



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

For

Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router

Model : BiPAC 7800VDOX

**Data Applies To : Please refer to section 2
(altogether 12 series models)**

Issued for

Billion Electric Co., Ltd.

**8F., No.192, Sec. 2, Zhongxing Rd., Xindian Dist.,
New Taipei City 231, Taiwan (R.O.C.)**

Issued by

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	03/06/2013	Initial Issue	All Page 184	Gloria Chang
01	04/09/2013	Revised the difference of the model	P.7 ~ P.8	Gloria Chang



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1. TEST REPORT CERTIFICATION

Applicant : Billion Electric Co., Ltd.
Address : 8F., No.192, Sec. 2, Zhongxing Rd., Xindian Dist.,
 New Taipei City 231, Taiwan (R.O.C.)
Equipment Under Test : Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router
Model : BiPAC 7800VDOX
Data Applies To : Please refer to section 2 (altogether 12 series models)
Tested Date : December 28, 2012 ~ February 26, 2013

APPLICABLE STANDARD	
Standard	Test Result
FCC Part 15 Subpart C AND ANSI C63.4:2003	PASS

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

Gundam Lin
Sr. Engineer



2. EUT DESCRIPTION

Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router
Model Number	BiPAC 7800VDOX
Data Applies To	Please refer to section 2 (altogether 12 series models)
Identify Number	T121228S01
Received Date	December 28, 2012
Frequency Range	IEEE 802.11a, 802.11an HT20 : 5745MHz ~ 5825MHz IEEE 802.11an HT40 : 5755MHz ~ 5795MHz IEEE 802.11b/g, 802.11n HT20 : 2412MHz ~ 2462MHz IEEE 802.11n HT40 : 2422MHz ~ 2452MHz
Transmit Power	5GHz : IEEE 802.11a : 24.72dBm (0.2965W) (Chain 0) IEEE 802.11a : 24.70dBm (0.2951W) (Chain 1) IEEE 802.11an HT20 : 27.20dBm (0.05248W) IEEE 802.11an HT40 : 27.28dBm (0.5340W) 2.4GHz : IEEE 802.11b : 21.54dBm (0.1426W) (Chain 0) IEEE 802.11b : 22.36dBm (0.1722W) (Chain 1) IEEE 802.11g : 25.72dBm (0.3733W) (Chain 0) IEEE 802.11g : 25.98dBm (0.3963W) (Chain 1) IEEE 802.11n HT20 : 28.14dBm (0.6510W) IEEE 802.11n HT40 : 27.78dBm (0.5992W)
Channel Spacing	IEEE 802.11a, 802.11an HT20 : 20MHz IEEE 802.11an HT40 : 40MHz IEEE 802.11b/g, 802.11n HT20/HT40 : 5MHz
Channel Number	IEEE 802.11a, IEEE 802.11an HT20: 5 Channels IEEE 802.11an HT40 : 2 Channels IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40 : 7 Channels
Transmit Data Rate	IEEE 802.11b : 11, 5.5, 2, 1 Mbps IEEE 802.11a/g : 54, 48, 36, 24, 18, 12, 9, 6 Mbps IEEE 802.11an/n HT20 : 144.4, 130, 117, 115.6, 104, 86.7, 78, 72.2, 65, 58.5, 57.8, 52, 43.3, 39, 28.9, 26, 21.7, 19.5, 14.4, 13, 7.2, 6.5, Mbps IEEE 802.11an/n HT40 : 300, 270, 243, 240, 216, 180, 162, 150, 135, 121.5, 120, 108, 90, 81, 60, 54, 45, 40.5, 30, 27, 15, 13.5 Mbps



Type of Modulation	IEEE 802.11b : DSSS (CCK, DQPSK, DBPSK) IEEE 802.11a/g : OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n/an HT20/40 : OFDM (64QAM, 16QAM, QPSK, BPSK)
Frequency Selection	by software / firmware
Antenna Type	Dual-Band Dipole Antenna × 2 (2.4GHz & 5GHz): Antenna 0 (Chain 0), Antenna Gain 5.11 dBi Antenna 1 (Chain 1), Antenna Gain 5.11 dBi
Power Rating	15Vdc
Test Voltage	120Vac, 60Hz
DC Power Cable Type	Non-shielded cable 1.5m (Non-detachable)
I/O Port	ADSL Port × 1, Line Port × 1, Telephone Port × 2, LAN Port × 4, Power Port × 1, USB Port × 1

Power Adapter :

No.	Manufacturer	Model No.	Power Input	Power Output
1	EGB	PAW024A15US	100-240Vac, 50/60Hz, 0.7A	15Vdc, 1.6A



The difference of the model :

Model Difference Item	BiPAC 7800VDOX	BiPAC 7800VDPX	BiPAC 7800DX	BiPAC 7800DXL	BiPAC 6800VDPX	BiPAC 6800VDOX
External Feature	Fixed- antenna	Fixed- antenna	Fixed- antenna, w/o VoIP	Fixed- antenna, w/o VoIP	Fixed- antenna, w/o DSL	Fixed- antenna, w/o DSL
External Color	Upper/lower casing: gray / silver	Upper/lower casing: blue / white	Upper/lower casing: gray / silver	Upper/lower casing: blue / white	Upper/lower casing: blue / white	Upper/lower casing: gray / silver
Housing Drawing	D3-1	D3-1	D3-1	D3-1	D3-1	D3-1
Support WiFi 2.4G						
Support WiFi 5G						
Support VoIP						
NAND Flash						
USB Host						
Circuits Design						
Major Componet Location						
VPN						
Trade Name	BILLION					

*Remark :1. " O " means within those function. ; " X " means without those function.
2. In this series model, the "D" indicates that support Dual-band(2.4GHz & 5GHz) ;
the "N" indicates that support single-band(2.4GHz)*



Model Difference Item	BEC 7800VDOX	BEC 7800VDPX	BEC 7800DX	BEC 7800DXL	BEC 7800X5	BEC 6800VDPX	BEC 6800VDOX
External Feature	Fixed-antenna	Fixed-antenna	Fixed-antenna, w/o VoIP	Fixed-antenna, w/o VoIP	Fixed-antenna, w/o VoIP	Fixed-antenna, w/o DSL	Fixed-antenna, w/o DSL
External Color	Upper/lower casing: gray /silver	Upper/lower casing: blue / white	Upper/lower casing: gray / silver	Upper/lower casing: blue / white	Upper/lower casing: gray/ silver	Upper/lower casing: blue / white	Upper/lower casing: gray / silver
Housing Drawing	D3-1	D3-1	D3-1	D3-1	D3-1	D3-1	D3-1
Support WiFi 2.4G							
Support WiFi 5G							
Support VoIP							
NAND Flash							
USB Host							
Circuits Design							
Major Componet Location							
VPN							
Trade Name	BEC						

Remark :1. " O " means within those function. ; " X " means without those function.
 2. In this series model, the "D" indicates that support Dual-band(2.4GHz & 5GHz) ;
 the "N" indicates that support single-band(2.4GHz)

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 models BiPAC 7800VDOX was considered the main model for testing.
4. This submittal(s) (test report) is intended for FCC ID: QI3BIL-7800VDOX 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 MIMO transceiver in Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router form factor.

IEEE 802.11a/b/g mode : Chain 0 or Chain 1 can be use as transmitter.

IEEE 802.11an/n HT20/HT40 : Chain 0 / Ant0 & Chain 1/ Ant1 two transmitter.

Conducted Emission / Radiated Emission Test (Below 1 GHz)

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

No.	Pre-Test Mode
1	Normal Operating

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

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

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

Conducted / Radiated Emission Test (Above 1 GHz)

IEEE ,802.11a ,802.11an HT20 mode

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	5745
Middle	5785
High	5825

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

IEEE 802.11an HT20 mode : 13Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11an HT40 mode

The EUT had been tested under operating condition.

There are two channels have been tested as following :

Channel	Frequency (MHz)
Low	5755
High	5795

IEEE 802.11an HT40 mode : 27Mbps data rate (worst case) were chosen for full testing.



IEEE 802.11b, 802.11g, 802.11n HT20 mode

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	2412
Middle	2437
High	2462

IEEE 802.11b mode : 11Mbps data rate (worst case) were chosen for full testing.

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

IEEE 802.11n HT20 mode : 13Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11n HT40 mode

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	2422
Middle	2437
High	2452

IEEE 802.11n HT40 mode : 27Mbps data rate (worst case) were chosen for full testing.



4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4: 2003 and FCC CFR 47, 15.207, 15.209, 15.247, KDB558074 and KDB662911.

5. FACILITIES AND ACCREDITATION

5.1 FACILITIES

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

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

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

5.2 ACCREDITATIONS

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

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

Canada	INDUSTRY CANADA
Japan	VCCI
Taiwan	BSMI
USA	FCC MRA

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



5.3 MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Semi Anechoic Chamber (966 Chamber_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.	FCC ID
1	Notebook PC	HP	ProBook 4421s	CNF03242PJ	DoC
2	Notebook PC	HP	ProBook 4421s	CNF03242PM	DoC
3	Notebook PC	IBM	ThinkPad T61 7663-AS6	L3F3864	DoC
4	ADSL iDSLAM	TECOM	M801	HIJ00040	---
5	Dongle	Huawei	E353	---	---
6	Switch Hub	ASUS	GX1008B	90-Q872AN1N0NA MA0-88QSA100352 2	---
7	Telephone	Sweetone	RS-802HF	0401018239	DoC
8	Telephone	Sweetone	RS-802HF	0401018237	DoC

No.	Power & Signal Cable Description
1	Non-shielded RJ-45 cable, 10m × 1
2	Non-shielded RJ-45 cable, 1m × 3
3	Non-shielded RJ-11 cable, 10m × 2
4	Non-shielded RJ-11 cable, 1m × 2

SETUP DIAGRAM FOR TESTS

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

EUT OPERATING CONDITION

RF Mode :

1. EUT & peripherals setup diagram is shown in appendix setup photos.
2. NB set fixed ip, 192.168.1.x
3. In MS-DOS : telnet 192.168.1.254
4. login: admin
5. password: admin
6. key in sh
7. key in command
 - wl -i wl0 pkteng_stop tx
 - wl -i wl0 down
 - wl -i wl0 country ALL



```
wl -i wl0 mpc 0
wl -i wl0 phy_watchdog 0
wl -i wl0 wsec 0
wl -i wl0 ampdu 1
wl -i wl0 frameburst 1
wl -i wl0 band xx      #a=5G,b=2.4G
wl -i wl0 interference 0
wl -i wl0 bi 65535
wl -i wl0 join ss imode infra
wl -i wl0 mimo_bw_cap 1
wl -i wl0 mimo_txbw xx  # xx=>2=20MHz,4=40MHz
wl -i wl0 chanspec xx  # xx=>1~13
wl -i wl0 txchain 2    #ant0 =>txchain 1,ant1 =>txchain 2,ant0+1 =>txchain 3
wl -i wl0 up
wl -i wl0 nrate -r xx  #b/g=>r xx,n=>1TX= mcs 0~7,2TX= mcs 8~15
wl -i wl0 phy_forcecal 1
wl -i wl0 ssid ""
wl -i wl0 pkteng_start 00:22:33:44:55:66 tx 50 1120 0
wl -i wl0 txpwr1 -o -q xx  # xx=>0~80
```

⇒ Power control mode

```
Output Power: IEEE 802.11b Channel Low (2412MHz) = 66 (Chain 0)
                IEEE 802.11b Channel Middle (2437MHz) = 66 (Chain 0)
                IEEE 802.11b Channel High (2462MHz) = 60 (Chain 0)
Output Power: IEEE 802.11b Channel Low (2412MHz) = 64 (Chain 1)
                IEEE 802.11b Channel Middle (2437MHz) = 70 (Chain 1)
                IEEE 802.11b Channel High (2462MHz) = 58 (Chain 1)
Output Power: IEEE 802.11g Channel Low (2412MHz) = 52 (Chain 0)
                IEEE 802.11g Channel Middle (2437MHz) = 68 (Chain 0)
                IEEE 802.11g Channel High (2462MHz) = 38 (Chain 0)
Output Power: IEEE 802.11g Channel Low (2412MHz) = 48 (Chain 1)
                IEEE 802.11g Channel Middle (2437MHz) = 68 (Chain 1)
                IEEE 802.11g Channel High (2462MHz) = 26 (Chain 1)
Output Power: IEEE 802.11n HT20 Channel Low (2412MHz) = 40
                IEEE 802.11n HT20 Channel Middle (2437MHz) = 60
                IEEE 802.11n HT20 Channel High (2462MHz) = 32
Output Power: IEEE 802.11n HT40 Channel Low (2422MHz) = 34
                IEEE 802.11n HT40 Channel Middle (2437MHz) = 60
                IEEE 802.11n HT40 Channel High (2452MHz) = 28
Output Power: IEEE 802.11a Channel Low (5745MHz) = 72 (Chain 0)
```



IEEE 802.11a Channel Middle (5785MHz) = 72 (Chain 0)
IEEE 802.11a Channel High (5825MHz) = 72 (Chain 0)
Output Power: IEEE 802.11a Channel Low (5745MHz) = 72 (Chain 1)
IEEE 802.11a Channel Middle (5785MHz) = 72 (Chain 1)
IEEE 802.11a Channel High (5825MHz) = 72 (Chain 1)
Output Power: IEEE 802.11an HT20 Channel Low (5745MHz) = 66
IEEE 802.11an HT20 Channel Middle (5785MHz) = 66
IEEE 802.11an HT20 Channel High (5825MHz) = 68
Output Power: IEEE 802.11an HT40 Channel Low (5755MHz) = 68
IEEE 802.11an HT40 Channel High (5795MHz) = 68

8. All of the functions are under run.
9. Start test.

Normal Mode :

1. EUT & peripherals setup diagram is shown in appendix setup photos.
2. Notebook PC (1) ping 192.168.1.254 to EUT.
3. Notebook PC (2) ping 192.168.1.254 to EUT.with 5G WiFi.
4. Notebook PC (3) ping 192.168.1.254 to EUT.with 2.4G WiFi.
5. Notebook PC 1~3 ping to each other and EUT.
6. ADSL port Link to ADSL iDSLAM.
7. Line port Link to outside phone line.
8. USB port link dongle load.
9. Phone1 and phone2 make a telephone calls.
10. All of the functions are under run.
11. 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	06/14/2013

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 resolution bandwidth (RBW) = 1-5% or DTS BW, not to exceed 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) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



TEST RESULTS

IEEE 802.11a Mode

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1		
Low	5745	16.40	15.47	500	PASS
Middle	5785	15.33	15.80	500	PASS
High	5825	14.93	15.67	500	PASS

IEEE 802.11an HT20 Mode (Two TX)

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1		
Low	5745	15.27	17.67	500	PASS
Middle	5785	15.47	17.67	500	PASS
High	5825	15.33	15.87	500	PASS

IEEE 802.11an HT40 Mode (Two TX)

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1		
Low	5755	35.60	36.50	500	PASS
High	5795	36.10	35.30	500	PASS



IEEE 802.11b Mode

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1		
Low	2412	8.20	8.20	500	PASS
Middle	2437	8.13	8.20	500	PASS
High	2462	8.20	8.20	500	PASS

IEEE 802.11g Mode

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1		
Low	2412	15.27	15.20	500	PASS
Middle	2437	15.13	15.27	500	PASS
High	2462	15.20	15.27	500	PASS

IEEE 802.11n HT20 Mode (Two TX)

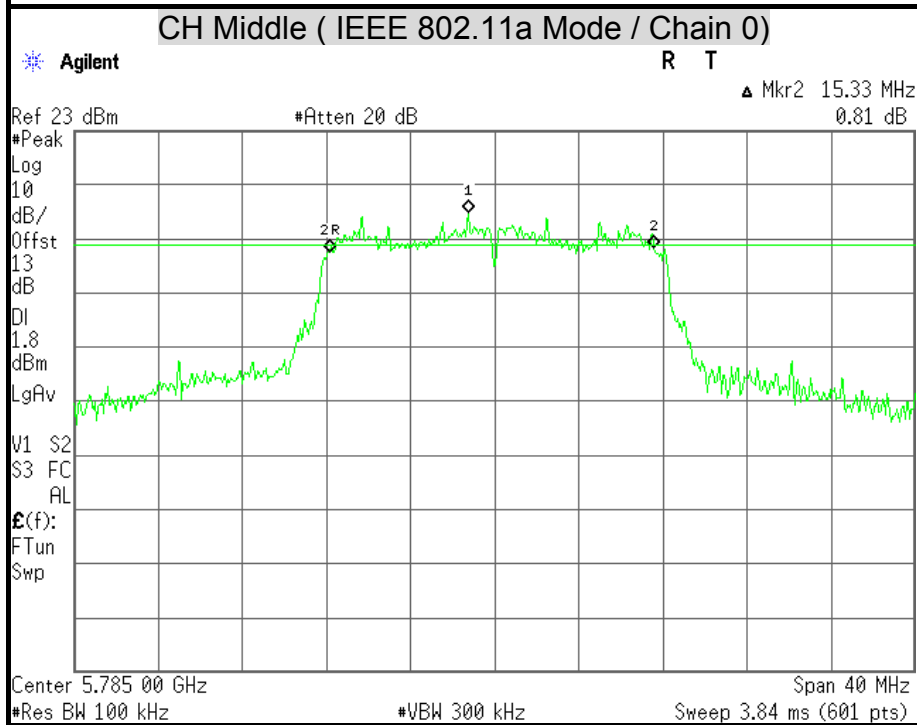
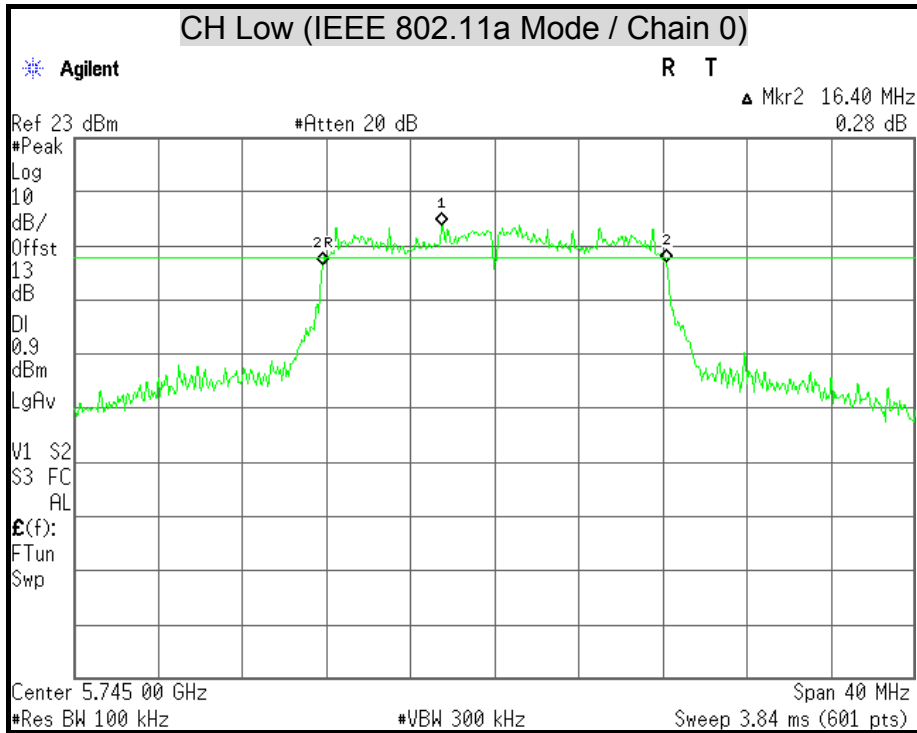
Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1		
Low	2412	15.27	15.20	500	PASS
Middle	2437	15.27	16.20	500	PASS
High	2462	15.27	15.20	500	PASS

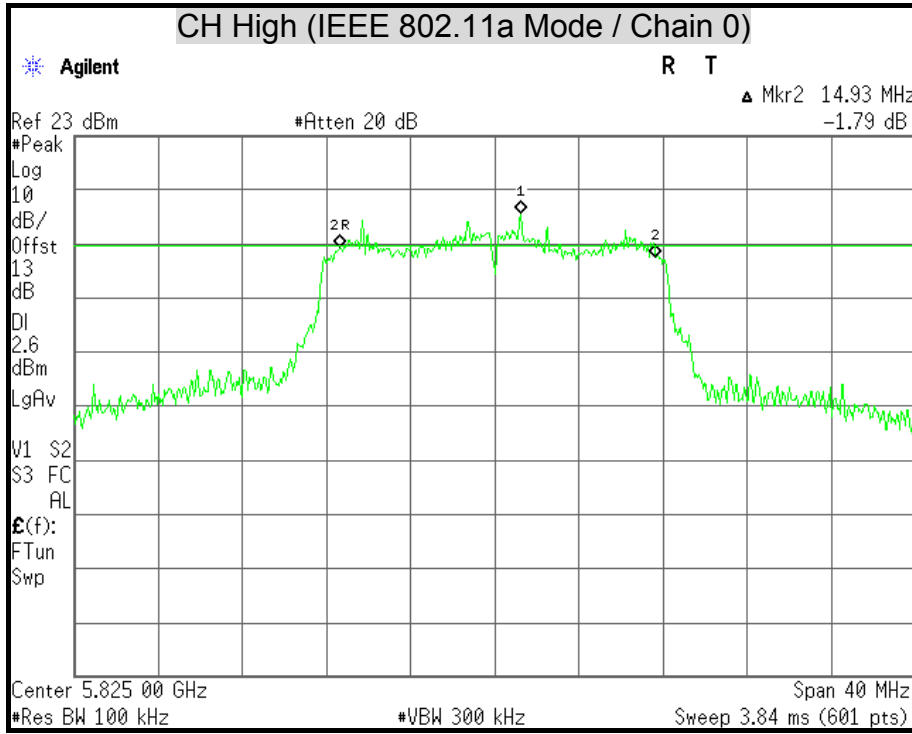
IEEE 802.11n HT40 Mode (Two TX)

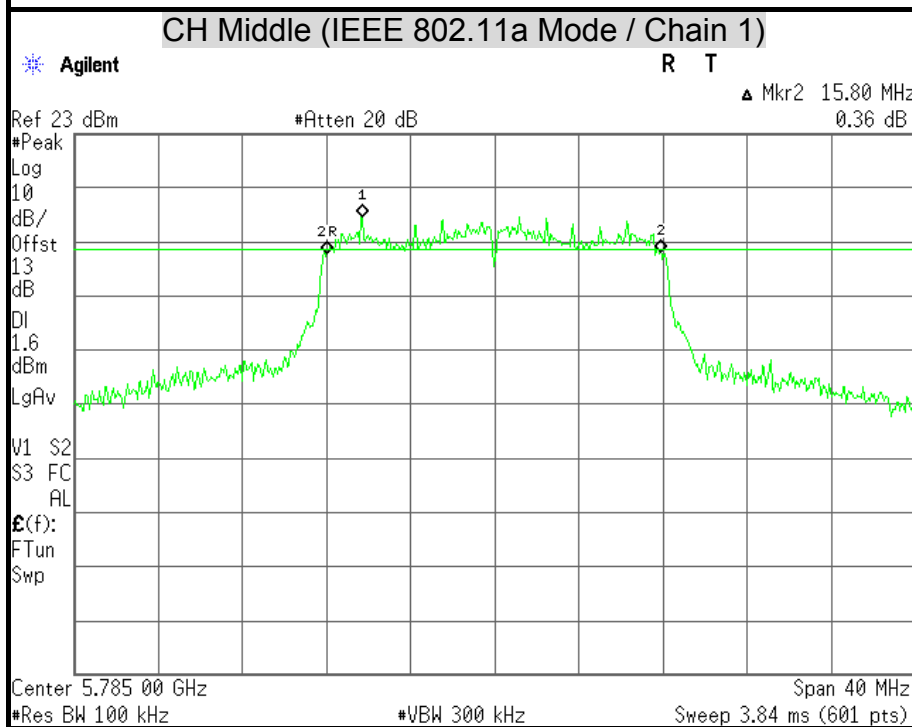
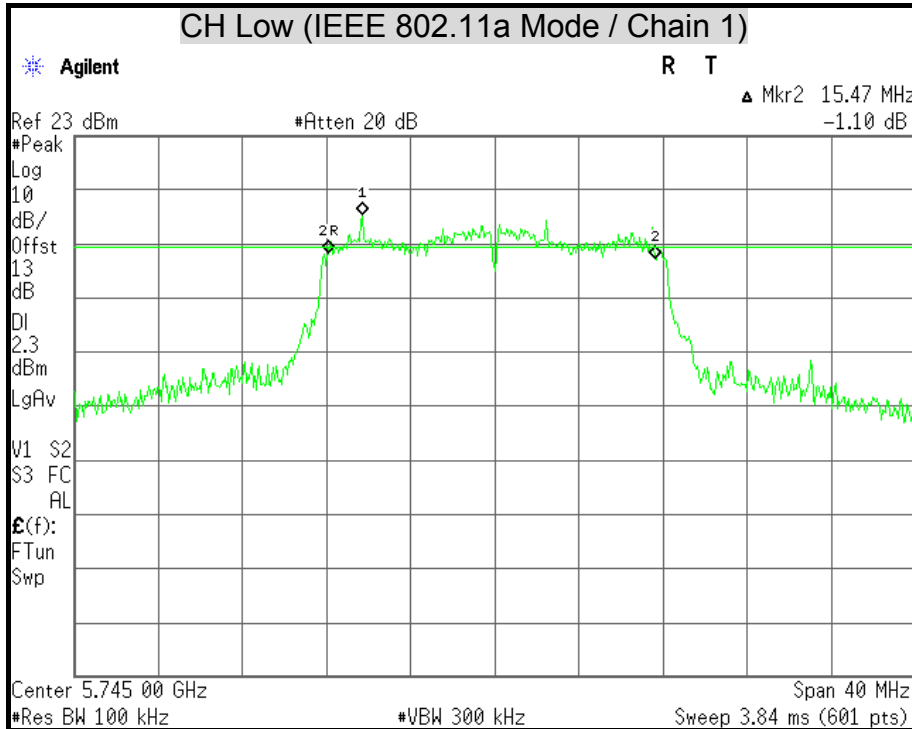
Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain 1		
Low	2422	36.50	36.50	500	PASS
Middle	2437	35.90	35.90	500	PASS
High	2452	36.30	36.00	500	PASS

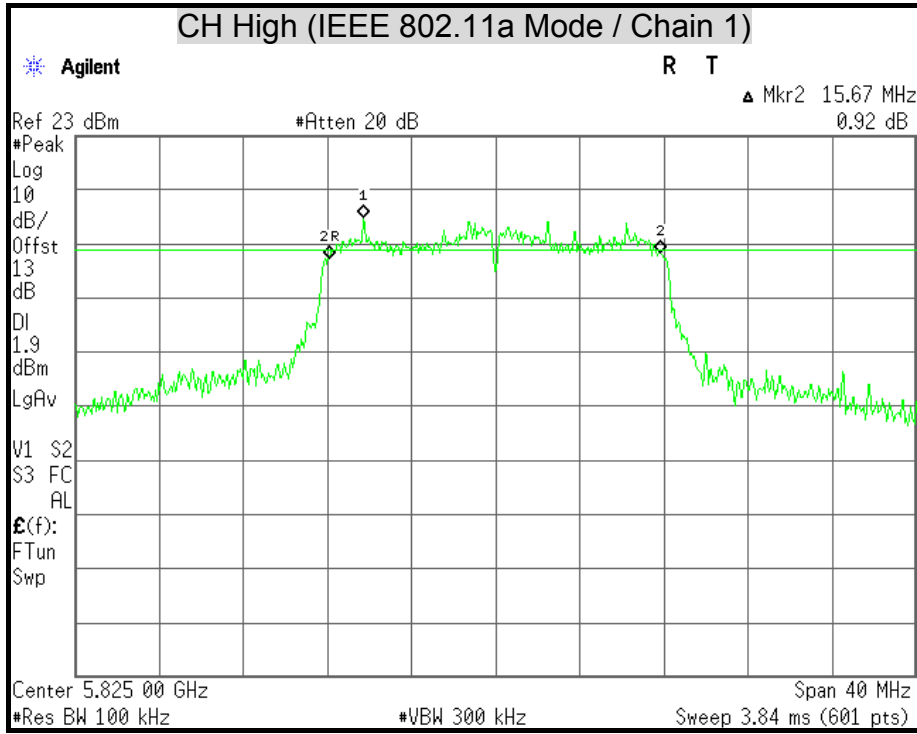


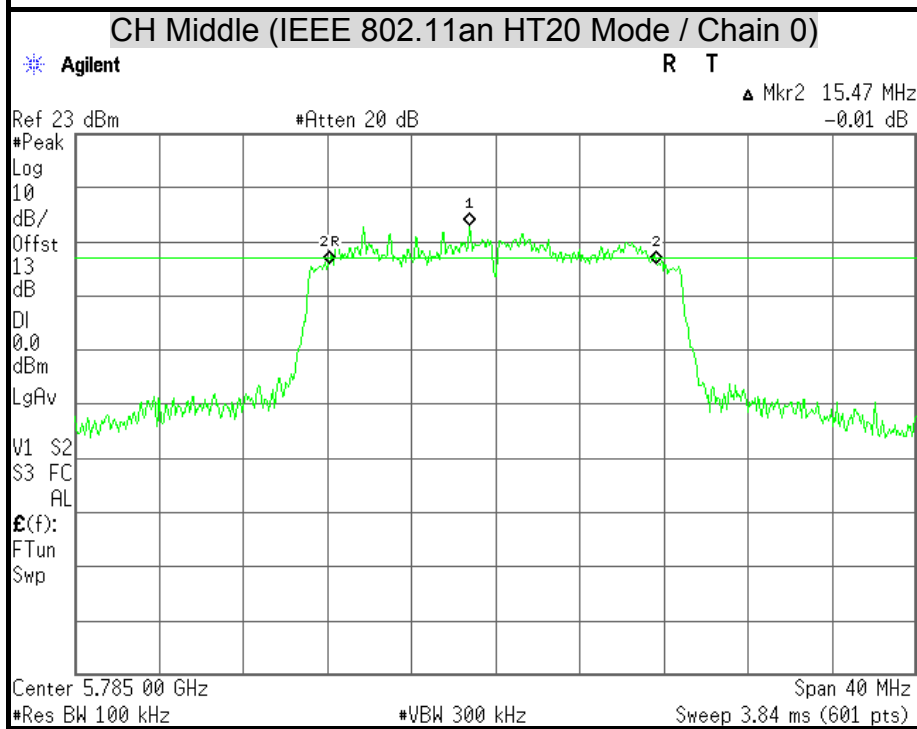
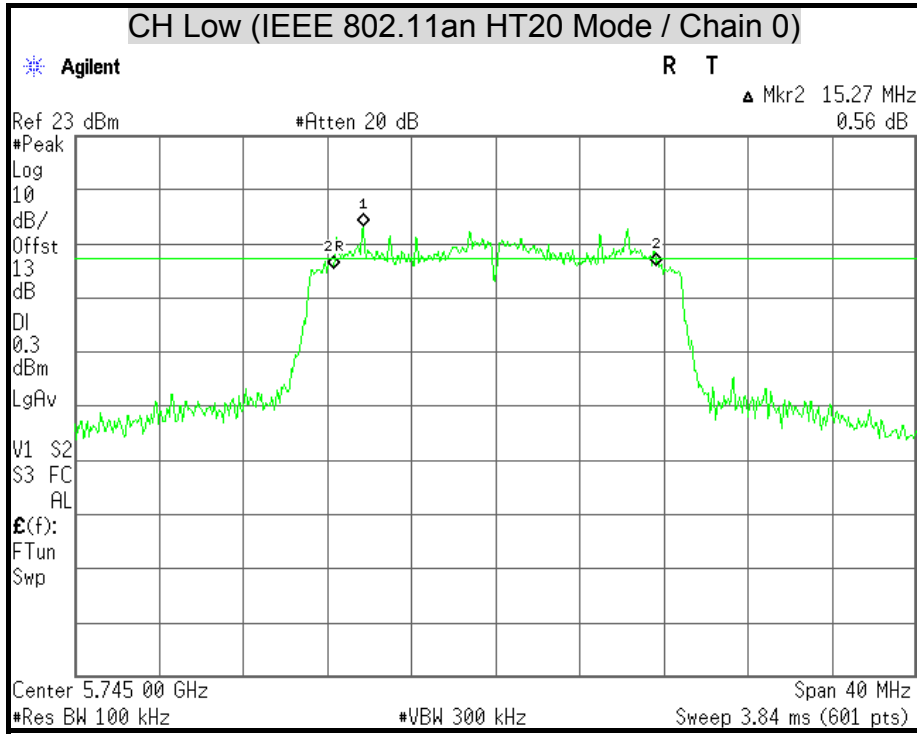
6dB BANDWIDTH

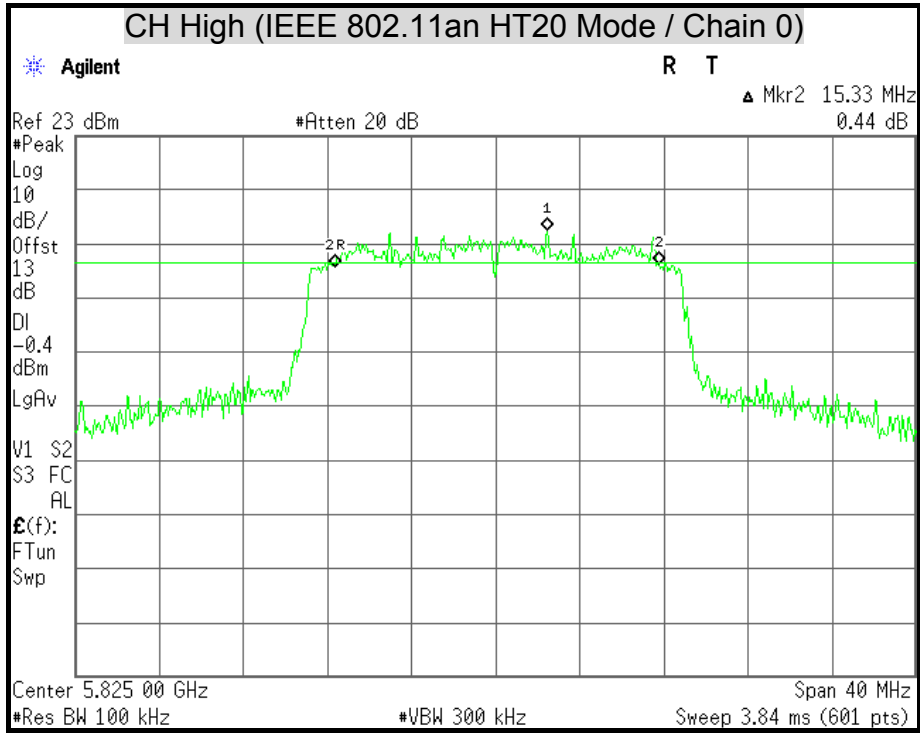


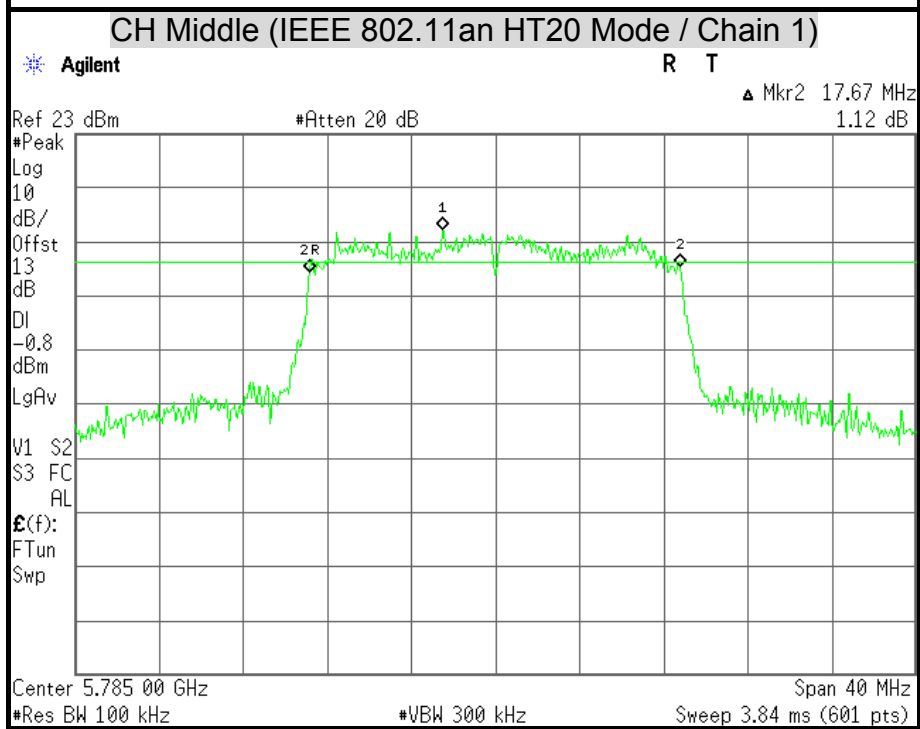
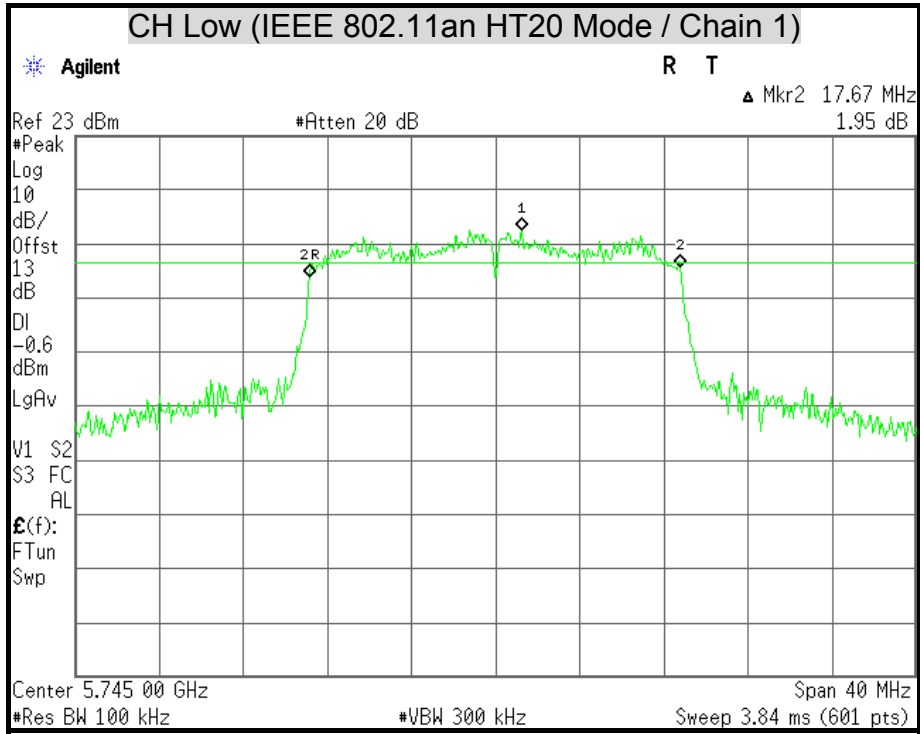


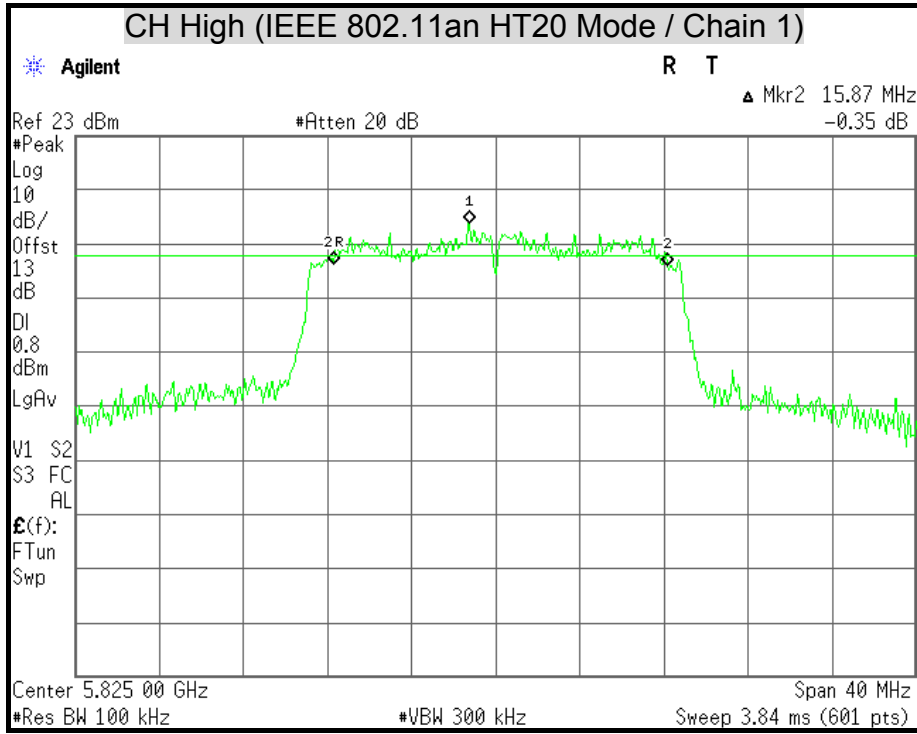


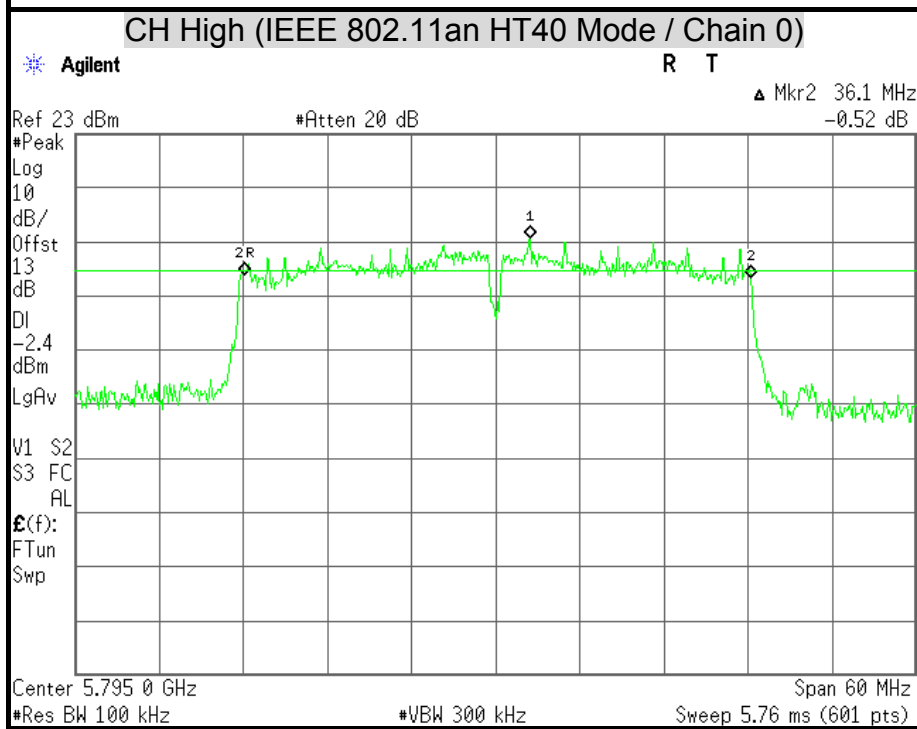
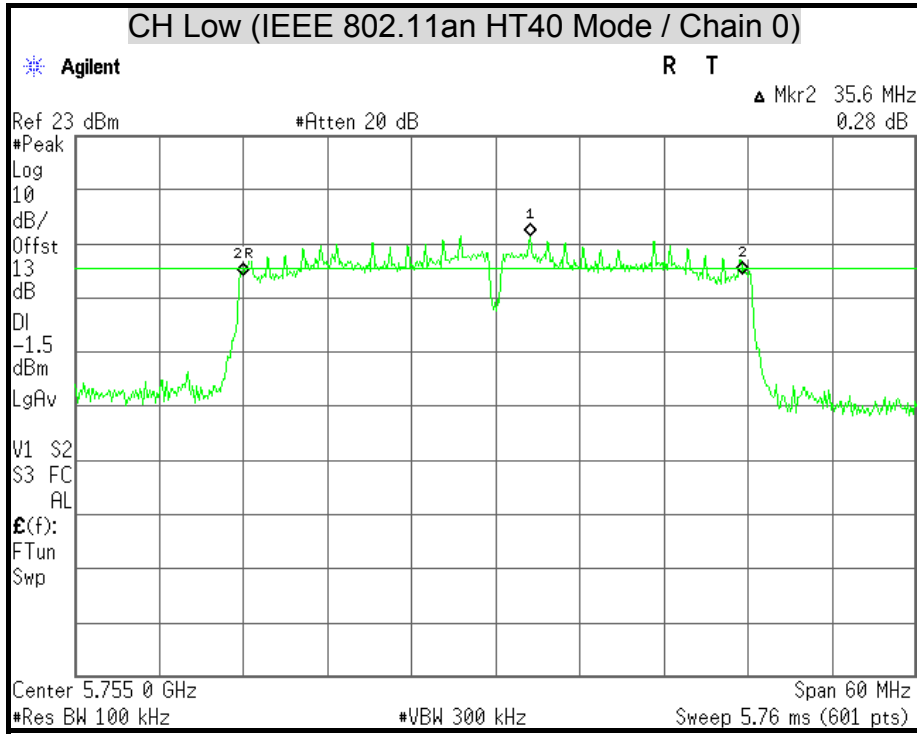


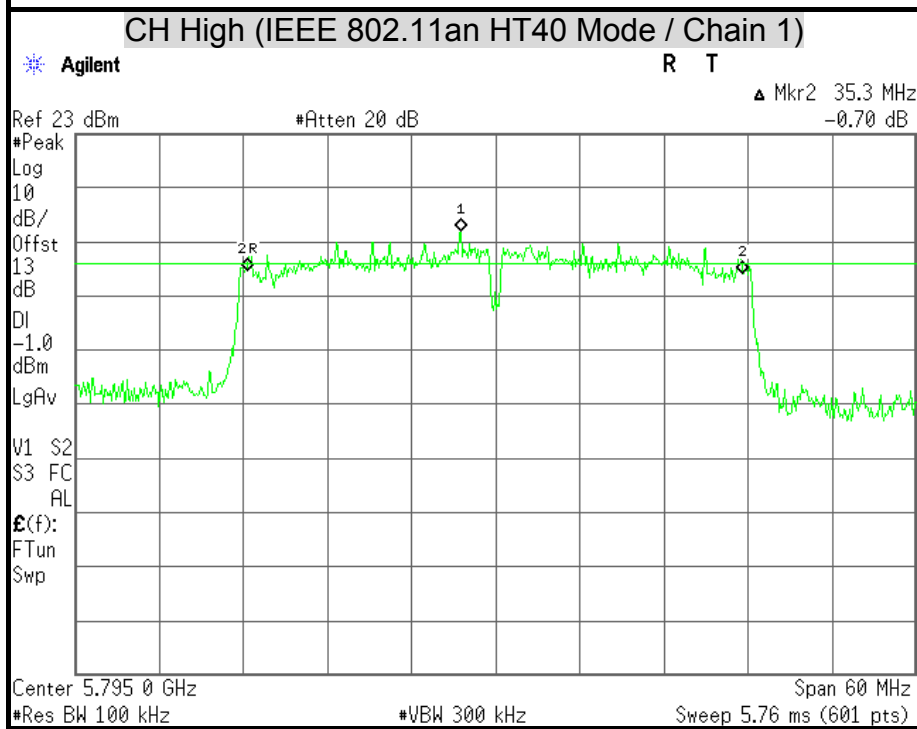
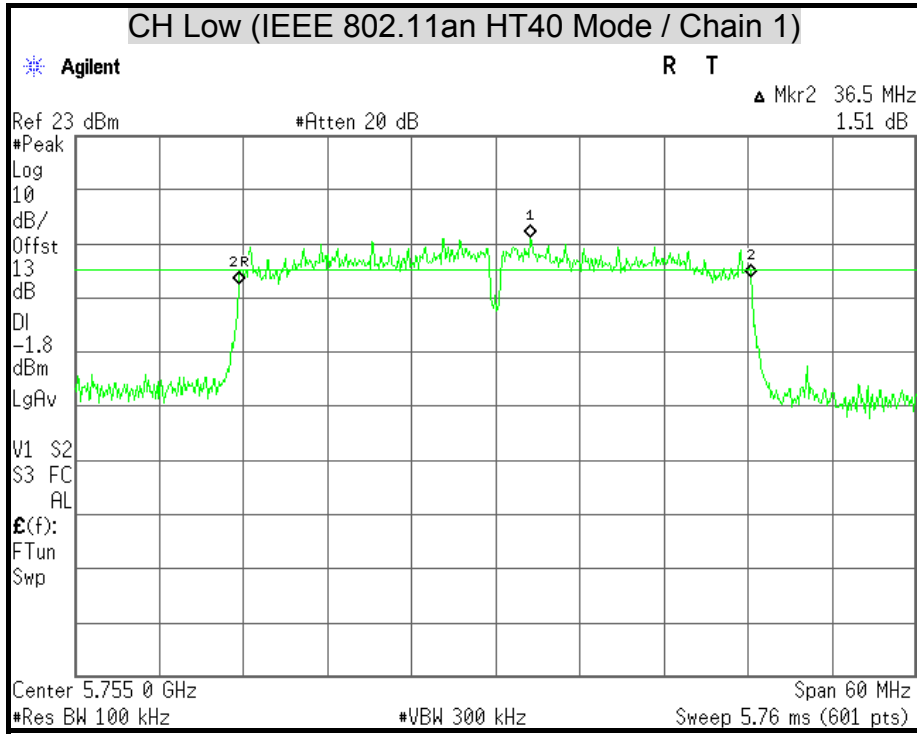


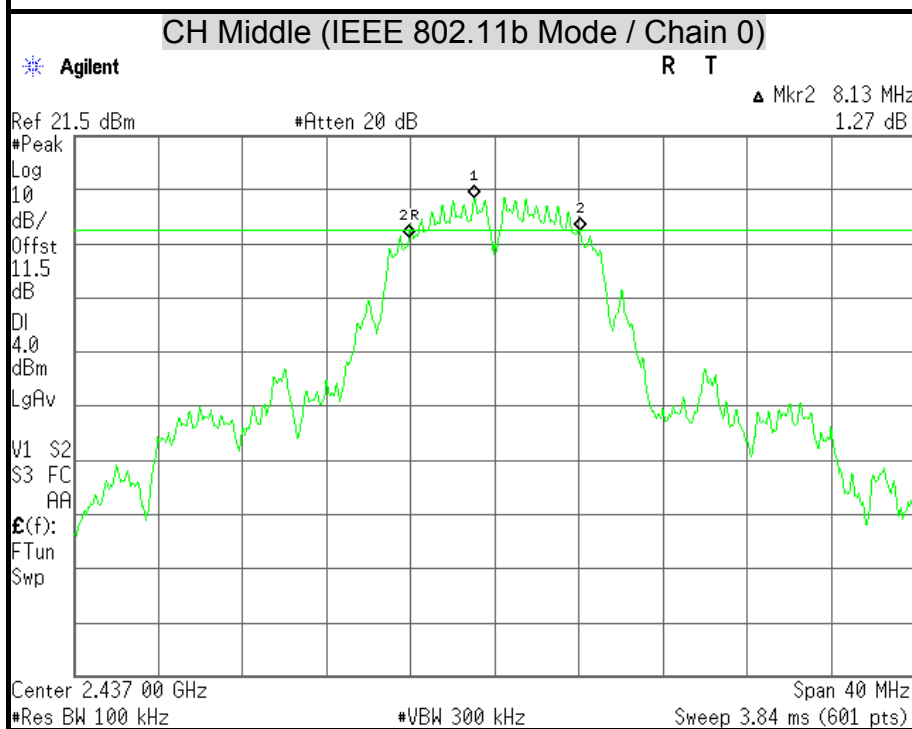
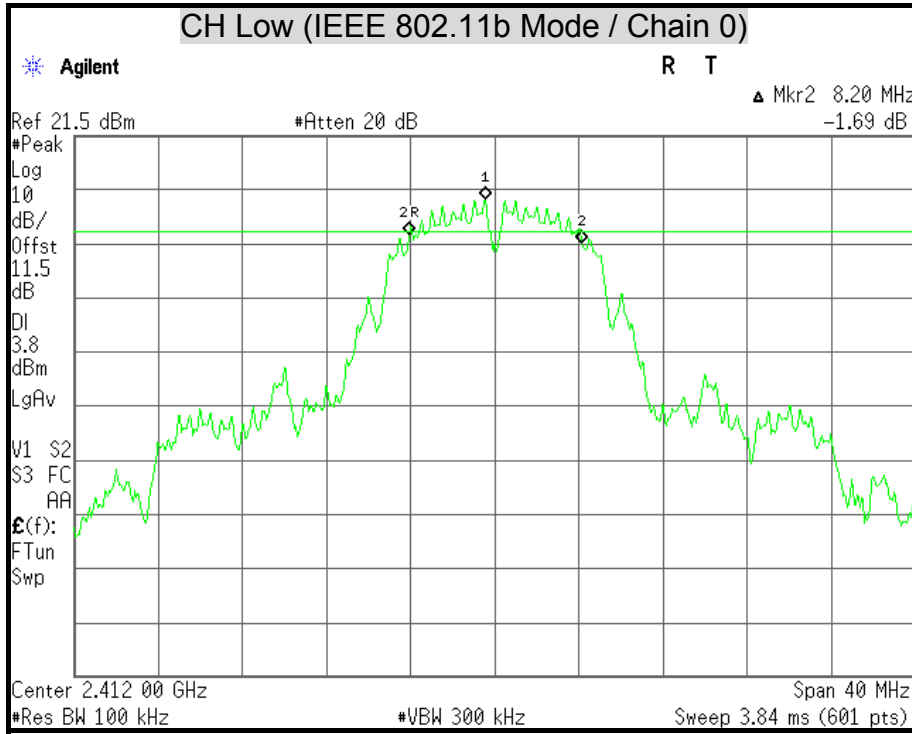


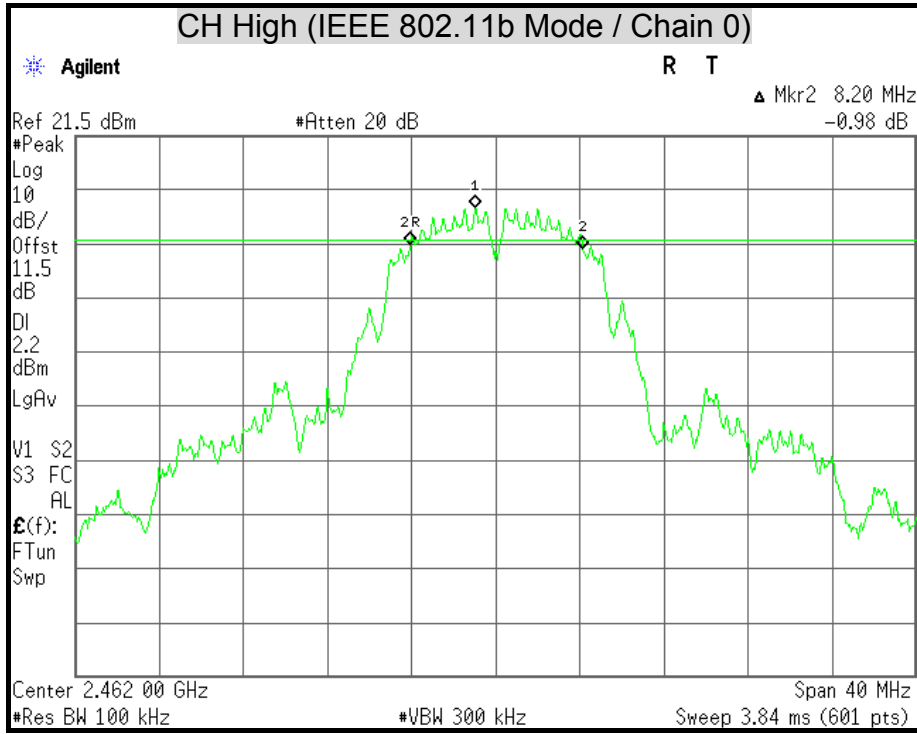


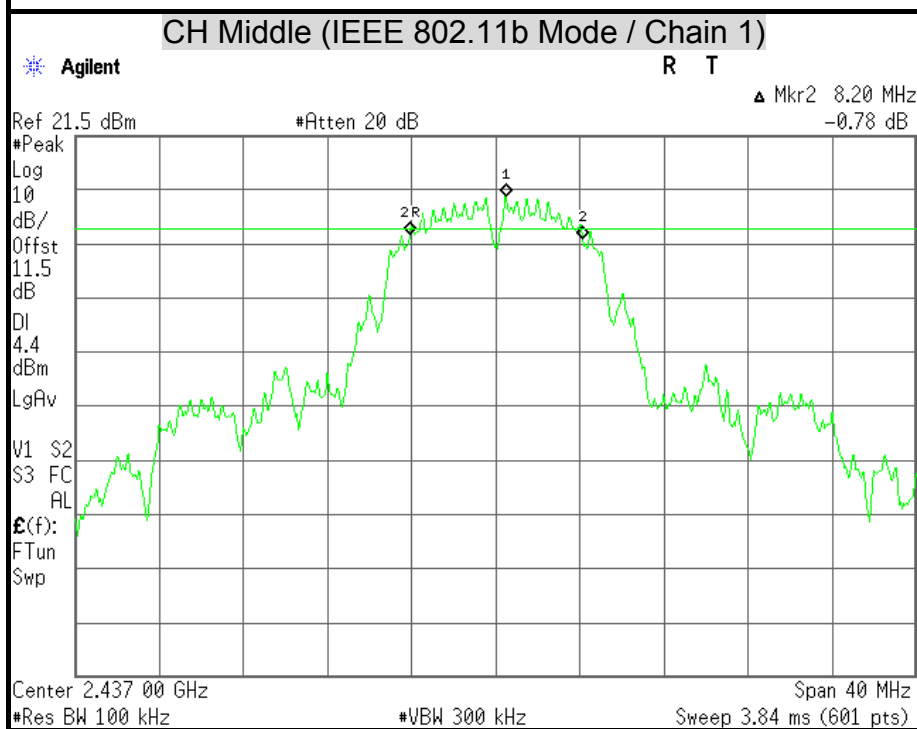
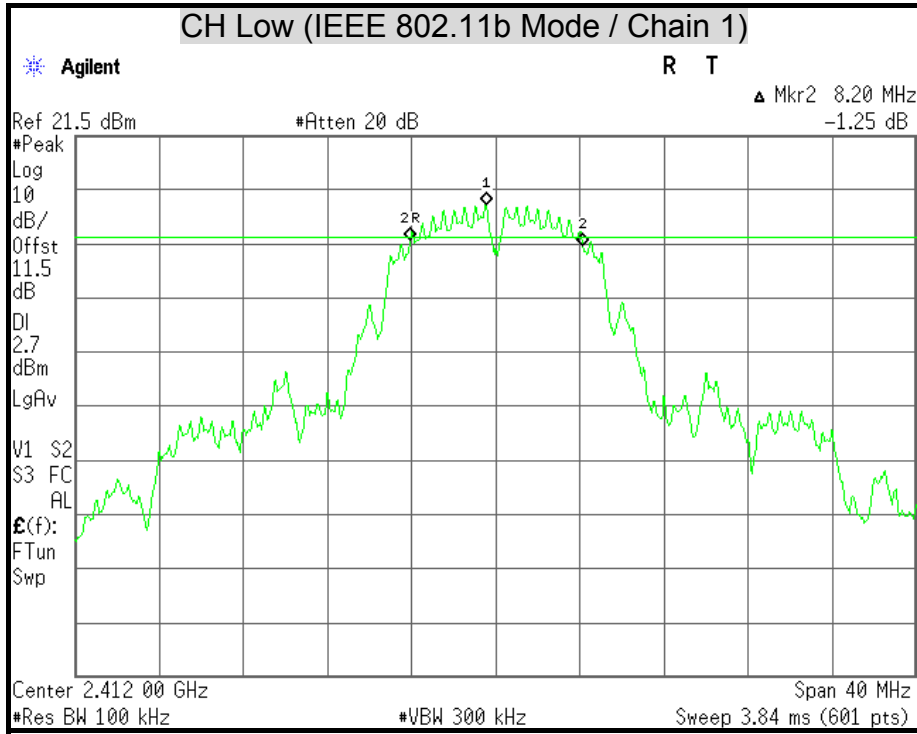


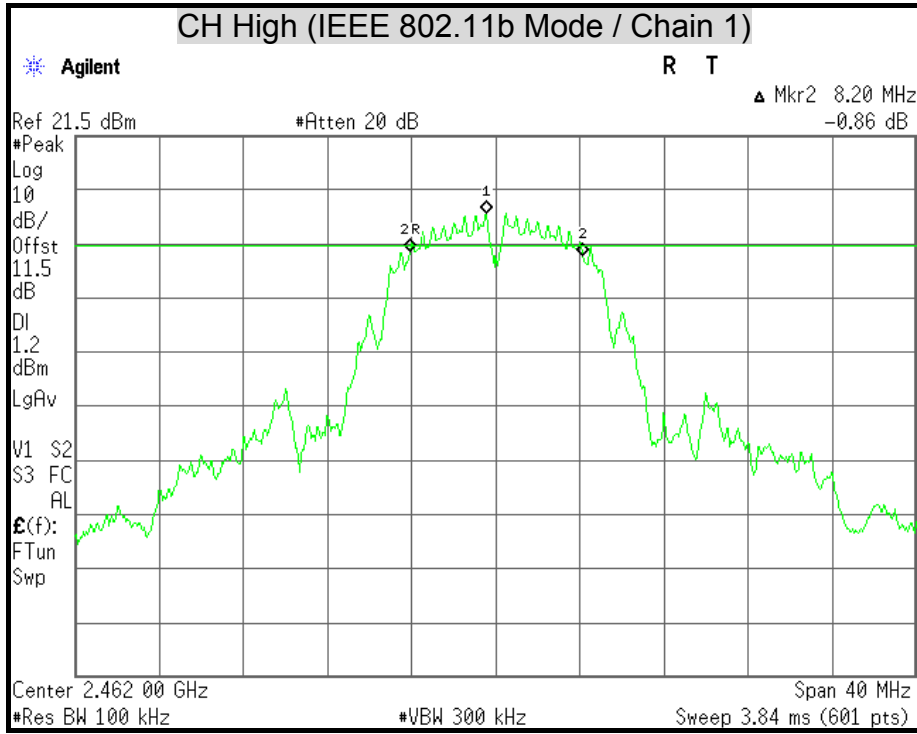


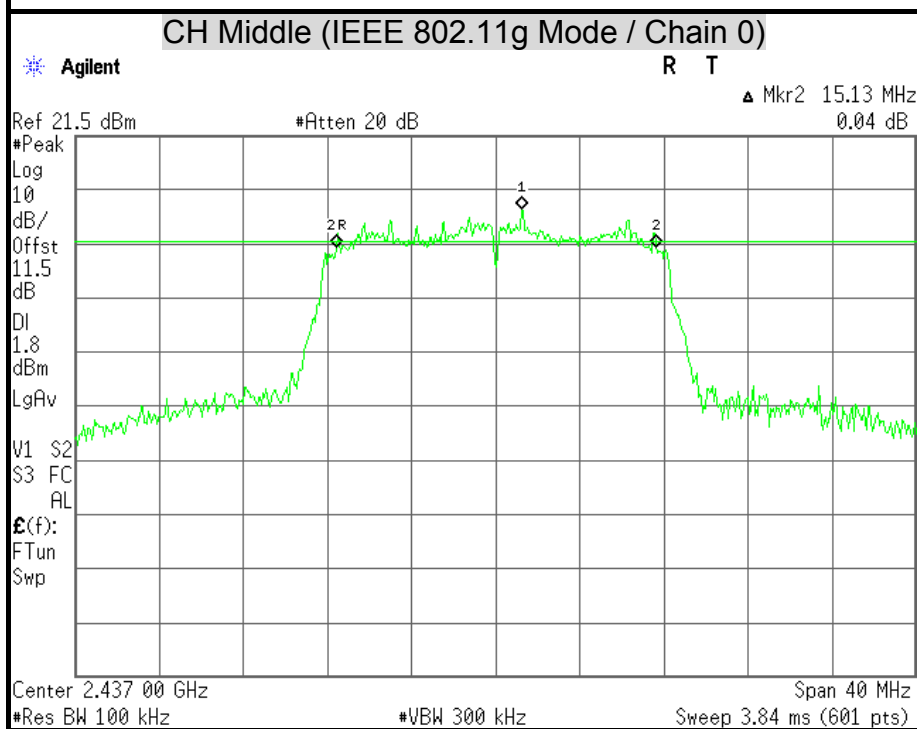
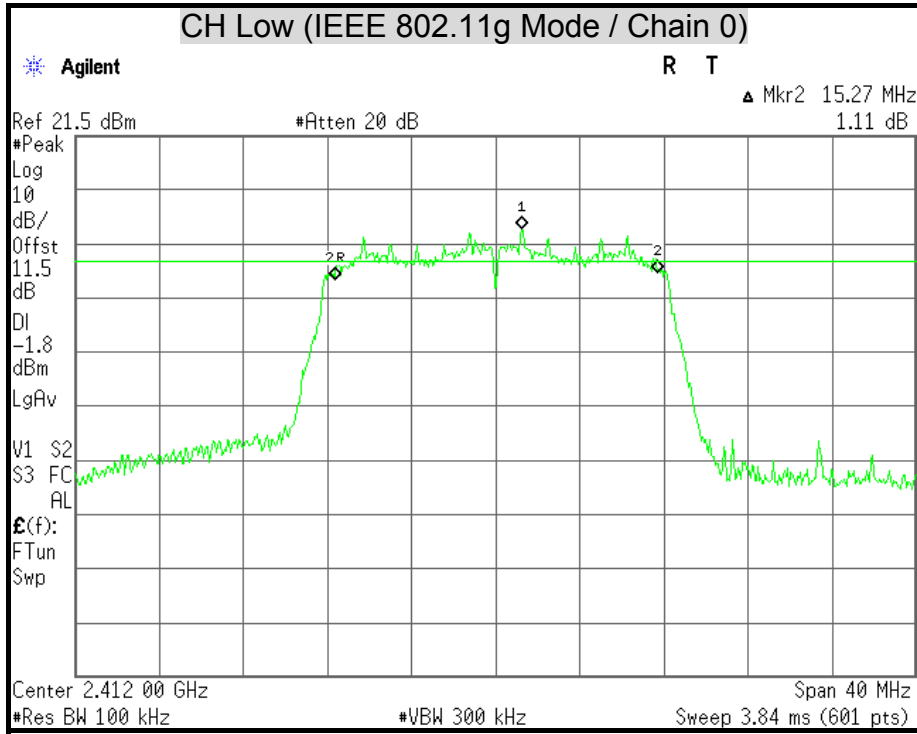


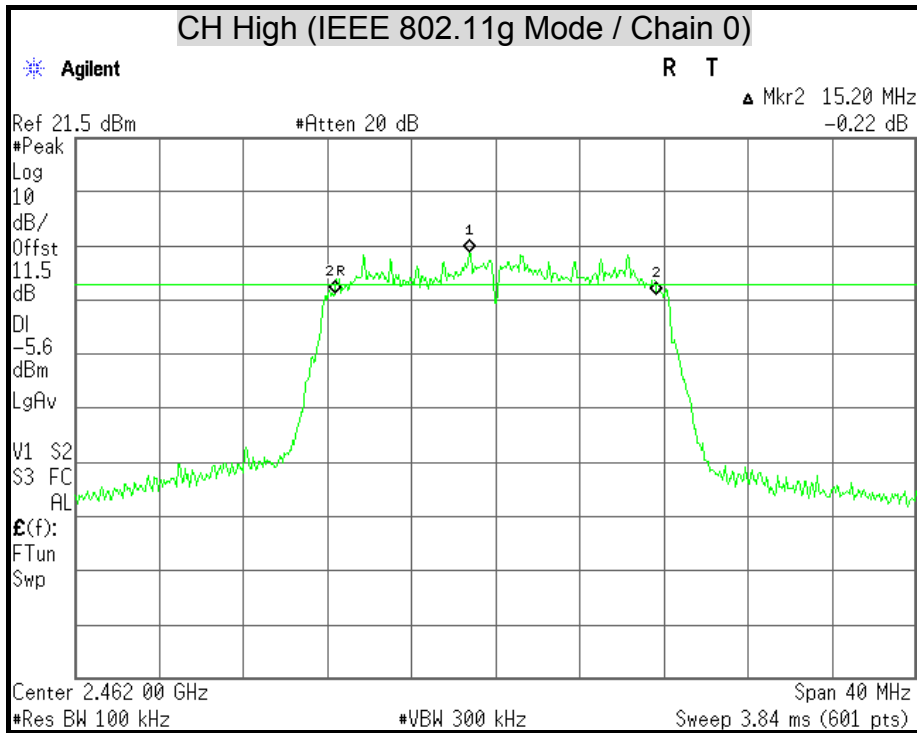


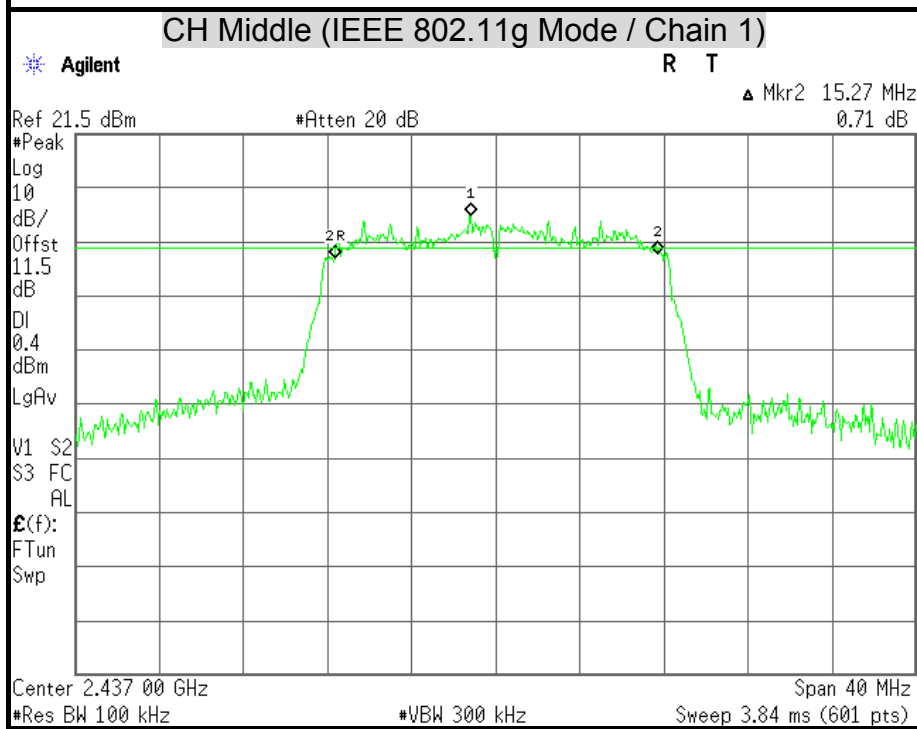
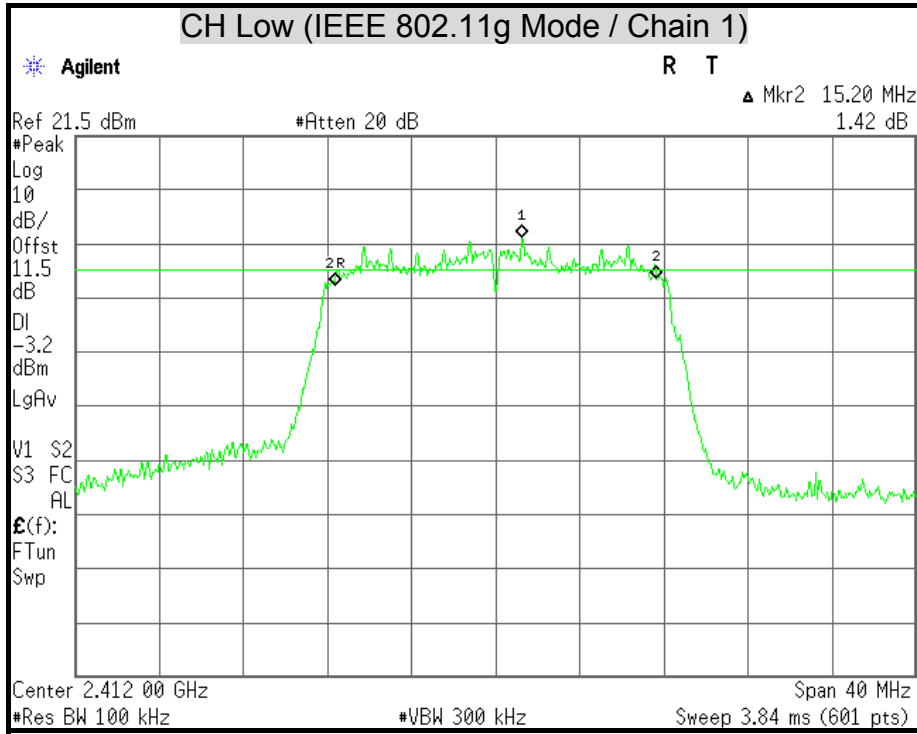


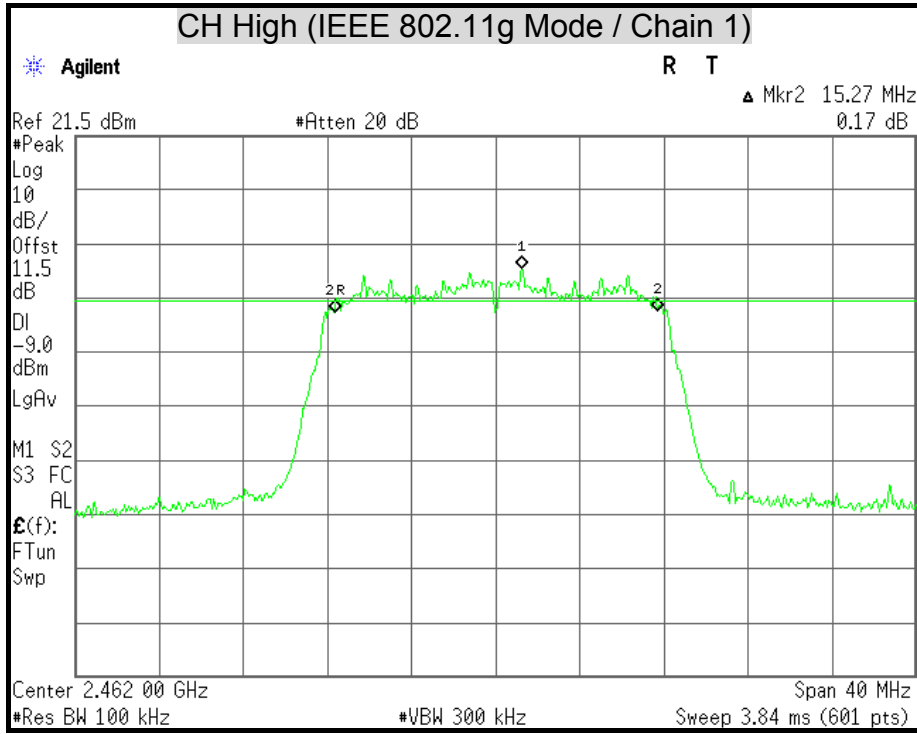


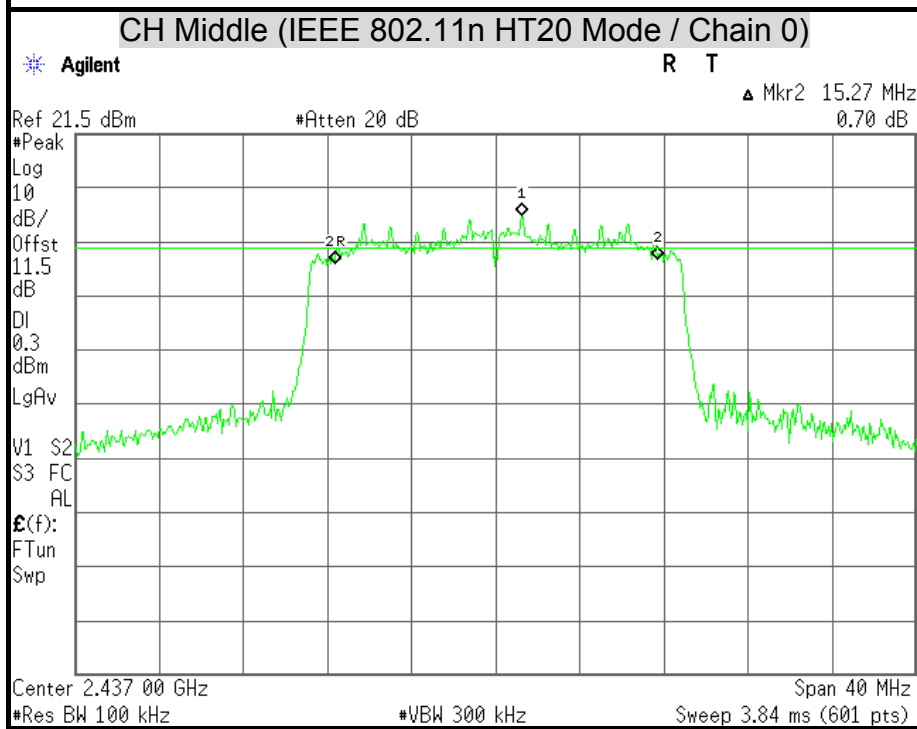
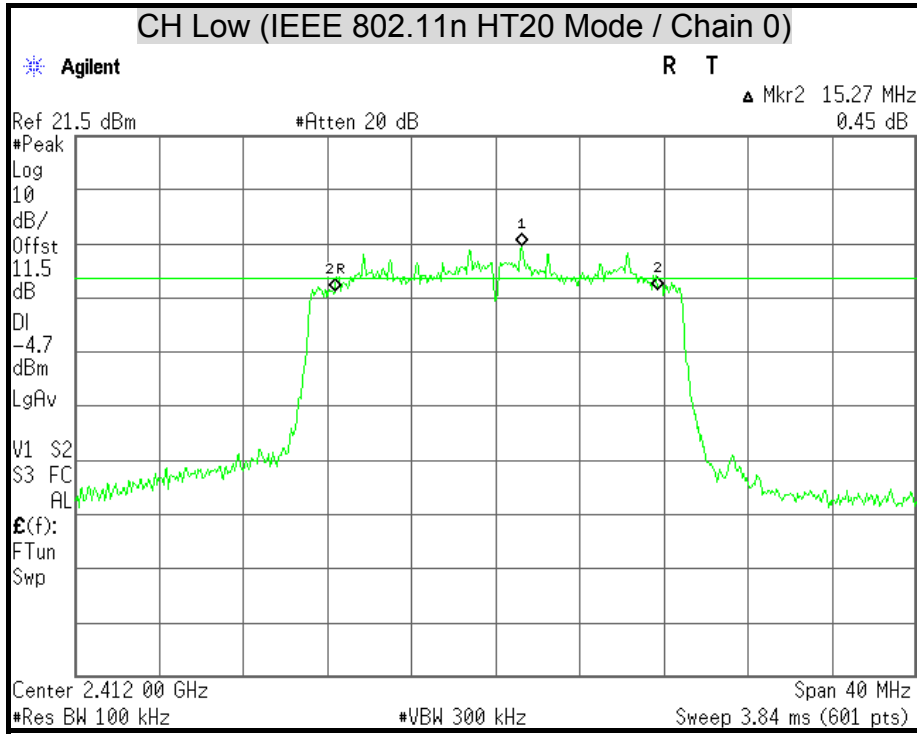


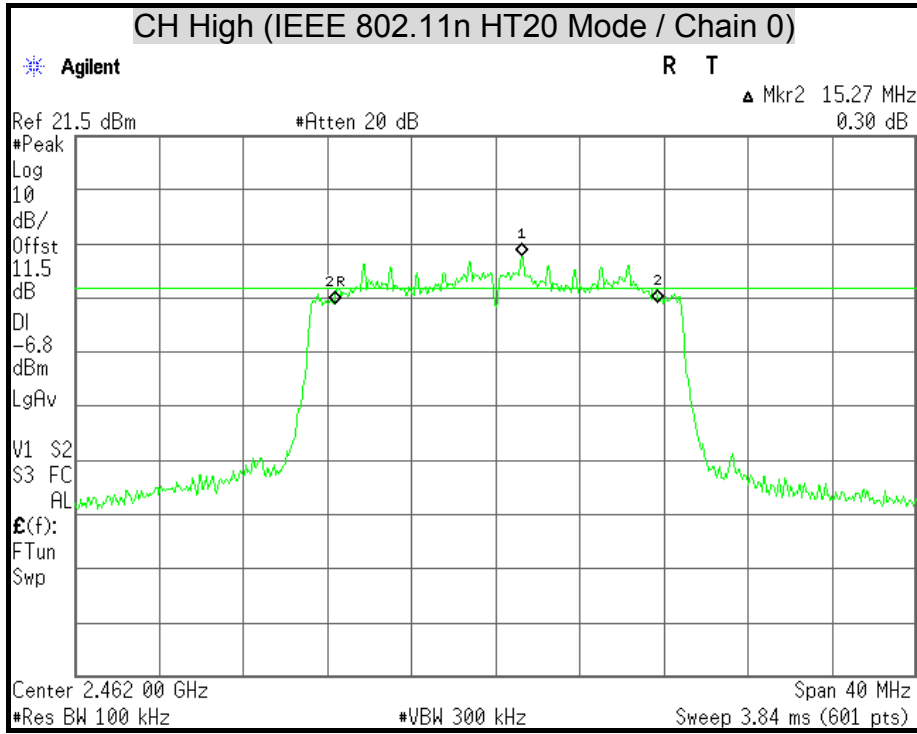


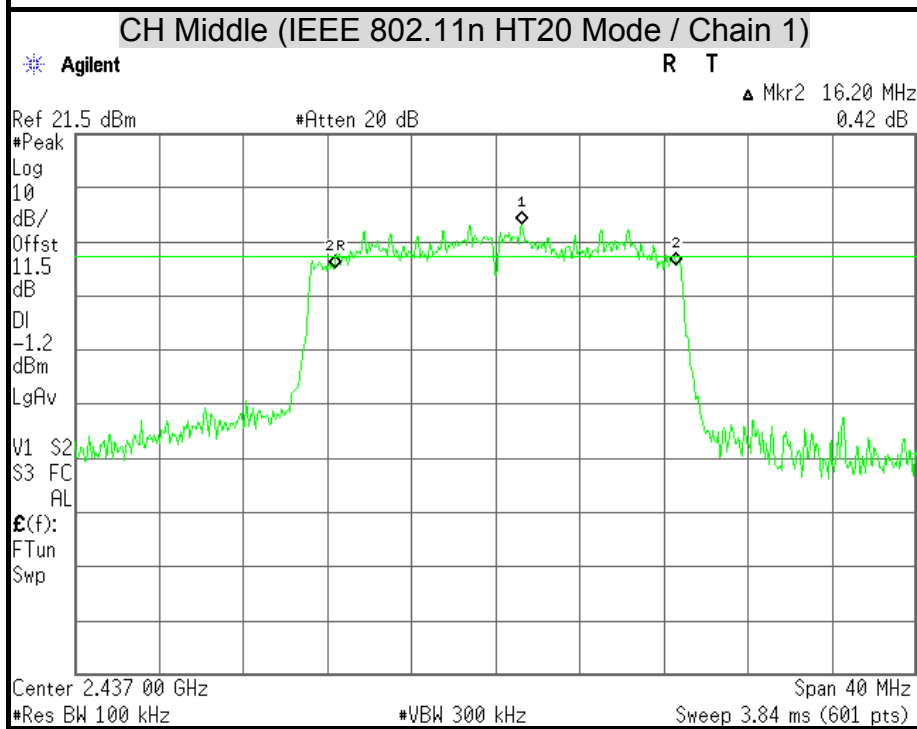
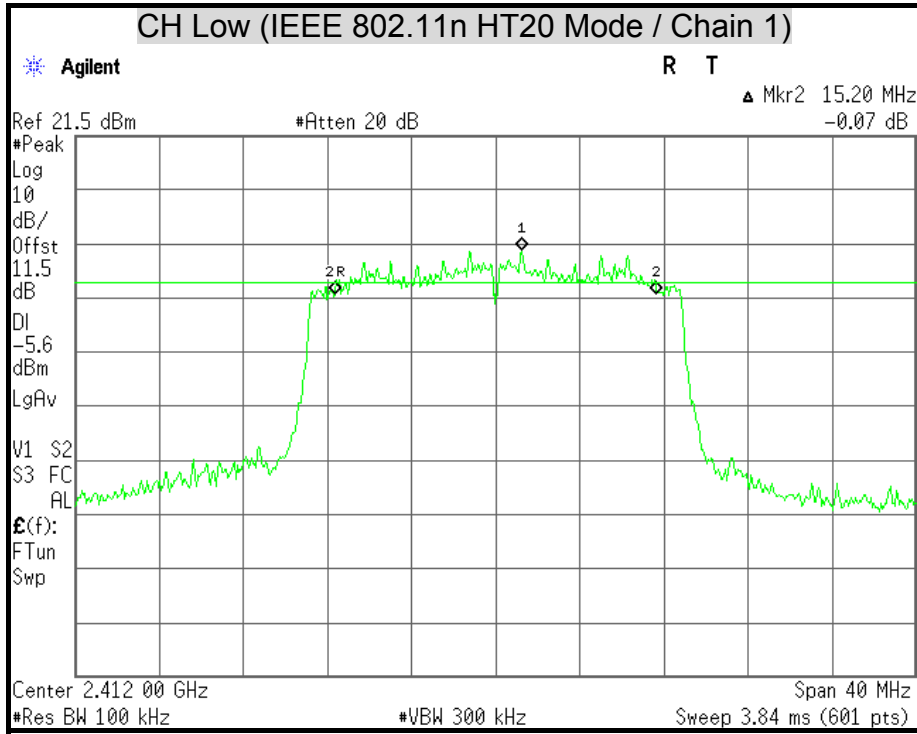


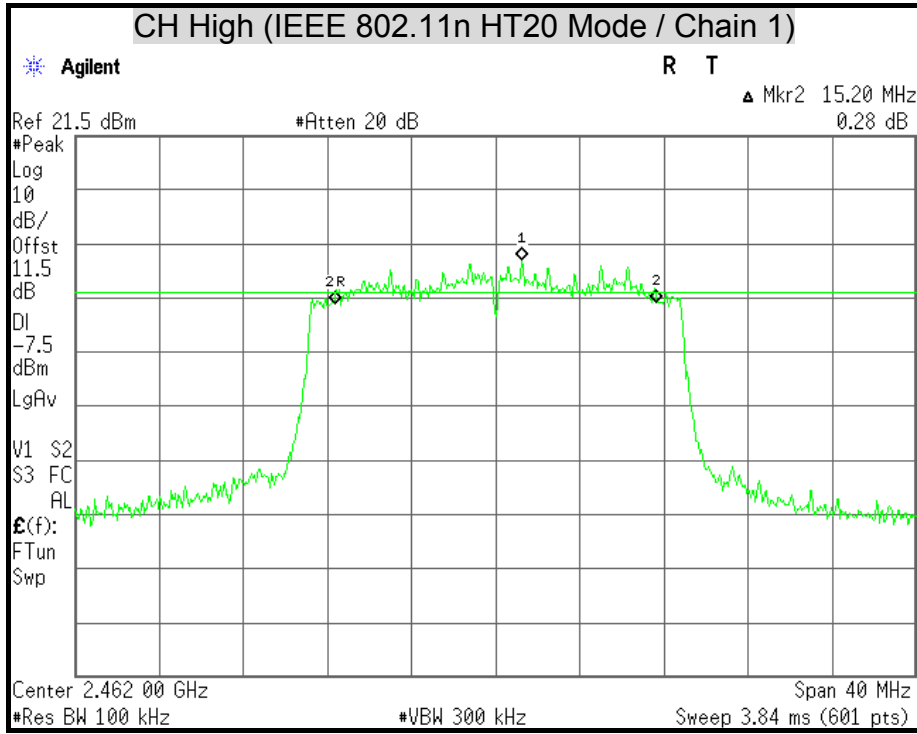


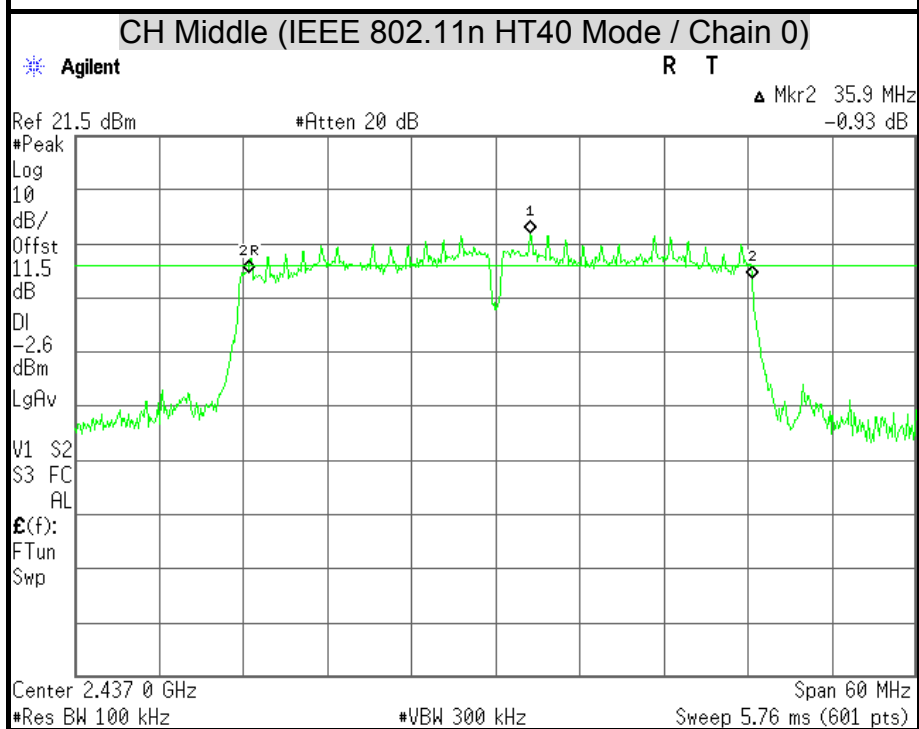
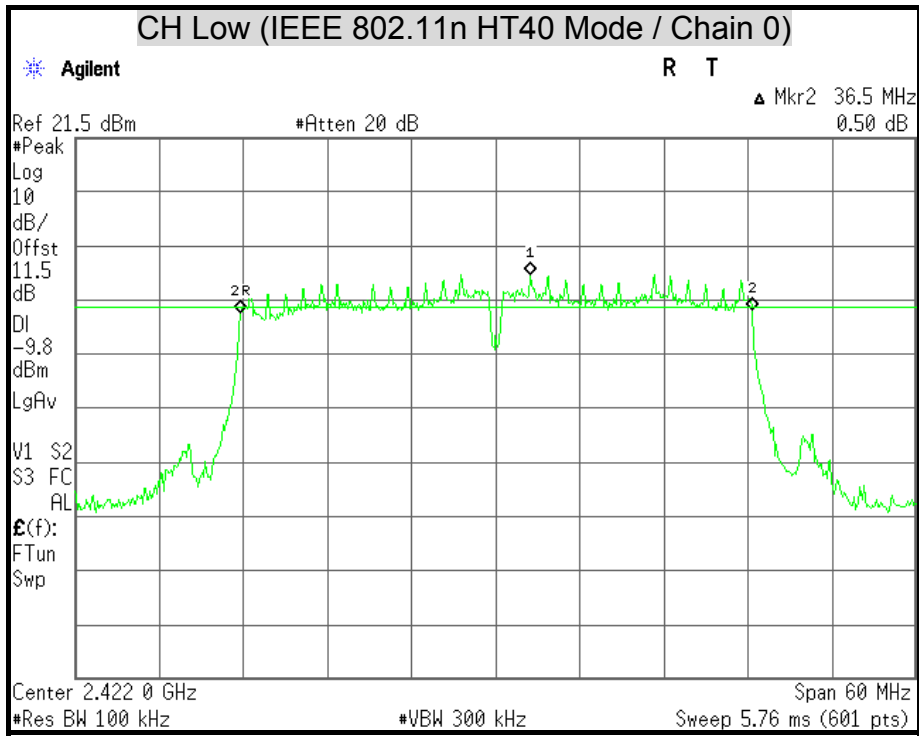


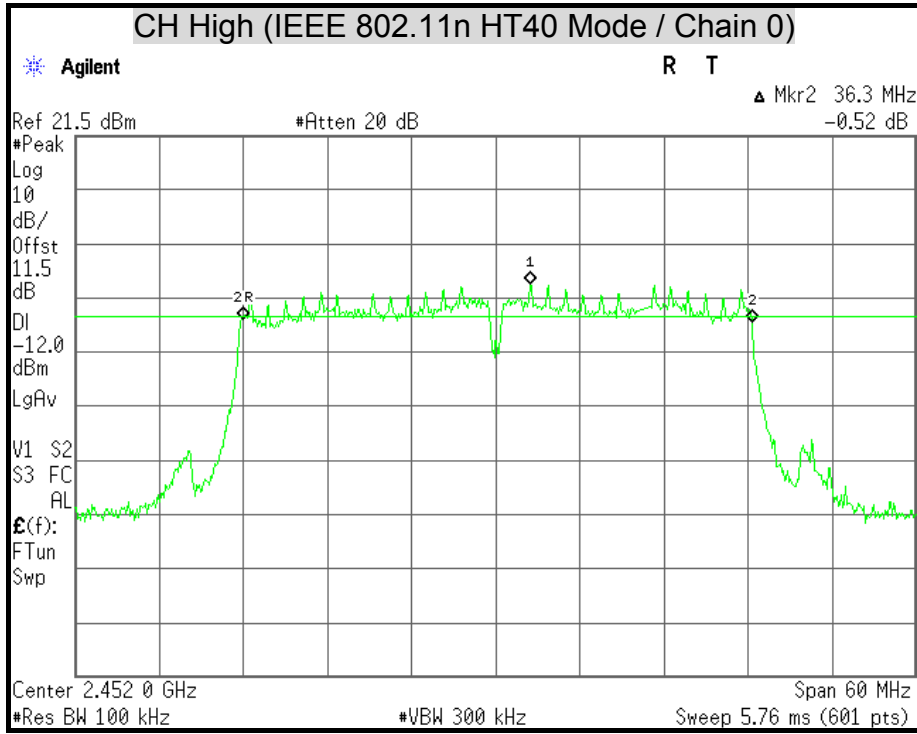


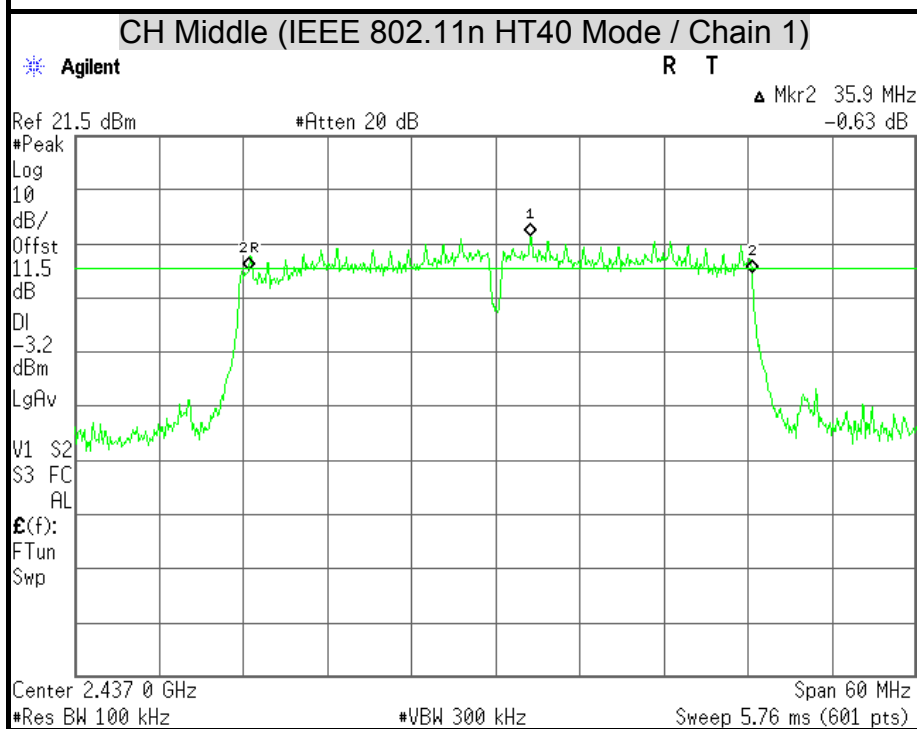
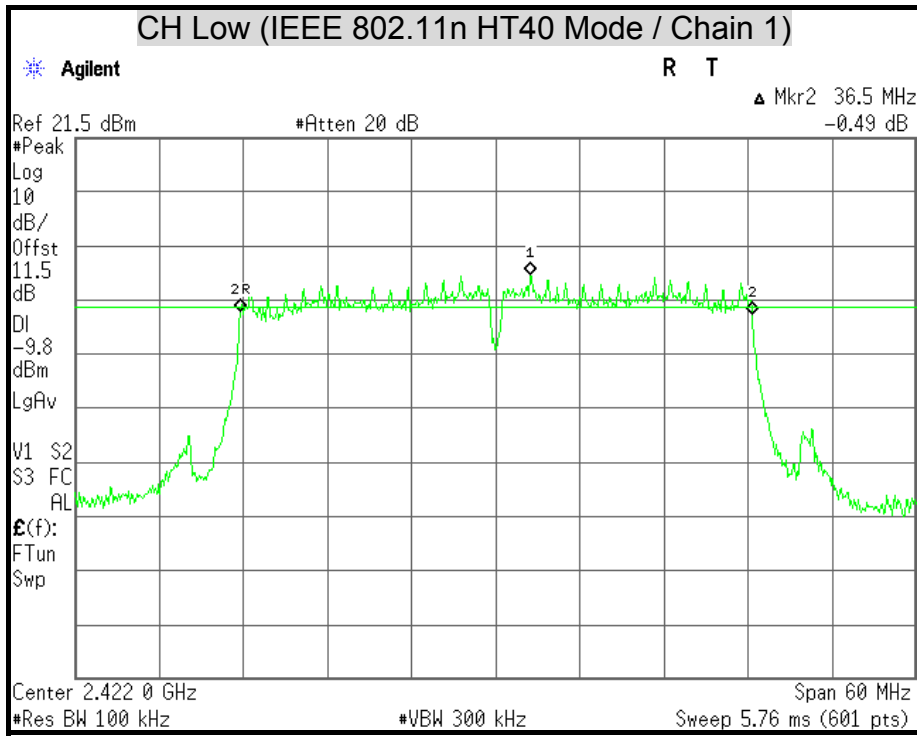


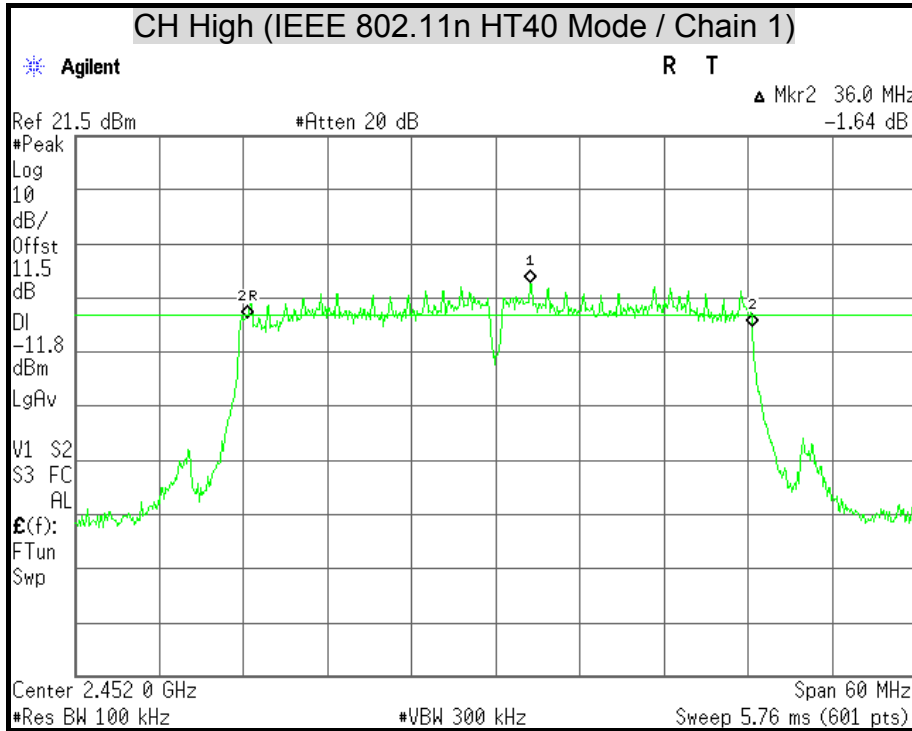














7.2 MAXIMUM PEAK OUTPUT POWER

LIMITS

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

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

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

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Power Meter	ANRITSU	ML2495A	1149001	12/06/2013
Power Sensor	ANRITSU	MA2411B	1126148	12/07/2013

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 802.11a Mode

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power (W)		Peak Power Limit		Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1	(dBm)	(W)	
Low	5745	24.72	24.70	0.2965	0.2951	30	1	PASS
Middle	5785	24.58	24.67	0.2871	0.2931	30	1	PASS
High	5825	24.48	24.53	0.2805	0.2838	30	1	PASS

Remark:

1. At final test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 13dB (including 10 dB pad and 3 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

IEEE 802.11an HT20 Mode

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total		Peak Power Limit		Pass / Fail
		Chain 0	Chain 1	(dBm)	(W)	(dBm)	(W)	
Low	5745	24.18	24.20	27.20	0.5248	30	1	PASS
Middle	5785	24.06	24.16	27.12	0.5153	30	1	PASS
High	5825	23.98	24.28	27.14	0.5180	30	1	PASS

Remark:

1. At final test to get the worst-case emission at 13Mbps.
2. The cable assembly insertion loss of 13dB (including 10 dB pad and 3 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.
3. Total peak power = Chain 0 + Chain 1.

IEEE 802.11an HT40 Mode

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total		Peak Power Limit		Pass / Fail
		Chain 0	Chain 1	(dBm)	(W)	(dBm)	(W)	
Low	5755	24.24	24.29	27.28	0.5340	30	1	PASS
High	5795	23.76	24.28	27.04	0.5056	30	1	PASS

Remark:

1. At final test to get the worst-case emission at 27Mbps.
2. The cable assembly insertion loss of 13dB (including 10 dB pad and 3 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.
3. Total peak power = Chain 0 + Chain 1.



IEEE 802.11b Mode

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power (W)		Peak Power Limit		Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1	(dBm)	(W)	
Low	2412	21.19	20.84	0.1315	0.1213	30	1	PASS
Middle	2437	21.54	22.36	0.1426	0.1722	30	1	PASS
High	2462	20.38	19.22	0.1091	0.0836	30	1	PASS

Remark:

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

IEEE 802.11g Mode

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power (W)		Peak Power Limit		Pass / Fail
		Chain 0	Chain 1	Chain 0	Chain 1	(dBm)	(W)	
Low	2412	23.84	23.40	0.2421	0.2188	30	1	PASS
Middle	2437	25.72	25.98	0.3733	0.3963	30	1	PASS
High	2462	21.52	18.05	0.1419	0.0638	30	1	PASS

Remark:

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



IEEE 802.11n HT20 Mode (Two TX)

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total		Peak Power Limit		Pass / Fail
		Chain 0	Chain 1	(dBm)	(W)	(dBm)	(W)	
Low	2412	21.43	21.35	24.40	0.2755	30	1	PASS
Middle	2437	25.07	25.18	28.14	0.6510	30	1	PASS
High	2462	19.44	19.51	22.49	0.1772	30	1	PASS

Remark:

1. At final test to get the worst-case emission at 13Mbps.
2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.
3. Total peak power = Chain 0 + Chain 1.

IEEE 802.11n HT40 Mode (Two TX)

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total		Peak Power Limit		Pass / Fail
		Chain 0	Chain 1	(dBm)	(W)	(dBm)	(W)	
Low	2422	19.78	19.90	22.85	0.1928	30	1	PASS
Middle	2437	24.69	24.84	27.78	0.5992	30	1	PASS
High	2452	17.66	17.98	20.83	0.1212	30	1	PASS

Remark:

1. At final test to get the worst-case emission at 27Mbps.
2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.
3. Total peak power = Chain 0 + Chain 1.



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	06/14/2013

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 \geq 3 kHz.
5. Set the VBW \geq 3 x 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.
11. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



TEST RESULTS

IEEE 802.11a Mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)		Minimum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1		
Low	5745	-5.06	-5.34	8	PASS
Middle	5785	-5.48	-4.94	8	PASS
High	5825	-5.57	-5.43	8	PASS

Remark:

1. At final test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 13 dB (including 10 dB pad and 3 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11an 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	5745	-7.41	-7.48	-4.43	8	PASS
Middle	5785	-6.75	-7.43	-4.07	8	PASS
High	5825	-6.50	-5.96	-3.21	8	PASS

Remark:

1. At final test to get the worst-case emission at 13Mbps.
2. The cable assembly insertion loss of 13dB (including 10 dB pad and 3 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.
3. Total power spectral density = Chain 0 + Chain 1.

IEEE 802.11an 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	5755	-8.57	-9.93	-6.19	8	PASS
High	5795	-10.58	-9.51	-7.00	8	PASS

Remark:

1. At final test to get the worst-case emission at 27Mbps.
2. The cable assembly insertion loss of 13dB (including 10 dB pad and 3 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.
3. Total power spectral density = Chain 0 + Chain 1.



IEEE 802.11b Mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)		Minimum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1		
Low	2412	-3.95	-3.93	8	PASS
Middle	2437	-4.20	-3.18	8	PASS
High	2462	-4.93	-5.89	8	PASS

Remark:

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

IEEE 802.11g Mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)		Minimum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1		
Low	2412	-9.37	-10.93	8	PASS
Middle	2437	-5.95	-6.12	8	PASS
High	2462	-12.59	-16.74	8	PASS

Remark:

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



IEEE 802.11n HT20 Mode (Two TX)

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)		PSD Total (dBm)	Minimum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	2412	-12.81	-13.09	-9.94	8	PASS
Middle	2437	-5.56	-9.43	-4.07	8	PASS
High	2462	-14.43	-14.52	-11.46	8	PASS

Remark:

1. At final test to get the worst-case emission at 13Mbps.
2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.
3. Total power spectral density = Chain 0 + Chain 1.

IEEE 802.11n HT40 Mode (Two TX)

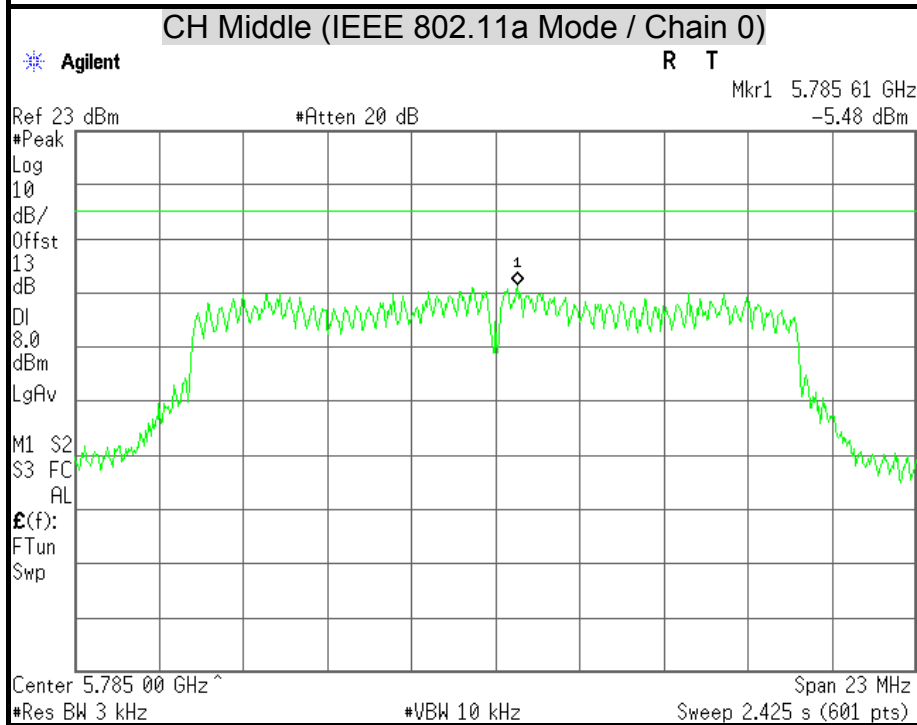
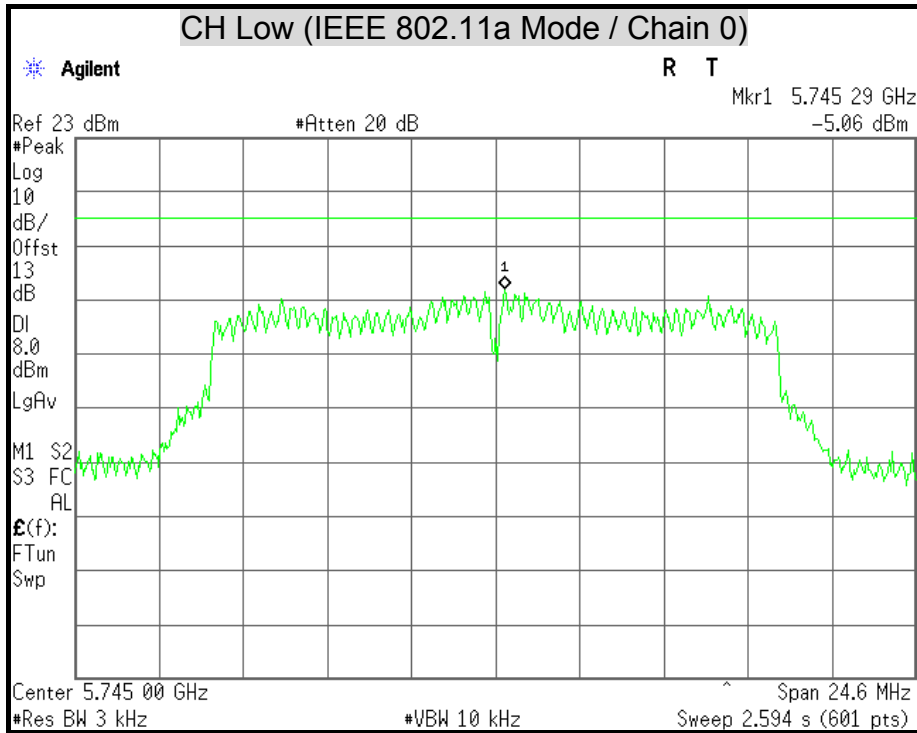
Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)		PSD Total (dBm)	Minimum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	2422	-18.33	-18.76	-15.53	8	PASS
Middle	2437	-10.99	-11.71	-8.32	8	PASS
High	2452	-21.05	-20.16	-17.57	8	PASS

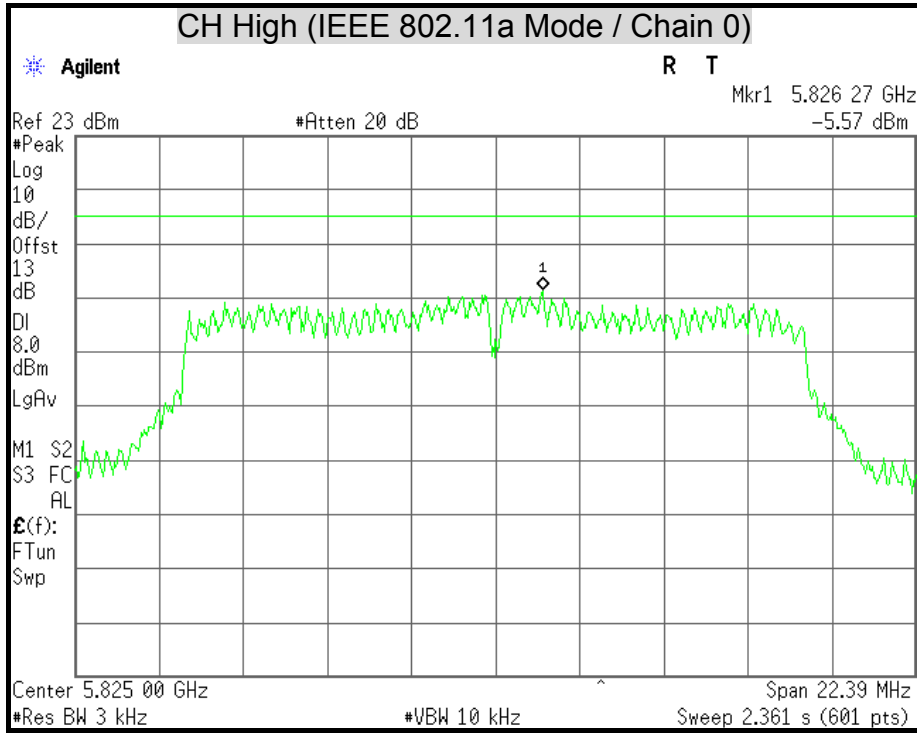
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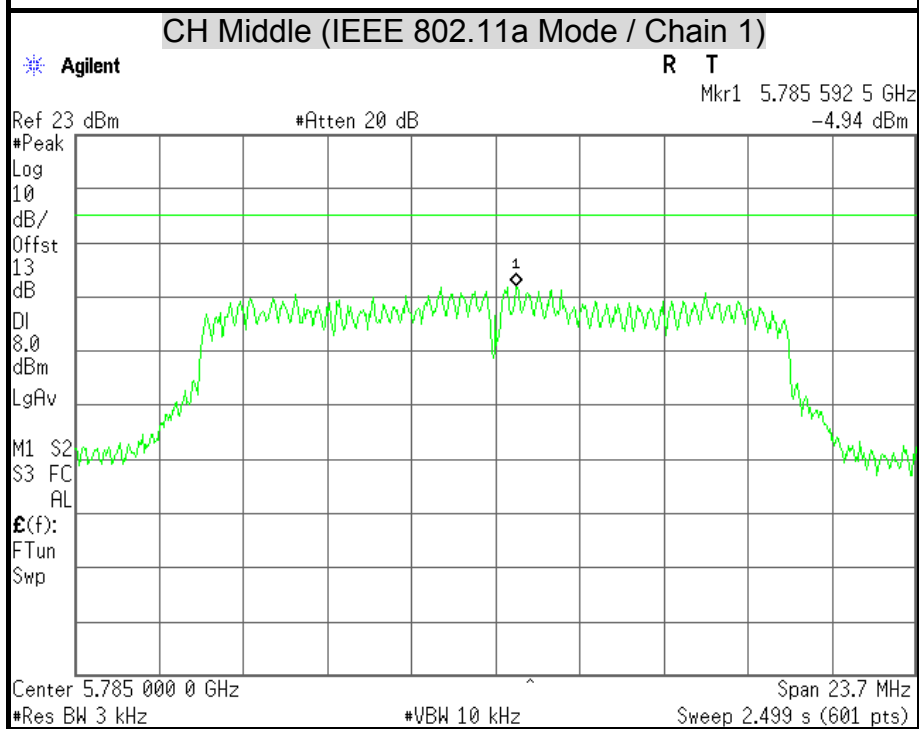
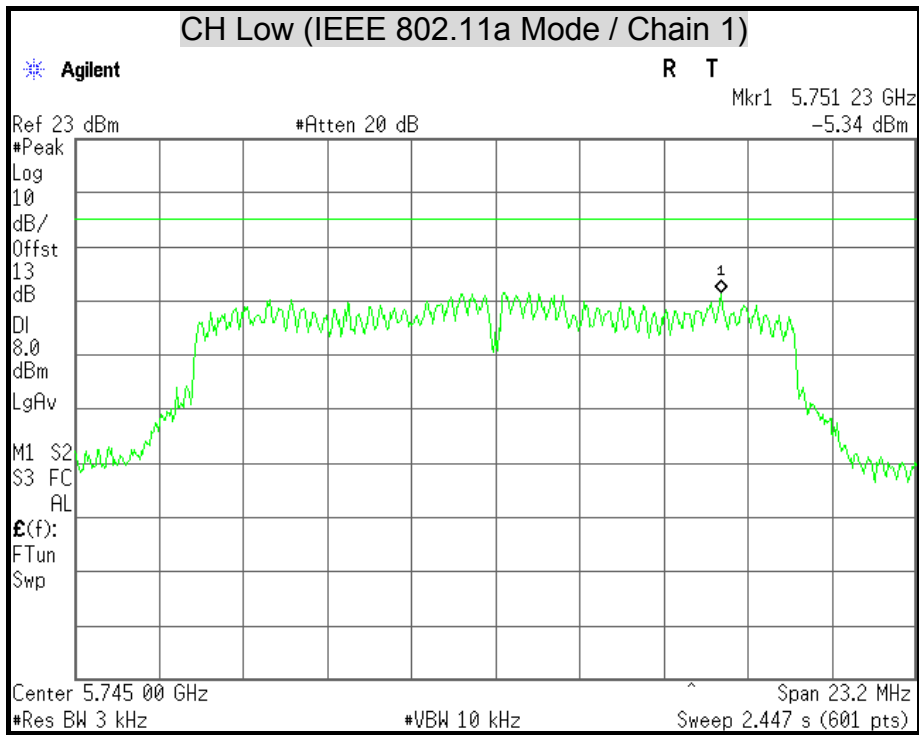
1. At final test to get the worst-case emission at 27Mbps.
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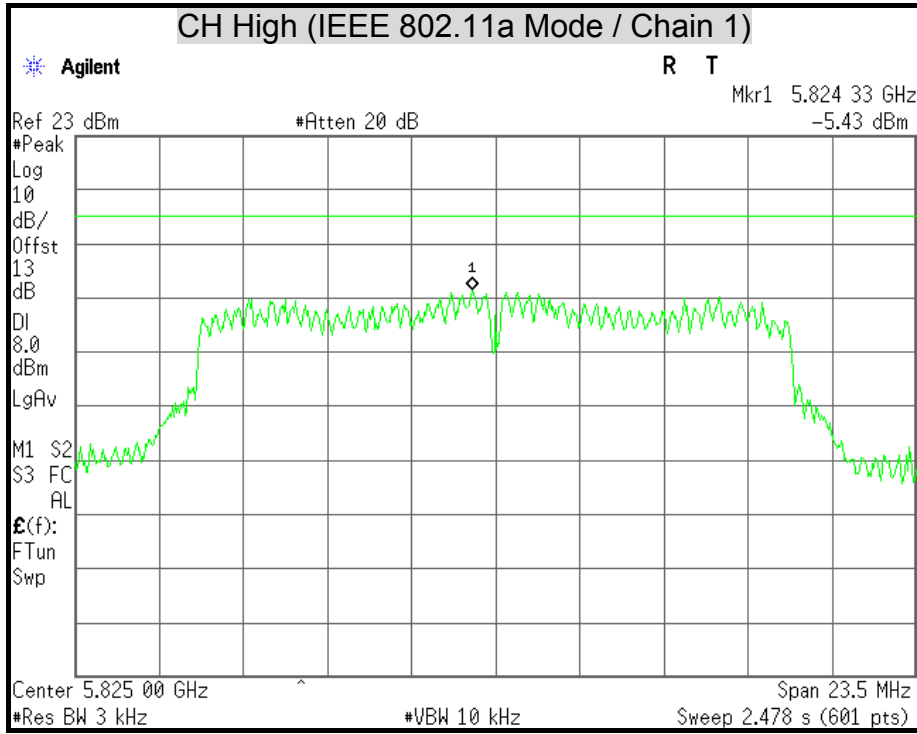


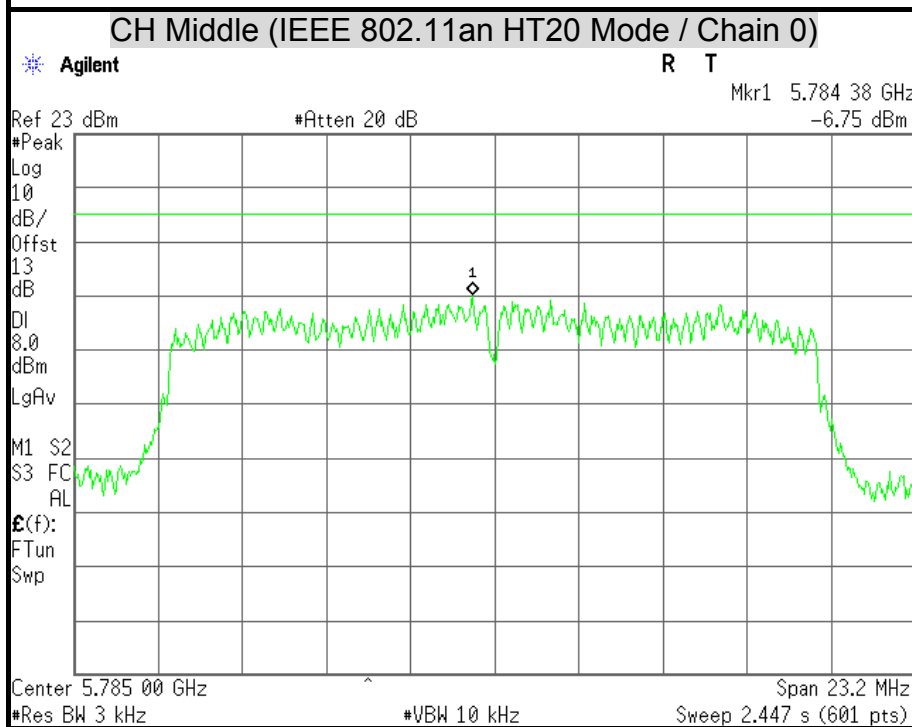
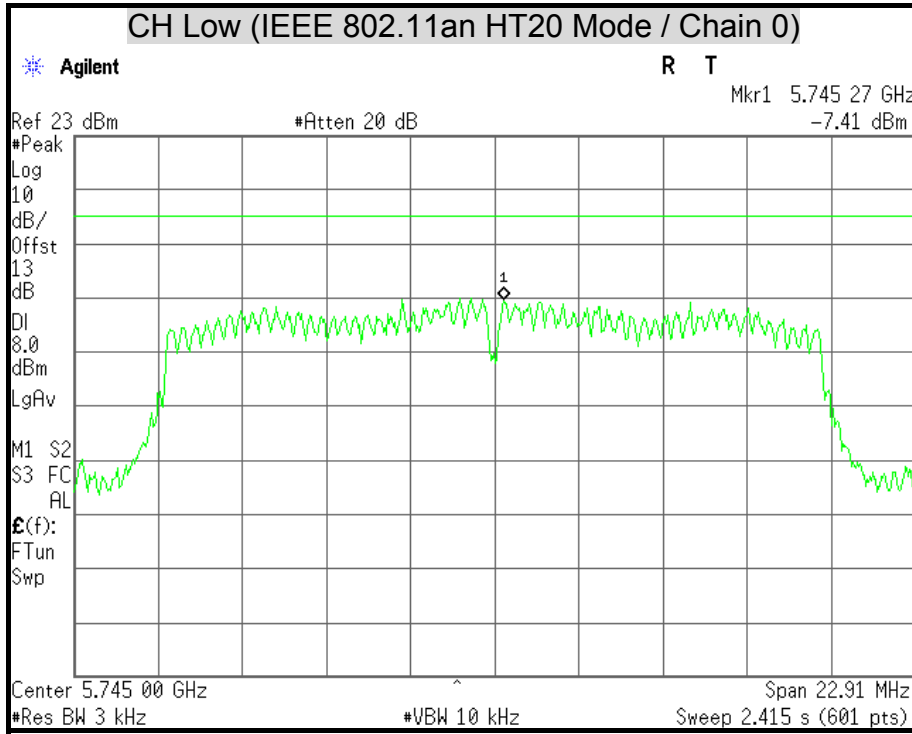
POWER SPECTRAL DENSITY

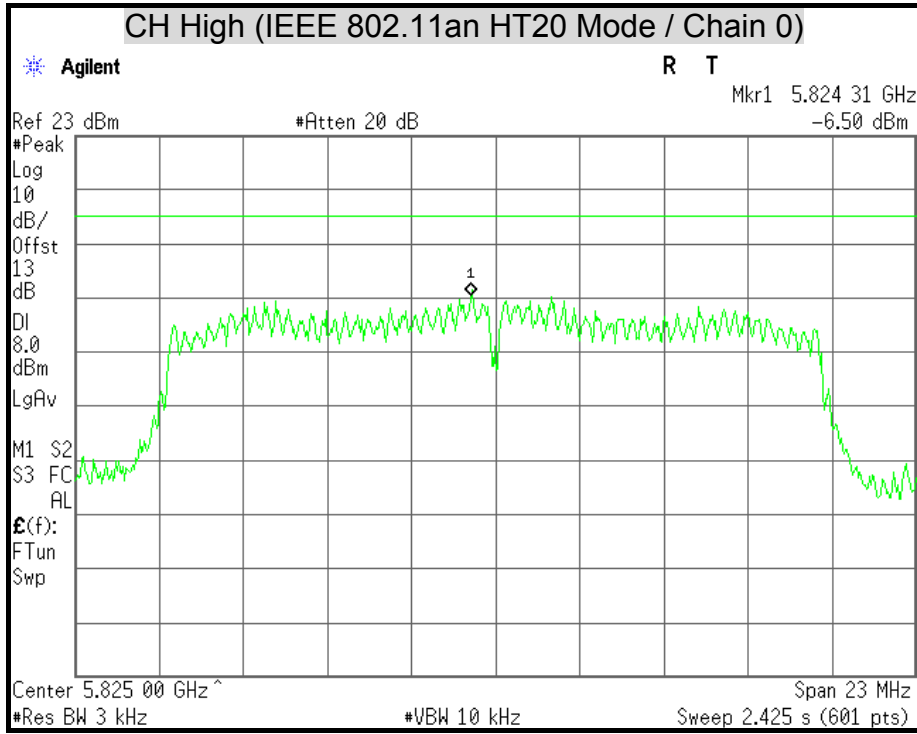


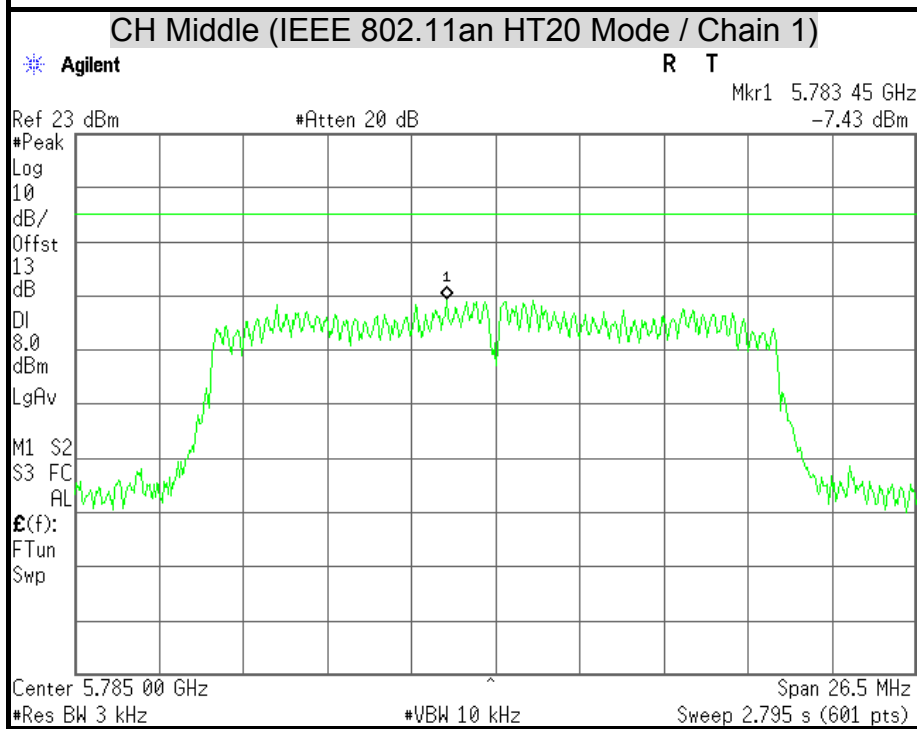
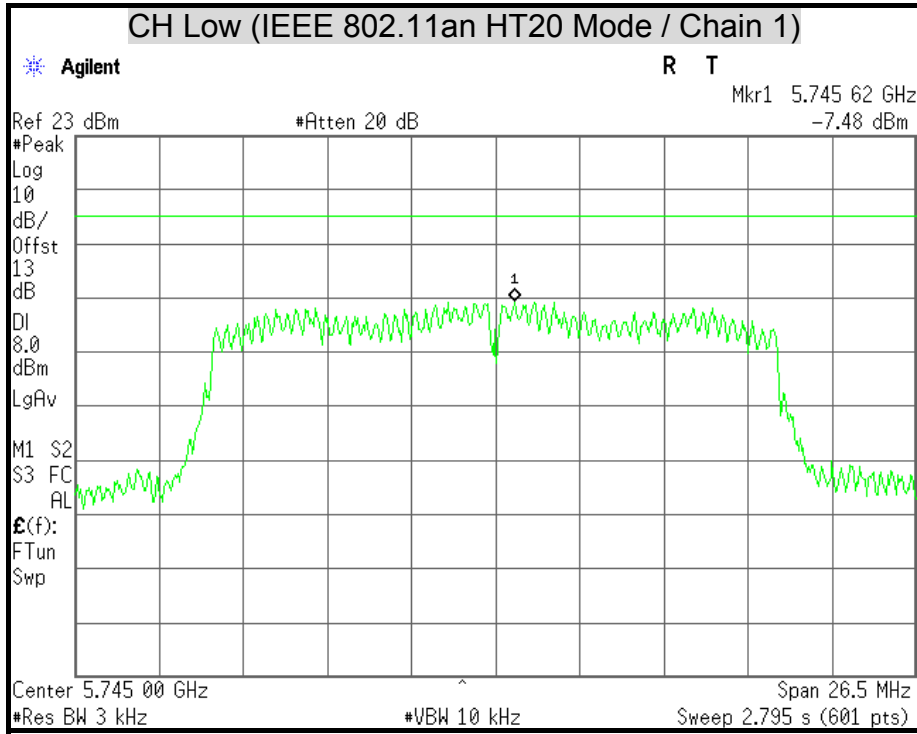


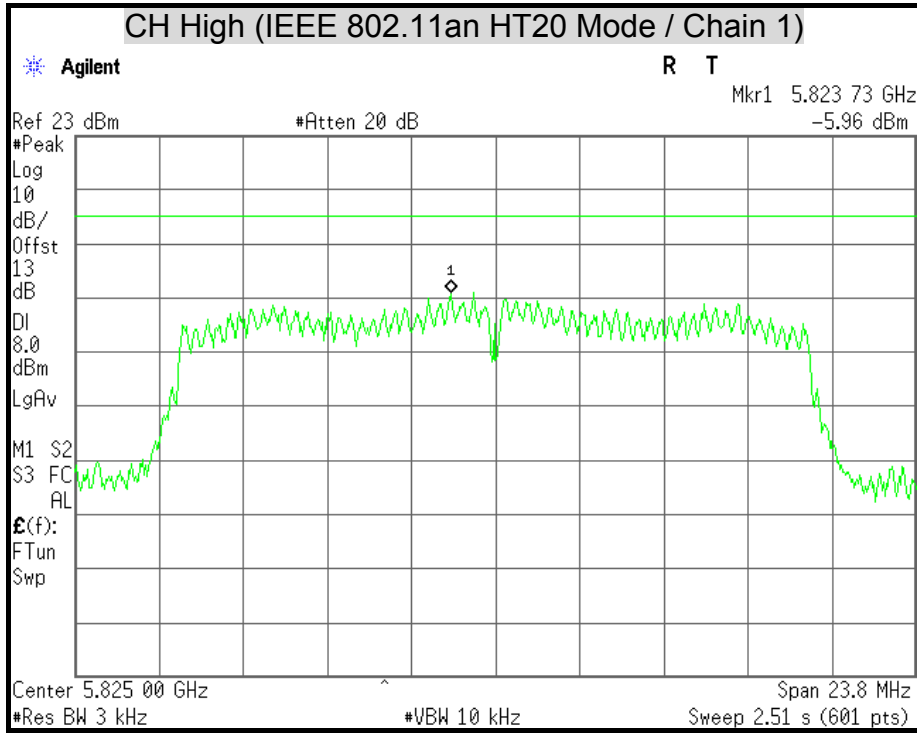


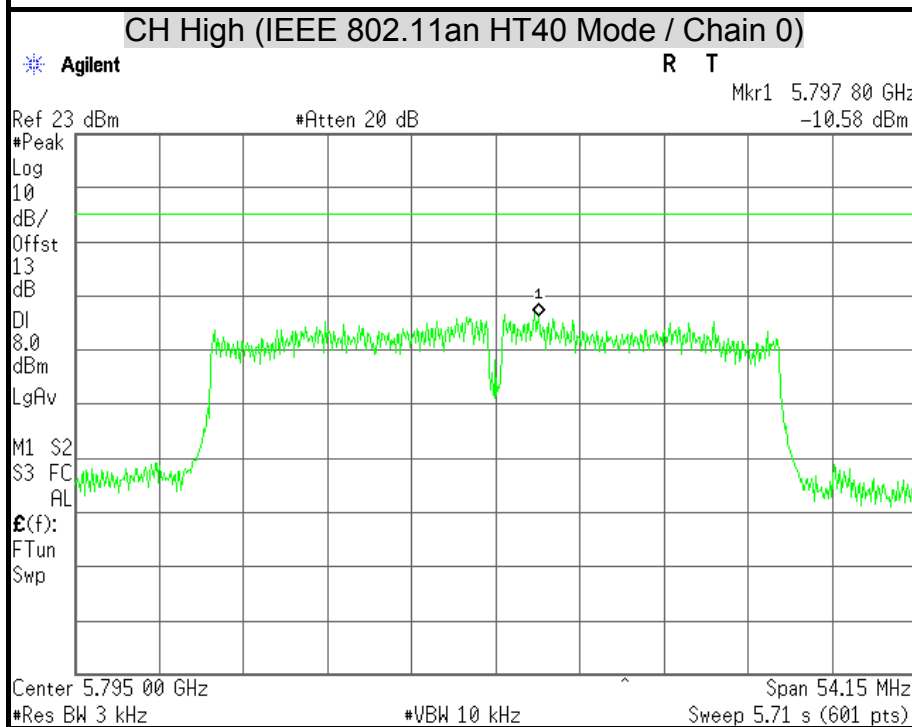
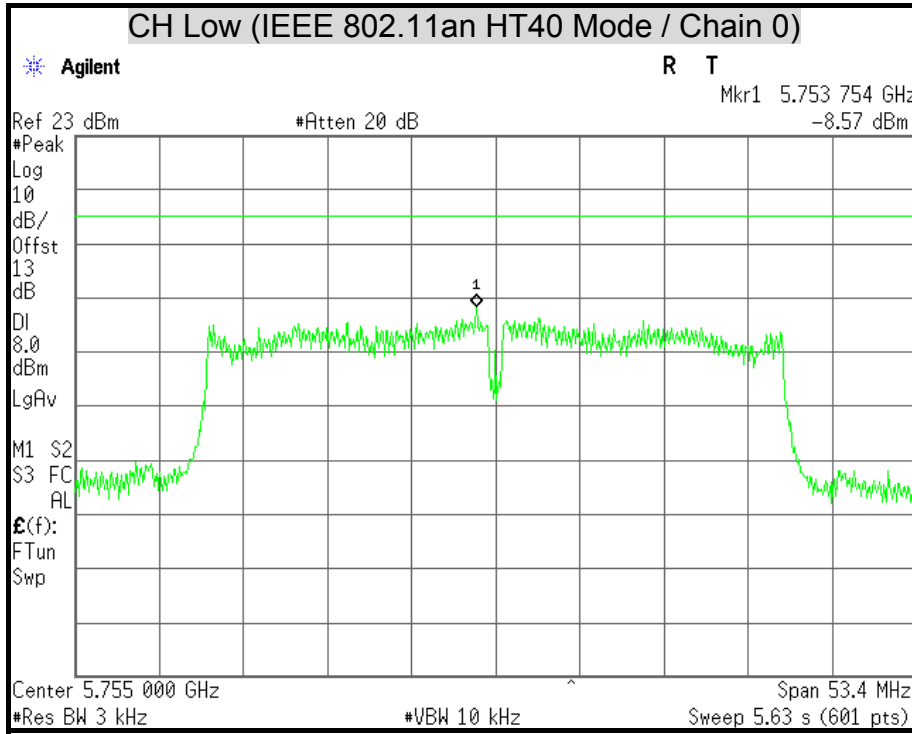


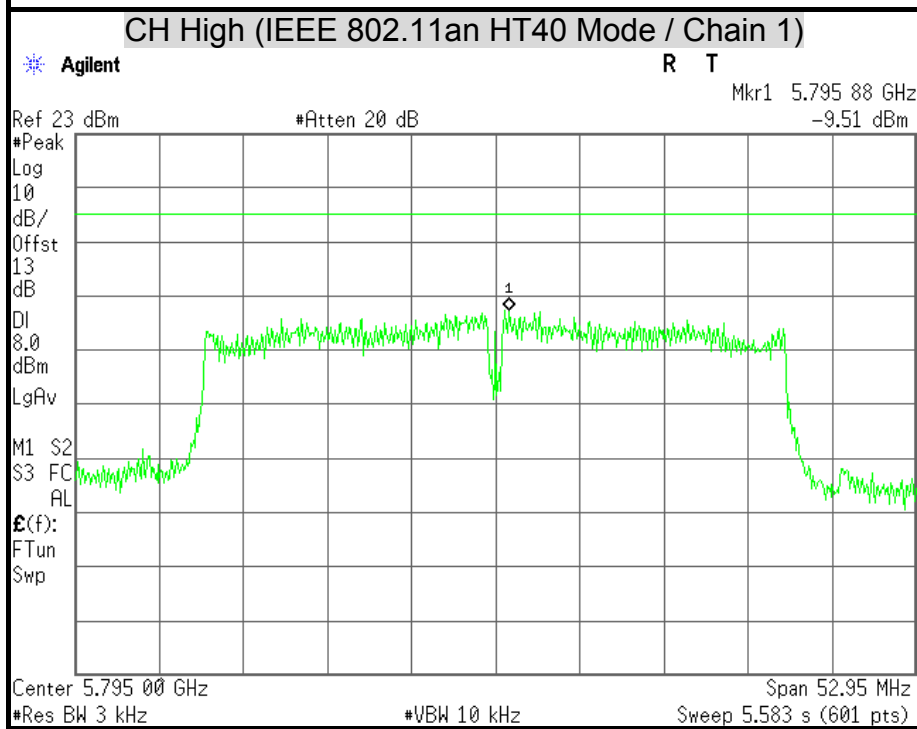
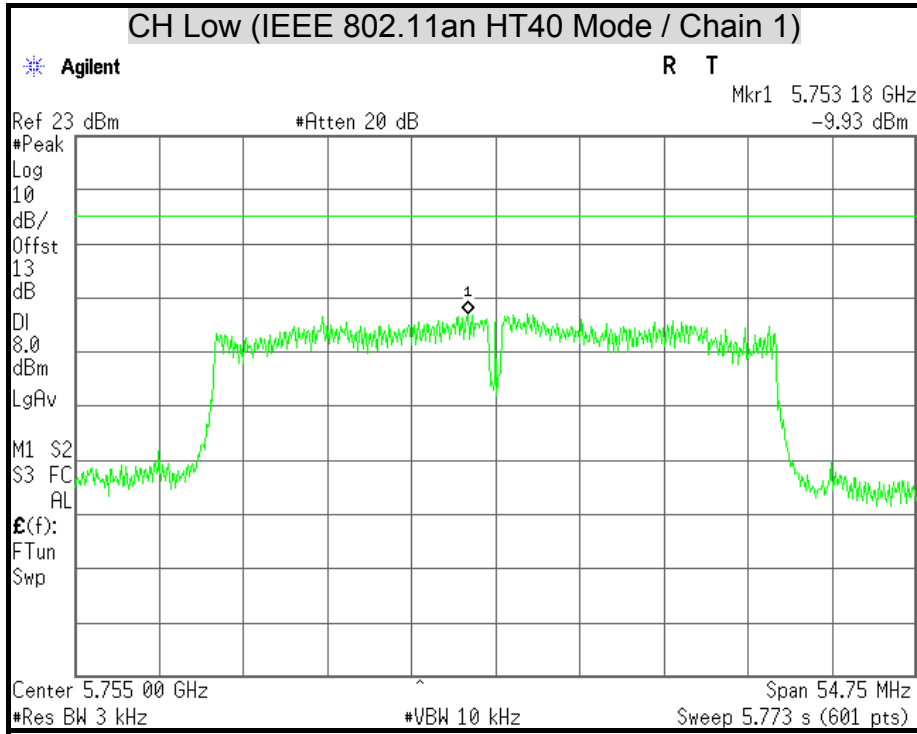


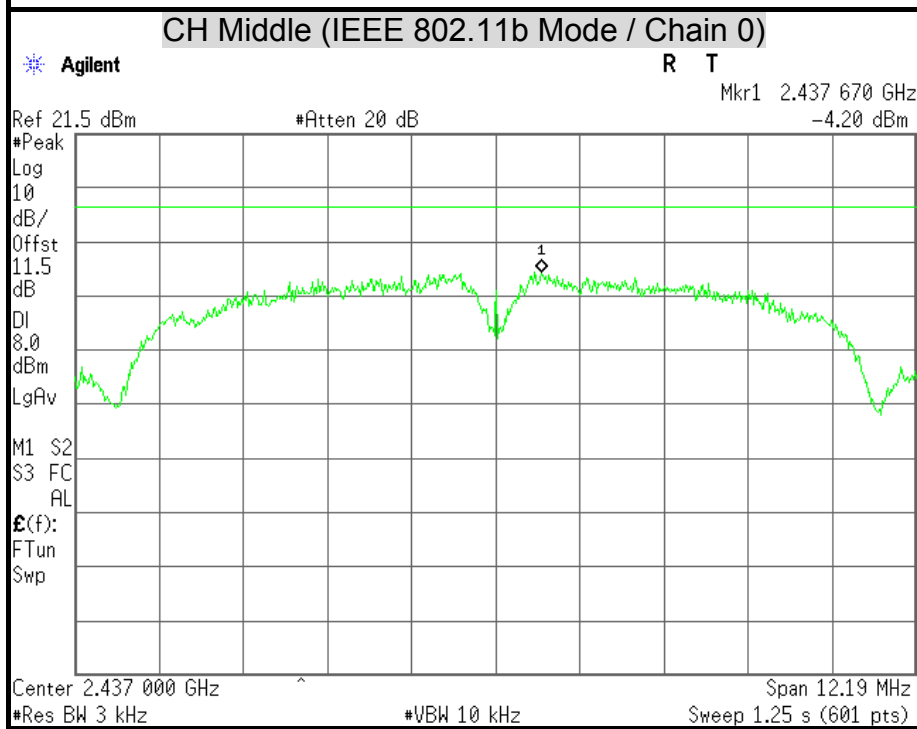
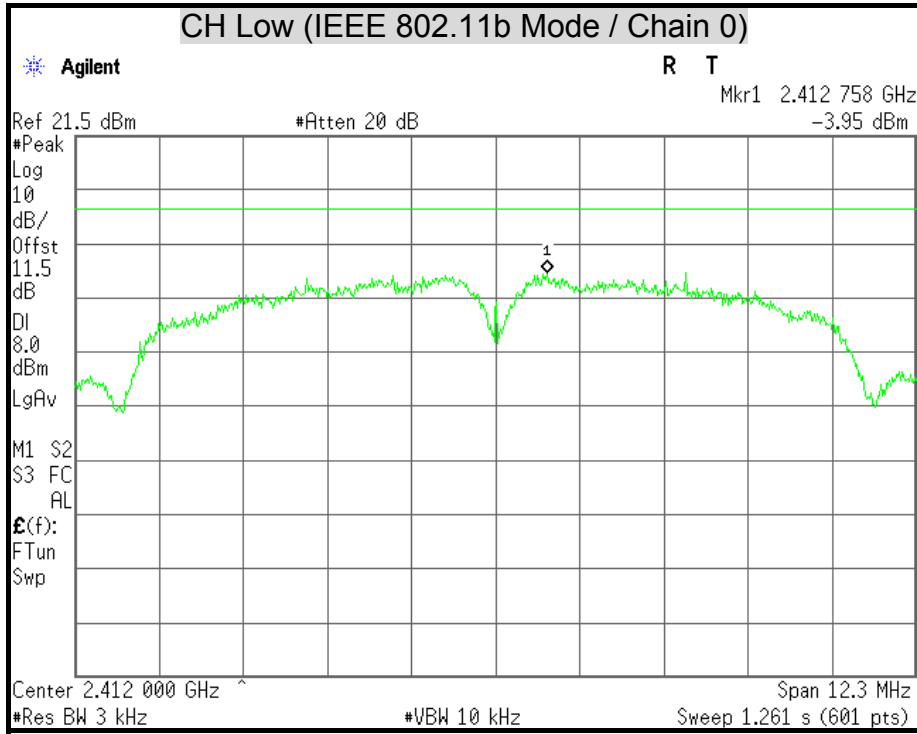


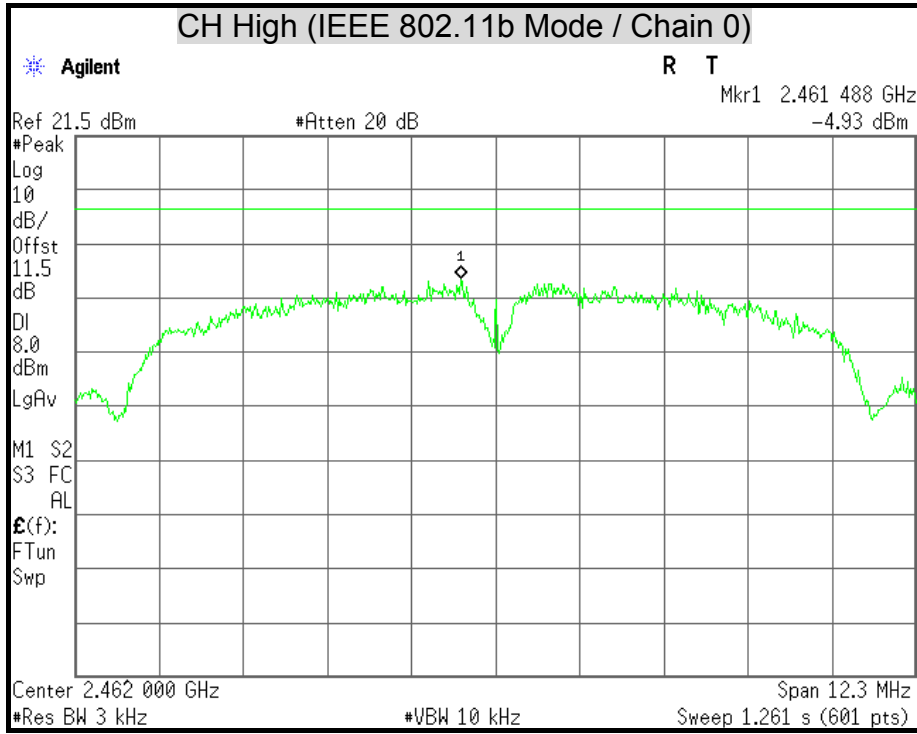


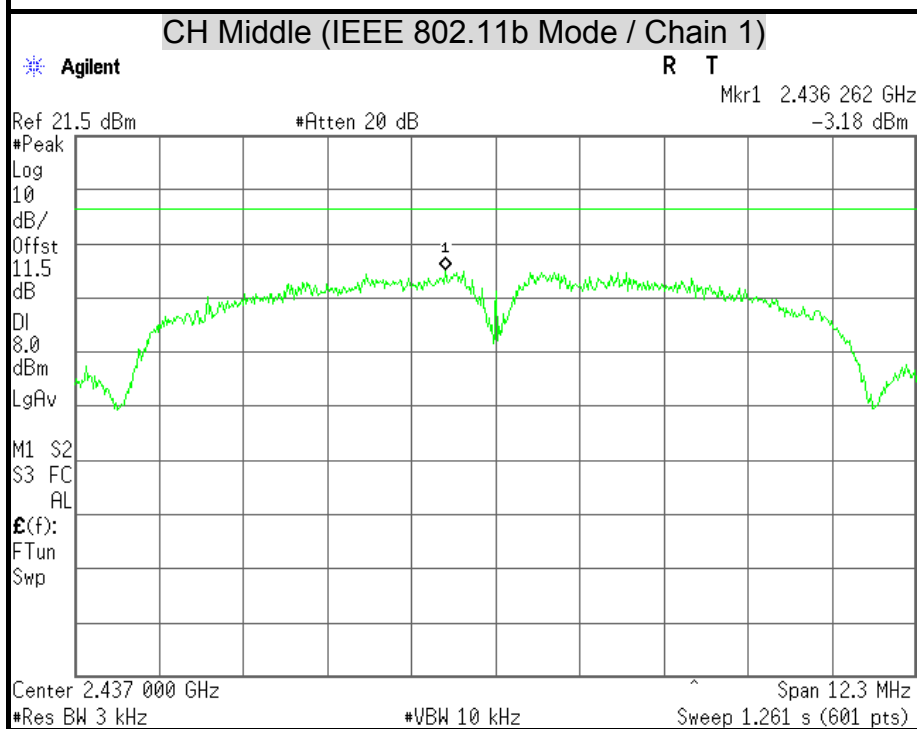
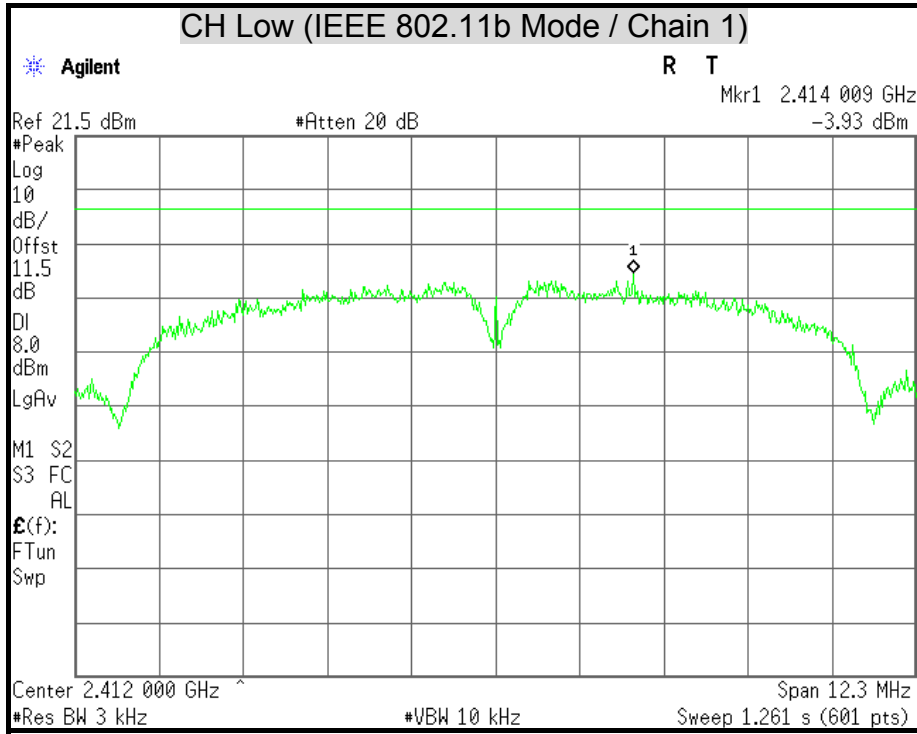


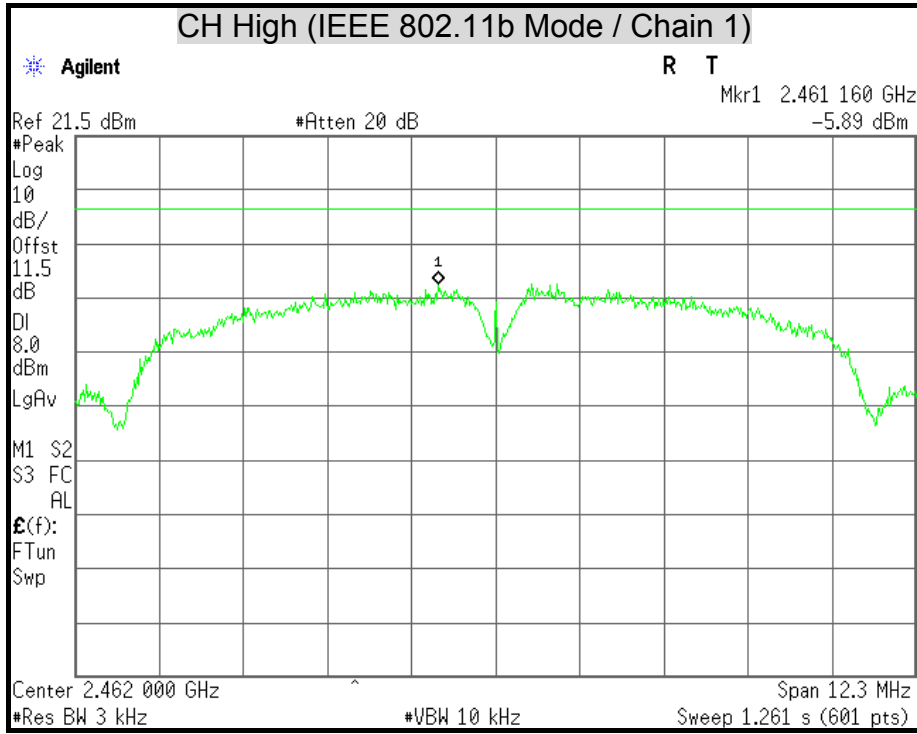


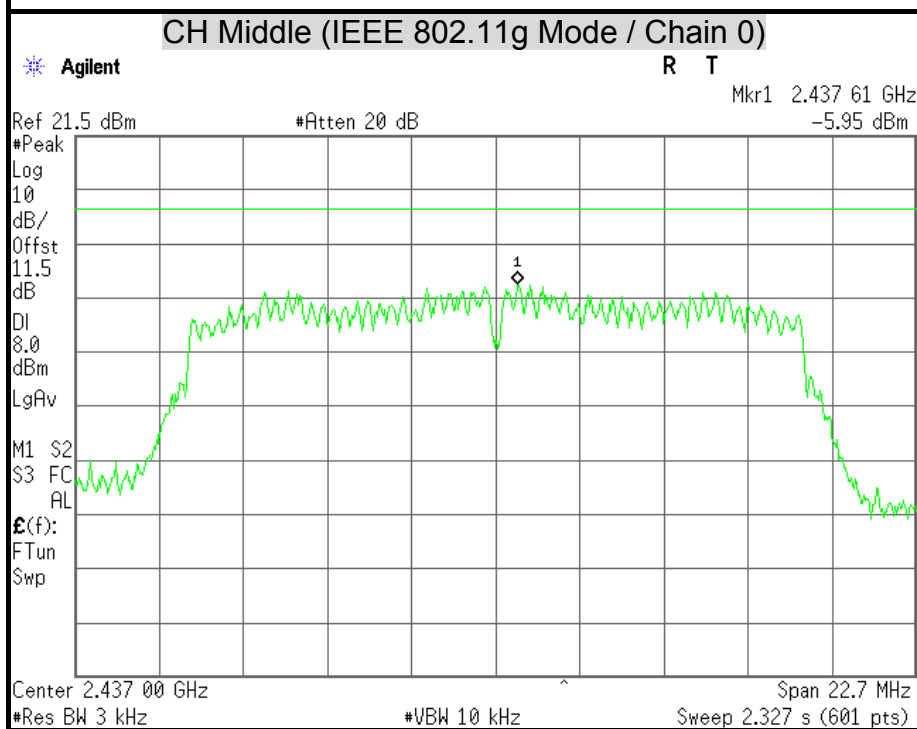
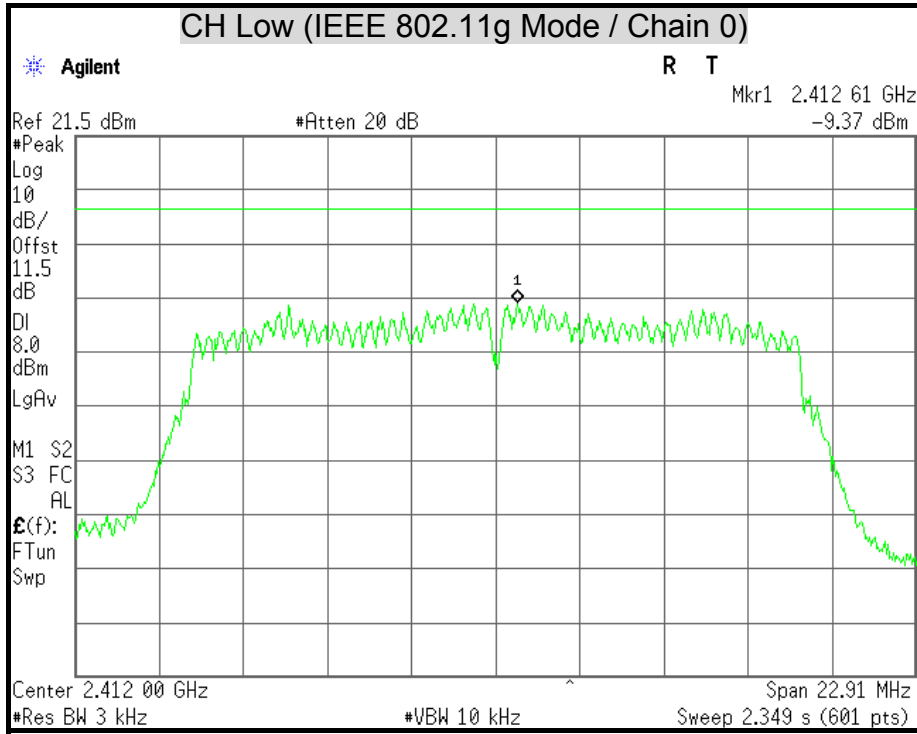


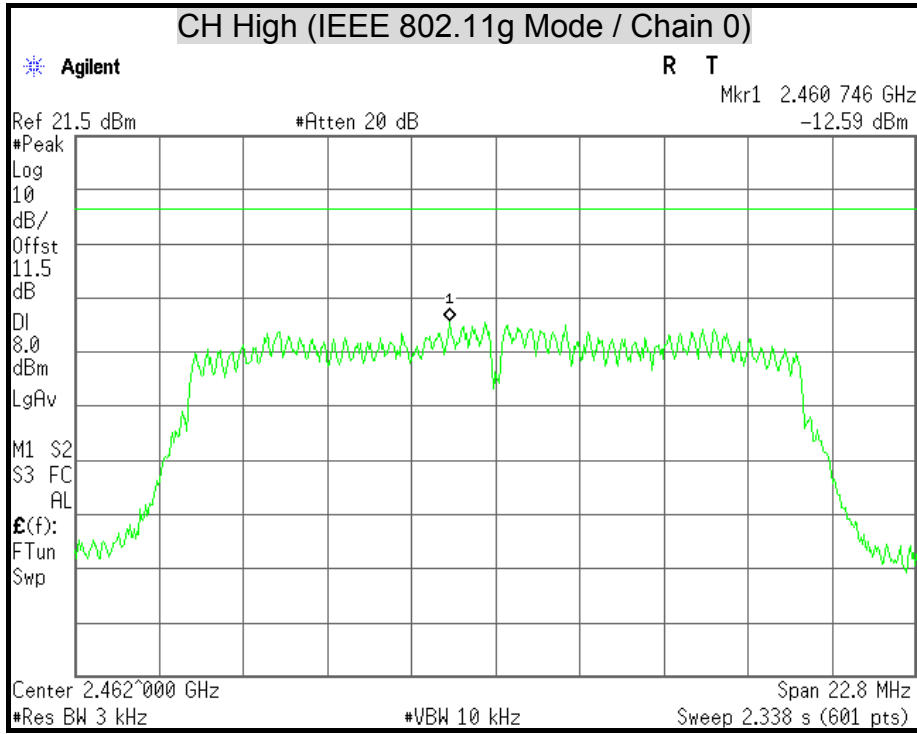


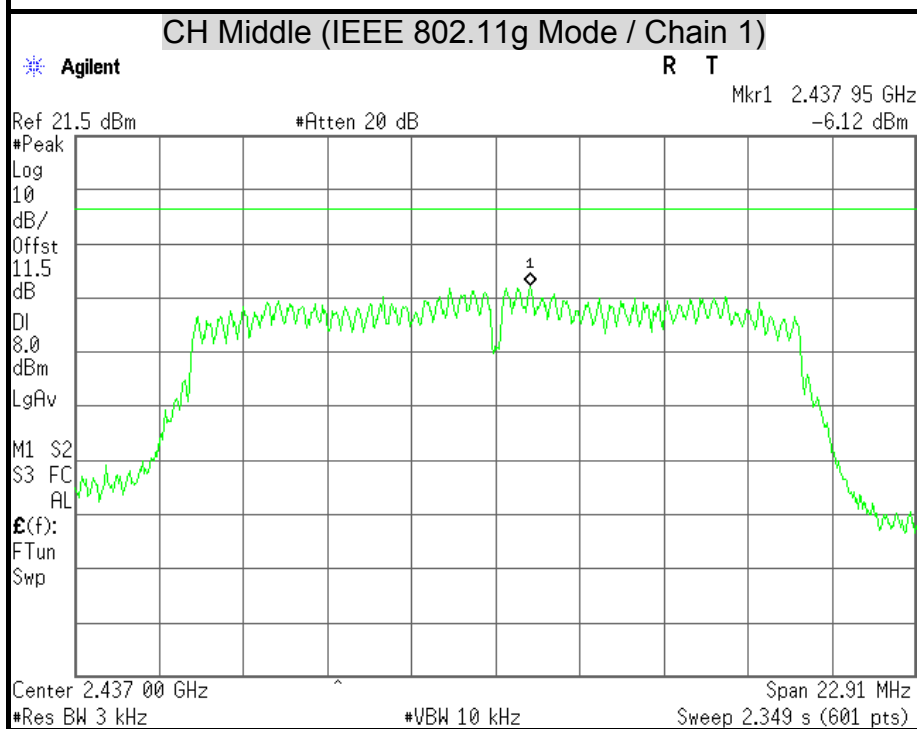
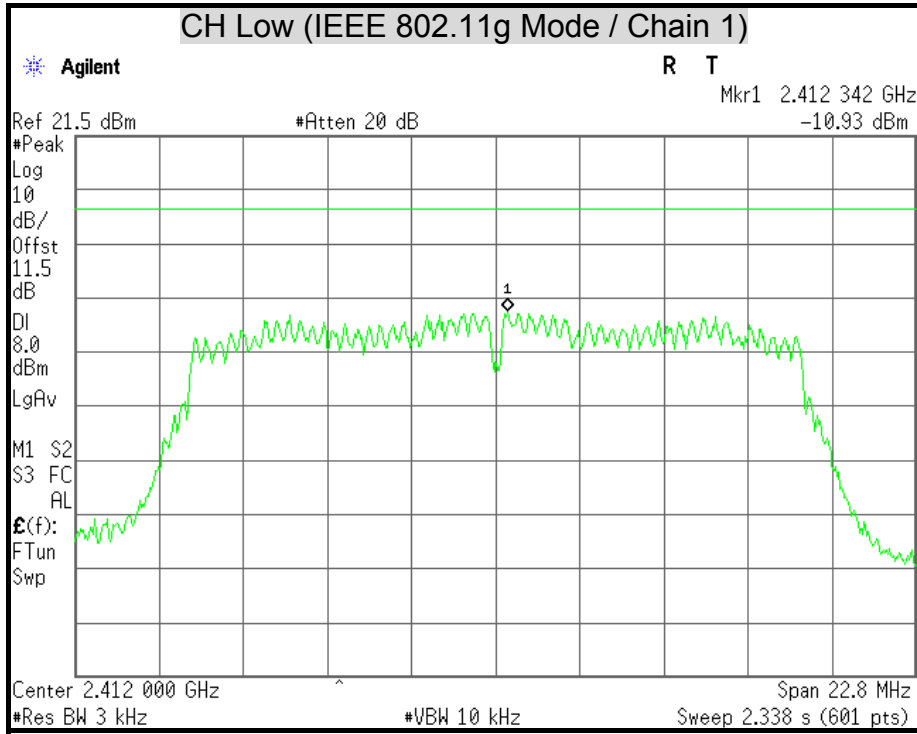


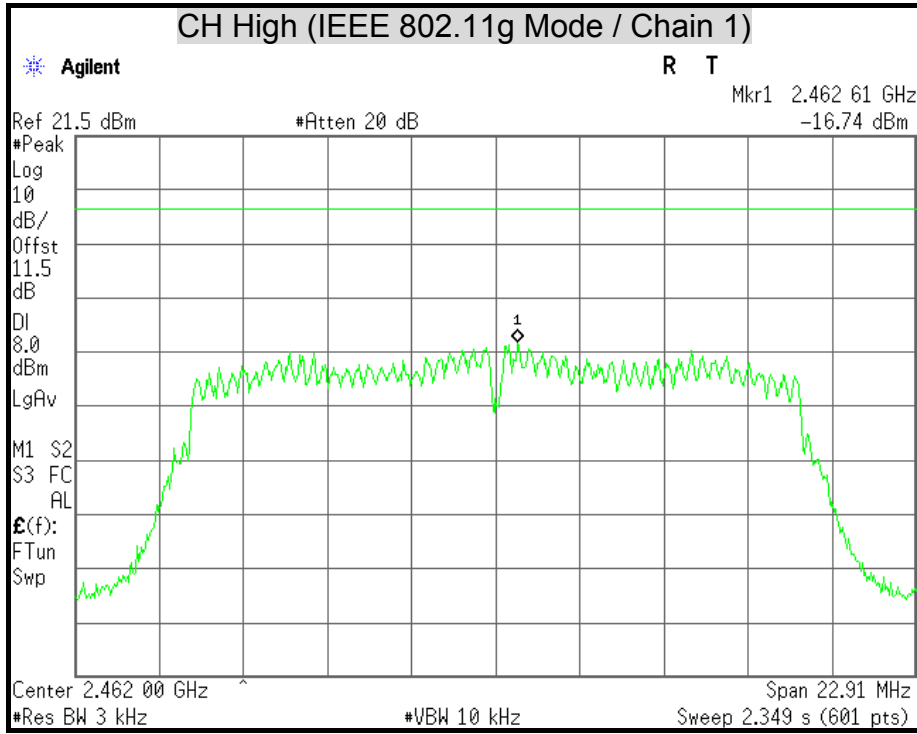


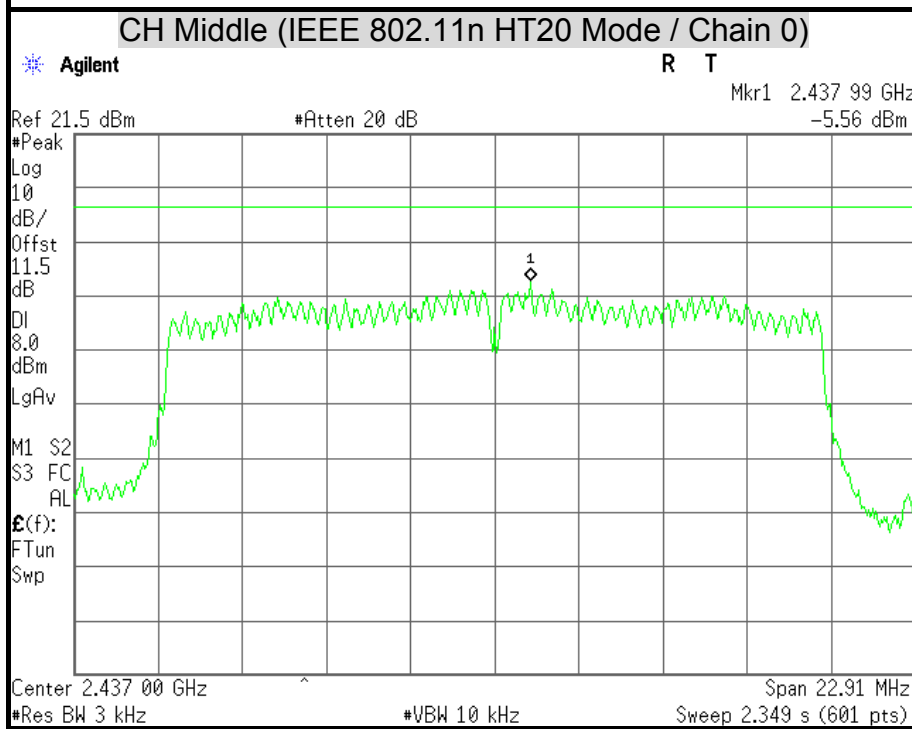
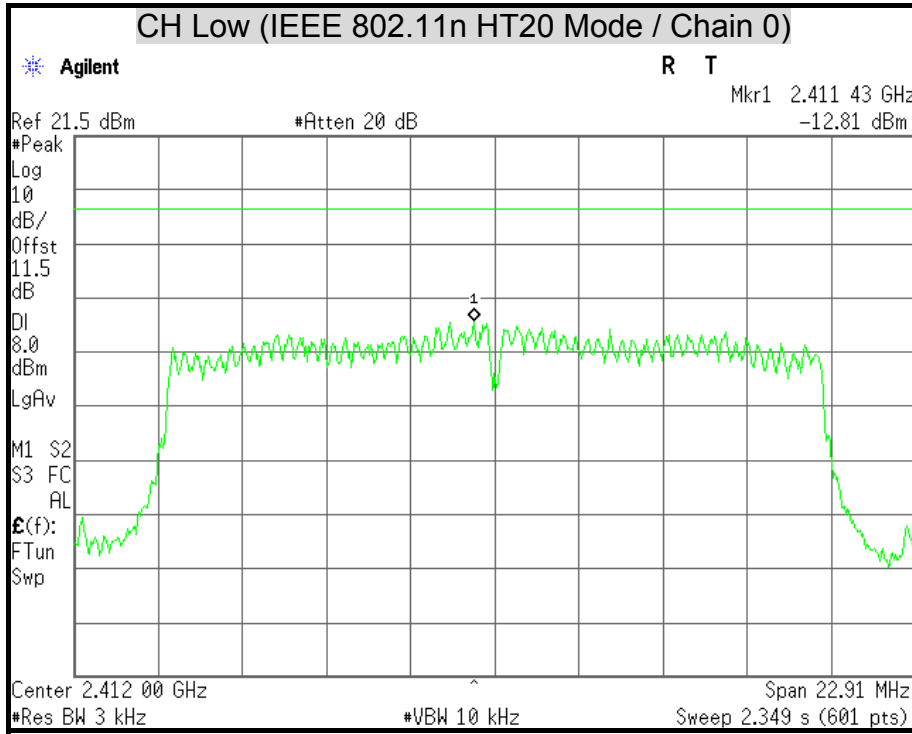


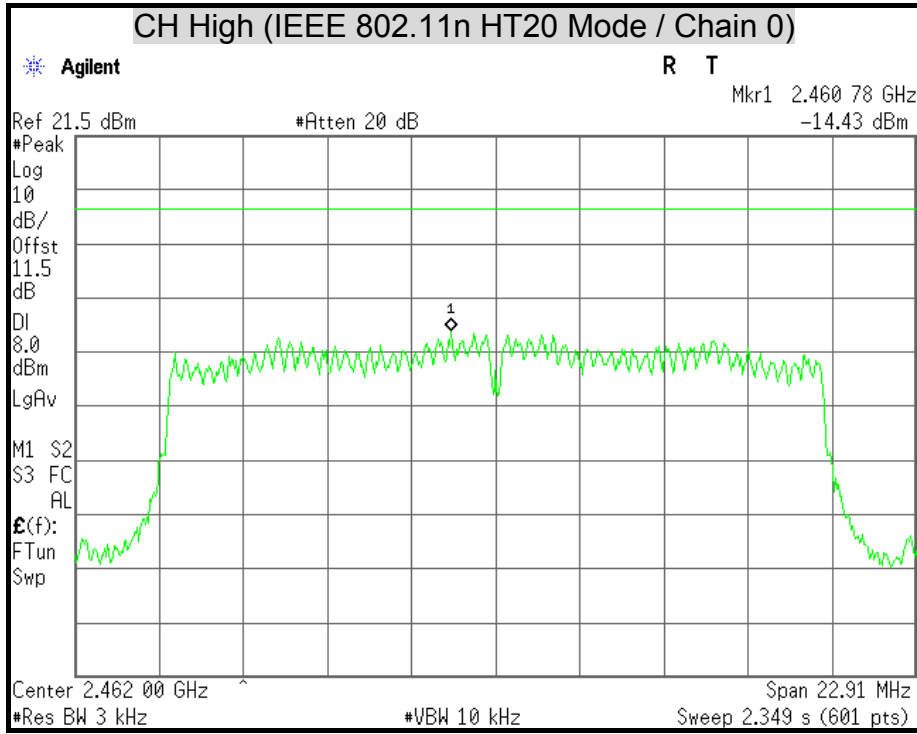


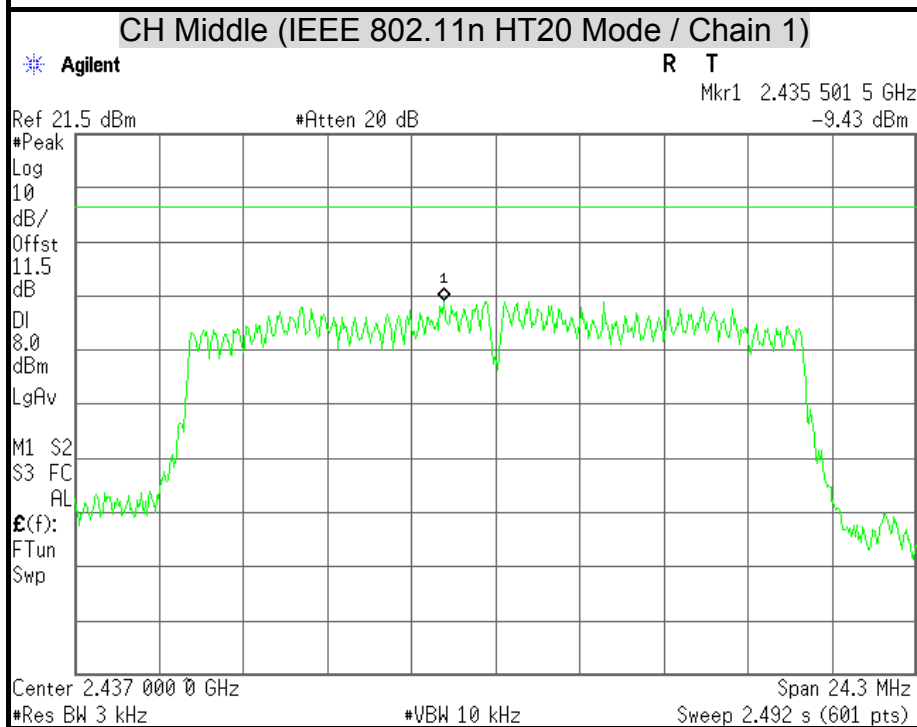
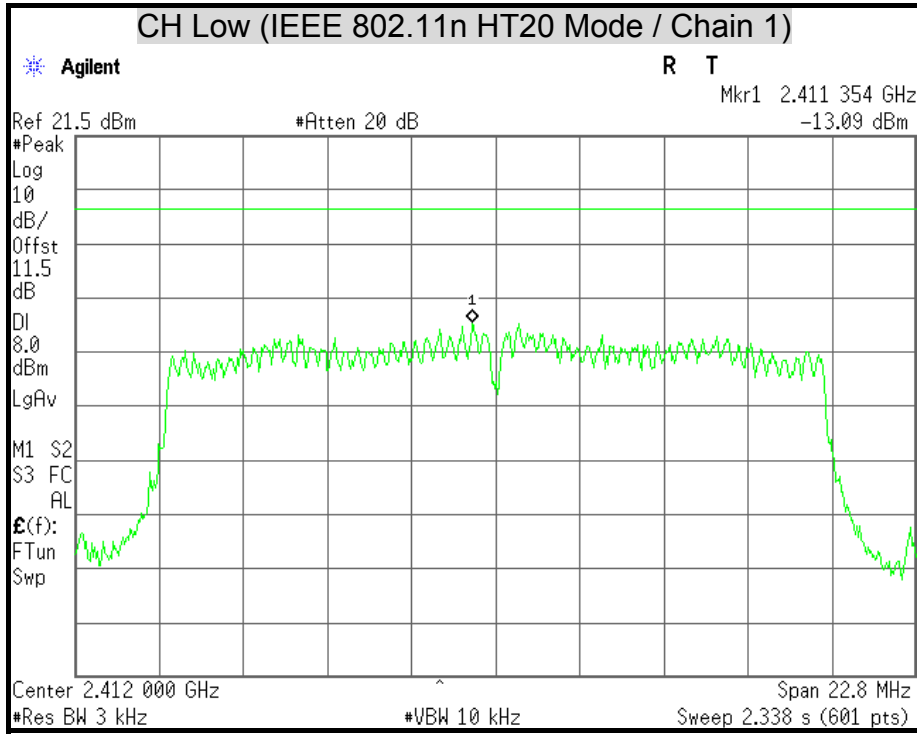


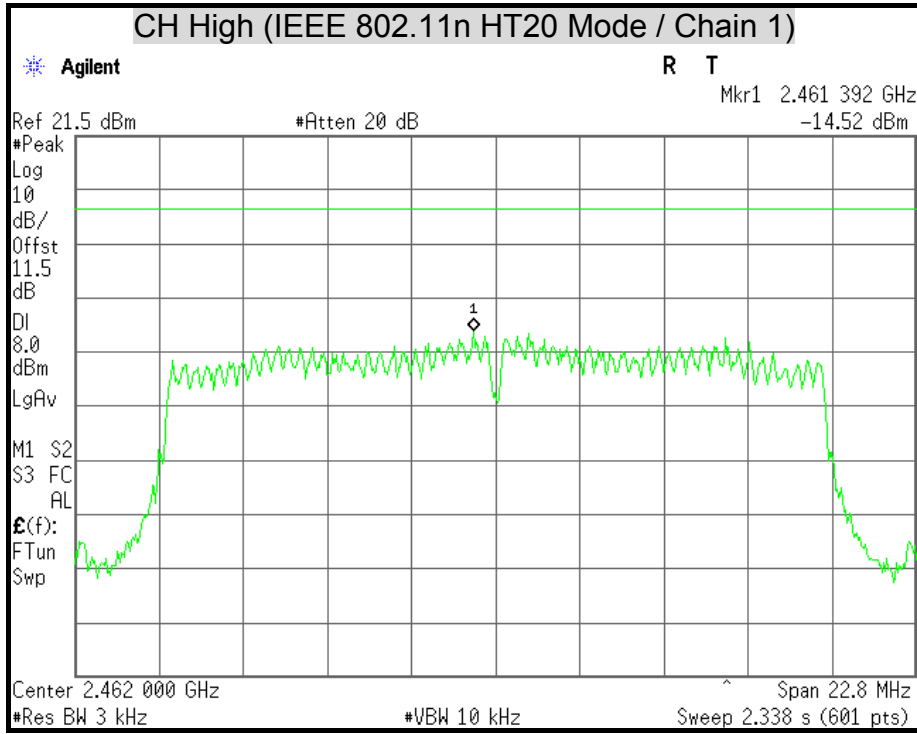


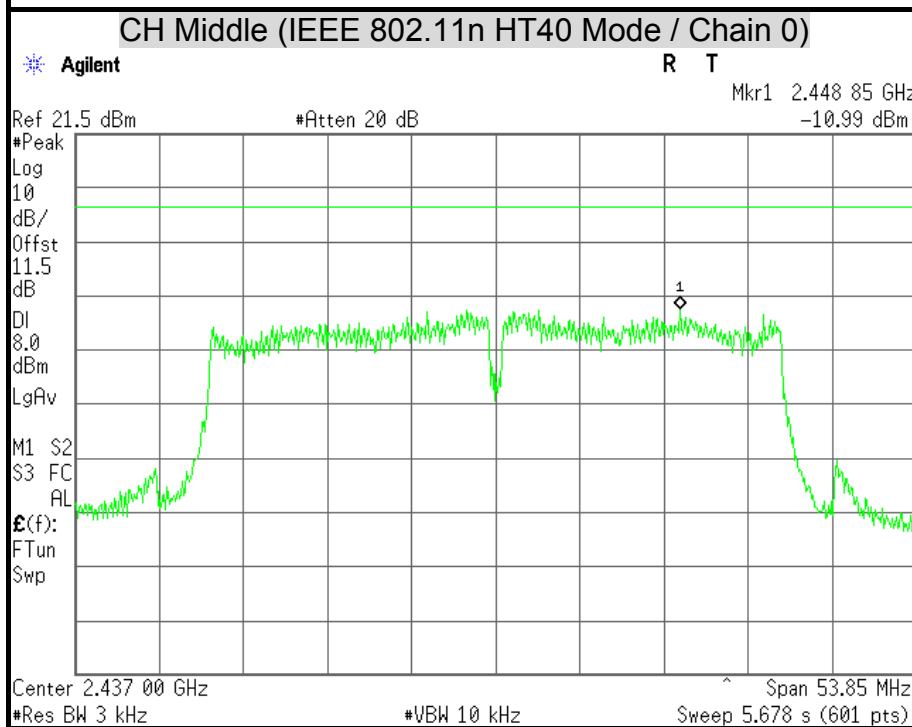
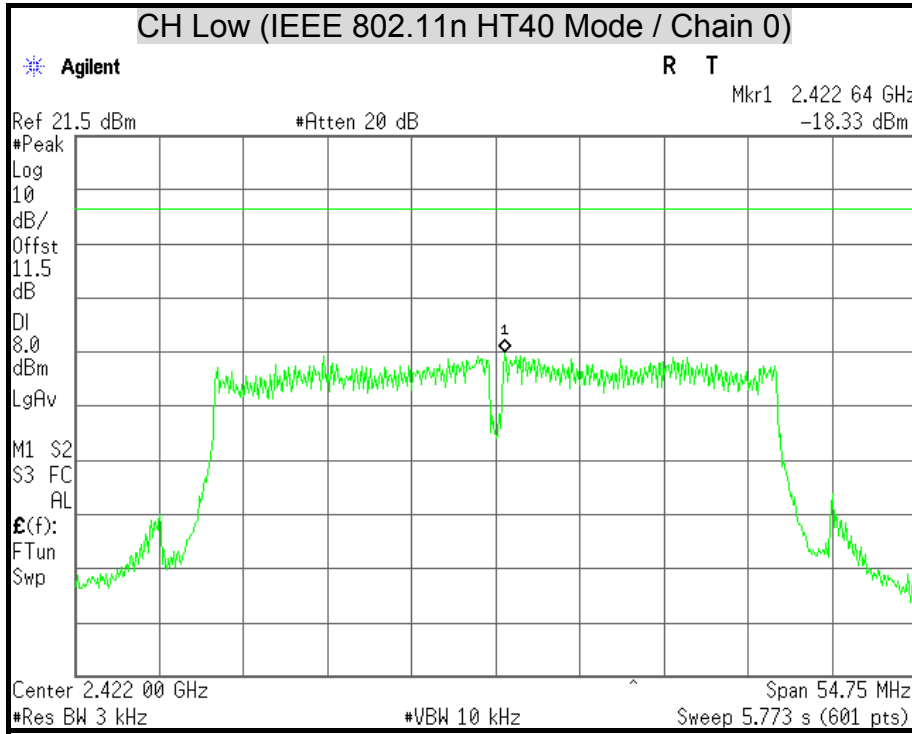


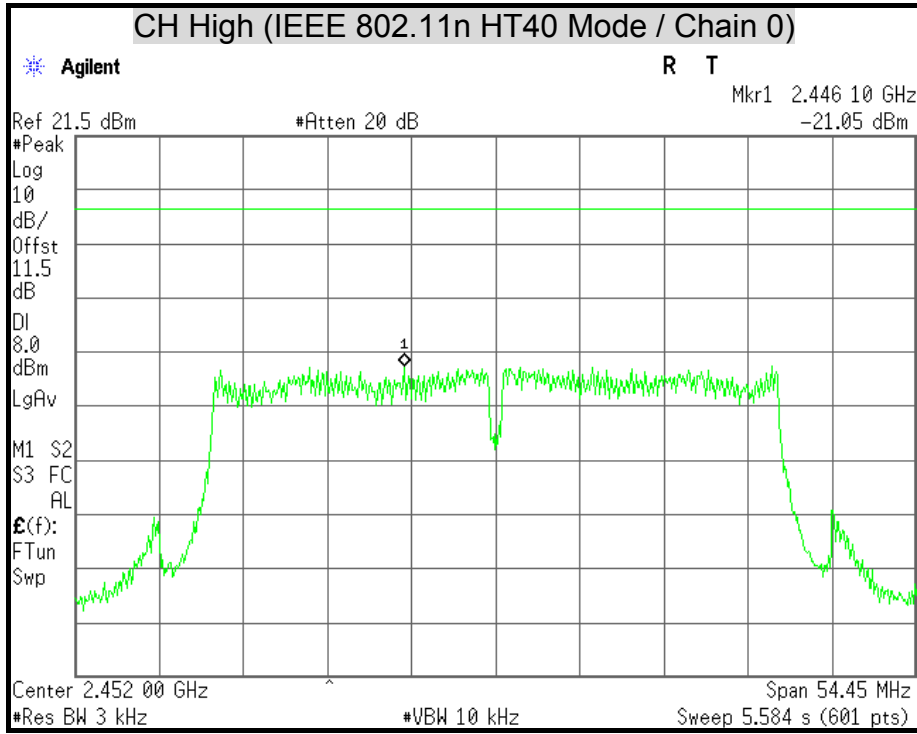


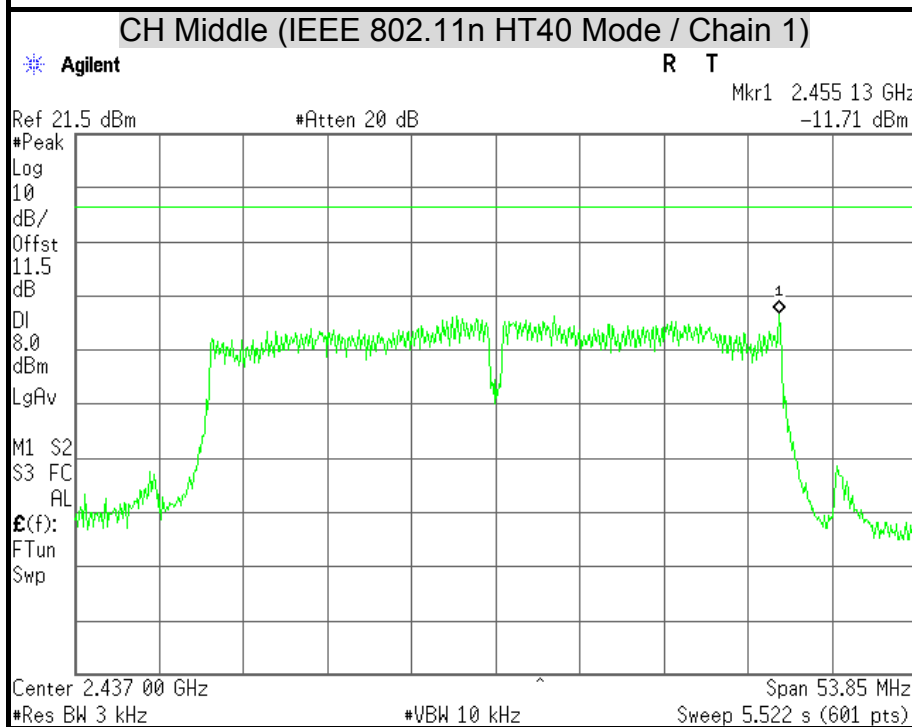
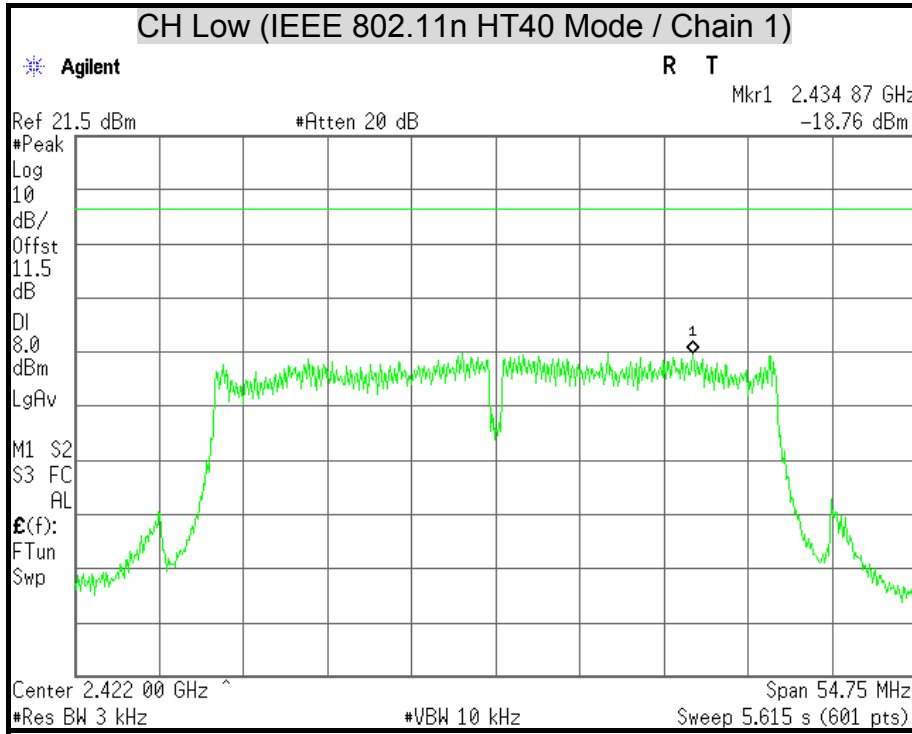


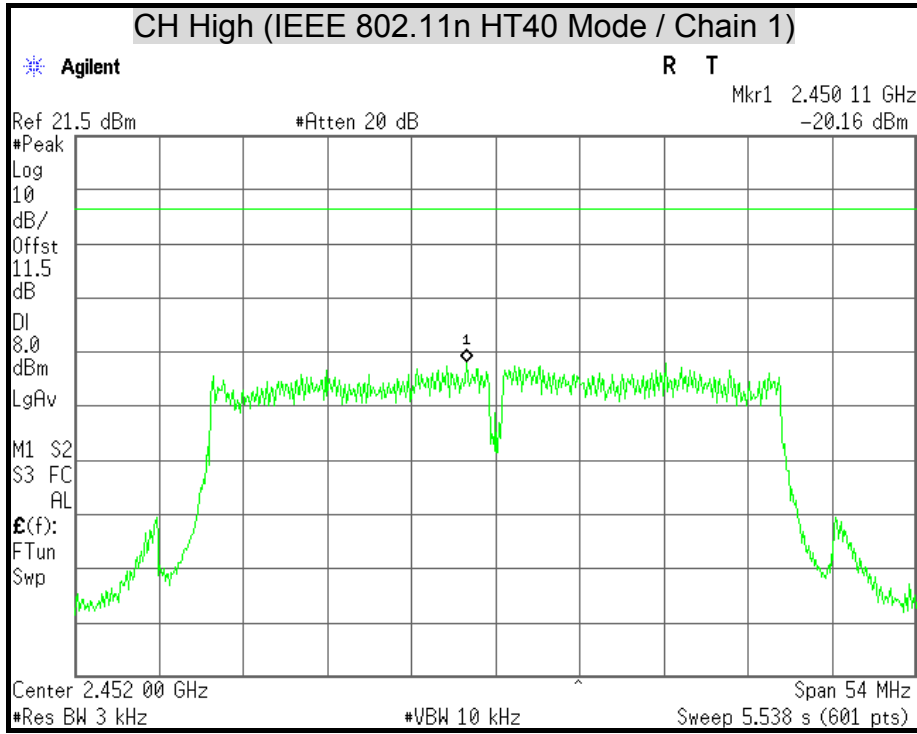














7.5 CONDUCTED SPURIOUS EMISSION

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 band 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	06/14/2013

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

TEST SETUP



TEST PROCEDURE

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

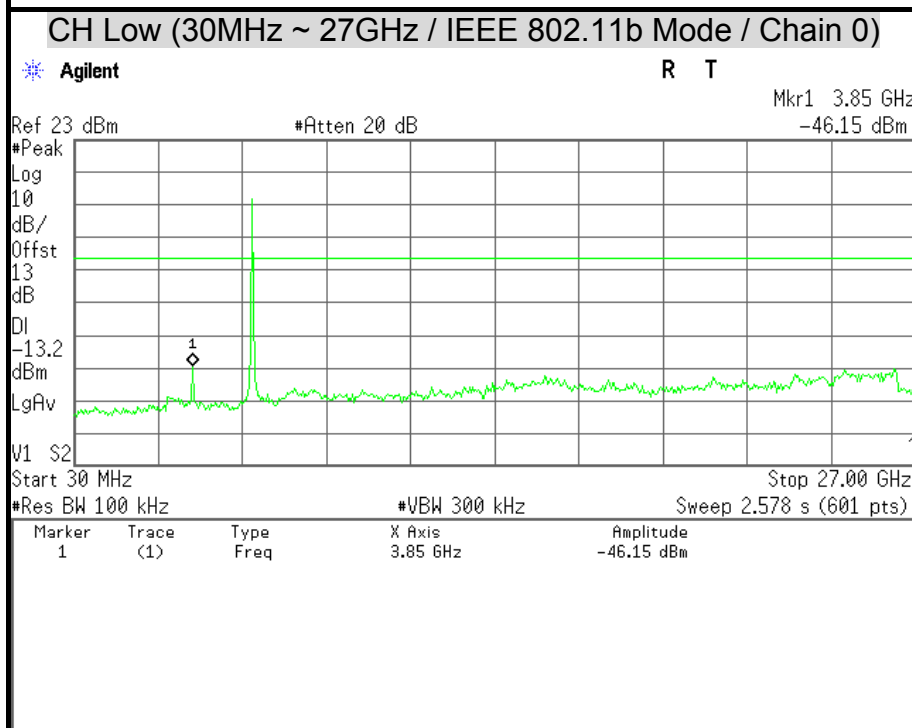
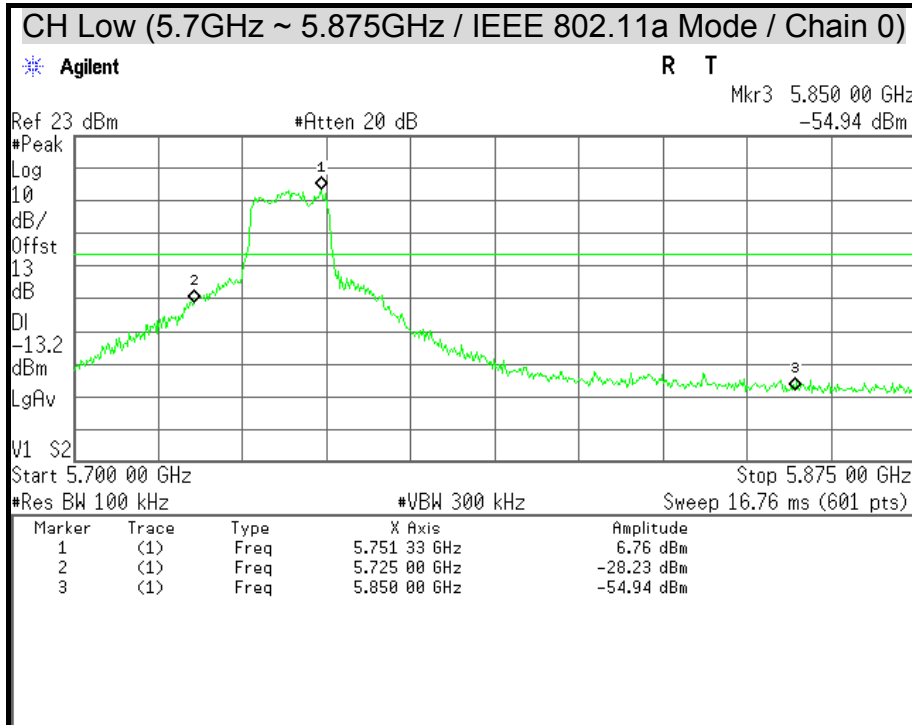
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 5 GHz band.

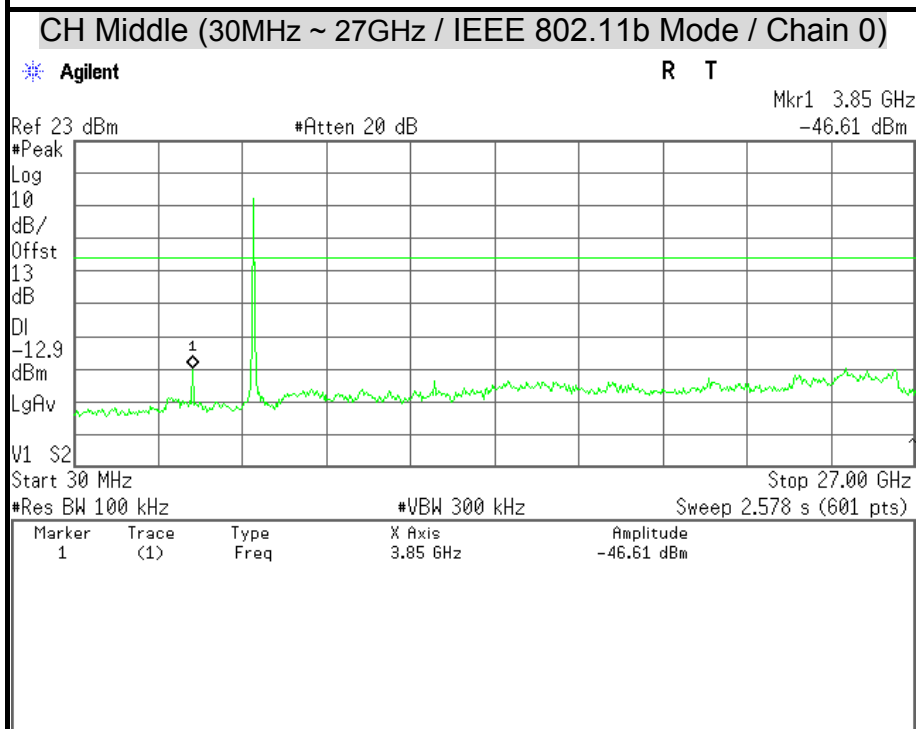
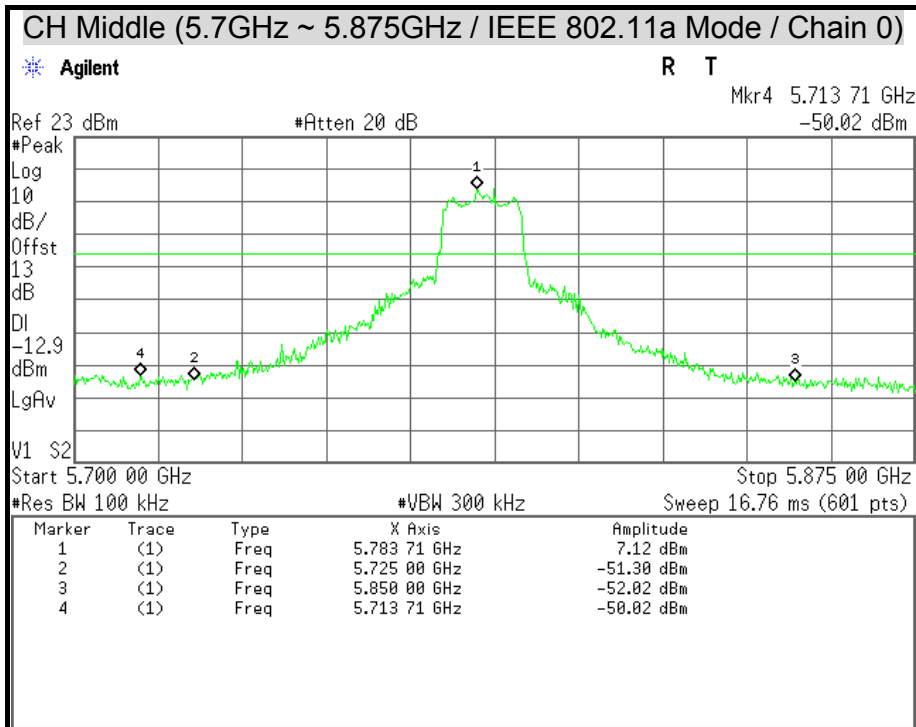


TEST RESULTS

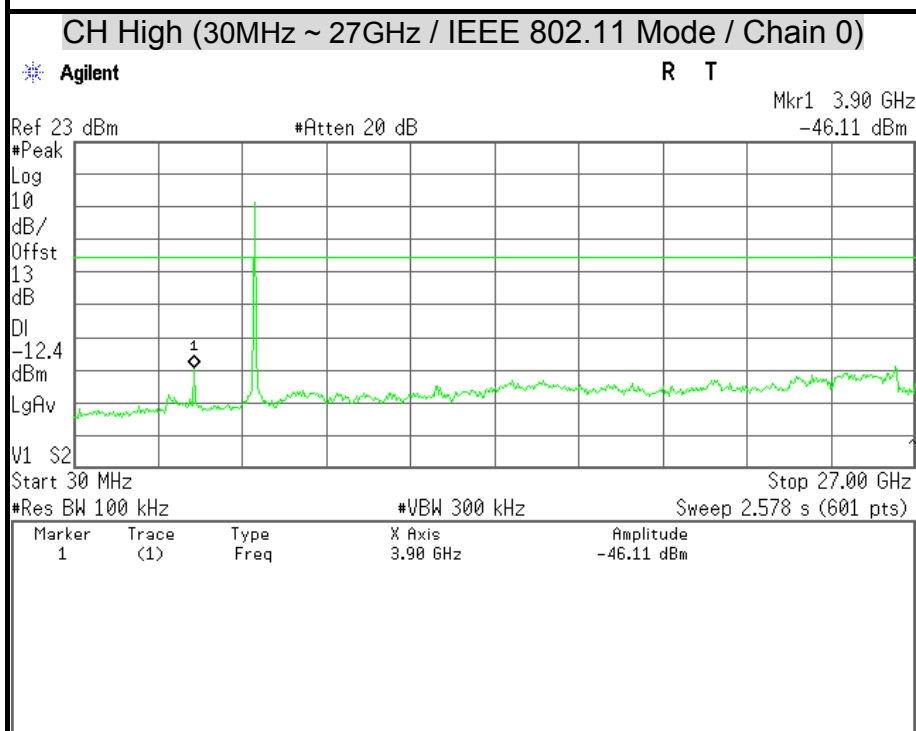
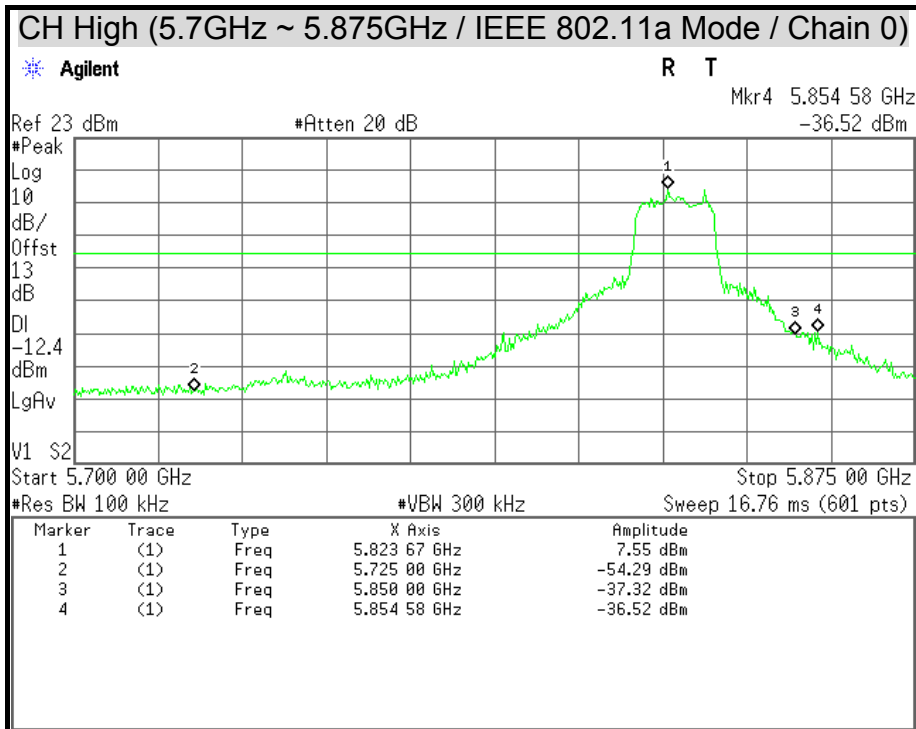
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT



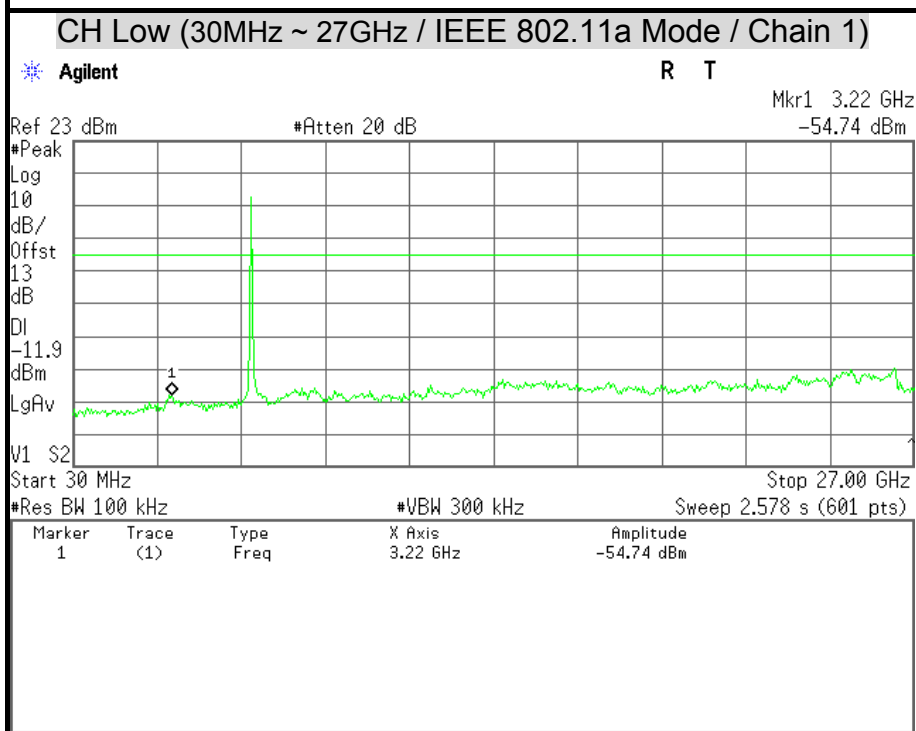
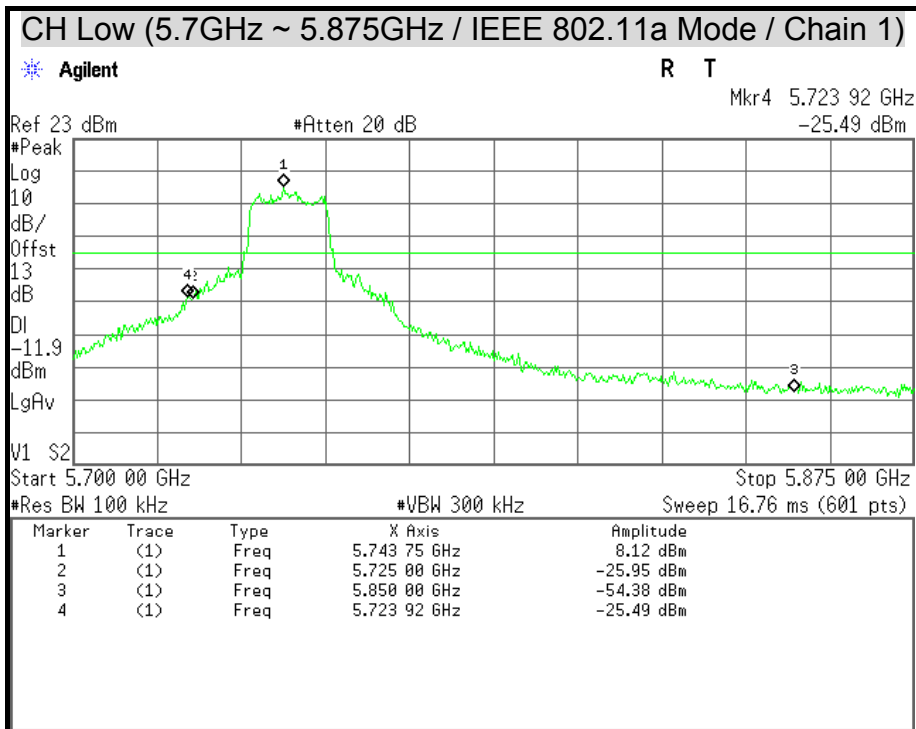
Remark: There is no emission in 27GHz ~ 40GHz.



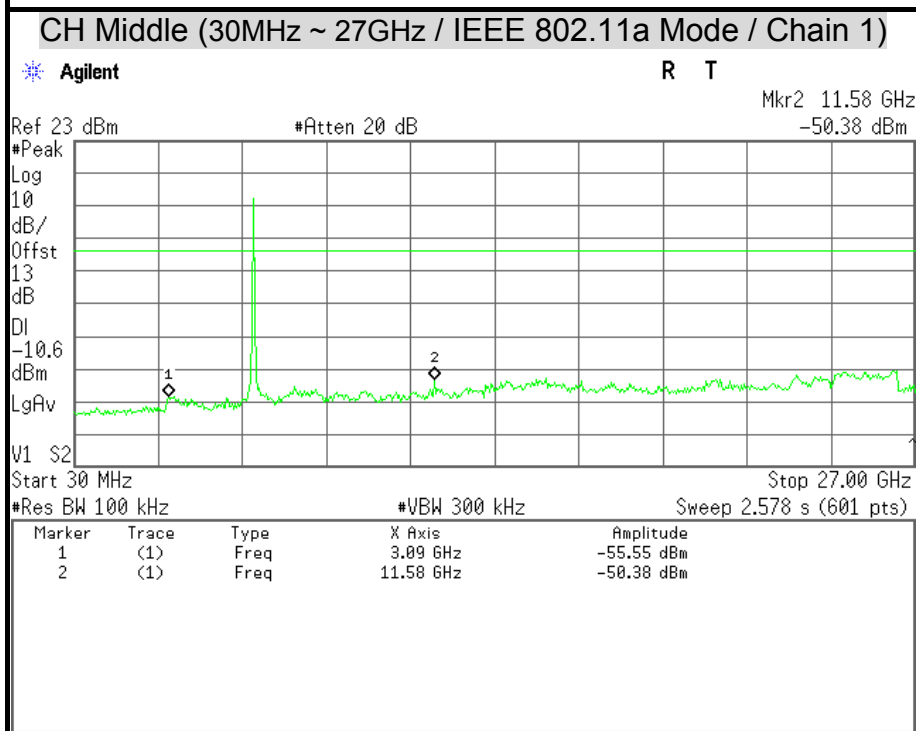
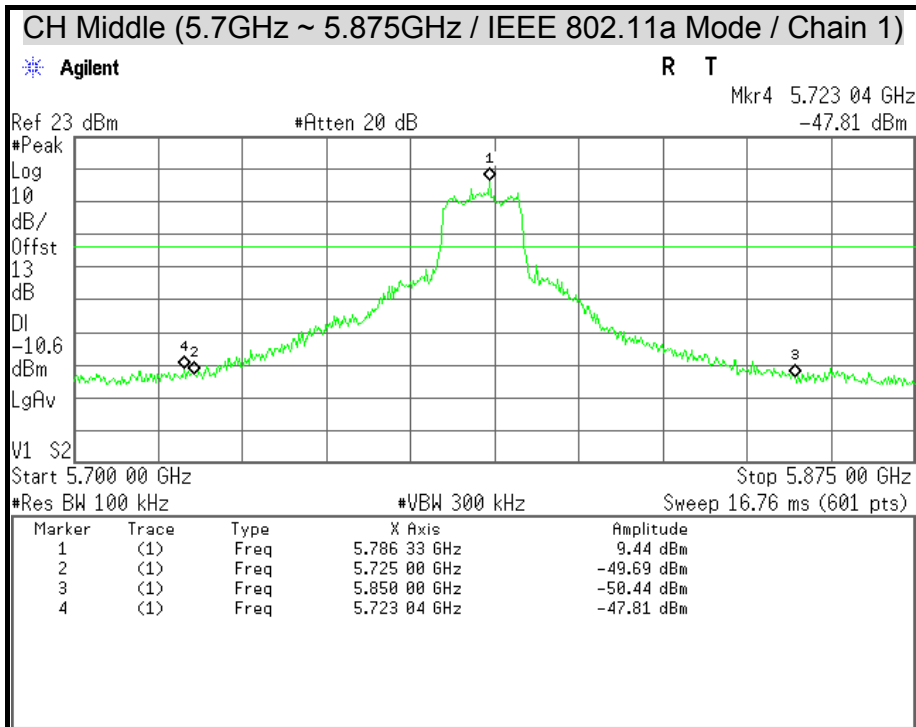
Remark: There is no emission in 27GHz ~ 40GHz.



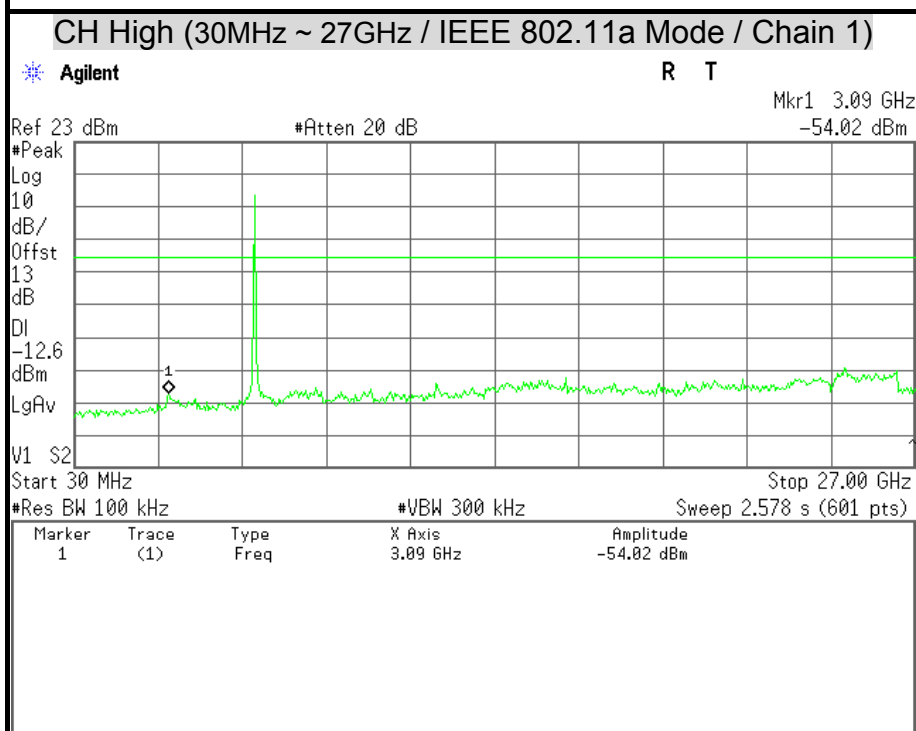
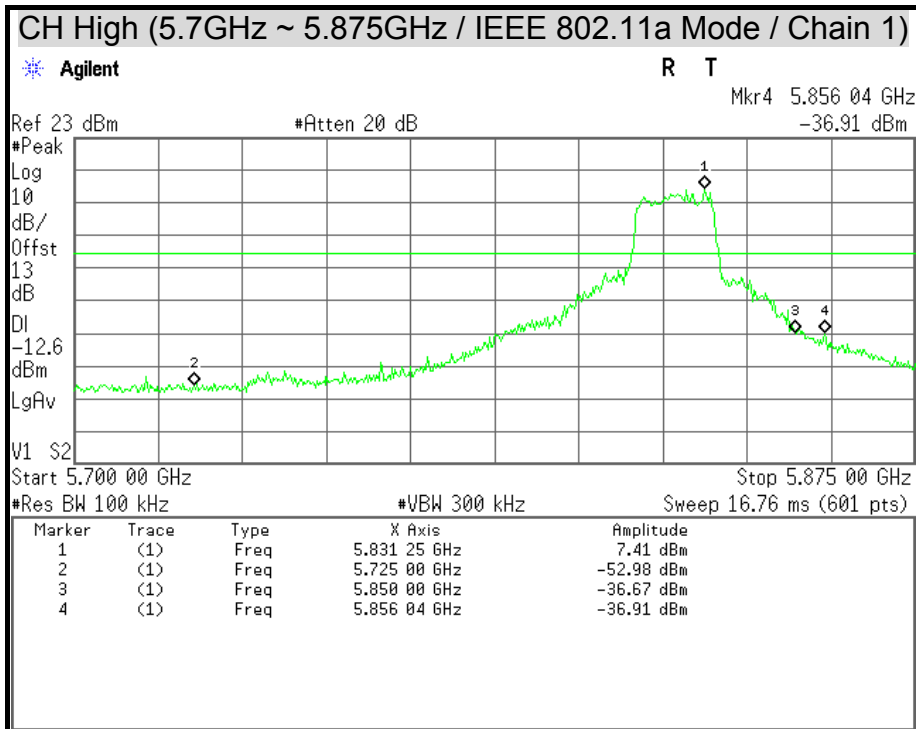
Remark: There is no emission in 27GHz ~ 40GHz.



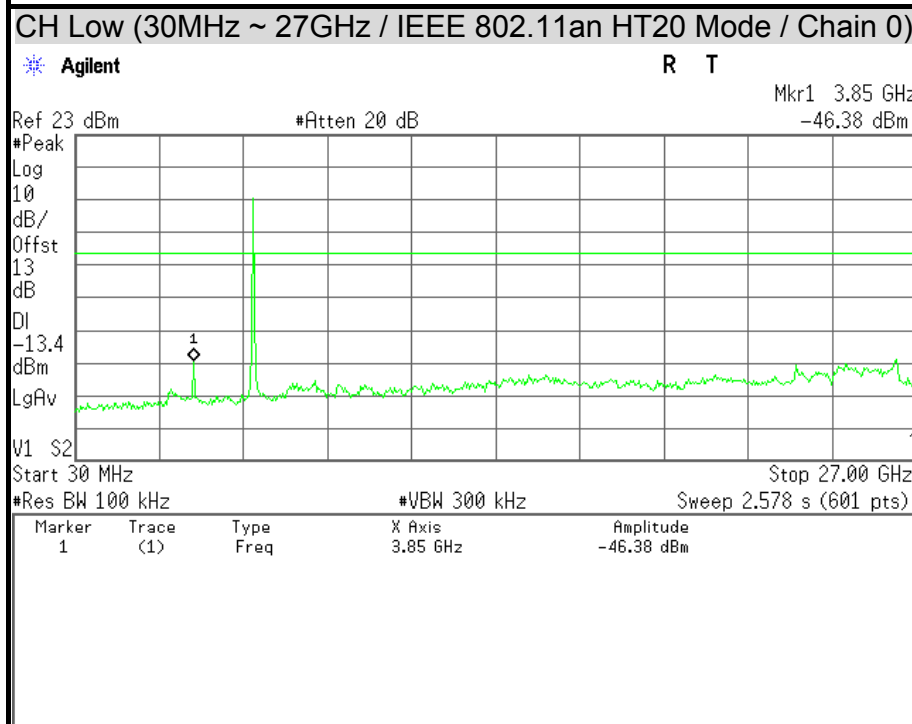
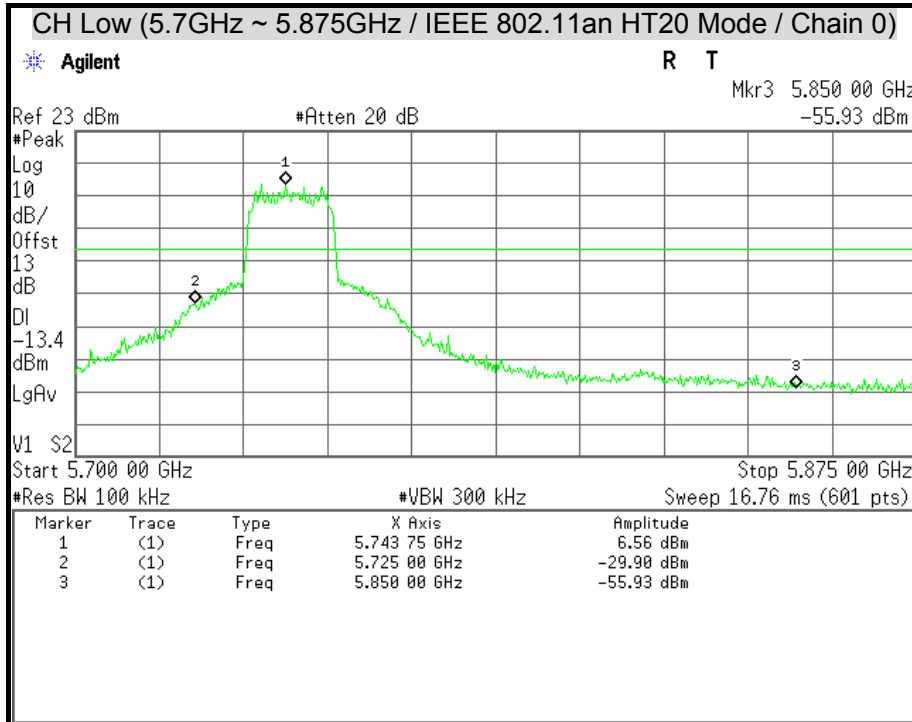
Remark: There is no emission in 27GHz ~ 40GHz.



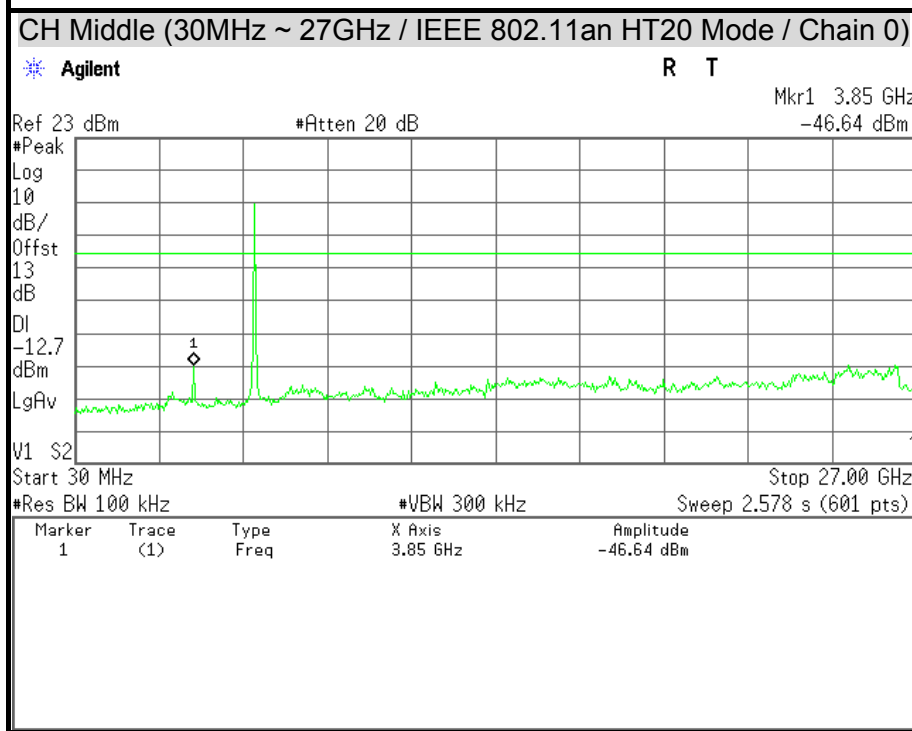
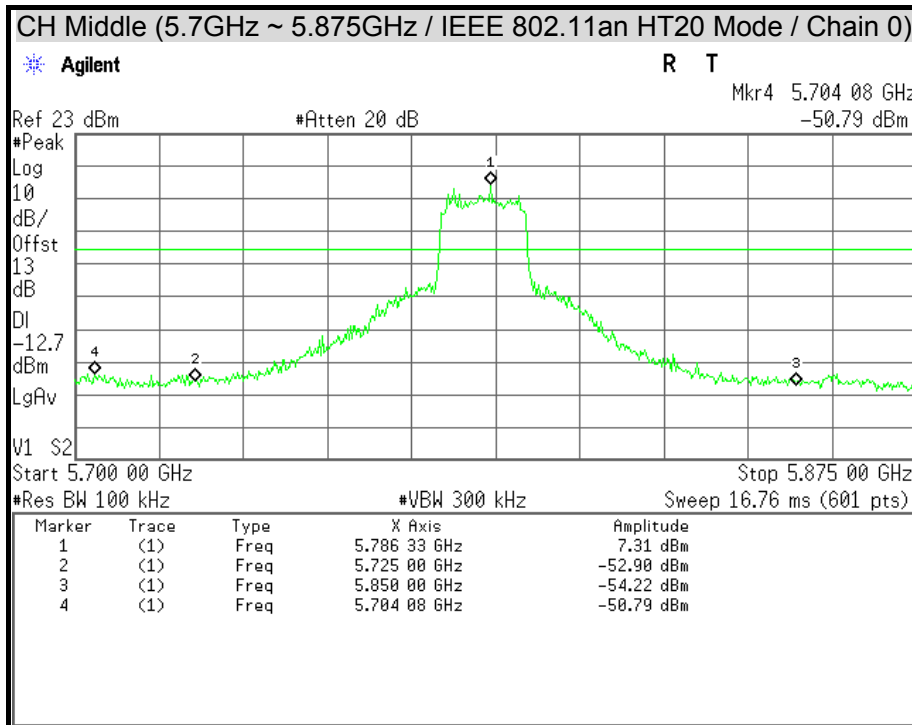
Remark: There is no emission in 27GHz ~ 40GHz.



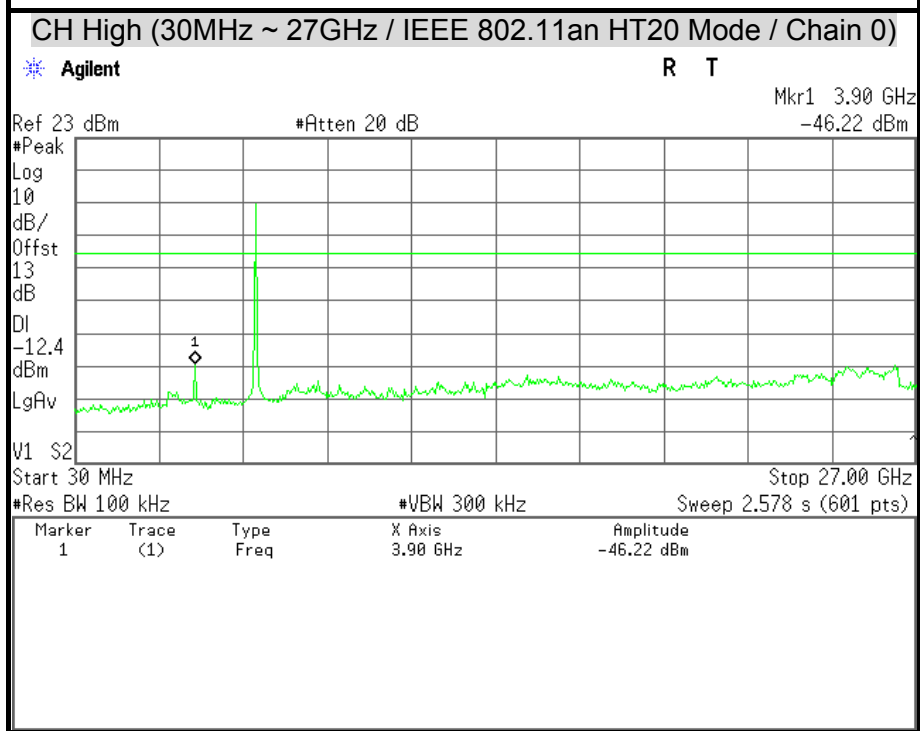
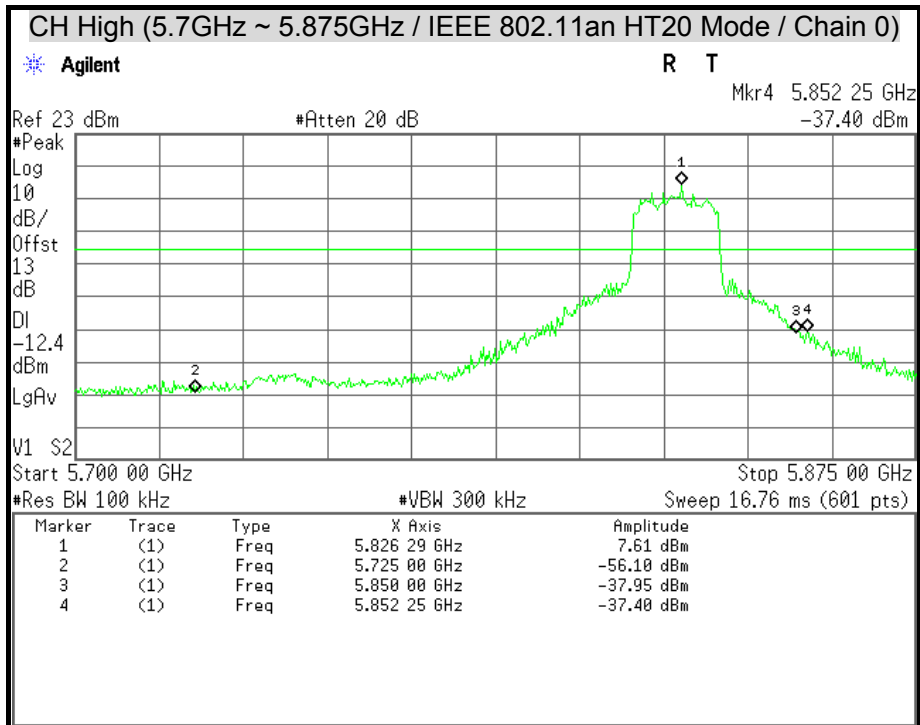
Remark: There is no emission in 27GHz ~ 40GHz.



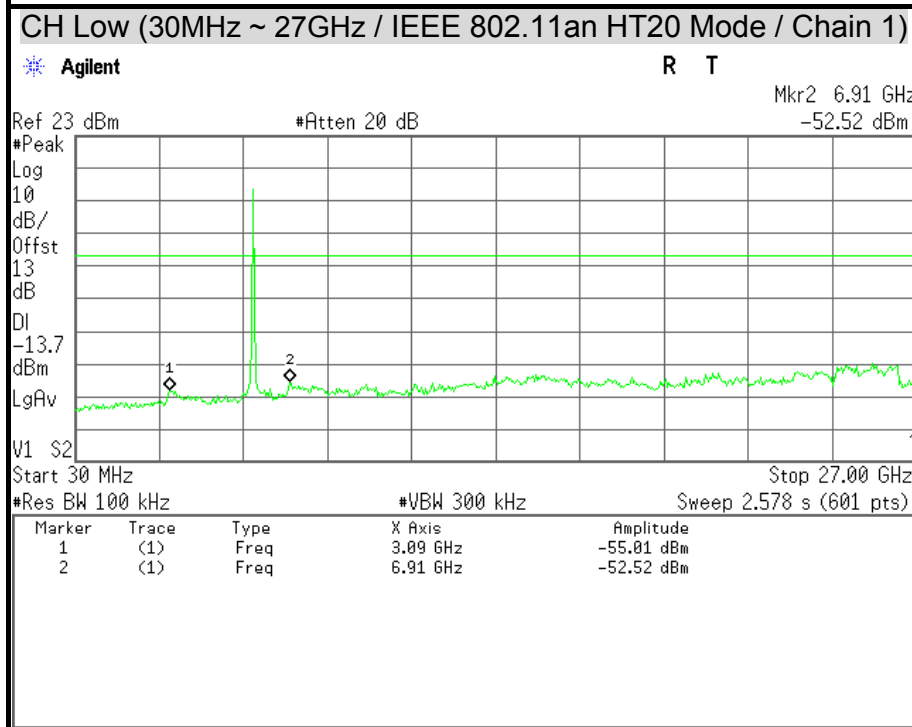
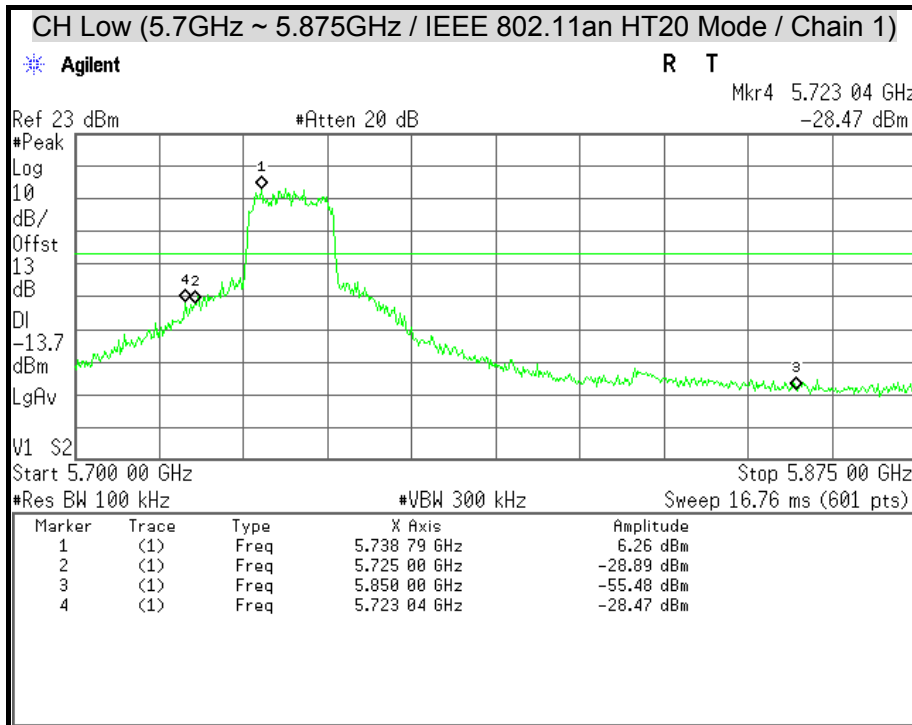
Remark: There is no emission in 27GHz ~ 40GHz.



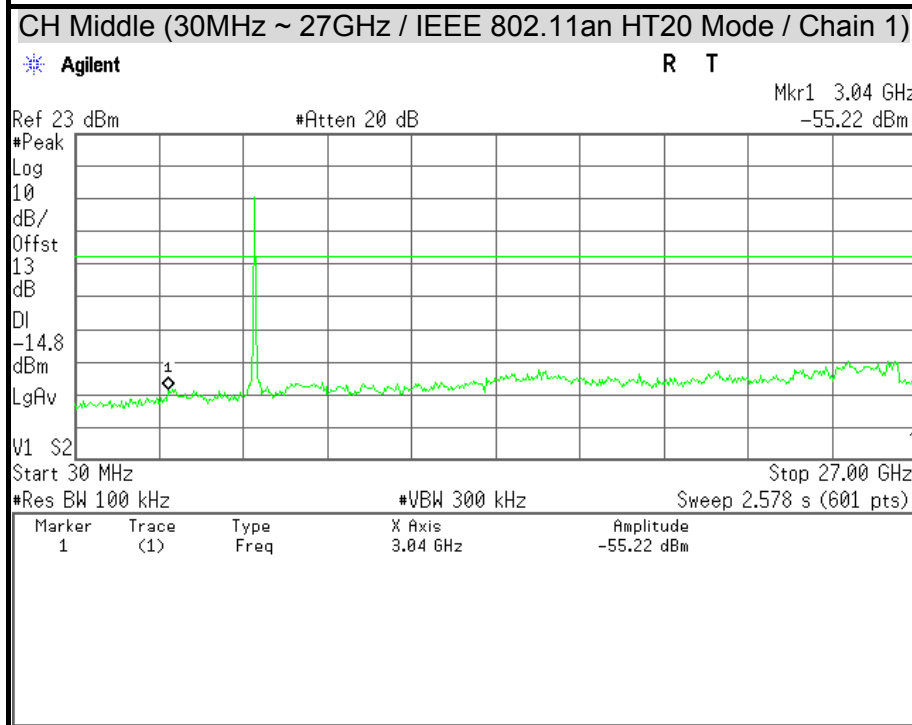
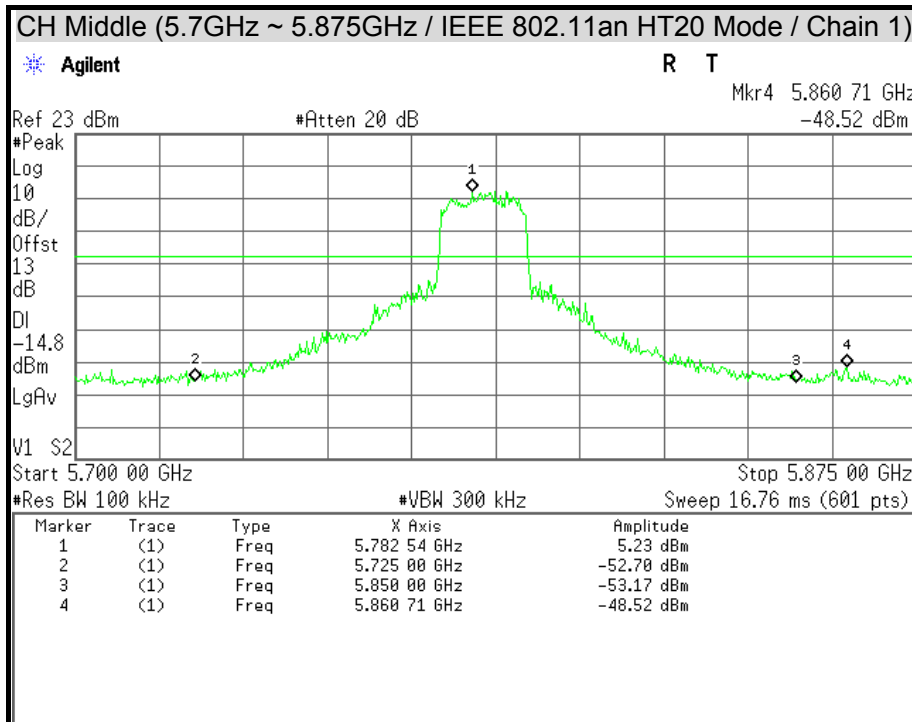
Remark: There is no emission in 27GHz ~ 40GHz.



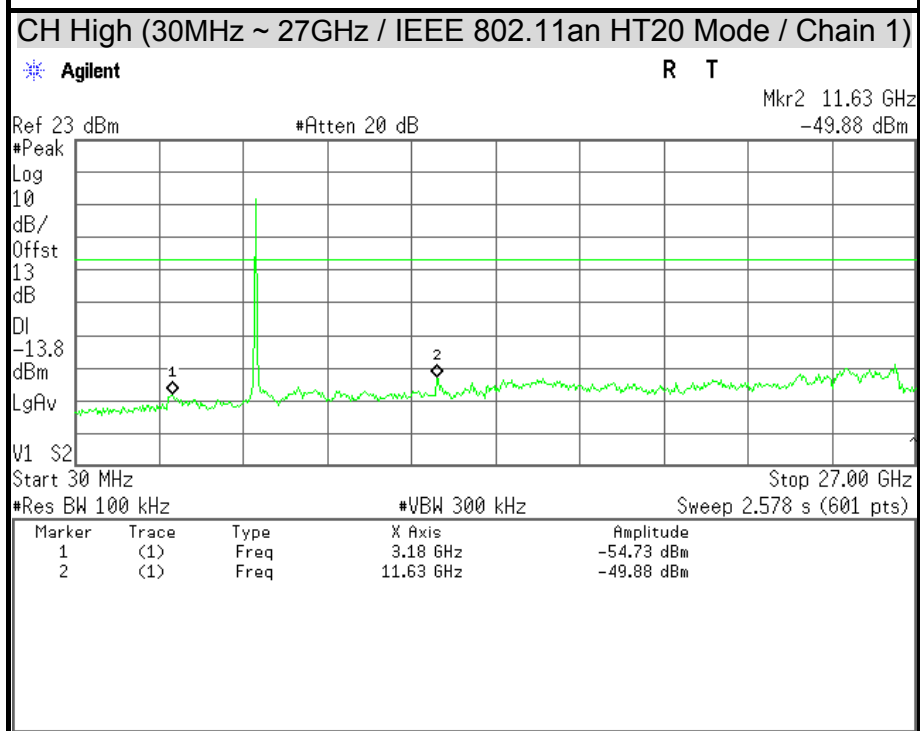
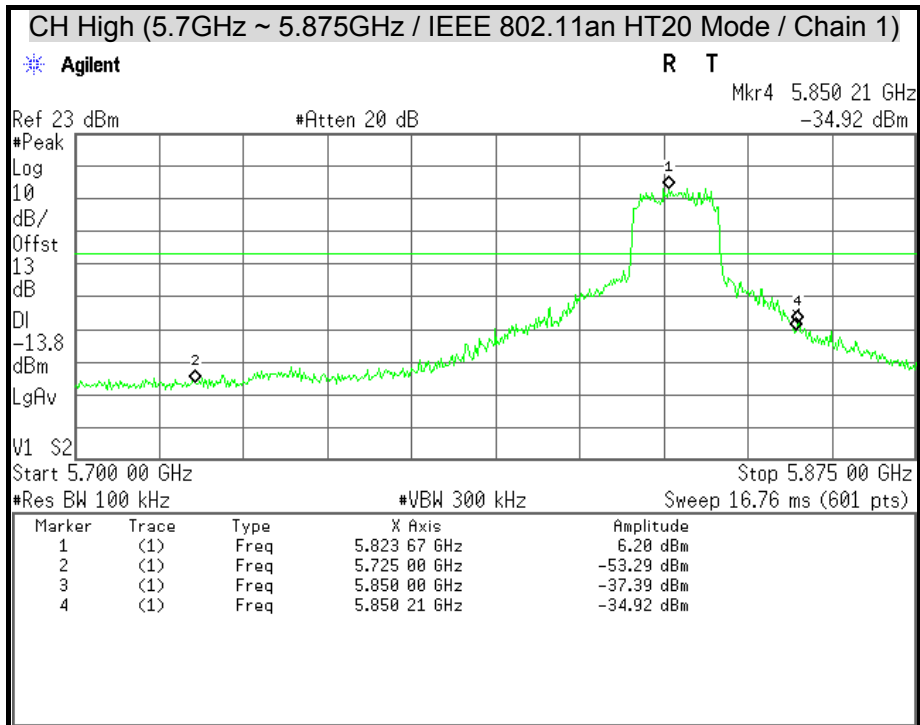
Remark: There is no emission in 27GHz ~ 40GHz.



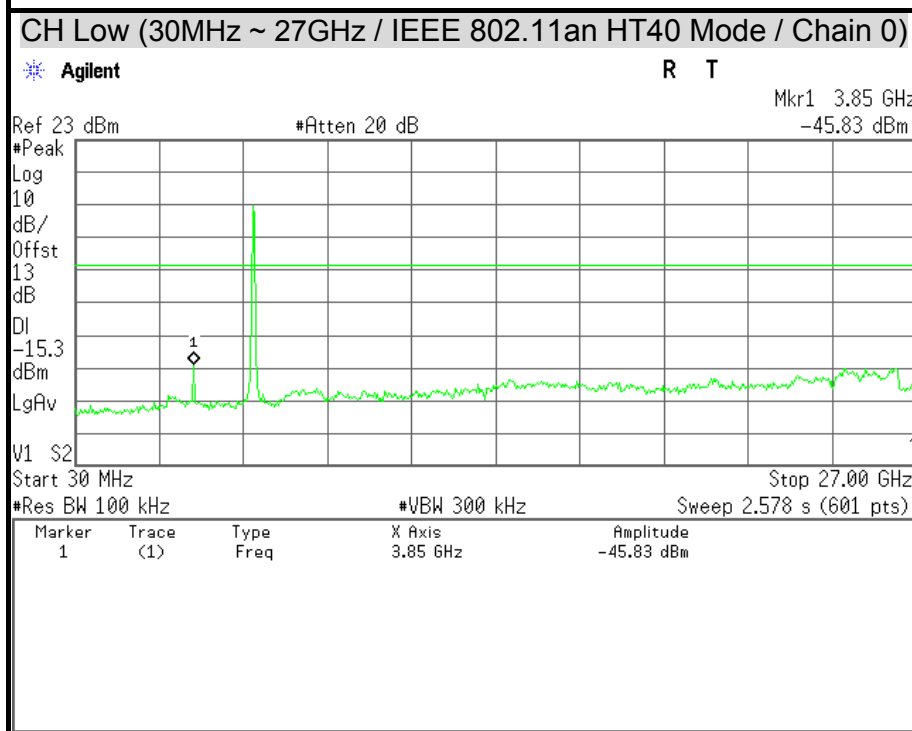
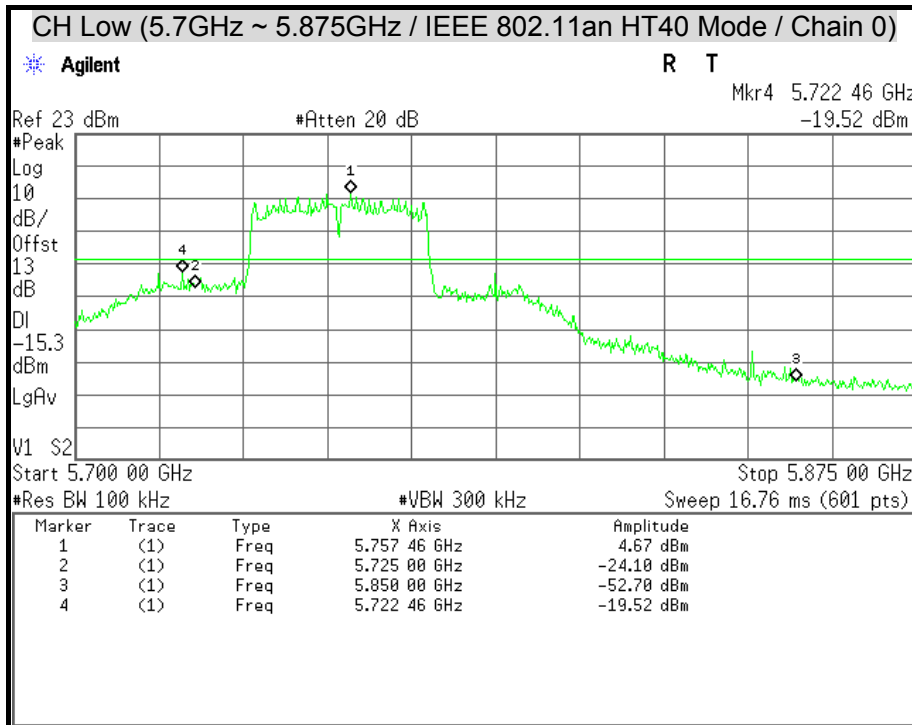
Remark: There is no emission in 27GHz ~ 40GHz.



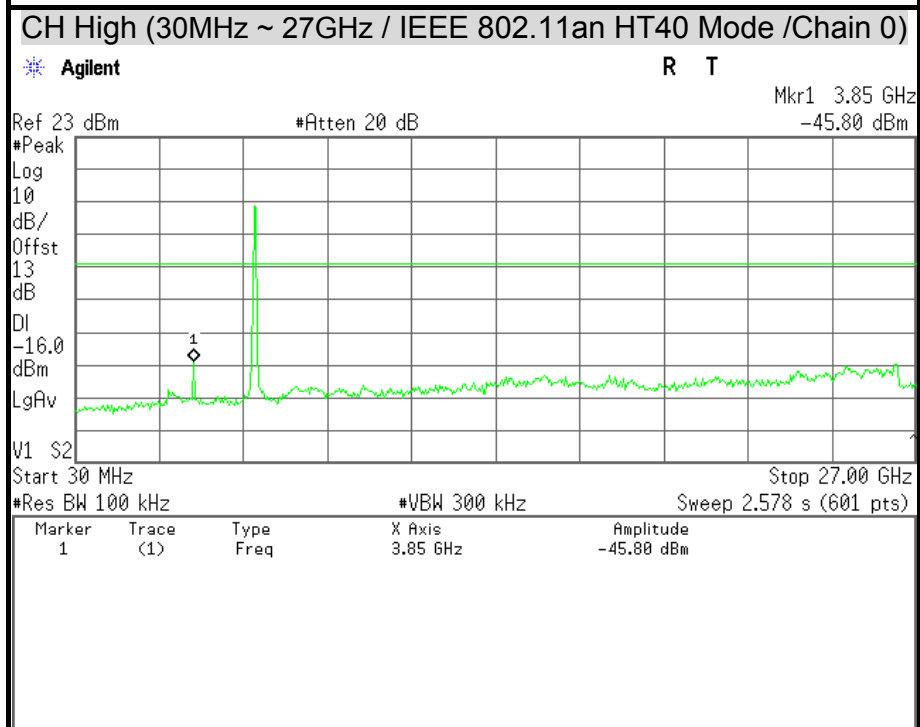
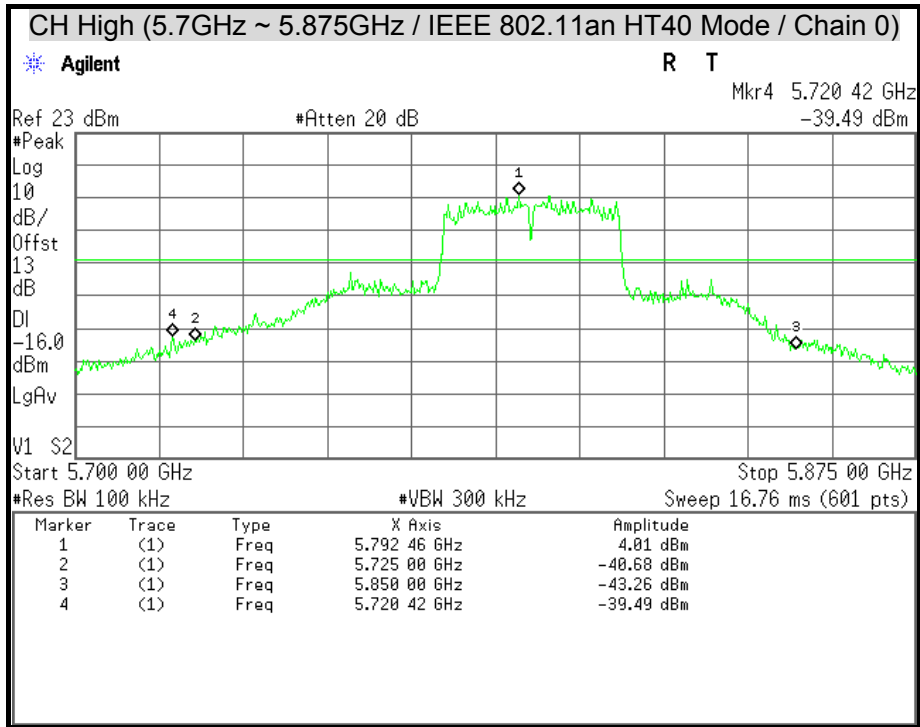
Remark: There is no emission in 27GHz ~ 40GHz.



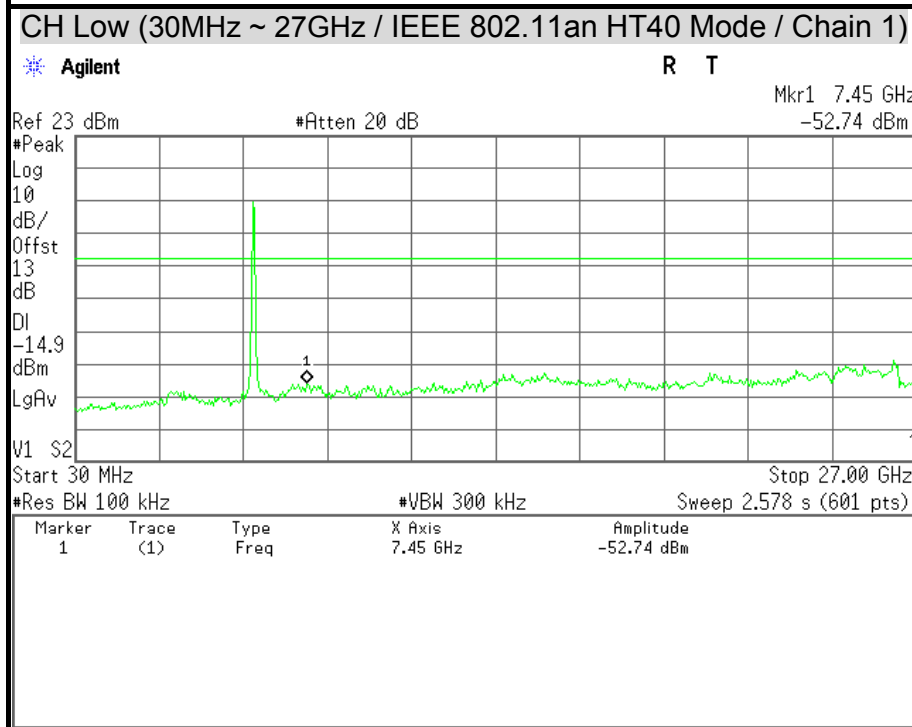
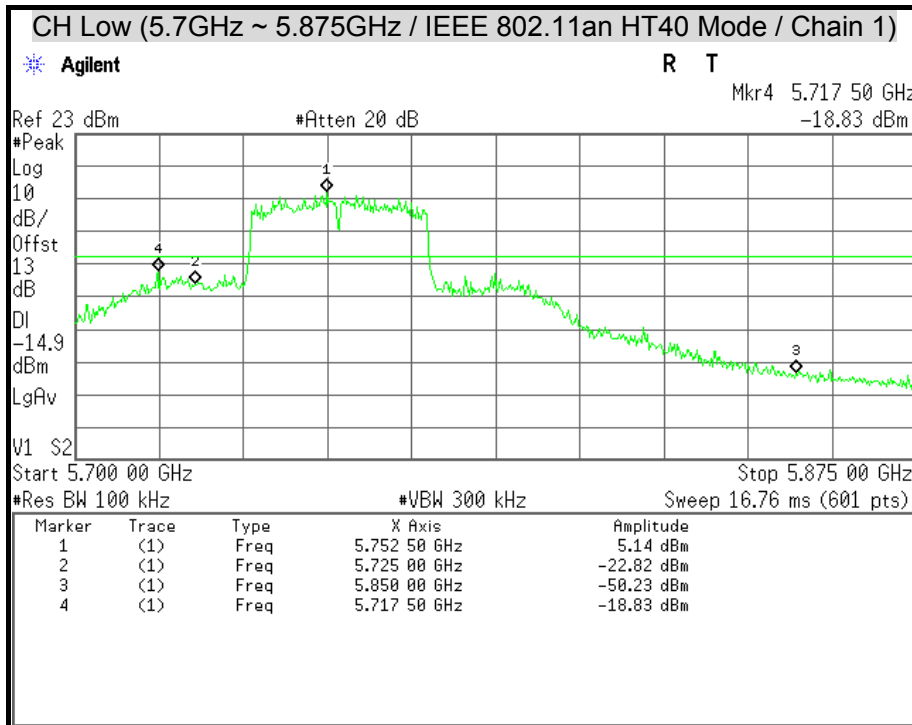
Remark: There is no emission in 27GHz ~ 40GHz.



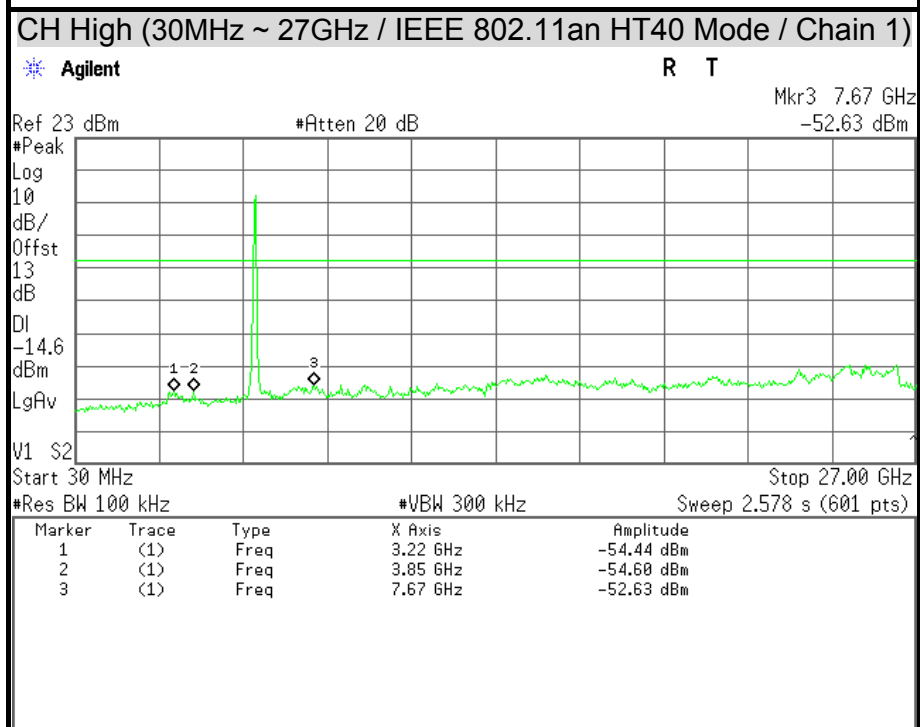
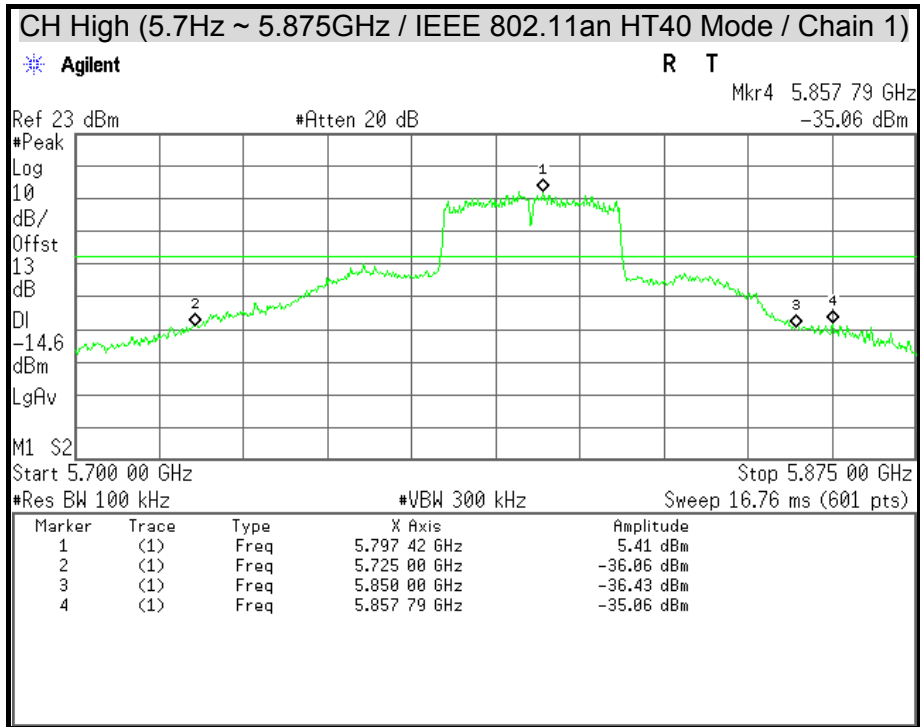
Remark: There is no emission in 27GHz ~ 40GHz.



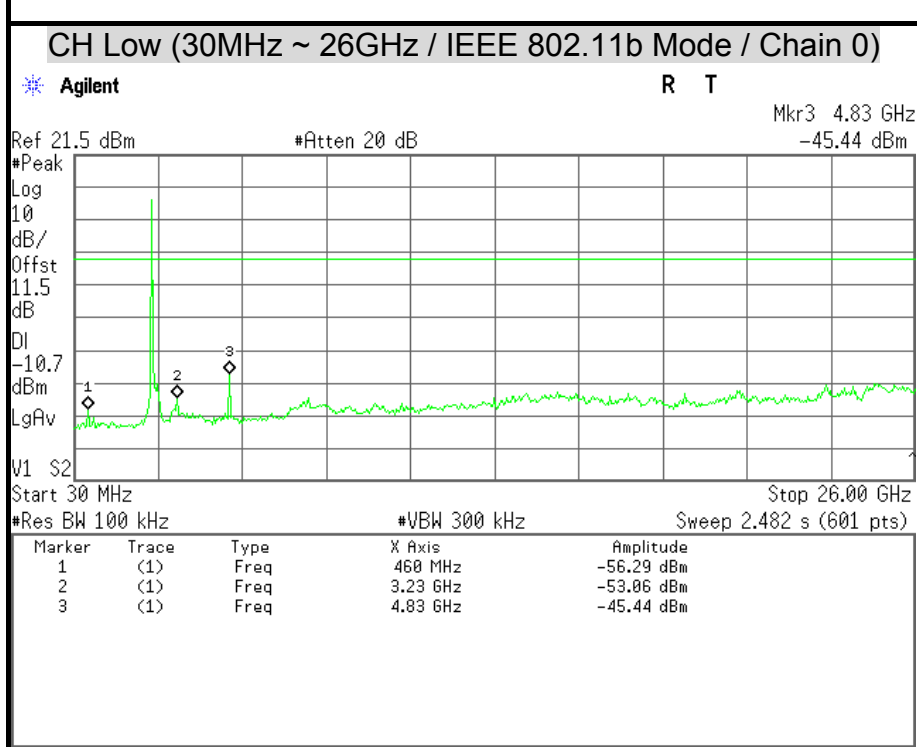
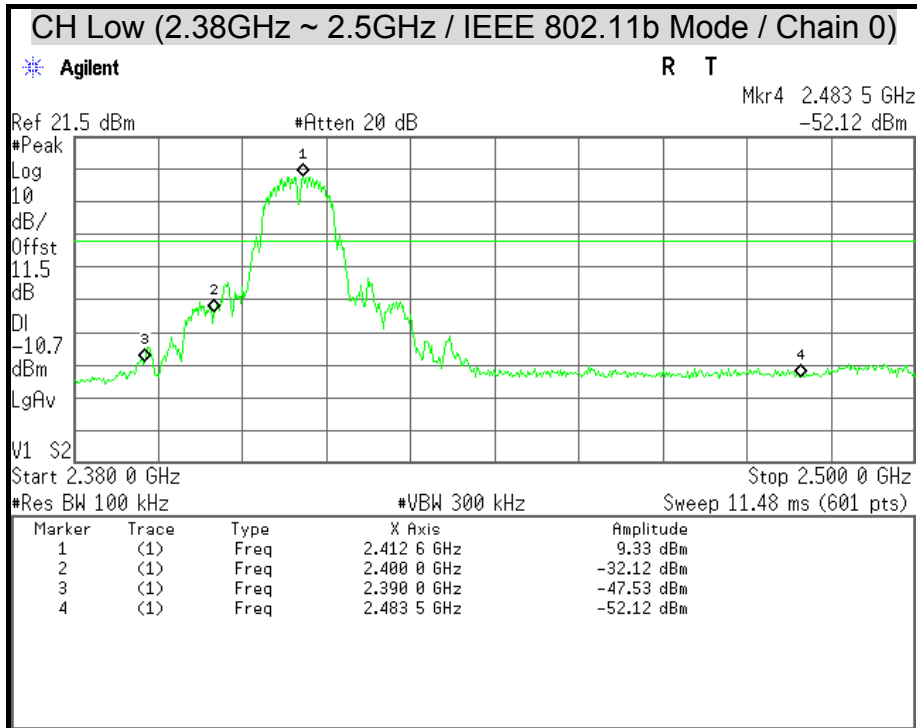
Remark: There is no emission in 27GHz ~ 40GHz.

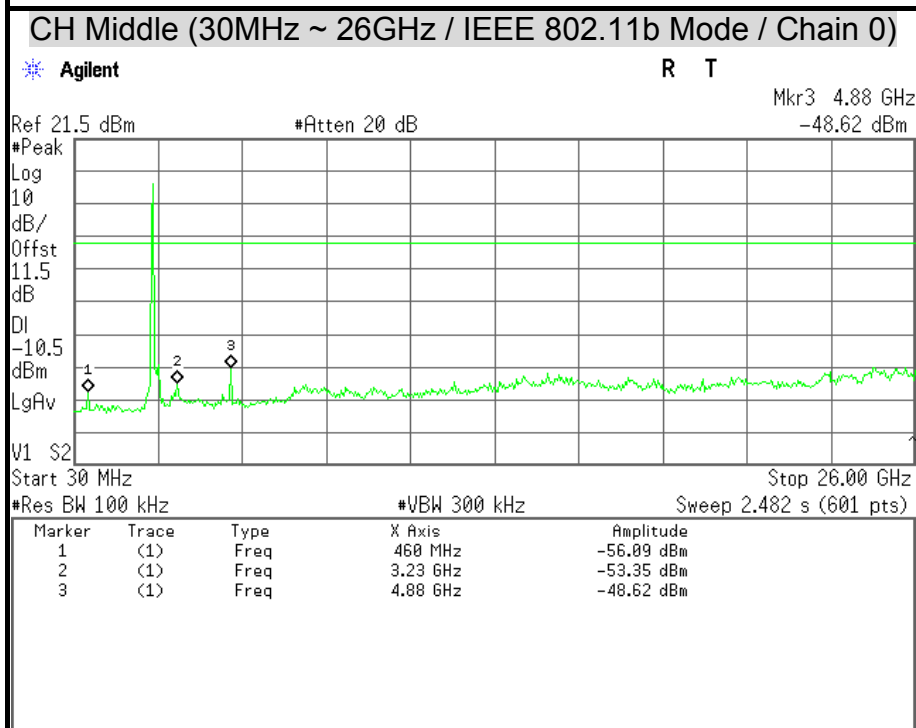
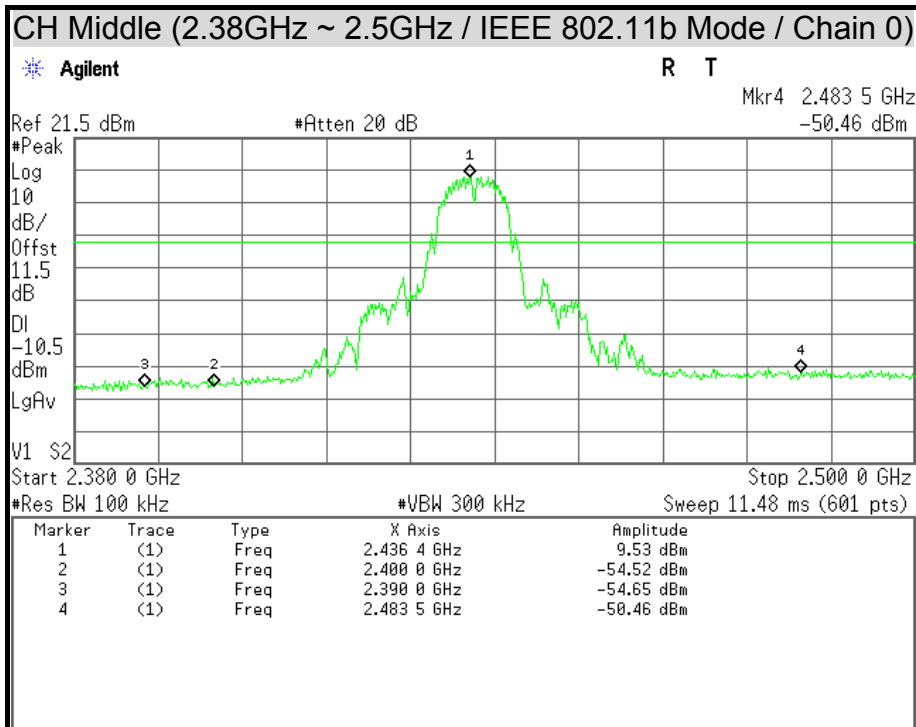


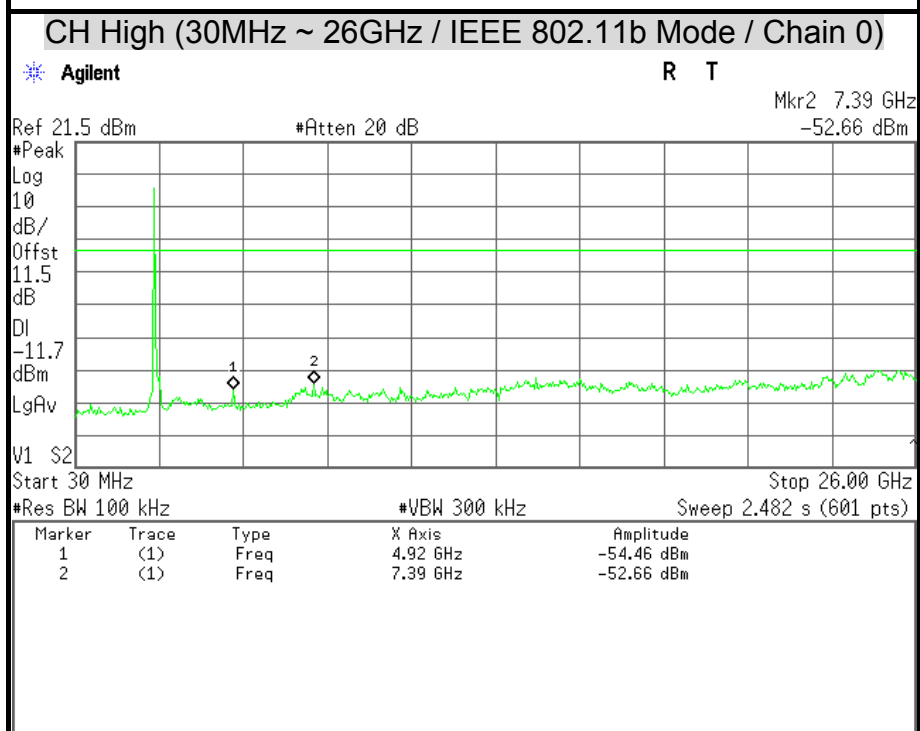
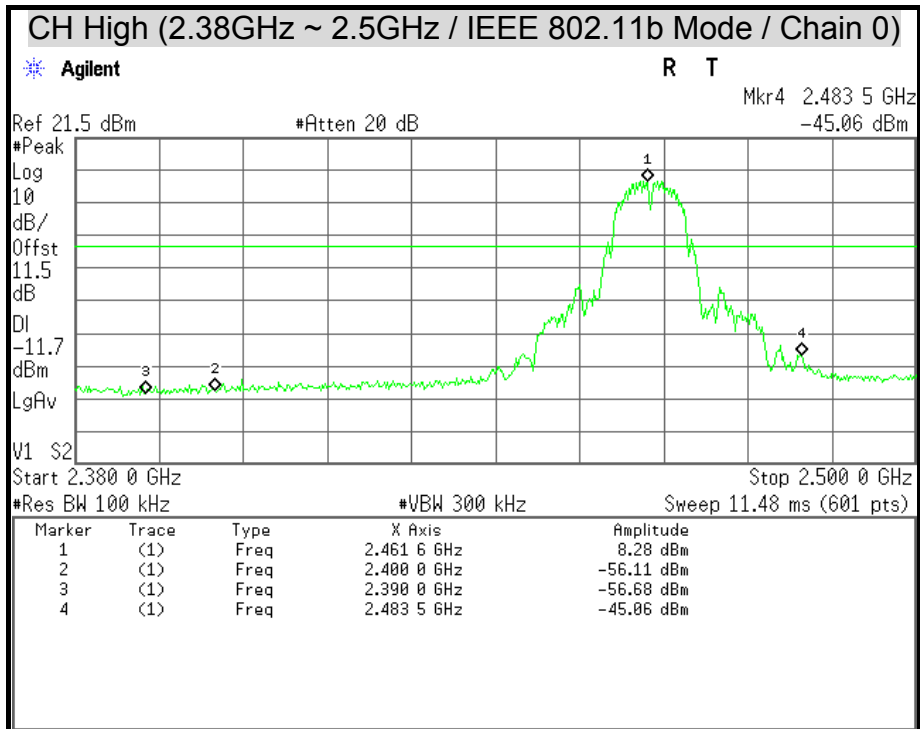
Remark: There is no emission in 27GHz ~ 40GHz.

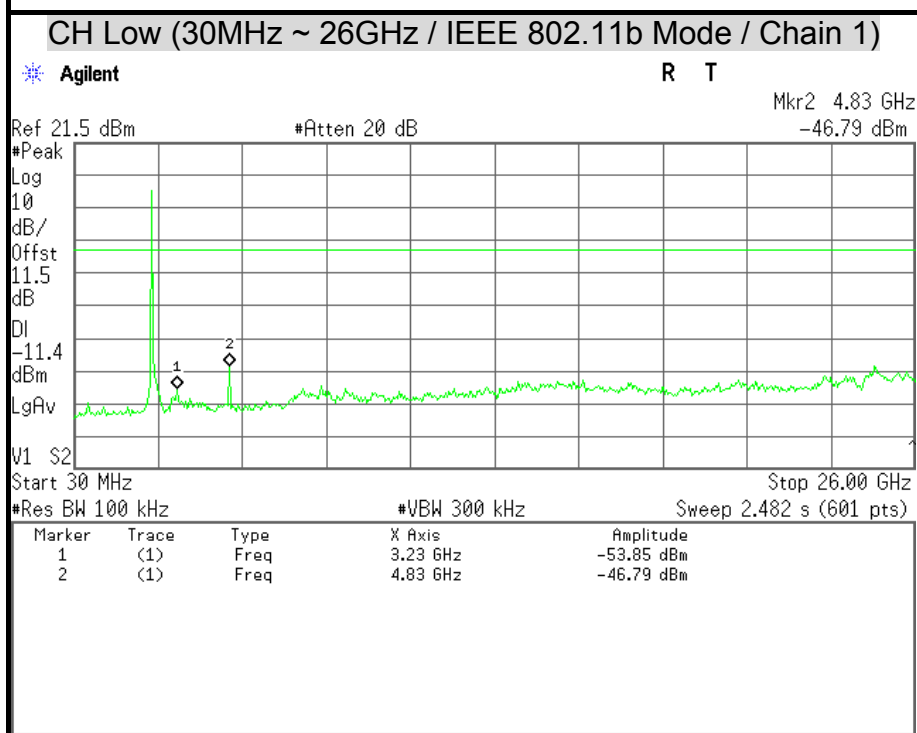
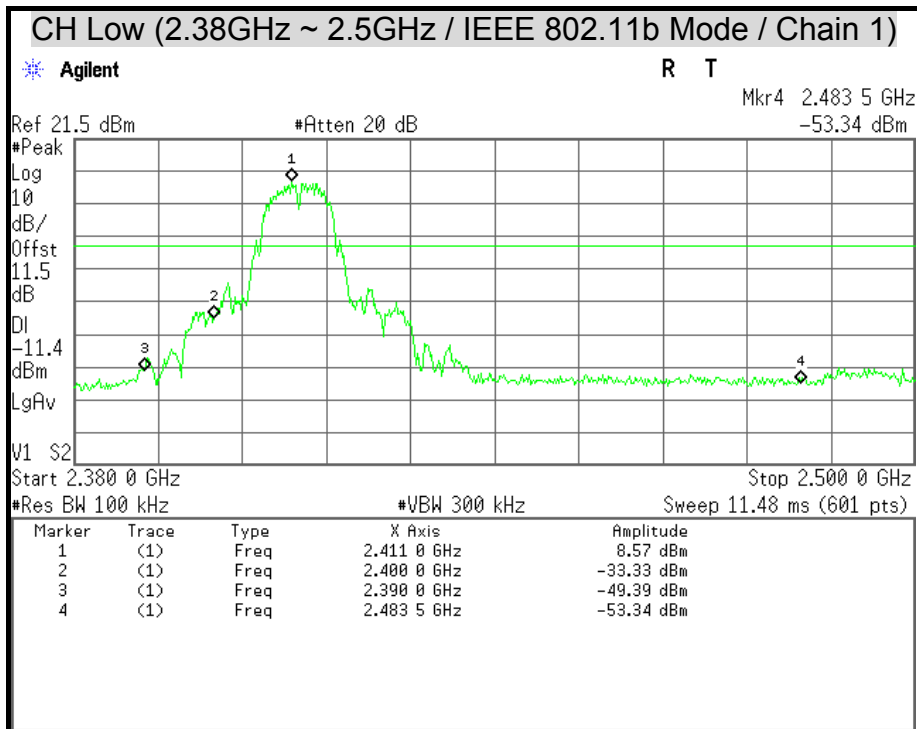


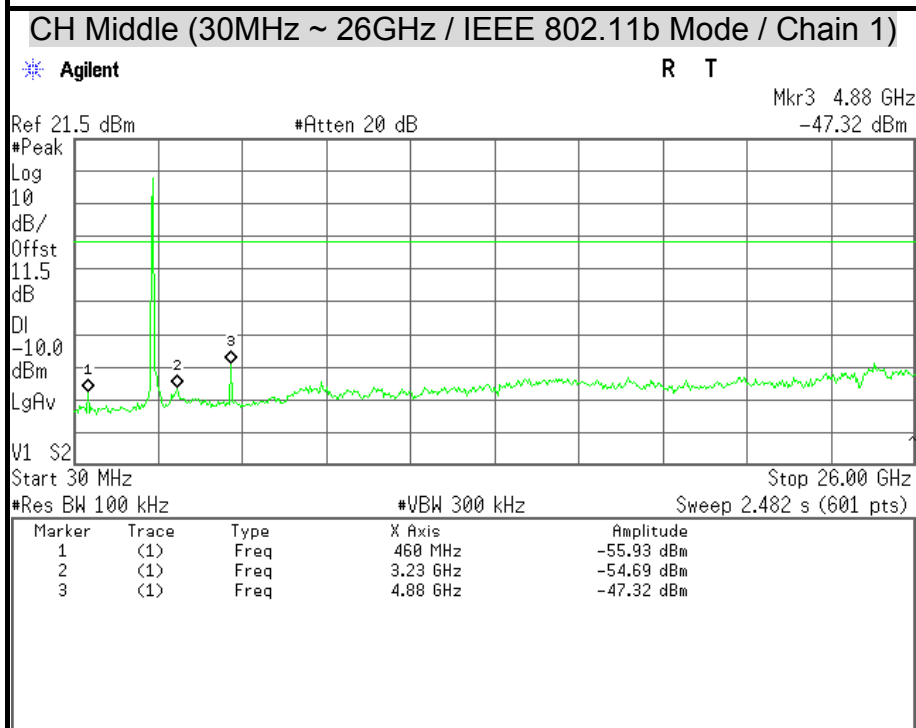
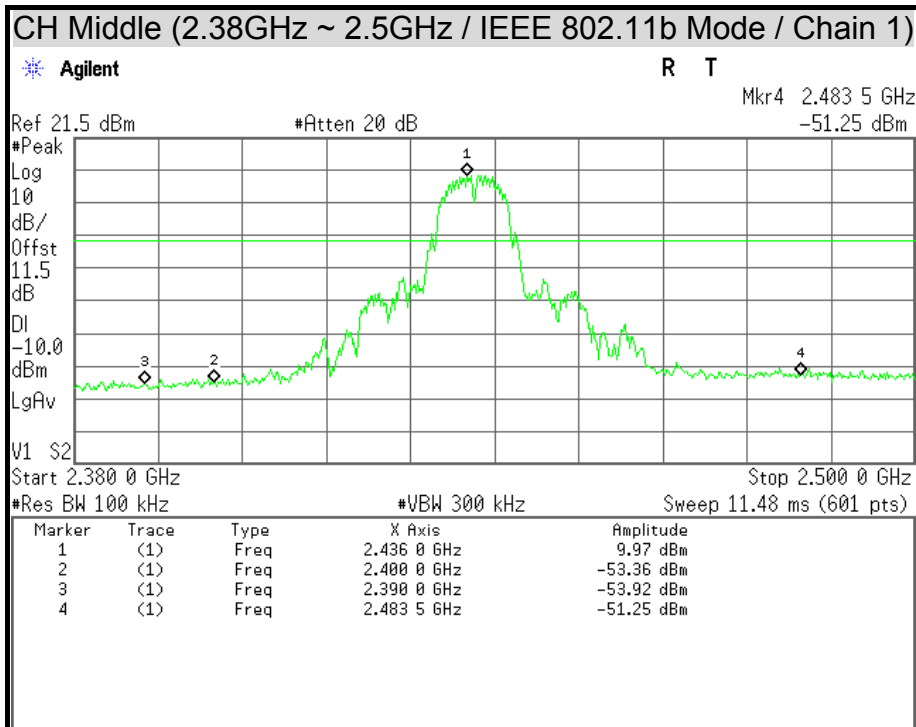
Remark: There is no emission in 27GHz ~ 40GHz.

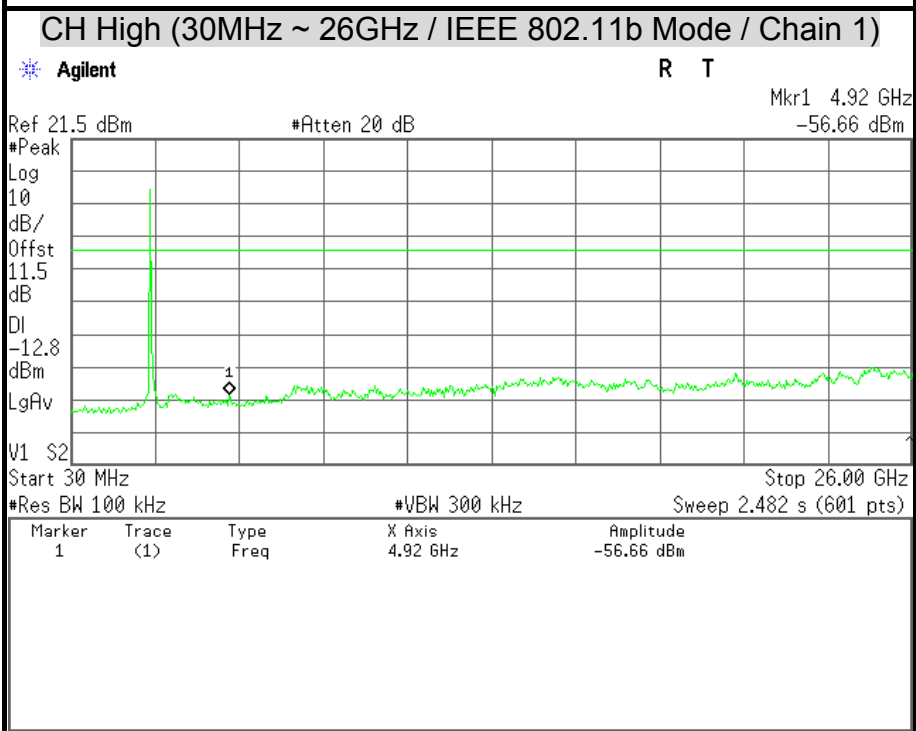
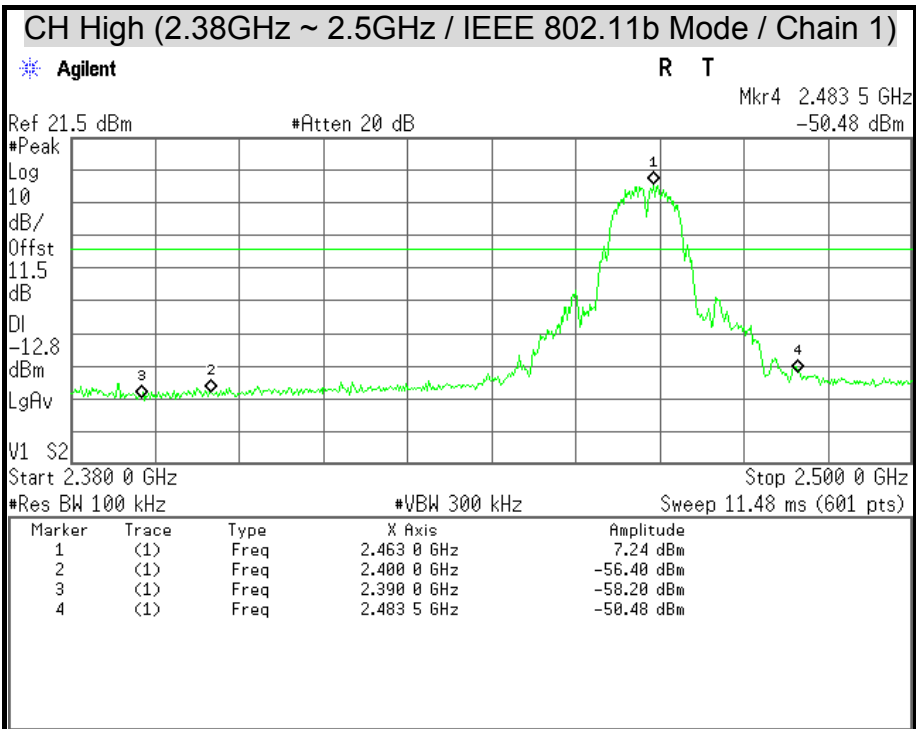


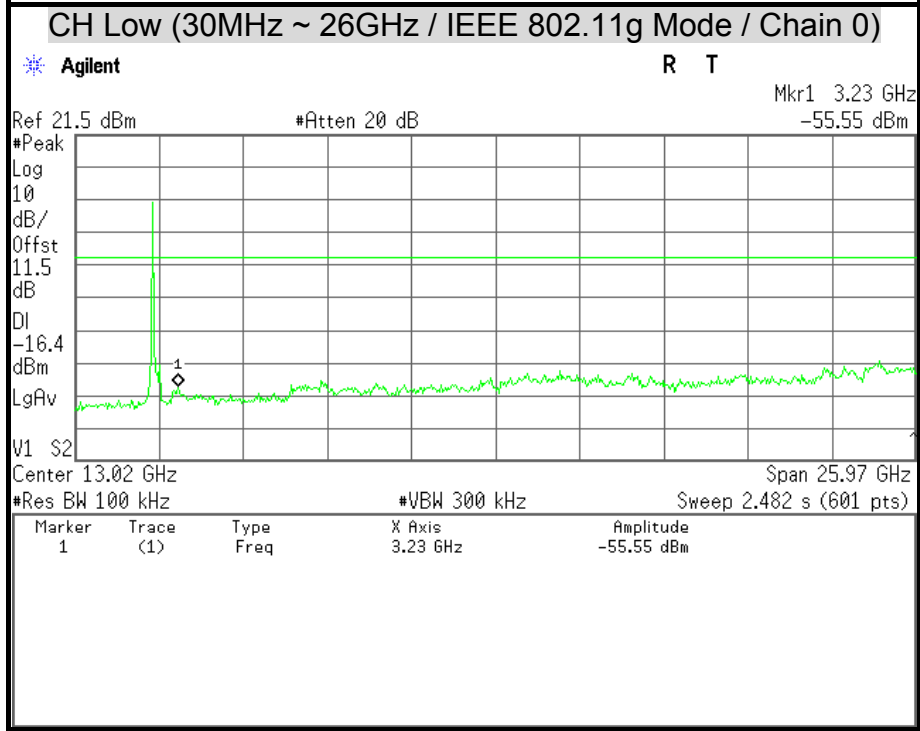
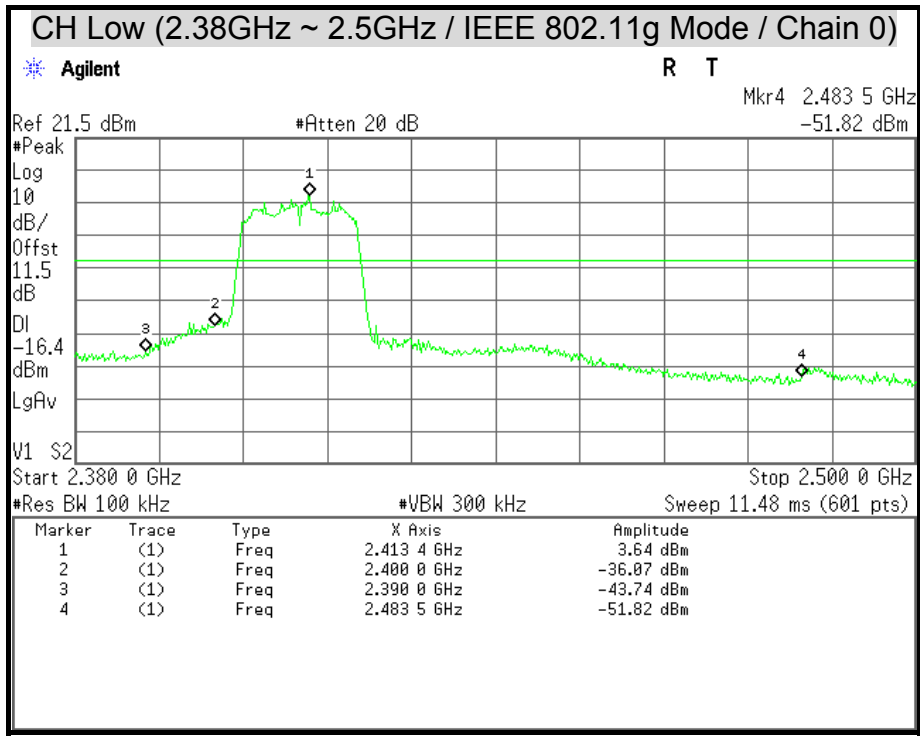


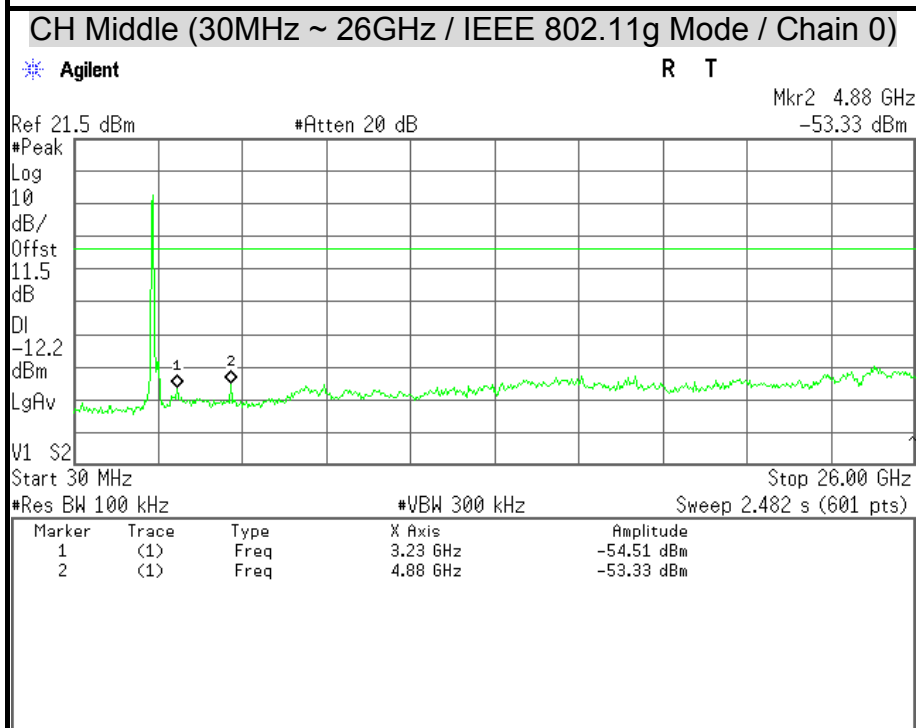
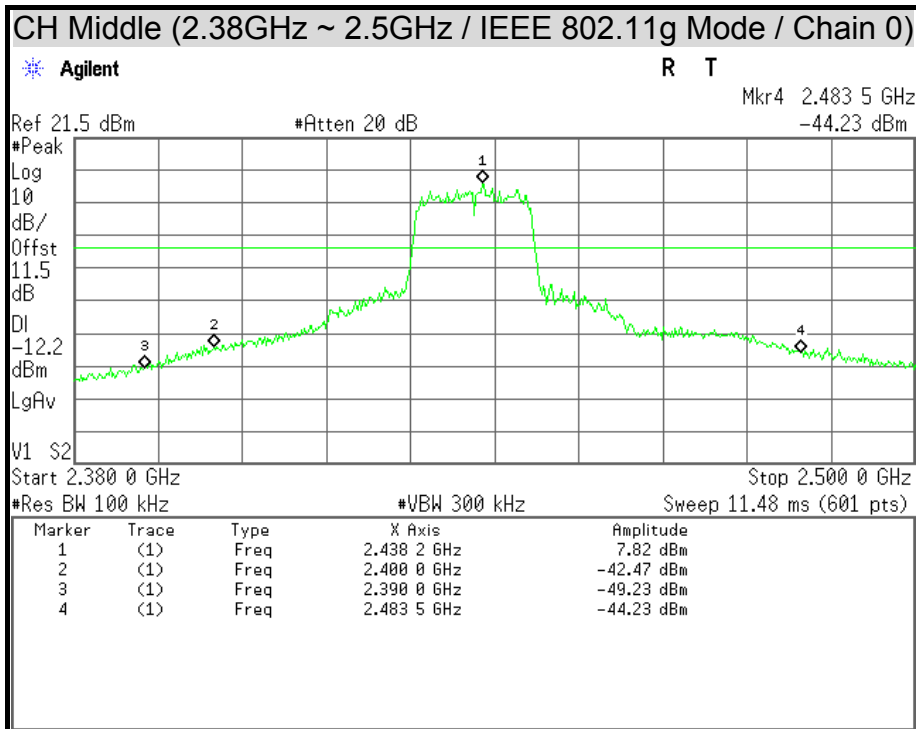


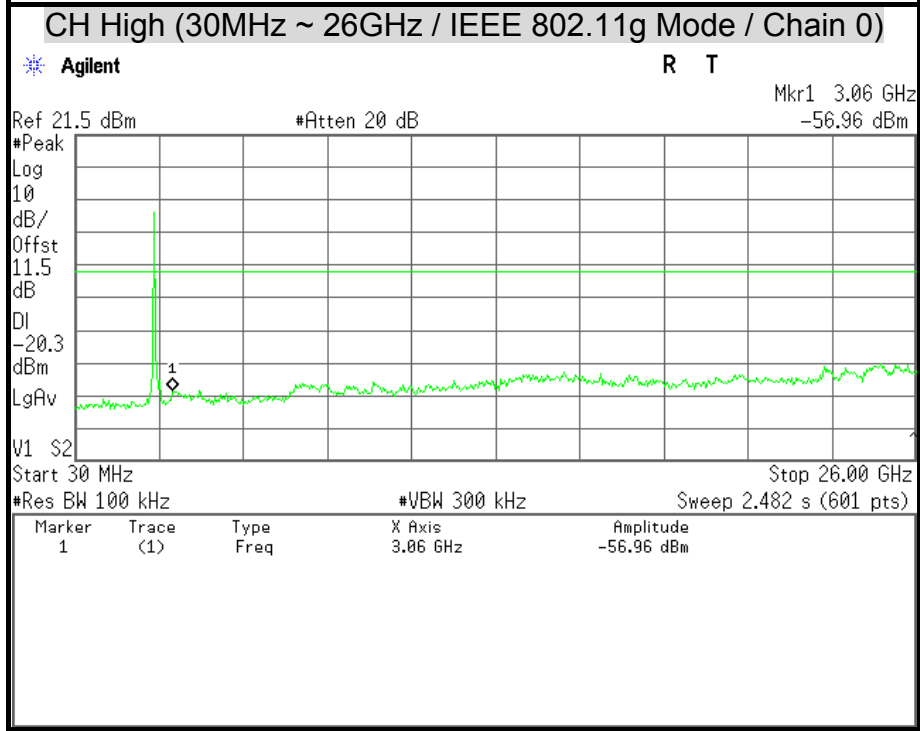
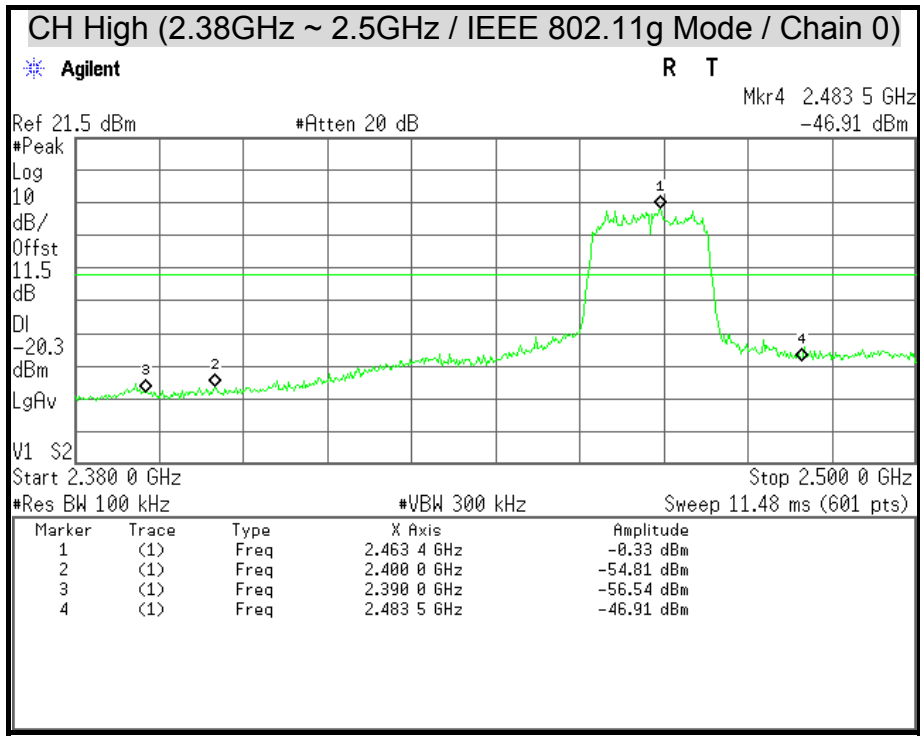


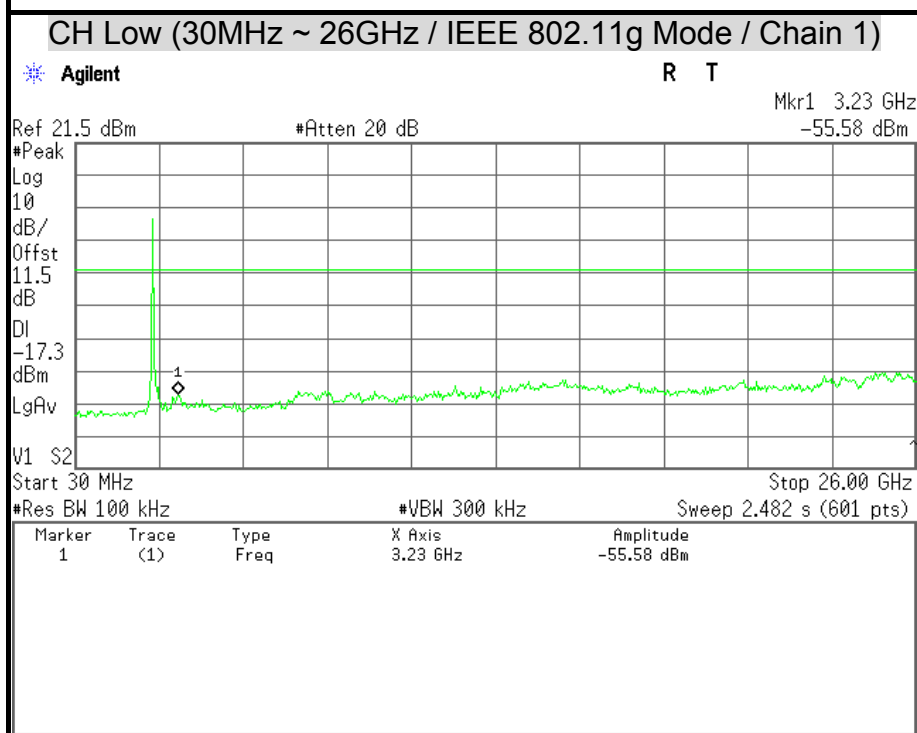
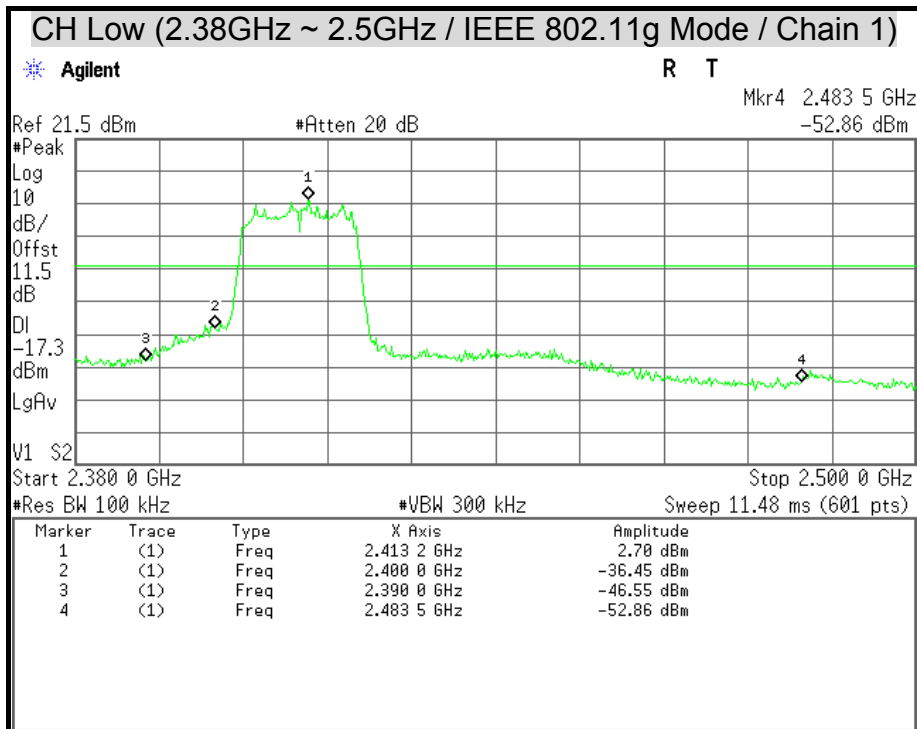


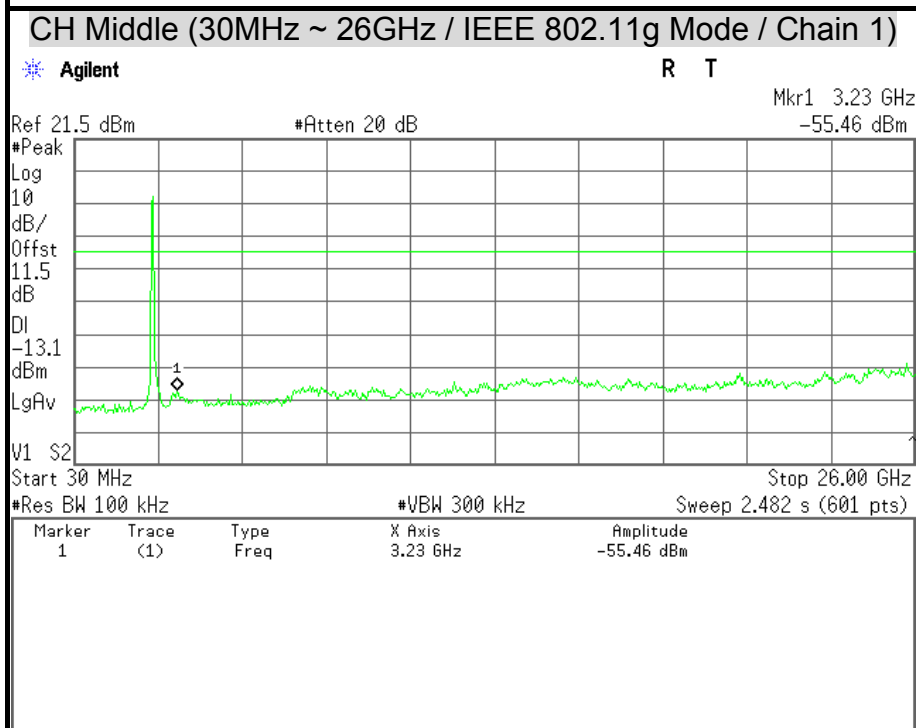
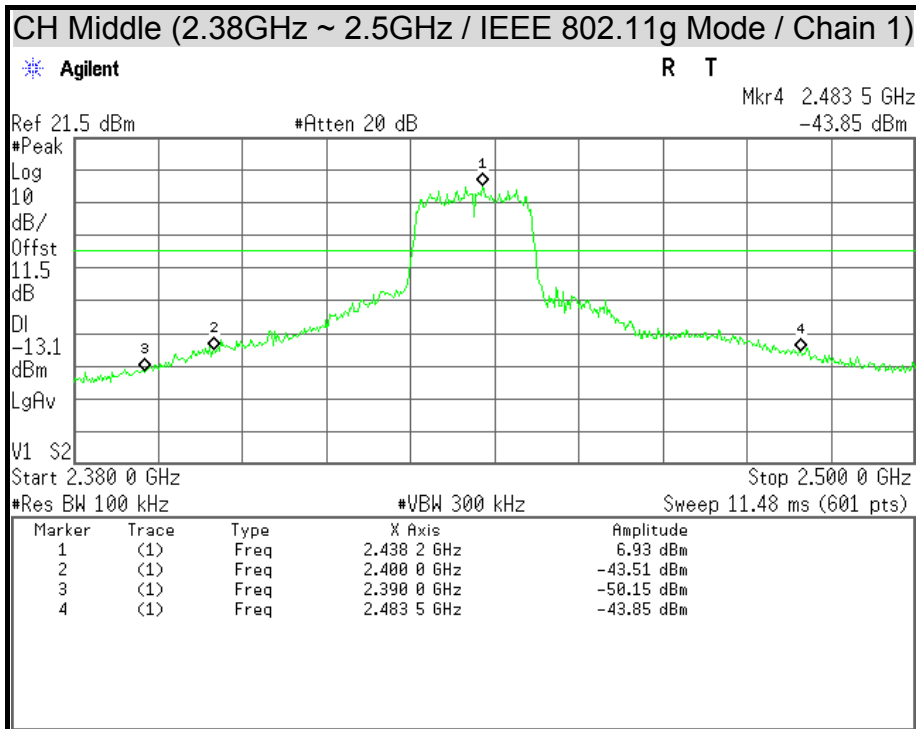


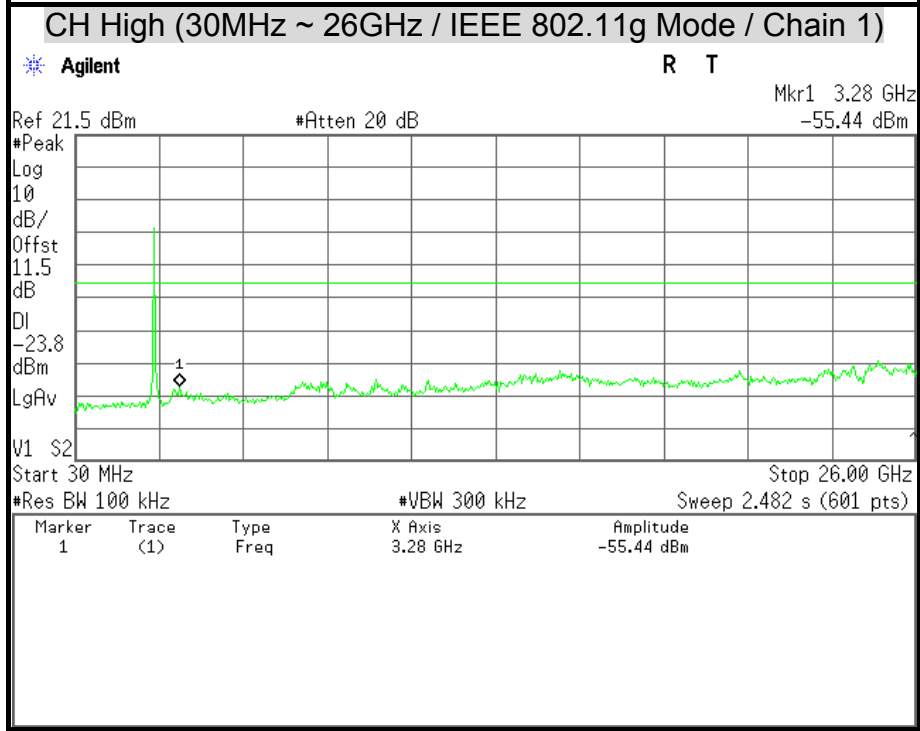
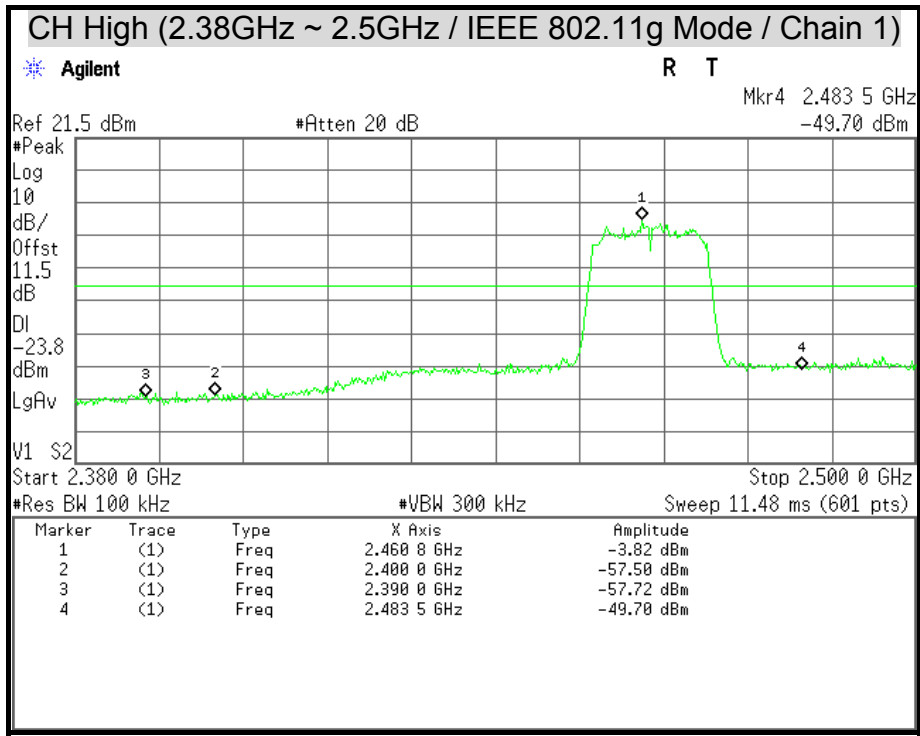


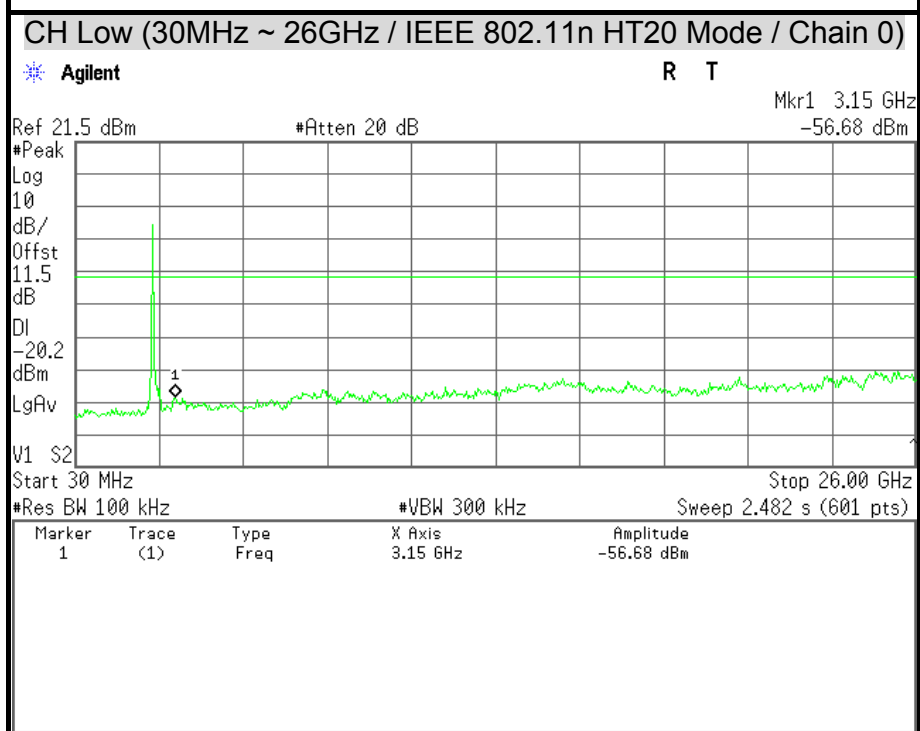
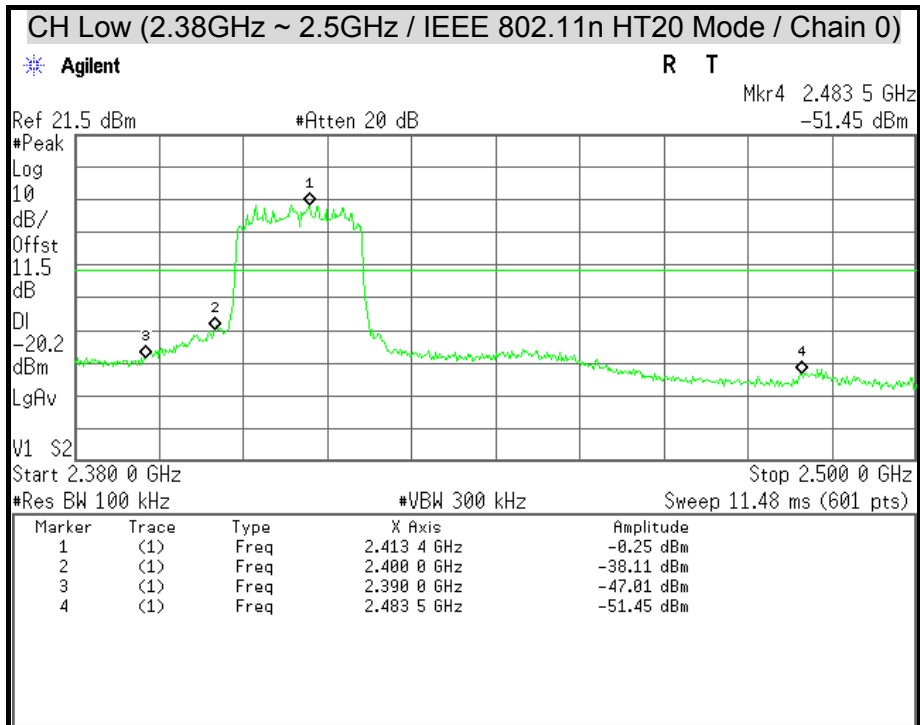


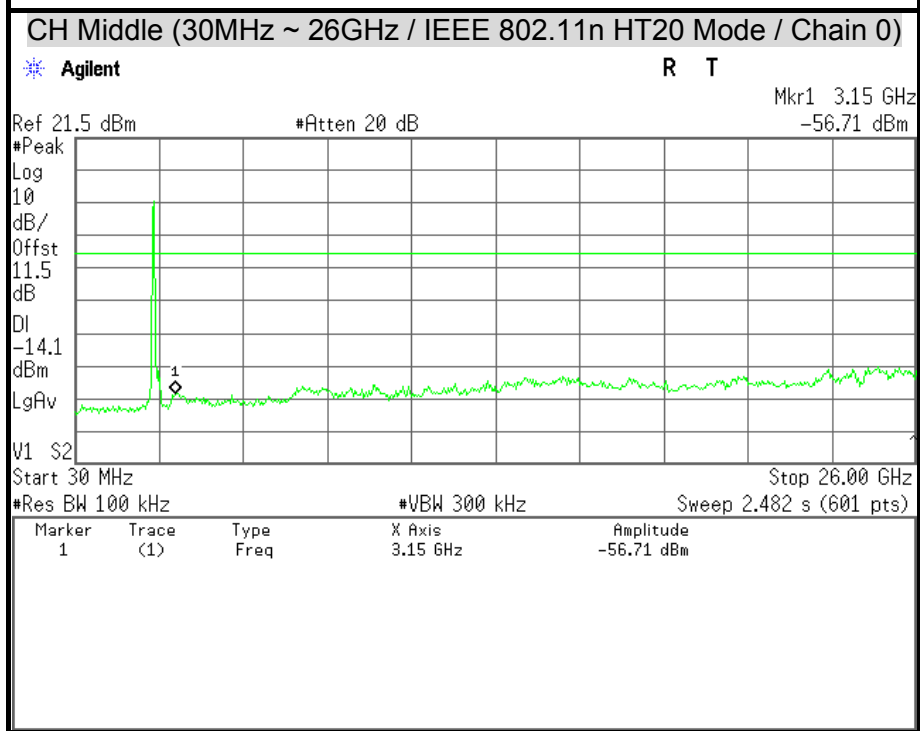
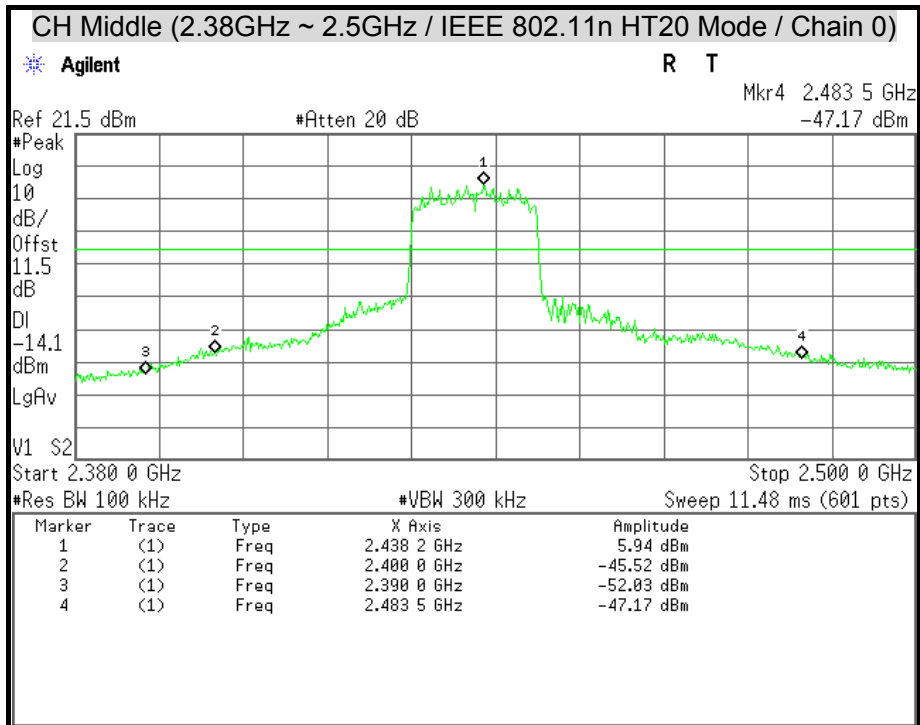


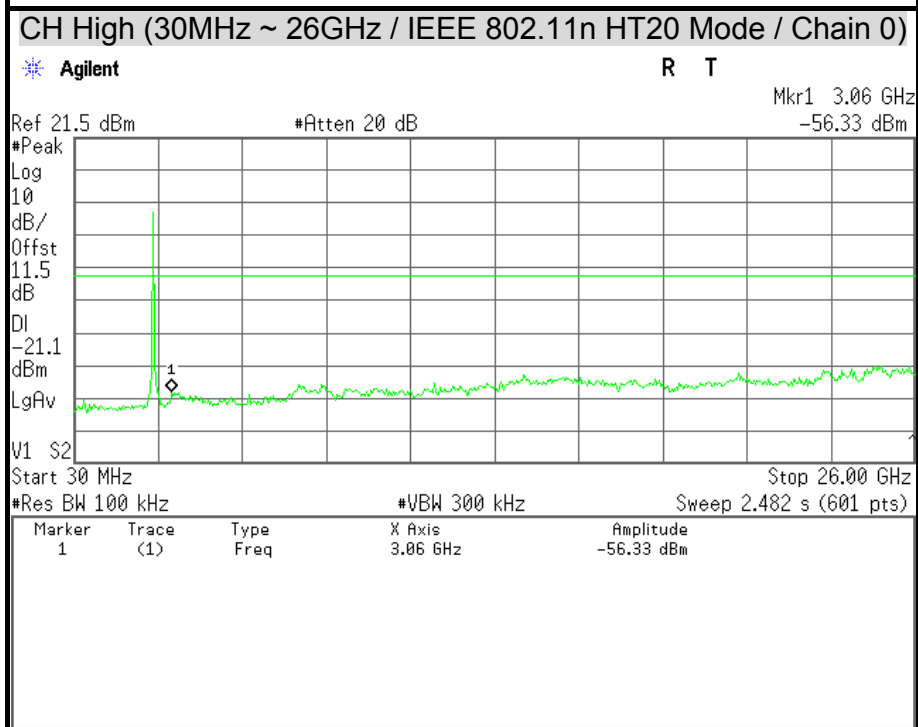
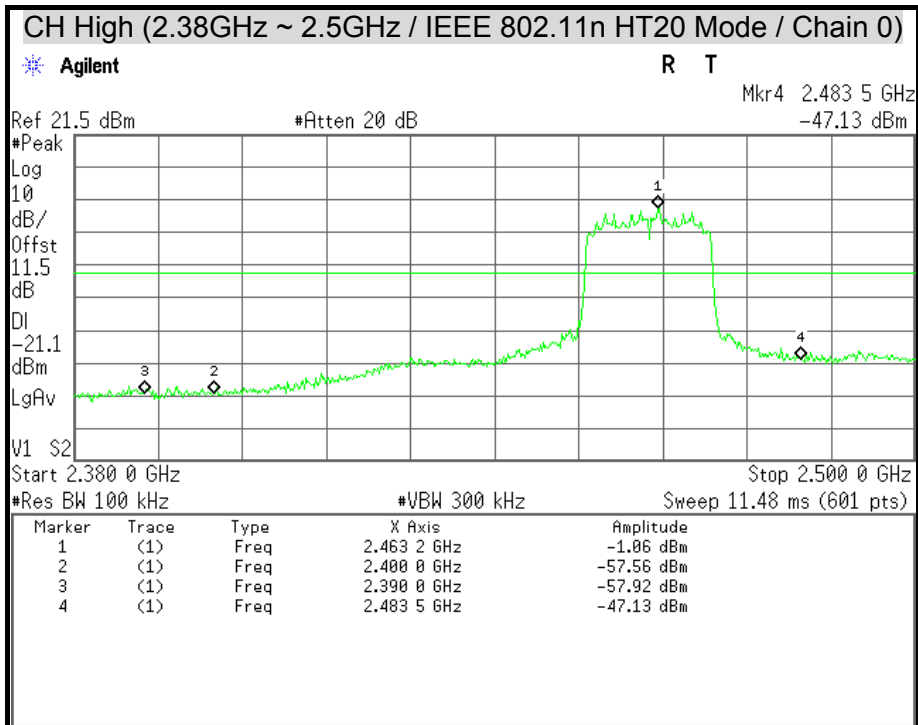


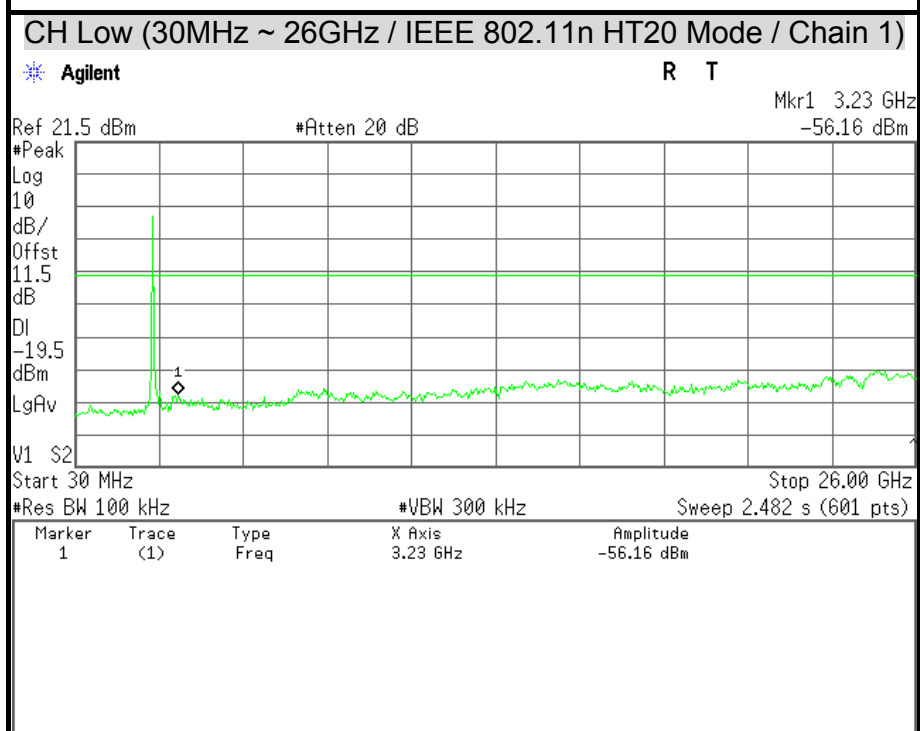
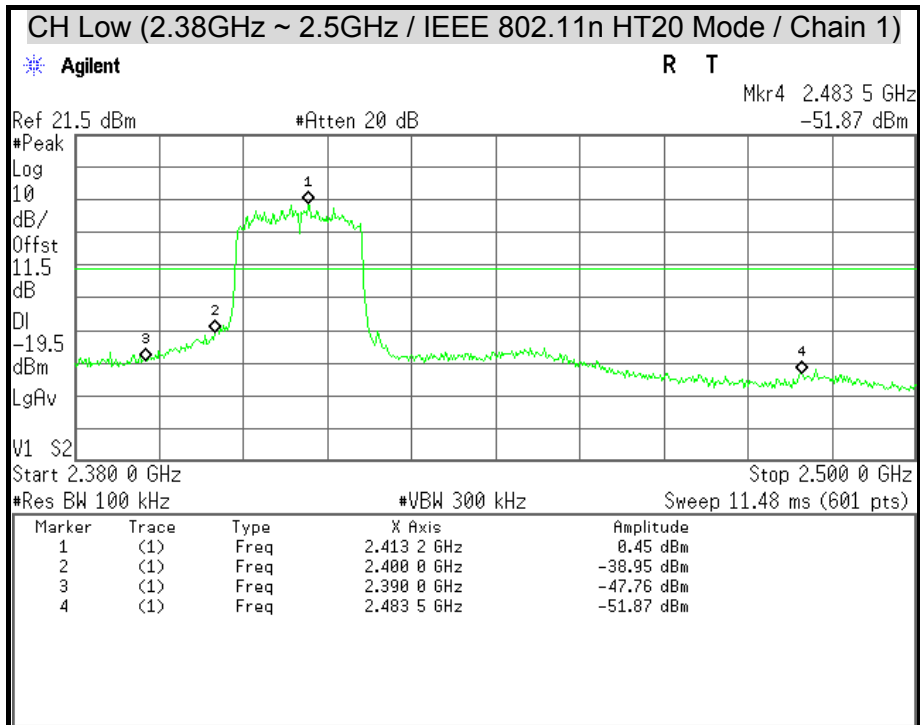


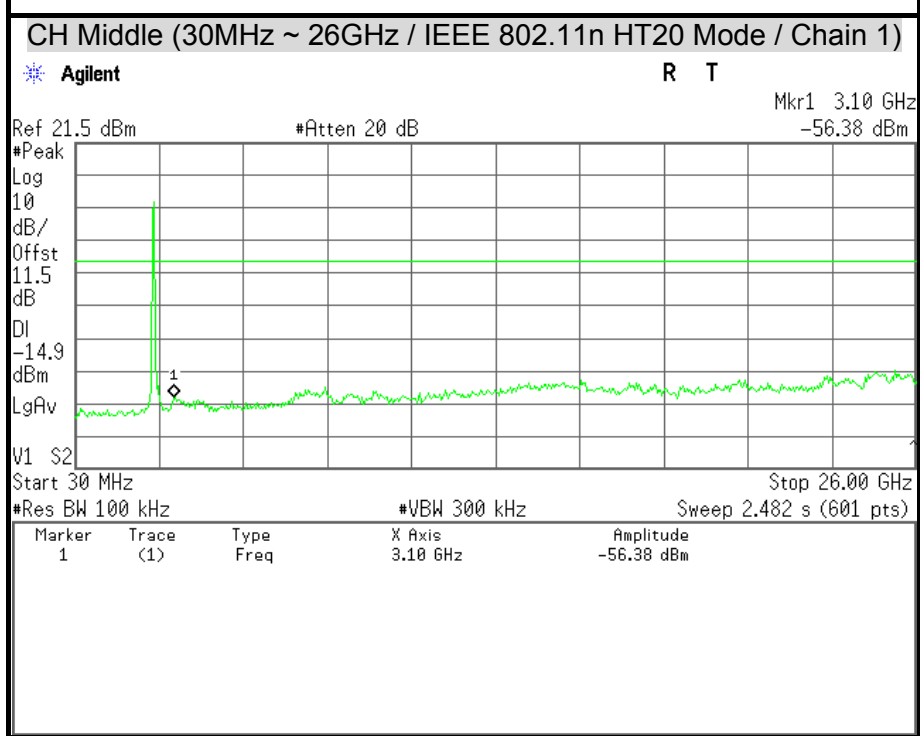
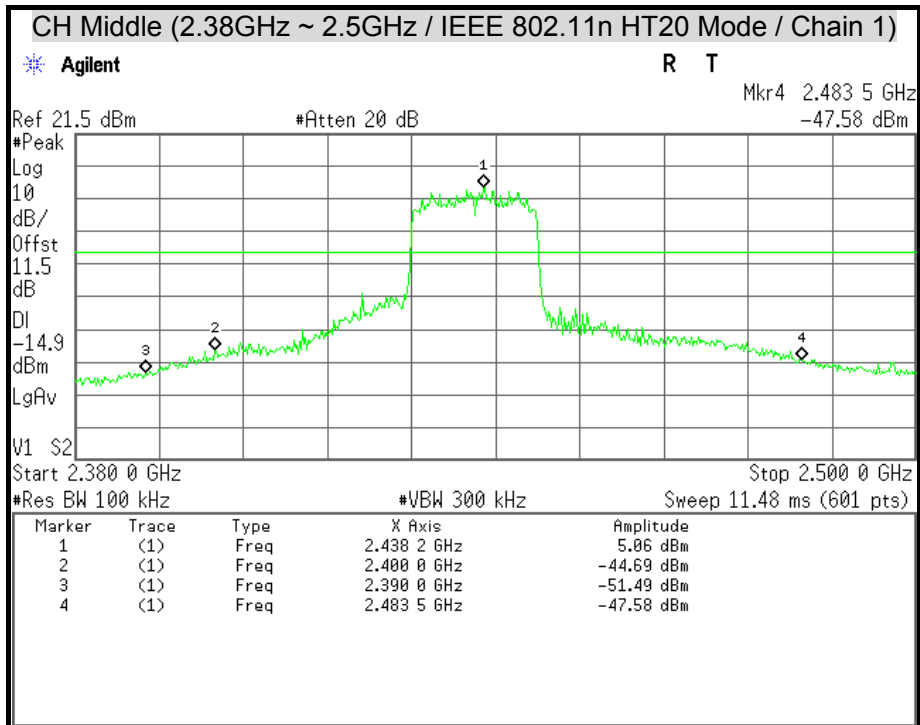


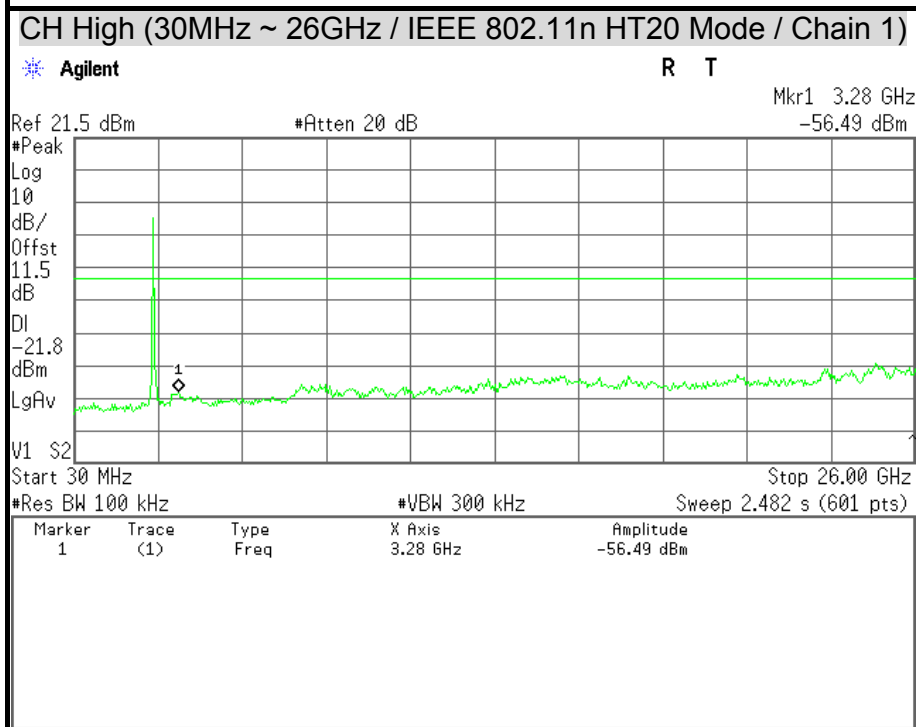
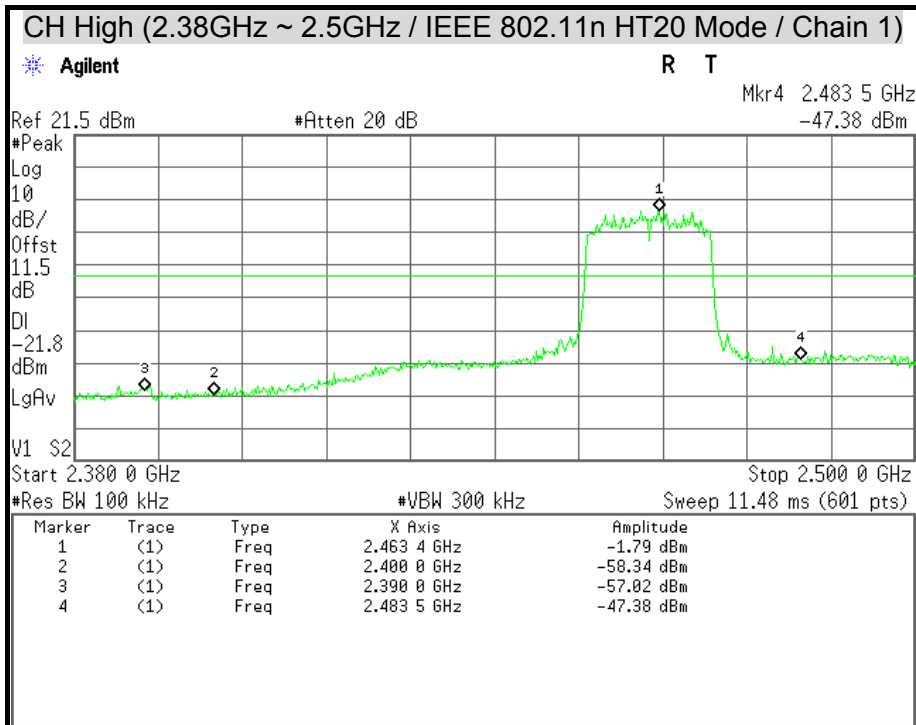


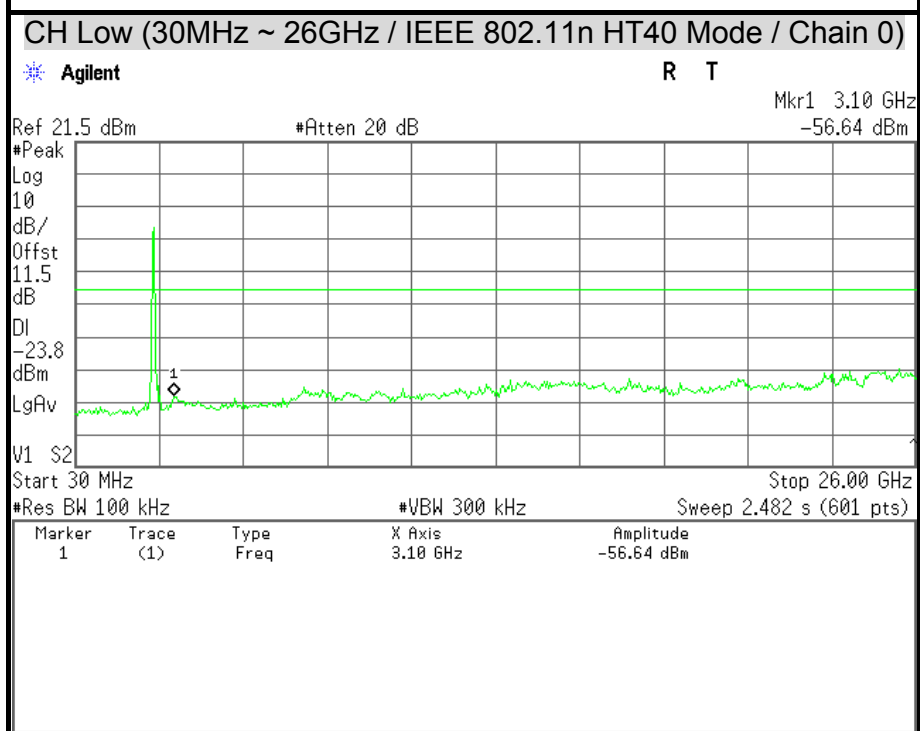
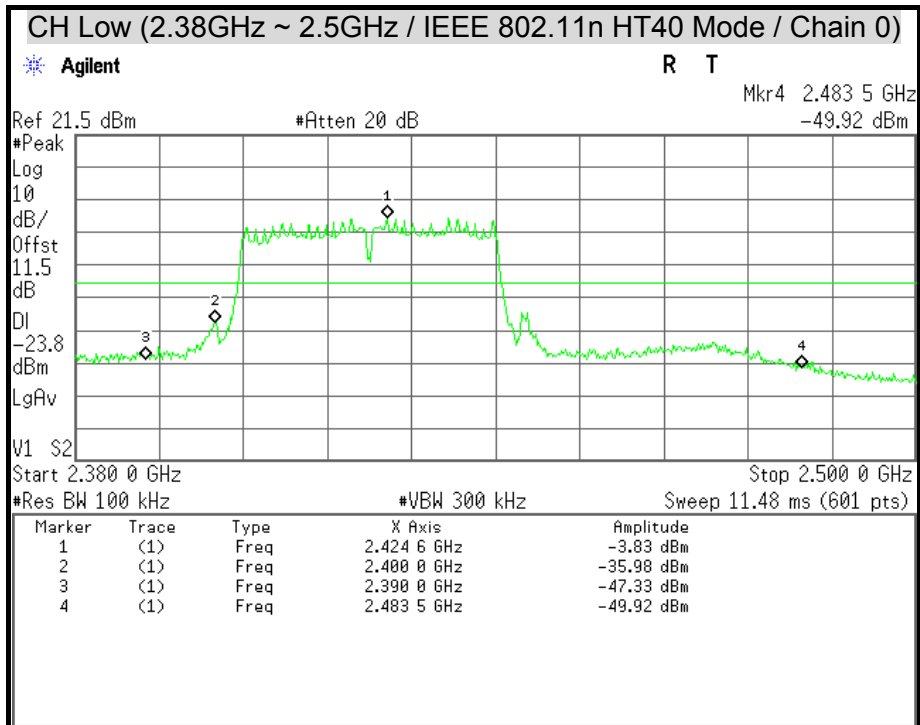


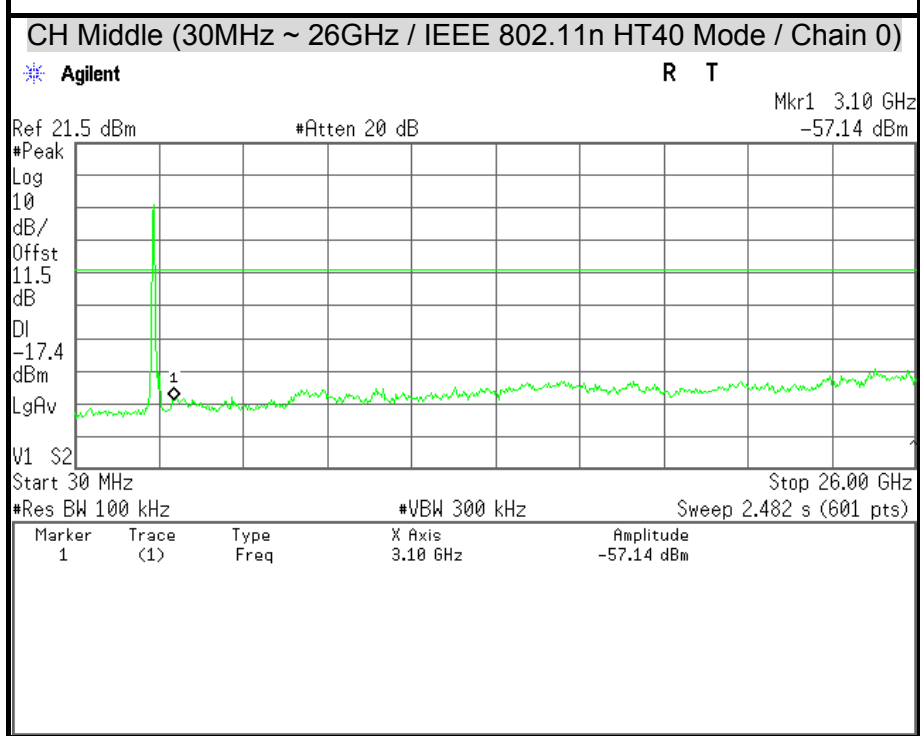
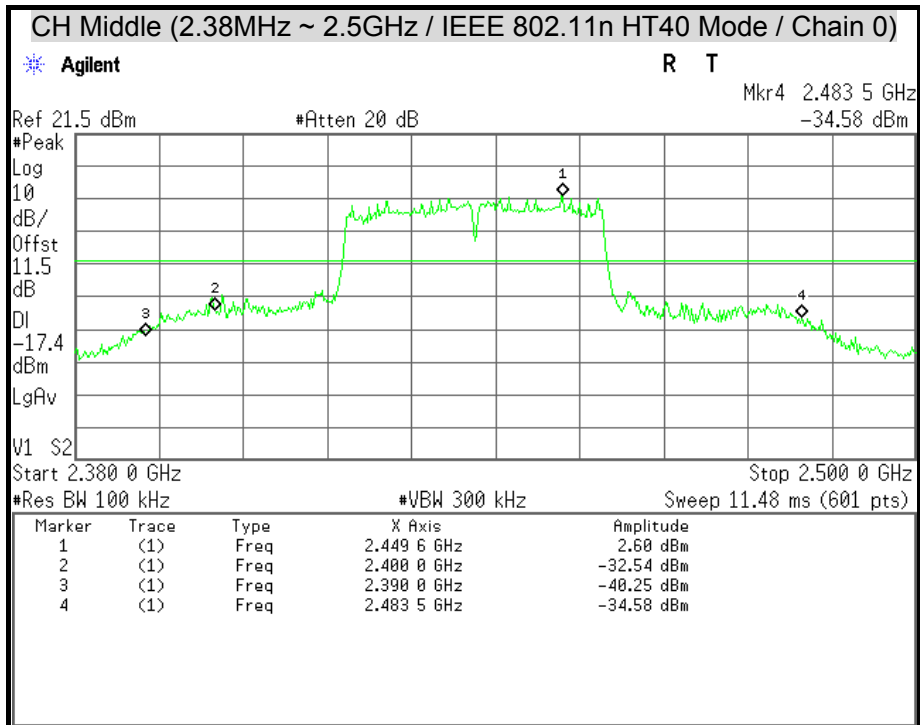


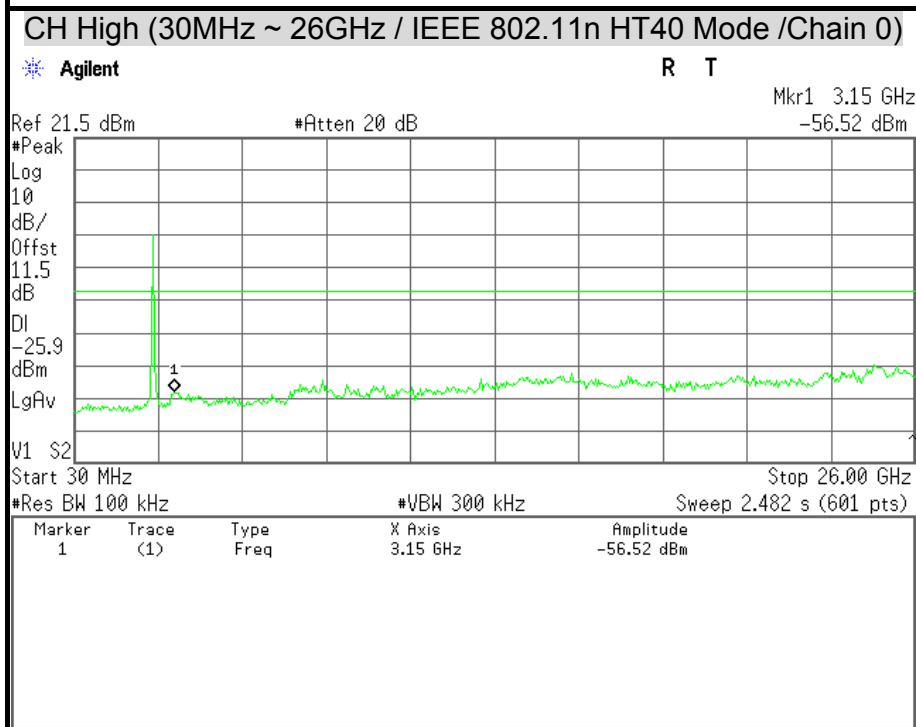
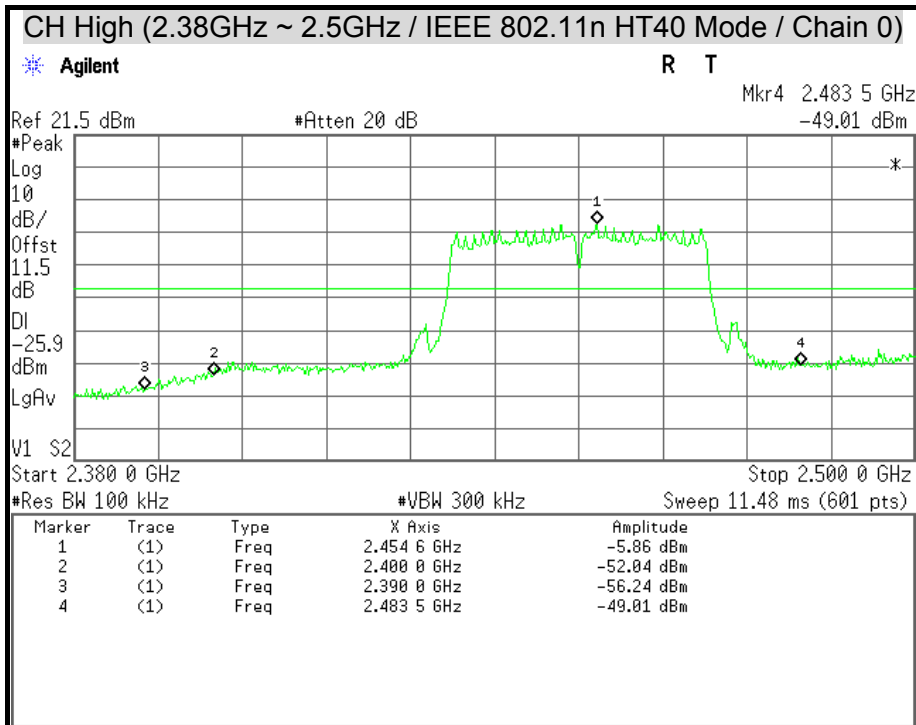


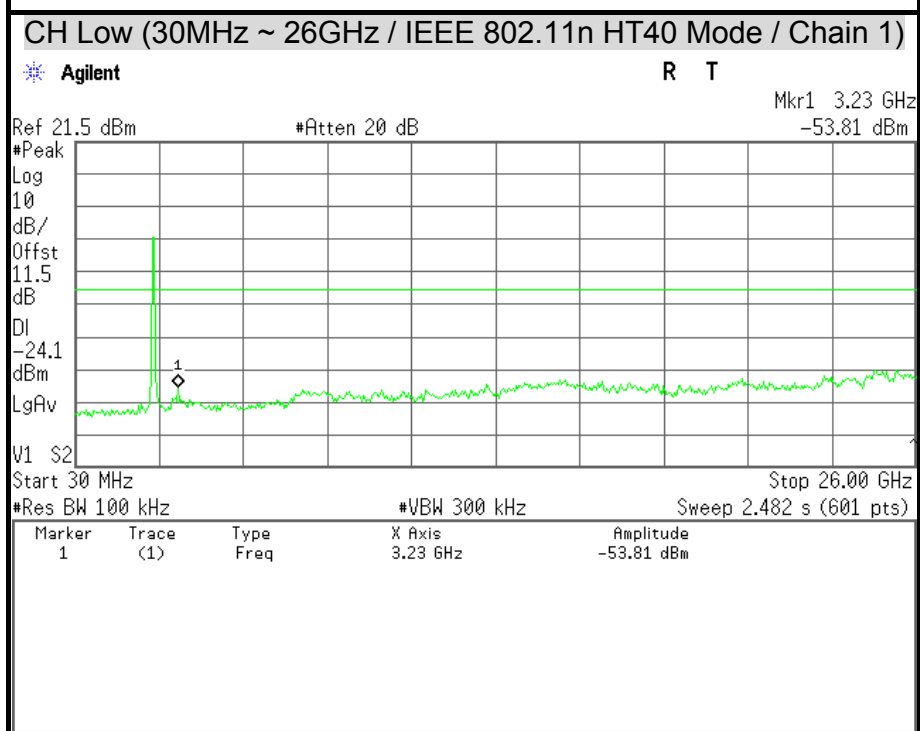
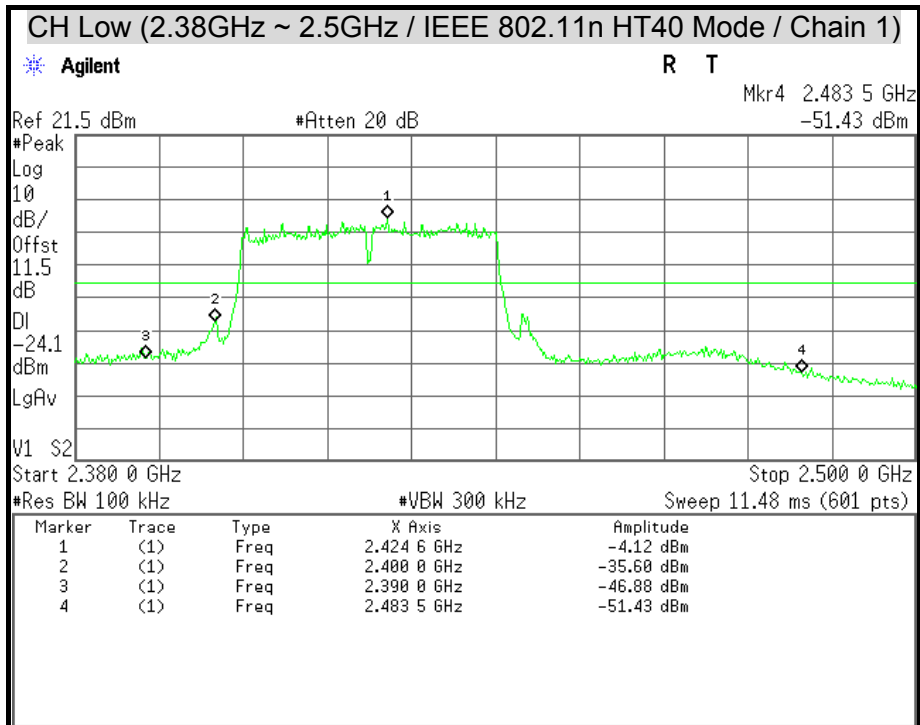


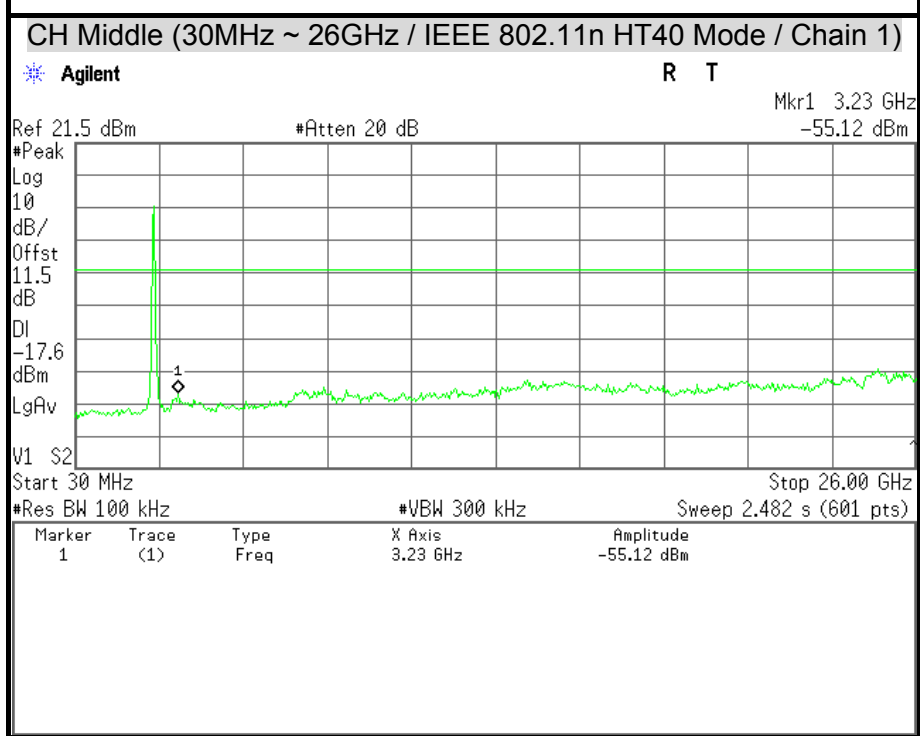
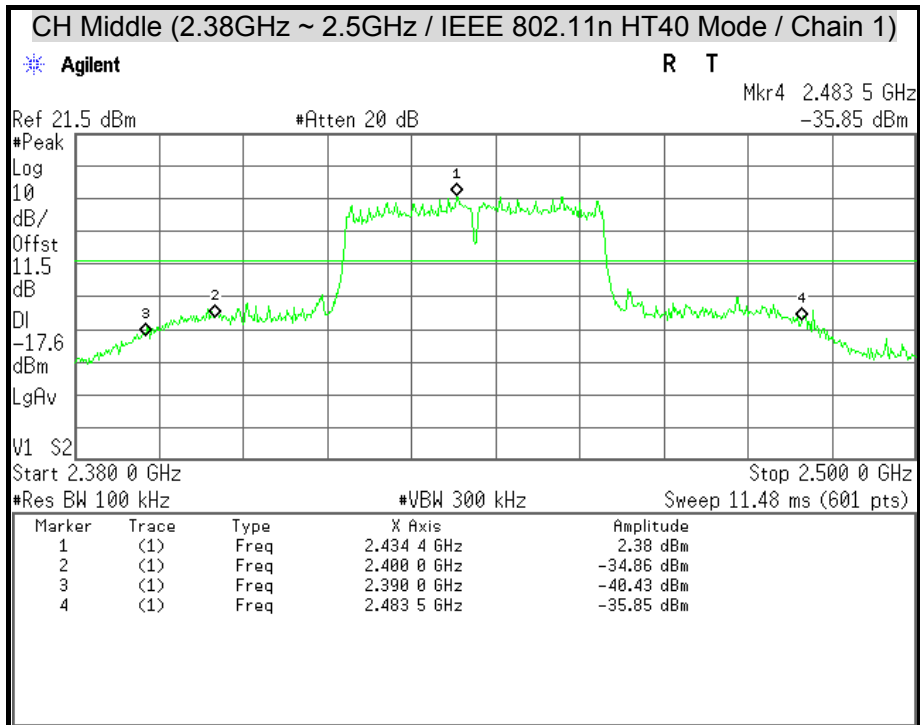


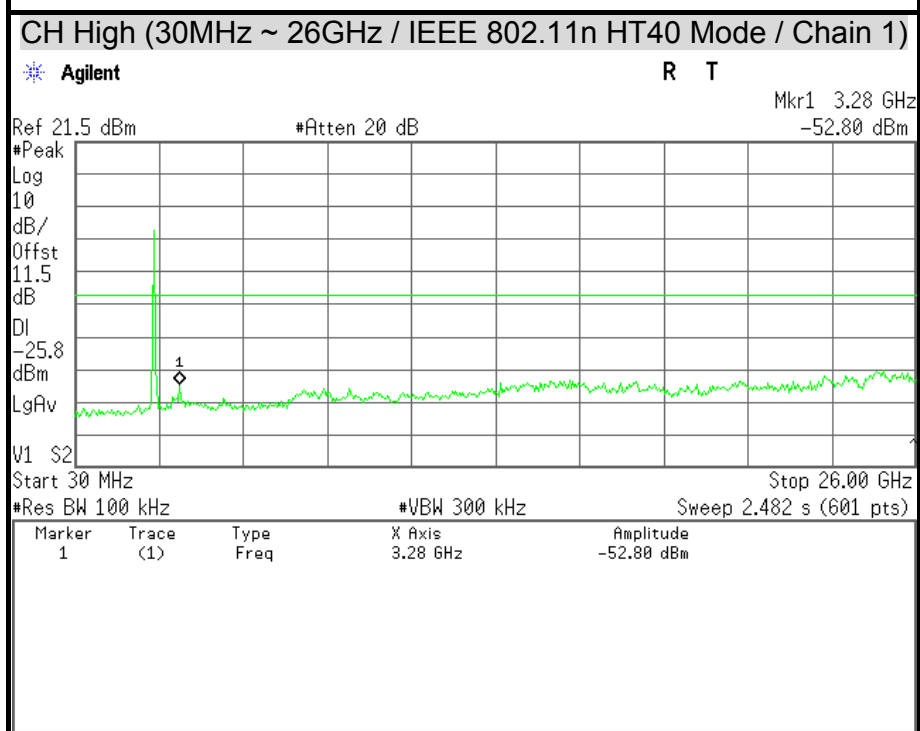
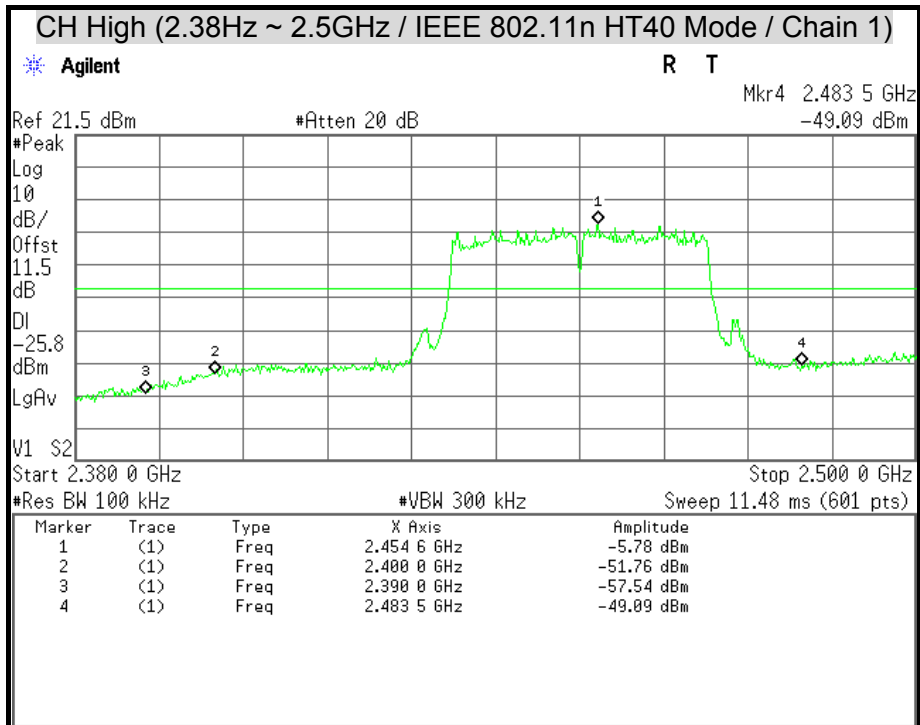














7.6 RADIATED EMISSION

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
¹ 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	(²)
13.36 - 13.41			

Remark:

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

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



(3) According to § 15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table :

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(KHz)	300
0.490 – 1.705	24000/F(KHz)	30
1.705 – 30.0	30	30
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

Remark: **Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

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

TEST EQUIPMENT

966Chamber_B

Name of Equipment	Manufacture	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY46180323	04/22/2013
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101131	01/14/2014
Bi-log Antenna	SCHWARZBECK	VULB 9168	9168-250	09/26/2013
Double-Ridged Waveguide Horn	ETS-LINDGREN	3117	00078733	12/11/2013
Horn Antenna	COM-POWER	AH-840	03077	12/20/2013
Pre-Amplifier	Agilent	8447D	2944A10052	07/17/2013
Pre-Amplifier	Agilent	8449B	3008A01916	07/17/2013
LOOP Antenna	EMCO	6502	8905-2356	06/10/2013
Notch Filters Band Reject	Micro-Tronics	BRM05702-01	026	N.C.R.
Band Reject Filter	Micro-Tronics	BRC50703-01	004	N.C.R.
Band Reject Filter	Micro-Tronics	BRC50704-01	004	N.C.R.
Band Reject Filter	Micro-Tronics	BRC50705-01	007	N.C.R.

Remark: 1. Each piece of equipment is scheduled for calibration once a year.

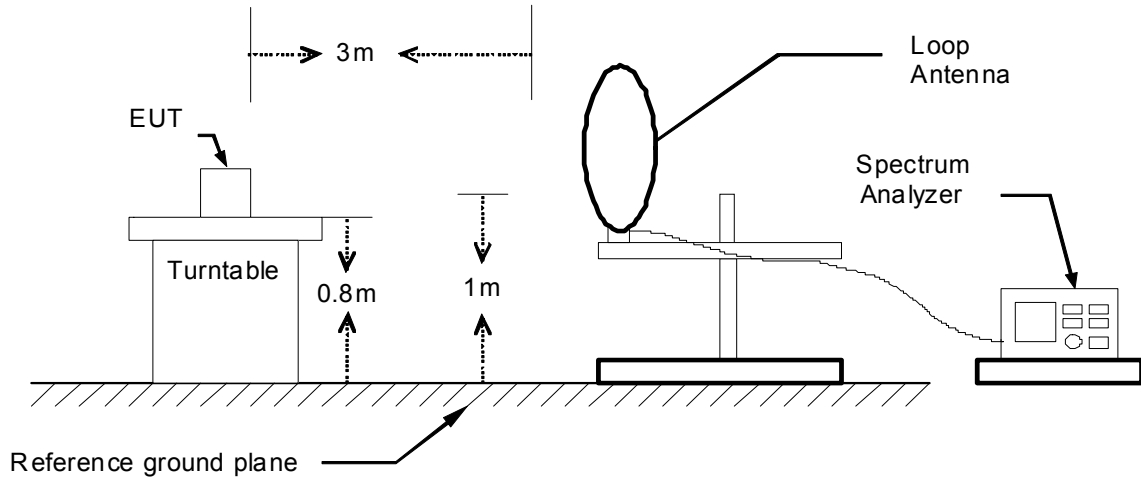
2. N.C.R = No Calibration Request.



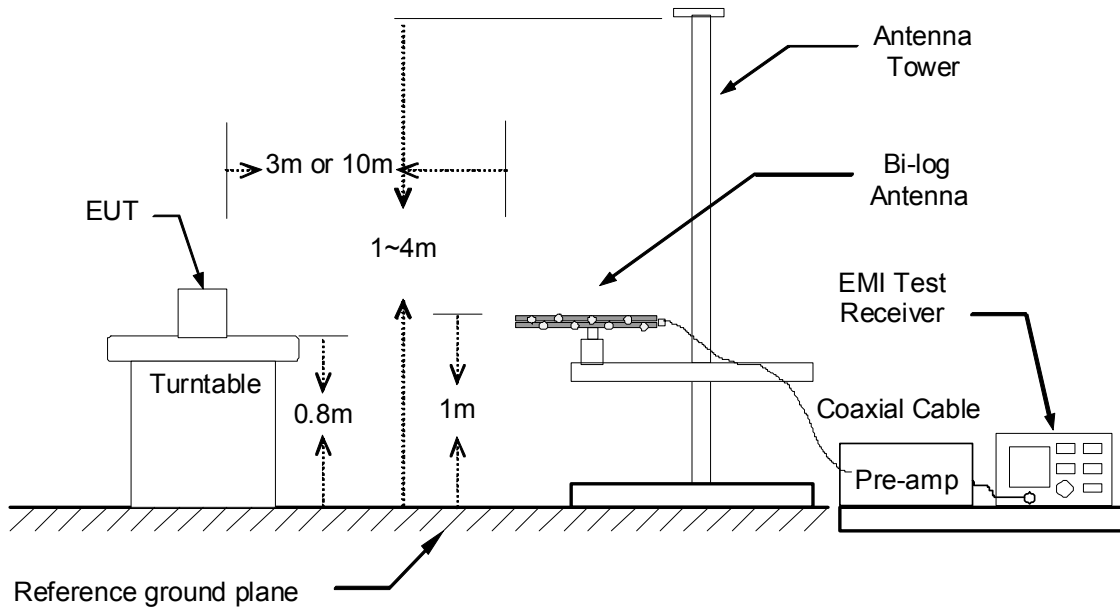
TEST SETUP

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

9kHz ~ 30MHz

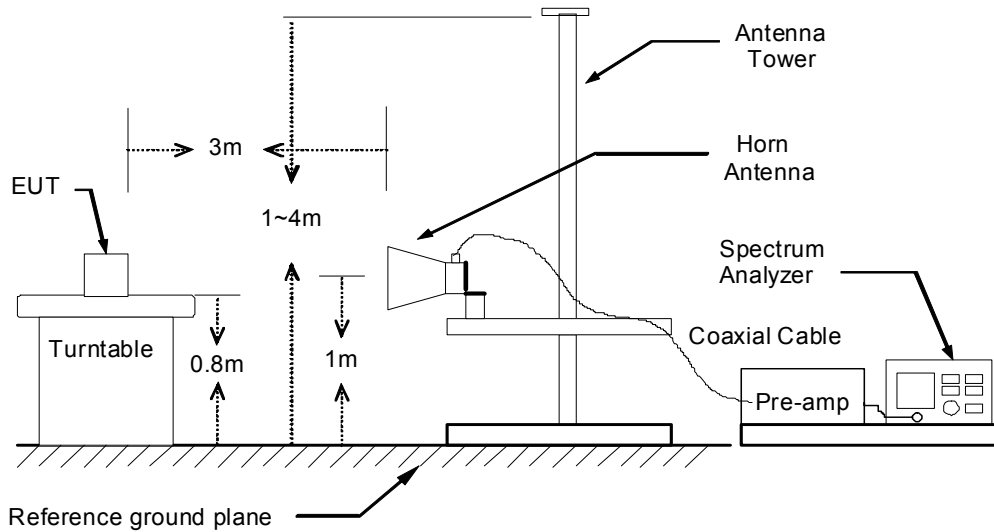


30MHz ~ 1GHz





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



TEST PROCEDURE

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground. 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)

Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Waternil Guan
Test Model	BiPAC 7800VDOX	Test Date	2013/01/28
Test Mode	Normal Operating	Temp. & Humidity	21°C, 48%

966 Chamber_B at 3Meter / Horizontal						
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark
30.97	45.08	-14.64	30.44	40.00	-9.56	Peak
127.00	46.94	-15.10	31.84	43.50	-11.66	Peak
233.70	50.63	-14.06	36.57	46.00	-9.43	Peak
375.32	42.87	-9.92	32.95	46.00	-13.05	Peak
624.61	43.27	-5.18	38.09	46.00	-7.91	Peak
749.74	40.86	-2.98	37.89	46.00	-8.11	Peak
874.87	38.53	-0.97	37.56	46.00	-8.44	Peak
960.23	38.23	0.06	38.30	54.00	-15.70	Peak

966 Chamber_B at 3Meter / Vertical						
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Remark
40.67	45.90	-13.58	32.32	40.00	-7.68	QP
126.03	49.98	-15.19	34.78	43.50	-8.72	Peak
375.32	42.69	-9.92	32.77	46.00	-13.23	Peak
624.61	40.30	-5.18	35.12	46.00	-10.88	Peak
666.32	38.28	-4.76	33.52	46.00	-12.48	Peak
749.74	39.11	-2.98	36.13	46.00	-9.87	Peak
874.87	37.98	-0.97	37.01	46.00	-8.99	Peak
960.23	37.44	0.06	37.50	54.00	-16.50	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

Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/22
Test Mode	IEEE 802.11a TX / CH Low / ANT 0	Temp. & Humidity	23°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
1275.00	45.74	---	-3.04	42.71	---	74.00	54.00	-11.29	Peak
1540.00	46.52	---	-1.89	44.63	---	74.00	54.00	-9.37	Peak
1975.00	44.30	---	2.03	46.32	---	74.00	54.00	-7.68	Peak
3050.00	50.10	32.50	5.10	55.20	37.60	74.00	54.00	-16.40	AVG
6276.00	36.75	---	12.15	48.89	---	74.00	54.00	-5.11	Peak
6648.00	36.26	---	12.76	49.02	---	74.00	54.00	-4.98	Peak
7800.00	35.90	---	14.10	50.00	---	74.00	54.00	-4.00	Peak
8664.00	35.01	---	13.89	48.90	---	74.00	54.00	-5.10	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
2040.00	44.46	---	2.39	46.84	---	74.00	54.00	-7.16	Peak
2410.00	45.17	---	3.64	48.81	---	74.00	54.00	-5.19	Peak
2950.00	45.06	---	4.89	49.95	---	74.00	54.00	-4.05	Peak
3830.00	51.30	34.30	6.79	58.09	41.09	74.00	54.00	-12.91	AVG
6432.00	35.35	---	12.47	47.82	---	74.00	54.00	-6.18	Peak
7200.00	37.36	---	13.26	50.62	---	74.00	54.00	-3.38	Peak
8112.00	35.01	---	14.31	49.32	---	74.00	54.00	-4.68	Peak
8592.00	35.14	---	13.73	48.87	---	74.00	54.00	-5.13	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)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/22
Test Mode	IEEE 802.11a TX / CH Middle / ANT 0	Temp. & Humidity	23°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
1160.00	46.41	---	-3.44	42.97	---	74.00	54.00	-11.03	Peak
2220.00	44.81	---	3.00	47.80	---	74.00	54.00	-6.20	Peak
2515.00	45.12	---	3.98	49.11	---	74.00	54.00	-4.89	Peak
3140.00	50.01	31.51	5.29	55.30	36.80	74.00	54.00	-17.20	AVG
6072.00	36.47	---	11.73	48.20	---	74.00	54.00	-5.80	Peak
6504.00	35.18	---	12.61	47.79	---	74.00	54.00	-6.21	Peak
7020.00	36.24	---	13.13	49.37	---	74.00	54.00	-4.63	Peak
7416.00	35.94	---	13.40	49.35	---	74.00	54.00	-4.65	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
1400.00	46.08	---	-2.60	43.48	---	74.00	54.00	-10.52	Peak
1780.00	45.68	---	0.27	45.95	---	74.00	54.00	-8.05	Peak
2525.00	45.29	---	4.00	49.30	---	74.00	54.00	-4.70	Peak
3855.00	51.70	33.90	6.84	58.54	40.74	74.00	54.00	-13.26	AVG
6060.00	36.70	---	11.70	48.41	---	74.00	54.00	-5.59	Peak
6396.00	34.97	---	12.40	47.36	---	74.00	54.00	-6.64	Peak
6696.00	35.59	---	12.81	48.40	---	74.00	54.00	-5.60	Peak
7044.00	35.62	---	13.15	48.77	---	74.00	54.00	-5.23	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)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/22
Test Mode	IEEE 802.11a TX / CH High / ANT 0	Temp. & Humidity	23°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
1225.00	46.50	---	-3.21	43.28	---	74.00	54.00	-10.72	Peak
1765.00	45.68	---	0.14	45.82	---	74.00	54.00	-8.18	Peak
2280.00	45.10	---	3.20	48.30	---	74.00	54.00	-5.70	Peak
3775.00	51.11	32.24	6.66	57.77	38.90	74.00	54.00	-15.10	AVG
6312.00	35.79	---	12.22	48.01	---	74.00	54.00	-5.99	Peak
6516.00	35.82	---	12.63	48.45	---	74.00	54.00	-5.55	Peak
7212.00	36.11	---	13.26	49.37	---	74.00	54.00	-4.63	Peak
7764.00	36.30	---	14.02	50.32	---	74.00	54.00	-3.68	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
1210.00	46.21	---	-3.27	42.94	---	74.00	54.00	-11.06	Peak
1800.00	45.37	---	0.45	45.82	---	74.00	54.00	-8.18	Peak
2515.00	44.49	---	3.98	48.47	---	74.00	54.00	-5.53	Peak
3885.00	50.30	29.70	6.91	57.21	36.61	74.00	54.00	-17.39	AVG
6012.00	37.70	---	11.60	49.31	---	74.00	54.00	-4.69	Peak
6624.00	35.88	---	12.74	48.62	---	74.00	54.00	-5.38	Peak
7116.00	36.63	---	13.20	49.83	---	74.00	54.00	-4.17	Peak
8040.00	35.41	---	14.45	49.86	---	74.00	54.00	-4.14	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)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/22
Test Mode	IEEE 802.11a TX / CH Low / ANT 1	Temp. & Humidity	23°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
1625.00	45.88	---	-1.12	44.76	---	74.00	54.00	-9.24	Peak
1740.00	44.84	---	-0.09	44.75	---	74.00	54.00	-9.25	Peak
2285.00	45.19	---	3.22	48.41	---	74.00	54.00	-5.59	Peak
3950.00	49.82	31.99	7.06	56.88	39.05	74.00	54.00	-14.95	AVG
6156.00	35.53	---	11.90	47.43	---	74.00	54.00	-6.57	Peak
6660.00	35.38	---	12.77	48.15	---	74.00	54.00	-5.85	Peak
7080.00	36.08	---	13.17	49.25	---	74.00	54.00	-4.75	Peak
7332.00	35.64	---	13.35	48.99	---	74.00	54.00	-5.01	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
1270.00	46.47	---	-3.06	43.42	---	74.00	54.00	-10.58	Peak
1745.00	45.39	---	-0.05	45.35	---	74.00	54.00	-8.65	Peak
2495.00	44.41	---	3.93	48.34	---	74.00	54.00	-5.66	Peak
3545.00	49.77	32.00	6.12	55.89	38.12	74.00	54.00	-15.88	AVG
6492.00	35.85	---	12.59	48.45	---	74.00	54.00	-5.55	Peak
6888.00	35.87	---	13.01	48.87	---	74.00	54.00	-5.13	Peak
7956.00	34.99	---	14.44	49.43	---	74.00	54.00	-4.57	Peak
8748.00	35.18	---	14.07	49.25	---	74.00	54.00	-4.75	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)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/22
Test Mode	IEEE 802.11a TX / CH Middle / ANT 1	Temp. & Humidity	23°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
1270.00	46.45	---	-3.06	43.40	---	74.00	54.00	-10.60	Peak
2000.00	45.03	---	2.25	47.28	---	74.00	54.00	-6.72	Peak
2515.00	45.47	---	3.98	49.45	---	74.00	54.00	-4.55	Peak
3055.00	49.41	33.59	5.11	54.52	38.70	74.00	54.00	-15.30	AVG
6084.00	36.07	---	11.75	47.83	---	74.00	54.00	-6.17	Peak
6420.00	36.70	---	12.45	49.15	---	74.00	54.00	-4.85	Peak
6696.00	36.13	---	12.81	48.94	---	74.00	54.00	-5.06	Peak
7704.00	35.88	---	13.90	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
1550.00	45.56	---	-1.80	43.76	---	74.00	54.00	-10.24	Peak
2335.00	44.94	---	3.39	48.33	---	74.00	54.00	-5.67	Peak
2540.00	45.22	---	4.03	49.25	---	74.00	54.00	-4.75	Peak
4065.00	48.81	30.90	7.33	56.14	38.23	74.00	54.00	-15.77	AVG
6084.00	43.50	32.60	11.75	55.25	44.35	74.00	54.00	-9.65	AVG
7200.00	36.60	---	13.26	49.86	---	74.00	54.00	-4.14	Peak
8184.00	35.94	---	14.16	50.10	---	74.00	54.00	-3.90	Peak
9228.00	39.70	32.10	15.05	54.75	47.15	74.00	54.00	-6.85	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/22
Test Mode	IEEE 802.11a TX / CH High / ANT 1	Temp. & Humidity	23°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
1320.00	45.69	---	-2.88	42.81	---	74.00	54.00	-11.19	Peak
2205.00	44.69	---	2.95	47.64	---	74.00	54.00	-6.36	Peak
3125.00	52.30	35.40	5.26	57.56	40.66	74.00	54.00	-13.34	AVG
4580.00	48.33	32.78	8.58	56.91	41.36	74.00	54.00	-12.64	AVG
6336.00	35.65	---	12.27	47.92	---	74.00	54.00	-6.08	Peak
7116.00	35.86	---	13.20	49.06	---	74.00	54.00	-4.94	Peak
7464.00	35.87	---	13.44	49.30	---	74.00	54.00	-4.70	Peak
7956.00	35.97	---	14.44	50.41	---	74.00	54.00	-3.59	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
1980.00	44.71	---	2.07	46.78	---	74.00	54.00	-7.22	Peak
2300.00	44.83	---	3.27	48.10	---	74.00	54.00	-5.90	Peak
2890.00	45.01	---	4.77	49.78	---	74.00	54.00	-4.22	Peak
4695.00	49.30	31.22	8.88	58.18	40.10	74.00	54.00	-13.90	AVG
6228.00	38.70	---	12.05	50.75	---	74.00	54.00	-3.25	Peak
6888.00	36.30	---	13.01	49.30	---	74.00	54.00	-4.70	Peak
7320.00	35.53	---	13.34	48.87	---	74.00	54.00	-5.13	Peak
7764.00	35.63	---	14.02	49.66	---	74.00	54.00	-4.34	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)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/22
Test Mode	IEEE 802.11an HT20 TX / CH Low	Temp. & Humidity	23°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
1685.00	46.83	---	-0.58	46.25	---	74.00	54.00	-7.75	Peak
2310.00	45.15	---	3.30	48.46	---	74.00	54.00	-5.54	Peak
2435.00	45.47	---	3.73	49.19	---	74.00	54.00	-4.81	Peak
3100.00	50.12	34.36	5.20	55.32	39.56	74.00	54.00	-14.44	AVG
6144.00	35.53	---	11.88	47.41	---	74.00	54.00	-6.59	Peak
6564.00	35.27	---	12.68	47.94	---	74.00	54.00	-6.06	Peak
7224.00	35.42	---	13.27	48.69	---	74.00	54.00	-5.31	Peak
8052.00	35.60	---	14.43	50.03	---	74.00	54.00	-3.97	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
1800.00	45.44	---	0.45	45.89	---	74.00	54.00	-8.11	Peak
2210.00	44.56	---	2.96	47.53	---	74.00	54.00	-6.47	Peak
2560.00	44.79	---	4.08	48.86	---	74.00	54.00	-5.14	Peak
3830.00	49.80	34.89	6.79	56.59	41.68	74.00	54.00	-12.32	AVG
6060.00	36.18	---	11.70	47.88	---	74.00	54.00	-6.12	Peak
6732.00	32.96	---	12.85	45.81	---	74.00	54.00	-8.19	Peak
7812.00	32.94	---	14.13	47.06	---	74.00	54.00	-6.94	Peak
8664.00	34.74	---	13.89	48.63	---	74.00	54.00	-5.37	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)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/22
Test Mode	IEEE 802.11an HT20 TX / CH Middle	Temp. & Humidity	23°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
1630.00	45.55	---	-1.08	44.47	---	74.00	54.00	-9.53	Peak
2170.00	45.02	---	2.83	47.85	---	74.00	54.00	-6.15	Peak
2850.00	45.12	---	4.68	49.81	---	74.00	54.00	-4.19	Peak
3825.00	49.20	34.12	6.77	55.97	40.89	74.00	54.00	-13.11	AVG
6084.00	38.72	---	11.75	50.48	---	74.00	54.00	-3.52	Peak
6372.00	37.98	---	12.35	50.33	---	74.00	54.00	-3.67	Peak
7212.00	42.44	33.91	13.26	55.70	47.17	74.00	54.00	-6.83	AVG
8520.00	43.50	34.30	13.57	57.07	47.87	74.00	54.00	-6.13	AVG

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
1625.00	45.46	---	-1.12	44.33	---	74.00	54.00	-9.67	Peak
2130.00	45.00	---	2.69	47.69	---	74.00	54.00	-6.31	Peak
2395.00	45.59	---	3.59	49.18	---	74.00	54.00	-4.82	Peak
3850.00	50.20	35.30	6.83	57.03	42.13	74.00	54.00	-11.87	AVG
6144.00	44.91	36.52	11.88	56.79	48.40	74.00	54.00	-5.60	AVG
6552.00	41.55	34.01	12.66	54.21	46.67	74.00	54.00	-7.33	AVG
7128.00	43.21	33.62	13.21	56.42	46.83	74.00	54.00	-7.17	AVG
7452.00	41.63	33.42	13.43	55.06	46.85	74.00	54.00	-7.15	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/22
Test Mode	IEEE 802.11an HT20 TX / CH High	Temp. & Humidity	23°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
1285.00	46.03	---	-3.00	43.02	---	74.00	54.00	-10.98	Peak
2120.00	45.18	---	2.66	47.84	---	74.00	54.00	-6.16	Peak
2460.00	44.47	---	3.81	48.28	---	74.00	54.00	-5.72	Peak
3205.00	50.36	32.40	5.42	55.78	37.82	74.00	54.00	-16.18	AVG
6156.00	38.05	---	11.90	49.95	---	74.00	54.00	-4.05	Peak
6504.00	38.33	---	12.61	50.95	---	74.00	54.00	-3.05	Peak
6864.00	42.81	33.54	12.98	55.79	46.52	74.00	54.00	-7.48	AVG
7452.00	40.87	32.34	13.43	54.30	45.77	74.00	54.00	-8.23	AVG

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
2050.00	44.96	---	2.42	47.38	---	74.00	54.00	-6.62	Peak
2520.00	45.16	---	3.99	49.16	---	74.00	54.00	-4.84	Peak
3055.00	50.03	33.98	5.11	55.14	39.09	74.00	54.00	-14.91	AVG
3885.00	53.22	36.02	6.91	60.13	42.93	74.00	54.00	-11.07	AVG
6288.00	46.90	36.70	12.17	59.07	48.87	74.00	54.00	-5.13	AVG
7176.00	42.30	33.60	13.24	55.54	46.84	74.00	54.00	-7.16	AVG
8208.00	40.30	30.55	14.11	54.41	44.66	74.00	54.00	-9.34	AVG
8976.00	43.97	34.88	14.57	58.54	49.45	74.00	54.00	-4.55	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/22
Test Mode	IEEE 802.11an HT40 TX / CH Low	Temp. & Humidity	23°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
2050.00	44.95	---	2.42	47.37	---	74.00	54.00	-6.63	Peak
2600.00	45.17	---	4.16	49.33	---	74.00	54.00	-4.67	Peak
3175.00	51.09	35.68	5.36	56.45	41.04	74.00	54.00	-12.96	AVG
3760.00	50.12	34.01	6.62	56.74	40.63	74.00	54.00	-13.37	AVG
6288.00	38.28	---	12.17	50.46	---	74.00	54.00	-3.54	Peak
7944.00	41.98	33.63	14.41	56.39	48.04	74.00	54.00	-5.96	AVG
8208.00	41.05	31.69	14.11	55.16	45.80	74.00	54.00	-8.20	AVG
9312.00	41.50	33.40	15.21	56.71	48.61	74.00	54.00	-5.39	AVG

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
1065.00	46.02	---	-3.77	42.25	---	74.00	54.00	-11.75	Peak
1625.00	45.40	---	-1.12	44.28	---	74.00	54.00	-9.72	Peak
2415.00	45.37	---	3.66	49.03	---	74.00	54.00	-4.97	Peak
3420.00	50.49	35.37	5.86	56.35	41.23	74.00	54.00	-12.77	AVG
6156.00	45.10	33.60	11.90	57.00	45.50	74.00	54.00	-8.50	AVG
6612.00	37.16	---	12.72	49.89	---	74.00	54.00	-4.11	Peak
7284.00	42.12	31.55	13.31	55.43	44.86	74.00	54.00	-9.14	AVG
7776.00	41.88	31.31	14.05	55.93	45.36	74.00	54.00	-8.64	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/22
Test Mode	IEEE 802.11an HT40 TX / CH High	Temp. & Humidity	23°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
1210.00	46.03	---	-3.27	42.76	---	74.00	54.00	-11.24	Peak
2075.00	45.00	---	2.51	47.51	---	74.00	54.00	-6.49	Peak
2800.00	44.81	---	4.58	49.39	---	74.00	54.00	-4.61	Peak
3900.00	47.22	33.97	6.95	54.17	40.92	74.00	54.00	-13.08	AVG
6108.00	38.45	---	11.80	50.25	---	74.00	54.00	-3.75	Peak
6348.00	37.97	---	12.30	50.27	---	74.00	54.00	-3.73	Peak
6624.00	37.73	---	12.74	50.47	---	74.00	54.00	-3.53	Peak
6900.00	37.86	---	13.02	50.88	---	74.00	54.00	-3.12	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
2050.00	44.85	---	2.42	47.27	---	74.00	54.00	-6.73	Peak
2625.00	45.35	---	4.21	49.56	---	74.00	54.00	-4.44	Peak
3330.00	51.62	36.45	5.67	57.29	42.12	74.00	54.00	-11.88	AVG
3865.00	51.04	35.73	6.87	57.91	42.60	74.00	54.00	-11.40	AVG
6168.00	48.63	32.66	11.93	60.56	44.59	74.00	54.00	-9.41	AVG
7092.00	42.05	31.90	13.18	55.23	45.08	74.00	54.00	-8.92	AVG
8040.00	43.10	31.50	14.45	57.55	45.95	74.00	54.00	-8.05	AVG
8736.00	42.30	32.10	14.04	56.34	46.14	74.00	54.00	-7.86	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11b TX / CH Low / ANT 0	Temp. & Humidity	23°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
1162.00	46.81	---	-3.43	43.37	---	74.00	54.00	-10.63	Peak
1438.00	46.23	---	-2.47	43.77	---	74.00	54.00	-10.23	Peak
2476.00	51.28	35.62	3.87	55.15	39.49	74.00	54.00	-14.51	AVG
2666.00	50.86	39.20	4.30	55.16	43.50	74.00	54.00	-10.50	AVG
3345.00	41.38	---	5.70	47.09	---	74.00	54.00	-6.91	Peak
3870.00	41.64	---	6.88	48.51	---	74.00	54.00	-5.49	Peak
4830.00	45.89	35.75	9.24	55.13	44.99	74.00	54.00	-9.01	AVG
7980.00	42.86	34.10	14.49	57.35	48.59	74.00	54.00	-5.41	AVG

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
1256.00	46.46	---	-3.10	43.36	---	74.00	54.00	-10.64	Peak
1900.00	45.46	---	1.35	46.81	---	74.00	54.00	-7.19	Peak
2556.00	58.41	43.35	4.07	62.48	47.42	74.00	54.00	-6.58	AVG
2666.00	55.06	47.85	4.30	59.36	52.15	74.00	54.00	-1.85	AVG
3075.00	42.84	---	5.15	48.00	---	74.00	54.00	-6.00	Peak
3705.00	41.08	---	6.50	47.57	---	74.00	54.00	-6.43	Peak
4830.00	48.76	44.72	9.24	58.00	53.96	74.00	54.00	-0.04	AVG
7230.00	43.99	37.16	13.28	57.27	50.44	74.00	54.00	-3.56	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11b TX / CH Middle / ANT 0	Temp. & Humidity	23°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
1666.00	45.51	---	-0.76	44.75	---	74.00	54.00	-9.25	Peak
2140.00	45.10	---	2.73	47.82	---	74.00	54.00	-6.18	Peak
2514.00	53.30	37.90	3.98	57.28	41.88	74.00	54.00	-12.12	AVG
2666.00	50.41	41.82	4.30	54.71	46.12	74.00	54.00	-7.88	AVG
3225.00	42.32	---	5.46	47.78	---	74.00	54.00	-6.22	Peak
4275.00	40.60	---	7.83	48.43	---	74.00	54.00	-5.57	Peak
4875.00	41.50	---	9.36	50.86	---	74.00	54.00	-3.14	Peak
7305.00	44.14	33.44	13.33	57.47	46.77	74.00	54.00	-7.23	AVG

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
1252.00	46.38	---	-3.12	43.26	---	74.00	54.00	-10.74	Peak
1730.00	45.52	---	-0.18	45.34	---	74.00	54.00	-8.66	Peak
2352.00	54.56	39.84	3.45	58.01	43.29	74.00	54.00	-10.71	AVG
2548.00	60.97	44.95	4.05	65.02	49.00	74.00	54.00	-5.00	AVG
3300.00	42.35	---	5.61	47.96	---	74.00	54.00	-6.04	Peak
3885.00	41.56	---	6.91	48.48	---	74.00	54.00	-5.52	Peak
4875.00	47.84	43.84	9.36	57.20	53.20	74.00	54.00	-0.80	AVG
7305.00	48.30	39.66	13.33	61.63	52.99	74.00	54.00	-1.01	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11b TX / CH High / ANT 0	Temp. & Humidity	23°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
1128.00	46.39	---	-3.55	42.84	---	74.00	54.00	-11.16	Peak
1626.00	45.91	---	-1.12	44.80	---	74.00	54.00	-9.20	Peak
1918.00	44.80	---	1.51	46.31	---	74.00	54.00	-7.69	Peak
2546.00	52.09	38.65	4.05	56.14	42.70	74.00	54.00	-11.30	AVG
3270.00	42.10	---	5.55	47.65	---	74.00	54.00	-6.35	Peak
3600.00	40.86	---	6.25	47.11	---	74.00	54.00	-6.89	Peak
3960.00	40.88	---	7.09	47.97	---	74.00	54.00	-6.03	Peak
4920.00	40.21	---	9.48	49.69	---	74.00	54.00	-4.31	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
1268.00	46.67	---	-3.06	43.61	---	74.00	54.00	-10.39	Peak
1640.00	46.02	---	-0.99	45.03	---	74.00	54.00	-8.97	Peak
1848.00	44.92	---	0.88	45.81	---	74.00	54.00	-8.19	Peak
2538.00	59.96	46.59	4.03	63.99	50.62	74.00	54.00	-3.38	AVG
3225.00	42.58	---	5.46	48.04	---	74.00	54.00	-5.96	Peak
4635.00	40.25	---	8.73	48.98	---	74.00	54.00	-5.02	Peak
4920.00	49.68	44.38	9.48	59.16	53.86	74.00	54.00	-0.14	AVG
7380.00	48.11	39.43	13.38	61.49	52.81	74.00	54.00	-1.19	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11b TX / CH Low / ANT 1	Temp. & Humidity	23°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
1160.00	46.72	---	-3.44	43.28	---	74.00	54.00	-10.72	Peak
1642.00	45.44	---	-0.97	44.46	---	74.00	54.00	-9.54	Peak
2568.00	52.22	39.10	4.09	56.31	43.19	74.00	54.00	-10.81	AVG
2948.00	45.41	---	4.89	50.30	---	74.00	54.00	-3.70	Peak
3180.00	42.78	---	5.37	48.15	---	74.00	54.00	-5.85	Peak
3825.00	41.14	---	6.77	47.91	---	74.00	54.00	-6.09	Peak
4065.00	40.83	---	7.33	48.16	---	74.00	54.00	-5.84	Peak
4830.00	45.02	38.45	9.24	54.26	47.69	74.00	54.00	-6.31	AVG

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
1160.00	45.76	---	-3.44	42.32	---	74.00	54.00	-11.68	Peak
1318.00	47.04	---	-2.89	44.15	---	74.00	54.00	-9.85	Peak
1814.00	46.81	---	0.58	47.39	---	74.00	54.00	-6.61	Peak
2572.00	59.79	46.54	4.10	63.89	50.64	74.00	54.00	-3.36	AVG
3210.00	44.61	---	5.43	50.04	---	74.00	54.00	-3.96	Peak
3705.00	41.98	---	6.50	48.48	---	74.00	54.00	-5.52	Peak
4830.00	50.58	44.46	9.24	59.82	53.70	74.00	54.00	-0.30	AVG
7230.00	44.46	37.00	13.28	57.74	50.28	74.00	54.00	-3.72	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11b TX / CH Middle / ANT 1	Temp. & Humidity	23°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
1126.00	46.69	---	-3.56	43.13	---	74.00	54.00	-10.87	Peak
1290.00	46.83	---	-2.98	43.84	---	74.00	54.00	-10.16	Peak
1746.00	46.00	---	-0.04	45.97	---	74.00	54.00	-8.03	Peak
2570.00	51.60	36.20	4.10	55.70	40.30	74.00	54.00	-13.70	AVG
3690.00	42.17	---	6.46	48.63	---	74.00	54.00	-5.37	Peak
3930.00	41.65	---	7.02	48.67	---	74.00	54.00	-5.33	Peak
4875.00	40.22	---	9.36	49.58	---	74.00	54.00	-4.42	Peak
5715.00	39.92	---	10.89	50.81	---	74.00	54.00	-3.19	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
1034.00	46.65	---	-3.88	42.77	---	74.00	54.00	-11.23	Peak
1952.00	45.88	---	1.82	47.70	---	74.00	54.00	-6.30	Peak
2346.00	53.92	36.96	3.43	57.35	40.39	74.00	54.00	-13.61	AVG
2570.00	58.98	43.95	4.10	63.08	48.05	74.00	54.00	-5.95	AVG
2784.00	45.41	---	4.55	49.96	---	74.00	54.00	-4.04	Peak
3255.00	43.57	---	5.52	49.09	---	74.00	54.00	-4.91	Peak
4230.00	40.75	---	7.73	48.48	---	74.00	54.00	-5.52	Peak
4875.00	48.45	44.33	9.36	57.81	53.69	74.00	54.00	-0.31	AVG
7305.00	45.14	37.42	13.33	58.47	50.75	74.00	54.00	-3.25	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11b TX / CH High / ANT 1	Temp. & Humidity	23°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
1288.00	47.15	---	-2.99	44.16	---	74.00	54.00	-9.84	Peak
1860.00	45.30	---	0.99	46.29	---	74.00	54.00	-7.71	Peak
2322.00	46.10	---	3.34	49.45	---	74.00	54.00	-4.55	Peak
2574.00	51.26	37.12	4.11	55.37	41.23	74.00	54.00	-12.77	AVG
3195.00	43.28	---	5.40	48.68	---	74.00	54.00	-5.32	Peak
3840.00	41.74	---	6.81	48.55	---	74.00	54.00	-5.45	Peak
4920.00	47.20	35.60	9.48	56.68	45.08	74.00	54.00	-8.92	AVG
7380.00	45.80	36.10	13.38	59.18	49.48	74.00	54.00	-4.52	AVG

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
1730.00	45.04	---	-0.18	44.86	---	74.00	54.00	-9.14	Peak
2378.00	54.12	37.92	3.54	57.66	41.46	74.00	54.00	-12.54	AVG
2540.00	59.82	46.09	4.03	63.85	50.12	74.00	54.00	-3.88	AVG
2698.00	50.53	34.66	4.37	54.90	39.03	74.00	54.00	-14.97	AVG
3975.00	41.83	---	7.12	48.95	---	74.00	54.00	-5.05	Peak
4920.00	49.11	43.73	9.48	58.59	53.21	74.00	54.00	-0.79	AVG
5475.00	39.96	---	10.34	50.29	---	74.00	54.00	-3.71	Peak
7380.00	46.64	37.68	13.38	60.02	51.06	74.00	54.00	-2.94	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11g TX / CH Low / ANT 0	Temp. & Humidity	23°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
1080.00	46.78	---	-3.72	43.06	---	74.00	54.00	-10.94	Peak
1462.00	47.51	---	-2.38	45.13	---	74.00	54.00	-8.87	Peak
1676.00	45.97	---	-0.67	45.31	---	74.00	54.00	-8.69	Peak
2570.00	53.70	39.70	4.10	57.80	43.80	74.00	54.00	-10.20	AVG
2666.00	50.93	43.10	4.30	55.23	47.40	74.00	54.00	-6.60	AVG
3165.00	42.41	---	5.34	47.74	---	74.00	54.00	-6.26	Peak
4020.00	41.66	---	7.23	48.89	---	74.00	54.00	-5.11	Peak
4410.00	41.27	---	8.16	49.43	---	74.00	54.00	-4.57	Peak
6135.00	39.05	---	11.86	50.91	---	74.00	54.00	-3.09	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
1320.00	46.44	---	-2.88	43.56	---	74.00	54.00	-10.44	Peak
1770.00	45.99	---	0.18	46.17	---	74.00	54.00	-7.83	Peak
2486.00	57.22	40.90	3.90	61.12	44.80	74.00	54.00	-9.20	AVG
2666.00	53.66	43.21	4.30	57.96	47.51	74.00	54.00	-6.49	AVG
3195.00	42.16	---	5.40	47.55	---	74.00	54.00	-6.45	Peak
4080.00	40.59	---	7.37	47.96	---	74.00	54.00	-6.04	Peak
4245.00	41.03	---	7.76	48.79	---	74.00	54.00	-5.21	Peak
4830.00	45.30	31.60	9.24	54.54	40.84	74.00	54.00	-13.16	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11g TX / CH Middle / ANT 0	Temp. & Humidity	23°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
1256.00	46.22	---	-3.10	43.12	---	74.00	54.00	-10.88	Peak
1626.00	45.57	---	-1.12	44.45	---	74.00	54.00	-9.55	Peak
2490.00	56.70	43.10	3.92	60.62	47.02	74.00	54.00	-6.98	AVG
2666.00	51.88	44.10	4.30	56.18	48.40	74.00	54.00	-5.60	AVG
3840.00	41.15	---	6.81	47.96	---	74.00	54.00	-6.04	Peak
4875.00	40.27	---	9.36	49.63	---	74.00	54.00	-4.37	Peak
5520.00	39.94	---	10.42	50.36	---	74.00	54.00	-3.64	Peak
5775.00	39.88	---	11.04	50.92	---	74.00	54.00	-3.08	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1098.00	46.70	---	-3.66	43.04	---	74.00	54.00	-10.96	Peak
1698.00	46.21	---	-0.47	45.75	---	74.00	54.00	-8.25	Peak
2390.00	61.66	43.48	3.58	65.24	47.06	74.00	54.00	-6.94	AVG
2488.00	65.88	44.76	3.91	69.79	48.67	74.00	54.00	-5.33	AVG
4410.00	40.79	---	8.16	48.94	---	74.00	54.00	-5.06	Peak
4875.00	46.60	34.20	9.36	55.96	43.56	74.00	54.00	-10.44	AVG
5865.00	39.20	---	11.25	50.45	---	74.00	54.00	-3.55	Peak
7305.00	45.80	36.40	13.33	59.13	49.73	74.00	54.00	-4.27	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11g TX / CH High / ANT 0	Temp. & Humidity	23°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
1778.00	45.89	---	0.25	46.15	---	74.00	54.00	-7.85	Peak
2438.00	52.90	41.10	3.74	56.64	44.84	74.00	54.00	-9.16	AVG
2492.00	55.21	46.30	3.92	59.13	50.22	74.00	54.00	-3.78	AVG
2534.00	53.30	45.80	4.02	57.32	49.82	74.00	54.00	-4.18	AVG
3450.00	41.18	---	5.92	47.10	---	74.00	54.00	-6.90	Peak
4470.00	40.29	---	8.30	48.59	---	74.00	54.00	-5.41	Peak
4920.00	39.96	---	9.48	49.44	---	74.00	54.00	-4.56	Peak
5670.00	39.08	---	10.78	49.86	---	74.00	54.00	-4.14	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
1538.00	45.76	---	-1.91	43.85	---	74.00	54.00	-10.15	Peak
1840.00	45.03	---	0.81	45.84	---	74.00	54.00	-8.16	Peak
2390.00	51.43	38.65	3.58	55.01	42.23	74.00	54.00	-11.77	AVG
2494.00	61.79	49.20	3.93	65.72	53.13	74.00	54.00	-0.87	AVG
3240.00	42.12	---	5.49	47.61	---	74.00	54.00	-6.39	Peak
4050.00	40.81	---	7.30	48.11	---	74.00	54.00	-5.89	Peak
4860.00	40.16	---	9.32	49.48	---	74.00	54.00	-4.52	Peak
6300.00	38.51	---	12.20	50.71	---	74.00	54.00	-3.29	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)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11g TX / CH Low / ANT 1	Temp. & Humidity	23°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
1536.00	46.18	---	-1.93	44.26	---	74.00	54.00	-9.74	Peak
1886.00	45.59	---	1.22	46.82	---	74.00	54.00	-7.18	Peak
2572.00	52.40	45.90	4.10	56.50	50.00	74.00	54.00	-4.00	AVG
2894.00	45.23	---	4.78	50.00	---	74.00	54.00	-4.00	Peak
4095.00	40.57	---	7.41	47.97	---	74.00	54.00	-6.03	Peak
4770.00	40.38	---	9.08	49.47	---	74.00	54.00	-4.53	Peak
5205.00	39.02	---	9.97	48.99	---	74.00	54.00	-5.01	Peak
6375.00	43.20	33.80	12.35	55.55	46.15	74.00	54.00	-7.85	AVG

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
1150.00	45.87	---	-3.47	42.39	---	74.00	54.00	-11.61	Peak
1412.00	46.59	---	-2.56	44.04	---	74.00	54.00	-9.96	Peak
1838.00	45.80	---	0.79	46.59	---	74.00	54.00	-7.41	Peak
2566.00	56.36	44.96	4.09	60.45	49.05	74.00	54.00	-4.95	AVG
3210.00	42.61	---	5.43	48.04	---	74.00	54.00	-5.96	Peak
4125.00	40.99	---	7.48	48.47	---	74.00	54.00	-5.53	Peak
4455.00	40.99	---	8.26	49.25	---	74.00	54.00	-4.75	Peak
5535.00	39.17	---	10.45	49.62	---	74.00	54.00	-4.38	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)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11g TX / CH Middle / ANT 1	Temp. & Humidity	23°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
1366.00	46.08	---	-2.72	43.36	---	74.00	54.00	-10.64	Peak
1626.00	46.43	---	-1.12	45.31	---	74.00	54.00	-8.69	Peak
1858.00	45.82	---	0.97	46.79	---	74.00	54.00	-7.21	Peak
2484.00	53.80	42.89	3.90	57.70	46.79	74.00	54.00	-7.21	AVG
3945.00	41.04	---	7.05	48.10	---	74.00	54.00	-5.90	Peak
4650.00	40.20	---	8.77	48.97	---	74.00	54.00	-5.03	Peak
5205.00	39.80	---	9.97	49.77	---	74.00	54.00	-4.23	Peak
6465.00	44.20	35.23	12.54	56.74	47.77	74.00	54.00	-6.23	AVG

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
1752.00	46.19	---	0.02	46.21	---	74.00	54.00	-7.79	Peak
2390.00	61.08	42.17	3.58	64.66	45.75	74.00	54.00	-8.25	AVG
2484.00	61.37	46.38	3.90	65.27	50.28	74.00	54.00	-3.72	AVG
2792.00	45.38	---	4.56	49.95	---	74.00	54.00	-4.05	Peak
3930.00	41.45	---	7.02	48.47	---	74.00	54.00	-5.53	Peak
4875.00	46.40	35.70	9.36	55.76	45.06	74.00	54.00	-8.94	AVG
7185.00	42.90	33.80	13.25	56.15	47.05	74.00	54.00	-6.95	AVG
8025.00	42.60	32.80	14.48	57.08	47.28	74.00	54.00	-6.72	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11g TX / CH High / ANT 1	Temp. & Humidity	23°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
1256.00	47.11	---	-3.10	44.01	---	74.00	54.00	-9.99	Peak
1956.00	46.24	---	1.85	48.10	---	74.00	54.00	-5.90	Peak
2390.00	45.82	---	3.58	49.40	---	74.00	54.00	-4.60	Peak
2562.00	53.40	45.30	4.08	57.48	49.38	74.00	54.00	-4.62	AVG
3615.00	41.83	---	6.29	48.12	---	74.00	54.00	-5.88	Peak
4260.00	40.34	---	7.80	48.14	---	74.00	54.00	-5.86	Peak
4950.00	39.49	---	9.56	49.04	---	74.00	54.00	-4.96	Peak
5505.00	39.03	---	10.38	49.41	---	74.00	54.00	-4.59	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
1128.00	46.12	---	-3.55	42.57	---	74.00	54.00	-11.43	Peak
1446.00	46.49	---	-2.44	44.05	---	74.00	54.00	-9.95	Peak
1750.00	45.76	---	0.00	45.76	---	74.00	54.00	-8.24	Peak
2544.00	58.79	47.26	4.04	62.83	51.30	74.00	54.00	-2.70	AVG
3195.00	42.63	---	5.40	48.03	---	74.00	54.00	-5.97	Peak
4515.00	40.21	---	8.41	48.62	---	74.00	54.00	-5.38	Peak
5550.00	39.31	---	10.49	49.80	---	74.00	54.00	-4.20	Peak
6315.00	42.10	33.70	12.23	54.33	45.93	74.00	54.00	-8.07	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11n HT20 TX / CH Low	Temp. & Humidity	23°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
1274.00	47.46	---	-3.04	44.41	---	74.00	54.00	-9.59	Peak
1686.00	46.01	---	-0.58	45.43	---	74.00	54.00	-8.57	Peak
2484.00	51.02	43.40	3.90	54.92	47.30	74.00	54.00	-6.70	AVG
2584.00	46.70	---	4.13	50.83	---	74.00	54.00	-3.17	Peak
3210.00	42.19	---	5.43	47.62	---	74.00	54.00	-6.38	Peak
3600.00	41.39	---	6.25	47.64	---	74.00	54.00	-6.36	Peak
4125.00	40.54	---	7.48	48.02	---	74.00	54.00	-5.98	Peak
4410.00	40.32	---	8.16	48.47	---	74.00	54.00	-5.53	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1876.00	45.90	---	1.13	47.04	---	74.00	54.00	-6.96	Peak
1950.00	45.67	---	1.80	47.47	---	74.00	54.00	-6.53	Peak
2486.00	57.12	48.22	3.90	61.02	52.12	74.00	54.00	-1.88	AVG
2904.00	45.00	---	4.80	49.80	---	74.00	54.00	-4.20	Peak
3555.00	41.46	---	6.15	47.61	---	74.00	54.00	-6.39	Peak
4815.00	40.79	---	9.20	49.99	---	74.00	54.00	-4.01	Peak
5400.00	40.19	---	10.23	50.43	---	74.00	54.00	-3.57	Peak
6510.00	43.10	34.55	12.62	55.72	47.17	74.00	54.00	-6.83	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11n HT20 TX / CH Middle	Temp. & Humidity	23°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
1254.00	46.89	---	-3.11	43.77	---	74.00	54.00	-10.23	Peak
1628.00	46.10	---	-1.10	45.01	---	74.00	54.00	-8.99	Peak
2390.00	56.00	39.52	3.58	59.58	43.10	74.00	54.00	-10.90	AVG
2486.00	59.13	39.24	3.90	63.03	43.14	74.00	54.00	-10.86	AVG
3900.00	41.96	---	6.95	48.90	---	74.00	54.00	-5.10	Peak
4305.00	41.43	---	7.91	49.33	---	74.00	54.00	-4.67	Peak
5535.00	39.35	---	10.45	49.81	---	74.00	54.00	-4.19	Peak
6165.00	38.92	---	11.92	50.84	---	74.00	54.00	-3.16	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
1268.00	47.07	---	-3.06	44.01	---	74.00	54.00	-9.99	Peak
1936.00	45.14	---	1.67	46.82	---	74.00	54.00	-7.18	Peak
2390.00	62.58	44.31	3.58	66.16	47.89	74.00	54.00	-6.11	AVG
2484.00	66.26	47.06	3.90	70.16	50.96	74.00	54.00	-3.04	AVG
3495.00	42.03	---	6.01	48.04	---	74.00	54.00	-5.96	Peak
4575.00	40.42	---	8.57	48.99	---	74.00	54.00	-5.01	Peak
4875.00	46.70	37.05	9.36	56.06	46.41	74.00	54.00	-7.59	AVG
7305.00	46.20	37.20	13.33	59.53	50.53	74.00	54.00	-3.47	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11n HT20 TX / CH High	Temp. & Humidity	23°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
1098.00	47.19	---	-3.66	43.54	---	74.00	54.00	-10.46	Peak
1476.00	46.74	---	-2.33	44.41	---	74.00	54.00	-9.59	Peak
1888.00	45.15	---	1.24	46.39	---	74.00	54.00	-7.61	Peak
2318.00	45.51	---	3.33	48.84	---	74.00	54.00	-5.16	Peak
3330.00	41.96	---	5.67	47.63	---	74.00	54.00	-6.37	Peak
3915.00	41.41	---	6.98	48.40	---	74.00	54.00	-5.60	Peak
4680.00	40.60	---	8.85	49.45	---	74.00	54.00	-4.55	Peak
5430.00	39.92	---	10.27	50.19	---	74.00	54.00	-3.81	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
1162.00	47.02	---	-3.43	43.58	---	74.00	54.00	-10.42	Peak
1410.00	46.32	---	-2.57	43.75	---	74.00	54.00	-10.25	Peak
1906.00	46.59	---	1.40	47.99	---	74.00	54.00	-6.01	Peak
2666.00	51.20	42.80	4.30	55.50	47.10	74.00	54.00	-6.90	AVG
3240.00	42.33	---	5.49	47.82	---	74.00	54.00	-6.18	Peak
4125.00	41.77	---	7.48	49.25	---	74.00	54.00	-4.75	Peak
5415.00	40.48	---	10.25	50.74	---	74.00	54.00	-3.26	Peak
6390.00	43.30	35.10	12.38	55.68	47.48	74.00	54.00	-6.52	AVG

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Average test would be performed if the peak result were greater than the average limit.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(AV)
Remark AVG = Result(AV) - Limit(AV)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11n HT40 TX / CH Low	Temp. & Humidity	23°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
1126.00	46.84	---	-3.56	43.28	---	74.00	54.00	-10.72	Peak
1700.00	45.26	---	-0.45	44.81	---	74.00	54.00	-9.19	Peak
1780.00	45.88	---	0.27	46.15	---	74.00	54.00	-7.85	Peak
2484.00	51.30	43.20	3.90	55.20	47.10	74.00	54.00	-6.90	AVG
3225.00	42.75	---	5.46	48.21	---	74.00	54.00	-5.79	Peak
3600.00	42.64	---	6.25	48.89	---	74.00	54.00	-5.11	Peak
3990.00	41.71	---	7.16	48.87	---	74.00	54.00	-5.13	Peak
4530.00	41.39	---	8.45	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
1354.00	45.90	---	-2.76	43.14	---	74.00	54.00	-10.86	Peak
1810.00	45.89	---	0.54	46.43	---	74.00	54.00	-7.57	Peak
2486.00	59.20	45.70	3.90	63.10	49.60	74.00	54.00	-4.40	AVG
2876.00	45.12	---	4.74	49.86	---	74.00	54.00	-4.14	Peak
3225.00	43.00	---	5.46	48.46	---	74.00	54.00	-5.54	Peak
3825.00	41.50	---	6.77	48.28	---	74.00	54.00	-5.72	Peak
4530.00	40.11	---	8.45	48.56	---	74.00	54.00	-5.44	Peak
4830.00	40.92	---	9.24	50.16	---	74.00	54.00	-3.84	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)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11n HT40 TX / CH Middle	Temp. & Humidity	23°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
1854.00	45.87	---	0.94	46.81	---	74.00	54.00	-7.19	Peak
2390.00	53.45	43.70	3.58	57.03	47.28	74.00	54.00	-6.72	AVG
2484.00	55.81	44.90	3.90	59.71	48.80	74.00	54.00	-5.20	AVG
2846.00	46.27	---	4.68	50.95	---	74.00	54.00	-3.05	Peak
3225.00	42.64	---	5.46	48.10	---	74.00	54.00	-5.90	Peak
3870.00	42.45	---	6.88	49.33	---	74.00	54.00	-4.67	Peak
4590.00	40.31	---	8.61	48.91	---	74.00	54.00	-5.09	Peak
5250.00	39.54	---	10.03	49.57	---	74.00	54.00	-4.43	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
1540.00	46.41	---	-1.89	44.52	---	74.00	54.00	-9.48	Peak
1658.00	46.60	---	-0.83	45.77	---	74.00	54.00	-8.23	Peak
2390.00	62.29	46.17	3.58	65.87	49.75	74.00	54.00	-4.25	AVG
2484.00	63.92	47.10	3.90	67.82	51.00	74.00	54.00	-3.00	AVG
3225.00	42.95	---	5.46	48.41	---	74.00	54.00	-5.59	Peak
3600.00	42.57	---	6.25	48.82	---	74.00	54.00	-5.18	Peak
3945.00	41.95	---	7.05	49.01	---	74.00	54.00	-4.99	Peak
4875.00	40.87	---	9.36	50.23	---	74.00	54.00	-3.77	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)



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Allen Liu
Test Model	BiPAC 7800VDOX	Test Date	2013/01/18
Test Mode	IEEE 802.11n HT40 TX / CH High	Temp. & Humidity	23°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
1036.00	47.82	---	-3.87	43.95	---	74.00	54.00	-10.05	Peak
1366.00	45.74	---	-2.72	43.02	---	74.00	54.00	-10.98	Peak
1814.00	45.20	---	0.58	45.78	---	74.00	54.00	-8.22	Peak
2796.00	44.80	---	4.57	49.38	---	74.00	54.00	-4.62	Peak
3180.00	42.63	---	5.37	48.00	---	74.00	54.00	-6.00	Peak
3675.00	42.04	---	6.43	48.47	---	74.00	54.00	-5.53	Peak
4665.00	40.31	---	8.81	49.12	---	74.00	54.00	-4.88	Peak
5385.00	39.50	---	10.21	49.71	---	74.00	54.00	-4.29	Peak

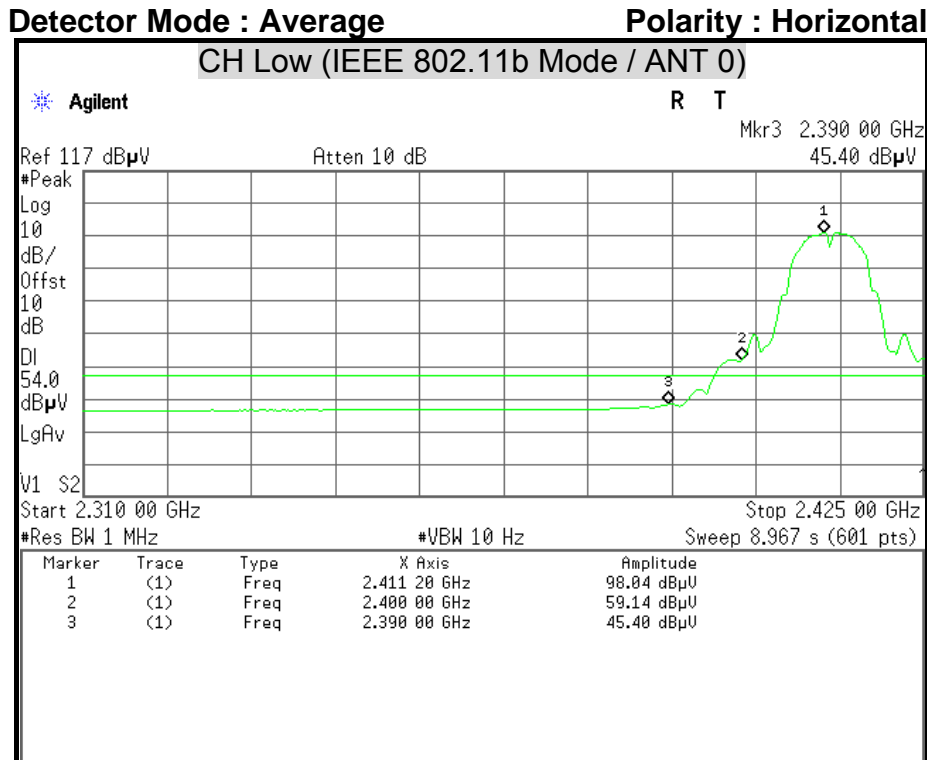
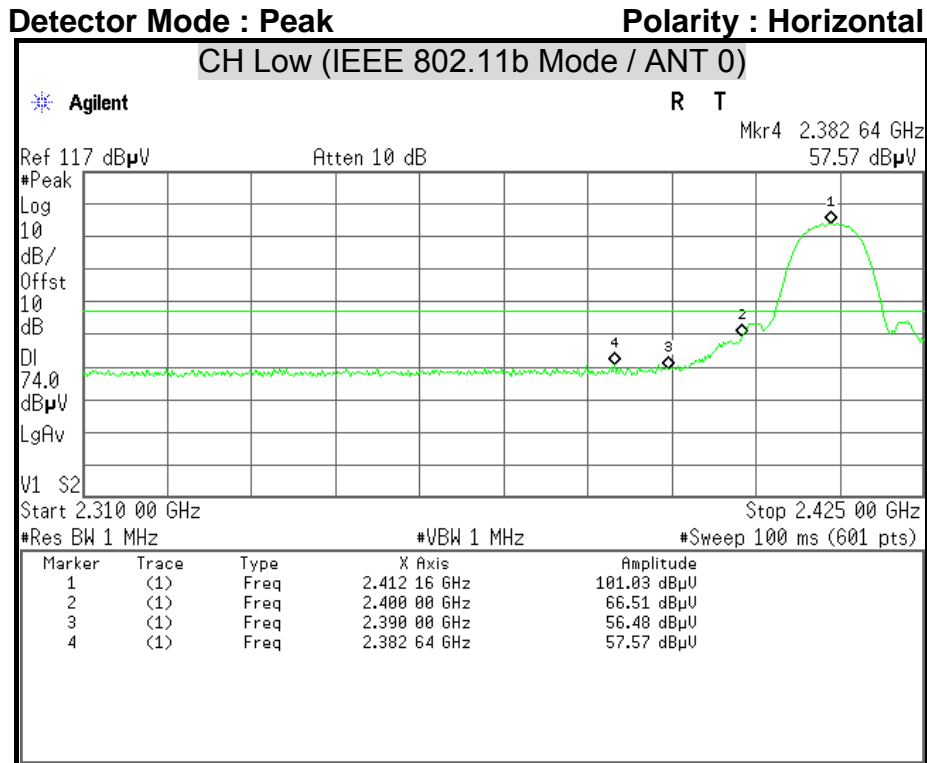
966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1714.00	46.11	---	-0.32	45.79	---	74.00	54.00	-8.21	Peak
1922.00	45.35	---	1.55	46.90	---	74.00	54.00	-7.10	Peak
2390.00	54.89	46.80	3.58	58.47	50.38	74.00	54.00	-3.62	AVG
2668.00	45.64	---	4.30	49.94	---	74.00	54.00	-4.06	Peak
3210.00	42.08	---	5.43	47.51	---	74.00	54.00	-6.49	Peak
3975.00	41.03	---	7.12	48.15	---	74.00	54.00	-5.85	Peak
4665.00	40.27	---	8.81	49.08	---	74.00	54.00	-4.92	Peak
5580.00	39.29	---	10.56	49.85	---	74.00	54.00	-4.15	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)



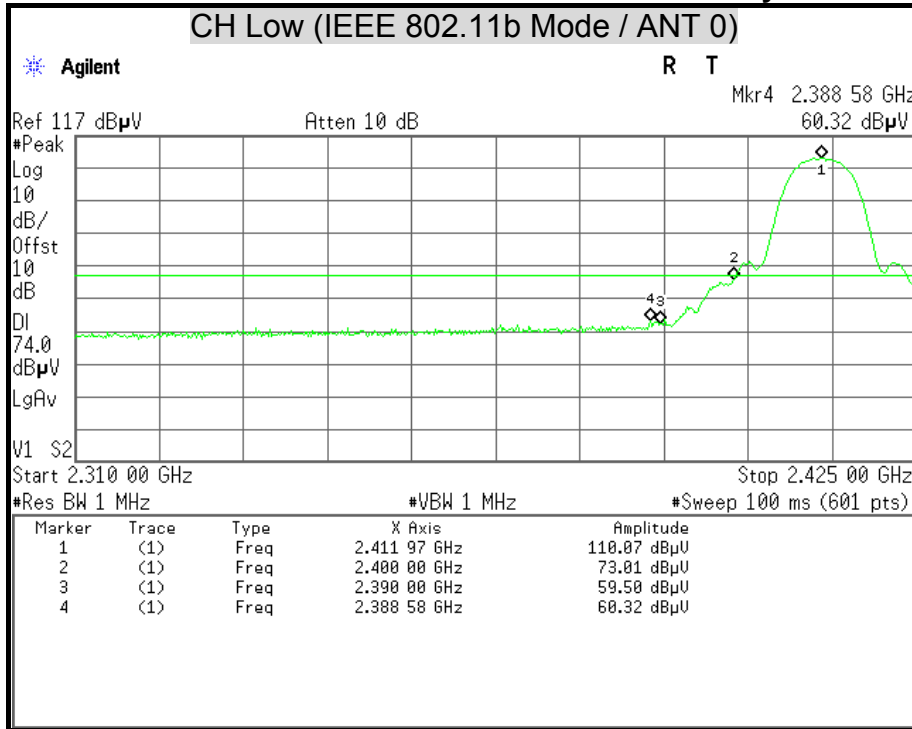
Restricted Band Edges





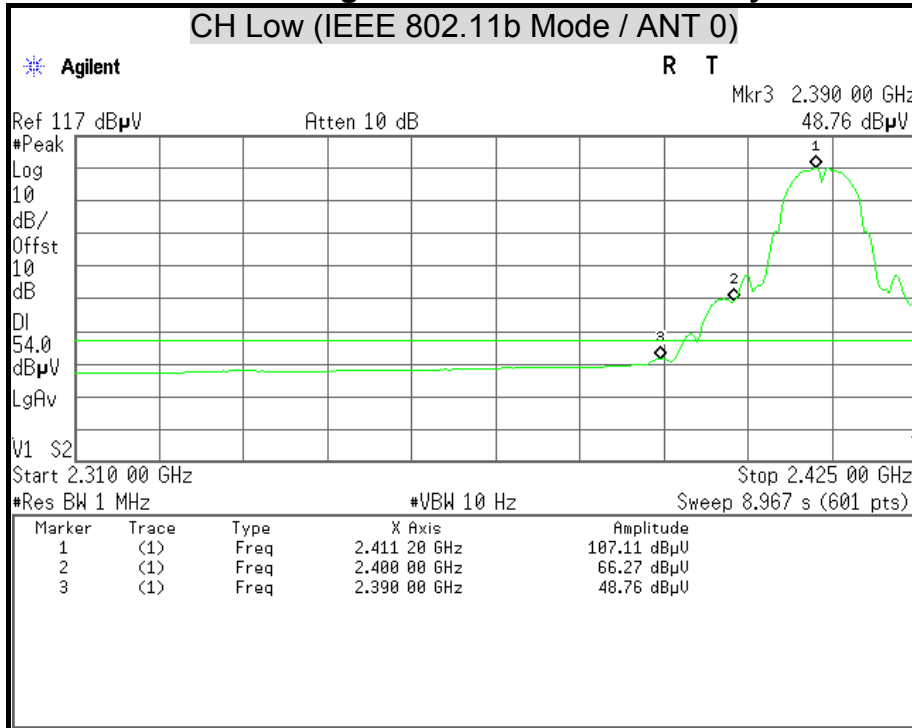
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

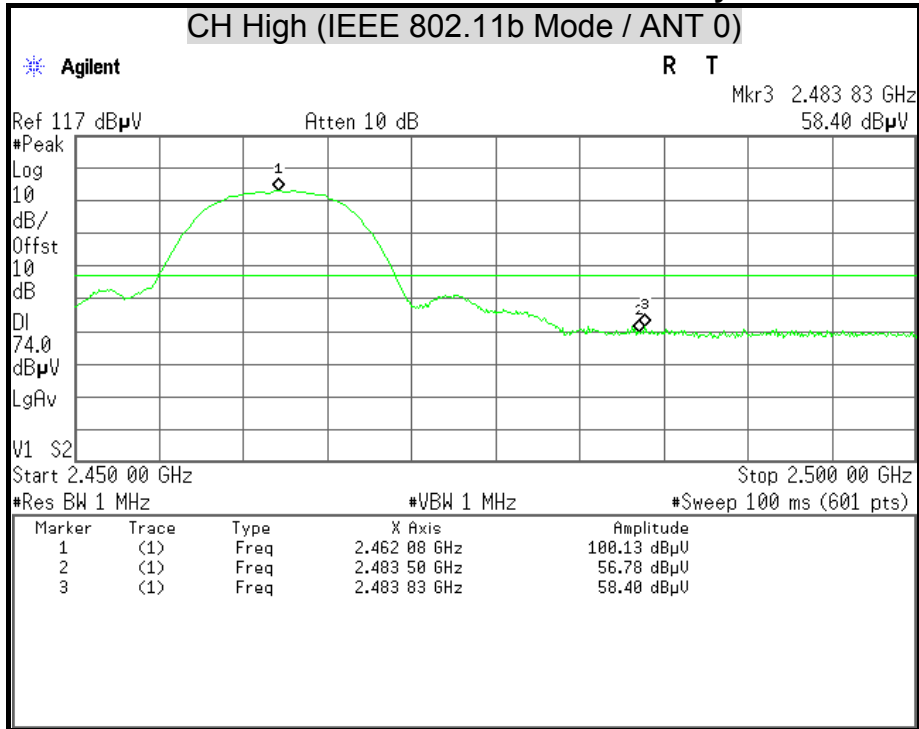
Polarity : Vertical





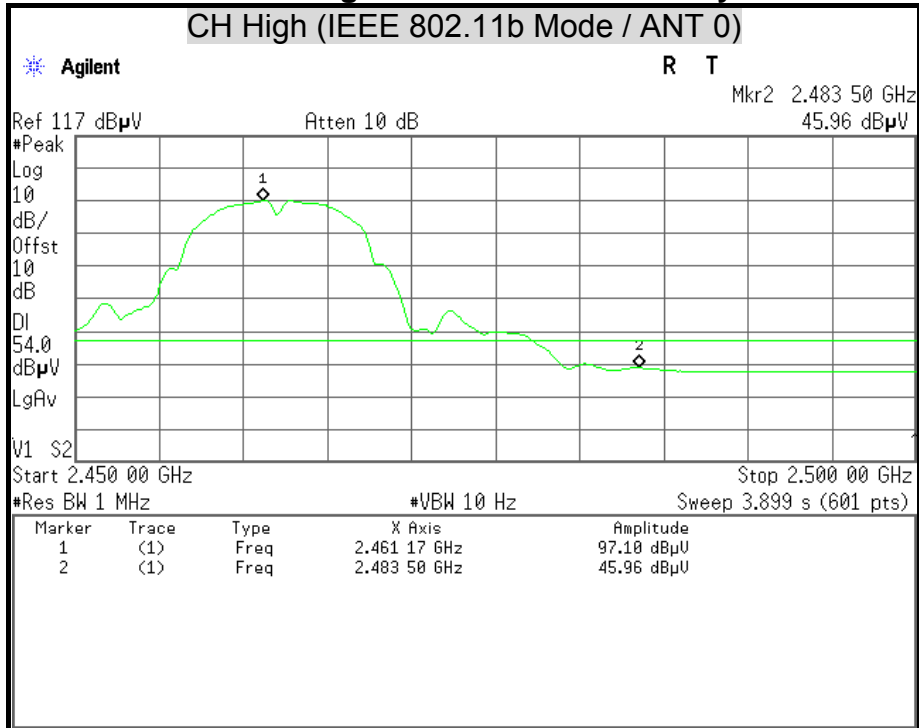
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

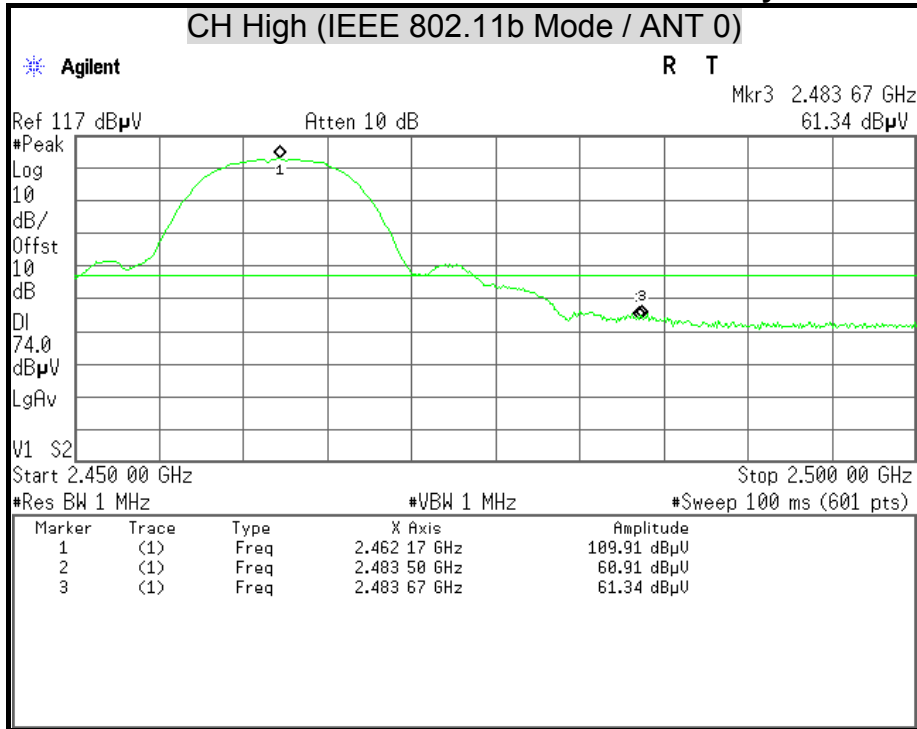
Polarity : Horizontal





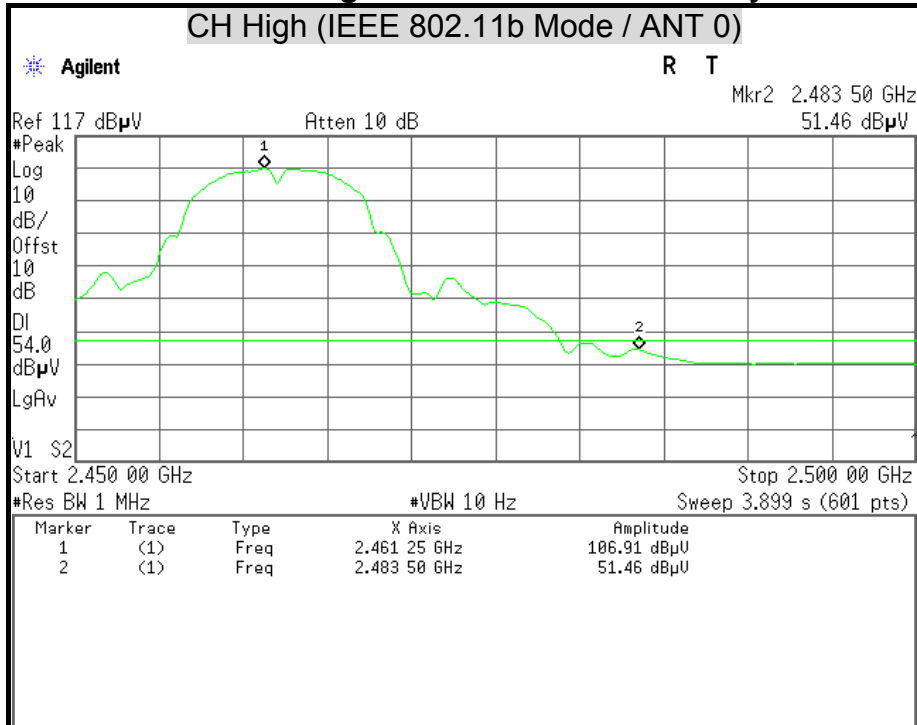
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

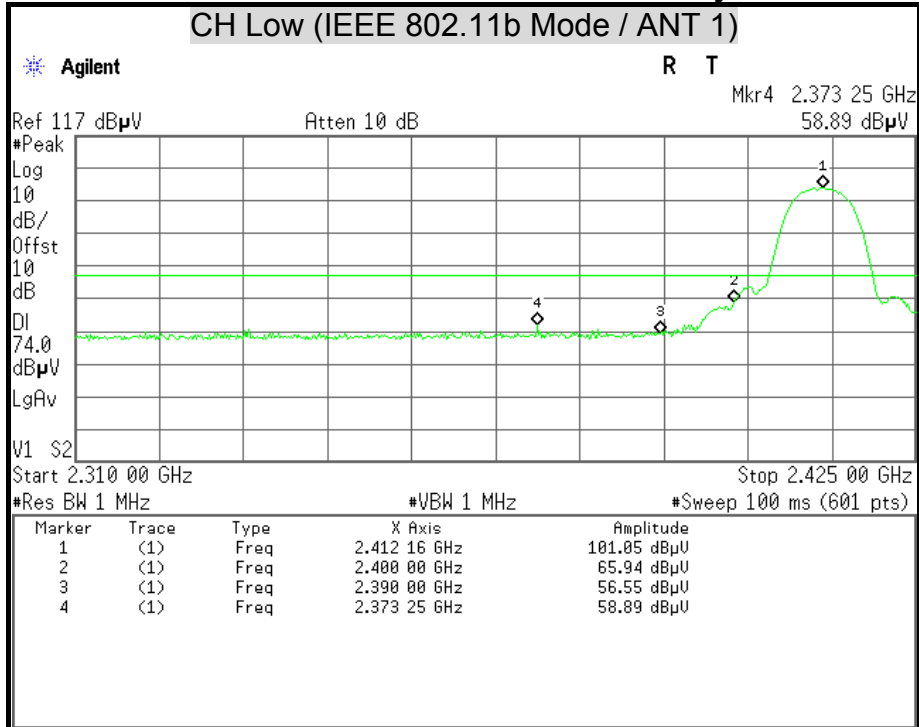
Polarity : Vertical





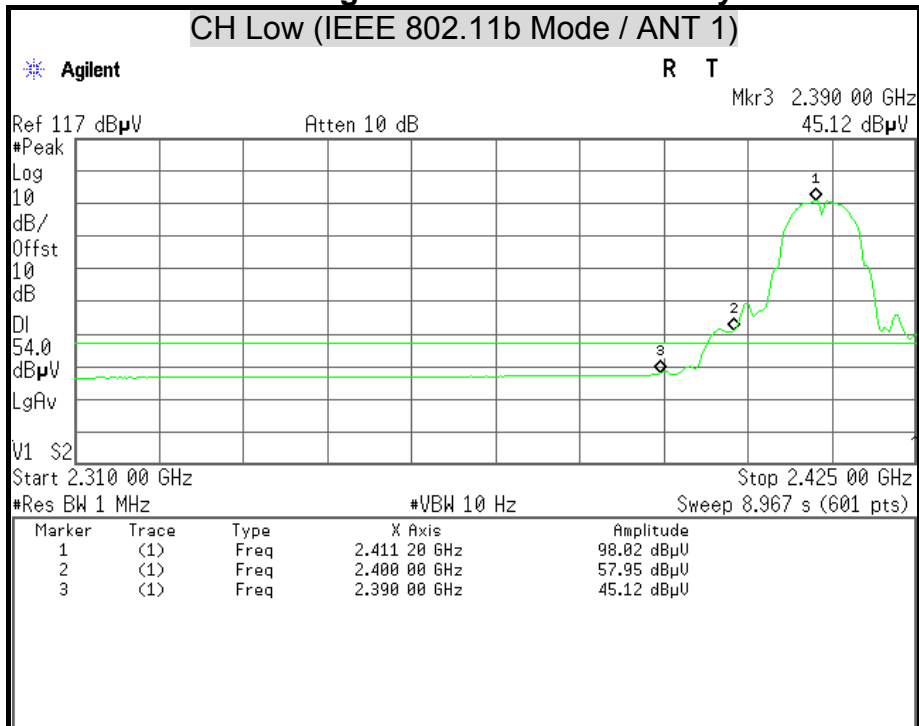
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

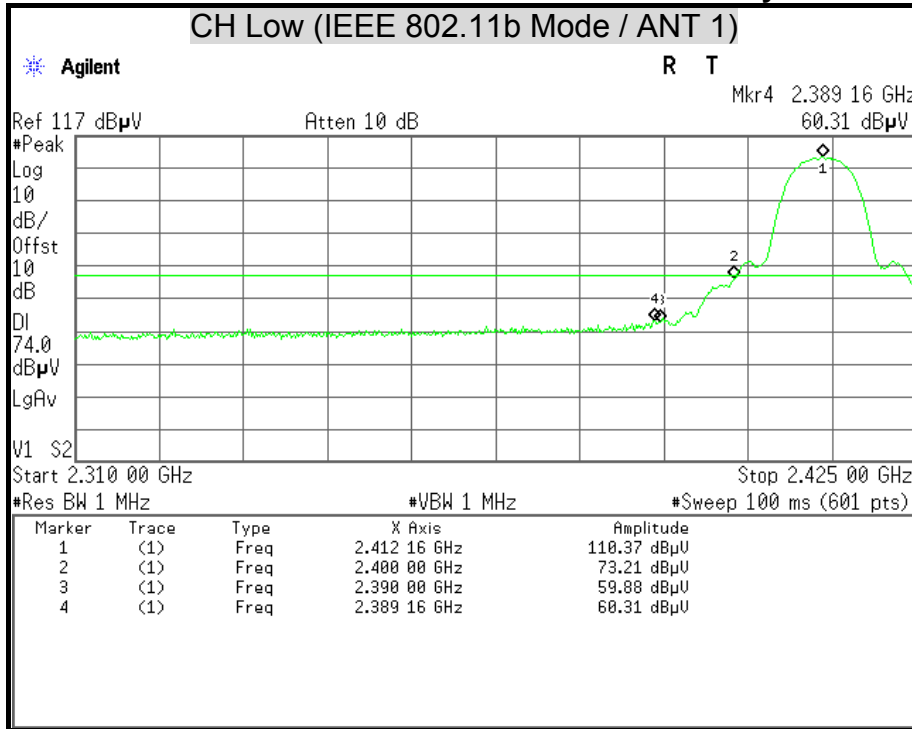
Polarity : Horizontal





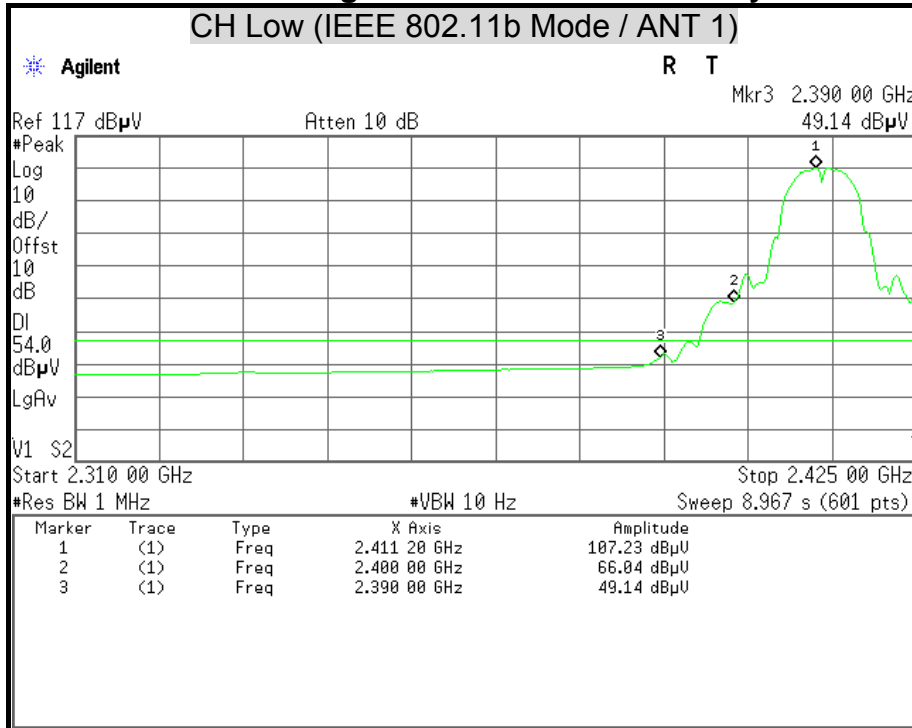
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

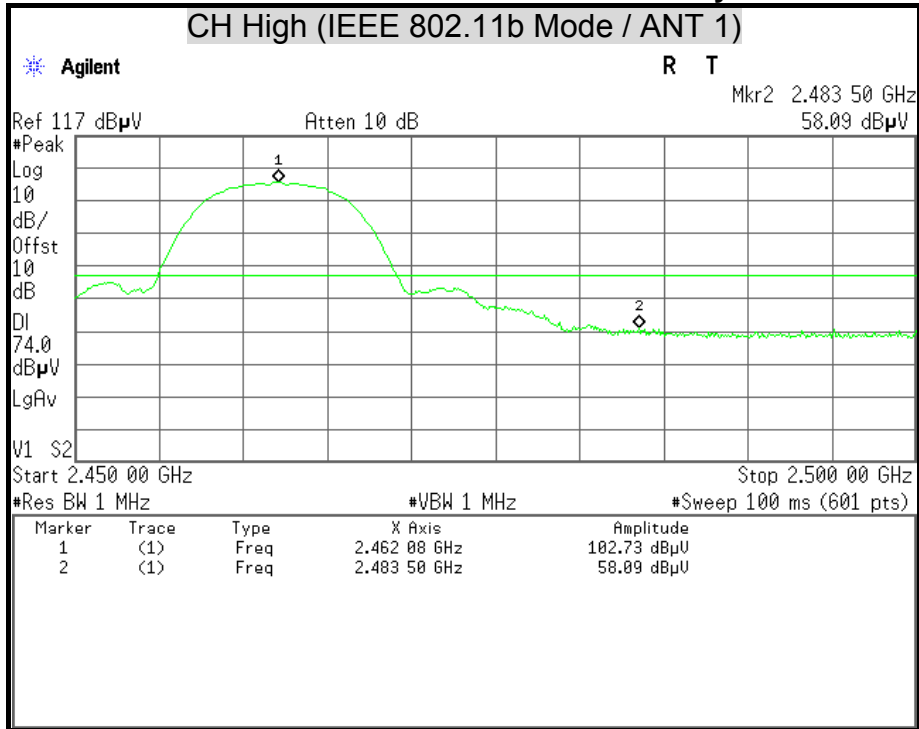
Polarity : Vertical





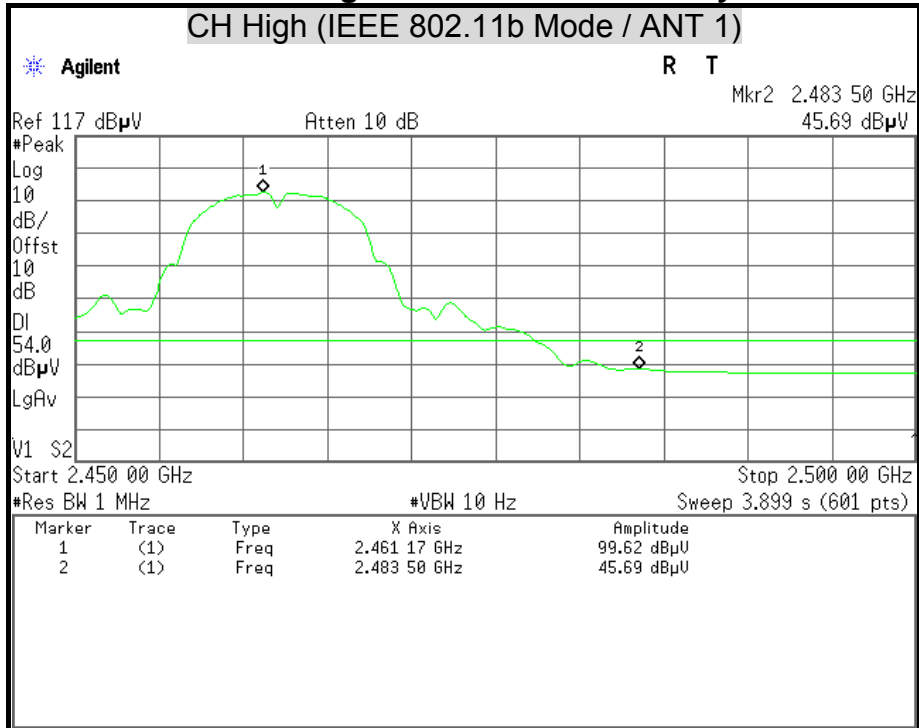
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

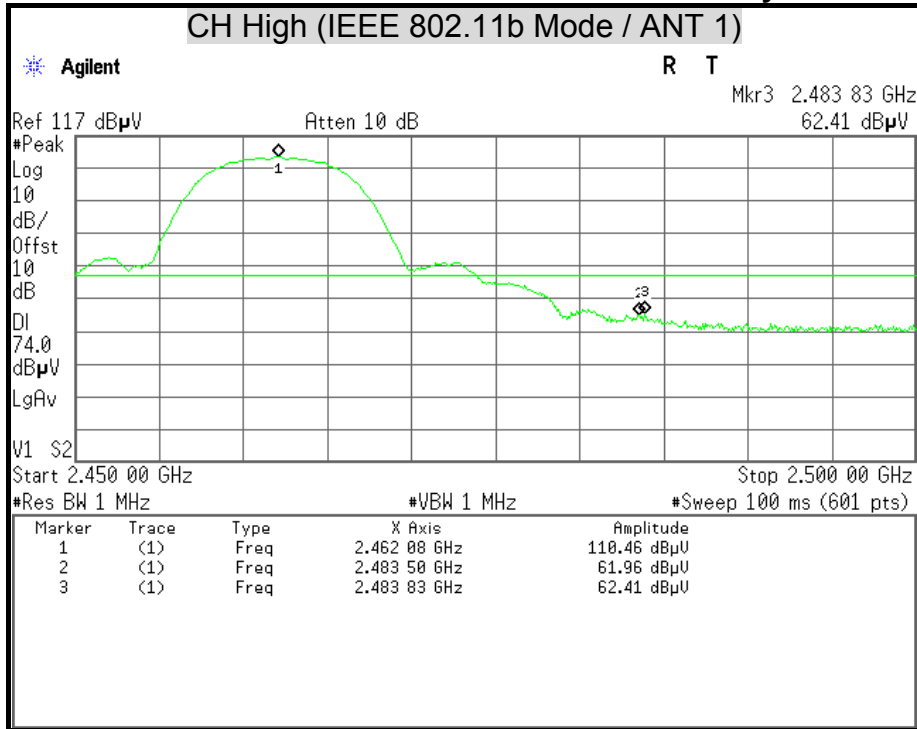
Polarity : Horizontal





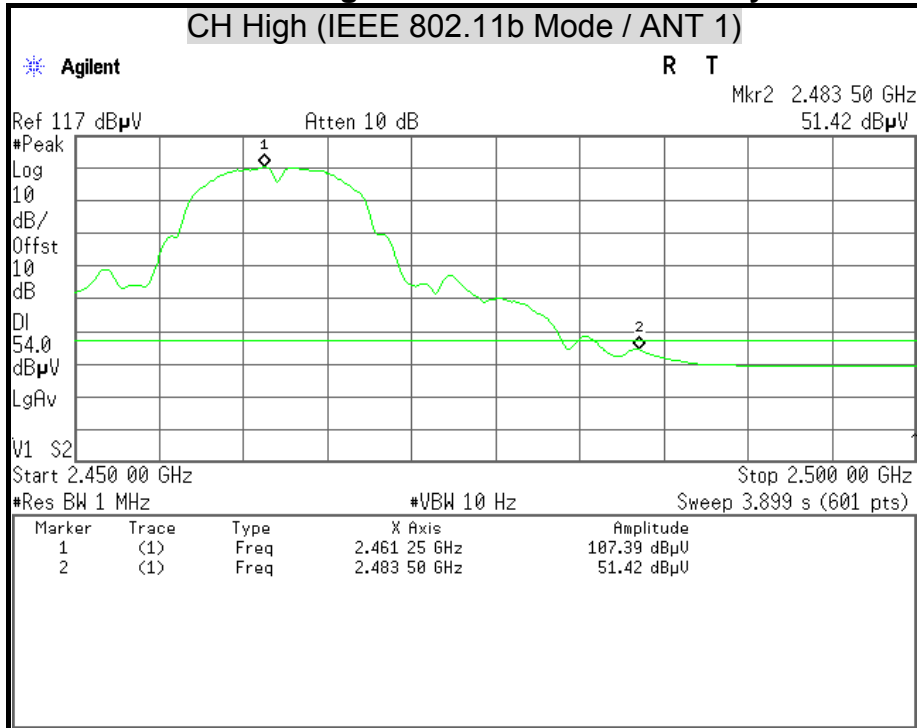
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

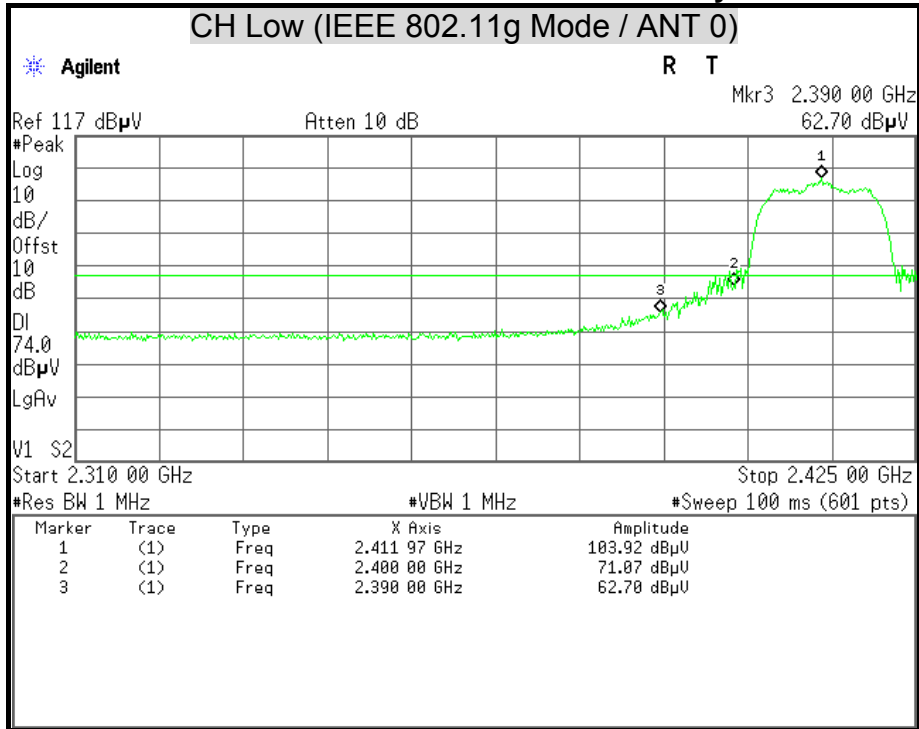
Polarity : Vertical





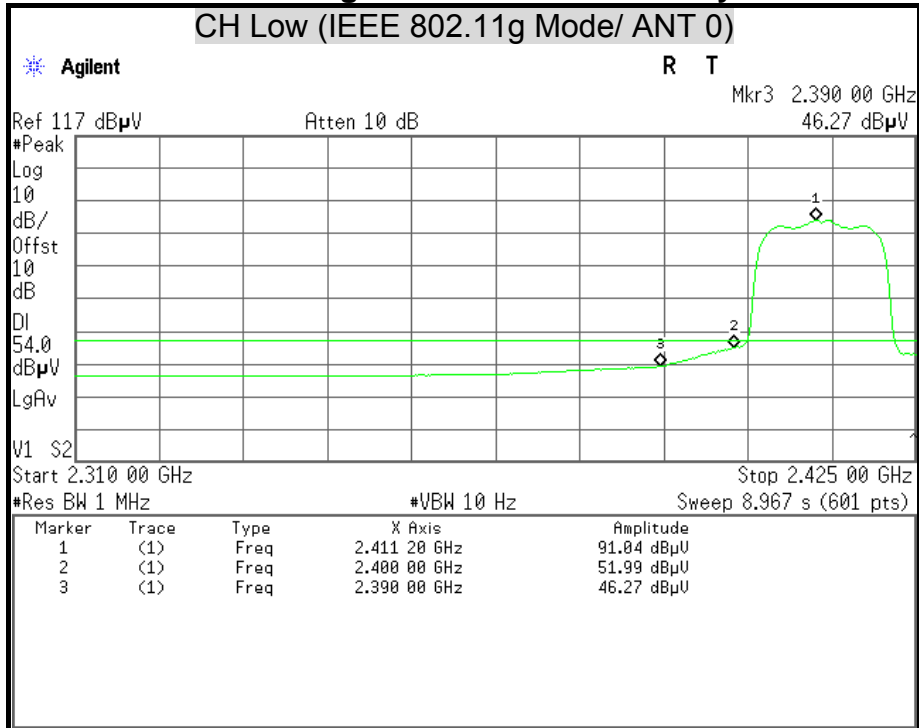
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

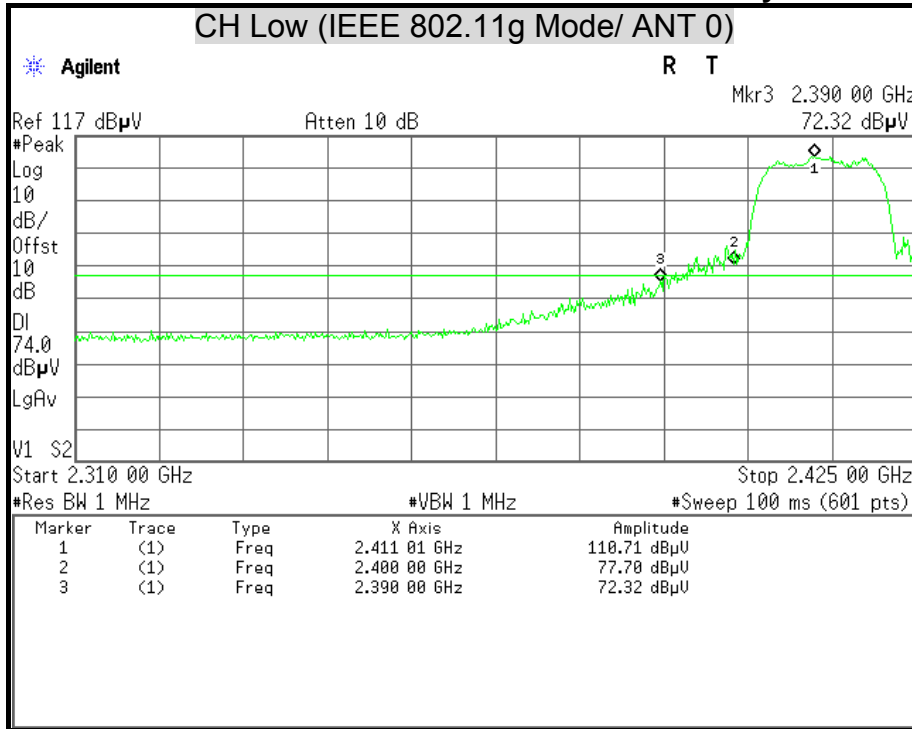
Polarity : Horizontal





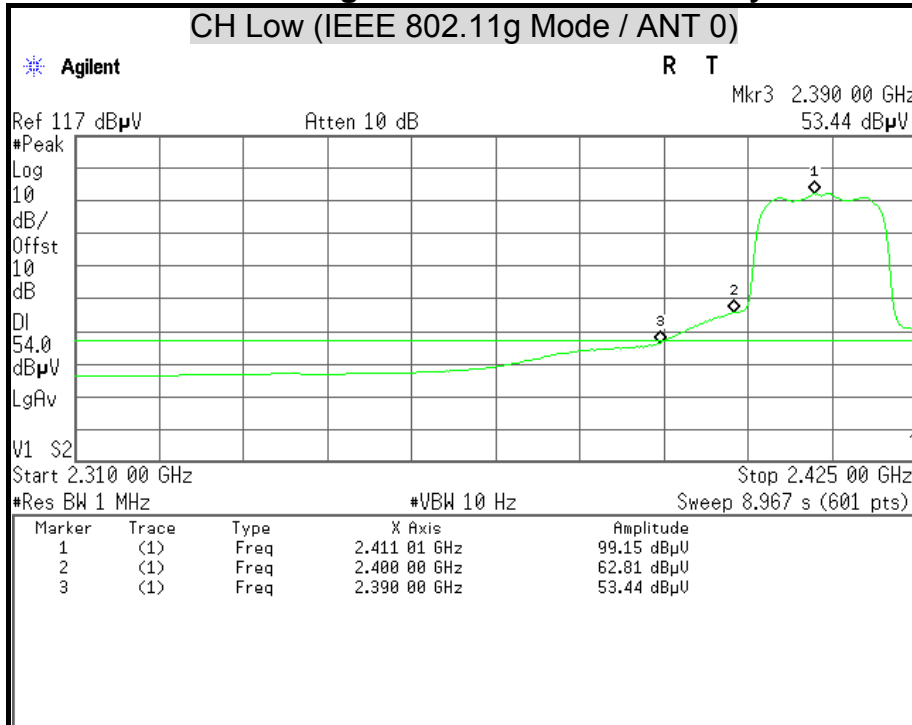
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

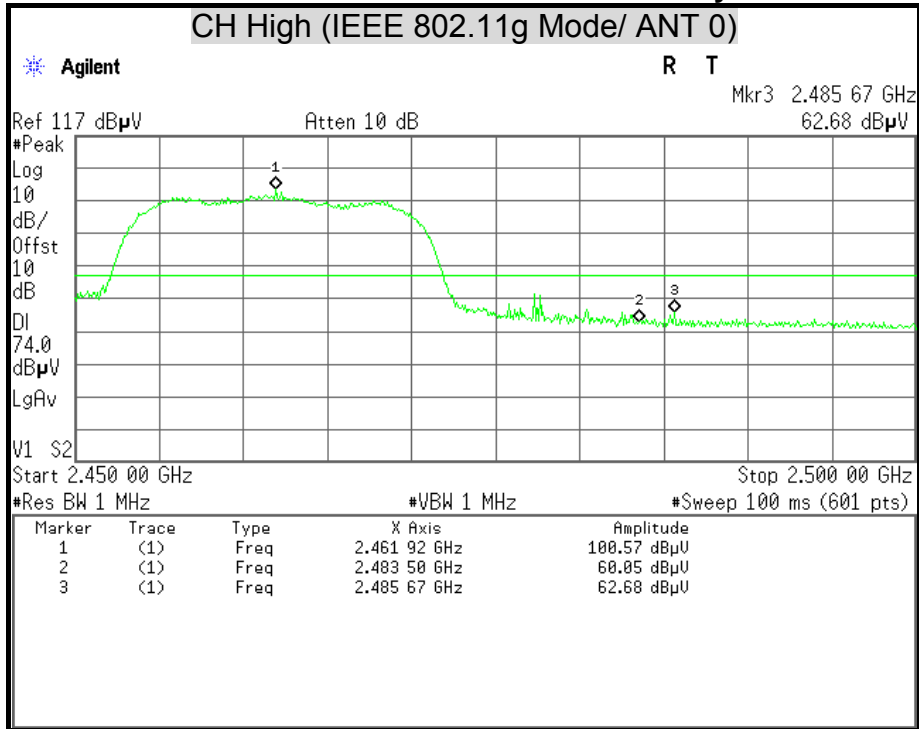
Polarity : Vertical





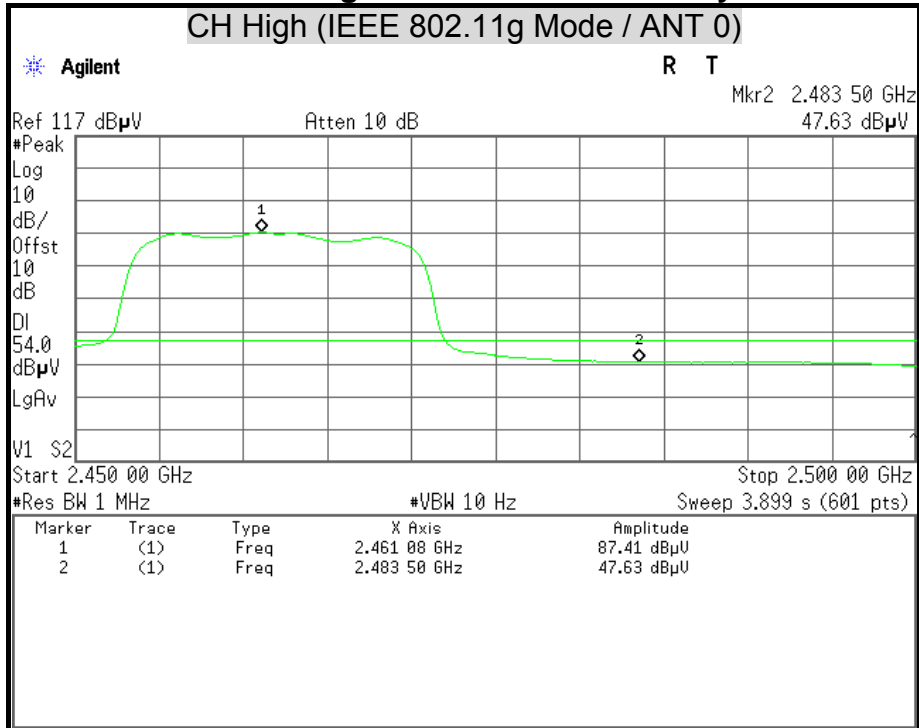
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

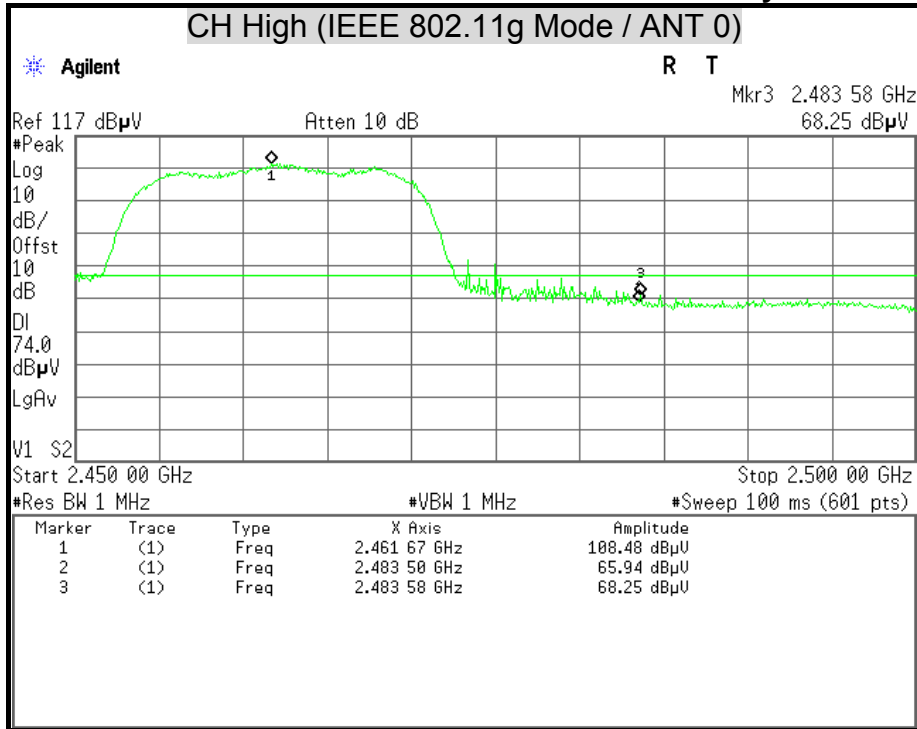
Polarity : Horizontal





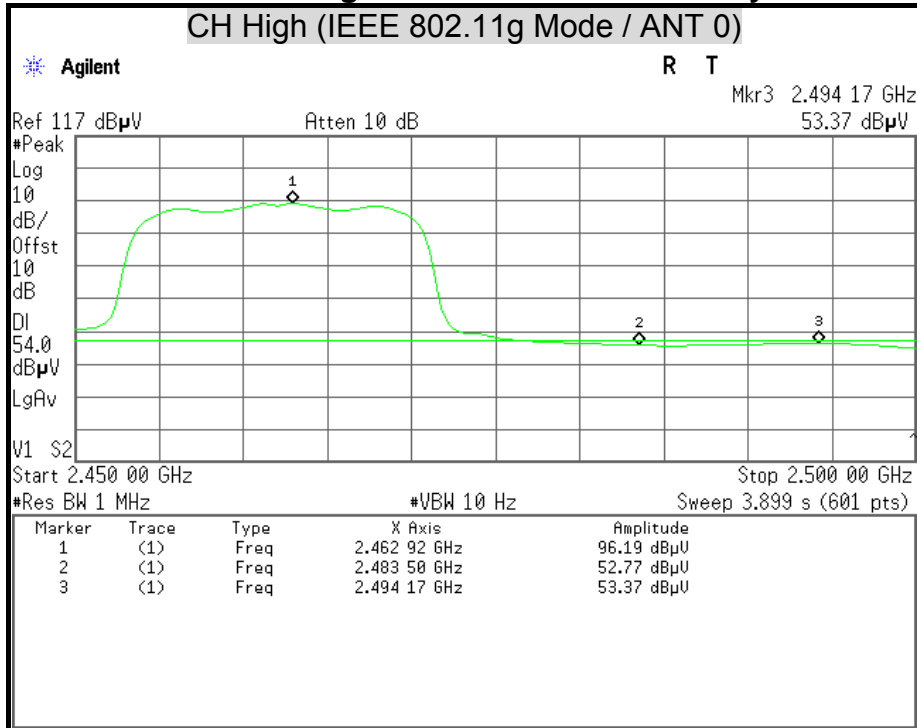
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

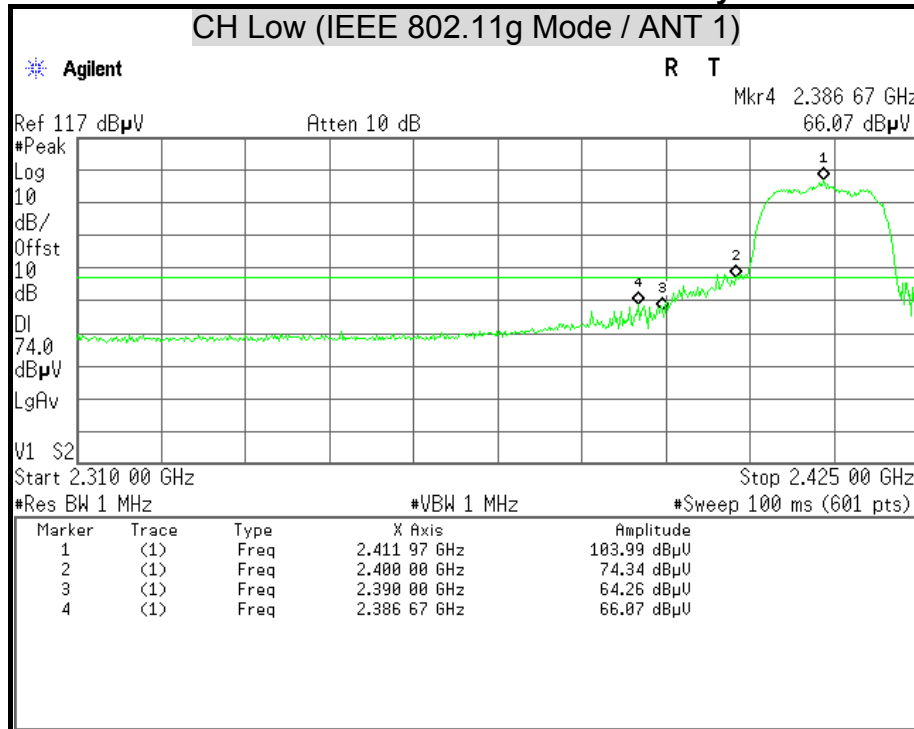
Polarity : Vertical





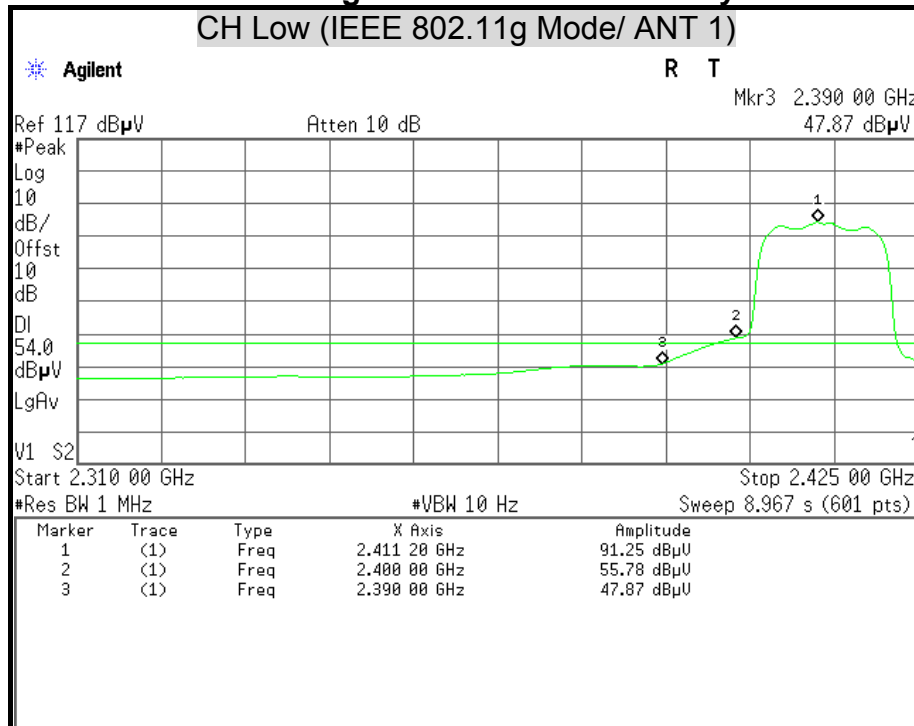
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

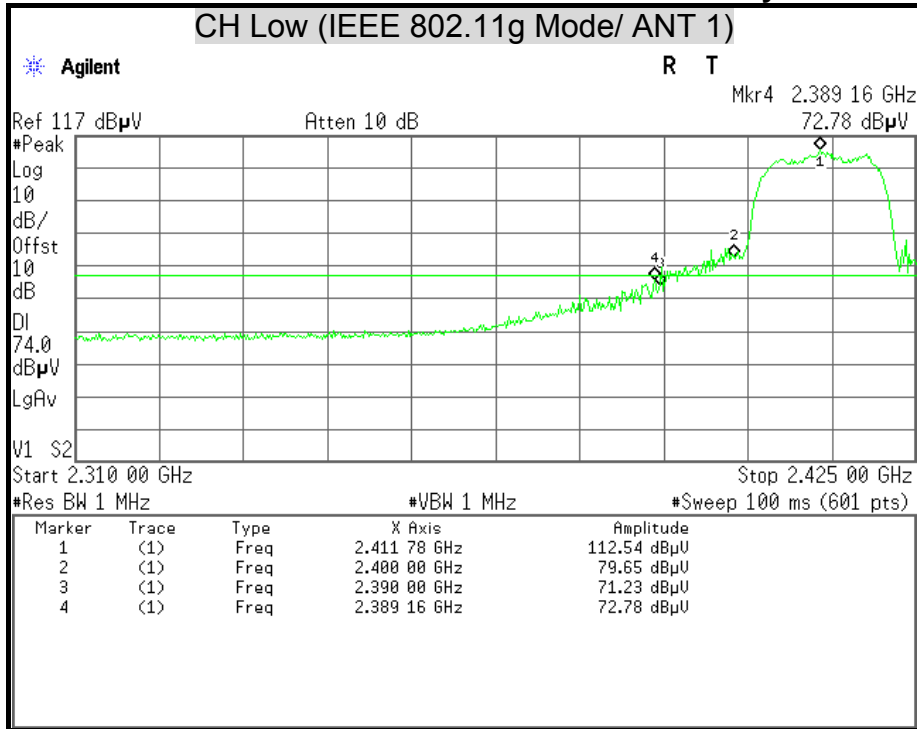
Polarity : Horizontal





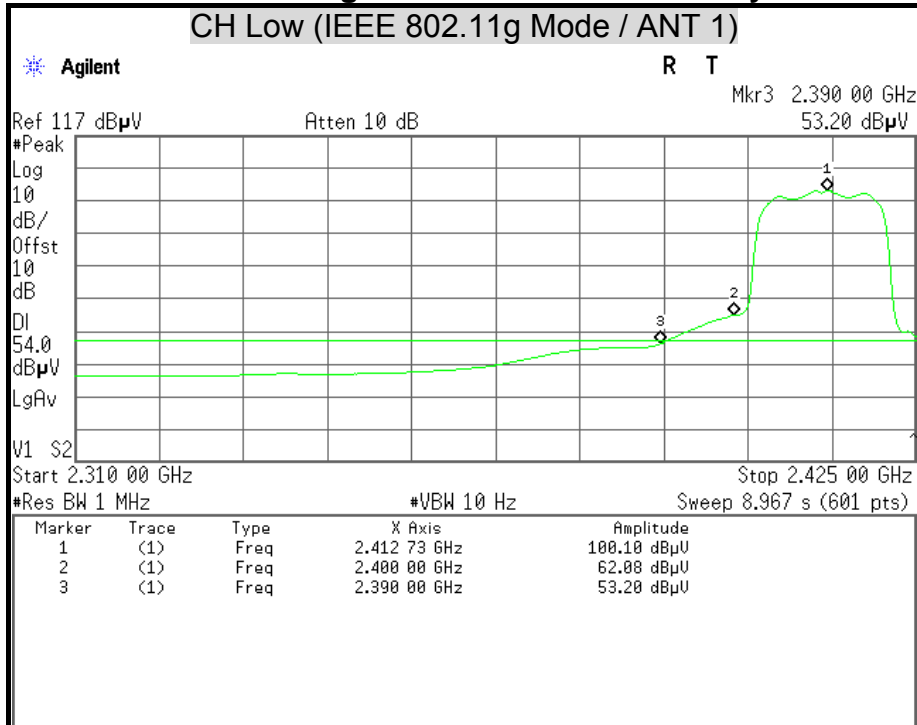
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

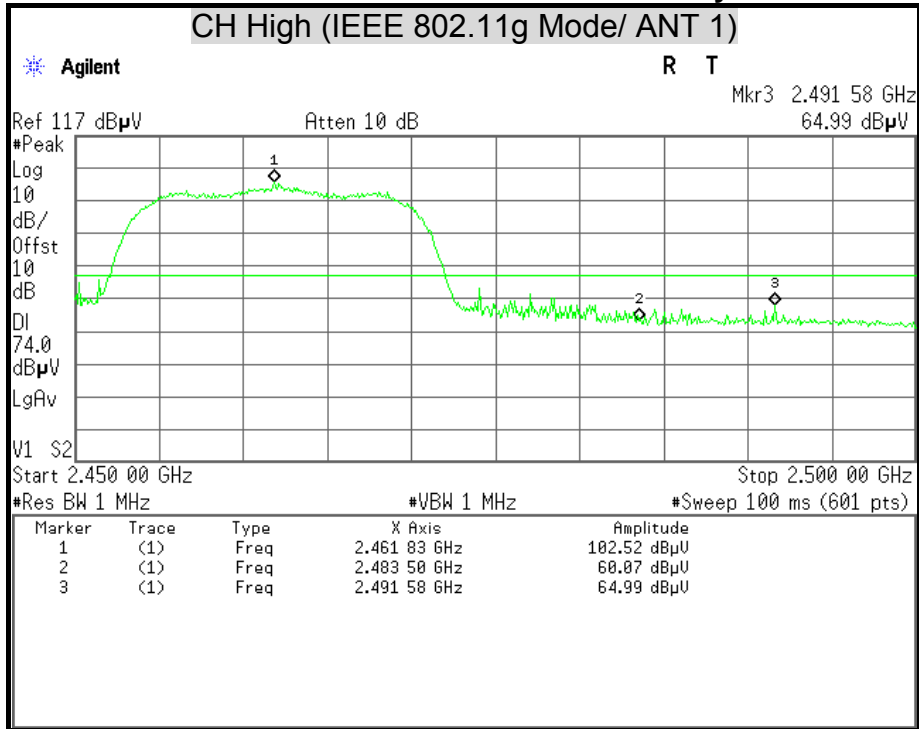
Polarity : Vertical





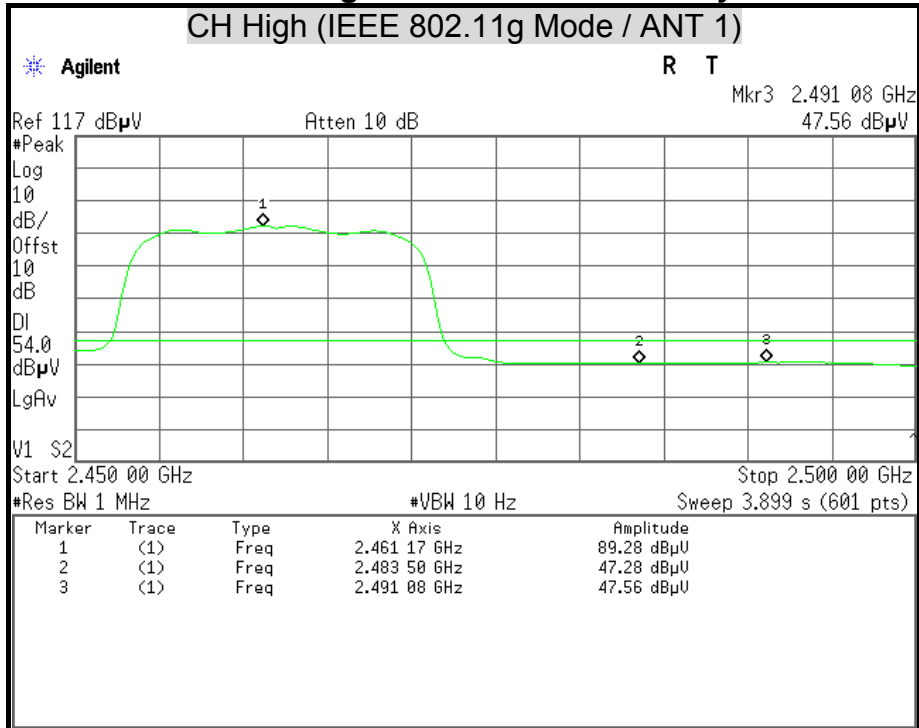
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

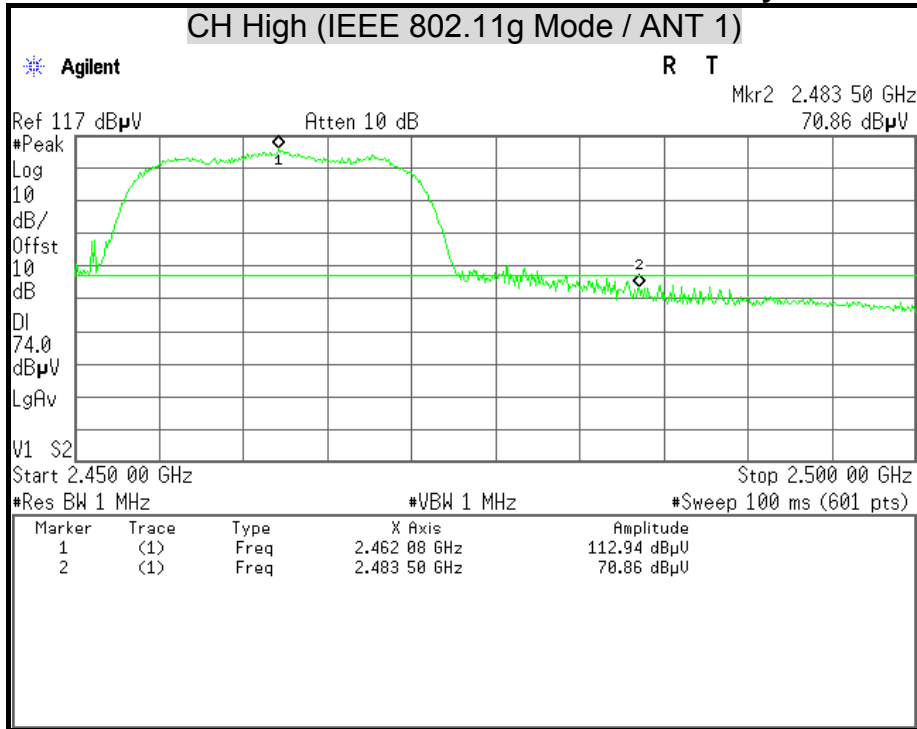
Polarity : Horizontal





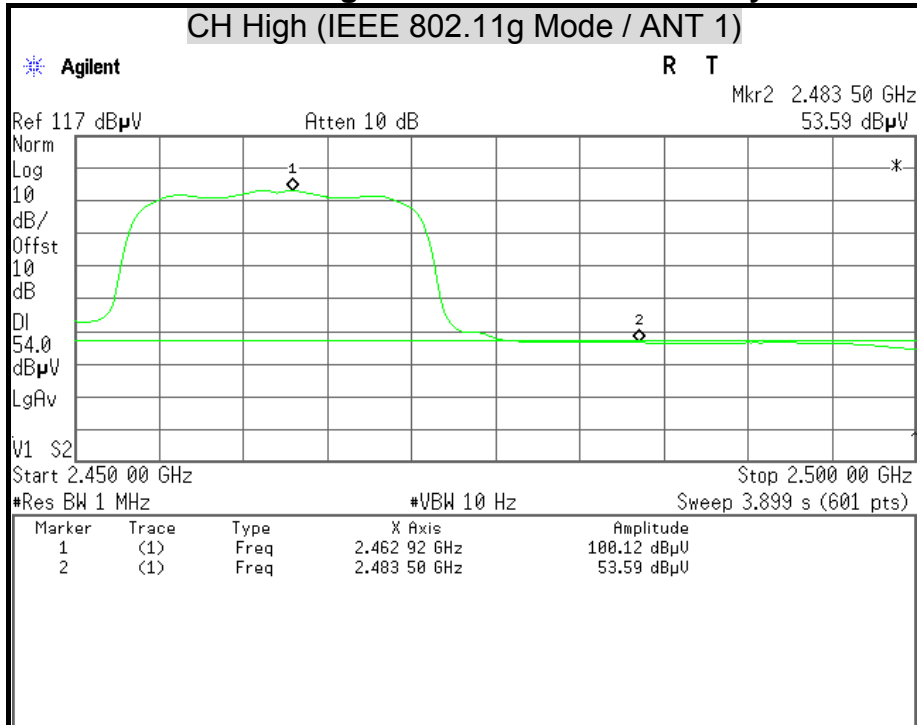
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

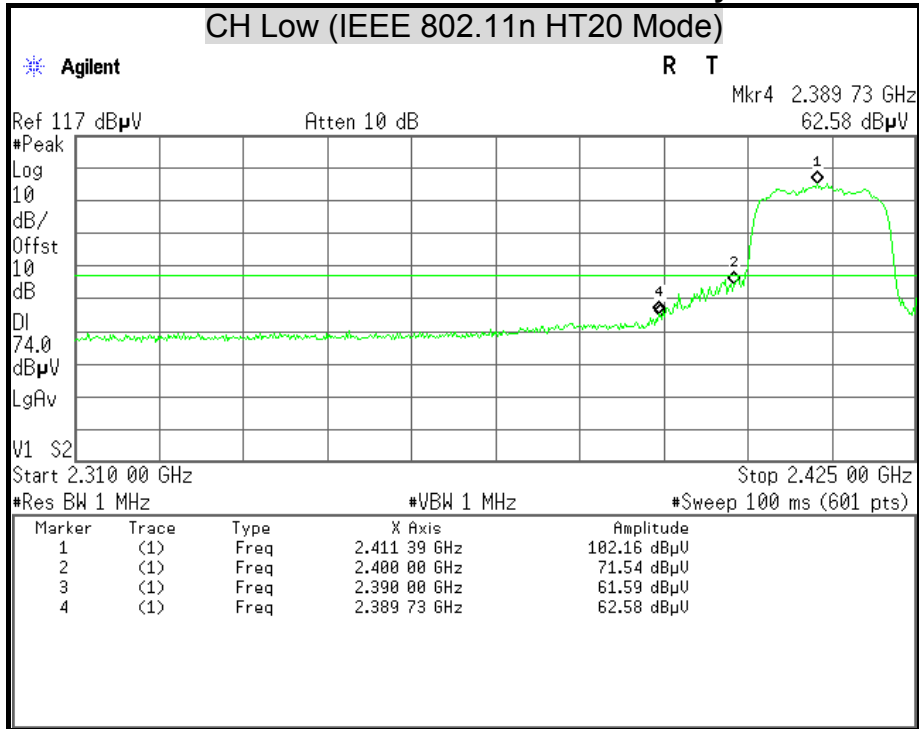
Polarity : Vertical





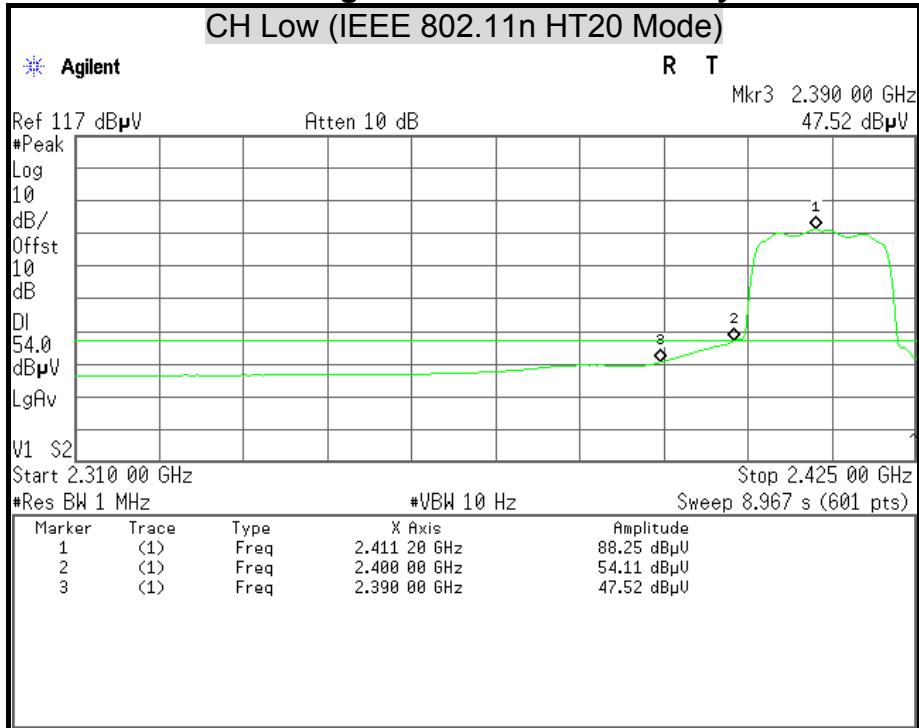
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

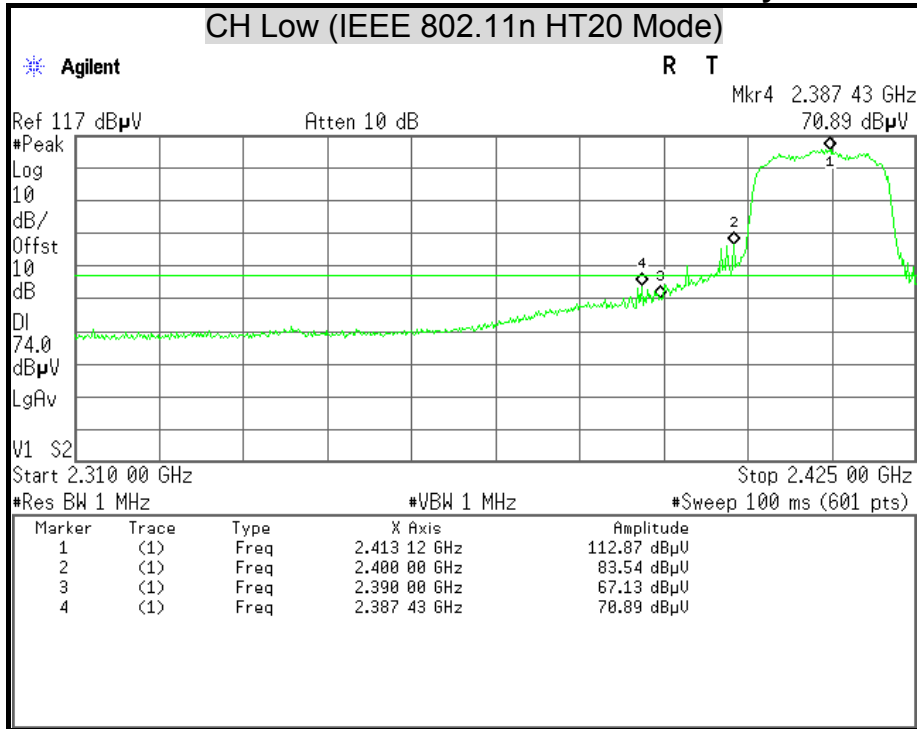
Polarity : Horizontal





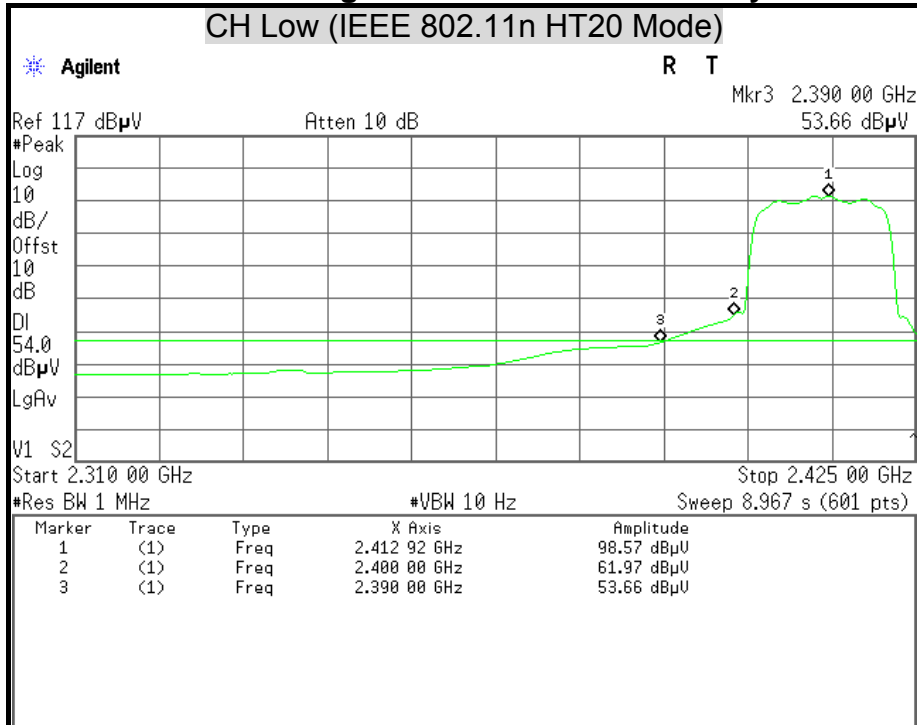
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

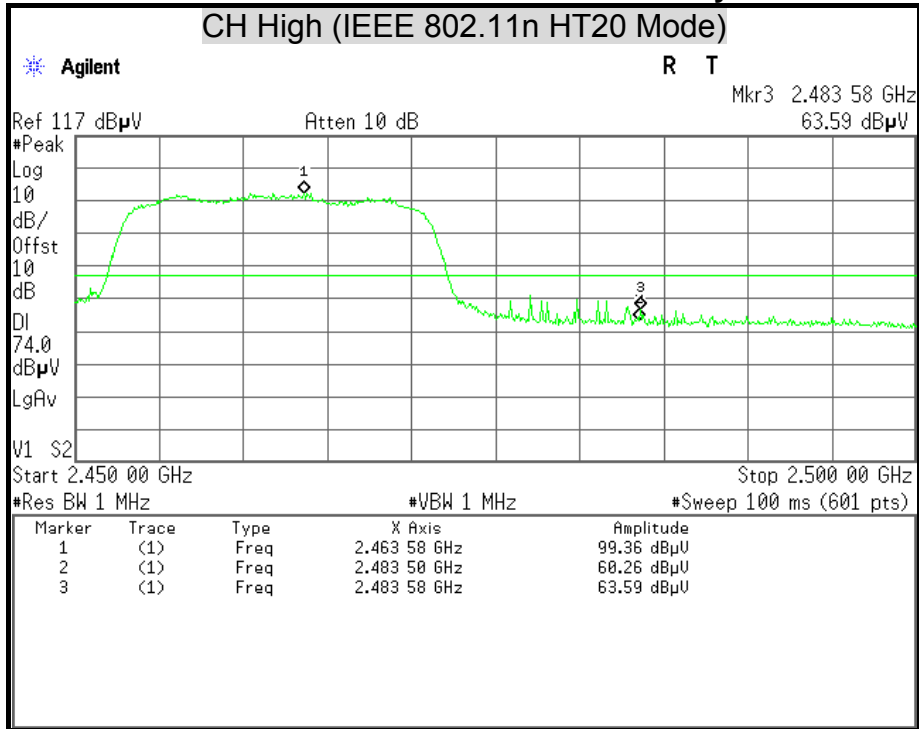
Polarity : Vertical





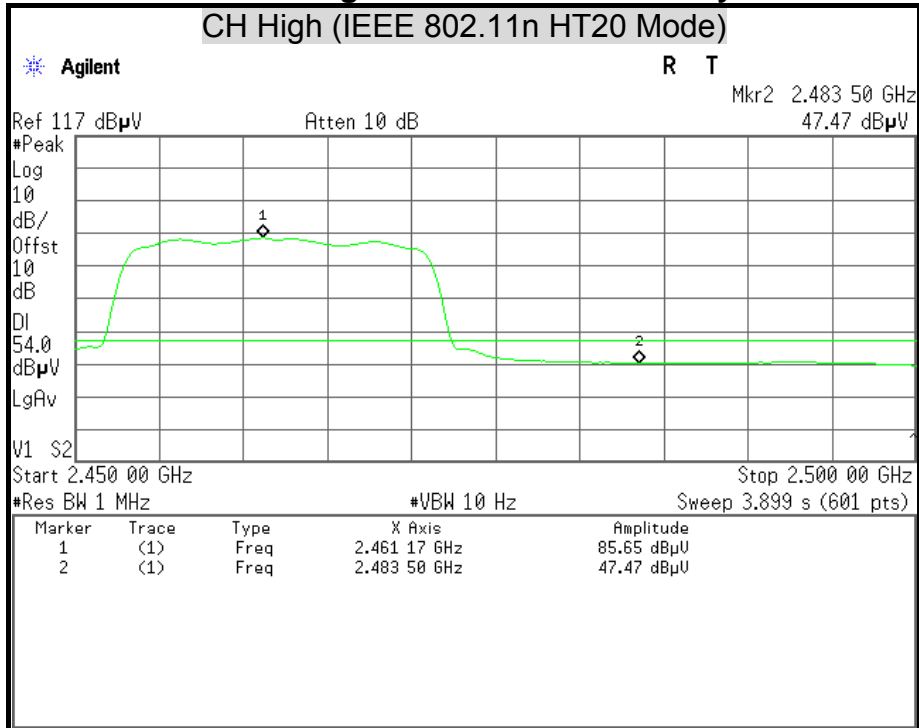
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

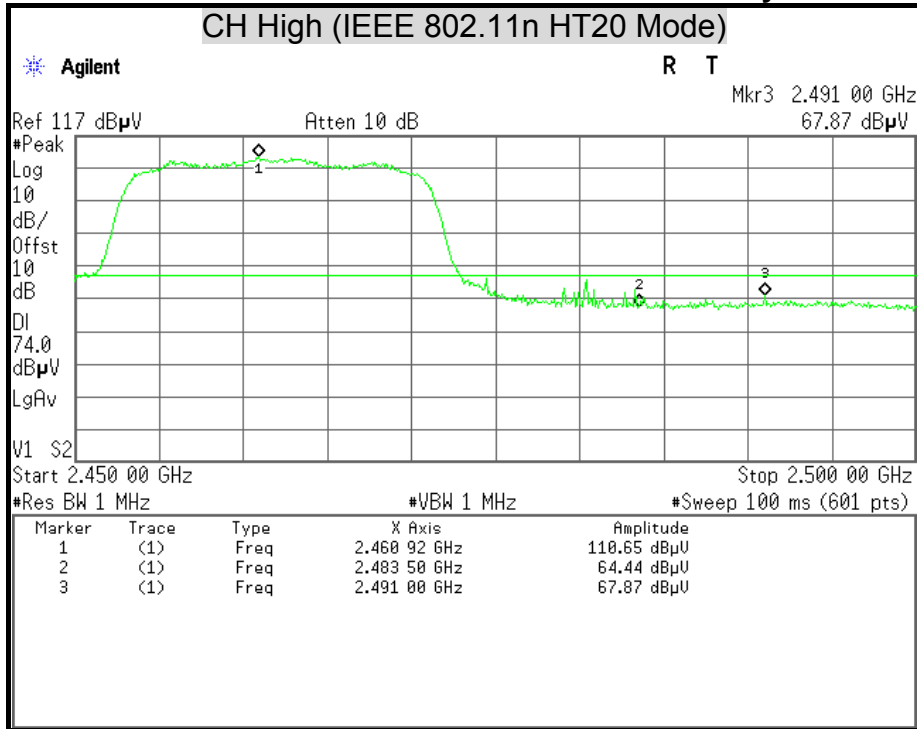
Polarity : Horizontal





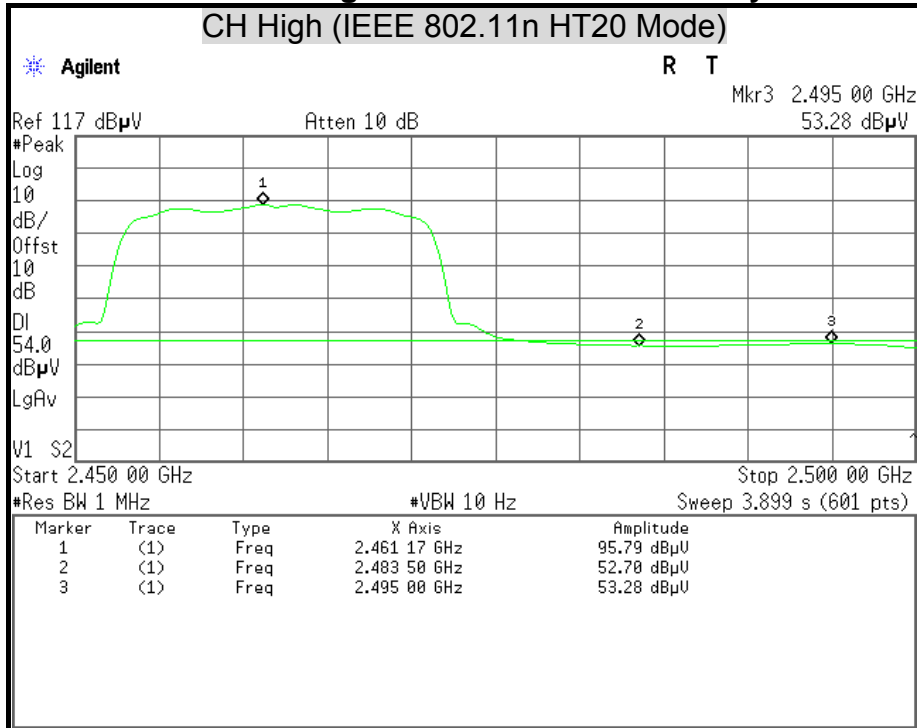
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

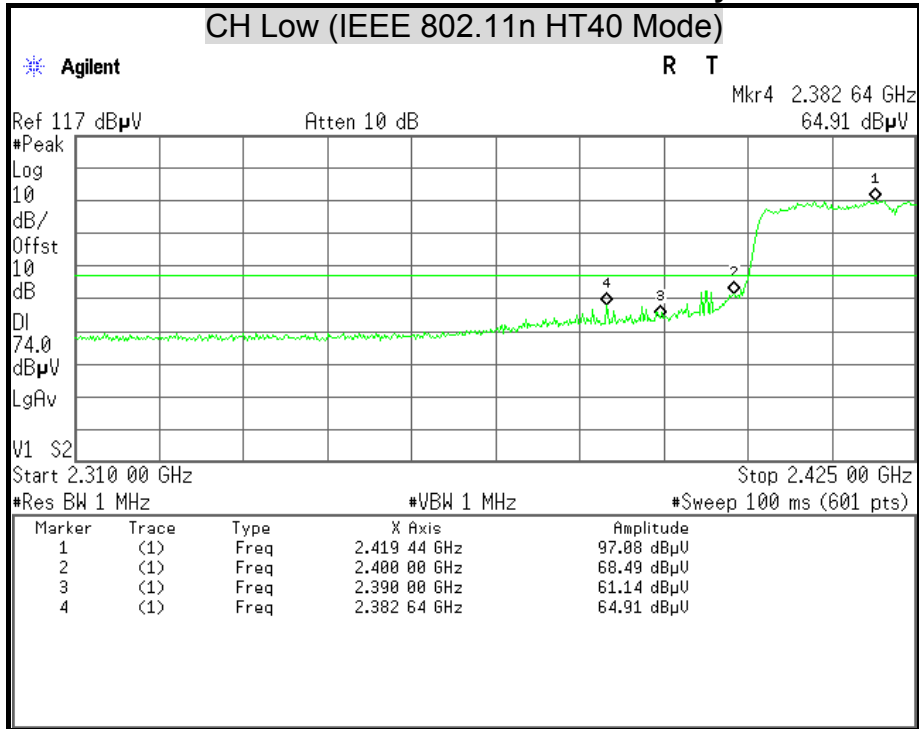
Polarity : Vertical





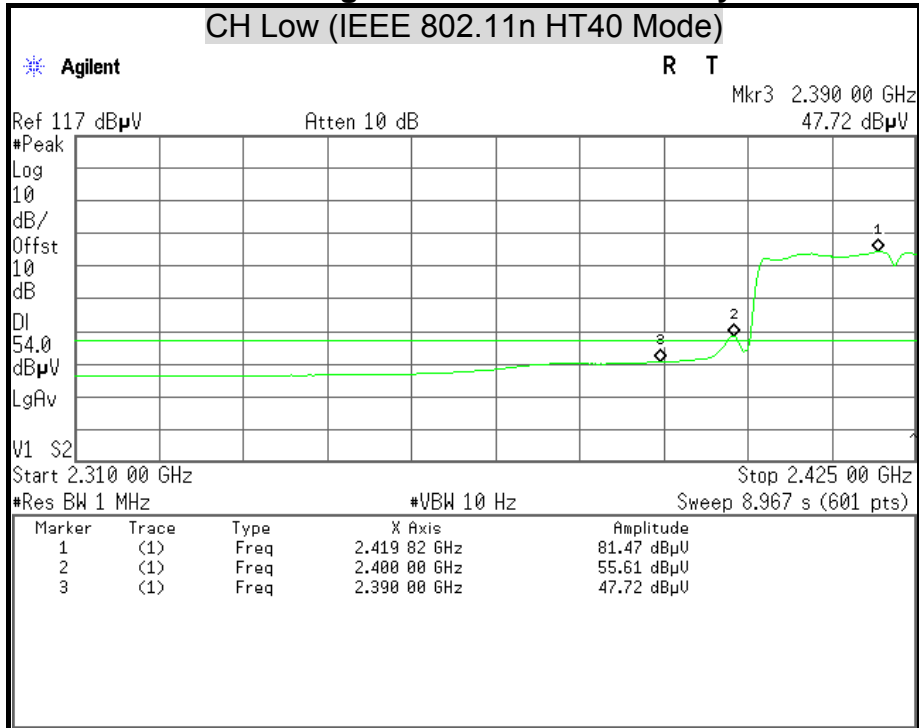
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

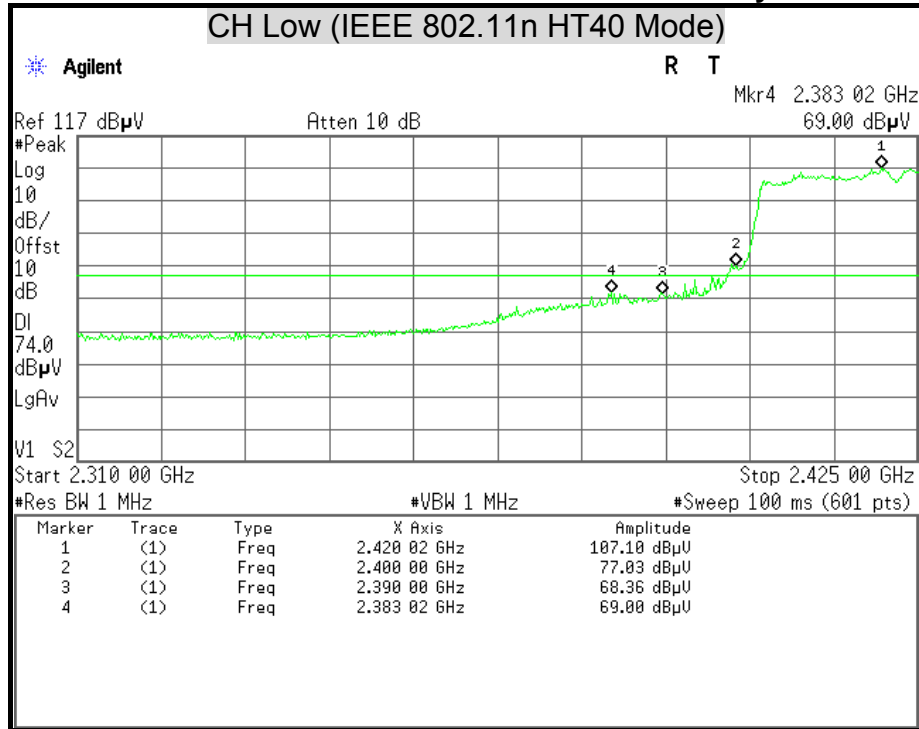
Polarity : Horizontal





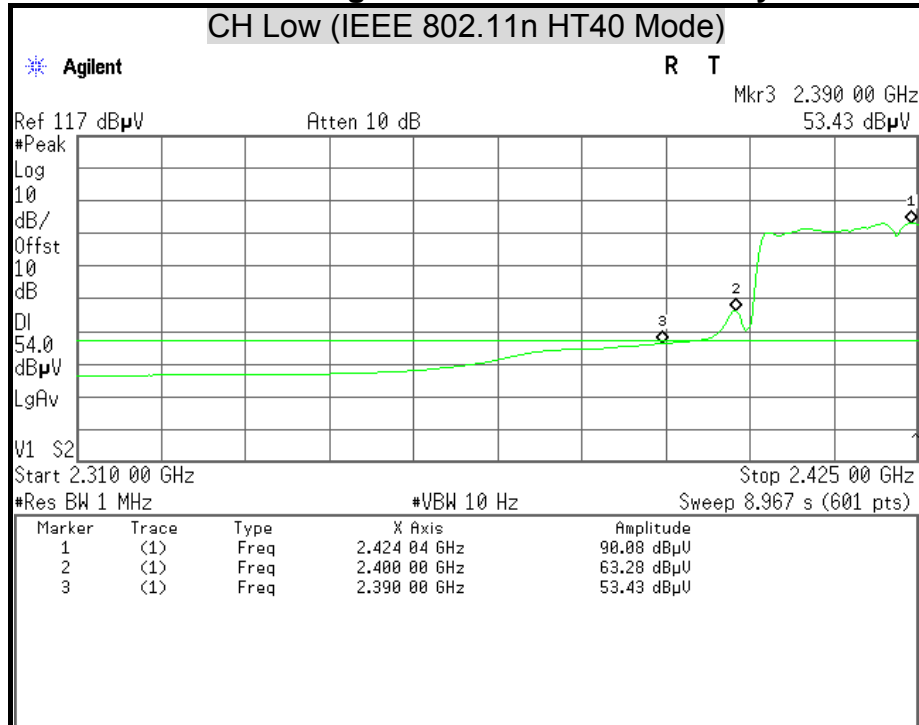
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

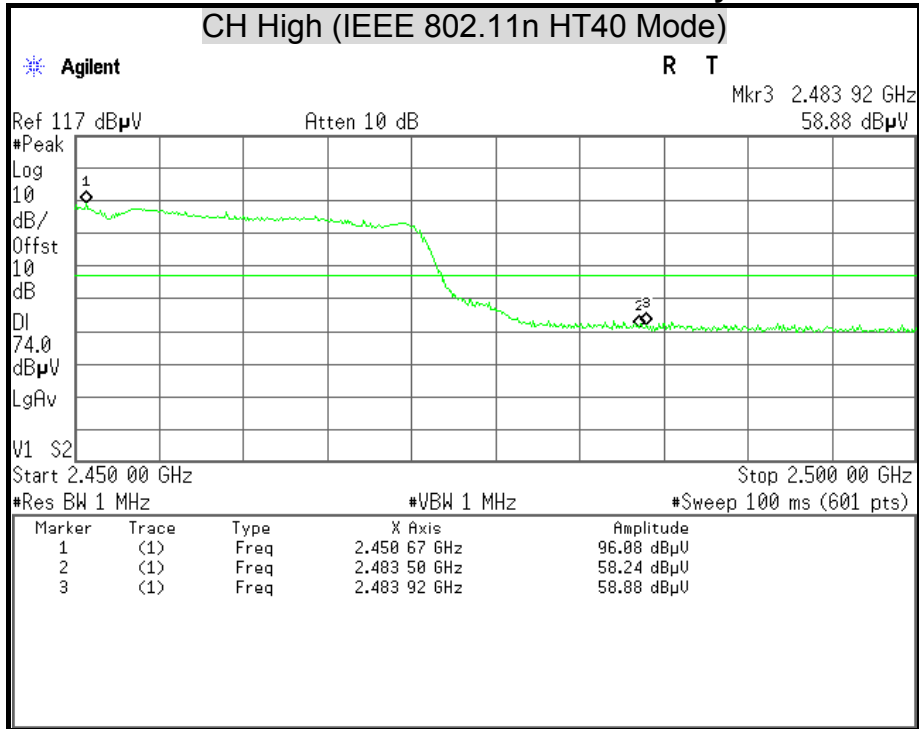
Polarity : Vertical





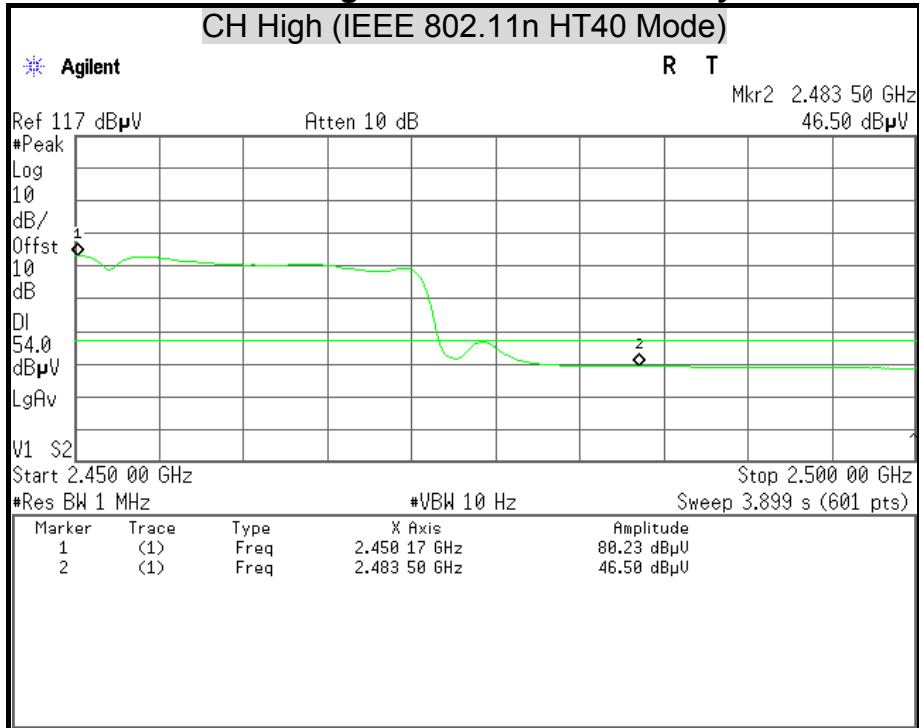
Detector Mode : Peak

Polarity : Horizontal



Detector Mode : Average

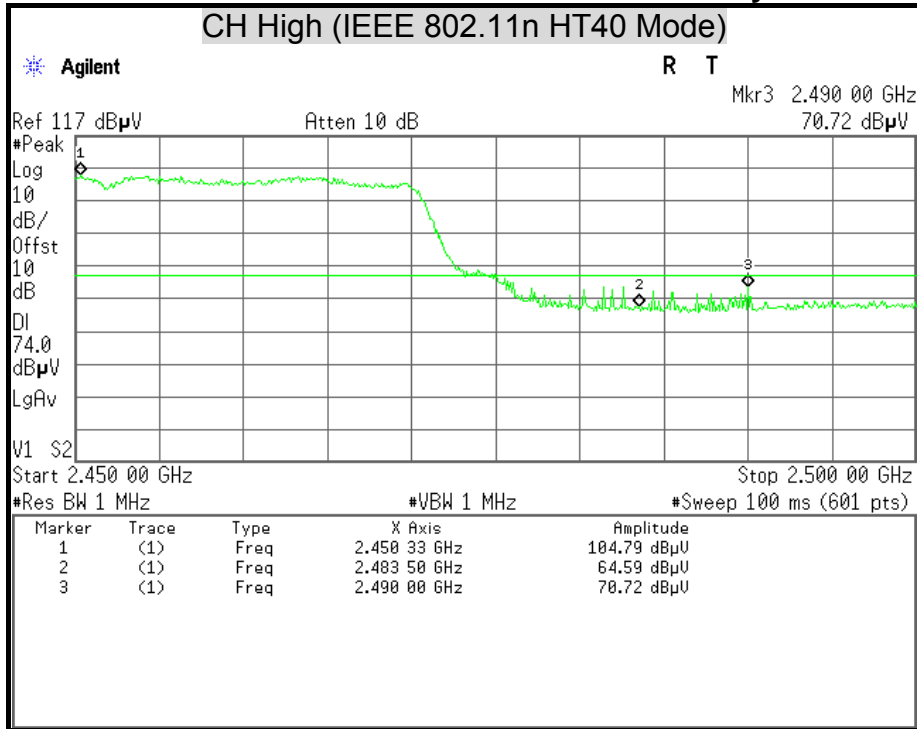
Polarity : Horizontal





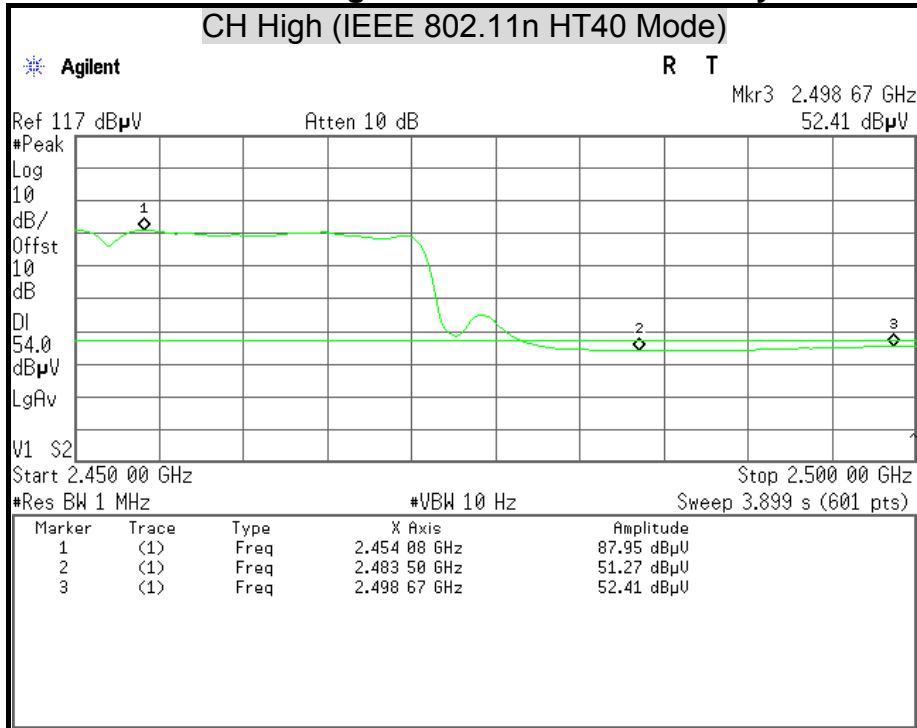
Detector Mode : Peak

Polarity : Vertical



Detector Mode : Average

Polarity : Vertical





7.7 CONDUCTED EMISSION

LIMITS

§ 15.207 (a) Except as shown in paragraph (b) and (c) this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ 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 μ 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

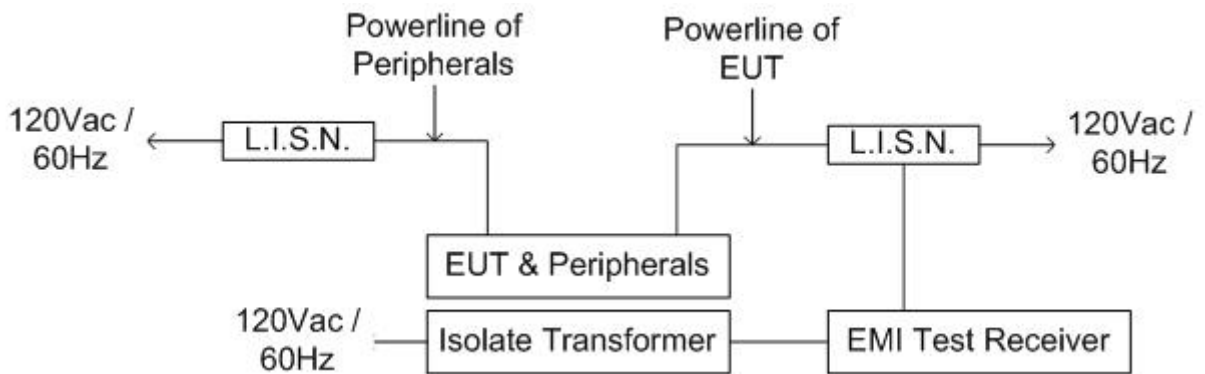
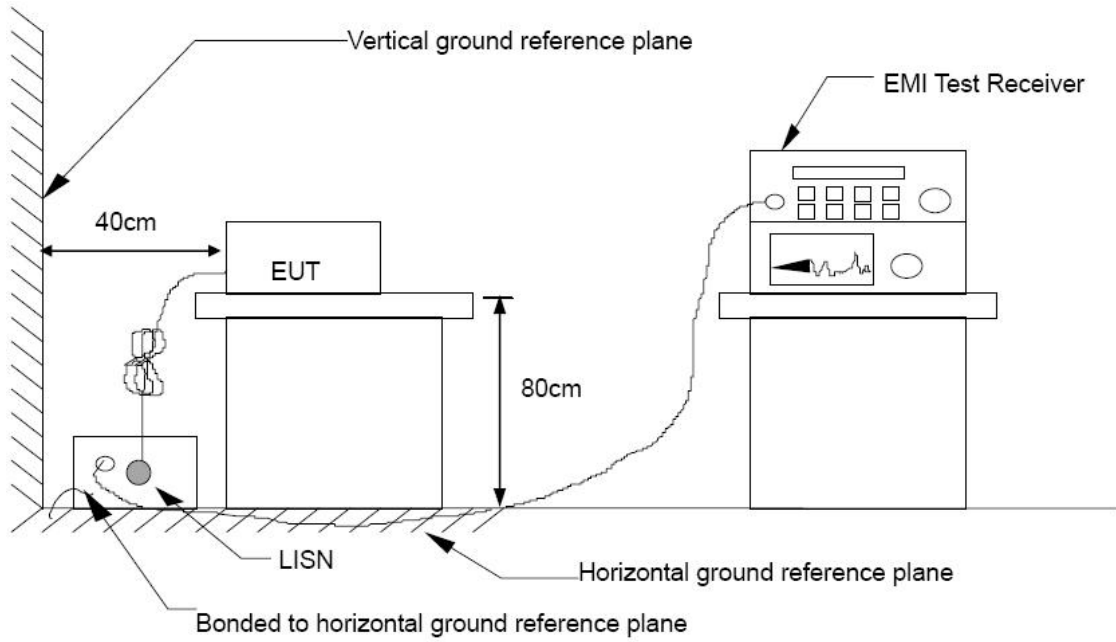
TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
L.I.S.N	SCHWARZBECK	NSLK 8127	8127-465	08/07/2013
L.I.S.N	SCHWARZBECK	NSLK 8127	8127-473	03/12/2013
EMI Receiver	ROHDE & SCHWARZ	ESCS 30	835418/008	10/16/2013
Pulse Limiter	ROHDE & SCHWARZ	ESH3-Z2	100117	07/03/2013

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



TEST SETUP





TEST PROCEDURE

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

The test procedure is performed in a 4m × 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.

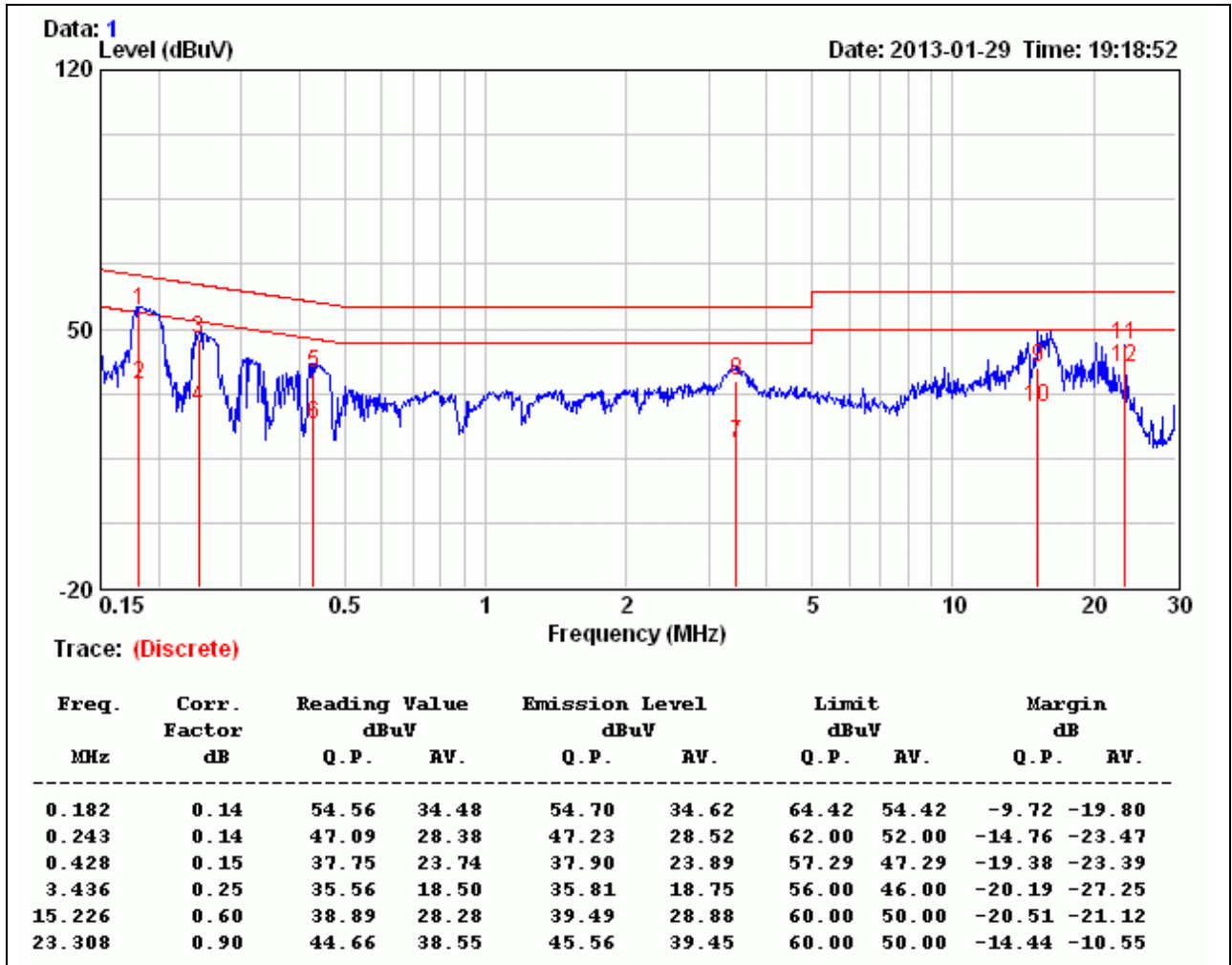
The EUT was located so that the distance between the boundary of the EUT and the closest surface of the LISN is 0.8 m. Where a mains flexible cord was provided by the manufacturer shall be 1 m long, or if in excess of 1 m, the excess cable was folded back and forth as far as possible so as to form a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



TEST RESULTS

Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Waternil Guan
Test Model	BiPAC 7800VDOX	Test Date	2013/01/29
Test Mode	Normal Operating	Temp. & Humidity	21°C, 60%

LINE



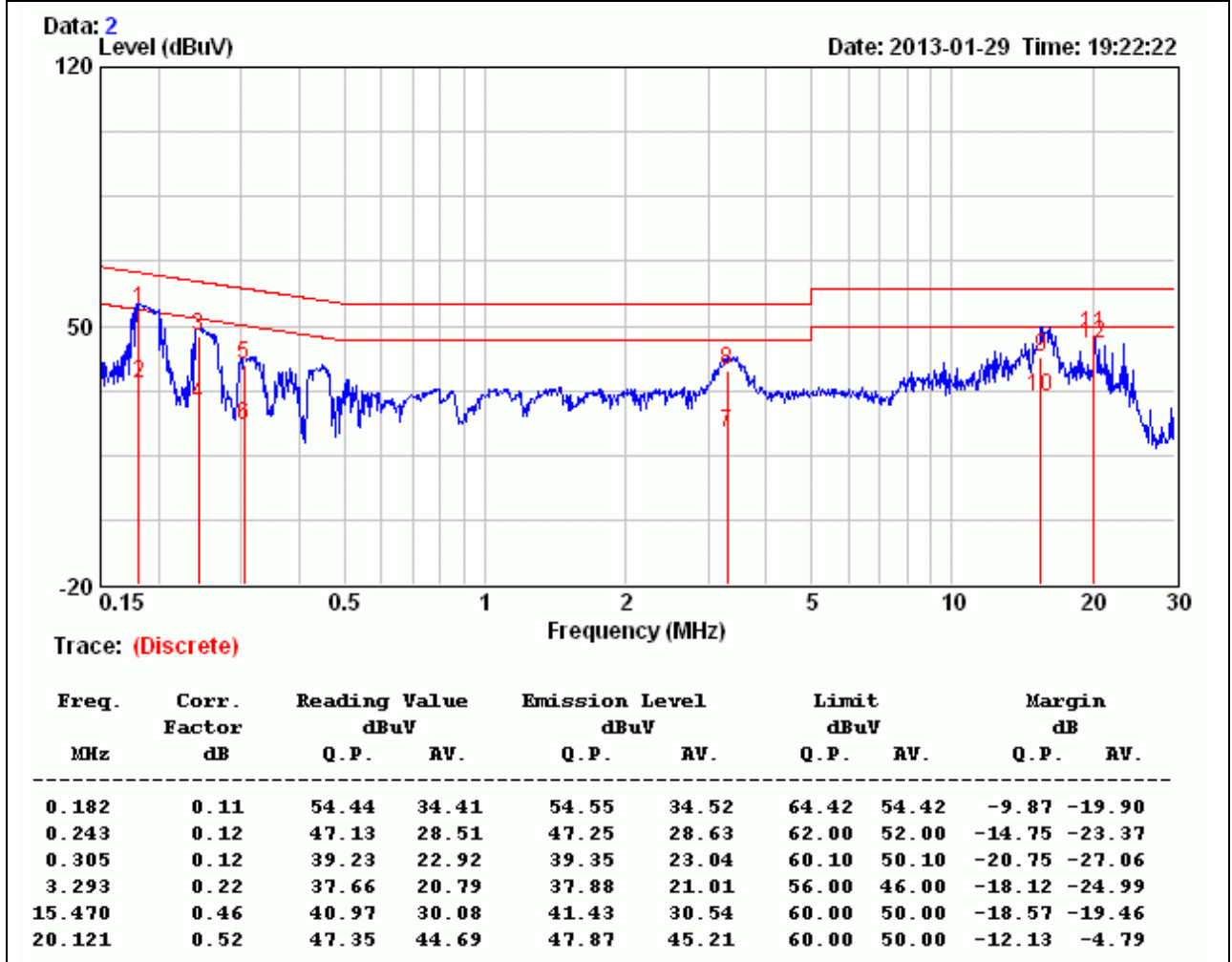
Remark:

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



Product Name	Dual-Band Wireless-N (VoIP) (VPN) ADSL2+ Router	Test By	Waternil Guan
Test Model	BiPAC 7800VDOX	Test Date	2013/01/29
Test Mode	Normal Operating	Temp. & Humidity	21°C, 60%

NEUTRAL



Remark:

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



APPENDIX I MAXIMUM PERMISSIBLE EXPOSURE

According to FCC 1.1310 : The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b) LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time
(A) Limits for Occupational / Control Exposures				
300-1,500	--	--	F/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Population / Uncontrol Exposures				
300-1,500	--	--	F/1500	6
1,500-100,000	--	--	1	30

CALCULATIONS

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{3770}$

Where *E* = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{3770d^2}$$

Changing to units of mW and cm, using:

$$P (mW) = P (W) / 1000 \text{ and}$$

$$d (cm) = d(m) / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$

Where *d* = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²



LIMIT

Power Density Limit, S=1.0mW/cm²

TEST RESULTS

Mode	Chain	Antenna Gain (dBi)	Minimum separation distance (cm)	Output Power (dBm)	Numeric antenna gain (mW)	Power Density Limit (mW/cm ²)	Power Density at 20cm (mW/cm ²)
IEEE 802.11a	0	3.95	20	23.59	2.48	1.00	0.112907
	1	3.95	20	23.59	2.48	1.00	0.112907
IEEE 802.11an HT20	0	3.95	20	21.85	2.48	1.00	0.145896
	1	3.95		21.53	2.48		
IEEE 802.11an HT40	0	3.95	20	22.05	2.48	1.00	0.162131
	1	3.95		22.25	2.48		
IEEE 802.11b	0	5.11	20	21.54	3.24	1.00	0.091986
	1	5.11	20	22.36	3.24	1.00	0.111101
IEEE 802.11g	0	5.11	20	25.72	3.24	1.00	0.240835
	1	5.11	20	25.98	3.24	1.00	0.255694
IEEE 802.11n HT20	0	5.11	20	25.07	3.24	1.00	0.420034
	1	5.11		25.18	3.24		
IEEE 802.11n HT40	0	5.11	20	24.69	3.24	1.00	0.386647
	1	5.11		24.84	3.24		

Remark: For mobile or fixed location transmitters, the maximum power density is 1.0 mW/cm² even if the calculation indicates that the power density would be larger.