

**FCC 47 CFR PART 15 SUBPART C AND ANSI C63.10:2009  
TEST REPORT**

**For**

**Computer**

**Model : TREK-572 ; TREK-572XXXXXXXXXXXXXXXXXX**  
(where "X" may be any alphanumeric character , "-" or blank)

**Trade Name : ADVANTECH**

**Issued for**

**Advantech Co. Ltd.**

**No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei 114, Taiwan,  
R.O.C.**

**Issued by**

**Compliance Certification Services Inc.  
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**Issued Date: March 16, 2015**



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## Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	03/16/2015	Initial Issue	All Page 136	Dola Hsieh

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# 1. TEST REPORT CERTIFICATION

**Applicant** : Advantech Co. Ltd.  
**Address** : No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District,  
 Taipei 114, Taiwan, R.O.C.  
**Equipment Under Test** : Computer  
**Model** : TREK-572 ; TREK-572XXXXXXXXXXXXXXXXXX  
 (where "X" may be any alphanumeric character , "-" or blank)  
**Trade Name** : ADVANTECH  
**Tested Date** : September 11, 2014 ~ March 16, 2015

APPLICABLE STANDARD	
Standard	Test Result
FCC Part 15 Subpart C AND ANSI C63.10:2009	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. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

**Approved by:**



Sb. Lu  
Sr. Engineer

**Reviewed by:**



Gundan Lin  
Sr. Engineer

## 2. EUT DESCRIPTION

<b>Product Name</b>	Computer
<b>Model Number</b>	TREK-572 ; TREK-572XXXXXXXXXXXXXXXXXX (where "X" may be any alphanumeric character , "-" or blank)
<b>Identify Number</b>	T140911L12-A
<b>Received Date</b>	September 11, 2014
<b>Frequency Range</b>	IEEE 802.11b/g, 802.11gn HT20 : 2412MHz ~ 2462MHz IEEE 802.11gn HT40 : 2422MHz ~ 2452MHz Bluetooth 4.0 : 2402MHz ~ 2480MHz
<b>Transmit Power</b>	IEEE 802.11b : 24.21 dBm (0.2636 W) IEEE 802.11g : 26.00 dBm (0.3981 W) IEEE 802.11gn HT20 : 25.98 dBm (0.3963 W) IEEE 802.11gn HT40 : 26.01 dBm (0.3990 W) Bluetooth 4.0 : 2.63 dBm (0.0018W)
<b>Channel Spacing</b>	IEEE 802.11b/g, 802.11gn HT20/HT40 : 5MHz Bluetooth 4.0: 2MHz
<b>Channel Number</b>	IEEE 802.11b/g, 802.11gn HT20 : 11 Channels IEEE 802.11gn HT40 : 7 Channels Bluetooth 4.0 : 40 Channels
<b>Transmit Data Rate</b>	IEEE 802.11b : up to 11 Mbps IEEE 802.11g : up to 54 Mbps IEEE 802.11gn (HT20,800ns GI) : up to 130.00 Mbps IEEE 802.11gn (HT20,400ns GI) : up to 144.40 Mbps IEEE 802.11gn (HT40,800ns GI) : up to 270.00 Mbps IEEE 802.11gn (HT40,400ns GI) : up to 300.00 Mbps Bluetooth 4.0 : 1Mbps
<b>Type of Modulation</b>	IEEE 802.11b : DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g : OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11gn HT20/40 : OFDM (64QAM, 16QAM, QPSK, BPSK) Bluetooth 4.0 : GFSK
<b>Antenna Type</b>	Puck Antenna × 2 , Antenna Gain : 6.89 dBi
<b>Power Rating</b>	9-32Vdc
<b>Test Voltage</b>	120Vac, 60Hz
<b>DC Power Cable Type</b>	Non-shielded cable, 1.5m × 1 (Detachable)
<b>I/O Port</b>	EUT : RJ-45 Port × 1, USB Port × 1, Power Port × 1, VGA Port × 1, Audio Port × 2, Display Port × 1 Panel : Display Port × 1, USB Port × 1
<b>Signal Cable</b>	Shielded signal cable, 2m × 1 (Detachable), with two ferrite core

**The difference of the series model**

Model Number	Difference
TREK-572	1. For marketing purpose only. 2. where "X" may be any alphanumeric character , "-" or blank
TREK-572XXXXXXXXXXXXXXXXXXXX	

**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. The model TREK-572 was considered the main model for testing.
- 4 This submittal(s) (test report) is intended for FCC ID: M82-TREK572LTE filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.

### 3. DESCRIPTION OF TEST MODES

The EUT is an 802.11n transceiver in Computer form factor.

For IEEE 802.11b/g, 802.11gn HT20/HT40 mode (2TX/2RX) :

Chain 0 & Chain 1 transmit/receive.

For Bluetooth : Chain 0 transmit/receive.

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

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

No.	Pre-Test Mode
1	TX Mode

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

Final Test Mode		
Emission	Radiated Emission	TX Mode
	Conducted Emission	N/A

**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, 802.11gn 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 802.11gn HT20 mode : 6.5Mbps data rate (worst case) were chosen for full testing.

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

**Bluetooth 4.0 mode**

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	2402
Middle	2440
High	2480

**Remark :** The field strength of spurious emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X, Y axis). The worst emission was found in lie-down position(X axis) and the worst case was recorded.



## 4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10:2009 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 C63.10:2009 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>

**Remark:** FCC Designation Number TW1027.

### 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_B) / Radiated Emission, 30 to 1000 MHz	+/- 3.97
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 1 to 18GHz	+/- 3.58
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 18 to 26 GHz	+/- 3.59
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 26 to 40 GHz	+/- 3.81
Conducted Emission (Mains Terminals), 9kHz to 30MHz	+/- 2.48

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, 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.
1	Notebook PC	HP	ProBook 4421s	CNF03242PJ
2	DC Power Supply	Rohde & Schwarz	NGSM 32/10	100232

No.	Signal Cable Description
1	Non-shielded RJ-45 cable, 12m × 1

## **SETUP DIAGRAM FOR TESTS**

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

## **EUT OPERATING CONDITION**

### **WiFi**

1. EUT & peripherals setup diagram is shown in appendix setup photos.
2. Run Test software. "artqui"

#### **(1) TX Mode:**

Tx Data Rate: 1Mbps Bandwidth 20 (IEEE 802.11b mode)  
6Mbps Bandwidth 20 (IEEE 802.11g mode)  
6.5Mbps Bandwidth 20 (IEEE 802.11gn HT20 mode)  
13.5Mbps Bandwidth 40 (IEEE 802.11gn HT40 mode)

#### Power control

IEEE 802.11b Channel Low (2412MHz) Chain0/Chain1 Power set 20.5  
IEEE 802.11b Channel Mid (2437MHz) Chain0/Chain1 Power set 21  
IEEE 802.11b Channel High (2462MHz) Chain0/Chain1 Power set 20  
IEEE 802.11g Channel Low (2412MHz) Chain0/Chain1 Power set 16.5  
IEEE 802.11g Channel Mid (2437MHz) Chain0/Chain1 Power set 18  
IEEE 802.11g Channel High (2462MHz) Chain0/Chain1 Power set 16  
IEEE 802.11gn HT20 Channel Low (2412MHz) Chain0/Chain1 Power set 16.5  
IEEE 802.11gn HT20 Channel Mid (2437MHz) Chain0/Chain1 Power set 18  
IEEE 802.11gn HT20 Channel High (2462MHz) Chain0/Chain1 Power set 15.5  
IEEE 802.11gn HT40 Channel Low (2422MHz) Chain0/Chain1 Power set 14.5  
IEEE 802.11gn HT40 Channel Mid (2437MHz) Chain0/Chain1 Power set 16.5  
IEEE 802.11gn HT40 Channel High (2452MHz) Chain0/Chain1 Power set 15

3. All of the functions are under run.
4. Start test.

### **Bluetooth 4.0**

1. EUT & peripherals setup diagram is shown in appendix setup photos.
2. Run "BtUSBTool" Software to test
3. PACKET TRANSMIT (TX Mode)  
Freq: 2402, 2440, 2480  
Power Setting : Default
4. All of the functions are under run.
5. Start test

## 7. FCC PART 15.247 REQUIREMENTS

### 7.1 6dB BANDWIDTH

#### LIMITS

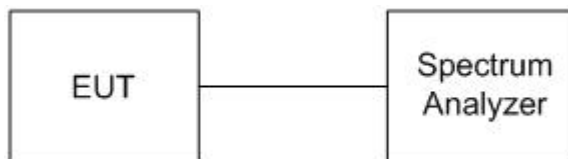
§ 15.247(a) (2) For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz.

#### TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY43360132	06/10/2015

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

#### TEST SETUP



#### TEST PROCEDURE

1. The transmitter output was connected to a spectrum analyzer.
2. Set RBW = 100 kHz.
3. Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

**TEST RESULTS**

**IEEE 802.11b Mode (Two TX)**

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1		
Low	2412	10.0750	10.0700	500	PASS
Middle	2437	10.0500	10.0250	500	PASS
High	2462	10.0500	10.0600	500	PASS

**IEEE 802.11g Mode (Two TX)**

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1		
Low	2412	16.3450	16.3450	500	PASS
Middle	2437	16.3350	16.4550	500	PASS
High	2462	16.3650	16.3450	500	PASS

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

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1		
Low	2412	17.5600	17.5650	500	PASS
Middle	2437	17.5550	17.5350	500	PASS
High	2462	17.3250	17.5450	500	PASS

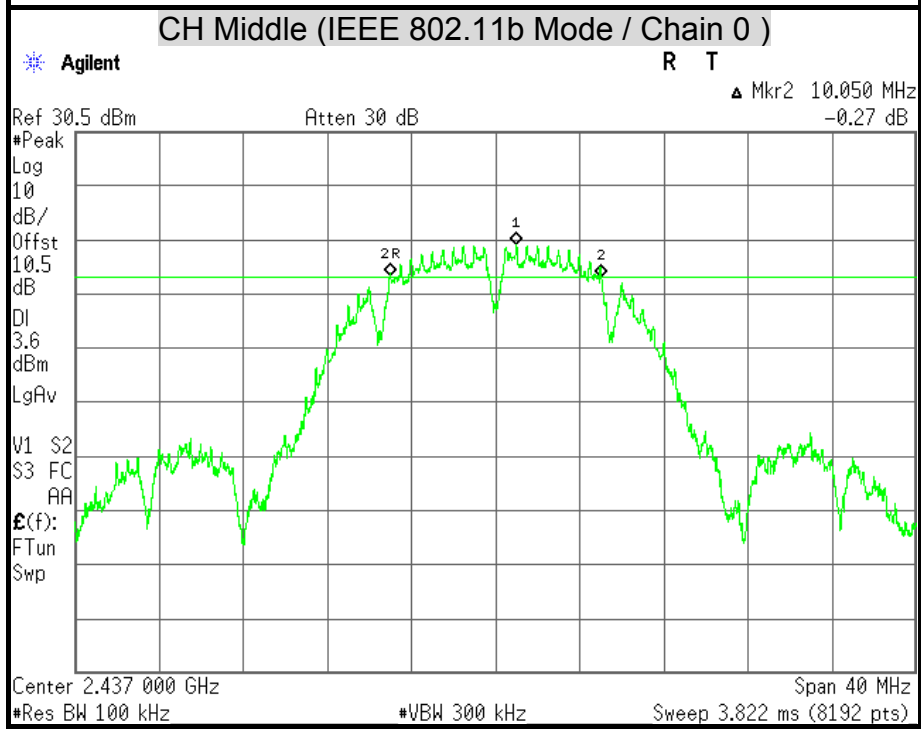
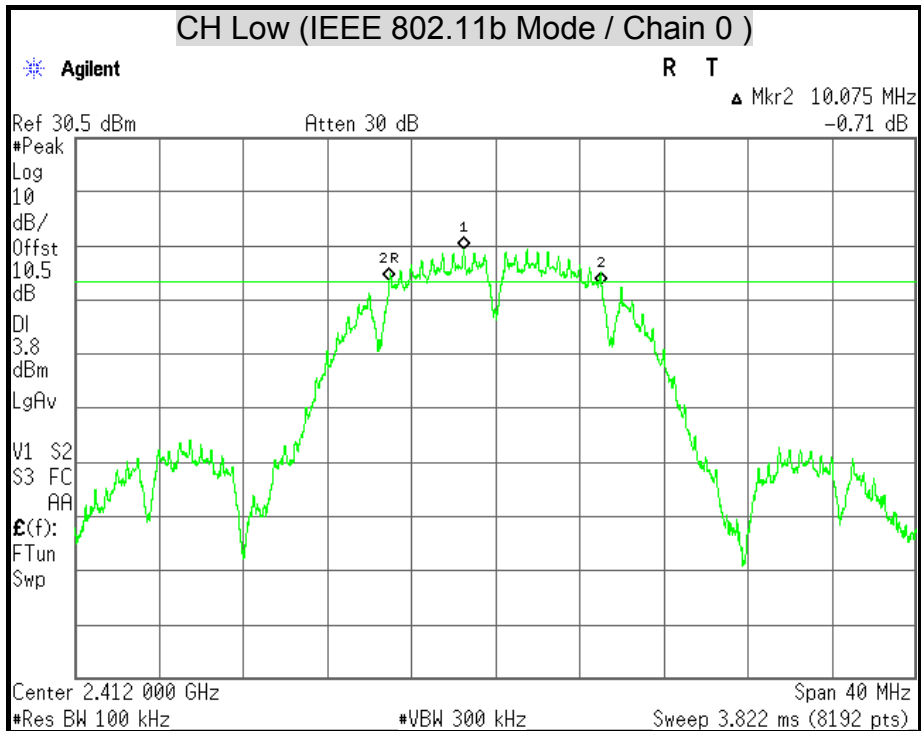
**IEEE 802.11gn HT40 Mode (Two TX)**

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1		
Low	2422	36.3300	36.3400	500	PASS
Middle	2437	36.0650	36.3500	500	PASS
High	2452	35.9850	36.3700	500	PASS

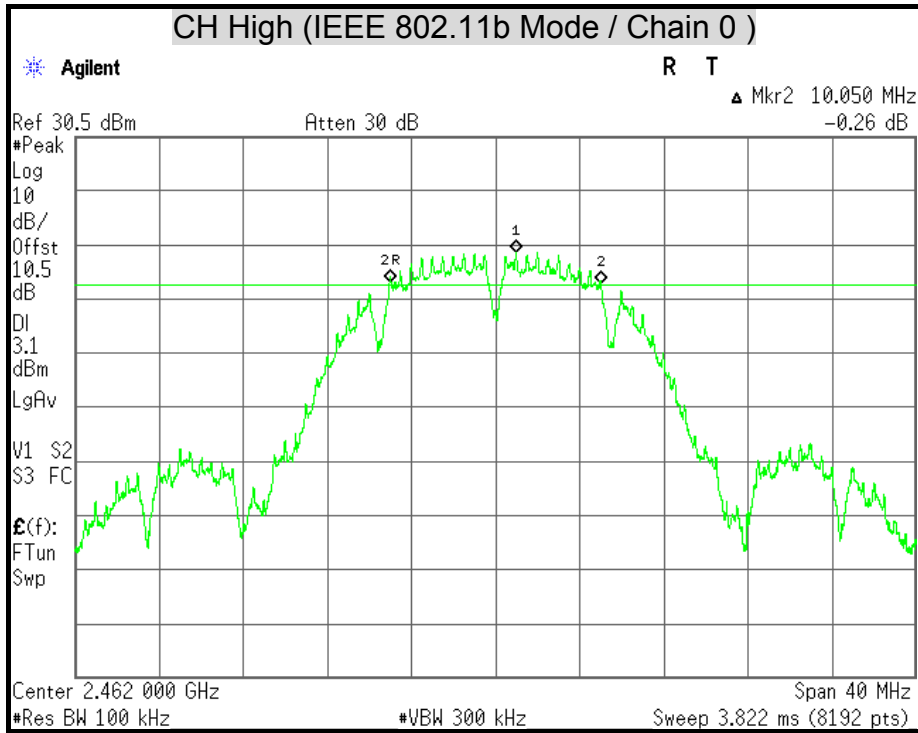
**Bluetooth 4.0 Mode**

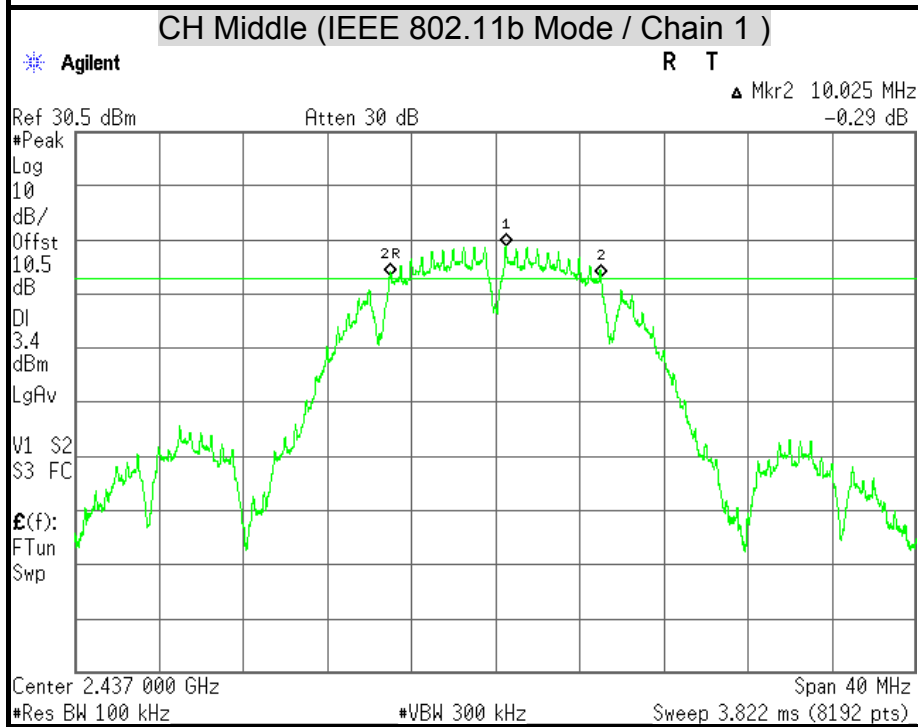
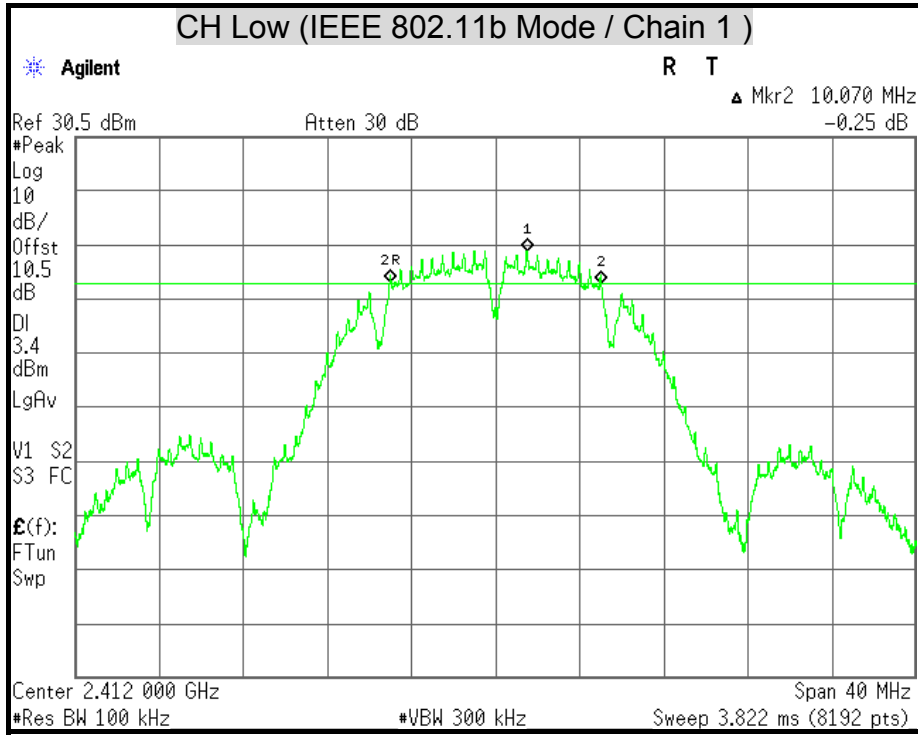
<b>Channel</b>	<b>Channel Frequency (MHz)</b>	<b>6dB Bandwidth (kHz)</b>	<b>Minimum Limit (kHz)</b>	<b>Pass / Fail</b>
Low	2402	664.2	500	PASS
Middle	2440	669.3	500	PASS
High	2480	669.3	500	PASS

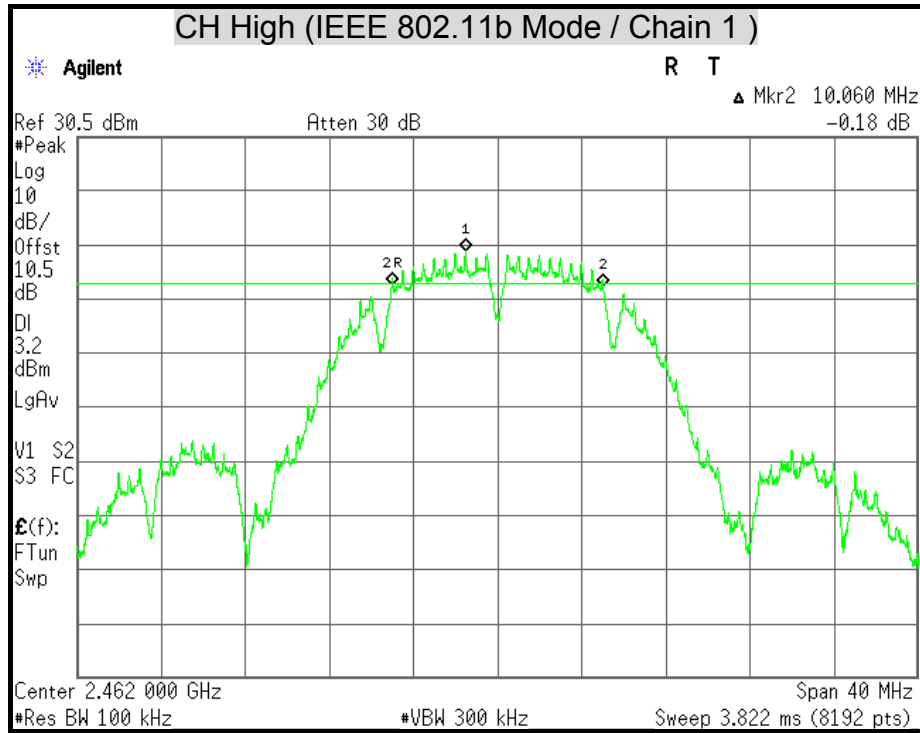
**6dB BANDWIDTH**

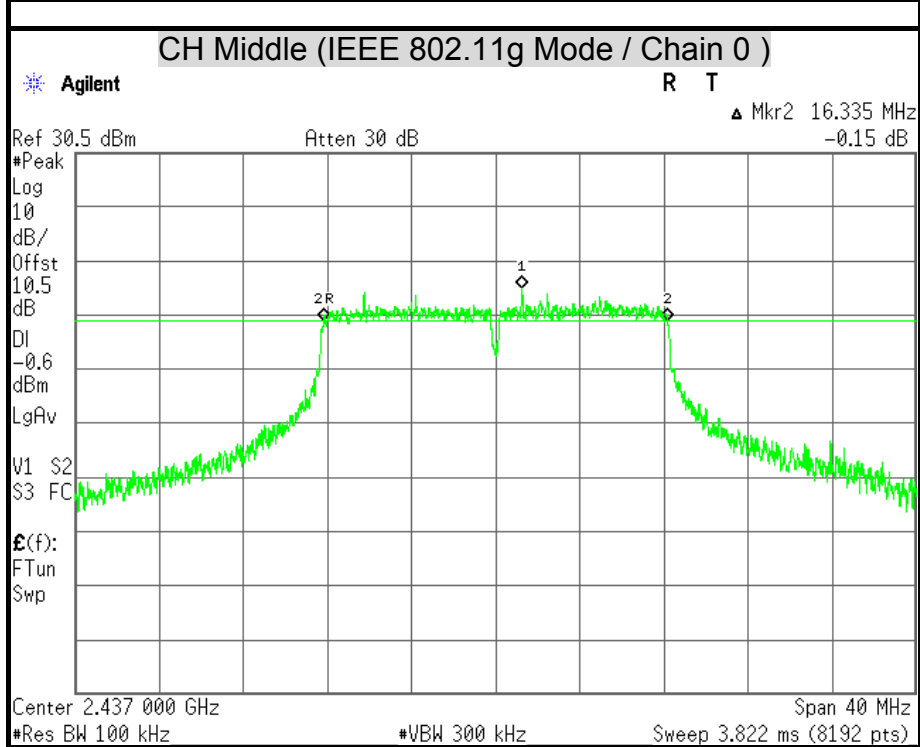
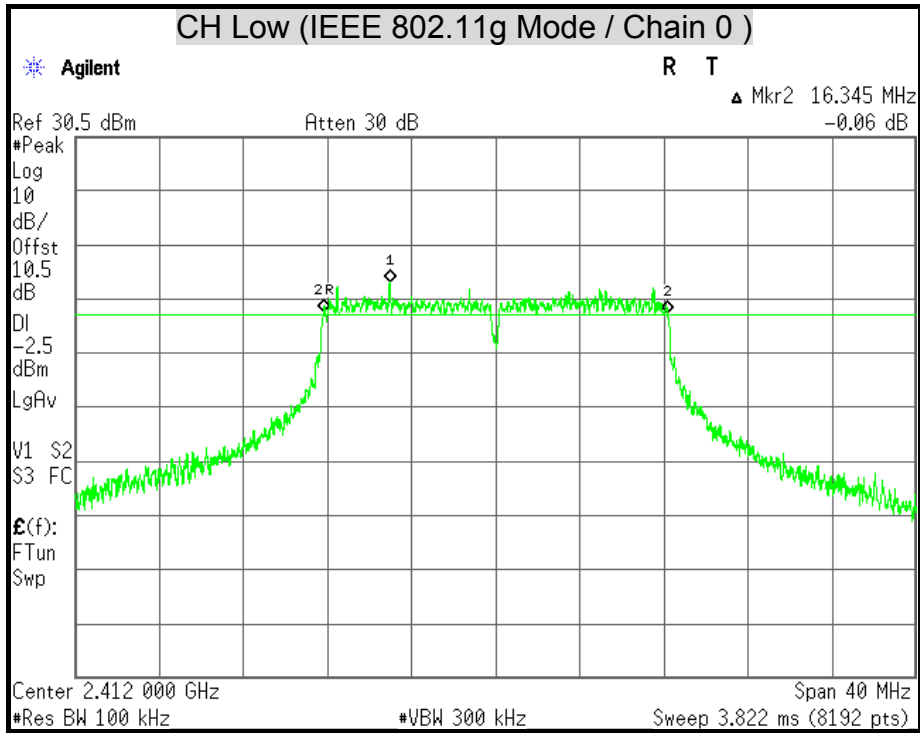


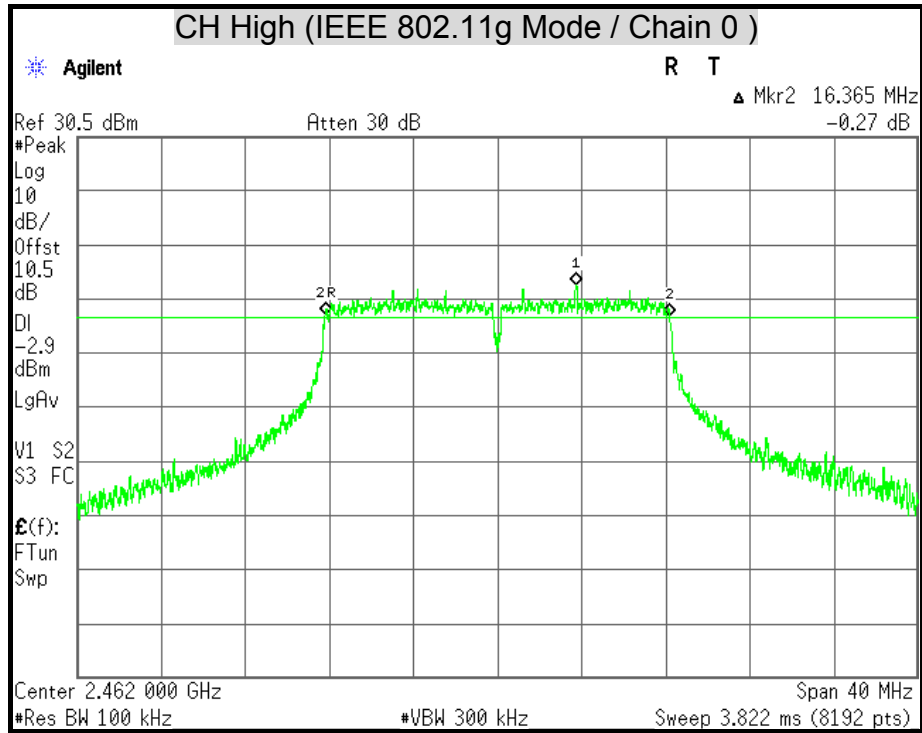


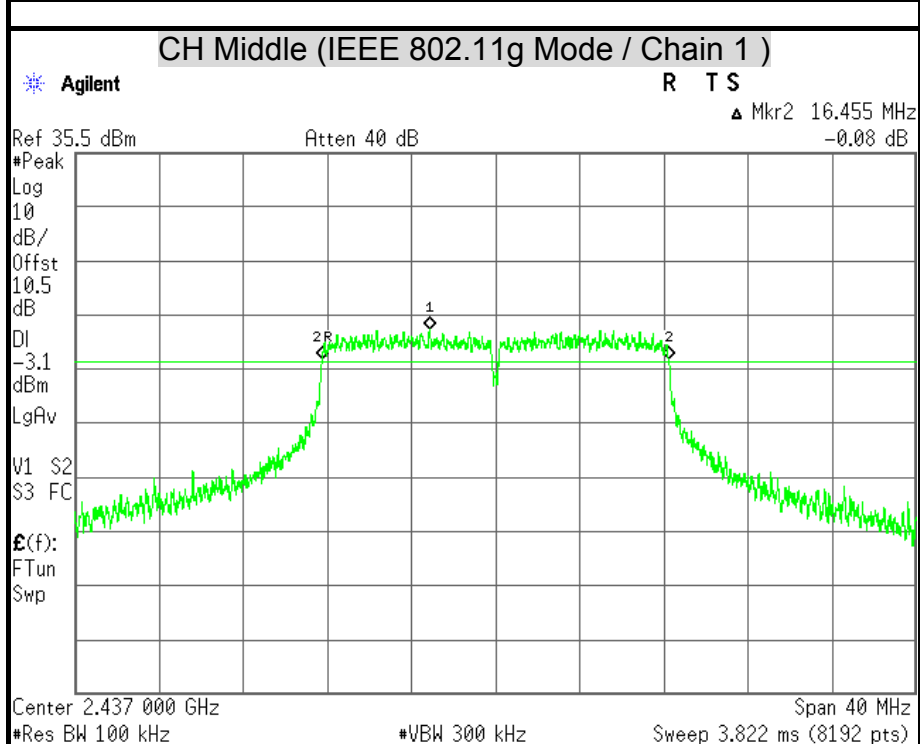
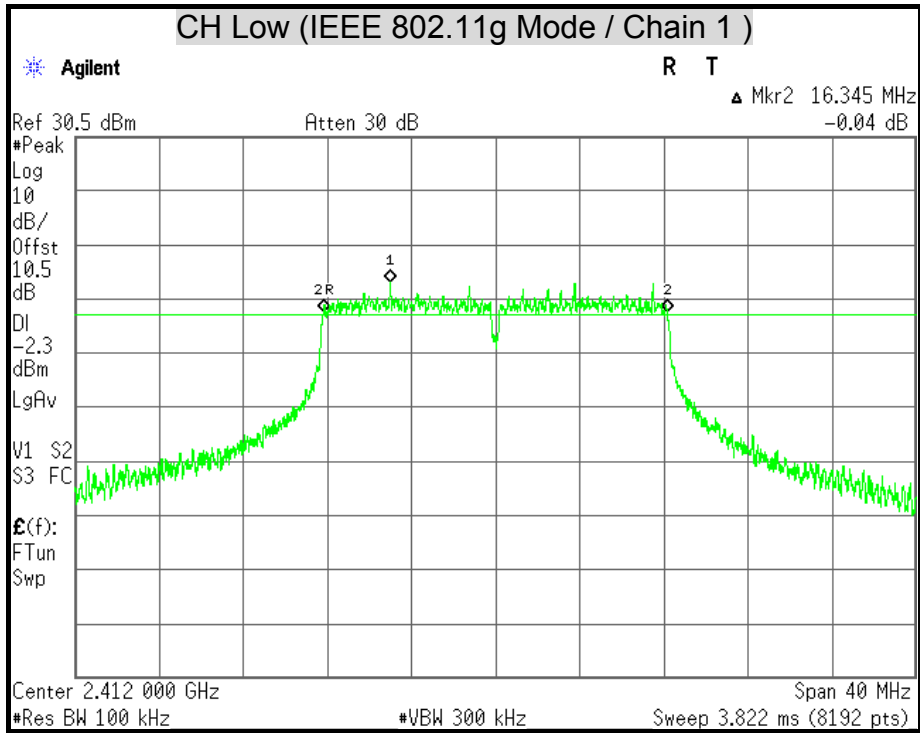


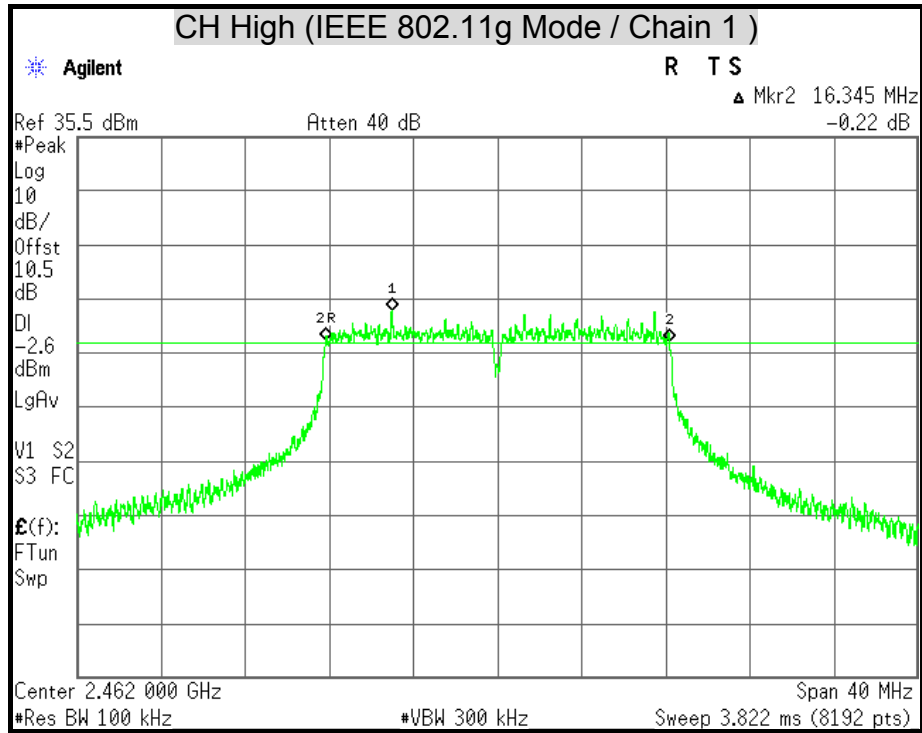


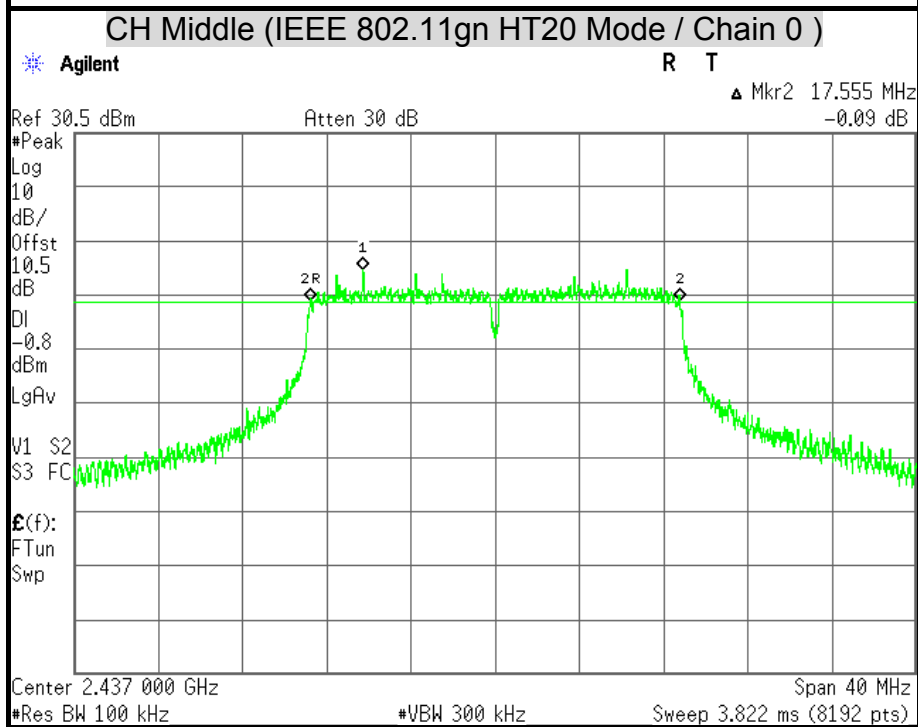
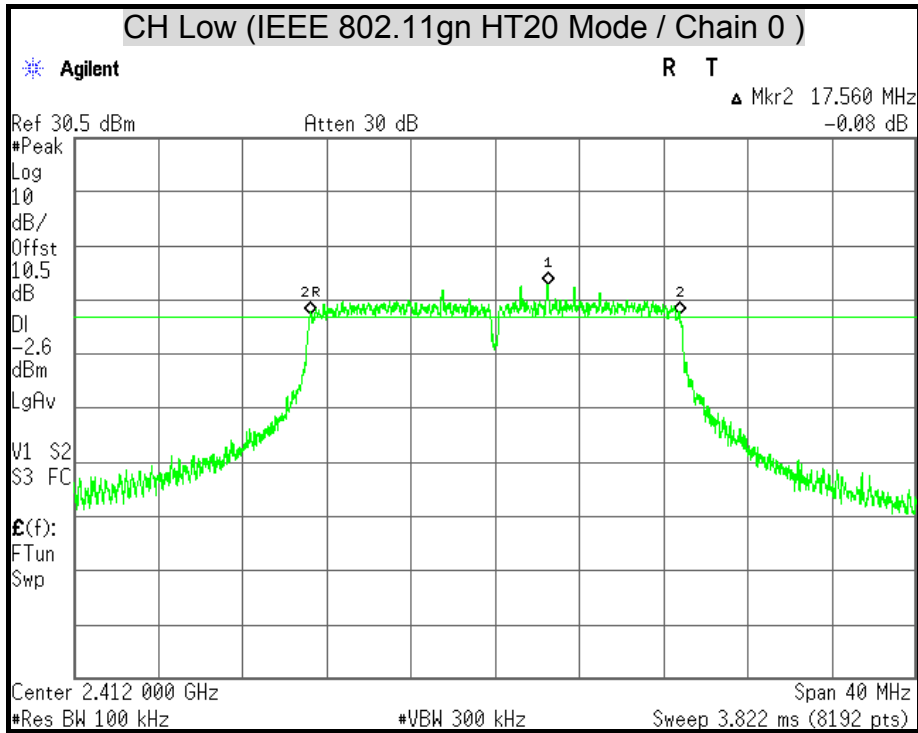




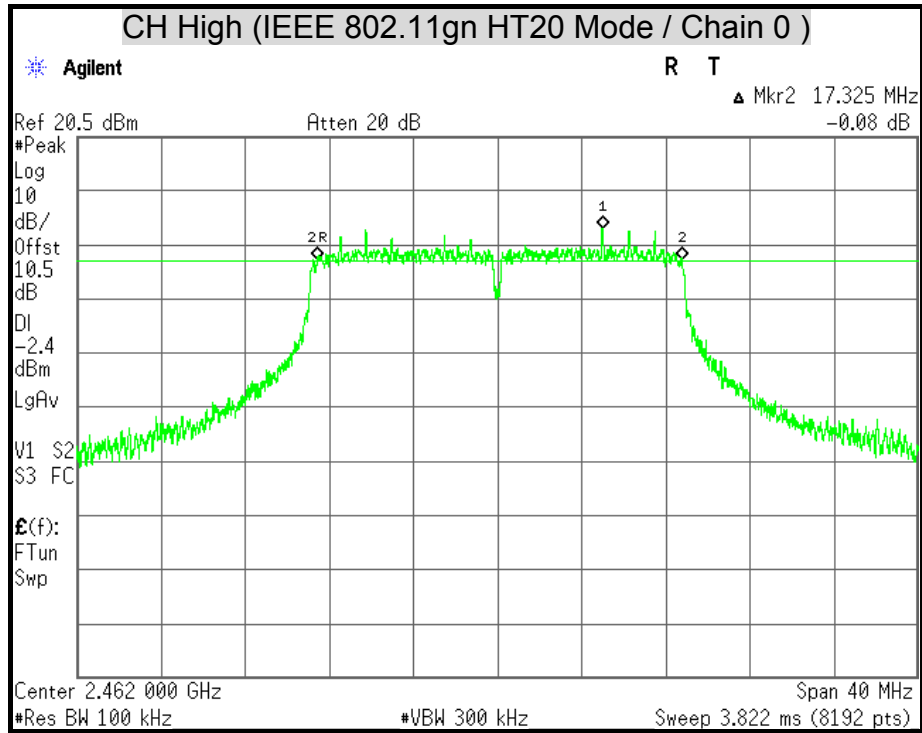


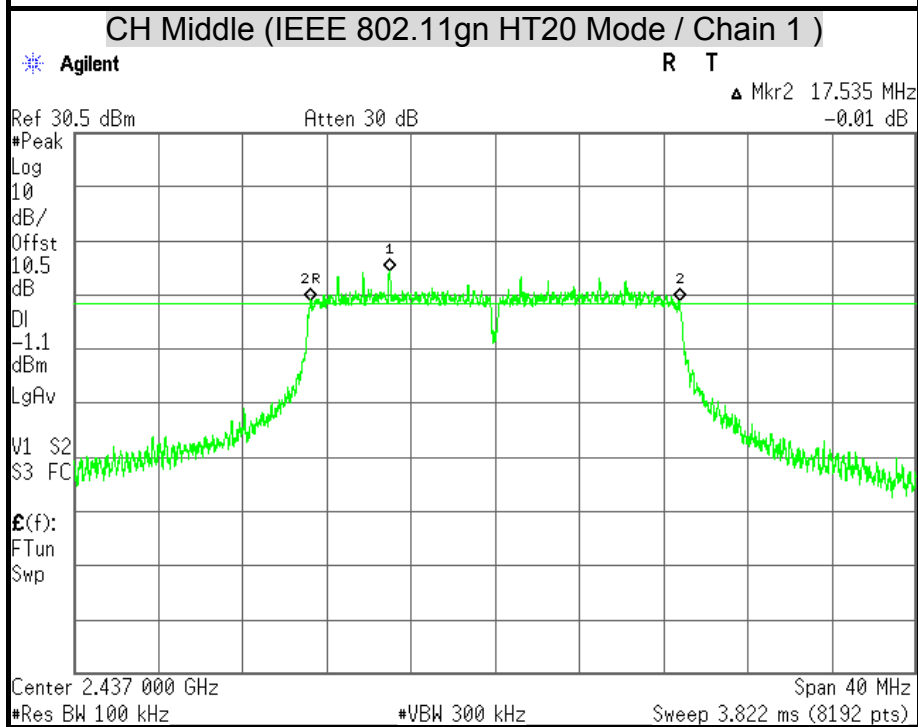
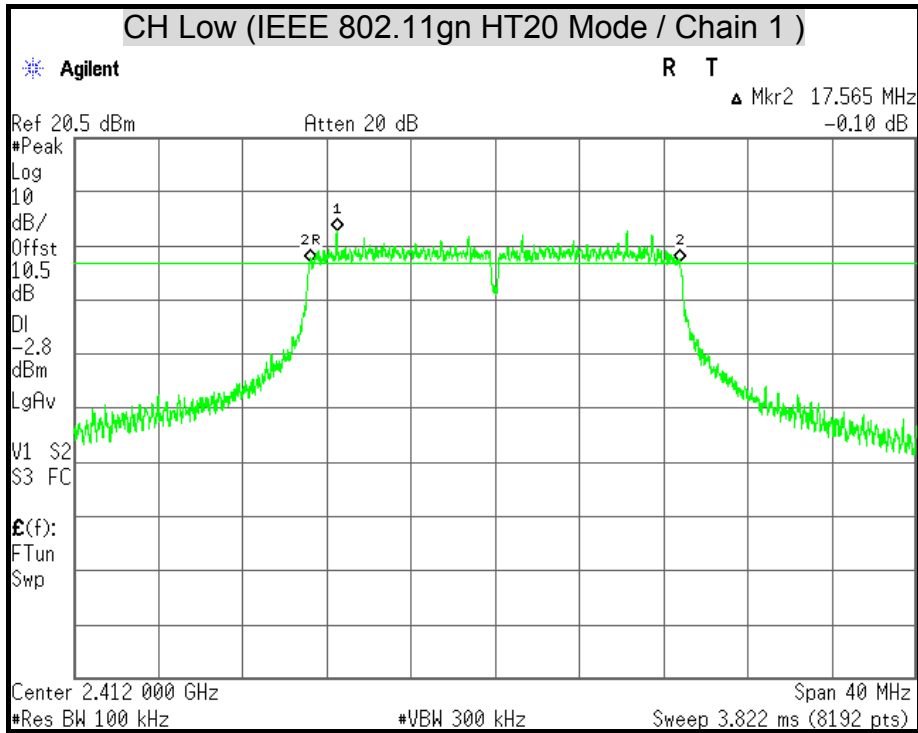


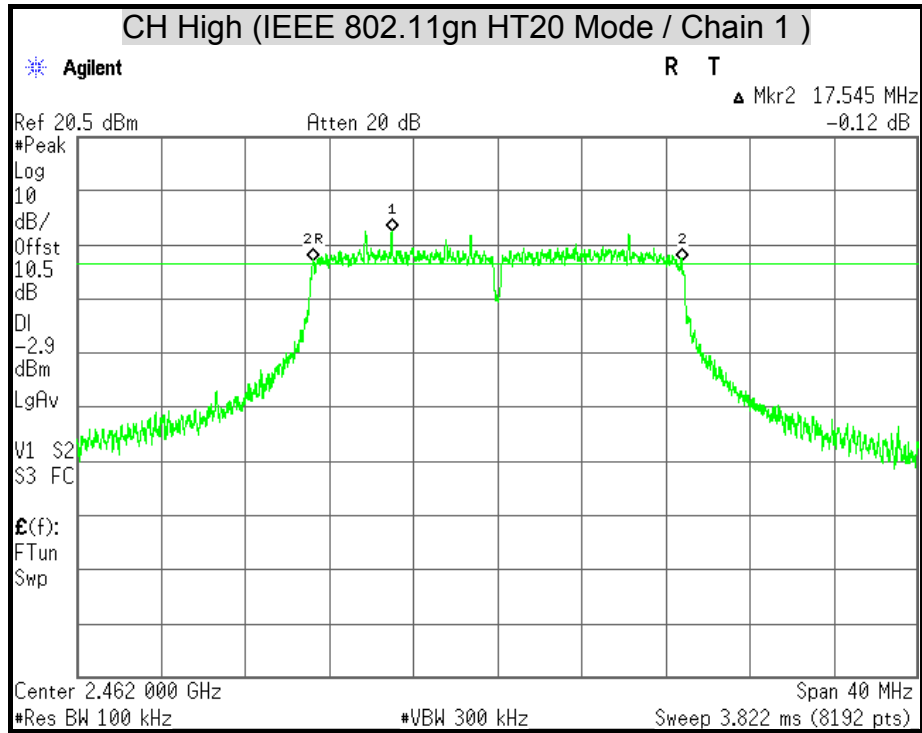


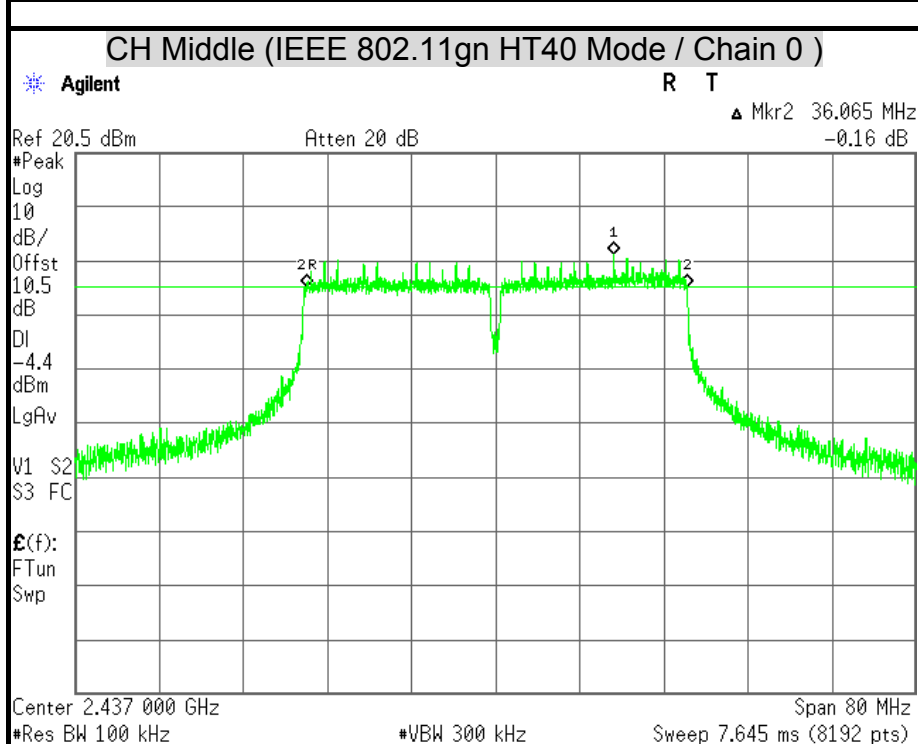
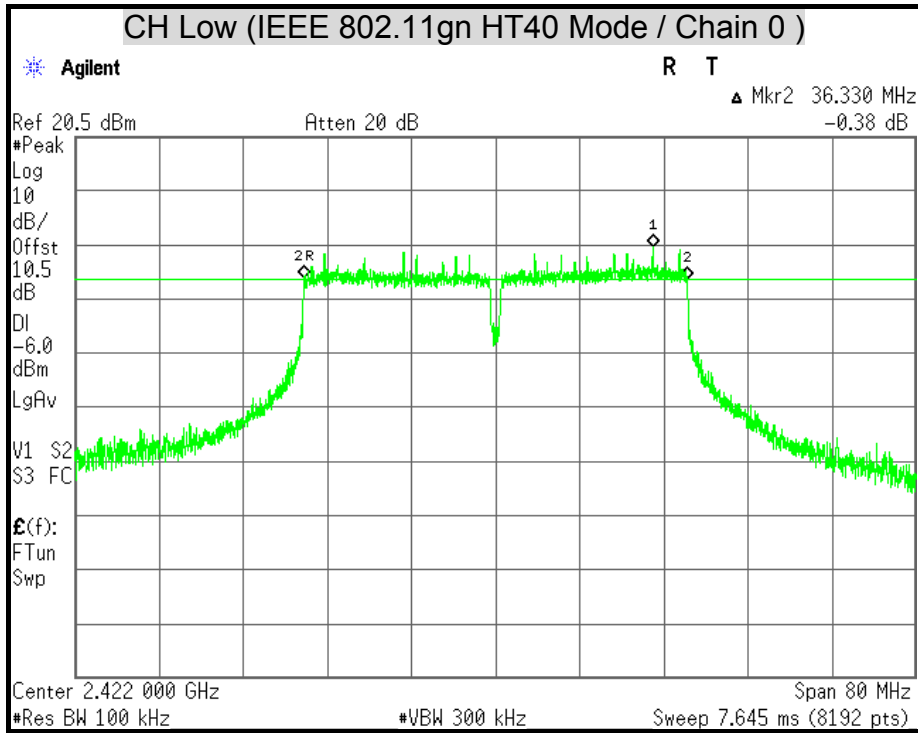


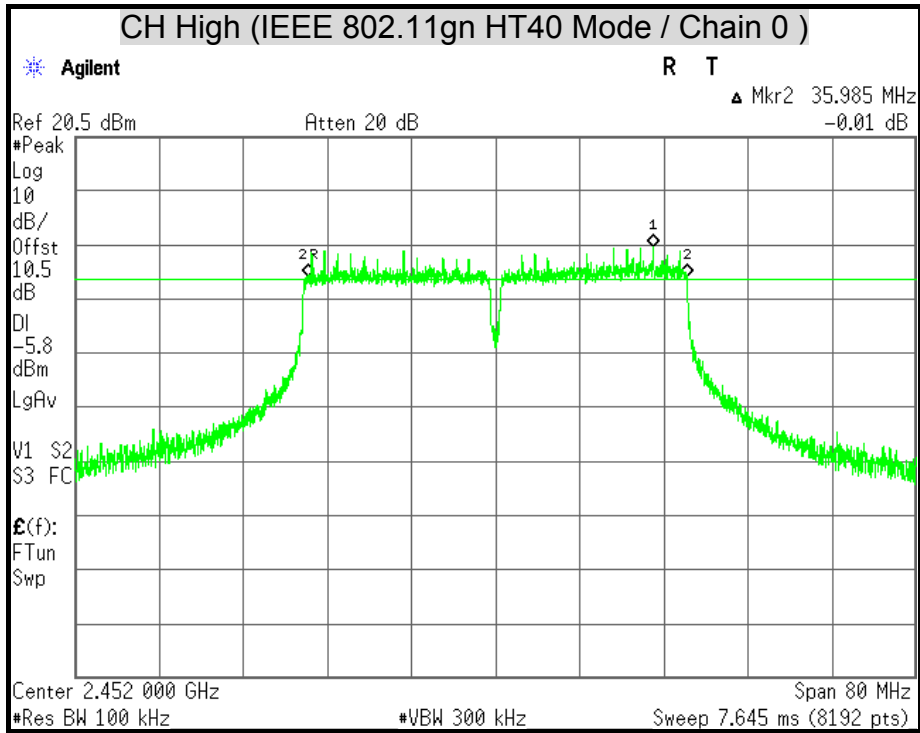


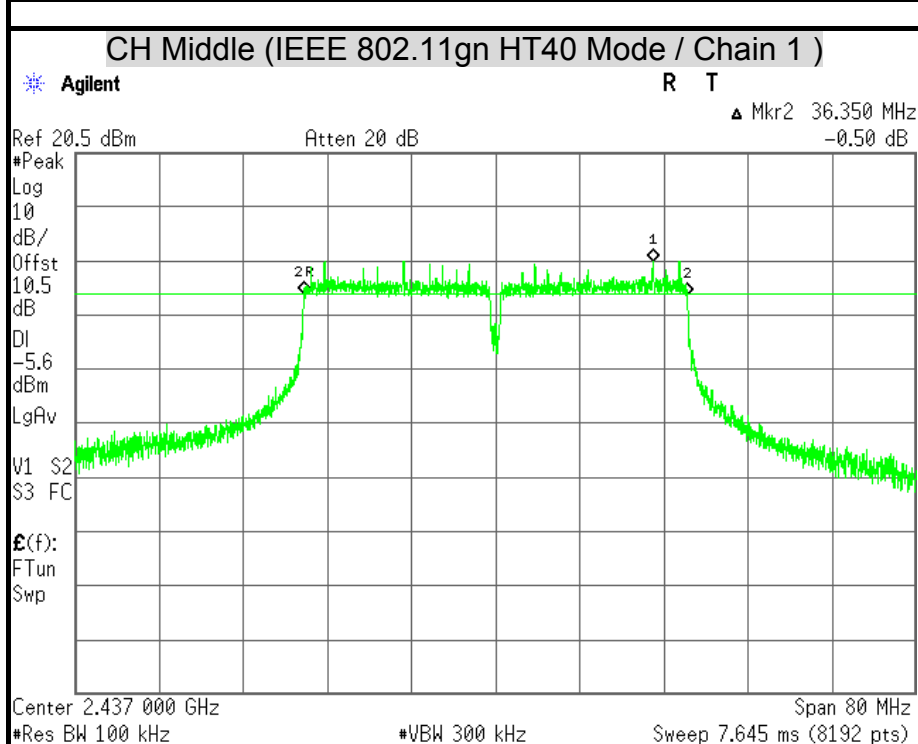
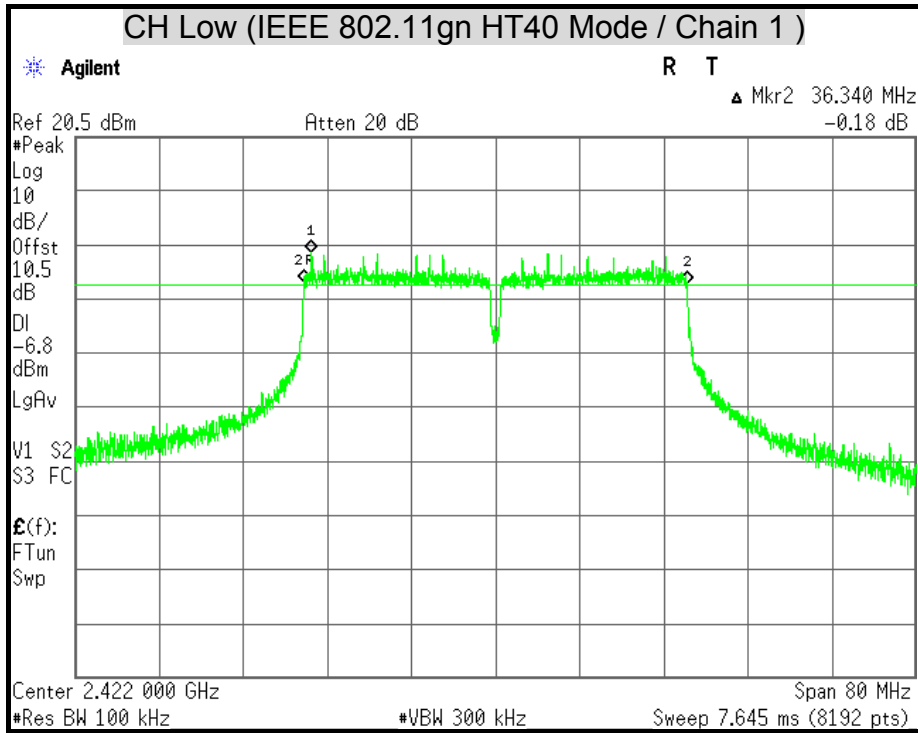


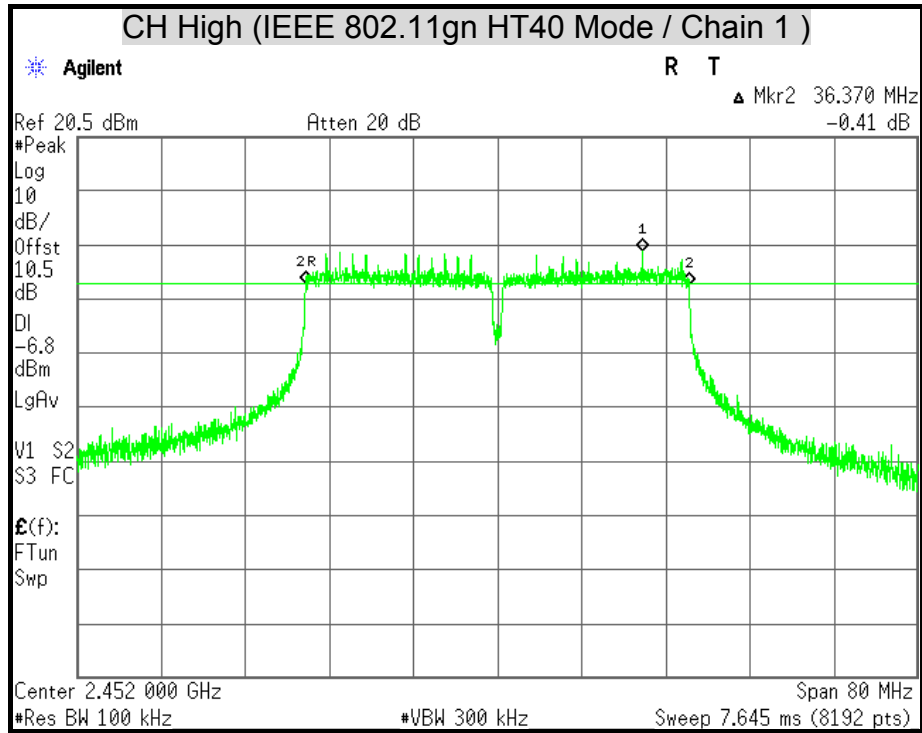


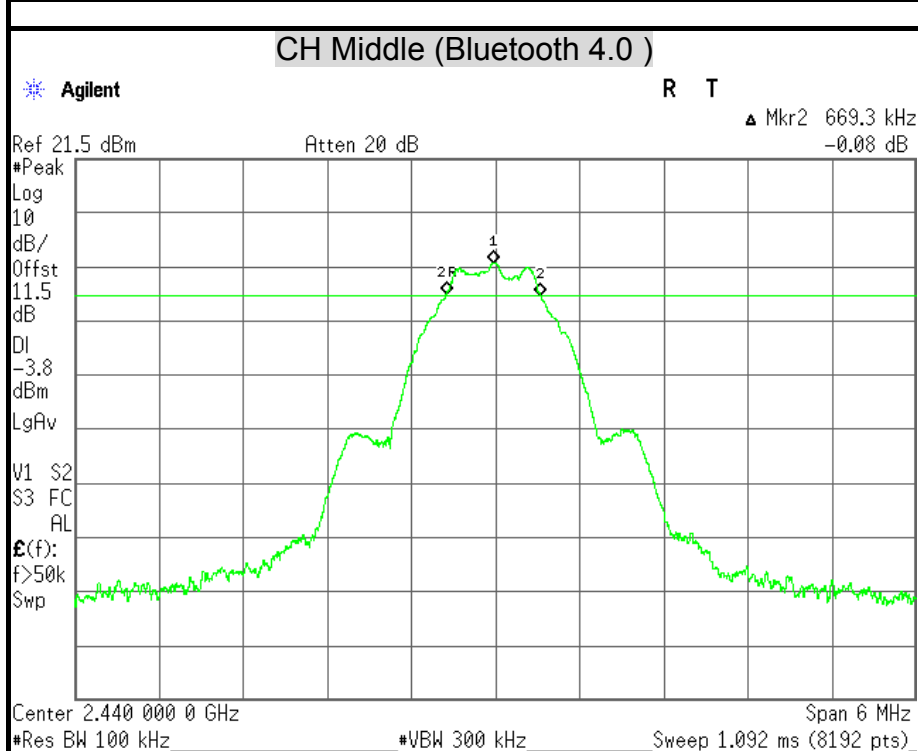
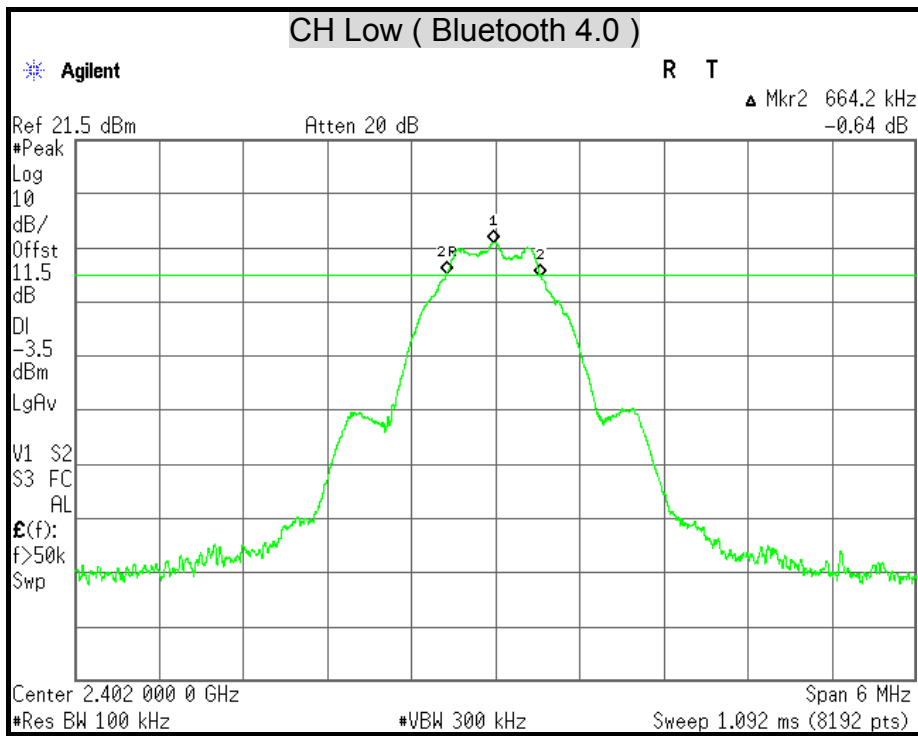




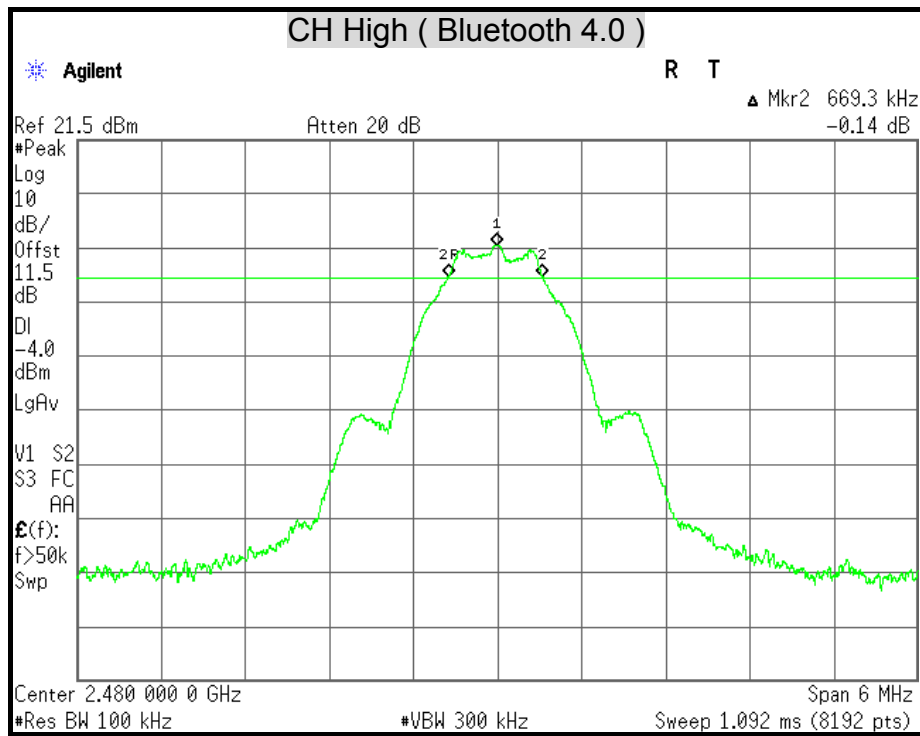












## 7.2 MAXIMUM PEAK OUTPUT POWER

### 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.

§ KDB 662911 : For power measurements on IEEE 802.11 devices

Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \leq 4$  ;

Array Gain = 0 dB (i.e., no array gain) for channel widths  $\geq 40$  MHz for any  $N_{ANT}$  ;

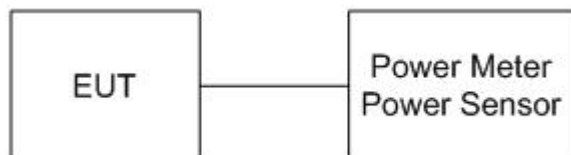
Array Gain =  $5 \log(N_{ANT}/N_{SS})$  dB or 3 dB, whichever is less for 20-MHz channel widths with  $N_{ANT} \geq 5$ .

### TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Power Meter	Anritsu	ML2495A	1149001	12/11/2015
Power Sensor	Anritsu	MA2411B	1126148	12/11/2015

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

### TEST SETUP



### TEST PROCEDURE

The transmitter output is connected to the power meter. The power meter is set to the peak power detection.

**TEST RESULTS**

**IEEE 802.11b 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	21.49	20.88	24.21	0.2636	29.11	0.8147	PASS
Middle	2437	21.21	21.06	24.15	0.2600	29.11	0.8147	PASS
High	2462	20.62	20.69	23.67	0.2328	29.11	0.8147	PASS

**Remark:**

1. At final test to get the worst-case emission at 1Mbps.
2. The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.
3. Array gain = 0 dB for  $N_{ANT} \leq 4$ , power limit do not reduce.
4. The Directional gain =  $G_{ANT} + \text{Array Gain} = 6.89\text{dBi}$  which is more than 6dBi, the limit should be 0.8147W.
5. Total peak power = Chain 0 + Chain 1.

**IEEE 802.11g 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	22.79	22.74	25.78	0.3784	29.11	0.8147	PASS
Middle	2437	23.11	22.87	26.00	0.3981	29.11	0.8147	PASS
High	2462	22.68	22.78	25.74	0.3750	29.11	0.8147	PASS

**Remark:**

1. At final test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.
3. Array gain = 0 dB for  $N_{ANT} \leq 4$ , power limit do not reduce.
4. The Directional gain =  $G_{ANT} + \text{Array Gain} = 6.89\text{dBi}$  which is more than 6dBi, the limit should be 0.8147W.
5. Total peak power = Chain 0 + Chain 1.

**IEEE 802.11gn 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	22.86	22.97	25.93	0.3917	29.11	0.8147	PASS
Middle	2437	23.07	22.87	25.98	0.3963	29.11	0.8147	PASS
High	2462	22.64	22.71	25.69	0.3707	29.11	0.8147	PASS

**Remark:**

1. At final test to get the worst-case emission at 6.5Mbps.
2. The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.
3. Array gain = 0 dB for  $N_{ANT} \leq 4$ , power limit do not reduce.
4. The Directional gain =  $G_{ANT} + \text{Array Gain} = 6.89\text{dBi}$  which is more than 6dBi, the limit should be 0.8147W.
5. Total peak power = Chain 0 + Chain 1.

**IEEE 802.11gn 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	22.47	22.24	25.37	0.3443	29.11	0.8147	PASS
Middle	2437	23.18	22.81	26.01	0.3990	29.11	0.8147	PASS
High	2452	22.48	22.06	25.29	0.3381	29.11	0.8147	PASS

**Remark:**

1. At final test to get the worst-case emission at 13.5Mbps.
2. The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.
3. Array gain = 0 dB for  $N_{ANT} \leq 4$ , power limit do not reduce.
4. The Directional gain =  $G_{ANT} + \text{Array Gain} = 6.89\text{dBi}$  which is more than 6dBi, the limit should be 0.8147W.
5. Total peak power = Chain 0 + Chain 1.

**Bluetooth 4.0 Mode**

Channel	Channel Frequency (MHz)	Peak Power		Peak Power Limit		Pass / Fail
		(dBm)	(W)	(dBm)	(W)	
Low	2402	2.63	0.0018	29.11	0.8147	PASS
Middle	2440	2.47	0.0018	29.11	0.8147	PASS
High	2480	2.46	0.0018	29.11	0.8147	PASS

**Remark:** 1. The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.  
 2. The maximum antenna gain 6.89dBi which is more than 6dBi, the limit should be 0.8147W.

### 7.3 AVERAGE POWER

#### LIMITS

None; for reporting purposes only.

#### TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Power Meter	ANRITSU	ML2495A	1149001	12/11/2015
Power Sensor	ANRITSU	MA2411B	1126148	12/11/2015

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

#### TEST SETUP



#### TEST PROCEDURE

The transmitter output is connected to the power meter. The power meter is set to the average power detection.

**TEST RESULTS**

**IEEE 802.11b Mode (Two TX)**

Channel	Channel Frequency (MHz)	Average Power (dBm)	
		Chain 0	Chain 1
Low	2412	19.41	19.67
Middle	2437	20.06	19.74
High	2462	19.37	19.14

**Remark:**

1. At final test to get the worst-case emission at 1Mbps.
2. The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

**IEEE 802.11g Mode (Two TX)**

Channel	Channel Frequency (MHz)	Average Power (dBm)	
		Chain 0	Chain 1
Low	2412	15.63	15.69
Middle	2437	17.34	16.71
High	2462	15.56	15.48

**Remark:**

1. At final test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

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

Channel	Channel Frequency (MHz)	Average Power (dBm)	
		Chain 0	Chain 1
Low	2412	15.67	15.62
Middle	2437	17.07	16.66
High	2462	15.35	15.03

**Remark:**

1. At final test to get the worst-case emission at 6.5Mbps.
2. The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

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

Channel	Channel Frequency (MHz)	Average Power (dBm)	
		Chain 0	Chain 1
Low	2422	14.47	14.23
Middle	2437	16.07	15.47
High	2452	14.92	14.67

**Remark:**

1. At final test to get the worst-case emission at 13.5Mbps.
2. The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

**Bluetooth 4.0 Mode**

Channel	Channel Frequency (MHz)	Average Power (dBm)
Low	2402	2.39
Middle	2440	2.22
High	2480	2.21

**Remark:** The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter 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	E4446A	MY43360132	06/10/2015

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

### TEST SETUP



### TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set analyzer center frequency to DTS channel center frequency.
3. Set the span to 1.5 times the DTS channel bandwidth.
4. Set the RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
5. Set the VBW  $\geq 3 \times \text{RBW}$ .
6. Detector = peak.
7. Sweep time = auto couple.
8. Trace mode = max hold.
9. Allow trace to fully stabilize.
10. Use the peak marker function to determine the maximum amplitude level within the RBW.
11. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

**TEST RESULTS**

**IEEE 802.11b 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	-2.94	-5.05	-0.86	4.1	PASS
Middle	2437	-2.75	-3.31	-0.01	4.1	PASS
High	2462	-5.05	-4.43	-1.72	4.1	PASS

**Remark:**

1. At final test to get the worst-case emission at 1Mbps.
2. The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.
3. The maximum antenna gain for the MIMO mode is 9.9 dBi which is more than 6dBi, the limit should be 4.1 dBm.
4. Total power spectral density = Chain 0 + Chain 1.

**IEEE 802.11g 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	-10.41	-10.87	-7.62	4.1	PASS
Middle	2437	-8.34	-10.12	-6.13	4.1	PASS
High	2462	-9.49	-9.17	-6.32	4.1	PASS

**Remark:**

1. At final test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.
3. The maximum antenna gain for the MIMO mode is 9.9 dBi which is more than 6dBi, the limit should be 4.1 dBm.
4. Total power spectral density = Chain 0 + Chain 1.

**IEEE 802.11gn 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	-10.35	-11.15	-7.72	4.1	PASS
Middle	2437	-8.70	-10.28	-6.41	4.1	PASS
High	2462	-10.79	-11.91	-8.30	4.1	PASS

**Remark:**

1. At final test to get the worst-case emission at 6.5Mbps.
2. The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.
3. The maximum antenna gain for the MIMO mode is 9.9 dBi which is more than 6dBi, the limit should be 4.1 dBm.
4. Total power spectral density = Chain 0 + Chain 1.

**IEEE 802.11gn 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	-15.09	-15.64	-12.35	4.1	PASS
Middle	2437	-13.35	-13.69	-10.51	4.1	PASS
High	2452	-14.57	-16.01	-12.22	4.1	PASS

**Remark:**

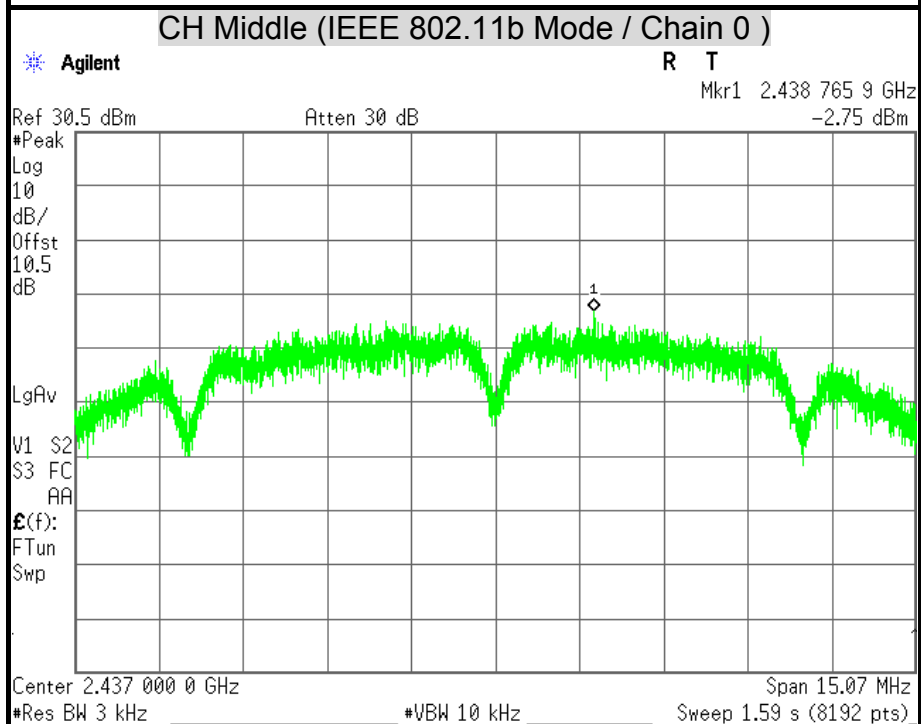
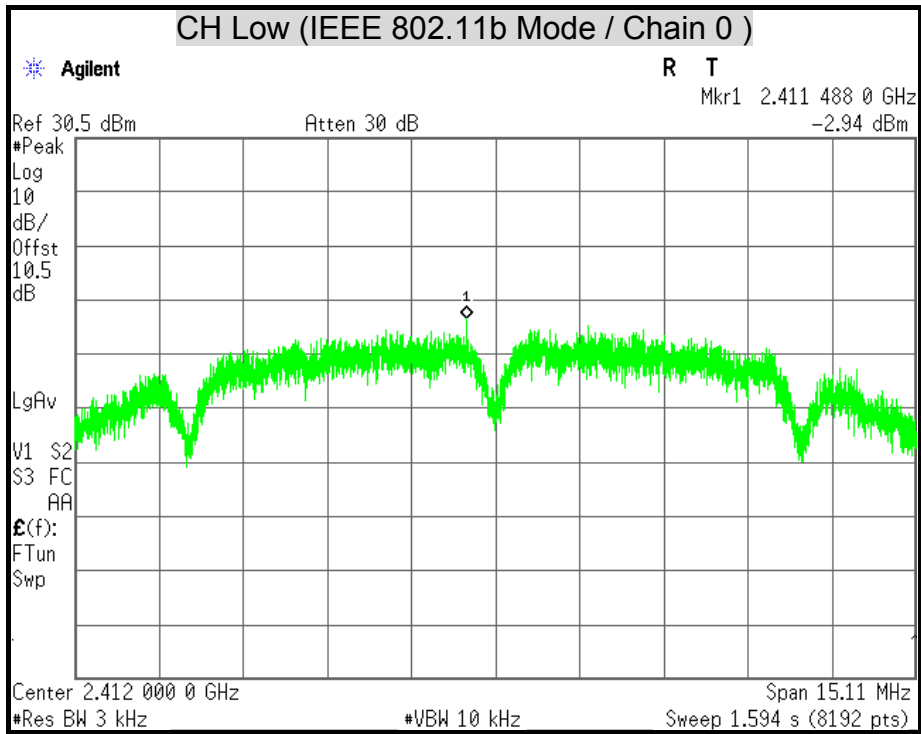
1. At final test to get the worst-case emission at 13.5Mbps.
2. The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.
3. The maximum antenna gain for the MIMO mode is 9.9 dBi which is more than 6dBi, the limit should be 4.1 dBm.
4. Total power spectral density = Chain 0 + Chain 1.

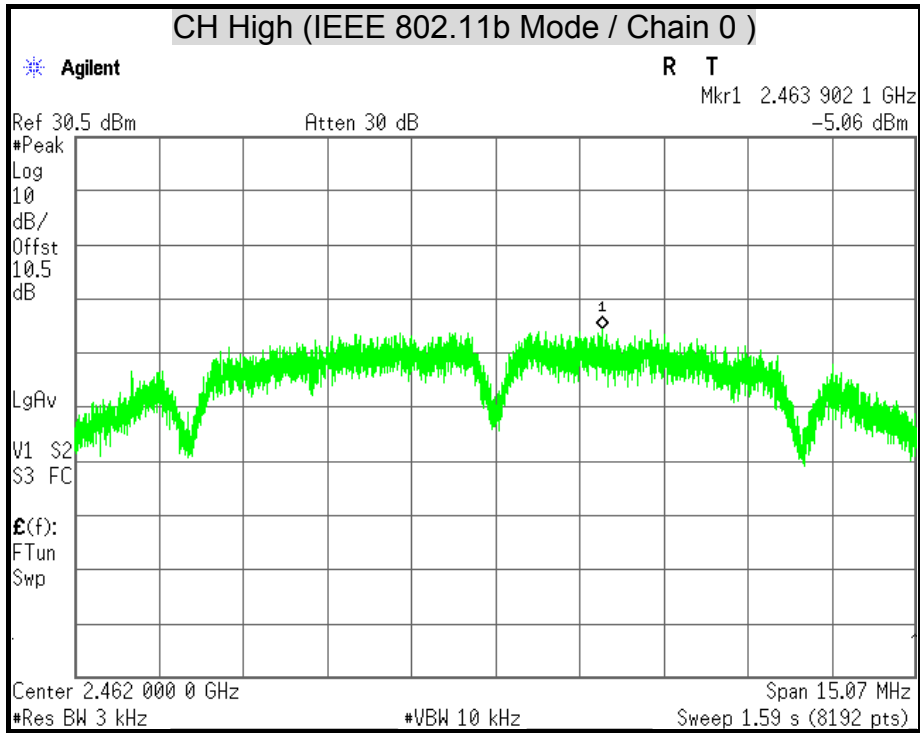
**Bluetooth 4.0 Mode**

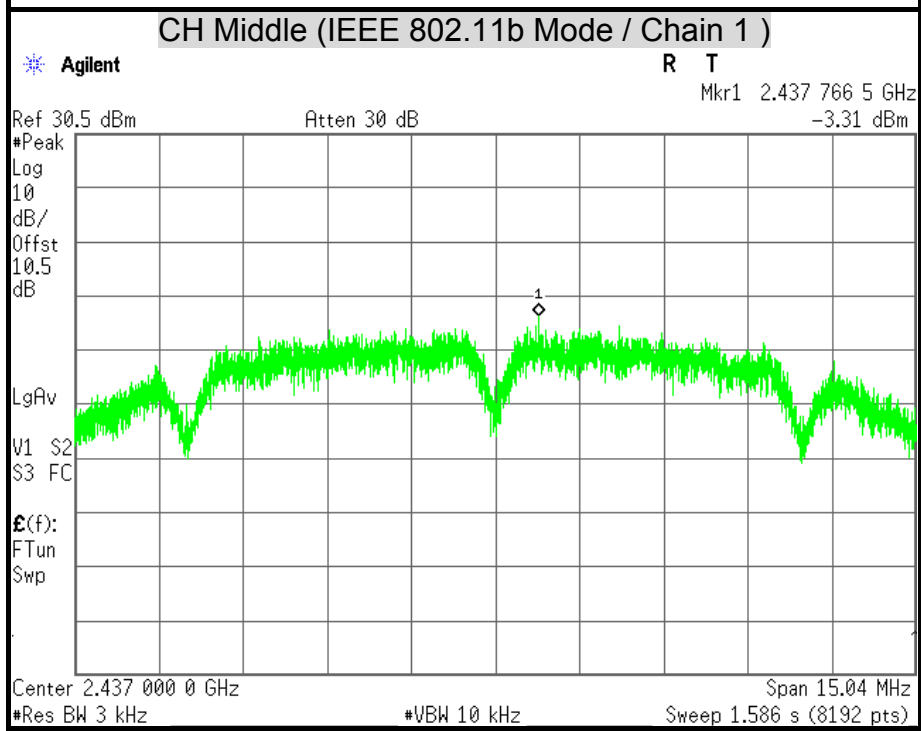
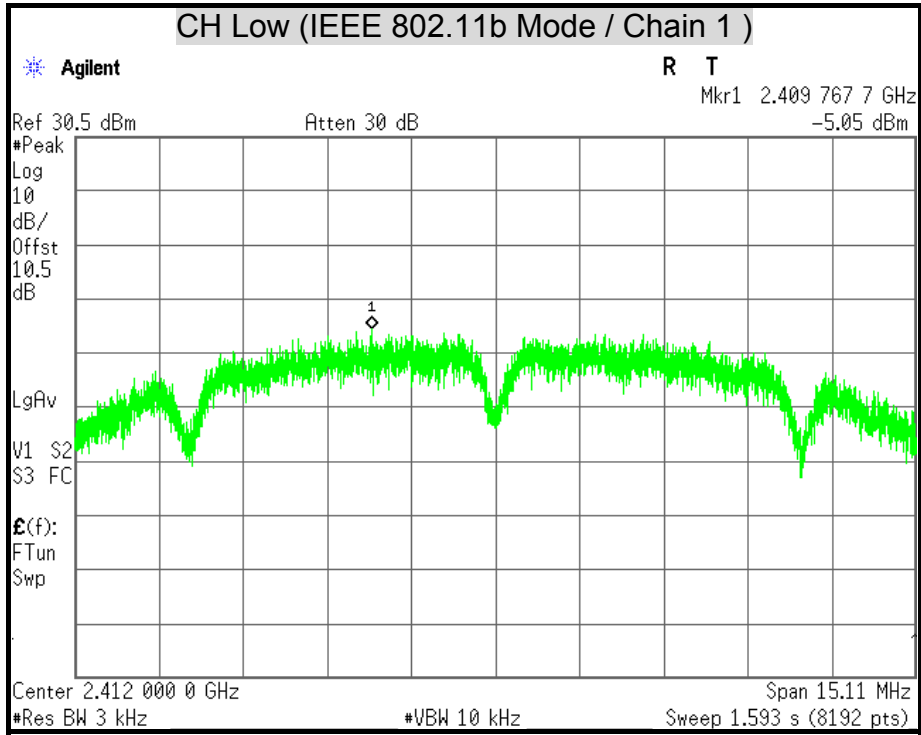
Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Minimum Limit (dBm)	Pass / Fail
Low	2402	-7.13	8	PASS
Middle	2440	-7.47	8	PASS
High	2480	-7.63	8	PASS

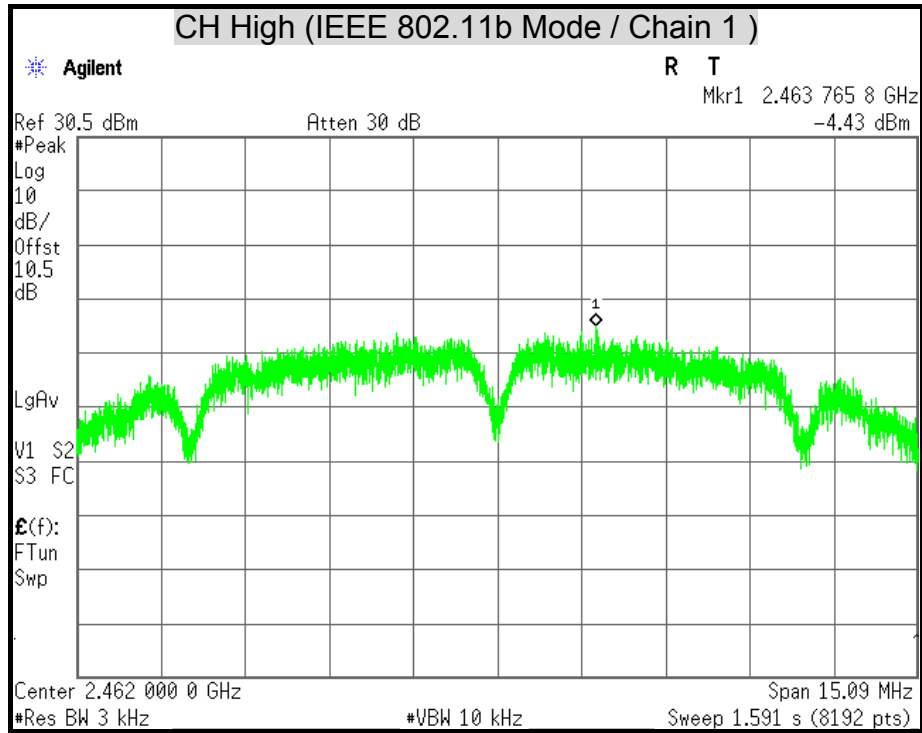
**Remark:** The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

**POWER SPECTRAL DENSITY**

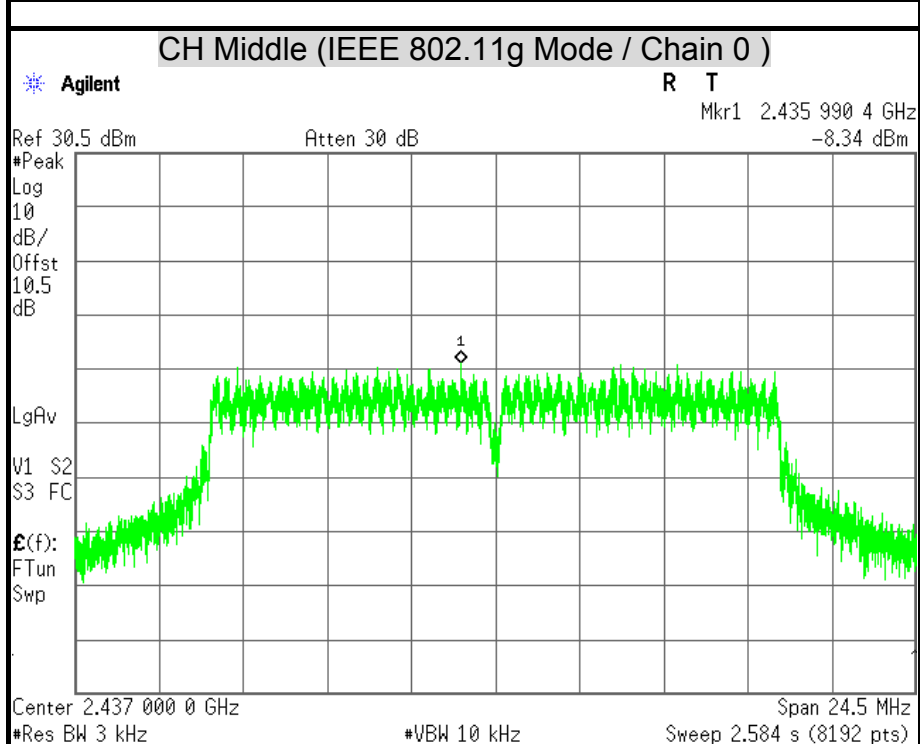
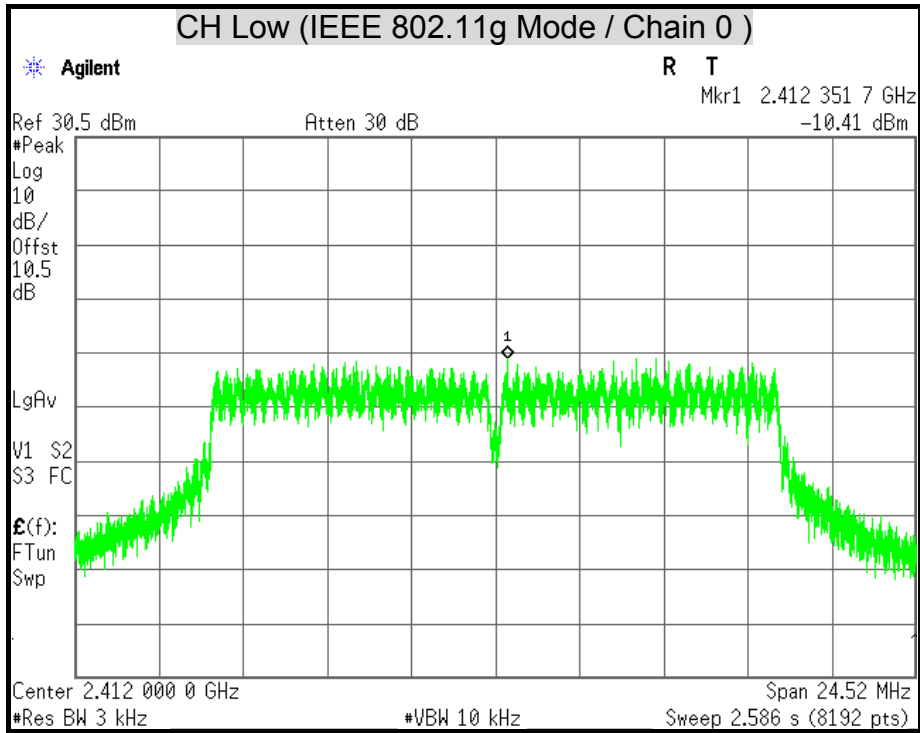


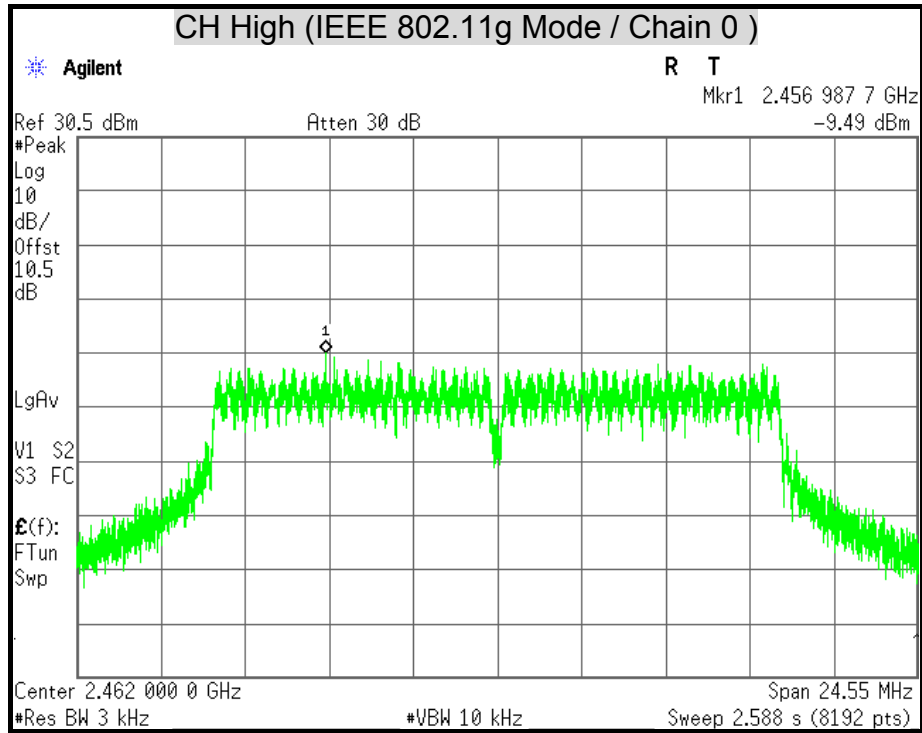


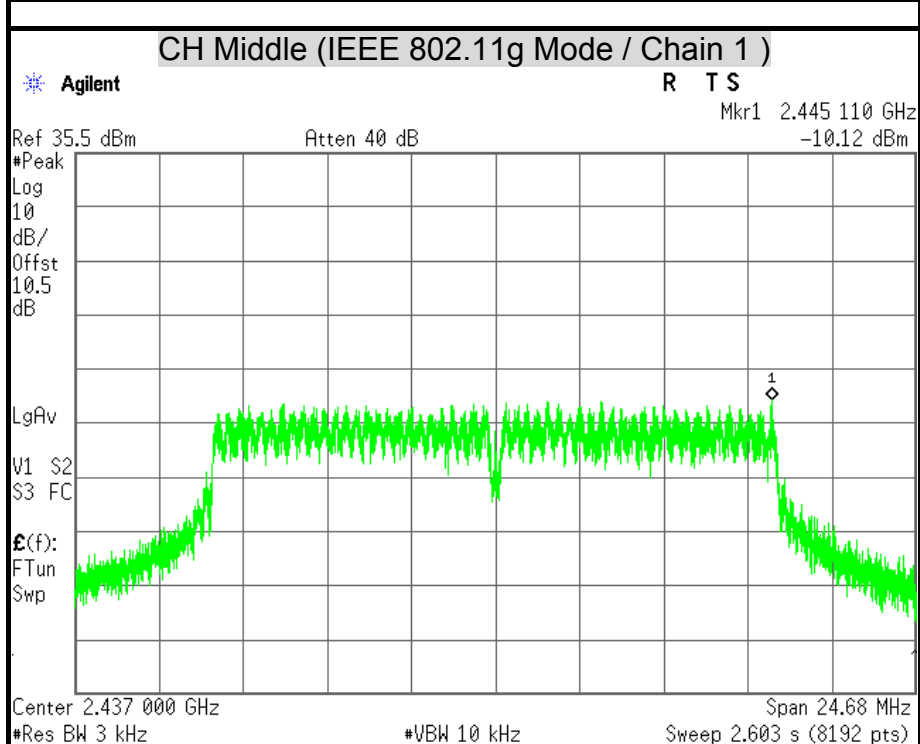
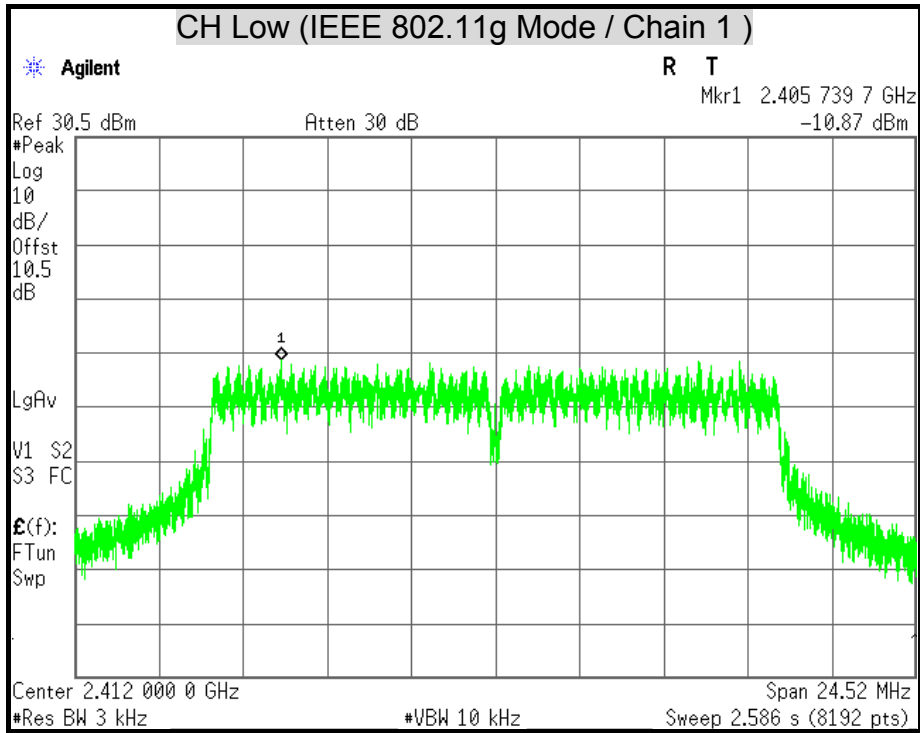


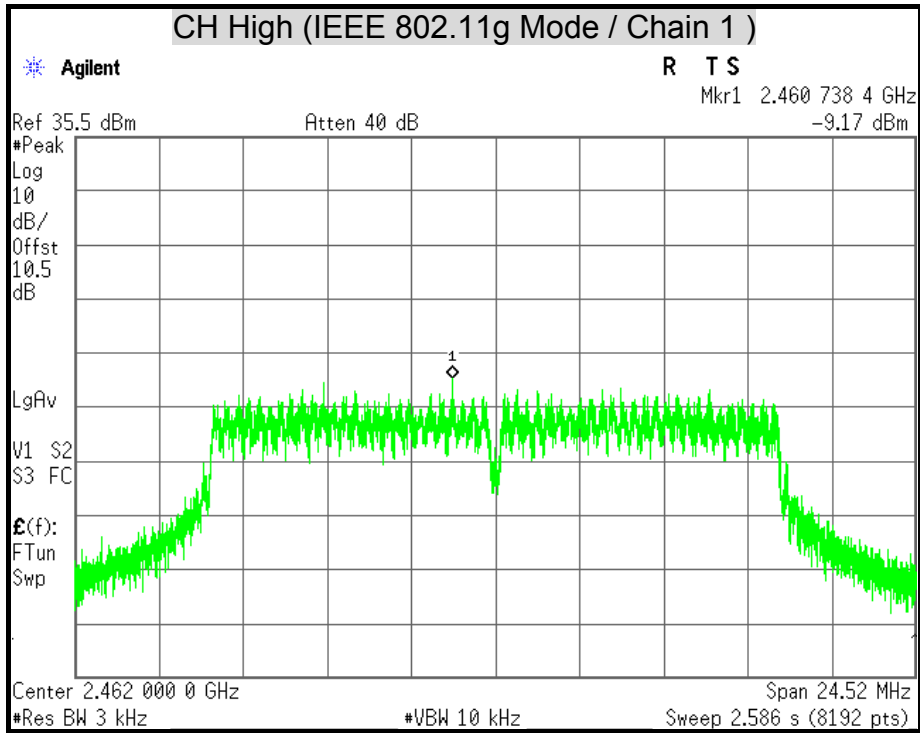


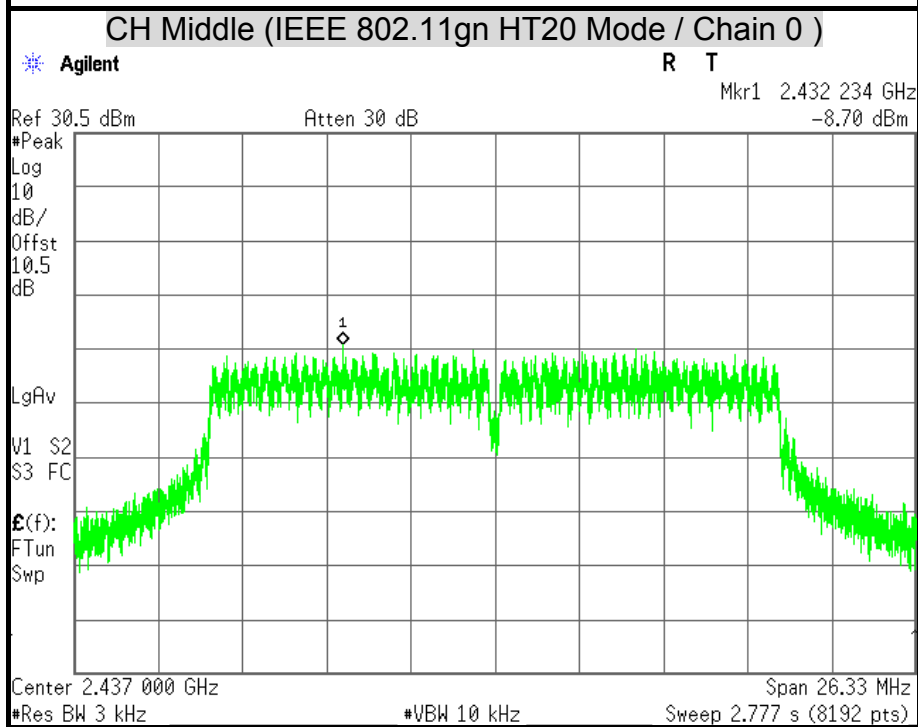
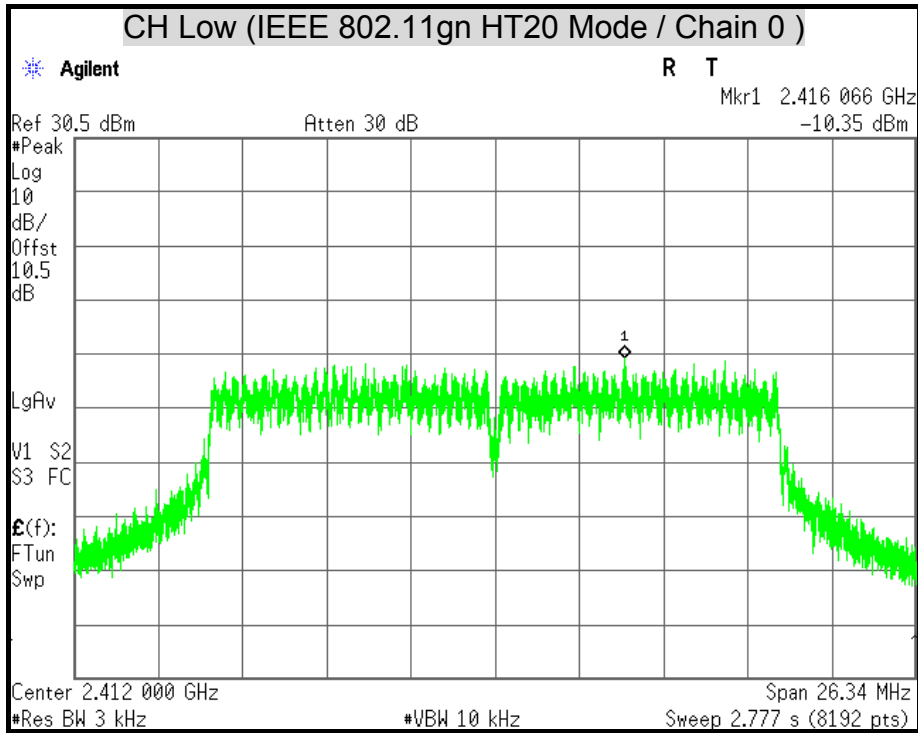


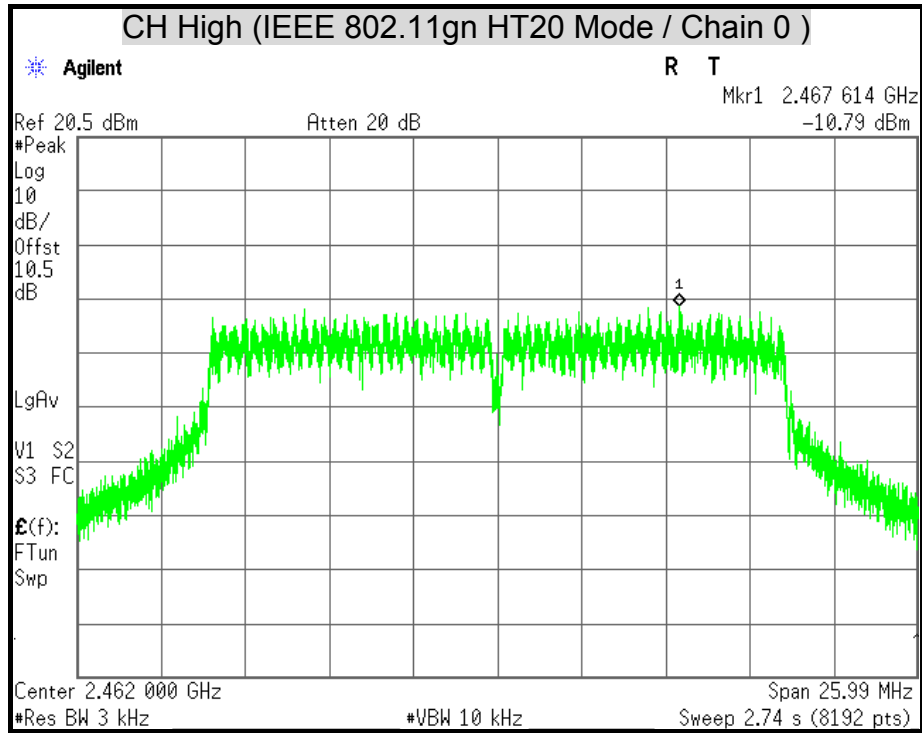


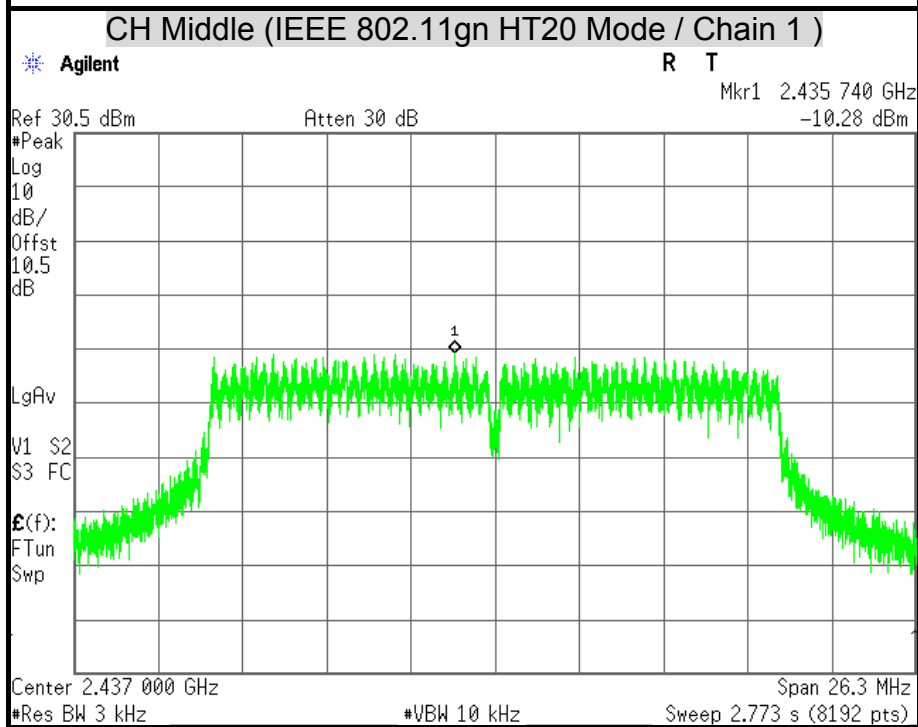
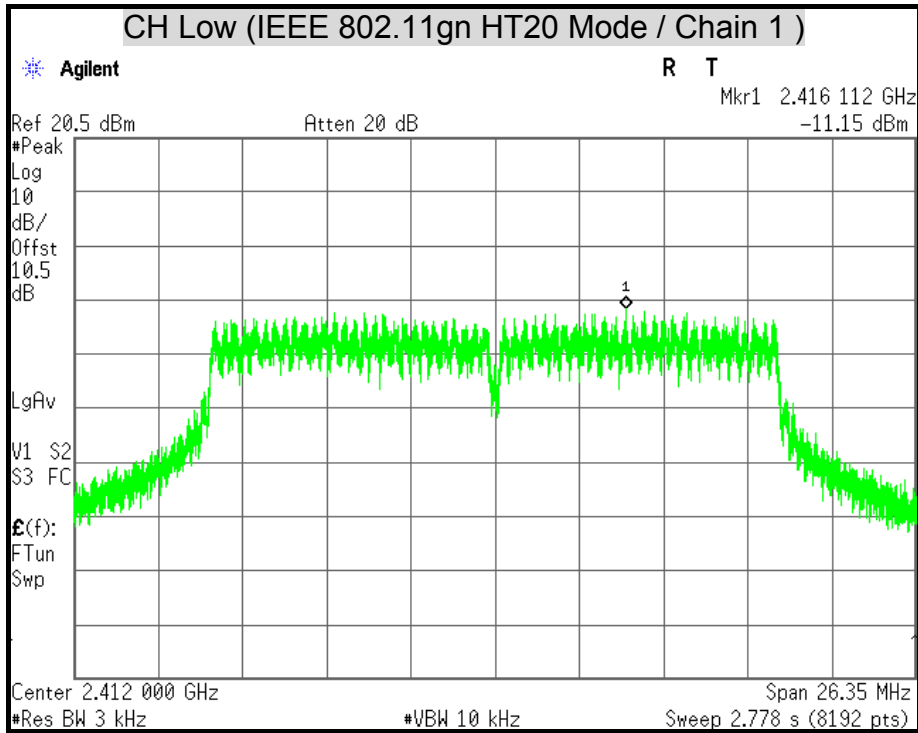


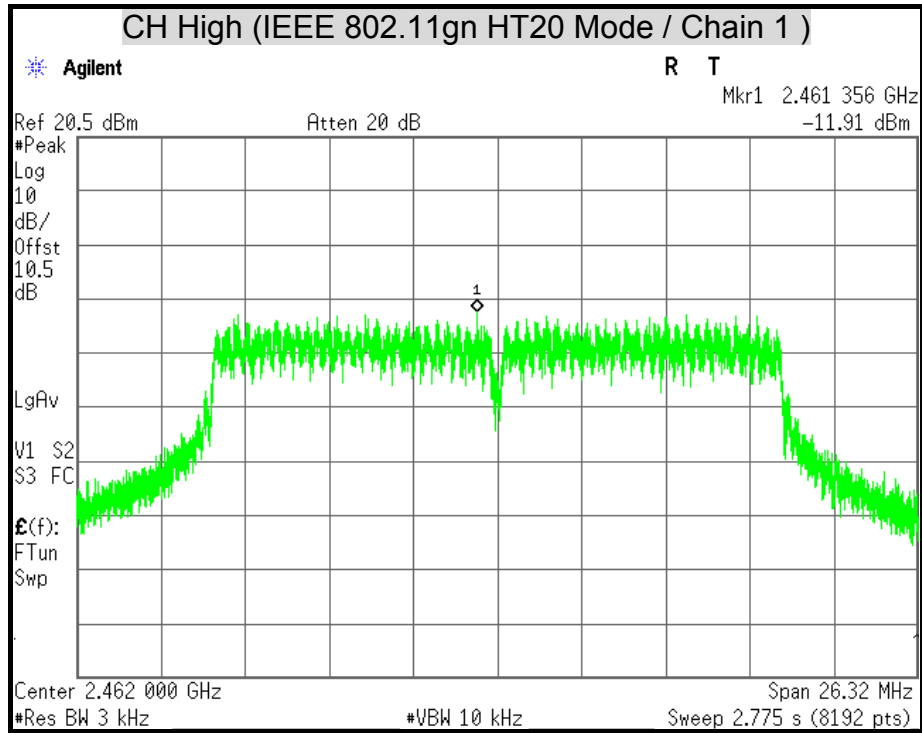




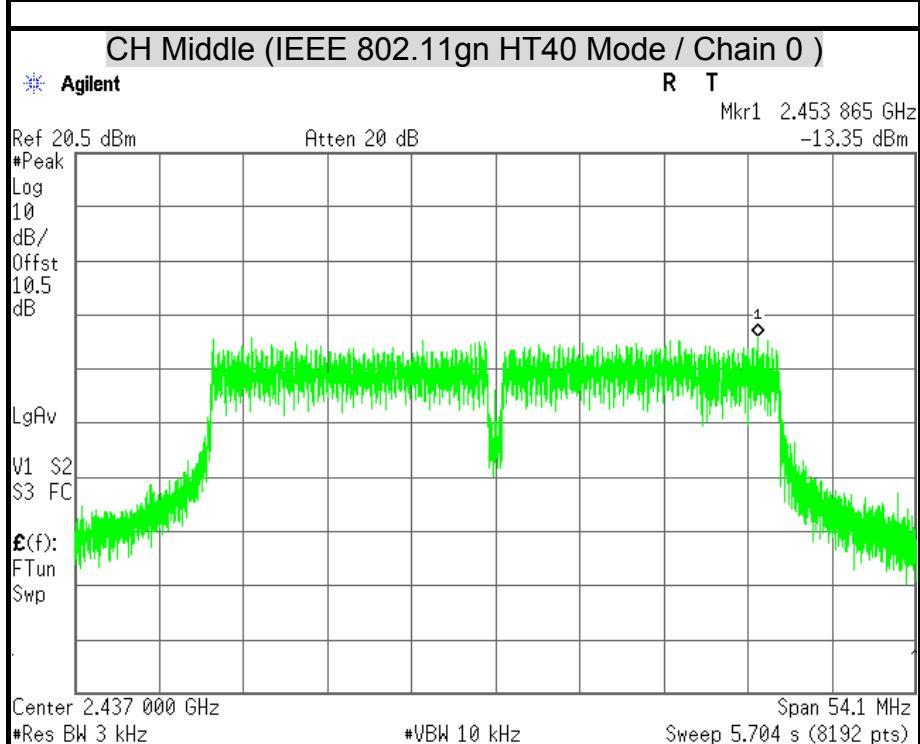
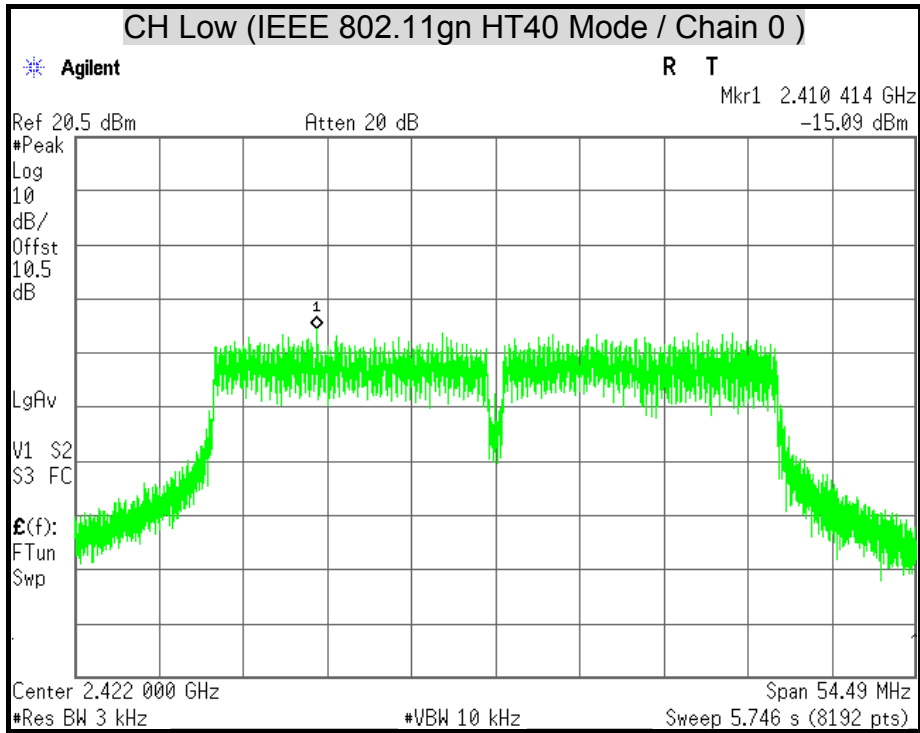


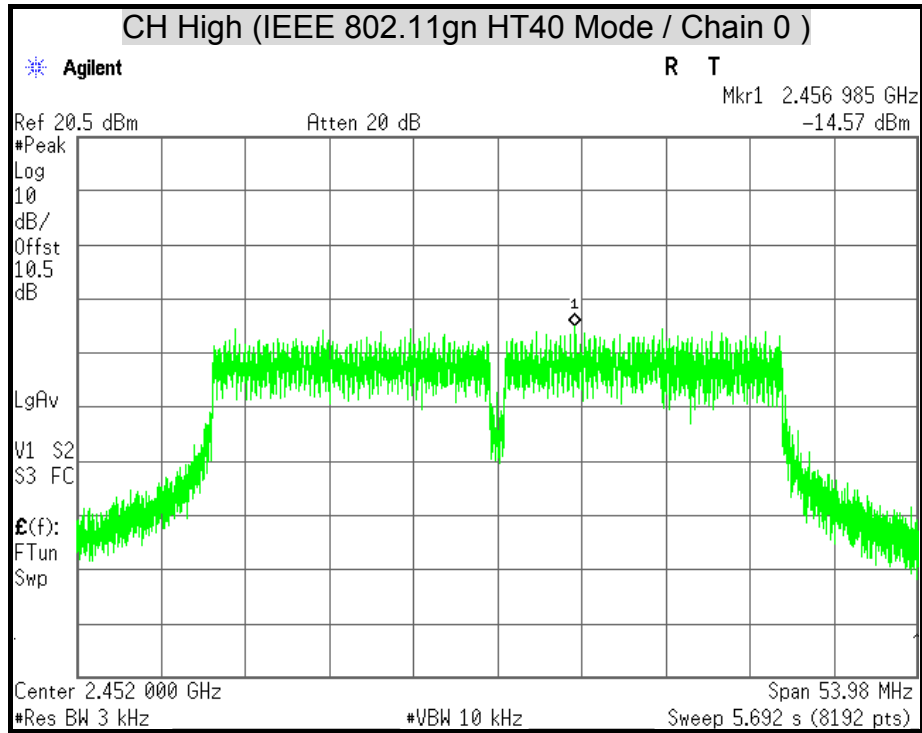


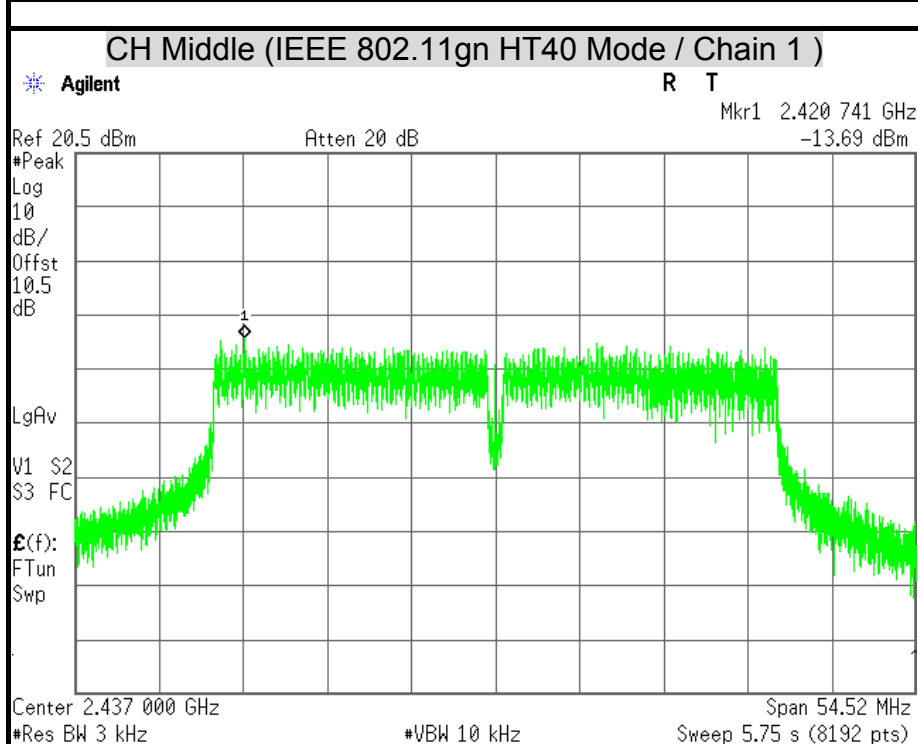
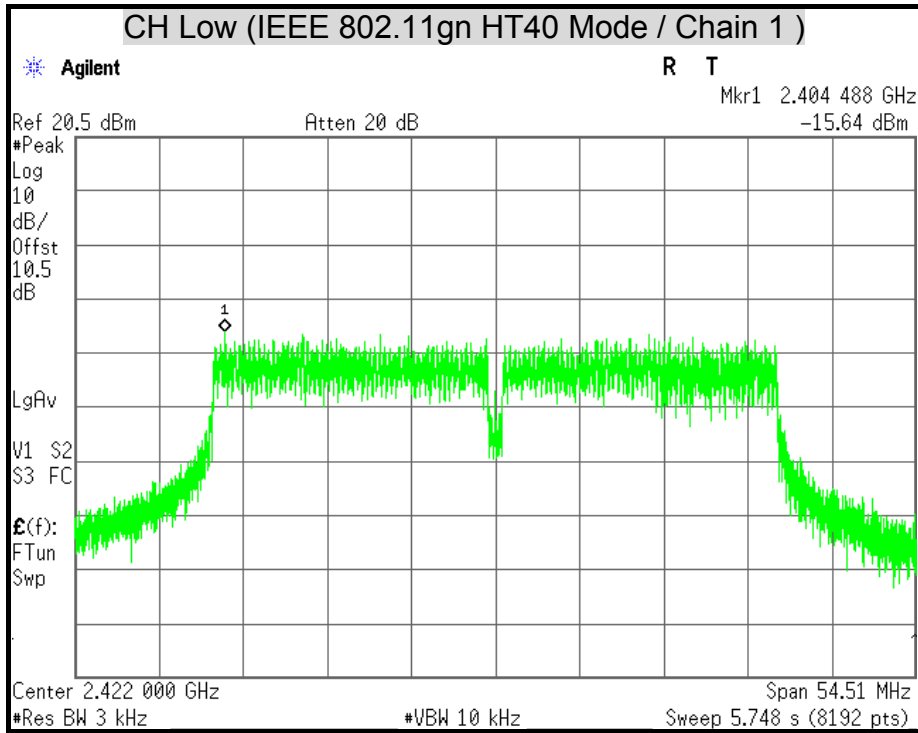


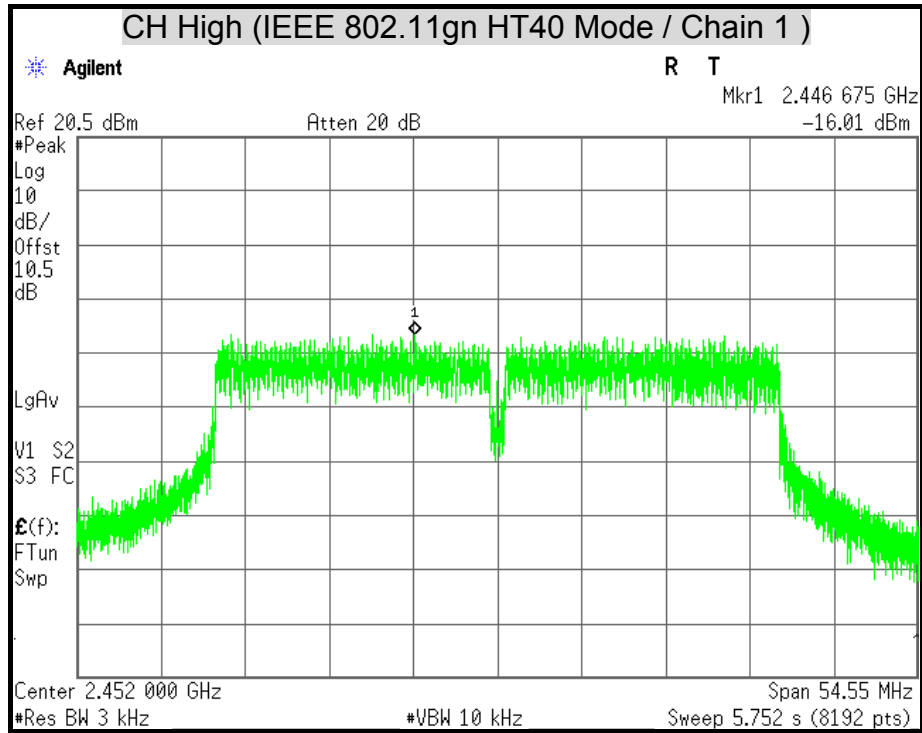


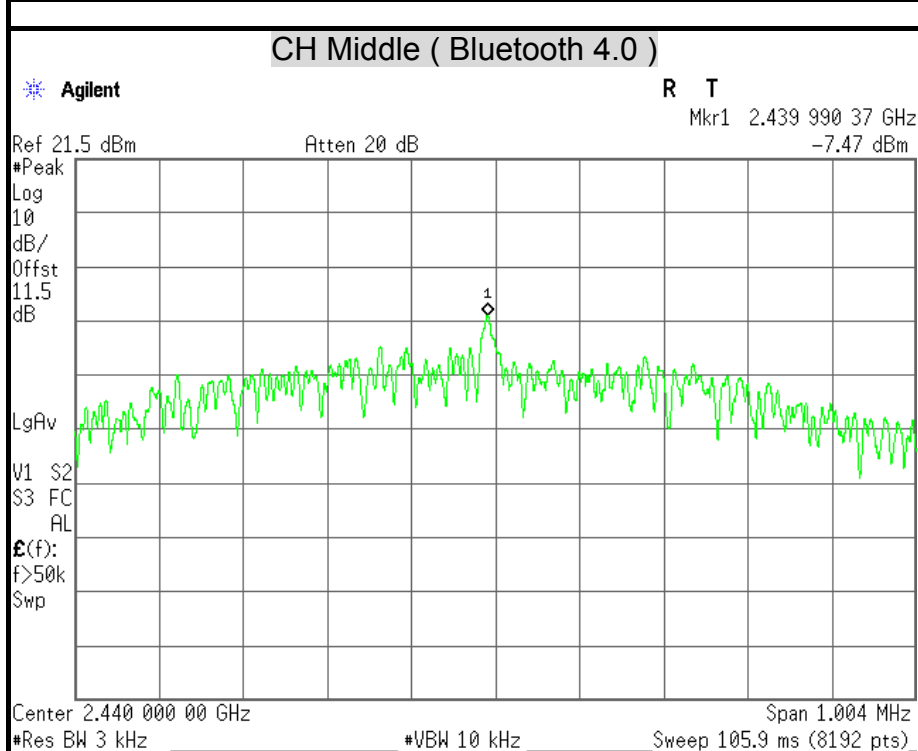
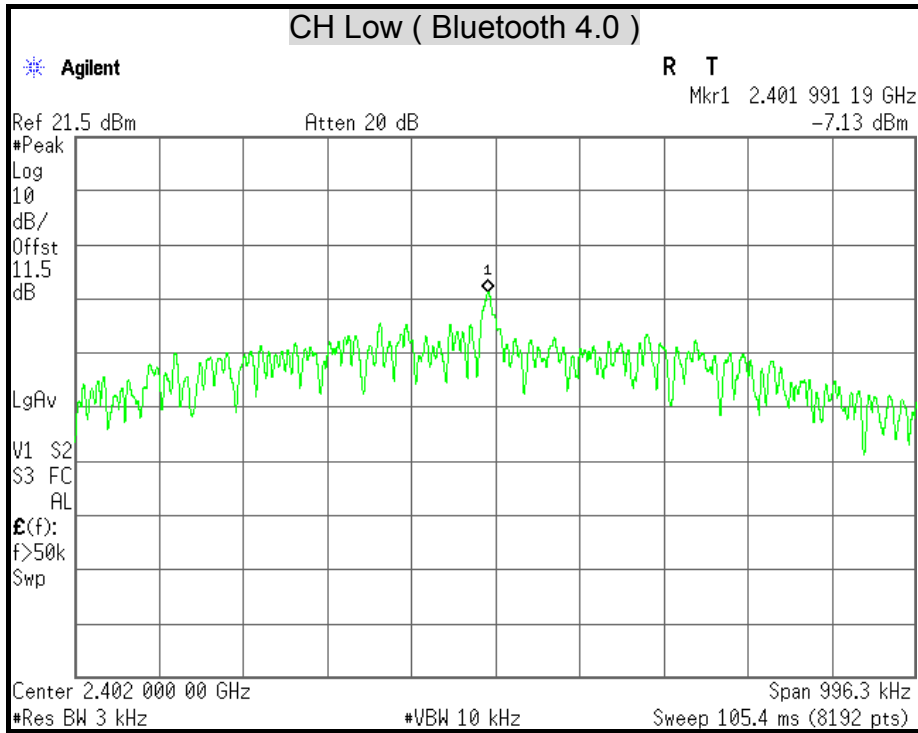


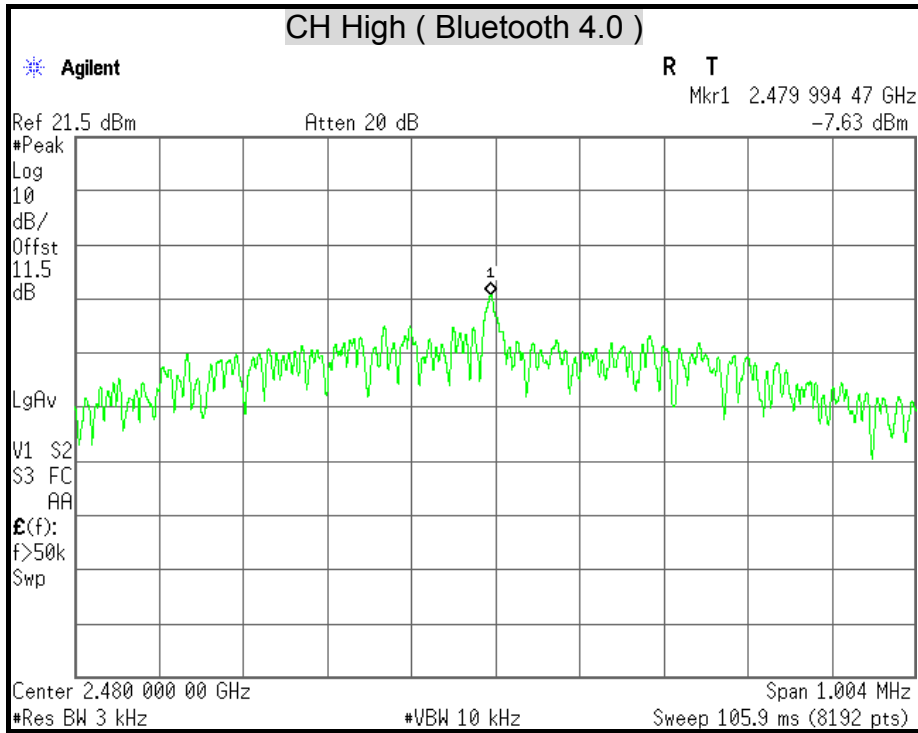












## 7.5 CONDUCTED SPURIOUS EMISSION

### LIMITS

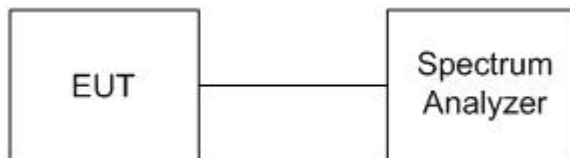
§ 15.247(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the and that contains the highest level 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	E4446A	MY43360132	06/10/2015

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

### TEST SETUP



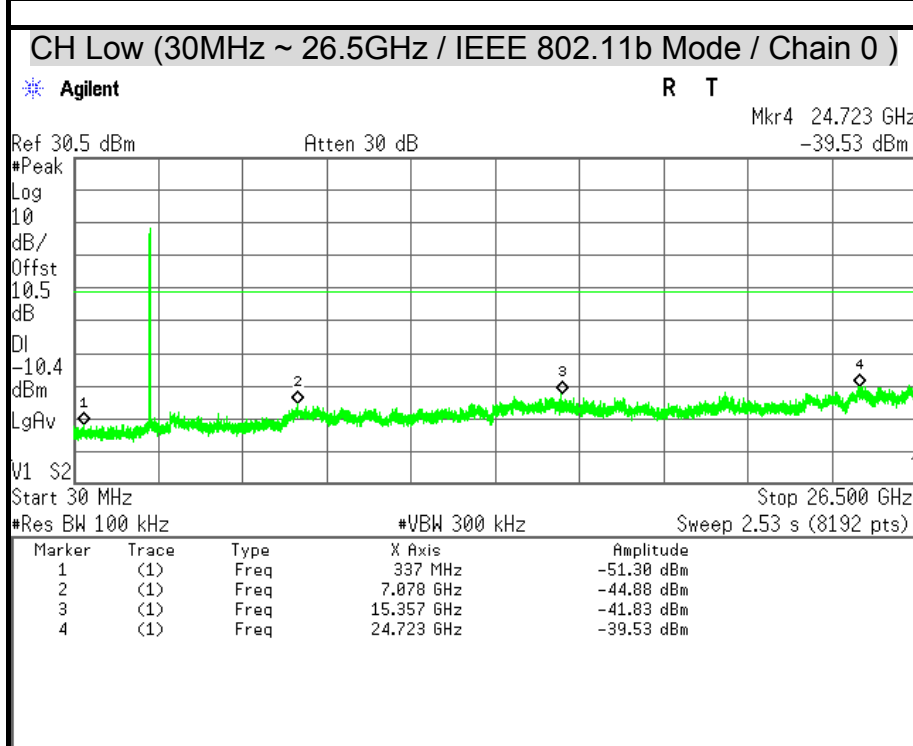
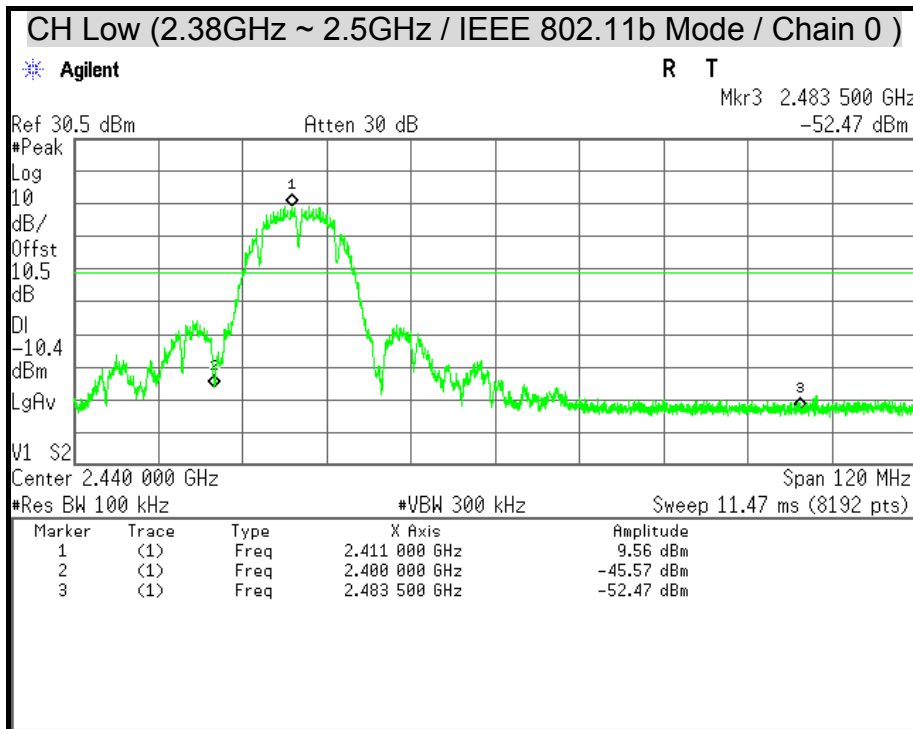
### TEST PROCEDURE

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.

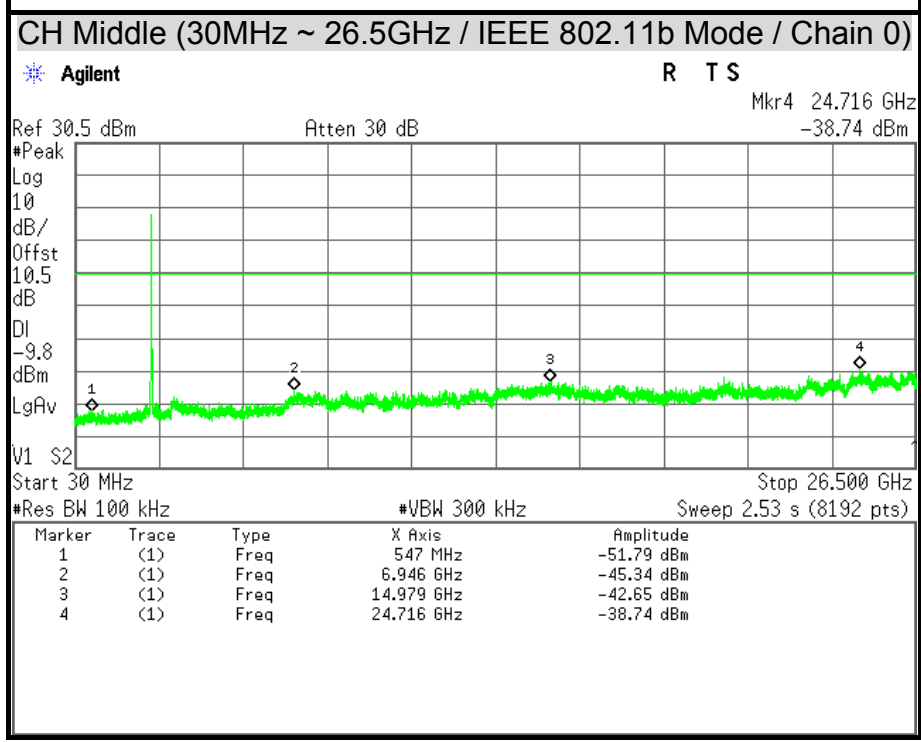
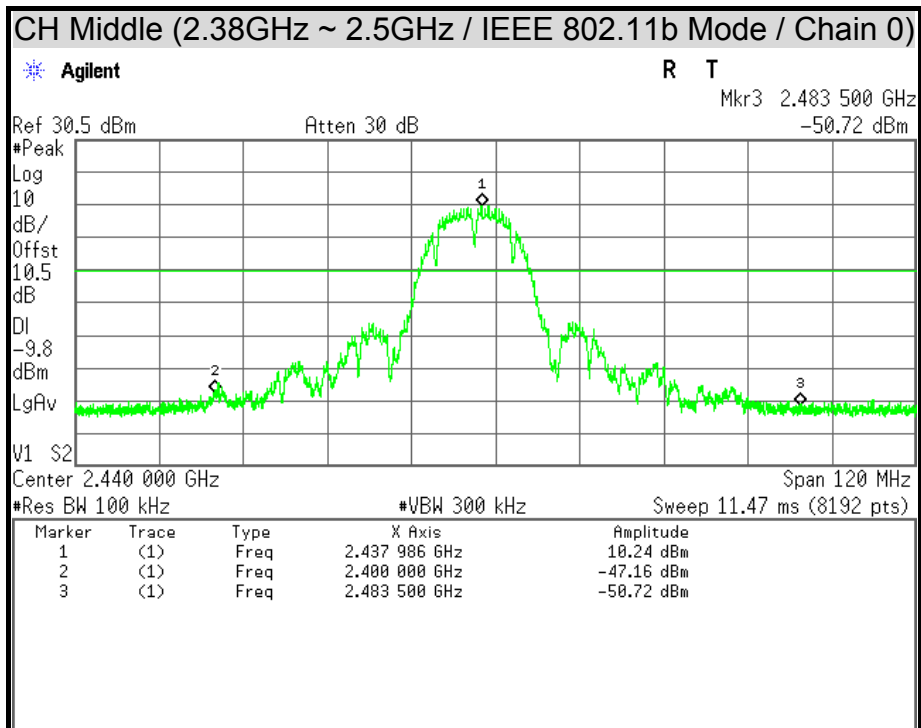
The spectrum from 30 MHz to 26.5 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

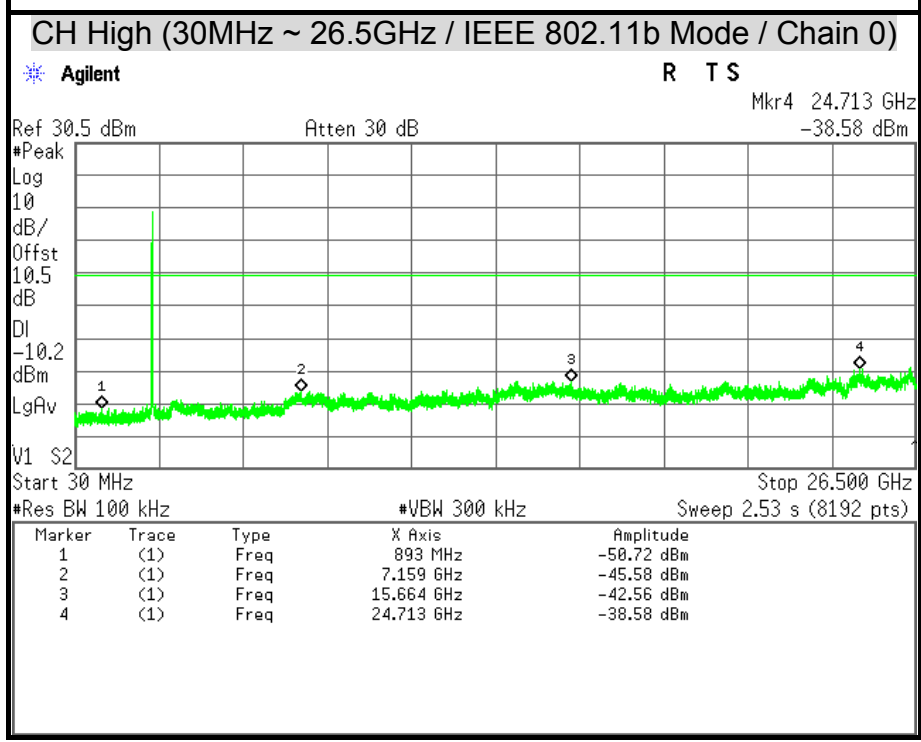
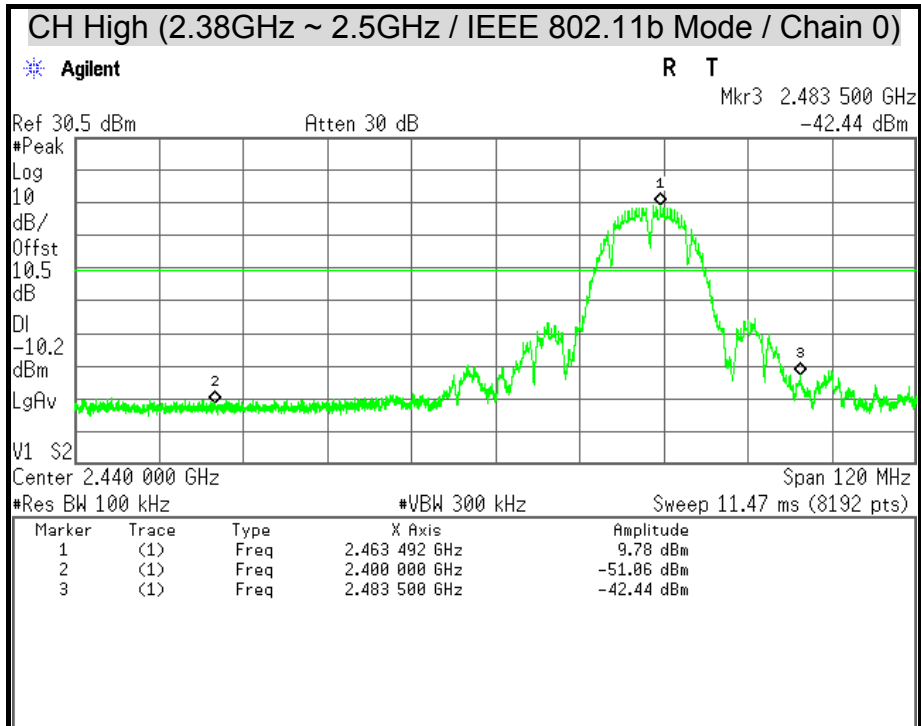
**TEST RESULTS**

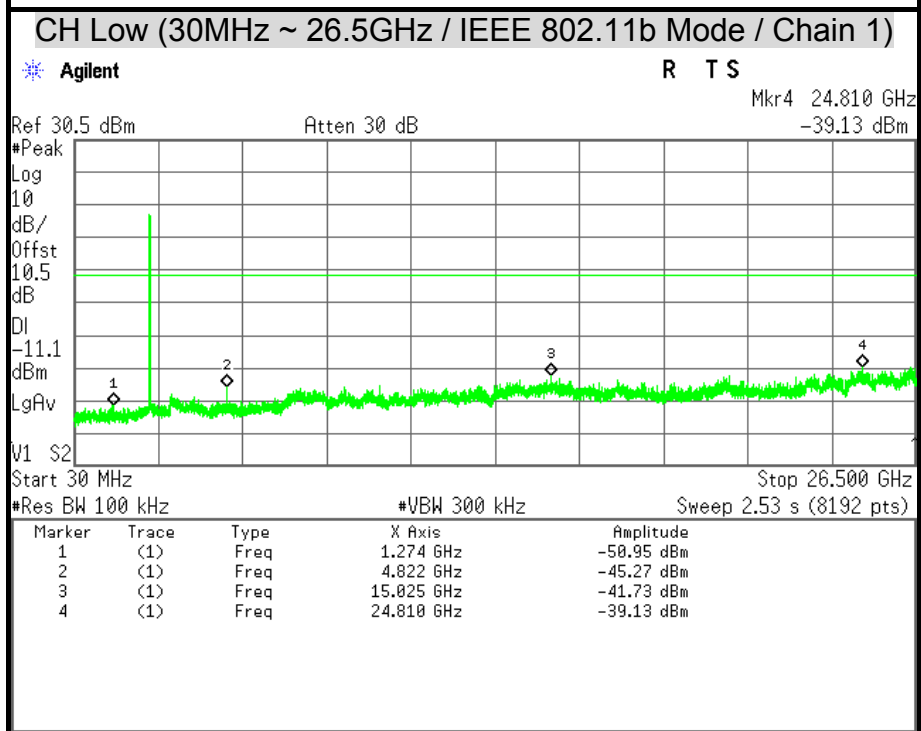
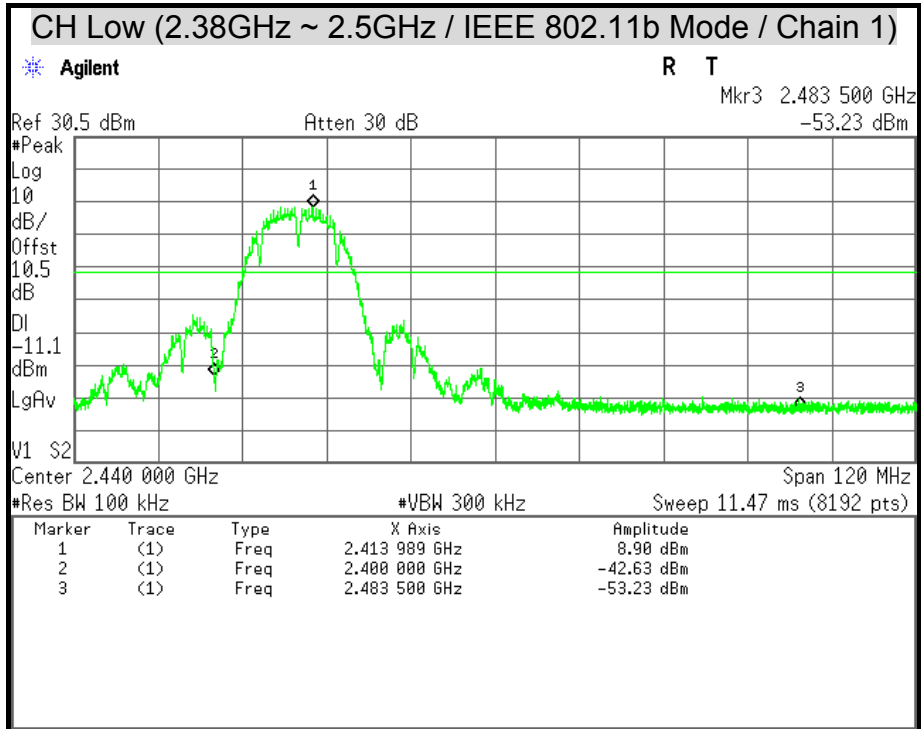
**OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT**

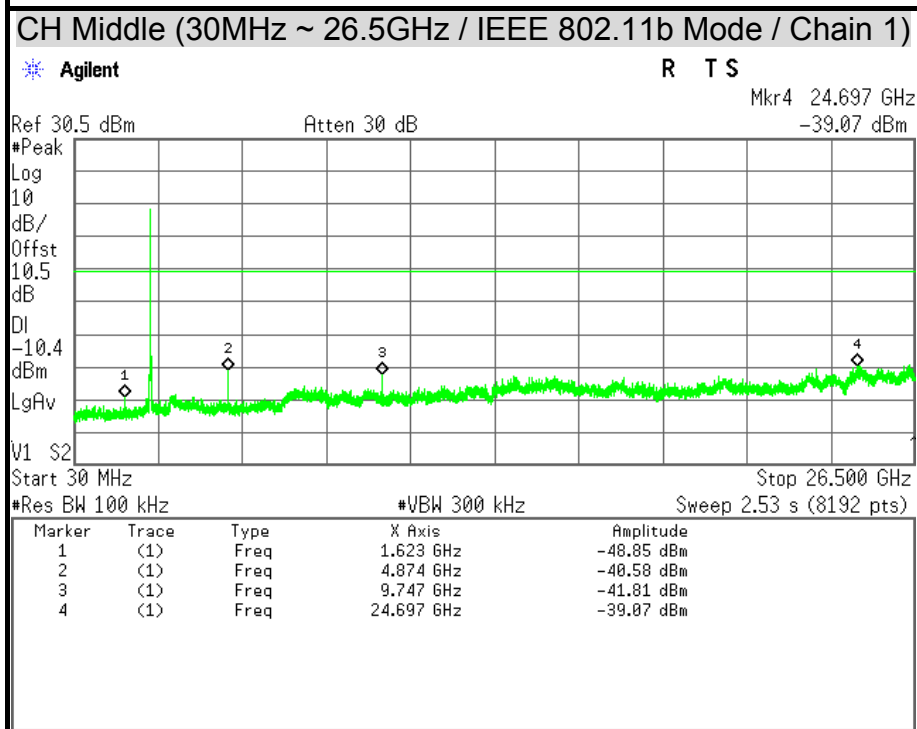
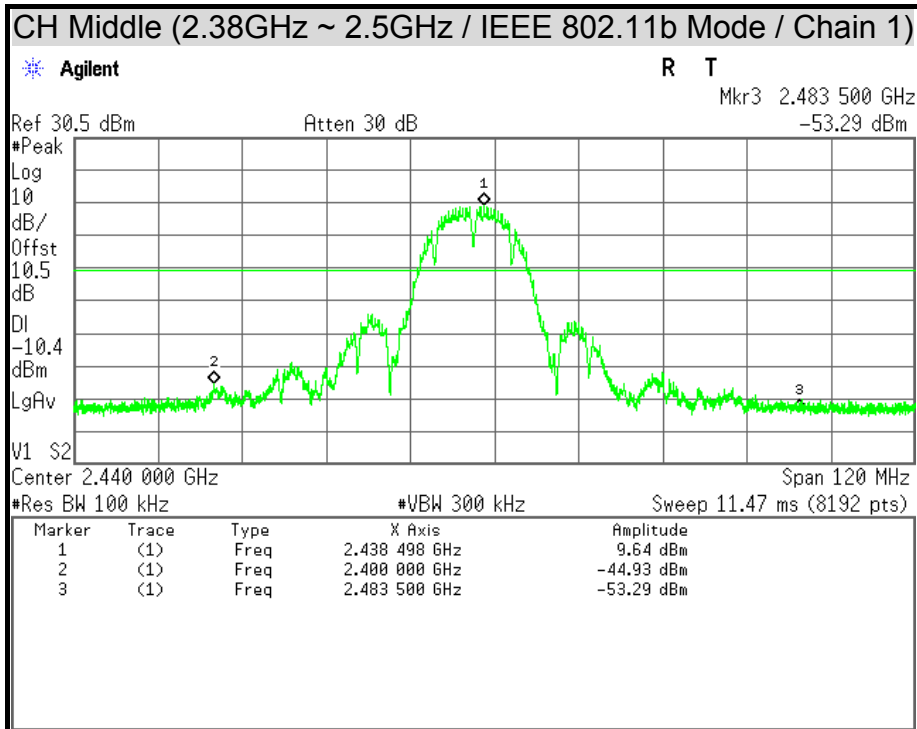


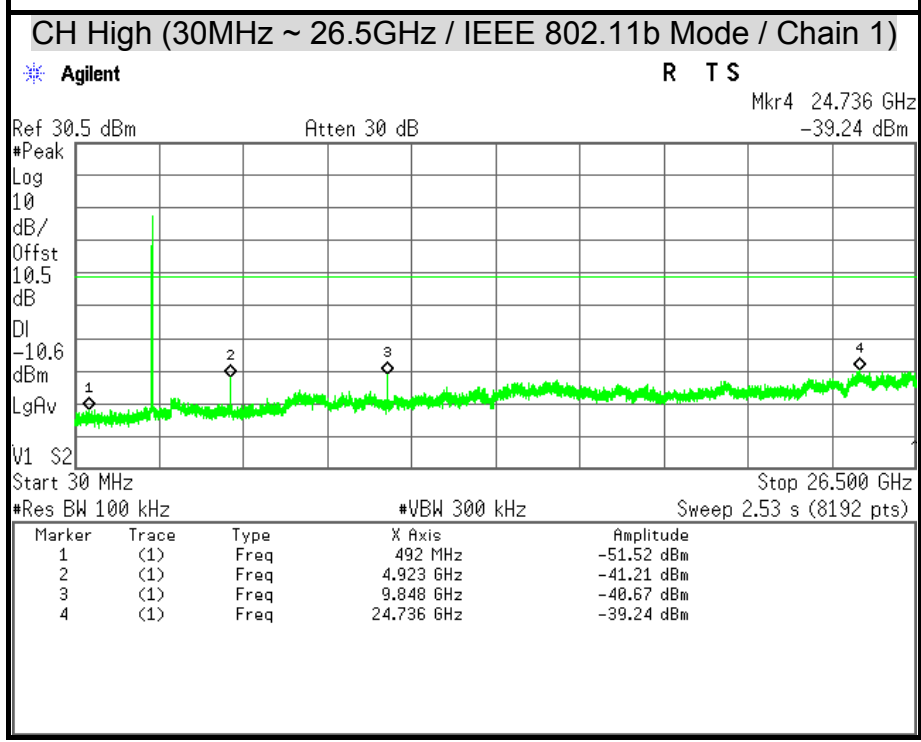
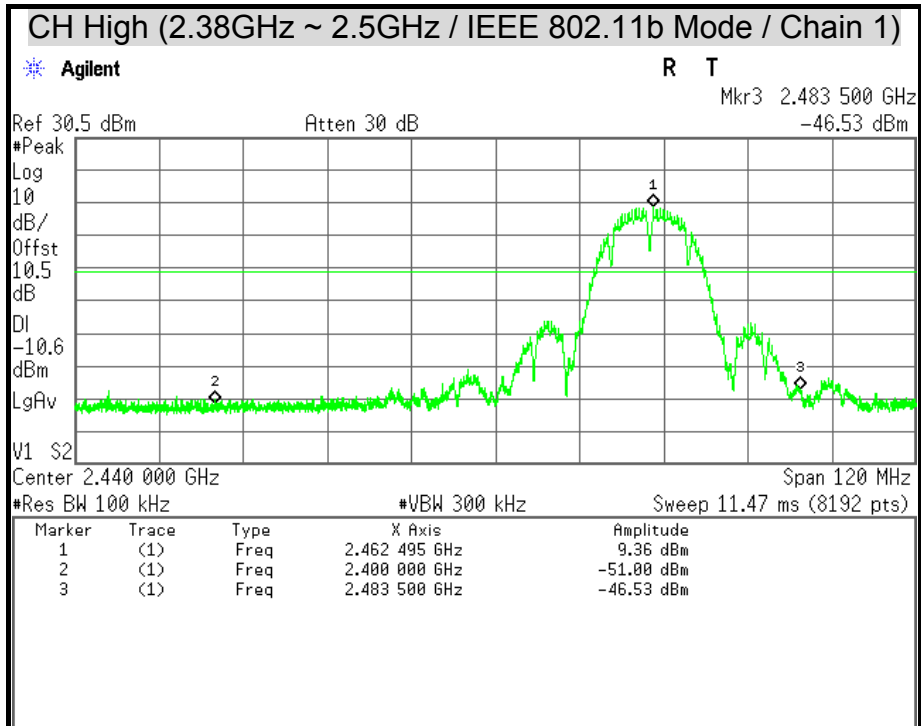


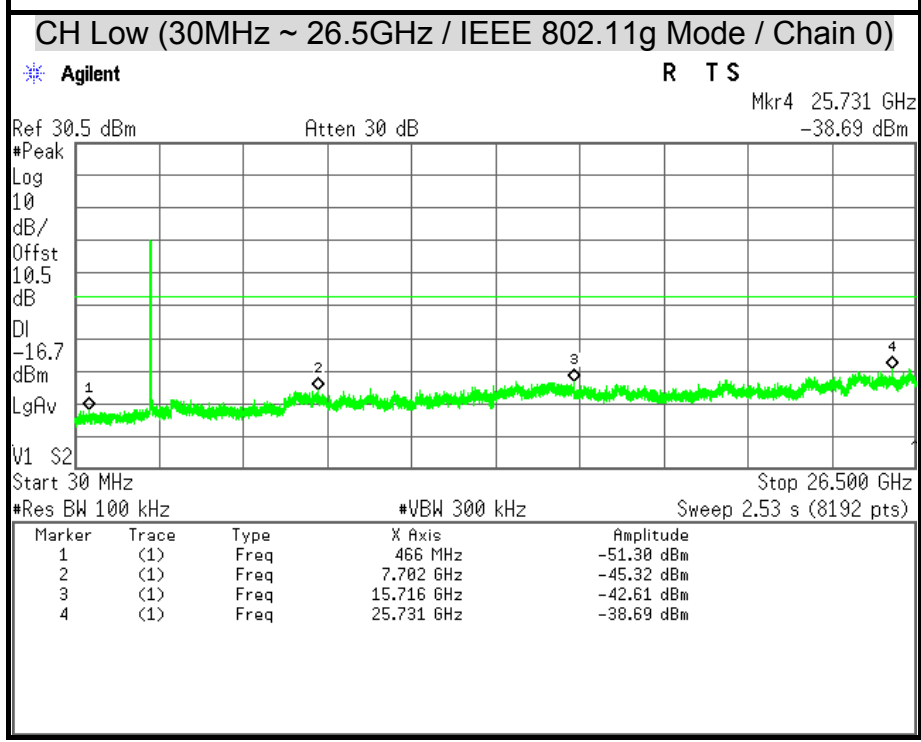
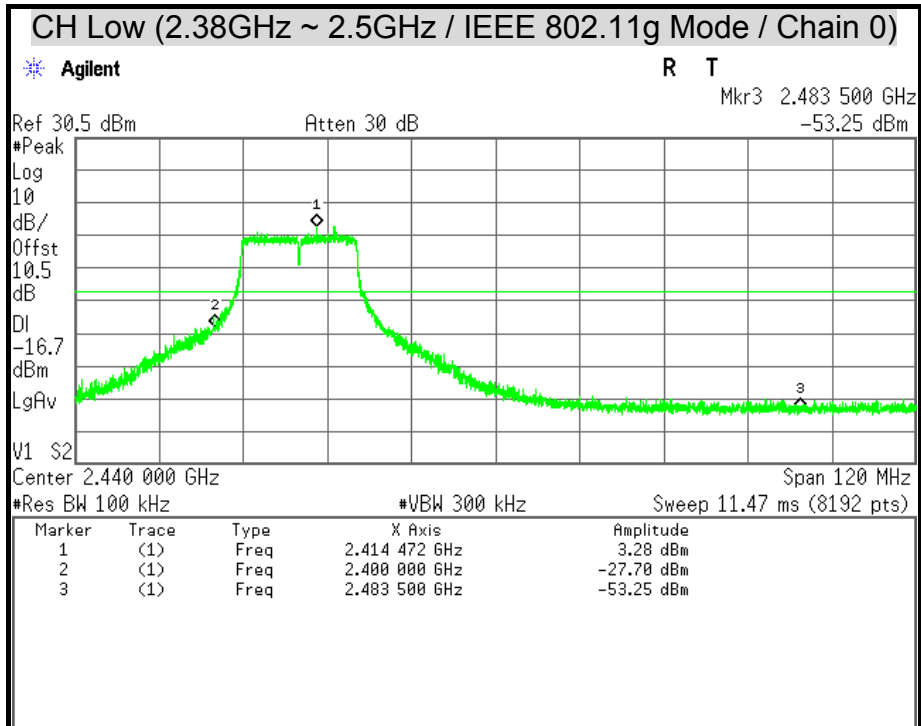


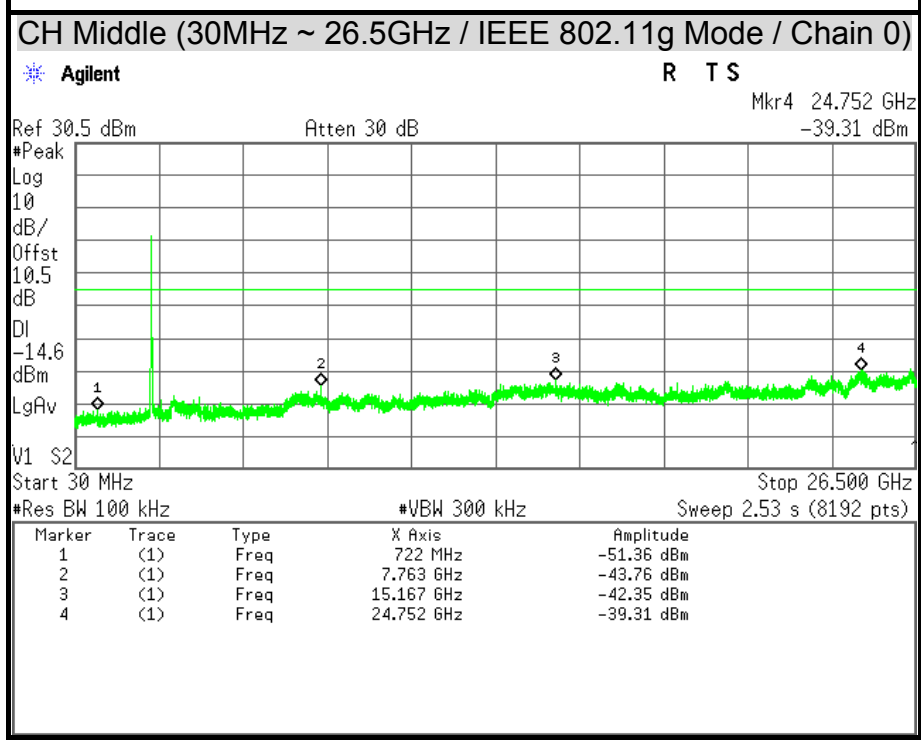
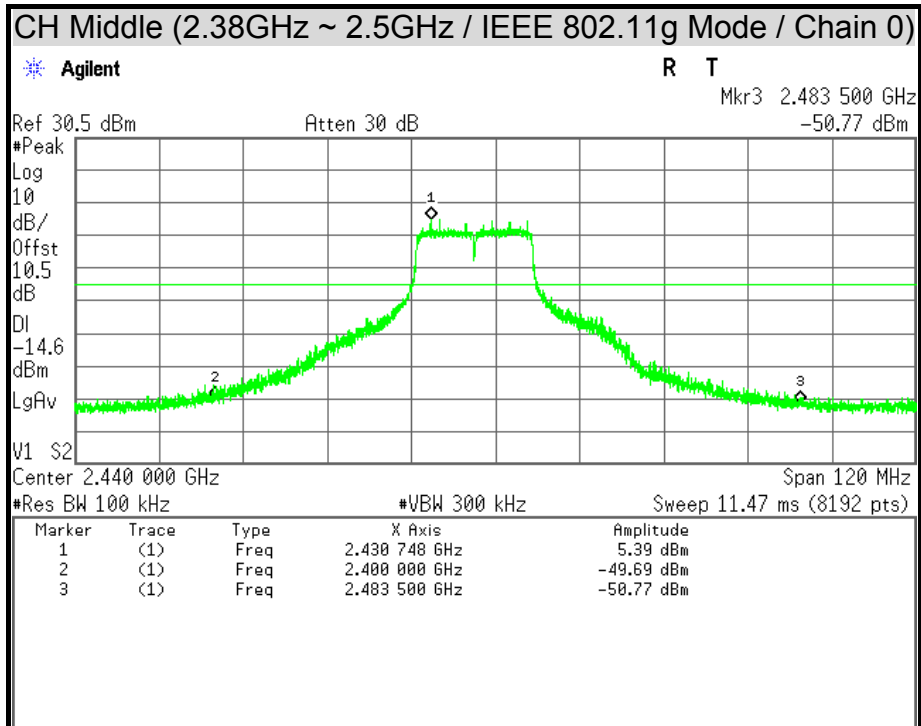


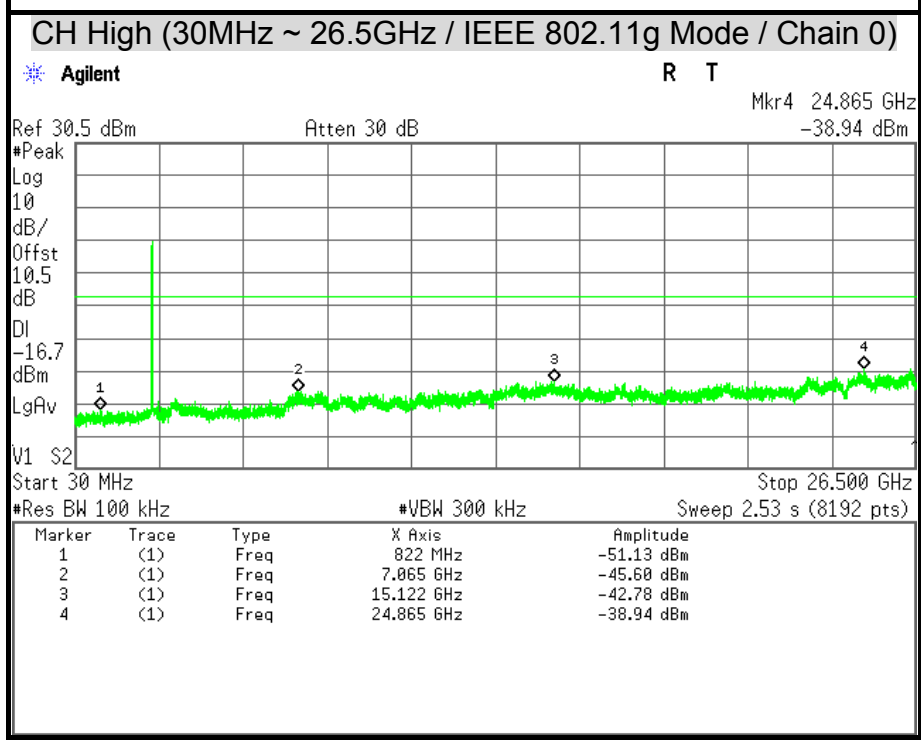
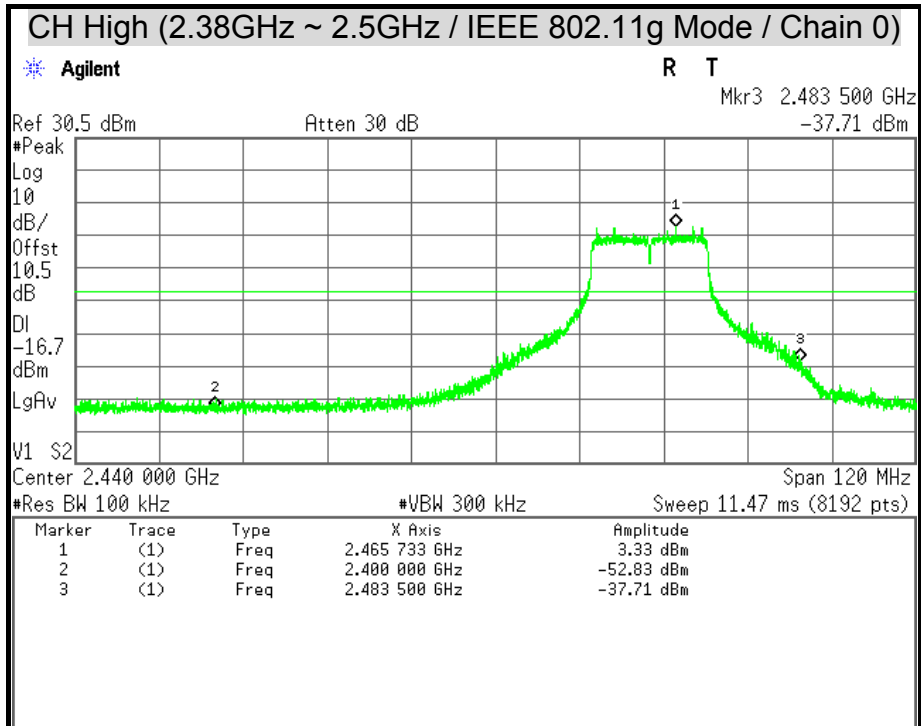




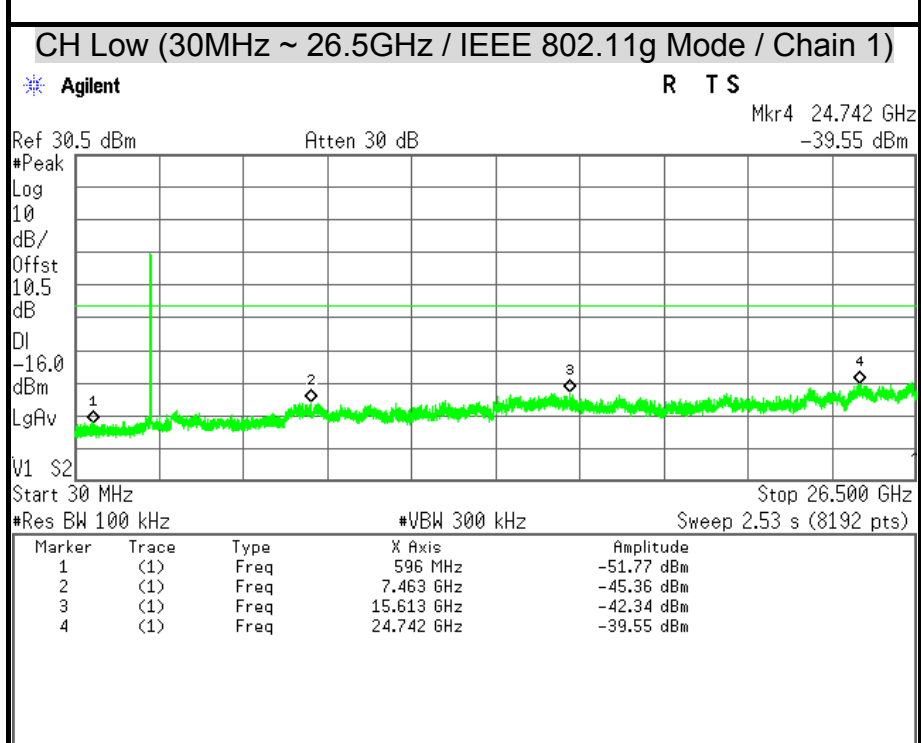
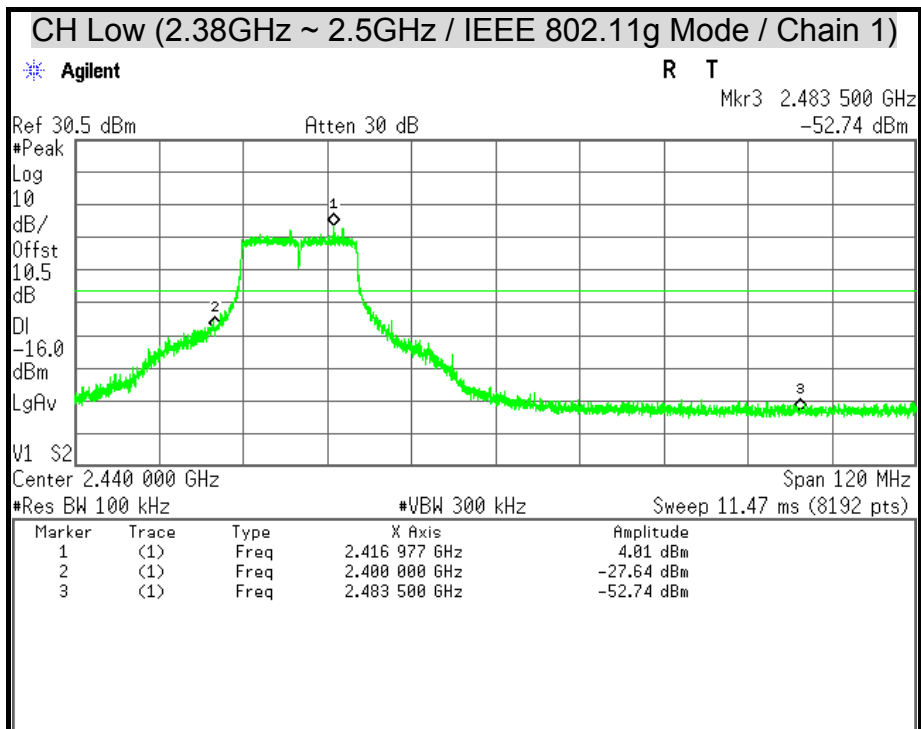


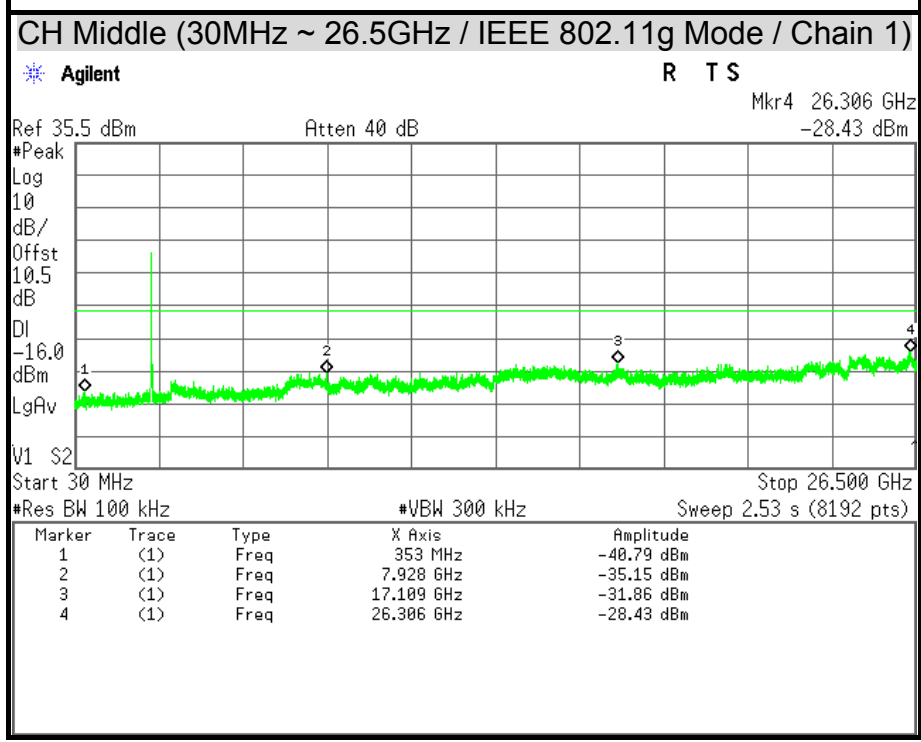
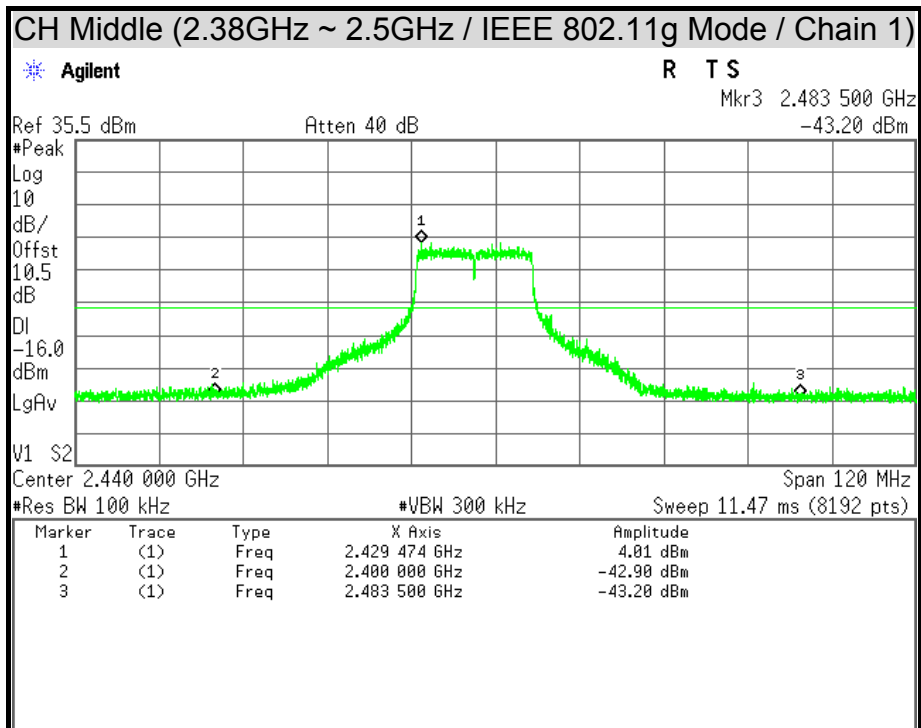


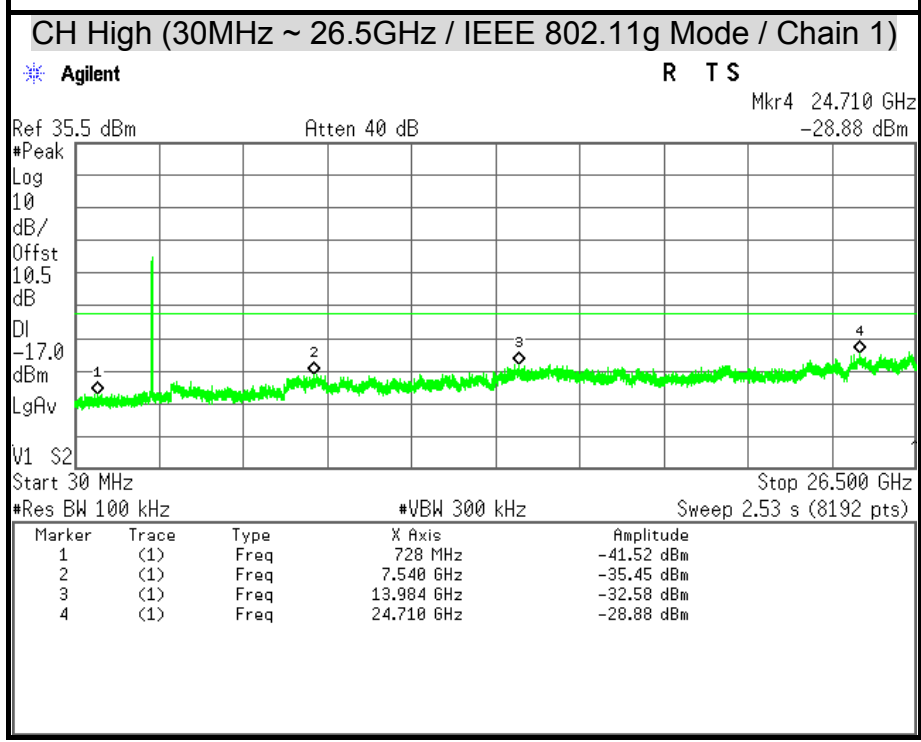
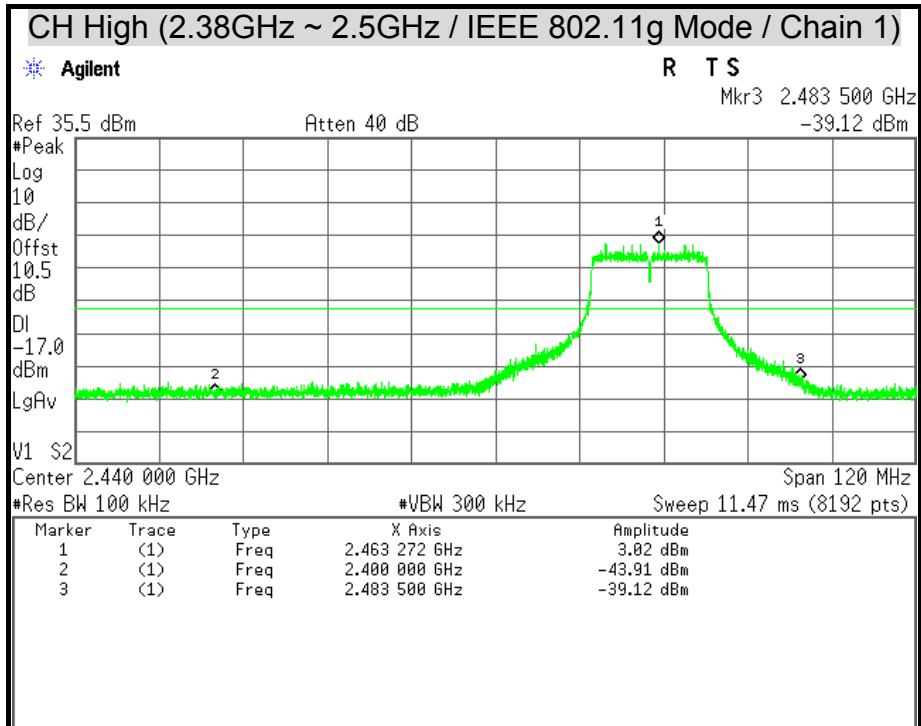


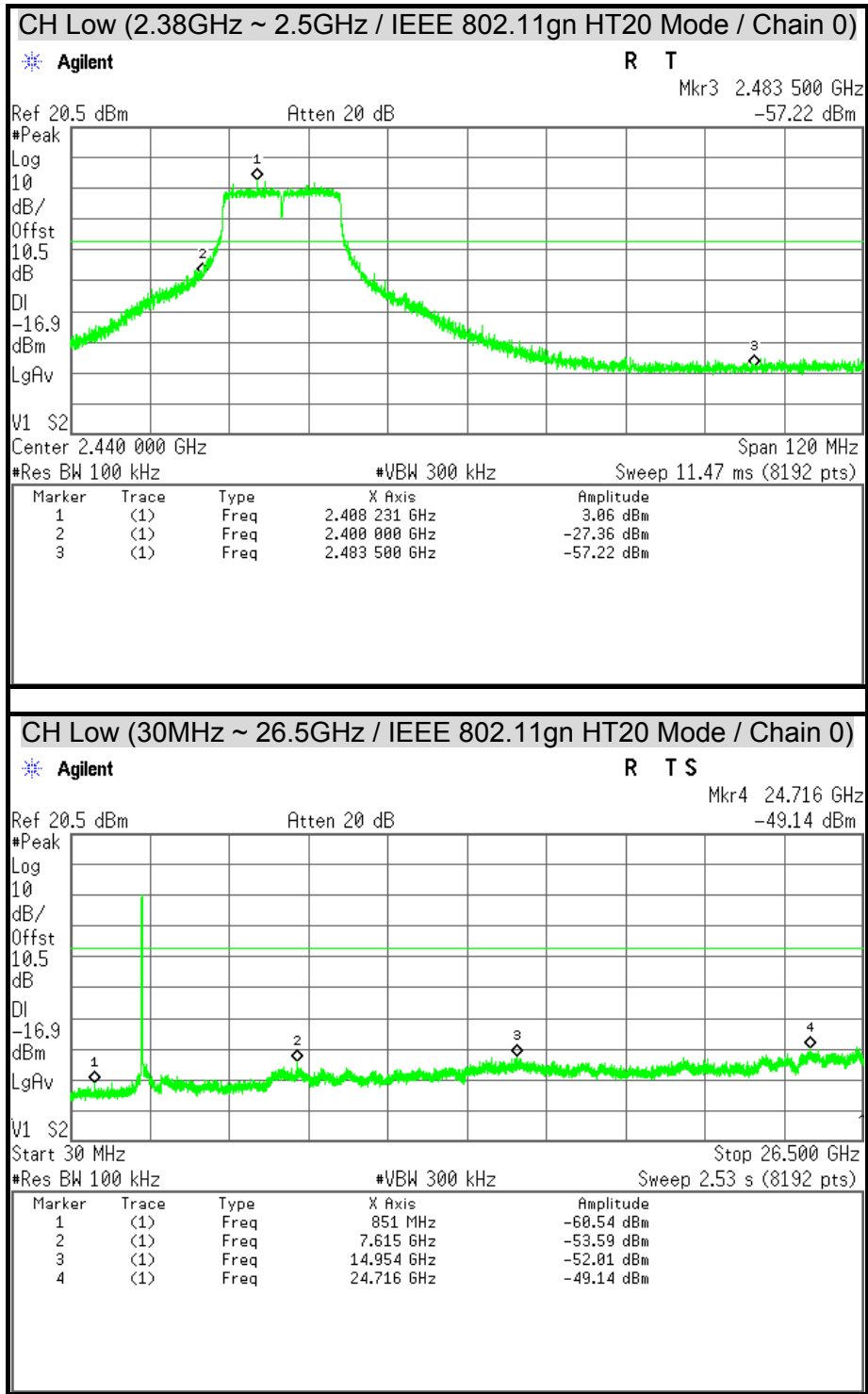


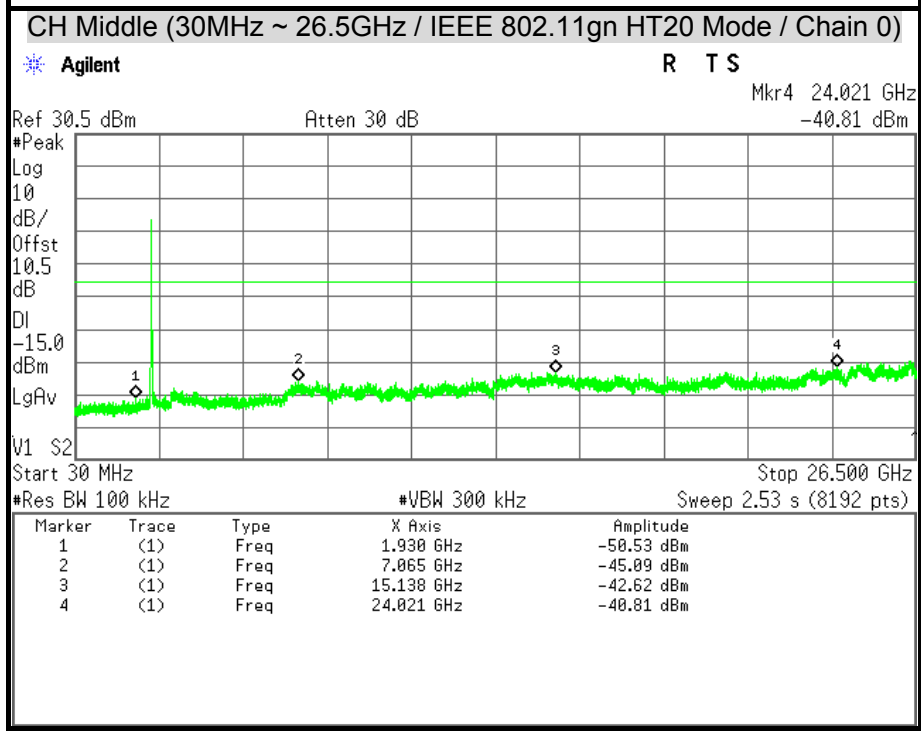
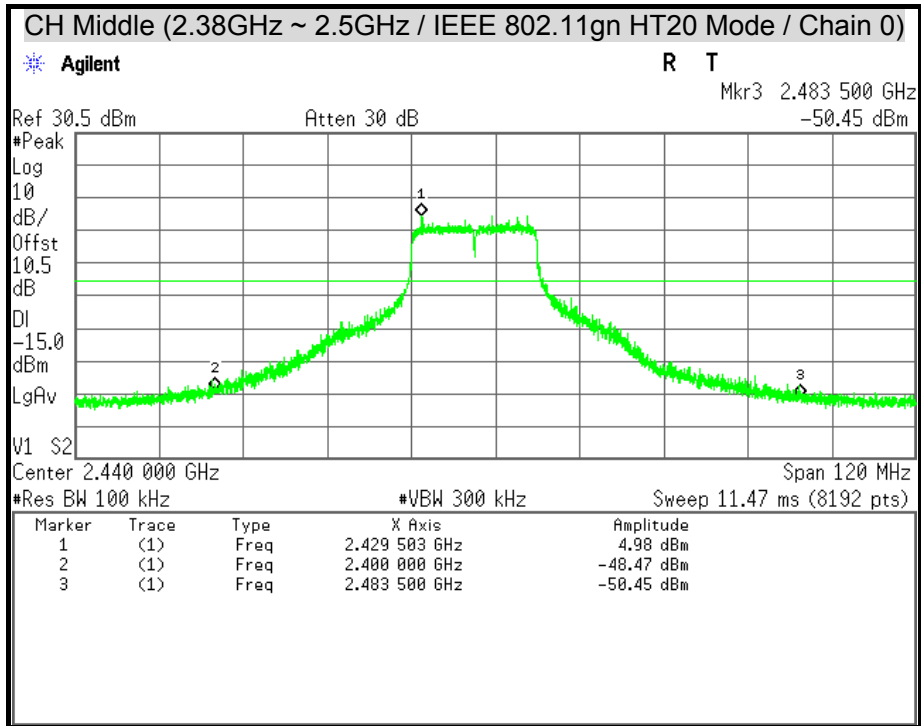


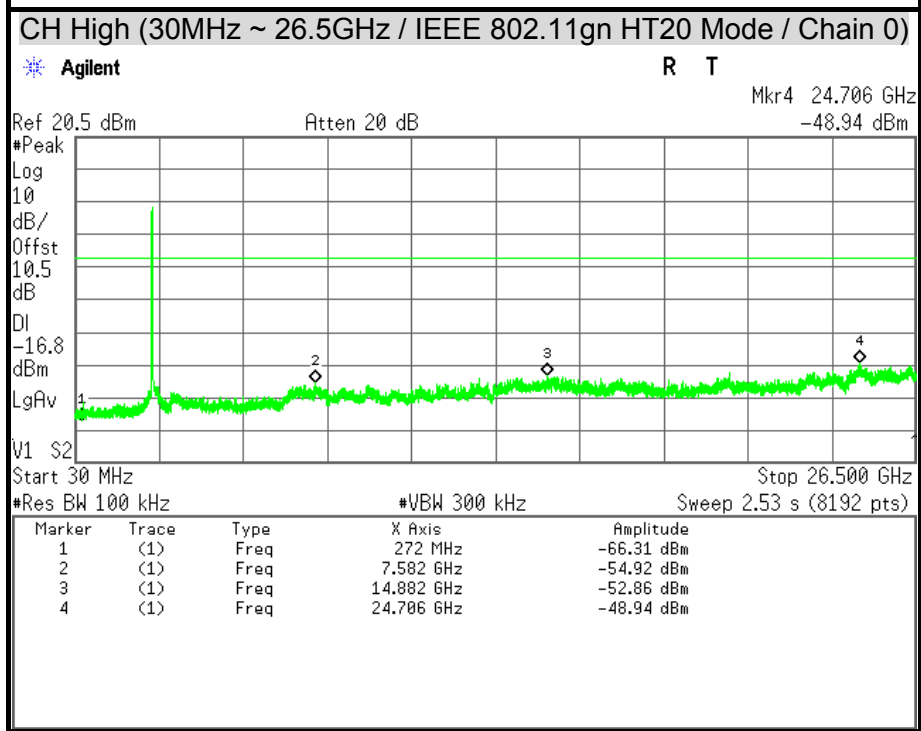
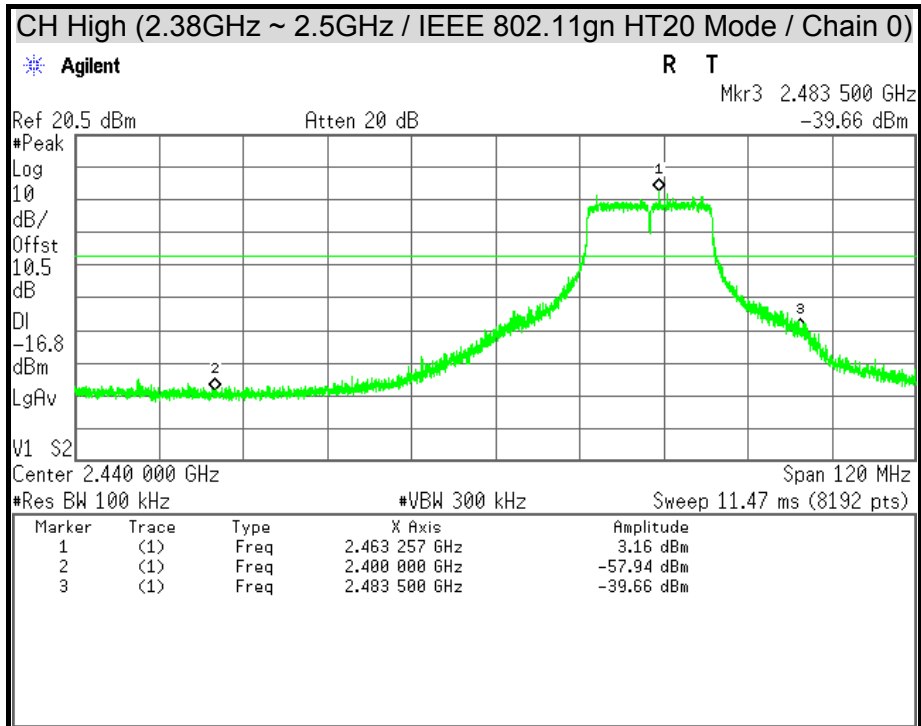


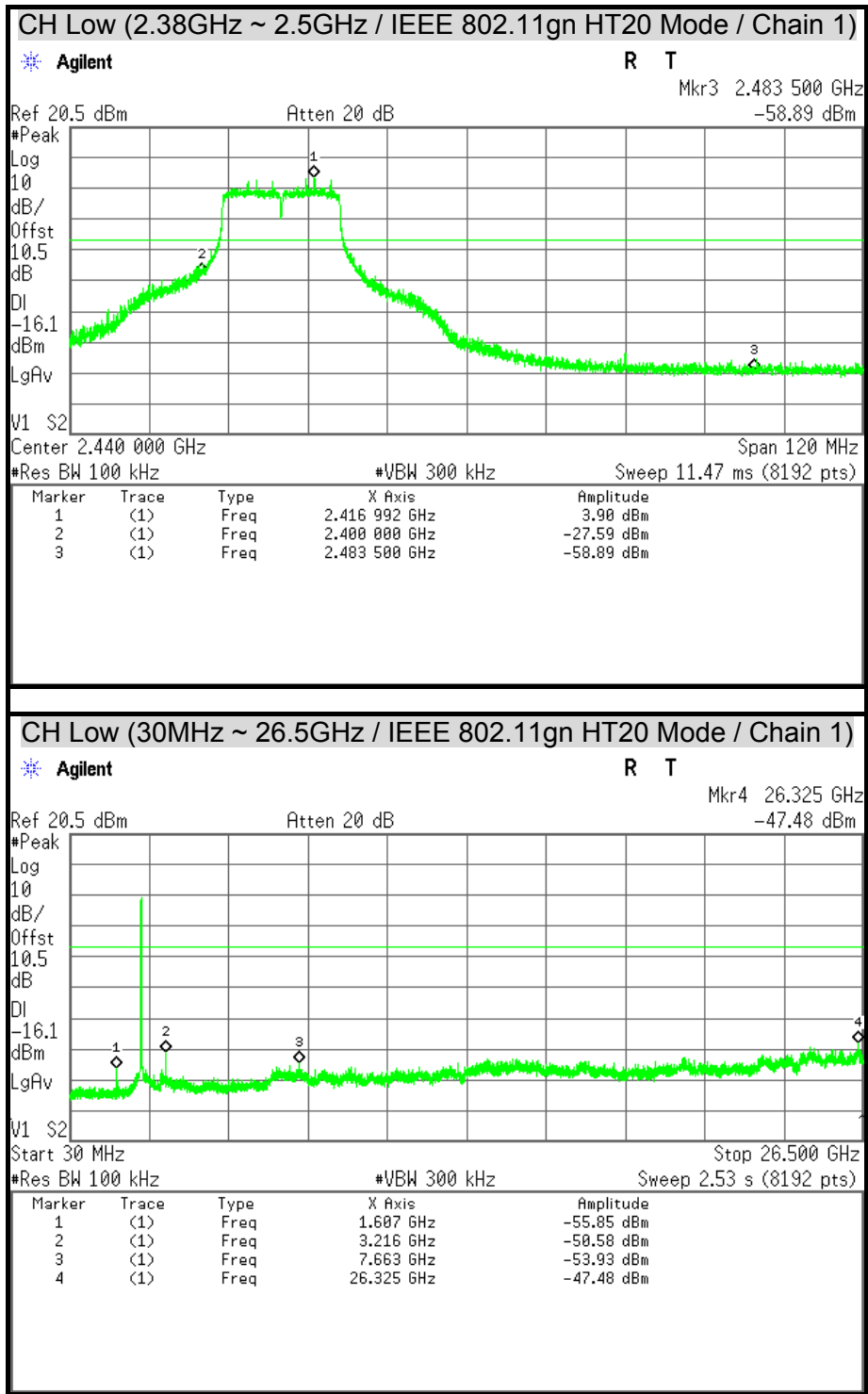


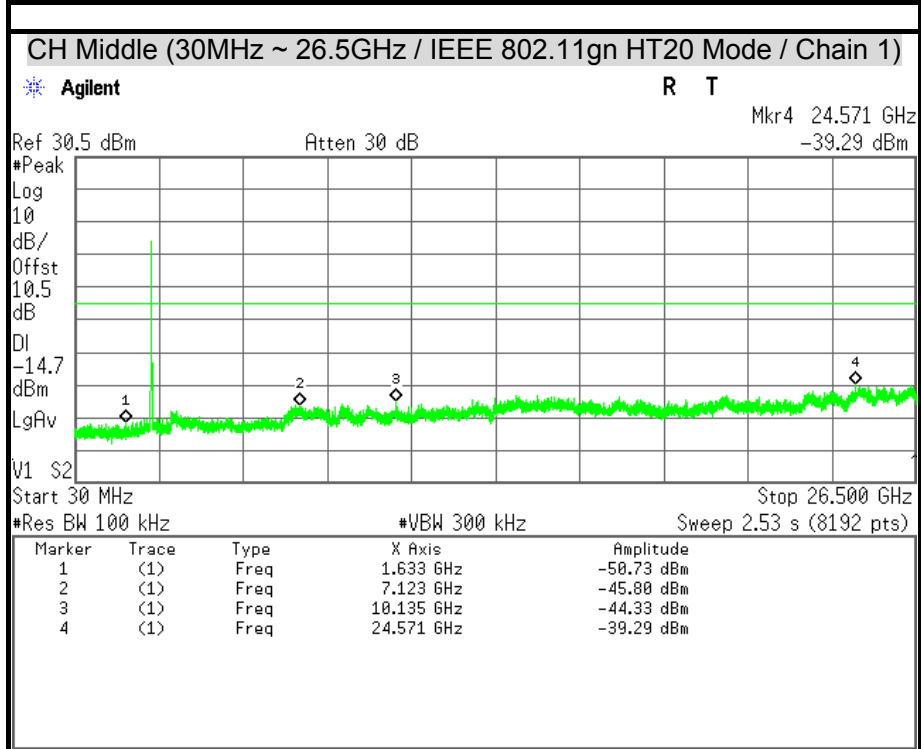
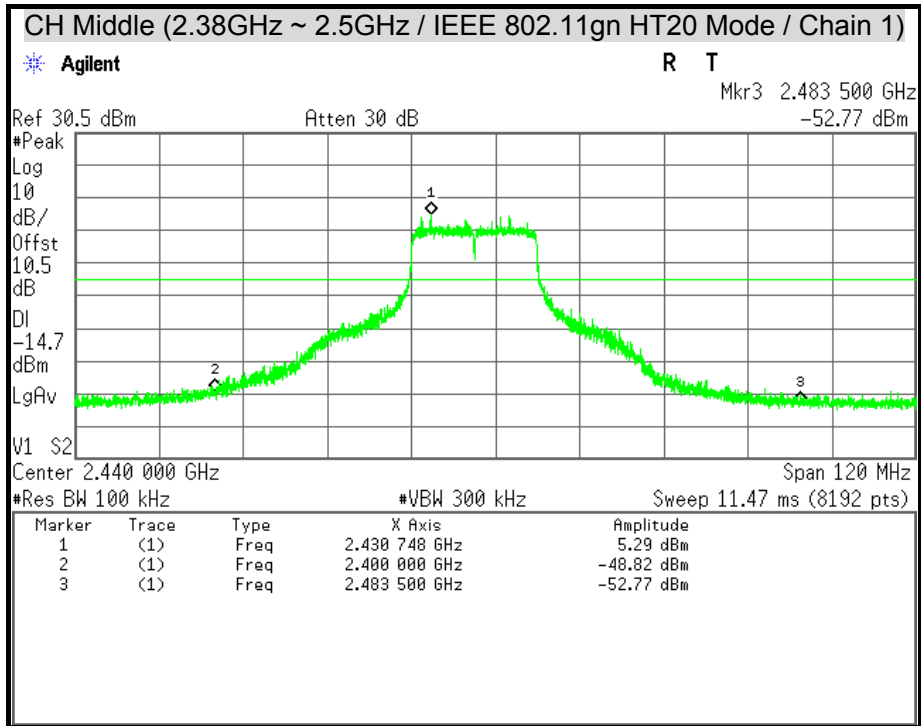




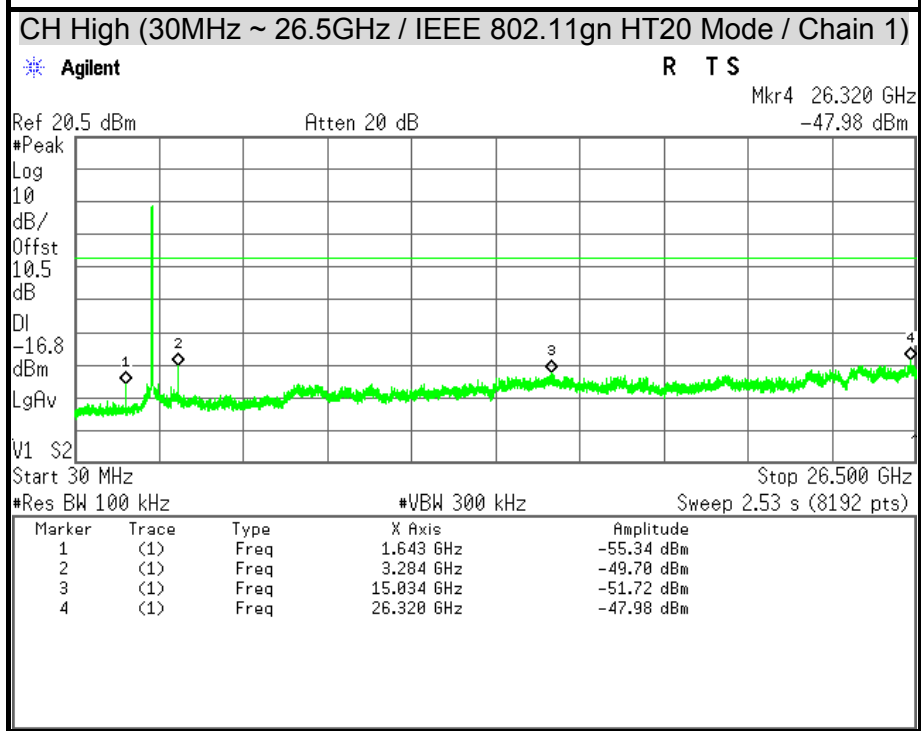
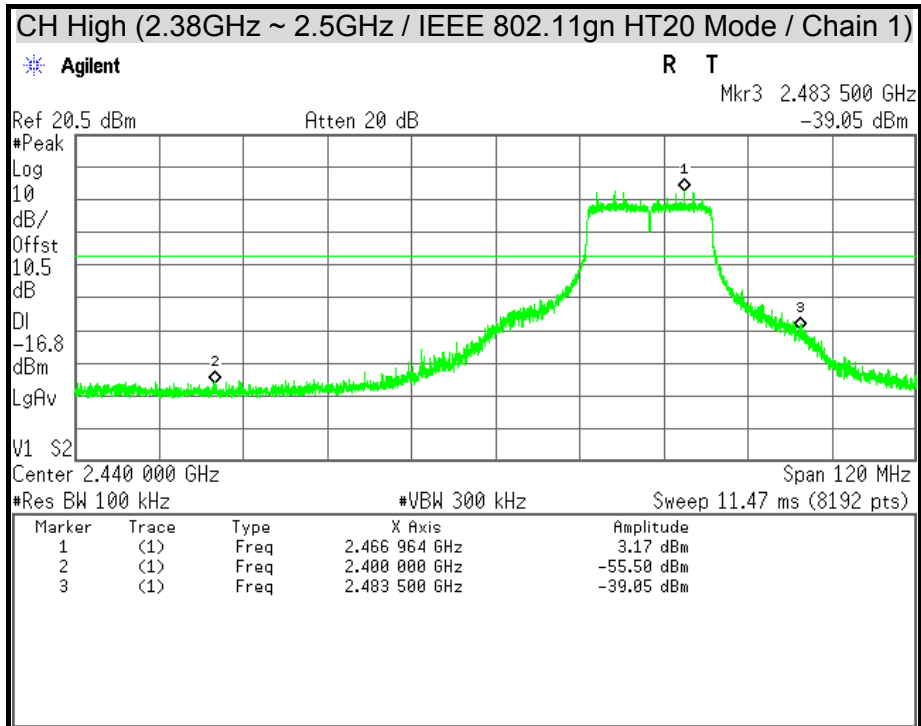


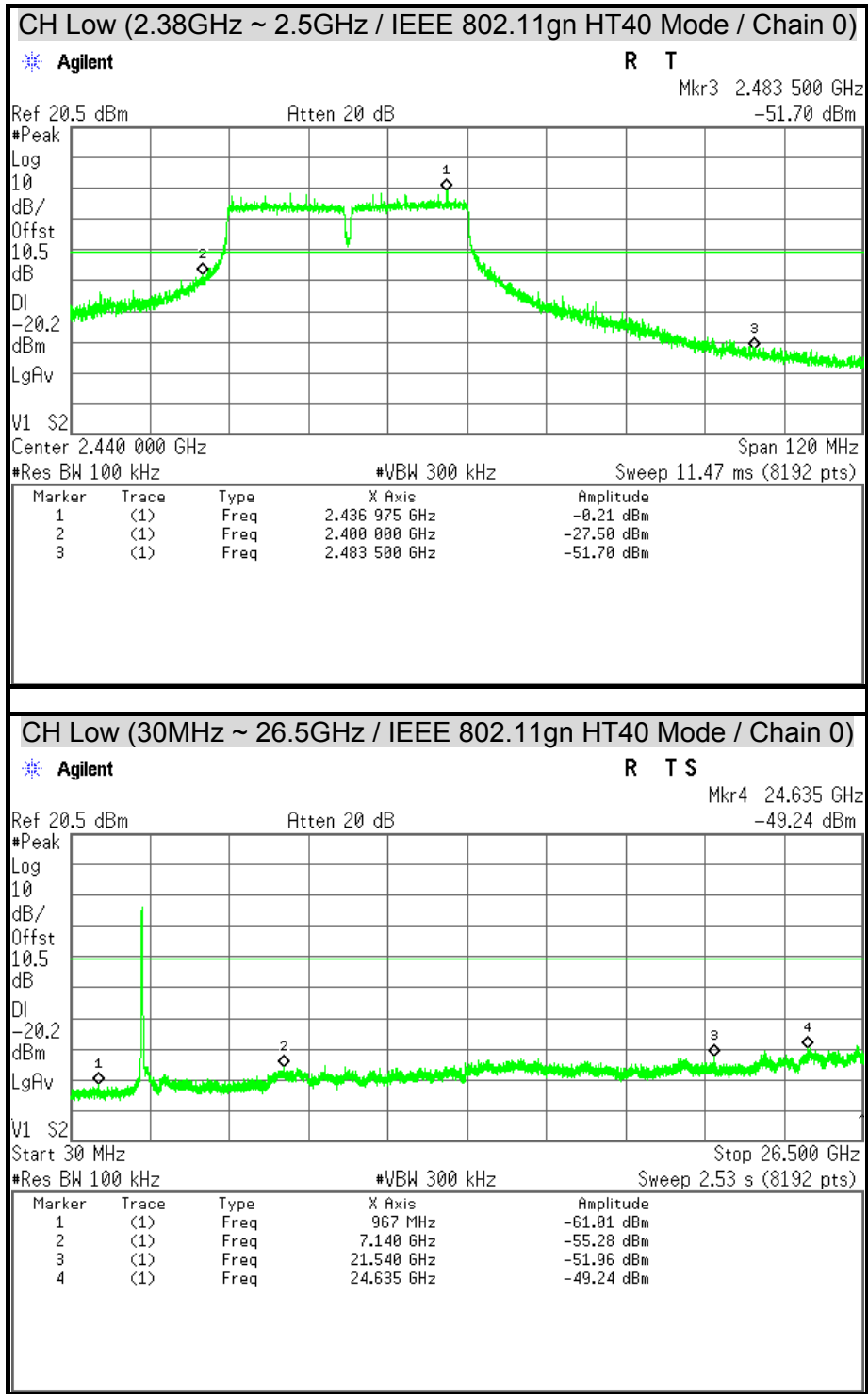


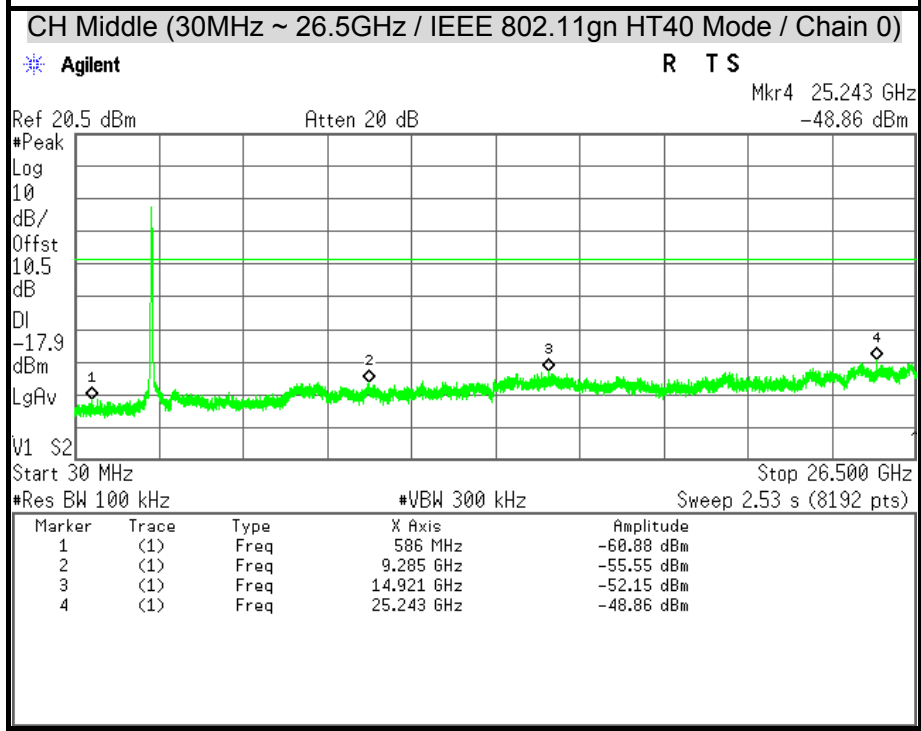
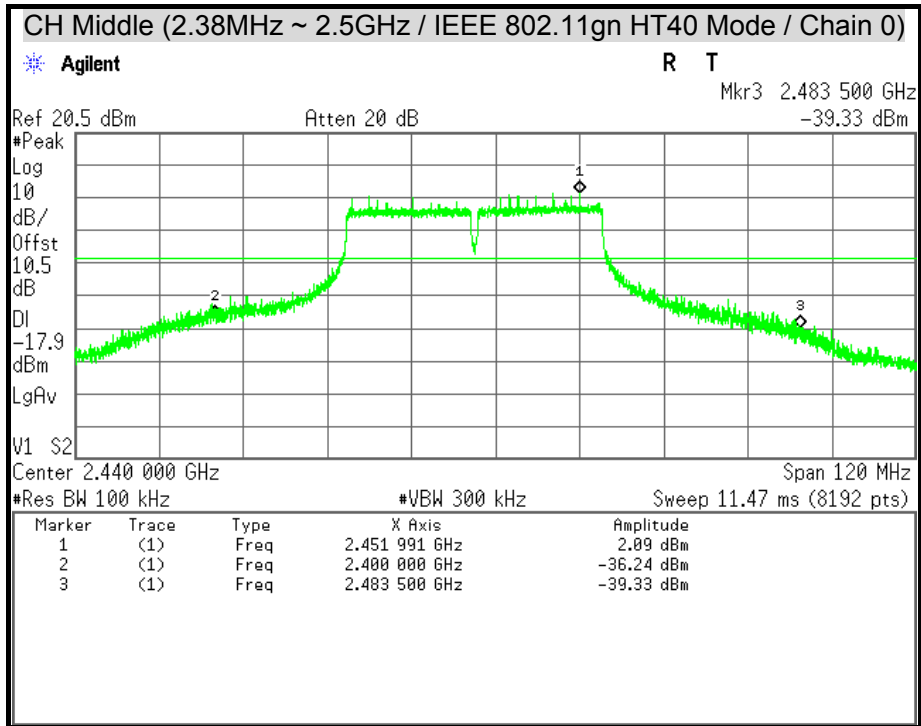


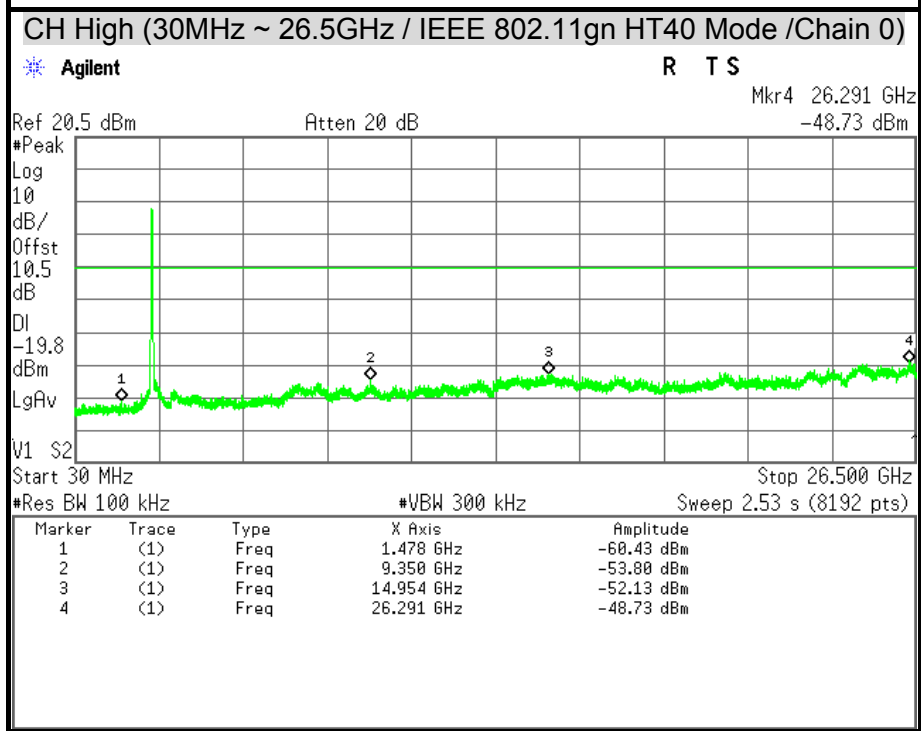
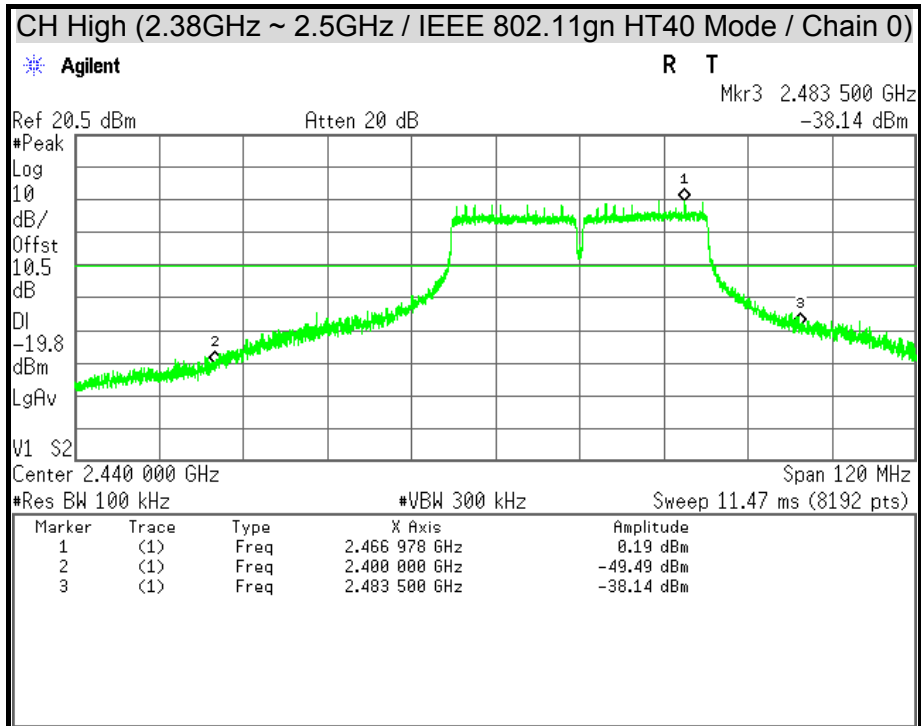


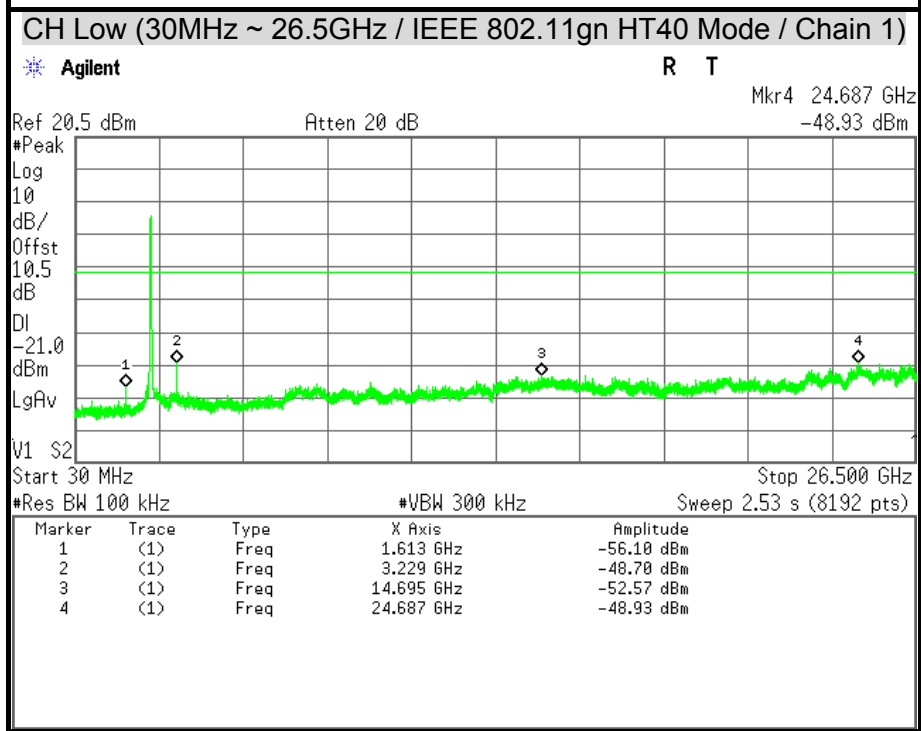
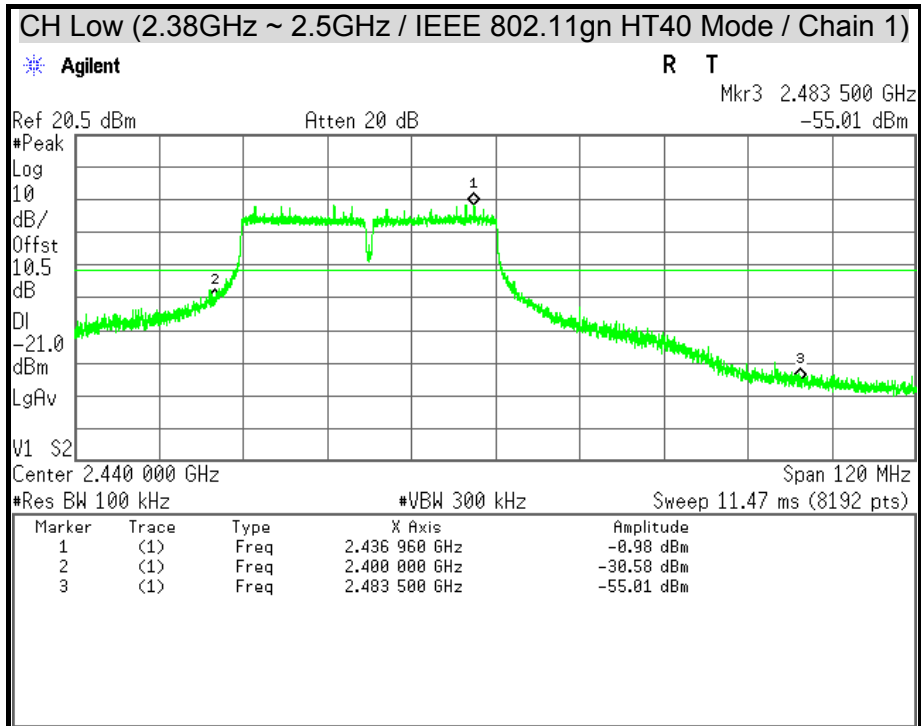


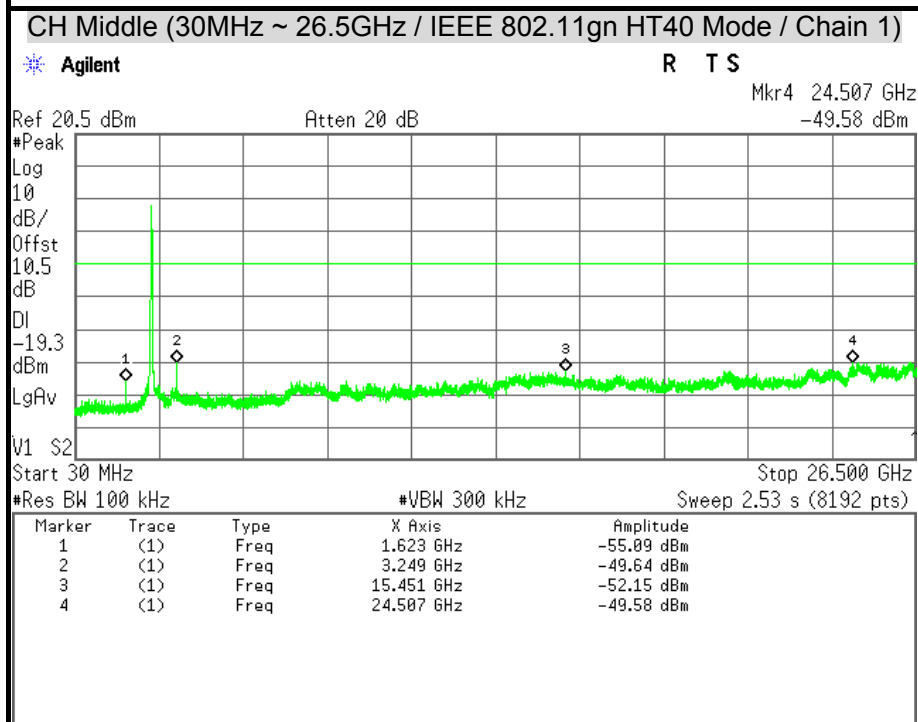
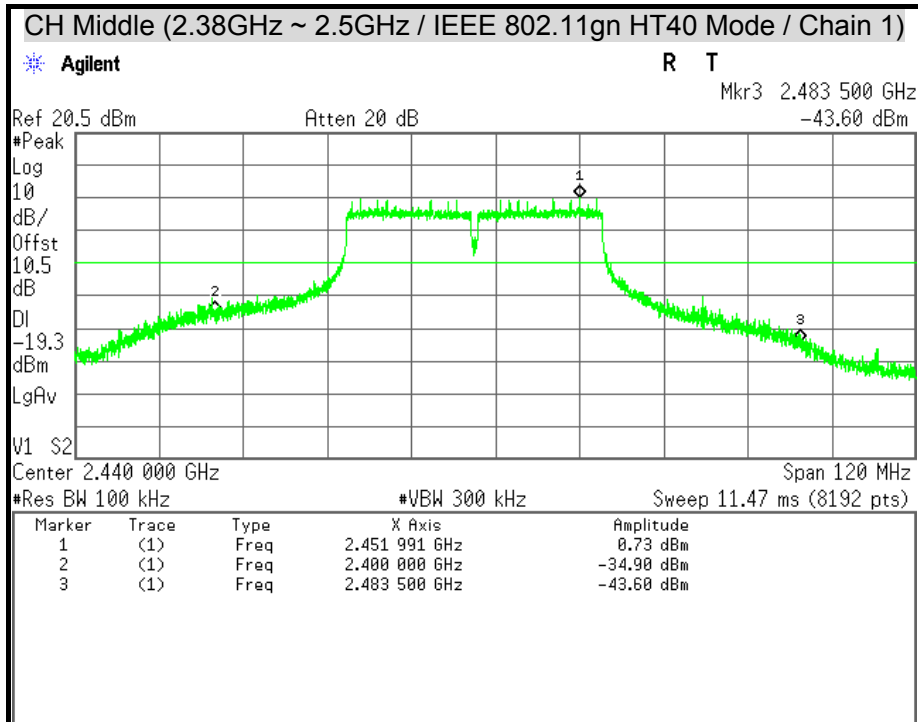


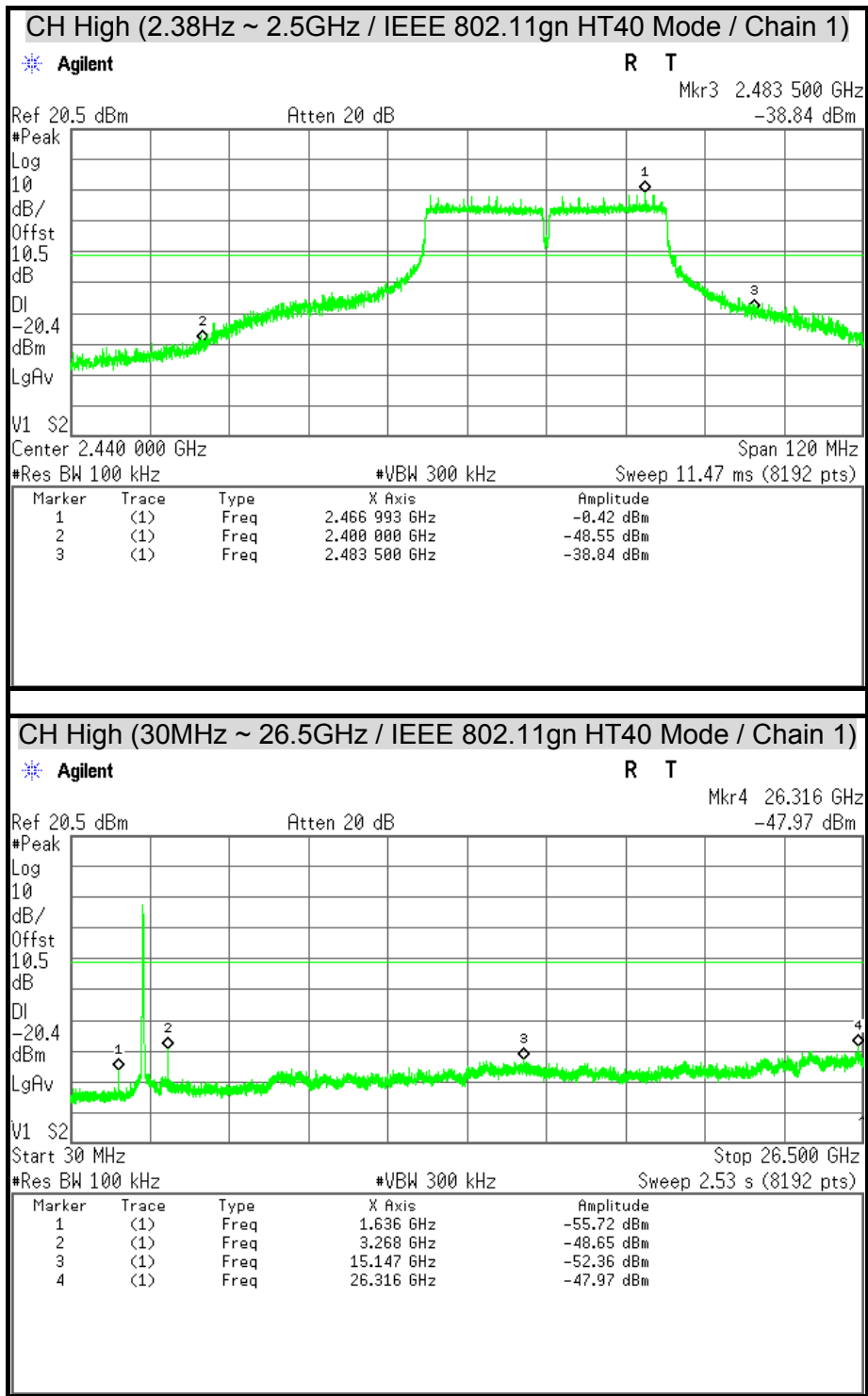


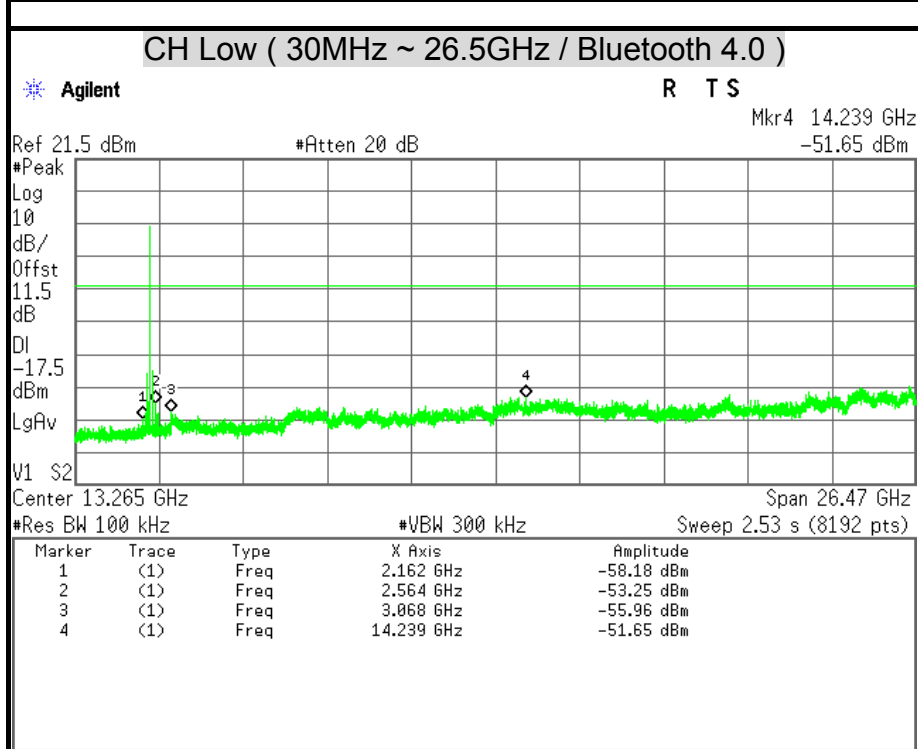
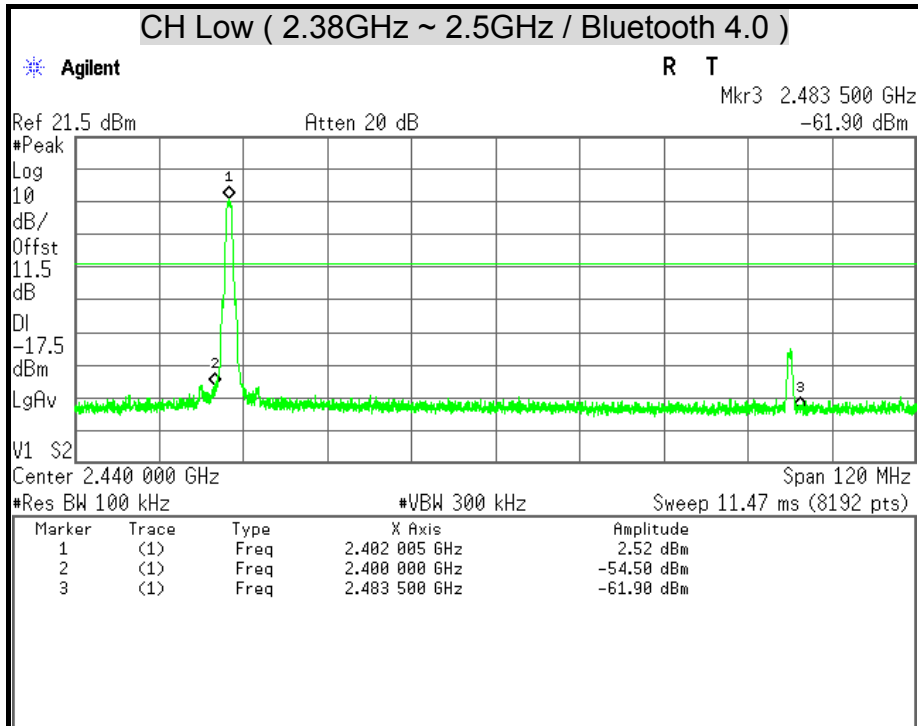




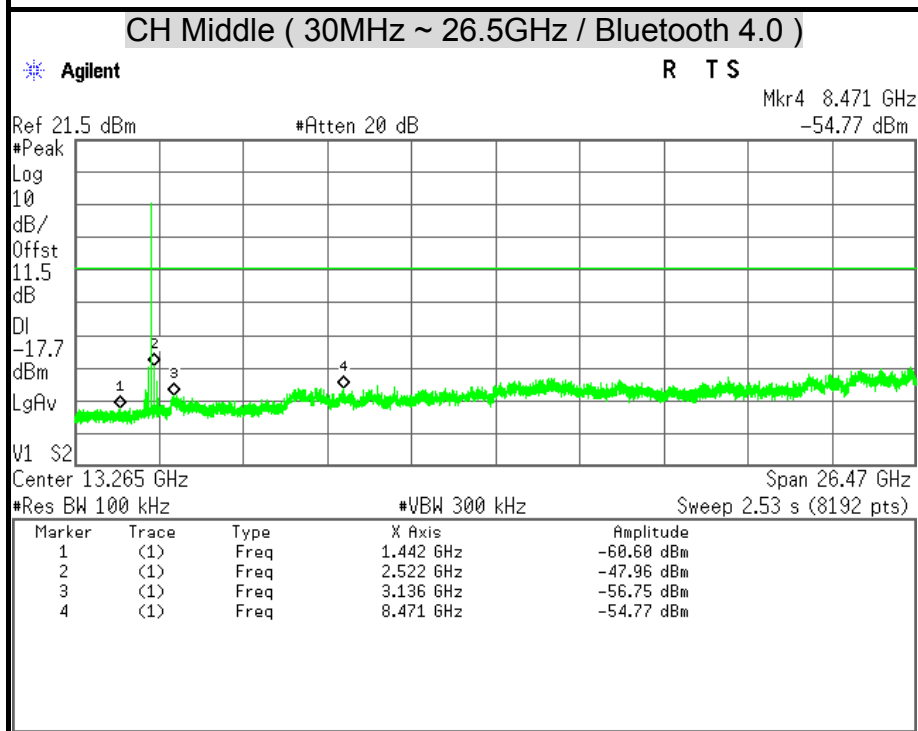
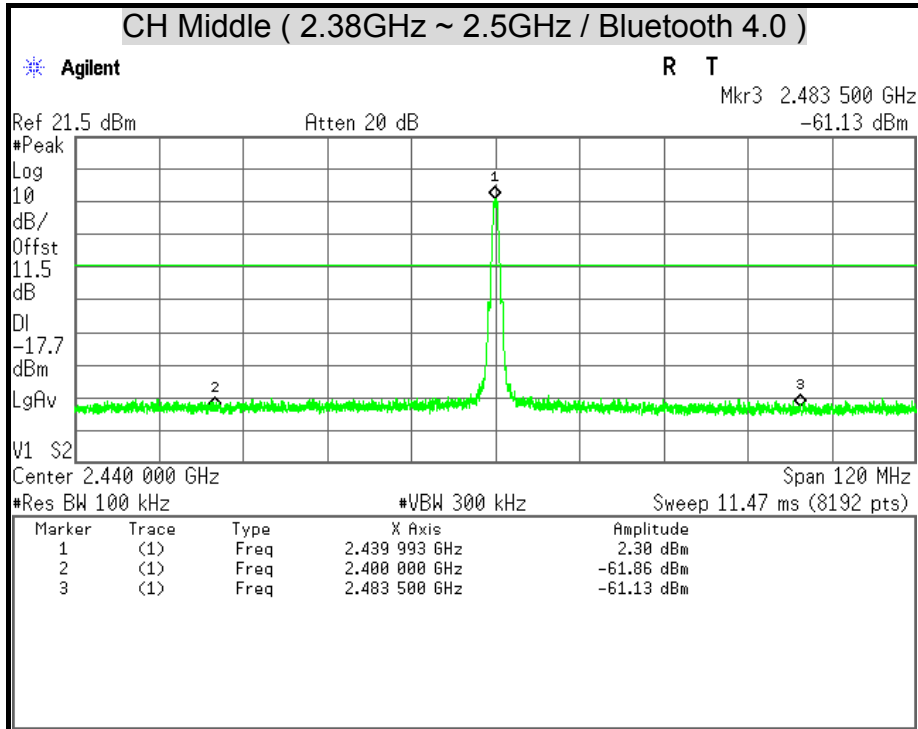


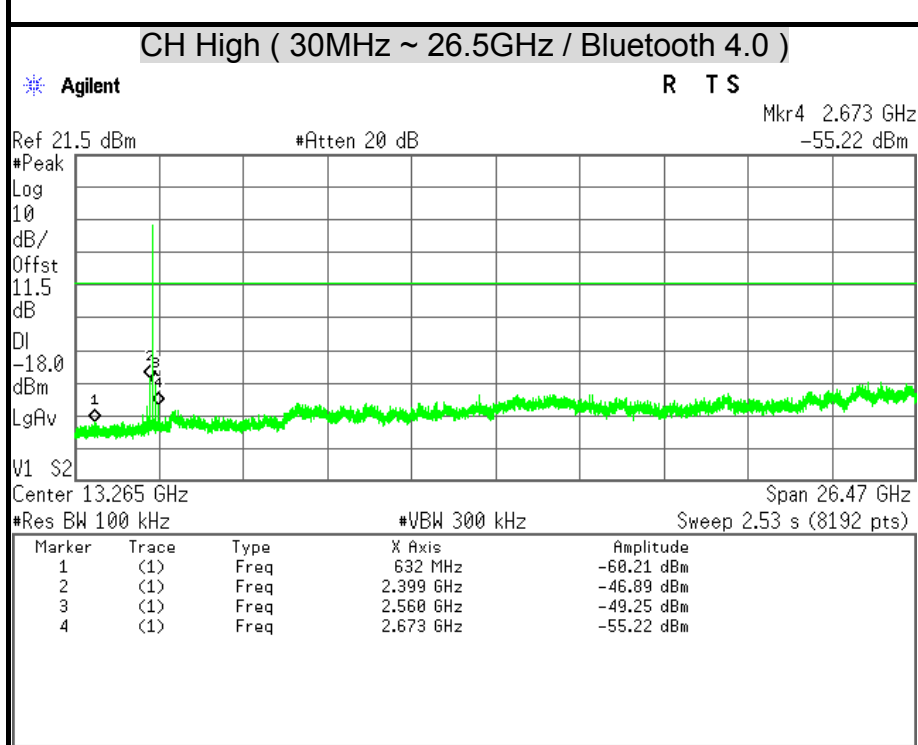
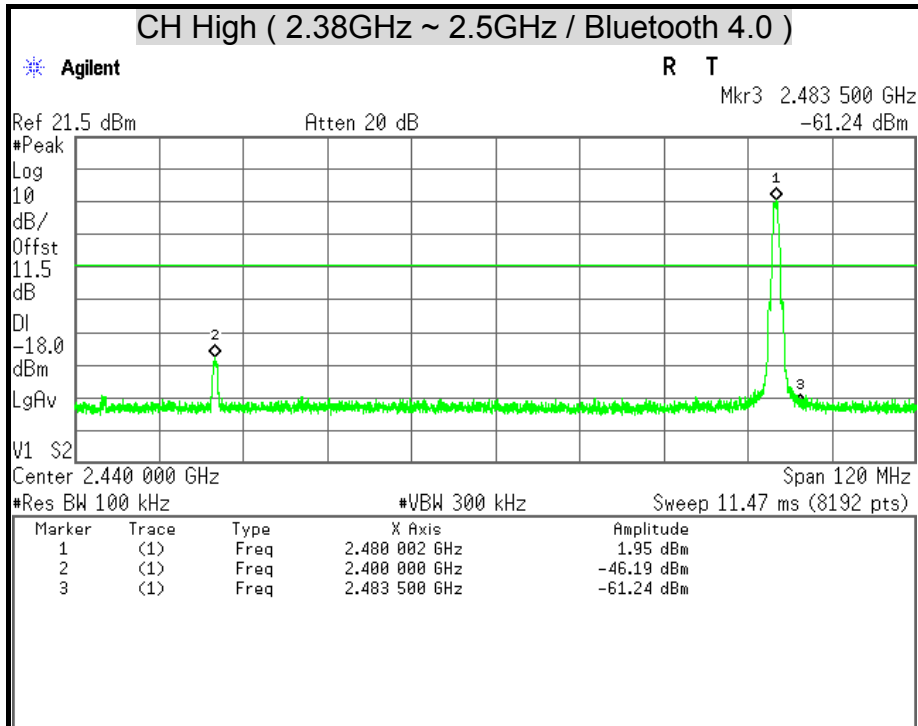












## 7.6 RADIATED EMISSION

### 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:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3338	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	( <sup>2</sup> )
13.36 - 13.41			

**Remark:**

1. <sup>1</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
2. <sup>2</sup> 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 / 966Chamber\_B**

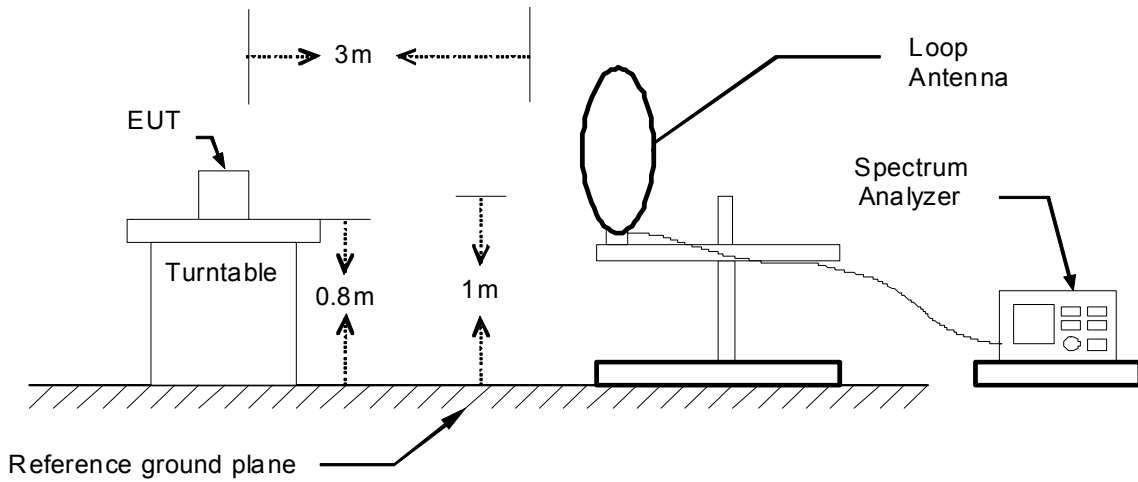
Name of Equipment	Manufacture	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY46180323	04/15/2015
EMI Test Receiver	ROHDE & SCHWARZ	ESCS 30	835418/008	10/14/2015
Bi-log Antenna	SCHWARZBECK	VULB 9168	9168-250	08/21/2015
Broad-Band Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-778	08/19/2015
Double-Ridged Waveguide Horn	ETS-LINDGREN	3117	00078733	12/02/2015
Horn Antenna	COM-POWER	AH-840	03077	12/17/2015
Pre-Amplifier	Agilent	8447D	2944A10052	07/15/2015
Pre-Amplifier	Agilent	8449B	3008A01916	07/15/2015
LOOP Antenna	EMCO	6502	8905-2356	09/23/2015
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.

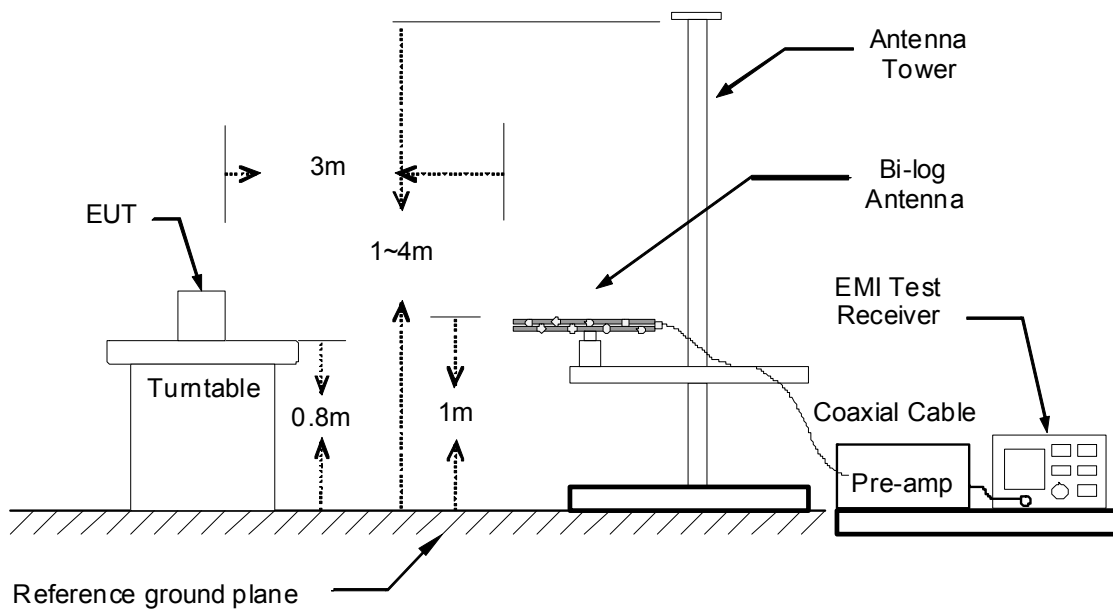
**TEST SETUP**

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

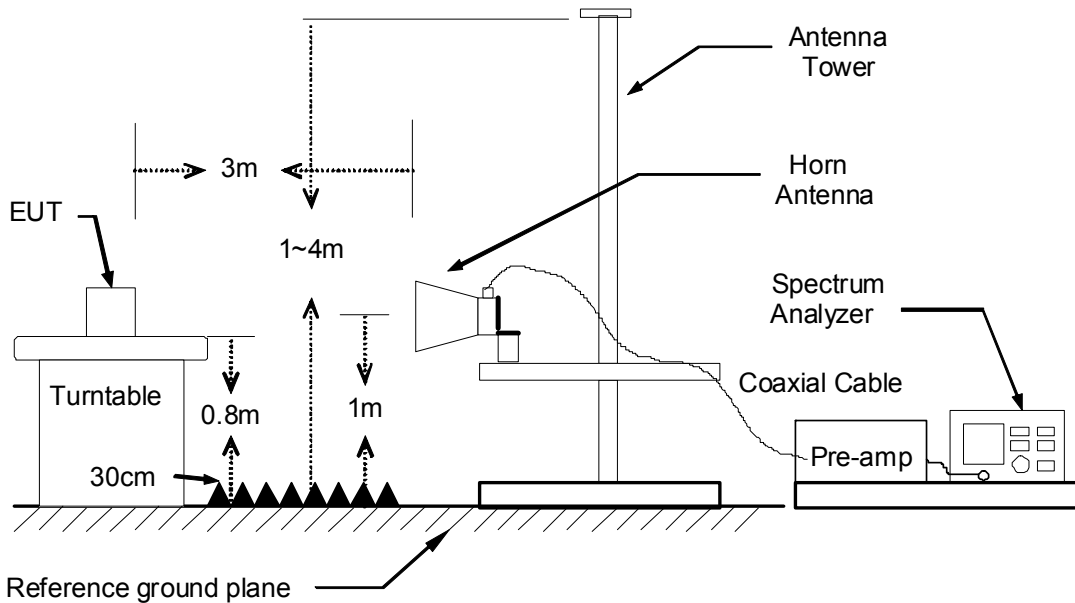
**9kHz ~ 30MHz**



**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. 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>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/03/05
<b>Test Mode</b>	WiFi / TX Mode	<b>Temp. &amp; Humidity</b>	18°C, 56%

966 Chamber_B at 3Meter / Horizontal						
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark
66.86	37.68	-15.67	22.01	40.00	-17.99	Peak
101.78	47.97	-18.35	29.62	43.50	-13.88	Peak
148.34	36.99	-13.75	23.25	43.50	-20.25	Peak
394.72	36.49	-10.09	26.40	46.00	-19.60	Peak
809.88	41.82	-3.15	38.67	46.00	-7.33	Peak
838.98	40.27	-2.60	37.67	46.00	-8.33	Peak

966 Chamber_B at 3Meter / Vertical						
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark
30.97	46.47	-15.39	31.08	40.00	-8.92	Peak
46.49	46.76	-13.87	32.90	40.00	-7.10	Peak
64.92	46.49	-15.32	31.17	40.00	-8.83	Peak
156.10	42.37	-13.55	28.82	43.50	-14.68	Peak
800.18	43.91	-3.34	40.57	46.00	-5.43	Peak
833.16	41.63	-2.71	38.92	46.00	-7.08	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).

<b>Product Name</b>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/03/05
<b>Test Mode</b>	Bluetooth 4.0 / TX Mode	<b>Temp. &amp; Humidity</b>	18°C, 56%

<b>966 Chamber_B at 3Meter / Horizontal</b>						
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark
103.72	47.66	-18.11	29.55	43.50	-13.95	Peak
148.34	37.30	-13.75	23.55	43.50	-19.95	Peak
800.18	43.72	-3.34	40.38	46.00	-5.62	Peak
811.82	38.29	-3.12	35.17	46.00	-10.83	Peak
838.01	37.91	-2.62	35.29	46.00	-10.71	Peak
846.74	41.48	-2.45	39.03	46.00	-6.97	Peak

<b>966 Chamber_B at 3Meter / Vertical</b>						
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark
30.97	44.93	-15.39	29.54	40.00	-10.46	Peak
46.49	47.01	-13.87	33.14	40.00	-6.86	Peak
64.92	47.07	-15.32	31.75	40.00	-8.25	Peak
800.18	40.82	-3.34	37.48	46.00	-8.52	Peak
810.85	39.74	-3.13	36.61	46.00	-9.39	Peak
834.13	43.99	-2.69	41.29	46.00	-4.71	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>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/28
<b>Test Mode</b>	IEEE 802.11b TX / CH Low	<b>Temp. &amp; Humidity</b>	18°C, 56%

<b>966 Chamber_B at 3Meter / Horizontal</b>									
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
1708.00	47.21	---	-0.93	46.28	---	74.00	54.00	-7.72	Peak
2040.00	44.35	---	1.88	46.23	---	74.00	54.00	-7.77	Peak
2520.00	45.26	---	3.05	48.32	---	74.00	54.00	-5.68	Peak
3255.00	41.85	---	4.54	46.39	---	74.00	54.00	-7.61	Peak
4830.00	42.71	---	8.00	50.71	---	74.00	54.00	-3.29	Peak
7005.00	39.08	---	12.30	51.38	---	74.00	54.00	-2.62	Peak

<b>966 Chamber_B at 3Meter / Vertical</b>									
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
1724.00	47.79	---	-0.78	47.01	---	74.00	54.00	-6.99	Peak
2102.00	43.88	---	2.03	45.91	---	74.00	54.00	-8.09	Peak
2522.00	43.63	---	3.05	46.68	---	74.00	54.00	-7.32	Peak
3390.00	42.37	---	4.81	47.18	---	74.00	54.00	-6.82	Peak
4830.00	41.94	---	8.00	49.95	---	74.00	54.00	-4.05	Peak
7110.00	39.05	---	12.06	51.11	---	74.00	54.00	-2.89	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. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)

<b>Product Name</b>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/28
<b>Test Mode</b>	IEEE 802.11b TX / CH Middle	<b>Temp. &amp; Humidity</b>	18°C, 56%

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
1740.00	49.09	---	-0.63	48.46	---	74.00	54.00	-5.54	Peak
2356.00	44.35	---	2.66	47.01	---	74.00	54.00	-6.99	Peak
2574.00	45.25	---	3.16	48.41	---	74.00	54.00	-5.59	Peak
3360.00	43.03	---	4.75	47.78	---	74.00	54.00	-6.22	Peak
4875.00	43.29	---	8.04	51.33	---	74.00	54.00	-2.67	Peak
7080.00	39.08	---	12.13	51.20	---	74.00	54.00	-2.80	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
1736.00	48.15	---	-0.67	47.48	---	74.00	54.00	-6.52	Peak
2150.00	43.11	---	2.15	45.26	---	74.00	54.00	-8.74	Peak
2536.00	43.86	---	3.08	46.94	---	74.00	54.00	-7.06	Peak
3240.00	41.99	---	4.51	46.50	---	74.00	54.00	-7.50	Peak
4875.00	40.69	---	8.04	48.73	---	74.00	54.00	-5.27	Peak
7125.00	39.33	---	12.02	51.36	---	74.00	54.00	-2.64	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. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)

<b>Product Name</b>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/28
<b>Test Mode</b>	IEEE 802.11b TX / CH High	<b>Temp. &amp; Humidity</b>	18°C, 56%

<b>966 Chamber_B at 3Meter / Horizontal</b>									
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
1726.00	50.37	---	-0.76	49.60	---	74.00	54.00	-4.40	Peak
2312.00	44.84	---	2.55	47.39	---	74.00	54.00	-6.61	Peak
2548.00	45.19	---	3.11	48.29	---	74.00	54.00	-5.71	Peak
3240.00	41.85	---	4.51	46.36	---	74.00	54.00	-7.64	Peak
4920.00	44.82	44.66	8.08	52.90	52.74	74.00	54.00	-1.26	AVG
7095.00	39.28	---	12.09	51.37	---	74.00	54.00	-2.63	Peak

<b>966 Chamber_B at 3Meter / Vertical</b>									
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
1726.00	47.60	---	-0.76	46.84	---	74.00	54.00	-7.16	Peak
2254.00	43.72	---	2.40	46.13	---	74.00	54.00	-7.87	Peak
2570.00	43.78	---	3.15	46.93	---	74.00	54.00	-7.07	Peak
3150.00	41.95	---	4.33	46.28	---	74.00	54.00	-7.72	Peak
4725.00	40.16	---	7.92	48.08	---	74.00	54.00	-5.92	Peak
7005.00	39.60	---	12.30	51.90	---	74.00	54.00	-2.10	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. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)

<b>Product Name</b>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/28
<b>Test Mode</b>	IEEE 802.11g TX / CH Low	<b>Temp. &amp; Humidity</b>	18°C, 56%

<b>966 Chamber_B at 3Meter / Horizontal</b>									
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
1730.00	50.45	---	-0.73	49.72	---	74.00	54.00	-4.28	Peak
2136.00	43.78	---	2.11	45.89	---	74.00	54.00	-8.11	Peak
2550.00	45.98	---	3.11	49.10	---	74.00	54.00	-4.90	Peak
3210.00	41.98	---	4.45	46.43	---	74.00	54.00	-7.57	Peak
4800.00	40.17	---	7.98	48.15	---	74.00	54.00	-5.85	Peak
6945.00	39.30	---	12.24	51.54	---	74.00	54.00	-2.46	Peak

<b>966 Chamber_B at 3Meter / Vertical</b>									
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
1746.00	47.76	---	-0.58	47.18	---	74.00	54.00	-6.82	Peak
2060.00	44.15	---	1.93	46.07	---	74.00	54.00	-7.93	Peak
2616.00	43.94	---	3.25	47.18	---	74.00	54.00	-6.82	Peak
3210.00	42.49	---	4.45	46.94	---	74.00	54.00	-7.06	Peak
4920.00	40.16	---	8.08	48.24	---	74.00	54.00	-5.76	Peak
7080.00	39.88	---	12.13	52.00	---	74.00	54.00	-2.00	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. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)

<b>Product Name</b>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/28
<b>Test Mode</b>	IEEE 802.11g TX / CH Middle	<b>Temp. &amp; Humidity</b>	18°C, 56%

<b>966 Chamber_B at 3Meter / Horizontal</b>									
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
1730.00	49.21	---	-0.73	48.48	---	74.00	54.00	-5.52	Peak
2390.00	46.20	---	2.74	48.94	---	74.00	54.00	-5.06	Peak
2484.00	47.32	---	2.97	50.29	---	74.00	54.00	-3.71	Peak
3255.00	42.60	---	4.54	47.14	---	74.00	54.00	-6.86	Peak
4875.00	40.16	---	8.04	48.20	---	74.00	54.00	-5.80	Peak
7305.00	39.96	---	11.61	51.57	---	74.00	54.00	-2.43	Peak

<b>966 Chamber_B at 3Meter / Vertical</b>									
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
1720.00	47.23	---	-0.82	46.41	---	74.00	54.00	-7.59	Peak
2390.00	42.77	---	2.74	45.51	---	74.00	54.00	-8.49	Peak
2484.00	47.42	---	2.97	50.39	---	74.00	54.00	-3.61	Peak
3210.00	42.99	---	4.45	47.44	---	74.00	54.00	-6.56	Peak
4980.00	39.80	---	8.12	47.92	---	74.00	54.00	-6.08	Peak
7125.00	39.16	---	12.02	51.18	---	74.00	54.00	-2.82	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. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)

<b>Product Name</b>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/28
<b>Test Mode</b>	IEEE 802.11g TX / CH High	<b>Temp. &amp; Humidity</b>	18°C, 56%

<b>966 Chamber_B at 3Meter / Horizontal</b>									
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
1720.00	47.24	---	-0.82	46.42	---	74.00	54.00	-7.58	Peak
2288.00	43.48	---	2.49	45.97	---	74.00	54.00	-8.03	Peak
2506.00	51.55	33.42	3.02	54.58	36.44	74.00	54.00	-17.56	AVG
3285.00	44.22	---	4.60	48.82	---	74.00	54.00	-5.18	Peak
4770.00	39.63	---	7.96	47.59	---	74.00	54.00	-6.41	Peak
7080.00	39.08	---	12.13	51.20	---	74.00	54.00	-2.80	Peak

<b>966 Chamber_B at 3Meter / Vertical</b>									
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
1720.00	45.16	---	-0.82	44.34	---	74.00	54.00	-9.66	Peak
2360.00	43.63	---	2.67	46.29	---	74.00	54.00	-7.71	Peak
2562.00	44.91	---	3.14	48.05	---	74.00	54.00	-5.95	Peak
3150.00	42.17	---	4.33	46.50	---	74.00	54.00	-7.50	Peak
4830.00	40.28	---	8.00	48.29	---	74.00	54.00	-5.71	Peak
7080.00	39.54	---	12.13	51.67	---	74.00	54.00	-2.33	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. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)

<b>Product Name</b>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/28
<b>Test Mode</b>	IEEE 802.11gn HT20 TX / CH Low	<b>Temp. &amp; Humidity</b>	18 °C, 56%

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
1724.00	48.96	---	-0.78	48.18	---	74.00	54.00	-5.82	Peak
1984.00	44.30	---	1.63	45.93	---	74.00	54.00	-8.07	Peak
2582.00	46.04	---	3.18	49.21	---	74.00	54.00	-4.79	Peak
3150.00	42.37	---	4.33	46.70	---	74.00	54.00	-7.30	Peak
4680.00	40.09	---	7.88	47.98	---	74.00	54.00	-6.02	Peak
6735.00	40.09	---	11.96	52.05	---	74.00	54.00	-1.95	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
1732.00	46.91	---	-0.71	46.21	---	74.00	54.00	-7.79	Peak
2022.00	43.46	---	1.83	45.30	---	74.00	54.00	-8.70	Peak
2534.00	44.17	---	3.08	47.25	---	74.00	54.00	-6.75	Peak
3120.00	42.12	---	4.27	46.39	---	74.00	54.00	-7.61	Peak
4830.00	39.99	---	8.00	47.99	---	74.00	54.00	-6.01	Peak
7005.00	38.81	---	12.30	51.11	---	74.00	54.00	-2.89	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. Result = Reading + Correction Factor  
 Margin = Result – Limit  
 Remark Peak = Result(PK) – Limit(AV)  
 Remark AVG = Result(AV) – Limit(AV)



<b>Product Name</b>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/28
<b>Test Mode</b>	IEEE 802.11gn HT20 TX / CH Middle	<b>Temp. &amp; Humidity</b>	18°C, 56%

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
1730.00	50.04	---	-0.73	49.31	---	74.00	54.00	-4.69	Peak
2390.00	45.93	---	2.74	48.67	---	74.00	54.00	-5.33	Peak
2484.00	49.94	32.35	2.97	52.91	35.32	74.00	54.00	-18.68	AVG
3195.00	42.04	---	4.42	46.46	---	74.00	54.00	-7.54	Peak
4875.00	40.52	---	8.04	48.56	---	74.00	54.00	-5.44	Peak
7095.00	39.39	---	12.09	51.48	---	74.00	54.00	-2.52	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
1734.00	47.87	---	-0.69	47.19	---	74.00	54.00	-6.81	Peak
2390.00	43.45	---	2.74	46.19	---	74.00	54.00	-7.81	Peak
2484.00	46.02	---	2.97	49.00	---	74.00	54.00	-5.00	Peak
3210.00	42.71	---	4.45	47.16	---	74.00	54.00	-6.84	Peak
4755.00	40.09	---	7.94	48.03	---	74.00	54.00	-5.97	Peak
7305.00	40.50	---	11.61	52.11	---	74.00	54.00	-1.89	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. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)



<b>Product Name</b>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/28
<b>Test Mode</b>	IEEE 802.11gn HT20 TX / CH High	<b>Temp. &amp; Humidity</b>	18°C, 56%

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
1726.00	50.26	---	-0.76	49.49	---	74.00	54.00	-4.51	Peak
2288.00	43.57	---	2.49	46.06	---	74.00	54.00	-7.94	Peak
2508.00	48.70	---	3.03	51.73	---	74.00	54.00	-2.27	Peak
3195.00	42.86	---	4.42	47.28	---	74.00	54.00	-6.72	Peak
4830.00	40.36	---	8.00	48.36	---	74.00	54.00	-5.64	Peak
7065.00	39.81	---	12.16	51.97	---	74.00	54.00	-2.03	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
1702.00	46.15	---	-0.99	45.17	---	74.00	54.00	-8.83	Peak
2280.00	43.06	---	2.47	45.52	---	74.00	54.00	-8.48	Peak
2502.00	45.71	---	3.01	48.72	---	74.00	54.00	-5.28	Peak
3195.00	42.13	---	4.42	46.55	---	74.00	54.00	-7.45	Peak
4920.00	40.34	---	8.08	48.42	---	74.00	54.00	-5.58	Peak
7095.00	39.01	---	12.09	51.10	---	74.00	54.00	-2.90	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. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)

<b>Product Name</b>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/28
<b>Test Mode</b>	IEEE 802.11gn HT40 TX / CH Low	<b>Temp. &amp; Humidity</b>	18 °C, 56%

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
1726.00	49.62	---	-0.76	48.86	---	74.00	54.00	-5.14	Peak
2112.00	43.53	---	2.06	45.59	---	74.00	54.00	-8.41	Peak
2490.00	49.49	---	2.99	52.48	---	74.00	54.00	-1.52	Peak
3120.00	42.26	---	4.27	46.53	---	74.00	54.00	-7.47	Peak
4785.00	40.30	---	7.97	48.27	---	74.00	54.00	-5.73	Peak
7095.00	39.09	---	12.09	51.18	---	74.00	54.00	-2.82	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
1728.00	48.27	---	-0.74	47.52	---	74.00	54.00	-6.48	Peak
2130.00	43.80	---	2.10	45.90	---	74.00	54.00	-8.10	Peak
2484.00	48.56	---	2.97	51.53	---	74.00	54.00	-2.47	Peak
3270.00	41.72	---	4.57	46.29	---	74.00	54.00	-7.71	Peak
4635.00	40.66	---	7.85	48.51	---	74.00	54.00	-5.49	Peak
7035.00	39.43	---	12.23	51.66	---	74.00	54.00	-2.34	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. Result = Reading + Correction Factor  
 Margin = Result – Limit  
 Remark Peak = Result(PK) – Limit(AV)  
 Remark AVG = Result(AV) – Limit(AV)

<b>Product Name</b>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/28
<b>Test Mode</b>	IEEE 802.11gn HT40 TX / CH Middle	<b>Temp. &amp; Humidity</b>	18°C, 56%

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
1700.00	46.51	---	-1.00	45.50	---	74.00	54.00	-8.50	Peak
2390.00	62.16	46.75	2.74	64.90	49.49	74.00	54.00	-4.51	AVG
2484.00	69.23	50.58	2.97	72.20	53.55	74.00	54.00	-0.45	AVG
3255.00	43.22	---	4.54	47.76	---	74.00	54.00	-6.24	Peak
4875.00	39.94	---	8.04	47.98	---	74.00	54.00	-6.02	Peak
7005.00	39.40	---	12.30	51.70	---	74.00	54.00	-2.30	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
1740.00	51.39	---	-0.63	50.76	---	74.00	54.00	-3.24	Peak
2390.00	60.27	44.23	2.74	63.01	46.97	74.00	54.00	-7.03	AVG
2484.00	63.83	45.12	2.97	66.80	48.09	74.00	54.00	-5.91	AVG
3360.00	42.12	---	4.75	46.87	---	74.00	54.00	-7.13	Peak
4590.00	40.58	---	7.81	48.39	---	74.00	54.00	-5.61	Peak
6975.00	39.73	---	12.28	52.01	---	74.00	54.00	-1.99	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. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)

<b>Product Name</b>	Computer	<b>Test By</b>	Rex Chiu
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/28
<b>Test Mode</b>	IEEE 802.11gn HT40 TX / CH High	<b>Temp. &amp; Humidity</b>	18°C, 56%

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
1728.00	48.44	---	-0.74	47.69	---	74.00	54.00	-6.31	Peak
2390.00	48.88	---	2.74	51.62	---	74.00	54.00	-2.38	Peak
2502.00	56.52	39.26	3.01	59.53	42.27	74.00	54.00	-11.73	AVG
3270.00	42.59	---	4.57	47.16	---	74.00	54.00	-6.84	Peak
4845.00	40.37	---	8.02	48.38	---	74.00	54.00	-5.62	Peak
7080.00	39.00	---	12.13	51.13	---	74.00	54.00	-2.87	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
1744.00	49.10	---	-0.60	48.51	---	74.00	54.00	-5.49	Peak
2298.00	43.81	---	2.51	46.33	---	74.00	54.00	-7.67	Peak
2502.00	51.71	35.56	3.01	54.72	38.57	74.00	54.00	-15.43	AVG
3180.00	43.15	---	4.39	47.54	---	74.00	54.00	-6.46	Peak
4815.00	39.92	---	7.99	47.92	---	74.00	54.00	-6.08	Peak
7020.00	39.27	---	12.26	51.53	---	74.00	54.00	-2.47	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. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)

<b>Product Name</b>	Computer	<b>Test By</b>	Waternil Guan
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/26
<b>Test Mode</b>	Bluetooth 4.0 / TX Mode / CH Low	<b>Temp. &amp; Humidity</b>	22°C, 51%

<b>966 Chamber_B at 3Meter / Horizontal</b>									
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
1728.00	51.90	---	-0.74	51.15	---	74.00	54.00	-2.85	Peak
2322.00	45.70	---	2.57	48.27	---	74.00	54.00	-5.73	Peak
2482.00	46.19	---	2.97	49.15	---	74.00	54.00	-4.85	Peak
3885.00	43.53	---	5.75	49.29	---	74.00	54.00	-4.71	Peak
4455.00	41.71	---	7.58	49.29	---	74.00	54.00	-4.71	Peak
4935.00	41.36	---	8.09	49.45	---	74.00	54.00	-4.55	Peak

<b>966 Chamber_B at 3Meter / Vertical</b>									
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
1484.00	45.86	---	-2.88	42.99	---	74.00	54.00	-11.01	Peak
1730.00	49.78	---	-0.73	49.05	---	74.00	54.00	-4.95	Peak
2482.00	45.87	---	2.97	48.83	---	74.00	54.00	-5.17	Peak
3600.00	42.87	---	5.22	48.08	---	74.00	54.00	-5.92	Peak
4020.00	43.09	---	6.04	49.13	---	74.00	54.00	-4.87	Peak
4830.00	41.77	---	8.00	49.78	---	74.00	54.00	-4.22	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. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)

<b>Product Name</b>	Computer	<b>Test By</b>	Waternil Guan
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/26
<b>Test Mode</b>	Bluetooth 4.0 / TX Mode / CH Middle	<b>Temp. &amp; Humidity</b>	22°C, 51%

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
1600.00	48.94	---	-1.93	47.00	---	74.00	54.00	-7.00	Peak
1730.00	51.04	---	-0.73	50.31	---	74.00	54.00	-3.69	Peak
1912.00	44.55	---	0.96	45.51	---	74.00	54.00	-8.49	Peak
4545.00	41.54	---	7.78	49.32	---	74.00	54.00	-4.68	Peak
4890.00	41.01	---	8.05	49.06	---	74.00	54.00	-4.94	Peak
5130.00	41.12	---	8.65	49.77	---	74.00	54.00	-4.23	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
1600.00	48.42	---	-1.93	46.49	---	74.00	54.00	-7.51	Peak
1674.00	46.69	---	-1.25	45.45	---	74.00	54.00	-8.55	Peak
1732.00	49.45	---	-0.71	48.75	---	74.00	54.00	-5.25	Peak
3990.00	42.11	---	5.95	48.06	---	74.00	54.00	-5.94	Peak
4470.00	41.60	---	7.63	49.23	---	74.00	54.00	-4.77	Peak
4860.00	41.48	---	8.03	49.51	---	74.00	54.00	-4.49	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. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)

<b>Product Name</b>	Computer	<b>Test By</b>	Waternil Guan
<b>Test Model</b>	TREK-572	<b>Test Date</b>	2015/02/26
<b>Test Mode</b>	Bluetooth 4.0 / TX Mode / CH High	<b>Temp. &amp; Humidity</b>	22°C, 51%

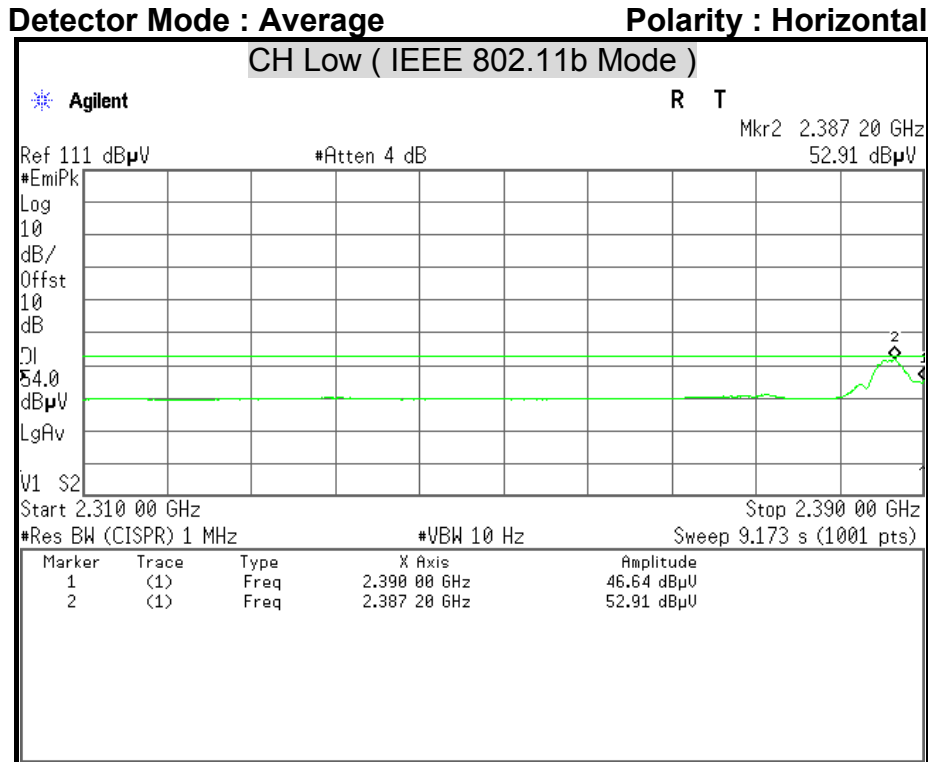
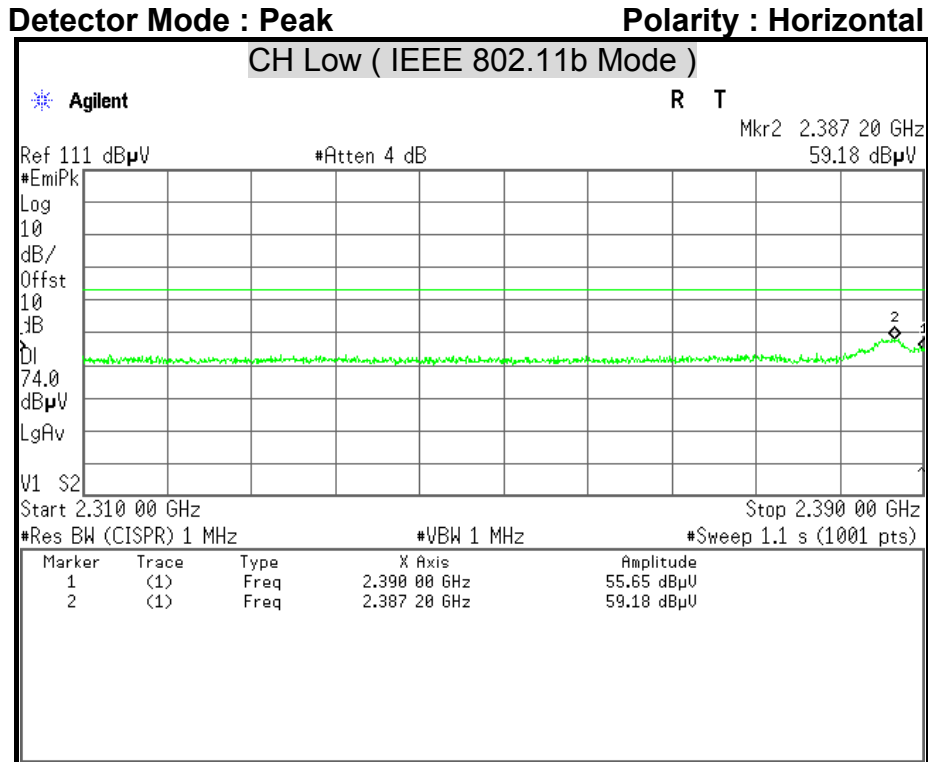
966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1600.00	49.48	---	-1.93	47.55	---	74.00	54.00	-6.45	Peak
1726.00	55.21	34.62	-0.76	54.45	33.86	74.00	54.00	-20.14	AVG
2042.00	43.66	---	1.88	45.54	---	74.00	54.00	-8.46	Peak
3960.00	42.47	---	5.89	48.36	---	74.00	54.00	-5.64	Peak
4275.00	41.71	---	6.94	48.65	---	74.00	54.00	-5.35	Peak
4695.00	41.94	---	7.90	49.84	---	74.00	54.00	-4.16	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
1600.00	50.66	---	-1.93	48.73	---	74.00	54.00	-5.27	Peak
1730.00	51.54	---	-0.73	50.81	---	74.00	54.00	-3.19	Peak
2096.00	43.76	---	2.02	45.78	---	74.00	54.00	-8.22	Peak
3285.00	43.12	---	4.60	47.72	---	74.00	54.00	-6.28	Peak
4455.00	41.74	---	7.58	49.33	---	74.00	54.00	-4.67	Peak
4875.00	41.84	---	8.04	49.88	---	74.00	54.00	-4.12	Peak

**Remark:**

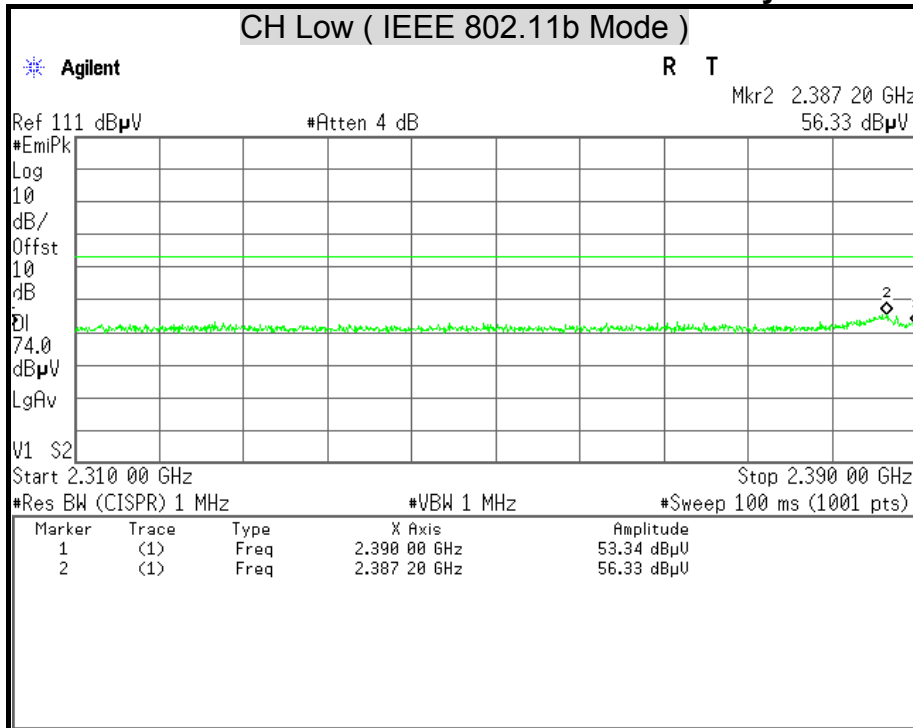
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are 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. Result = Reading + Correction Factor  
 Margin = Result - Limit  
 Remark Peak = Result(PK) - Limit(AV)  
 Remark AVG = Result(AV) - Limit(AV)

**Restricted Band Edges**

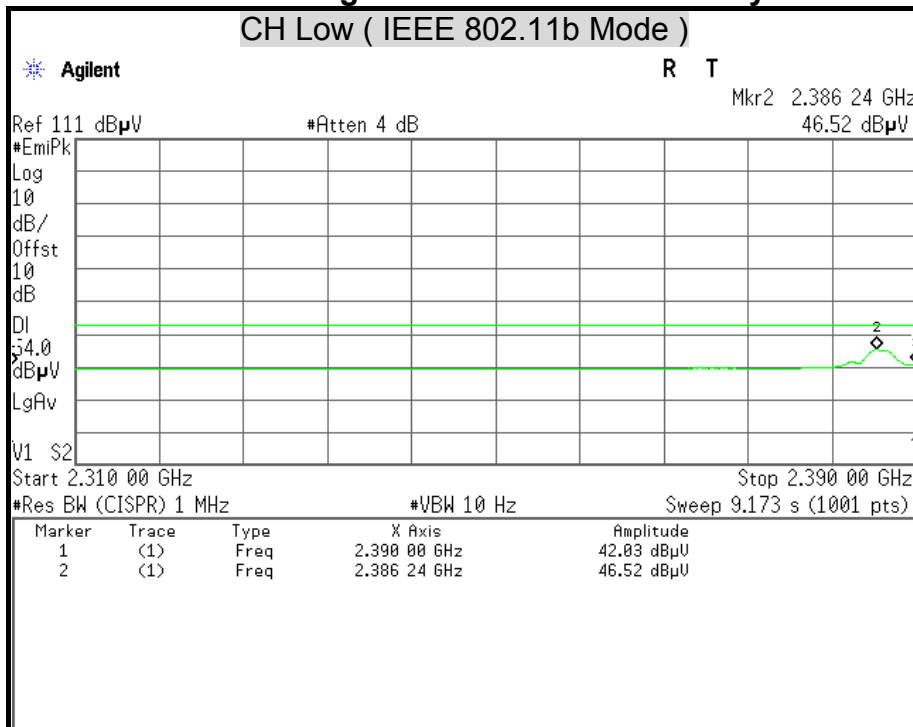




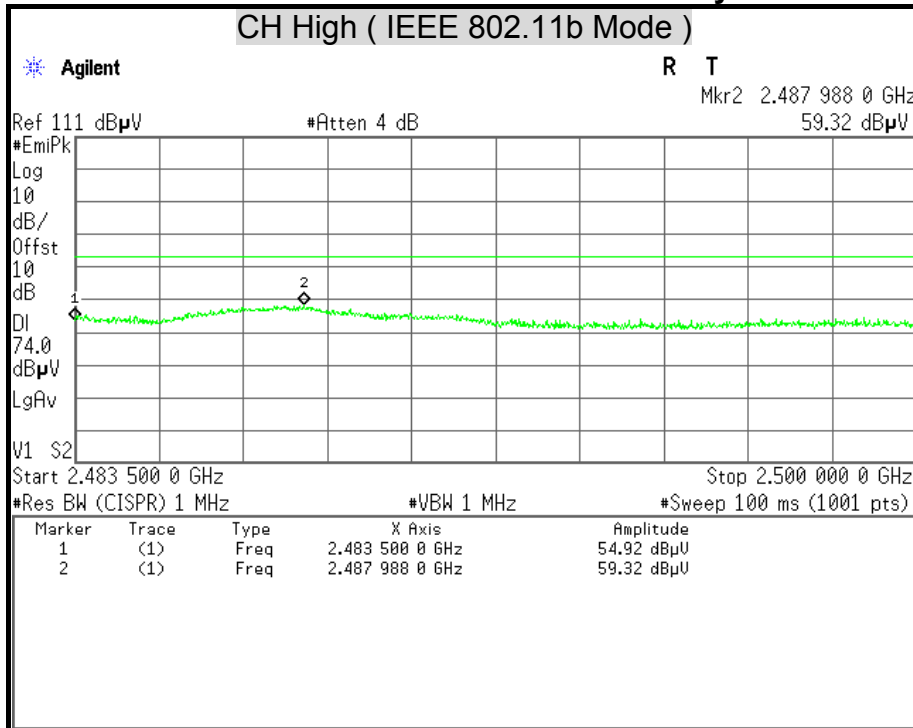
**Detector Mode : Peak** **Polarity : Vertical**



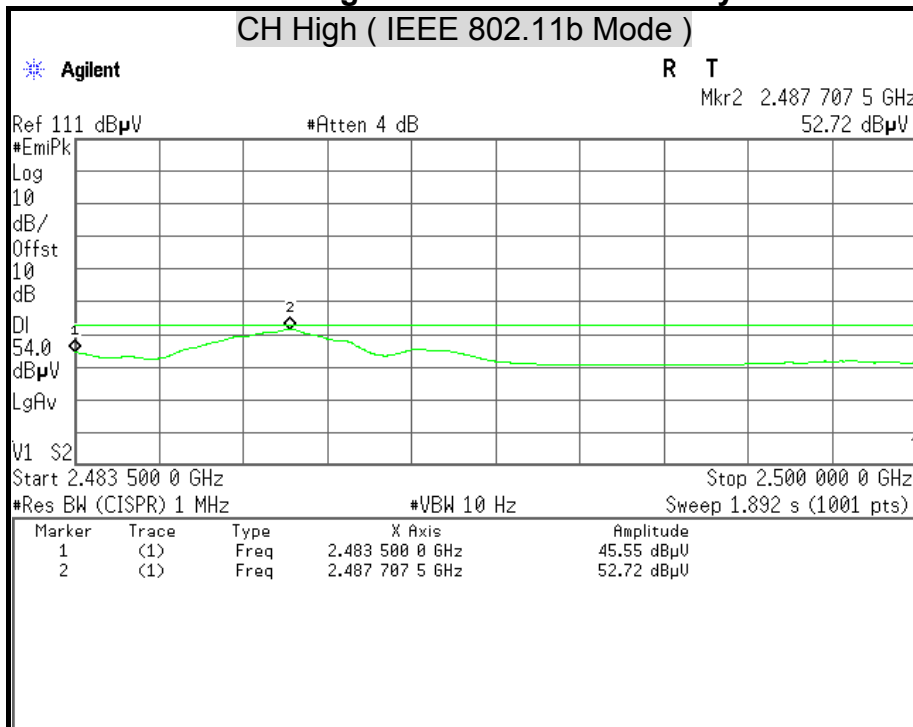
**Detector Mode : Average** **Polarity : Vertical**



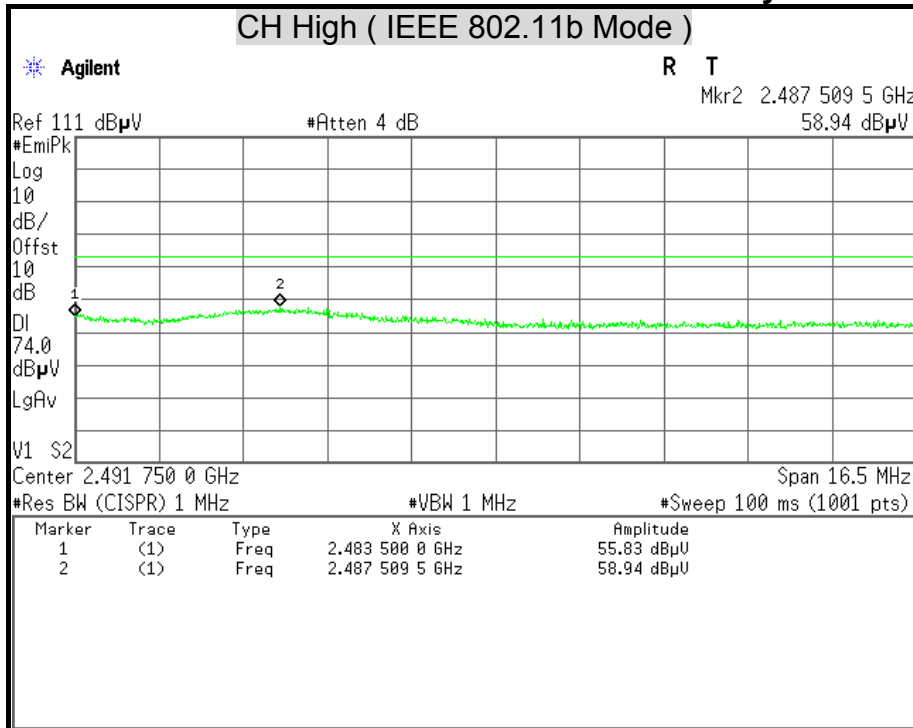
**Detector Mode : Peak** **Polarity : Horizontal**



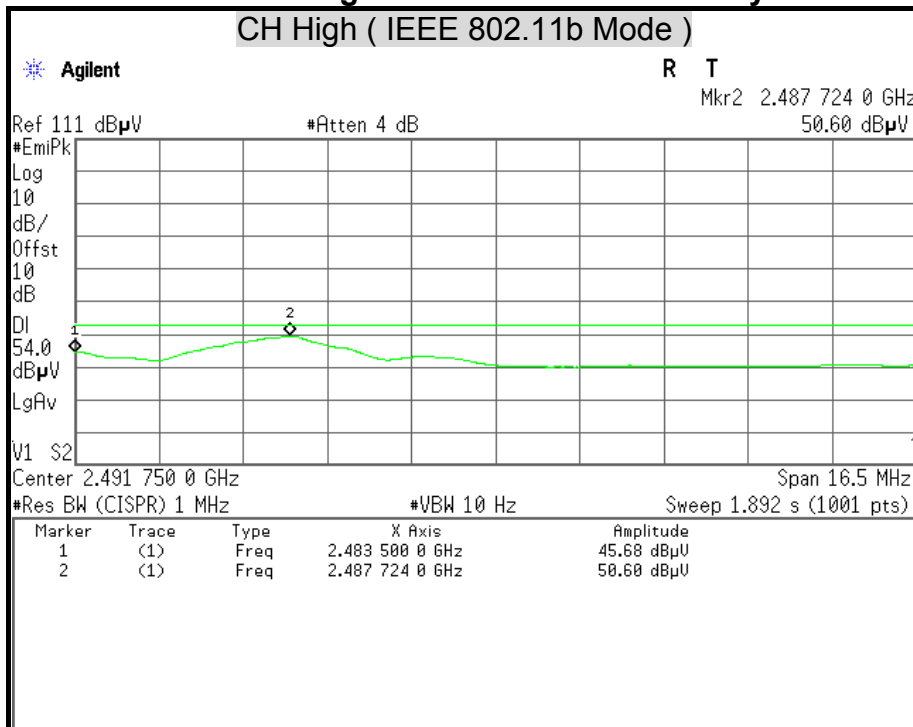
**Detector Mode : Average** **Polarity : Horizontal**



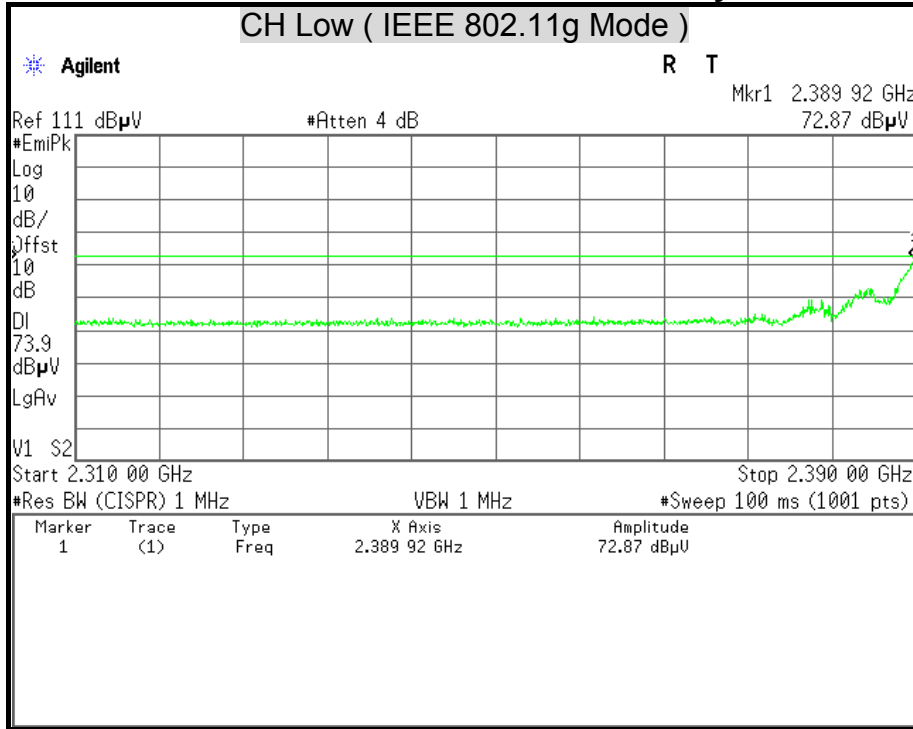
**Detector Mode : Peak** **Polarity : Vertical**



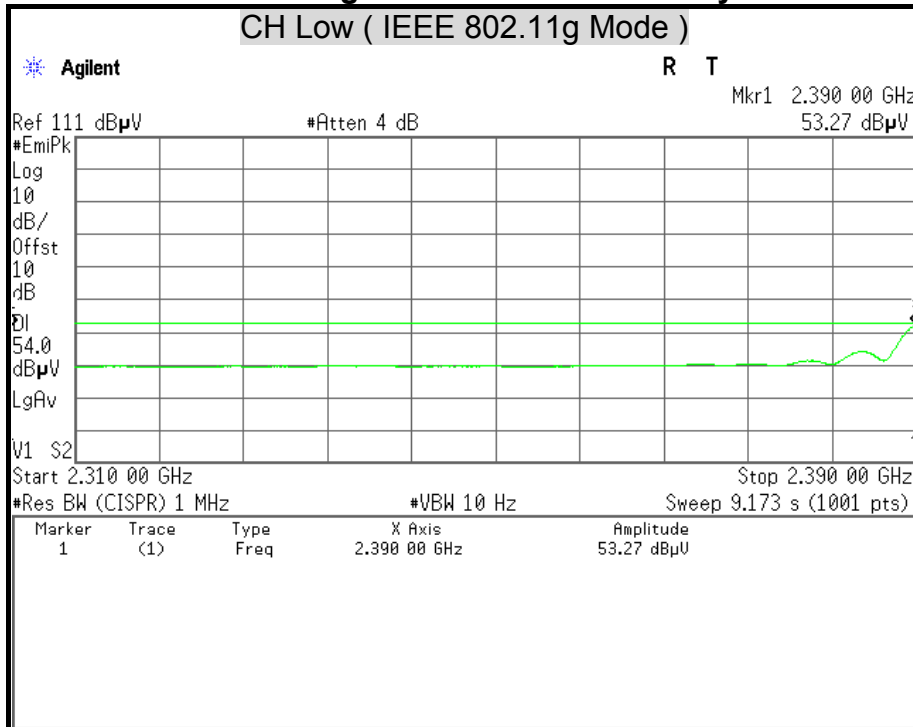
**Detector Mode : Average** **Polarity : Vertical**



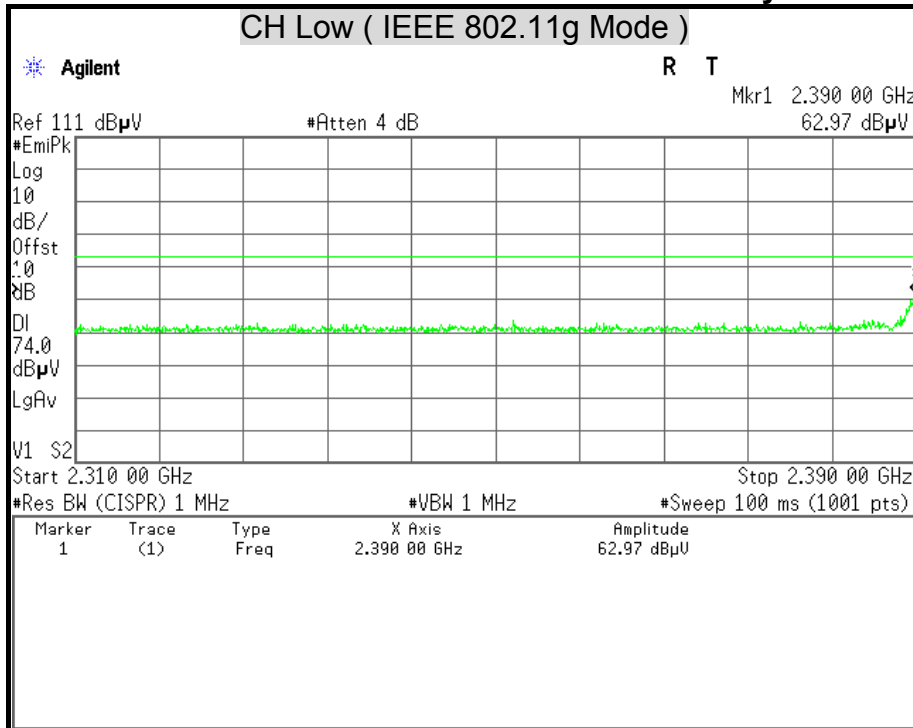
**Detector Mode : Peak** **Polarity : Horizontal**



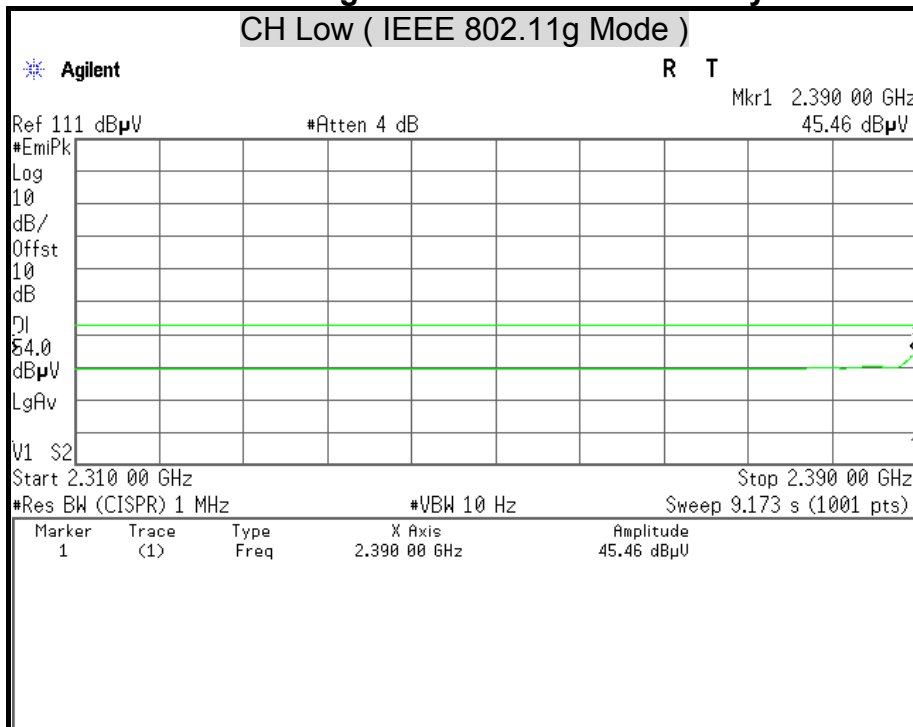
**Detector Mode : Average** **Polarity : Horizontal**



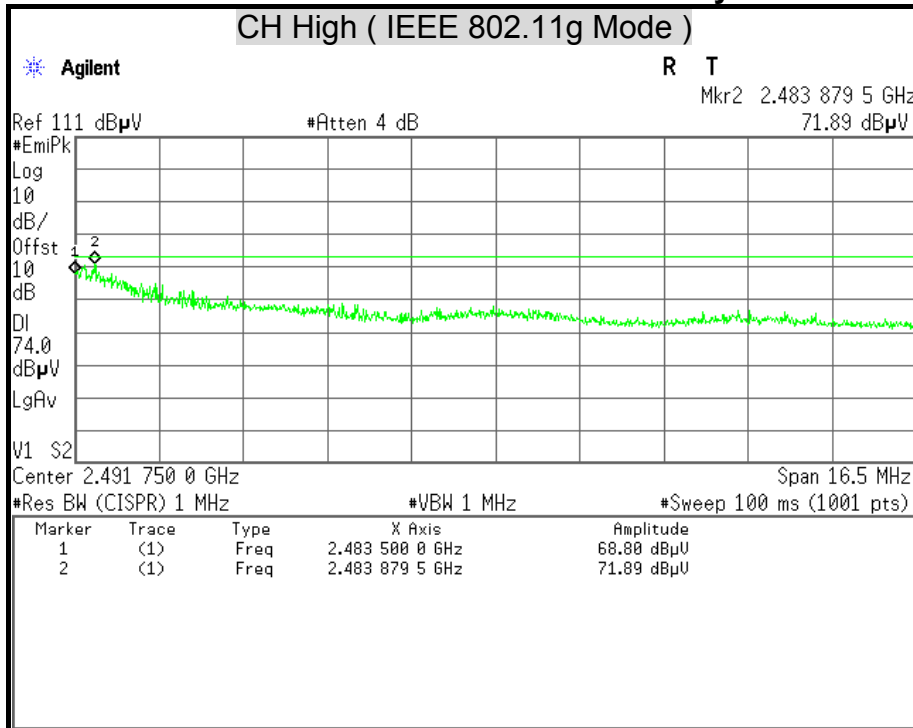
**Detector Mode : Peak** **Polarity : Vertical**



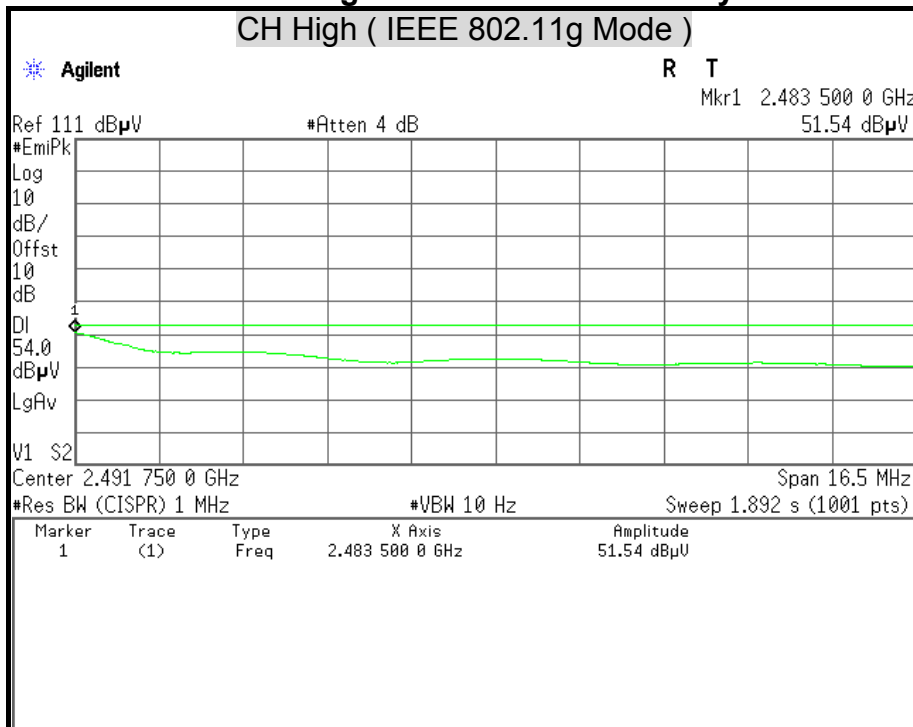
**Detector Mode : Average** **Polarity : Vertical**



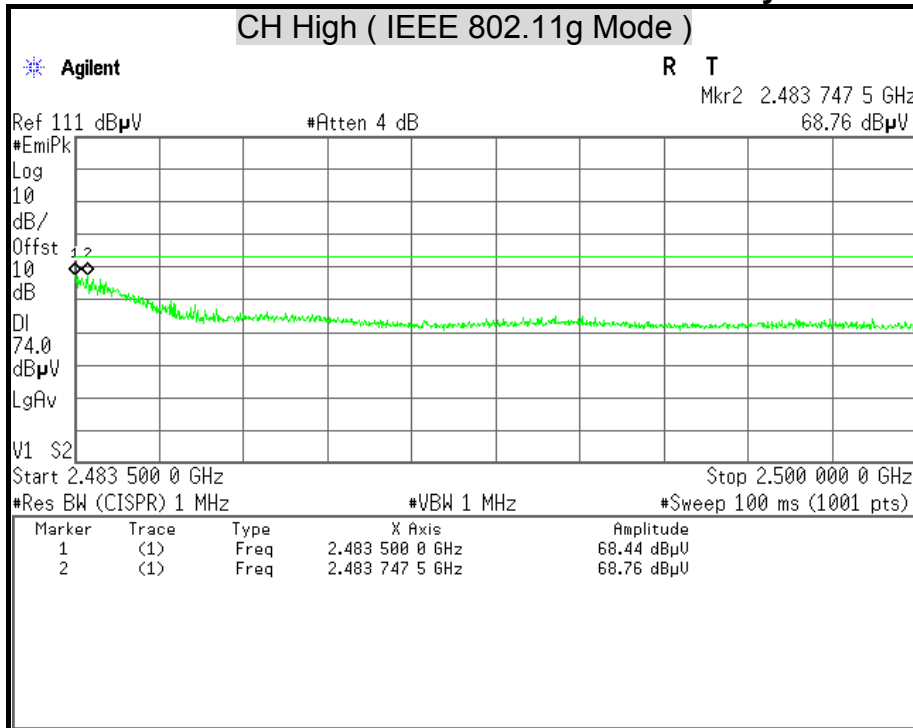
**Detector Mode : Peak** **Polarity : Horizontal**



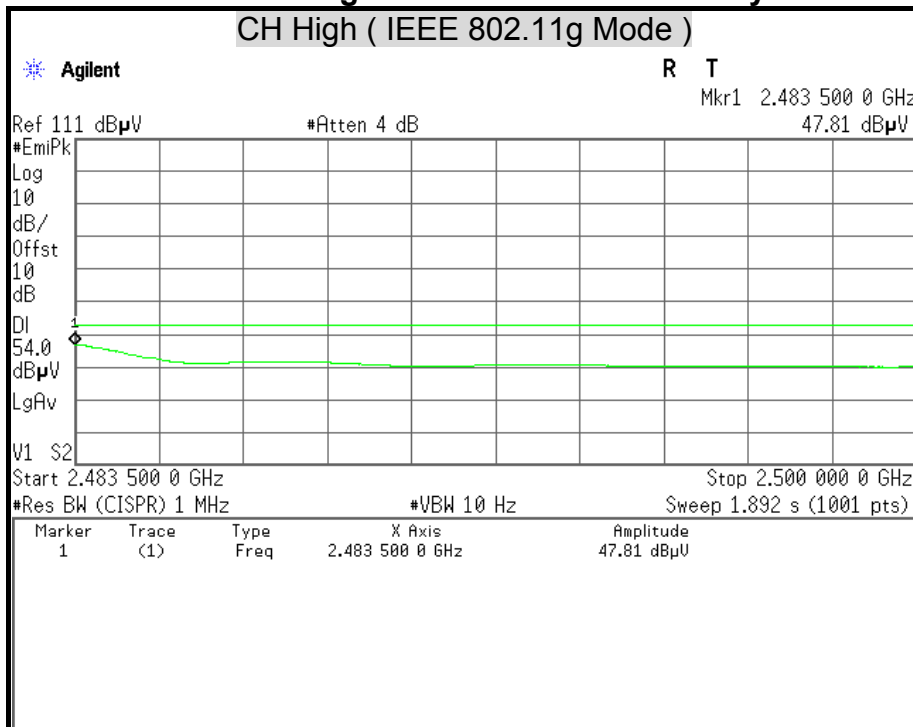
**Detector Mode : Average** **Polarity : Horizontal**



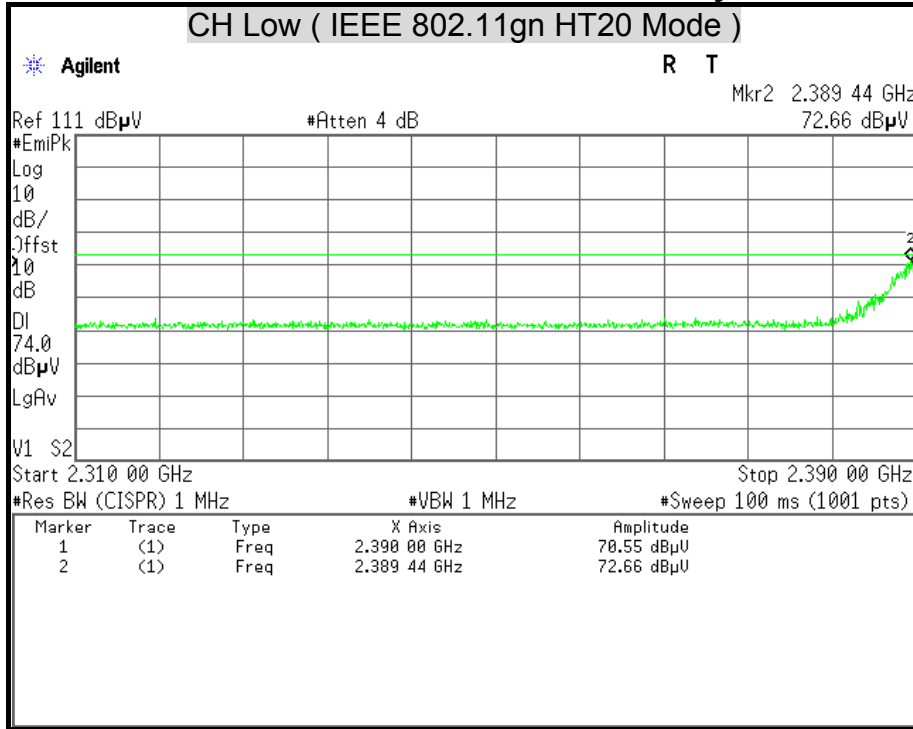
**Detector Mode : Peak** **Polarity : Vertical**



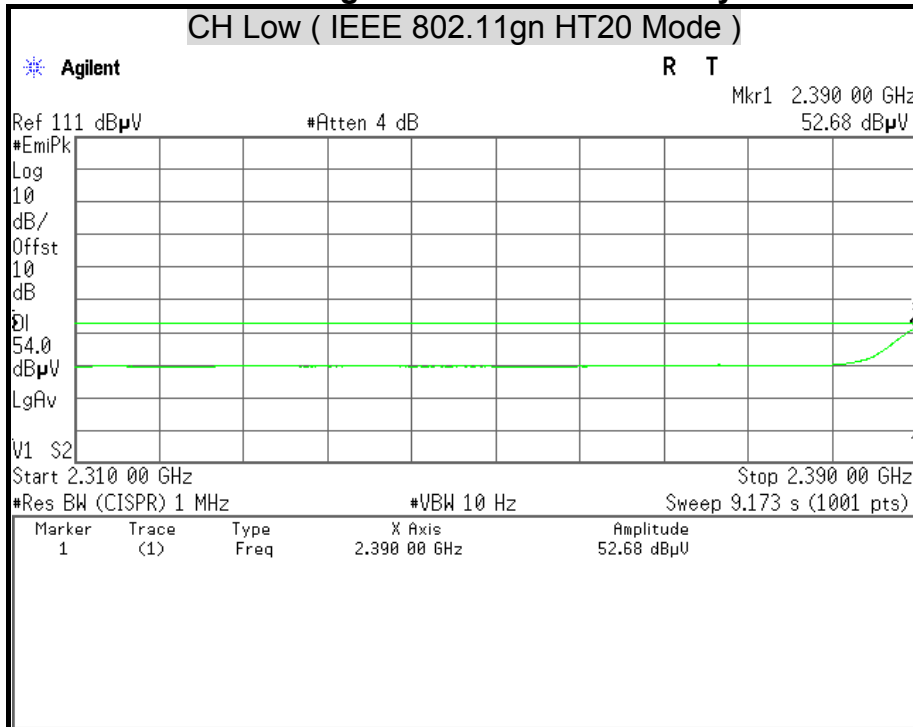
**Detector Mode : Average** **Polarity : Vertical**



**Detector Mode : Peak** **Polarity : Horizontal**

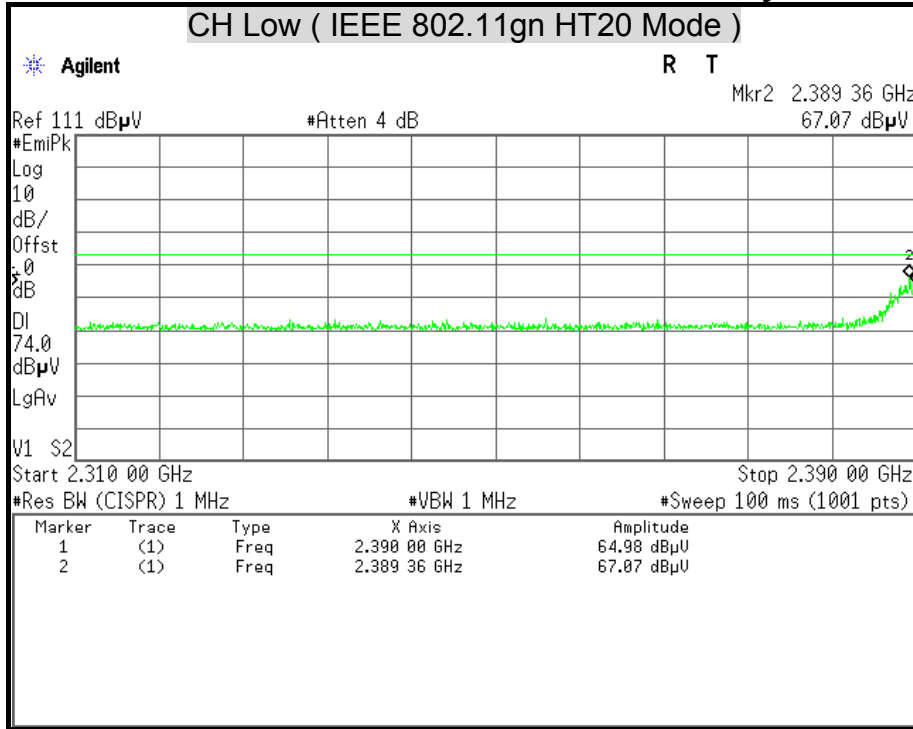


**Detector Mode : Average** **Polarity : Horizontal**

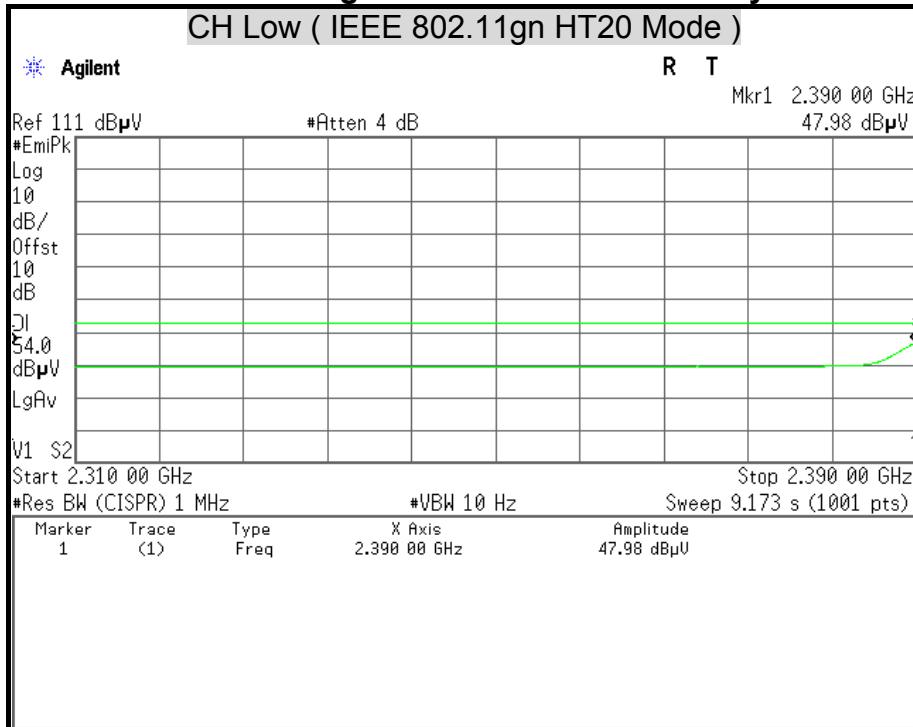




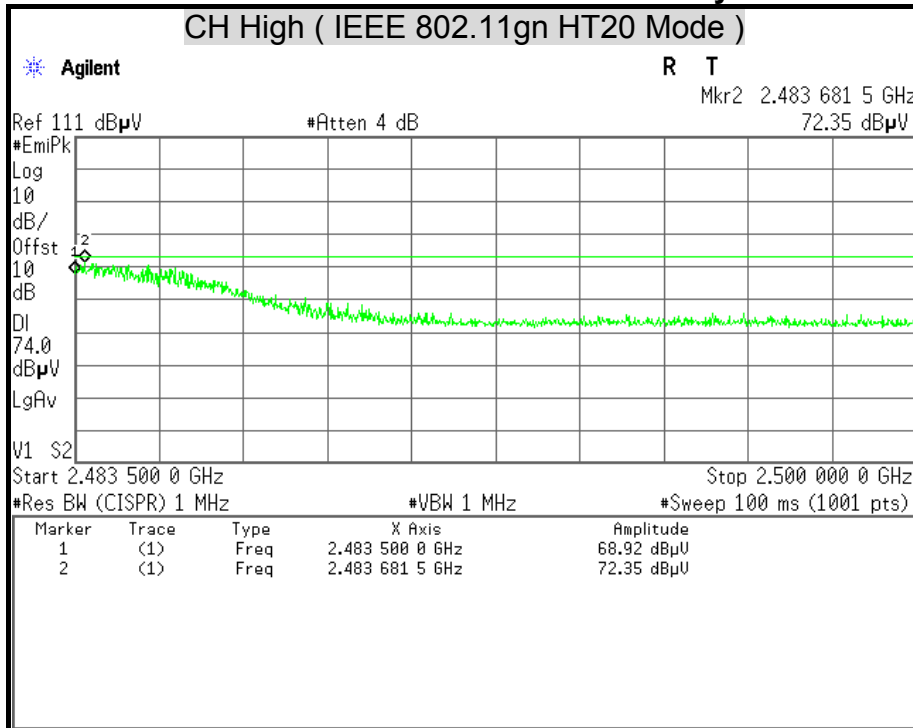
**Detector Mode : Peak** **Polarity : Vertical**



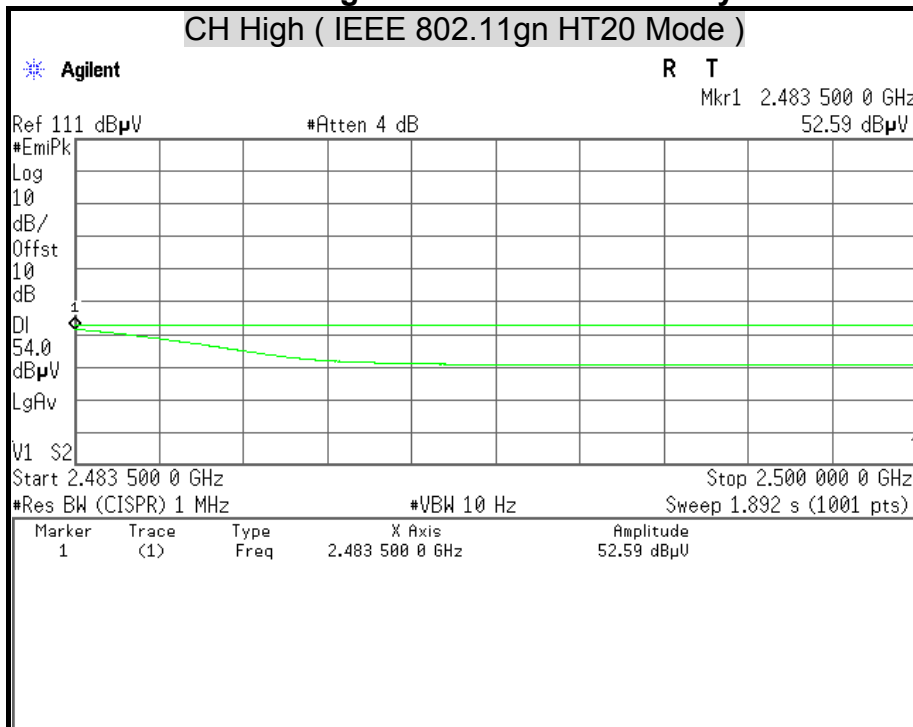
**Detector Mode : Average** **Polarity : Vertical**



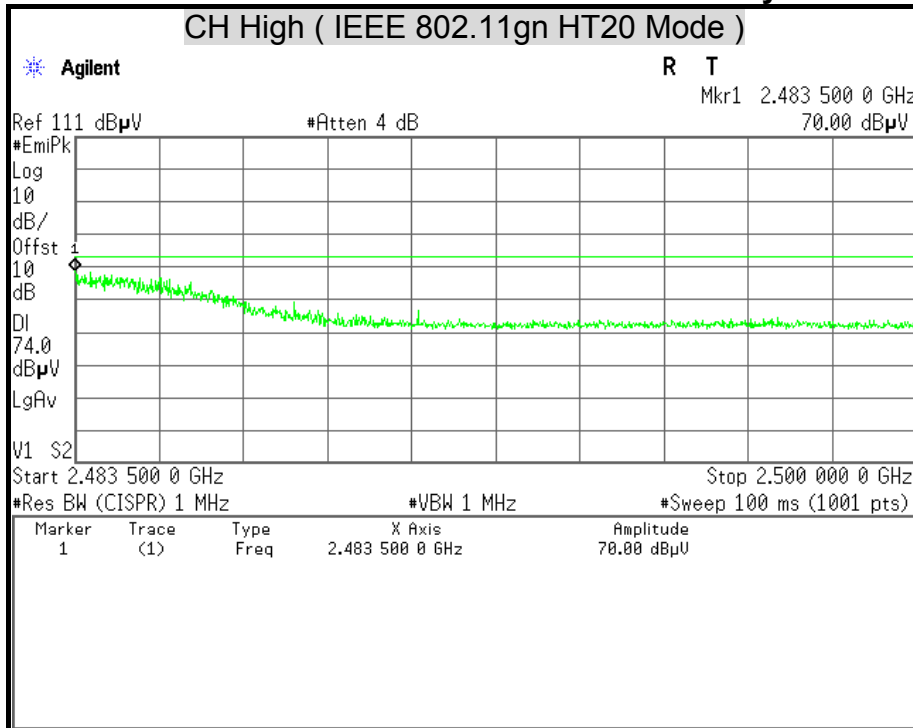
**Detector Mode : Peak** **Polarity : Horizontal**



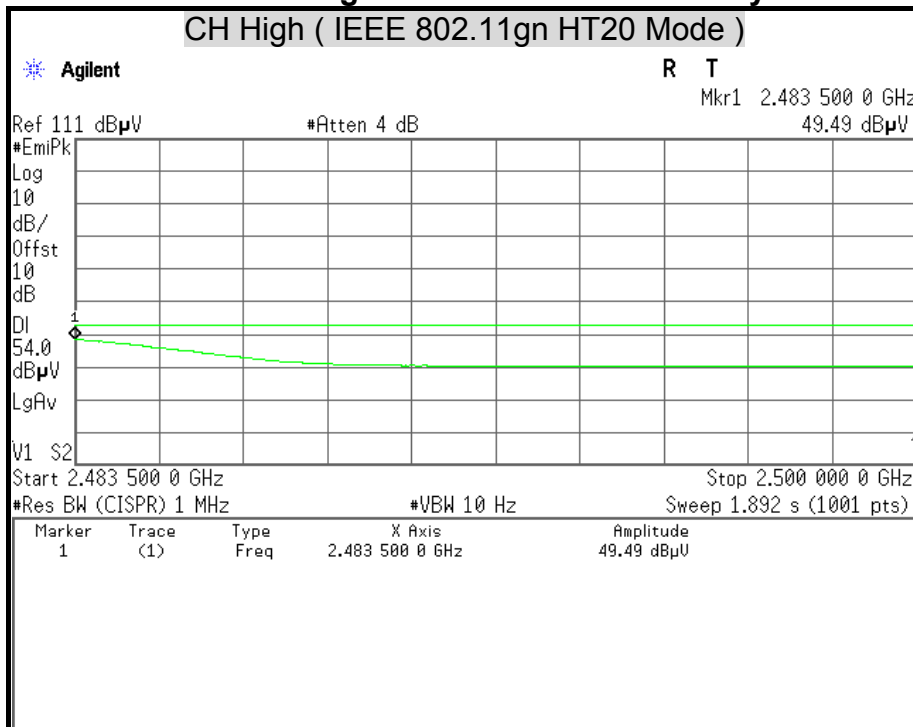
**Detector Mode : Average** **Polarity : Horizontal**



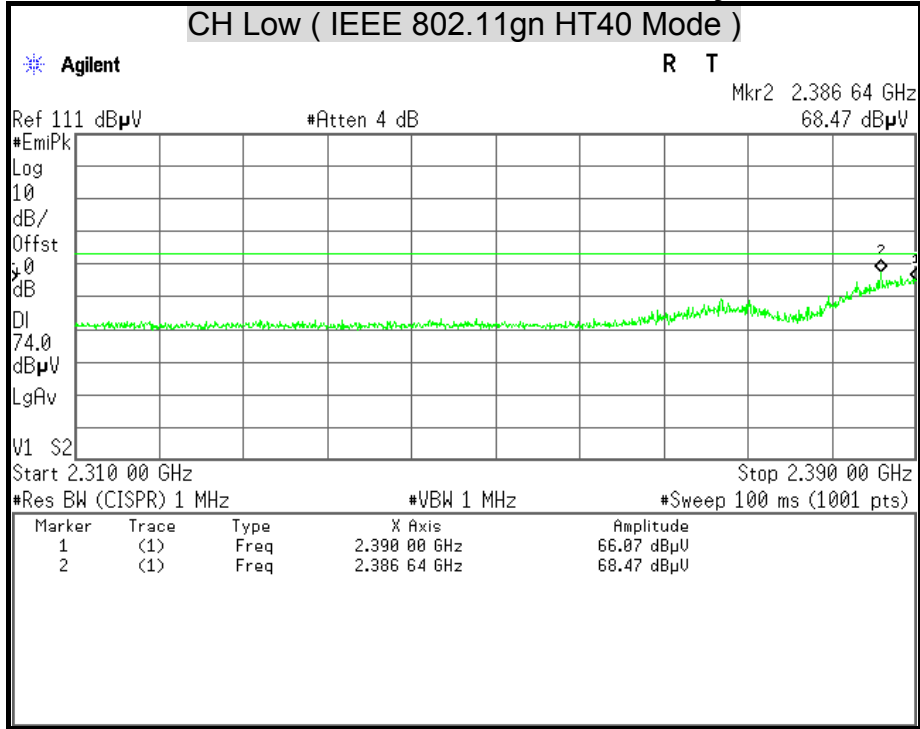
**Detector Mode : Peak** **Polarity : Vertical**



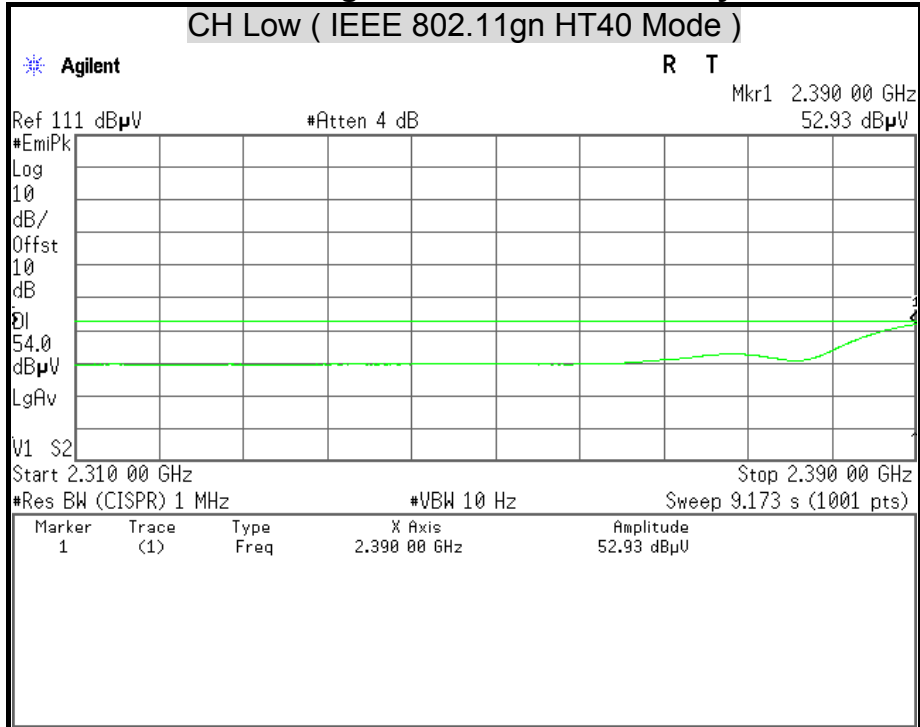
**Detector Mode : Average** **Polarity : Vertical**



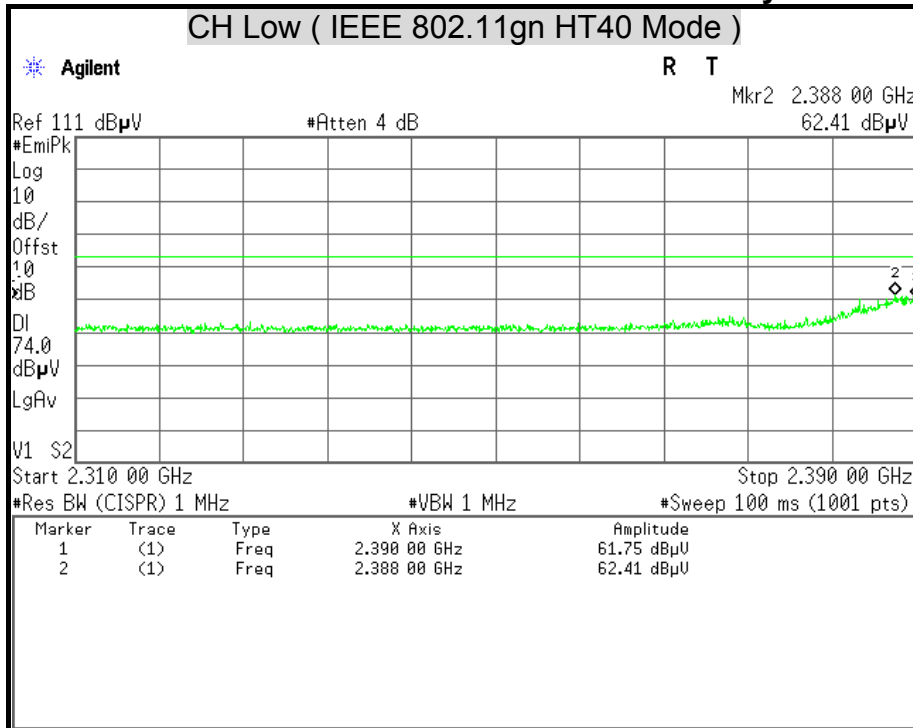
**Detector Mode : Peak** **Polarity : Horizontal**



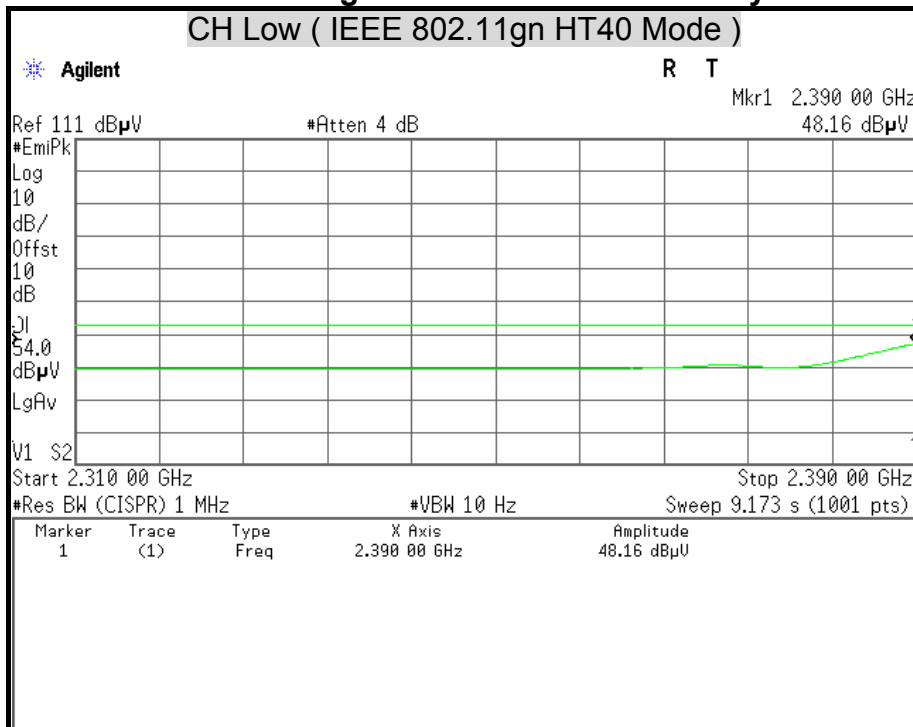
**Detector Mode : Average** **Polarity : Horizontal**



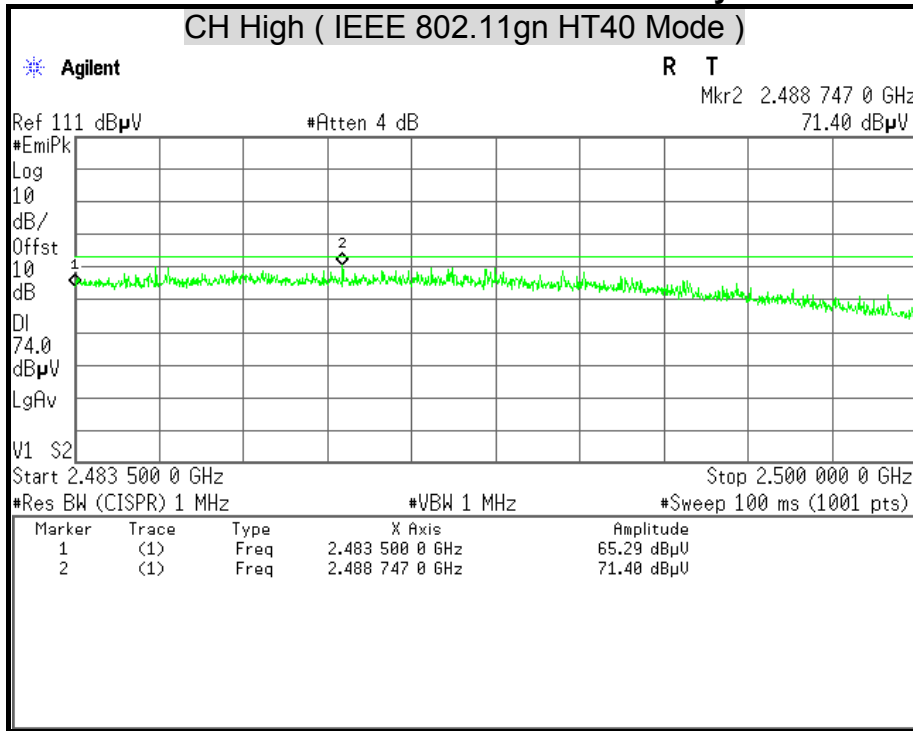
**Detector Mode : Peak** **Polarity : Vertical**



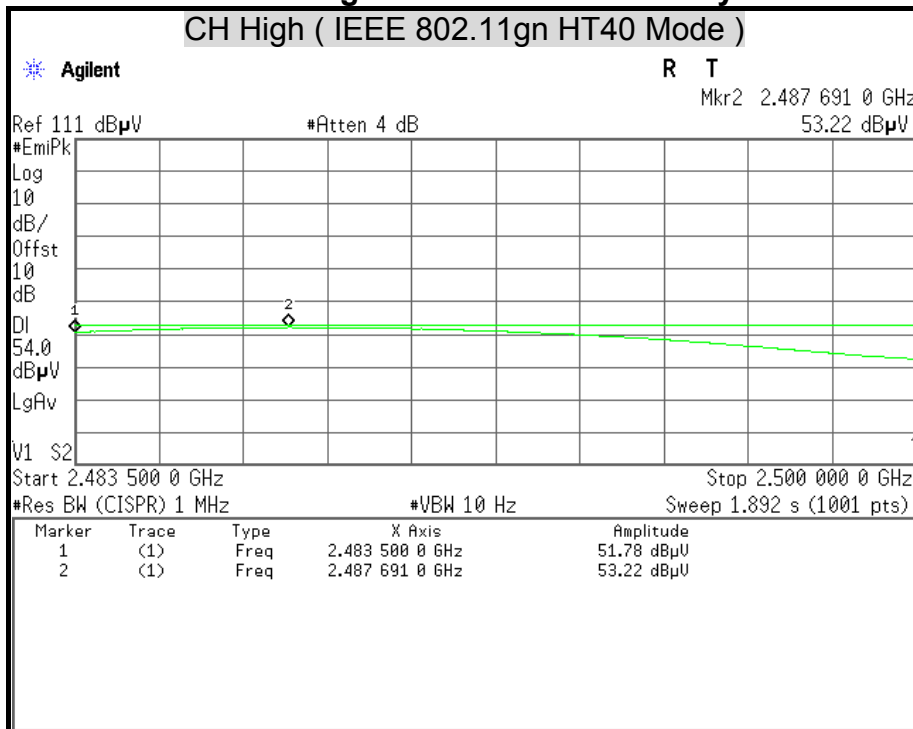
**Detector Mode : Average** **Polarity : Vertical**



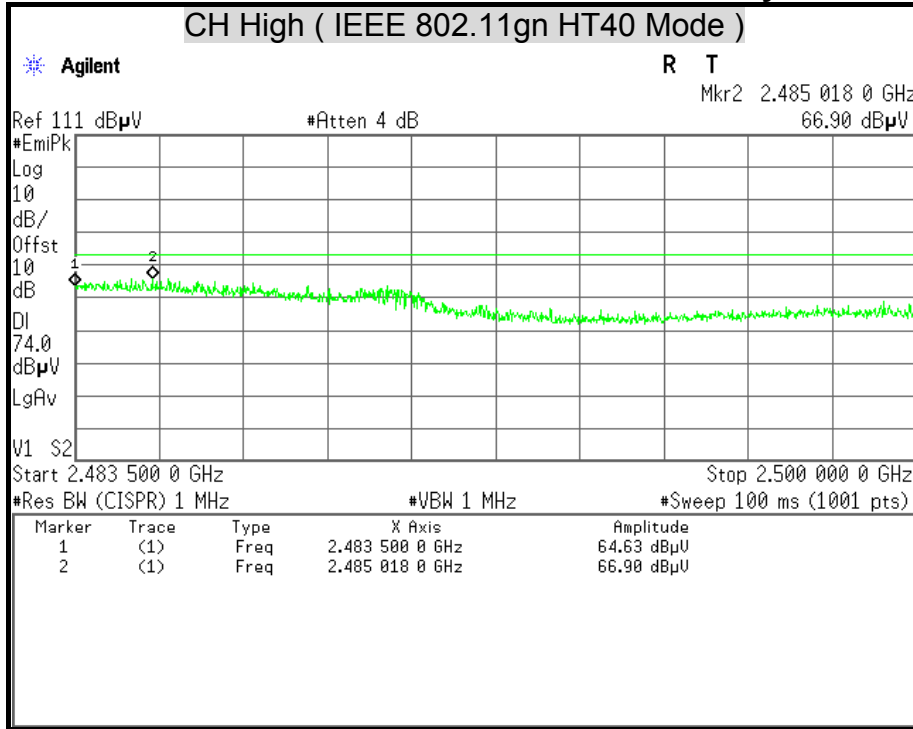
**Detector Mode : Peak** **Polarity : Horizontal**



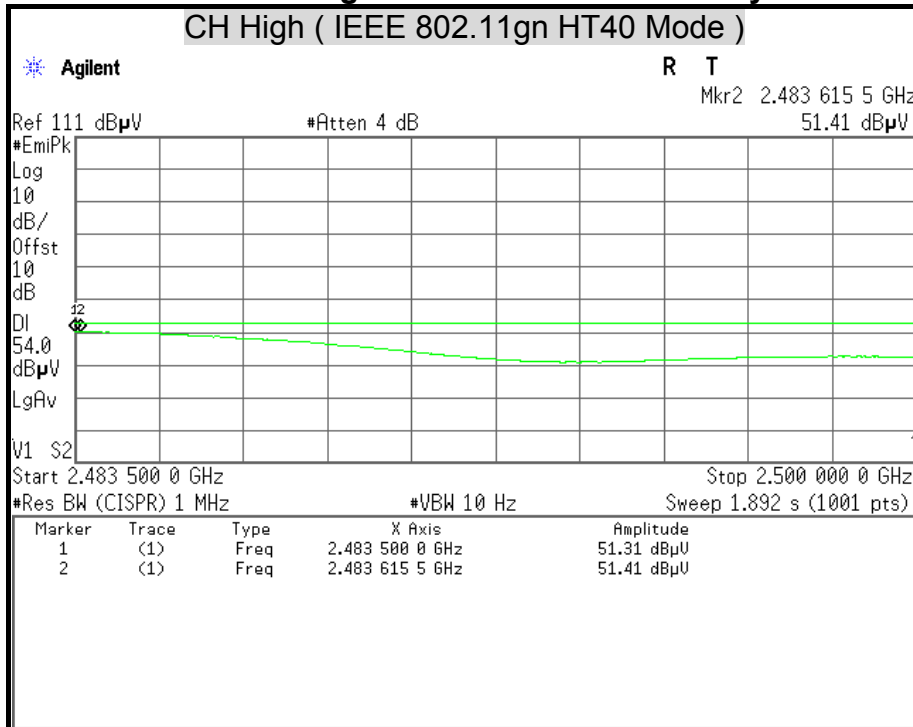
**Detector Mode : Average** **Polarity : Horizontal**



**Detector Mode : Peak** **Polarity : Vertical**



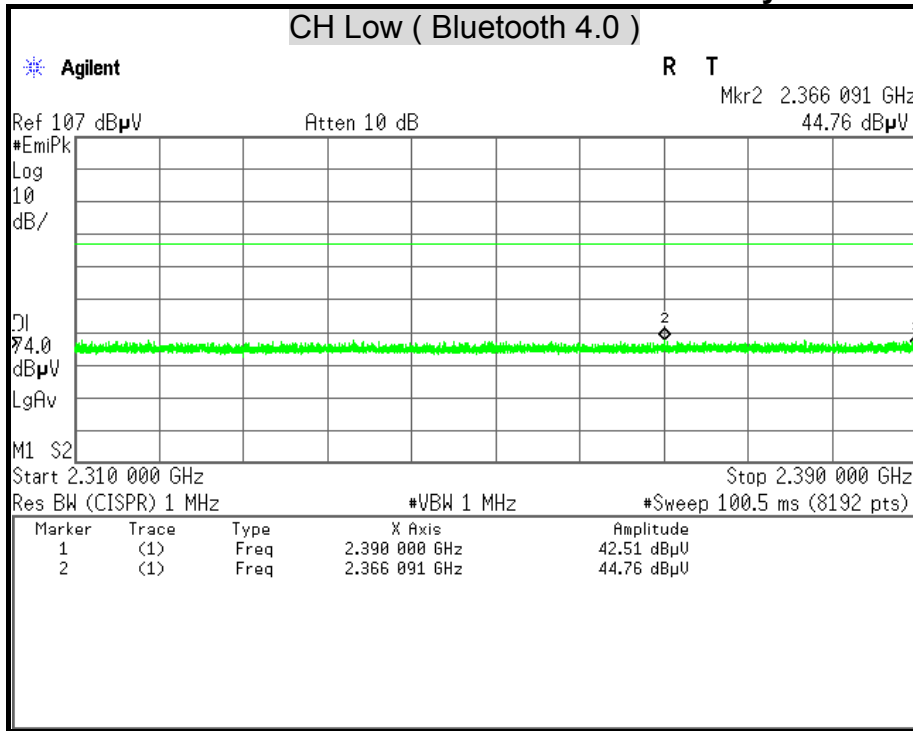
**Detector Mode : Average** **Polarity : Vertical**



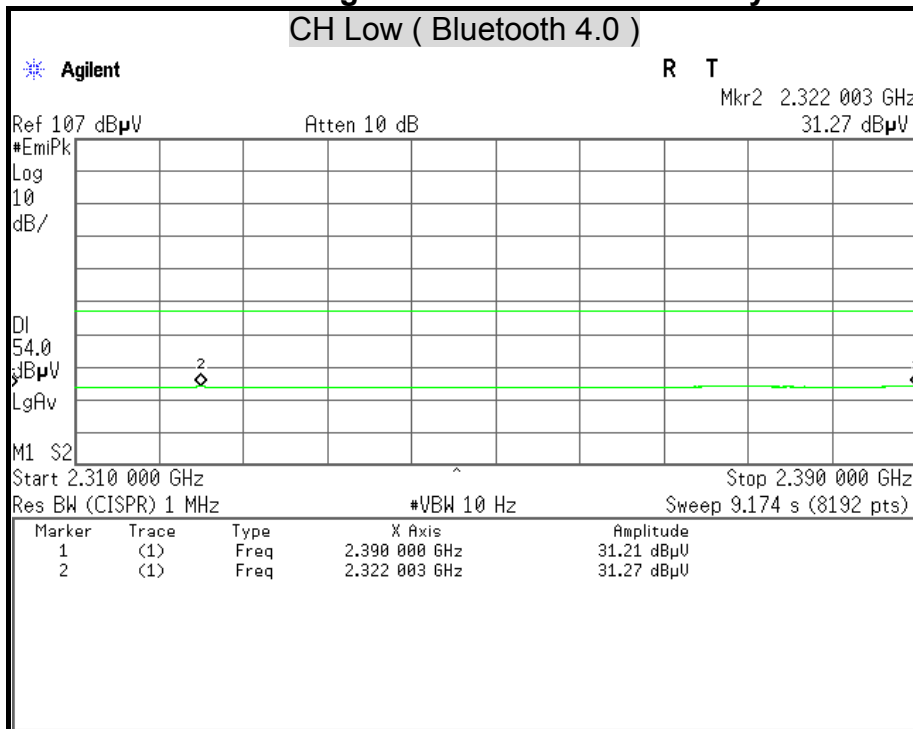




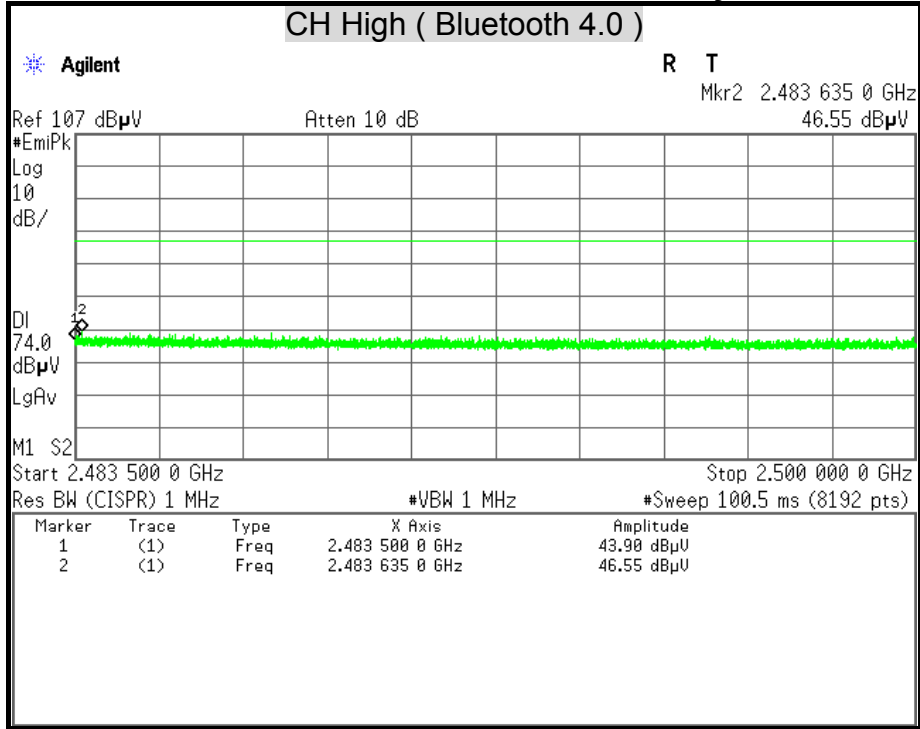
**Detector Mode : Peak** **Polarity : Vertical**



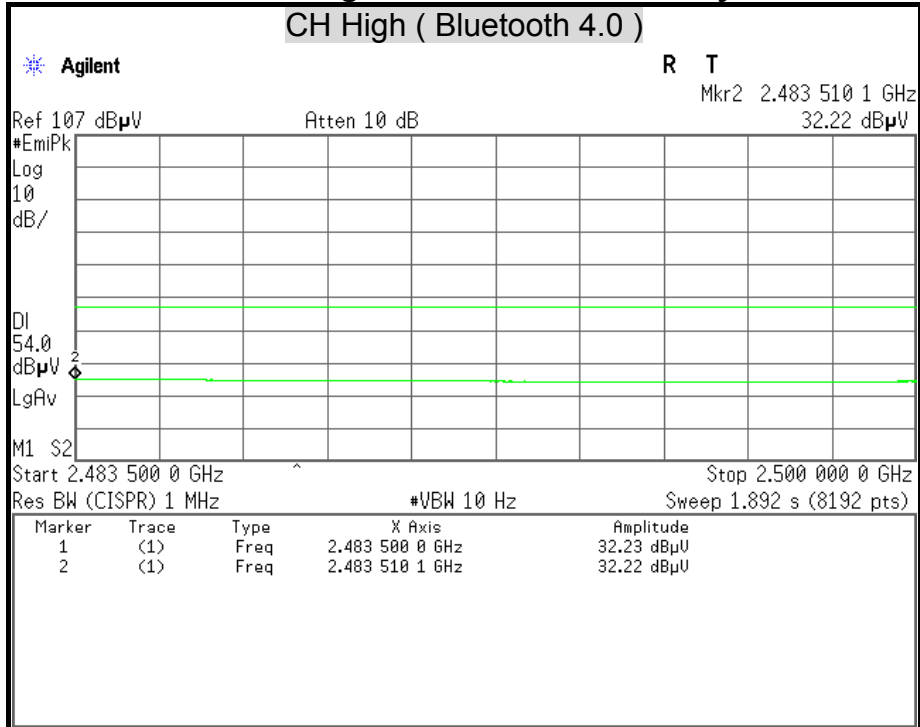
**Detector Mode : Average** **Polarity : Vertical**



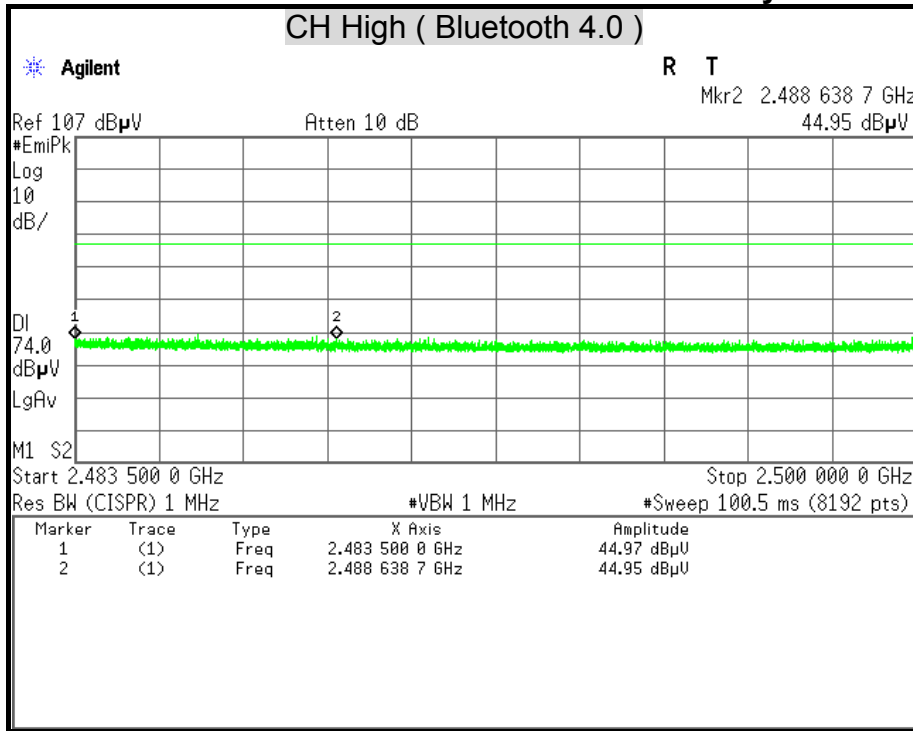
**Detector Mode : Peak** **Polarity : Horizontal**



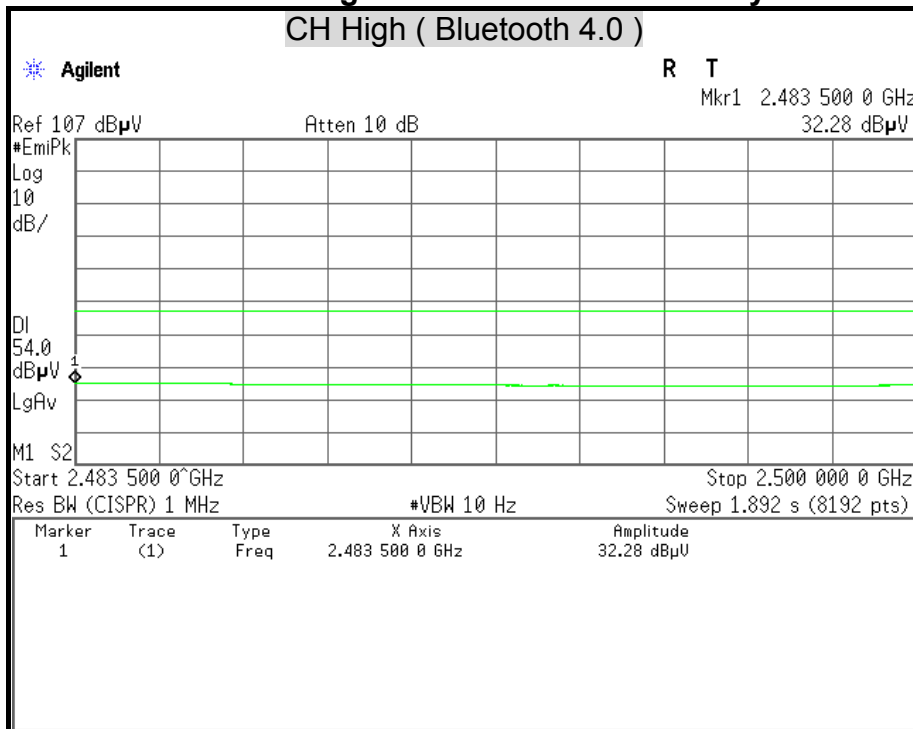
**Detector Mode : Average** **Polarity : Horizontal**



**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.

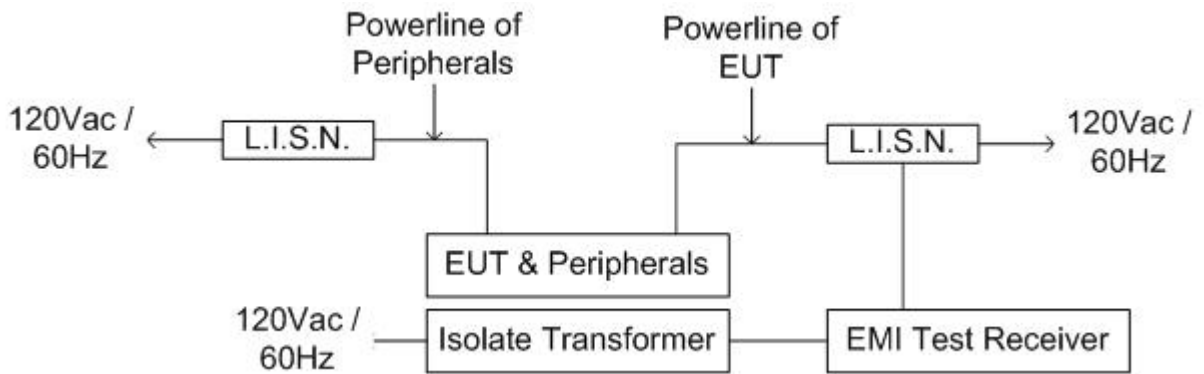
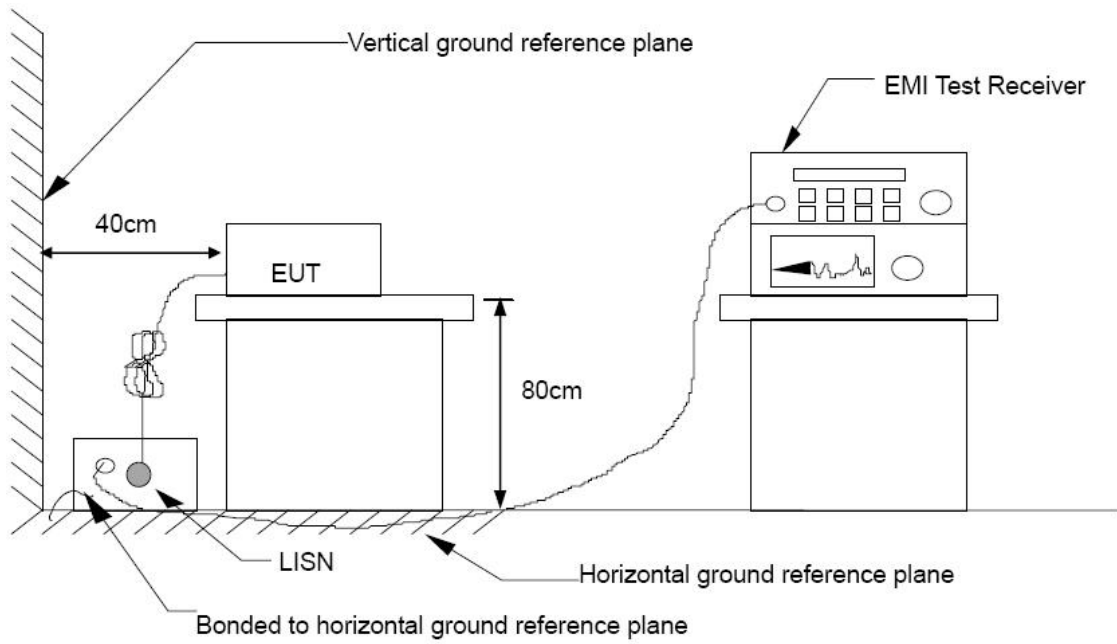
Frequency Range (MHz)	Conducted Limit (dB $\mu$ v)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5.00	56	46
5.00 - 30.0	60	50

### TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
L.I.S.N	SCHWARZBECK	NSLK 8127	8127-465	08/06/2015
L.I.S.N	SCHWARZBECK	NSLK 8127	8127-473	03/09/2016
EMI Receiver	ROHDE & SCHWARZ	ESHS 30	838550/003	11/02/2015
Pulse Limiter	ROHDE & SCHWARZ	ESH3-Z2	100111	06/30/2015

*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 C63.10:2009.

The test procedure is performed in a 4m × 3m × 2.4m (L×W×H) shielded room.

The EUT along with its peripherals were placed on a 1.0m (W) × 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**

Since the EUT is powered by DC Source, this test item is not applicable.