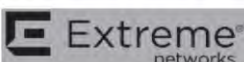




FCC Test Report

FCC ID : QXO-AP310
Equipment : Wireless Access Point
Brand Name :  or Extreme Networks
Model Name : AP310i, AP310e
Applicant : Extreme Networks, Inc.
6480 Via Del Oro, San Jose, CA 95119,
United States
Manufacturer : Extreme Networks, Inc.
6480 Via Del Oro, San Jose, CA 95119,
United States
Standard : 47 CFR FCC Part 15.247

The product was received on Oct. 18, 2019, and testing was started from Nov. 01, 2019 and completed on Jan. 02, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FR992608AC	01	Initial issue of report	Feb. 25, 2020

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and explanations:

None

Reviewed by: Sam Tsai

Report Producer: Debby Hung

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20),VHT20, ax (HEW 20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40), VHT40, ax (HEW 40)	2422-2452	3-9 [7]

Non-Beamforming

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	1TX
2.4-2.4835GHz	802.11g	20	1TX
2.4-2.4835GHz	VHT20	20	1TX
2.4-2.4835GHz	VHT40	40	1TX
2.4-2.4835GHz	802.11ax HEW20	20	1TX
2.4-2.4835GHz	802.11ax HEW40	40	1TX
2.4-2.4835GHz	802.11b	20	2TX
2.4-2.4835GHz	802.11g	20	2TX
2.4-2.4835GHz	VHT20	20	2TX
2.4-2.4835GHz	VHT40	40	2TX
2.4-2.4835GHz	802.11ax HEW20	20	2TX
2.4-2.4835GHz	802.11ax HEW40	40	2TX

Beamforming

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	VHT20-BF	20	2TX
2.4-2.4835GHz	VHT40-BF	40	2TX
2.4-2.4835GHz	802.11ax HEW20-BF	20	2TX
2.4-2.4835GHz	802.11ax HEW40-BF	40	2TX

Note:

- ♦ 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- ♦ 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ HEW20, HEW40 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ BWch is the nominal channel bandwidth.
- ♦ The resource unit of HEW 20, HEW 40 only support full loading.

1.1.2 Antenna Information

(AP310i) Internal Antenna

Ant.	Brand	Model Number (P/N)	Antenna Type	Connector	Antenna Gain (dBi)			Remark
					2.4GHz	5GHz	BLE/Thread	
1	SENAO	5718A0485300	PIFA	IPEX	4.5	5.17	-	Radio 1
2	SENAO	5718A0487300	PIFA	IPEX	4.53	5.07	-	Radio 1
3	SENAO	5718A0486300	PIFA	IPEX	-	4.81	-	Radio 2
4	SENAO	5718A0488300	PIFA	IPEX	-	4.75	-	Radio 2
5	SENAO	5718A0489300	PIFA	IPEX	-	-	4.74	Radio 3

(AP310e) External Antenna

Group	Brand	Model Number (P/N)	Antenna Type	Connector	Antenna Gain (dBi)		
					2.4GHz	5GHz	BLE/Thread
1	Extreme	ML-2452-APA2-01	Omni	Reverse SMA	3.17	4.85	-
2	Extreme	ML-2452-HPA5-036	Omni	Reverse SMA	3.9	5.7	-
3	Extreme	ML-2452-HPAG4A6-01	Omni	N-type	4	7.3	-
4	Extreme	ML-2452-PTA4M4-036	Omni	Reverse SMA	5	6.6	-
5	Extreme	ML-2452-HPAG5A8-01	Omni	N-type	5	8	-
6	Extreme	30724 WS-AO-DQ04360N	Omni	N-type	5.5	6	-
7	Extreme	AI-DQ04360S	Omni	Reverse SMA	5.5	6	-
8	Extreme	ML-2452-PNA5-01R	Panel	N-type	4.5	5	-
9	Extreme	ML-2452-SEC6M4-036, WS-AI-DQ05120 (30702)	Panel	Reverse SMA	6.92	7.23	-
10	Extreme	30705 WS-AI-DE07025	Panel	Reverse SMA	7.5	6.5	-
11	Extreme	ML-2452-PNA7-01R	Panel	N-type	7.8	10.7	7.8
12	Extreme	30707 WS-AI-DE10055	Panel	Reverse SMA	10.5	7.5	-
13	Extreme	ML-2452-APA2-02	Omni	Reverse SMA	3.17	4.85	-
14	Extreme	ML-2499-HPA8-01	Dipole	N-type	-	-	8

Note 1: Group 5, 11,12 were measured during the test for WLAN 2.4G Mode.

Note 2: Group 11,14 were measured during the test for Bluetooth/Thread Mode.

Note 3: Group 5,11 were measured during the test for WLAN 5G Mode.

**For 2.4GHz function:**

For IEEE 802.11 b/g/n/ax mode (1TX/1RX)

Only port 1 can be used as transmitting/receiving antenna.

For IEEE 802.11 b/g/n/ax mode (2TX/2RX)

Port 1 and port 2 could transmit/receive simultaneously.

For BT function:

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

Only port 1 can be used as transmitting/receiving antenna.

For Thread function:

For IEEE 802.15.4 Thread mode (1TX/1RX)

Only port 1 can be used as transmitting/receiving antenna.

For 5GHz function:

For IEEE 802.11 a/n/ac/ax mode (1TX/1RX)

Only port 1 can be used as transmitting/receiving antenna.

For IEEE 802.11 a/n/ac/ax mode (2TX/2RX)

Port 1 and port 2 could transmit/receive simultaneously.

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From PoE		
EUT Function	☒	Point-to-multipoint	☐ Point-to-point
Beamforming Function	☒	With beamforming	☐ Without beamforming
Type of EUT			
☒	Stand-alone		
☐	Combined (EUT where the radio part is fully integrated within another device)		
	Combined Equipment - Brand Name / Model No.:		...
☐	Plug-in radio (EUT intended for a variety of host systems)		
	Host System - Brand Name / Model No.:		...
☐	Other:		

1.1.4 Table for Multiple Listing

Sample Number	Model Name	Description
1	AP310i	The "i" in AP310i indicates that it comes with internal antennas and the "e" in AP310e indicates that the access point comes with external antenna connectors.
2	AP310e	

1.1.5 Mode Test Duty Cycle

Non-Beamforming

Sample 1_Radio 1_1T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11b_Nss1,(1Mbps)_1TX	0.946	0.24	12.421m	100
802.11g_Nss1,(6Mbps)_1TX	0.952	0.21	2.067m	1k
VHT20_Nss1,(MCS0)_1TX	0.986	0.06	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
VHT40_Nss1,(MCS0)_1TX	0.972	0.12	955.938u	3k
802.11ax HEW20_Nss1,(MCS0)_1TX	0.981	0.08	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW40_Nss1,(MCS0)_1TX	0.964	0.16	774.375u	3k

Sample 1_Radio 1_2T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11b_Nss1,(1Mbps)_2TX	0.949	0.23	12.422m	100
802.11g_Nss1,(6Mbps)_2TX	0.952	0.21	2.069m	1k
VHT20_Nss2,(MCS0)_2TX	0.973	0.12	990.938u	3k
VHT40_Nss2,(MCS0)_2TX	0.948	0.23	503.125u	3k
802.11ax HEW20_Nss2,(MCS0)_2TX	0.965	0.15	782.5u	3k
802.11ax HEW40_Nss2,(MCS0)_2TX	0.933	0.3	424.375u	3k

Sample 2_Radio 1_1T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11b_Nss1,(1Mbps)_1TX	0.948	0.23	12.417m	100
802.11g_Nss1,(6Mbps)_1TX	0.951	0.22	2.066m	1k
VHT20_Nss1,(MCS0)_1TX	0.986	0.06	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
VHT40_Nss1,(MCS0)_1TX	0.972	0.12	954.688u	3k
802.11ax HEW20_Nss1,(MCS0)_1TX	0.98	0.09	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW40_Nss1,(MCS0)_1TX	0.963	0.16	775u	3k

Sample 2_Radio 1_2T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11b_Nss1,(1Mbps)_2TX	0.948	0.23	12.417m	100
802.11g_Nss1,(6Mbps)_2TX	0.951	0.22	2.066m	1k
VHT20_Nss2,(MCS0)_2TX	0.972	0.12	990.625u	3k
VHT40_Nss2,(MCS0)_2TX	0.948	0.23	503.125u	3k
802.11ax HEW20_Nss2,(MCS0)_2TX	0.964	0.16	781.25u	3k
802.11ax HEW40_Nss2,(MCS0)_2TX	0.932	0.31	423.438u	3k

**Beamforming****Sample 1_Radio 1_2T1S**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
VHT20-BF_Nss1,(MCS0)_2TX	0.905	0.43	2.226m	1k
VHT40-BF_Nss1,(MCS0)_2TX	0.905	0.43	2.798m	1k
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	0.868	0.61	1.503m	1k
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	0.883	0.54	2.224m	1k

Sample 2_Radio 1_2T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
VHT20-BF_Nss1,(MCS0)_2TX	0.905	0.43	2.226m	1k
VHT40-BF_Nss1,(MCS0)_2TX	0.905	0.43	2.798m	1k
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	0.868	0.61	1.503m	1k
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	0.883	0.54	2.224m	1k

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013
- ♦ KDB 558074 D01 v05r02
- ♦ KDB 662911 D01 v02r01
- ♦ KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.			
☐	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Edward Wang	20.3~23.1°C / 55.6~67.2%	26/Dec/2019~ 27/Dec/2019
RF Conducted	TH01-HY	Alan	23.1~25°C / 61~67%	01/Nov/2019~ 02/Jan/2020
Radiated	03CH02-HY	Dexter	22.3~24.6°C / 52~56%	06/Nov/2019~ 26/Dec/2019

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.54 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	1.6 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%
Temperature	0.7 °C	Confidence levels of 95%
Humidity	4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V

2.2 Test Channel Mode

Non-Beamforming

Test Software Version	accessMTool_REL_3_1_0_1
-----------------------	-------------------------

Sample 1_Radio 1_1T1S

Mode	Power Setting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	22.5
2417MHz	22.5
2437MHz	23.25
2457MHz	22.5
2462MHz	22.5
802.11g_Nss1,(6Mbps)_1TX	-
2412MHz	17.75
2417MHz	20
2437MHz	22
2457MHz	19.75
2462MHz	17
VHT20_Nss1,(MCS0)_1TX	-
2412MHz	17.5
2417MHz	19.25
2437MHz	21.5
2457MHz	19
2462MHz	15.25
VHT40_Nss1,(MCS0)_1TX	-
2422MHz	16.5
2427MHz	17
2437MHz	18.25
2447MHz	18
2452MHz	17.25



Mode	Power Setting
802.11ax HEW20_Nss1,(MCS0)_1TX	-
2412MHz	17.5
2417MHz	19.25
2437MHz	21.5
2457MHz	19
2462MHz	15.25
802.11ax HEW40_Nss1,(MCS0)_1TX	-
2422MHz	16.5
2427MHz	17
2437MHz	18.25
2447MHz	18
2452MHz	17.25

**Sample 1_Radio 1_2T2S**

Mode	Power Setting
802.11b_Nss1,(1Mbps)_2TX	-
2412MHz	21.75
2417MHz	22
2437MHz	24.25
2457MHz	22
2462MHz	21.5
802.11g_Nss1,(6Mbps)_2TX	-
2412MHz	18.75
2417MHz	20
2437MHz	22.25
2457MHz	19.25
2462MHz	16.75
VHT20_Nss2,(MCS0)_2TX	-
2412MHz	17.75
2417MHz	18.5
2437MHz	21
2457MHz	18.5
2462MHz	17.75
VHT40_Nss2,(MCS0)_2TX	-
2422MHz	15.5
2427MHz	16.75
2437MHz	17.25
2447MHz	17
2452MHz	16.75
802.11ax HEW20_Nss2,(MCS0)_2TX	-
2412MHz	17.75
2417MHz	18.5
2437MHz	21
2457MHz	18.5
2462MHz	17.75
802.11ax HEW40_Nss2,(MCS0)_2TX	-
2422MHz	15.5
2427MHz	16.75
2437MHz	17.25
2447MHz	17
2452MHz	16.75

**Sample 2_Radio 1_Omni_1T1S**

Mode	Power Setting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	20
2417MHz	20.25
2437MHz	20.25
2462MHz	20.25
802.11g_Nss1,(6Mbps)_1TX	
2412MHz	16.75
2417MHz	19.25
2437MHz	21.75
2457MHz	18.5
2462MHz	15.75
VHT20_Nss1,(MCS0)_1TX	
2412MHz	16.25
2417MHz	18.75
2437MHz	20.75
2457MHz	18.25
2462MHz	16.25
VHT40_Nss1,(MCS0)_1TX	
2422MHz	14.75
2427MHz	15.25
2437MHz	16.75
2447MHz	15.75
2452MHz	15.5
802.11ax HEW20_Nss1,(MCS0)_1TX	
2412MHz	16.25
2417MHz	18.75
2437MHz	20.75
2457MHz	18.25
2462MHz	16.25
802.11ax HEW40_Nss1,(MCS0)_1TX	
2422MHz	14.75
2427MHz	15.25
2437MHz	16.75
2447MHz	15.75
2452MHz	15.5

**Sample 2_Radio 1_Omni_2T2S**

Mode	Power Setting
802.11b_Nss1,(1Mbps)_2TX	-
2412MHz	19
2417MHz	20
2437MHz	20
2457MHz	20
2462MHz	19
802.11g_Nss1,(6Mbps)_2TX	-
2412MHz	14
2417MHz	15.75
2437MHz	19.75
2457MHz	15.25
2462MHz	14
VHT20_Nss2,(MCS0)_2TX	-
2412MHz	14
2417MHz	16.25
2437MHz	18.5
2457MHz	15.5
2462MHz	14.5
VHT40_Nss2,(MCS0)_2TX	-
2422MHz	12.5
2427MHz	12.75
2437MHz	14.25
2447MHz	13.75
2452MHz	13.25
802.11ax HEW20_Nss2,(MCS0)_2TX	-
2412MHz	14
2417MHz	16.25
2437MHz	18.5
2457MHz	15.5
2462MHz	14.5
802.11ax HEW40_Nss2,(MCS0)_2TX	-
2422MHz	12.5
2427MHz	12.75
2437MHz	14.25
2447MHz	13.75
2452MHz	13.25

**Sample 2_Radio 1_Panel 1_1T1S**

Mode	Power Setting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	20
2417MHz	20.25
2437MHz	20.5
2457MHz	20.5
2462MHz	20
802.11g_Nss1,(6Mbps)_1TX	-
2412MHz	15
2417MHz	17
2437MHz	20.5
2457MHz	16
2462MHz	14.75
VHT20_Nss1,(MCS0)_1TX	-
2412MHz	12
2417MHz	15.5
2437MHz	20
2457MHz	16
2462MHz	11.75
VHT40_Nss1,(MCS0)_1TX	-
2422MHz	14.25
2427MHz	14.25
2437MHz	15.5
2447MHz	14.25
2452MHz	14
802.11ax HEW20_Nss1,(MCS0)_1TX	-
2412MHz	12
2417MHz	15.5
2437MHz	20
2457MHz	16
2462MHz	11.75
802.11ax HEW40_Nss1,(MCS0)_1TX	-
2422MHz	14.25
2427MHz	14.25
2437MHz	15.5
2447MHz	14.25
2452MHz	14

**Sample 2_Radio 1_Panel 1_2T2S**

Mode	Power Setting
802.11b_Nss1,(1Mbps)_2TX	-
2412MHz	17.75
2437MHz	16.75
2462MHz	17.5
802.11g_Nss1,(6Mbps)_2TX	
2412MHz	13.75
2417MHz	15
2437MHz	19
2457MHz	15
2462MHz	14.25
VHT20_Nss2,(MCS0)_2TX	
2412MHz	14.5
2417MHz	15.5
2437MHz	18.25
2457MHz	15.75
2462MHz	14.5
VHT40_Nss2,(MCS0)_2TX	
2422MHz	13.25
2427MHz	13.25
2437MHz	14
2447MHz	14
2452MHz	13.5
802.11ax HEW20_Nss2,(MCS0)_2TX	
2412MHz	14.5
2417MHz	15.5
2437MHz	18.25
2457MHz	15.75
2462MHz	14.5
802.11ax HEW40_Nss2,(MCS0)_2TX	
2422MHz	13.25
2427MHz	13.25
2437MHz	14
2447MHz	14
2452MHz	13.5

**Sample 2_Radio 1_Panel 2_1T1S**

Mode	Power Setting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	19.75
2437MHz	19.5
2462MHz	20
802.11g_Nss1,(6Mbps)_1TX	-
2412MHz	14.5
2417MHz	16.75
2437MHz	20
2457MHz	16.75
2462MHz	15
VHT20_Nss1,(MCS0)_1TX	-
2412MHz	12
2417MHz	16
2437MHz	19.25
2457MHz	17
2462MHz	12.25
VHT40_Nss1,(MCS0)_1TX	-
2422MHz	14.75
2427MHz	14.25
2437MHz	15.75
2447MHz	14.5
2452MHz	14
802.11ax HEW20_Nss1,(MCS0)_1TX	-
2412MHz	12
2417MHz	16
2437MHz	19.25
2457MHz	17
2462MHz	12.25
802.11ax HEW40_Nss1,(MCS0)_1TX	-
2422MHz	14.75
2427MHz	14.25
2437MHz	15.75
2447MHz	14.5
2452MHz	14

**Sample 2_Radio 1_Panel 2_2T2S**

Mode	Power Setting
802.11b_Nss1,(1Mbps)_2TX	-
2412MHz	18
2417MHz	18
2437MHz	20.5
2457MHz	19
2462MHz	19
802.11g_Nss1,(6Mbps)_2TX	-
2412MHz	13.25
2417MHz	14
2437MHz	18.25
2457MHz	15
2462MHz	13.5
VHT20_Nss2,(MCS0)_2TX	-
2412MHz	12.75
2417MHz	14.75
2437MHz	18
2457MHz	15
2462MHz	14
VHT40_Nss2,(MCS0)_2TX	-
2422MHz	12
2427MHz	12.25
2437MHz	13.75
2447MHz	13.25
2452MHz	12.75
802.11ax HEW20_Nss2,(MCS0)_2TX	-
2412MHz	12.75
2417MHz	14.75
2437MHz	18
2457MHz	15
2462MHz	14
802.11ax HEW40_Nss2,(MCS0)_2TX	-
2422MHz	12
2427MHz	12.25
2437MHz	13.75
2447MHz	13.25
2452MHz	12.75

**Beamforming**

Test Software Version	Dos
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Sample 1_Radio 1_2T1S

Mode	Power Setting
VHT20-BF_Nss1,(MCS0)_2TX	-
2412MHz	16.25
2417MHz	16.25
2437MHz	21.25
2457MHz	17.25
2462MHz	14
VHT40-BF_Nss1,(MCS0)_2TX	
2422MHz	13.5
2427MHz	15.75
2437MHz	15.75
2447MHz	15.75
2452MHz	15.5
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	
2412MHz	16.25
2417MHz	16.25
2437MHz	21.25
2457MHz	17.25
2462MHz	14
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	
2422MHz	13.5
2427MHz	15.75
2437MHz	15.75
2447MHz	15.75
2452MHz	15.5

**Sample 2_Radio 1_Omni_2T1S**

Mode	Power Setting
VHT20-BF_Nss1,(MCS0)_2TX	-
2412MHz	13.25
2417MHz	14.25
2437MHz	20
2457MHz	14.5
2462MHz	13
VHT40-BF_Nss1,(MCS0)_2TX	
2422MHz	11
2427MHz	11
2437MHz	12.25
2452MHz	12.25
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	
2412MHz	13.25
2417MHz	14.25
2437MHz	20
2457MHz	14.5
2462MHz	13
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	
2422MHz	11
2427MHz	11
2437MHz	12.25
2452MHz	12.25

**Sample 2_Radio 1_Panel 1_2T1S**

Mode	Power Setting
VHT20-BF_Nss1,(MCS0)_2TX	-
2412MHz	12.25
2417MHz	14.25
2437MHz	19
2457MHz	14
2462MHz	12.25
VHT40-BF_Nss1,(MCS0)_2TX	
2422MHz	10.5
2427MHz	10.75
2437MHz	13.75
2447MHz	12.25
2452MHz	12
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	
2412MHz	12.25
2417MHz	14.25
2437MHz	19
2457MHz	14
2462MHz	12.25
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	
2422MHz	10.5
2427MHz	10.75
2437MHz	13.75
2447MHz	12.25
2452MHz	12

**Sample 2_Radio 1_Panel 2_2T1S**

Mode	Power Setting
VHT20-BF_Nss1,(MCS0)_2TX	-
2412MHz	12.5
2417MHz	14.25
2437MHz	18.5
2457MHz	12.75
2462MHz	12
VHT40-BF_Nss1,(MCS0)_2TX	
2422MHz	12
2427MHz	12.5
2437MHz	14
2447MHz	12.5
2452MHz	12
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	
2412MHz	12.5
2417MHz	14.25
2437MHz	18.5
2457MHz	12.75
2462MHz	12
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	
2422MHz	12
2427MHz	12.5
2437MHz	14
2447MHz	12.5
2452MHz	12

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX
1	PoE mode (Non-Beamforming_Sample 1)
2	PoE mode (Non-Beamforming_Sample 2)
3	PoE mode (Beamforming_Sample 1)
4	PoE mode (Beamforming_Sample 2)

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests			
Tests Item	Emissions in Restricted Frequency Bands		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
Operating Mode < 1GHz	CTX		
1	PoE Mode (Non-Beamforming_Sample 1_Radio 1_1T1S)		
2	PoE Mode (Non-Beamforming_Sample 1_Radio 1_2T2S)		
3	PoE Mode (Non-Beamforming_Sample 2_Radio 1_Omni_1T1S)		
4	PoE Mode (Non-Beamforming_Sample 2_Radio 1_Omni_2T2S)		
5	PoE Mode (Non-Beamforming_Sample 2_Radio 1_Panel 1_1T1S)		
6	PoE Mode (Non-Beamforming_Sample 2_Radio 1_Panel 1_2T2S)		
7	PoE Mode (Non-Beamforming_Sample 2_Radio 1_Panel 2_1T1S)		
8	PoE Mode (Non-Beamforming_Sample 2_Radio 1_Panel 2_2T2S)		
9	PoE Mode (Beamforming_Sample 1_Radio 1_2T1S)		
10	PoE Mode (Beamforming_Sample 2_Radio 1_Omni_2T1S)		
11	PoE Mode (Beamforming_Sample 2_Radio 1_Panel 1_2T1S)		
12	PoE Mode (Beamforming_Sample 2_Radio 1_Panel 2_2T1S)		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT	V	V	V

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Operating Mode	CTX
1	Radio 1 WLAN 2.4G+ Radio 2 WLAN 5G+ Bluetooth
2	Radio 1 WLAN 2.4G+ Radio 2 WLAN 5G+ Thread
3	Radio 1 WLAN 5G+ Radio 2 WLAN 5G+ Bluetooth
4	Radio 1 WLAN 5G+ Radio 2 WLAN 5G+ Thread
Refer to Sporton Test Report No.: FA992608 for Co-location RF Exposure Evaluation.	

2.4 Support Equipment

Support Equipment – AC Conduction				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Load	Sporton	-	-
2	USB 2.0 Flash	Transcend	D24425 2101	-
3	LAN Cable	Power Sync	UTP5-01	-
4	LAN Cable	Power Sync	CAT-6E-10	-
5	PoE	EnGenius	EPA5006GP	-
6	AC Power Cable	-	-	-
7	PoE for Beamforming	EnGenius	EPA5006GP	Remote
8	AC Power Cable	-	-	Remote
9	Notebook	DELL	PP13S	Remote
10	LAN Cable	Power Sync	CAT-6E-01	Remote
11	Adapter for NB	DELL	AA90PM111	Remote
12	AC Power Cable for NB	Power sync	PW-GPC180-3	Remote

Note: Support equipment No.5,6,7,8 were provided by customer.

Support Equipment – RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	PP13S	R33002 / DOC
2	Adapter for NB	DELL	AA90PM111	R35737 / DOC
3	Notebook	DELL	PP13S	R33002 / DOC
4	Adapter for NB	DELL	AA90PM111	R35737 / DOC
5	PoE	EnGenius	EPA5006GP	-

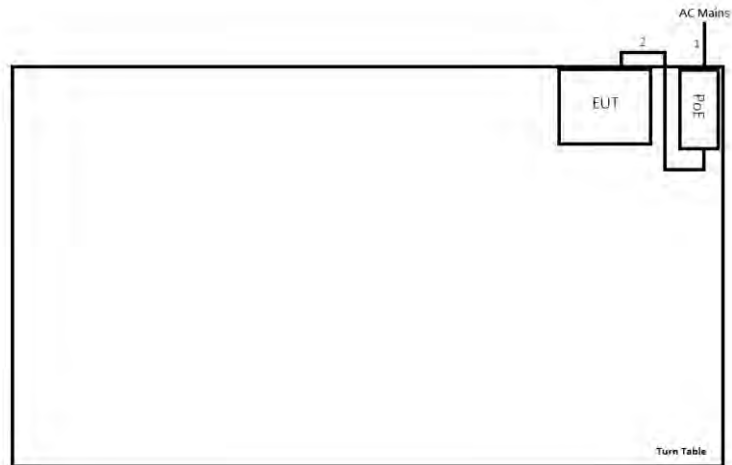
Note: Support equipment No.5 was provided by customer.

Support Equipment – Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Load	Sporton	-	-
2	LAN Cable	Power Sync	CAT-6E-01	-
3	LAN Cable	Power Sync	CAT-6E-10	-
4	PoE	EnGenius	EPA5006GP	Remote
5	AC Power Cable	-	-	Remote
6	Notebook	DELL	M-S69	Remote
7	LAN Cable	Power Sync	CAT-6E-01	Remote
8	Adapter for Notebook	DELL	M-S69	Remote

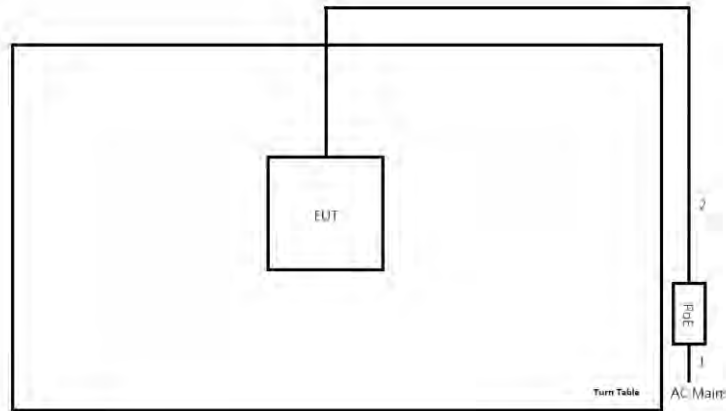
Note: Support equipment No.4, 5 were provided by customer.

2.5 Test Setup Diagram

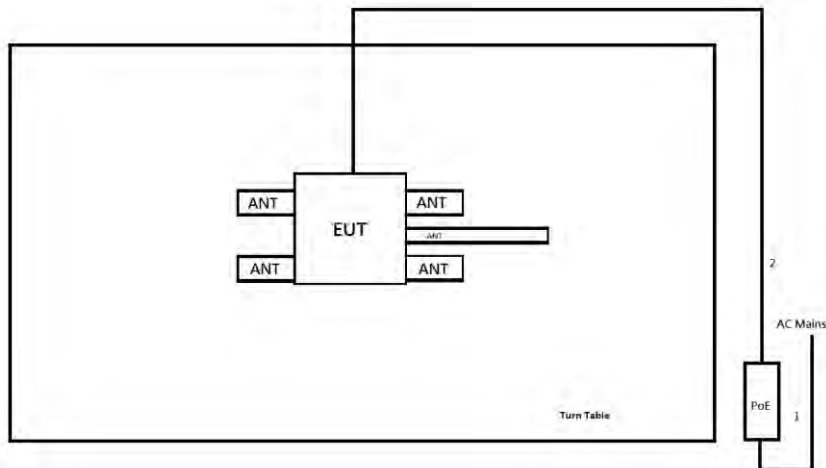
Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	0.5	Client provided
2	LAN Cable	No	10	-

Test Setup Diagram - Radiated Test (Sample 1)


Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	0.5	Client provided
2	LAN Cable	No	10	-

Test Setup Diagram - Radiated Test (Sample 2)


Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	0.5	-
2	LAN Cable	No	10	-

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

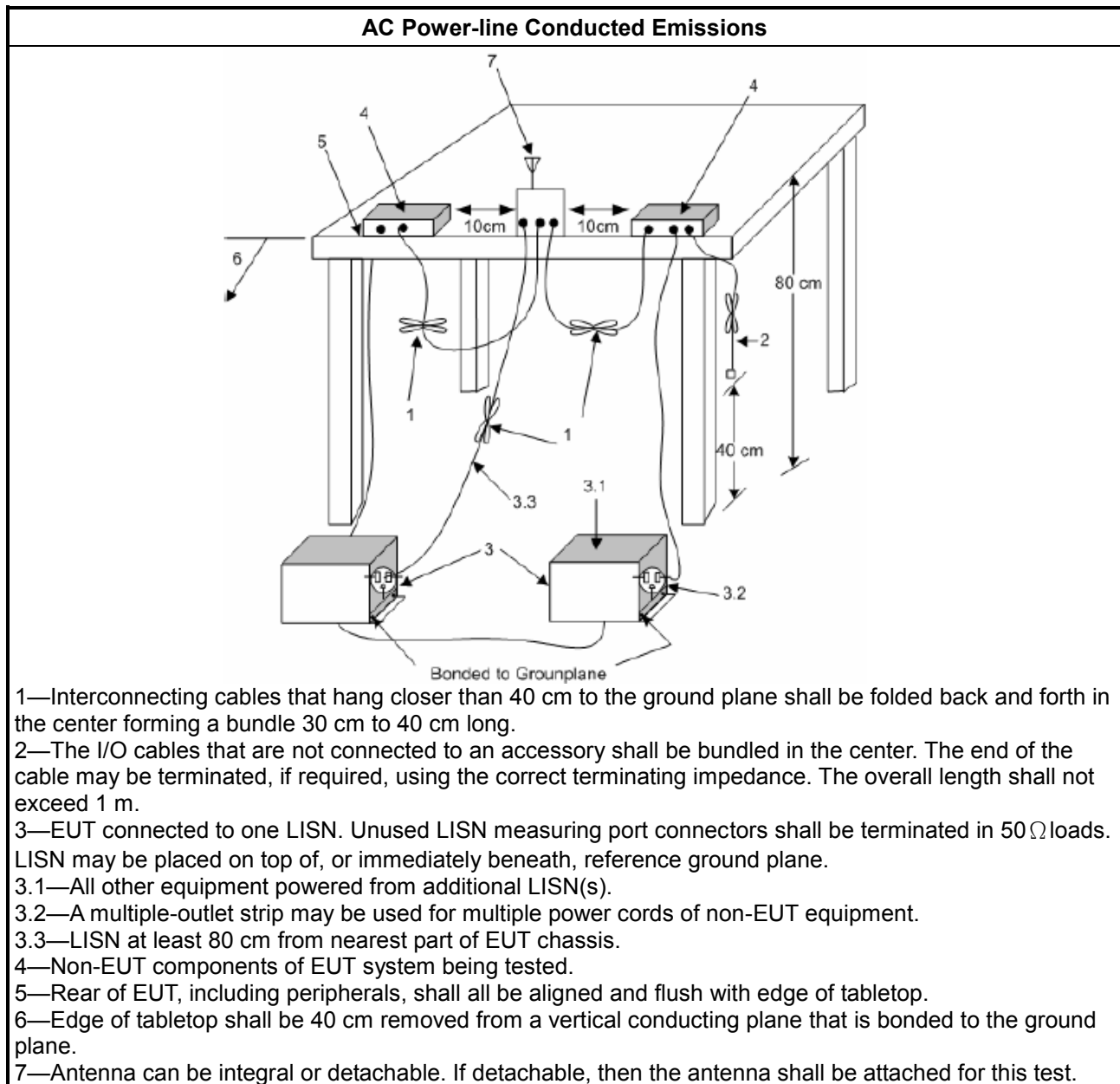
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit	
Systems using digital modulation techniques:	
▪	6 dB bandwidth $\geq$ 500 kHz.

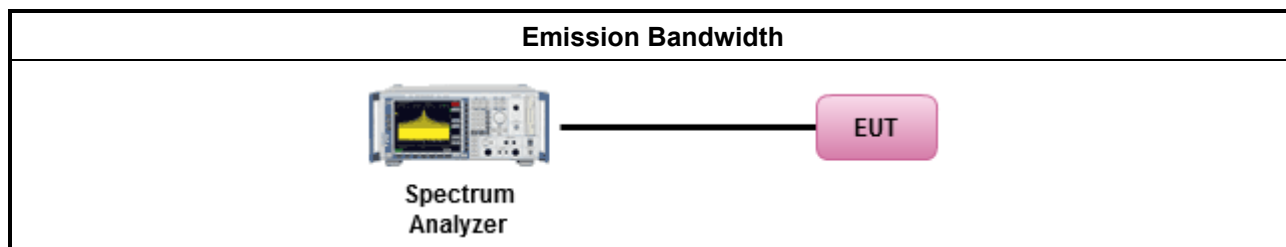
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method	
▪	For the emission bandwidth shall be measured using one of the options below:
☒	Refer as KDB 558074. clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
☐	Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.
☐	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit		
	▪	If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	▪	Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	▪	Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	▪	Smart antenna system (SAS):
	-	Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	-	Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	-	Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm
e.i.r.p. Power Limit:		
	▪	2400-2483.5 MHz Band
	▪	Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
	▪	Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
	▪	Smart antenna system (SAS)
	-	Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	-	Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	-	Aggregate power on all beams: $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])$ dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.		

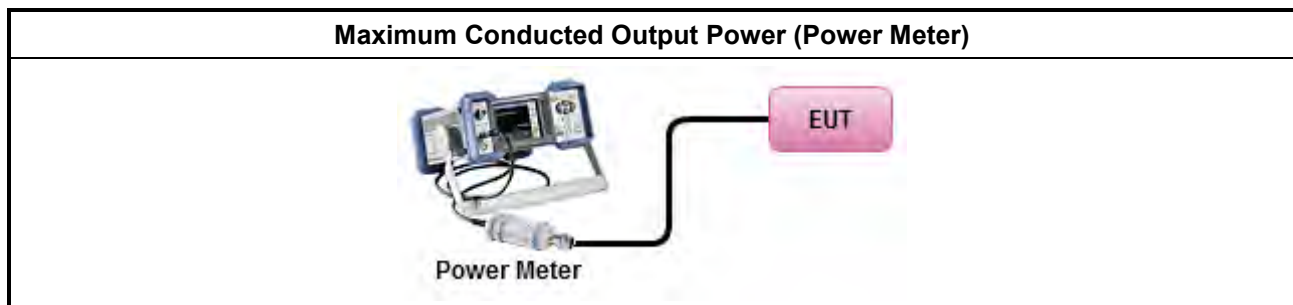
3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
Maximum Peak Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
☐	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
☐	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
Maximum Average Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
☒	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.	
If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit	
▪	Power Spectral Density (PSD) $\leq$ 8 dBm/3kHz

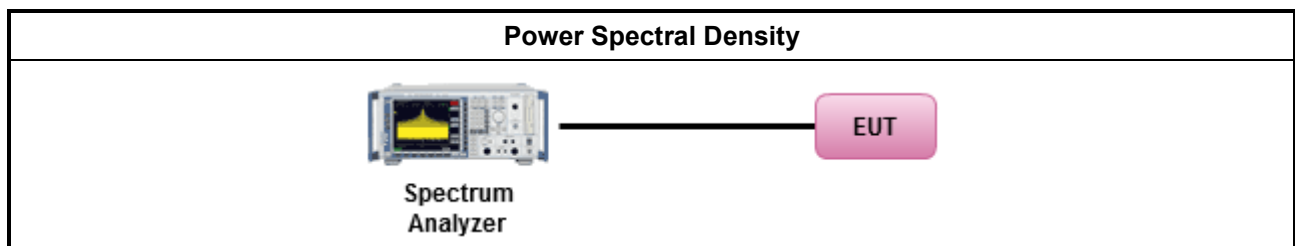
3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method	
▪	Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
☒	Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Method PKPSD.
▪	For conducted measurement.
▪	If The EUT supports multiple transmit chains using options given below:
▪	Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	Limit (dB)
Peak output power procedure	20
Average output power procedure	30
Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak level. Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average level.	

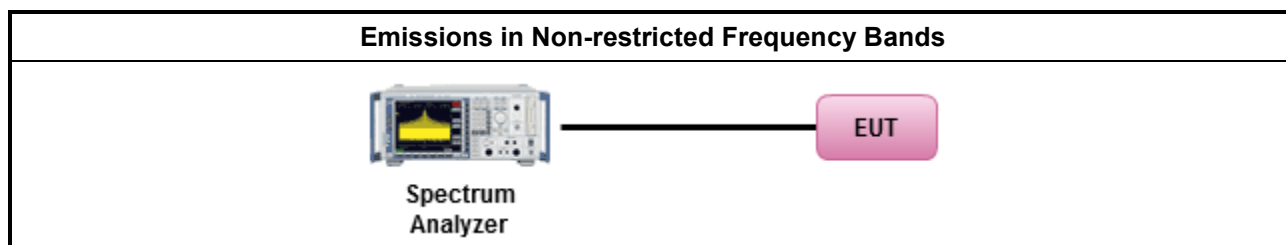
3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method
Refer as KDB 558074, clause 8.5 (11.11 of ANSI C63.10) for non-restricted frequency bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

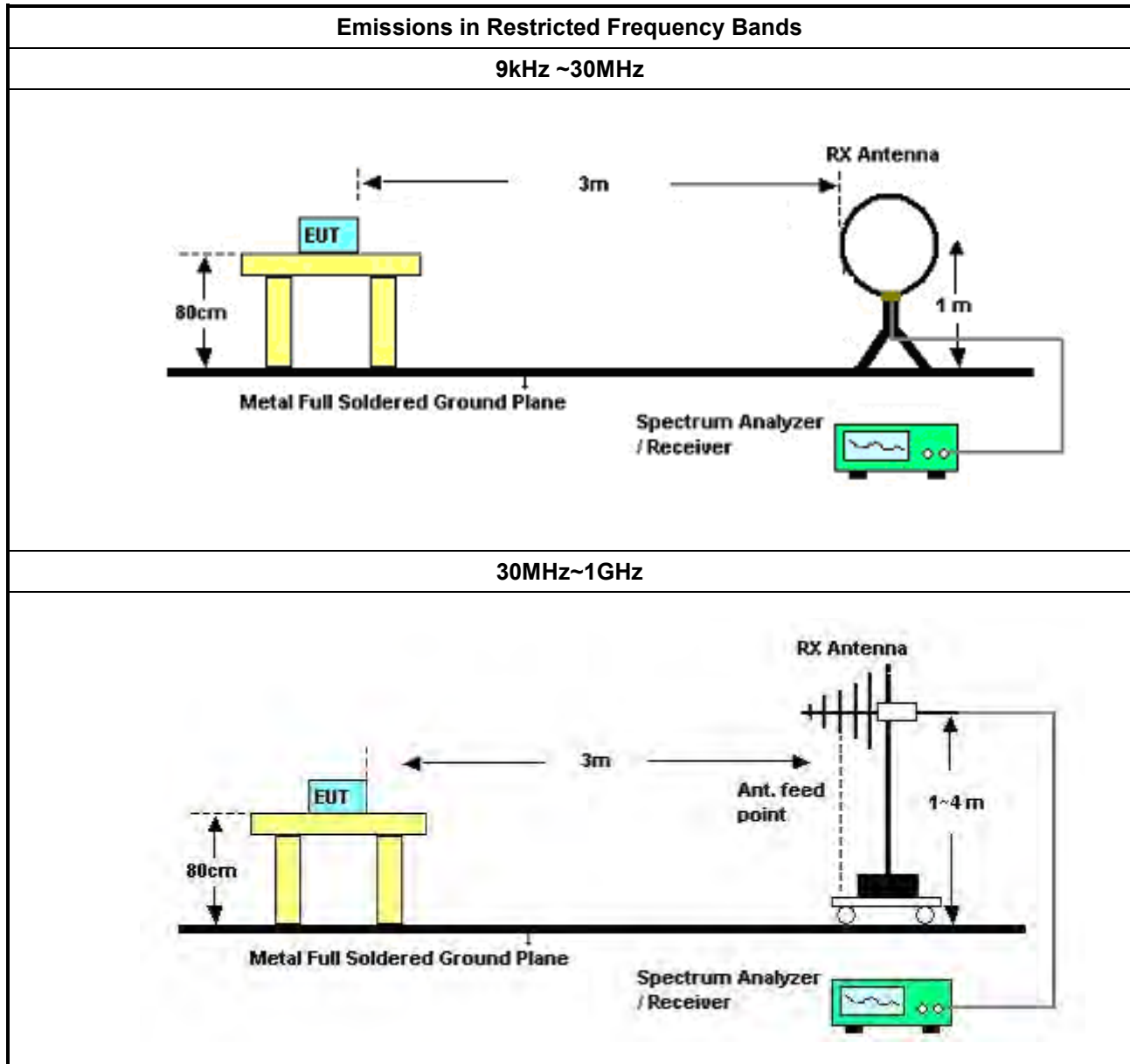
3.6.2 Measuring Instruments

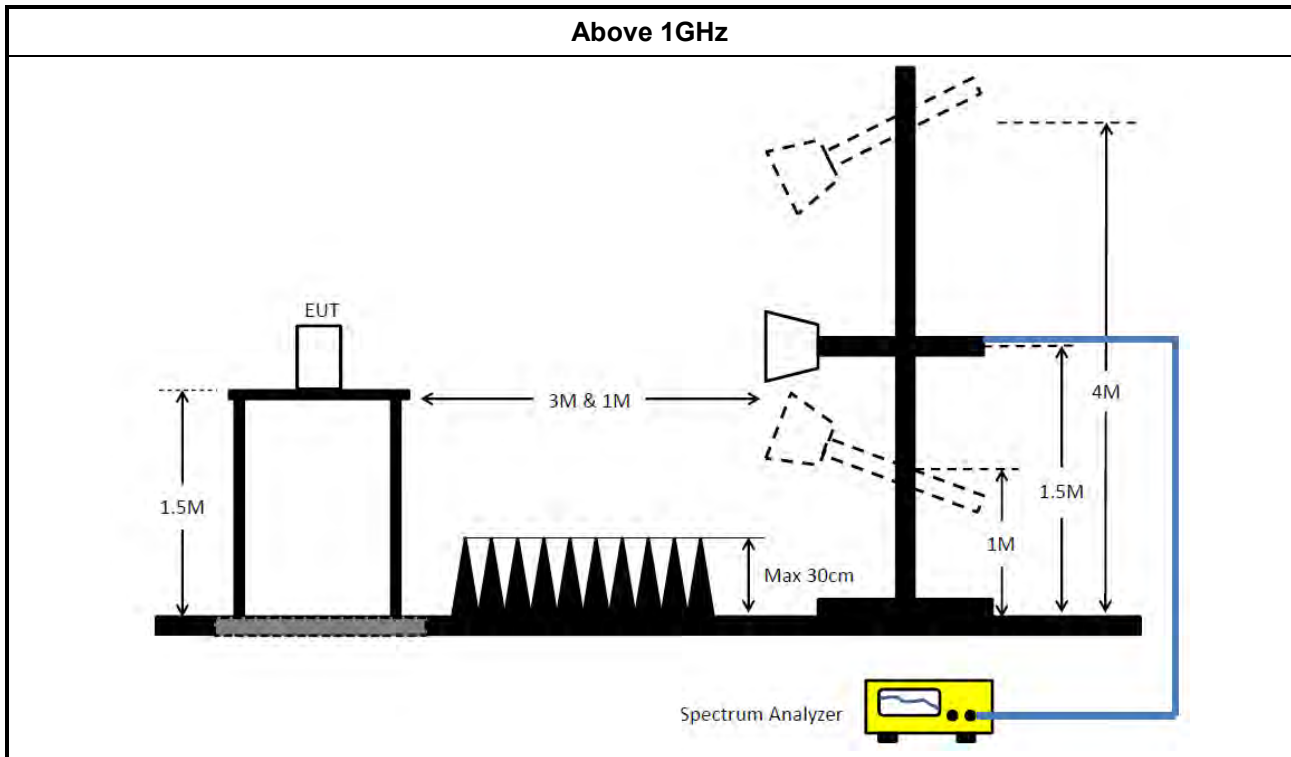
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method	
The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].	
Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
For the transmitter unwanted emissions shall be measured using following options below:	
	Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
For the transmitter band-edge emissions shall be measured using following options below:	
	Refer as KDB 558074 clause 8.7.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels.
Use the following spectrum analyzer settings:	
	Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4.
KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.	
	Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.
	Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

3.6.4 Test Setup





3.6.5 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

3.6.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR3	102052	9kHz ~ 3.6GHz	09/Apr/2019	08/Apr/2020
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	05/Nov/2019	04/Nov/2020
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	12/Sep/2019	11/Sep/2020
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	24/Sep/2019	23/Sep/2020

NCR : Non-Calibration Require

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	10Hz~40GHz	13/Mar/2019	12/Mar/2020
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	10/Nov/2020
Power Sensor	Anritsu	MA2411B	0917017	300MHz ~ 40GHz	19/Feb/2019	18/Feb/2020
Power Meter	Anritsu	ML2495A	0949003	300MHz ~ 40GHz	19/Feb/2019	18/Feb/2020
Cable 0.2m	HUBER	MY10710/4	RF Cable - 01	30MHz~18G	11/Jan/2019	10/Jan/2020
Cable 0.2m	HUBER	MY10711/4	RF Cable - 02	30MHz~18G	11/Jan/2019	10/Jan/2020
Cable 0.5m	HUBER	MY10714/4	RF Cable - 05	30MHz~1G	11/Jan/2019	10/Jan/2020

**Instrument for Radiated Test**

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	30/Aug/2019	29/Aug/2020
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	30/Aug/2019	29/Aug/2020
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	22/Apr/2019	21/Apr/2020
EMI Test Receiver	R&S	ESR3	102052	9kHz ~ 3.6GHz	09/Apr/2019	08/Apr/2020
Bilog Antenna & 5db Attenuator	SCHAFFNER/MTJ	CBL6112D / MTJ6102-05	2678 / 001	30MHz ~ 2GHz	06/Jul/2019	05/Jul/2020
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL 6112B / MTJ6102-05	2723 / 2	30MHz ~ 2GHz	11/Oct/2019	10/Oct/2020
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz ~ 26.5GHz	23/Oct/2018	22/Oct/2019
Microwave System Preamplifier	KEYSIGHT	83017A	MY53270196	1GHz ~ 26.5GHz	09/Sep/2019	08/Sep/2020
Signal Analyzer	R&S	FSP40	100305	9 kHz ~ 40 GHz;-140-+30dBm	10/Jun/2019	09/Jun/2020
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	22/Mar/2019	21/Mar/2020
RF CABLE 6m	HUBER+SUHNER	SUOFLEX 104	SN 805801/4	1GHz ~ 40GHz	21/Mar/2019	20/Mar/2020
RF CABLE	HUBER+SUHNER	SUOFLEX 104	802378/4	1 GHz ~ 18 GHz	04/Jul/2019	03/Jul/2020
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	15GHz ~ 40GHz	22/Mar/2019	21/Mar/2020
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1531	1GHz ~ 18GHz	09/Mar/2019	08/Mar/2020
Loop Antenna	TESEQ	HLA 6120	31244	9k-30MHz	15/Mar/2019	14/Mar/2020



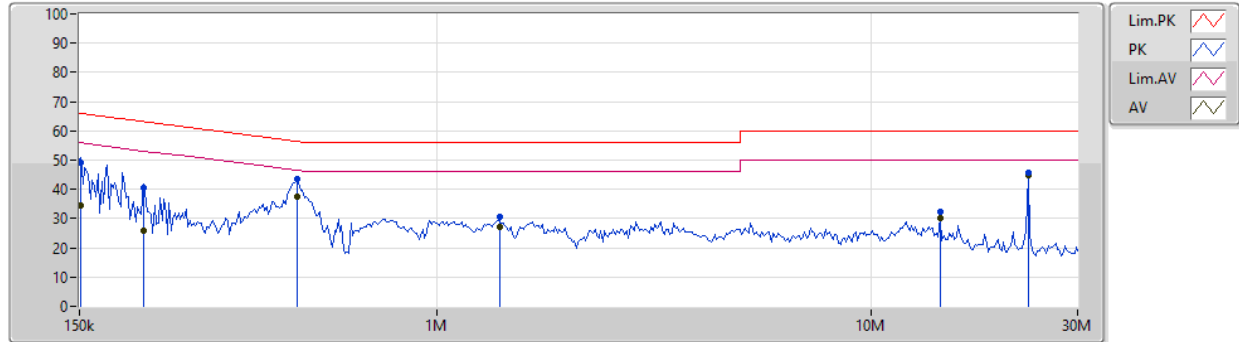
AC Power-line Conducted Emissions Non Beamforming_Sample 1

Appendix A.1

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	Sample 1; PoE mode; WIFI 2.4G TX		

26/12/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	151.5k	49.29	65.92	-16.63	19.63	Neutral	-	29.66	9.65	0.11	9.87			
AV	151.5k	34.29	55.92	-21.63	19.63	Neutral	-	14.66	9.65	0.11	9.87			
QP	210.387k	40.50	63.19	-22.69	19.62	Neutral	-	20.88	9.64	0.11	9.87			
AV	210.387k	26.05	53.19	-27.14	19.62	Neutral	-	6.43	9.64	0.11	9.87			
QP	475.741k	43.58	56.42	-12.84	19.63	Neutral	-	23.95	9.63	0.13	9.87			
AV	475.741k	37.58	46.42	-8.84	19.63	Neutral	-	17.95	9.63	0.13	9.87			
QP	1.393M	30.52	56.00	-25.48	19.65	Neutral	-	10.87	9.64	0.13	9.88			
AV	1.393M	27.26	46.00	-18.74	19.65	Neutral	-	7.61	9.64	0.13	9.88			
QP	14.441M	32.41	60.00	-27.59	19.90	Neutral	-	12.51	9.71	0.31	9.88			
AV	14.441M	30.01	50.00	-19.99	19.90	Neutral	-	10.11	9.71	0.31	9.88			
QP	23.052M	45.83	60.00	-14.17	19.97	Neutral	-	25.86	9.70	0.39	9.88			
AV	23.052M	44.99	50.00	-5.01	19.97	Neutral	"Worst"	25.02	9.70	0.39	9.88			



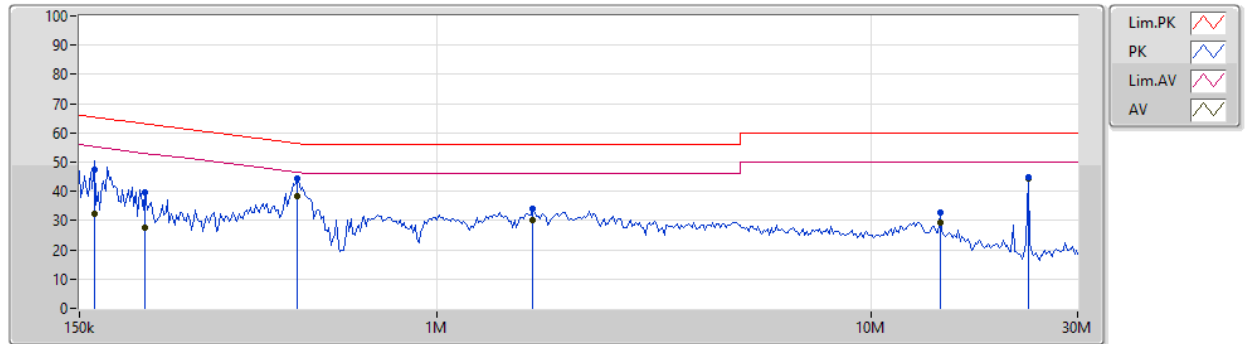
AC Power-line Conducted Emissions _Non Beamforming_Sample 1

Appendix A.1

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Sample 1; PoE mode; WIFI 2.4G TX		

26/12/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	162.429k	47.31	65.33	-18.02	19.64	Line	-	27.67	9.66	0.11	9.87			
AV	162.429k	32.23	55.33	-23.10	19.64	Line	-	12.59	9.66	0.11	9.87			
QP	212.49k	39.73	63.11	-23.38	19.63	Line	-	20.10	9.65	0.11	9.87			
AV	212.49k	27.49	53.11	-25.62	19.63	Line	-	7.86	9.65	0.11	9.87			
QP	475.741k	44.22	56.42	-12.20	19.64	Line	-	24.58	9.64	0.13	9.87			
AV	475.741k	38.20	46.42	-8.22	19.64	Line	-	18.56	9.64	0.13	9.87			
QP	1.667M	33.98	56.00	-22.02	19.66	Line	-	14.32	9.65	0.14	9.87			
AV	1.667M	30.07	46.00	-15.93	19.66	Line	-	10.41	9.65	0.14	9.87			
QP	14.441M	32.61	60.00	-27.39	19.85	Line	-	12.76	9.66	0.31	9.88			
AV	14.441M	29.16	50.00	-20.84	19.85	Line	-	9.31	9.66	0.31	9.88			
QP	23.052M	45.04	60.00	-14.96	19.86	Line	-	25.18	9.59	0.39	9.88			
AV	23.052M	44.30	50.00	-5.70	19.86	Line	"Worst"	24.44	9.59	0.39	9.88			



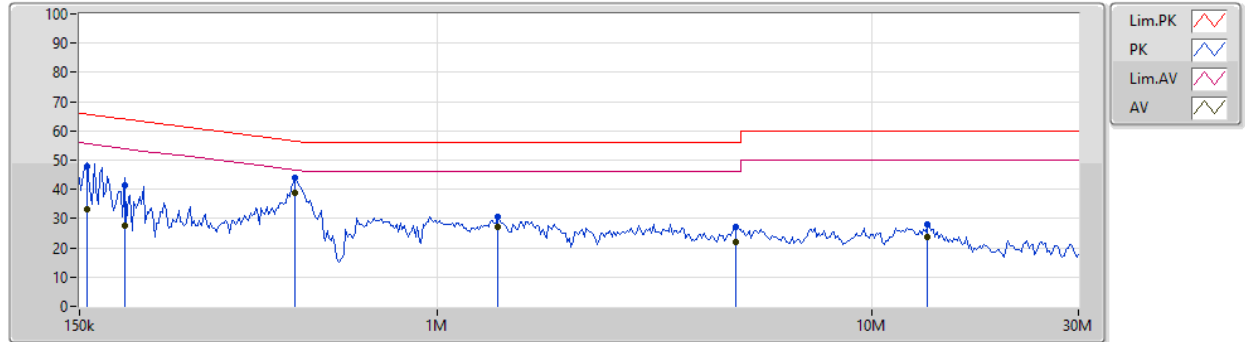
AC Power-line Conducted Emissions _Non Beamforming_Sample 2

Appendix A.2

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	Sample 2; PoE mode; WIFI 2.4G TX		

27/12/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	156.091k	47.72	65.67	-17.95	19.63	Neutral	-	28.09	9.65	0.11	9.87			
AV	156.091k	33.32	55.67	-22.35	19.63	Neutral	-	13.69	9.65	0.11	9.87			
QP	190.46k	41.48	64.01	-22.53	19.62	Neutral	-	21.86	9.64	0.11	9.87			
AV	190.46k	27.71	54.01	-26.30	19.62	Neutral	-	8.09	9.64	0.11	9.87			
QP	471.031k	44.06	56.50	-12.44	19.63	Neutral	-	24.43	9.63	0.13	9.87			
AV	471.031k	38.98	46.50	-7.52	19.63	Neutral	"Worst"	19.35	9.63	0.13	9.87			
QP	1.38M	30.73	56.00	-25.27	19.65	Neutral	-	11.08	9.64	0.13	9.88			
AV	1.38M	27.20	46.00	-18.80	19.65	Neutral	-	7.55	9.64	0.13	9.88			
QP	4.882M	27.14	56.00	-28.86	19.75	Neutral	-	7.39	9.67	0.20	9.88			
AV	4.882M	21.91	46.00	-24.09	19.75	Neutral	-	2.16	9.67	0.20	9.88			
QP	13.47M	27.83	60.00	-32.17	19.89	Neutral	-	7.94	9.71	0.30	9.88			
AV	13.47M	23.52	50.00	-26.48	19.89	Neutral	-	3.63	9.71	0.30	9.88			



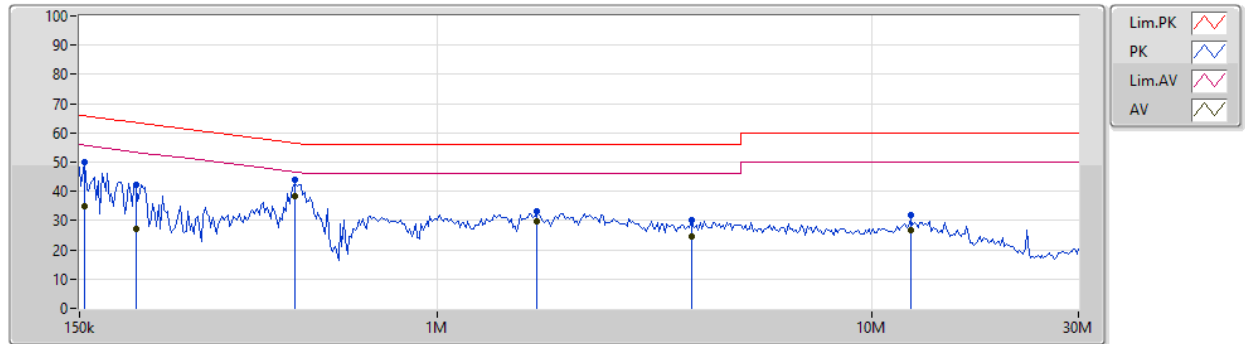
AC Power-line Conducted Emissions _Non Beamforming_Sample 2

Appendix A.2

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Sample 2; PoE mode; WIFI 2.4G TX		

27/12/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	154.545k	49.97	65.75	-15.78	19.64	Line	-	30.33	9.66	0.11	9.87			
AV	154.545k	34.71	55.75	-21.04	19.64	Line	-	15.07	9.66	0.11	9.87			
QP	202.177k	42.03	63.51	-21.48	19.63	Line	-	22.40	9.65	0.11	9.87			
AV	202.177k	27.24	53.51	-26.27	19.63	Line	-	7.61	9.65	0.11	9.87			
QP	471.031k	43.77	56.50	-12.73	19.64	Line	-	24.13	9.64	0.13	9.87			
AV	471.031k	38.31	46.50	-8.19	19.64	Line	-	18.67	9.64	0.13	9.87			
QP	1.7M	33.38	56.00	-22.62	19.66	Line	-	13.72	9.65	0.14	9.87			
AV	1.7M	29.53	46.00	-16.47	19.66	Line	-	9.87	9.65	0.14	9.87			
QP	3.845M	30.08	56.00	-25.92	19.73	Line	-	10.35	9.66	0.19	9.88			
AV	3.845M	24.59	46.00	-21.41	19.73	Line	-	4.86	9.66	0.19	9.88			
QP	12.316M	31.70	60.00	-28.30	19.85	Line	-	11.85	9.68	0.29	9.88			
AV	12.316M	26.91	50.00	-23.09	19.85	Line	-	7.06	9.68	0.29	9.88			



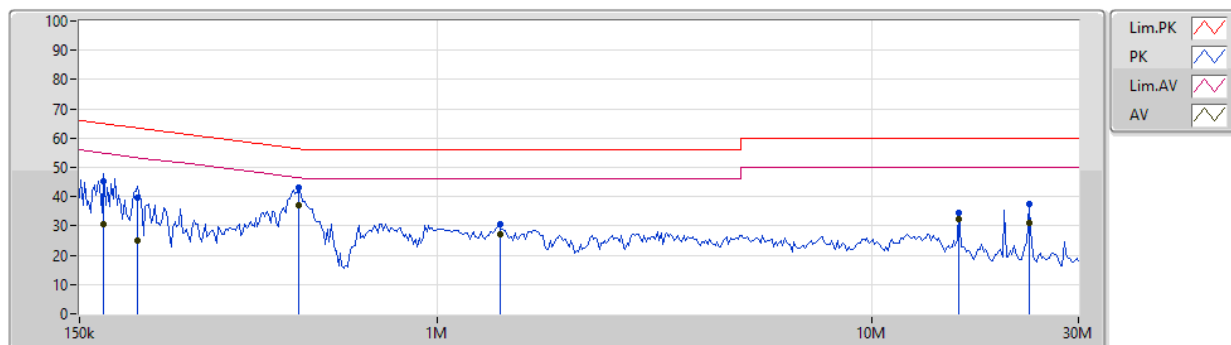
AC Power-line Conducted Emissions _ Beamforming_Sample 1

Appendix A.3

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	Sample 1; PoE mode; WIFI 2.4G TX		

26/12/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	170.714k	45.42	64.93	-19.51	19.63	Neutral	-	25.79	9.65	0.11	9.87			
AV	170.714k	30.48	54.93	-24.45	19.63	Neutral	-	10.85	9.65	0.11	9.87			
QP	204.199k	39.62	63.44	-23.82	19.62	Neutral	-	20.00	9.64	0.11	9.87			
AV	204.199k	25.00	53.44	-28.44	19.62	Neutral	-	5.38	9.64	0.11	9.87			
QP	480.498k	42.94	56.33	-13.39	19.63	Neutral	-	23.31	9.63	0.13	9.87			
AV	480.498k	37.15	46.33	-9.18	19.63	Neutral	"Worst"	17.52	9.63	0.13	9.87			
QP	1.393M	30.66	56.00	-25.34	19.65	Neutral	-	11.01	9.64	0.13	9.88			
AV	1.393M	27.34	46.00	-18.66	19.65	Neutral	-	7.69	9.64	0.13	9.88			
QP	15.952M	34.48	60.00	-25.52	19.91	Neutral	-	14.57	9.71	0.32	9.88			
AV	15.952M	32.21	50.00	-17.79	19.91	Neutral	-	12.30	9.71	0.32	9.88			
QP	23.052M	37.53	60.00	-22.47	19.97	Neutral	-	17.56	9.70	0.39	9.88			
AV	23.052M	30.90	50.00	-19.10	19.97	Neutral	-	10.93	9.70	0.39	9.88			



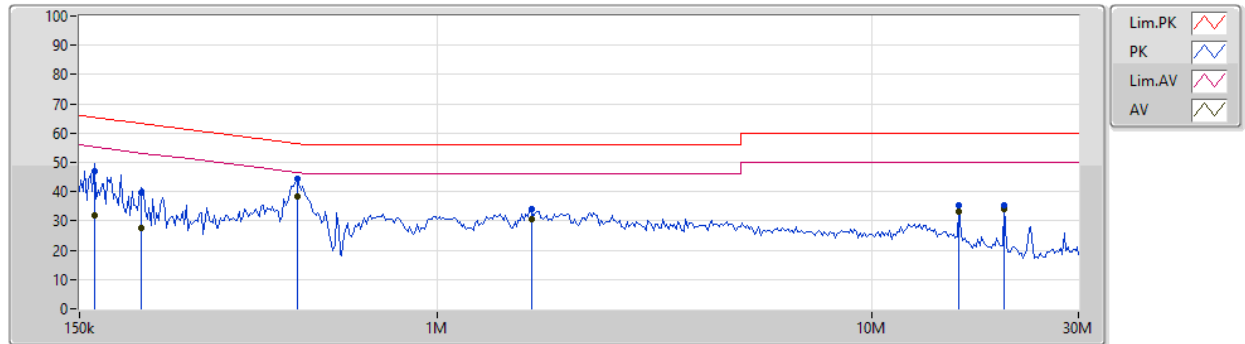
AC Power-line Conducted Emissions _ Beamforming_Sample 1

Appendix A.3

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Sample 1; PoE mode; WIFI 2.4G TX		

26/12/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	162.429k	46.82	65.33	-18.51	19.64	Line	-	27.18	9.66	0.11	9.87			
AV	162.429k	31.97	55.33	-23.36	19.64	Line	-	12.33	9.66	0.11	9.87			
QP	208.304k	39.60	63.27	-23.67	19.63	Line	-	19.97	9.65	0.11	9.87			
AV	208.304k	27.41	53.27	-25.86	19.63	Line	-	7.78	9.65	0.11	9.87			
QP	475.741k	44.26	56.42	-12.16	19.64	Line	-	24.62	9.64	0.13	9.87			
AV	475.741k	38.20	46.42	-8.22	19.64	Line	"Worst"	18.56	9.64	0.13	9.87			
QP	1.65M	34.05	56.00	-21.95	19.66	Line	-	14.39	9.65	0.14	9.87			
AV	1.65M	30.40	46.00	-15.60	19.66	Line	-	10.74	9.65	0.14	9.87			
QP	15.952M	35.27	60.00	-24.73	19.86	Line	-	15.41	9.66	0.32	9.88			
AV	15.952M	33.28	50.00	-16.72	19.86	Line	-	13.42	9.66	0.32	9.88			
QP	20.255M	35.35	60.00	-24.65	19.89	Line	-	15.46	9.64	0.36	9.89			
AV	20.255M	33.87	50.00	-16.13	19.89	Line	-	13.98	9.64	0.36	9.89			



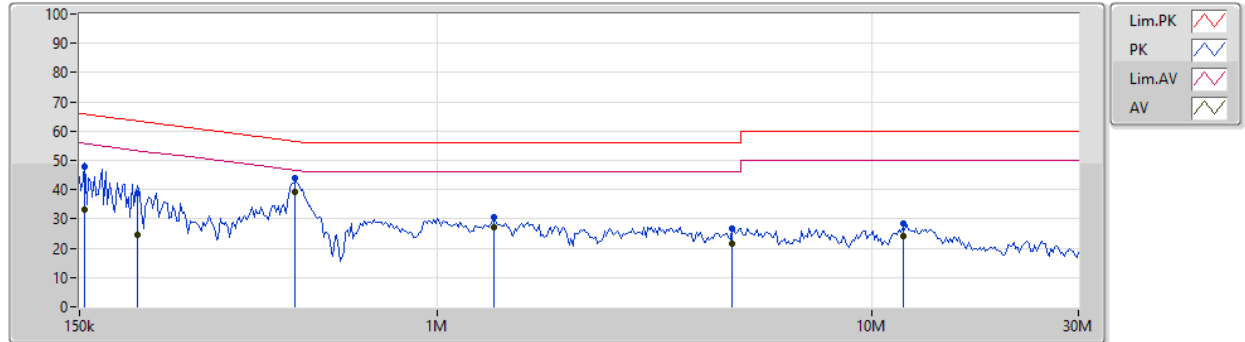
AC Power-line Conducted Emissions _ Beamforming_Sample 2

Appendix A.4

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	Sample 2; PoE mode; WIFI 2.4G TX		

27/12/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	154.545k	47.83	65.75	-17.92	19.63	Neutral	-	28.20	9.65	0.11	9.87			
AV	154.545k	33.35	55.75	-22.40	19.63	Neutral	-	13.72	9.65	0.11	9.87			
QP	204.199k	38.82	63.44	-24.62	19.62	Neutral	-	19.20	9.64	0.11	9.87			
AV	204.199k	24.68	53.44	-28.76	19.62	Neutral	-	5.06	9.64	0.11	9.87			
QP	471.031k	44.05	56.50	-12.45	19.63	Neutral	-	24.42	9.63	0.13	9.87			
AV	471.031k	39.01	46.50	-7.49	19.63	Neutral	"Worst"	19.38	9.63	0.13	9.87			
QP	1.352M	30.66	56.00	-25.34	19.65	Neutral	-	11.01	9.64	0.13	9.88			
AV	1.352M	26.96	46.00	-19.04	19.65	Neutral	-	7.31	9.64	0.13	9.88			
QP	4.786M	26.64	56.00	-29.36	19.75	Neutral	-	6.89	9.67	0.20	9.88			
AV	4.786M	21.55	46.00	-24.45	19.75	Neutral	-	1.80	9.67	0.20	9.88			
QP	11.835M	28.43	60.00	-31.57	19.87	Neutral	-	8.56	9.70	0.29	9.88			
AV	11.835M	23.96	50.00	-26.04	19.87	Neutral	-	4.09	9.70	0.29	9.88			



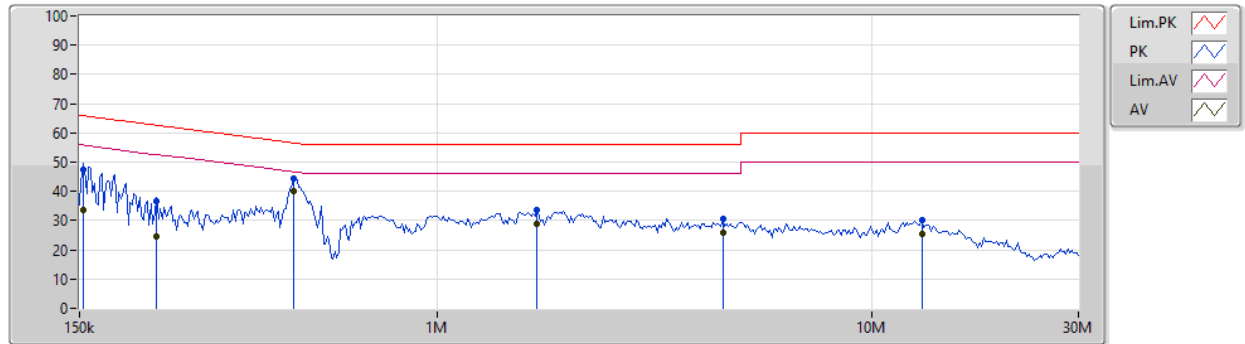
AC Power-line Conducted Emissions _ Beamforming_Sample 2

Appendix A.4

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Sample 2; PoE mode; WIFI 2.4G TX		

27/12/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	153.015k	47.28	65.83	-18.55	19.64	Line	-	27.64	9.66	0.11	9.87			
AV	153.015k	33.70	55.83	-22.13	19.64	Line	-	14.06	9.66	0.11	9.87			
QP	225.563k	36.68	62.62	-25.94	19.64	Line	-	17.04	9.65	0.12	9.87			
AV	225.563k	24.56	52.62	-28.06	19.64	Line	-	4.92	9.65	0.12	9.87			
QP	466.367k	44.24	56.57	-12.33	19.64	Line	-	24.60	9.64	0.13	9.87			
AV	466.367k	39.92	46.57	-6.65	19.64	Line	"Worst"	20.28	9.64	0.13	9.87			
QP	1.7M	33.47	56.00	-22.53	19.66	Line	-	13.81	9.65	0.14	9.87			
AV	1.7M	28.68	46.00	-17.32	19.66	Line	-	9.02	9.65	0.14	9.87			
QP	4.553M	30.50	56.00	-25.50	19.73	Line	-	10.77	9.66	0.19	9.88			
AV	4.553M	25.75	46.00	-20.25	19.73	Line	-	6.02	9.66	0.19	9.88			
QP	13.073M	30.37	60.00	-29.63	19.85	Line	-	10.52	9.67	0.30	9.88			
AV	13.073M	25.53	50.00	-24.47	19.85	Line	-	5.68	9.67	0.30	9.88			

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	7.525M	11.994M	12M0G1D	6.6M	10.475M
802.11g_Nss1,(6Mbps)_1TX	16.35M	17.591M	17M6D1D	16.325M	16.732M
VHT20_Nss1,(MCS0)_1TX	17.575M	18.271M	18M3D1D	17.575M	17.831M
VHT40_Nss1,(MCS0)_1TX	36.3M	36.502M	36M5D1D	36.25M	36.422M
802.11ax HEW20_Nss1,(MCS0)_1TX	19M	19.27M	19M3D1D	18.9M	19.03M
802.11ax HEW40_Nss1,(MCS0)_1TX	37.3M	37.581M	37M6D1D	37.2M	37.501M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	6.6M	11.194M
2437MHz_TnomVnom	Pass	500k	7.525M	11.994M
2462MHz_TnomVnom	Pass	500k	7.05M	10.475M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	16.325M	16.752M
2437MHz_TnomVnom	Pass	500k	16.325M	17.591M
2462MHz_TnomVnom	Pass	500k	16.35M	16.732M
VHT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	17.575M	17.851M
2437MHz_TnomVnom	Pass	500k	17.575M	18.271M
2462MHz_TnomVnom	Pass	500k	17.575M	17.831M
VHT40_Nss1,(MCS0)_1TX	-	-	-	-
2422MHz_TnomVnom	Pass	500k	36.3M	36.422M
2437MHz_TnomVnom	Pass	500k	36.25M	36.502M
2452MHz_TnomVnom	Pass	500k	36.3M	36.422M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	18.975M	19.03M
2437MHz_TnomVnom	Pass	500k	18.9M	19.27M
2462MHz_TnomVnom	Pass	500k	19M	19.03M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
2422MHz_TnomVnom	Pass	500k	37.3M	37.541M
2437MHz_TnomVnom	Pass	500k	37.2M	37.581M
2452MHz_TnomVnom	Pass	500k	37.3M	37.501M

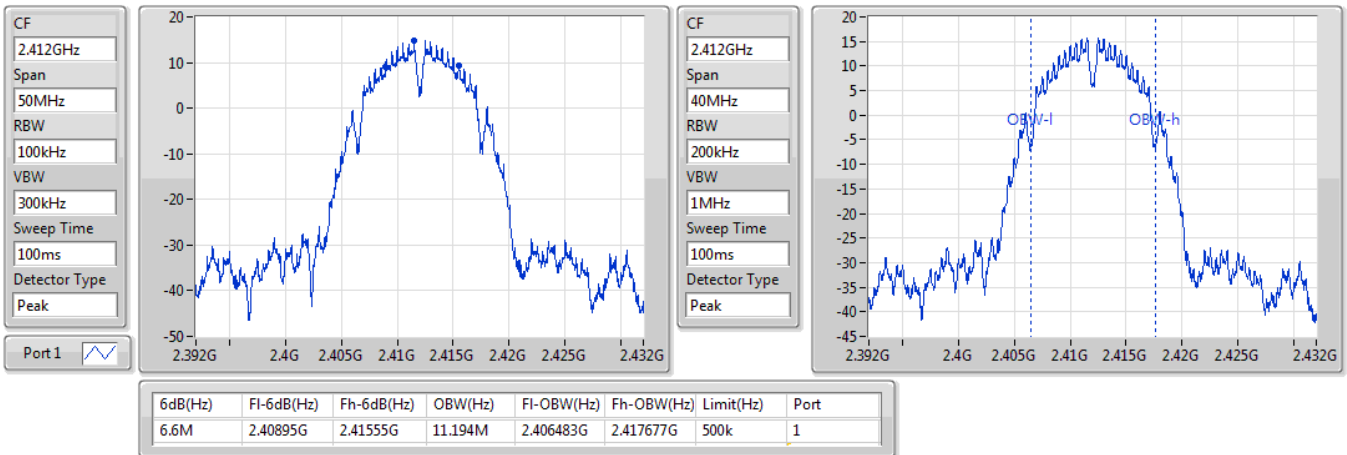
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

802.11b_Nss1,(1Mbps)_1TX

EBW

2412MHz

08/11/2019

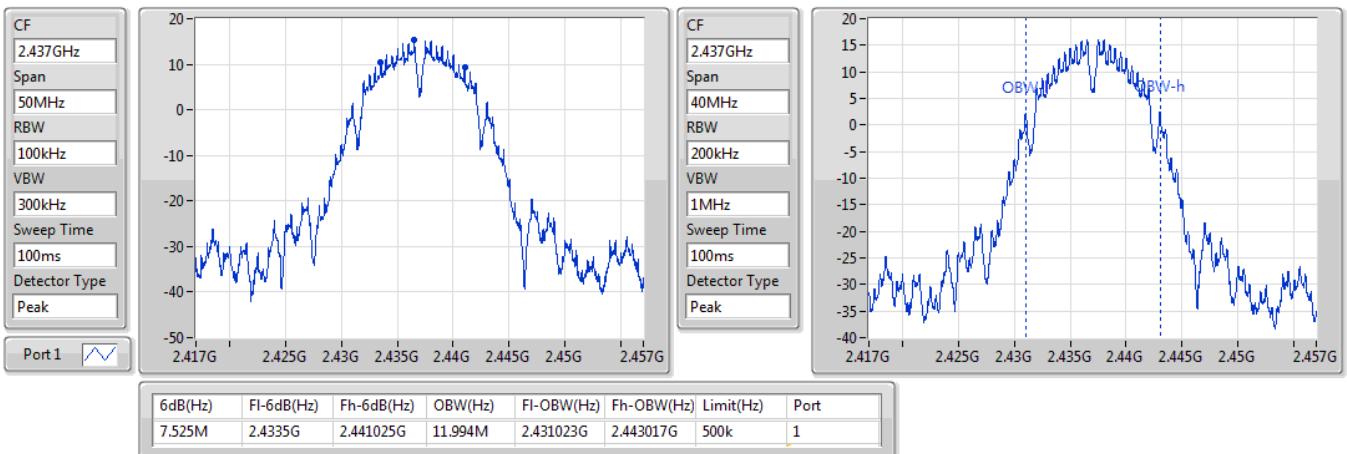


802.11b_Nss1,(1Mbps)_1TX

EBW

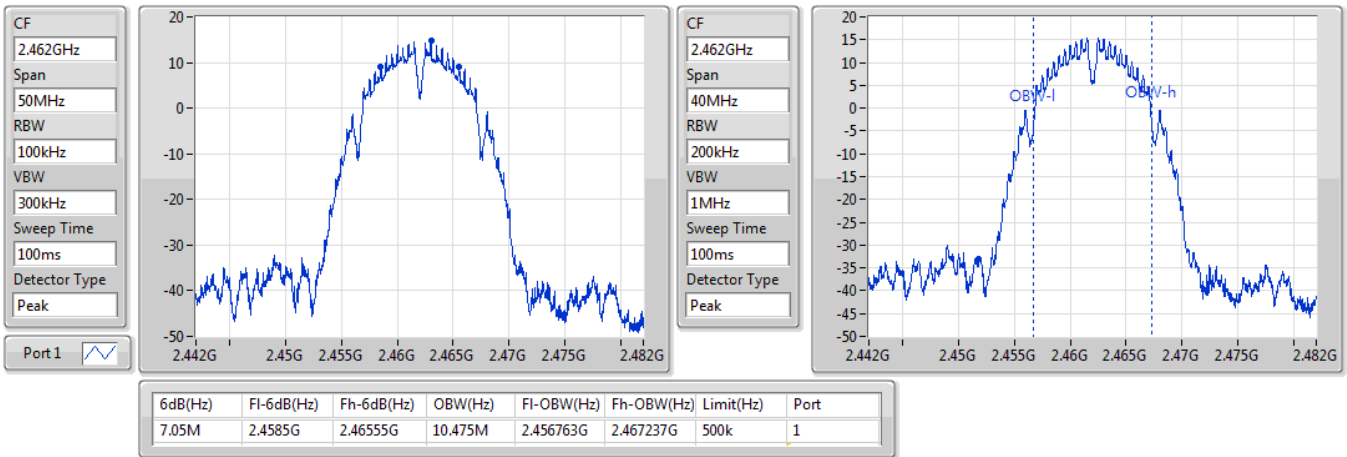
2437MHz

08/11/2019

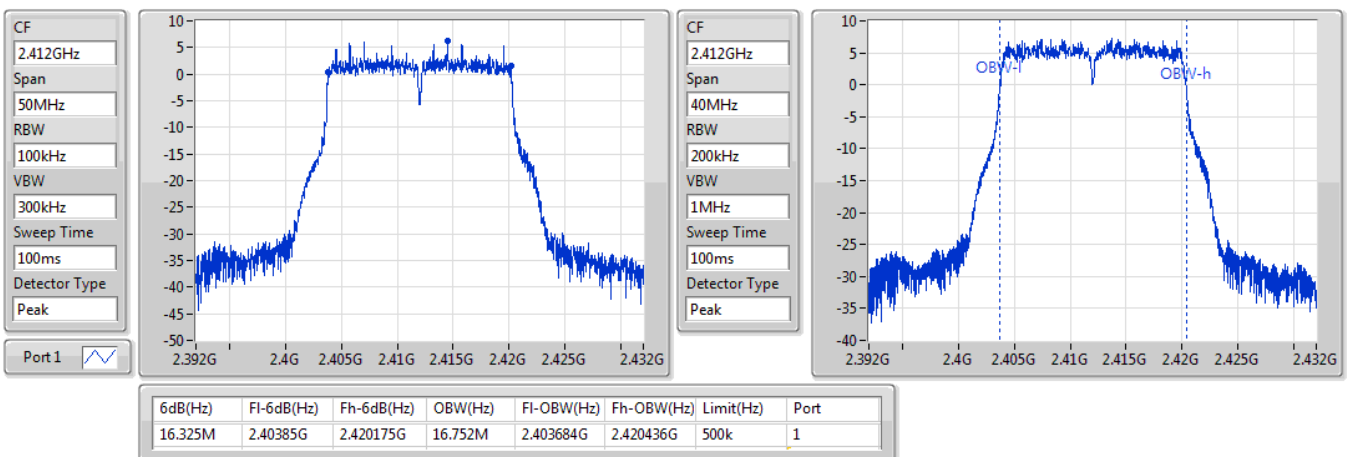


802.11b_Nss1,(1Mbps)_1TX
EBW
2462MHz

08/11/2019


802.11g_Nss1,(6Mbps)_1TX
EBW
2412MHz

08/11/2019

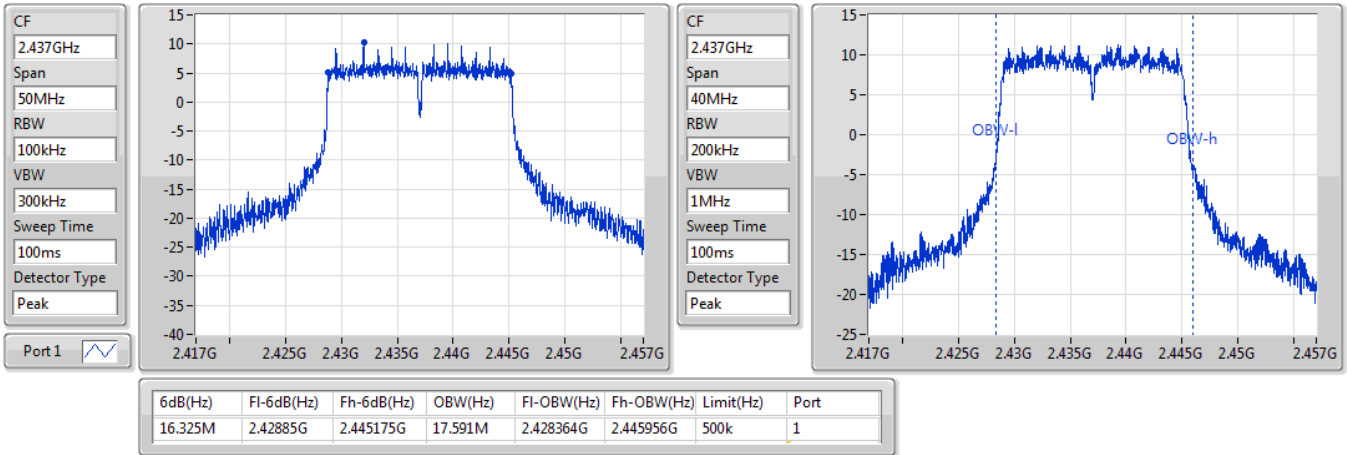


802.11g_Nss1,(6Mbps)_1TX

EBW

2437MHz

08/11/2019

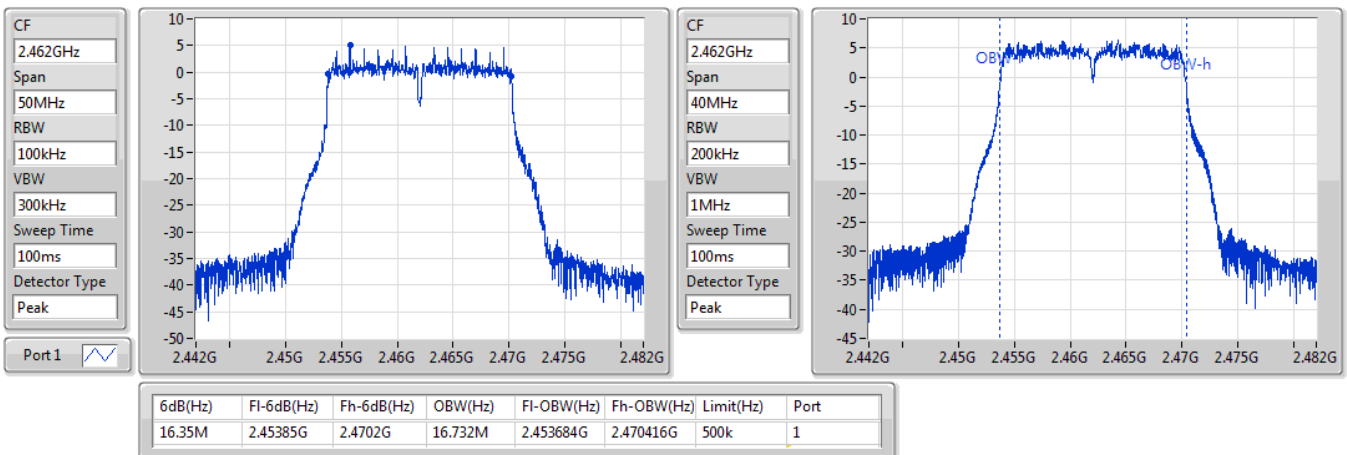


802.11g_Nss1,(6Mbps)_1TX

EBW

2462MHz

08/11/2019

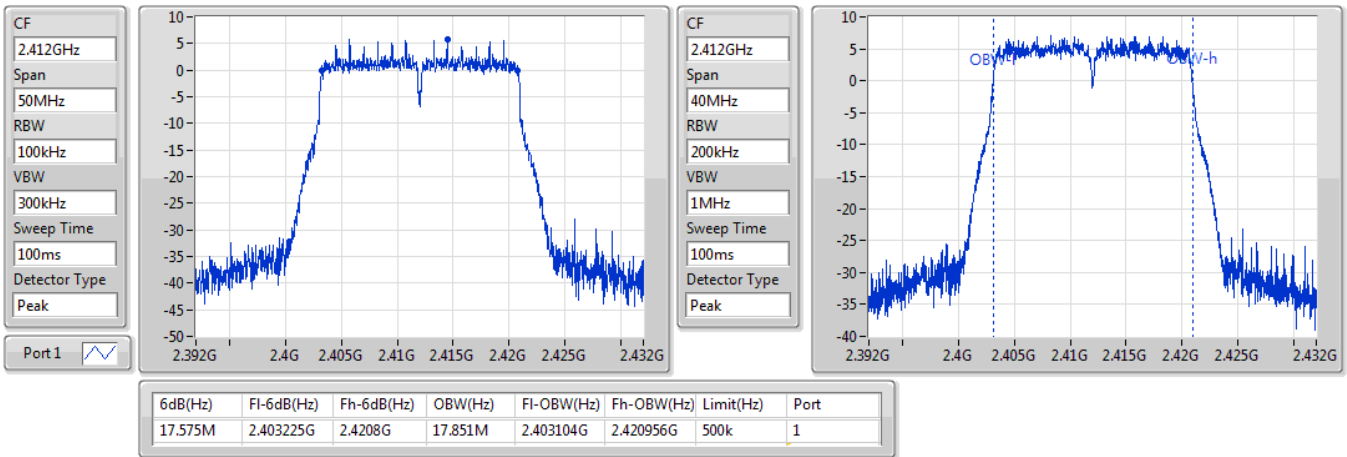


VHT20_Nss1,(MCS0)_1TX

EBW

2412MHz

08/11/2019

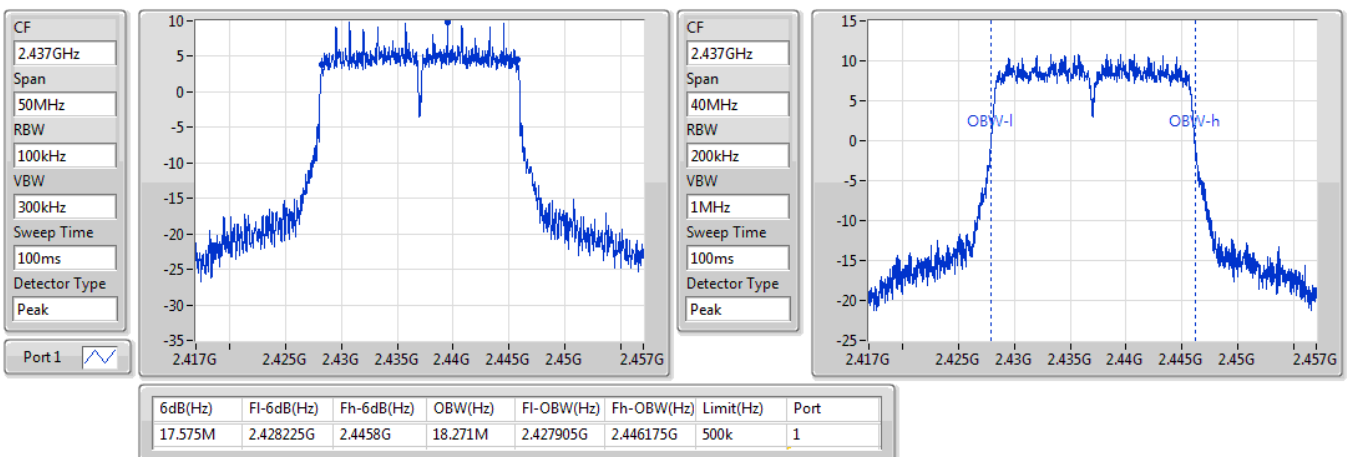


VHT20_Nss1,(MCS0)_1TX

EBW

2437MHz

08/11/2019

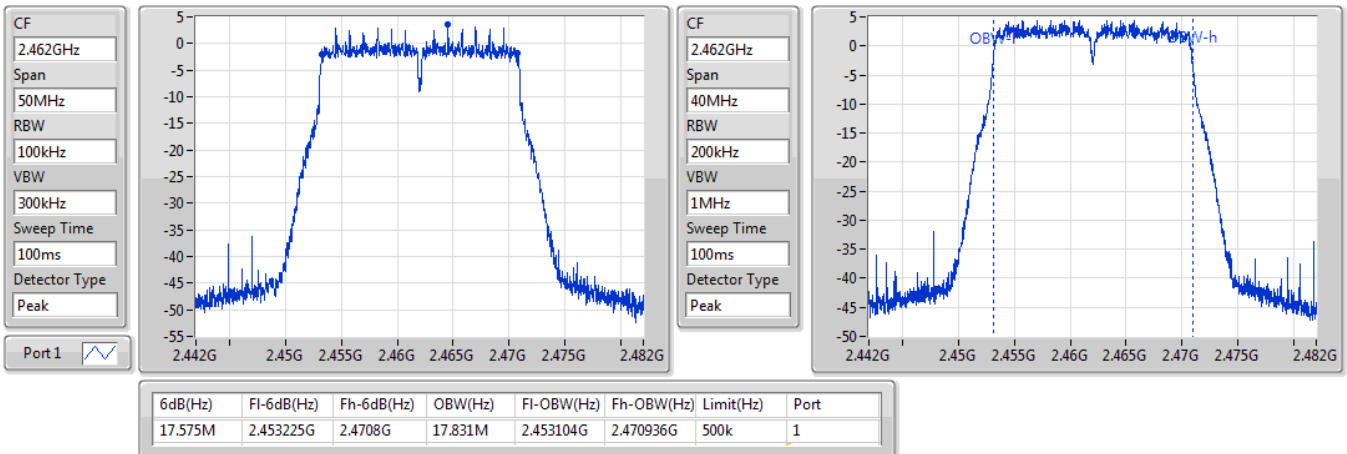


VHT20_Nss1,(MCS0)_1TX

EBW

2462MHz

08/11/2019

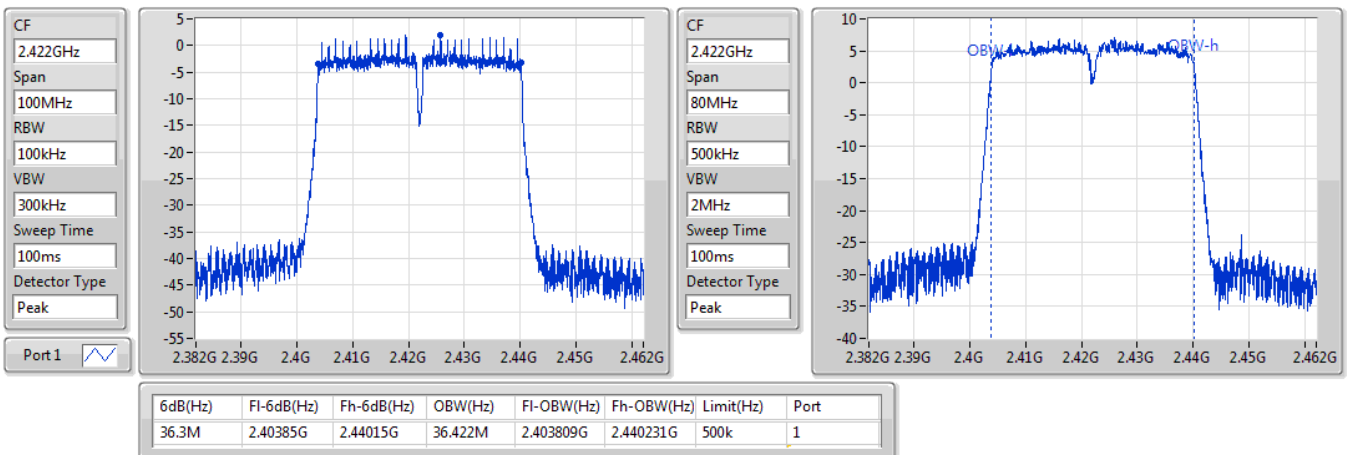


VHT40_Nss1,(MCS0)_1TX

EBW

2422MHz

08/11/2019

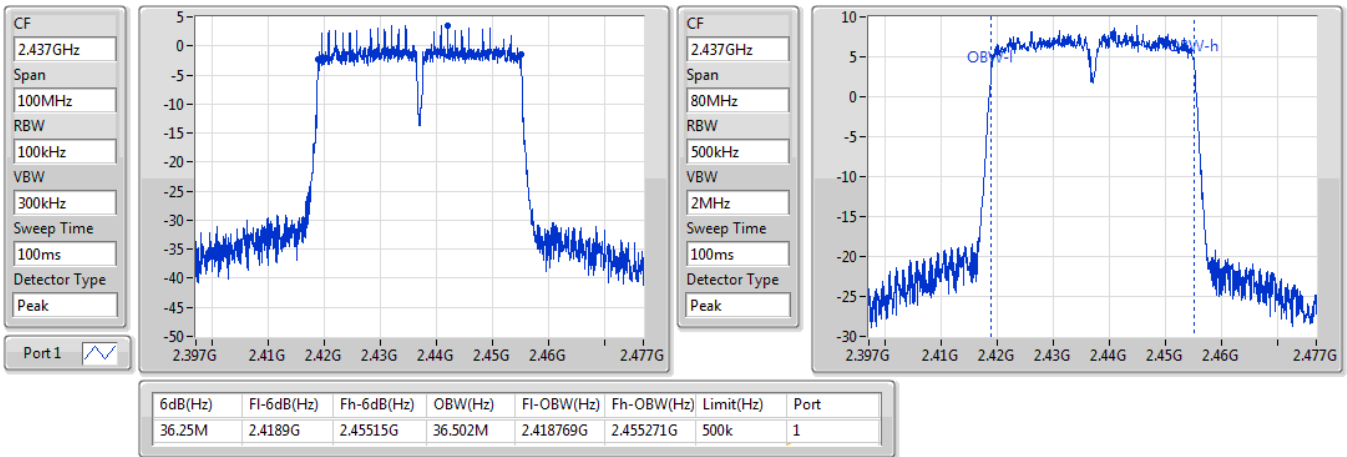


VHT40_Nss1,(MCS0)_1TX

EBW

2437MHz

08/11/2019

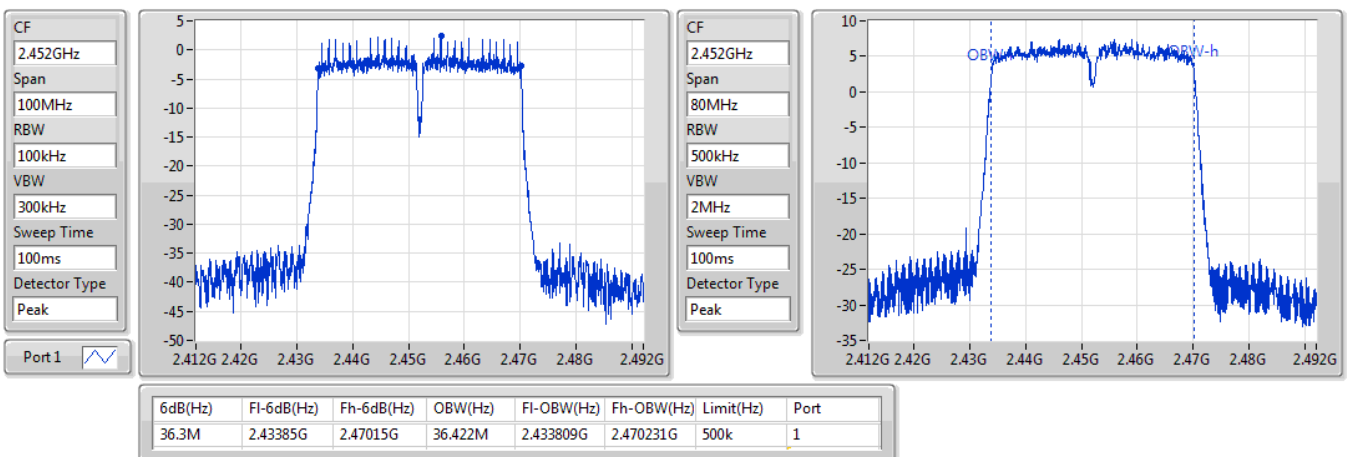


VHT40_Nss1,(MCS0)_1TX

EBW

2452MHz

08/11/2019

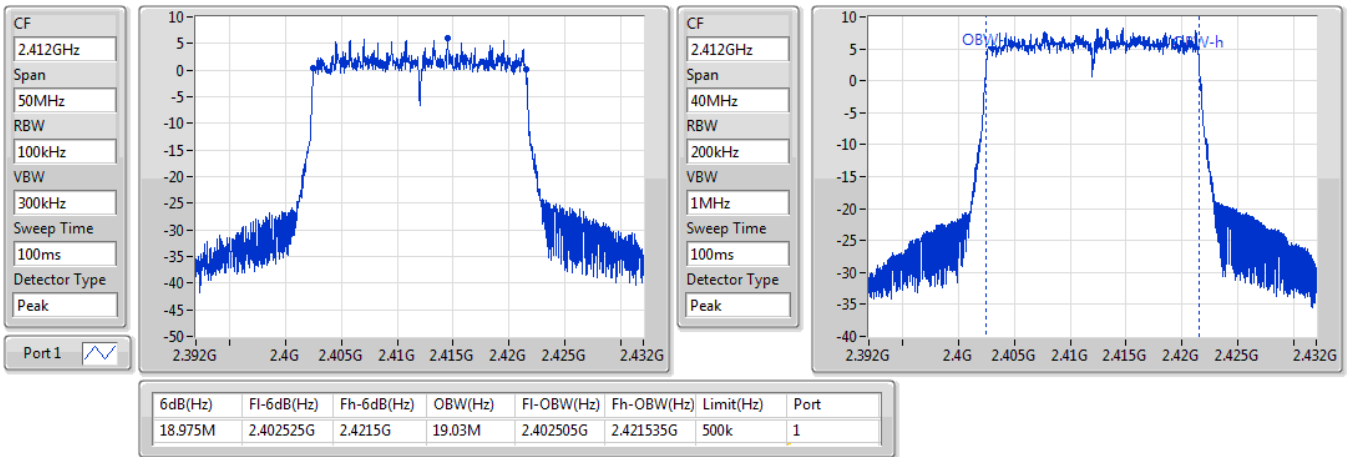


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

2412MHz

08/11/2019

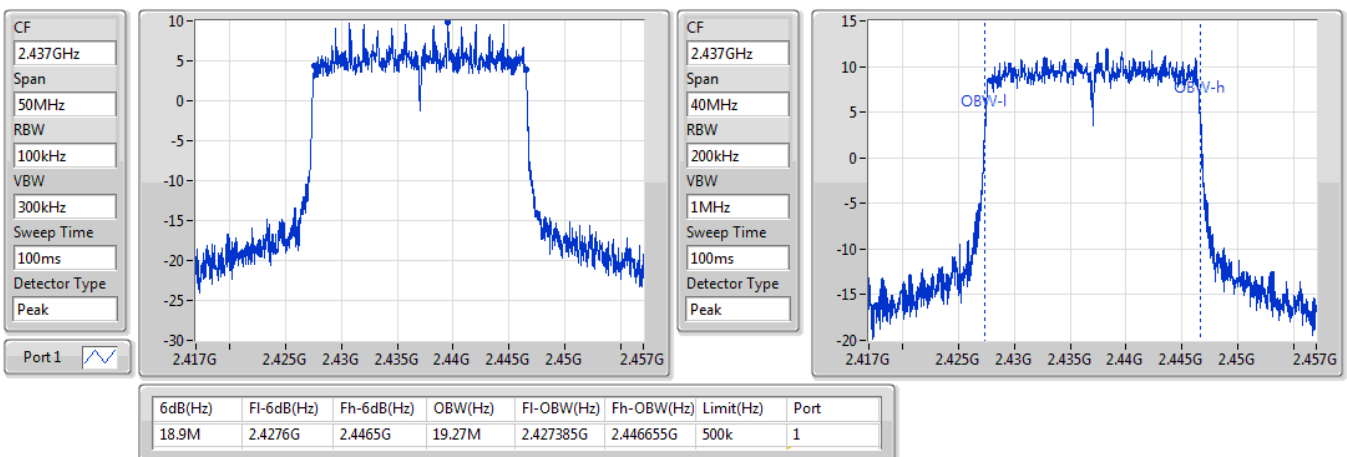


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

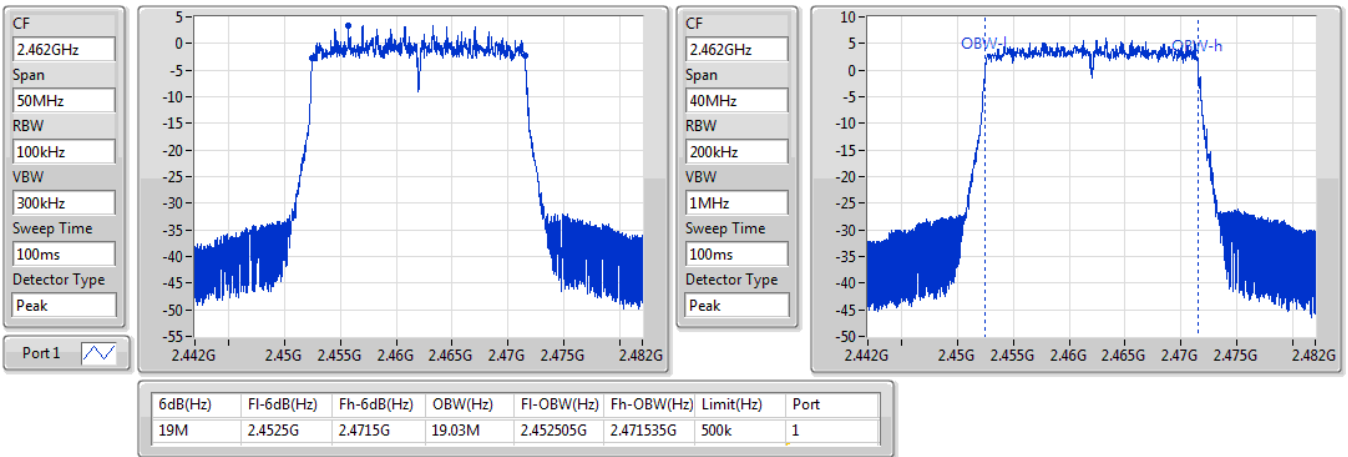
2437MHz

08/11/2019

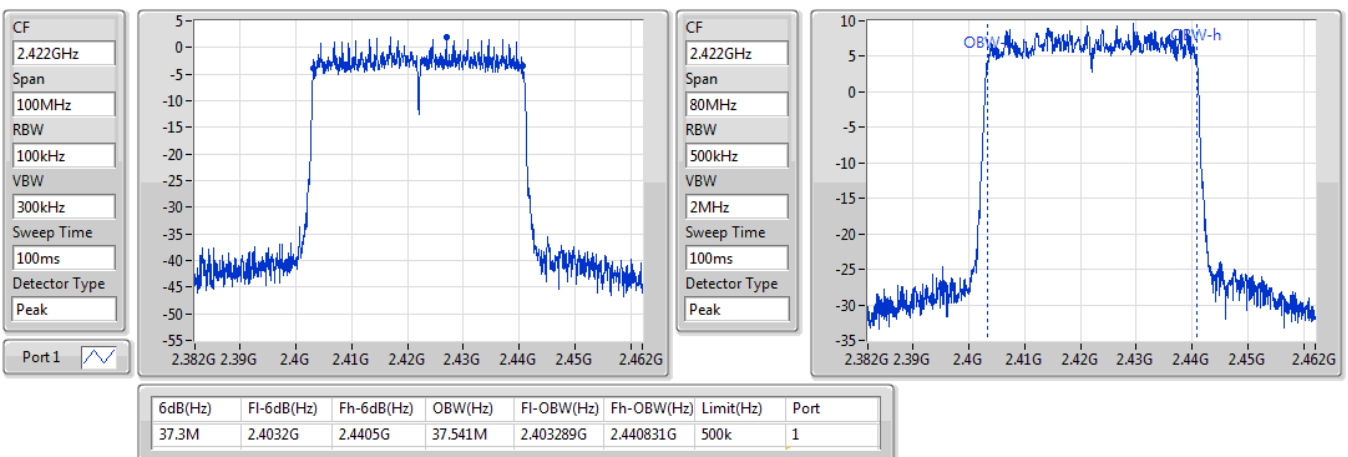


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
2462MHz

08/11/2019


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
2422MHz

08/11/2019

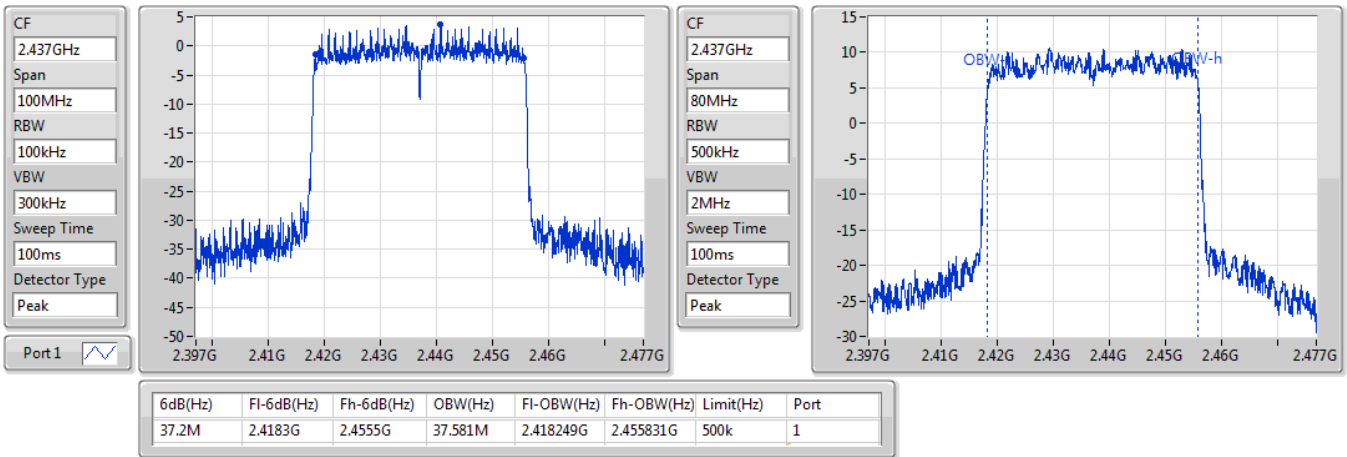


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

2437MHz

08/11/2019

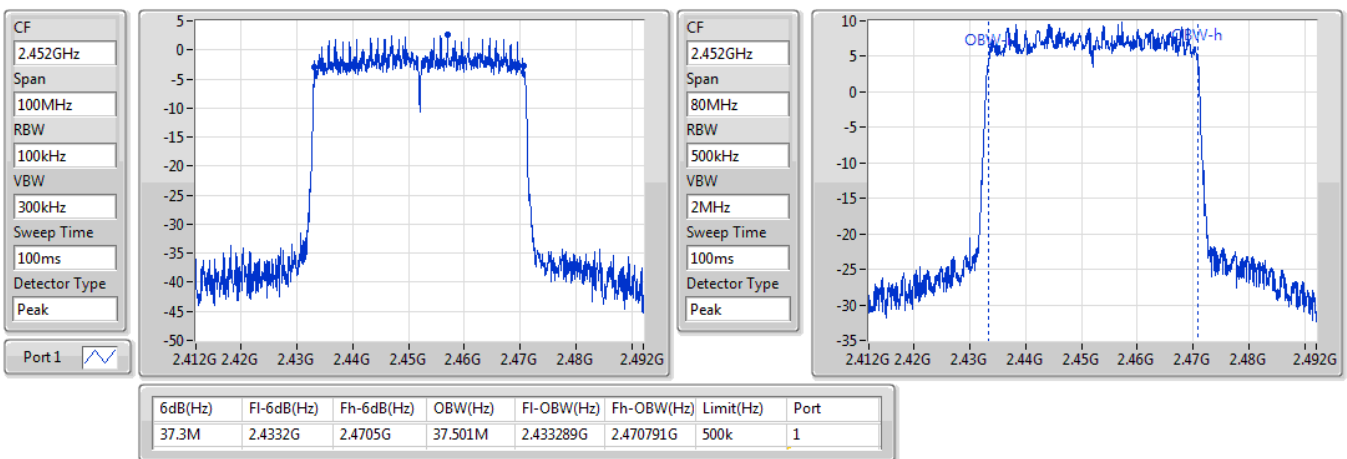


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

2452MHz

08/11/2019



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	7.55M	13.713M	13M7G1D	7.025M	10.175M
802.11g_Nss1,(6Mbps)_2TX	16.325M	19.79M	19M8D1D	16.325M	16.692M
VHT20_Nss2,(MCS0)_2TX	17.575M	18.231M	18M2D1D	17.575M	17.831M
VHT40_Nss2,(MCS0)_2TX	36.35M	36.382M	36M4D1D	36.25M	36.342M
802.11ax HEW20_Nss2,(MCS0)_2TX	19M	19.21M	19M2D1D	18.6M	19.03M
802.11ax HEW40_Nss2,(MCS0)_2TX	37.5M	37.661M	37M7D1D	36.95M	37.541M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	500k	7.025M	10.175M	7.525M	10.375M
2437MHz_TnomVnom	Pass	500k	7.025M	13.133M	7.05M	13.713M
2462MHz_TnomVnom	Pass	500k	7.55M	10.875M	7.5M	10.535M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	500k	16.325M	16.792M	16.325M	16.792M
2437MHz_TnomVnom	Pass	500k	16.325M	19.79M	16.325M	17.991M
2462MHz_TnomVnom	Pass	500k	16.325M	16.692M	16.325M	16.752M
VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	500k	17.575M	17.831M	17.575M	17.891M
2437MHz_TnomVnom	Pass	500k	17.575M	18.231M	17.575M	18.231M
2462MHz_TnomVnom	Pass	500k	17.575M	17.851M	17.575M	17.891M
VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz_TnomVnom	Pass	500k	36.35M	36.342M	36.35M	36.342M
2437MHz_TnomVnom	Pass	500k	36.35M	36.342M	36.25M	36.382M
2452MHz_TnomVnom	Pass	500k	36.35M	36.342M	36.25M	36.382M
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	500k	18.975M	19.07M	19M	19.05M
2437MHz_TnomVnom	Pass	500k	18.6M	19.21M	18.95M	19.15M
2462MHz_TnomVnom	Pass	500k	18.8M	19.09M	18.975M	19.03M
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz_TnomVnom	Pass	500k	36.95M	37.541M	37.5M	37.621M
2437MHz_TnomVnom	Pass	500k	37M	37.581M	37.5M	37.661M
2452MHz_TnomVnom	Pass	500k	36.95M	37.621M	37.5M	37.661M

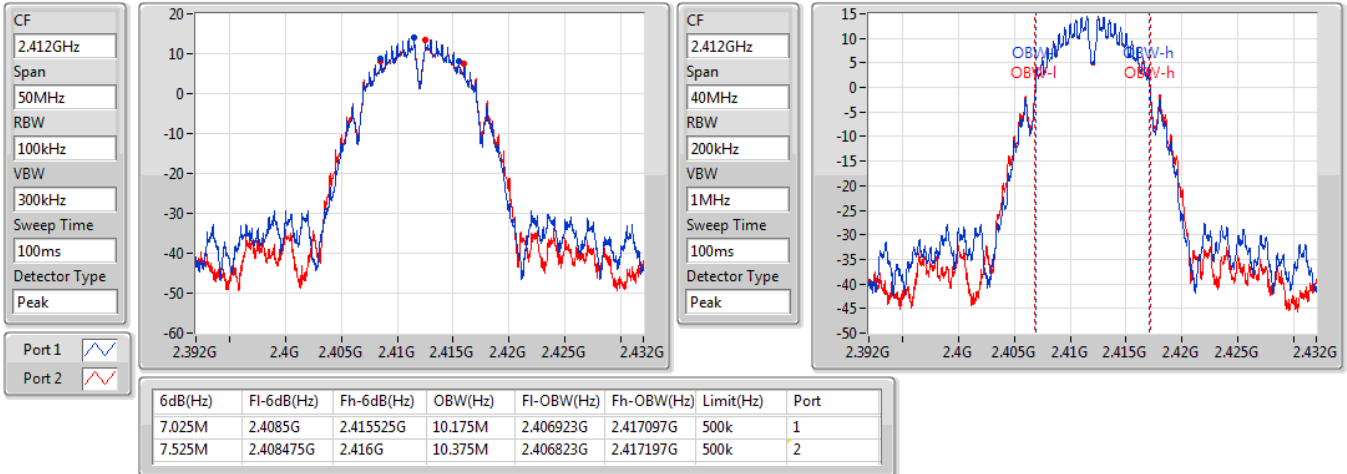
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

802.11b_Nss1,(1Mbps)_2TX

EBW

2412MHz

08/11/2019

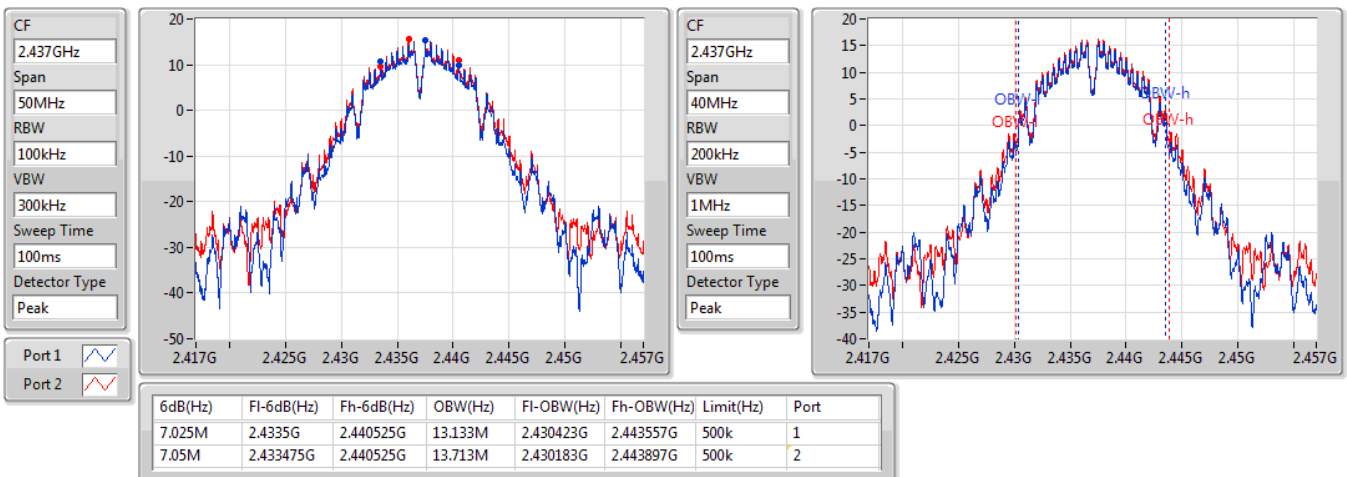


802.11b_Nss1,(1Mbps)_2TX

EBW

2437MHz

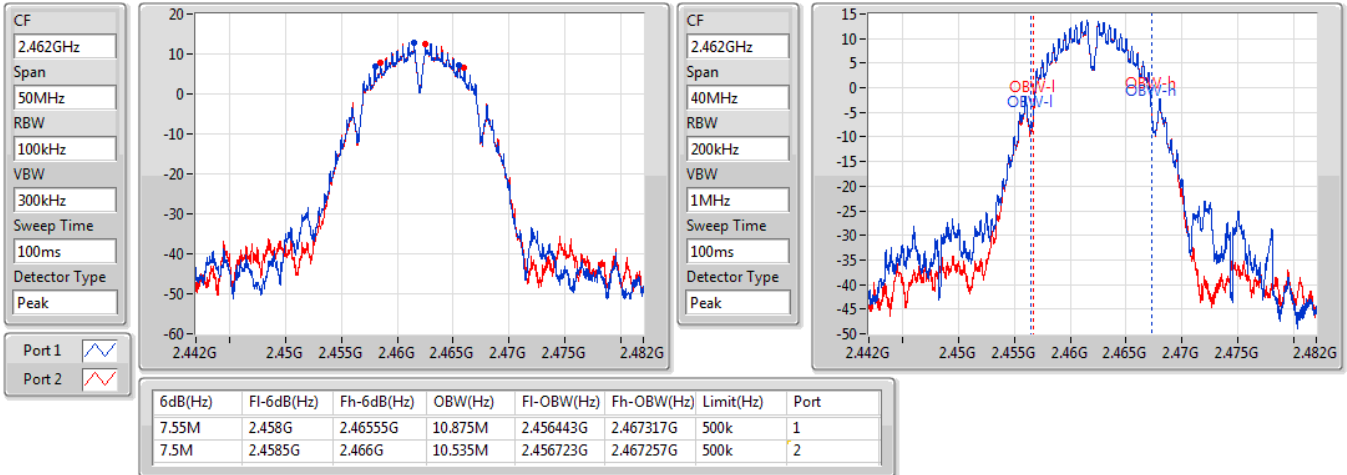
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802.11b_Nss1,(1Mbps)_2TX

2462MHz

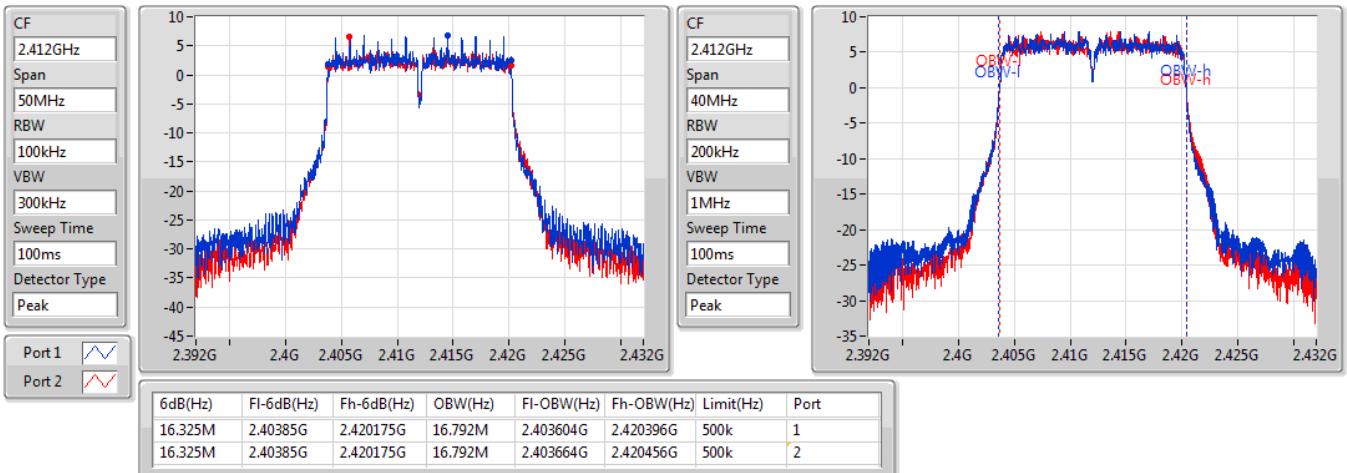
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802.11g_Nss1,(6Mbps)_2TX

2412MHz

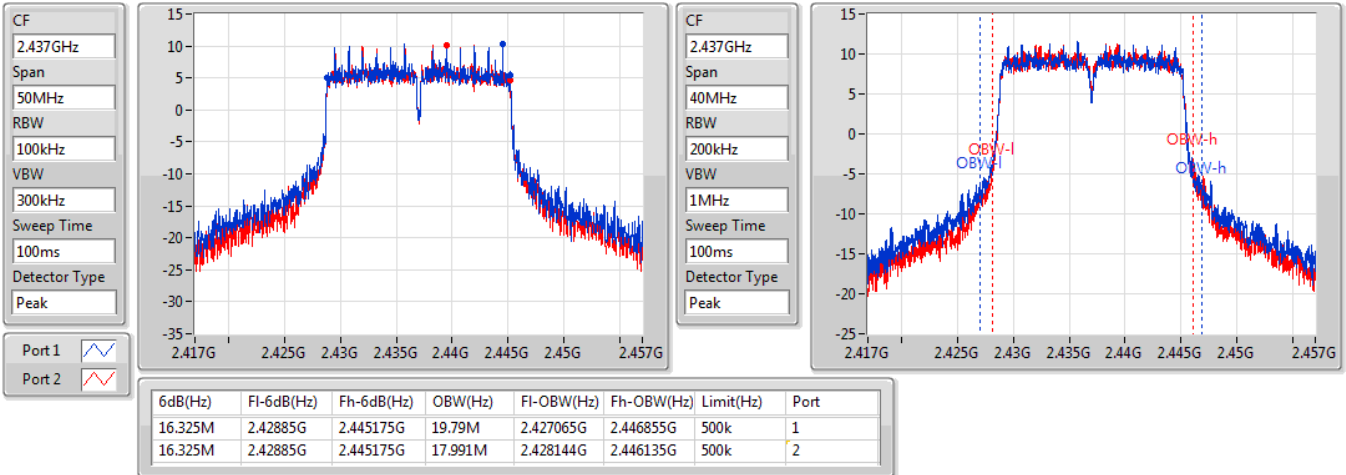
08/11/2019



802.11g_Nss1,(6Mbps)_2TX

2437MHz

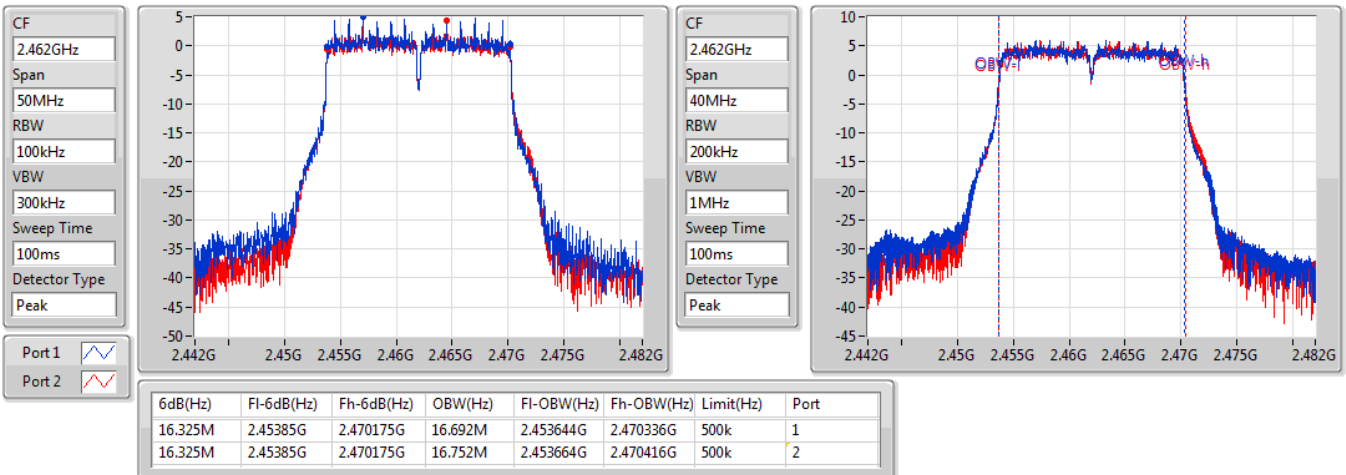
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802.11g_Nss1,(6Mbps)_2TX

2462MHz

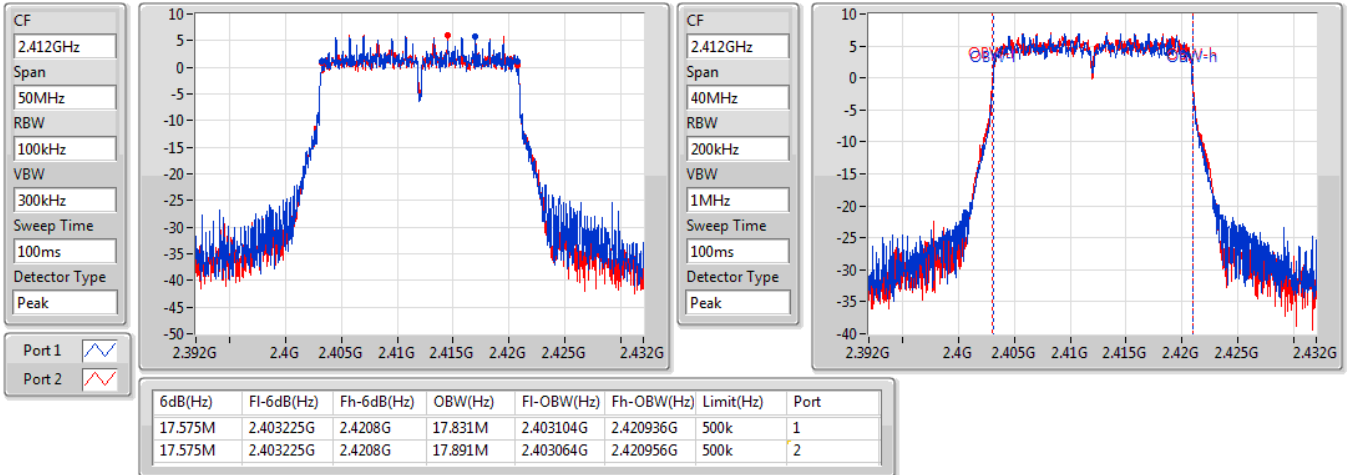
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VHT20_Nss2,(MCS0)_2TX

2412MHz

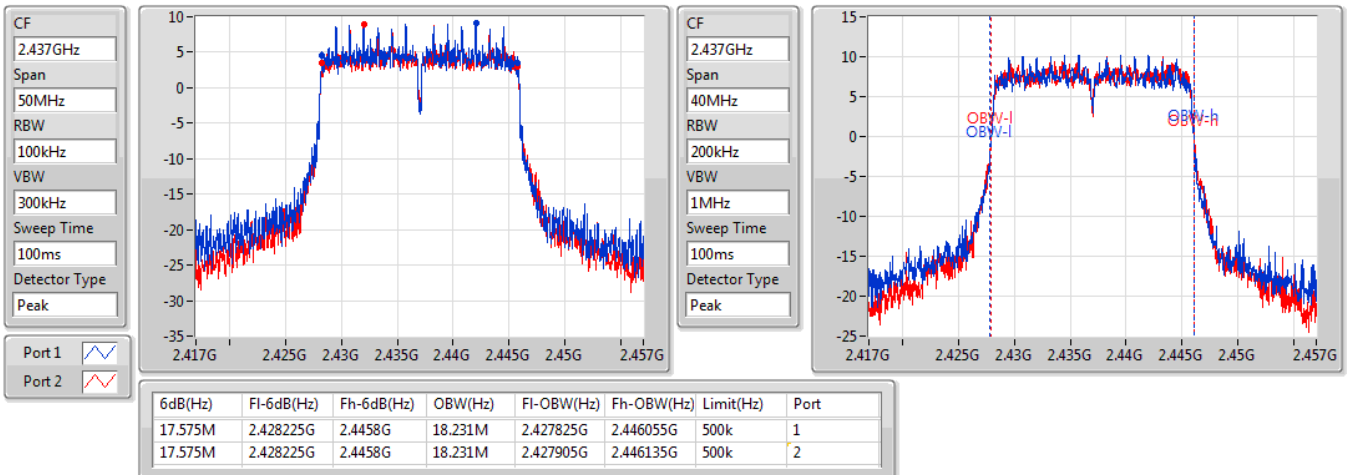
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VHT20_Nss2,(MCS0)_2TX

2437MHz

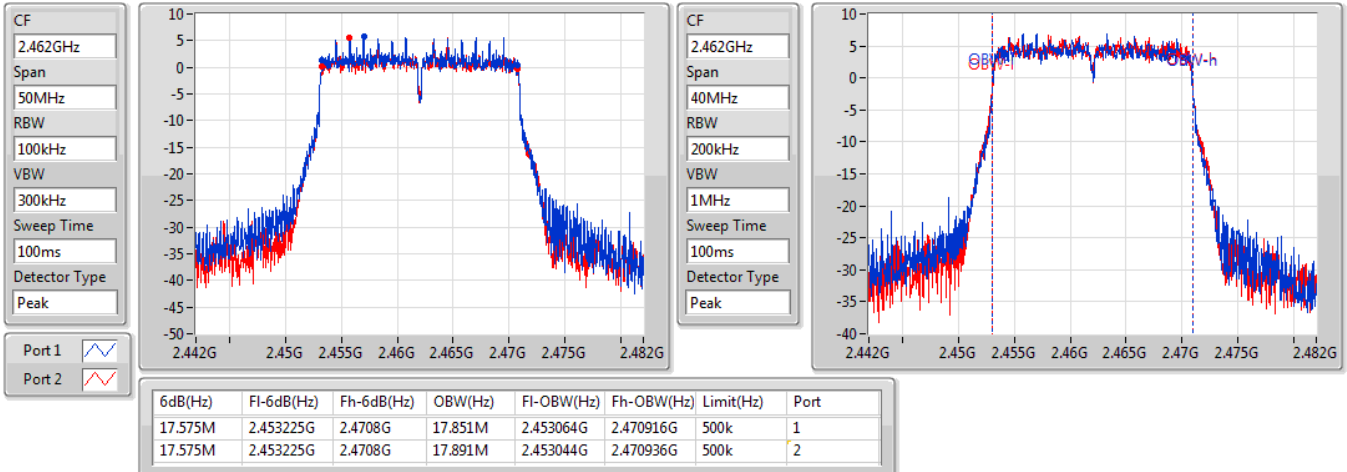
08/11/2019



VHT20_Nss2,(MCS0)_2TX

2462MHz

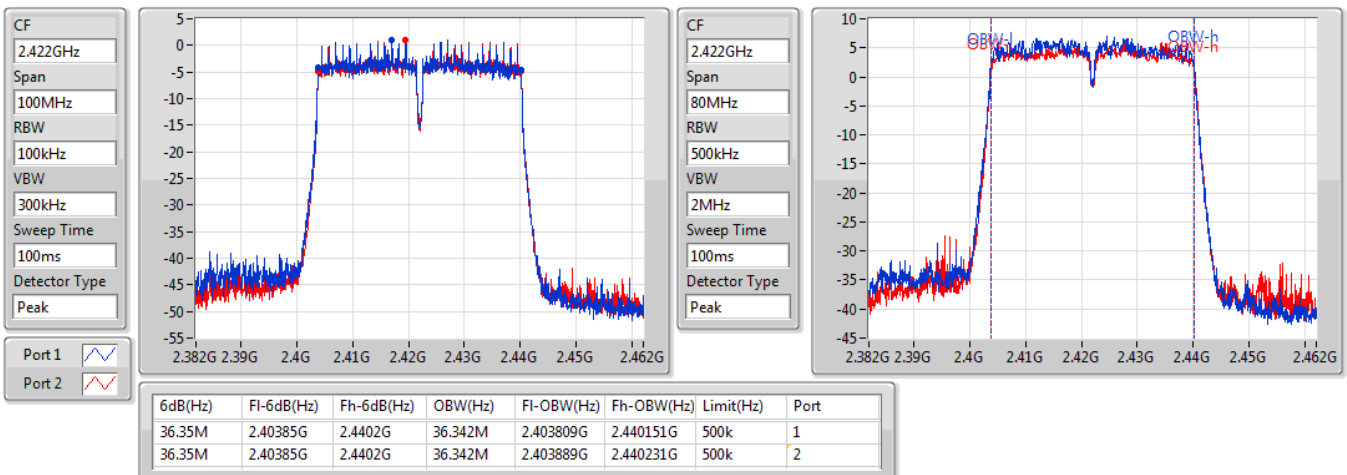
08/11/2019



VHT40_Nss2,(MCS0)_2TX

2422MHz

08/11/2019

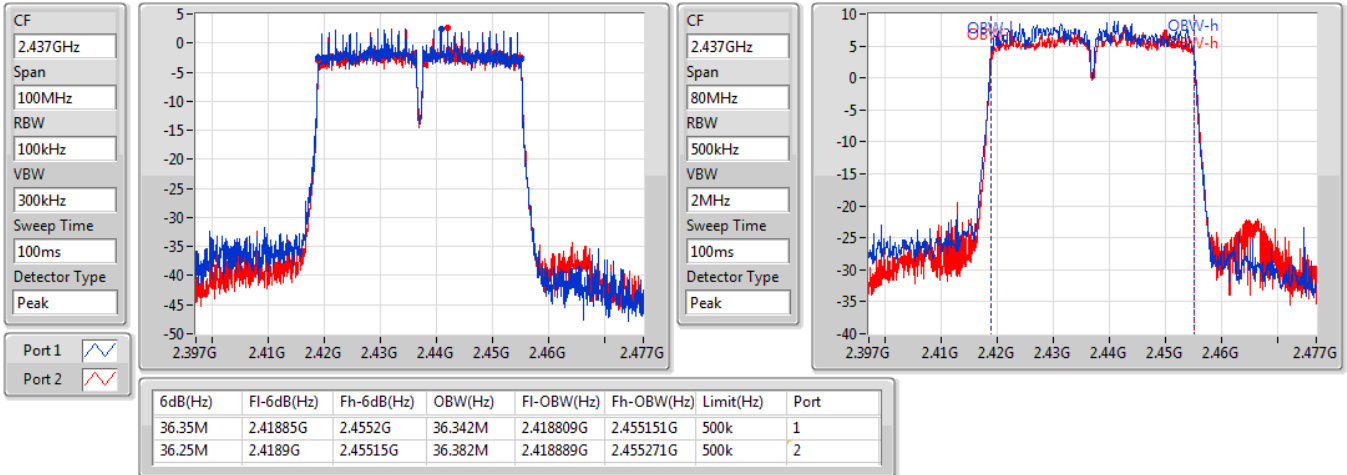


VHT40_Nss2,(MCS0)_2TX

EBW

2437MHz

08/11/2019

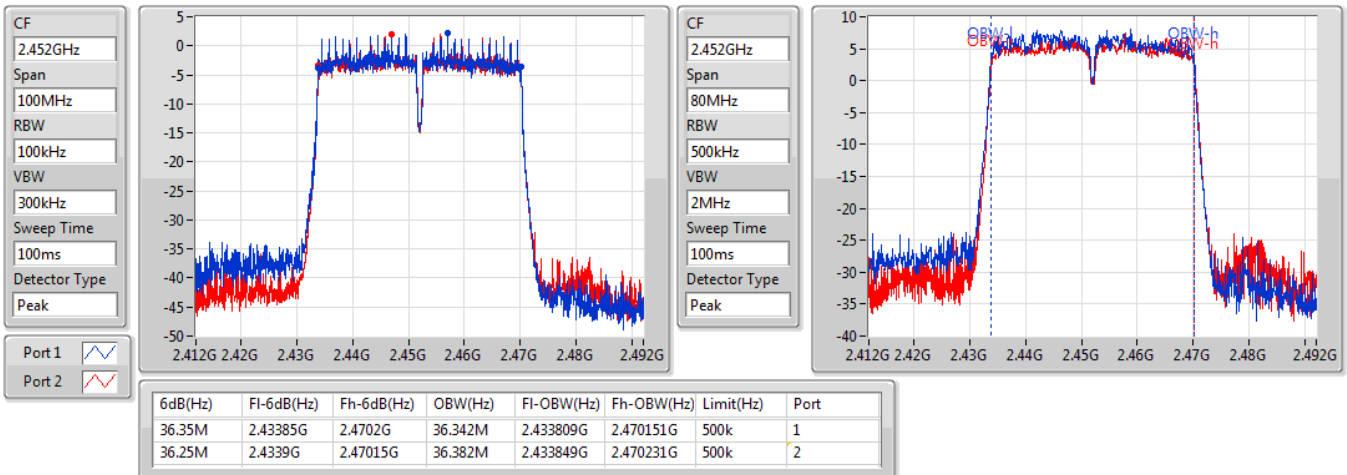


VHT40_Nss2,(MCS0)_2TX

EBW

2452MHz

08/11/2019

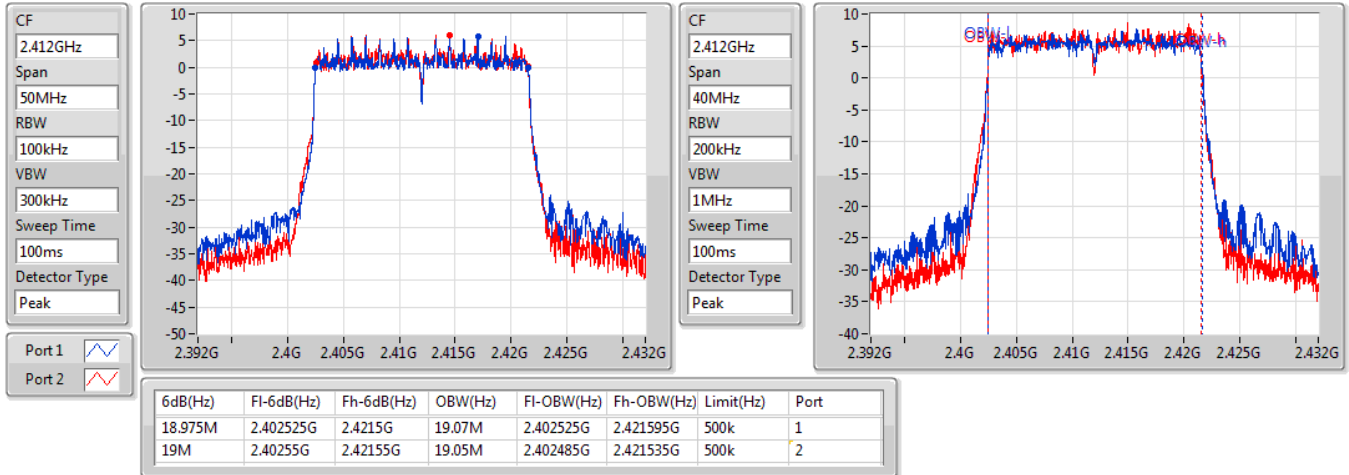


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

2412MHz

08/11/2019

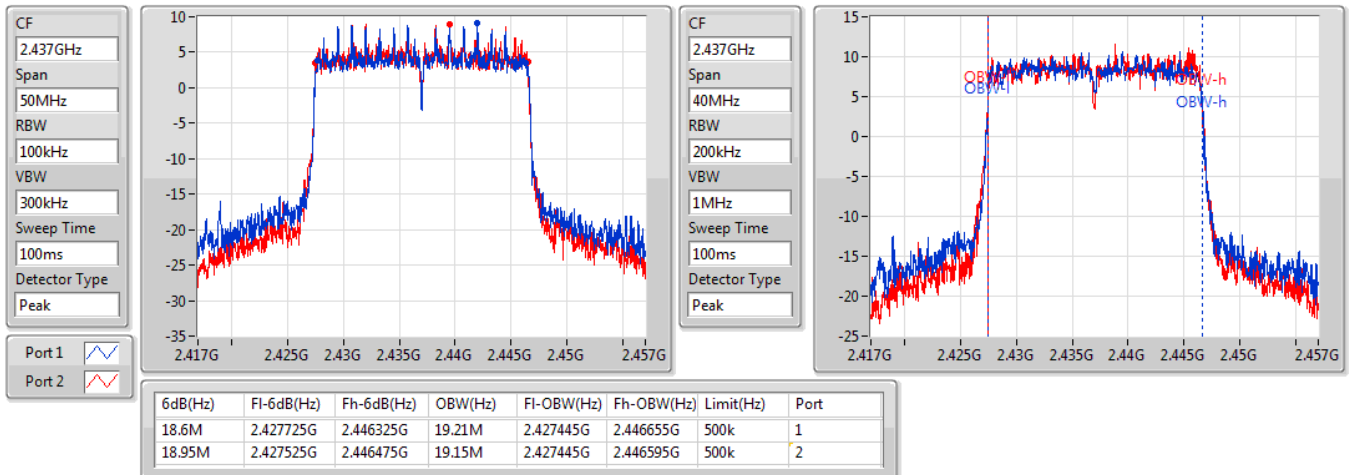


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

2437MHz

08/11/2019

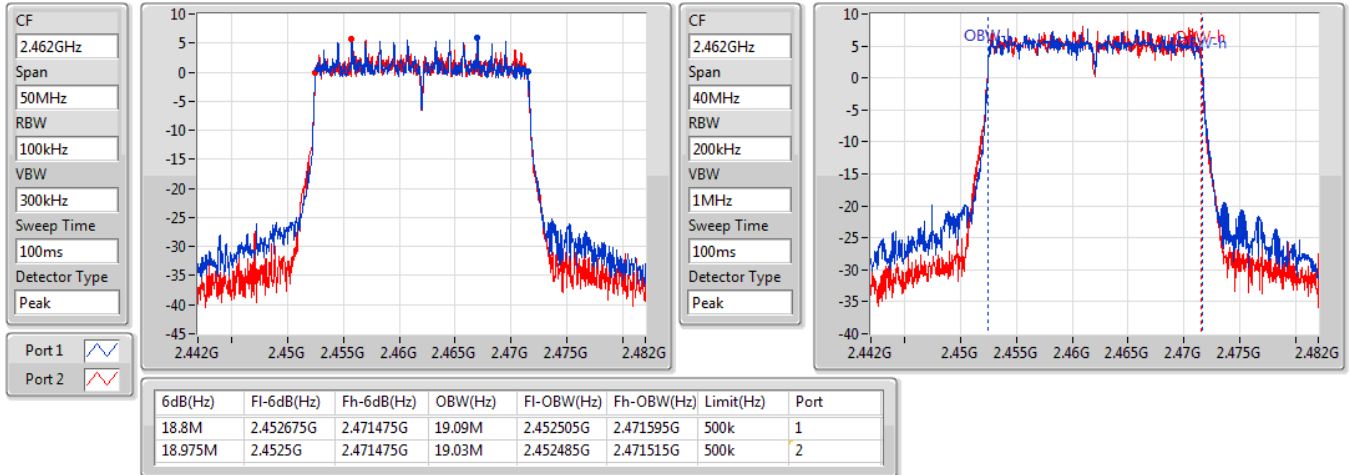


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

2462MHz

08/11/2019

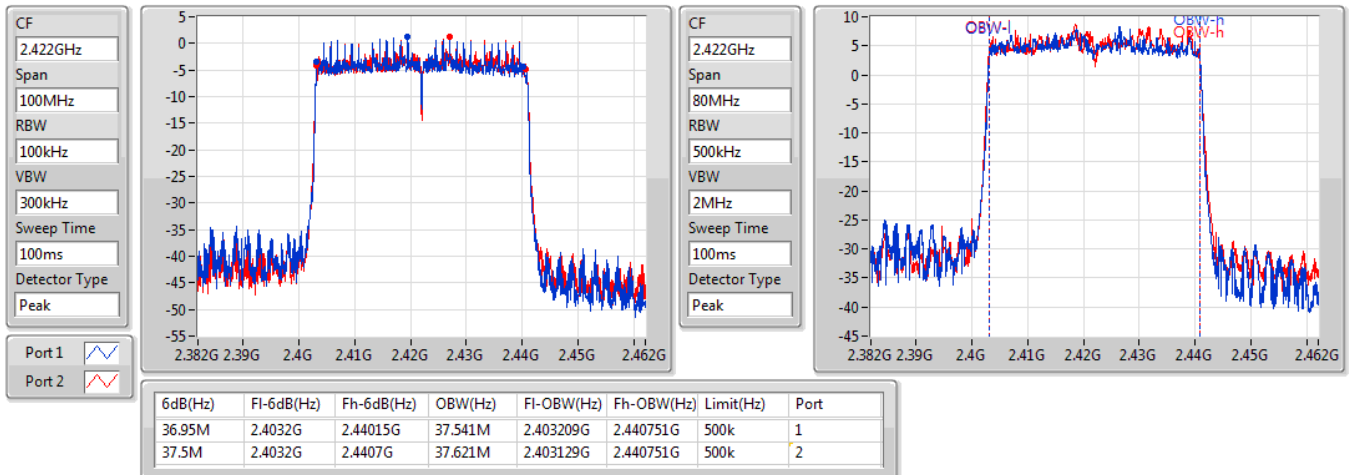


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

2422MHz

08/11/2019

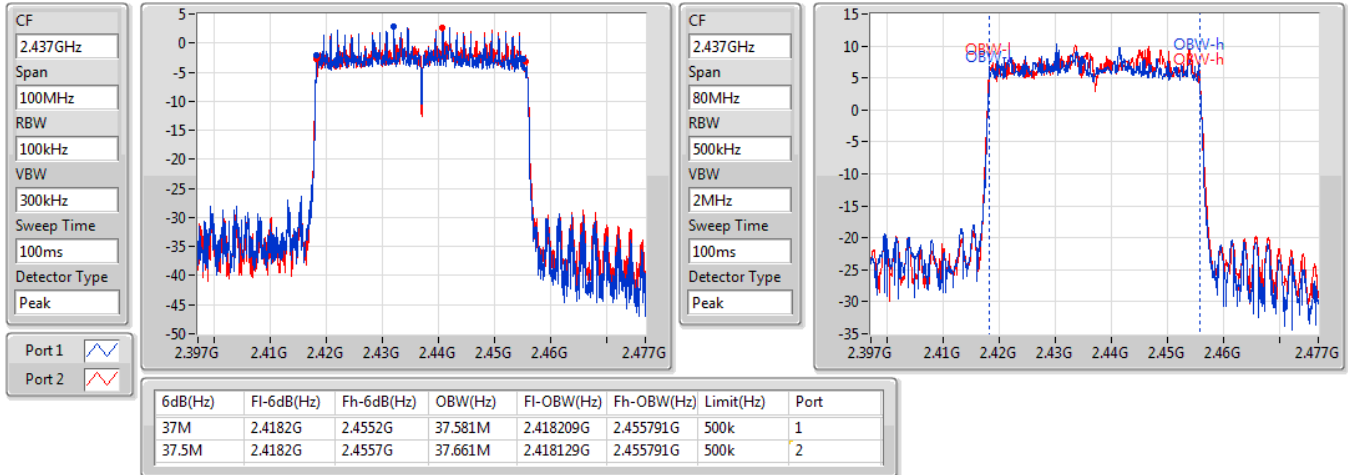


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

2437MHz

08/11/2019

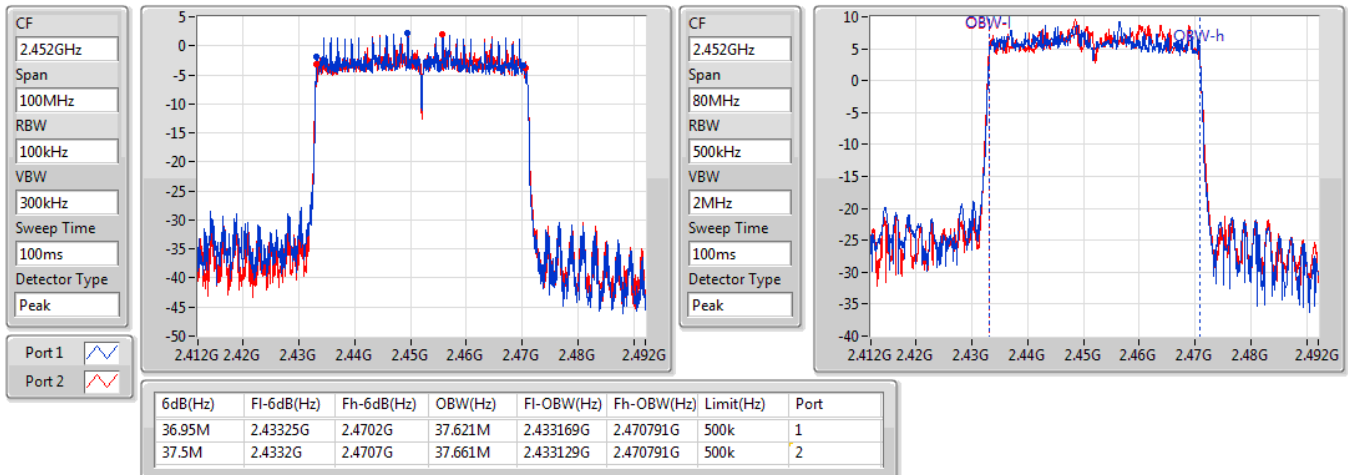


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

2452MHz

08/11/2019



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	7.05M	10.435M	10M4G1D	6.525M	10.275M
802.11g_Nss1,(6Mbps)_1TX	16.35M	19.91M	19M9D1D	16.325M	16.712M
VHT20_Nss1,(MCS0)_1TX	17.575M	18.471M	18M5D1D	17.55M	17.851M
VHT40_Nss1,(MCS0)_1TX	36.35M	36.502M	36M5D1D	36.25M	36.422M
802.11ax HEW20_Nss1,(MCS0)_1TX	18.975M	19.35M	19M3D1D	18.85M	19.01M
802.11ax HEW40_Nss1,(MCS0)_1TX	36.35M	36.502M	36M5D1D	36.25M	36.422M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	6.525M	10.315M
2437MHz	Pass	500k	7.05M	10.275M
2462MHz	Pass	500k	7M	10.435M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	16.35M	16.792M
2437MHz	Pass	500k	16.325M	19.91M
2462MHz	Pass	500k	16.325M	16.712M
VHT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	17.575M	17.851M
2437MHz	Pass	500k	17.55M	18.471M
2462MHz	Pass	500k	17.575M	17.851M
VHT40_Nss1,(MCS0)_1TX	-	-	-	-
2422MHz	Pass	500k	36.35M	36.422M
2437MHz	Pass	500k	36.25M	36.502M
2452MHz	Pass	500k	36.3M	36.422M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	18.975M	19.03M
2437MHz	Pass	500k	18.85M	19.35M
2462MHz	Pass	500k	18.925M	19.01M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
2422MHz	Pass	500k	36.25M	36.422M
2437MHz	Pass	500k	36.35M	36.502M
2452MHz	Pass	500k	36.35M	36.462M

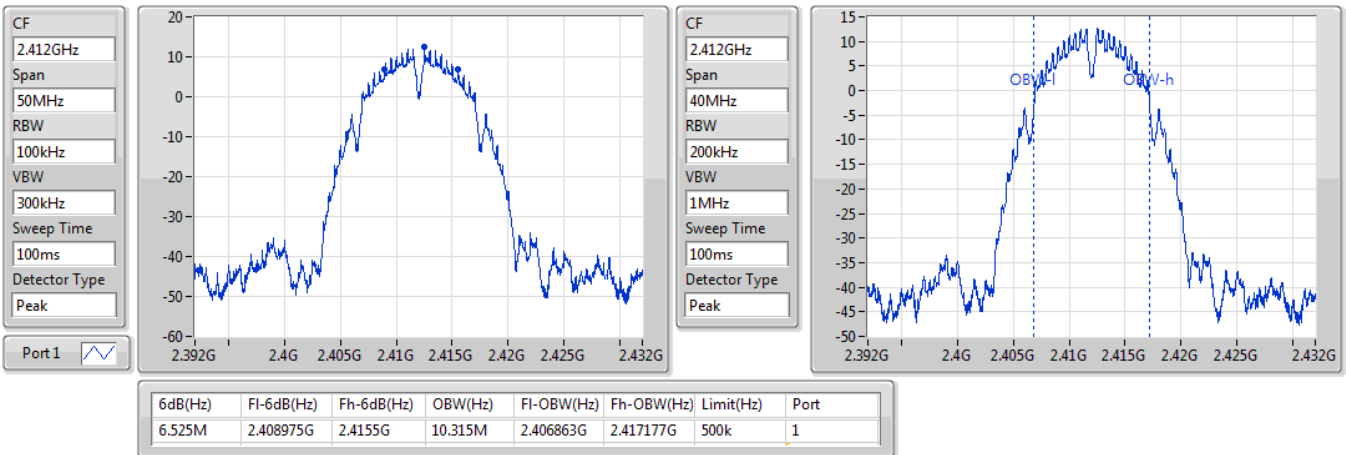
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

802.11b_Nss1,(1Mbps)_1TX

EBW

2412MHz

11/11/2019

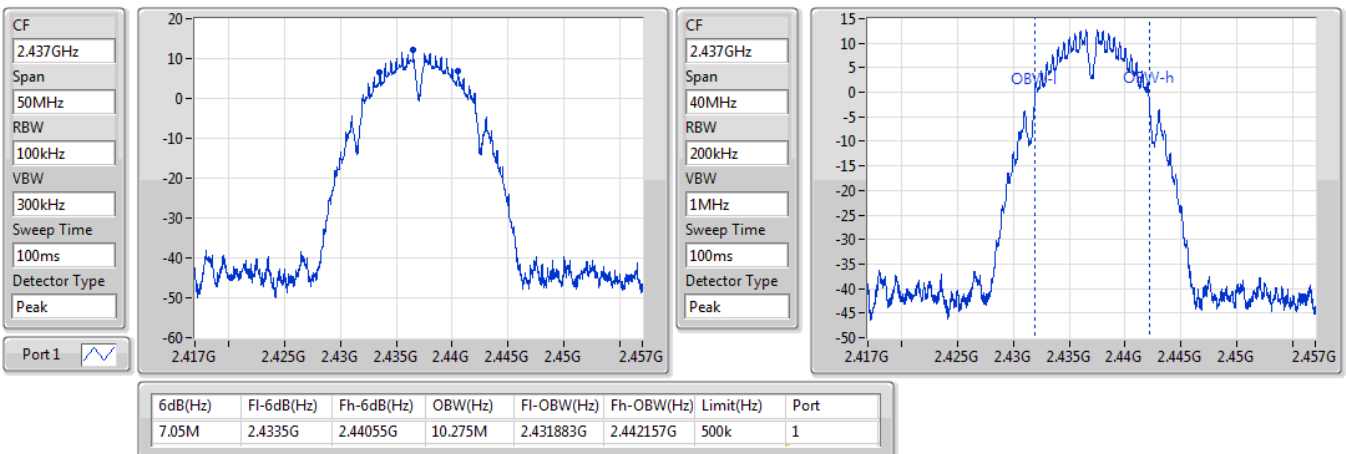


802.11b_Nss1,(1Mbps)_1TX

EBW

2437MHz

11/11/2019

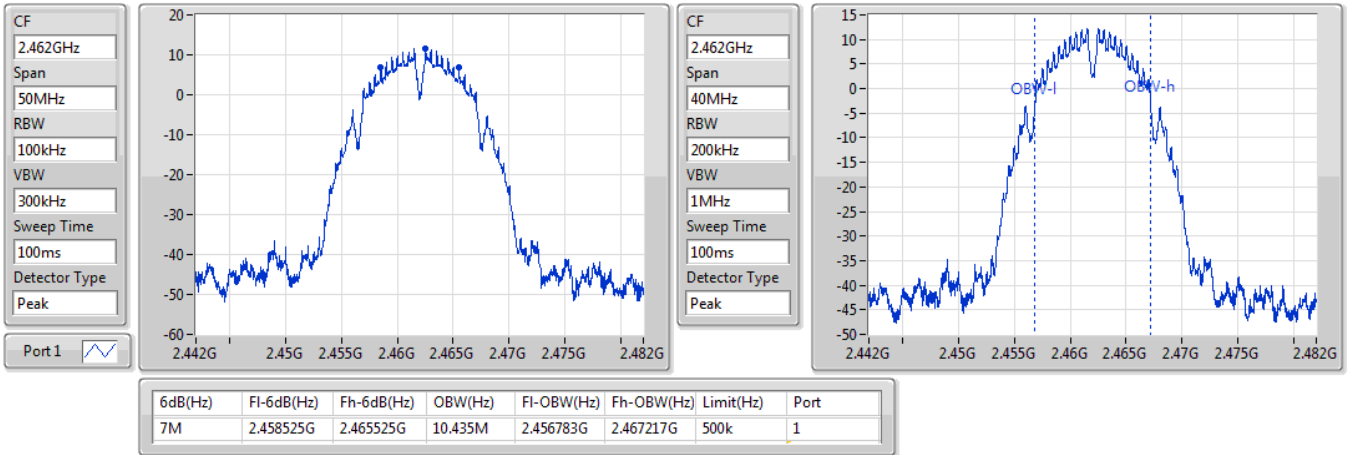


802.11b_Nss1,(1Mbps)_1TX

EBW

2462MHz

11/11/2019

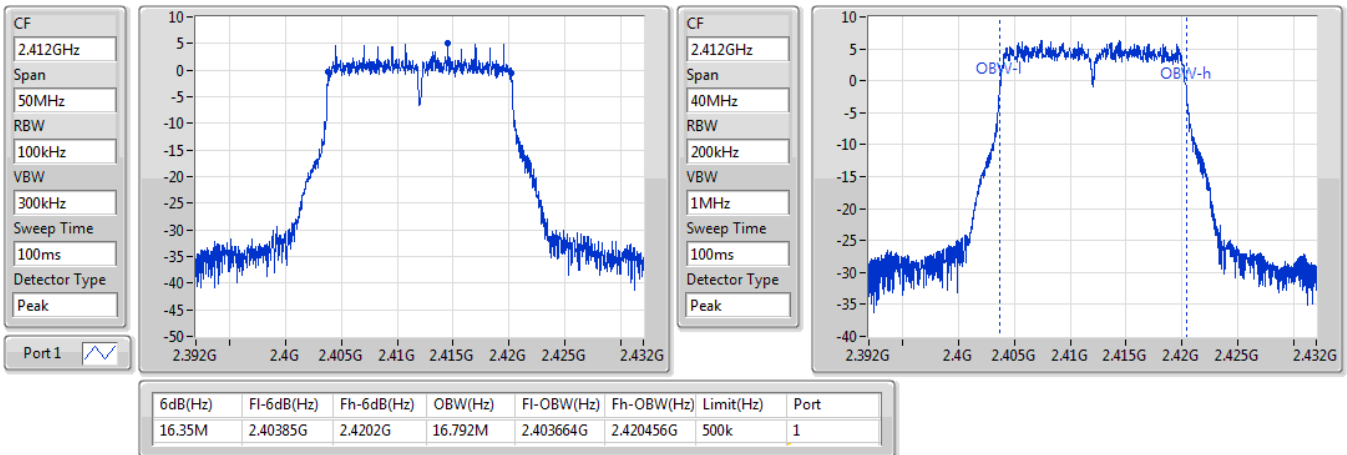


802.11g_Nss1,(6Mbps)_1TX

EBW

2412MHz

11/11/2019

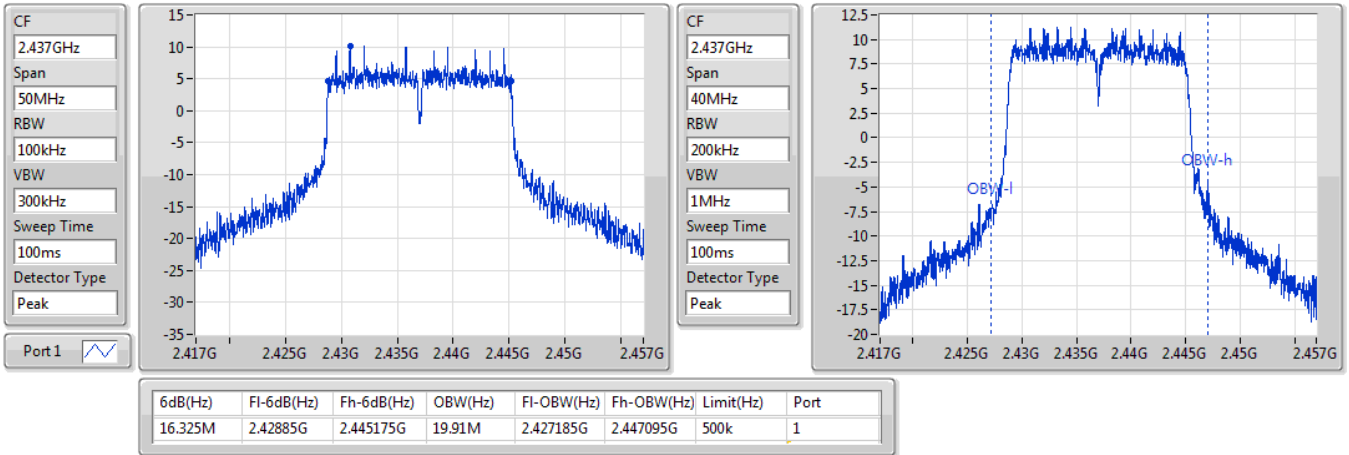


802.11g_Nss1,(6Mbps)_1TX

EBW

2437MHz

11/11/2019

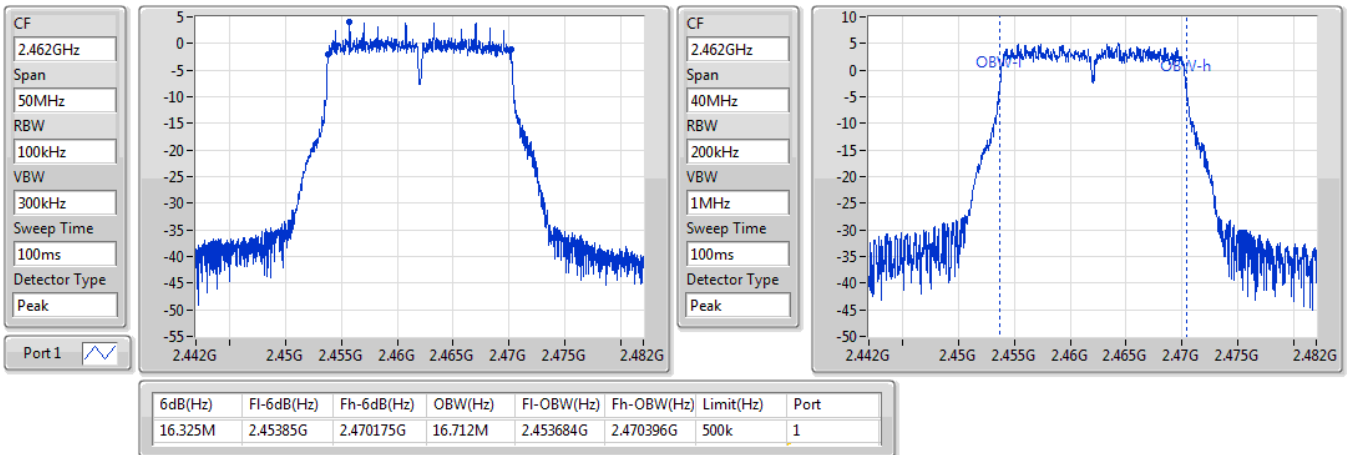


802.11g_Nss1,(6Mbps)_1TX

EBW

2462MHz

11/11/2019

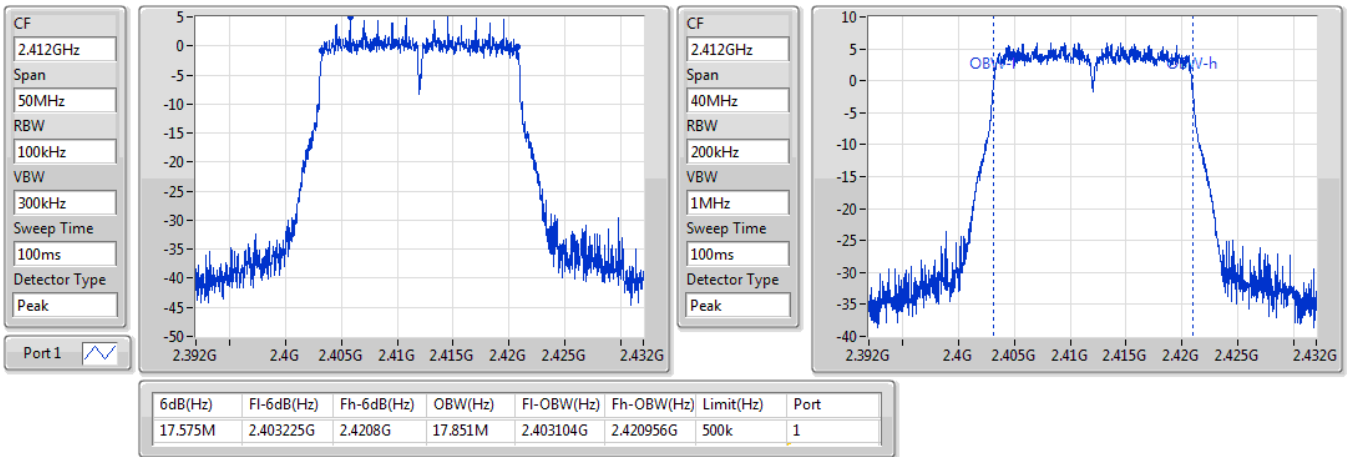


VHT20_Nss1,(MCS0)_1TX

EBW

2412MHz

11/11/2019

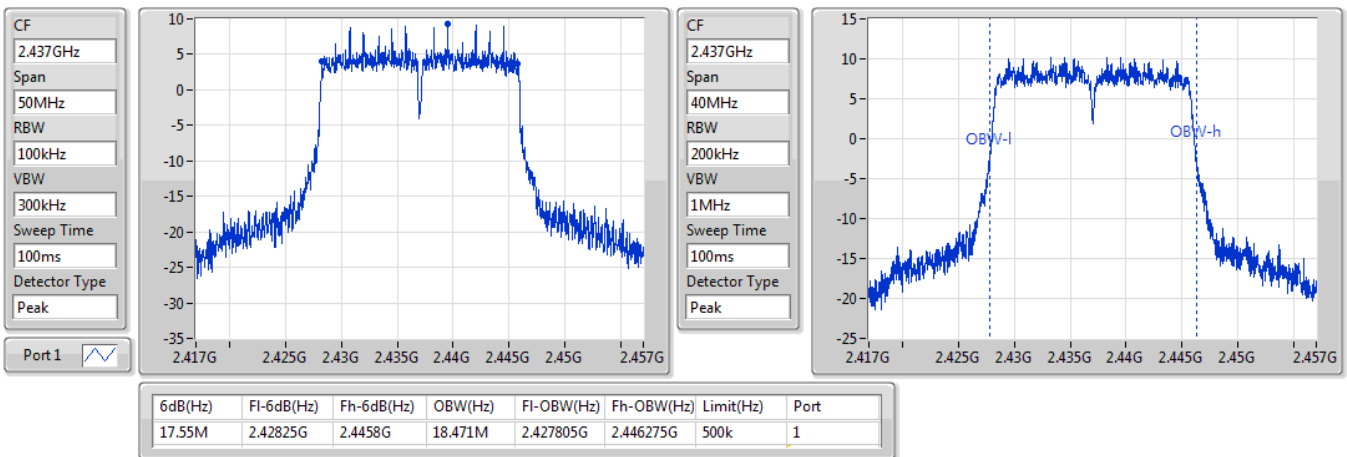


VHT20_Nss1,(MCS0)_1TX

EBW

2437MHz

11/11/2019

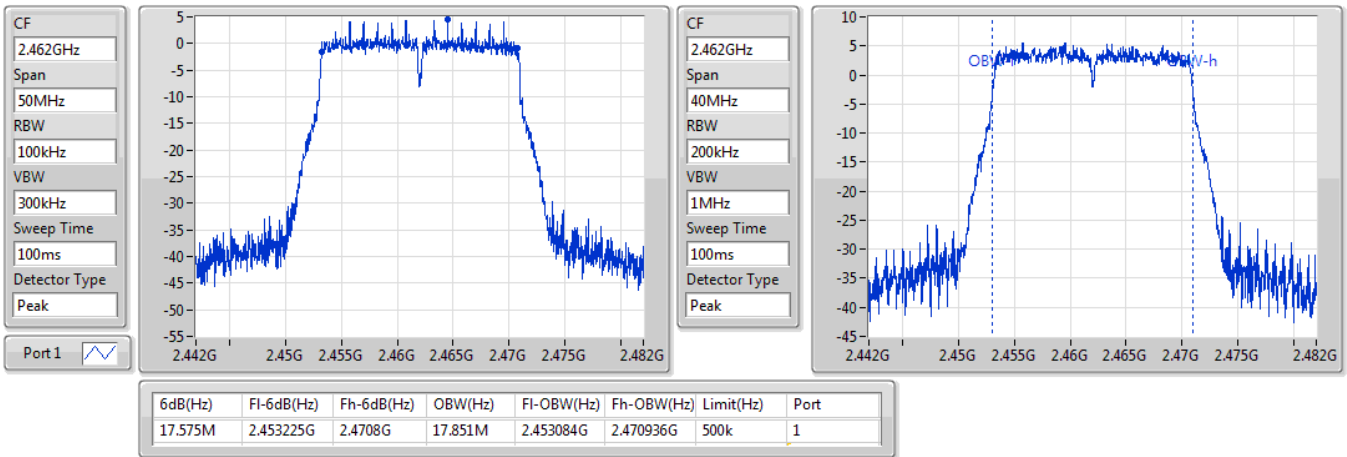


VHT20_Nss1,(MCS0)_1TX

EBW

2462MHz

11/11/2019

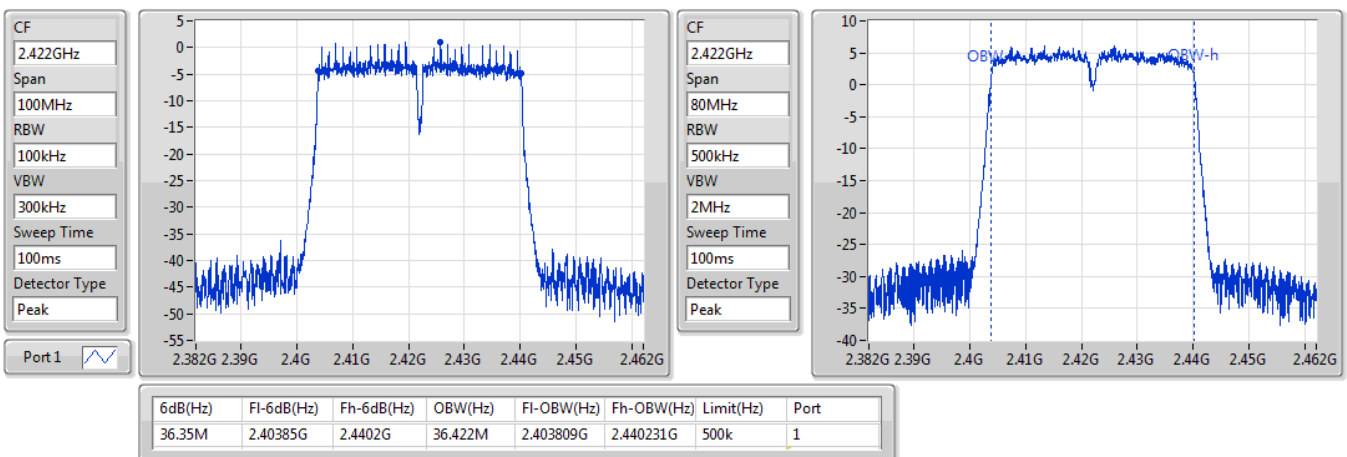


VHT40_Nss1,(MCS0)_1TX

EBW

2422MHz

11/11/2019

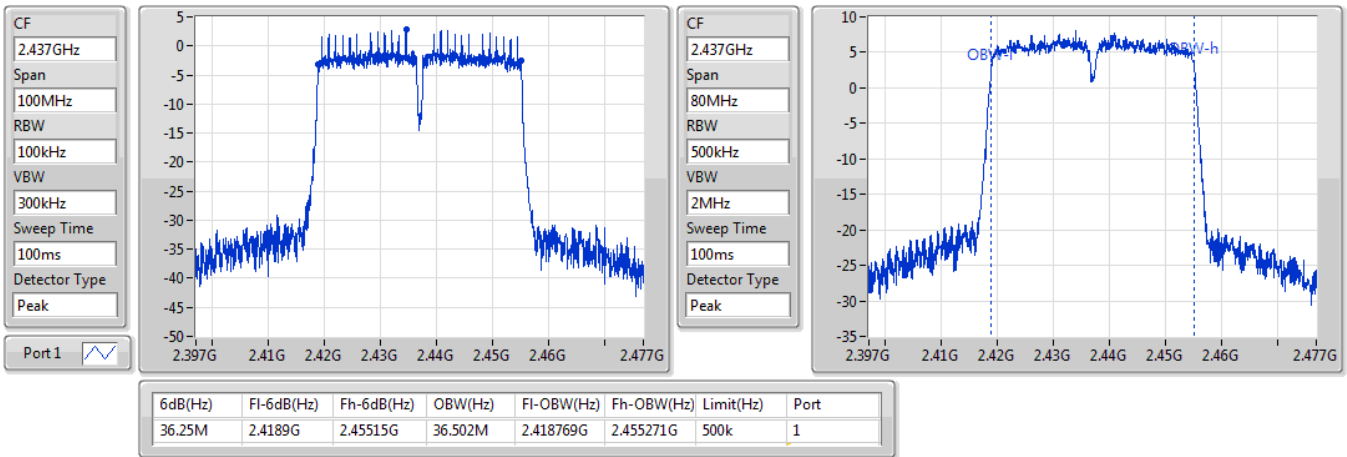


VHT40_Nss1,(MCS0)_1TX

EBW

2437MHz

11/11/2019

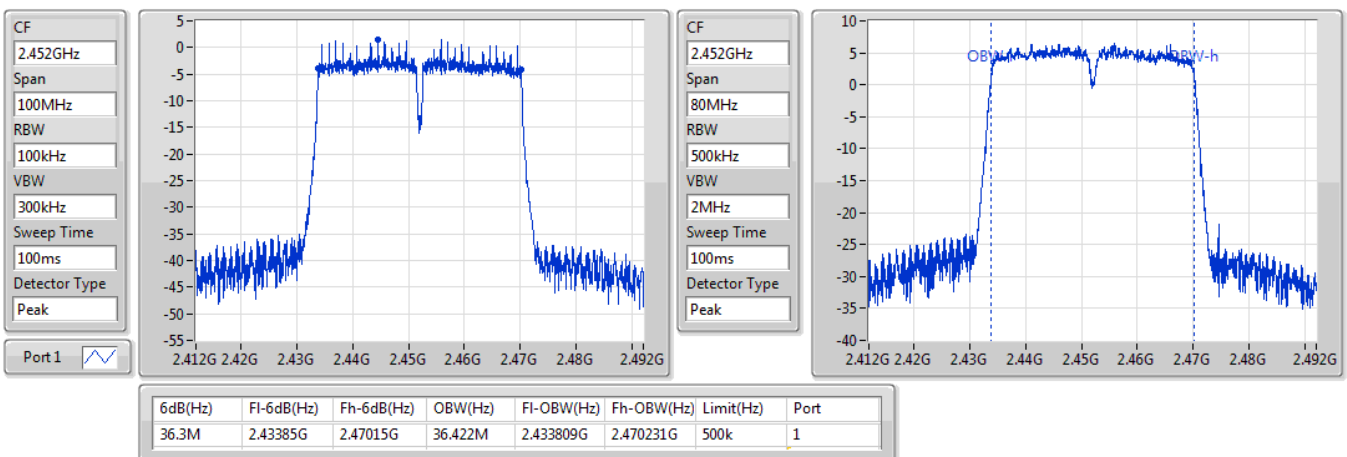


VHT40_Nss1,(MCS0)_1TX

EBW

2452MHz

11/11/2019

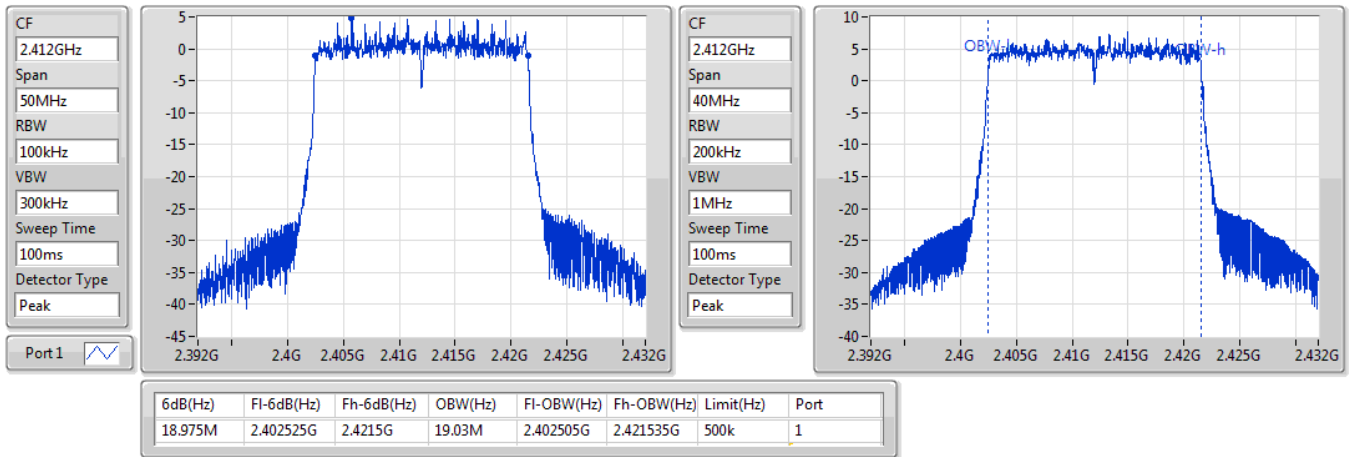


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

2412MHz

11/11/2019

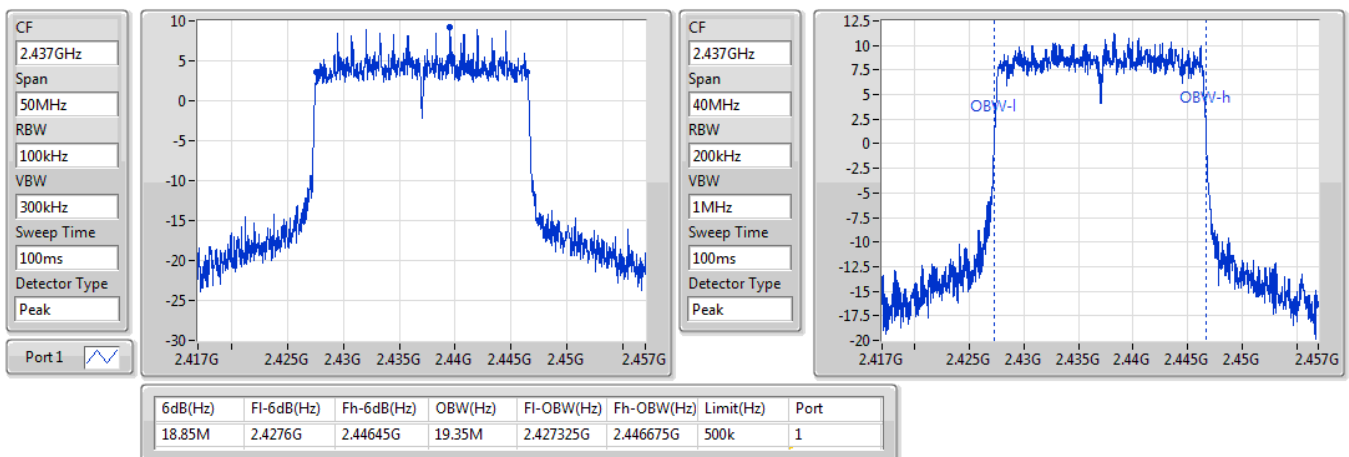


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

2437MHz

11/11/2019

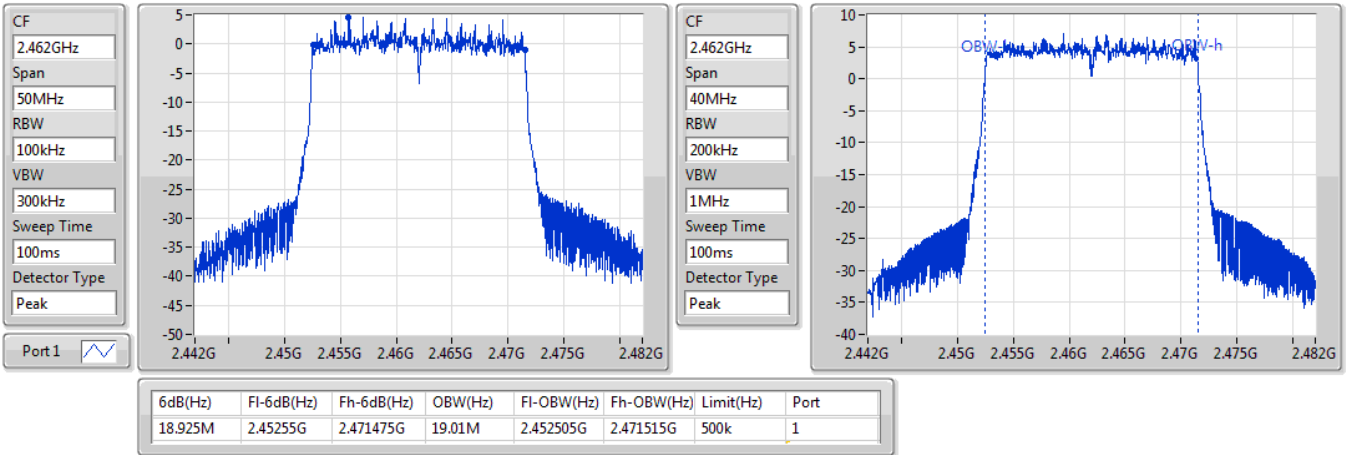


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

2462MHz

11/11/2019

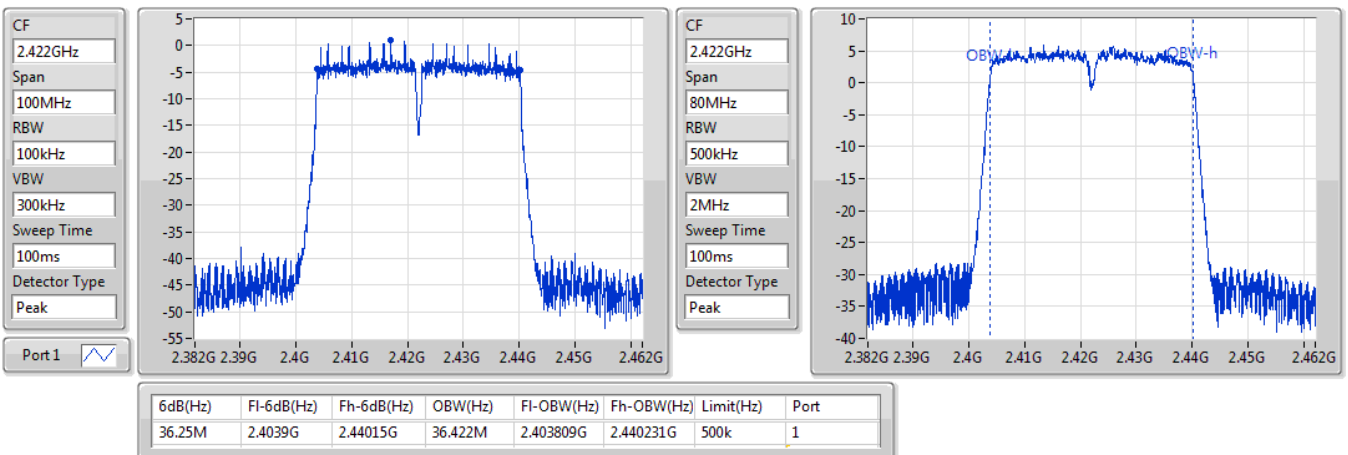


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

2422MHz

11/11/2019

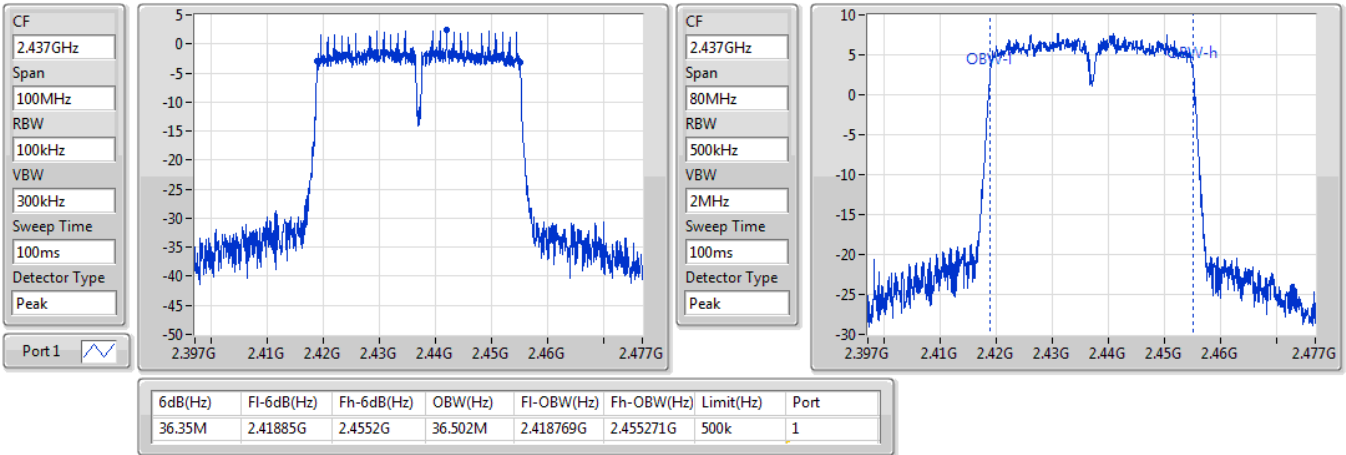


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

2437MHz

11/11/2019

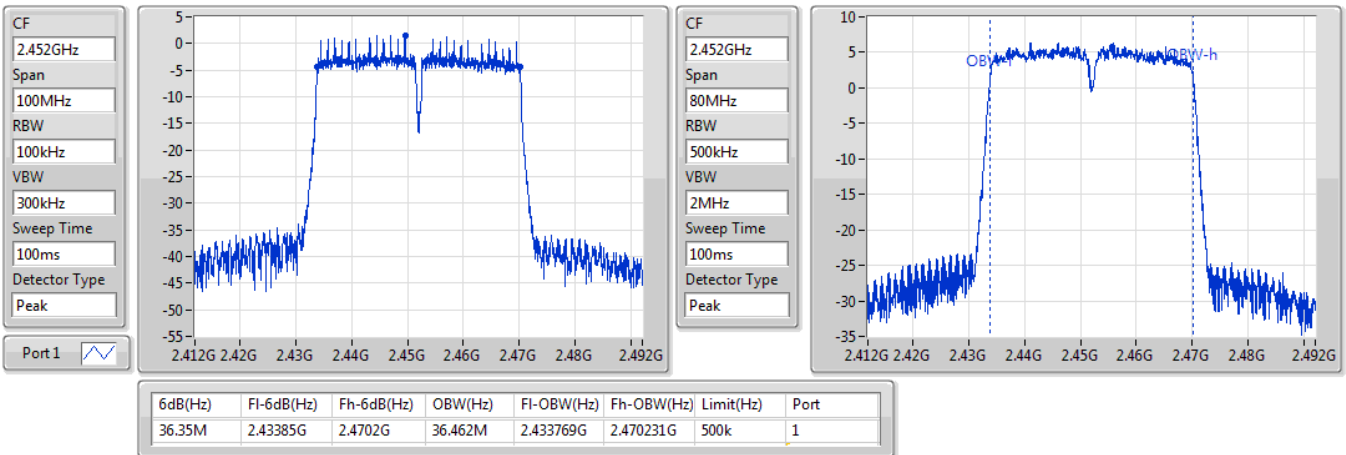


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

2452MHz

11/11/2019



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	7.525M	10.455M	10M5G1D	6.525M	10.235M
802.11g_Nss1,(6Mbps)_2TX	16.35M	17.111M	17M1D1D	16.325M	16.652M
VHT20_Nss2,(MCS0)_2TX	17.6M	18.031M	18M0D1D	17.55M	17.791M
VHT40_Nss2,(MCS0)_2TX	36.35M	36.342M	36M3D1D	35.75M	36.262M
802.11ax HEW20_Nss2,(MCS0)_2TX	18.975M	19.11M	19M1D1D	18.85M	19.03M
802.11ax HEW40_Nss2,(MCS0)_2TX	37.65M	37.621M	37M6D1D	36.45M	37.501M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	6.975M	10.355M	7.525M	10.235M
2437MHz	Pass	500k	7.025M	10.275M	6.525M	10.455M
2462MHz	Pass	500k	7.05M	10.415M	7.05M	10.295M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.35M	16.752M	16.35M	16.652M
2437MHz	Pass	500k	16.35M	17.111M	16.325M	17.091M
2462MHz	Pass	500k	16.325M	16.732M	16.325M	16.652M
VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	17.575M	17.871M	17.6M	17.791M
2437MHz	Pass	500k	17.55M	18.031M	17.6M	17.911M
2462MHz	Pass	500k	17.55M	17.871M	17.575M	17.791M
VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	36.3M	36.342M	35.75M	36.262M
2437MHz	Pass	500k	36.25M	36.342M	36.35M	36.302M
2452MHz	Pass	500k	36.3M	36.342M	36.35M	36.302M
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	18.95M	19.03M	18.85M	19.03M
2437MHz	Pass	500k	18.95M	19.07M	18.975M	19.11M
2462MHz	Pass	500k	18.95M	19.03M	18.925M	19.03M
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	37.5M	37.621M	36.45M	37.501M
2437MHz	Pass	500k	37.35M	37.621M	36.95M	37.541M
2452MHz	Pass	500k	37.65M	37.621M	37M	37.541M

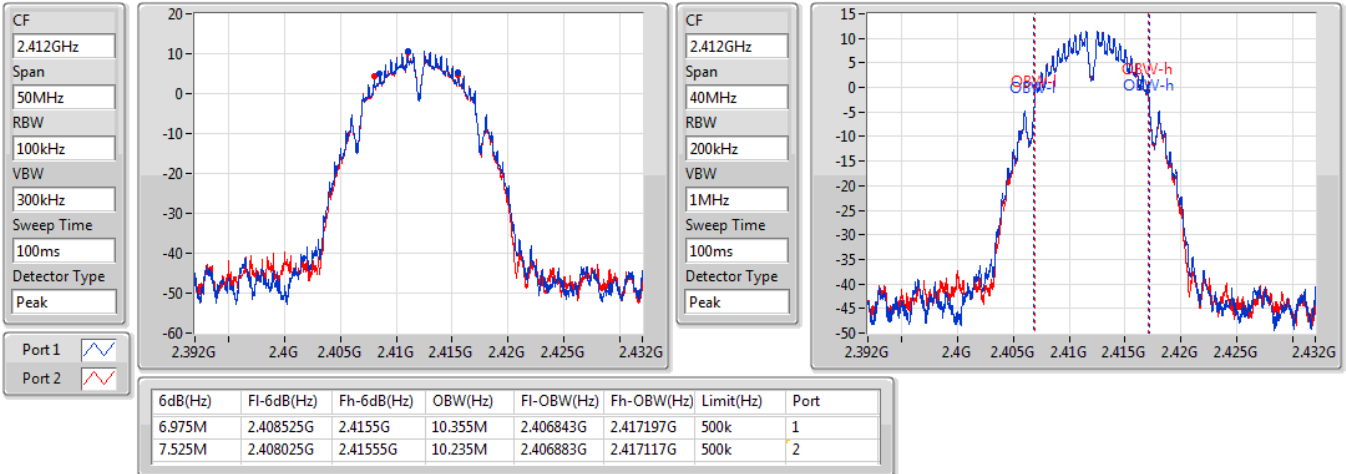
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

802.11b_Nss1,(1Mbps)_2TX

EBW

2412MHz

11/11/2019

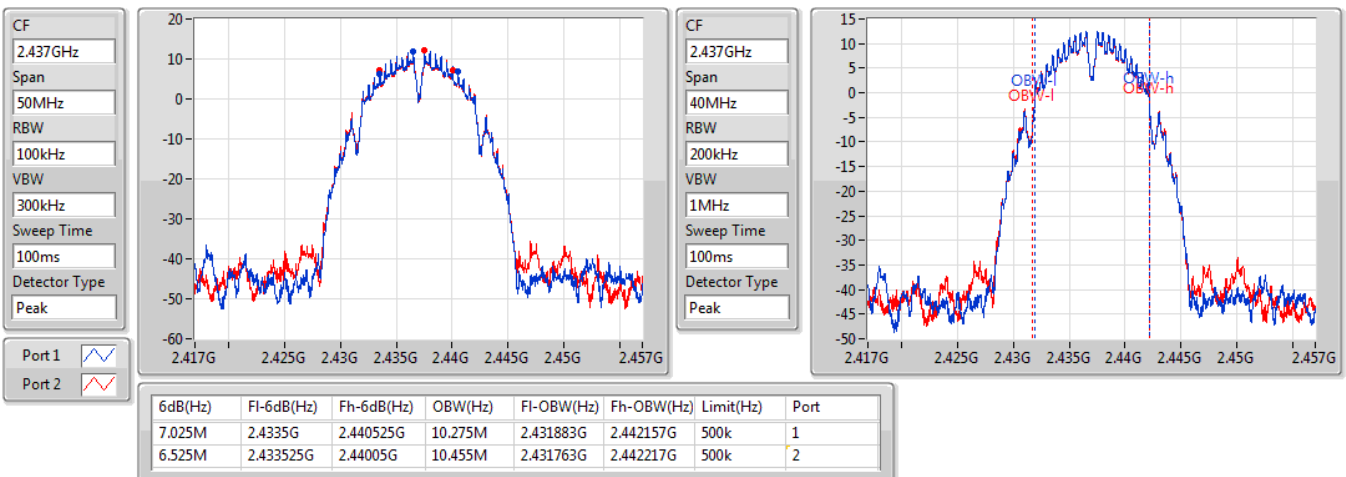


802.11b_Nss1,(1Mbps)_2TX

EBW

2437MHz

11/11/2019

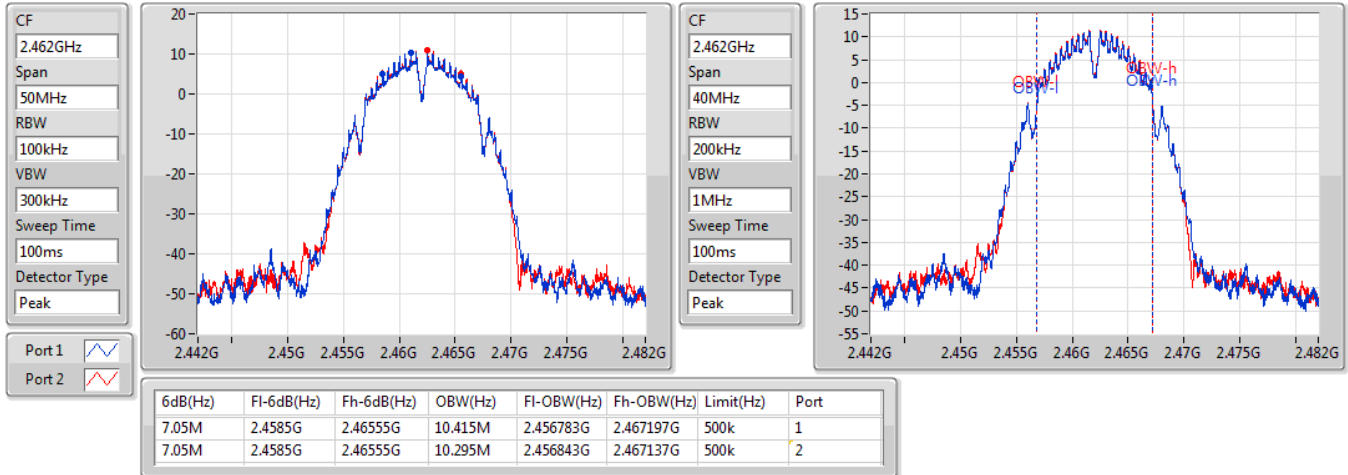


802.11b_Nss1,(1Mbps)_2TX

EBW

2462MHz

11/11/2019

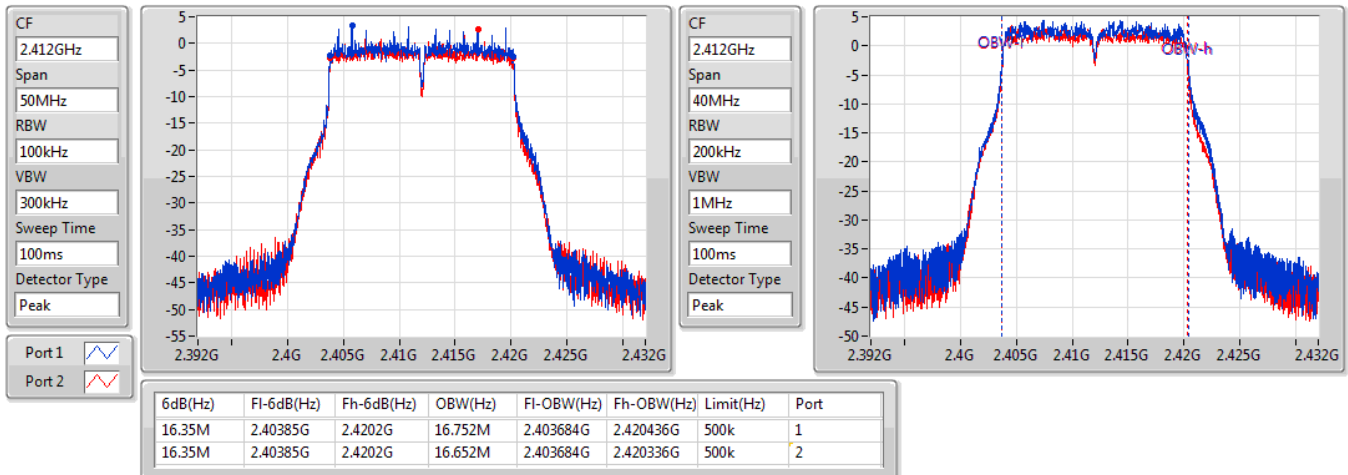


802.11g_Nss1,(6Mbps)_2TX

EBW

2412MHz

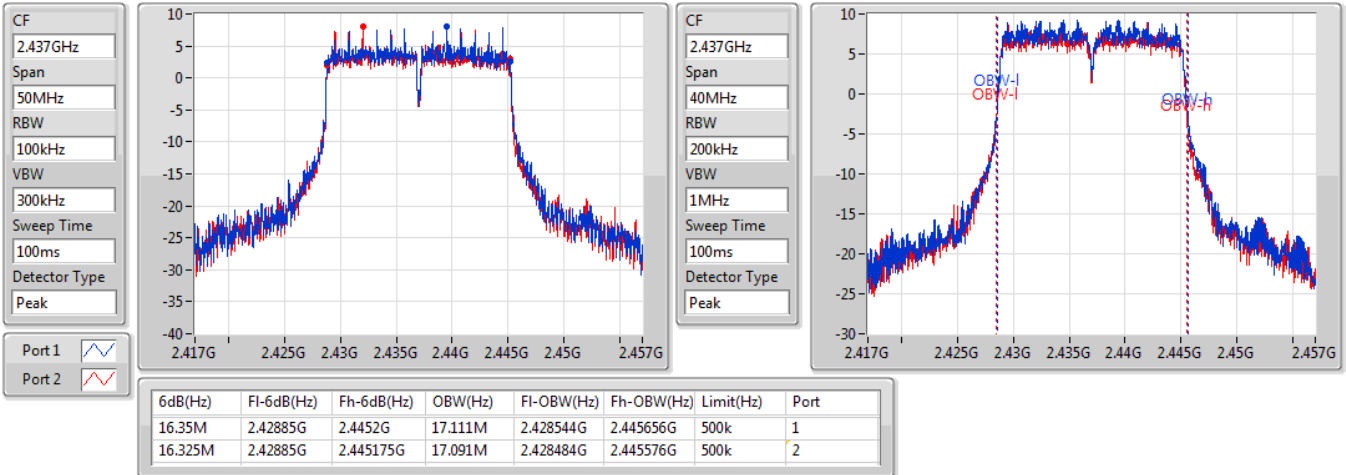
11/11/2019



802.11g_Nss1,(6Mbps)_2TX

2437MHz

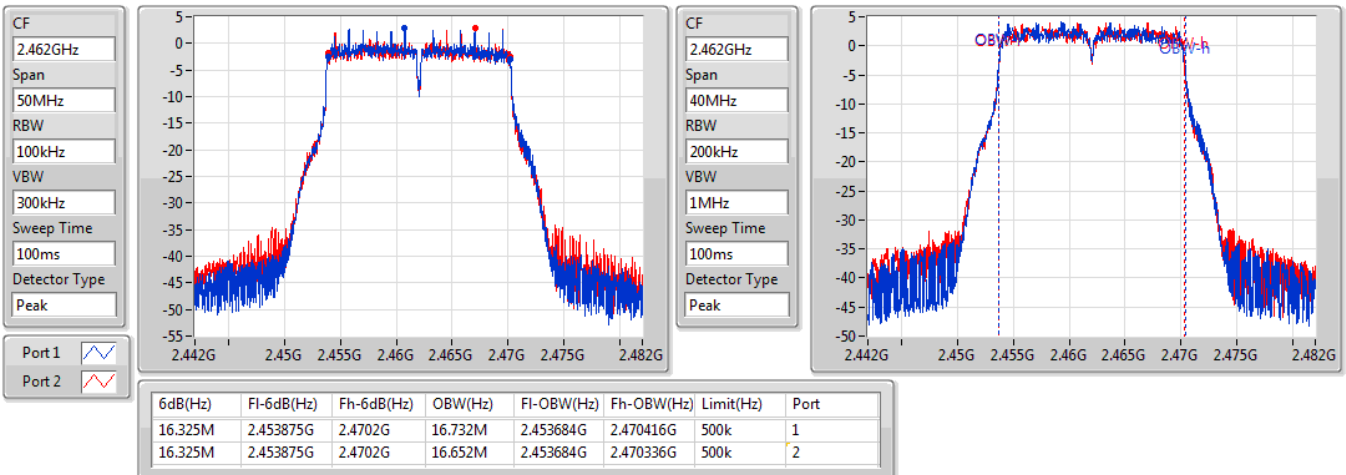
11/11/2019



802.11g_Nss1,(6Mbps)_2TX

2462MHz

11/11/2019

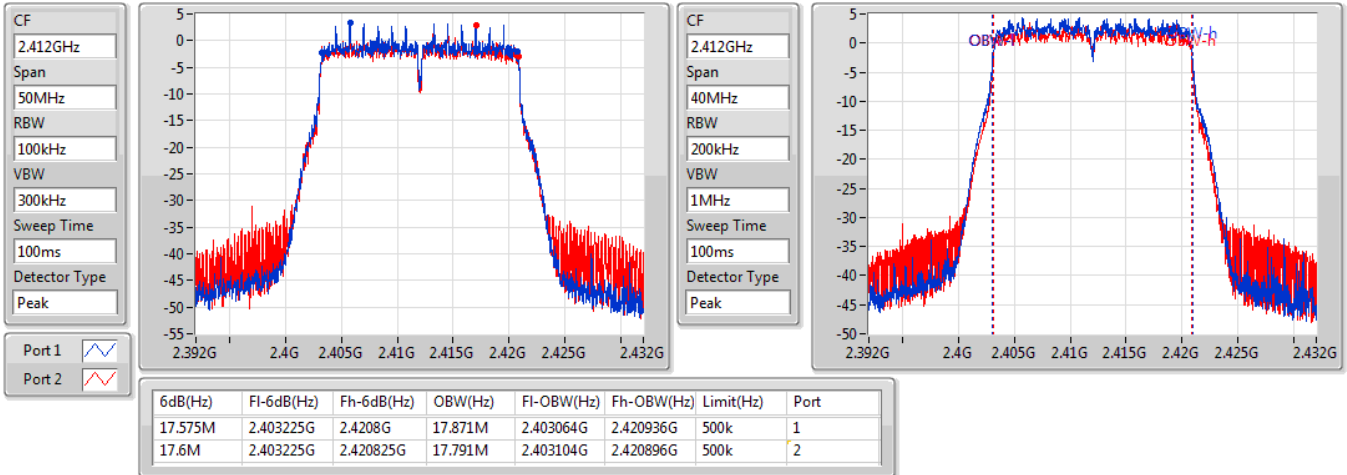


VHT20_Nss2,(MCS0)_2TX

EBW

2412MHz

11/11/2019

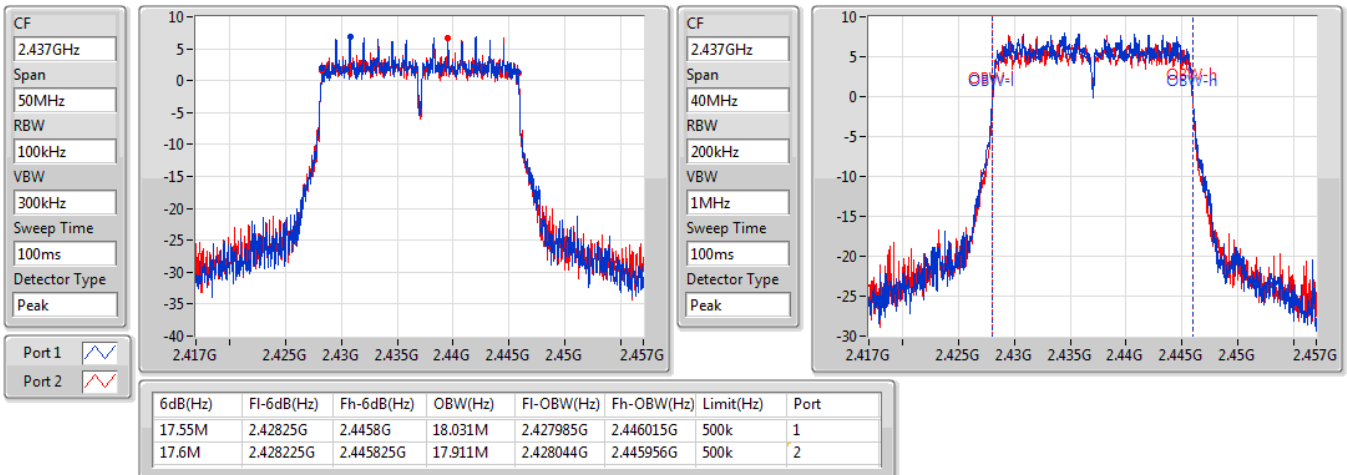


VHT20_Nss2,(MCS0)_2TX

EBW

2437MHz

11/11/2019

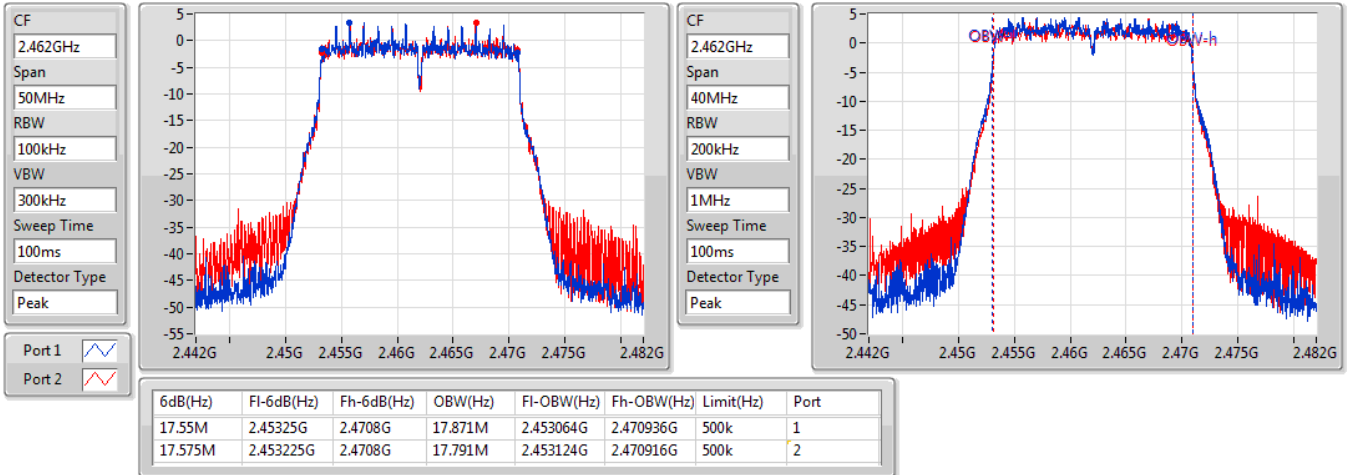


VHT20_Nss2,(MCS0)_2TX

EBW

2462MHz

11/11/2019

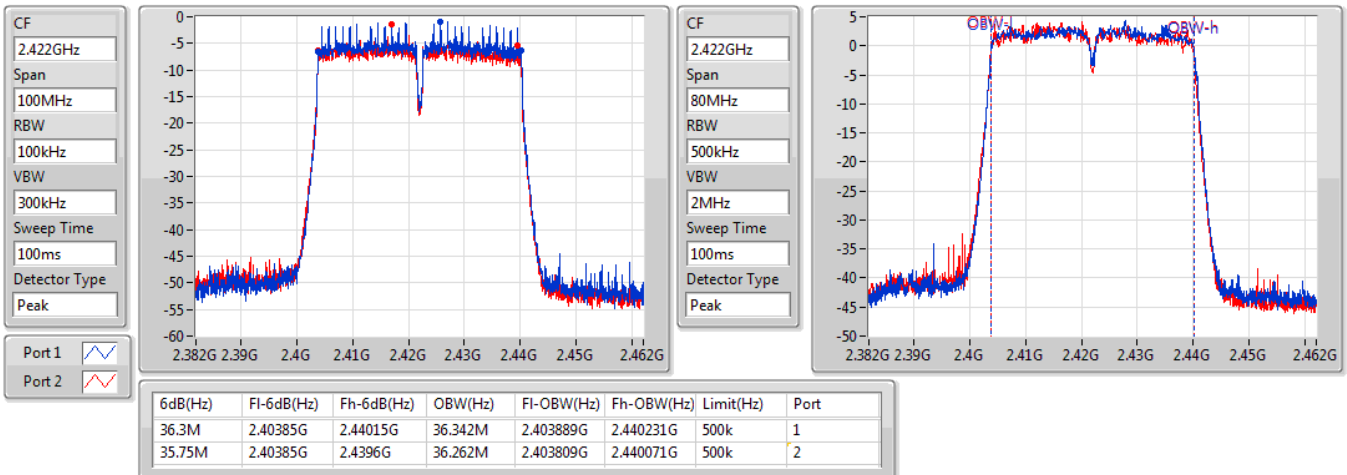


VHT40_Nss2,(MCS0)_2TX

EBW

2422MHz

11/11/2019

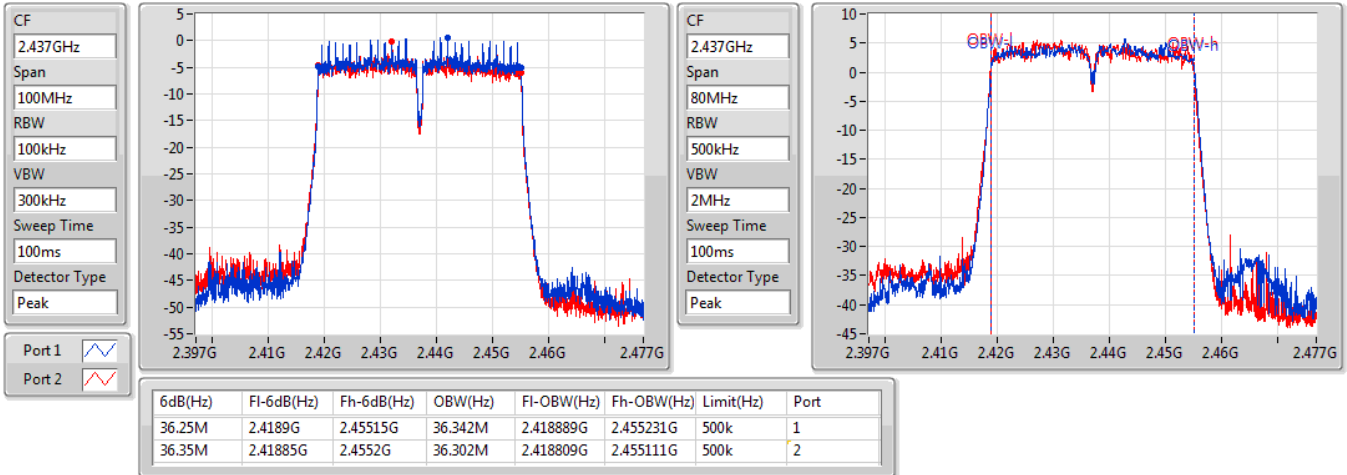


VHT40_Nss2,(MCS0)_2TX

EBW

2437MHz

11/11/2019

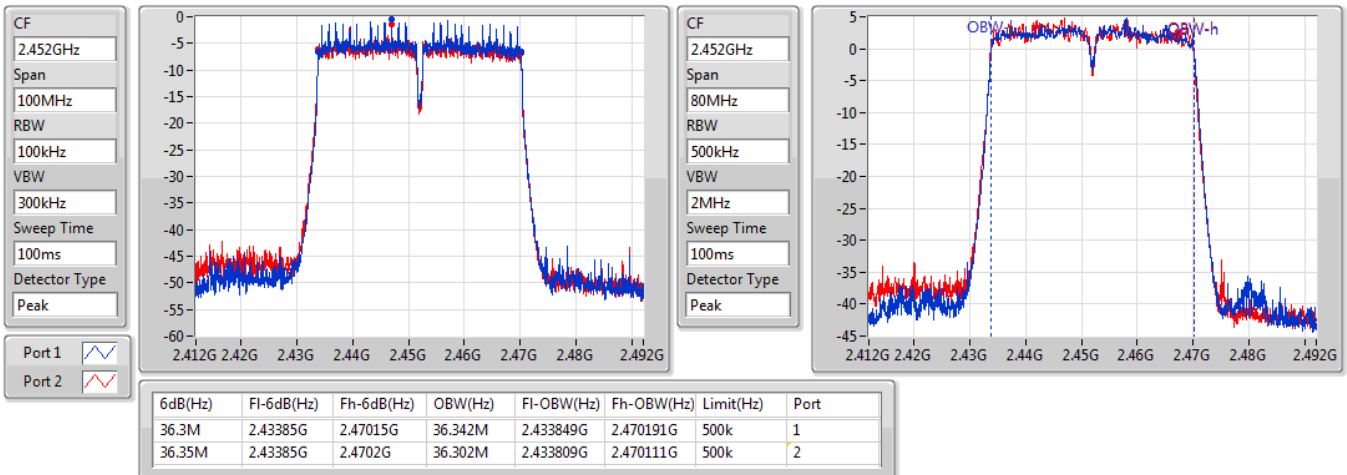


VHT40_Nss2,(MCS0)_2TX

EBW

2452MHz

11/11/2019

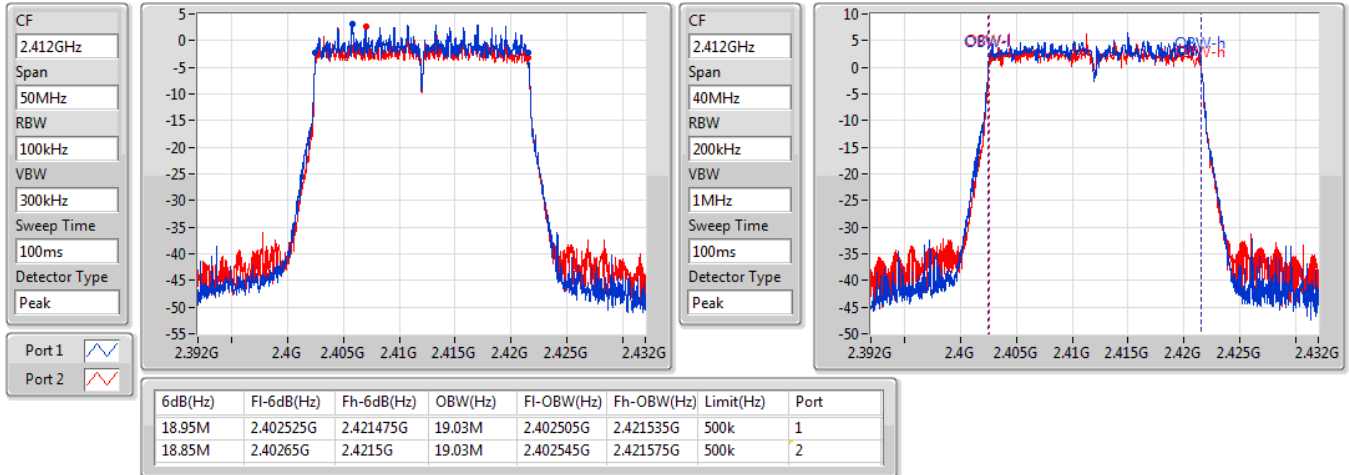


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

2412MHz

11/11/2019

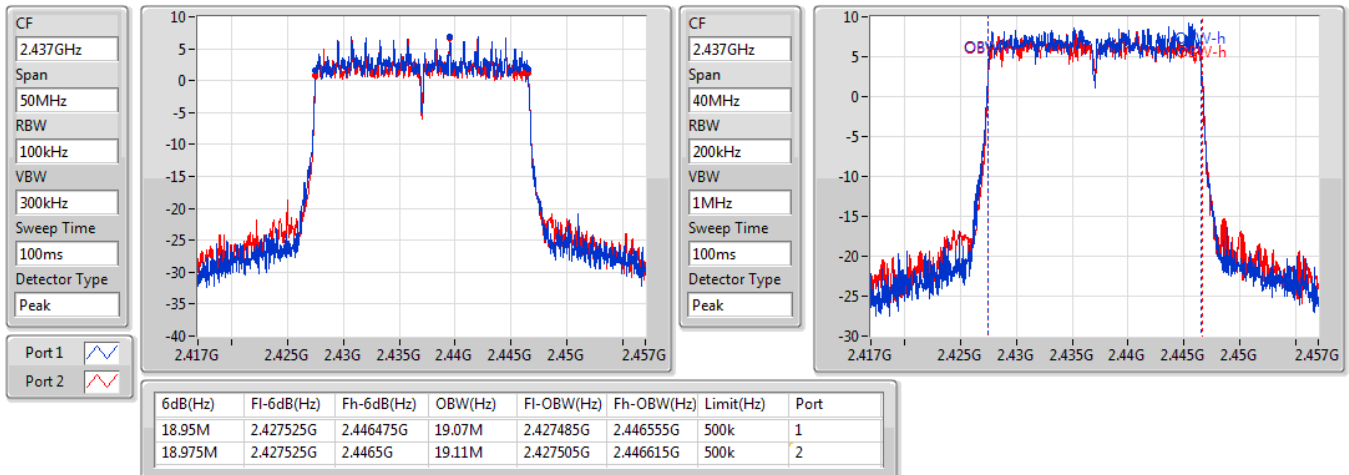


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

2437MHz

11/11/2019

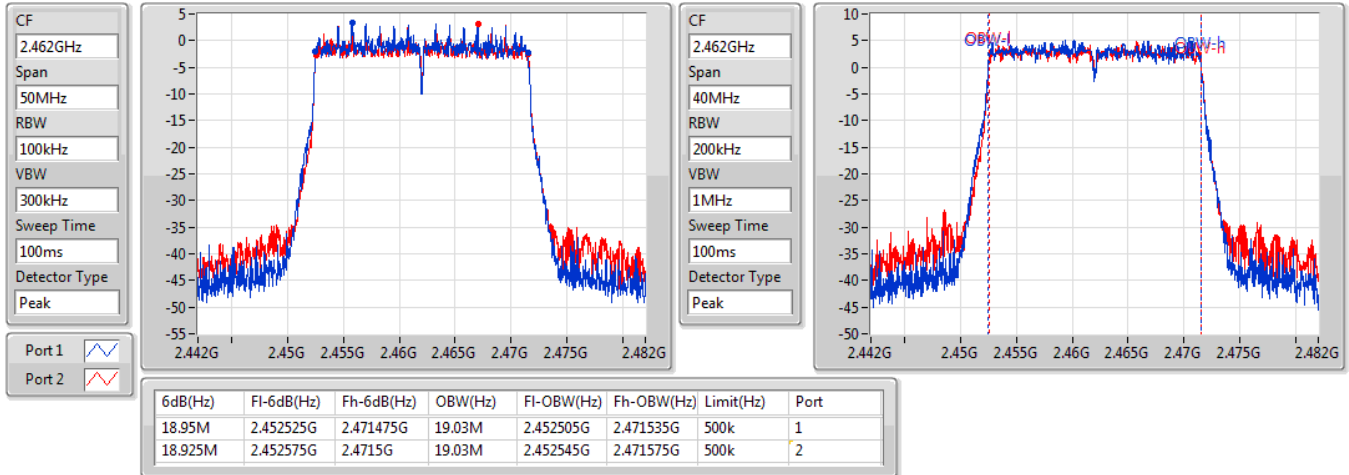


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

2462MHz

11/11/2019

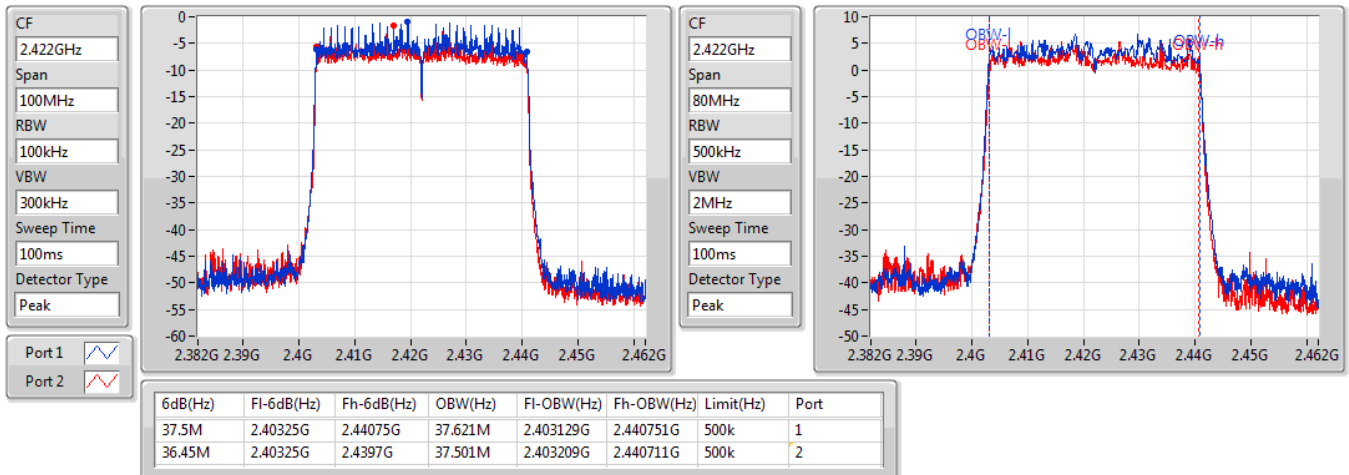


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

2422MHz

11/11/2019

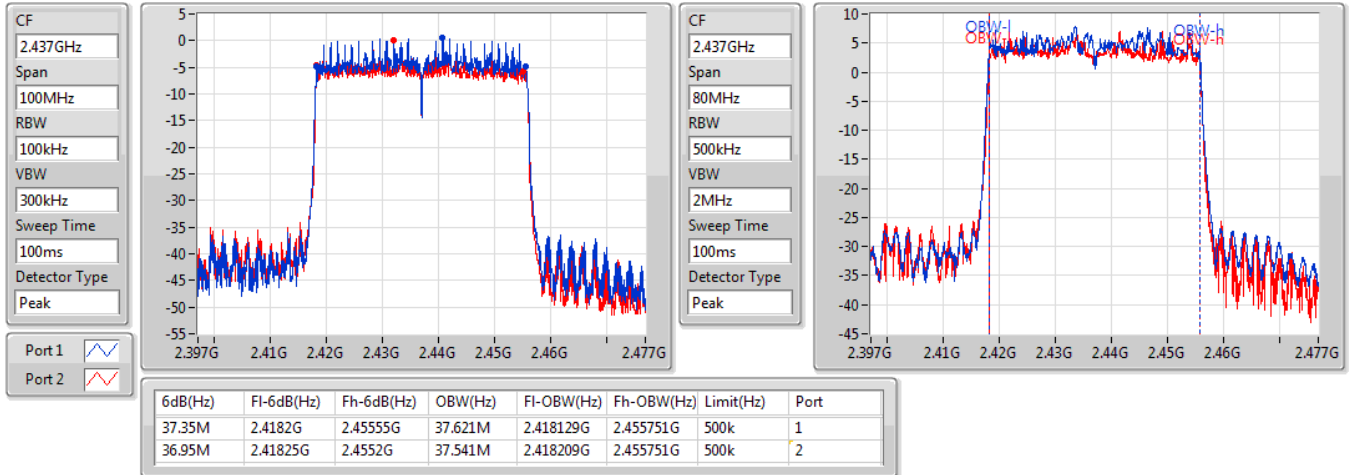


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

2437MHz

11/11/2019

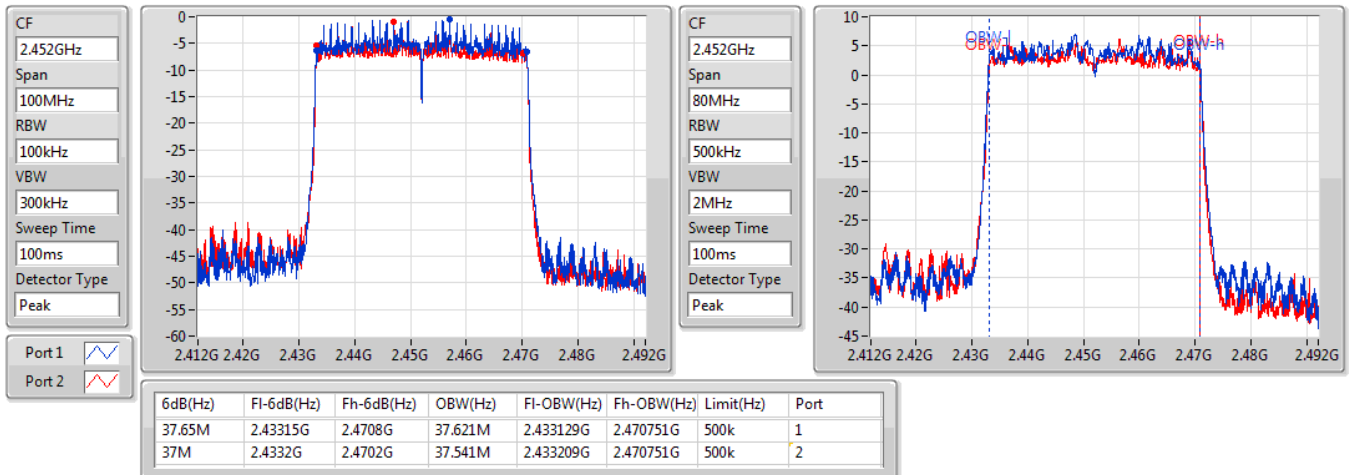


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

2452MHz

11/11/2019



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	7.05M	10.415M	10M4G1D	7.025M	10.395M
802.11g_Nss1,(6Mbps)_1TX	16.35M	17.471M	17M5D1D	16.3M	16.732M
VHT20_Nss1,(MCS0)_1TX	17.575M	18.151M	18M2D1D	17.575M	17.831M
VHT40_Nss1,(MCS0)_1TX	36.35M	36.422M	36M4D1D	36.25M	36.422M
802.11ax HEW20_Nss1,(MCS0)_1TX	18.95M	19.21M	19M2D1D	18.9M	18.991M
802.11ax HEW40_Nss1,(MCS0)_1TX	37.35M	37.541M	37M5D1D	37.3M	37.501M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	7.05M	10.395M
2437MHz	Pass	500k	7.025M	10.415M
2462MHz	Pass	500k	7.025M	10.415M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	16.35M	16.752M
2437MHz	Pass	500k	16.3M	17.471M
2462MHz	Pass	500k	16.35M	16.732M
VHT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	17.575M	17.851M
2437MHz	Pass	500k	17.575M	18.151M
2462MHz	Pass	500k	17.575M	17.831M
VHT40_Nss1,(MCS0)_1TX	-	-	-	-
2422MHz	Pass	500k	36.35M	36.422M
2437MHz	Pass	500k	36.25M	36.422M
2452MHz	Pass	500k	36.3M	36.422M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz	Pass	500k	18.95M	18.991M
2437MHz	Pass	500k	18.925M	19.21M
2462MHz	Pass	500k	18.9M	18.991M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
2422MHz	Pass	500k	37.3M	37.501M
2437MHz	Pass	500k	37.3M	37.541M
2452MHz	Pass	500k	37.35M	37.501M

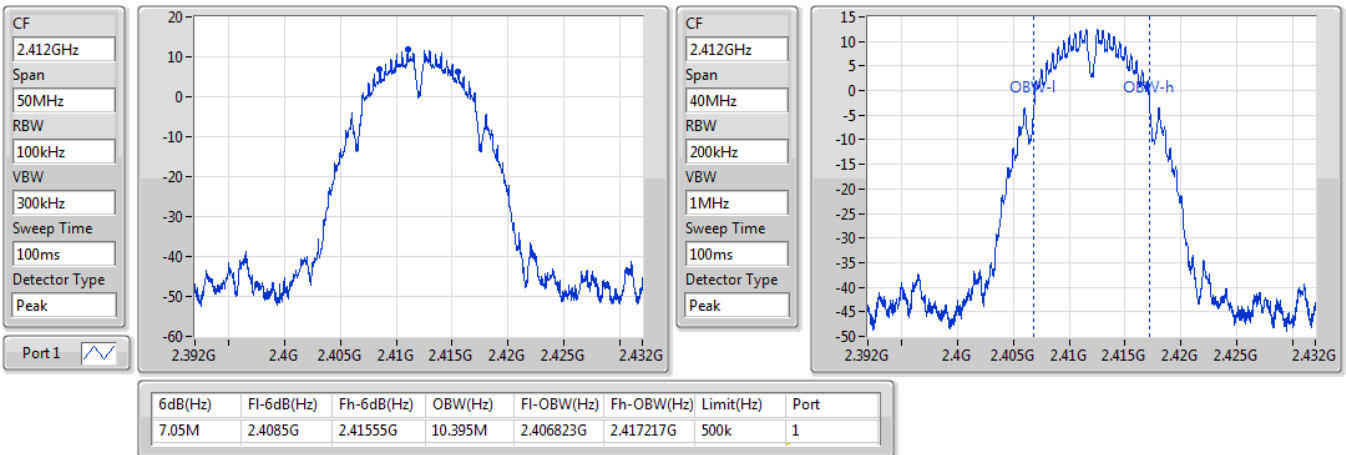
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

802.11b_Nss1,(1Mbps)_1TX

EBW

2412MHz

11/11/2019

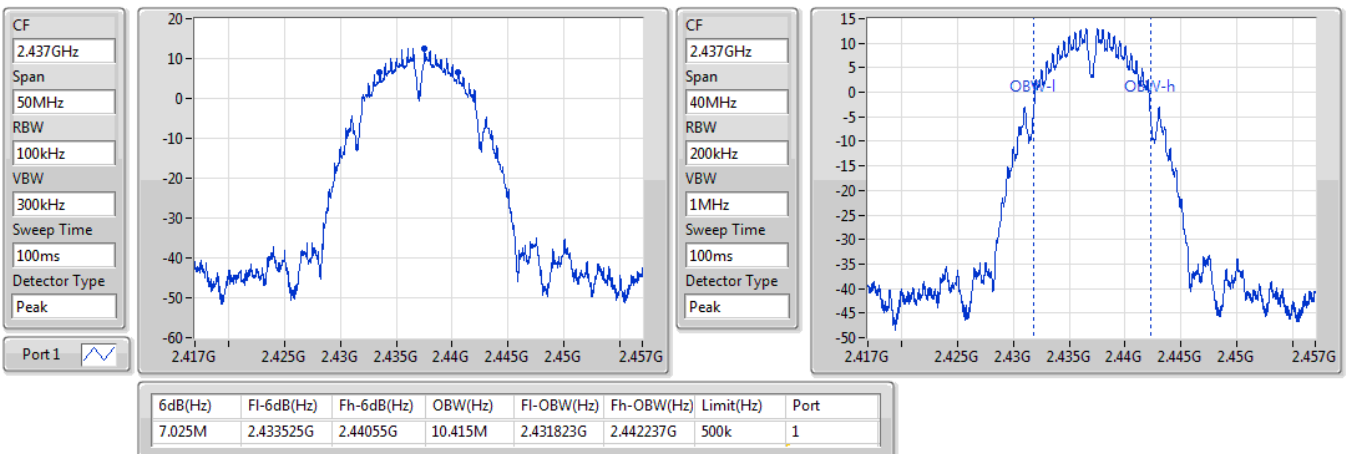


802.11b_Nss1,(1Mbps)_1TX

EBW

2437MHz

11/11/2019

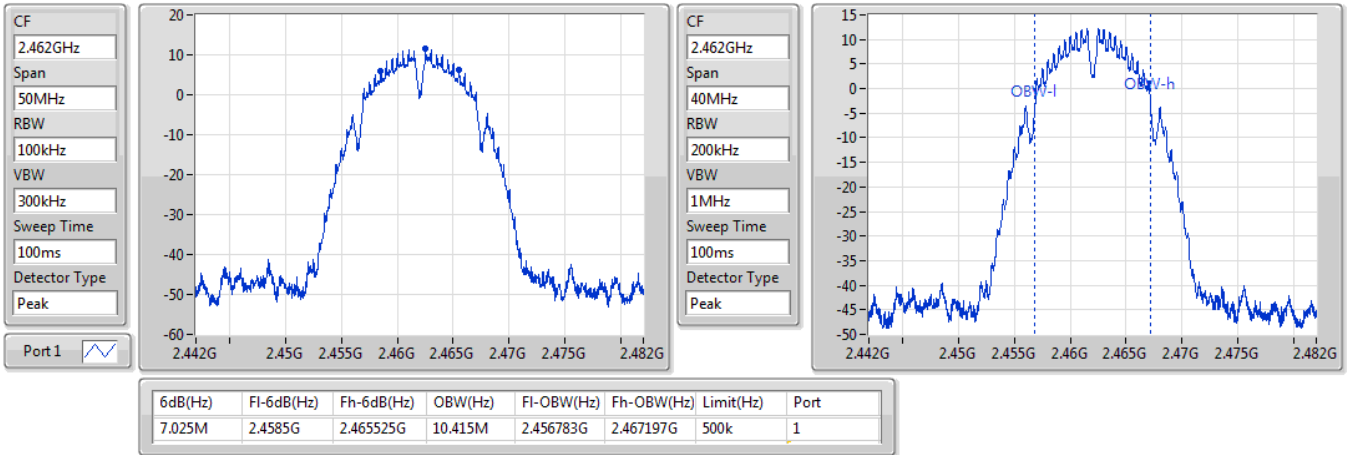


802.11b_Nss1,(1Mbps)_1TX

EBW

2462MHz

11/11/2019

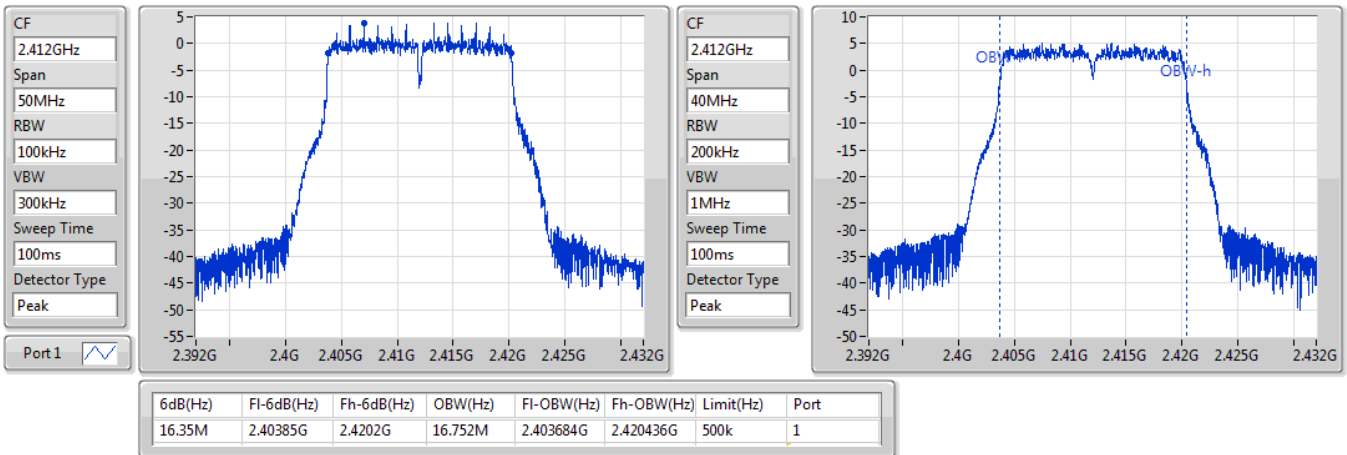


802.11g_Nss1,(6Mbps)_1TX

EBW

2412MHz

11/11/2019

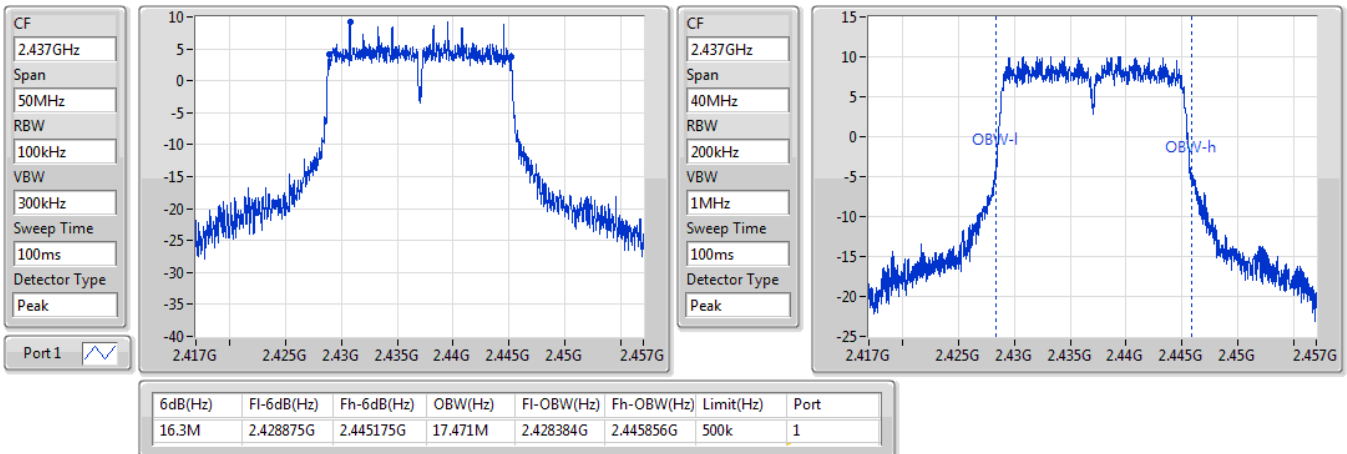


802.11g_Nss1,(6Mbps)_1TX

EBW

2437MHz

11/11/2019

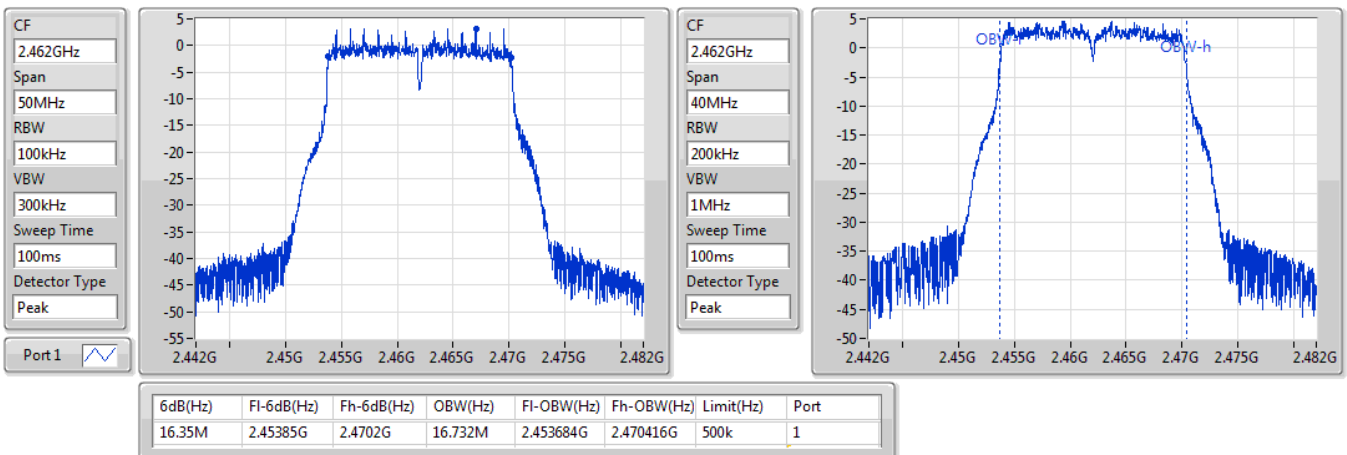


802.11g_Nss1,(6Mbps)_1TX

EBW

2462MHz

11/11/2019

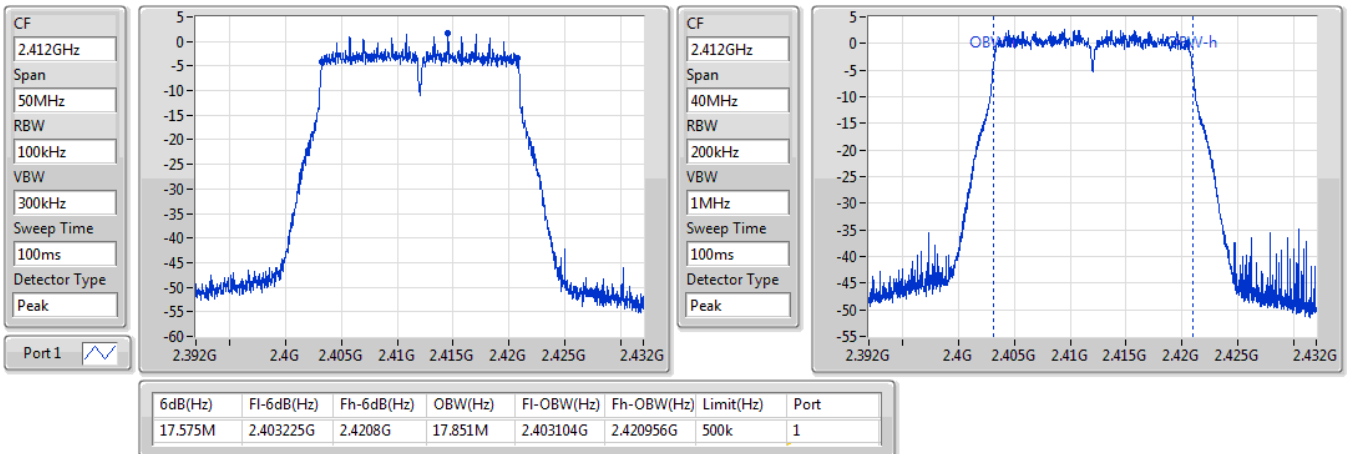


VHT20_Nss1,(MCS0)_1TX

EBW

2412MHz

11/11/2019

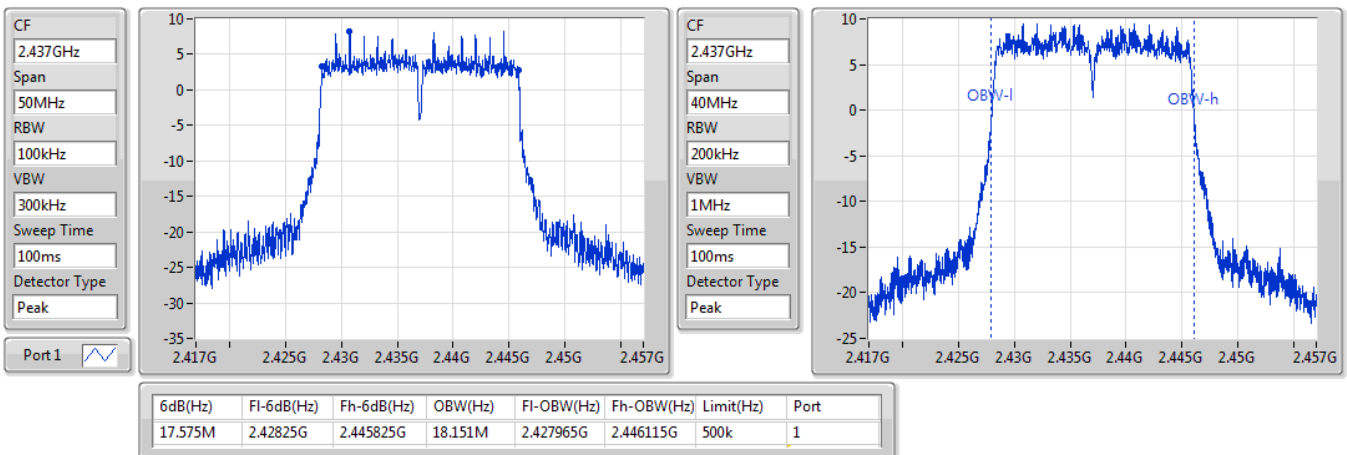


VHT20_Nss1,(MCS0)_1TX

EBW

2437MHz

11/11/2019

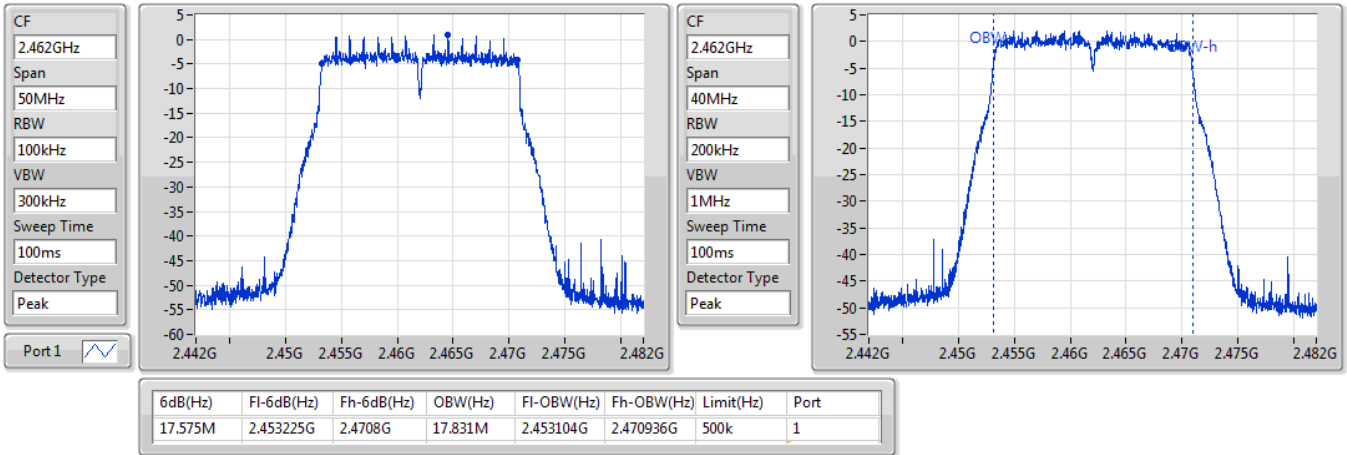


VHT20_Nss1,(MCS0)_1TX

EBW

2462MHz

11/11/2019

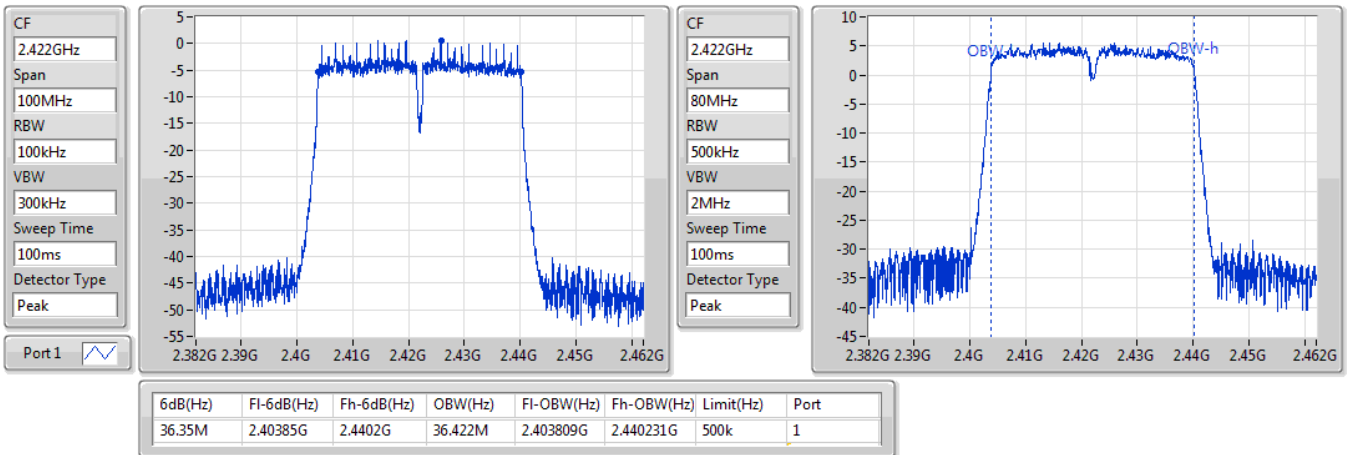


VHT40_Nss1,(MCS0)_1TX

EBW

2422MHz

11/11/2019

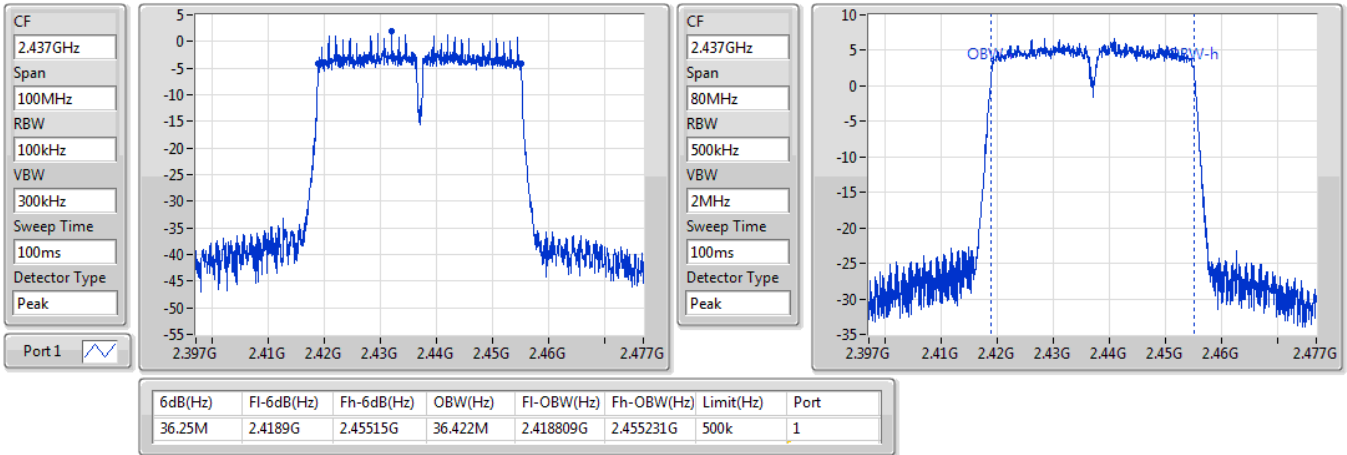


VHT40_Nss1,(MCS0)_1TX

EBW

2437MHz

11/11/2019

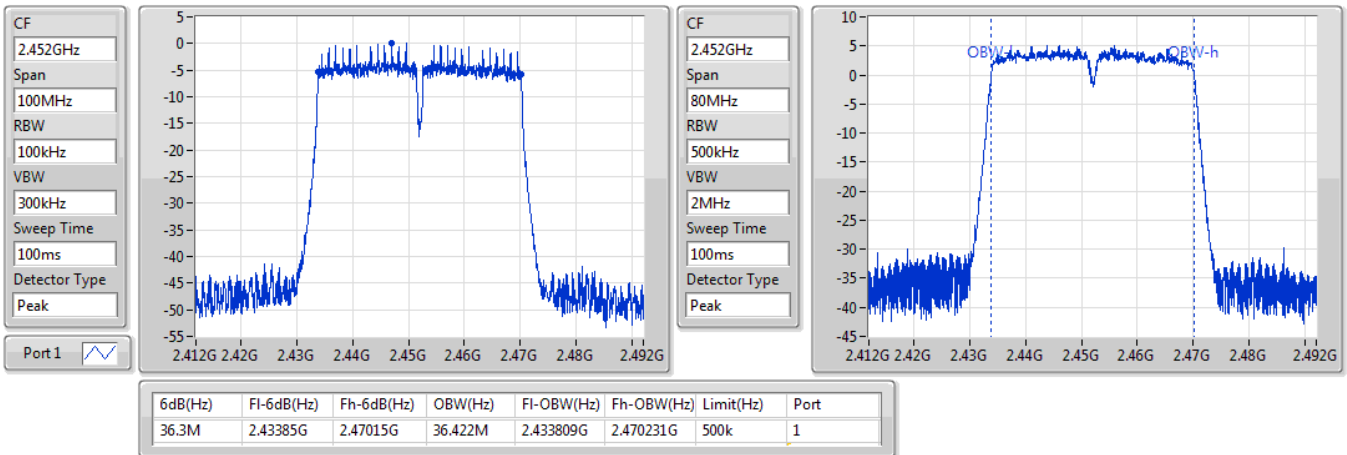


VHT40_Nss1,(MCS0)_1TX

EBW

2452MHz

11/11/2019

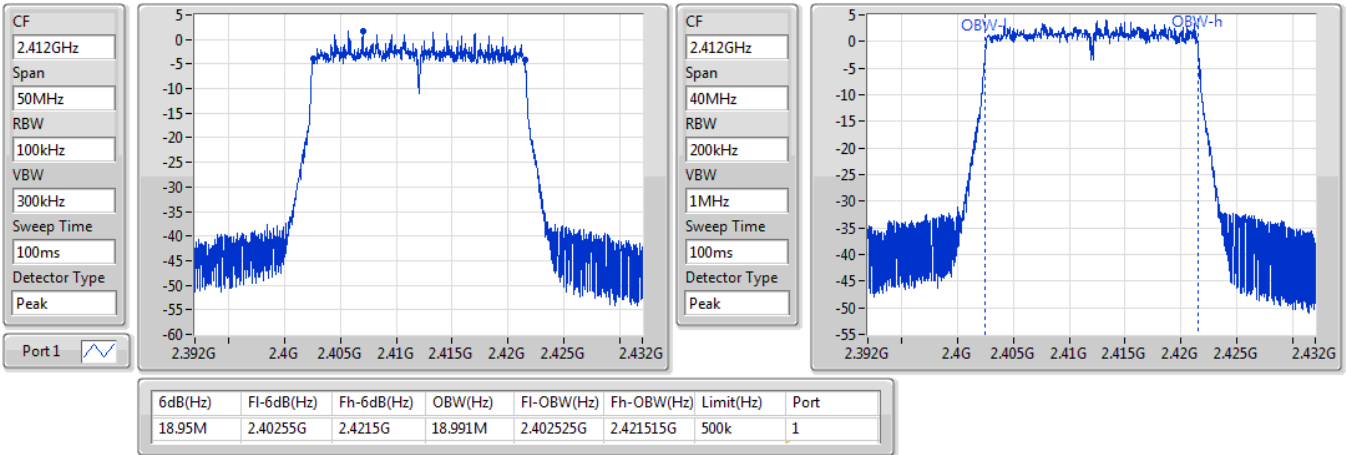


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

2412MHz

11/11/2019

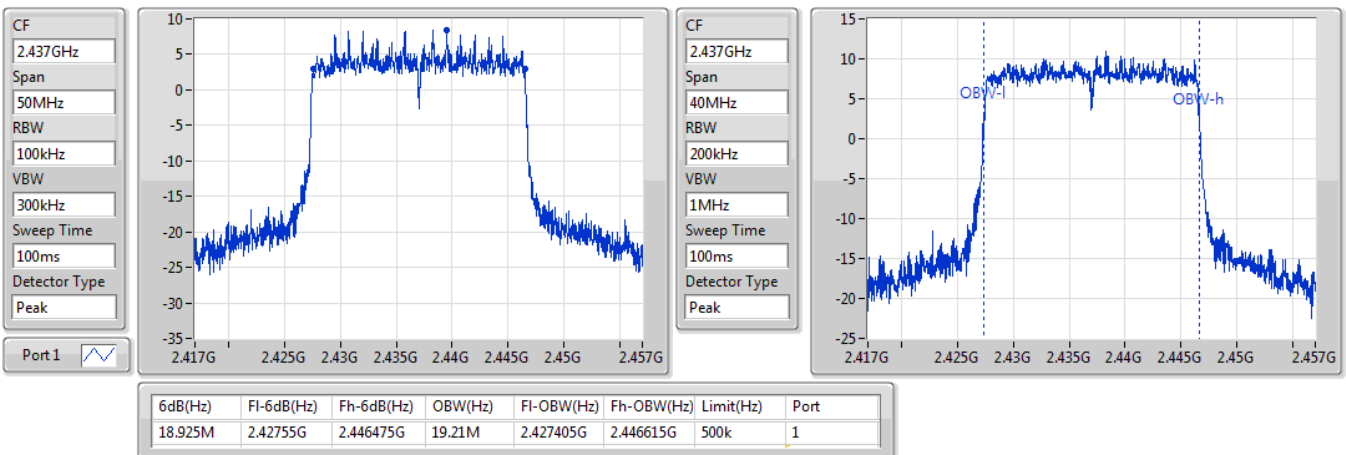


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

2437MHz

11/11/2019

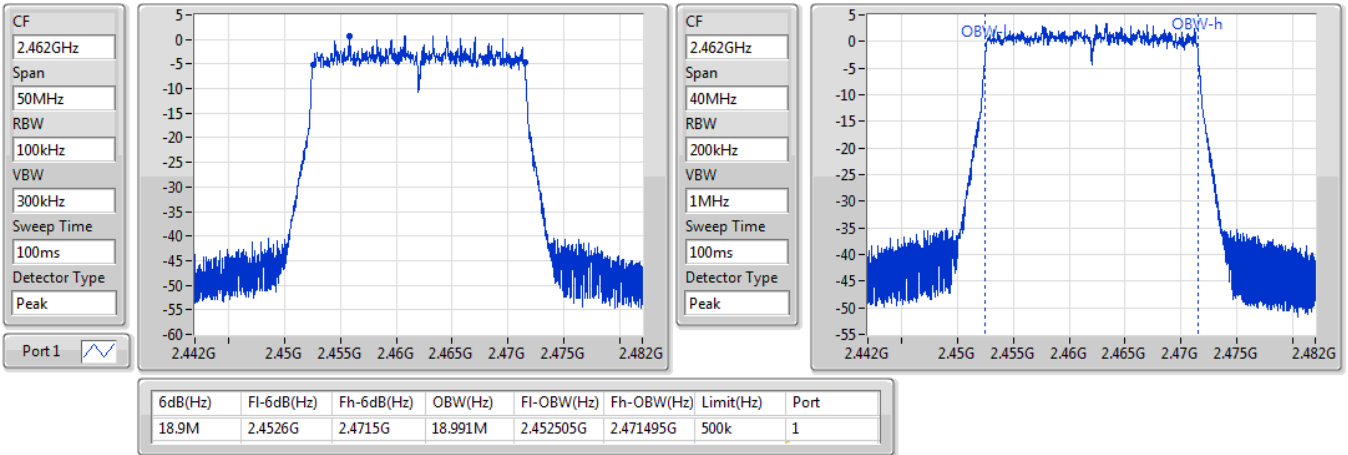


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

2462MHz

11/11/2019

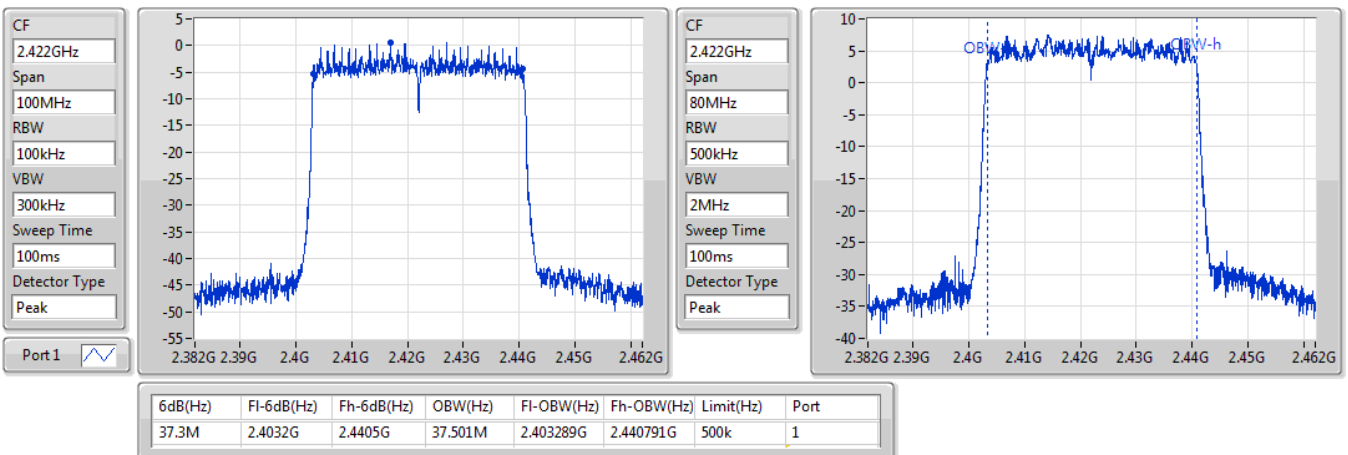


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

2422MHz

11/11/2019

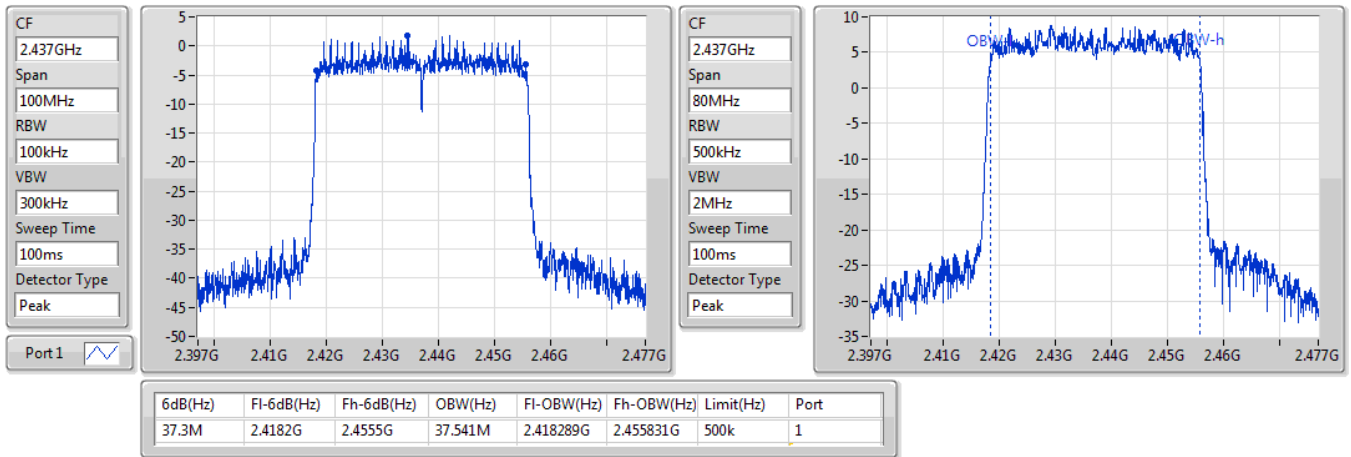


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

2437MHz

11/11/2019

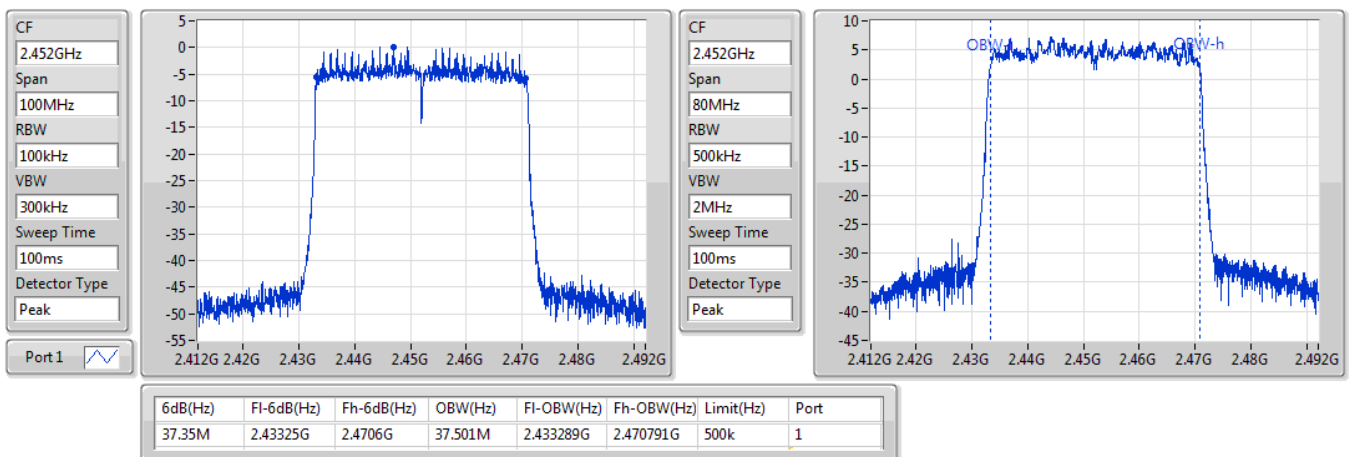


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

2452MHz

11/11/2019



**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	7.05M	10.295M	10M3G1D	6.525M	10.235M
802.11g_Nss1,(6Mbps)_2TX	16.35M	16.912M	16M9D1D	16.3M	16.652M
VHT20_Nss2,(MCS0)_2TX	17.6M	17.971M	18M0D1D	17.55M	17.791M
VHT40_Nss2,(MCS0)_2TX	36.35M	36.382M	36M4D1D	35.9M	36.262M
802.11ax HEW20_Nss2,(MCS0)_2TX	18.975M	19.11M	19M1D1D	18.85M	19.03M
802.11ax HEW40_Nss2,(MCS0)_2TX	37.6M	37.661M	37M7D1D	37M	37.501M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	7.05M	10.295M	7.05M	10.255M
2437MHz	Pass	500k	6.525M	10.275M	7.05M	10.235M
2462MHz	Pass	500k	7.05M	10.235M	7.025M	10.255M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	16.35M	16.732M	16.35M	16.652M
2437MHz	Pass	500k	16.325M	16.912M	16.3M	16.872M
2462MHz	Pass	500k	16.35M	16.712M	16.35M	16.672M
VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	17.575M	17.871M	17.6M	17.811M
2437MHz	Pass	500k	17.55M	17.971M	17.6M	17.871M
2462MHz	Pass	500k	17.575M	17.871M	17.575M	17.791M
VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	36.35M	36.382M	36.35M	36.302M
2437MHz	Pass	500k	36.3M	36.342M	36.35M	36.302M
2452MHz	Pass	500k	36.3M	36.342M	35.9M	36.262M
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	18.975M	19.03M	18.975M	19.03M
2437MHz	Pass	500k	18.975M	19.09M	18.85M	19.11M
2462MHz	Pass	500k	18.95M	19.03M	18.95M	19.03M
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	37.55M	37.621M	37.05M	37.541M
2437MHz	Pass	500k	37.6M	37.661M	37M	37.501M
2452MHz	Pass	500k	37.55M	37.621M	37M	37.501M

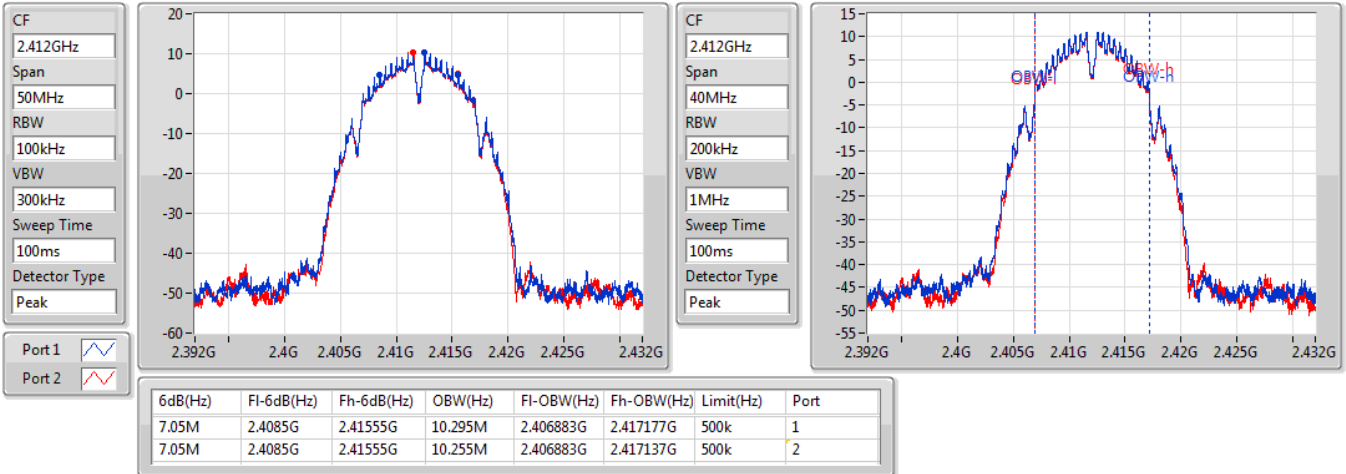
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

802.11b_Nss1,(1Mbps)_2TX

EBW

2412MHz

13/11/2019

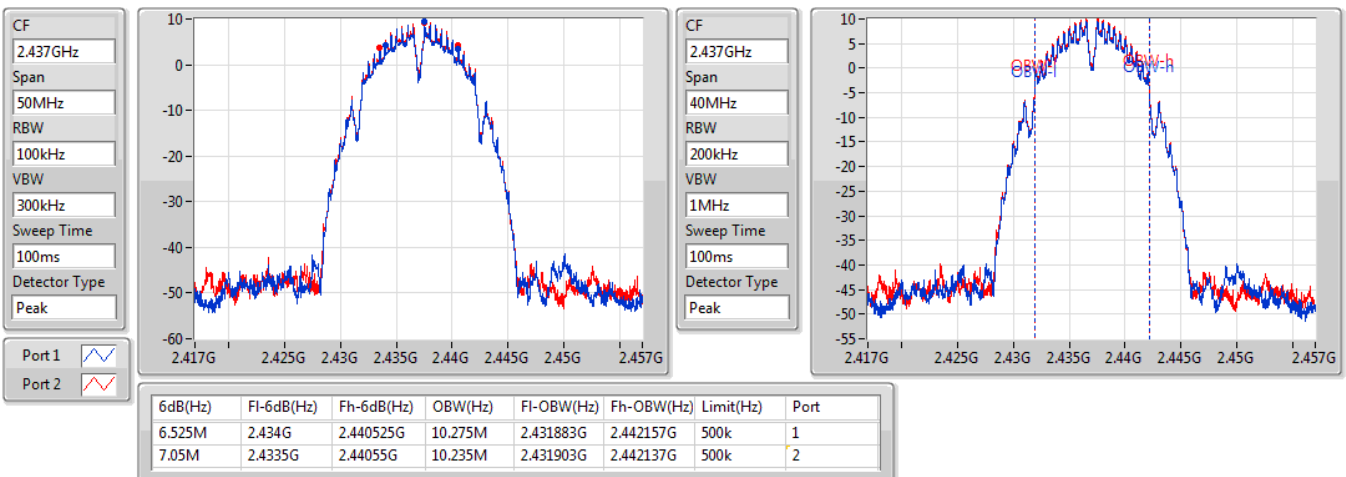


802.11b_Nss1,(1Mbps)_2TX

EBW

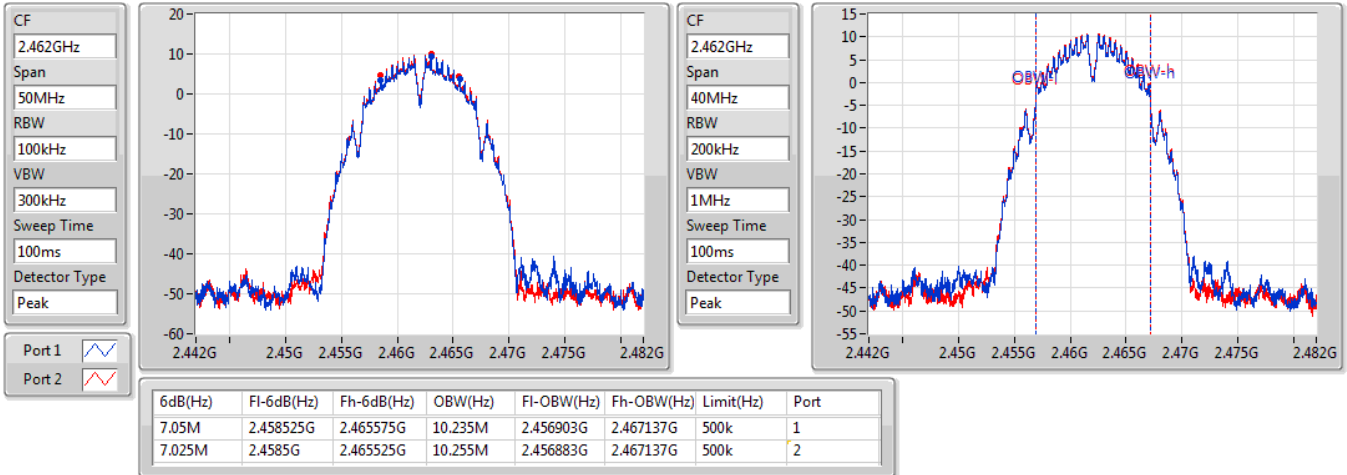
2437MHz

13/11/2019

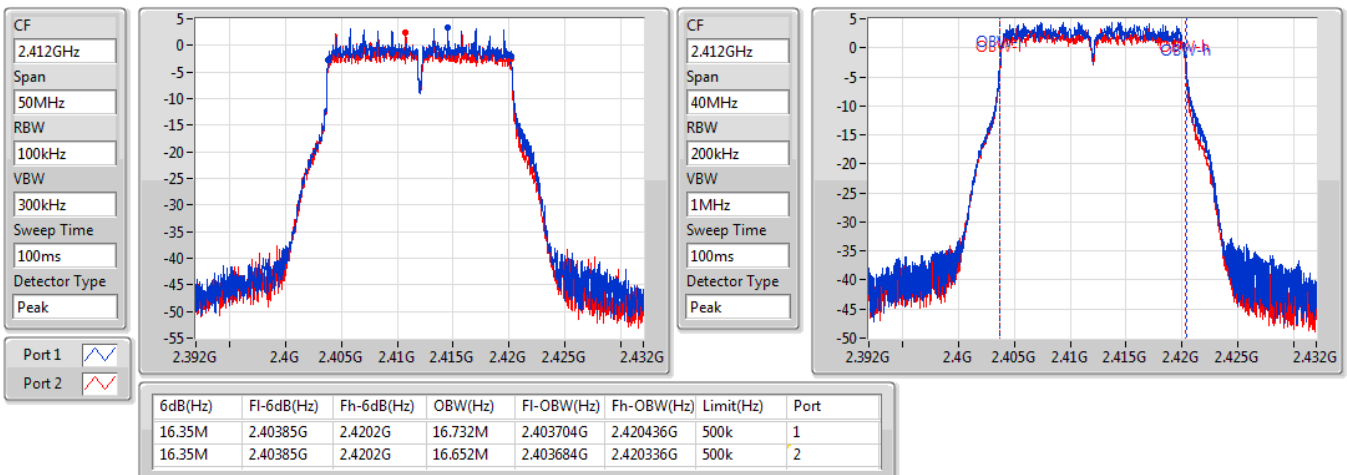


802.11b_Nss1,(1Mbps)_2TX
EBW
2462MHz

13/11/2019


802.11g_Nss1,(6Mbps)_2TX
EBW
2412MHz

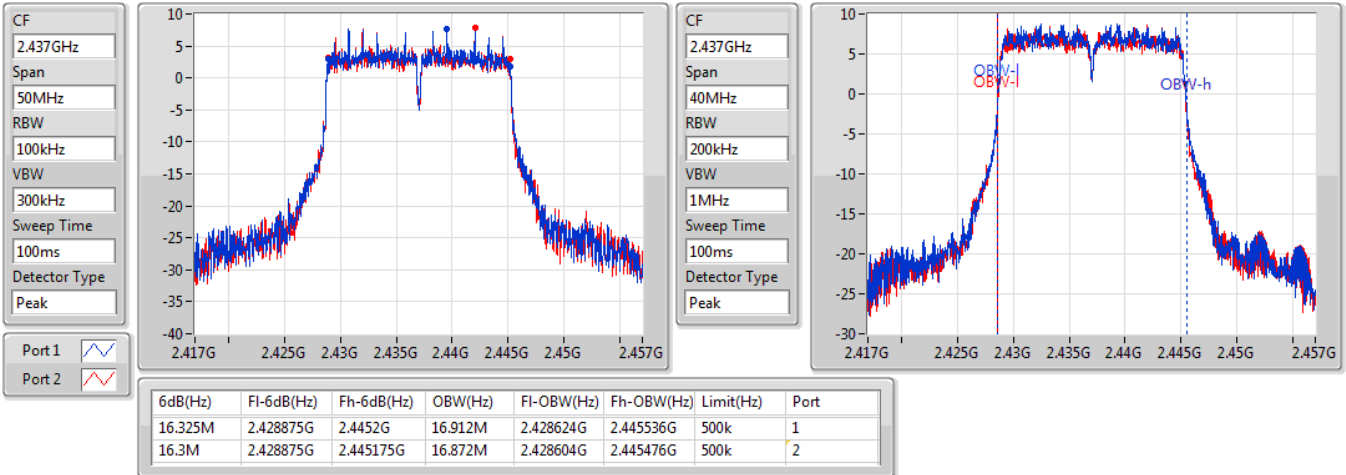
13/11/2019



802.11g_Nss1,(6Mbps)_2TX

2437MHz

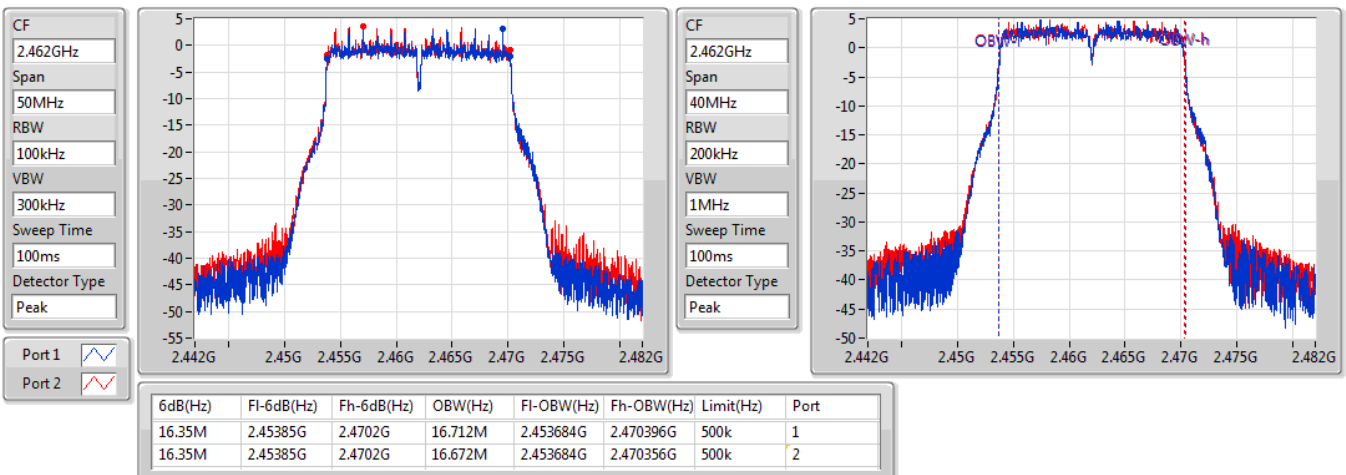
13/11/2019



802.11g_Nss1,(6Mbps)_2TX

2462MHz

13/11/2019

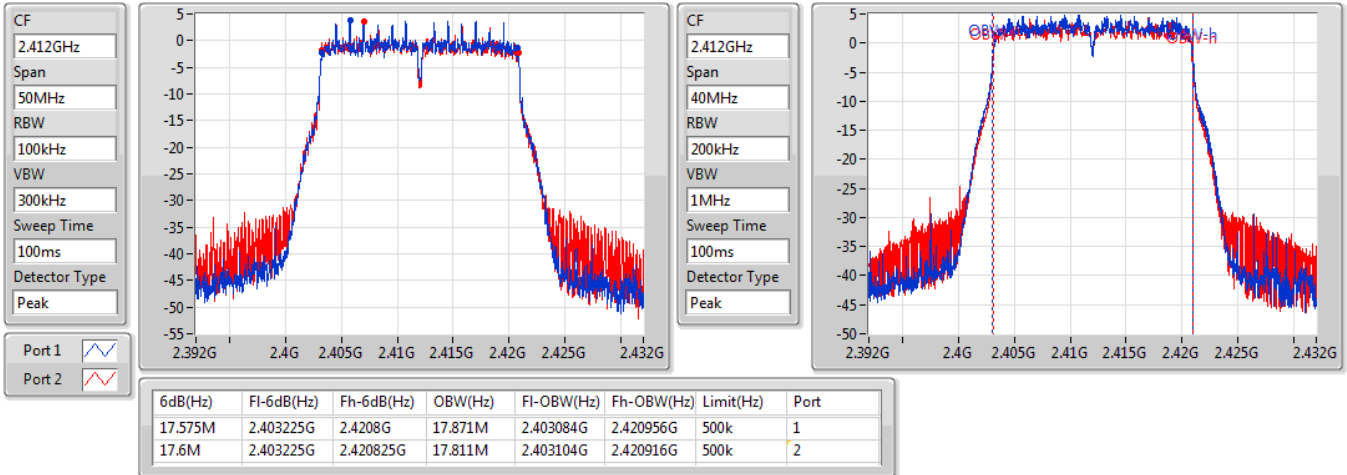


VHT20_Nss2,(MCS0)_2TX

EBW

2412MHz

13/11/2019

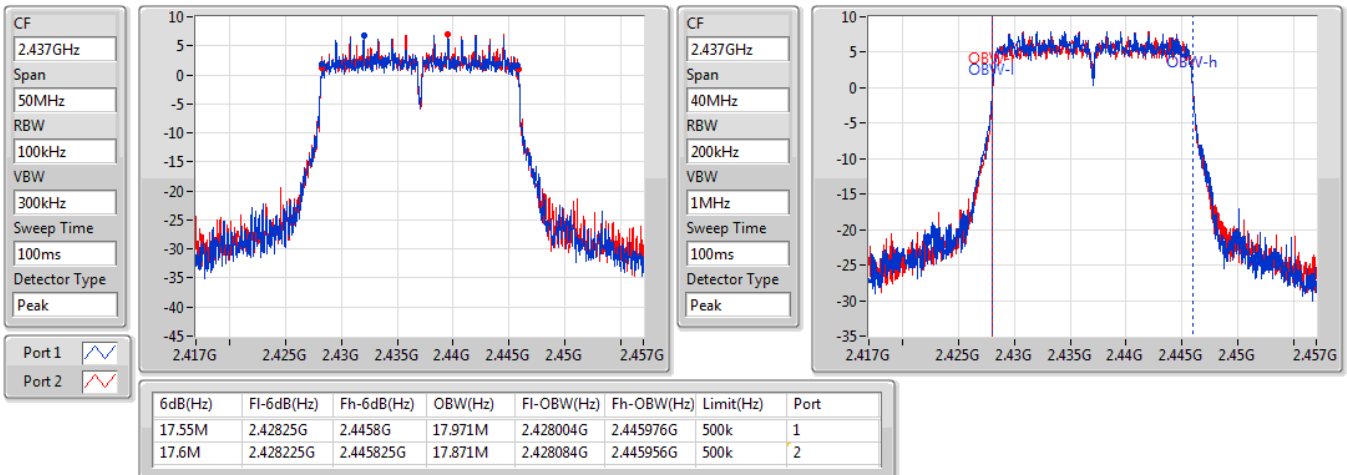


VHT20_Nss2,(MCS0)_2TX

EBW

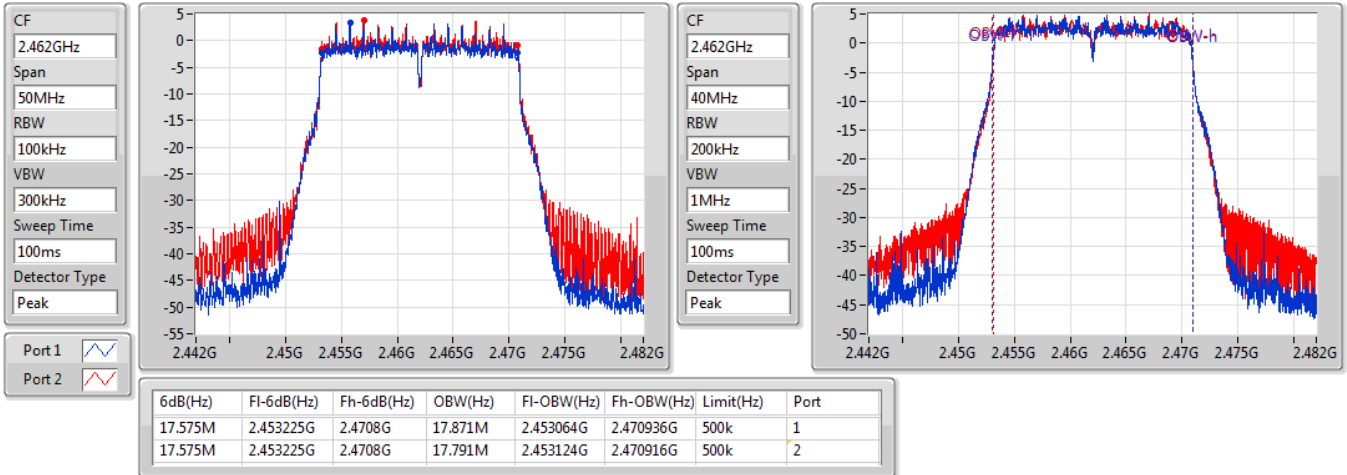
2437MHz

13/11/2019

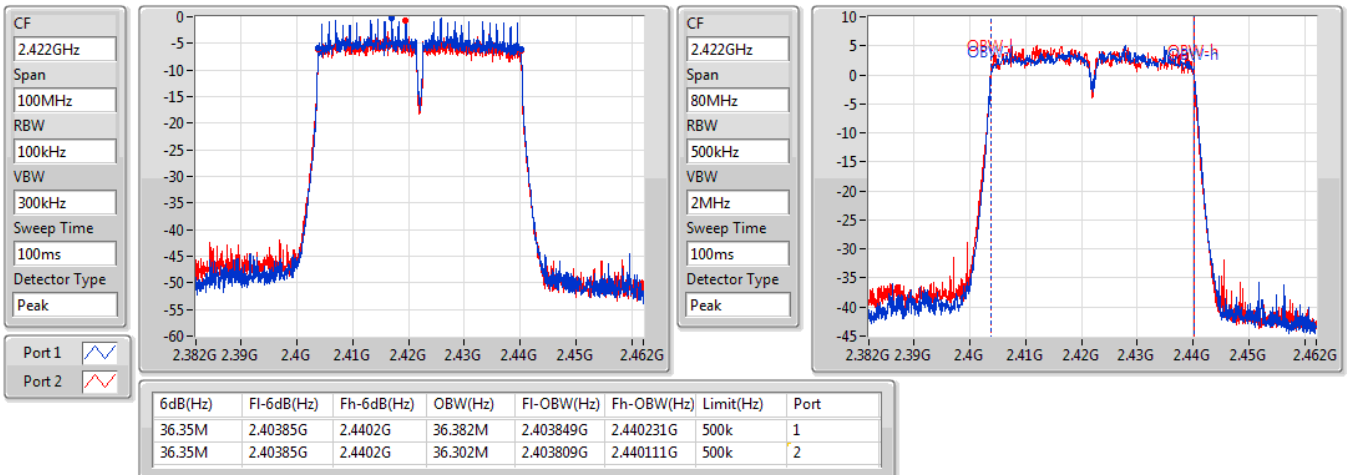


VHT20_Nss2,(MCS0)_2TX
EBW
2462MHz

13/11/2019


VHT40_Nss2,(MCS0)_2TX
EBW
2422MHz

13/11/2019

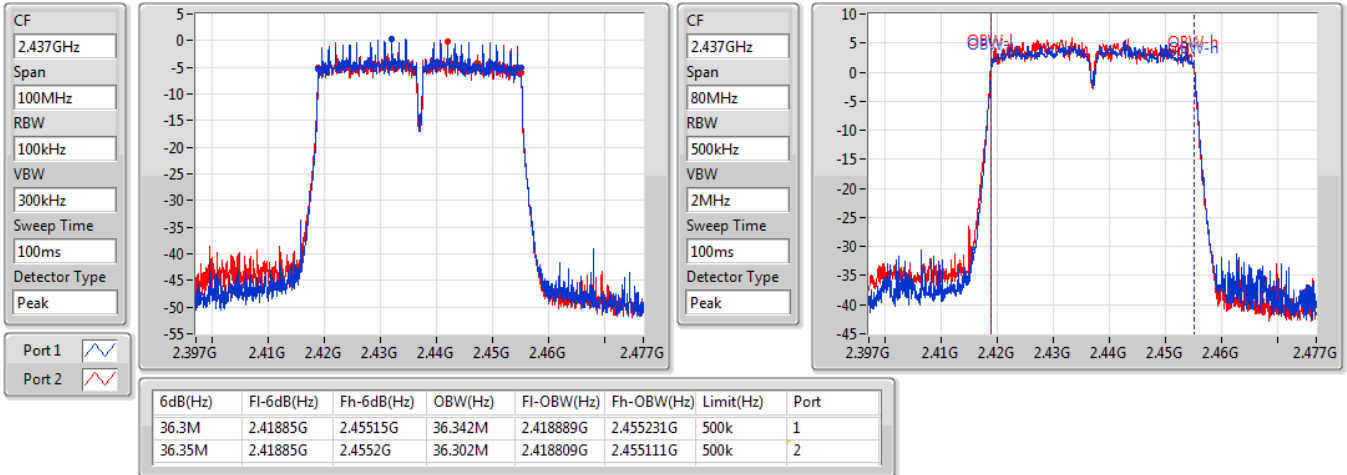


VHT40_Nss2,(MCS0)_2TX

EBW

2437MHz

13/11/2019

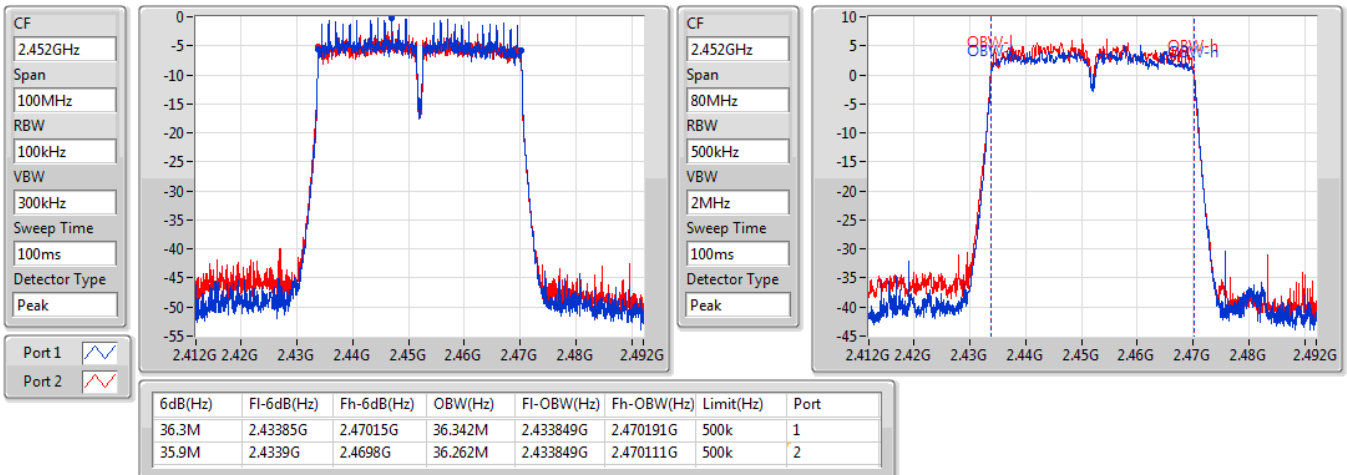


VHT40_Nss2,(MCS0)_2TX

EBW

2452MHz

13/11/2019

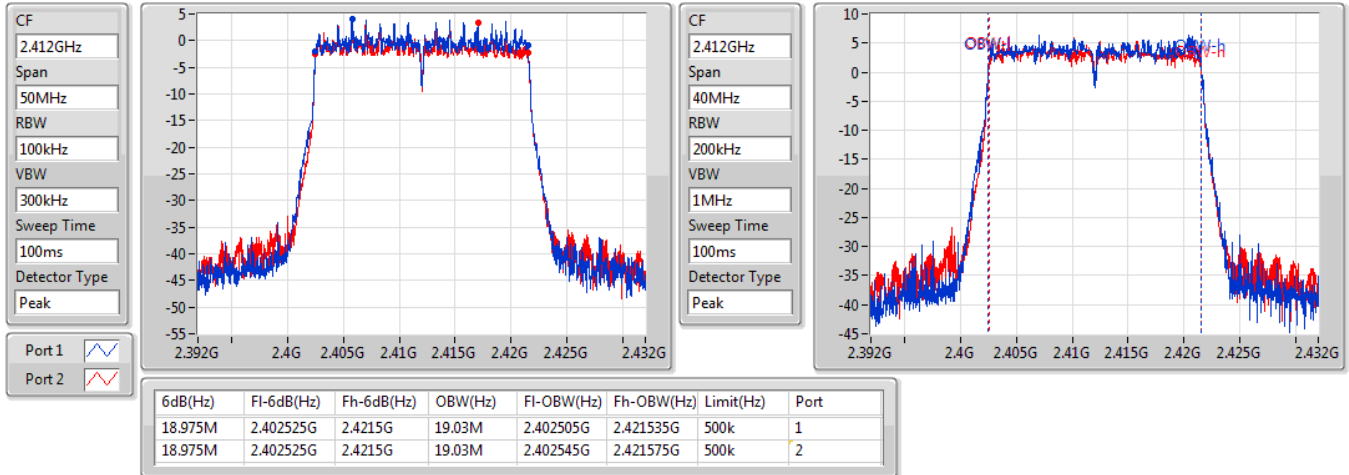


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

2412MHz

13/11/2019

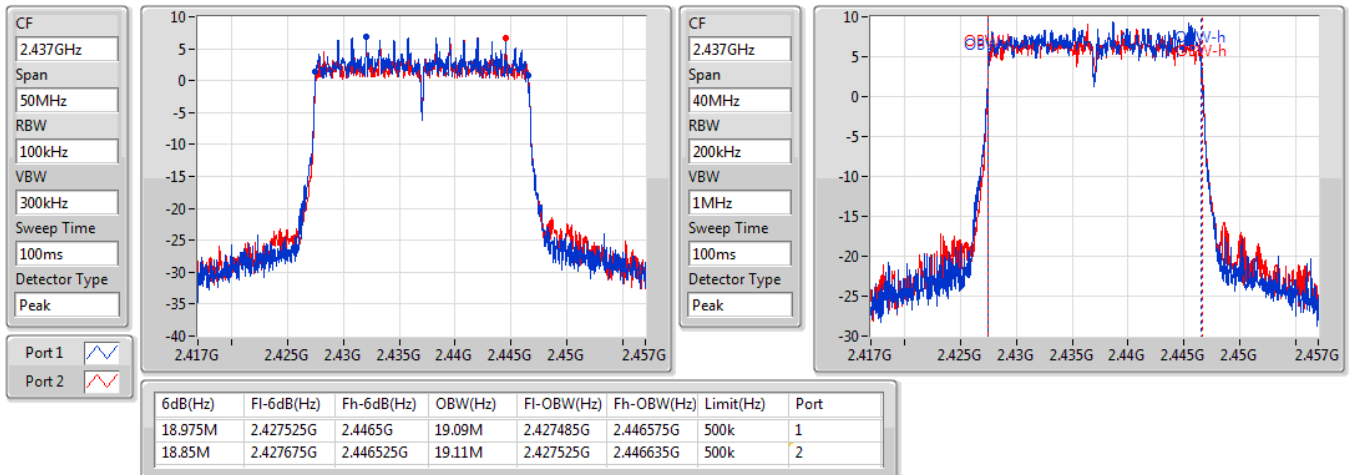


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

2437MHz

13/11/2019

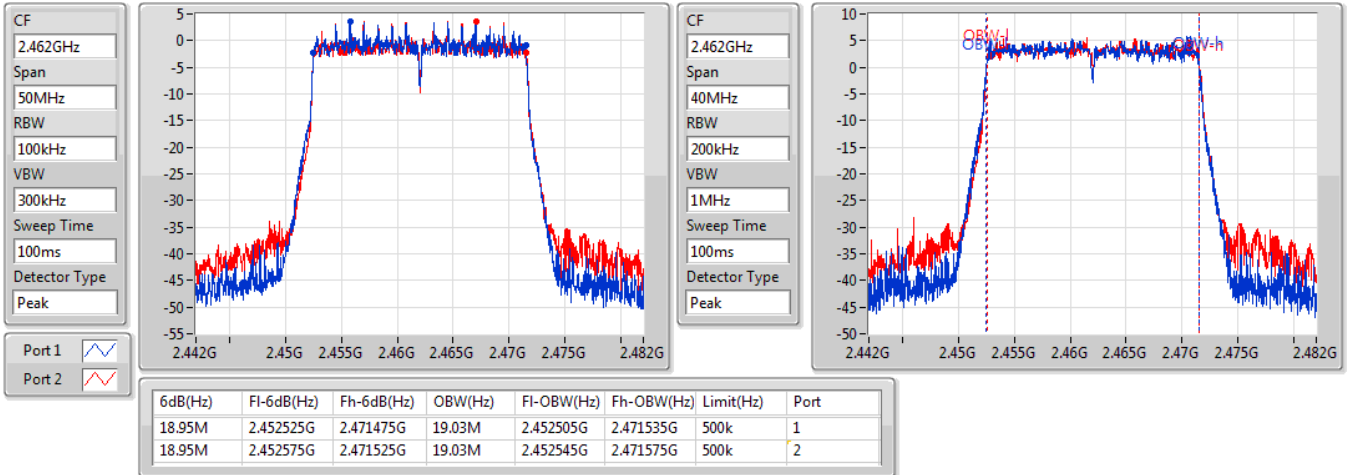


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

2462MHz

13/11/2019

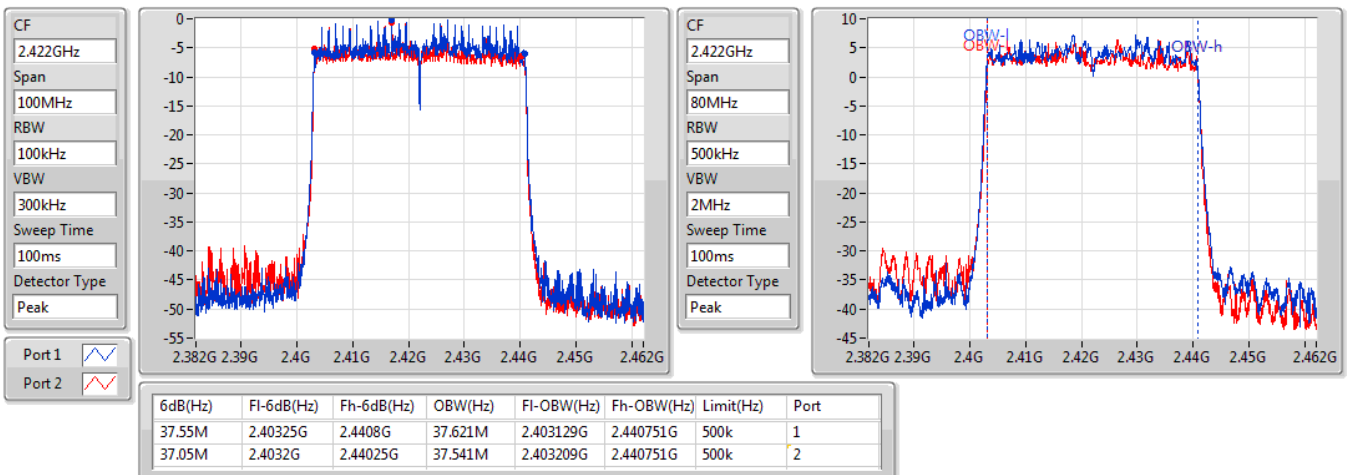


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

2422MHz

13/11/2019

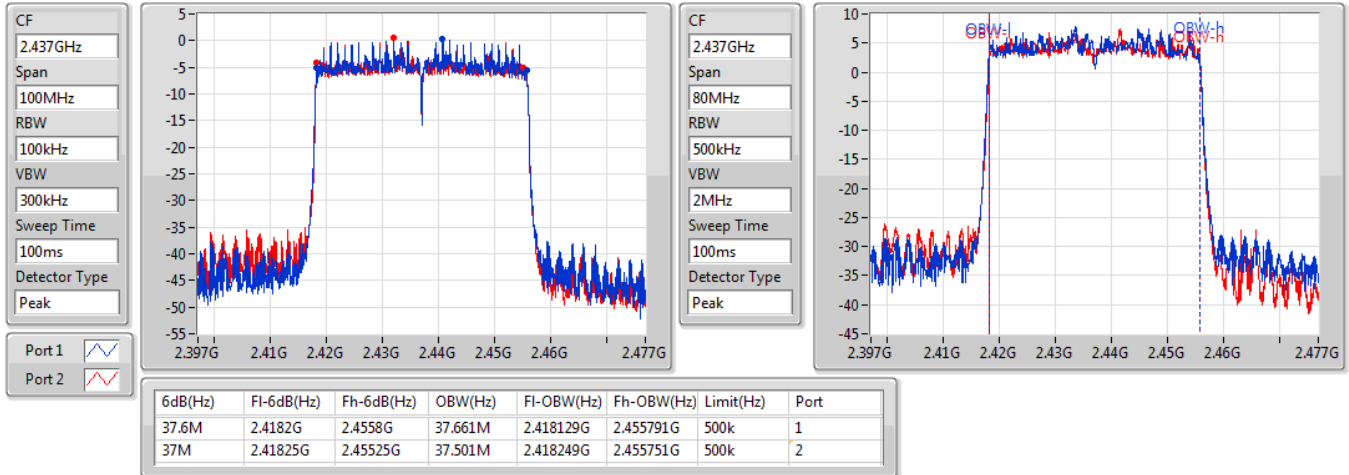


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

2437MHz

13/11/2019

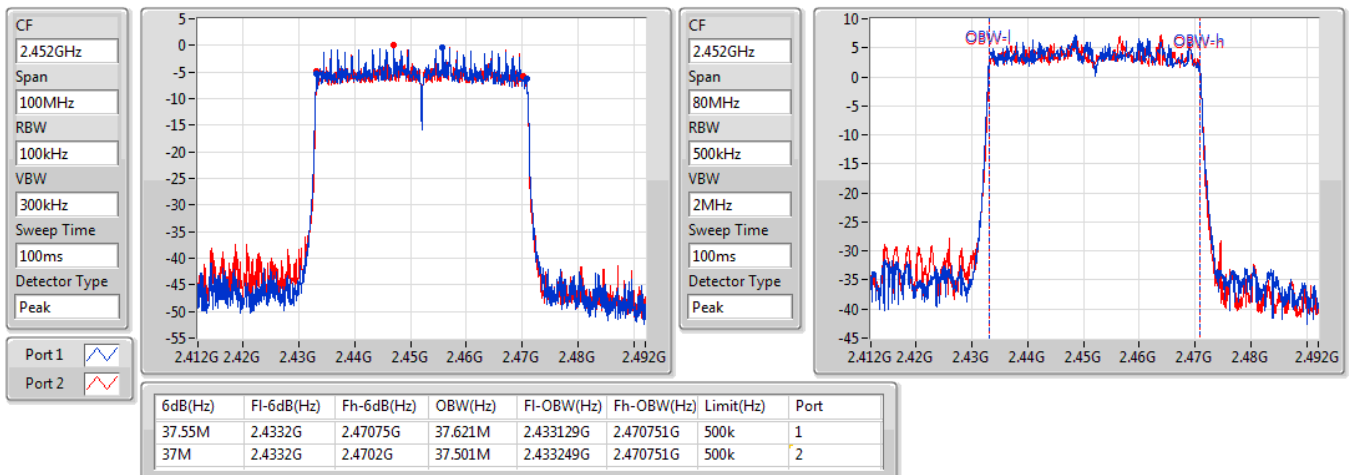


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

2452MHz

13/11/2019



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	7.075M	10.395M	10M4G1D	7M	10.255M
802.11g_Nss1,(6Mbps)_1TX	16.35M	17.051M	17M1D1D	16.325M	16.732M
VHT20_Nss1,(MCS0)_1TX	17.575M	17.971M	18M0D1D	17.575M	17.851M
VHT40_Nss1,(MCS0)_1TX	36.3M	36.422M	36M4D1D	36.3M	36.382M
802.11ax HEW20_Nss1,(MCS0)_1TX	18.975M	19.11M	19M1D1D	18.95M	18.991M
802.11ax HEW40_Nss1,(MCS0)_1TX	37.5M	37.541M	37M5D1D	37.35M	37.501M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

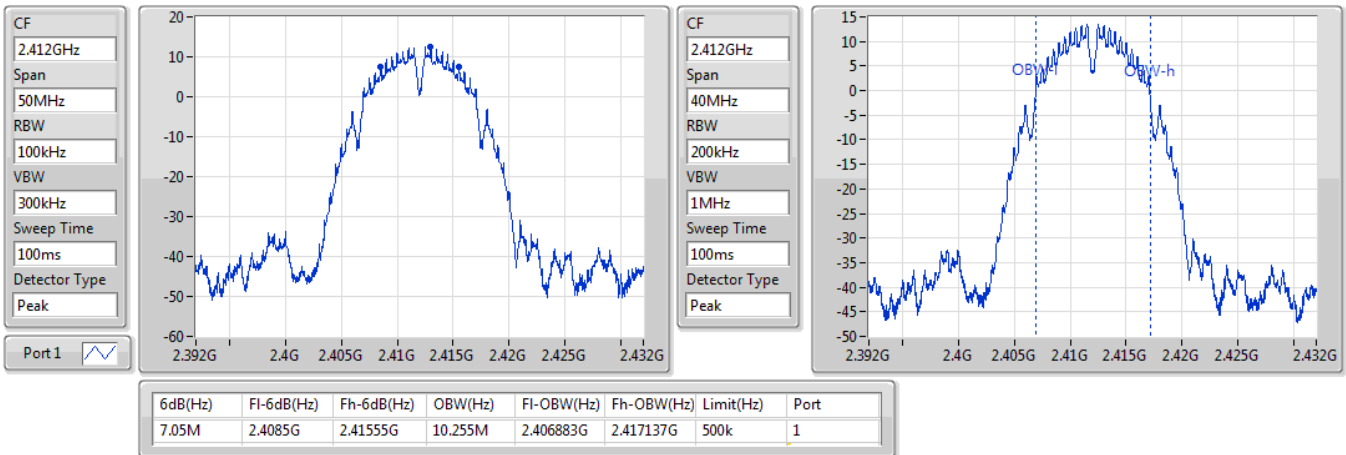
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	7.05M	10.255M
2437MHz_TnomVnom	Pass	500k	7M	10.255M
2462MHz_TnomVnom	Pass	500k	7.075M	10.395M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	16.325M	16.752M
2437MHz_TnomVnom	Pass	500k	16.325M	17.051M
2462MHz_TnomVnom	Pass	500k	16.35M	16.732M
VHT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	17.575M	17.871M
2437MHz_TnomVnom	Pass	500k	17.575M	17.971M
2462MHz_TnomVnom	Pass	500k	17.575M	17.851M
VHT40_Nss1,(MCS0)_1TX	-	-	-	-
2422MHz_TnomVnom	Pass	500k	36.3M	36.382M
2437MHz_TnomVnom	Pass	500k	36.3M	36.422M
2452MHz_TnomVnom	Pass	500k	36.3M	36.382M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	18.975M	18.991M
2437MHz_TnomVnom	Pass	500k	18.95M	19.11M
2462MHz_TnomVnom	Pass	500k	18.95M	19.01M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
2422MHz_TnomVnom	Pass	500k	37.5M	37.501M
2437MHz_TnomVnom	Pass	500k	37.35M	37.541M
2452MHz_TnomVnom	Pass	500k	37.35M	37.501M

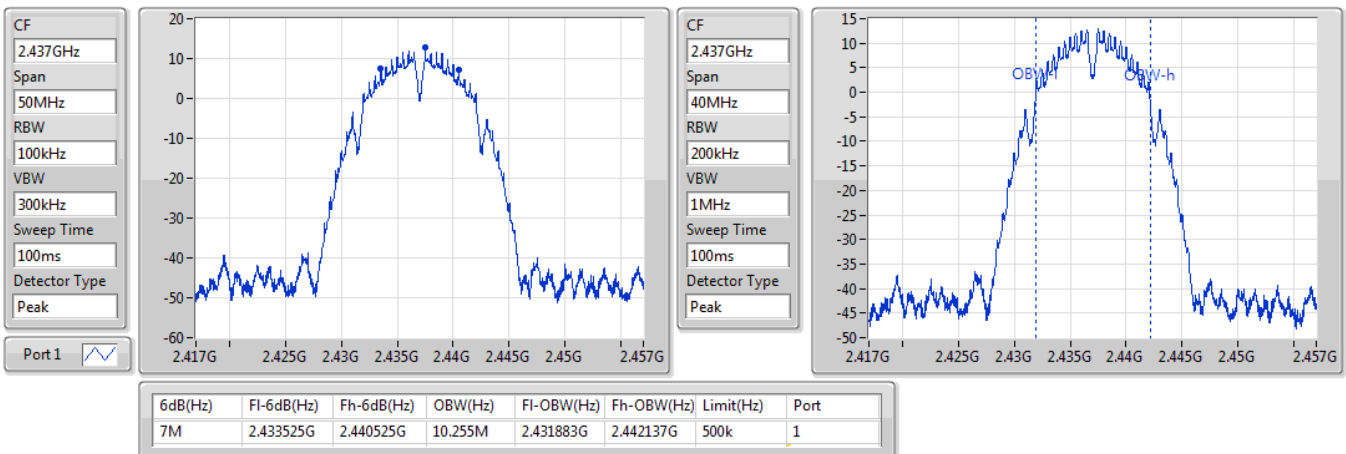
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

802.11b_Nss1,(1Mbps)_1TX
EBW
2412MHz

14/11/2019

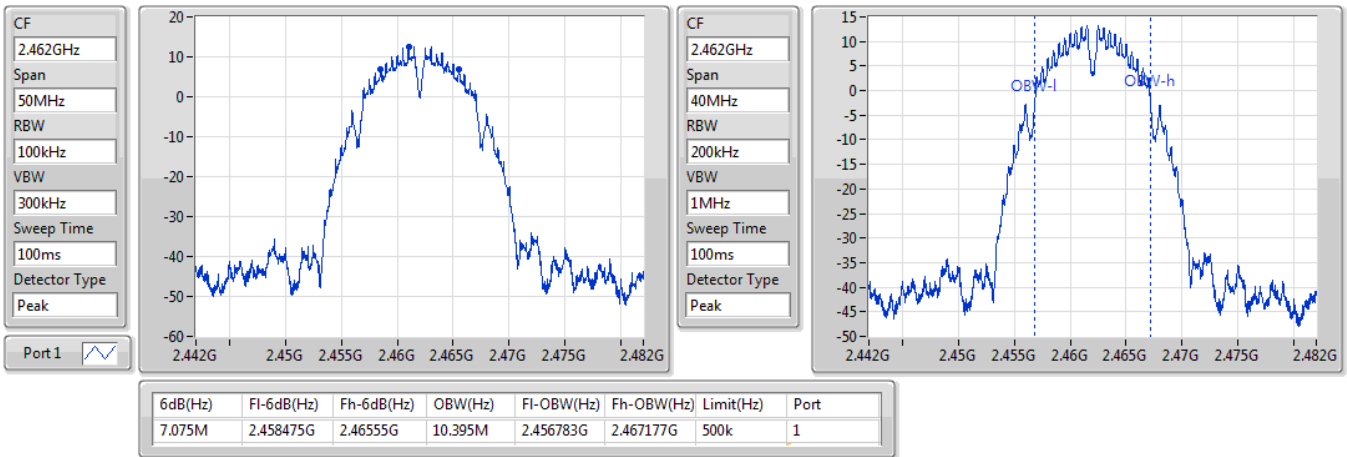

802.11b_Nss1,(1Mbps)_1TX
EBW
2437MHz

14/11/2019

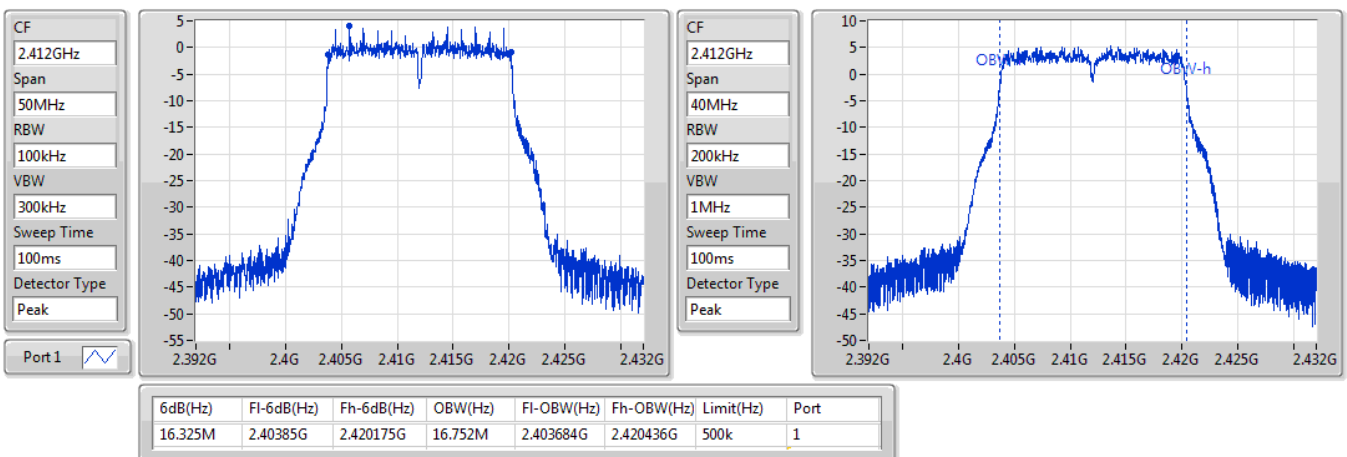


802.11b_Nss1,(1Mbps)_1TX
EBW
2462MHz

14/11/2019

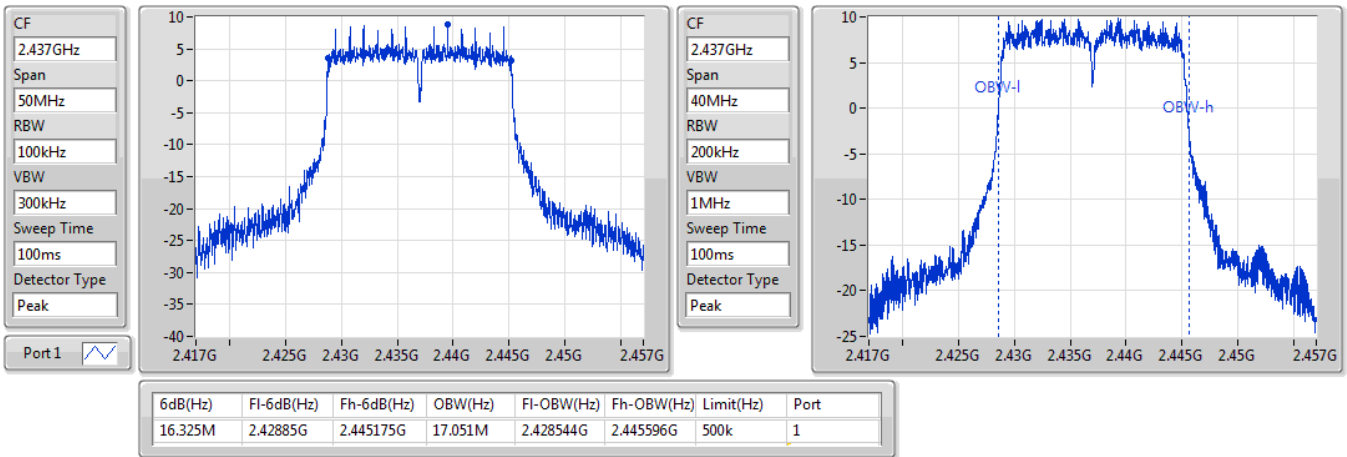

802.11g_Nss1,(6Mbps)_1TX
EBW
2412MHz

14/11/2019

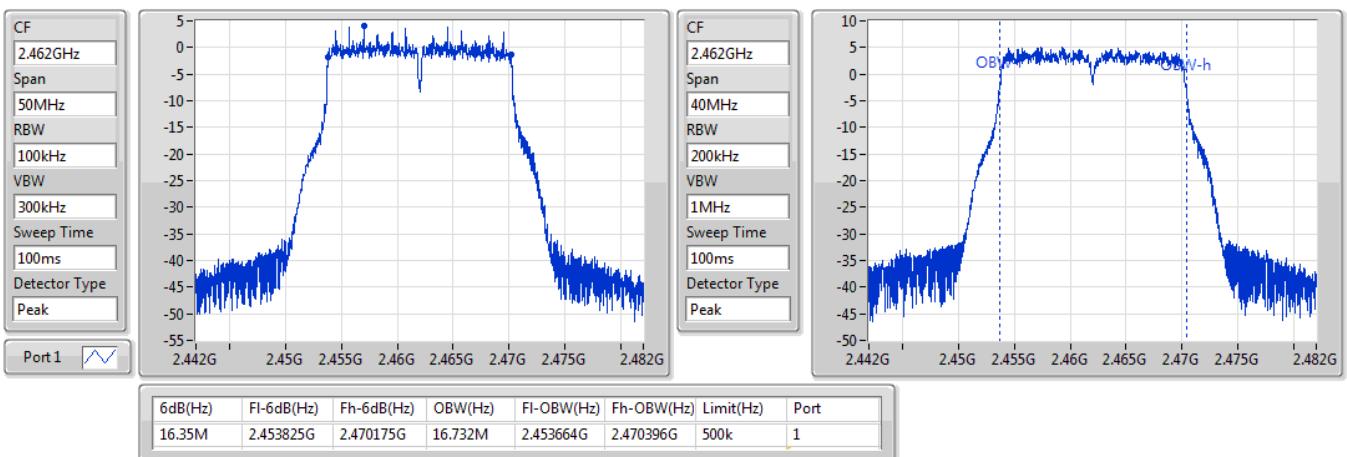


802.11g_Nss1,(6Mbps)_1TX
EBW
2437MHz

14/11/2019

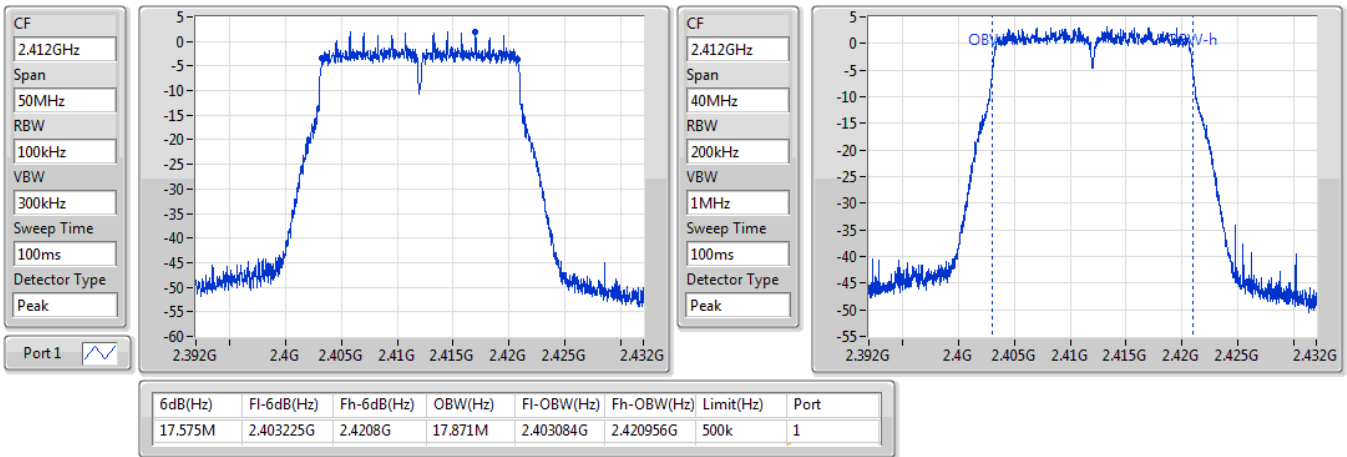

802.11g_Nss1,(6Mbps)_1TX
EBW
2462MHz

14/11/2019

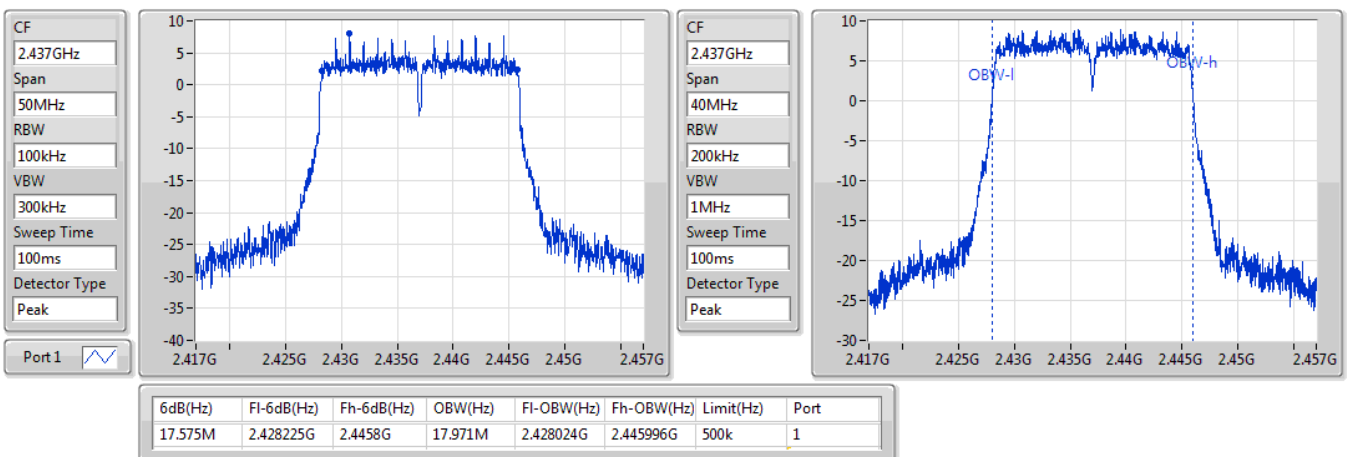


VHT20_Nss1,(MCS0)_1TX
EBW
2412MHz

14/11/2019

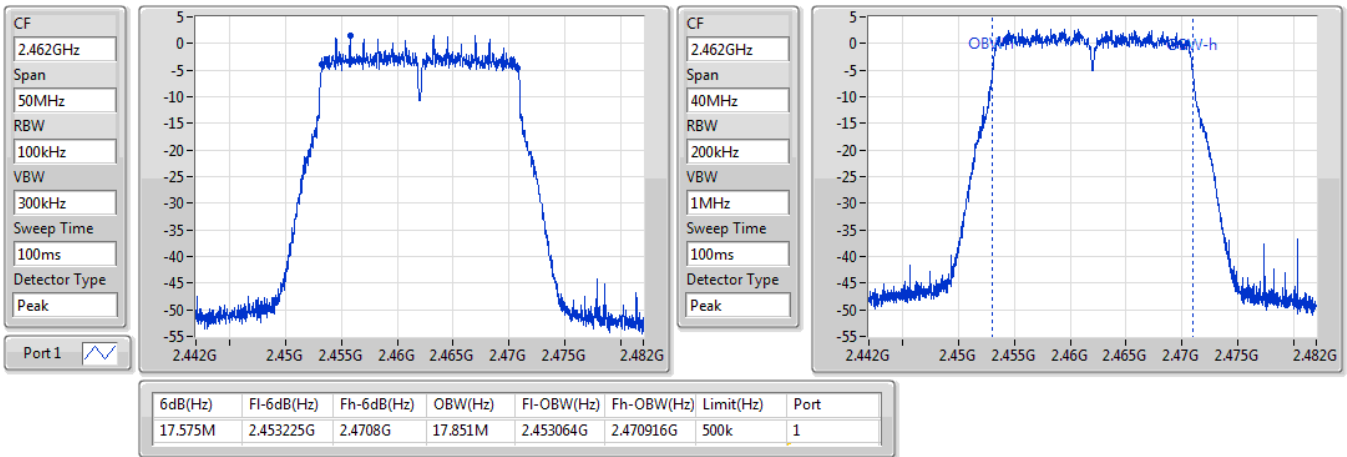

VHT20_Nss1,(MCS0)_1TX
EBW
2437MHz

14/11/2019

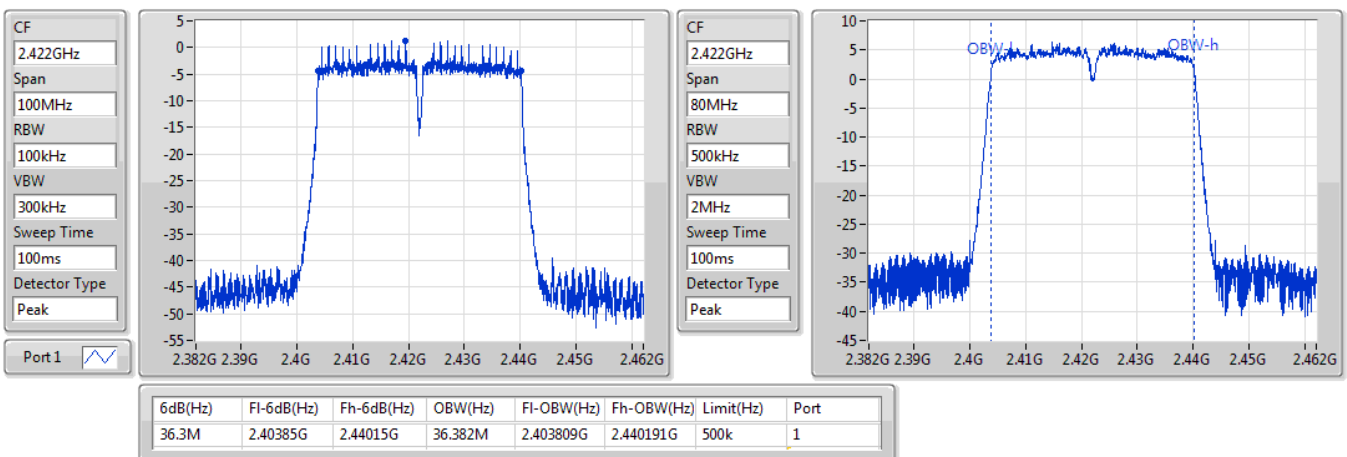


VHT20_Nss1,(MCS0)_1TX
EBW
2462MHz

14/11/2019


VHT40_Nss1,(MCS0)_1TX
EBW
2422MHz

14/11/2019

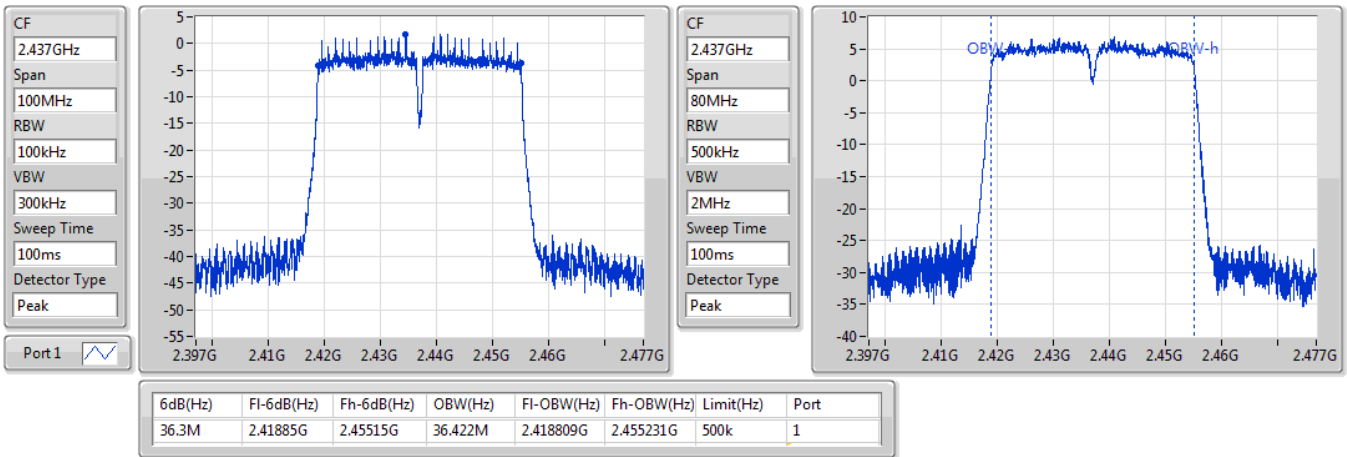


VHT40_Nss1,(MCS0)_1TX

EBW

2437MHz

14/11/2019

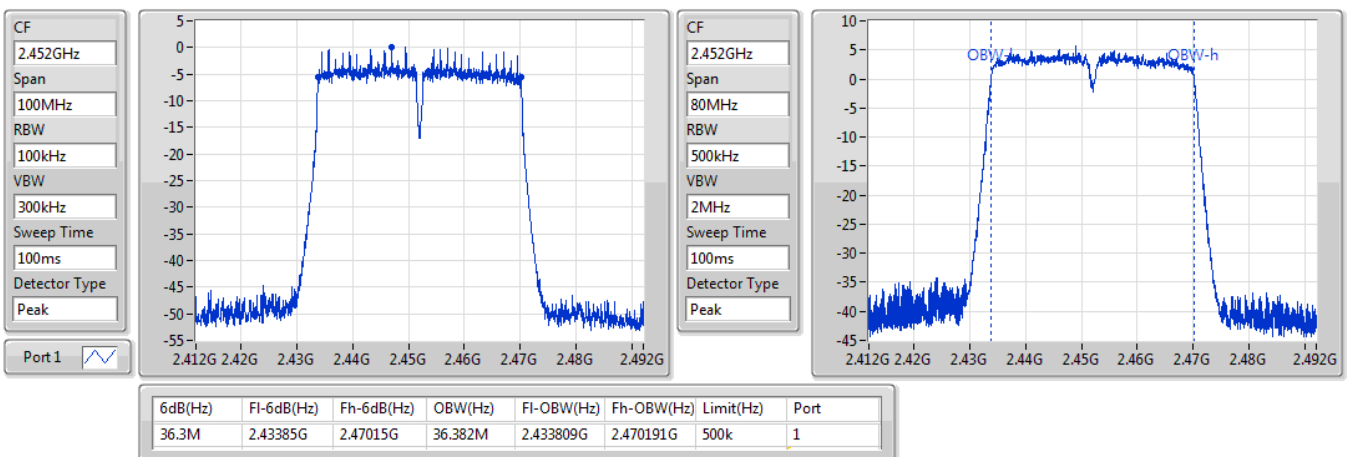


VHT40_Nss1,(MCS0)_1TX

EBW

2452MHz

14/11/2019

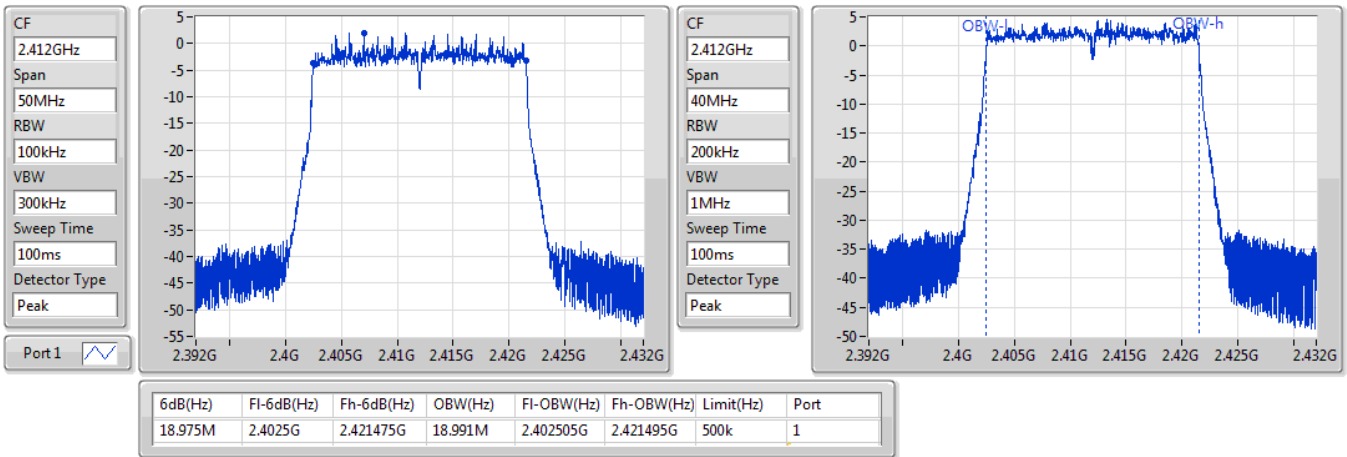


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

2412MHz

14/11/2019

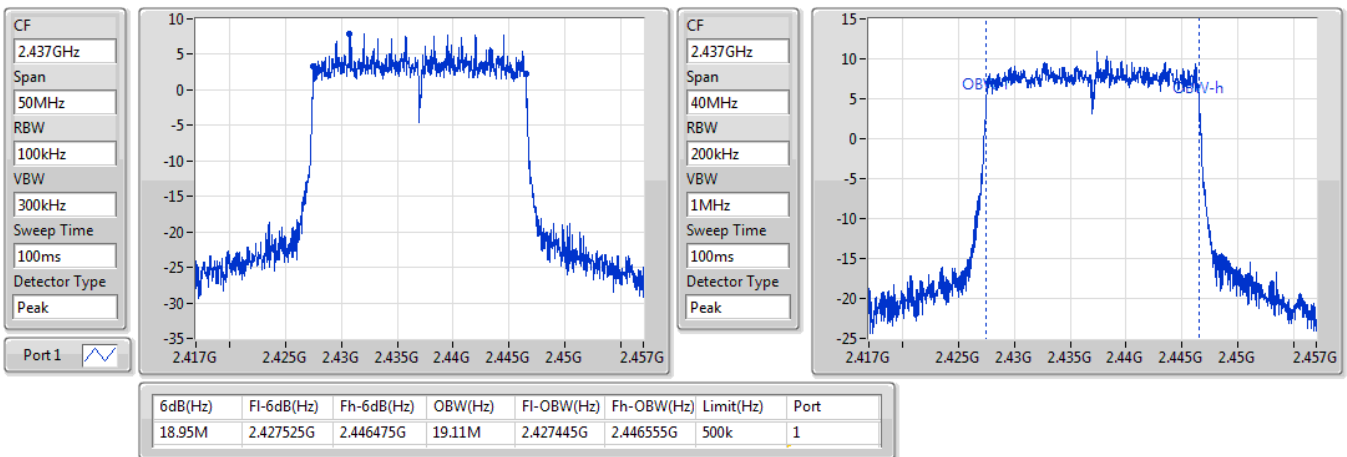


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

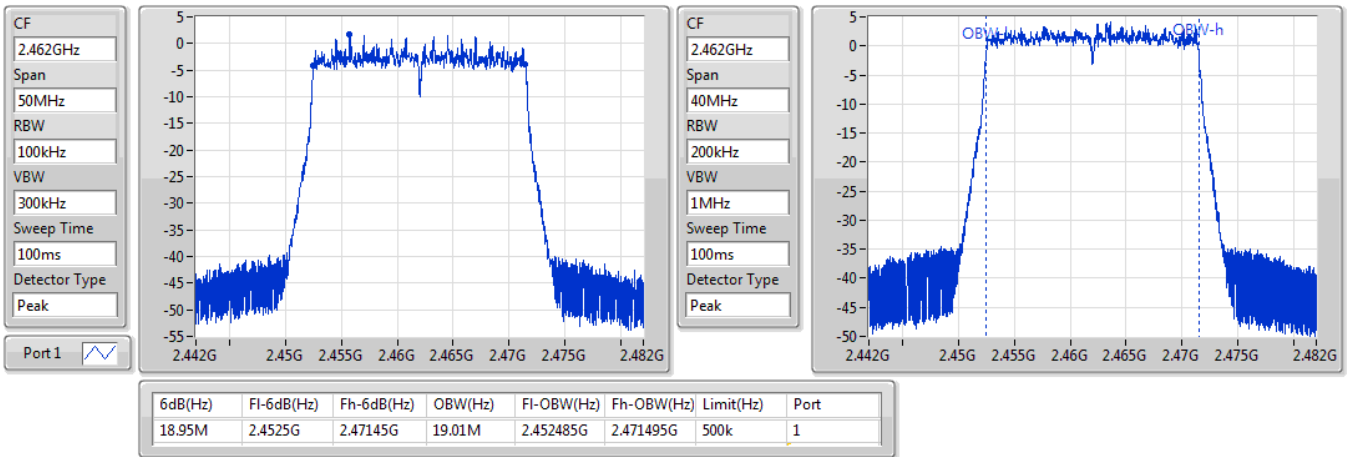
2437MHz

14/11/2019

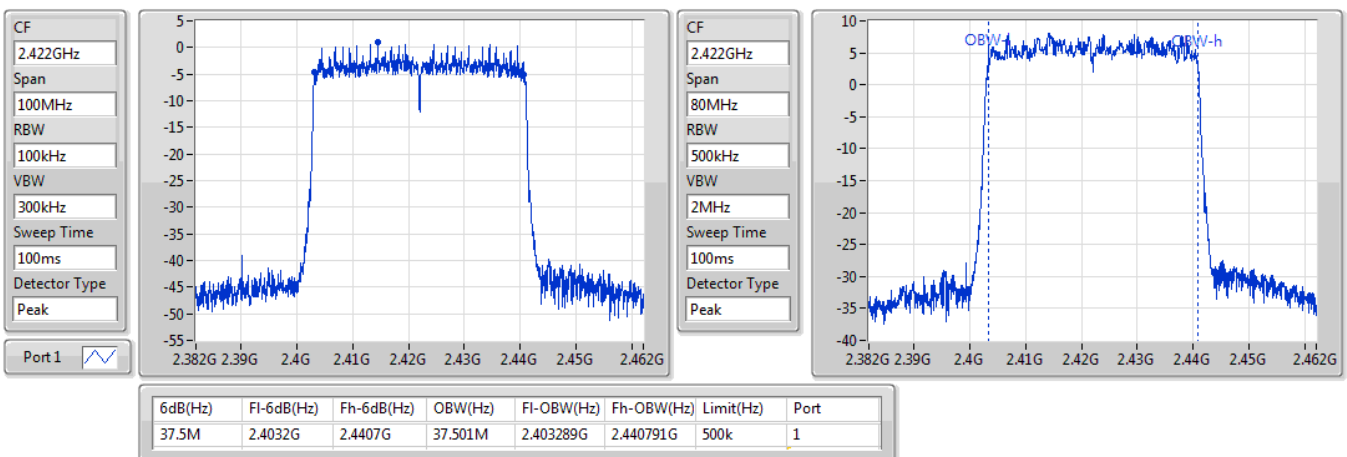


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
2462MHz

14/11/2019

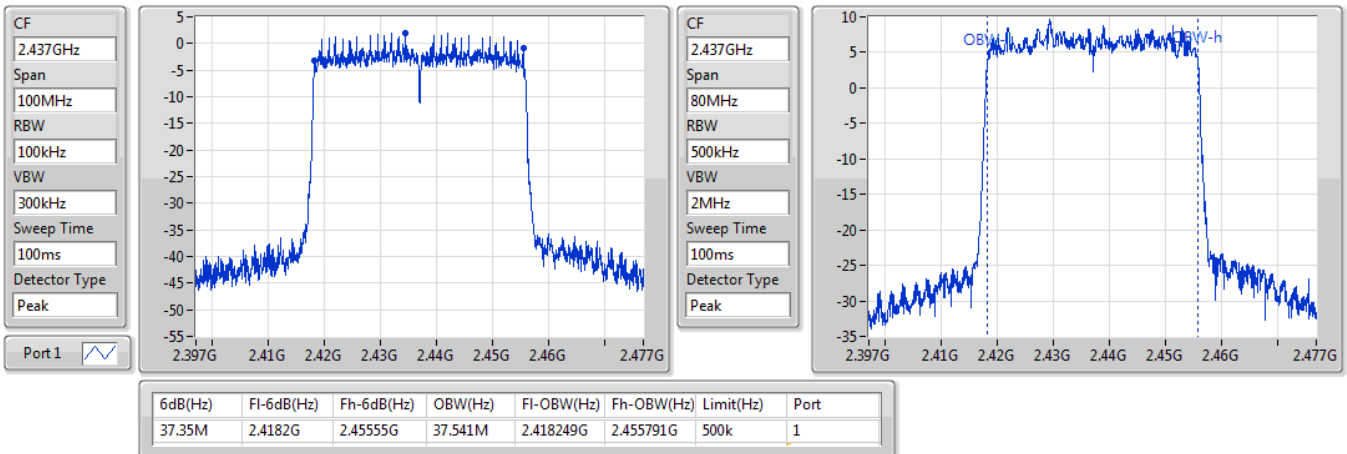

802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
2422MHz

14/11/2019

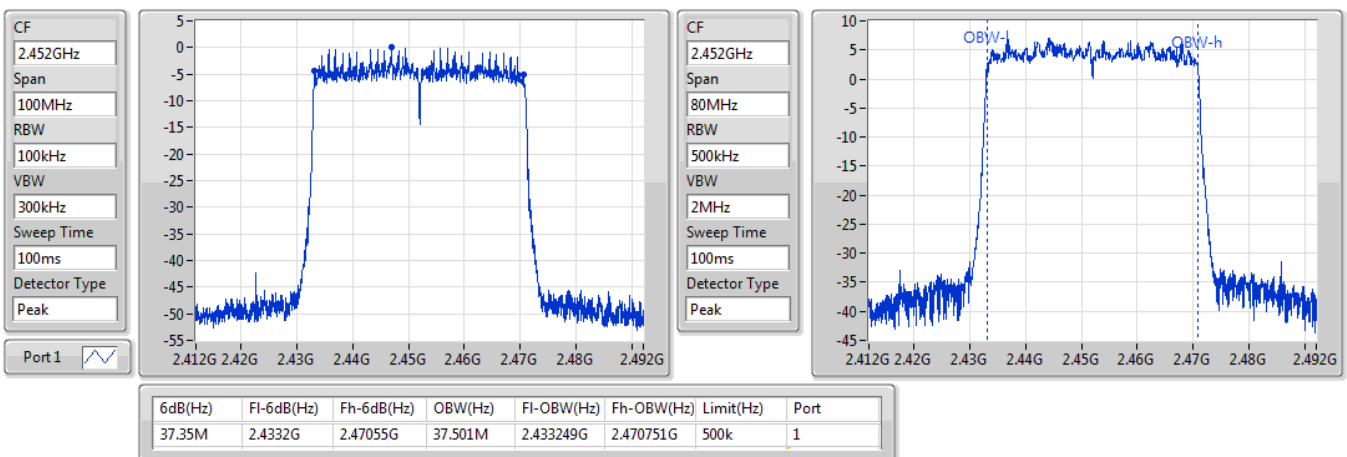


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
2437MHz

14/11/2019


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
2452MHz

14/11/2019



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_2TX	7.55M	10.495M	10M5G1D	7M	10.215M
802.11g_Nss1,(6Mbps)_2TX	16.35M	16.832M	16M8D1D	16.325M	16.652M
VHT20_Nss2,(MCS0)_2TX	17.6M	17.951M	18M0D1D	17.55M	17.771M
VHT40_Nss2,(MCS0)_2TX	36.3M	36.342M	36M3D1D	36.3M	36.302M
802.11ax HEW20_Nss2,(MCS0)_2TX	18.975M	19.09M	19M1D1D	18.875M	19.01M
802.11ax HEW40_Nss2,(MCS0)_2TX	37.6M	37.581M	37M6D1D	37M	37.501M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	500k	7M	10.235M	7.05M	10.315M
2437MHz_TnomVnom	Pass	500k	7.55M	10.255M	7.075M	10.495M
2462MHz_TnomVnom	Pass	500k	7.05M	10.315M	7.05M	10.215M
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	500k	16.35M	16.752M	16.35M	16.672M
2437MHz_TnomVnom	Pass	500k	16.35M	16.832M	16.35M	16.732M
2462MHz_TnomVnom	Pass	500k	16.325M	16.712M	16.35M	16.652M
VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	500k	17.575M	17.871M	17.575M	17.771M
2437MHz_TnomVnom	Pass	500k	17.55M	17.951M	17.6M	17.851M
2462MHz_TnomVnom	Pass	500k	17.55M	17.871M	17.6M	17.811M
VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz_TnomVnom	Pass	500k	36.3M	36.342M	36.3M	36.302M
2437MHz_TnomVnom	Pass	500k	36.3M	36.342M	36.3M	36.302M
2452MHz_TnomVnom	Pass	500k	36.3M	36.342M	36.3M	36.302M
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	500k	18.975M	19.05M	18.925M	19.03M
2437MHz_TnomVnom	Pass	500k	18.95M	19.03M	18.875M	19.09M
2462MHz_TnomVnom	Pass	500k	18.975M	19.05M	18.925M	19.01M
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz_TnomVnom	Pass	500k	37.5M	37.581M	37.6M	37.501M
2437MHz_TnomVnom	Pass	500k	37.35M	37.581M	37.55M	37.541M
2452MHz_TnomVnom	Pass	500k	37.3M	37.581M	37M	37.541M

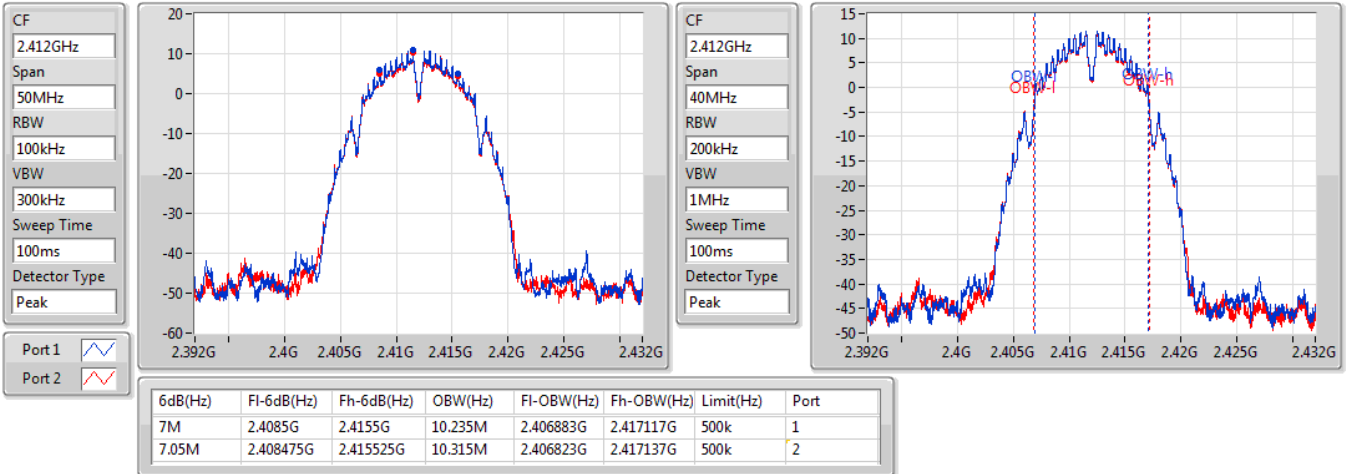
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

802.11b_Nss1,(1Mbps)_2TX

EBW

2412MHz

14/11/2019

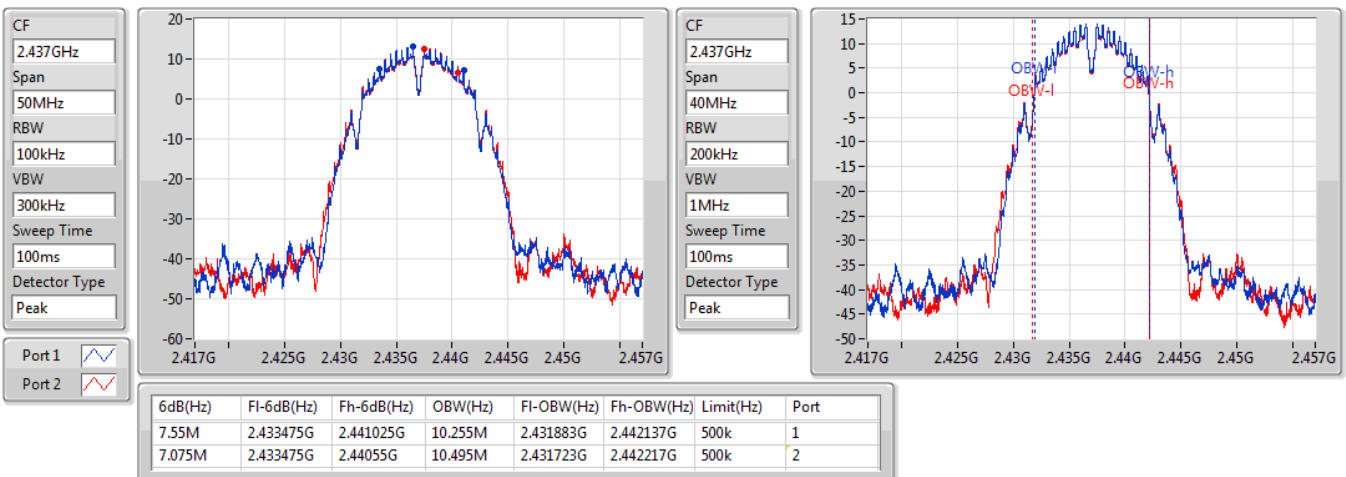


802.11b_Nss1,(1Mbps)_2TX

EBW

2437MHz

14/11/2019

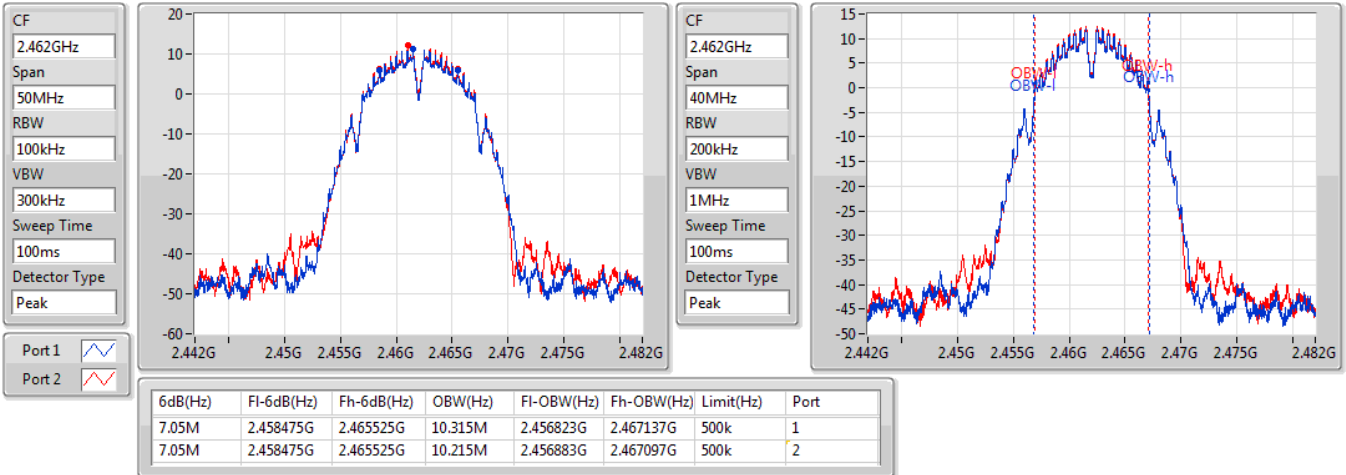


802.11b_Nss1,(1Mbps)_2TX

EBW

2462MHz

14/11/2019

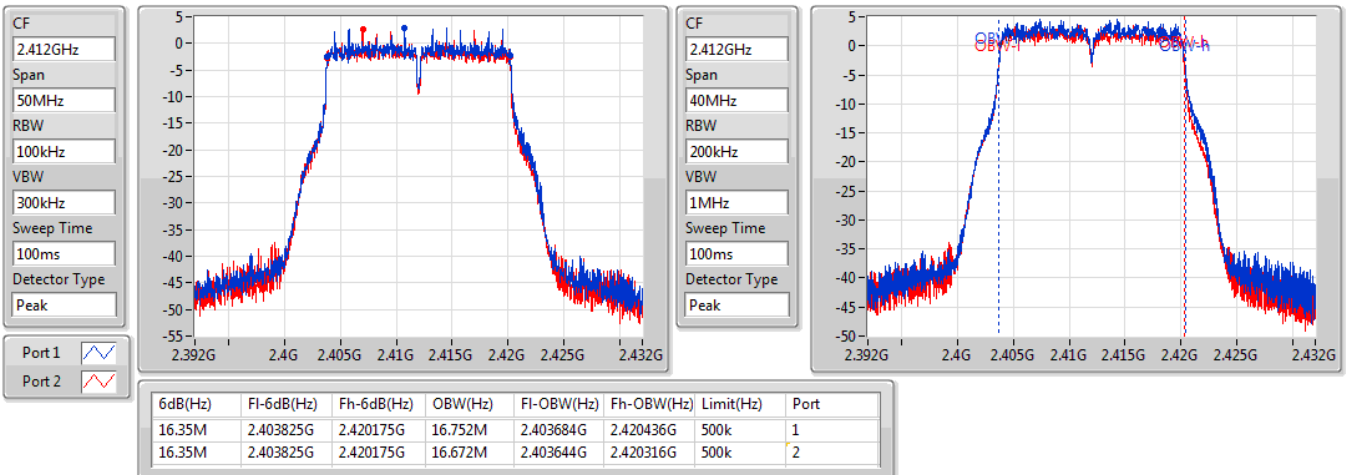


802.11g_Nss1,(6Mbps)_2TX

EBW

2412MHz

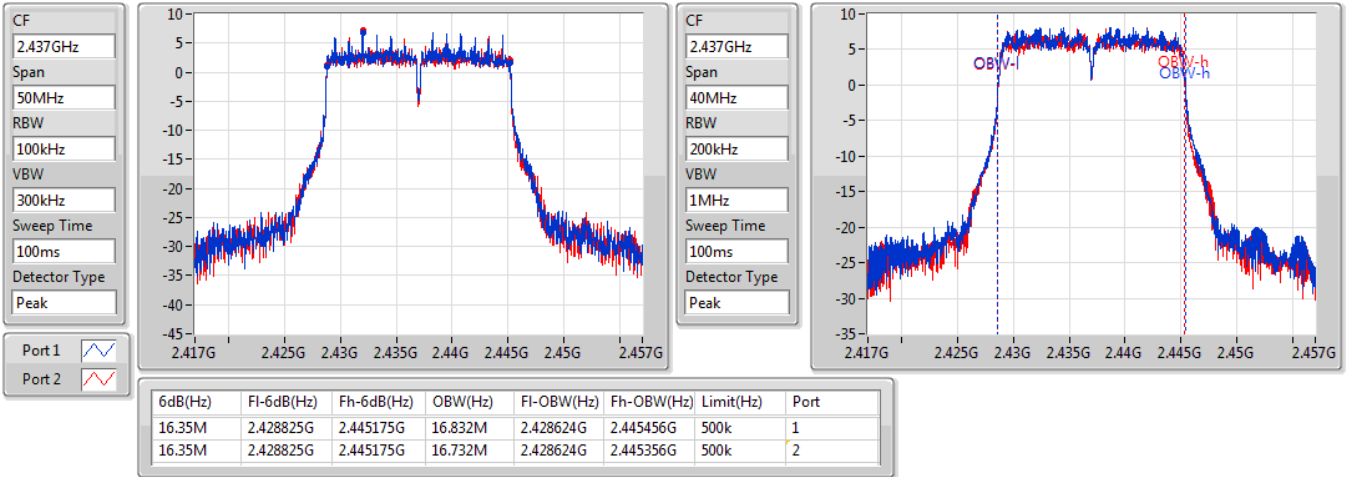
14/11/2019



802.11g_Nss1,(6Mbps)_2TX

2437MHz

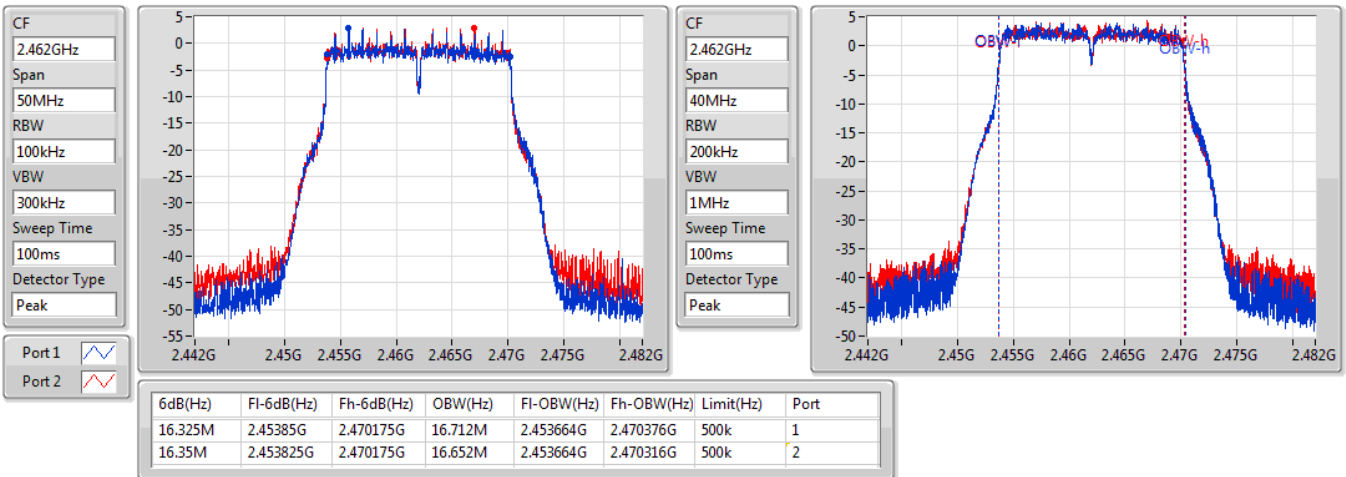
14/11/2019



802.11g_Nss1,(6Mbps)_2TX

2462MHz

14/11/2019

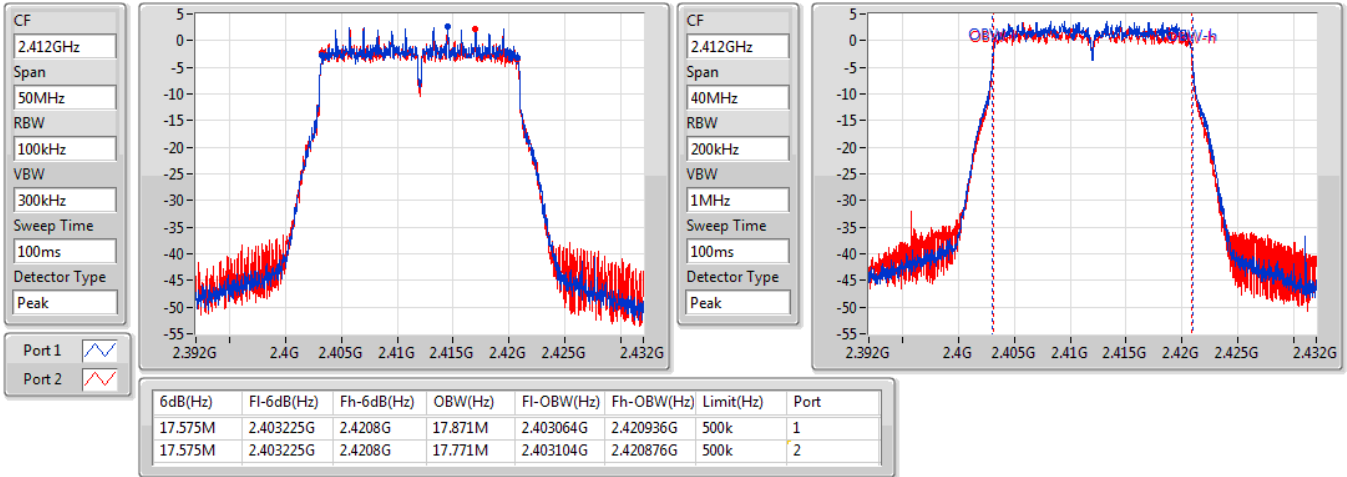


VHT20_Nss2,(MCS0)_2TX

EBW

2412MHz

14/11/2019

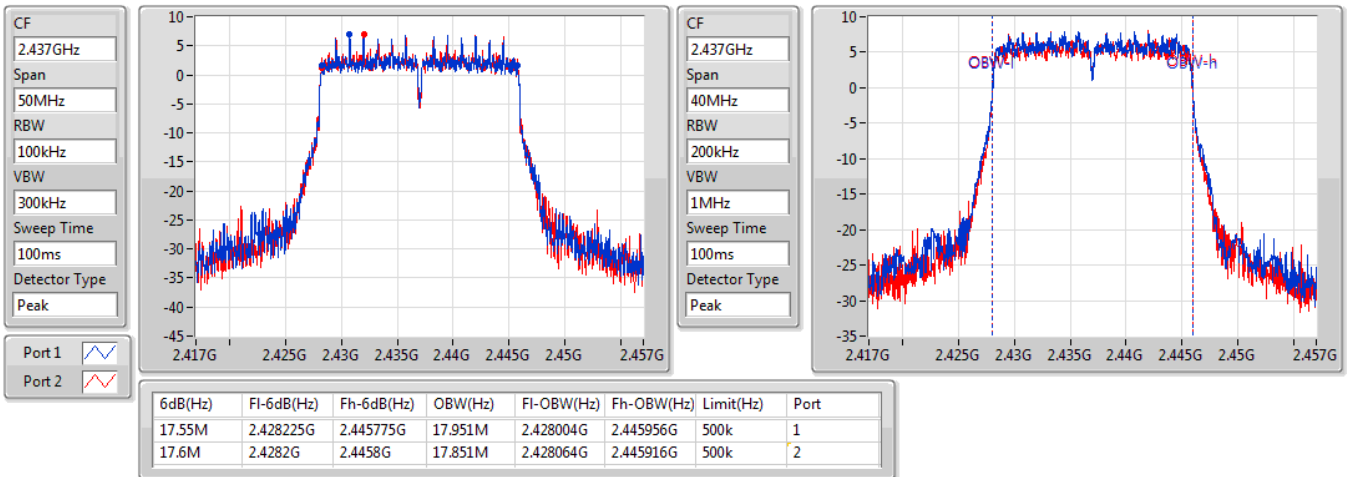


VHT20_Nss2,(MCS0)_2TX

EBW

2437MHz

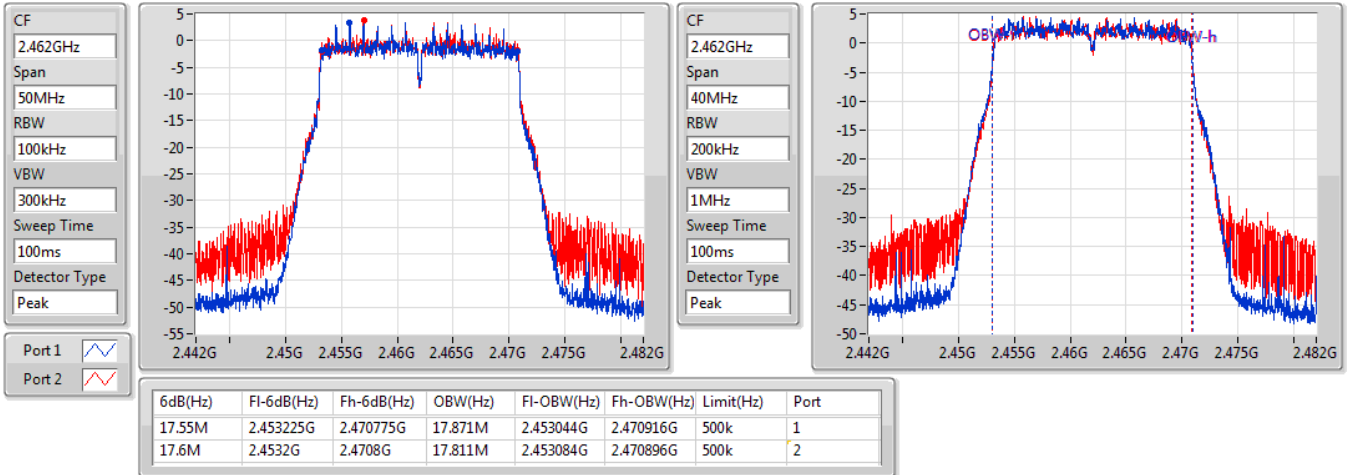
14/11/2019



VHT20_Nss2,(MCS0)_2TX

2462MHz

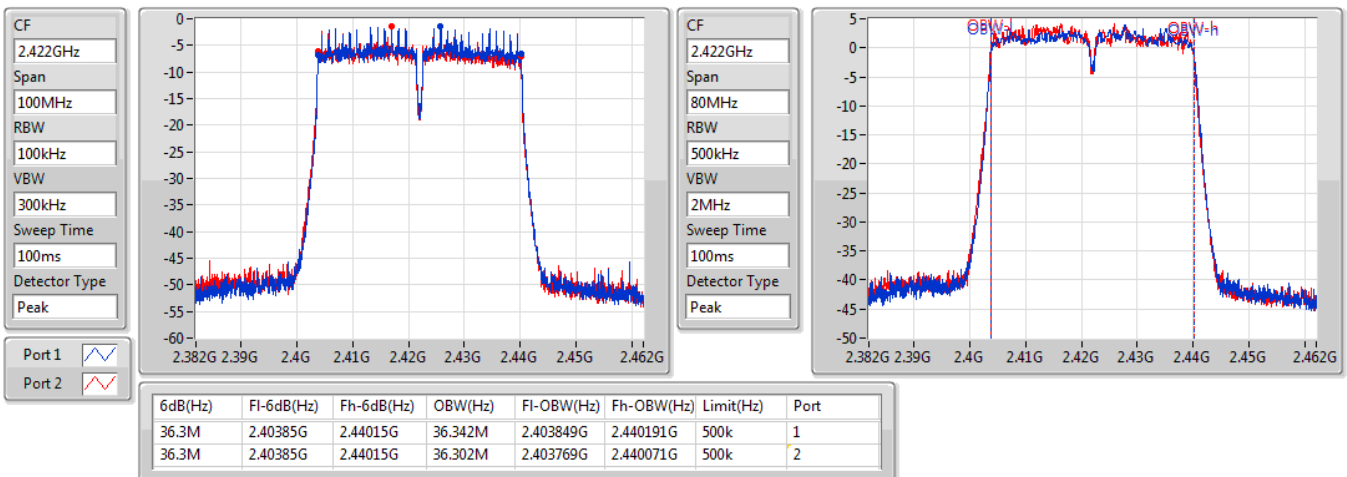
14/11/2019



VHT40_Nss2,(MCS0)_2TX

2422MHz

14/11/2019

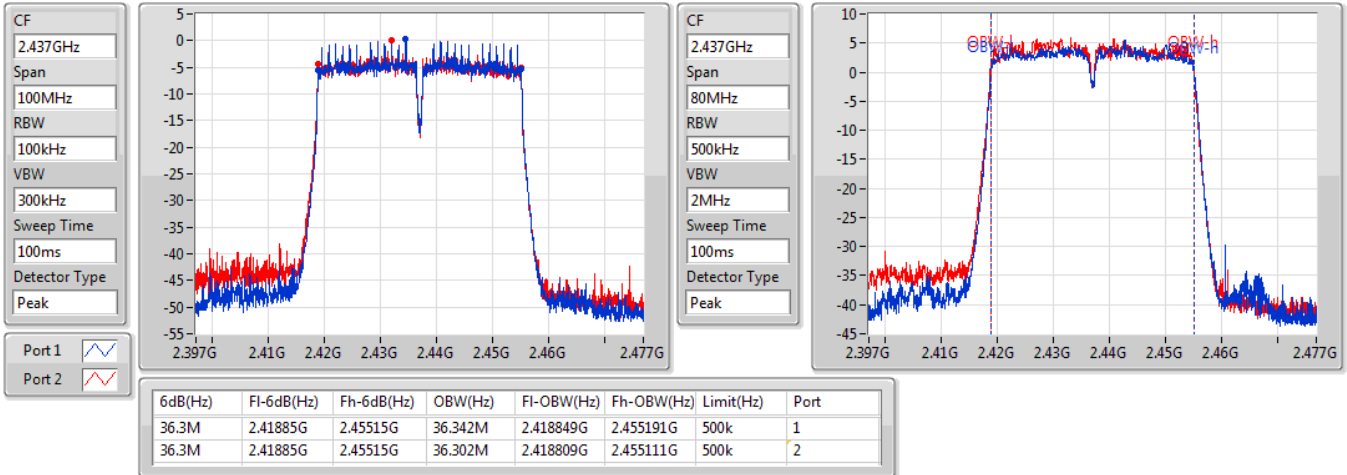


VHT40_Nss2,(MCS0)_2TX

2437MHz

14/11/2019

EBW

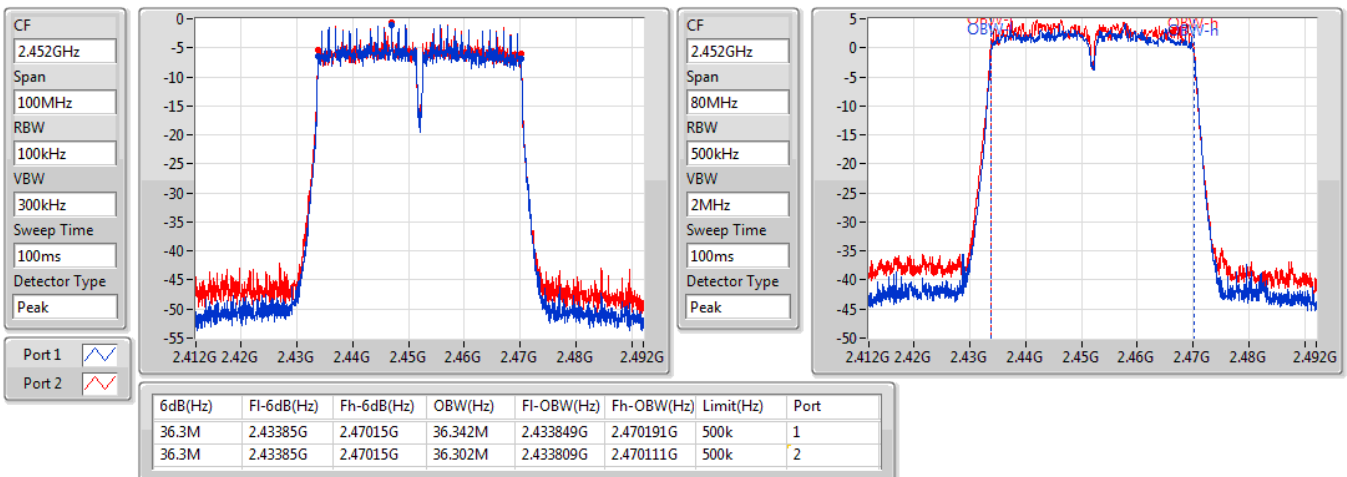


VHT40_Nss2,(MCS0)_2TX

2452MHz

14/11/2019

EBW

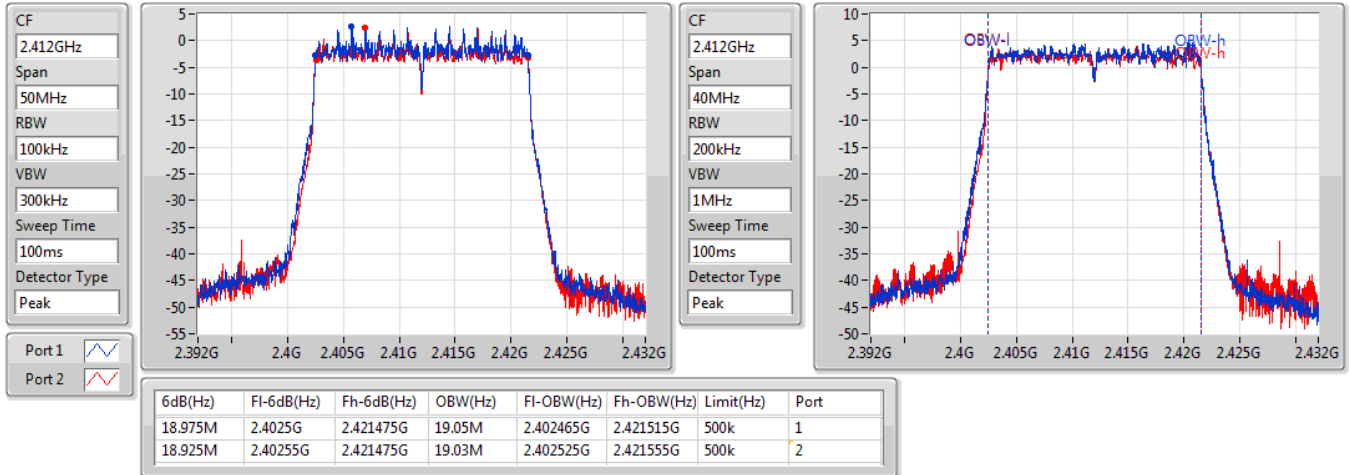


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

2412MHz

14/11/2019

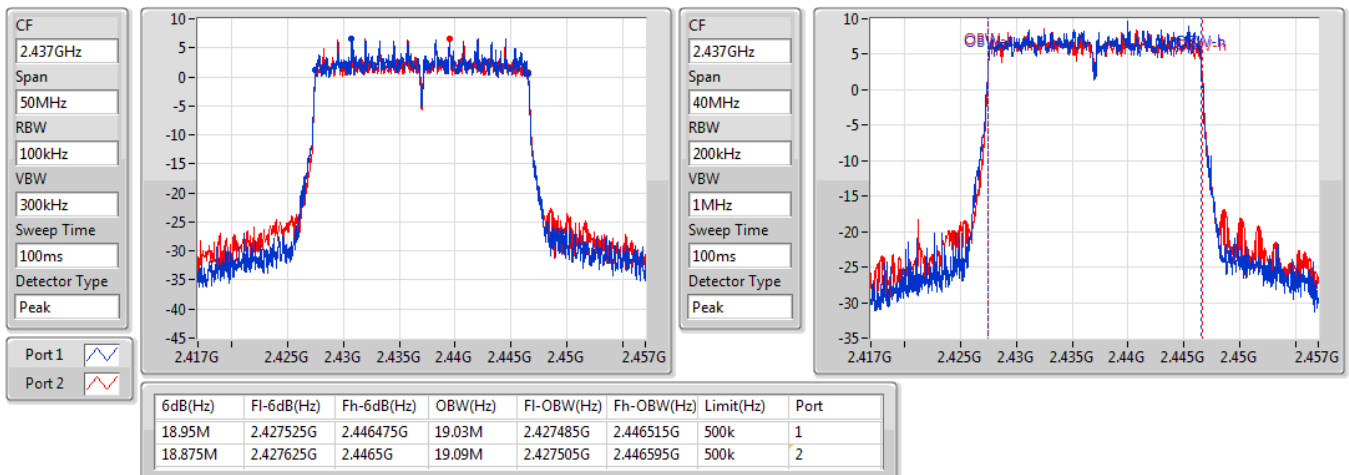


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

2437MHz

14/11/2019

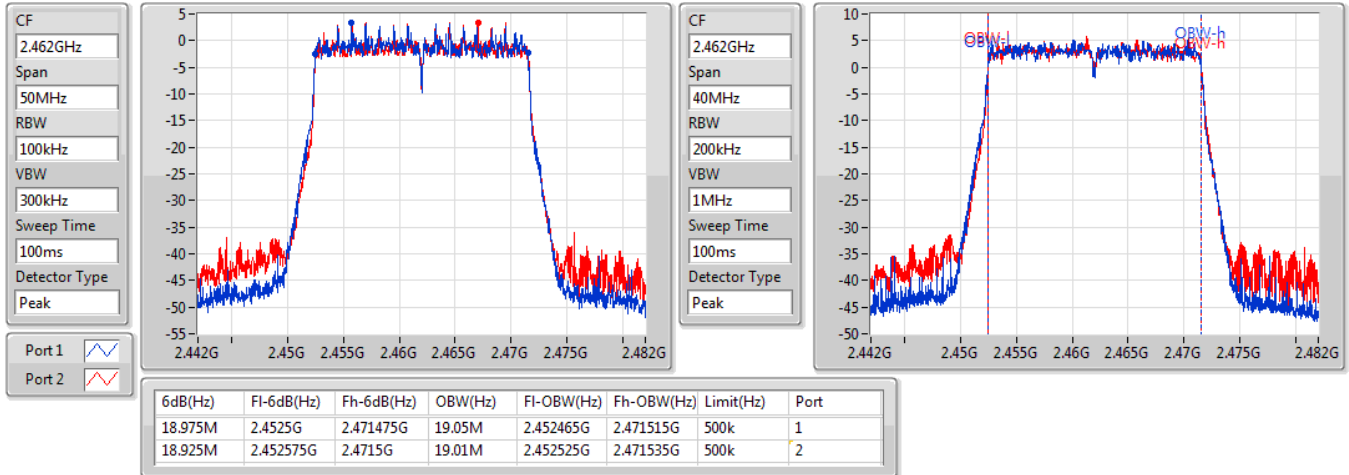


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

2462MHz

14/11/2019

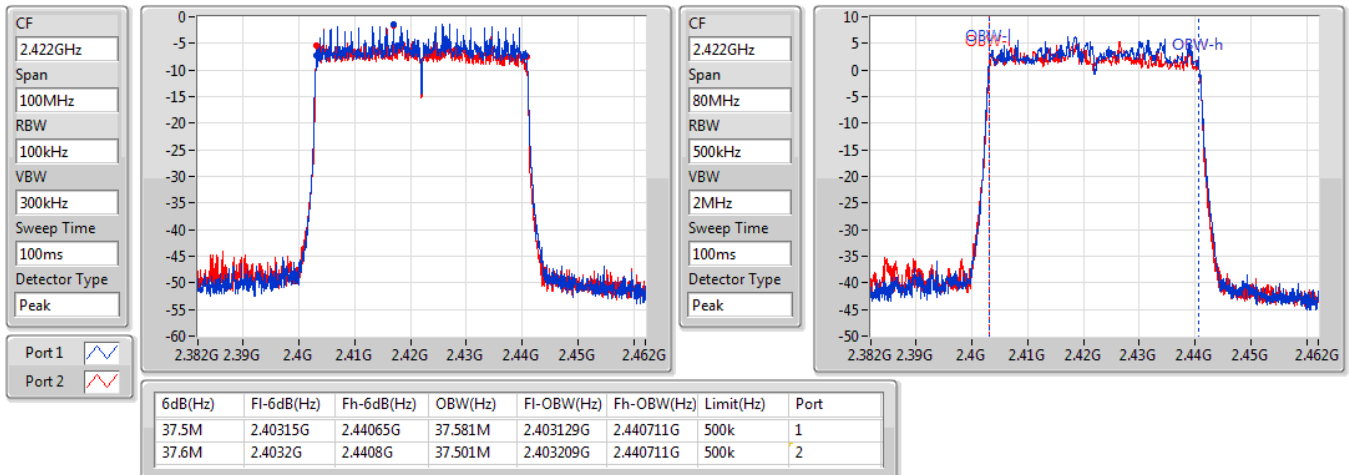


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

2422MHz

14/11/2019

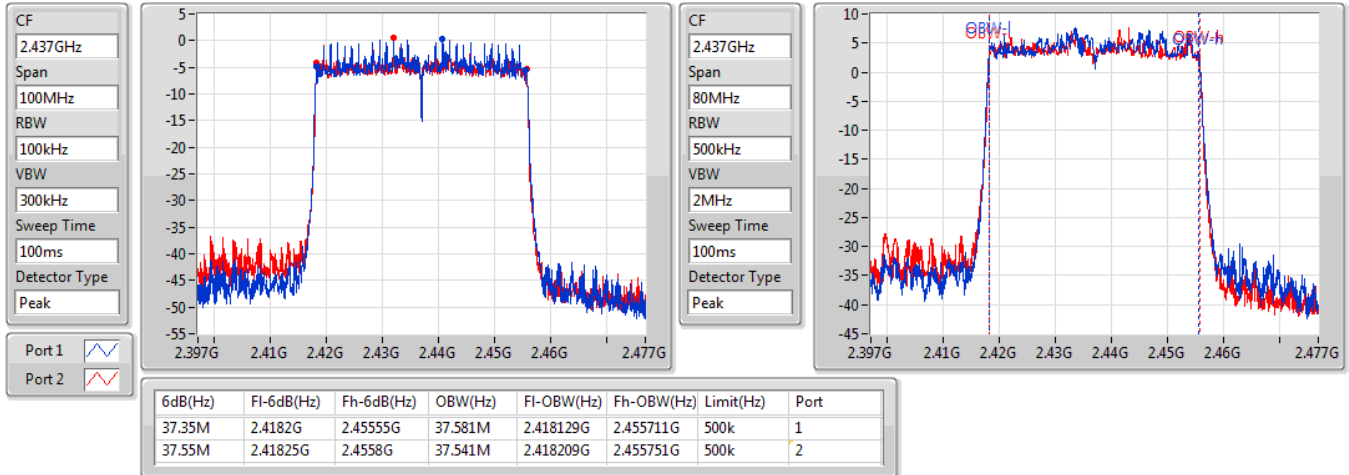


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

2437MHz

14/11/2019

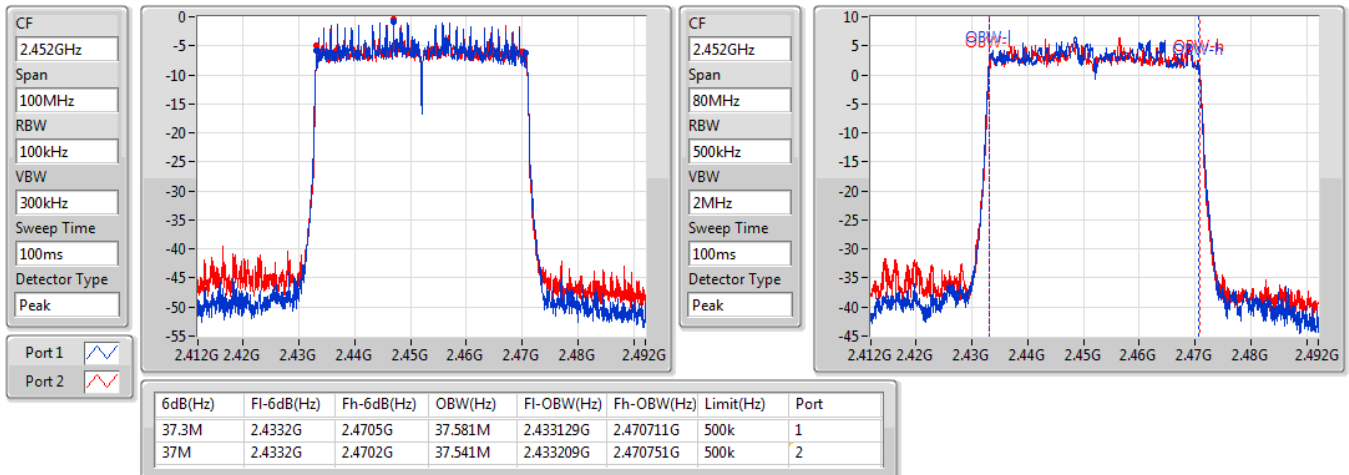


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

2452MHz

14/11/2019





Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20-BF_Nss1,(MCS0)_2TX	15.1M	18.091M	18M1D1D	14.975M	17.731M
VHT40-BF_Nss1,(MCS0)_2TX	33.8M	36.502M	36M5D1D	29.95M	36.342M
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	19.1M	19.29M	19M3D1D	18.825M	19.05M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	37.7M	37.581M	37M6D1D	35.7M	37.541M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	15.05M	17.771M	15.075M	17.831M
2437MHz	Pass	500k	15.1M	18.031M	15.075M	18.091M
2462MHz	Pass	500k	15.05M	17.731M	14.975M	17.831M
VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	33.8M	36.462M	33.8M	36.342M
2437MHz	Pass	500k	32.55M	36.502M	32.55M	36.502M
2452MHz	Pass	500k	32.5M	36.422M	29.95M	36.462M
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	19.1M	19.07M	19.025M	19.05M
2437MHz	Pass	500k	18.825M	19.27M	18.875M	19.29M
2462MHz	Pass	500k	19M	19.05M	19.025M	19.05M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	37.7M	37.541M	35.7M	37.541M
2437MHz	Pass	500k	36.95M	37.581M	37.1M	37.541M
2452MHz	Pass	500k	37.3M	37.541M	37.6M	37.541M

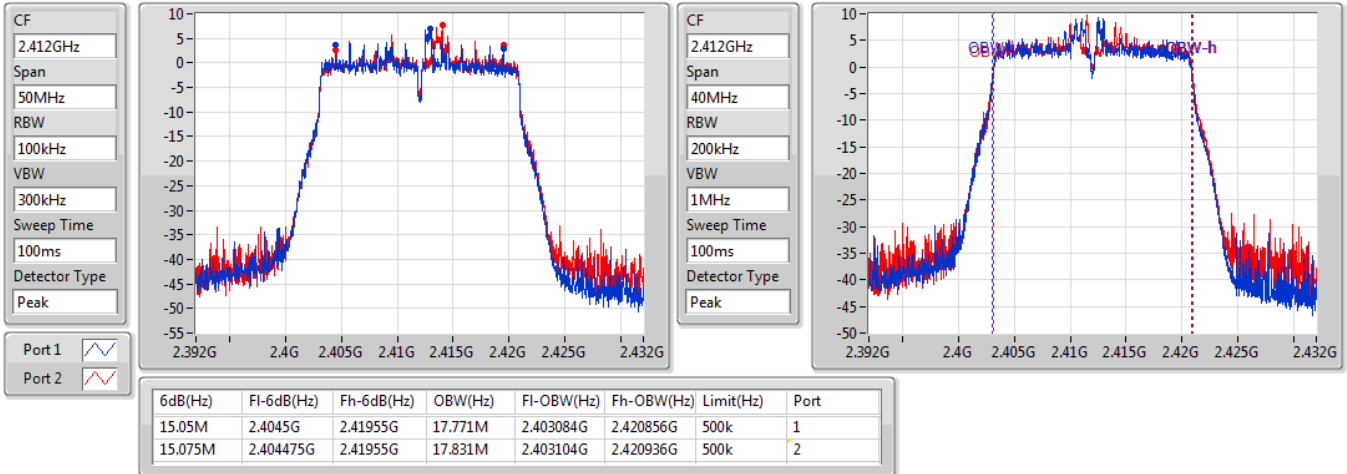
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20-BF_Nss1,(MCS0)_2TX

EBW

2412MHz

25/11/2019

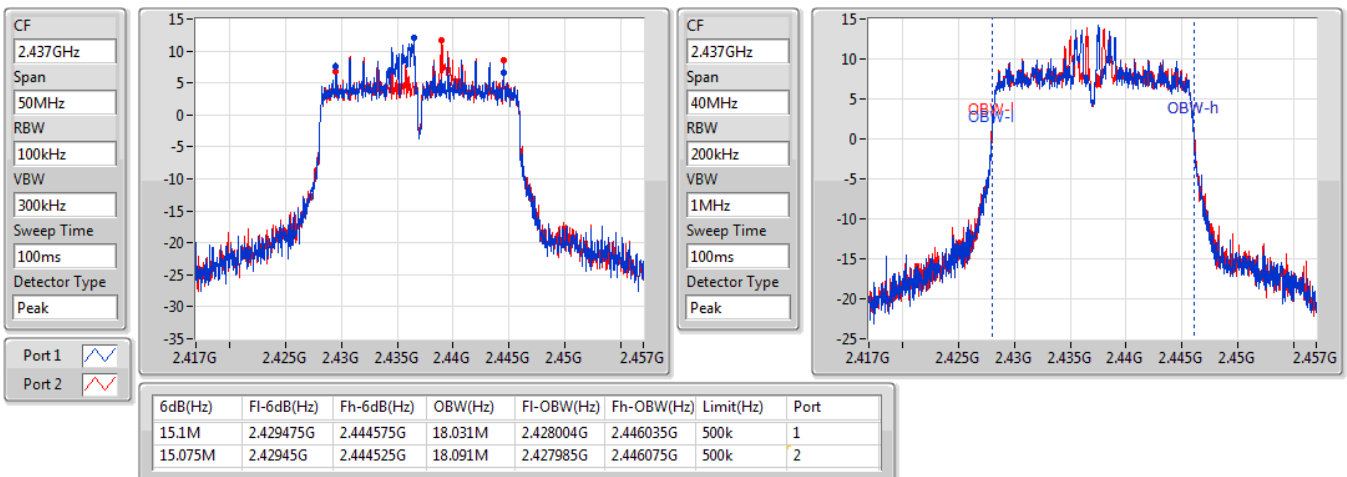


VHT20-BF_Nss1,(MCS0)_2TX

EBW

2437MHz

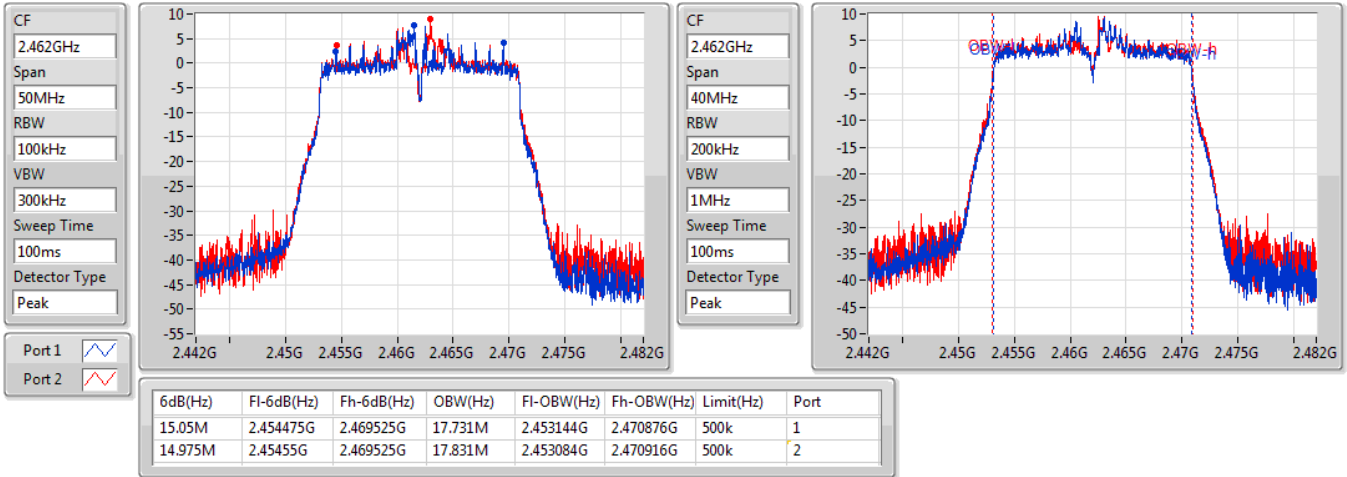
25/11/2019



VHT20-BF_Nss1,(MCS0)_2TX

2462MHz

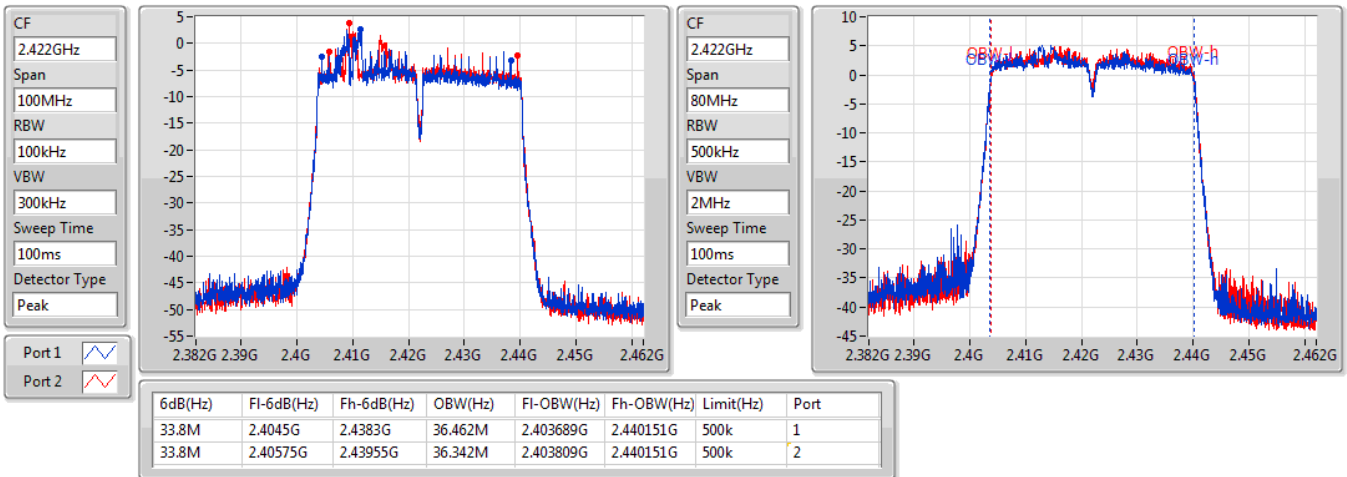
25/11/2019



VHT40-BF_Nss1,(MCS0)_2TX

2422MHz

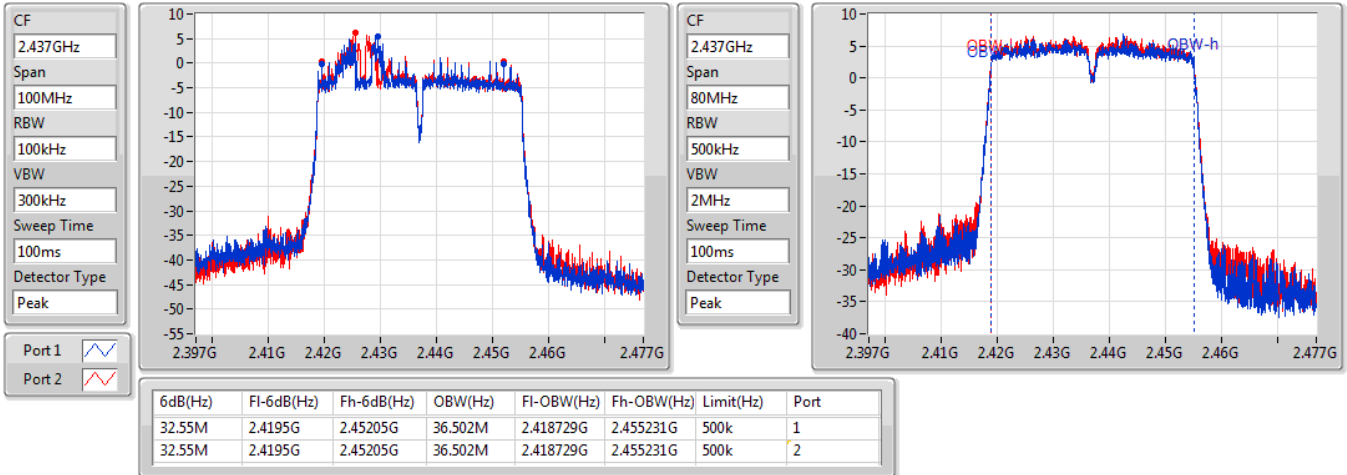
25/11/2019



VHT40-BF_Nss1,(MCS0)_2TX

2437MHz

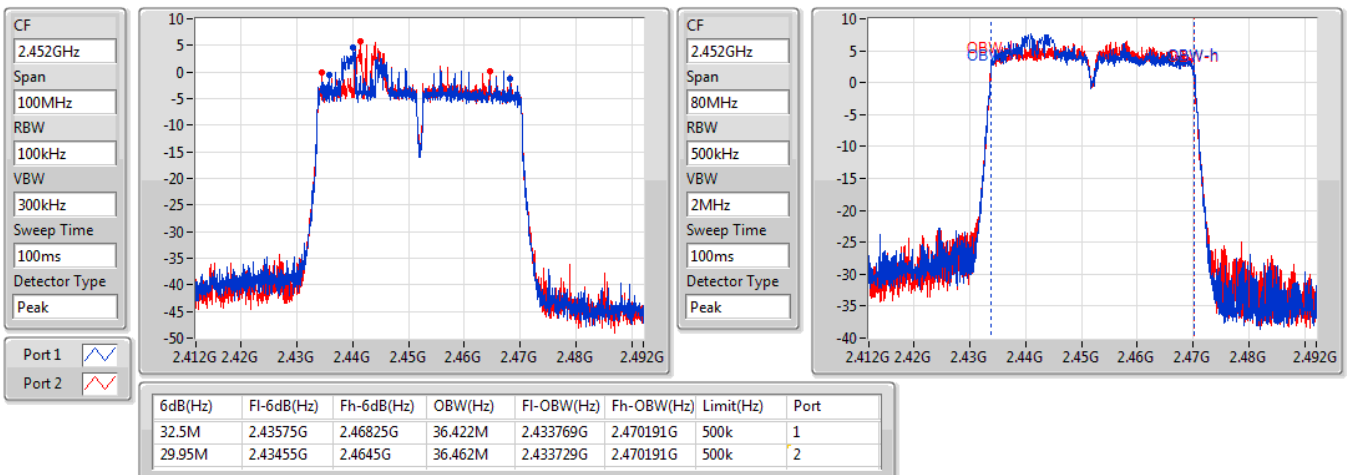
25/11/2019



VHT40-BF_Nss1,(MCS0)_2TX

2452MHz

25/11/2019

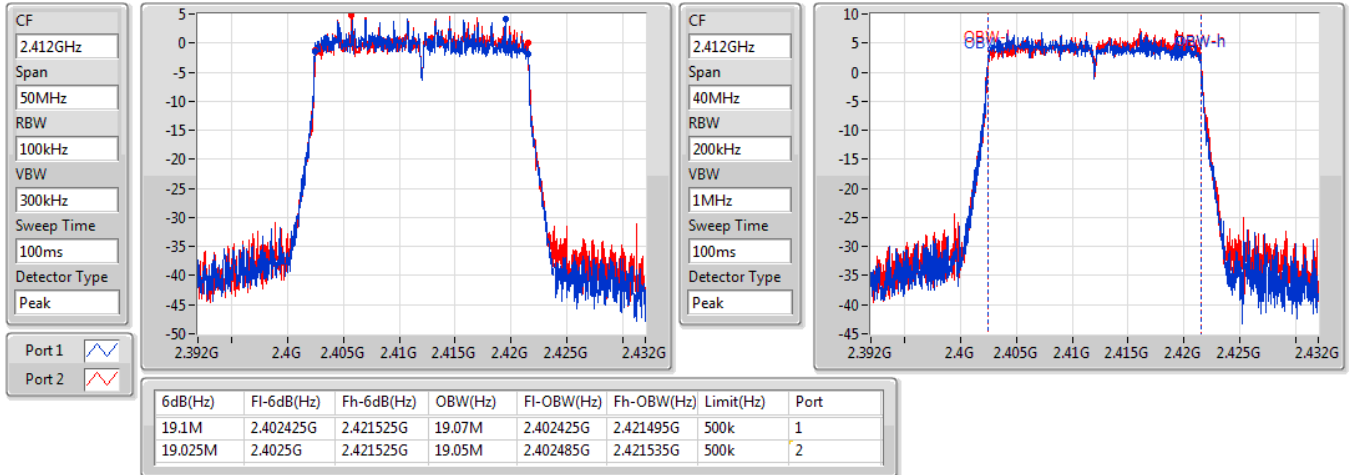


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

2412MHz

25/11/2019

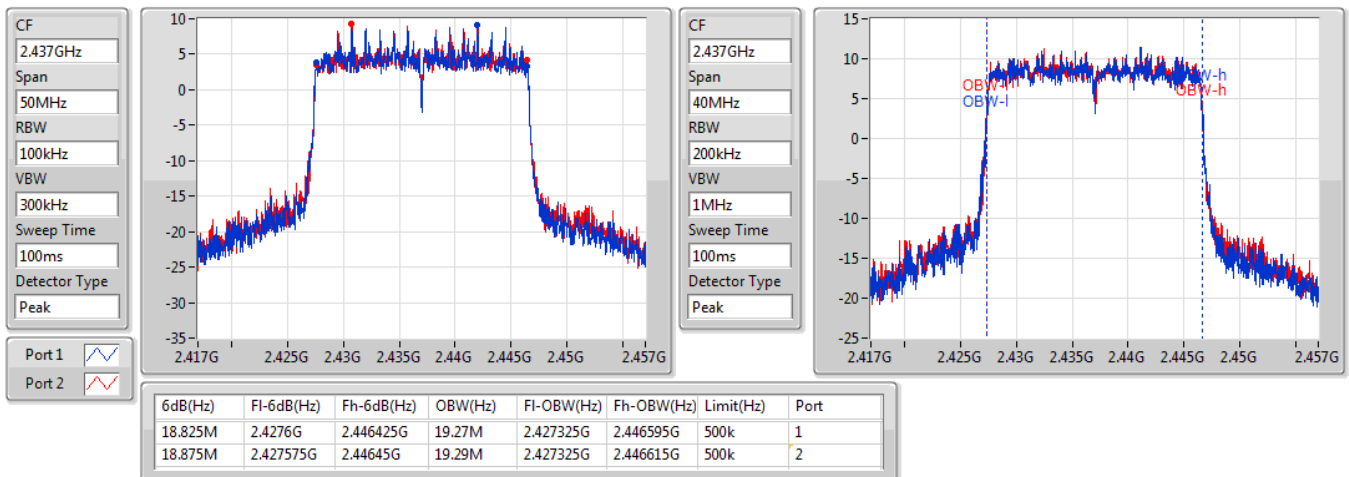


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

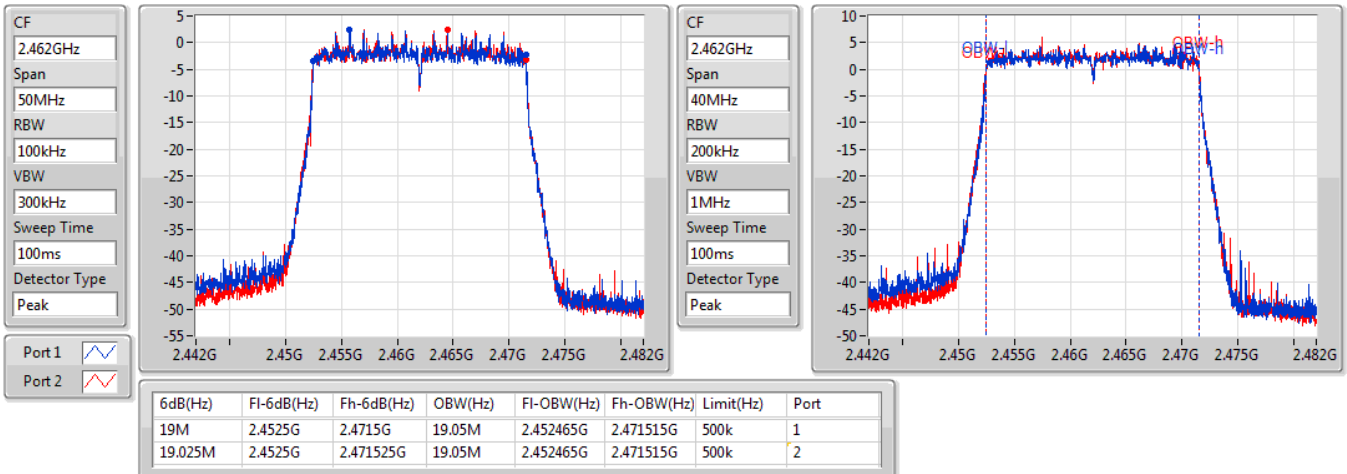
2437MHz

25/11/2019

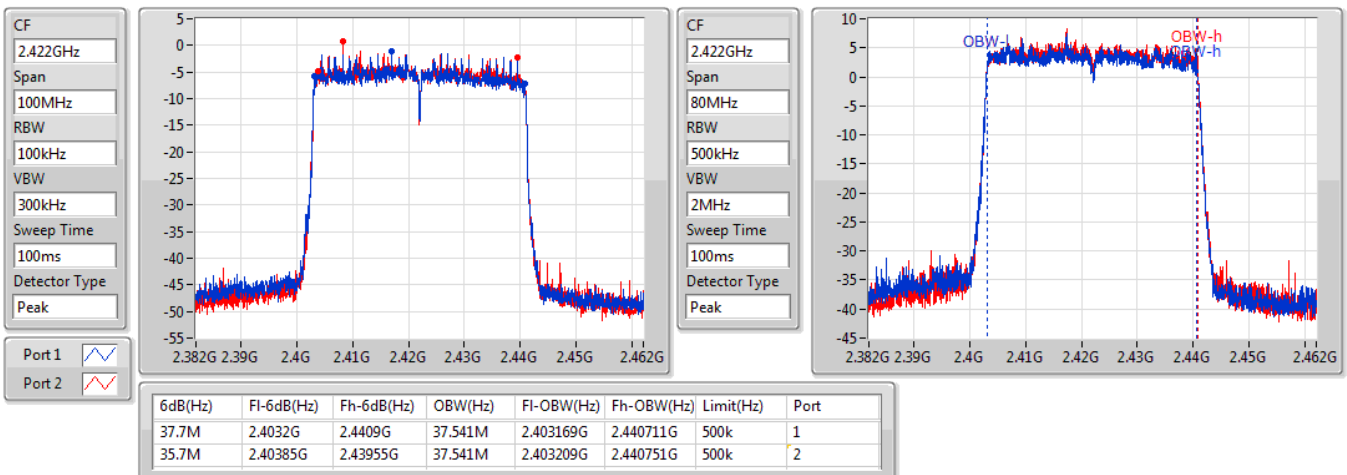


802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
2462MHz

25/11/2019


802.11ax HEW40-BF_Nss1,(MCS0)_2TX
EBW
2422MHz

25/11/2019

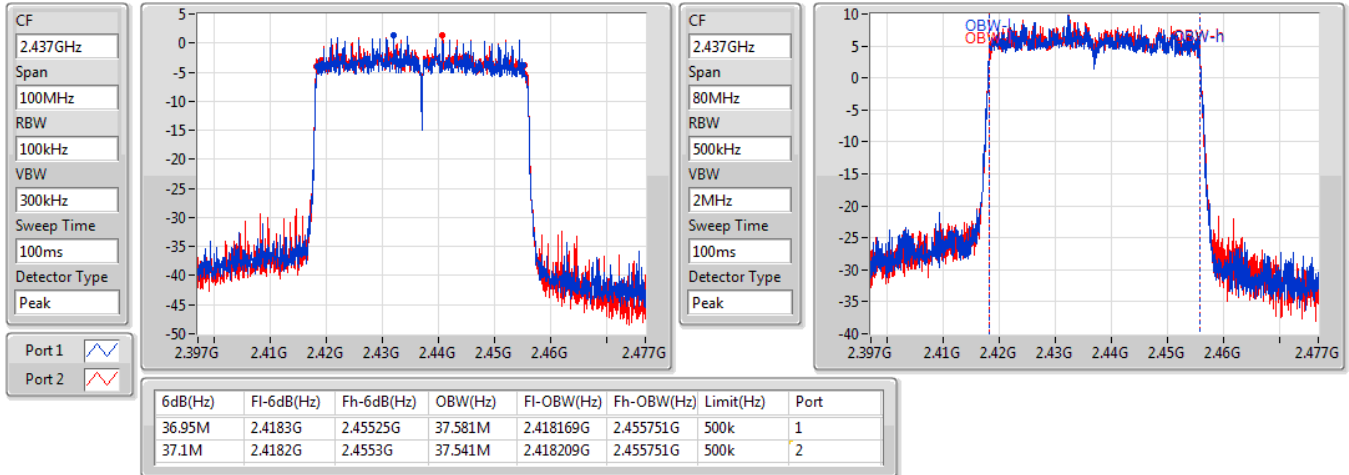


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

2437MHz

25/11/2019

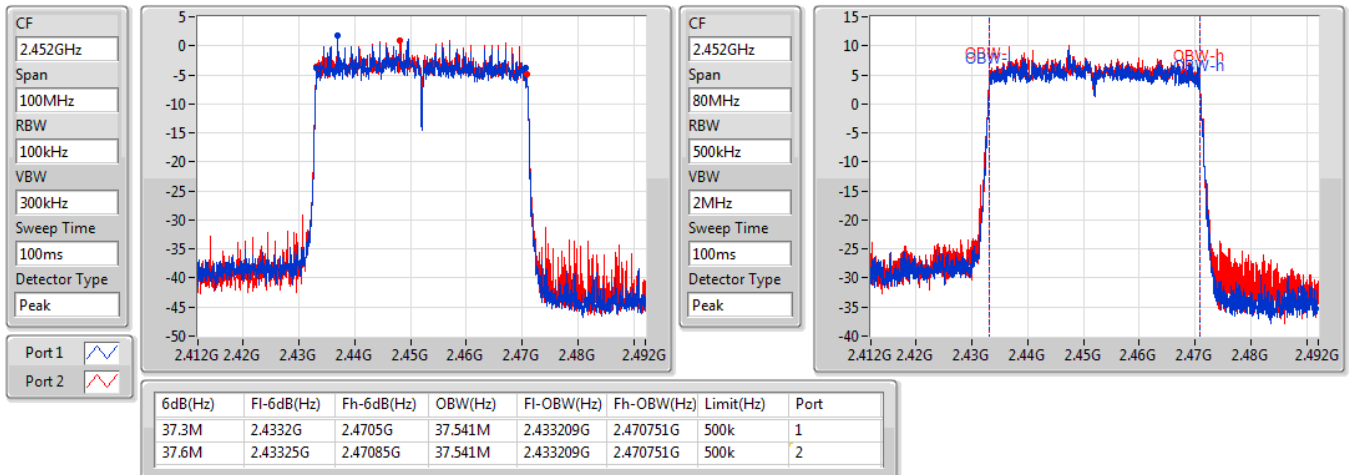


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

2452MHz

25/11/2019



**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20-BF_Nss1,(MCS0)_2TX	15.1M	17.991M	18M0D1D	14.975M	17.751M
VHT40-BF_Nss1,(MCS0)_2TX	35.1M	36.462M	36M5D1D	18.75M	36.262M
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	19M	19.19M	19M2D1D	18.925M	19.01M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	37.75M	37.581M	37M6D1D	37.2M	37.461M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	15.025M	17.991M	15.075M	17.871M
2437MHz	Pass	500k	15.1M	17.951M	15.075M	17.851M
2462MHz	Pass	500k	14.975M	17.811M	15.05M	17.751M
VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	18.75M	36.382M	30M	36.382M
2437MHz	Pass	500k	30M	36.462M	35.1M	36.262M
2452MHz	Pass	500k	35M	36.382M	35.05M	36.382M
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	18.925M	19.01M	18.975M	19.05M
2437MHz	Pass	500k	18.975M	19.19M	18.925M	19.11M
2462MHz	Pass	500k	19M	19.05M	18.95M	19.03M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	37.75M	37.501M	37.75M	37.581M
2437MHz	Pass	500k	37.5M	37.541M	37.4M	37.461M
2452MHz	Pass	500k	37.7M	37.541M	37.2M	37.581M

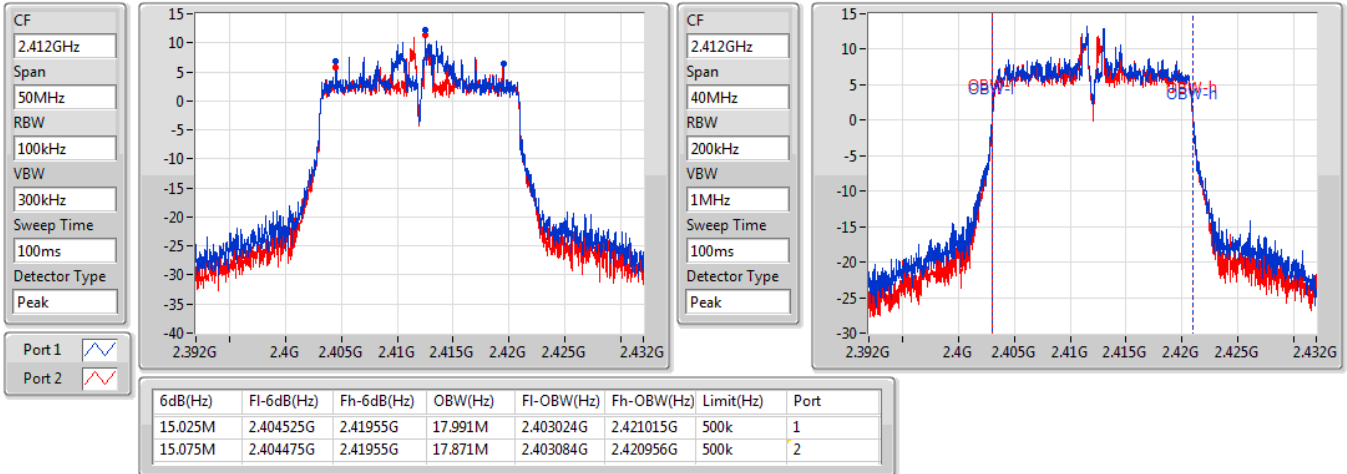
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20-BF_Nss1,(MCS0)_2TX

EBW

2412MHz

25/11/2019

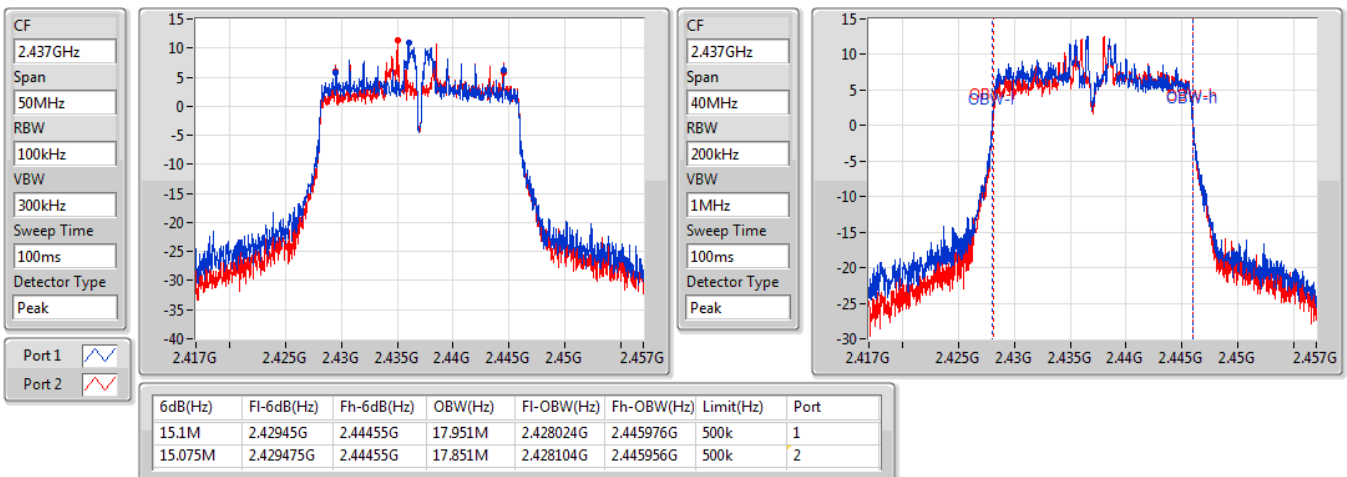


VHT20-BF_Nss1,(MCS0)_2TX

EBW

2437MHz

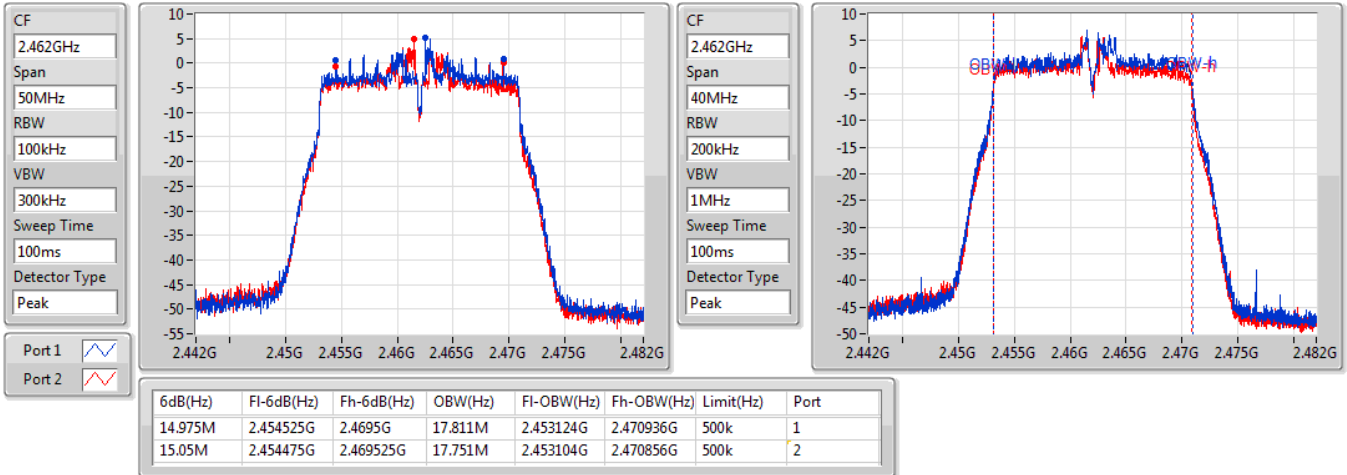
25/11/2019



VHT20-BF_Nss1,(MCS0)_2TX

2462MHz

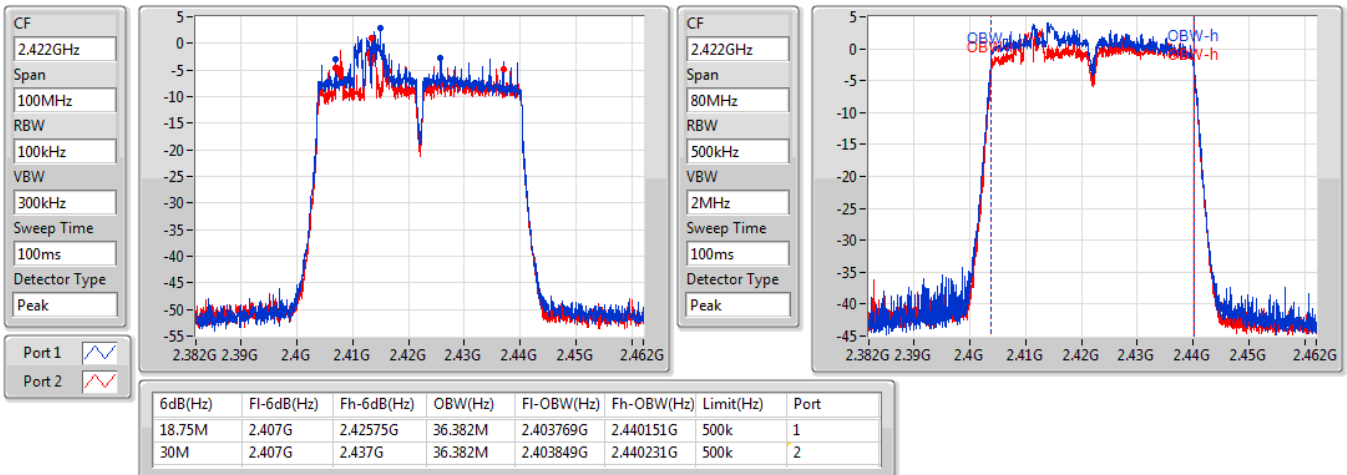
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VHT40-BF_Nss1,(MCS0)_2TX

2422MHz

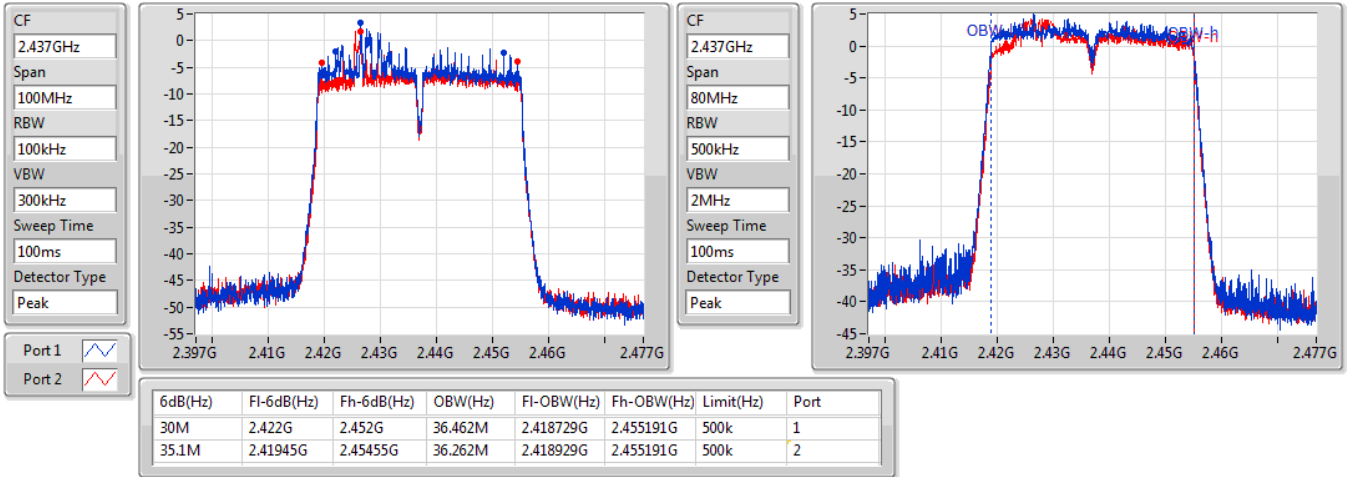
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VHT40-BF_Nss1,(MCS0)_2TX

2437MHz

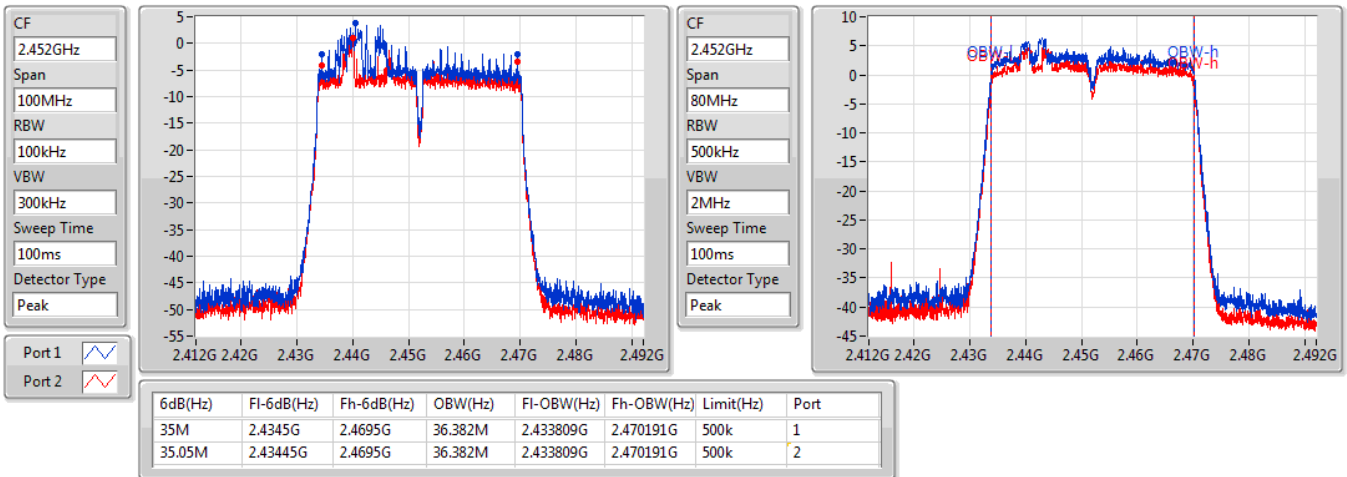
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VHT40-BF_Nss1,(MCS0)_2TX

2452MHz

04/12/2019

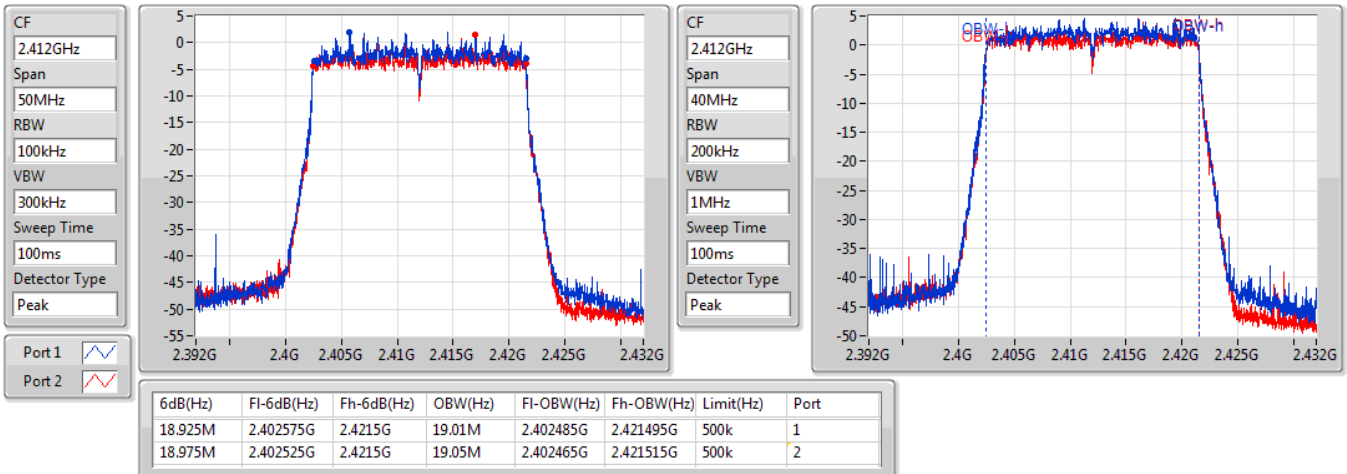


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

2412MHz

25/11/2019

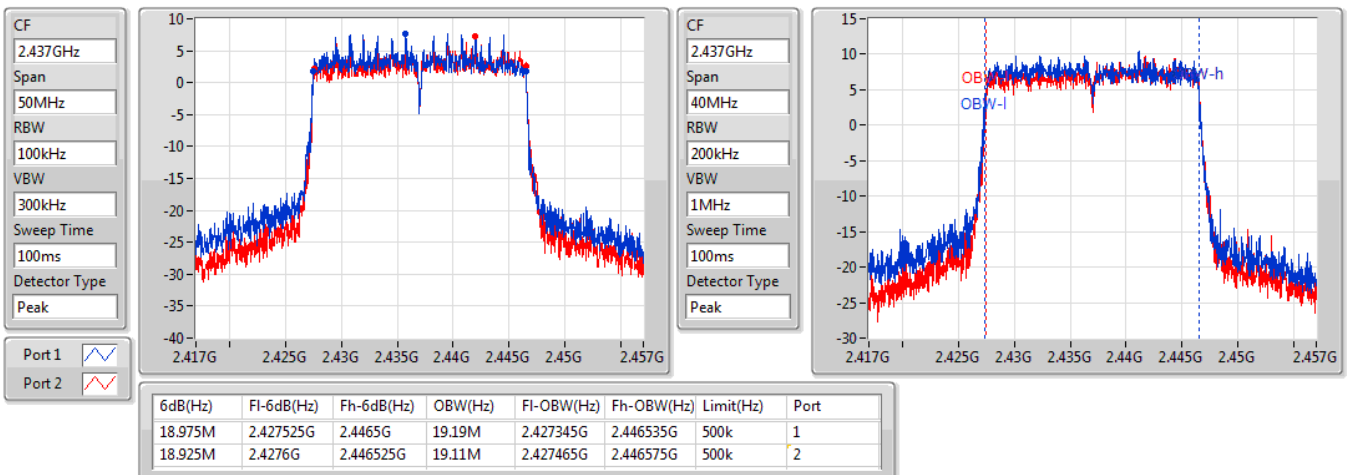


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

2437MHz

25/11/2019

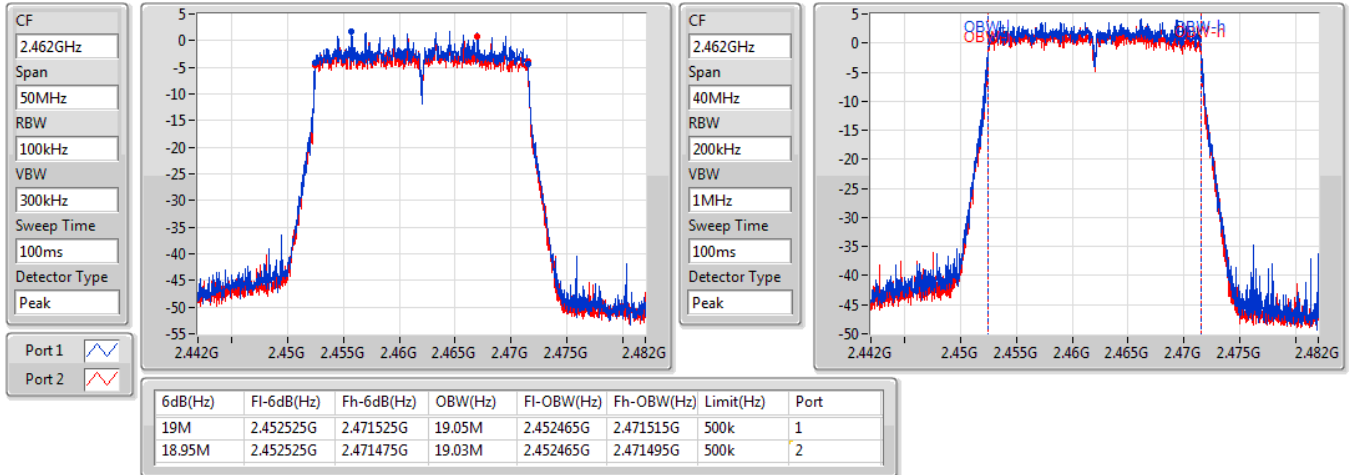


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

2462MHz

25/11/2019

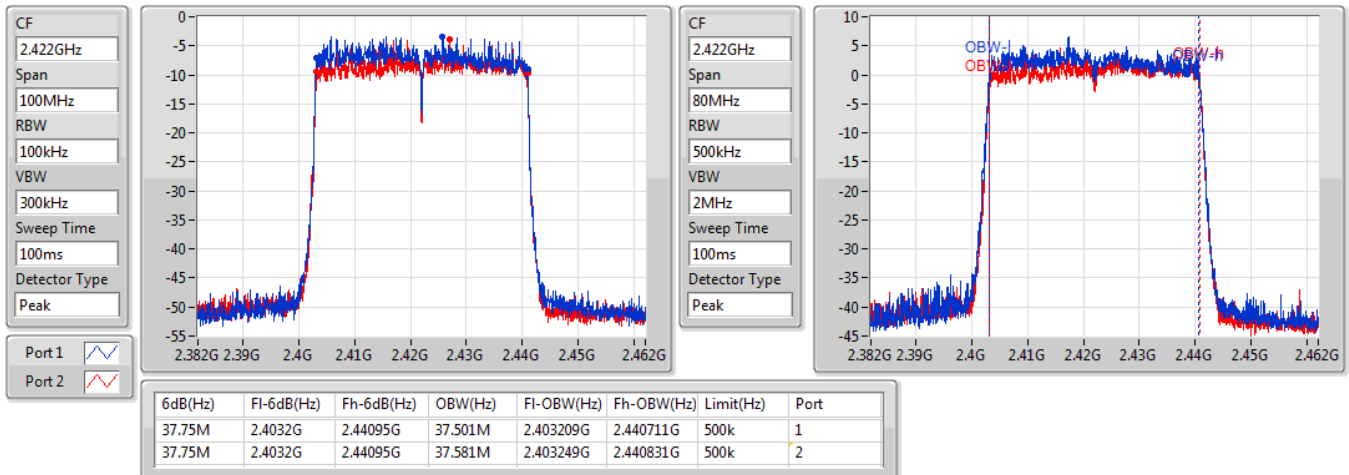


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

2422MHz

25/11/2019

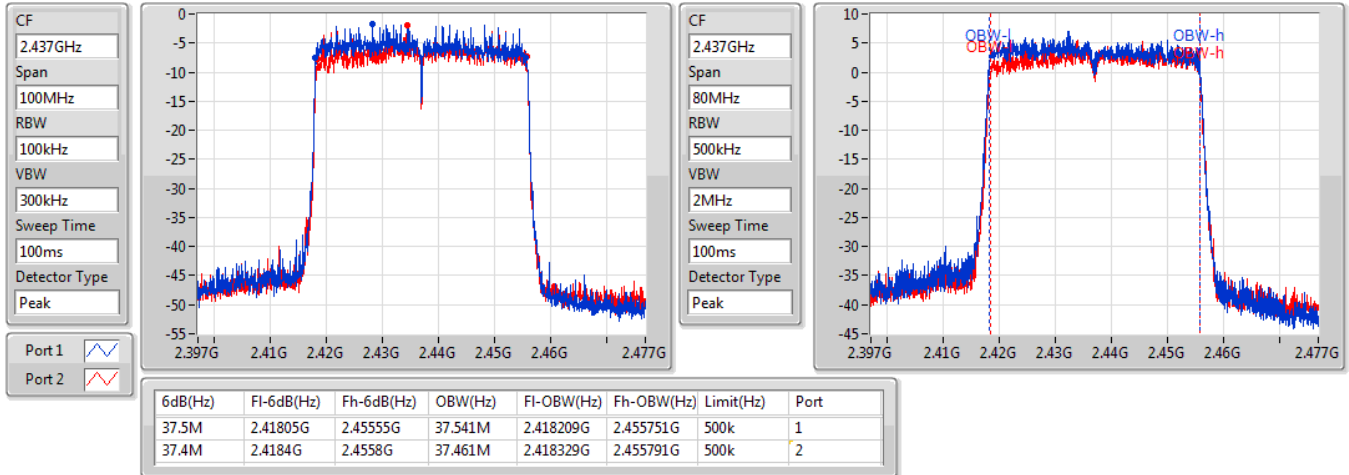


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

2437MHz

25/11/2019

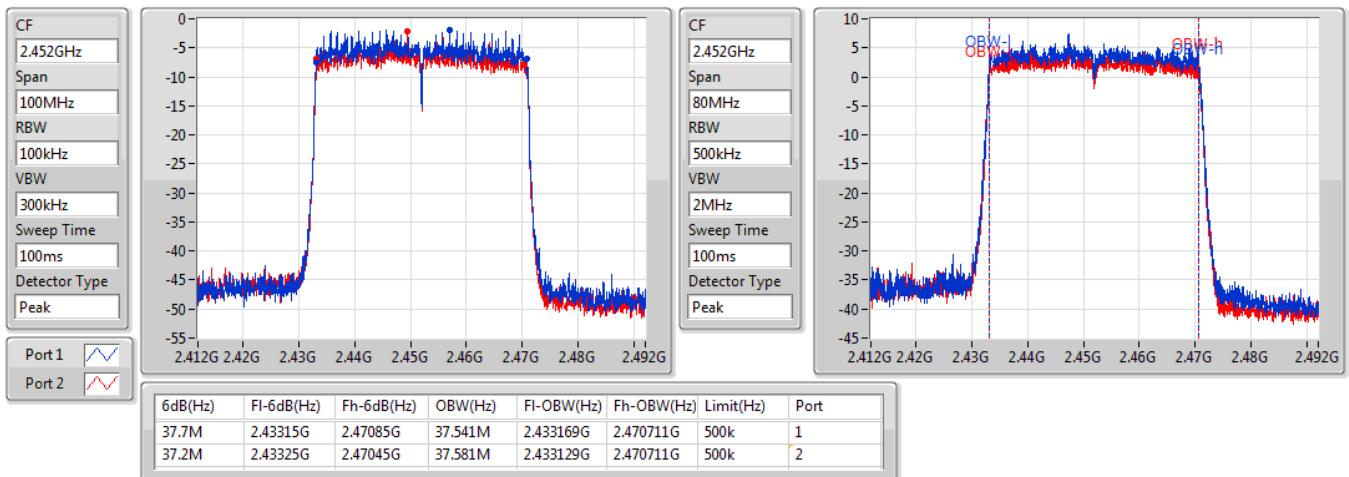


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

2452MHz

25/11/2019



**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20-BF_Nss1,(MCS0)_2TX	17.575M	17.891M	17M9D1D	13.85M	17.731M
VHT40-BF_Nss1,(MCS0)_2TX	35M	36.422M	36M4D1D	8.05M	36.342M
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	19.05M	19.11M	19M1D1D	18.9M	19.07M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	37.6M	37.621M	37M6D1D	35.7M	37.461M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	13.85M	17.811M	15.3M	17.731M
2437MHz	Pass	500k	17.575M	17.871M	17.55M	17.891M
2462MHz	Pass	500k	15.4M	17.811M	15.075M	17.791M
VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	35M	36.342M	32.5M	36.422M
2437MHz	Pass	500k	35M	36.342M	17.6M	36.422M
2452MHz	Pass	500k	8.05M	36.382M	33.75M	36.342M
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	19M	19.09M	19.05M	19.11M
2437MHz	Pass	500k	18.95M	19.11M	18.9M	19.07M
2462MHz	Pass	500k	18.9M	19.07M	18.975M	19.07M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	37M	37.461M	37.6M	37.621M
2437MHz	Pass	500k	35.7M	37.581M	36.85M	37.501M
2452MHz	Pass	500k	37.3M	37.621M	35.9M	37.501M

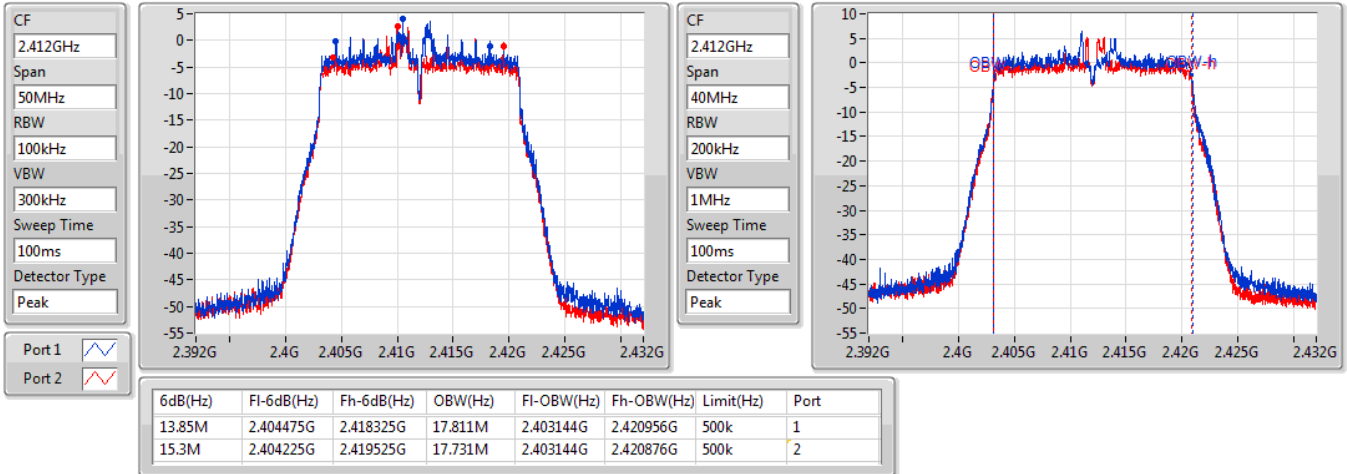
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20-BF_Nss1,(MCS0)_2TX

EBW

2412MHz

25/11/2019

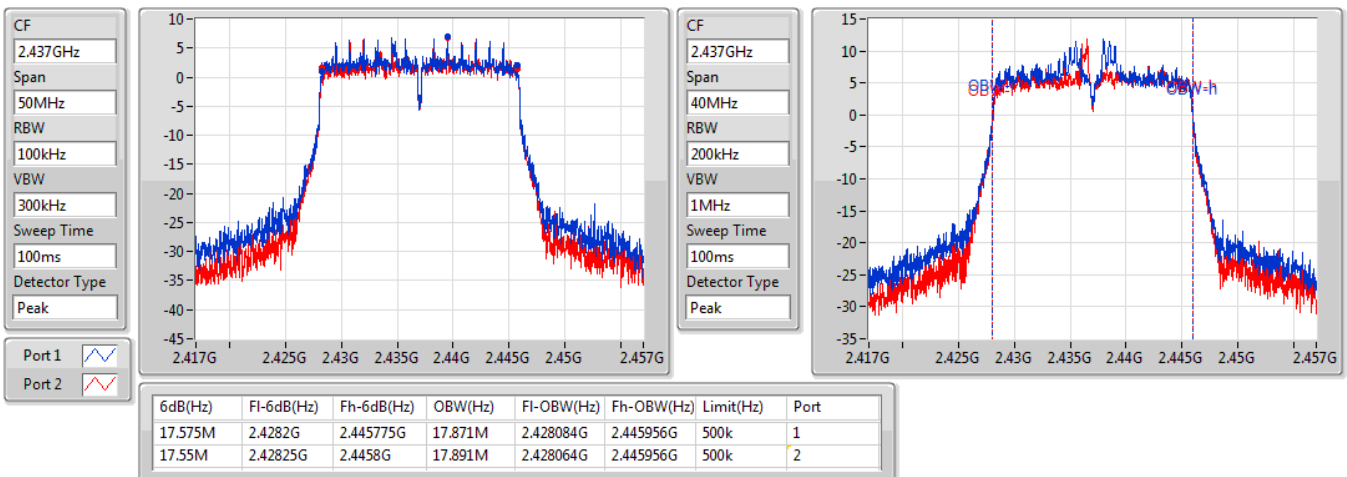


VHT20-BF_Nss1,(MCS0)_2TX

EBW

2437MHz

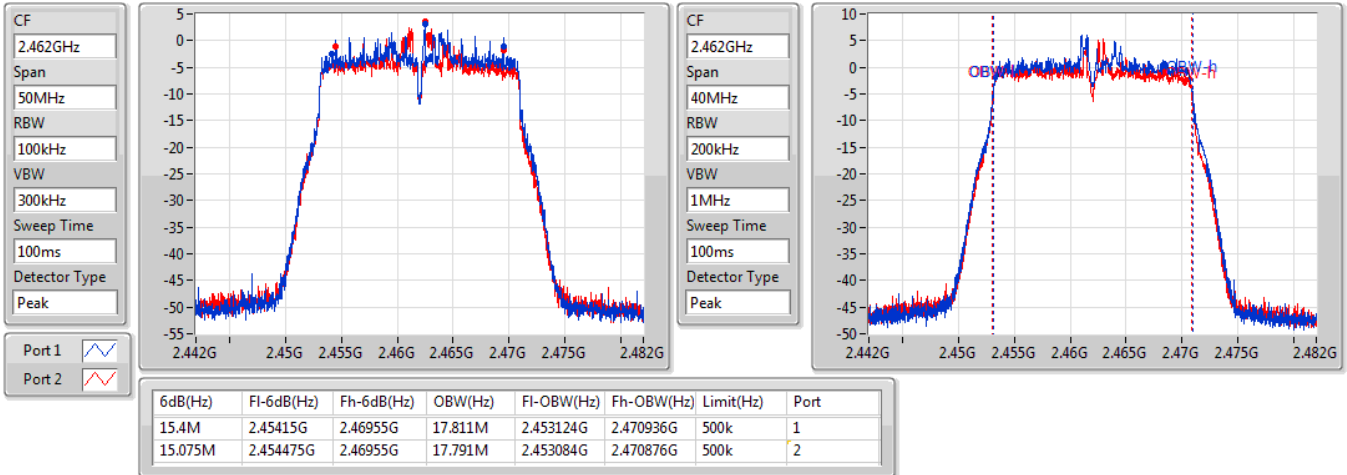
25/11/2019



VHT20-BF_Nss1,(MCS0)_2TX

2462MHz

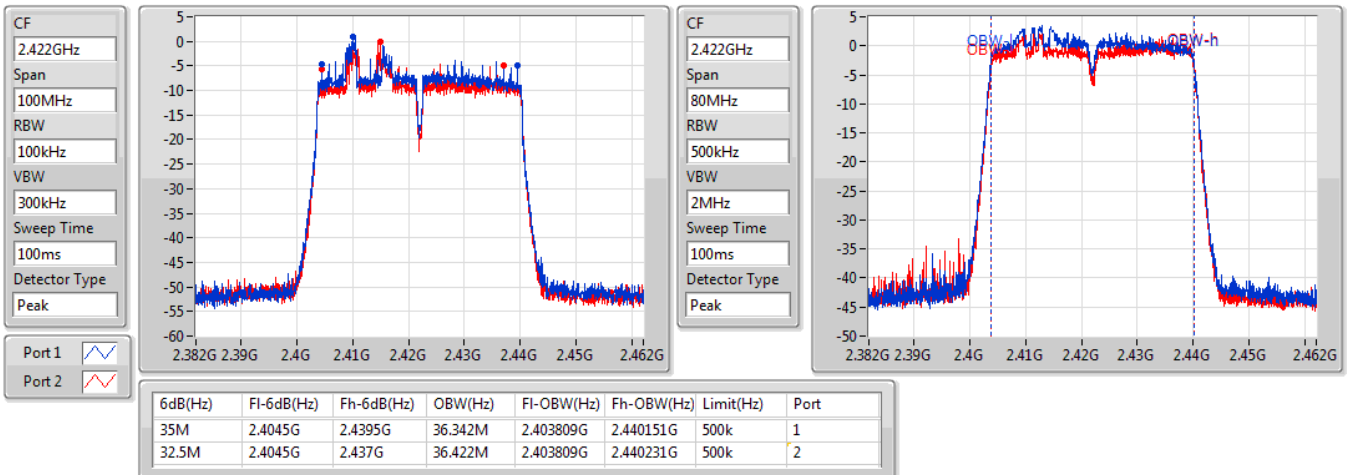
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VHT40-BF_Nss1,(MCS0)_2TX

2422MHz

25/11/2019

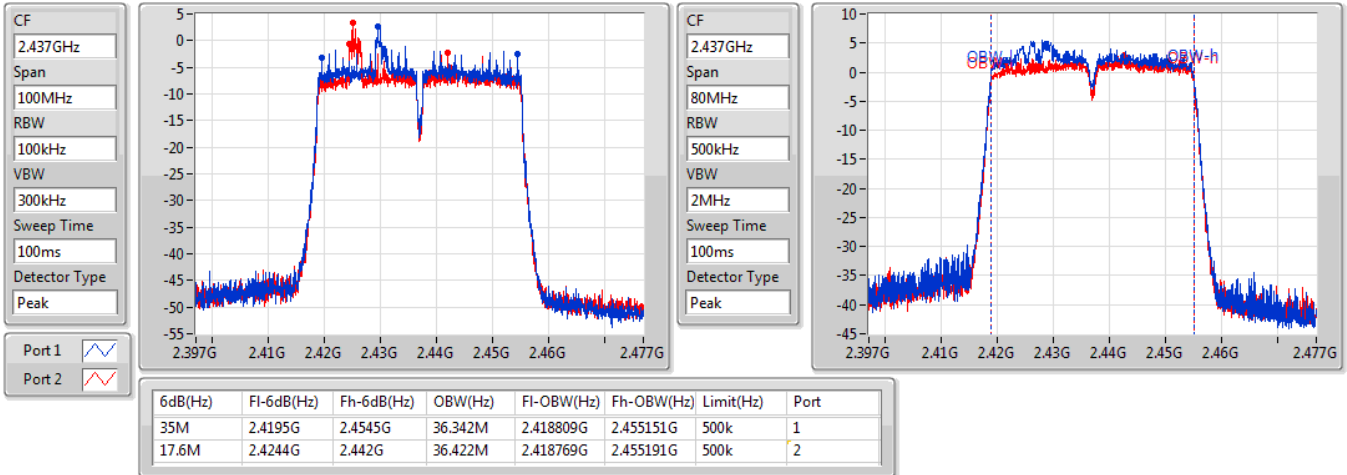


VHT40-BF_Nss1,(MCS0)_2TX

EBW

2437MHz

25/11/2019

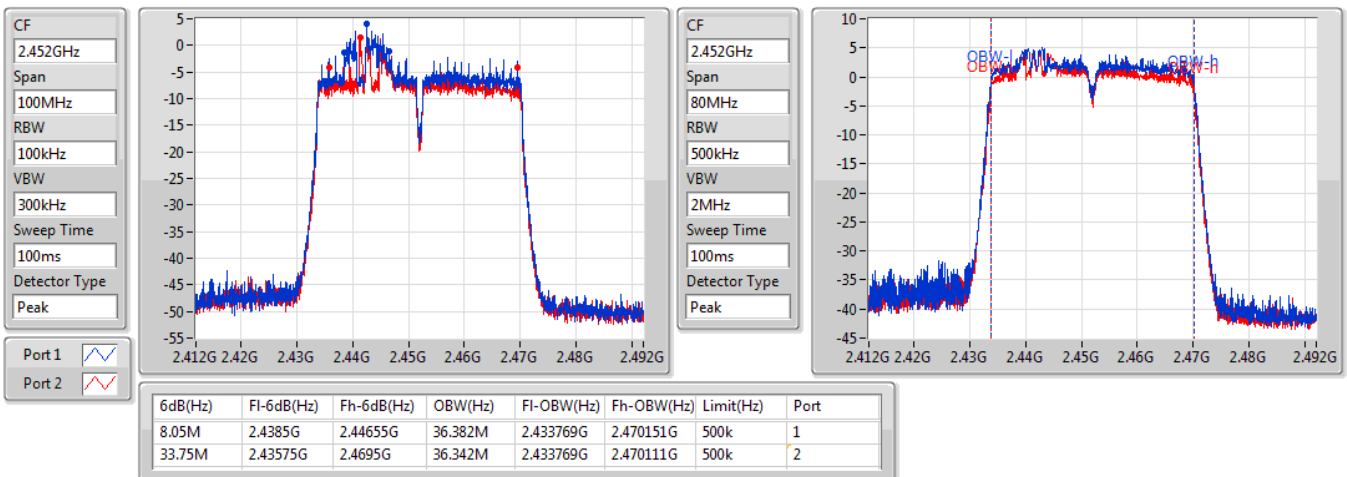


VHT40-BF_Nss1,(MCS0)_2TX

EBW

2452MHz

25/11/2019

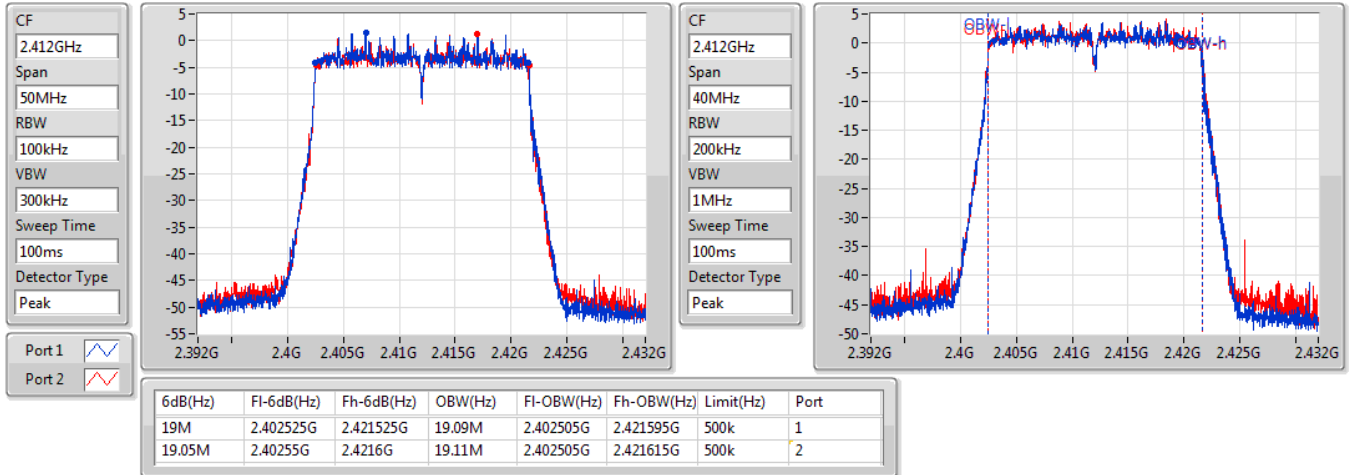


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

2412MHz

04/12/2019

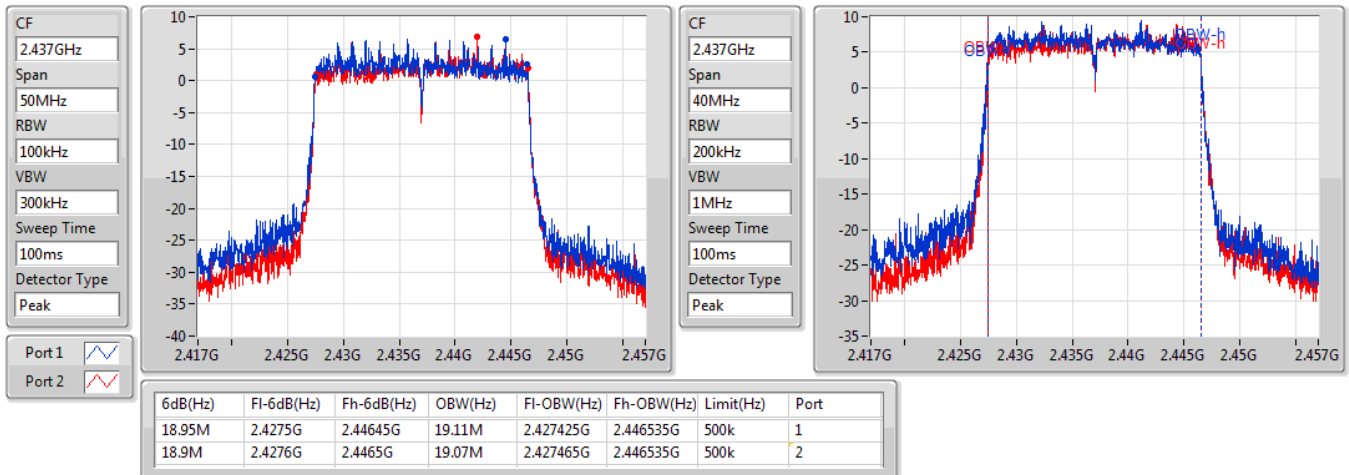


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

2437MHz

25/11/2019

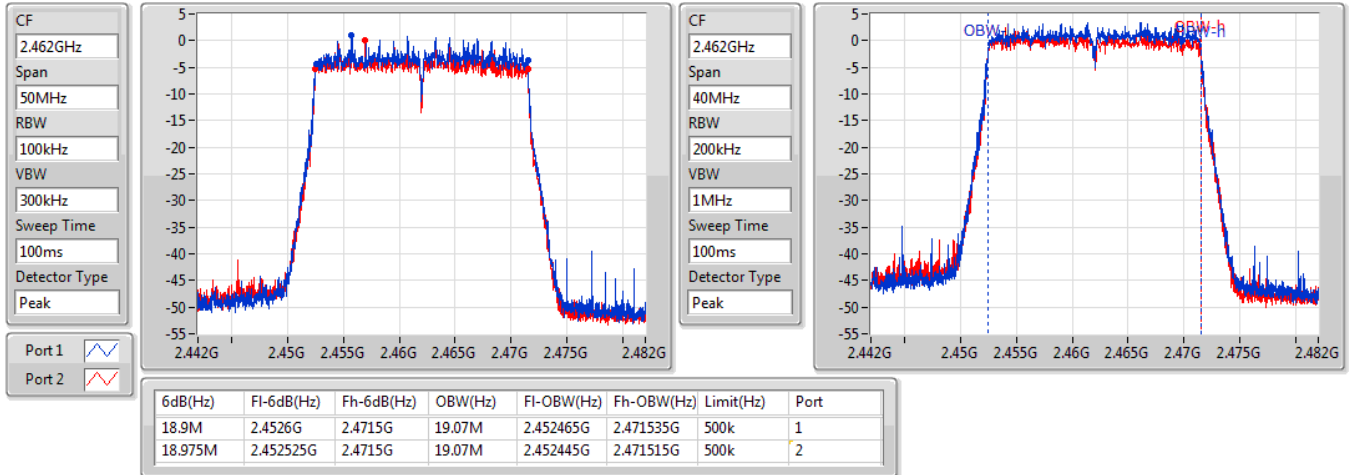


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

2462MHz

25/11/2019

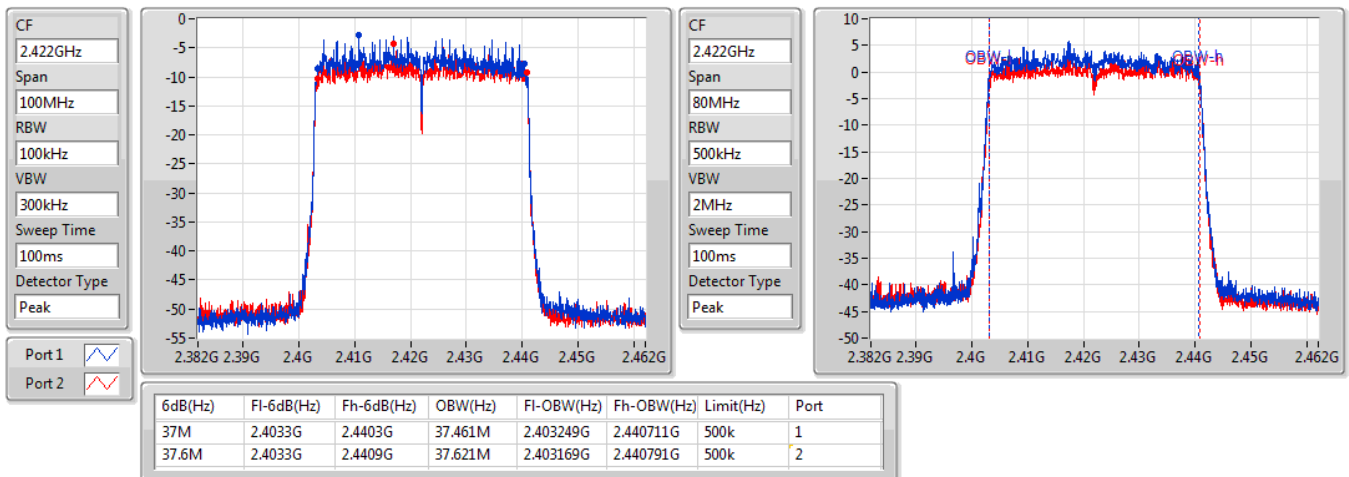


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

2422MHz

25/11/2019

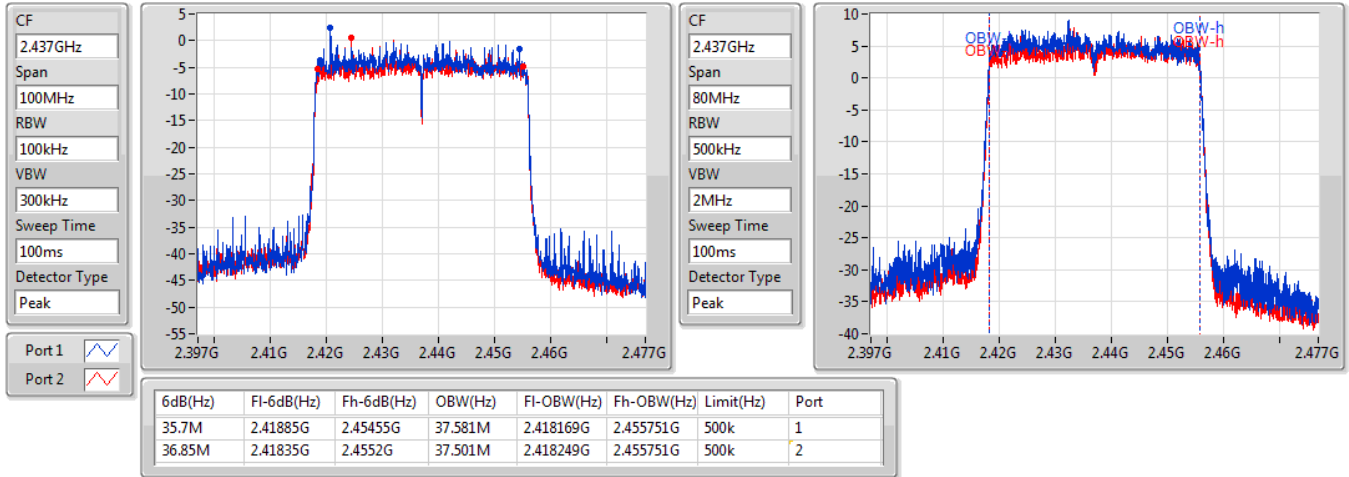


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

2437MHz

25/11/2019

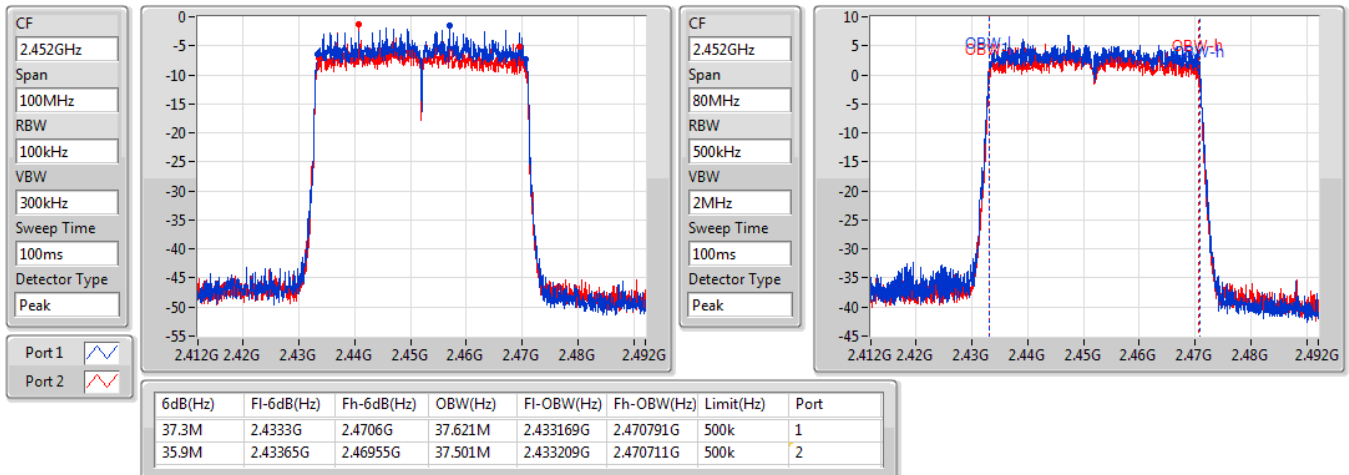


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

2452MHz

25/11/2019



**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20-BF_Nss1,(MCS0)_2TX	17.3M	17.831M	17M8D1D	15M	17.751M
VHT40-BF_Nss1,(MCS0)_2TX	35.05M	36.422M	36M4D1D	8.05M	36.302M
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	19M	19.11M	19M1D1D	18.9M	18.991M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	37.6M	37.621M	37M6D1D	35.9M	37.501M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
VHT20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	15M	17.811M	15.05M	17.751M
2437MHz	Pass	500k	17.3M	17.831M	15.1M	17.831M
2462MHz	Pass	500k	15.925M	17.831M	15.075M	17.771M
VHT40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	31.35M	36.302M	33.75M	36.422M
2437MHz	Pass	500k	35M	36.382M	35.05M	36.342M
2452MHz	Pass	500k	8.05M	36.382M	33.75M	36.342M
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	500k	19M	19.03M	19M	19.05M
2437MHz	Pass	500k	18.975M	19.11M	18.9M	19.07M
2462MHz	Pass	500k	18.95M	18.991M	18.95M	19.03M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	500k	37.6M	37.501M	36.9M	37.541M
2437MHz	Pass	500k	37.05M	37.541M	37.4M	37.581M
2452MHz	Pass	500k	37.3M	37.621M	35.9M	37.501M

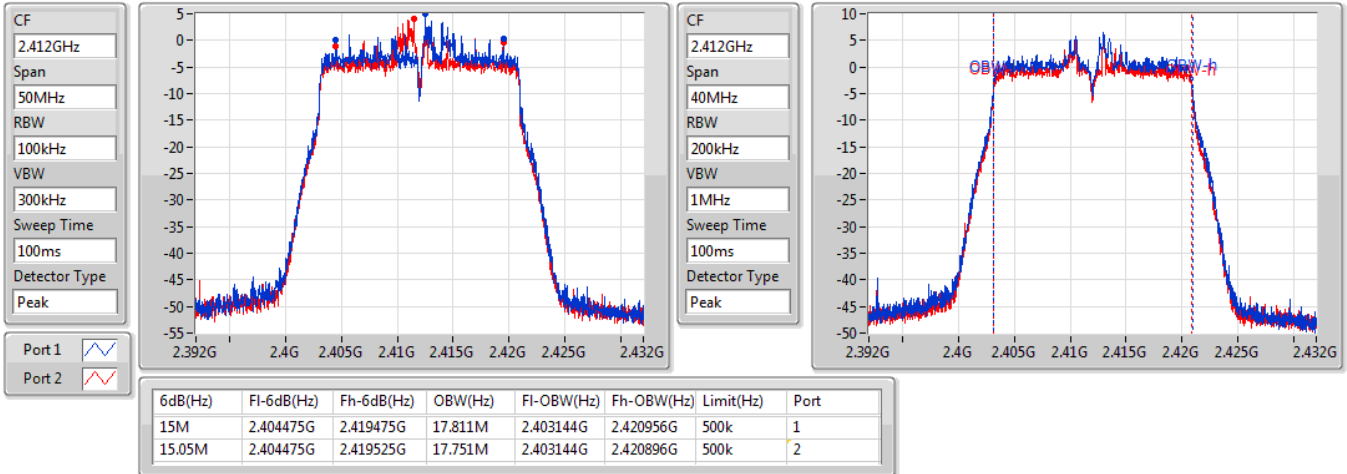
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20-BF_Nss1,(MCS0)_2TX

EBW

2412MHz

25/11/2019

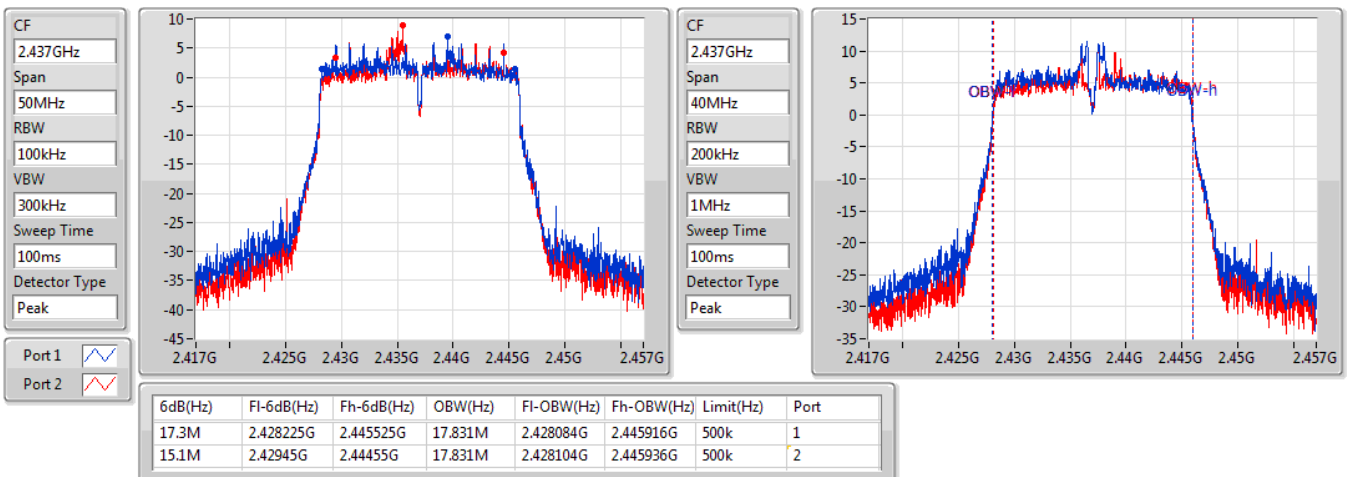


VHT20-BF_Nss1,(MCS0)_2TX

EBW

2437MHz

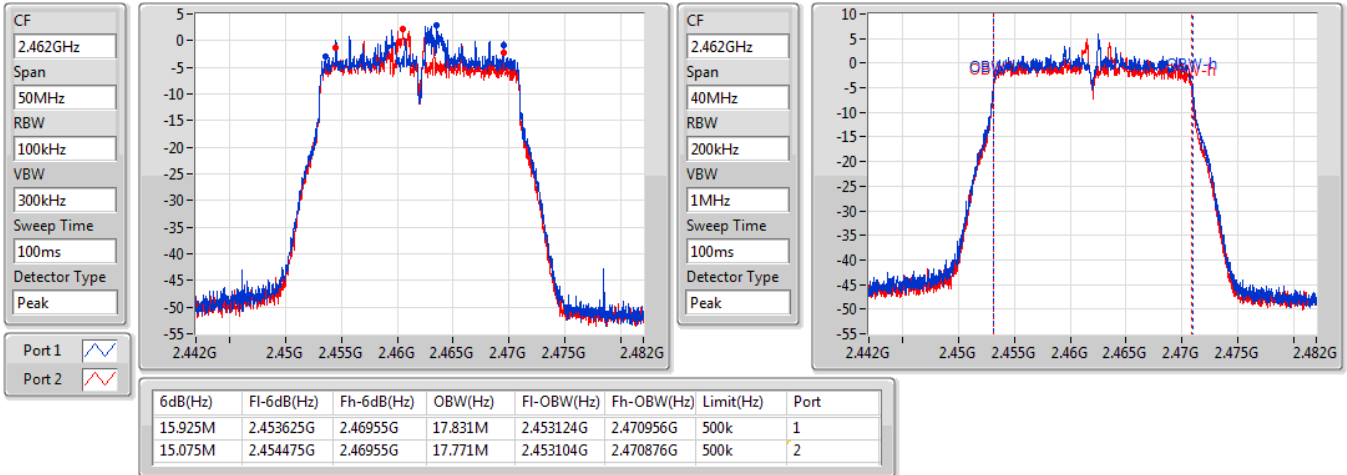
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VHT20-BF_Nss1,(MCS0)_2TX

2462MHz

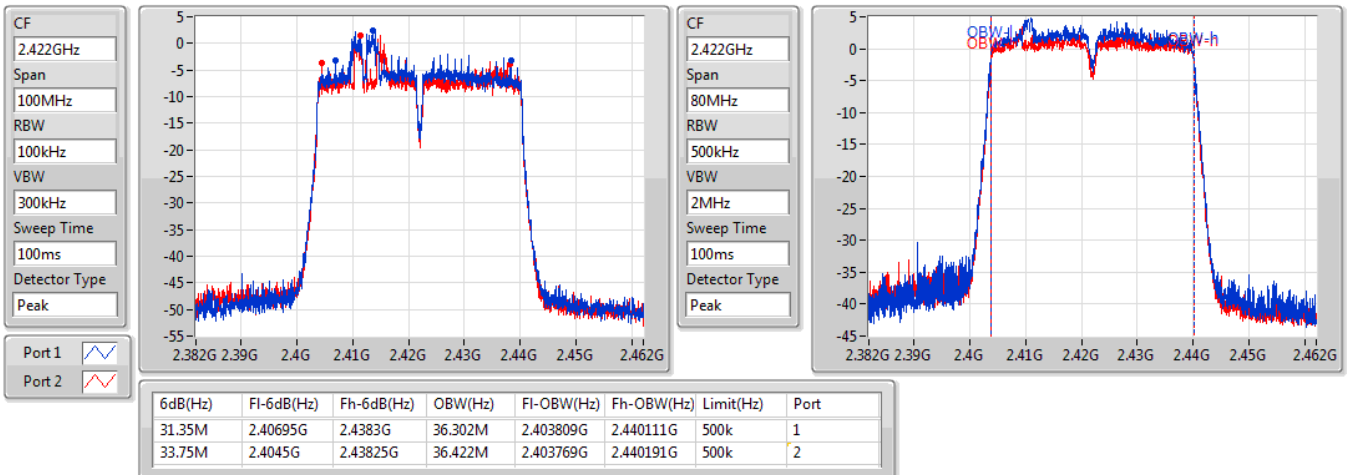
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VHT40-BF_Nss1,(MCS0)_2TX

2422MHz

25/11/2019

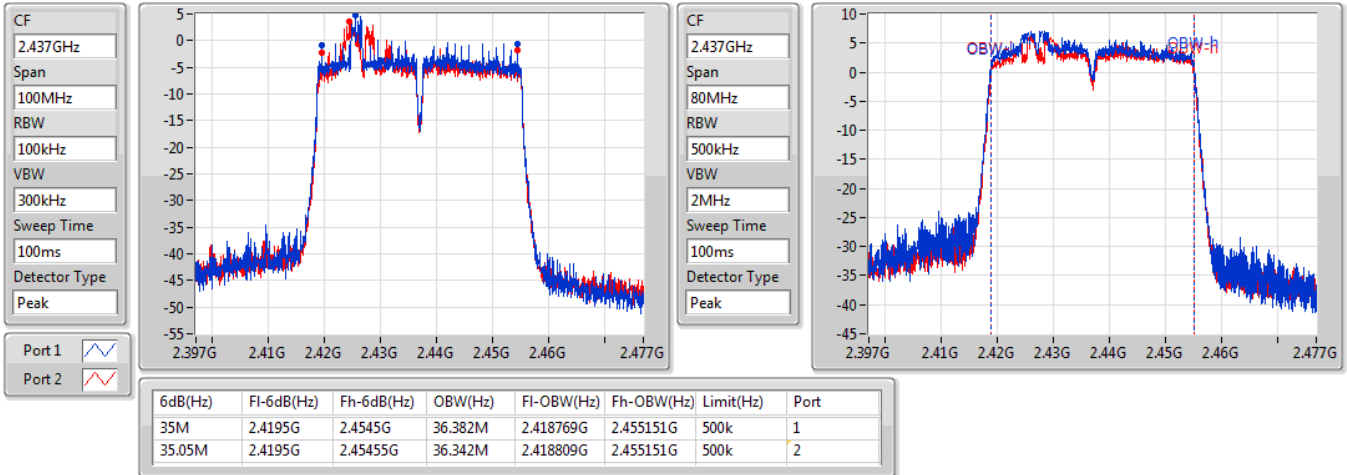


VHT40-BF_Nss1,(MCS0)_2TX

EBW

2437MHz

25/11/2019

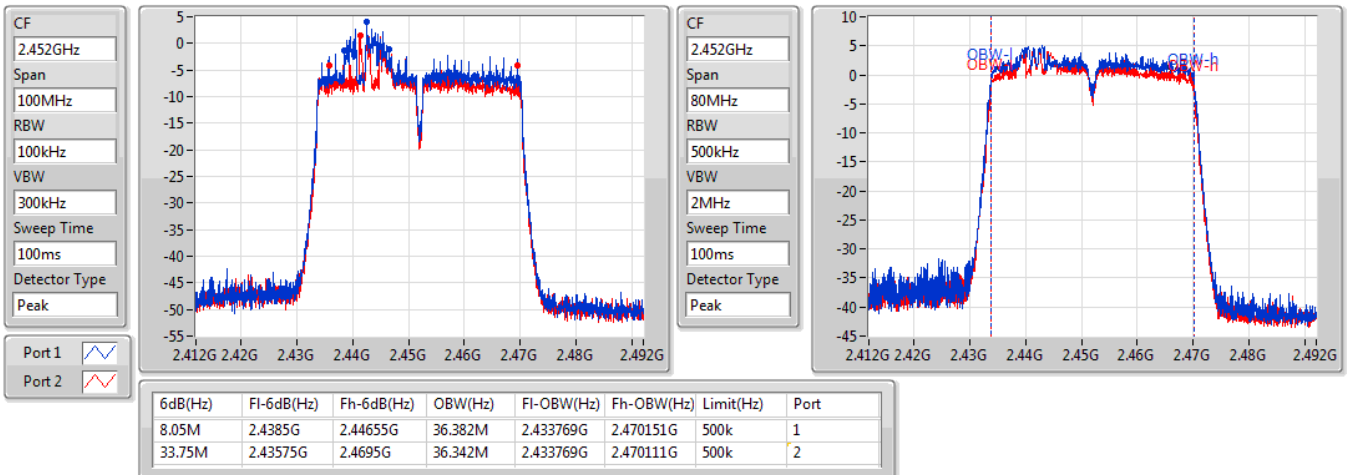


VHT40-BF_Nss1,(MCS0)_2TX

EBW

2452MHz

25/11/2019

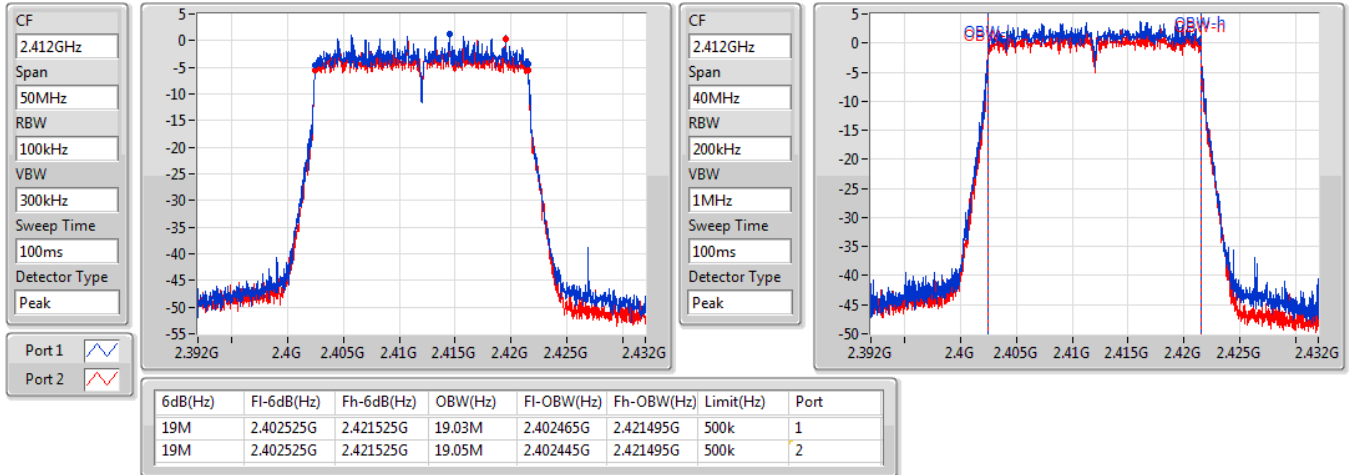


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

2412MHz

25/11/2019

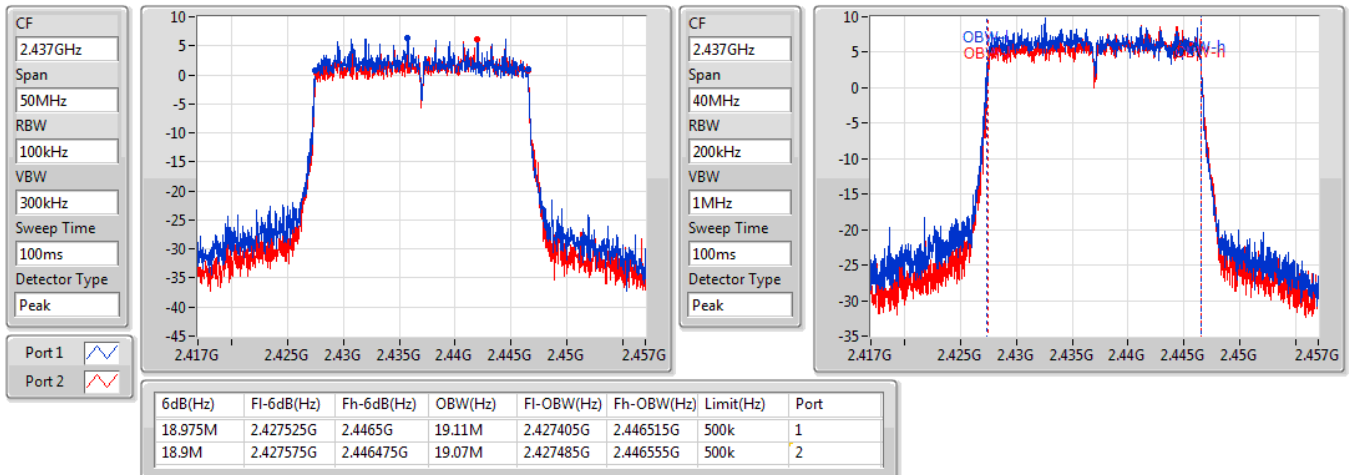


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

2437MHz

25/11/2019

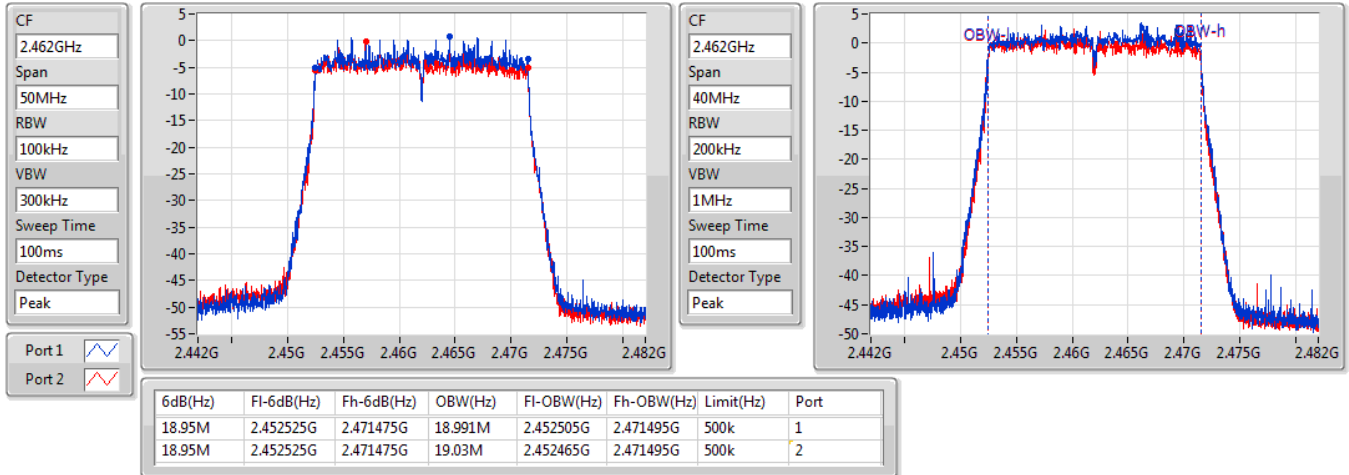


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

2462MHz

25/11/2019

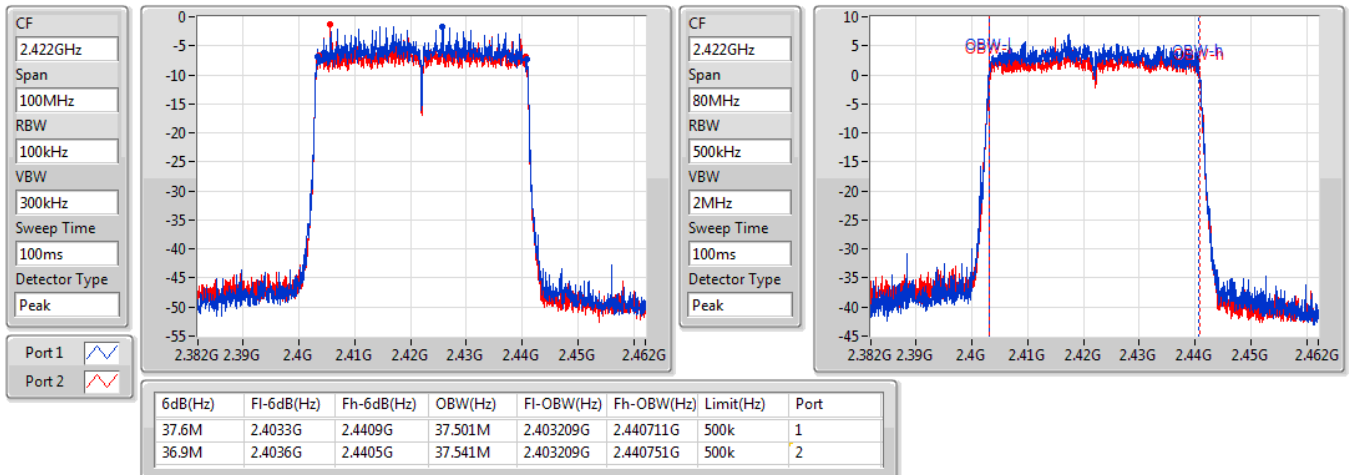


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

2422MHz

25/11/2019

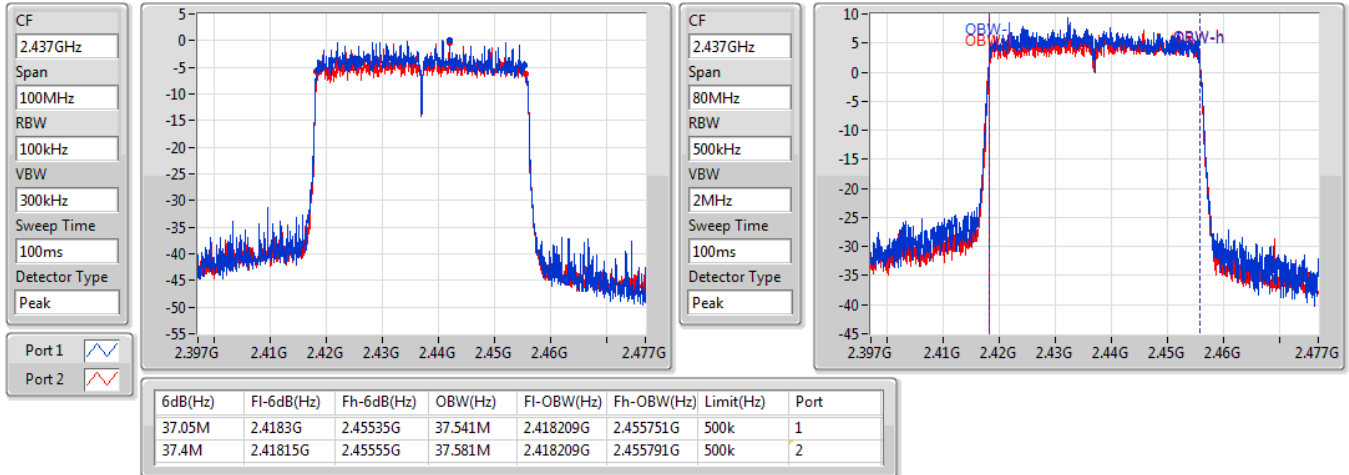


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

2437MHz

25/11/2019

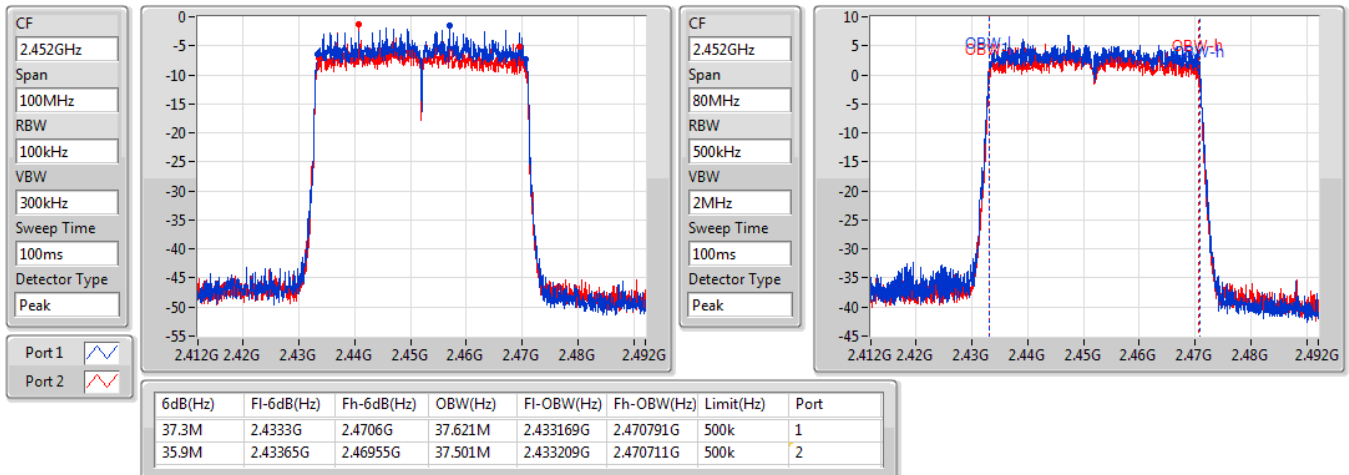


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

2452MHz

25/11/2019





Average Power_Non-Beamforming_Sample 1_Radio 1_1T1S Appendix C.1

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	23.54	0.22594
802.11g_Nss1,(6Mbps)_1TX	21.52	0.14191
VHT20_Nss1,(MCS0)_1TX	21.06	0.12764
VHT40_Nss1,(MCS0)_1TX	17.99	0.06295
802.11ax HEW20_Nss1,(MCS0)_1TX	21.40	0.13804
802.11ax HEW40_Nss1,(MCS0)_1TX	18.17	0.06561



Average Power_Non-Beamforming_Sample 1_Radio 1_1T1S Appendix C.1

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.50	23.06	23.06	30.00
2417MHz_TnomVnom	Pass	4.50	22.82	22.82	30.00
2437MHz_TnomVnom	Pass	4.50	23.54	23.54	30.00
2457MHz_TnomVnom	Pass	4.50	22.69	22.69	30.00
2462MHz_TnomVnom	Pass	4.50	22.53	22.53	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.50	17.77	17.77	30.00
2417MHz_TnomVnom	Pass	4.50	19.68	19.68	30.00
2437MHz_TnomVnom	Pass	4.50	21.52	21.52	30.00
2457MHz_TnomVnom	Pass	4.50	19.22	19.22	30.00
2462MHz_TnomVnom	Pass	4.50	16.73	16.73	30.00
VHT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.50	17.41	17.41	30.00
2417MHz_TnomVnom	Pass	4.50	19.08	19.08	30.00
2437MHz_TnomVnom	Pass	4.50	21.06	21.06	30.00
2457MHz_TnomVnom	Pass	4.50	18.51	18.51	30.00
2462MHz_TnomVnom	Pass	4.50	15.20	15.20	30.00
VHT40_Nss1,(MCS0)_1TX	-	-	-	-	-
2422MHz_TnomVnom	Pass	4.50	16.47	16.47	30.00
2427MHz_TnomVnom	Pass	4.50	16.82	16.82	30.00
2437MHz_TnomVnom	Pass	4.50	17.99	17.99	30.00
2447MHz_TnomVnom	Pass	4.50	17.57	17.57	30.00
2452MHz_TnomVnom	Pass	4.50	16.94	16.94	30.00
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.50	17.86	17.86	30.00
2417MHz_TnomVnom	Pass	4.50	19.34	19.34	30.00
2437MHz_TnomVnom	Pass	4.50	21.40	21.40	30.00
2457MHz_TnomVnom	Pass	4.50	18.81	18.81	30.00
2462MHz_TnomVnom	Pass	4.50	15.45	15.45	30.00
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-	-
2422MHz_TnomVnom	Pass	4.50	16.66	16.66	30.00
2427MHz_TnomVnom	Pass	4.50	17.04	17.04	30.00
2437MHz_TnomVnom	Pass	4.50	18.17	18.17	30.00
2447MHz_TnomVnom	Pass	4.50	18.04	18.04	30.00
2452MHz_TnomVnom	Pass	4.50	17.11	17.11	30.00

DG = Directional Gain; Port X = Port X output power

**Summary**

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	26.77	0.47534
802.11g_Nss1,(6Mbps)_2TX	24.65	0.29174
VHT20_Nss2,(MCS0)_2TX	23.50	0.22387
VHT40_Nss2,(MCS0)_2TX	19.94	0.09863
802.11ax HEW20_Nss2,(MCS0)_2TX	23.77	0.23823
802.11ax HEW40_Nss2,(MCS0)_2TX	20.14	0.10328

**Result**

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.53	22.06	22.05	25.07	30.00
2417MHz_TnomVnom	Pass	4.53	22.30	22.09	25.21	30.00
2437MHz_TnomVnom	Pass	4.53	23.46	24.04	26.77	30.00
2457MHz_TnomVnom	Pass	4.53	21.87	21.80	24.85	30.00
2462MHz_TnomVnom	Pass	4.53	21.30	21.15	24.24	30.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.53	18.61	18.53	21.58	30.00
2417MHz_TnomVnom	Pass	4.53	19.71	19.60	22.67	30.00
2437MHz_TnomVnom	Pass	4.53	21.65	21.63	24.65	30.00
2457MHz_TnomVnom	Pass	4.53	18.83	18.67	21.76	30.00
2462MHz_TnomVnom	Pass	4.53	16.60	16.83	19.73	30.00
VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.52	17.65	17.74	20.71	30.00
2417MHz_TnomVnom	Pass	4.52	18.43	18.35	21.40	30.00
2437MHz_TnomVnom	Pass	4.52	20.57	20.41	23.50	30.00
2457MHz_TnomVnom	Pass	4.52	18.25	18.02	21.15	30.00
2462MHz_TnomVnom	Pass	4.52	17.53	17.35	20.45	30.00
VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz_TnomVnom	Pass	4.52	15.31	15.37	18.35	30.00
2427MHz_TnomVnom	Pass	4.52	16.53	16.58	19.57	30.00
2437MHz_TnomVnom	Pass	4.52	16.91	16.95	19.94	30.00
2447MHz_TnomVnom	Pass	4.52	16.60	16.55	19.59	30.00
2452MHz_TnomVnom	Pass	4.52	16.37	16.40	19.40	30.00
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	4.52	17.84	17.87	20.87	30.00
2417MHz_TnomVnom	Pass	4.52	18.65	18.57	21.62	30.00
2437MHz_TnomVnom	Pass	4.52	20.72	20.79	23.77	30.00
2457MHz_TnomVnom	Pass	4.52	18.50	18.32	21.42	30.00
2462MHz_TnomVnom	Pass	4.52	17.72	17.57	20.66	30.00
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz_TnomVnom	Pass	4.52	15.43	15.75	18.60	30.00
2427MHz_TnomVnom	Pass	4.52	16.88	16.82	19.86	30.00
2437MHz_TnomVnom	Pass	4.52	17.04	17.22	20.14	30.00
2447MHz_TnomVnom	Pass	4.52	16.86	16.87	19.88	30.00
2452MHz_TnomVnom	Pass	4.52	16.63	16.60	19.63	30.00

DG = Directional Gain; **Port X** = Port X output power

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	20.52	0.11272
802.11g_Nss1,(6Mbps)_1TX	21.49	0.14093
VHT20_Nss1,(MCS0)_1TX	20.61	0.11508
VHT40_Nss1,(MCS0)_1TX	17.18	0.05224
802.11ax HEW20_Nss1,(MCS0)_1TX	20.86	0.12190
802.11ax HEW40_Nss1,(MCS0)_1TX	17.25	0.05309

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	5.00	19.93	19.93	30.00
2417MHz	Pass	5.00	20.52	20.52	30.00
2437MHz	Pass	5.00	20.32	20.32	30.00
2462MHz	Pass	5.00	19.87	19.87	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	5.00	17.12	17.12	30.00
2417MHz	Pass	5.00	19.41	19.41	30.00
2437MHz	Pass	5.00	21.49	21.49	30.00
2457MHz	Pass	5.00	18.36	18.36	30.00
2462MHz	Pass	5.00	15.94	15.94	30.00
VHT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	5.00	16.73	16.73	30.00
2417MHz	Pass	5.00	18.84	18.84	30.00
2437MHz	Pass	5.00	20.61	20.61	30.00
2457MHz	Pass	5.00	18.16	18.16	30.00
2462MHz	Pass	5.00	16.34	16.34	30.00
VHT40_Nss1,(MCS0)_1TX	-	-	-	-	-
2422MHz	Pass	5.00	15.17	15.17	30.00
2427MHz	Pass	5.00	15.05	15.05	30.00
2437MHz	Pass	5.00	17.18	17.18	30.00
2447MHz	Pass	5.00	16.04	16.04	30.00
2452MHz	Pass	5.00	15.92	15.92	30.00
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	5.00	17.03	17.03	30.00
2417MHz	Pass	5.00	19.11	19.11	30.00
2437MHz	Pass	5.00	20.86	20.86	30.00
2457MHz	Pass	5.00	18.49	18.49	30.00
2462MHz	Pass	5.00	16.77	16.77	30.00
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-	-
2422MHz	Pass	5.00	15.31	15.31	30.00
2427MHz	Pass	5.00	15.27	15.27	30.00
2437MHz	Pass	5.00	17.25	17.25	30.00
2447MHz	Pass	5.00	16.29	16.29	30.00
2452MHz	Pass	5.00	15.96	15.96	30.00

DG = Directional Gain; **Port X** = Port X output power



Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	23.11	0.20464
802.11g_Nss1,(6Mbps)_2TX	22.65	0.18408
VHT20_Nss2,(MCS0)_2TX	21.50	0.14125
VHT40_Nss2,(MCS0)_2TX	17.56	0.05702
802.11ax HEW20_Nss2,(MCS0)_2TX	21.86	0.15346
802.11ax HEW40_Nss2,(MCS0)_2TX	17.69	0.05875

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.00	18.92	18.81	21.88	30.00
2417MHz	Pass	5.00	20.15	20.05	23.11	30.00
2437MHz	Pass	5.00	20.04	19.95	23.01	30.00
2457MHz	Pass	5.00	19.82	19.89	22.87	30.00
2462MHz	Pass	5.00	18.62	18.79	21.72	30.00
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.00	15.06	14.31	17.71	30.00
2417MHz	Pass	5.00	16.54	16.01	19.29	30.00
2437MHz	Pass	5.00	19.84	19.42	22.65	30.00
2457MHz	Pass	5.00	15.88	15.56	18.73	30.00
2462MHz	Pass	5.00	14.85	14.75	17.81	30.00
VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.00	15.21	14.49	17.88	30.00
2417MHz	Pass	5.00	16.94	16.16	19.58	30.00
2437MHz	Pass	5.00	18.72	18.24	21.50	30.00
2457MHz	Pass	5.00	16.08	15.79	18.95	30.00
2462MHz	Pass	5.00	15.15	14.83	18.00	30.00
VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	5.00	13.46	12.52	16.03	30.00
2427MHz	Pass	5.00	13.59	12.65	16.16	30.00
2437MHz	Pass	5.00	14.91	14.16	17.56	30.00
2447MHz	Pass	5.00	14.39	13.69	17.06	30.00
2452MHz	Pass	5.00	13.92	13.07	16.53	30.00
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	5.00	15.26	14.69	17.99	30.00
2417MHz	Pass	5.00	17.12	16.56	19.86	30.00
2437MHz	Pass	5.00	18.98	18.71	21.86	30.00
2457MHz	Pass	5.00	16.32	16.15	19.25	30.00
2462MHz	Pass	5.00	15.38	15.24	18.32	30.00
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	5.00	13.71	12.60	16.20	30.00
2427MHz	Pass	5.00	13.84	12.89	16.40	30.00
2437MHz	Pass	5.00	15.11	14.20	17.69	30.00
2447MHz	Pass	5.00	14.67	14.03	17.37	30.00
2452MHz	Pass	5.00	14.15	13.49	16.84	30.00

DG = Directional Gain; **Port X** = Port X output power



Average Power_Non-Beamforming_Sample 2_Radio 1_Panel 1_1T1S

Appendix C.5

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	20.55	0.11350
802.11g_Nss1,(6Mbps)_1TX	20.60	0.11482
VHT20_Nss1,(MCS0)_1TX	20.02	0.10046
VHT40_Nss1,(MCS0)_1TX	16.12	0.04093
802.11ax HEW20_Nss1,(MCS0)_1TX	20.32	0.10765
802.11ax HEW40_Nss1,(MCS0)_1TX	16.37	0.04335



Average Power_Non-Beamforming_Sample 2_Radio 1_Panel 1_1T1S

Appendix C.5

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	7.80	20.13	20.13	28.20
2417MHz	Pass	7.80	20.42	20.42	28.20
2437MHz	Pass	7.80	20.55	20.55	28.20
2457MHz	Pass	7.80	20.48	20.48	28.20
2462MHz	Pass	7.80	19.76	19.76	28.20
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	7.80	15.81	15.81	28.20
2417MHz	Pass	7.80	17.47	17.47	28.20
2437MHz	Pass	7.80	20.60	20.60	28.20
2457MHz	Pass	7.80	16.67	16.67	28.20
2462MHz	Pass	7.80	15.33	15.33	28.20
VHT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	7.80	13.28	13.28	28.20
2417MHz	Pass	7.80	16.34	16.34	28.20
2437MHz	Pass	7.80	20.02	20.02	28.20
2457MHz	Pass	7.80	16.35	16.35	28.20
2462MHz	Pass	7.80	12.91	12.91	28.20
VHT40_Nss1,(MCS0)_1TX	-	-	-	-	-
2422MHz	Pass	7.80	15.15	15.15	28.20
2427MHz	Pass	7.80	15.08	15.08	28.20
2437MHz	Pass	7.80	16.12	16.12	28.20
2447MHz	Pass	7.80	14.79	14.79	28.20
2452MHz	Pass	7.80	14.63	14.63	28.20
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz	Pass	7.80	13.60	13.60	28.20
2417MHz	Pass	7.80	16.65	16.65	28.20
2437MHz	Pass	7.80	20.32	20.32	28.20
2457MHz	Pass	7.80	16.81	16.81	28.20
2462MHz	Pass	7.80	13.20	13.20	28.20
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-	-
2422MHz	Pass	7.80	15.34	15.34	28.20
2427MHz	Pass	7.80	15.34	15.34	28.20
2437MHz	Pass	7.80	16.37	16.37	28.20
2447MHz	Pass	7.80	15.13	15.13	28.20
2452MHz	Pass	7.80	14.82	14.82	28.20

DG = Directional Gain; Port X = Port X output power



Average Power_Non-Beamforming_Sample 2_Radio 1_Panel 1_2T2S

Appendix C.6

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_2TX	20.50	0.11220
802.11g_Nss1,(6Mbps)_2TX	21.89	0.15453
VHT20_Nss2,(MCS0)_2TX	21.29	0.13459
VHT40_Nss2,(MCS0)_2TX	17.38	0.05470
802.11ax HEW20_Nss2,(MCS0)_2TX	21.46	0.13996
802.11ax HEW40_Nss2,(MCS0)_2TX	17.60	0.05754



Average Power_Non-Beamforming_Sample 2_Radio 1_Panel 1_2T2S

Appendix C.6

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.80	17.72	17.25	20.50	28.20
2437MHz	Pass	7.80	16.57	16.85	19.72	28.20
2462MHz	Pass	7.80	17.22	17.47	20.36	28.20
802.11g_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.80	14.84	14.33	17.60	28.20
2417MHz	Pass	7.80	15.74	15.22	18.50	28.20
2437MHz	Pass	7.80	18.94	18.82	21.89	28.20
2457MHz	Pass	7.80	15.36	15.56	18.47	28.20
2462MHz	Pass	7.80	15.03	15.12	18.09	28.20
VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.80	15.23	14.96	18.11	28.20
2417MHz	Pass	7.80	16.04	15.74	18.90	28.20
2437MHz	Pass	7.80	18.25	18.31	21.29	28.20
2457MHz	Pass	7.80	16.04	16.36	19.21	28.20
2462MHz	Pass	7.80	15.16	15.24	18.21	28.20
VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	7.80	13.95	13.26	16.63	28.20
2427MHz	Pass	7.80	13.83	13.35	16.61	28.20
2437MHz	Pass	7.80	14.47	14.09	17.29	28.20
2447MHz	Pass	7.80	14.48	14.25	17.38	28.20
2452MHz	Pass	7.80	13.99	13.93	16.97	28.20
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2412MHz	Pass	7.80	15.68	15.30	18.50	28.20
2417MHz	Pass	7.80	16.47	15.83	19.17	28.20
2437MHz	Pass	7.80	18.55	18.34	21.46	28.20
2457MHz	Pass	7.80	16.41	16.63	19.53	28.20
2462MHz	Pass	7.80	15.21	15.43	18.33	28.20
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
2422MHz	Pass	7.80	14.22	13.50	16.89	28.20
2427MHz	Pass	7.80	14.17	13.62	16.91	28.20
2437MHz	Pass	7.80	14.71	14.46	17.60	28.20
2447MHz	Pass	7.80	14.68	14.41	17.56	28.20
2452MHz	Pass	7.80	14.11	14.09	17.11	28.20

DG = Directional Gain; Port X = Port X output power