 0.8 m. Where a mains flexible cord was provided by the manufacturer shall be 1 m long, or if in excess of 1 m, the excess cable was folded back and forth as far as possible so as to form a bundle not exceeding 0.4 m in length.

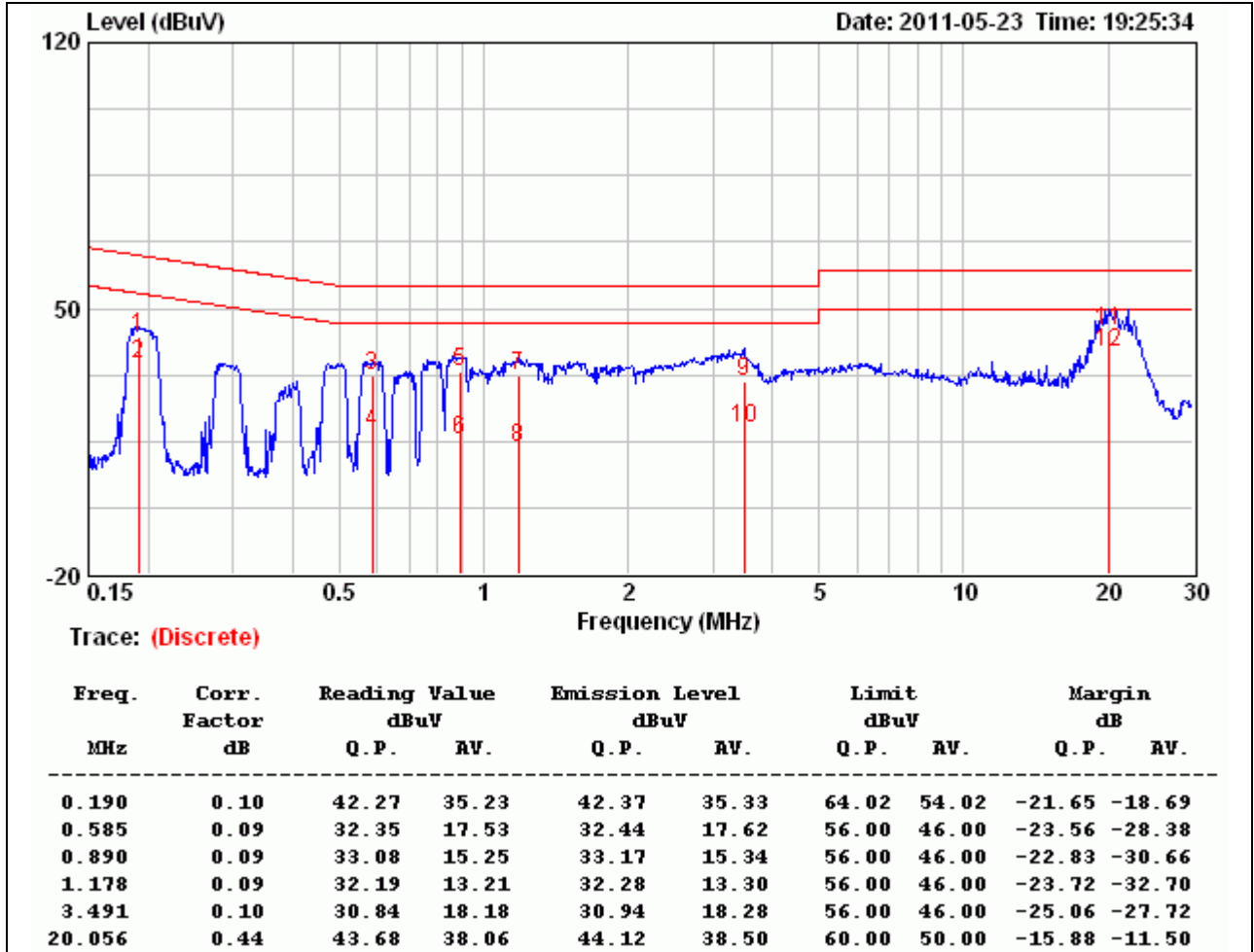




**TEST RESULTS**

<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Bell Huang
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/23
<b>Test Mode</b>	Normal Operating	<b>Temp. &amp; Humidity</b>	24°C, 65%

**LINE**



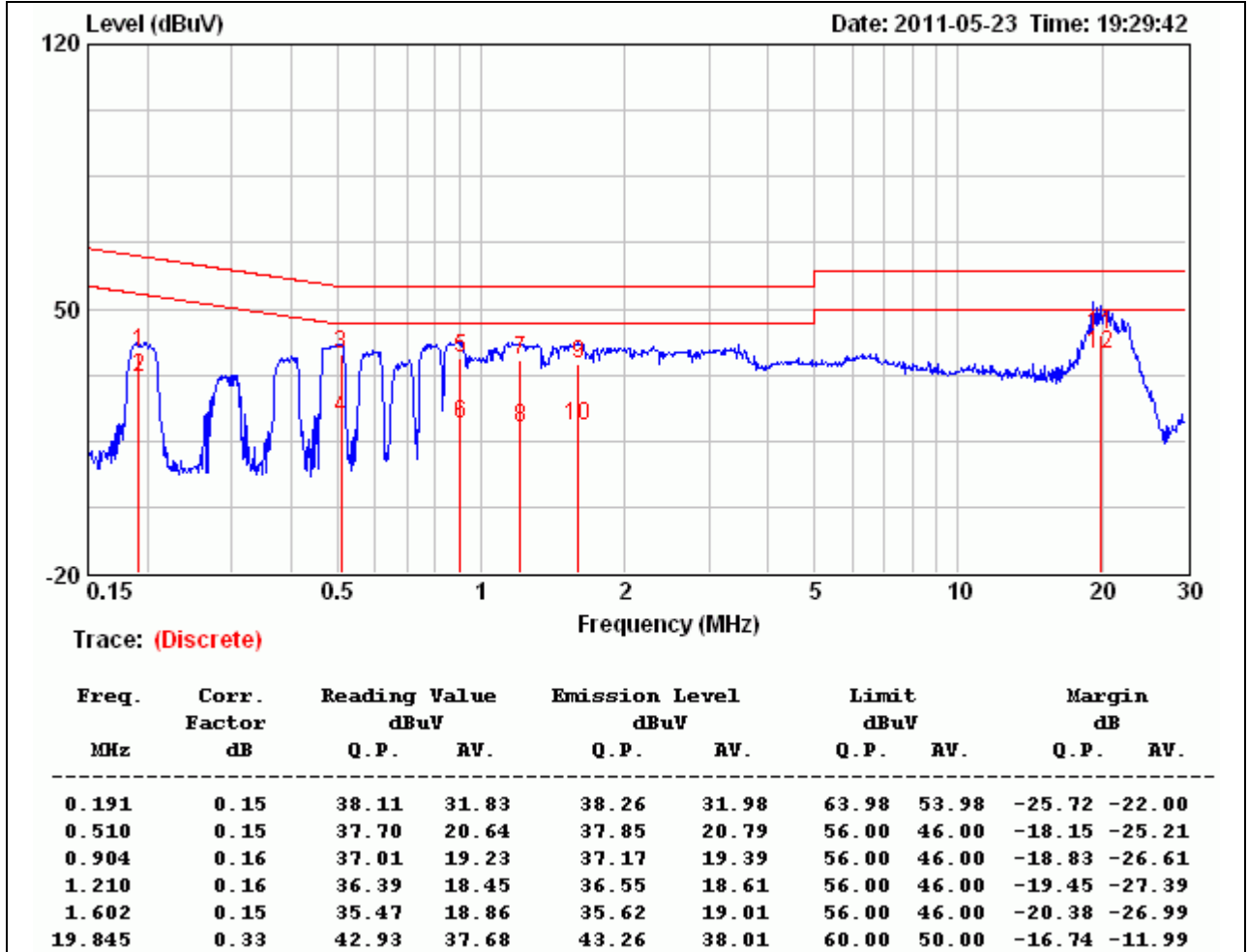
**Remark:**

1. Correction Factor = Insertion loss + Cable loss
2. Emission level = Reading Value + Correction factor
3. Margin value = Emission level – Limit value



<b>Product Name</b>	Wireless Cable Router	<b>Test By</b>	Bell Huang
<b>Test Model</b>	CDW-3023510519301	<b>Test Date</b>	2011/05/23
<b>Test Mode</b>	Normal Operating	<b>Temp. &amp; Humidity</b>	24°C, 65%

NEUTRAL



Remark:

1. Correction Factor = Insertion loss + Cable loss
2. Emission level = Reading Value + Correction factor
3. Margin value = Emission level – Limit value