

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 15.407

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.)



Table of Contents

HISTORY OF THIS TEST REPORT	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Information.....	5
1.2 Testing Applied Standards	12
1.3 Testing Location Information	12
1.4 Measurement Uncertainty	12
2 TEST CONFIGURATION OF EUT.....	13
2.1 Test Condition	13
2.2 Test Channel Mode	13
2.3 The Worst Case Measurement Configuration.....	43
2.4 Support Equipment.....	45
2.5 Test Setup Diagram	46
3 TRANSMITTER TEST RESULT	50
3.1 AC Power-line Conducted Emissions	50
3.2 Emission Bandwidth	52
3.3 Maximum Conducted Output Power	53
3.4 Peak Power Spectral Density.....	55
3.5 Unwanted Emissions.....	57
4 TEST EQUIPMENT AND CALIBRATION DATA.....	62
APPENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS	
APPENDIX B. TEST RESULTS OF EMISSION BANDWIDTH	
APPENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER	
APPENDIX D. TEST RESULTS OF PEAK POWER SPECTRAL DENSITY	
APPENDIX E. TEST RESULTS OF UNWANTED EMISSIONS	
APPENDIX F. TEST PHOTOS	
PHOTOGRAPHS OF EUT V01	



History of this test report

TEL : 886-3-3273456
FAX : 886-3-3270973
Report Template No.: HE1-D1 Ver2.4
FCC ID: QXO-AP310

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	15.407(a)	Emission Bandwidth	PASS	-
3.3	15.407(a)	Maximum Conducted Output Power	PASS	-
3.4	15.407(a)	Peak Power Spectral Density	PASS	-
3.5	15.407(b)	Unwanted Emissions	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
5150-5250	a, n (HT20), ac (VHT20), ax(HEW 20)	5180-5240	36-48 [4]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40), ax(HEW 40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80), ax(HEW 80)	5210	42 [1]
5725-5850		5775	155 [1]

Non-Beamforming

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	1TX
5.725-5.85GHz	802.11a	20	1TX
5.15-5.25GHz	802.11ac VHT20	20	1TX
5.725-5.85GHz	802.11ac VHT20	20	1TX
5.15-5.25GHz	802.11ac VHT40	40	1TX
5.725-5.85GHz	802.11ac VHT40	40	1TX
5.15-5.25GHz	802.11ac VHT80	80	1TX
5.725-5.85GHz	802.11ac VHT80	80	1TX
5.15-5.25GHz	802.11ax HEW20	20	1TX
5.725-5.85GHz	802.11ax HEW20	20	1TX
5.15-5.25GHz	802.11ax HEW40	40	1TX
5.725-5.85GHz	802.11ax HEW40	40	1TX
5.15-5.25GHz	802.11ax HEW80	80	1TX
5.725-5.85GHz	802.11ax HEW80	80	1TX
5.15-5.25GHz	802.11a	20	2TX
5.725-5.85GHz	802.11a	20	2TX
5.15-5.25GHz	802.11ac VHT20	20	2TX
5.725-5.85GHz	802.11ac VHT20	20	2TX
5.15-5.25GHz	802.11ac VHT40	40	2TX
5.725-5.85GHz	802.11ac VHT40	40	2TX
5.15-5.25GHz	802.11ac VHT80	80	2TX

Band	Mode	BWch (MHz)	Nant
5.725-5.85GHz	802.11ac VHT80	80	2TX
5.15-5.25GHz	802.11ax HEW20	20	2TX
5.725-5.85GHz	802.11ax HEW20	20	2TX
5.15-5.25GHz	802.11ax HEW40	40	2TX
5.725-5.85GHz	802.11ax HEW40	40	2TX
5.15-5.25GHz	802.11ax HEW80	80	2TX
5.725-5.85GHz	802.11ax HEW80	80	2TX

Beamforming

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11ac VHT20-BF	20	2TX
5.725-5.85GHz	802.11ac VHT20-BF	20	2TX
5.15-5.25GHz	802.11ac VHT40-BF	40	2TX
5.725-5.85GHz	802.11ac VHT40-BF	40	2TX
5.15-5.25GHz	802.11ac VHT80-BF	80	2TX
5.725-5.85GHz	802.11ac VHT80-BF	80	2TX
5.15-5.25GHz	802.11ax HEW20-BF	20	2TX
5.725-5.85GHz	802.11ax HEW20-BF	20	2TX
5.15-5.25GHz	802.11ax HEW40-BF	40	2TX
5.725-5.85GHz	802.11ax HEW40-BF	40	2TX
5.15-5.25GHz	802.11ax HEW80-BF	80	2TX
5.725-5.85GHz	802.11ax HEW80-BF	80	2TX

Note:

- ♦ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40, VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ HEW20, HEW40, HEW80 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, HEW 80 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	☐ Outdoor AP	☒	Indoor AP
	☐ Fixed P2P AP	☐	Outdoor/Indoor Client
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_1T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a_Nss1,(6Mbps)_1TX	0.952	0.21	2.067m	1k
802.11ac VHT20_Nss1,(MCS0)_1TX	0.986	0.06	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ac VHT40_Nss1,(MCS0)_1TX	0.973	0.12	955.938u	3k
802.11ac VHT80_Nss1,(MCS0)_1TX	0.945	0.25	463.75u	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	0.964	0.16	774.375u	3k
802.11ax HEW80_Nss1,(MCS0)_1TX	0.931	0.31	404.688u	3k

Sample 1_2T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a_Nss1,(6Mbps)_2TX	0.95	0.22	2.066m	1k
802.11ac VHT20_Nss2,(MCS0)_2TX	0.973	0.12	990.625u	3k
802.11ac VHT40_Nss2,(MCS0)_2TX	0.947	0.24	501.563u	3k
802.11ac VHT80_Nss2,(MCS0)_2TX	0.903	0.44	257.813u	10k
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
802.11ax HEW80_Nss2,(MCS0)_2TX	0.892	0.5	242.187u	10k

Sample 2_1T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a_Nss1,(6Mbps)_1TX	0.951	0.22	2.066m	1k
802.11ac VHT20_Nss1,(MCS0)_1TX	0.986	0.06	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ac VHT40_Nss1,(MCS0)_1TX	0.971	0.13	954.688u	3k
802.11ac VHT80_Nss1,(MCS0)_1TX	0.944	0.25	462.5u	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
802.11ax HEW80_Nss1,(MCS0)_1TX	0.929	0.32	403.125u	3k

Sample 2_2T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a_Nss1,(6Mbps)_2TX	0.95	0.22	2.066m	1k
802.11ac VHT20_Nss2,(MCS0)_2TX	0.973	0.12	990.625u	3k
802.11ac VHT40_Nss2,(MCS0)_2TX	0.947	0.24	501.563u	3k
802.11ac VHT80_Nss2,(MCS0)_2TX	0.903	0.44	257.813u	10k
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
802.11ax HEW80_Nss2,(MCS0)_2TX	0.892	0.5	242.187u	10k

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

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	0.902	0.45	1.95m	1k
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	0.906	0.43	2.798m	1k
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	0.915	0.39	3.43m	300
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	0.879	0.56	1.503m	1k
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	0.882	0.55	2.223m	1k
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	0.917	0.38	3.844m	300

Sample 1_Radio 2

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	0.9	0.46	1.95m	1k
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	0.903	0.44	2.798m	1k
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	0.909	0.41	3.43m	300
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	0.869	0.61	1.503m	1k
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	0.88	0.56	2.223m	1k
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	0.918	0.37	3.844m	300

Sample 2_Radio 1

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	0.899	0.46	1.95m	1k
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	0.903	0.44	2.798m	1k
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	0.913	0.4	3.43m	300
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	0.872	0.59	1.503m	1k
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	0.884	0.54	2.223m	1k
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	0.911	0.4	3.844m	300

Sample 2_Radio 2

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	0.896	0.48	1.95m	1k
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	0.899	0.46	2.798m	1k
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	0.917	0.38	3.43m	300
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	0.877	0.57	1.503m	1k
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	0.882	0.55	2.223m	1k
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	0.913	0.4	3.844m	300

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 789033 D02 v02r01
- ♦ 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

Condition Item	Abbreviation/Remark	Remark
TnomVnom	Tnom	20°C
	Vnom	120V

2.2 Test Channel Mode

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

Non-Beamforming

Sample 1_Radio 1_1T1S

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	20.5
5200MHz	23.5
5240MHz	21.25
5745MHz	23.75
5785MHz	21.25
5825MHz	21.25
802.11ac VHT20_Nss1,(MCS0)_1TX	
5180MHz	19.25
5200MHz	22.75
5240MHz	21
5745MHz	23.75
5785MHz	21.5
5825MHz	22.25
802.11ac VHT40_Nss1,(MCS0)_1TX	
5190MHz	17.5
5230MHz	21
5755MHz	23.25
5795MHz	24
802.11ac VHT80_Nss1,(MCS0)_1TX	
5210MHz	17
5775MHz	21.25
802.11ax HEW20_Nss1,(MCS0)_1TX	



Mode	Power Setting
5180MHz	19.25
5200MHz	22.75
5240MHz	21
5745MHz	23.75
5785MHz	21.5
5825MHz	22.25
802.11ax HEW40_Nss1,(MCS0)_1TX	
5190MHz	17.5
5230MHz	21
5755MHz	23.25
5795MHz	24
802.11ax HEW80_Nss1,(MCS0)_1TX	
5210MHz	17
5775MHz	21.25



Sample 1_Radio 1_2T2S

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	20
5200MHz	23.5
5240MHz	20
5745MHz	23.75
5785MHz	21
5825MHz	21.5
802.11ac VHT20_Nss2,(MCS0)_2TX	
5180MHz	19
5200MHz	22.75
5240MHz	21.25
5745MHz	23.5
5785MHz	22
5825MHz	22.25
802.11ac VHT40_Nss2,(MCS0)_2TX	
5190MHz	16.25
5230MHz	20.75
5755MHz	23
5795MHz	23.5
802.11ac VHT80_Nss2,(MCS0)_2TX	
5210MHz	16.75
5775MHz	21.75
802.11ax HEW20_Nss2,(MCS0)_2TX	
5180MHz	19
5200MHz	22.75
5240MHz	21.25
5745MHz	23.5
5785MHz	22
5825MHz	22.25
802.11ax HEW40_Nss2,(MCS0)_2TX	
5190MHz	16.25
5230MHz	20.75
5755MHz	23
5795MHz	23.5



Mode	Power Setting
802.11ax HEW80_Nss2,(MCS0)_2TX	
5210MHz	16.75
5775MHz	21.75

**Sample 1_Radio 2_1T1S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	21
5200MHz	24.25
5240MHz	22.5
5745MHz	25.25
5785MHz	30
5825MHz	30
802.11ac VHT20_Nss1,(MCS0)_1TX	
5180MHz	20
5200MHz	23.25
5240MHz	22.5
5745MHz	24.75
5785MHz	30
5825MHz	25
802.11ac VHT40_Nss1,(MCS0)_1TX	
5190MHz	17
5230MHz	22
5755MHz	24
5795MHz	24.5
802.11ac VHT80_Nss1,(MCS0)_1TX	
5210MHz	16.75
5775MHz	21.75
802.11ax HEW20_Nss1,(MCS0)_1TX	
5180MHz	20
5200MHz	23.25
5240MHz	22.5
5745MHz	24.75
5785MHz	30
5825MHz	25
802.11ax HEW40_Nss1,(MCS0)_1TX	
5190MHz	17
5230MHz	22
5755MHz	24
5795MHz	24.5



Mode	Power Setting
802.11ax HEW80_Nss1,(MCS0)_1TX	
5210MHz	16.75
5775MHz	21.75

**Sample 1_Radio 2_2T2S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	20
5200MHz	23.5
5240MHz	22
5745MHz	23.75
5785MHz	30
5825MHz	25.25
802.11ac VHT20_Nss2,(MCS0)_2TX	
5180MHz	18.75
5200MHz	22.5
5240MHz	21.75
5745MHz	23.75
5785MHz	30
5825MHz	30
802.11ac VHT40_Nss2,(MCS0)_2TX	
5190MHz	16.25
5230MHz	21.75
5755MHz	23.75
5795MHz	24.75
802.11ac VHT80_Nss2,(MCS0)_2TX	
5210MHz	17.25
5775MHz	22.5
802.11ax HEW20_Nss2,(MCS0)_2TX	
5180MHz	18.75
5200MHz	22.5
5240MHz	21.75
5745MHz	23.75
5785MHz	30
5825MHz	30
802.11ax HEW40_Nss2,(MCS0)_2TX	
5190MHz	16.25
5230MHz	21.75
5755MHz	23.75
5795MHz	24.75



Mode	Power Setting
802.11ax HEW80_Nss2,(MCS0)_2TX	
5210MHz	17.25
5775MHz	22.5

**Sample 2_Radio 1_Omni_1T1S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	16.75
5200MHz	21.75
5240MHz	20.75
5745MHz	22.75
5785MHz	22.5
5825MHz	22.5
802.11ac VHT20_Nss1,(MCS0)_1TX	-
5180MHz	17.5
5200MHz	21.25
5240MHz	20.5
5745MHz	22
5785MHz	21.25
5825MHz	22.25
802.11ac VHT40_Nss1,(MCS0)_1TX	-
5190MHz	13.5
5230MHz	19.5
5755MHz	21.75
5795MHz	21.75
802.11ac VHT80_Nss1,(MCS0)_1TX	-
5210MHz	14
5775MHz	19.5
802.11ax HEW20_Nss1,(MCS0)_1TX	-
5180MHz	17.5
5200MHz	21.25
5240MHz	20.5
5745MHz	22
5785MHz	21.25
5825MHz	22.25
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5190MHz	13.5
5230MHz	19.75
5755MHz	21.75
5795MHz	21.75



Mode	Power Setting
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5210MHz	14
5775MHz	19.5

**Sample 2_Radio 1_Omni_2T2S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	16.25
5200MHz	20.5
5240MHz	20.25
5745MHz	22.5
5785MHz	22.25
5825MHz	22.5
802.11ac VHT20_Nss2,(MCS0)_2TX	-
5180MHz	15.75
5200MHz	20
5240MHz	20
5745MHz	23.25
5785MHz	23.75
5825MHz	23.25
802.11ac VHT40_Nss2,(MCS0)_2TX	-
5190MHz	13.75
5230MHz	19.25
5755MHz	19.75
5795MHz	21.25
802.11ac VHT80_Nss2,(MCS0)_2TX	-
5210MHz	13
5775MHz	17.25
802.11ax HEW20_Nss2,(MCS0)_2TX	-
5180MHz	15.75
5200MHz	20
5240MHz	20
5745MHz	23.25
5785MHz	23.75
5825MHz	23.25
802.11ax HEW40_Nss2,(MCS0)_2TX	-
5190MHz	13.75
5230MHz	19.25
5755MHz	19.75
5795MHz	21.25



Mode	Power Setting
802.11ax HEW80_Nss2,(MCS0)_2TX	-
5210MHz	13
5775MHz	17.25

**Sample 2_Radio 1_Panel 1_1T1S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	17.25
5200MHz	21.5
5240MHz	20.25
5745MHz	22.25
5785MHz	22
5825MHz	23.75
802.11ac VHT20_Nss1,(MCS0)_1TX	
5180MHz	16.75
5200MHz	20.75
5240MHz	20.25
5745MHz	23
5785MHz	24
5825MHz	23.5
802.11ac VHT40_Nss1,(MCS0)_1TX	
5190MHz	13.5
5230MHz	19.25
5755MHz	21.75
5795MHz	22
802.11ac VHT80_Nss1,(MCS0)_1TX	
5210MHz	13.75
5775MHz	18.75
802.11ax HEW20_Nss1,(MCS0)_1TX	
5180MHz	16.75
5200MHz	20.75
5240MHz	20.25
5745MHz	23
5785MHz	24
5825MHz	23.5
802.11ax HEW40_Nss1,(MCS0)_1TX	
5190MHz	13.5
5230MHz	19.5
5755MHz	21.75
5795MHz	22



Mode	Power Setting
802.11ax HEW80_Nss1,(MCS0)_1TX	
5210MHz	13.75
5775MHz	18.75

**Sample 2_Radio 1_Panel 1_2T2S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	16.25
5200MHz	20
5240MHz	20
5745MHz	22
5785MHz	21
5825MHz	21
802.11ac VHT20_Nss2,(MCS0)_2TX	-
5180MHz	15.5
5200MHz	19.75
5240MHz	20
5745MHz	22
5785MHz	22
5825MHz	22
802.11ac VHT40_Nss2,(MCS0)_2TX	-
5190MHz	13
5230MHz	18.75
5755MHz	20.25
5795MHz	21
802.11ac VHT80_Nss2,(MCS0)_2TX	-
5210MHz	12
5775MHz	15.75
802.11ax HEW20_Nss2,(MCS0)_2TX	-
5180MHz	15.5
5200MHz	19.75
5240MHz	20
5745MHz	22
5785MHz	22
5825MHz	22
802.11ax HEW40_Nss2,(MCS0)_2TX	-
5190MHz	13
5230MHz	18.75
5755MHz	20.25
5795MHz	21



Mode	Power Setting
802.11ax HEW80_Nss2,(MCS0)_2TX	-
5210MHz	12
5775MHz	15.75

**Sample 2_Radio 2_Omni_1T1S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	21
5200MHz	24
5240MHz	22.25
5745MHz	24.5
5785MHz	30
5825MHz	22.25
802.11ac VHT20_Nss1,(MCS0)_1TX	
5180MHz	19.5
5200MHz	23
5240MHz	22
5745MHz	24.5
5785MHz	30
5825MHz	22.25
802.11ac VHT40_Nss1,(MCS0)_1TX	
5190MHz	16
5230MHz	21.5
5755MHz	23
5795MHz	24.25
802.11ac VHT80_Nss1,(MCS0)_1TX	
5210MHz	16.25
5775MHz	20.75
802.11ax HEW20_Nss1,(MCS0)_1TX	
5180MHz	19.5
5200MHz	23
5240MHz	22
5745MHz	24.5
5785MHz	30
5825MHz	22.25
802.11ax HEW40_Nss1,(MCS0)_1TX	
5190MHz	16
5230MHz	21.5
5755MHz	23
5795MHz	24.25



Mode	Power Setting
802.11ax HEW80_Nss1,(MCS0)_1TX	
5210MHz	16.25
5775MHz	20.75

**Sample 2_Radio 2_Omni_2T2S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	18.75
5200MHz	22.5
5240MHz	21
5745MHz	24
5785MHz	25.75
5825MHz	22
802.11ac VHT20_Nss2,(MCS0)_2TX	-
5180MHz	17.75
5200MHz	22
5240MHz	21
5745MHz	24.25
5785MHz	25
5825MHz	22
802.11ac VHT40_Nss2,(MCS0)_2TX	-
5190MHz	15.5
5230MHz	20.5
5755MHz	20.75
5795MHz	22.25
802.11ac VHT80_Nss2,(MCS0)_2TX	-
5210MHz	14
5775MHz	18
802.11ax HEW20_Nss2,(MCS0)_2TX	-
5180MHz	17.75
5200MHz	22
5240MHz	21
5745MHz	24.25
5785MHz	25
5825MHz	22
802.11ax HEW40_Nss2,(MCS0)_2TX	-
5190MHz	15.5
5230MHz	20.5
5755MHz	20.75
5795MHz	22.25



Mode	Power Setting
802.11ax HEW80_Nss2,(MCS0)_2TX	-
5210MHz	14
5775MHz	18

**Sample 2_Radio 2_Panel 1_1T1S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	18.75
5200MHz	23.75
5240MHz	22.25
5745MHz	24.5
5785MHz	24
5825MHz	24.25
802.11ac VHT20_Nss1,(MCS0)_1TX	-
5180MHz	18.75
5200MHz	23
5240MHz	22
5745MHz	24.5
5785MHz	24
5825MHz	24
802.11ac VHT40_Nss1,(MCS0)_1TX	-
5190MHz	15.5
5230MHz	21.75
5755MHz	23.5
5795MHz	24
802.11ac VHT80_Nss1,(MCS0)_1TX	-
5210MHz	15.25
5775MHz	20
802.11ax HEW20_Nss1,(MCS0)_1TX	-
5180MHz	18.75
5200MHz	23
5240MHz	22
5745MHz	24.5
5785MHz	24
5825MHz	24
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5190MHz	15.5
5230MHz	21.75
5755MHz	23.5
5795MHz	24



Mode	Power Setting
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5210MHz	15.25
5775MHz	20

**Sample 2_Radio 2_Panel 1_2T2S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	16.75
5200MHz	17.75
5240MHz	17.75
5745MHz	21.75
5785MHz	21.75
5825MHz	21.75
802.11ac VHT20_Nss2,(MCS0)_2TX	-
5180MHz	16.75
5200MHz	21.25
5240MHz	21.25
5745MHz	21.5
5785MHz	21.5
5825MHz	21.5
802.11ac VHT40_Nss2,(MCS0)_2TX	-
5190MHz	14
5230MHz	20.5
5755MHz	21
5795MHz	21.25
802.11ac VHT80_Nss2,(MCS0)_2TX	-
5210MHz	13.5
5775MHz	19.5
802.11ax HEW20_Nss2,(MCS0)_2TX	-
5180MHz	16.75
5200MHz	21.25
5240MHz	21.25
5745MHz	21.5
5785MHz	21.5
5825MHz	21.5
802.11ax HEW40_Nss2,(MCS0)_2TX	-
5190MHz	14
5230MHz	20.5
5755MHz	21
5795MHz	21.25



Mode	Power Setting
802.11ax HEW80_Nss2,(MCS0)_2TX	-
5210MHz	13.5
5775MHz	19.5

**Beamforming**

Test Software Version	Dos
-----------------------	-----

Sample 1 Radio 1 2T1S

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
5180MHz	19.75
5200MHz	23.5
5240MHz	20.75
5745MHz	21.25
5785MHz	25
5825MHz	25
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-
5190MHz	17
5230MHz	20.25
5755MHz	22.25
5795MHz	23.75
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-
5210MHz	15.25
5775MHz	21
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
5180MHz	19.75
5200MHz	23.5
5240MHz	20.75
5745MHz	21.25
5785MHz	25
5825MHz	25
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
5190MHz	17
5230MHz	20.25
5755MHz	22.25
5795MHz	23.75
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-
5210MHz	15.25
5775MHz	21

**Sample 1_Radio 2_2T1S**

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
5180MHz	18.25
5200MHz	23
5240MHz	21.75
5745MHz	23.75
5785MHz	23.75
5825MHz	19.5
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	
5190MHz	17
5230MHz	21
5755MHz	23
5795MHz	24.5
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	
5210MHz	17
5775MHz	22.25
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	
5180MHz	18.25
5200MHz	23
5240MHz	21.75
5745MHz	23.75
5785MHz	23.75
5825MHz	19.5
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	
5190MHz	17
5230MHz	21
5755MHz	23
5795MHz	24.5
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	
5210MHz	17
5775MHz	22.25

**Sample 2_Radio 1_Omni_2T1S**

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
5180MHz	16.5
5200MHz	19.75
5240MHz	20.75
5745MHz	21.25
5785MHz	21.25
5825MHz	21.25
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	
5190MHz	14.25
5230MHz	18.75
5755MHz	20.75
5795MHz	21.25
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	
5210MHz	13.25
5775MHz	17.75
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	
5180MHz	16.5
5200MHz	19.75
5240MHz	20.75
5745MHz	21.25
5785MHz	21.25
5825MHz	21.25
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	
5190MHz	14.25
5230MHz	18.75
5755MHz	20.75
5795MHz	21.25
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	
5210MHz	13.25
5775MHz	17.75

**Sample 2_Radio 1_Panel 1_2T1S**

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
5180MHz	16.25
5200MHz	18.75
5240MHz	18.75
5745MHz	18.5
5785MHz	18.5
5825MHz	18.5
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	
5190MHz	14
5230MHz	19
5755MHz	18.75
5795MHz	18.75
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	
5210MHz	13.5
5775MHz	18
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	
5180MHz	16.25
5200MHz	18.75
5240MHz	18.75
5745MHz	18.5
5785MHz	18.5
5825MHz	18.5
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	
5190MHz	14
5230MHz	19
5755MHz	18.75
5795MHz	18.75
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	
5210MHz	13.5
5775MHz	18

**Sample 2_Radio 2_Omni_2T1S**

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
5180MHz	17.5
5200MHz	22
5240MHz	21
5745MHz	21.75
5785MHz	21.75
5825MHz	21.75
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	
5190MHz	16.25
5230MHz	20.25
5755MHz	21.75
5795MHz	21.75
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	
5210MHz	15.75
5775MHz	18.75
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	
5180MHz	17.5
5200MHz	22
5240MHz	21
5745MHz	21.75
5785MHz	21.75
5825MHz	21.75
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	
5190MHz	16.25
5230MHz	20.25
5755MHz	21.75
5795MHz	21.75
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	
5210MHz	15.75
5775MHz	18.75

**Sample 2_Radio 2_Panel 1_2T1S**

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
5180MHz	16.75
5200MHz	19
5240MHz	19
5745MHz	19
5785MHz	19
5825MHz	19
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	
5190MHz	15.5
5230MHz	19
5755MHz	19
5795MHz	19
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	
5210MHz	15
5775MHz	18
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	
5180MHz	16.75
5200MHz	19
5240MHz	19
5745MHz	19
5785MHz	19
5825MHz	19
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	
5190MHz	15.5
5230MHz	19
5755MHz	19
5795MHz	19
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	
5210MHz	15
5775MHz	18

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	Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
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 1_Radio 2_1T1S)
4	PoE Mode (Non-Beamforming_Sample 1_Radio 2_2T2S)
5	PoE Mode (Non-Beamforming_Sample 2_Radio 1_Omni_1T1S)
6	PoE Mode (Non-Beamforming_Sample 2_Radio 1_Omni_2T2S)
7	PoE Mode (Non-Beamforming_Sample 2_Radio 1_Panel 1_1T1S)
8	PoE Mode (Non-Beamforming_Sample 2_Radio 1_Panel 1_2T2S)
9	PoE Mode (Non-Beamforming_Sample 2_Radio 2_Omni_1T1S)
10	PoE Mode (Non-Beamforming_Sample 2_Radio 2_Omni_2T2S)
11	PoE Mode (Non-Beamforming_Sample 2_Radio 2_Panel 1_1T1S)
12	PoE Mode (Non-Beamforming_Sample 2_Radio 2_Panel 1_2T2S)
13	PoE Mode (Beamforming_Sample 1_Radio 1_2T1S)
14	PoE Mode (Beamforming_Sample 1_Radio 2_2T1S)

15	PoE Mode (Beamforming_Sample 2_Radio 1_Omni_2T1S)		
16	PoE Mode (Beamforming_Sample 2_Radio 1_Panel 1_2T1S)		
17	PoE Mode (Beamforming_Sample 2_Radio 2_Omni_2T1S)		
18	PoE Mode (Beamforming_Sample 2_Radio 2_Panel 1_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.

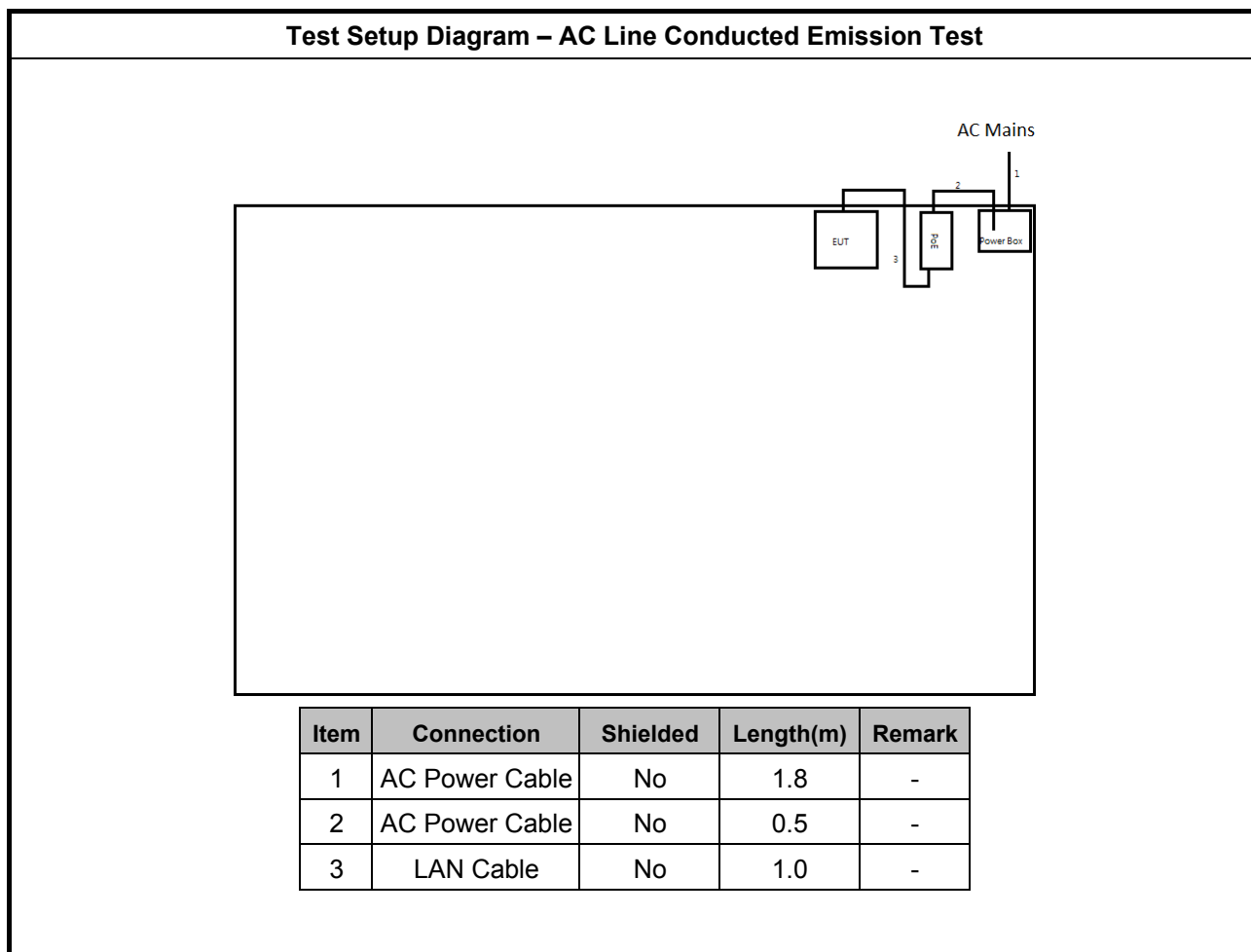
Support Equipment – RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	PP13S	R33002 / DOC
2	Adapter for NB	DELL	AA90PM111	R35737 / DOC
3	Notebook	DELL	PP13S	R33002 / DOC
4	Adapter for NB	DELL	AA90PM111	R35737 / DOC
5	PoE	EnGenius	EPA5006GP	-

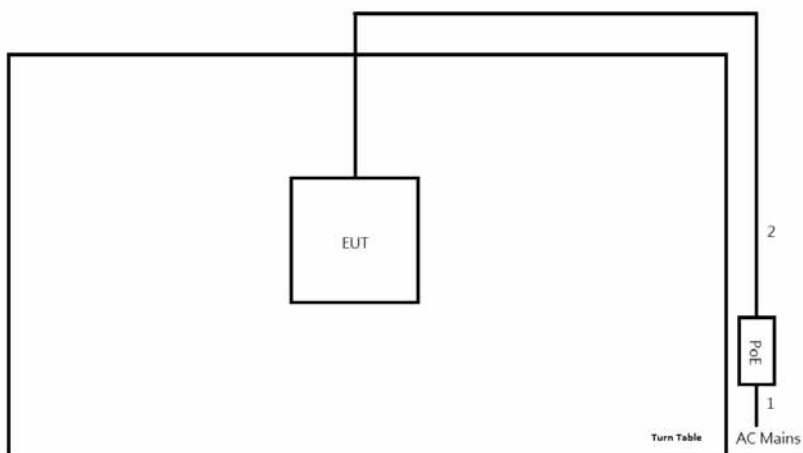
Note: Support equipment No.5 was provided by customer.

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

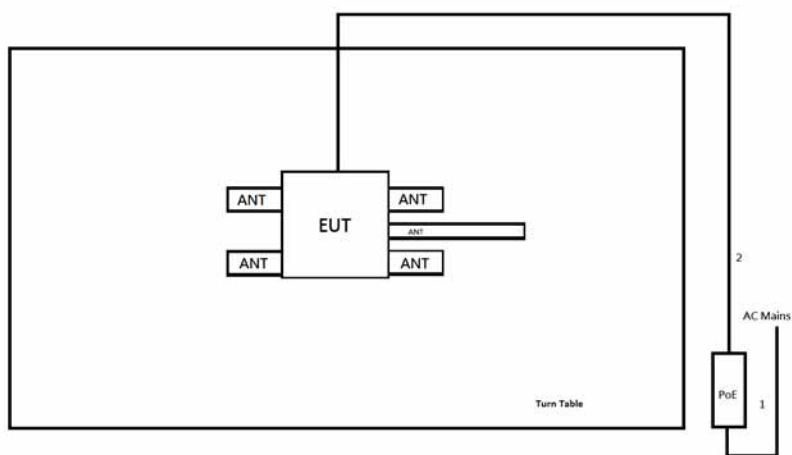
Note: Support equipment No.4, 5 were provided by customer.

2.5 Test Setup Diagram

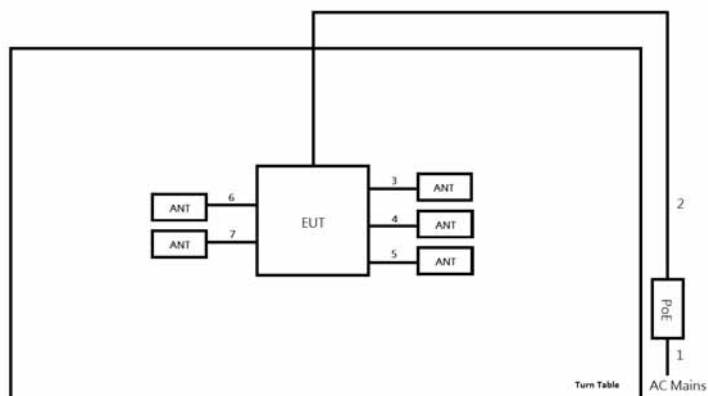


Test Setup Diagram - Radiated Test (Sample 1)


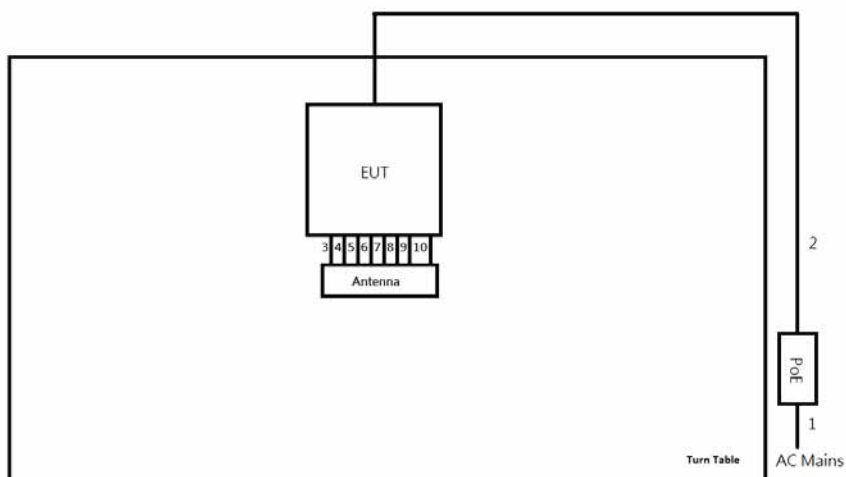
Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	0.5	Client provided
2	LAN Cable	No	10	-

Test Setup Diagram - Radiated Test (Sample 2_Omni)


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_Panel 1)


Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	0.5	Client provided
2	LAN Cable	No	10	
3	Antenna Cable	No	0.3	
4	Antenna Cable	No	0.3	
5	Antenna Cable	No	0.3	
6	Antenna Cable	No	0.3	
7	Antenna Cable	No	0.3	

Test Setup Diagram - Radiated Test (Sample 2_Panel 2)


Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	0.5	Client provided
2	LAN Cable	No	10	
3	Antenna Cable	No	1.6	
4	Antenna Cable	No	1.6	
5	Antenna Cable	No	1.6	
6	Antenna Cable	No	1.6	
7	Antenna Cable	No	1.6	
8	Antenna Cable	No	1.6	
9	Antenna Cable	No	1.6	
9	Antenna Cable	No	1.6	

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.		

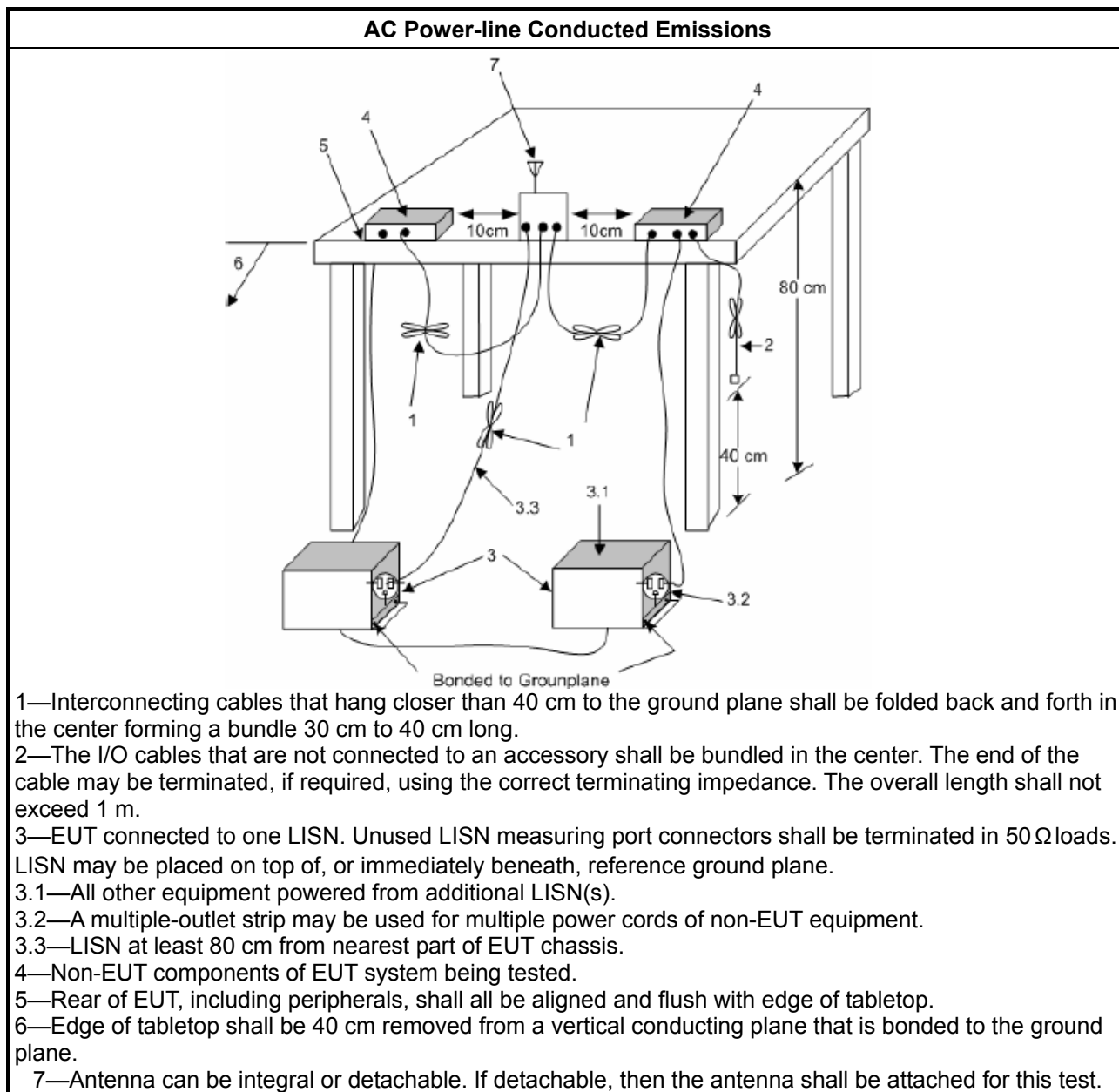
3.1.2 Measuring Instruments

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 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

Emission Bandwidth Limit	
UNII Devices	
☒	For the 5.15-5.25 GHz band, N/A
☐	For the 5.25-5.35 GHz band, N/A
☐	For the 5.47-5.725 GHz band, N/A
☒	For the 5.725-5.85 GHz band, 6 dB emission bandwidth $\geq$ 500kHz.

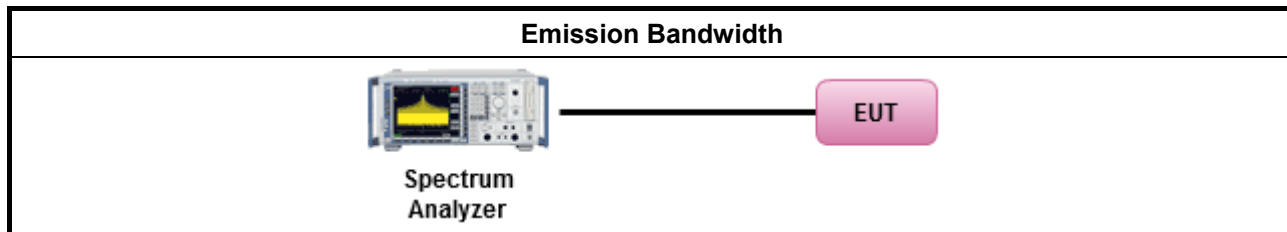
3.2.2 Measuring Instruments

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 789033, clause C for EBW and clause D for OBW measurement.
☐	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.
☐	Refer as IC RSS-Gen, clause 6.7 for 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	
UNII Devices	
☒ For the 5.15-5.25 GHz band:	
☐	- Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. e.i.r.p. at any elevation angle above 30 degrees ≤ 125mW [21dBm] - Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ - Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$. - Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☐	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☐	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☒ For the 5.725-5.85 GHz band:	
☐	- Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

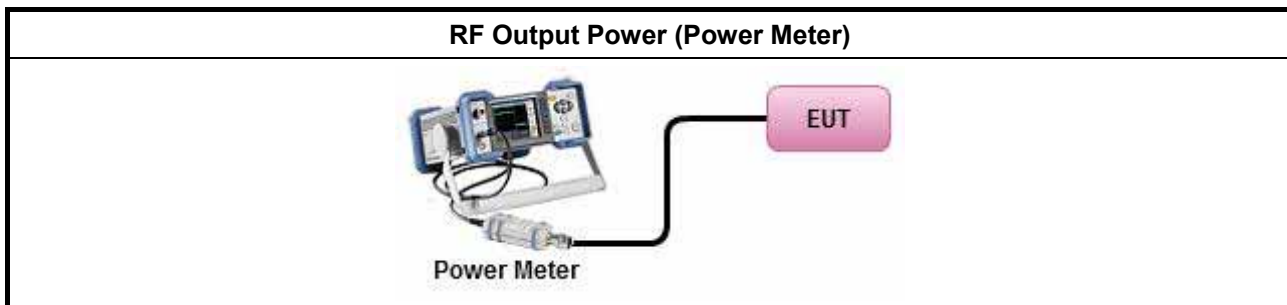
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
Maximum Conducted Output Power	
	Duty cycle $\geq 98\%$
☐	Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).
	Duty cycle $< 98\%$
☐	Refer as KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
☒	Refer as KDB 789033, clause E Method PM (using an RF average 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 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
☒ For the 5.15-5.25 GHz band:	
☐	- Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. - Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. - Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$. - Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
☐	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
☐	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
☒ For the 5.725-5.85 GHz band:	
☐	- Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi.	

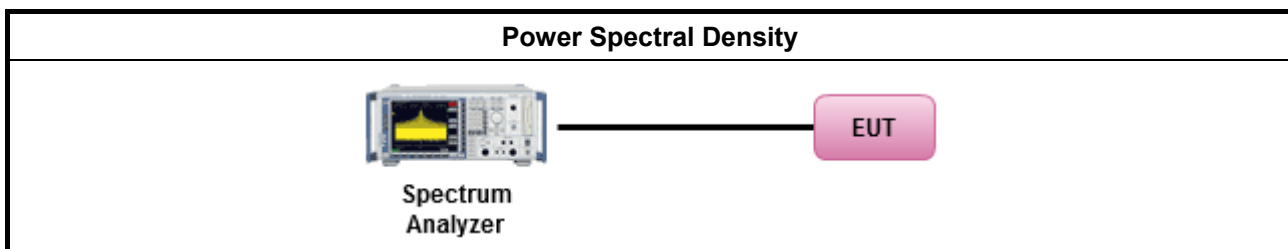
3.4.2 Measuring Instruments

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 shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:	
☐ Refer as KDB 789033, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth	
Duty cycle ≥ 98%	
☐ Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).	
Duty cycle < 98%	
☒ Refer as KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)	
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.
☐	If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$

3.4.4 Test Setup



3.4.5 Test Result of Peak Power Spectral Density

Refer as Appendix D

3.5 Unwanted Emissions

3.5.1 Transmitter Radiated Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz 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.

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.85 GHz	5.650-5700 GHz: e.i.r.p. -27 ~ 10 dBm [68.2 ~ 105.2 dBuV/m@3m] 5.700-5720 GHz: e.i.r.p. 10 ~ 15.6 dBm [105.2 ~ 110.8 dBuV/m@3m] 5.720-5725 GHz: e.i.r.p. 15.6 ~ 27 dBm [110.8 ~ 122.2 dBuV/m@3m] 5.850-5.855 GHz: e.i.r.p. 27 ~ 15.6 dBm [122.2 ~ 110.8 dBuV/m@3m] 5.855-5.875 GHz: e.i.r.p. 15.6 ~ 10 dBm [110.8 ~ 105.2 dBuV/m@3m] 5.875-5.925 GHz: e.i.r.p. 10 ~ -27 dBm [105.2 ~ 68.2dBuV/m@3m] Other un-restricted band: e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
Note 1: 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).	

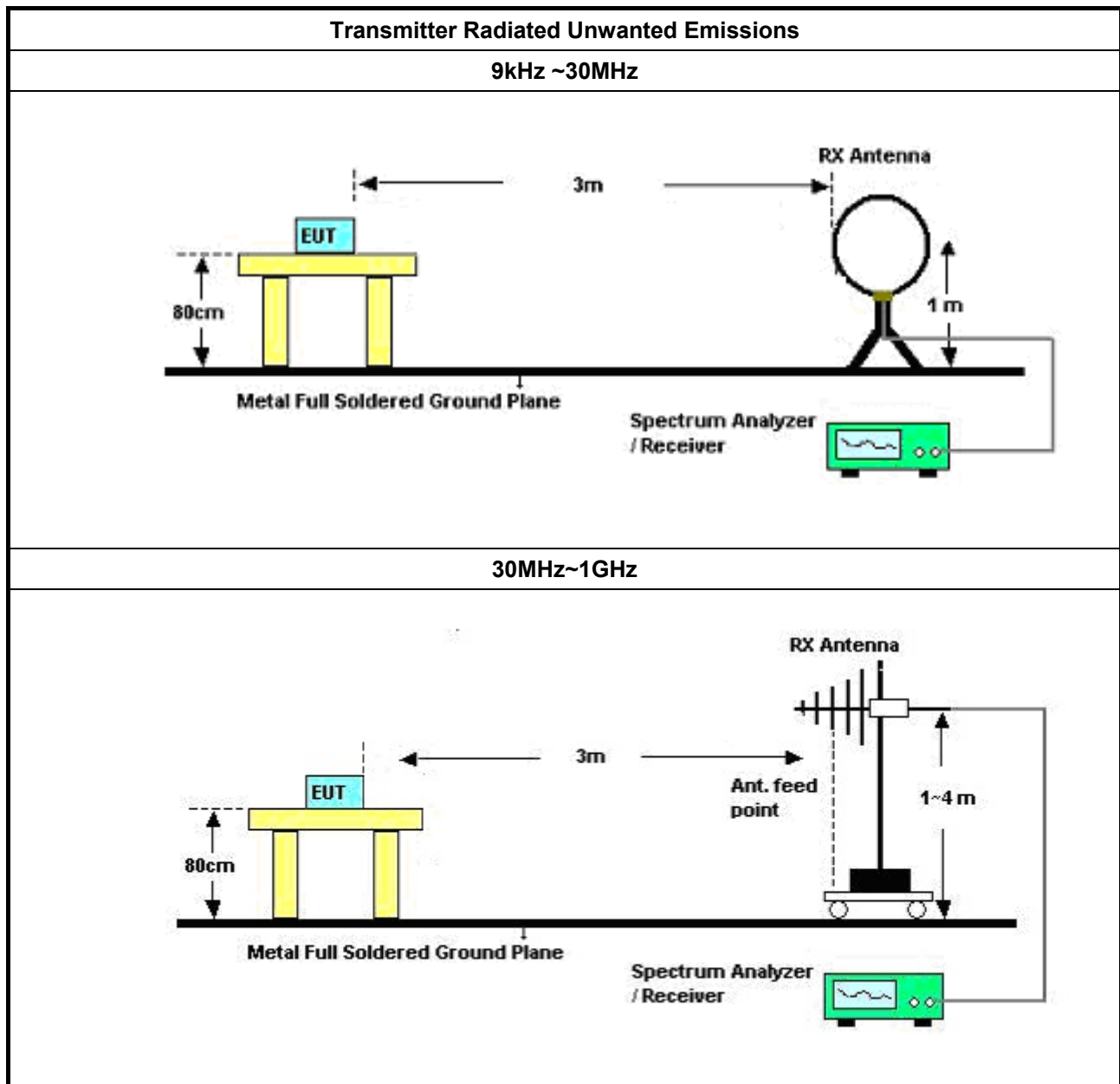
3.5.2 Measuring Instruments

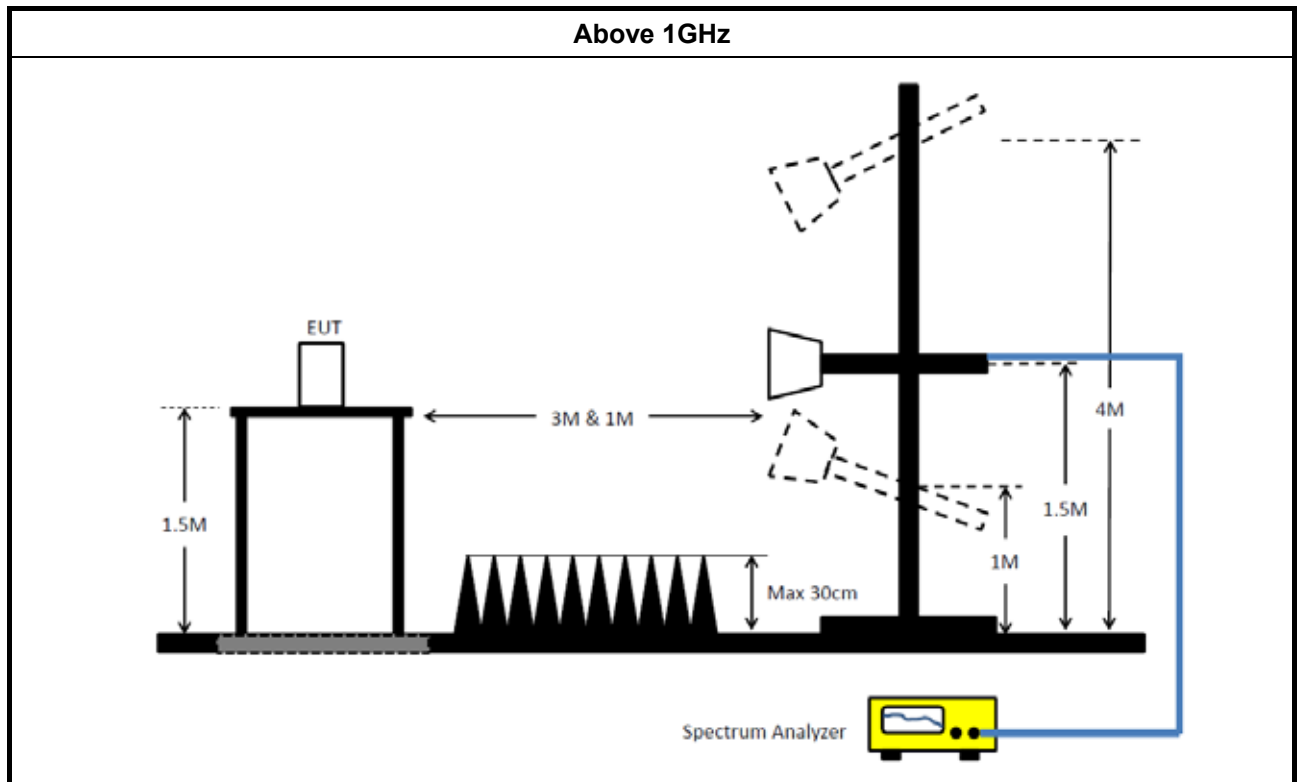
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method	
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. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. 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).	
The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].	
For the transmitter unwanted emissions shall be measured using following options below:	
	Refer as KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.
	Refer as KDB 789033, clause G)1) for unwanted emissions into restricted bands.
	☒ Refer as KDB 789033, G)6) Method VB (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW.
	☒ Refer as KDB 789033, clause G)5) (ANSI C63.10, clause 4.1.4.2.2), measurement procedure peak limit.
For radiated measurement.	
	Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
	Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
The any unwanted emissions level shall not exceed the fundamental emission level.	
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.	

3.5.4 Test Setup





3.5.5 Transmitter Unwanted Emissions (Below 30MHz)

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

3.5.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E

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 Result

Operating Mode	1	Power Phase	Neutral
Operating Function	Sample 1; PoE mode; WIFI 5G 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	169.024k	45.62	65.01	-19.39	19.63	Neutral	-	25.99	9.65	0.11	9.87			
AV	169.024k	30.58	55.01	-24.43	19.63	Neutral	-	10.95	9.65	0.11	9.87			
QP	208.304k	40.15	63.27	-23.12	19.62	Neutral	-	20.53	9.64	0.11	9.87			
AV	208.304k	25.88	53.27	-27.39	19.62	Neutral	-	6.26	9.64	0.11	9.87			
QP	466.367k	43.26	56.57	-13.31	19.63	Neutral	-	23.63	9.63	0.13	9.87			
AV	466.367k	38.75	46.57	-7.82	19.63	Neutral	-	19.12	9.63	0.13	9.87			
QP	1.326M	28.94	56.00	-27.06	19.65	Neutral	-	9.29	9.64	0.13	9.88			
AV	1.326M	25.75	46.00	-20.25	19.65	Neutral	-	6.10	9.64	0.13	9.88			
QP	14.441M	31.21	60.00	-28.79	19.90	Neutral	-	11.31	9.71	0.31	9.88			
AV	14.441M	28.03	50.00	-21.97	19.90	Neutral	-	8.13	9.71	0.31	9.88			
QP	23.052M	45.58	60.00	-14.42	19.97	Neutral	-	25.61	9.70	0.39	9.88			
AV	23.052M	44.36	50.00	-5.64	19.97	Neutral	"Worst"	24.39	9.70	0.39	9.88			



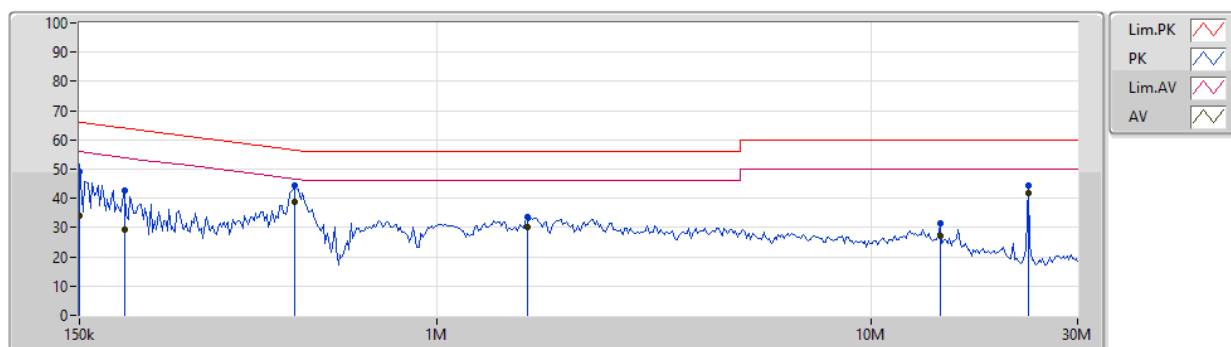
AC Power-line Conducted Emissions Non Beamforming_Sample 1

Appendix A.1

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Sample 1; PoE mode; WIFI 5G 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	150k	49.12	66.00	-16.88	19.64	Line	-	29.48	9.66	0.11	9.87			
AV	150k	33.96	56.00	-22.04	19.64	Line	-	14.32	9.66	0.11	9.87			
QP	190.46k	42.66	64.01	-21.35	19.63	Line	-	23.03	9.65	0.11	9.87			
AV	190.46k	29.26	54.01	-24.75	19.63	Line	-	9.63	9.65	0.11	9.87			
QP	471.031k	44.22	56.50	-12.28	19.64	Line	-	24.58	9.64	0.13	9.87			
AV	471.031k	38.94	46.50	-7.56	19.64	Line	"Worst"	19.30	9.64	0.13	9.87			
QP	1.618M	33.78	56.00	-22.22	19.66	Line	-	14.12	9.65	0.14	9.87			
AV	1.618M	30.03	46.00	-15.97	19.66	Line	-	10.37	9.65	0.14	9.87			
QP	14.441M	31.26	60.00	-28.74	19.85	Line	-	11.41	9.66	0.31	9.88			
AV	14.441M	27.10	50.00	-22.90	19.85	Line	-	7.25	9.66	0.31	9.88			
QP	23.052M	44.19	60.00	-15.81	19.86	Line	-	24.33	9.59	0.39	9.88			
AV	23.052M	41.75	50.00	-8.25	19.86	Line	-	21.89	9.59	0.39	9.88			



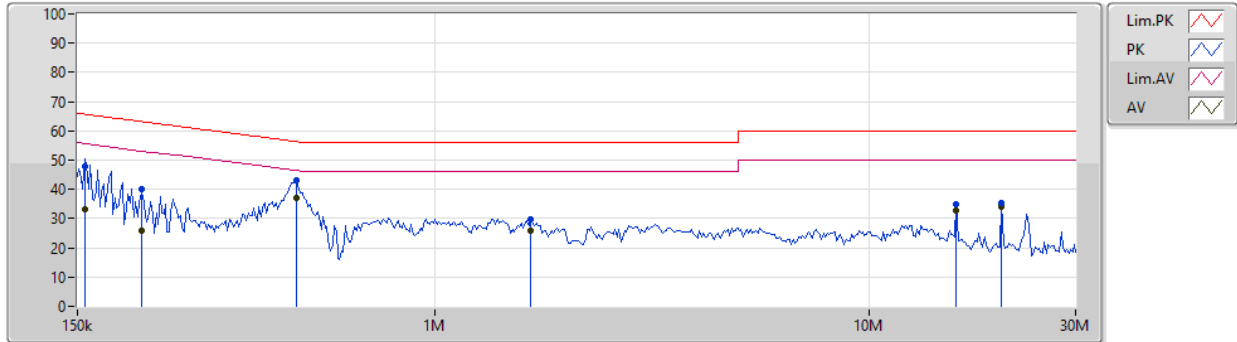
AC Power-line Conducted Emissions Non Beamforming_Sample 2

Appendix A.2

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	Sample 2; PoE mode; WIFI 5G 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	156.091k	47.82	65.67	-17.85	19.63	Neutral	-	28.19	9.65	0.11	9.87			
AV	156.091k	33.33	55.67	-22.34	19.63	Neutral	-	13.70	9.65	0.11	9.87			
QP	210.387k	40.04	63.19	-23.15	19.62	Neutral	-	20.42	9.64	0.11	9.87			
AV	210.387k	25.85	53.19	-27.34	19.62	Neutral	-	6.23	9.64	0.11	9.87			
QP	480.498k	42.93	56.33	-13.40	19.63	Neutral	-	23.30	9.63	0.13	9.87			
AV	480.498k	37.11	46.33	-9.22	19.63	Neutral	"Worst"	17.48	9.63	0.13	9.87			
QP	1.667M	29.53	56.00	-26.47	19.65	Neutral	-	9.88	9.64	0.14	9.87			
AV	1.667M	25.80	46.00	-20.20	19.65	Neutral	-	6.15	9.64	0.14	9.87			
QP	15.952M	34.76	60.00	-25.24	19.91	Neutral	-	14.85	9.71	0.32	9.88			
AV	15.952M	32.80	50.00	-17.20	19.91	Neutral	-	12.89	9.71	0.32	9.88			
QP	20.255M	35.29	60.00	-24.71	19.97	Neutral	-	15.32	9.72	0.36	9.89			
AV	20.255M	34.18	50.00	-15.82	19.97	Neutral	-	14.21	9.72	0.36	9.89			



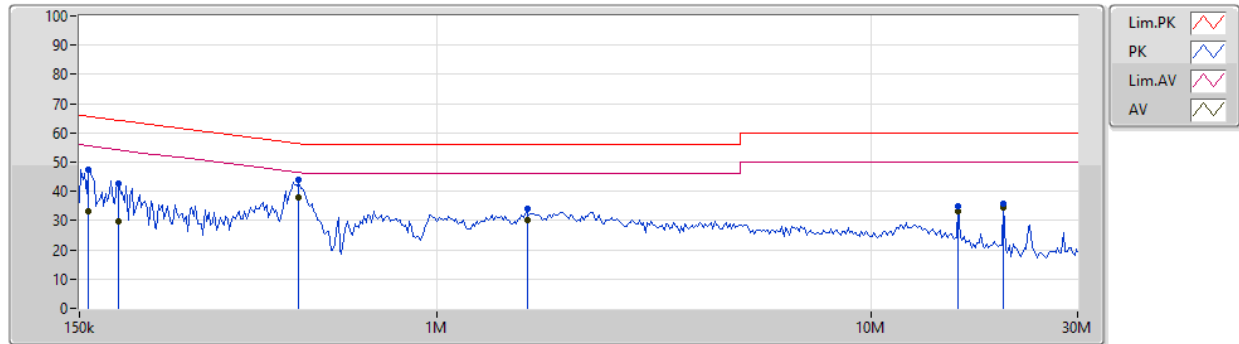
AC Power-line Conducted Emissions Non Beamforming_Sample 2

Appendix A.2

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Sample 2; PoE mode; WIFI 5G 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	157.652k	47.36	65.58	-18.22	19.64	Line	-	27.72	9.66	0.11	9.87			
AV	157.652k	33.28	55.58	-22.30	19.64	Line	-	13.64	9.66	0.11	9.87			
QP	184.859k	42.74	64.26	-21.52	19.63	Line	-	23.11	9.65	0.11	9.87			
AV	184.859k	29.62	54.26	-24.64	19.63	Line	-	9.99	9.65	0.11	9.87			
QP	480.498k	43.76	56.33	-12.57	19.64	Line	-	24.12	9.64	0.13	9.87			
AV	480.498k	37.93	46.33	-8.40	19.64	Line	"Worst"	18.29	9.64	0.13	9.87			
QP	1.618M	33.88	56.00	-22.12	19.66	Line	-	14.22	9.65	0.14	9.87			
AV	1.618M	30.11	46.00	-15.89	19.66	Line	-	10.45	9.65	0.14	9.87			
QP	15.952M	35.12	60.00	-24.88	19.86	Line	-	15.26	9.66	0.32	9.88			
AV	15.952M	32.99	50.00	-17.01	19.86	Line	-	13.13	9.66	0.32	9.88			
QP	20.255M	35.57	60.00	-24.43	19.89	Line	-	15.68	9.64	0.36	9.89			
AV	20.255M	34.41	50.00	-15.59	19.89	Line	-	14.52	9.64	0.36	9.89			



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 5G 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	156.091k	47.87	65.67	-17.80	19.63	Neutral	-	28.24	9.65	0.11	9.87			
AV	156.091k	33.39	55.67	-22.28	19.63	Neutral	-	13.76	9.65	0.11	9.87			
QP	254.17k	34.07	61.62	-27.55	19.63	Neutral	-	14.44	9.64	0.12	9.87			
AV	254.17k	24.62	51.62	-27.00	19.63	Neutral	-	4.99	9.64	0.12	9.87			
QP	471.031k	43.70	56.50	-12.80	19.63	Neutral	-	24.07	9.63	0.13	9.87			
AV	471.031k	38.48	46.50	-8.02	19.63	Neutral	"Worst"	18.85	9.63	0.13	9.87			
QP	1.421M	30.29	56.00	-25.71	19.64	Neutral	-	10.65	9.64	0.13	9.87			
AV	1.421M	26.14	46.00	-19.86	19.64	Neutral	-	6.50	9.64	0.13	9.87			
QP	15.952M	34.14	60.00	-25.86	19.91	Neutral	-	14.23	9.71	0.32	9.88			
AV	15.952M	31.56	50.00	-18.44	19.91	Neutral	-	11.65	9.71	0.32	9.88			
QP	23.052M	41.45	60.00	-18.55	19.97	Neutral	-	21.48	9.70	0.39	9.88			
AV	23.052M	35.69	50.00	-14.31	19.97	Neutral	-	15.72	9.70	0.39	9.88			



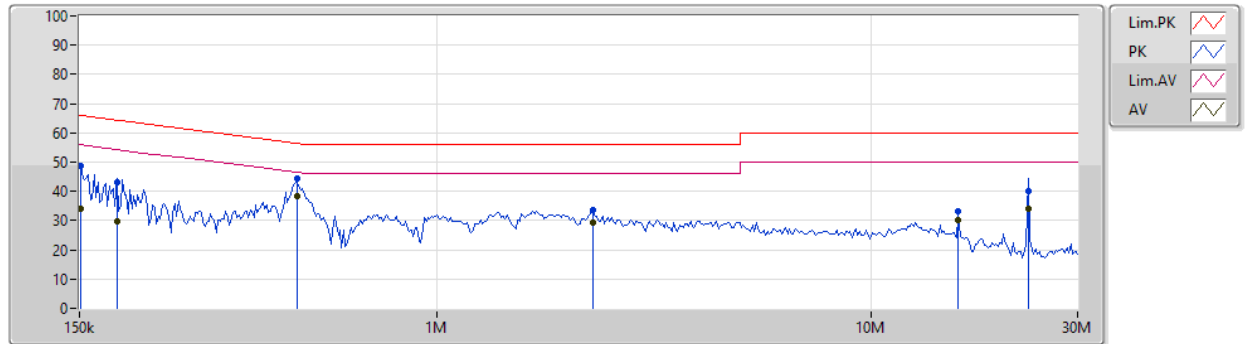
AC Power-line Conducted Emissions _ Beamforming_Sample 1

Appendix A.3

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Sample 1; PoE mode; WIFI 5G 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	48.68	65.92	-17.24	19.64	Line	-	29.04	9.66	0.11	9.87			
AV	151.5k	34.17	55.92	-21.75	19.64	Line	-	14.53	9.66	0.11	9.87			
QP	183.029k	43.20	64.34	-21.14	19.63	Line	-	23.57	9.65	0.11	9.87			
AV	183.029k	29.70	54.34	-24.64	19.63	Line	-	10.07	9.65	0.11	9.87			
QP	475.741k	44.24	56.42	-12.18	19.64	Line	-	24.60	9.64	0.13	9.87			
AV	475.741k	38.21	46.42	-8.21	19.64	Line	"Worst"	18.57	9.64	0.13	9.87			
QP	2.292M	33.58	56.00	-22.42	19.68	Line	-	13.90	9.65	0.16	9.87			
AV	2.292M	29.26	46.00	-16.74	19.68	Line	-	9.58	9.65	0.16	9.87			
QP	15.952M	33.33	60.00	-26.67	19.86	Line	-	13.47	9.66	0.32	9.88			
AV	15.952M	29.99	50.00	-20.01	19.86	Line	-	10.13	9.66	0.32	9.88			
QP	23.052M	40.15	60.00	-19.85	19.86	Line	-	20.29	9.59	0.39	9.88			
AV	23.052M	33.98	50.00	-16.02	19.86	Line	-	14.12	9.59	0.39	9.88			



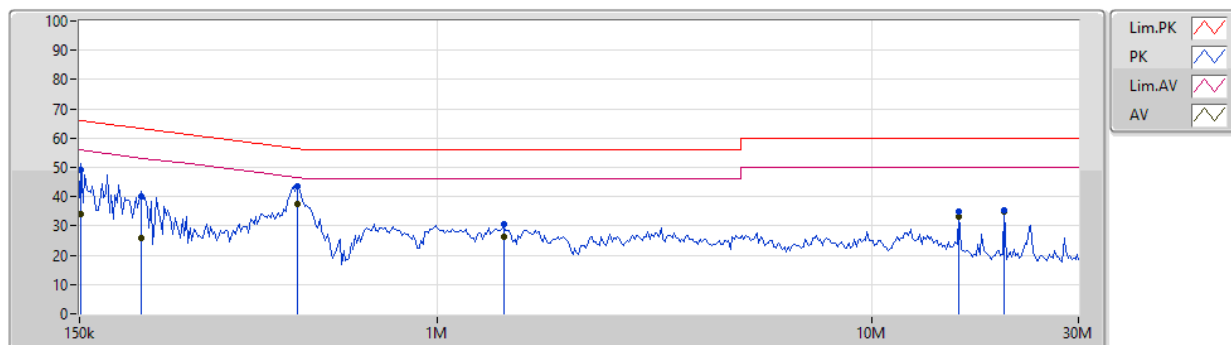
AC Power-line Conducted Emissions _ Beamforming_Sample 2

Appendix A.4

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	Sample 2; PoE mode; WIFI 5G TX		

26/12/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	151.5k	48.98	65.92	-16.94	19.63	Neutral	-	29.35	9.65	0.11	9.87			
AV	151.5k	34.03	55.92	-21.89	19.63	Neutral	-	14.40	9.65	0.11	9.87			
QP	208.304k	40.10	63.27	-23.17	19.62	Neutral	-	20.48	9.64	0.11	9.87			
AV	208.304k	25.66	53.27	-27.61	19.62	Neutral	-	6.04	9.64	0.11	9.87			
QP	475.741k	43.66	56.42	-12.76	19.63	Neutral	-	24.03	9.63	0.13	9.87			
AV	475.741k	37.67	46.42	-8.75	19.63	Neutral	"Worst"	18.04	9.63	0.13	9.87			
QP	1.421M	30.45	56.00	-25.55	19.64	Neutral	-	10.81	9.64	0.13	9.87			
AV	1.421M	26.36	46.00	-19.64	19.64	Neutral	-	6.72	9.64	0.13	9.87			
QP	15.952M	34.88	60.00	-25.12	19.91	Neutral	-	14.97	9.71	0.32	9.88			
AV	15.952M	33.10	50.00	-16.90	19.91	Neutral	-	13.19	9.71	0.32	9.88			
QP	20.255M	35.55	60.00	-24.45	19.97	Neutral	-	15.58	9.72	0.36	9.89			
AV	20.255M	34.75	50.00	-15.25	19.97	Neutral	-	14.78	9.72	0.36	9.89			



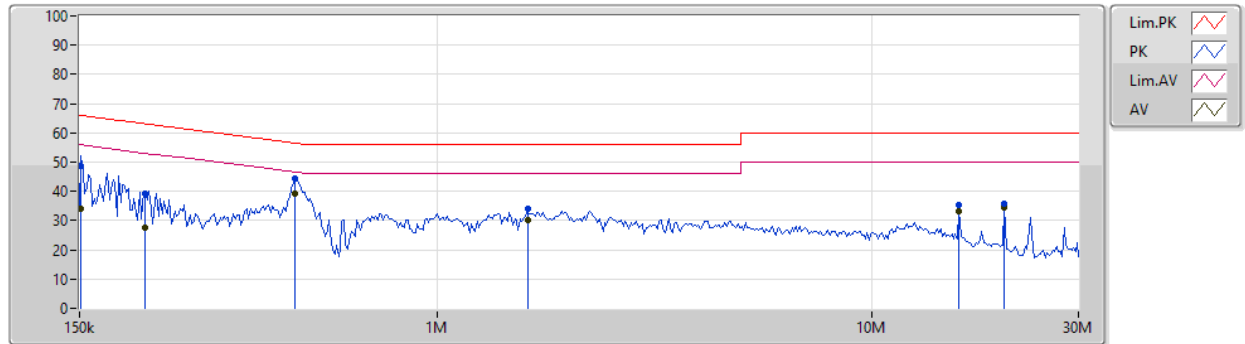
AC Power-line Conducted Emissions _ Beamforming_Sample 2

Appendix A.4

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Sample 2; PoE mode; WIFI 5G 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	48.69	65.92	-17.23	19.64	Line	-	29.05	9.66	0.11	9.87			
AV	151.5k	34.04	55.92	-21.88	19.64	Line	-	14.40	9.66	0.11	9.87			
QP	212.49k	39.38	63.11	-23.73	19.63	Line	-	19.75	9.65	0.11	9.87			
AV	212.49k	27.46	53.11	-25.65	19.63	Line	-	7.83	9.65	0.11	9.87			
QP	471.031k	44.33	56.50	-12.17	19.64	Line	-	24.69	9.64	0.13	9.87			
AV	471.031k	39.11	46.50	-7.39	19.64	Line	"Worst"	19.47	9.64	0.13	9.87			
QP	1.618M	33.85	56.00	-22.15	19.66	Line	-	14.19	9.65	0.14	9.87			
AV	1.618M	30.10	46.00	-15.90	19.66	Line	-	10.44	9.65	0.14	9.87			
QP	15.952M	35.19	60.00	-24.81	19.86	Line	-	15.33	9.66	0.32	9.88			
AV	15.952M	33.17	50.00	-16.83	19.86	Line	-	13.31	9.66	0.32	9.88			
QP	20.255M	35.60	60.00	-24.40	19.89	Line	-	15.71	9.64	0.36	9.89			
AV	20.255M	34.37	50.00	-15.63	19.89	Line	-	14.48	9.64	0.36	9.89			

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	43.41M	28.996M	29M0D1D	33.48M	17.211M
802.11ac VHT20_Nss1,(MCS0)_1TX	43.02M	25.697M	25M7D1D	23.31M	17.931M
802.11ac VHT40_Nss1,(MCS0)_1TX	75.24M	37.301M	37M3D1D	39.9M	36.342M
802.11ac VHT80_Nss1,(MCS0)_1TX	81.48M	75.802M	75M8D1D	81.48M	75.802M
802.11ax HEW20_Nss1,(MCS0)_1TX	45.6M	27.256M	27M3D1D	24.18M	19.19M
802.11ax HEW40_Nss1,(MCS0)_1TX	73.98M	39.1M	39M1D1D	39.96M	37.601M
802.11ax HEW80_Nss1,(MCS0)_1TX	81.36M	77.121M	77M1D1D	81.36M	77.121M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	16.32M	34.423M	34M4D1D	16.29M	17.571M
802.11ac VHT20_Nss1,(MCS0)_1TX	17.58M	33.133M	33M1D1D	17.55M	18.591M
802.11ac VHT40_Nss1,(MCS0)_1TX	36.36M	61.709M	61M7D1D	36.36M	52.114M
802.11ac VHT80_Nss1,(MCS0)_1TX	76.32M	76.402M	76M4D1D	76.32M	76.402M
802.11ax HEW20_Nss1,(MCS0)_1TX	18.9M	37.751M	37M8D1D	18.51M	19.43M
802.11ax HEW40_Nss1,(MCS0)_1TX	37.38M	60.45M	60M4D1D	37.32M	51.394M
802.11ax HEW80_Nss1,(MCS0)_1TX	75.84M	77.721M	77M7D1D	75.84M	77.721M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Min-OBW = Minimum 99% occupied bandwidth;

Result

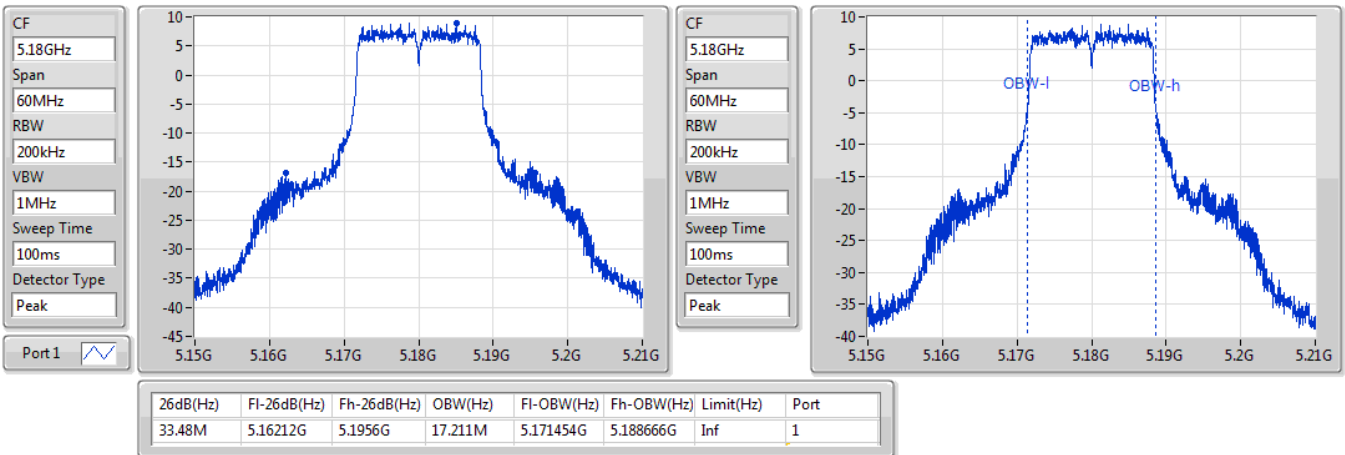
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5180MHz	Pass	Inf	33.48M	17.211M
5200MHz	Pass	Inf	43.41M	28.996M
5240MHz	Pass	Inf	38.28M	18.981M
5745MHz	Pass	500k	16.29M	34.423M
5785MHz	Pass	500k	16.32M	17.571M
5825MHz	Pass	500k	16.32M	17.691M
802.11ac VHT20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz	Pass	Inf	23.31M	17.931M
5200MHz	Pass	Inf	43.02M	25.697M
5240MHz	Pass	Inf	35.79M	18.441M
5745MHz	Pass	500k	17.55M	33.133M
5785MHz	Pass	500k	17.58M	18.591M
5825MHz	Pass	500k	17.58M	21.679M
802.11ac VHT40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz	Pass	Inf	39.9M	36.342M
5230MHz	Pass	Inf	75.24M	37.301M
5755MHz	Pass	500k	36.36M	52.114M
5795MHz	Pass	500k	36.36M	61.709M
802.11ac VHT80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz	Pass	Inf	81.48M	75.802M
5775MHz	Pass	500k	76.32M	76.402M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz	Pass	Inf	24.18M	19.19M
5200MHz	Pass	Inf	45.6M	27.256M
5240MHz	Pass	Inf	38.97M	19.55M
5745MHz	Pass	500k	18.51M	37.751M
5785MHz	Pass	500k	18.9M	19.43M
5825MHz	Pass	500k	18.81M	22.549M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz	Pass	Inf	39.96M	37.601M
5230MHz	Pass	Inf	73.98M	39.1M
5755MHz	Pass	500k	37.32M	51.394M
5795MHz	Pass	500k	37.38M	60.45M
802.11ax HEW80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz	Pass	Inf	81.36M	77.121M
5775MHz	Pass	500k	75.84M	77.721M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

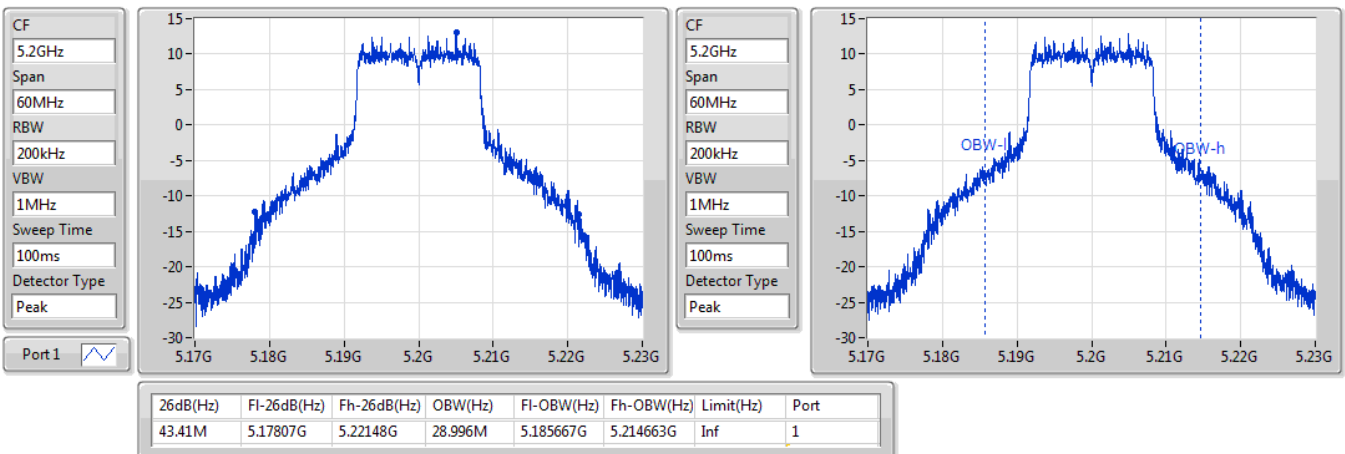
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_1TX
EBW
5180MHz

18/12/2019

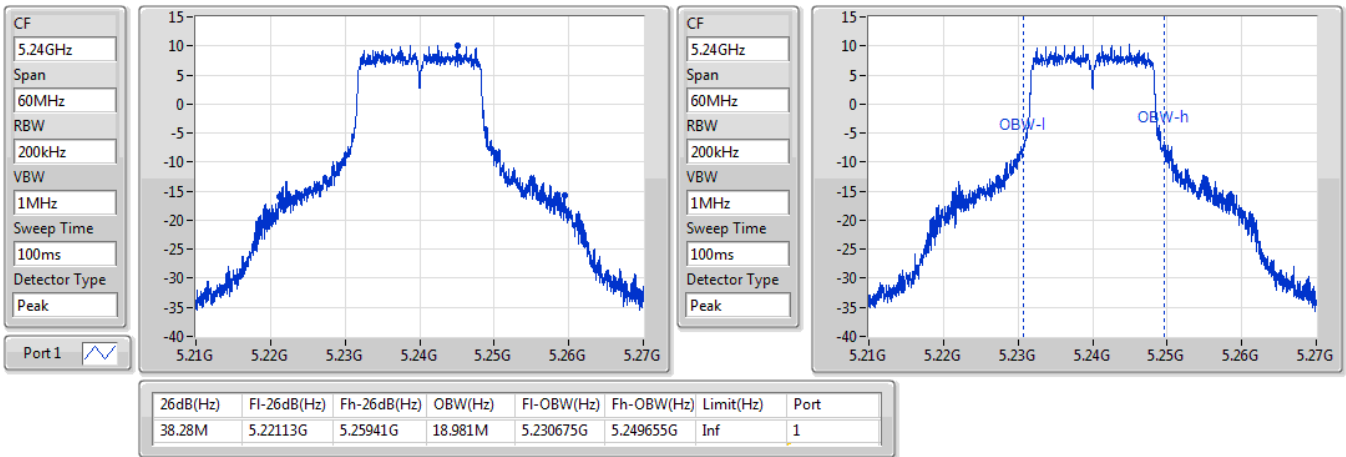

802.11a_Nss1,(6Mbps)_1TX
EBW
5200MHz

18/12/2019

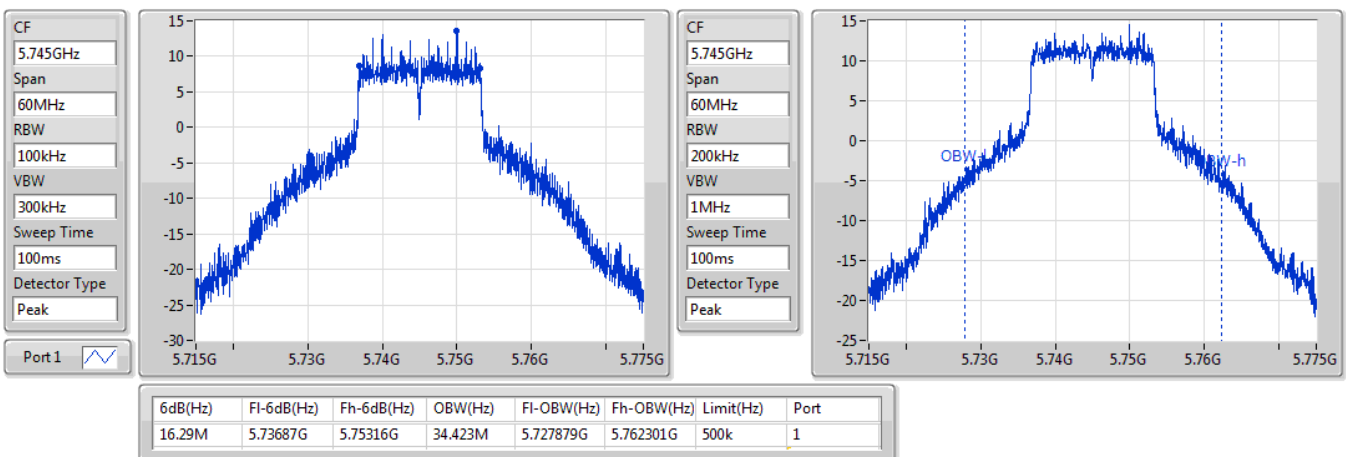


802.11a_Nss1,(6Mbps)_1TX
EBW
5240MHz

18/12/2019

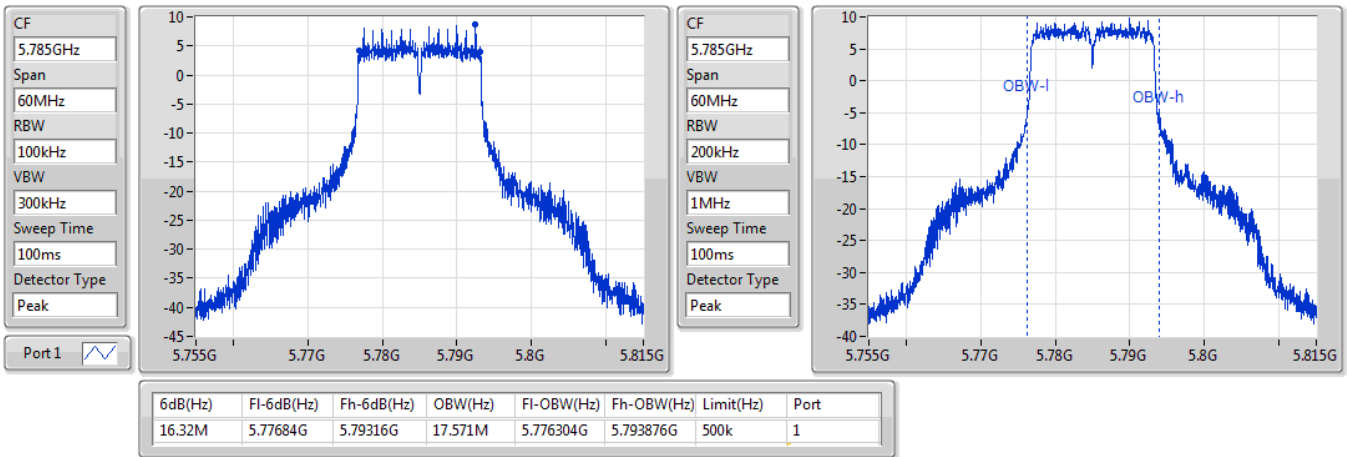

802.11a_Nss1,(6Mbps)_1TX
EBW
5745MHz

18/12/2019

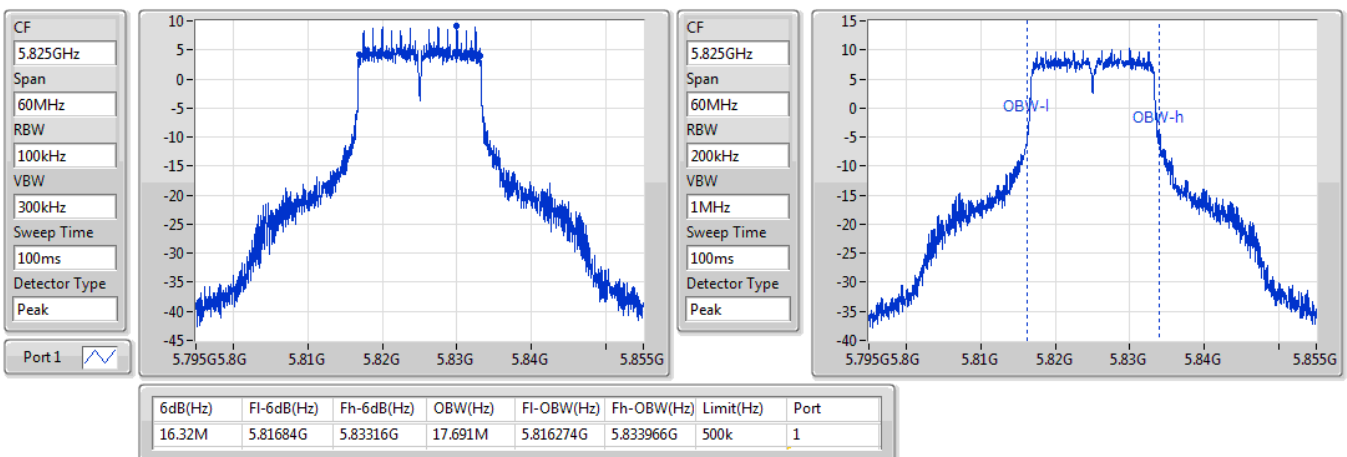


802.11a_Nss1,(6Mbps)_1TX
EBW
5785MHz

18/12/2019


802.11a_Nss1,(6Mbps)_1TX
EBW
5825MHz

18/12/2019

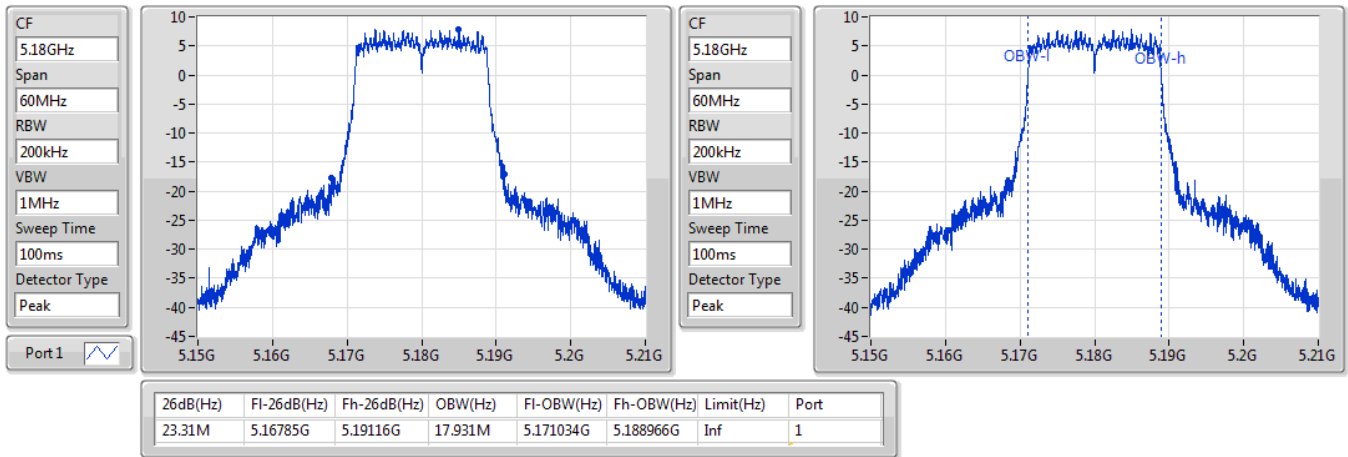


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

5180MHz

18/12/2019

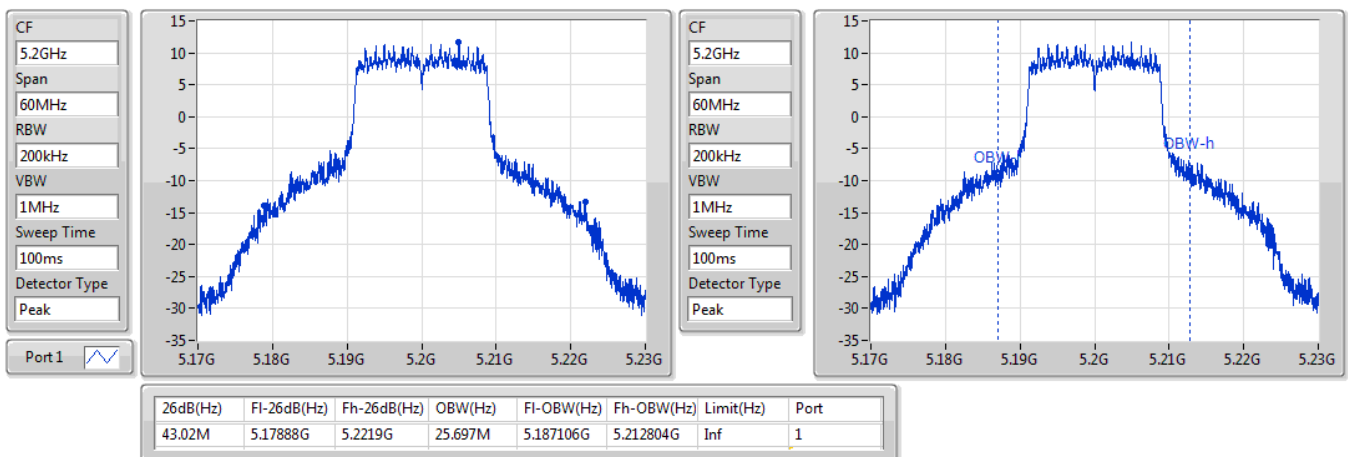


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

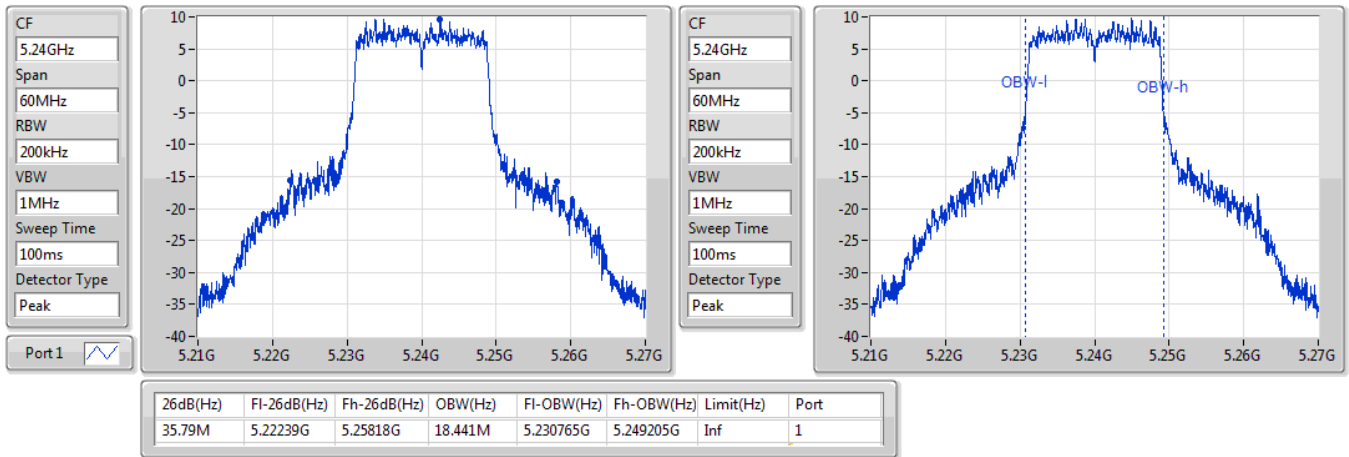
5200MHz

18/12/2019

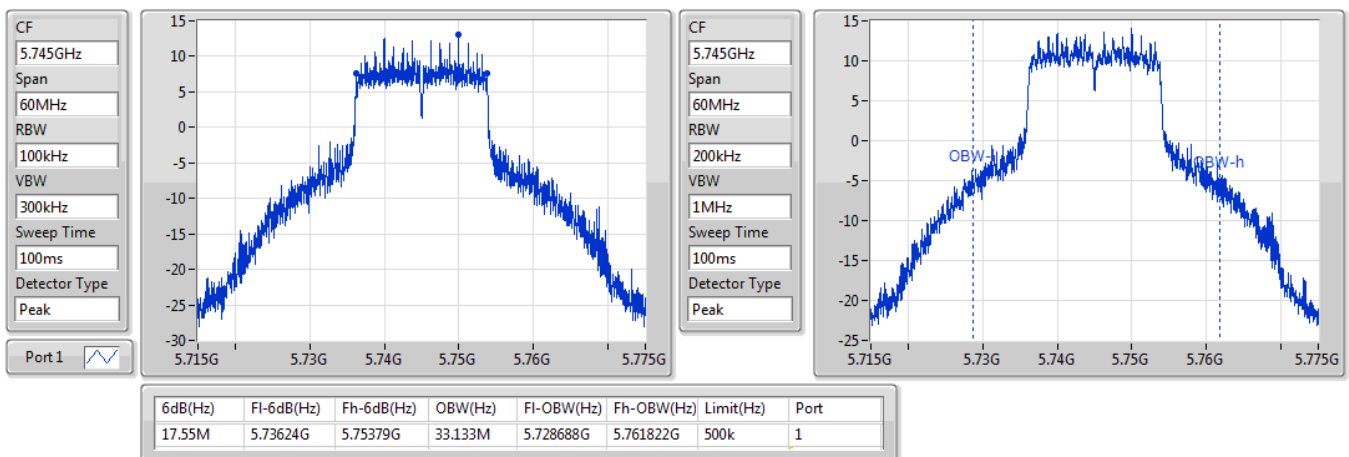


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5240MHz

18/12/2019

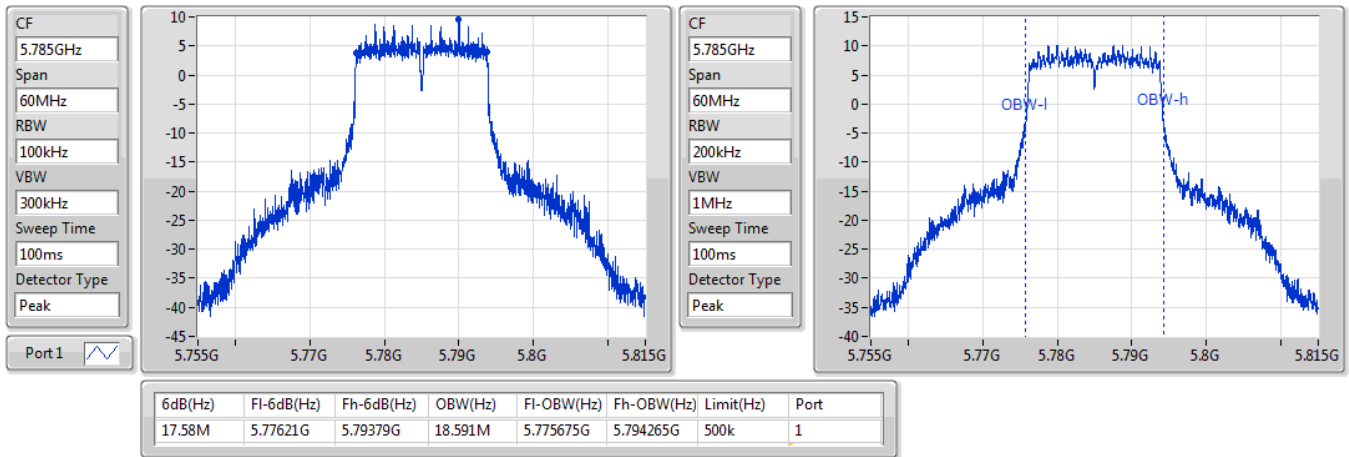

802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5745MHz

18/12/2019

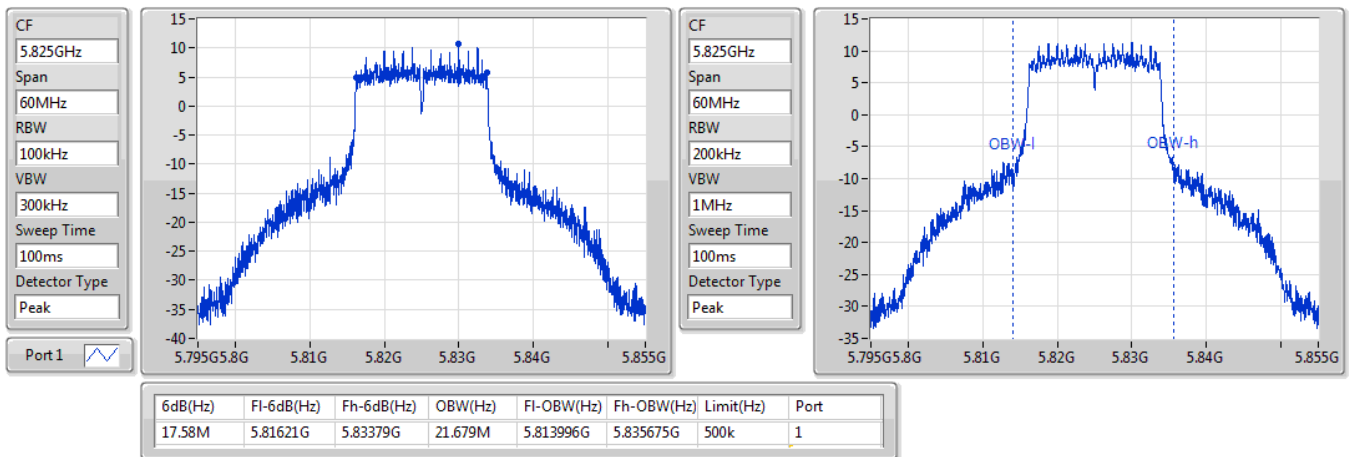


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5785MHz

18/12/2019

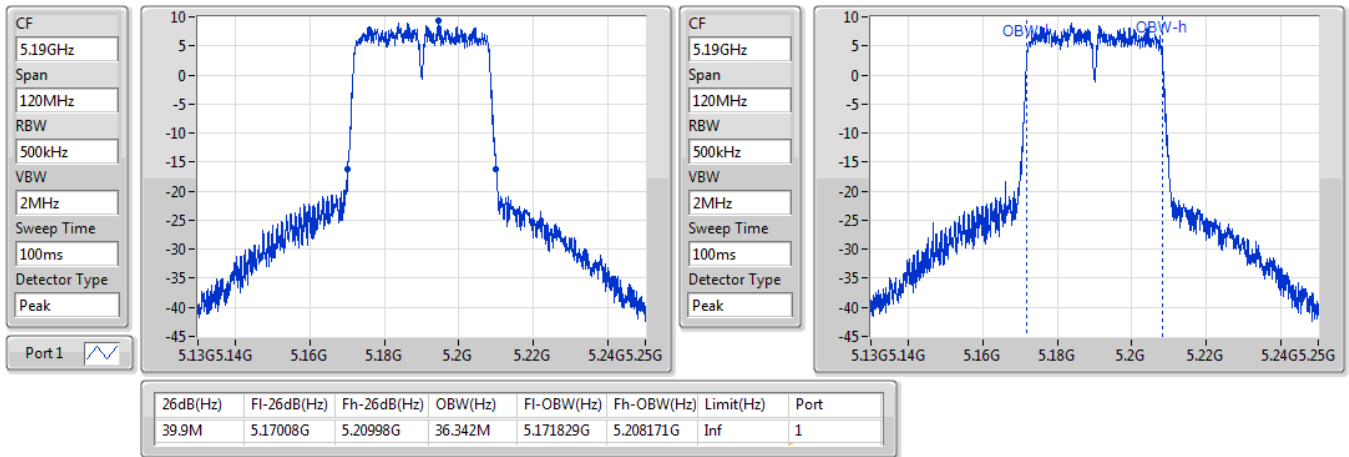

802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5825MHz

18/12/2019

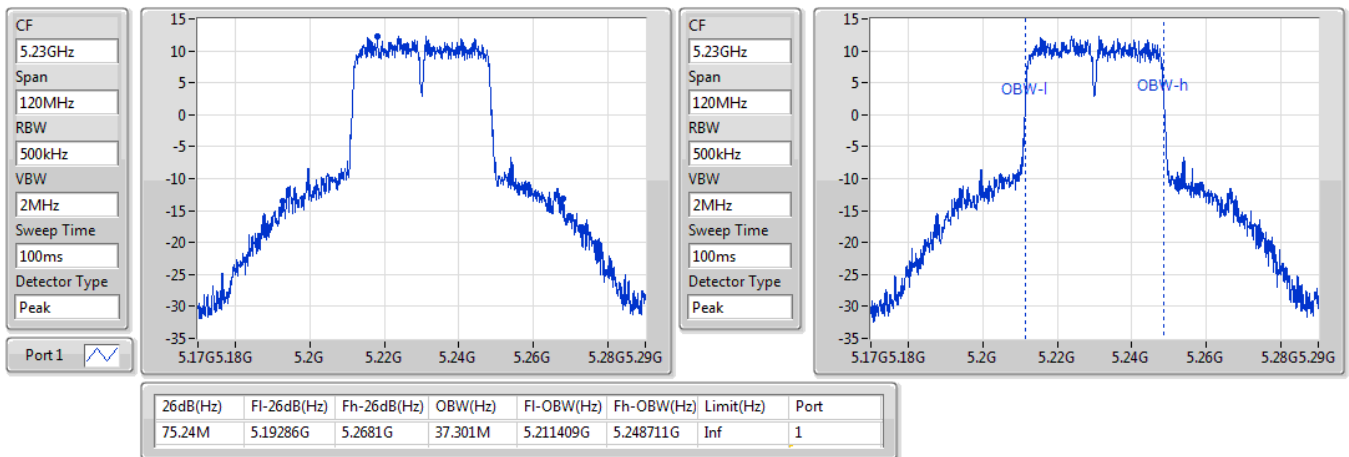


802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5190MHz

18/12/2019

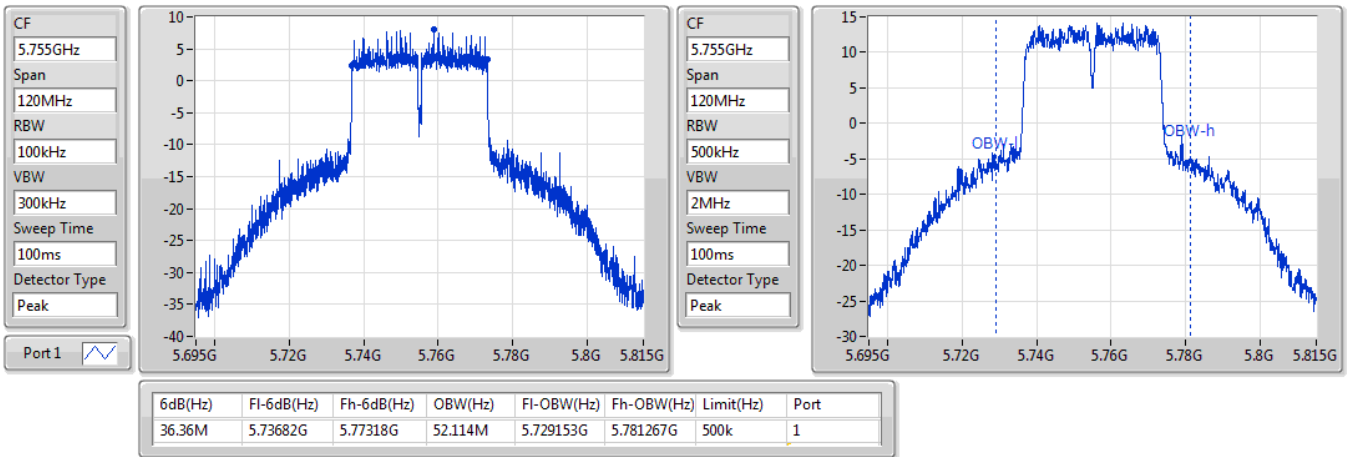

802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5230MHz

18/12/2019

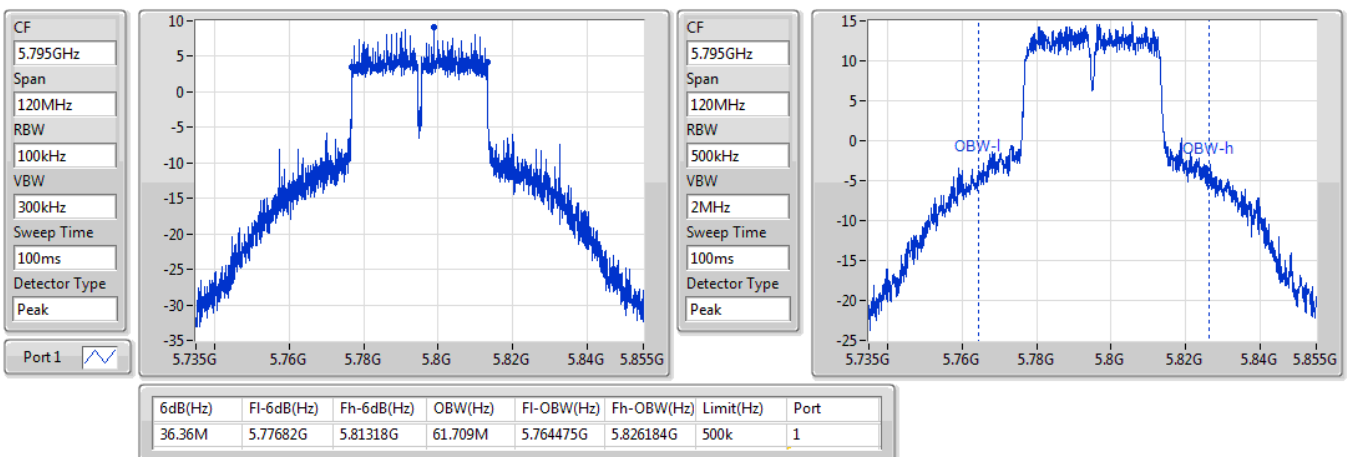


802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5755MHz

18/12/2019

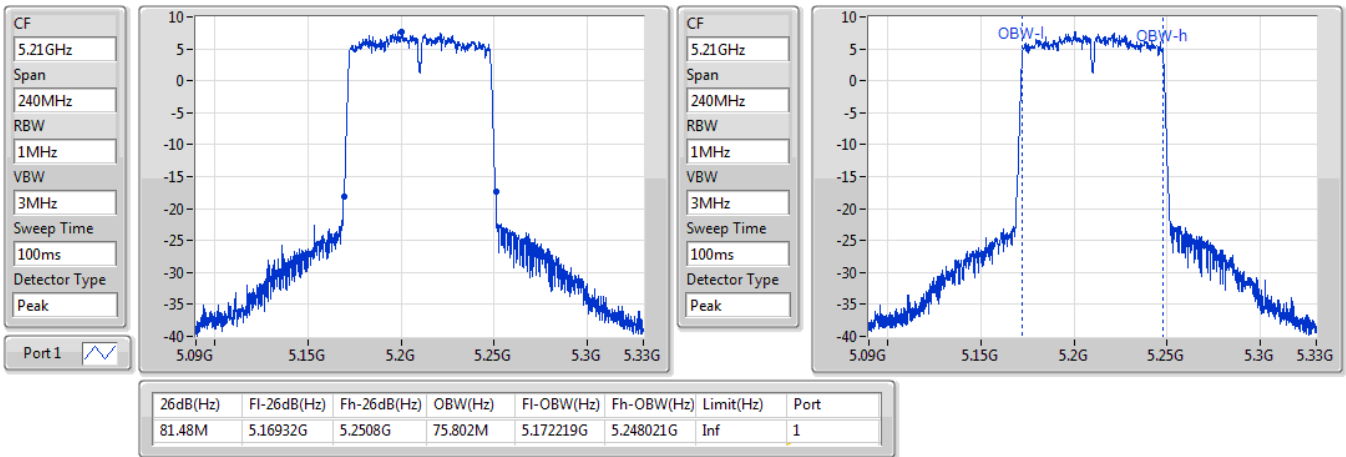

802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5795MHz

18/12/2019

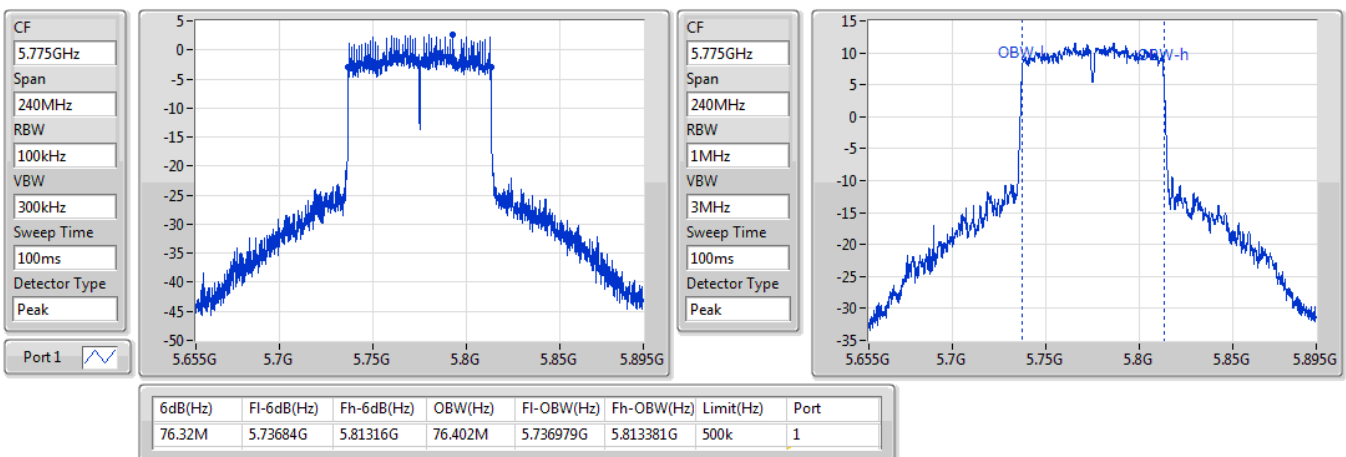


802.11ac VHT80_Nss1,(MCS0)_1TX
EBW
5210MHz

18/12/2019

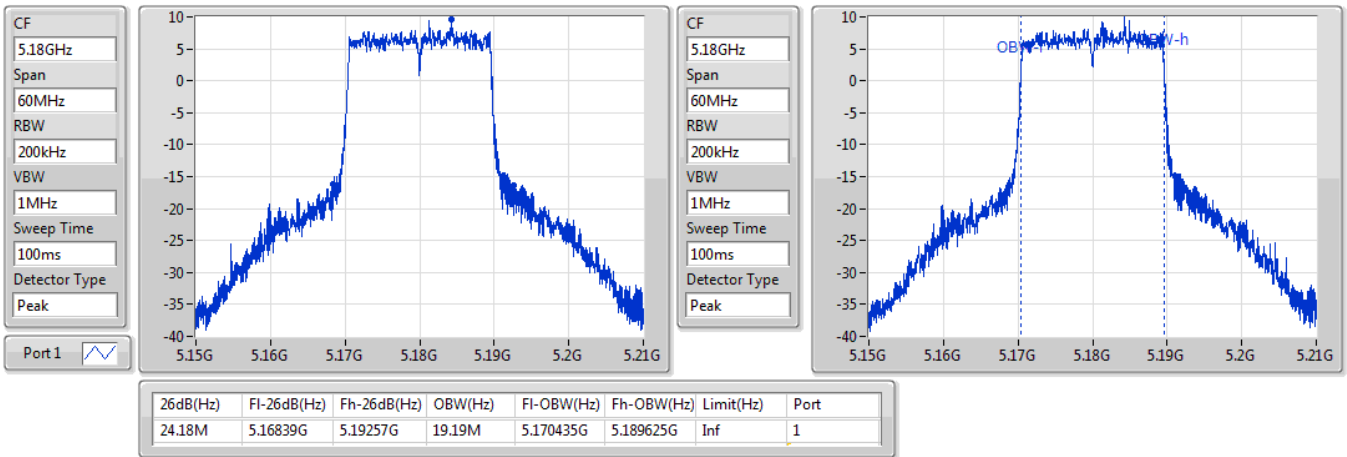

802.11ac VHT80_Nss1,(MCS0)_1TX
EBW
5775MHz

18/12/2019

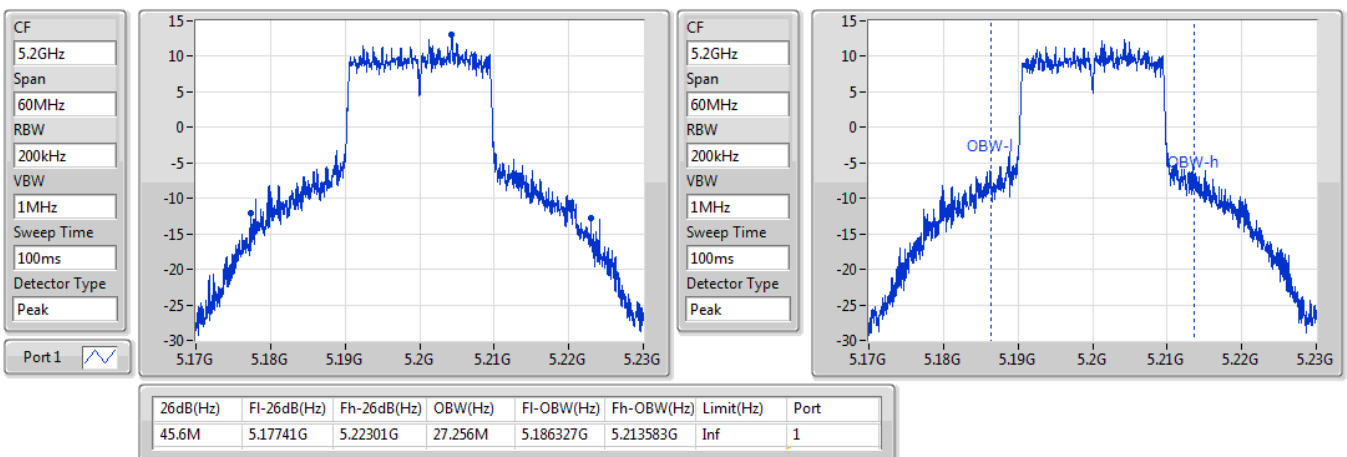


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5180MHz

18/12/2019

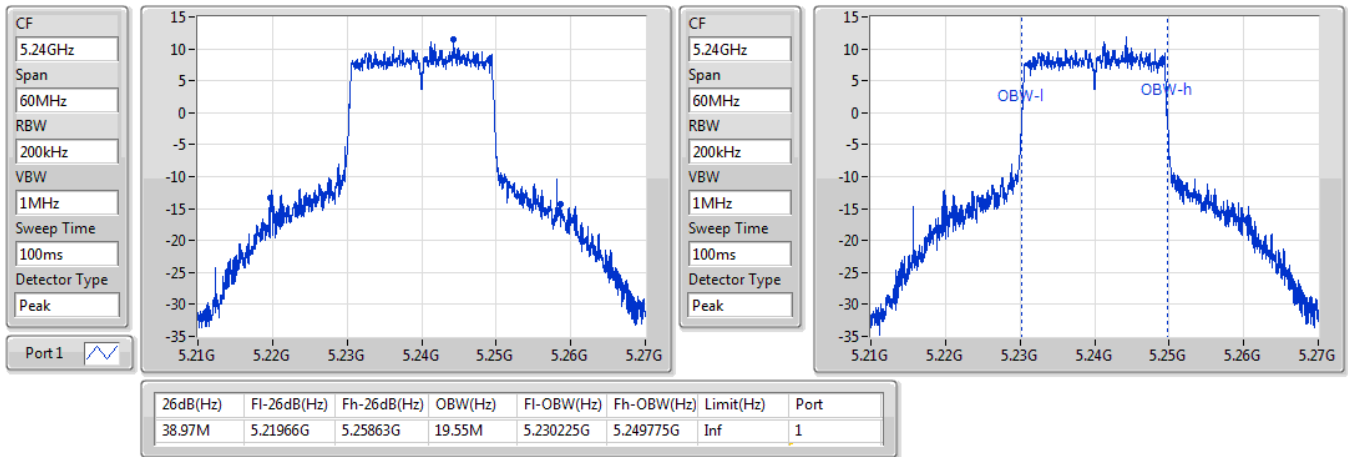

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5200MHz

18/12/2019

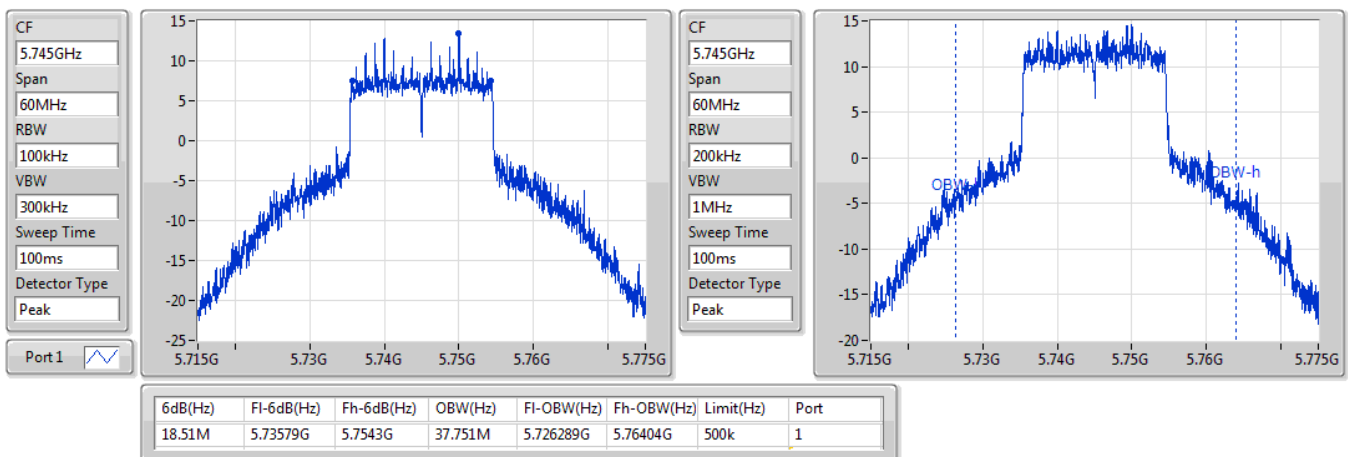


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5240MHz

18/12/2019

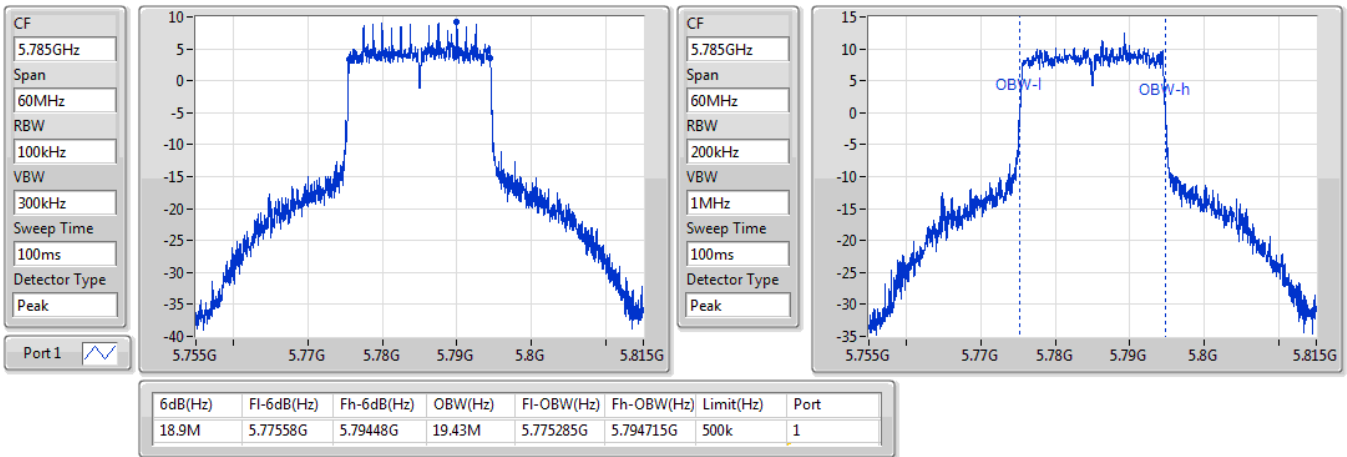

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5745MHz

18/12/2019

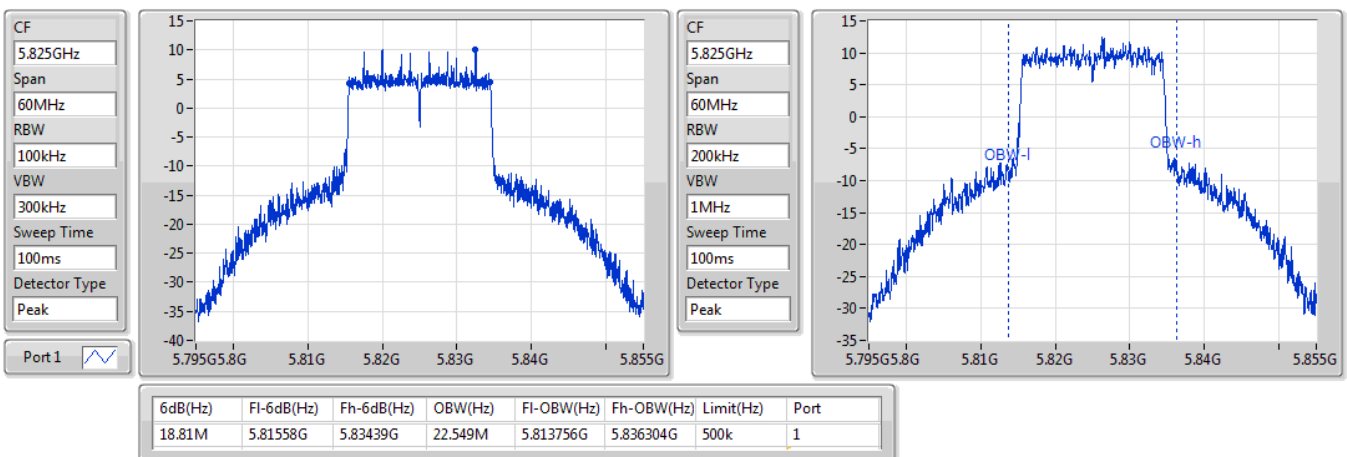


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5785MHz

18/12/2019

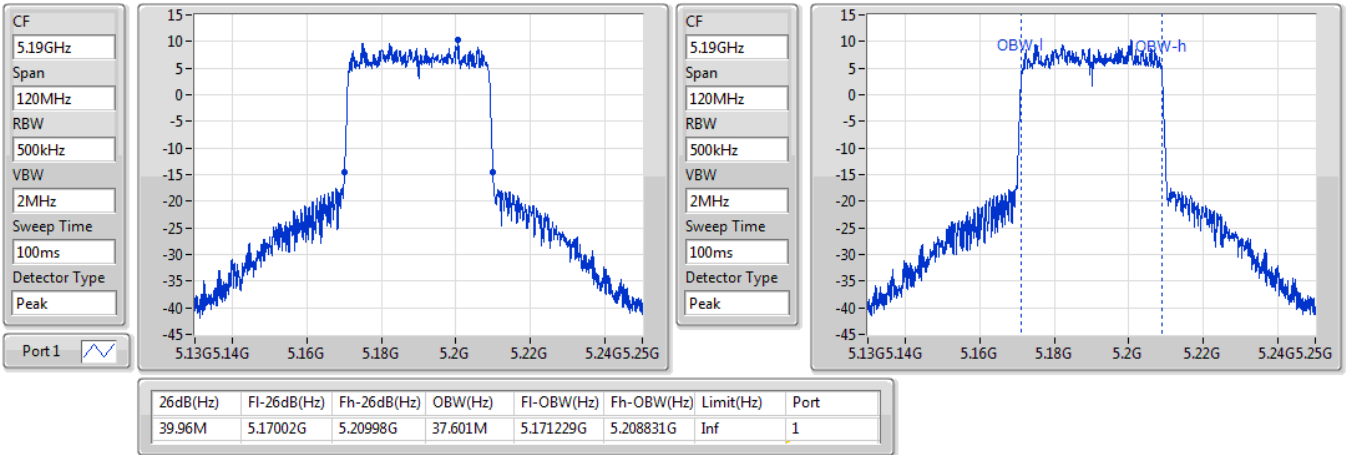

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5825MHz

18/12/2019

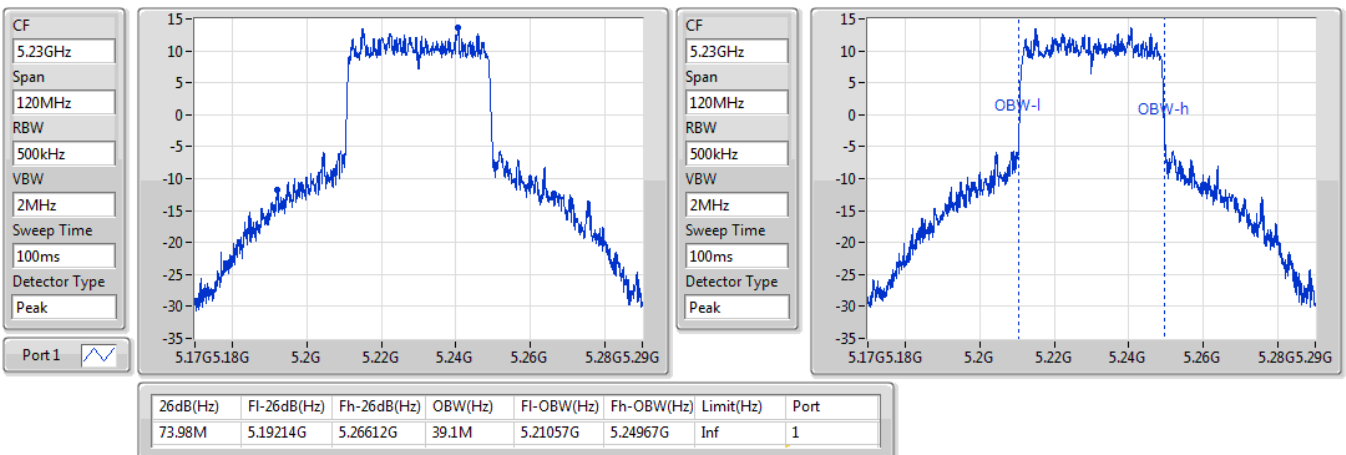


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5190MHz

18/12/2019

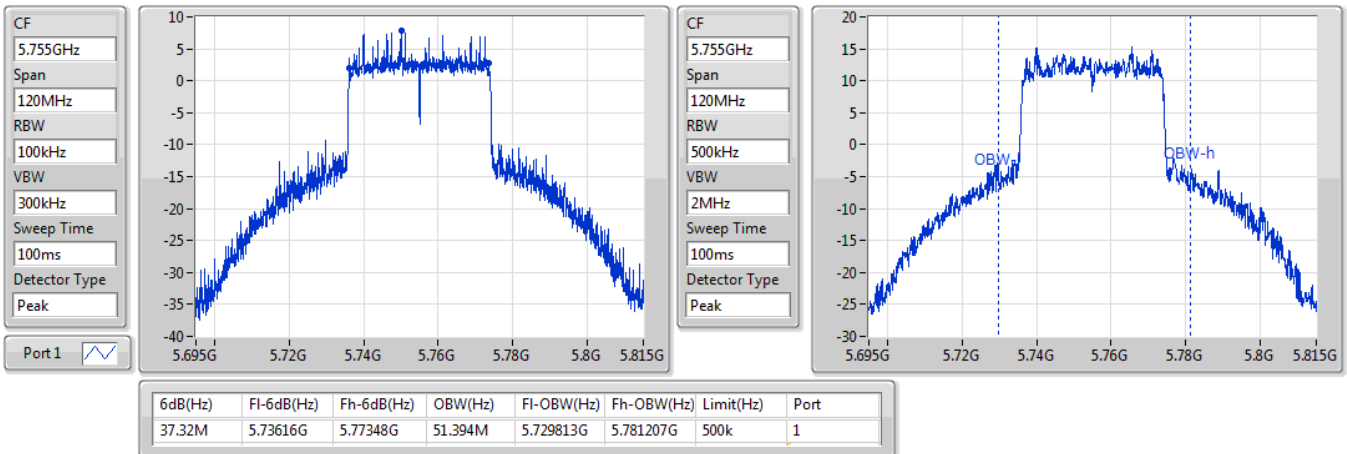

802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5230MHz

18/12/2019

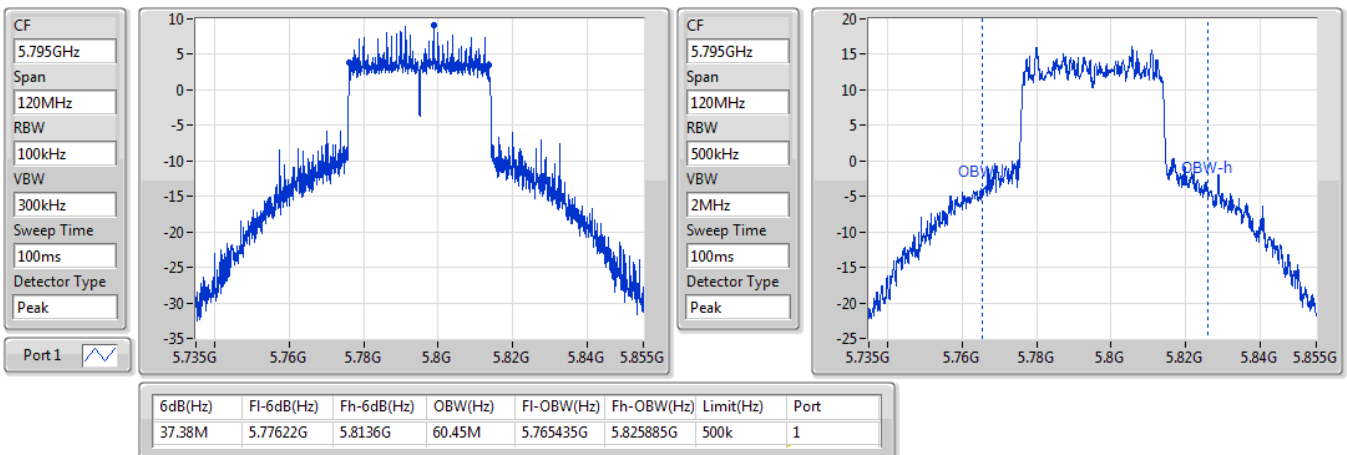


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5755MHz

18/12/2019

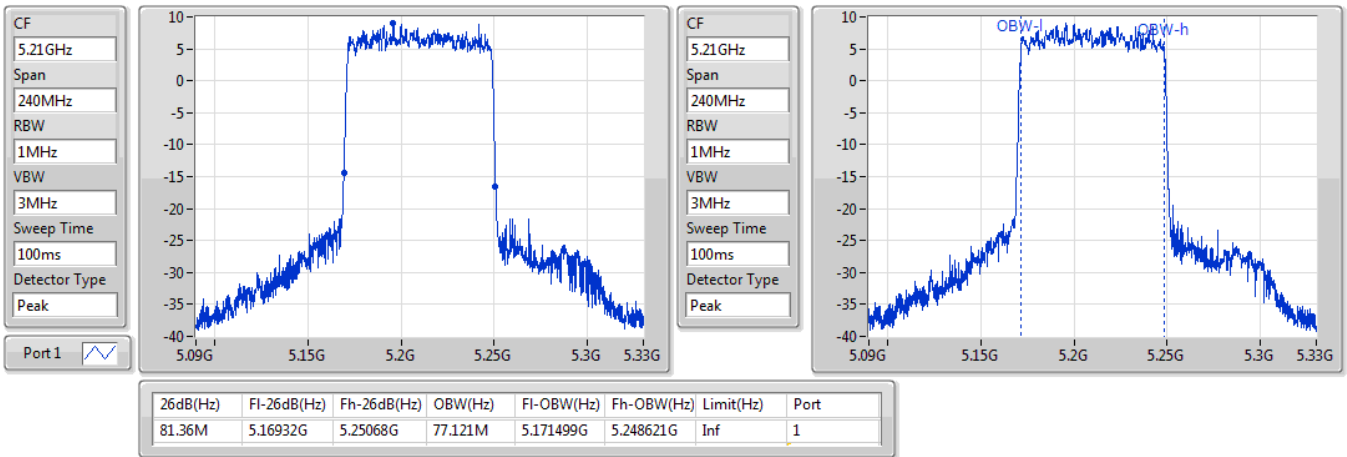

802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5795MHz

18/12/2019

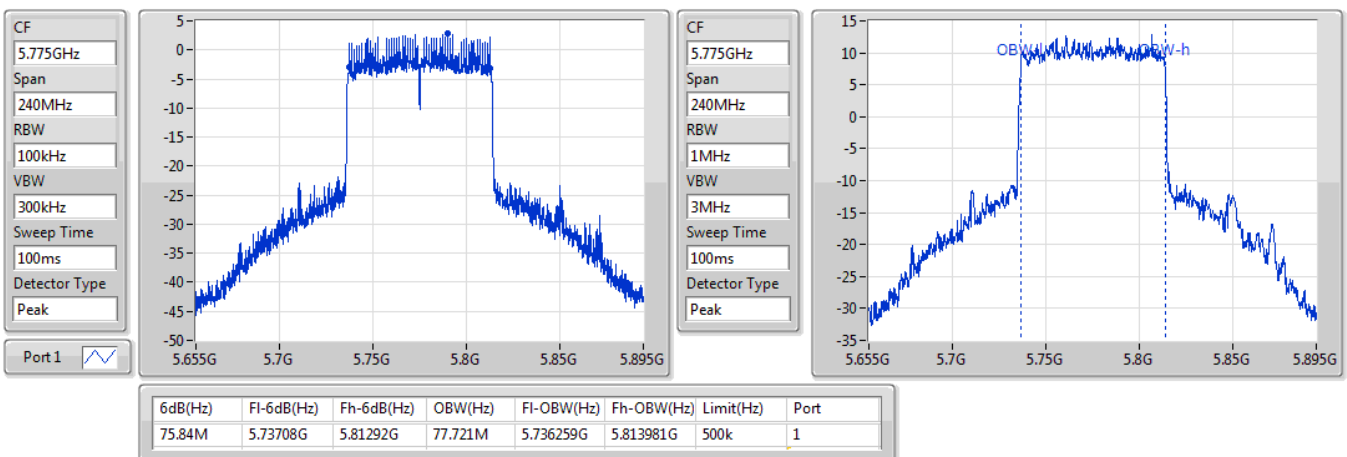


802.11ax HEW80_Nss1,(MCS0)_1TX
EBW
5210MHz

18/12/2019


802.11ax HEW80_Nss1,(MCS0)_1TX
EBW
5775MHz

18/12/2019



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	45.27M	34.273M	34M3D1D	27.15M	17.061M
802.11ac VHT20_Nss2,(MCS0)_2TX	44.43M	26.657M	26M7D1D	22.47M	17.931M
802.11ac VHT40_Nss2,(MCS0)_2TX	71.64M	37.061M	37M1D1D	39.78M	36.282M
802.11ac VHT80_Nss2,(MCS0)_2TX	81.72M	75.802M	75M8D1D	81.6M	75.802M
802.11ax HEW20_Nss2,(MCS0)_2TX	44.85M	26.447M	26M4D1D	21.6M	19.07M
802.11ax HEW40_Nss2,(MCS0)_2TX	76.5M	38.381M	38M4D1D	39.96M	37.541M
802.11ax HEW80_Nss2,(MCS0)_2TX	81.24M	77.121M	77M1D1D	81.12M	77.121M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.38M	35.142M	35M1D1D	16.32M	17.121M
802.11ac VHT20_Nss2,(MCS0)_2TX	17.58M	31.724M	31M7D1D	17.55M	19.04M
802.11ac VHT40_Nss2,(MCS0)_2TX	36.3M	59.13M	59M1D1D	36.24M	47.916M
802.11ac VHT80_Nss2,(MCS0)_2TX	75.84M	77.001M	77M0D1D	75.72M	76.642M
802.11ax HEW20_Nss2,(MCS0)_2TX	18.96M	35.832M	35M8D1D	17.73M	19.58M
802.11ax HEW40_Nss2,(MCS0)_2TX	37.62M	55.892M	55M9D1D	37.5M	46.657M
802.11ax HEW80_Nss2,(MCS0)_2TX	76.56M	77.961M	78M0D1D	75.96M	77.841M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

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)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	36.87M	17.721M	27.15M	17.061M
5200MHz	Pass	Inf	45.27M	34.273M	43.23M	29.205M
5240MHz	Pass	Inf	38.22M	18.891M	37.59M	17.511M
5745MHz	Pass	500k	16.35M	35.022M	16.32M	35.142M
5785MHz	Pass	500k	16.38M	17.451M	16.32M	17.121M
5825MHz	Pass	500k	16.32M	18.171M	16.32M	17.541M
802.11ac VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	22.8M	17.931M	22.47M	17.961M
5200MHz	Pass	Inf	44.43M	26.657M	39.06M	22.159M
5240MHz	Pass	Inf	38.55M	19.13M	28.83M	18.321M
5745MHz	Pass	500k	17.58M	31.724M	17.55M	30.375M
5785MHz	Pass	500k	17.58M	20M	17.58M	19.04M
5825MHz	Pass	500k	17.58M	21.499M	17.58M	20.27M
802.11ac VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	40.02M	36.282M	39.78M	36.402M
5230MHz	Pass	Inf	71.64M	36.942M	69.96M	37.061M
5755MHz	Pass	500k	36.24M	48.936M	36.3M	47.916M
5795MHz	Pass	500k	36.3M	56.012M	36.24M	59.13M
802.11ac VHT80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	81.6M	75.802M	81.72M	75.802M
5775MHz	Pass	500k	75.72M	76.642M	75.84M	77.001M
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	26.07M	19.13M	21.6M	19.07M
5200MHz	Pass	Inf	44.85M	26.447M	42.06M	21.409M
5240MHz	Pass	Inf	41.73M	19.67M	36.06M	19.22M
5745MHz	Pass	500k	17.73M	35.832M	18.51M	34.723M
5785MHz	Pass	500k	18.81M	19.94M	18.96M	19.58M
5825MHz	Pass	500k	18.57M	21.619M	18.93M	20.78M
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	39.96M	37.541M	40.02M	37.661M
5230MHz	Pass	Inf	71.34M	38.381M	76.5M	38.321M
5755MHz	Pass	500k	37.56M	49.835M	37.5M	46.657M
5795MHz	Pass	500k	37.56M	55.232M	37.62M	55.892M
802.11ax HEW80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	81.12M	77.121M	81.24M	77.121M
5775MHz	Pass	500k	75.96M	77.841M	76.56M	77.961M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

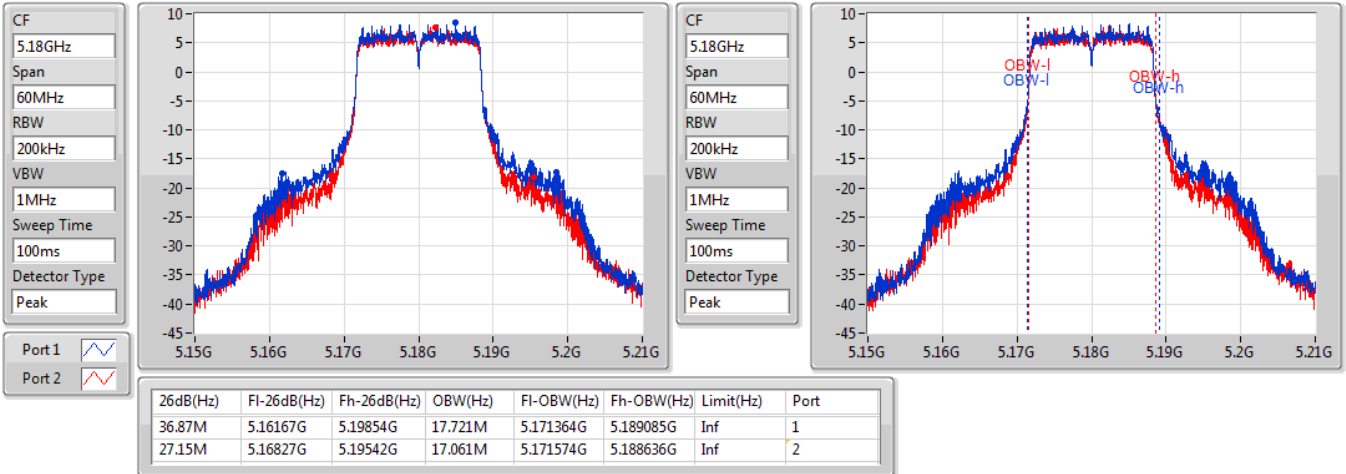
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_2TX

EBW

5180MHz

17/12/2019

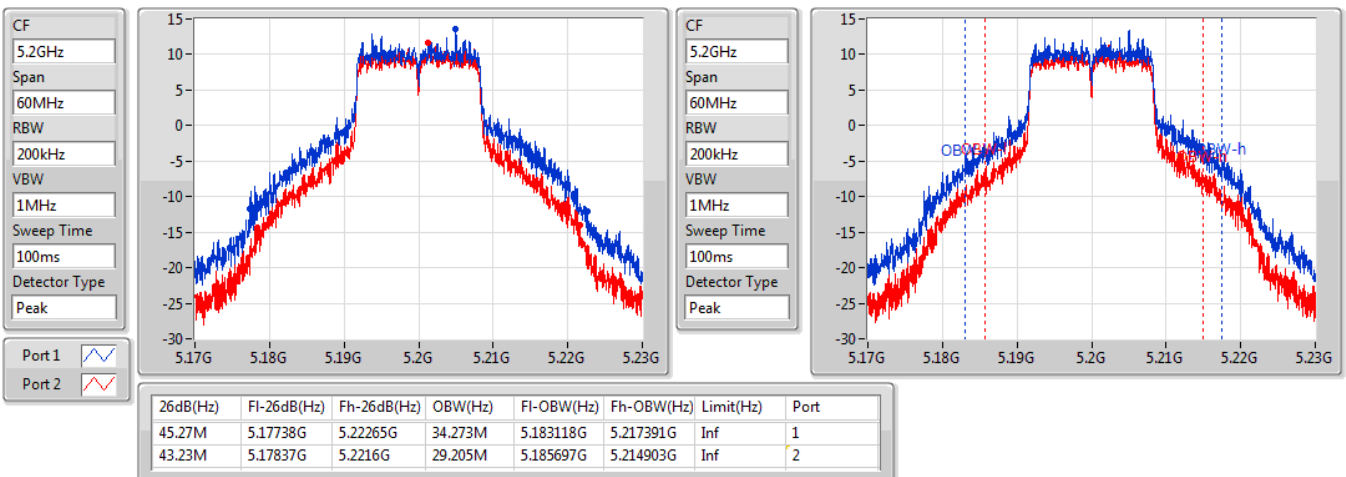


802.11a_Nss1,(6Mbps)_2TX

EBW

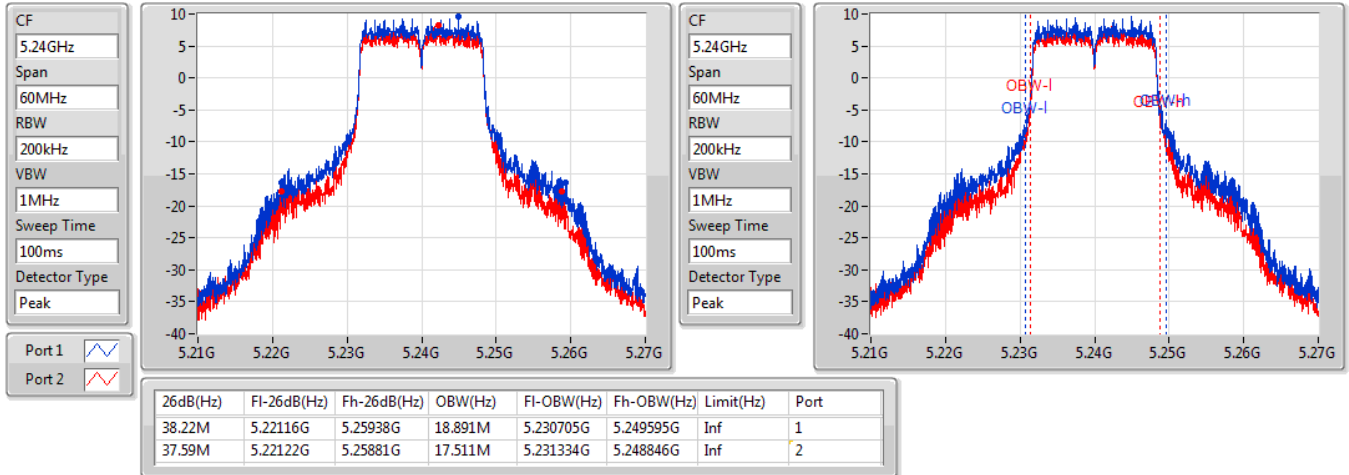
5200MHz

17/12/2019

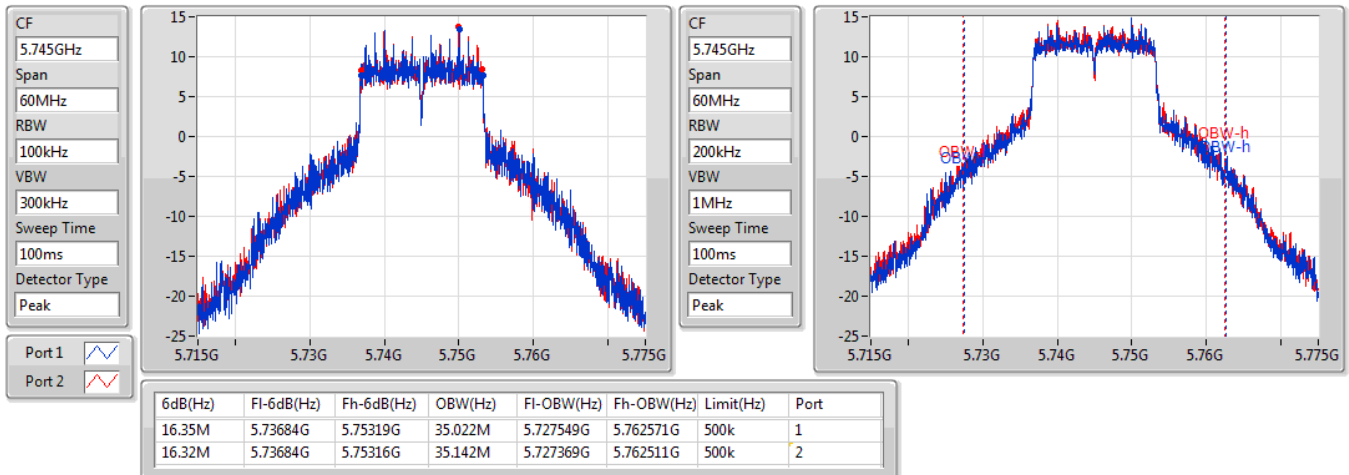


802.11a_Nss1,(6Mbps)_2TX
EBW
5240MHz

17/12/2019


802.11a_Nss1,(6Mbps)_2TX
EBW
5745MHz

17/12/2019

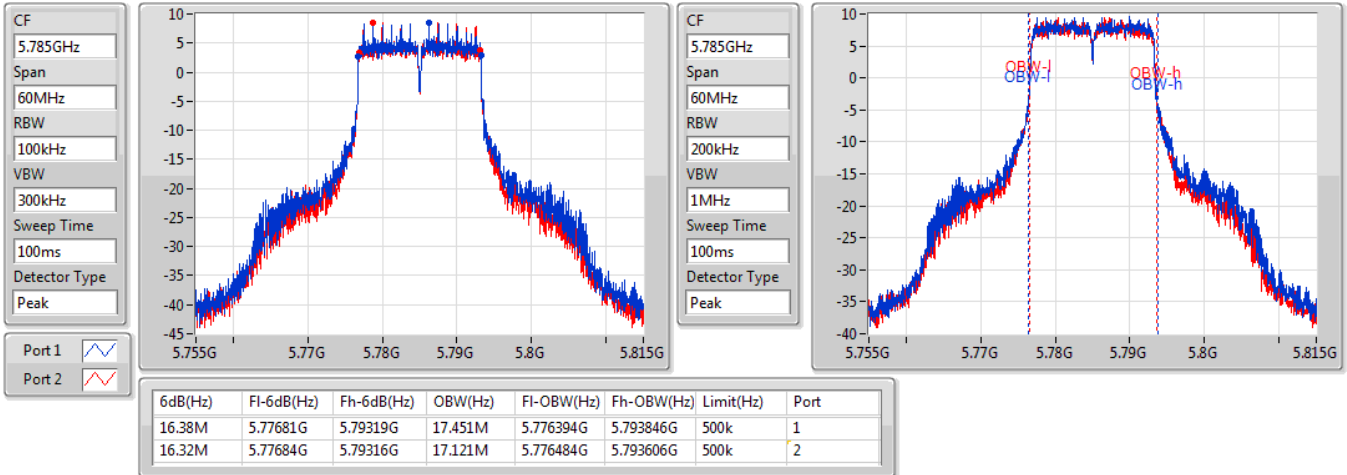


802.11a_Nss1,(6Mbps)_2TX

EBW

5785MHz

17/12/2019

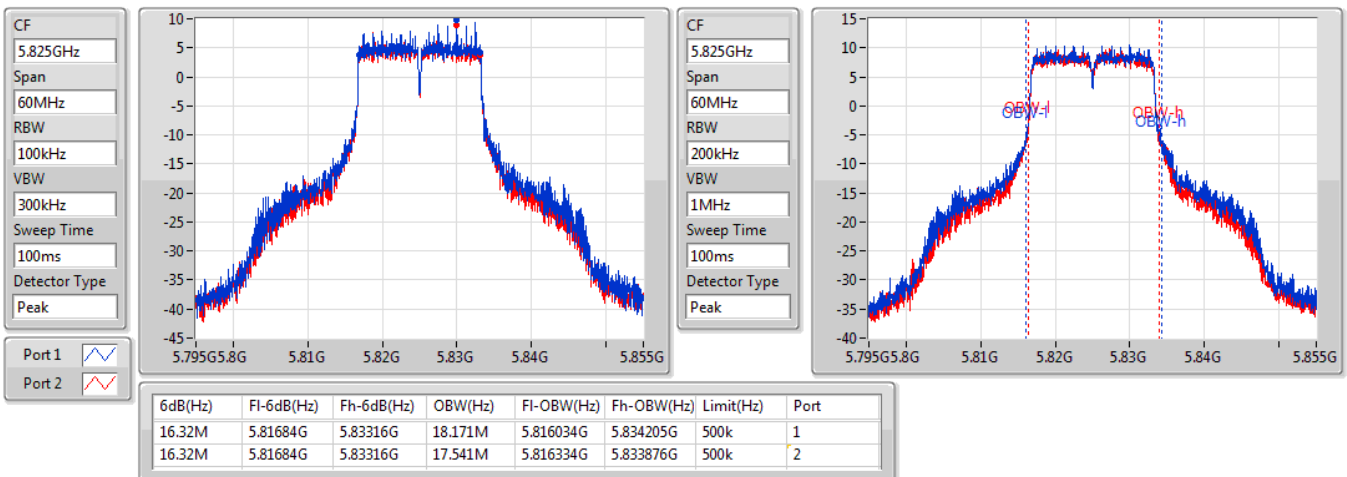


802.11a_Nss1,(6Mbps)_2TX

EBW

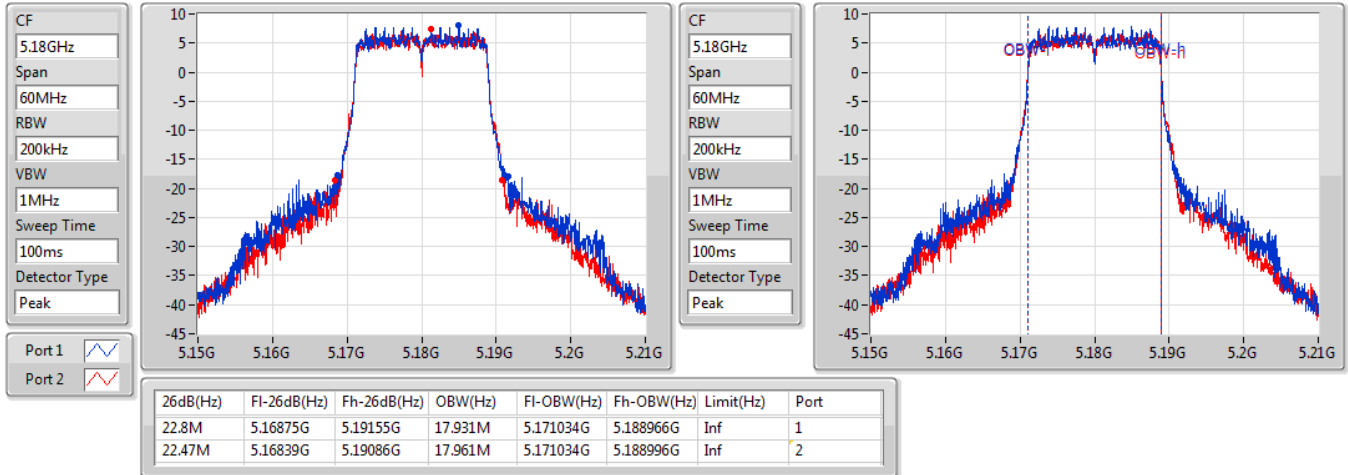
5825MHz

17/12/2019

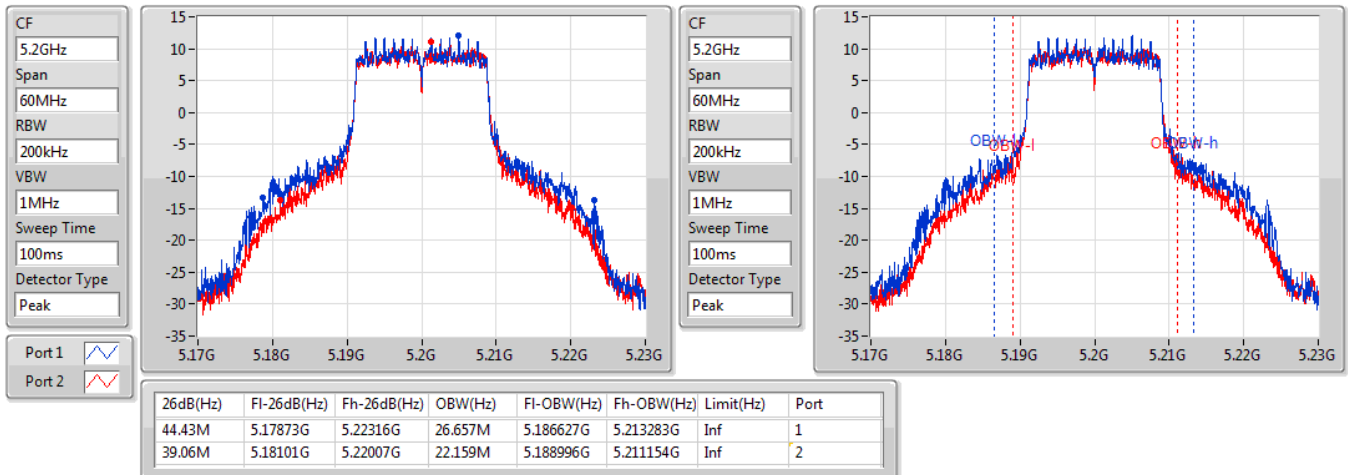


802.11ac VHT20_Nss2,(MCS0)_2TX
EBW
5180MHz

17/12/2019


802.11ac VHT20_Nss2,(MCS0)_2TX
EBW
5200MHz

17/12/2019

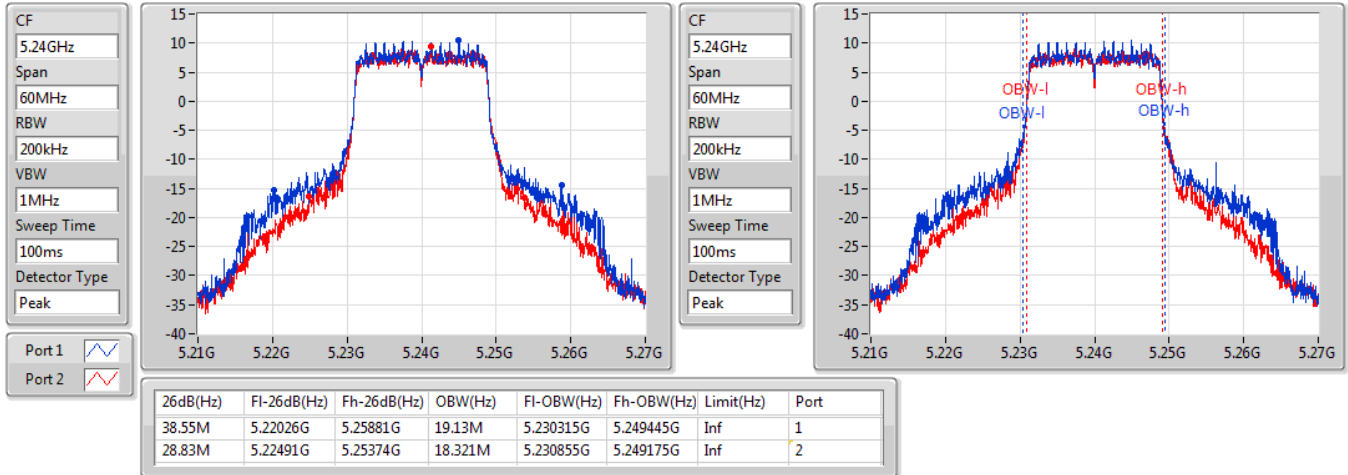


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5240MHz

17/12/2019

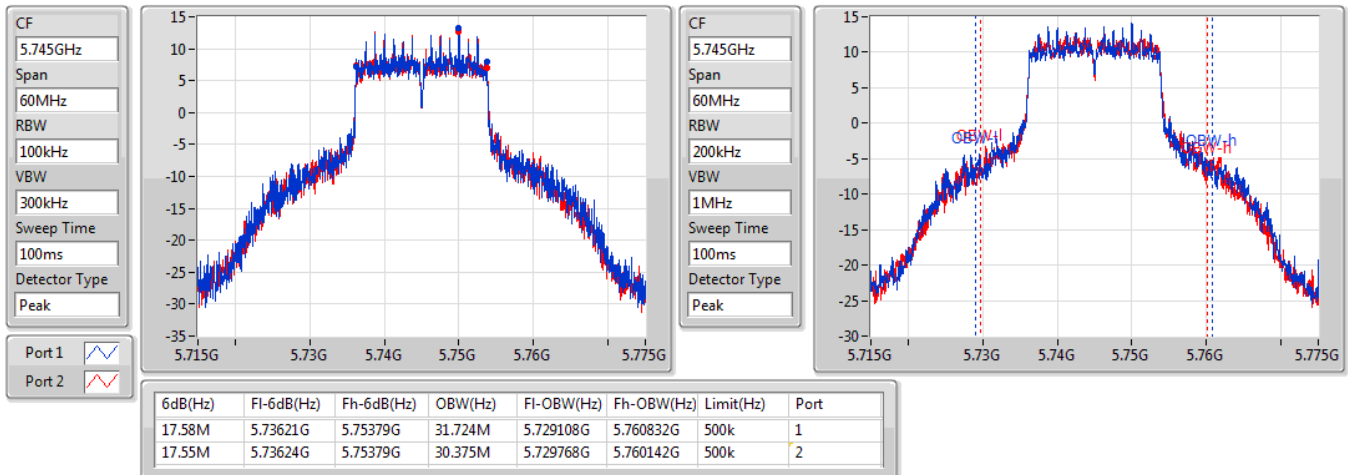


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5745MHz

17/12/2019

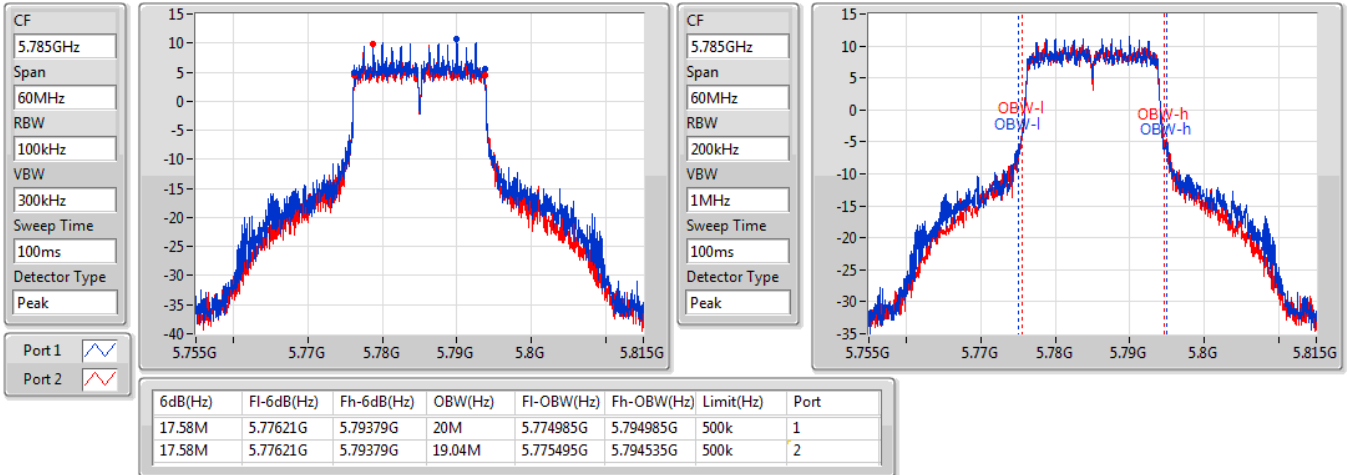


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5785MHz

17/12/2019

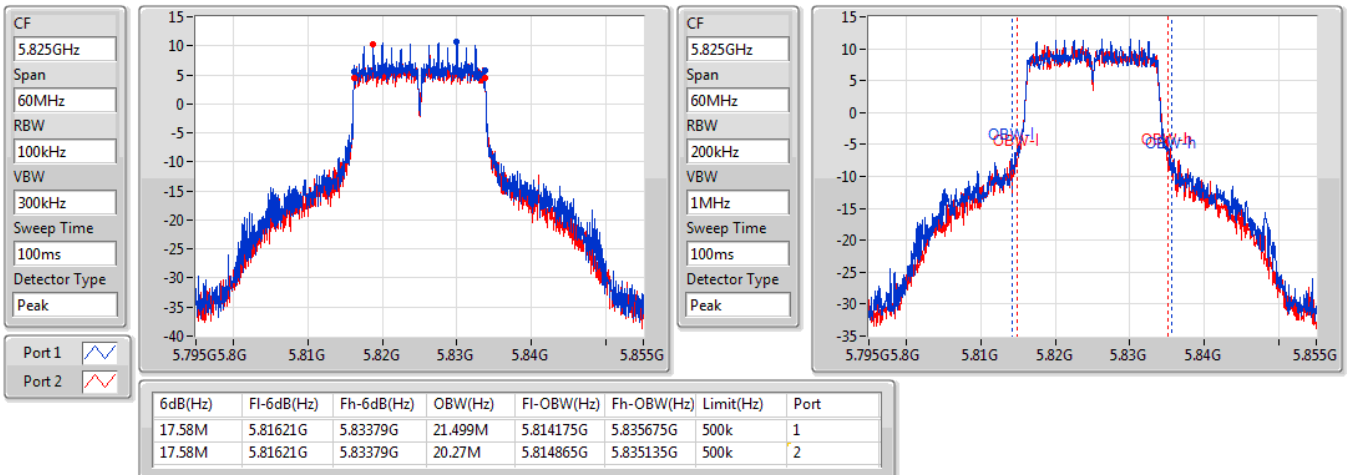


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5825MHz

17/12/2019

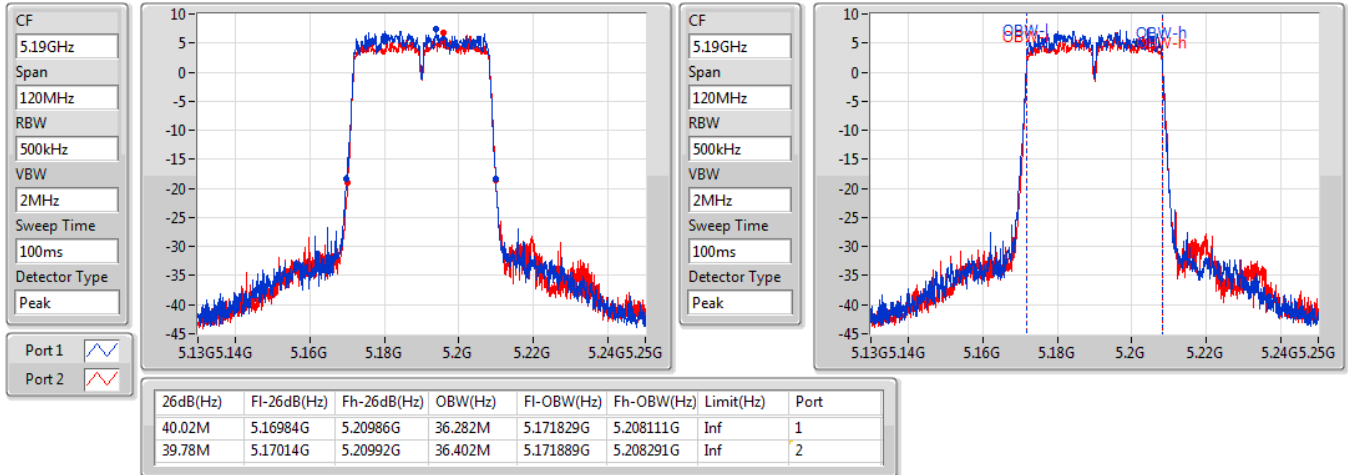


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5190MHz

17/12/2019

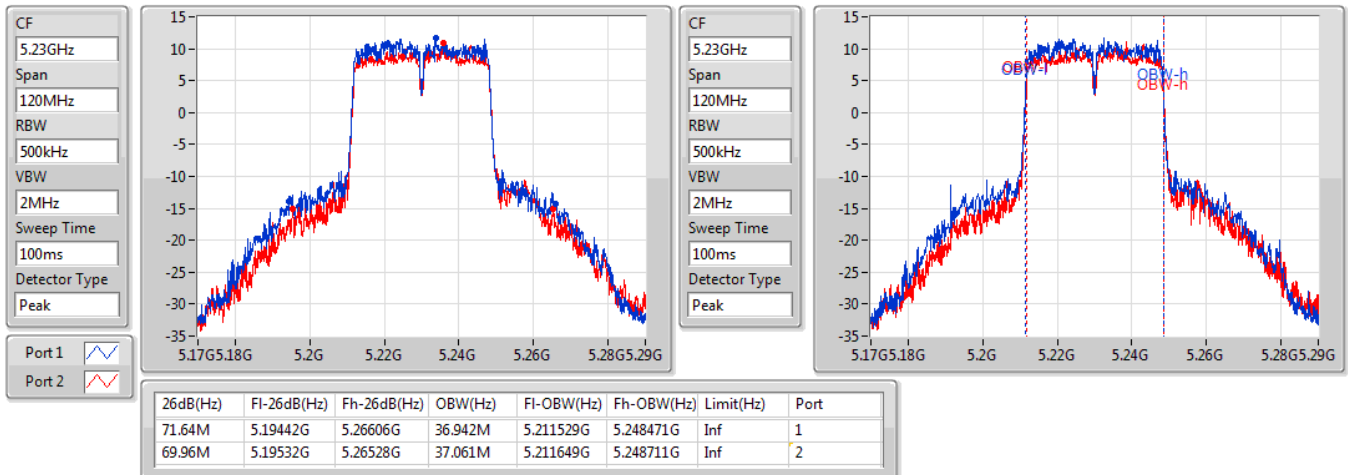


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5230MHz

17/12/2019

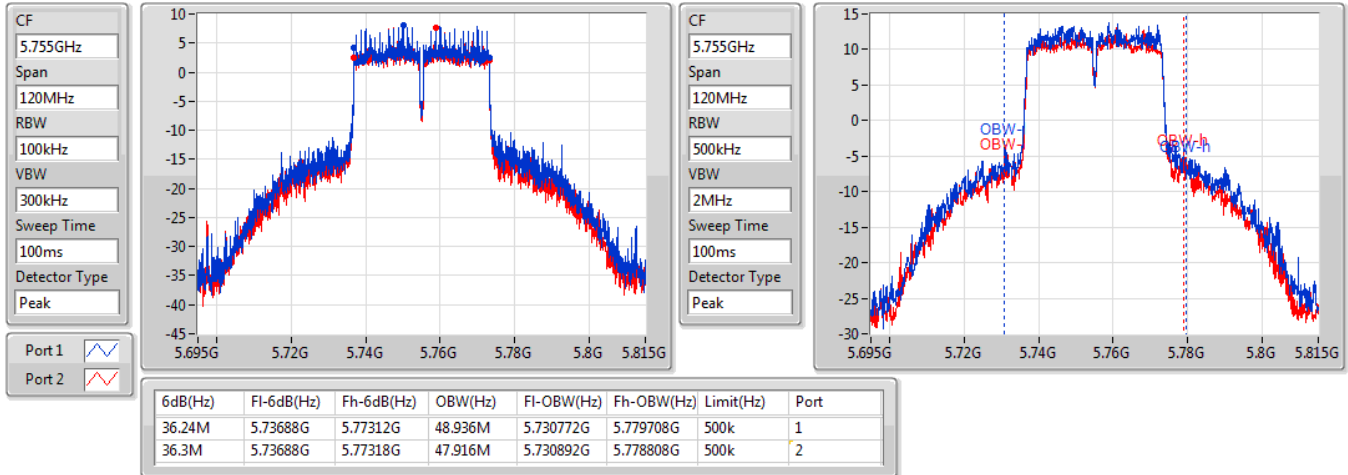


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5755MHz

17/12/2019

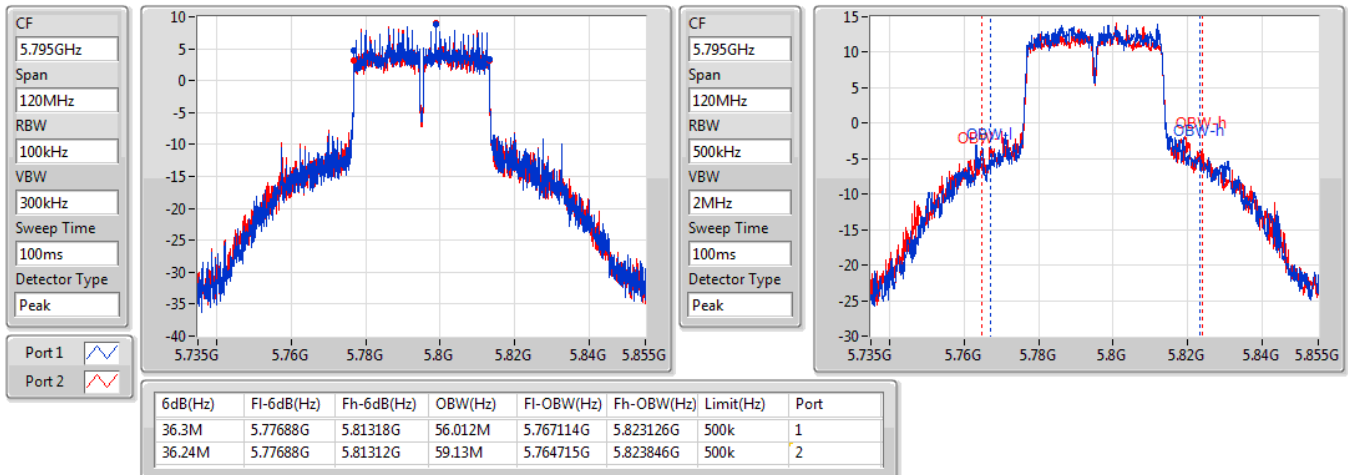


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5795MHz

17/12/2019

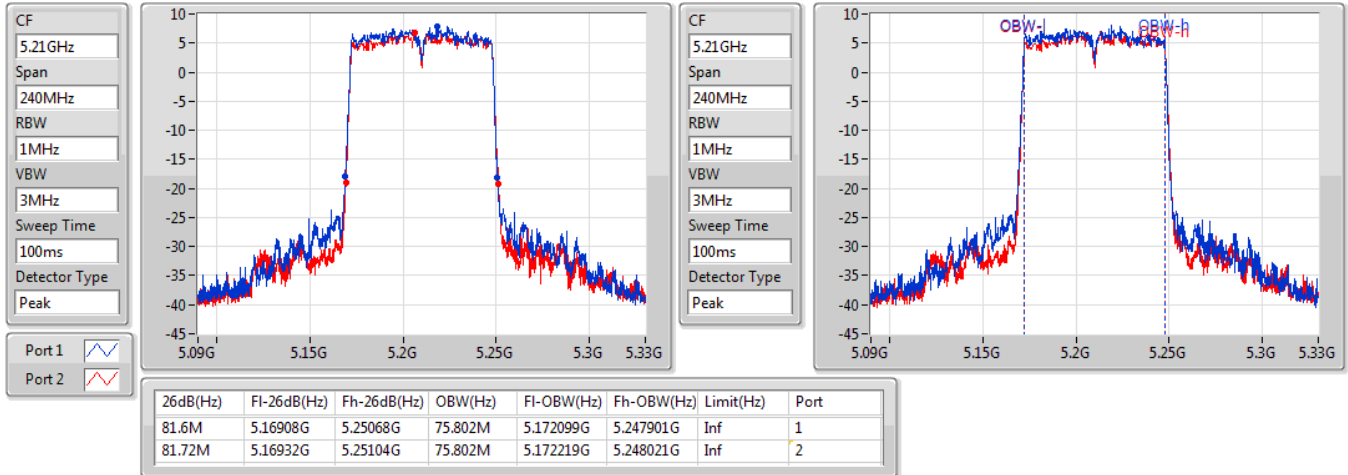


802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

5210MHz

17/12/2019

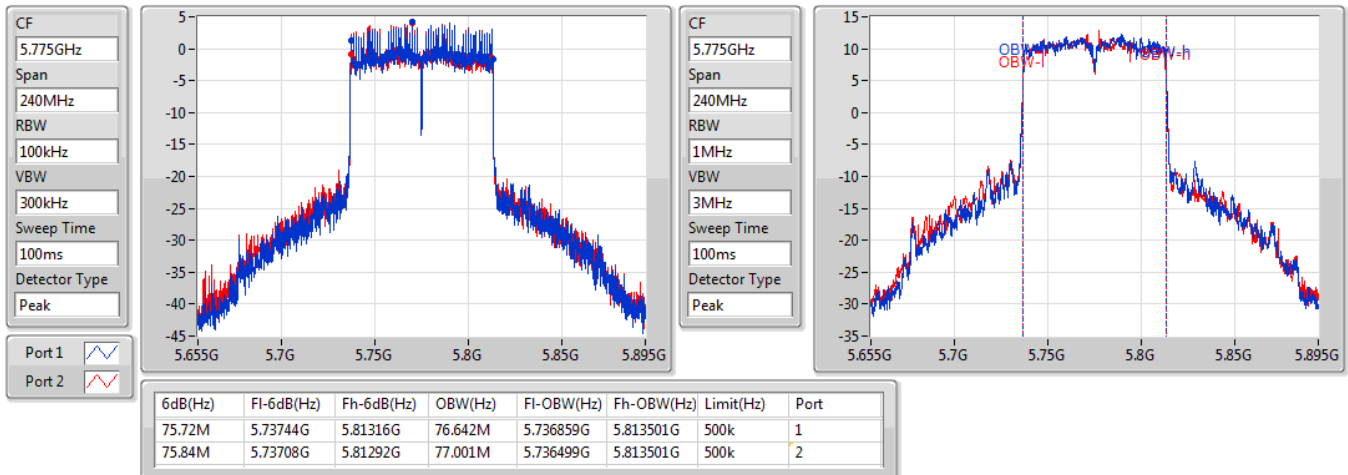


802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

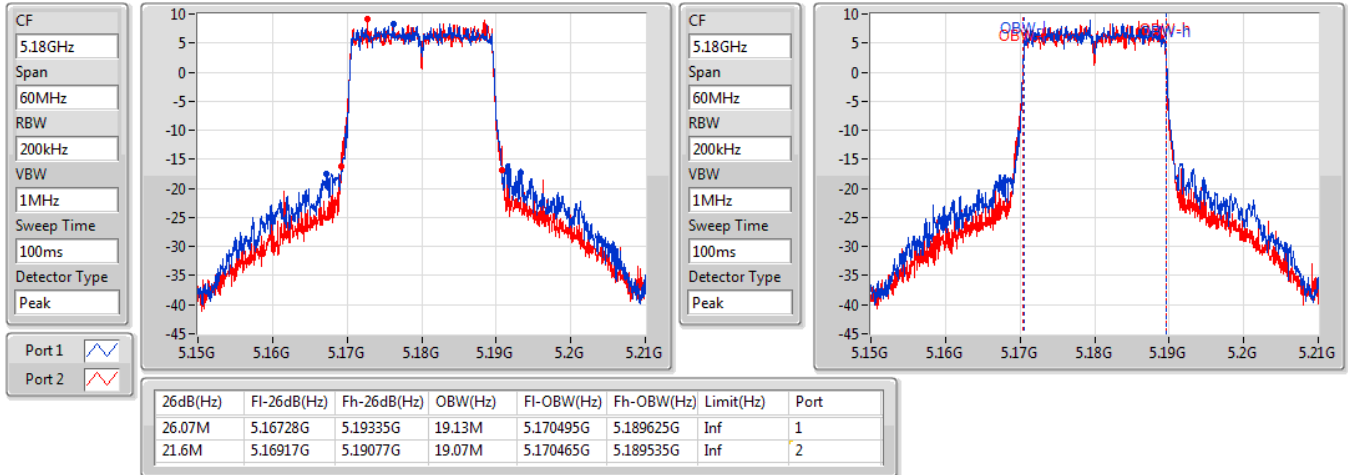
5775MHz

17/12/2019

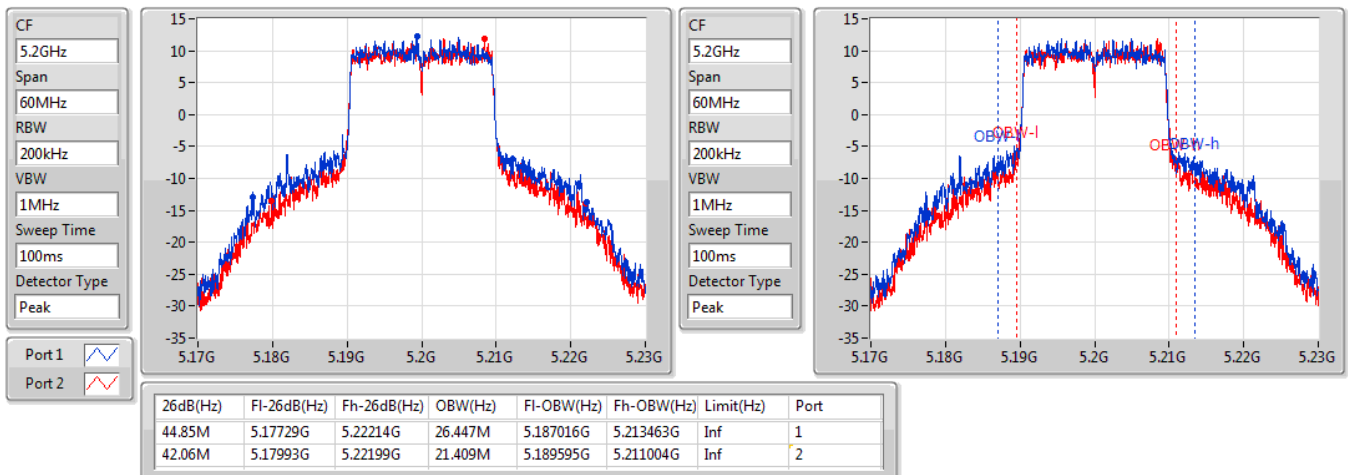


802.11ax HEW20_Nss2,(MCS0)_2TX
EBW
5180MHz

17/12/2019


802.11ax HEW20_Nss2,(MCS0)_2TX
EBW
5200MHz

17/12/2019

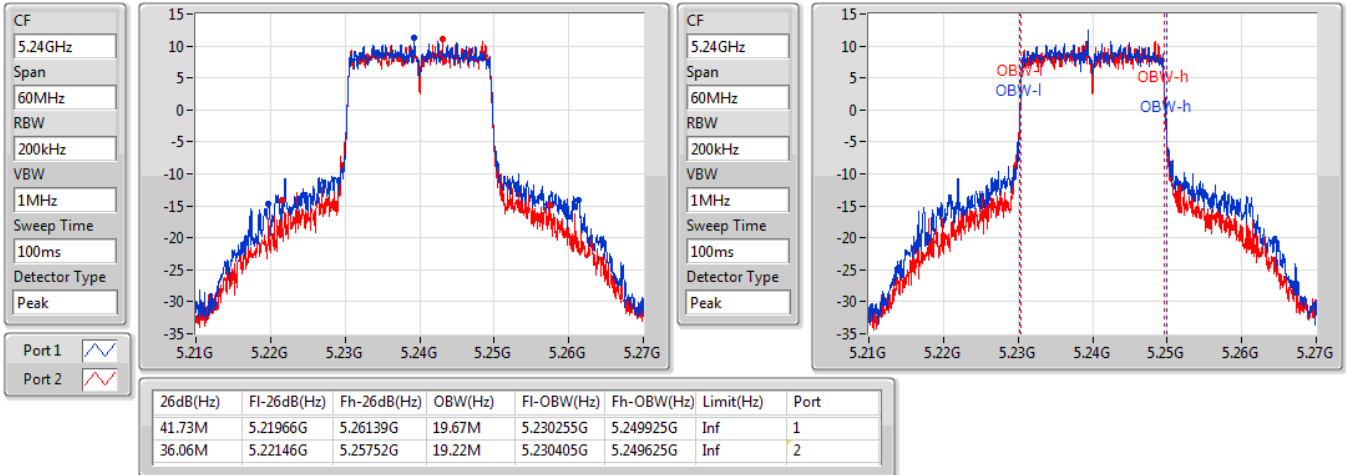


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5240MHz

17/12/2019

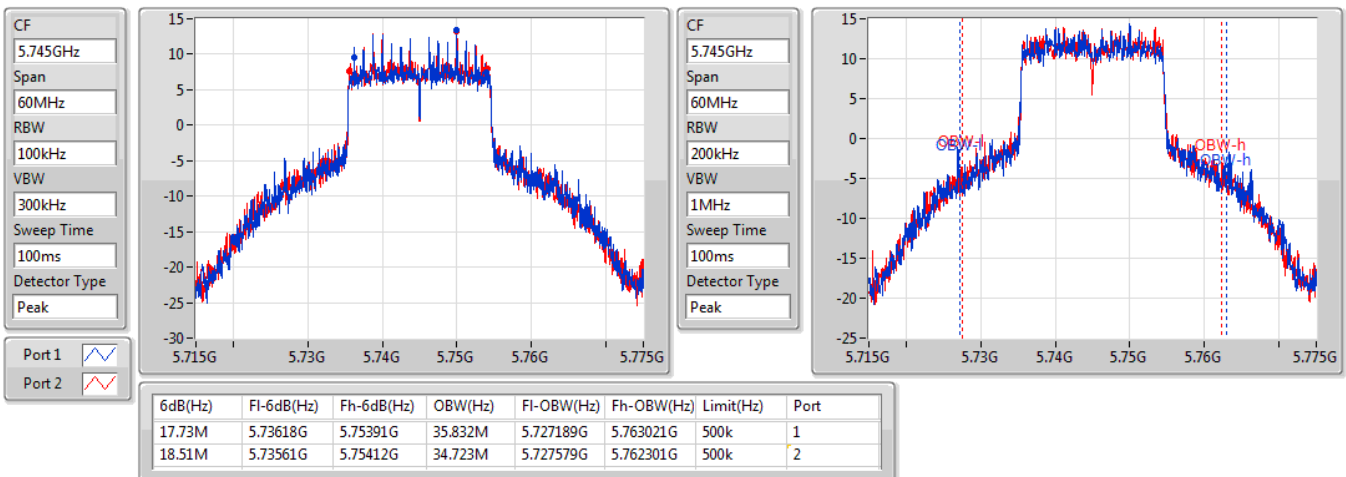


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5745MHz

17/12/2019

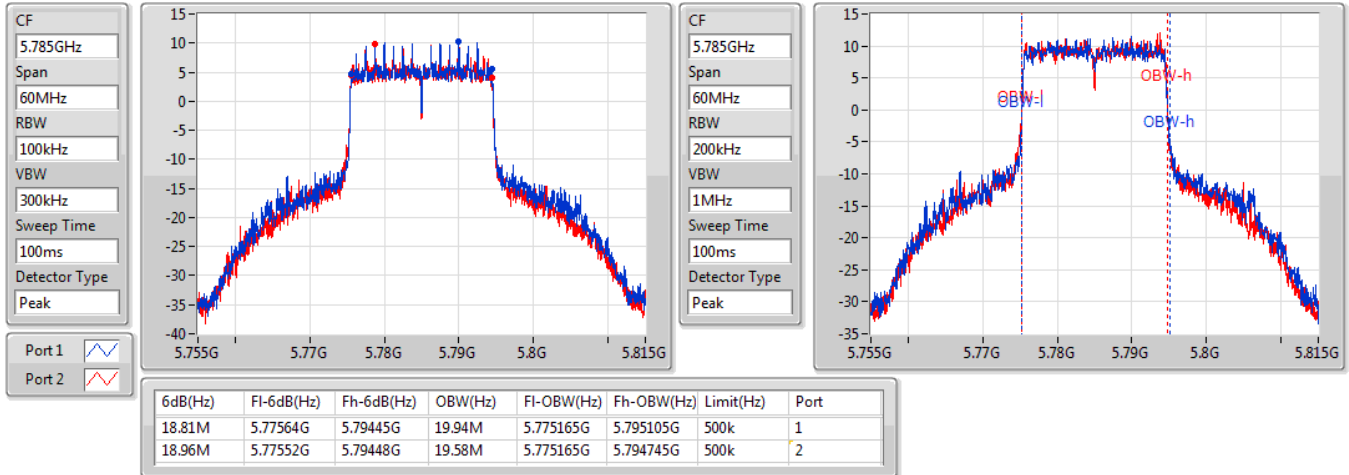


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5785MHz

17/12/2019

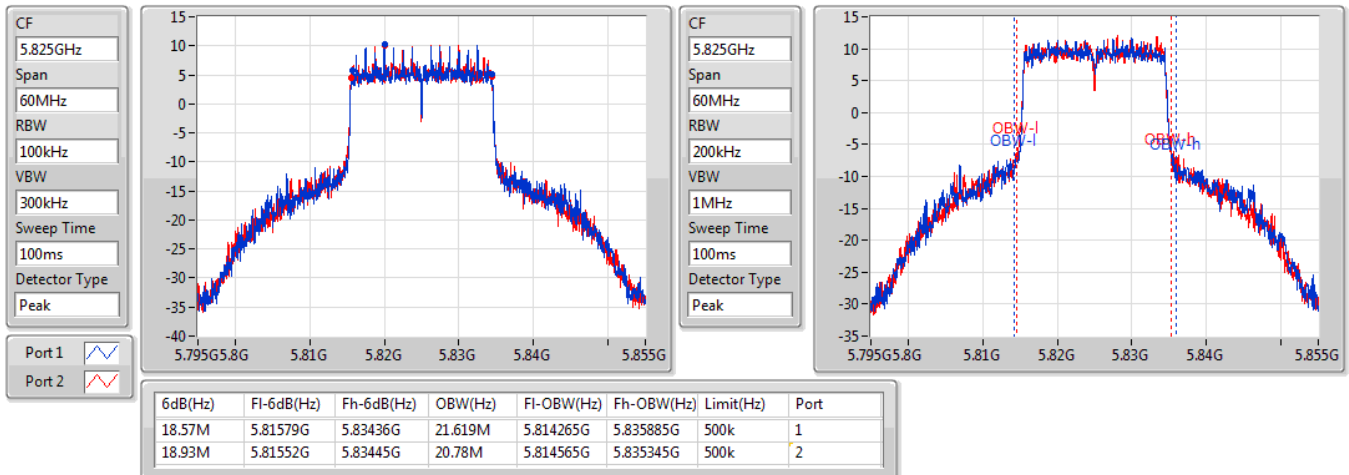


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

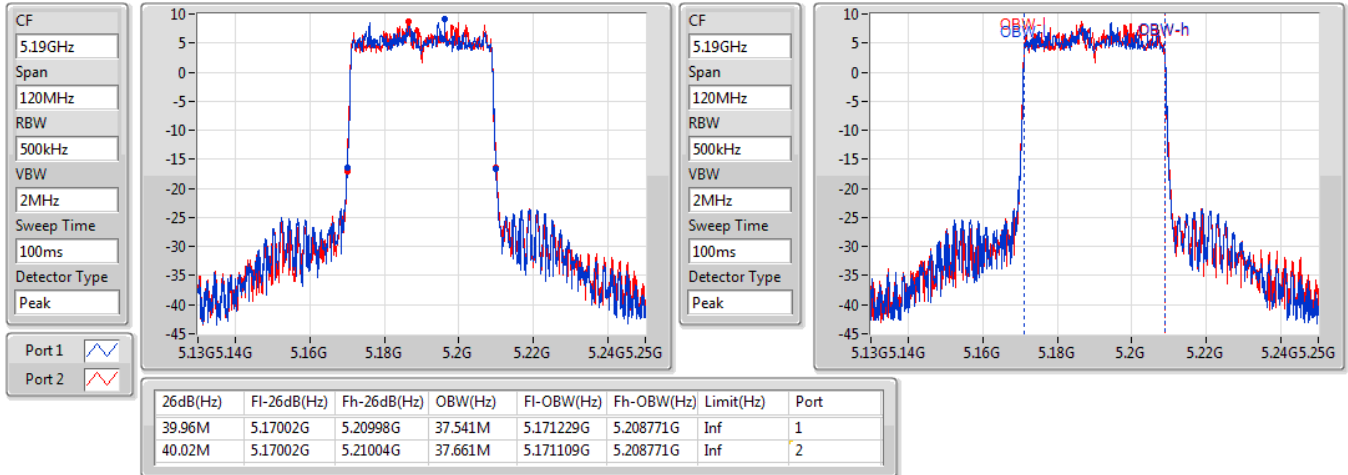
5825MHz

17/12/2019

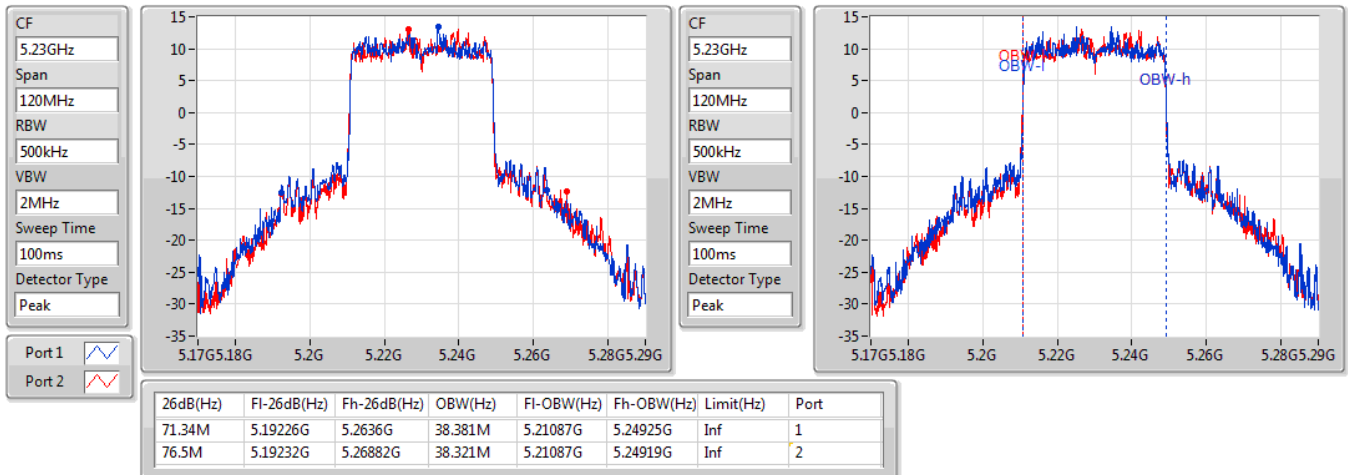


802.11ax HEW40_Nss2,(MCS0)_2TX
EBW
5190MHz

17/12/2019


802.11ax HEW40_Nss2,(MCS0)_2TX
EBW
5230MHz

17/12/2019

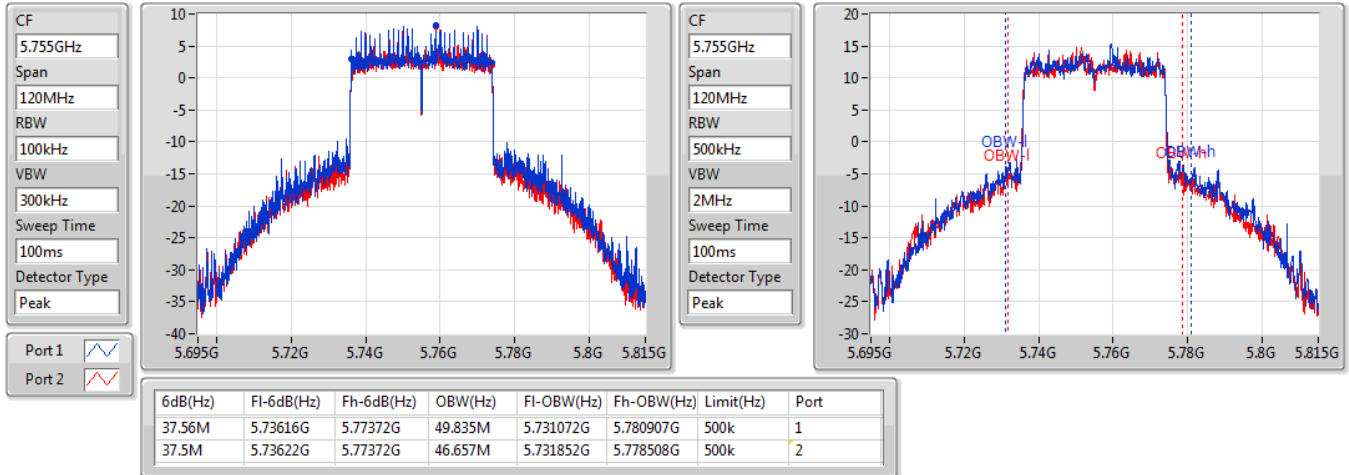


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5755MHz

17/12/2019

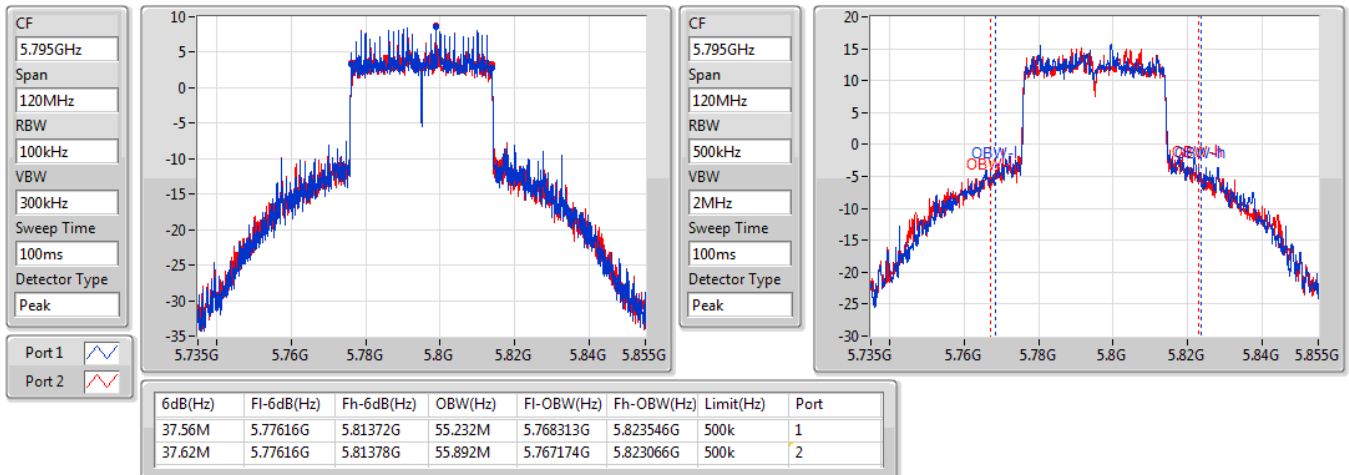


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5795MHz

17/12/2019

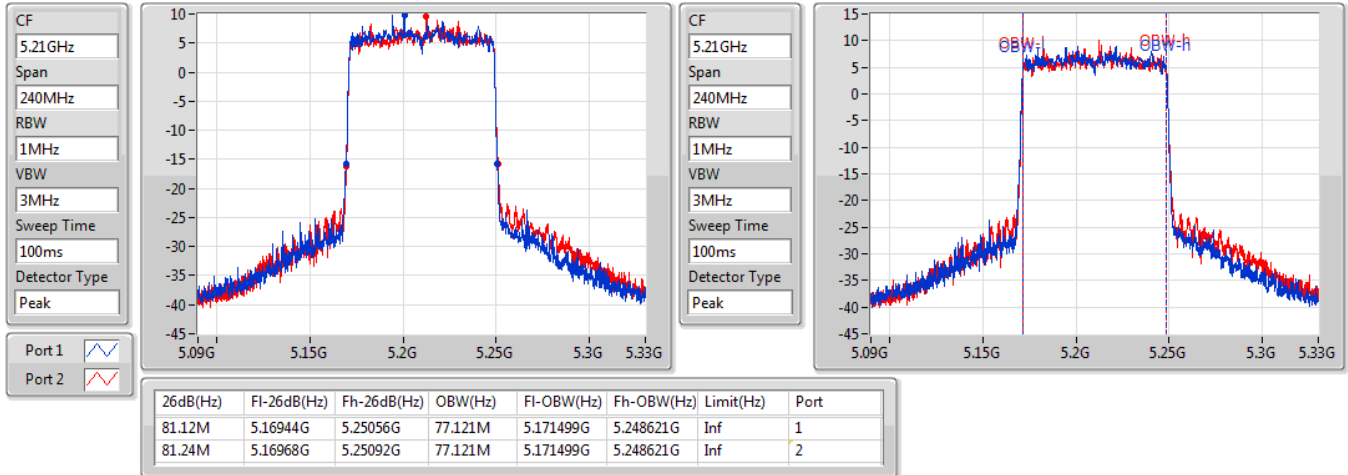


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5210MHz

17/12/2019

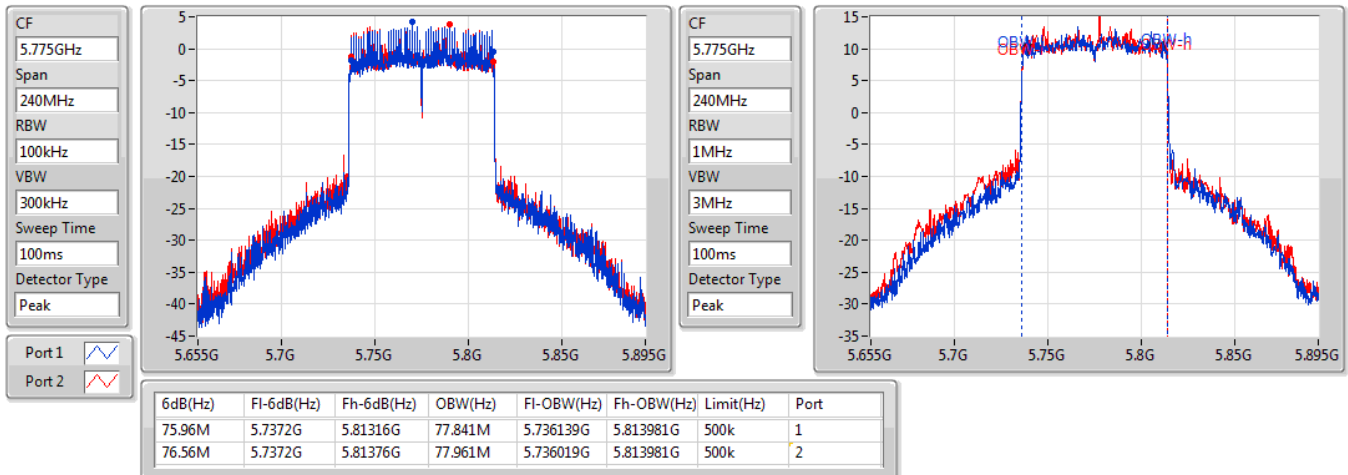


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5775MHz

17/12/2019



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	42.18M	27.766M	27M8D1D	30.87M	17.121M
802.11ac VHT20_Nss1,(MCS0)_1TX	41.91M	22.429M	22M4D1D	22.95M	17.991M
802.11ac VHT40_Nss1,(MCS0)_1TX	75.48M	37.421M	37M4D1D	40.26M	36.402M
802.11ac VHT80_Nss1,(MCS0)_1TX	81.84M	75.802M	75M8D1D	81.84M	75.802M
802.11ax HEW20_Nss1,(MCS0)_1TX	47.4M	24.378M	24M4D1D	25.8M	19.13M
802.11ax HEW40_Nss1,(MCS0)_1TX	63.18M	38.021M	38M0D1D	40.02M	37.541M
802.11ax HEW80_Nss1,(MCS0)_1TX	81.96M	77.121M	77M1D1D	81.96M	77.121M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	16.35M	40.81M	40M8D1D	16.32M	35.052M
802.11ac VHT20_Nss1,(MCS0)_1TX	17.55M	43.208M	43M2D1D	17.52M	28.426M
802.11ac VHT40_Nss1,(MCS0)_1TX	36.36M	64.108M	64M1D1D	36.3M	59.13M
802.11ac VHT80_Nss1,(MCS0)_1TX	75.12M	76.522M	76M5D1D	75.12M	76.522M
802.11ax HEW20_Nss1,(MCS0)_1TX	18.87M	44.378M	44M4D1D	18.03M	30.555M
802.11ax HEW40_Nss1,(MCS0)_1TX	37.5M	62.309M	62M3D1D	37.38M	55.052M
802.11ax HEW80_Nss1,(MCS0)_1TX	76.56M	77.721M	77M7D1D	76.56M	77.721M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Min-OBW = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5180MHz	Pass	Inf	30.87M	17.121M
5200MHz	Pass	Inf	42.18M	27.766M
5240MHz	Pass	Inf	37.65M	19.16M
5745MHz	Pass	500k	16.32M	35.052M
5785MHz	Pass	500k	16.32M	40.81M
5825MHz	Pass	500k	16.35M	40.3M
802.11ac VHT20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz	Pass	Inf	22.95M	17.991M
5200MHz	Pass	Inf	41.91M	22.429M
5240MHz	Pass	Inf	37.17M	18.891M
5745MHz	Pass	500k	17.55M	28.426M
5785MHz	Pass	500k	17.52M	43.208M
5825MHz	Pass	500k	17.55M	31.064M
802.11ac VHT40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz	Pass	Inf	40.26M	36.402M
5230MHz	Pass	Inf	75.48M	37.421M
5755MHz	Pass	500k	36.36M	59.13M
5795MHz	Pass	500k	36.3M	64.108M
802.11ac VHT80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz	Pass	Inf	81.84M	75.802M
5775MHz	Pass	500k	75.12M	76.522M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz	Pass	Inf	25.8M	19.13M
5200MHz	Pass	Inf	47.4M	24.378M
5240MHz	Pass	Inf	41.16M	19.82M
5745MHz	Pass	500k	18.87M	30.555M
5785MHz	Pass	500k	18.03M	44.378M
5825MHz	Pass	500k	18.45M	31.244M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz	Pass	Inf	40.02M	37.541M
5230MHz	Pass	Inf	63.18M	38.021M
5755MHz	Pass	500k	37.38M	55.052M
5795MHz	Pass	500k	37.5M	62.309M
802.11ax HEW80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz	Pass	Inf	81.96M	77.121M
5775MHz	Pass	500k	76.56M	77.721M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

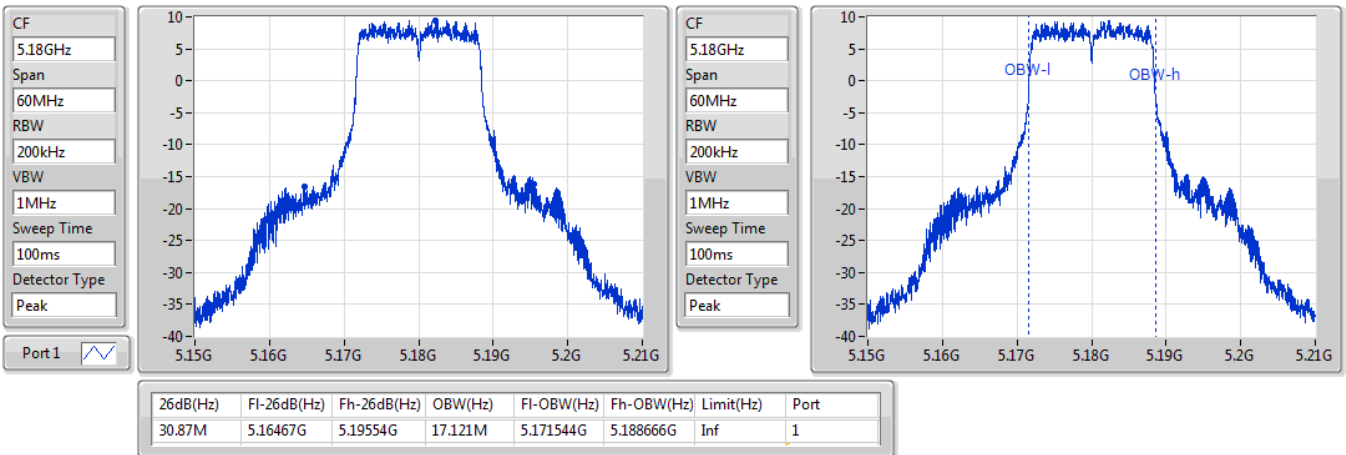
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_1TX

EBW

5180MHz

18/12/2019

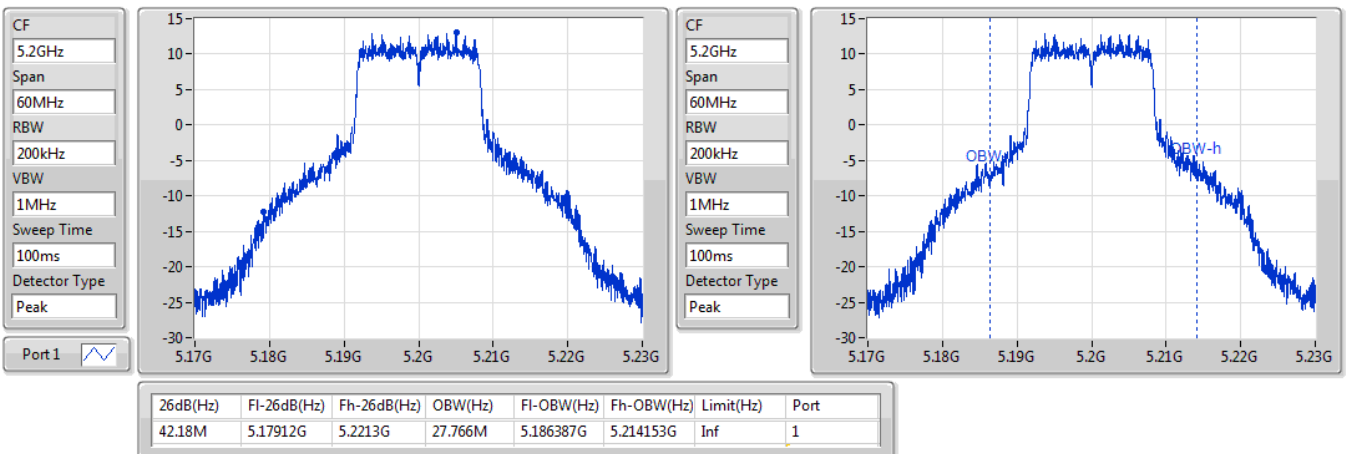


802.11a_Nss1,(6Mbps)_1TX

EBW

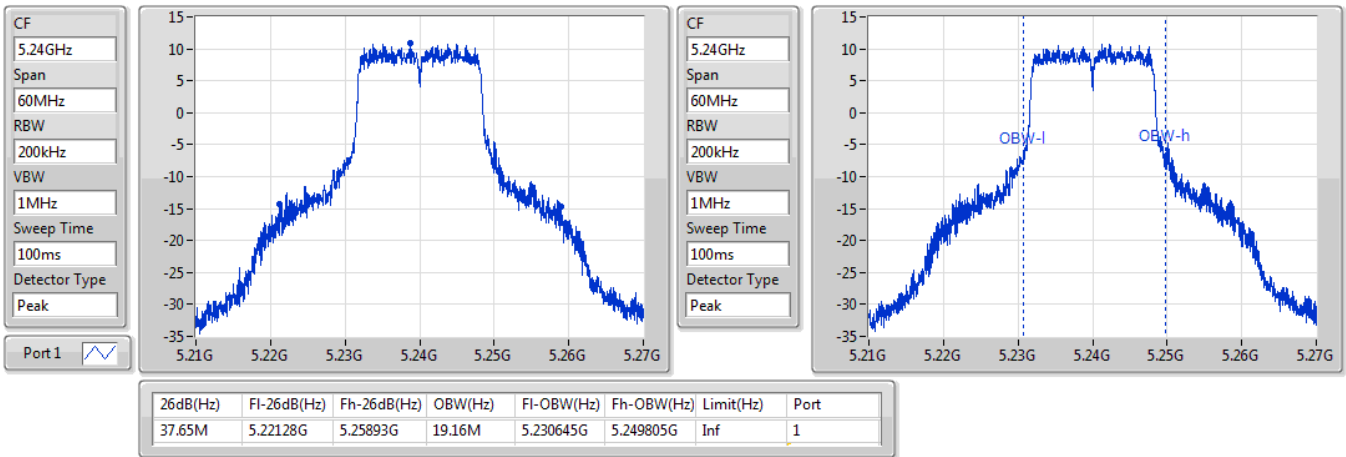
5200MHz

18/12/2019

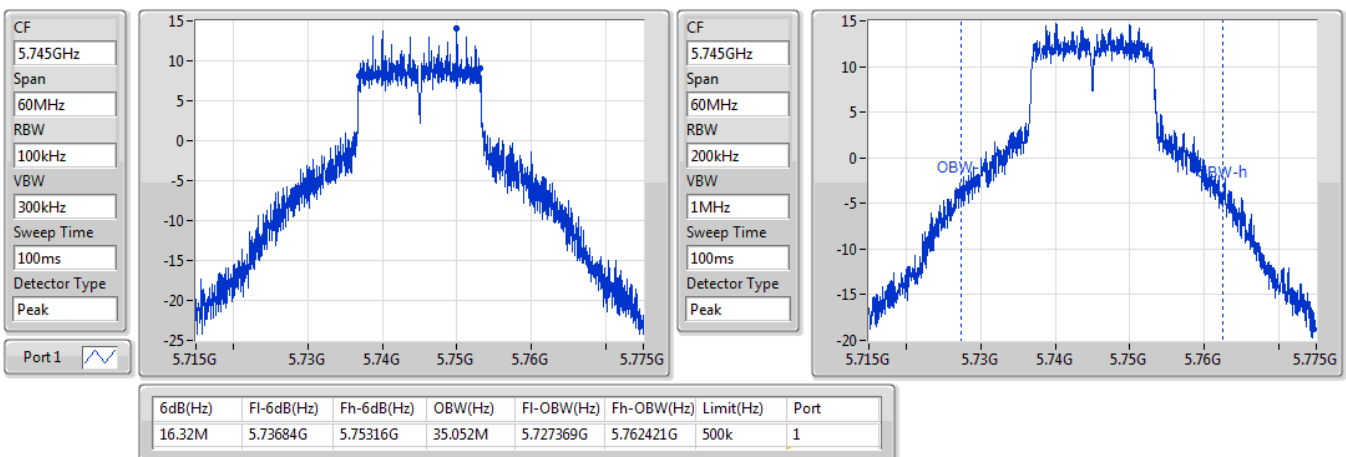


802.11a_Nss1,(6Mbps)_1TX
EBW
5240MHz

18/12/2019

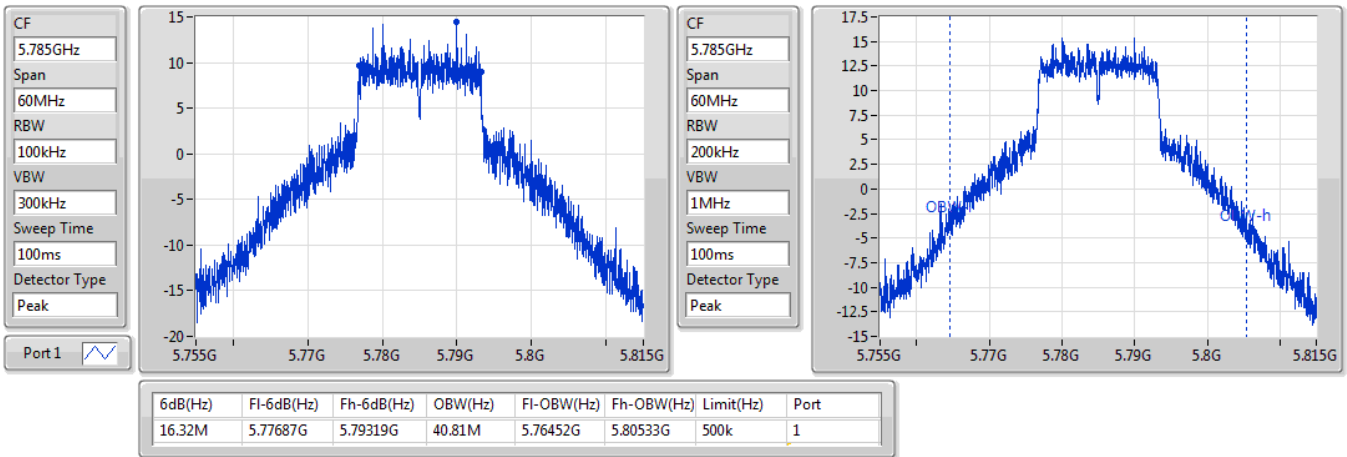

802.11a_Nss1,(6Mbps)_1TX
EBW
5745MHz

18/12/2019

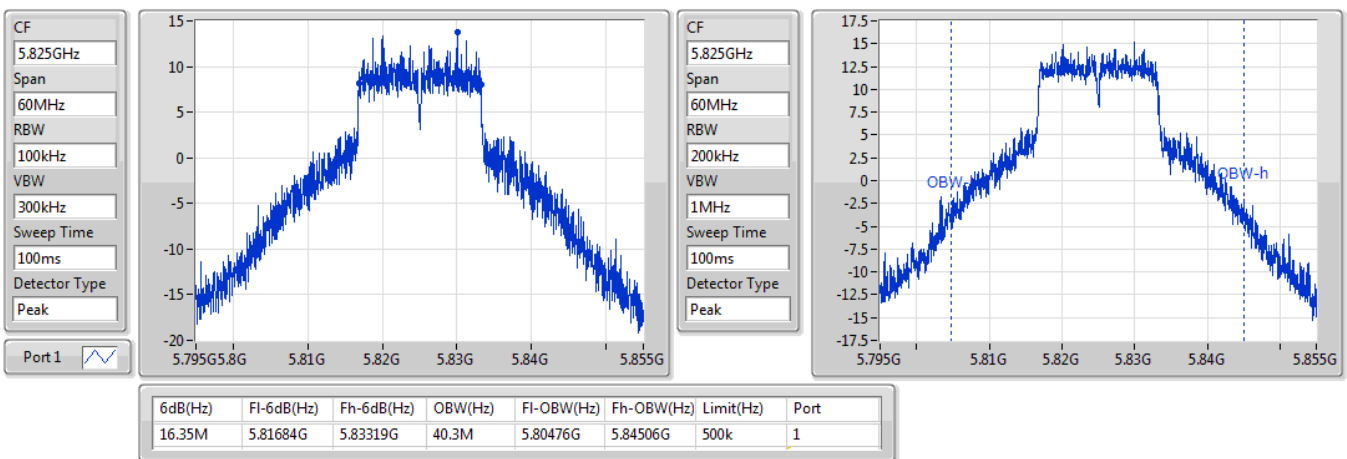


802.11a_Nss1,(6Mbps)_1TX
EBW
5785MHz

18/12/2019

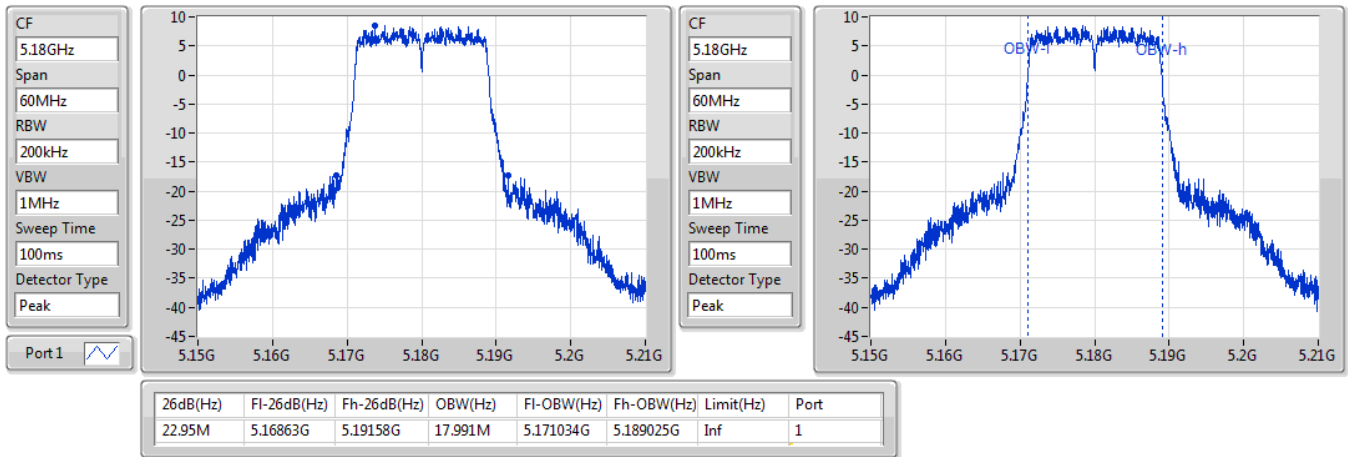

802.11a_Nss1,(6Mbps)_1TX
EBW
5825MHz

18/12/2019

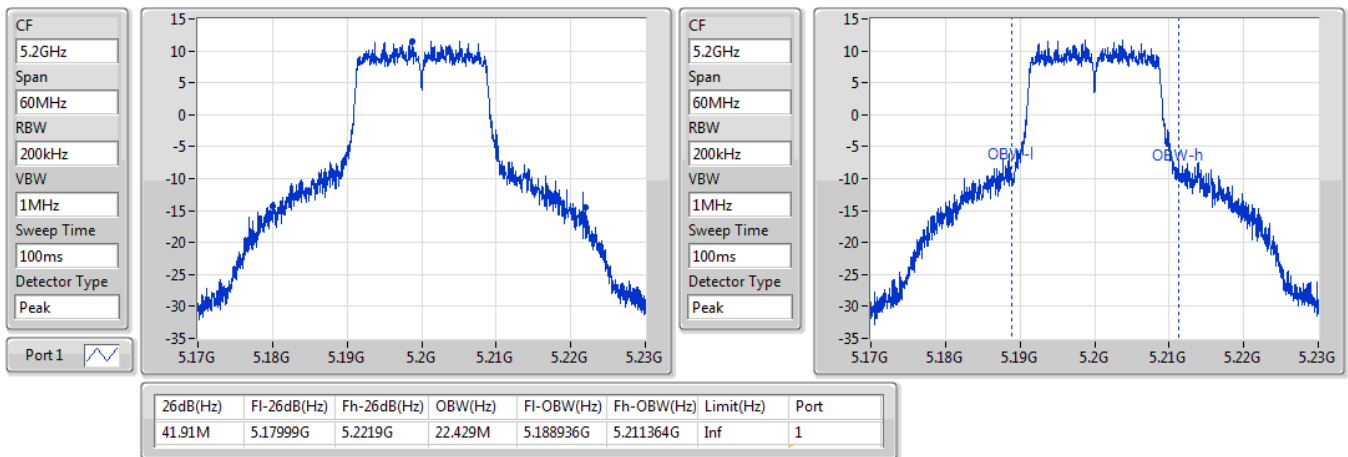


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5180MHz

18/12/2019


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5200MHz

18/12/2019

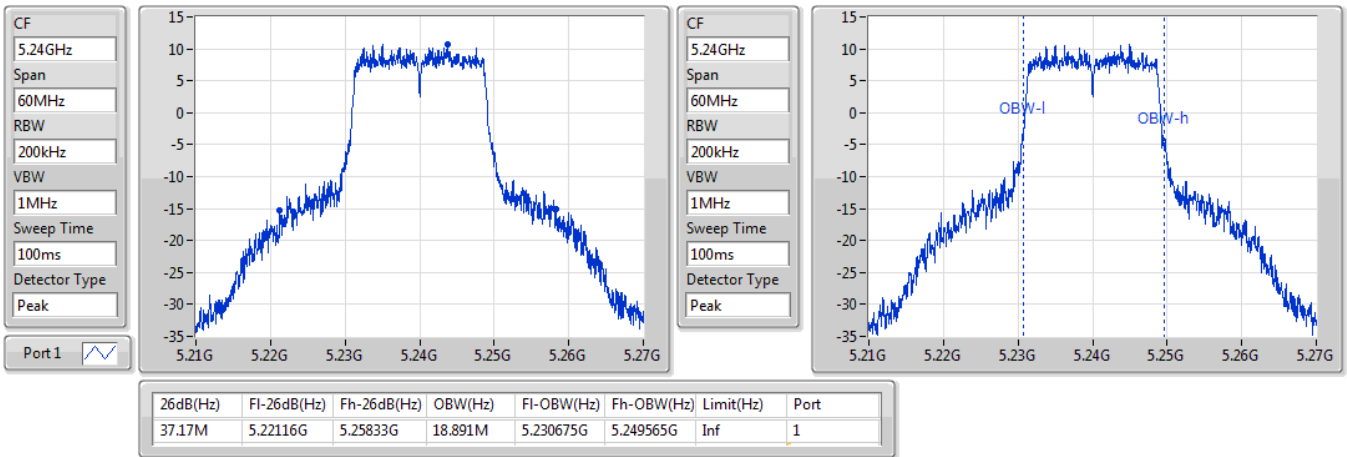


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

5240MHz

18/12/2019

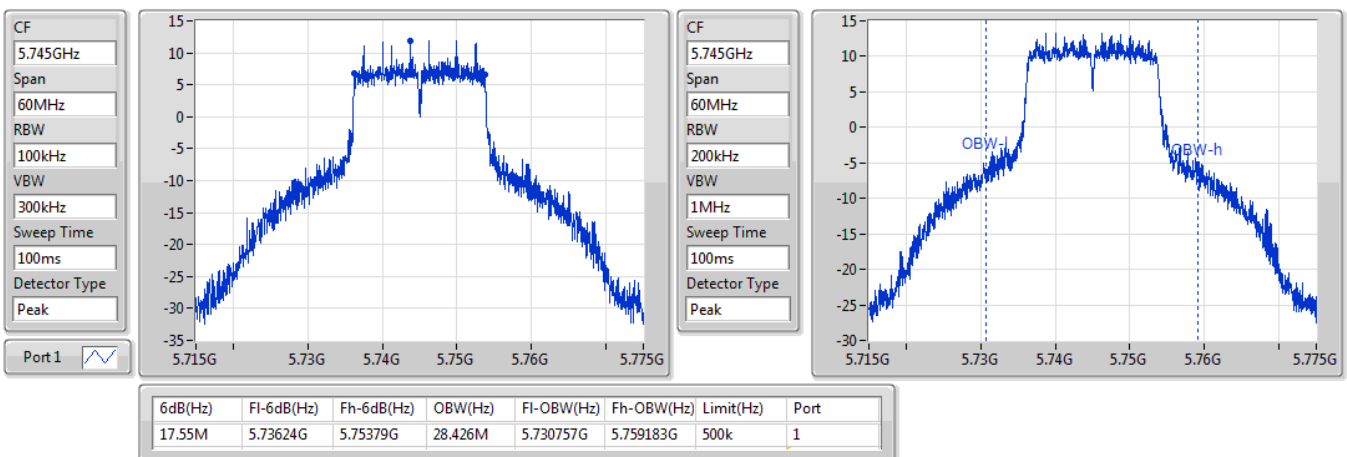


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

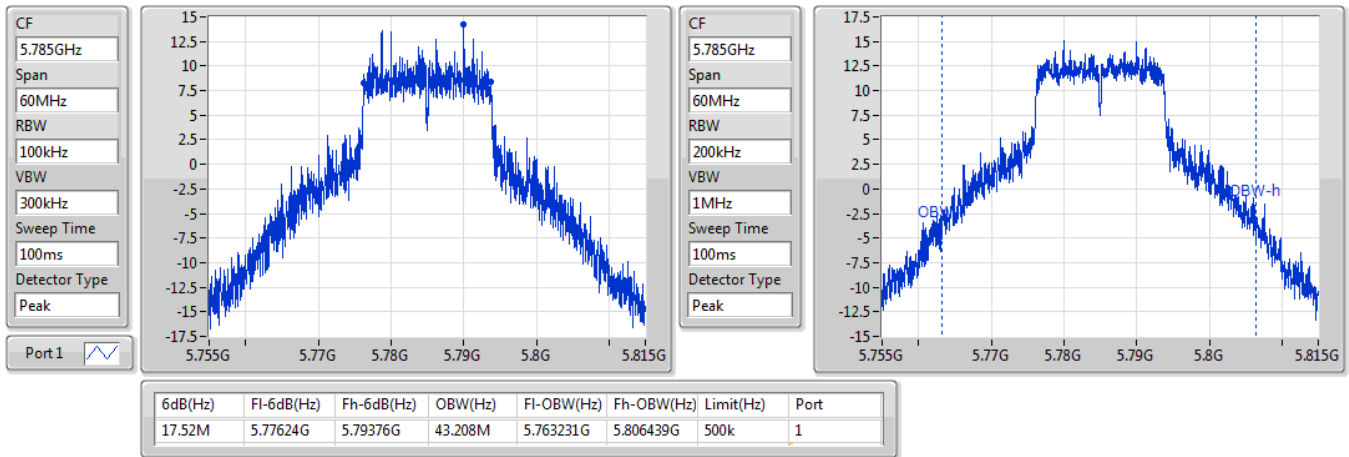
5745MHz

18/12/2019

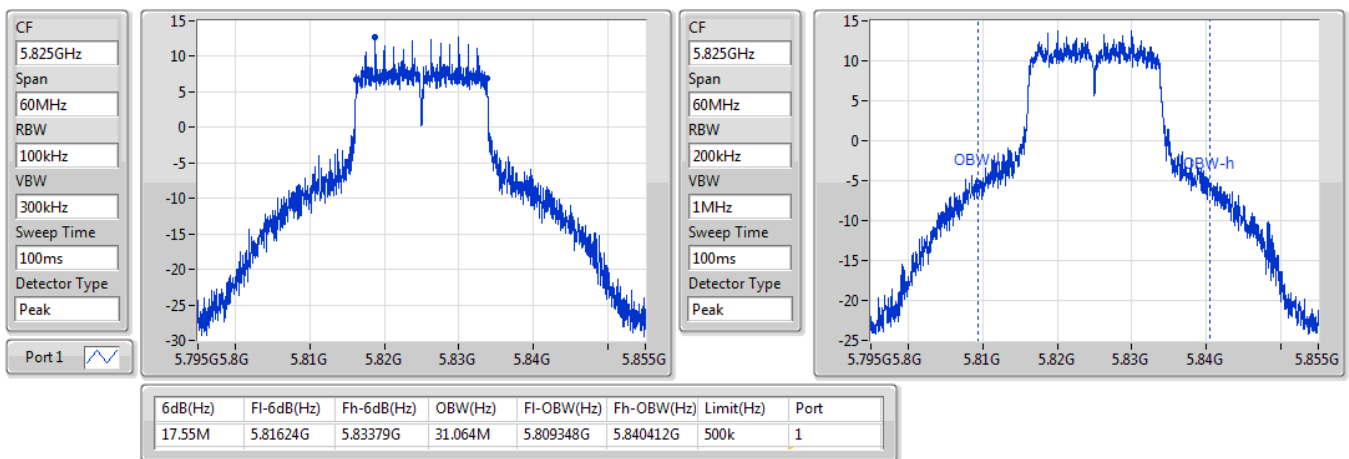


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5785MHz

18/12/2019

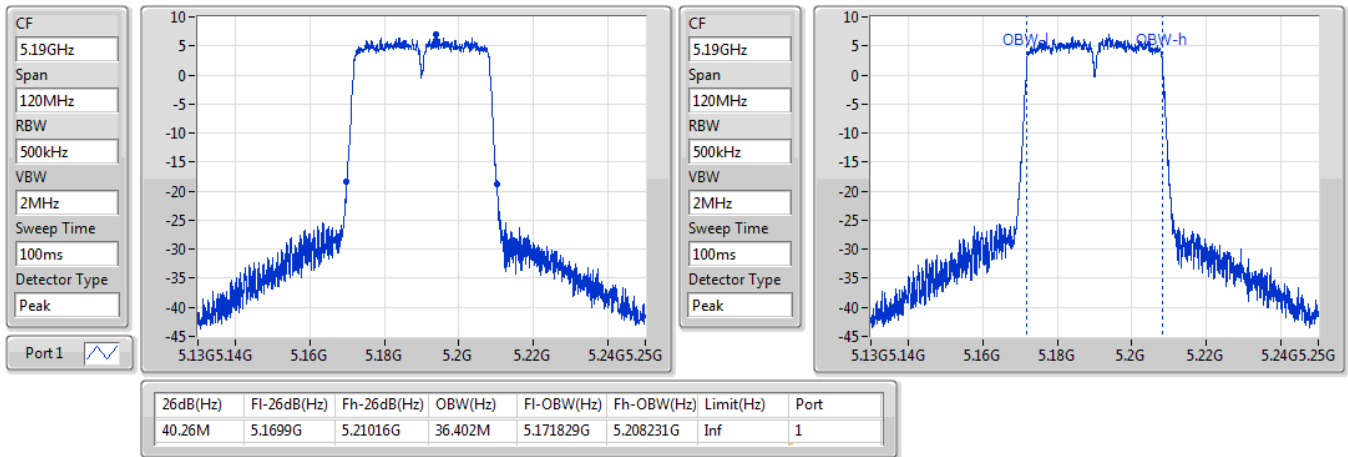

802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5825MHz

18/12/2019

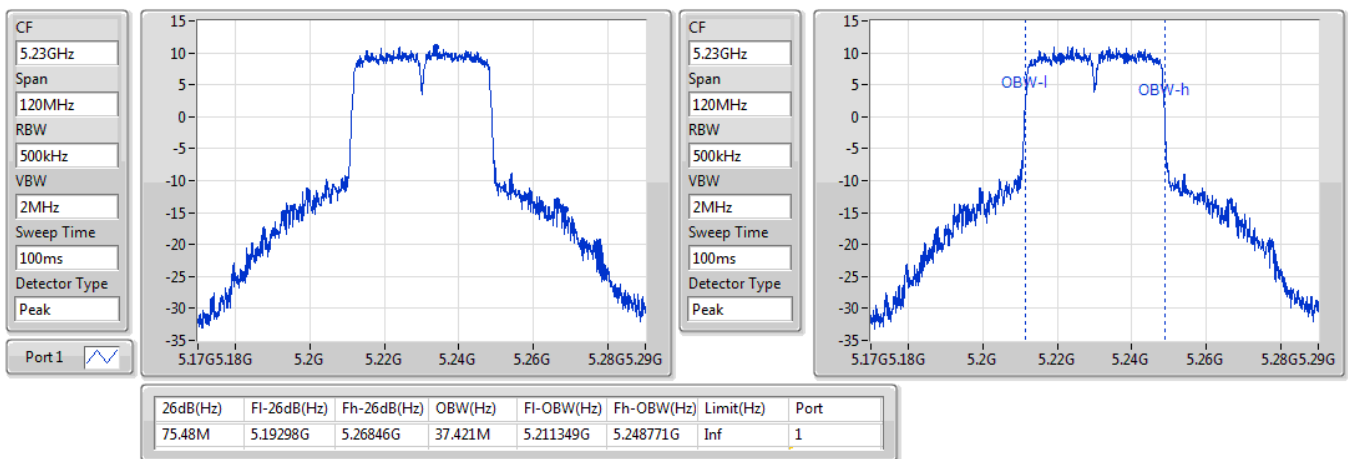


802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5190MHz

18/12/2019

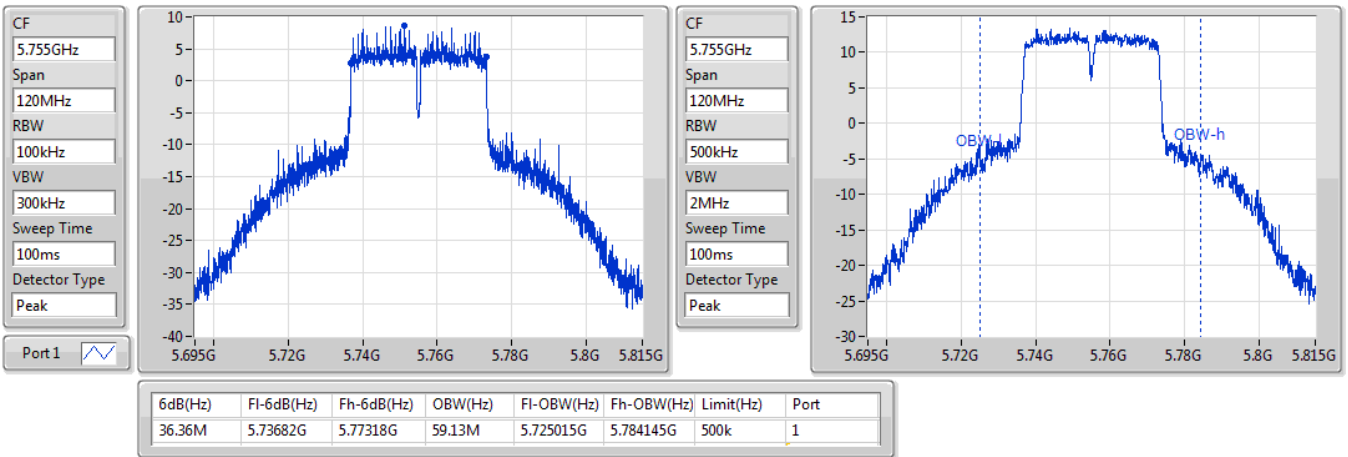

802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5230MHz

18/12/2019

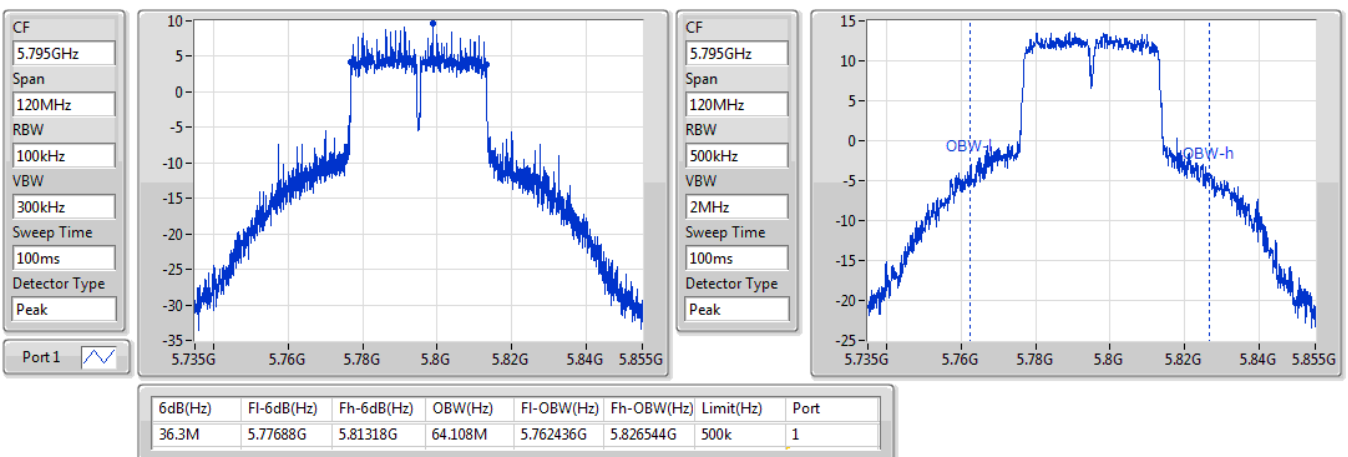


802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5755MHz

18/12/2019

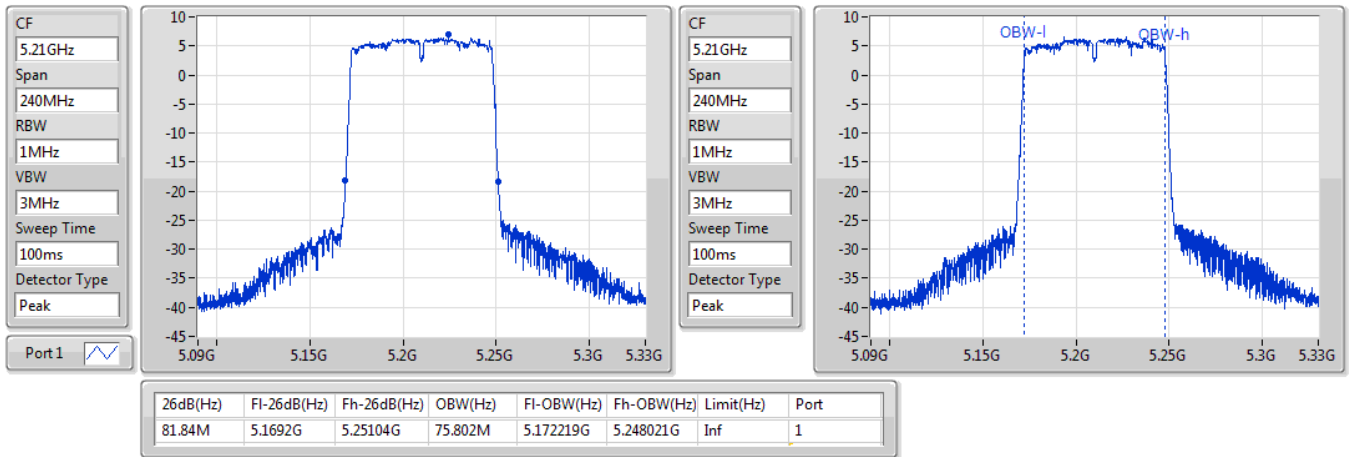

802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5795MHz

18/12/2019

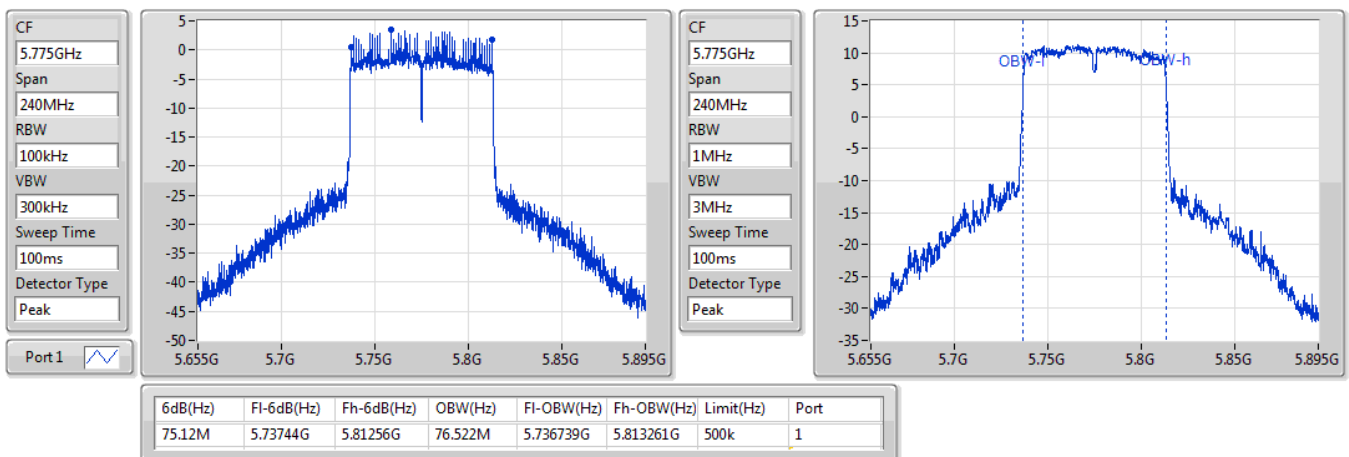


802.11ac VHT80_Nss1,(MCS0)_1TX
EBW
5210MHz

18/12/2019

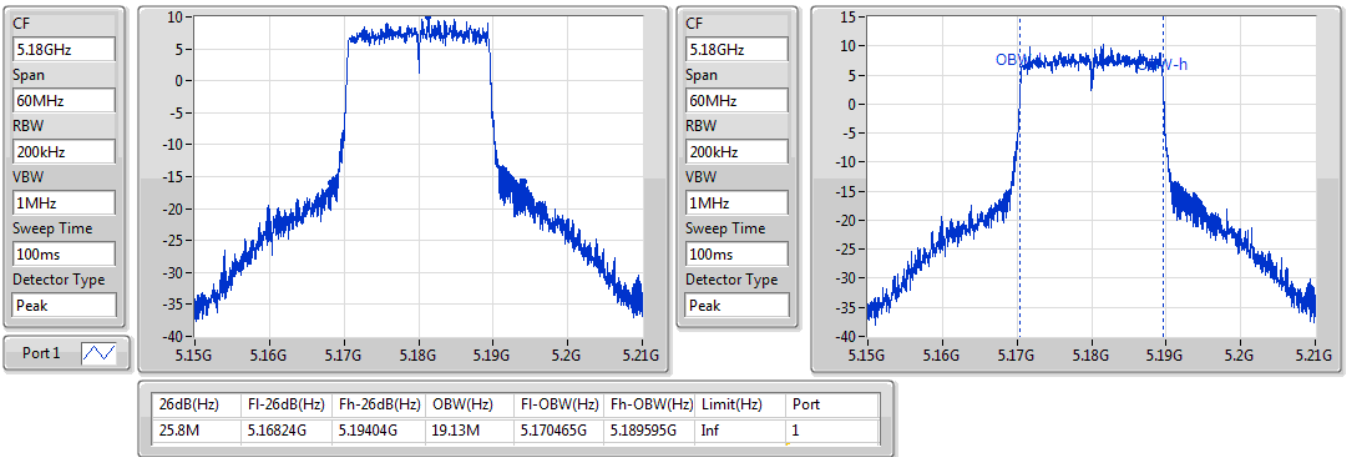

802.11ac VHT80_Nss1,(MCS0)_1TX
EBW
5775MHz

18/12/2019

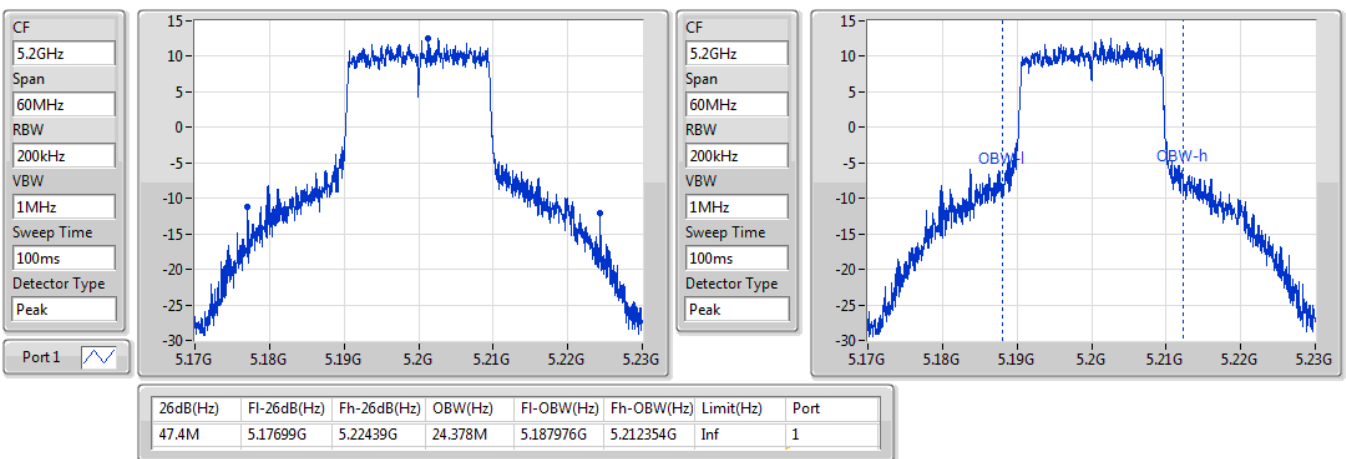


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5180MHz

18/12/2019

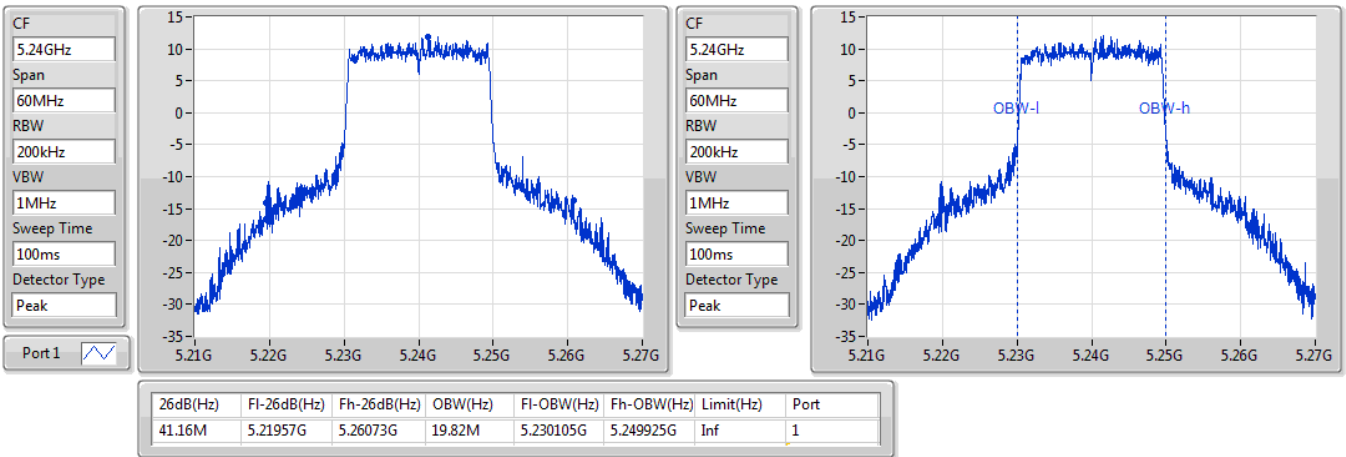

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5200MHz

18/12/2019

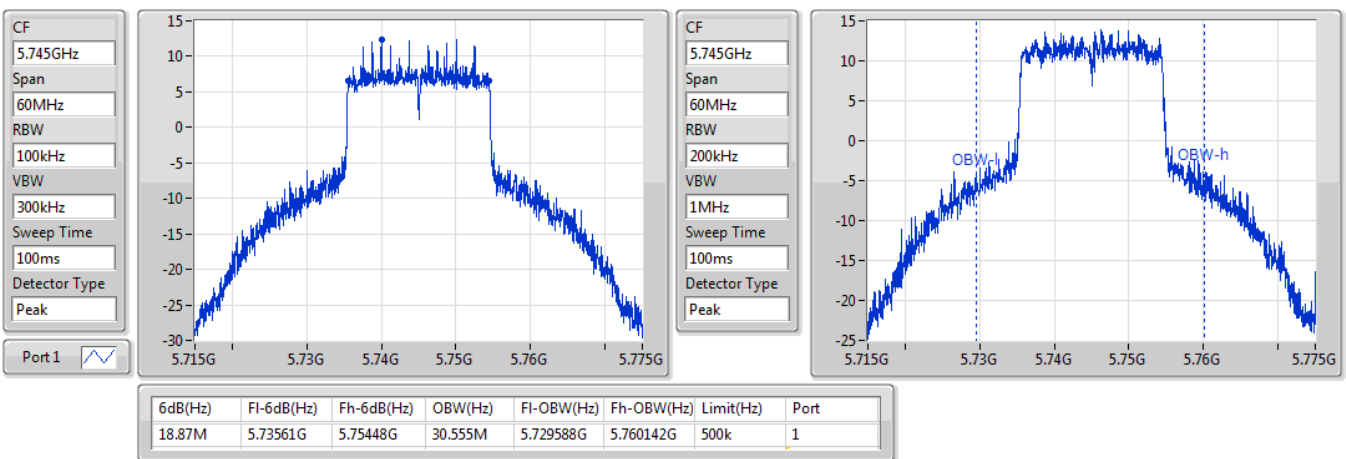


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5240MHz

18/12/2019

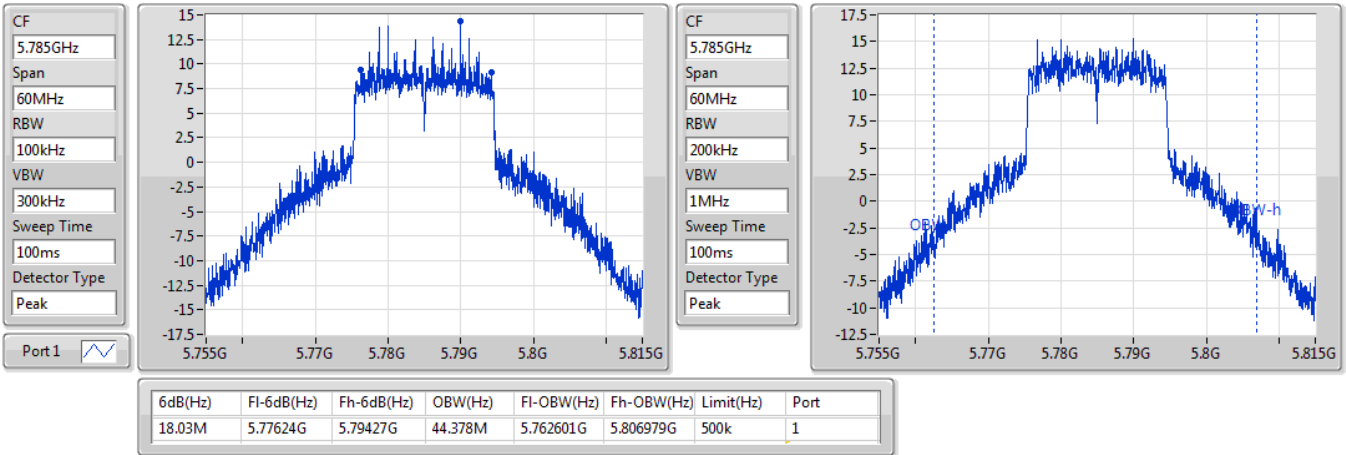

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5745MHz

18/12/2019

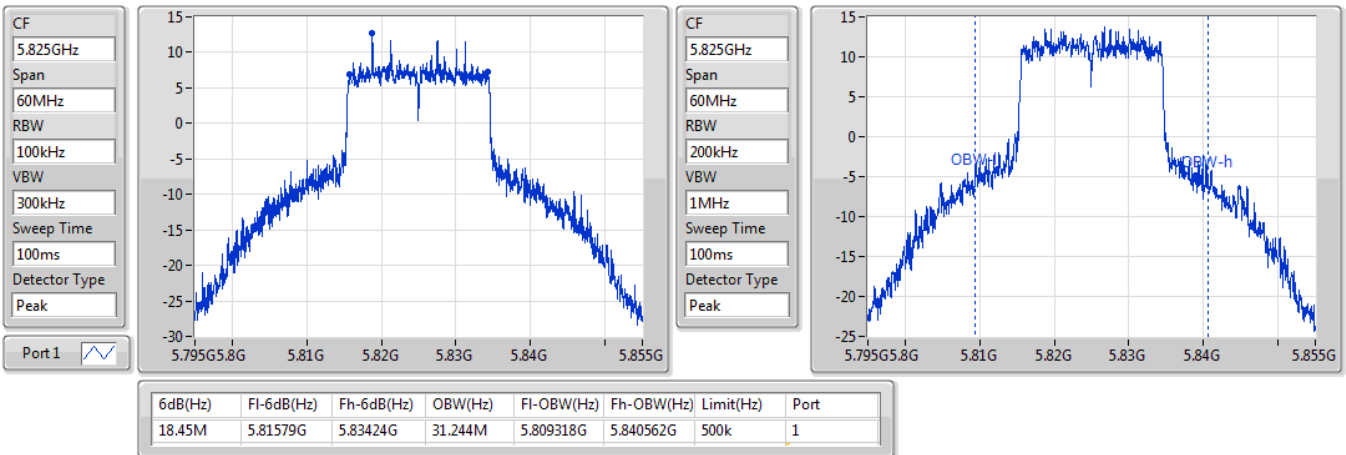


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5785MHz

18/12/2019

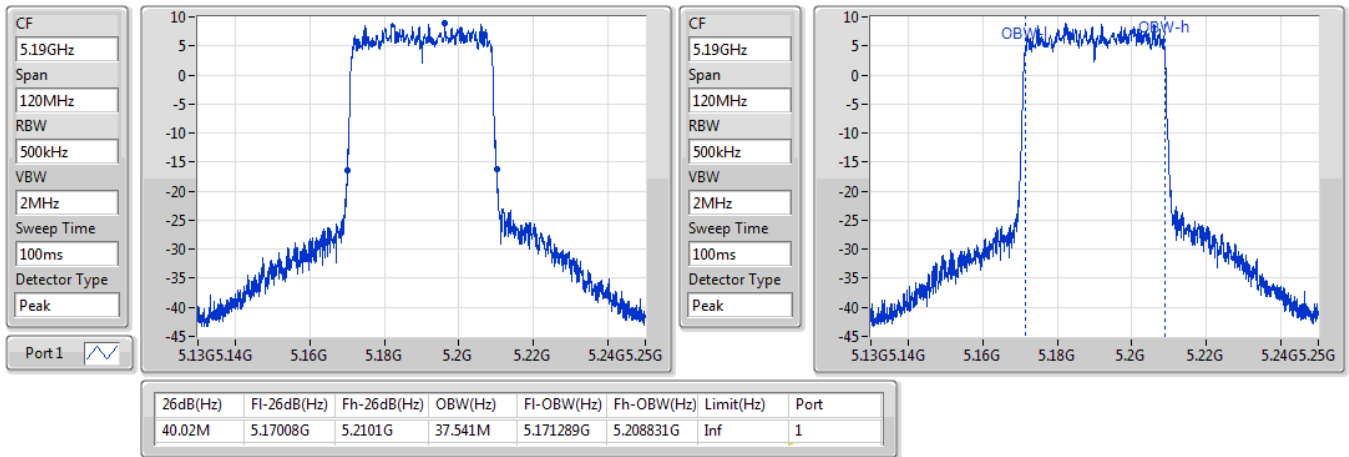

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5825MHz

18/12/2019

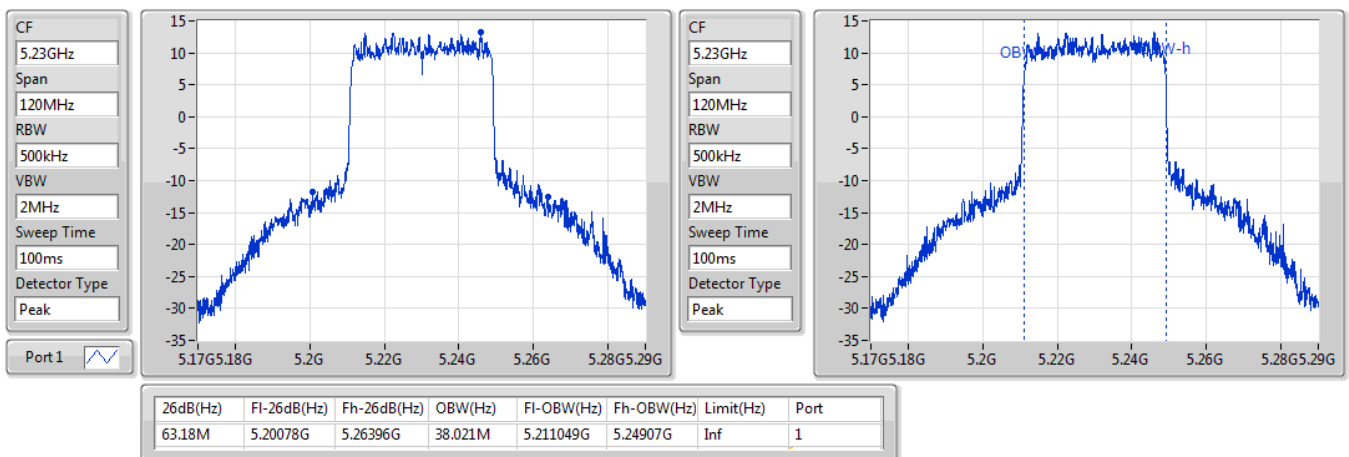


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5190MHz

18/12/2019

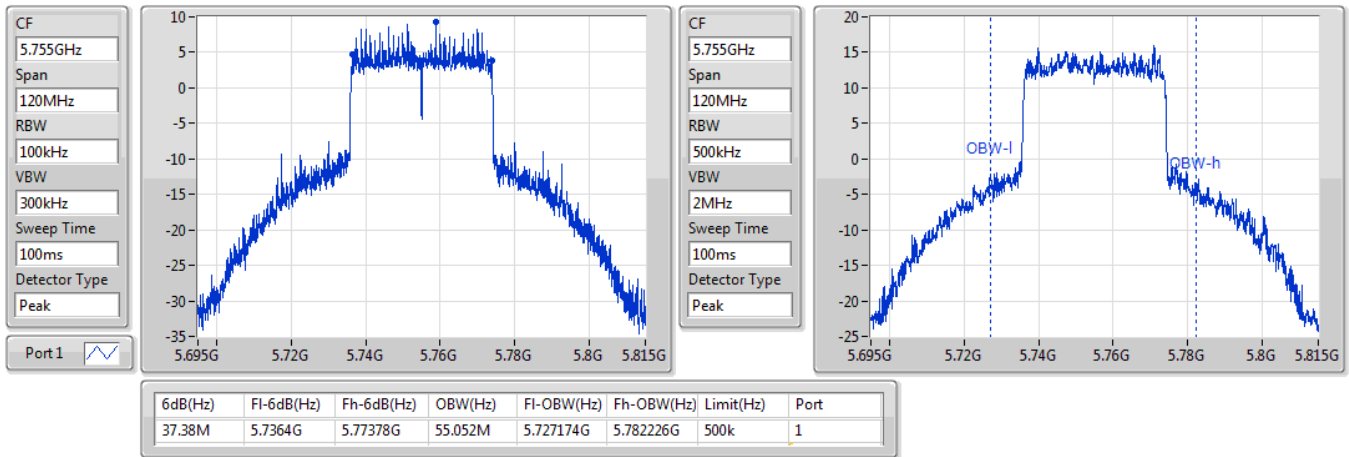

802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5230MHz

18/12/2019

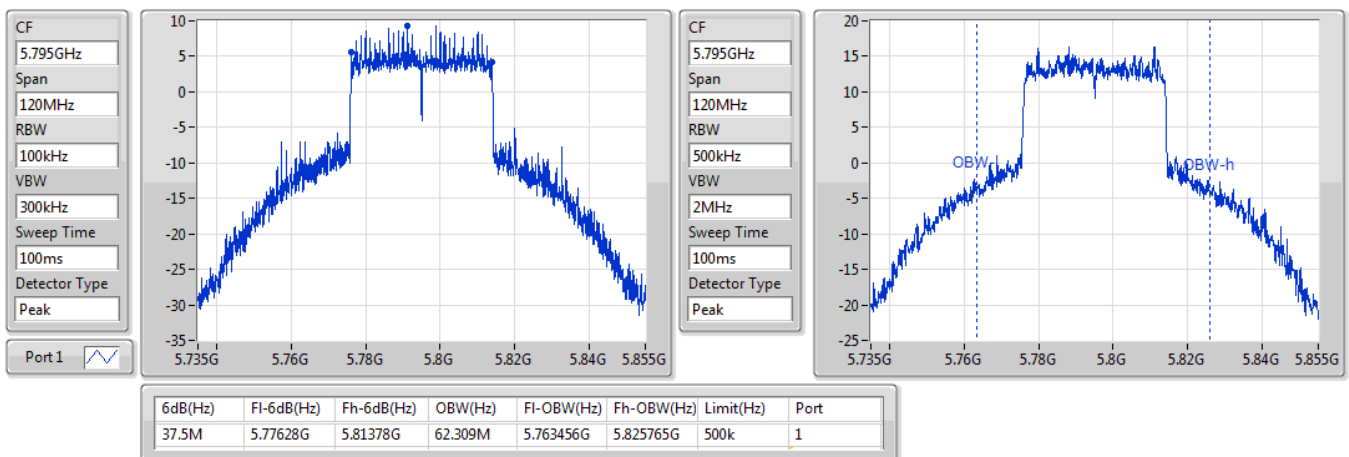


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5755MHz

18/12/2019


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5795MHz

18/12/2019

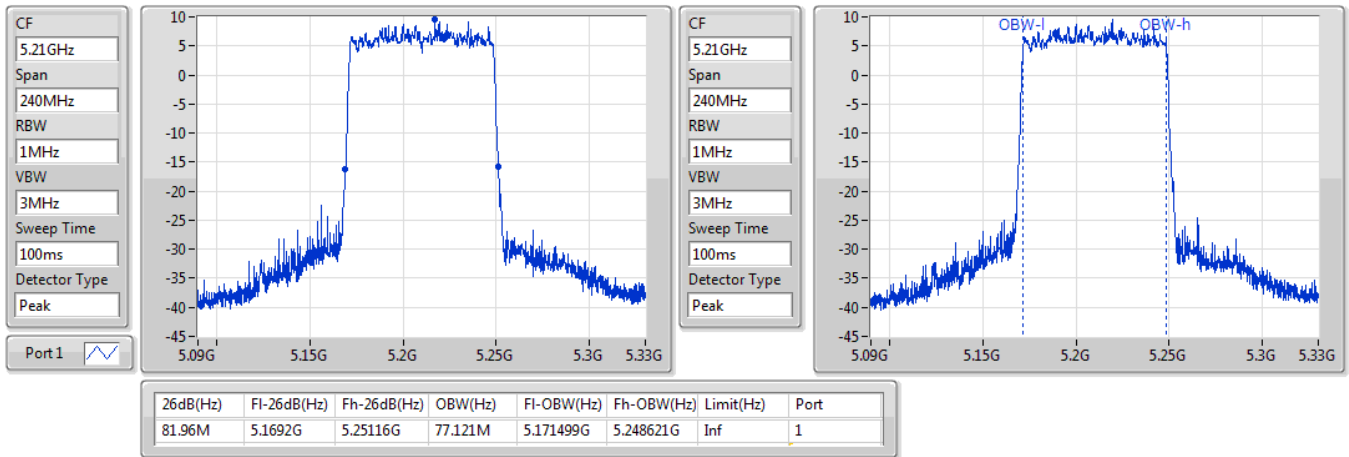


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5210MHz

18/12/2019

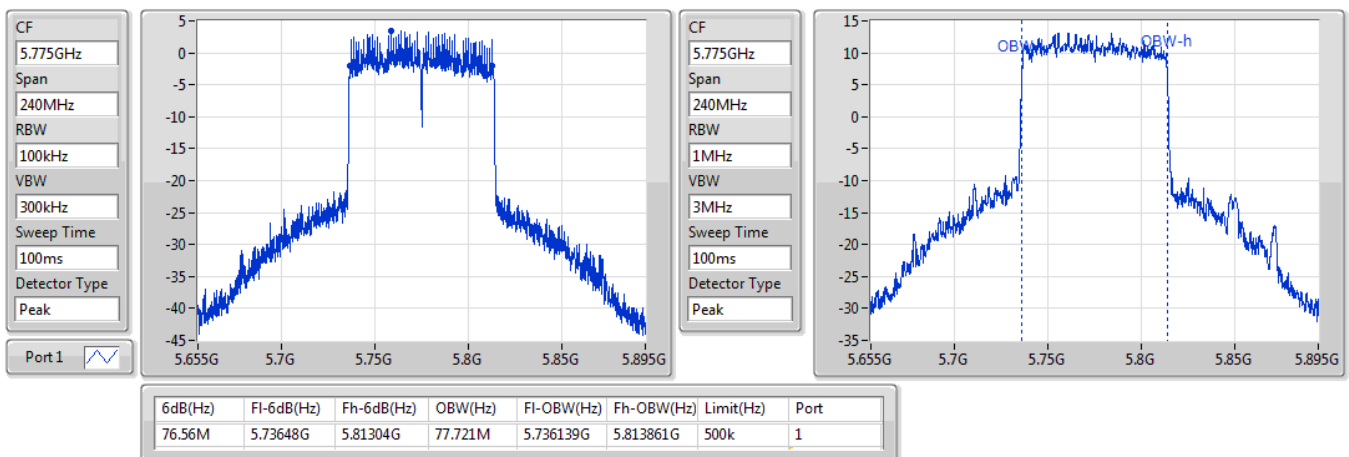


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5775MHz

18/12/2019



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	42.3M	25.697M	25M7D1D	24.69M	16.912M
802.11ac VHT20_Nss2,(MCS0)_2TX	41.1M	21.289M	21M3D1D	21.78M	17.871M
802.11ac VHT40_Nss2,(MCS0)_2TX	78.6M	38.321M	38M3D1D	39.78M	36.342M
802.11ac VHT80_Nss2,(MCS0)_2TX	81.72M	75.922M	75M9D1D	81.48M	75.802M
802.11ax HEW20_Nss2,(MCS0)_2TX	44.16M	21.409M	21M4D1D	21.63M	19.07M
802.11ax HEW40_Nss2,(MCS0)_2TX	75M	39.28M	39M3D1D	39.96M	37.601M
802.11ax HEW80_Nss2,(MCS0)_2TX	81.24M	77.121M	77M1D1D	81.12M	77.121M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.47M	40.72M	40M7D1D	16.29M	23.778M
802.11ac VHT20_Nss2,(MCS0)_2TX	17.58M	43.388M	43M4D1D	17.55M	22.249M
802.11ac VHT40_Nss2,(MCS0)_2TX	36.36M	68.606M	68M6D1D	35.94M	57.391M
802.11ac VHT80_Nss2,(MCS0)_2TX	75.48M	77.841M	77M8D1D	75.12M	77.361M
802.11ax HEW20_Nss2,(MCS0)_2TX	18.87M	44.528M	44M5D1D	17.7M	24.318M
802.11ax HEW40_Nss2,(MCS0)_2TX	37.62M	69.265M	69M3D1D	37.02M	59.67M
802.11ax HEW80_Nss2,(MCS0)_2TX	75.24M	79.52M	79M5D1D	75.12M	78.321M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Min-OBW = Minimum 99% occupied bandwidth;

Result

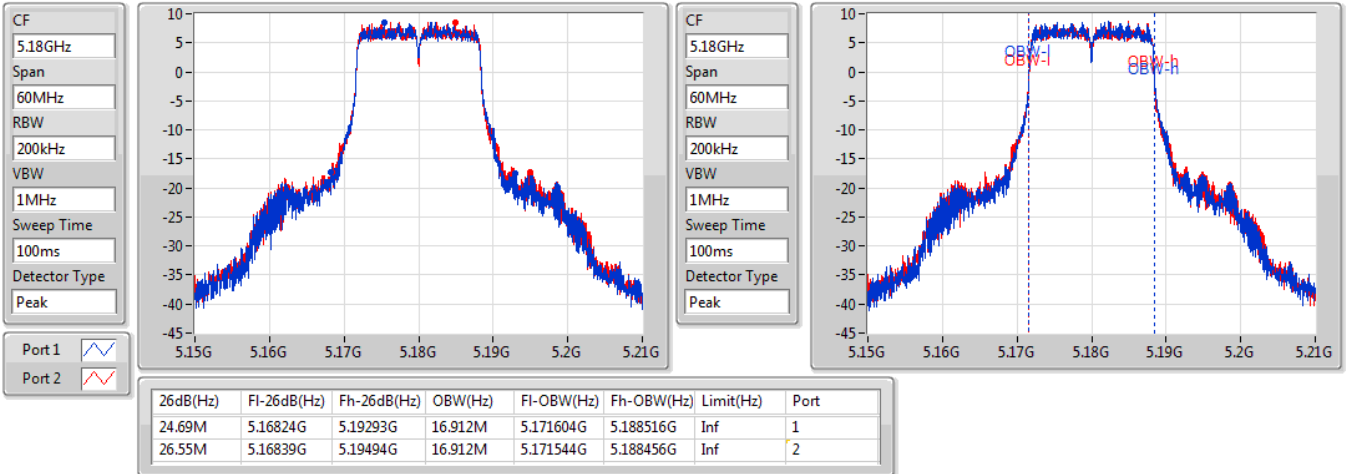
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	24.69M	16.912M	26.55M	16.912M
5200MHz	Pass	Inf	41.16M	23.808M	42.3M	25.697M
5240MHz	Pass	Inf	37.65M	18.321M	37.62M	19.55M
5745MHz	Pass	500k	16.32M	23.778M	16.29M	28.846M
5785MHz	Pass	500k	16.29M	40.15M	16.47M	40.69M
5825MHz	Pass	500k	16.29M	30.945M	16.29M	40.72M
802.11ac VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.78M	17.961M	22.32M	17.871M
5200MHz	Pass	Inf	36.51M	19.79M	41.1M	21.289M
5240MHz	Pass	Inf	33.87M	18.561M	38.58M	19.07M
5745MHz	Pass	500k	17.55M	22.249M	17.58M	27.496M
5785MHz	Pass	500k	17.55M	42.759M	17.55M	43.298M
5825MHz	Pass	500k	17.58M	42.279M	17.58M	43.388M
802.11ac VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	39.78M	36.402M	40.02M	36.342M
5230MHz	Pass	Inf	69.96M	37.421M	78.6M	38.321M
5755MHz	Pass	500k	36.3M	57.871M	36.36M	57.391M
5795MHz	Pass	500k	35.94M	67.946M	36.3M	68.606M
802.11ac VHT80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	81.72M	75.922M	81.48M	75.802M
5775MHz	Pass	500k	75.48M	77.361M	75.12M	77.841M
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.63M	19.07M	23.85M	19.1M
5200MHz	Pass	Inf	42.42M	19.61M	44.16M	21.409M
5240MHz	Pass	Inf	36.87M	19.34M	44.04M	19.67M
5745MHz	Pass	500k	18.87M	24.318M	18.27M	31.634M
5785MHz	Pass	500k	18.48M	43.478M	18.24M	44.528M
5825MHz	Pass	500k	18.48M	43.448M	17.7M	44.288M
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	39.96M	37.661M	39.96M	37.601M
5230MHz	Pass	Inf	74.82M	38.141M	75M	39.28M
5755MHz	Pass	500k	37.62M	59.67M	37.56M	61.049M
5795MHz	Pass	500k	37.02M	68.006M	37.5M	69.265M
802.11ax HEW80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	81.12M	77.121M	81.24M	77.121M
5775MHz	Pass	500k	75.24M	78.321M	75.12M	79.52M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

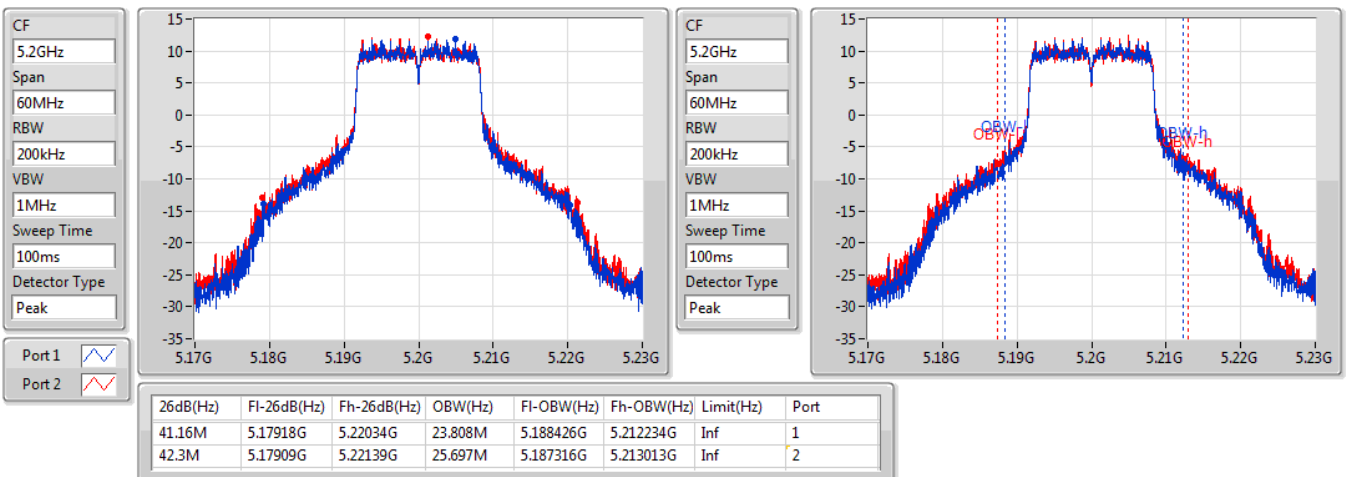
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_2TX
EBW
5180MHz

18/12/2019

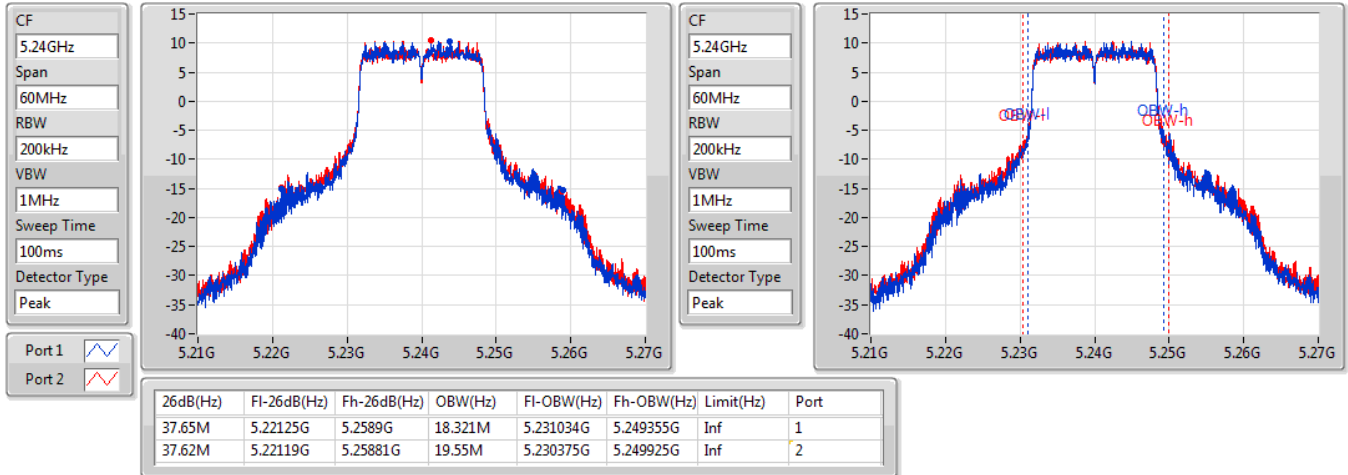

802.11a_Nss1,(6Mbps)_2TX
EBW
5200MHz

18/12/2019

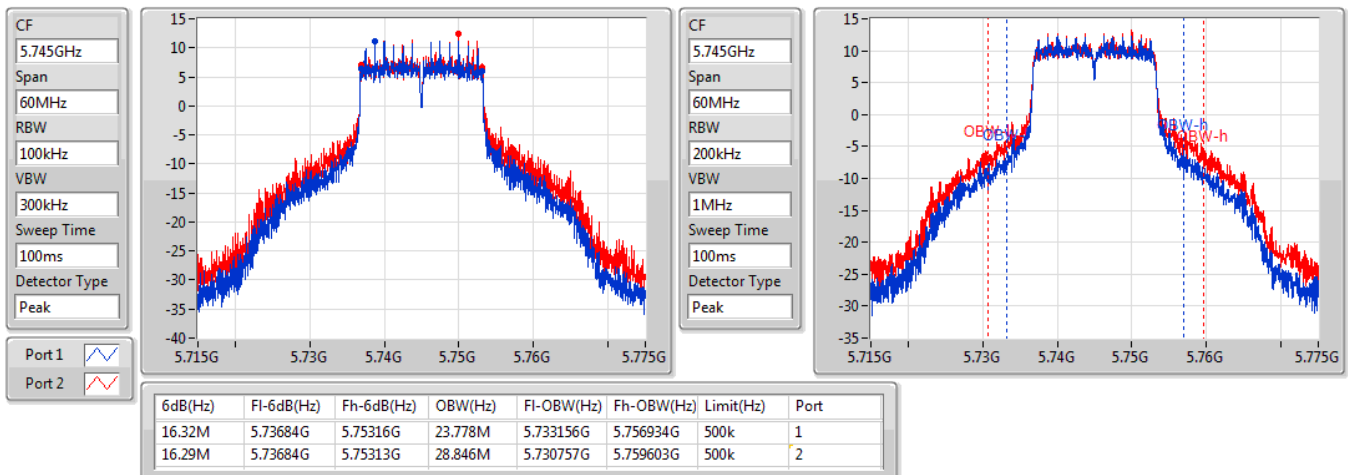


802.11a_Nss1,(6Mbps)_2TX
EBW
5240MHz

18/12/2019


802.11a_Nss1,(6Mbps)_2TX
EBW
5745MHz

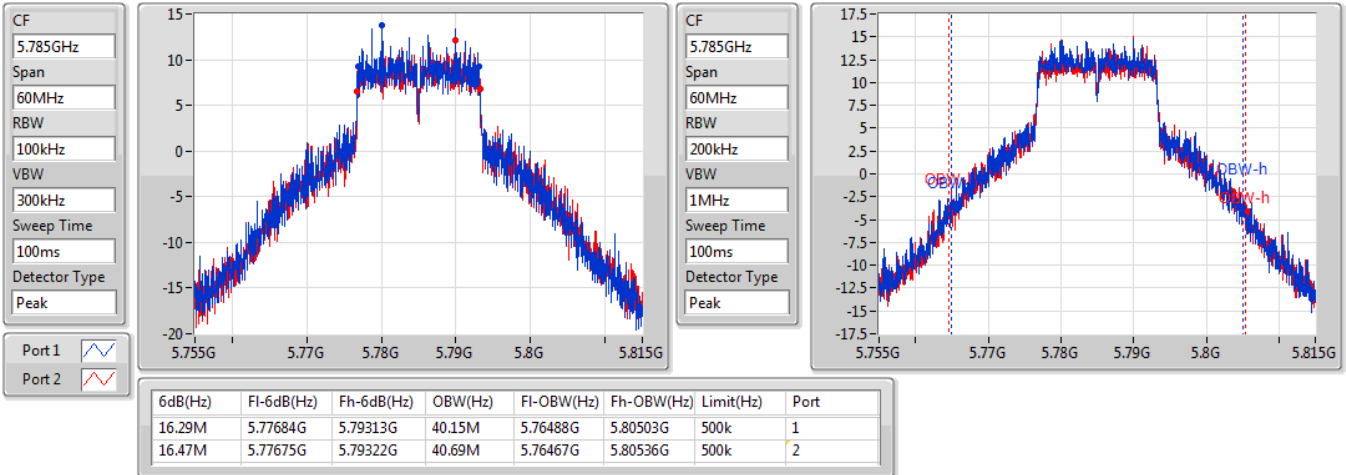
18/12/2019



802.11a_Nss1,(6Mbps)_2TX

5785MHz

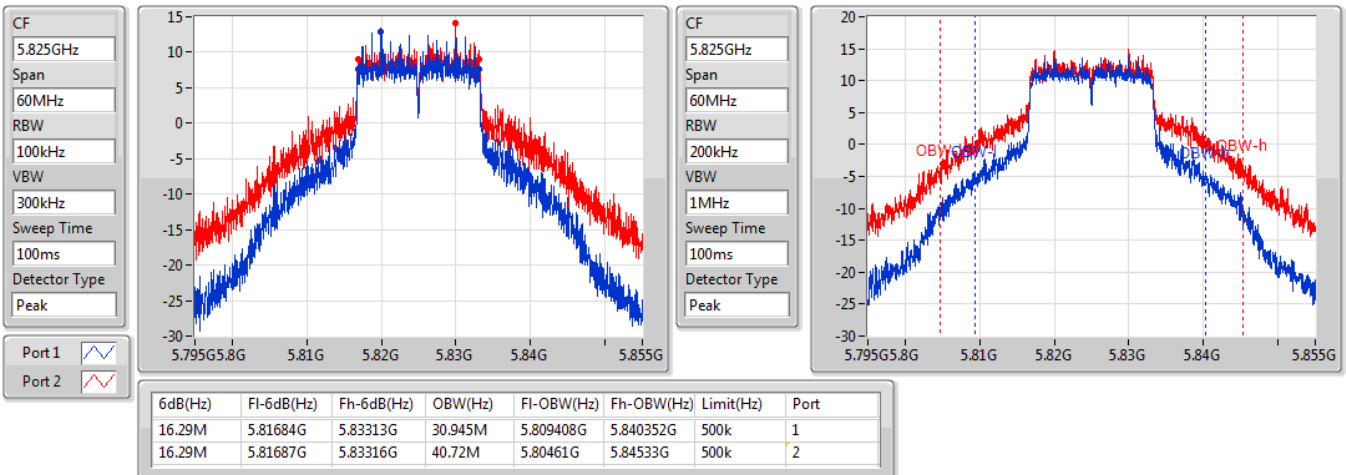
18/12/2019



802.11a_Nss1,(6Mbps)_2TX

5825MHz

18/12/2019

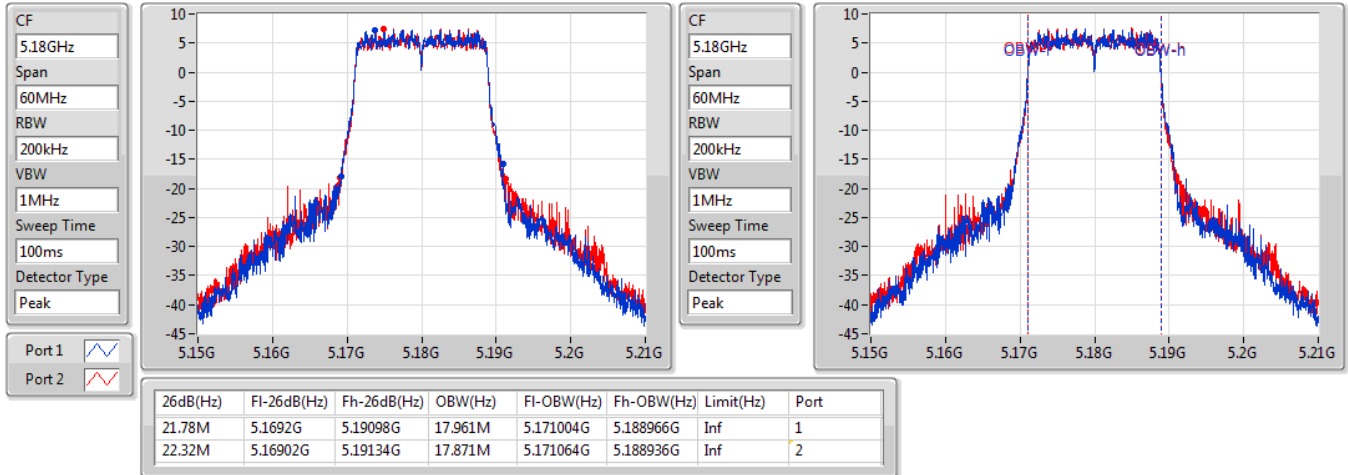


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5180MHz

18/12/2019

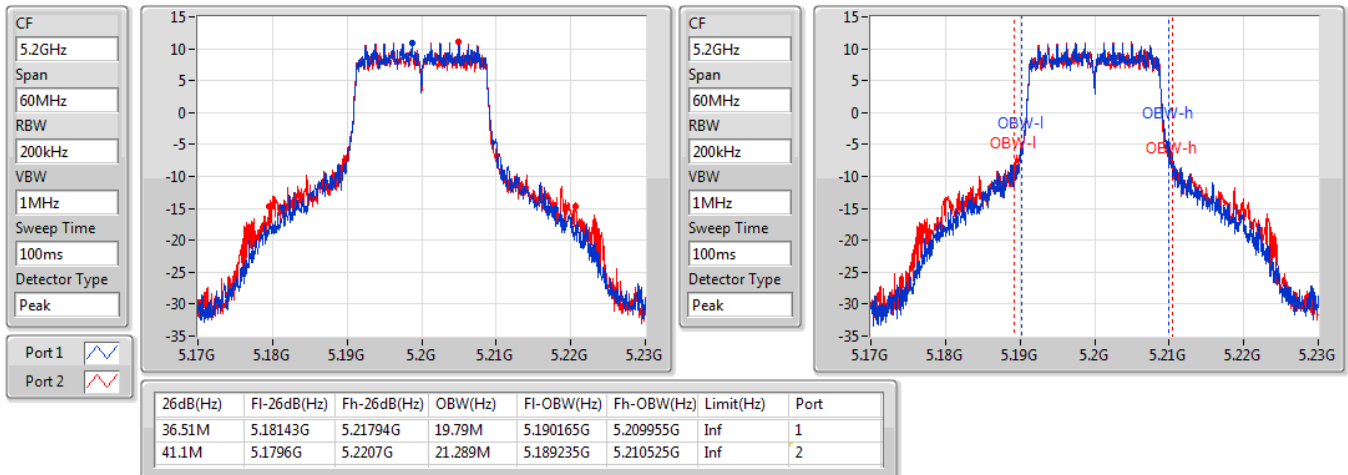


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5200MHz

18/12/2019

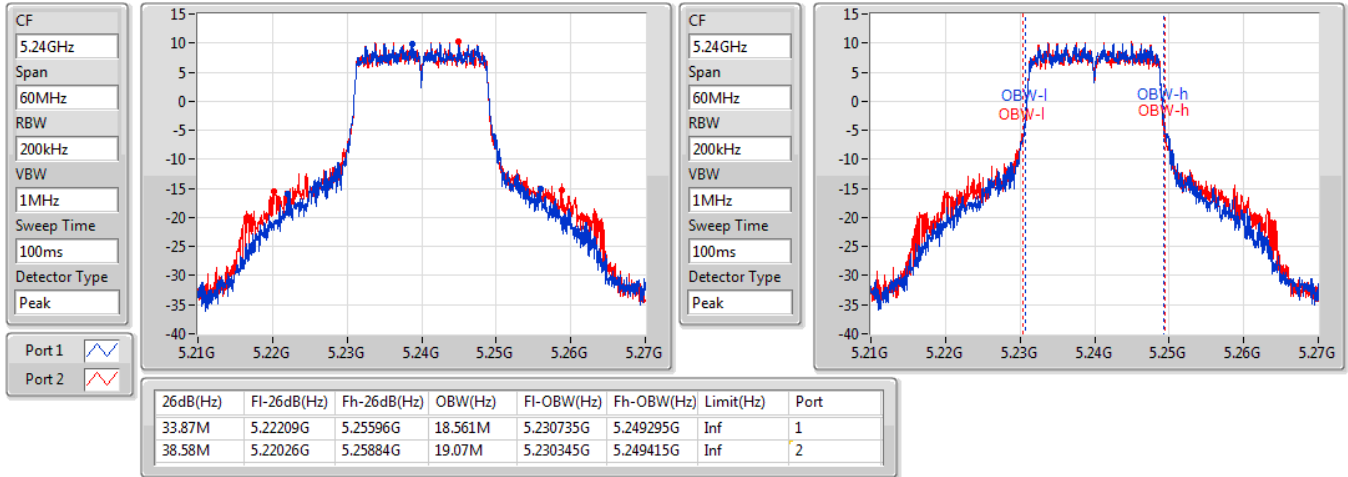


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5240MHz

18/12/2019

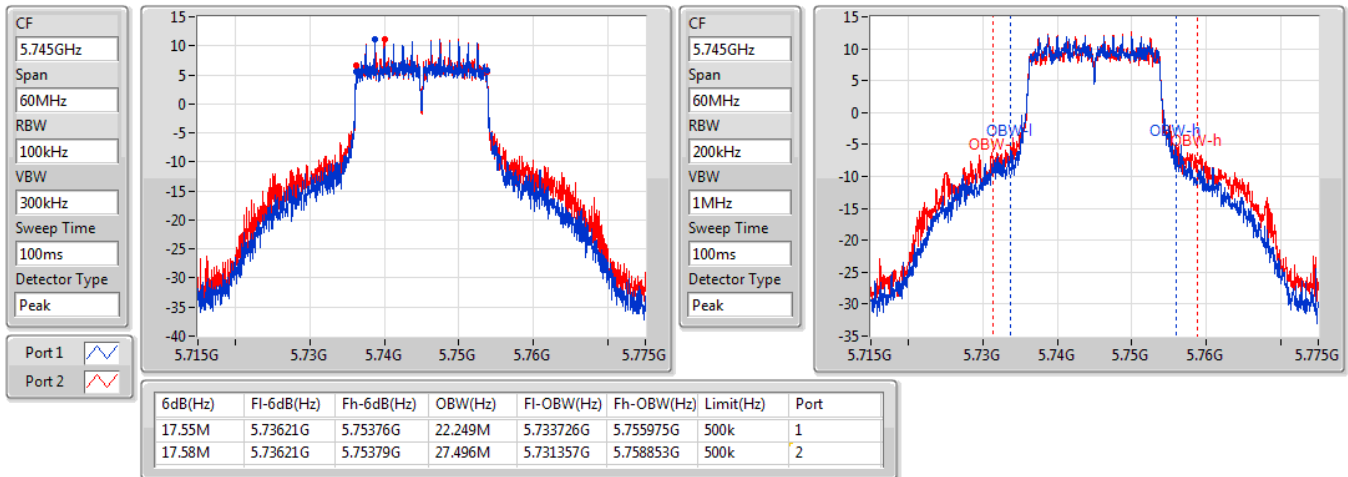


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5745MHz

18/12/2019

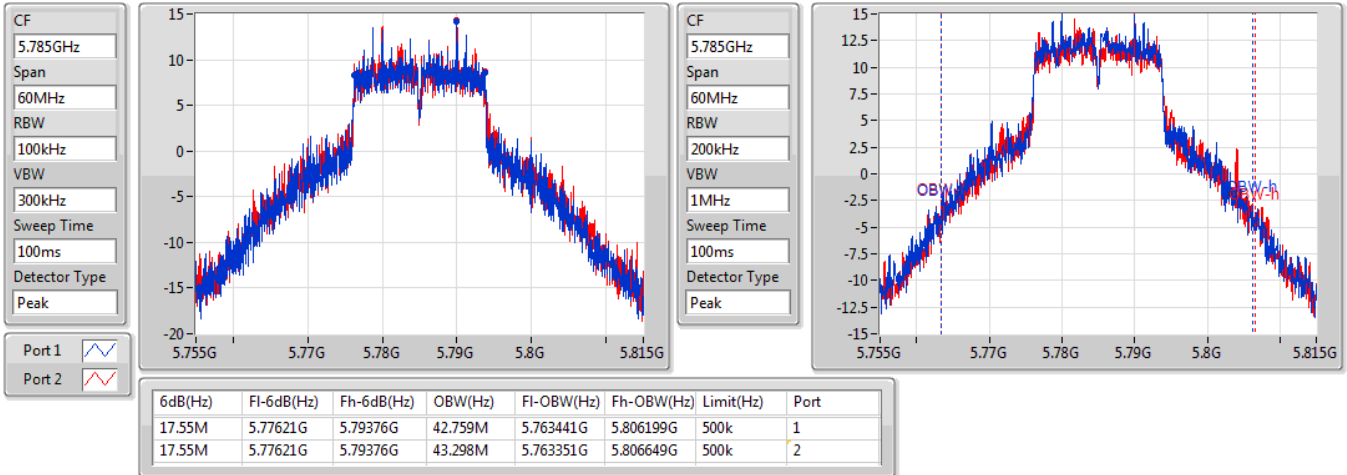


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5785MHz

18/12/2019

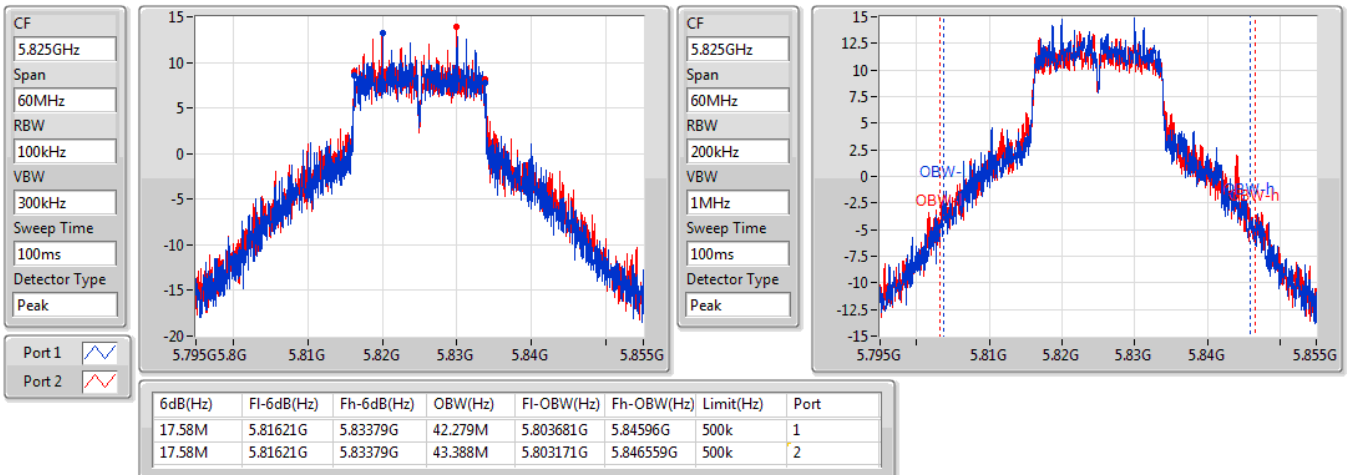


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5825MHz

18/12/2019

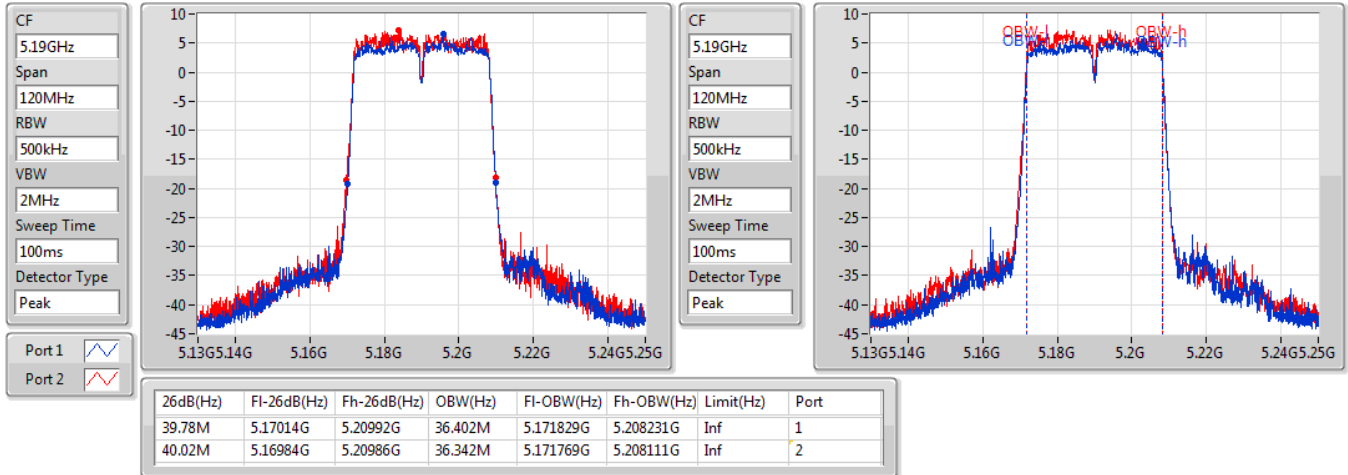


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5190MHz

18/12/2019

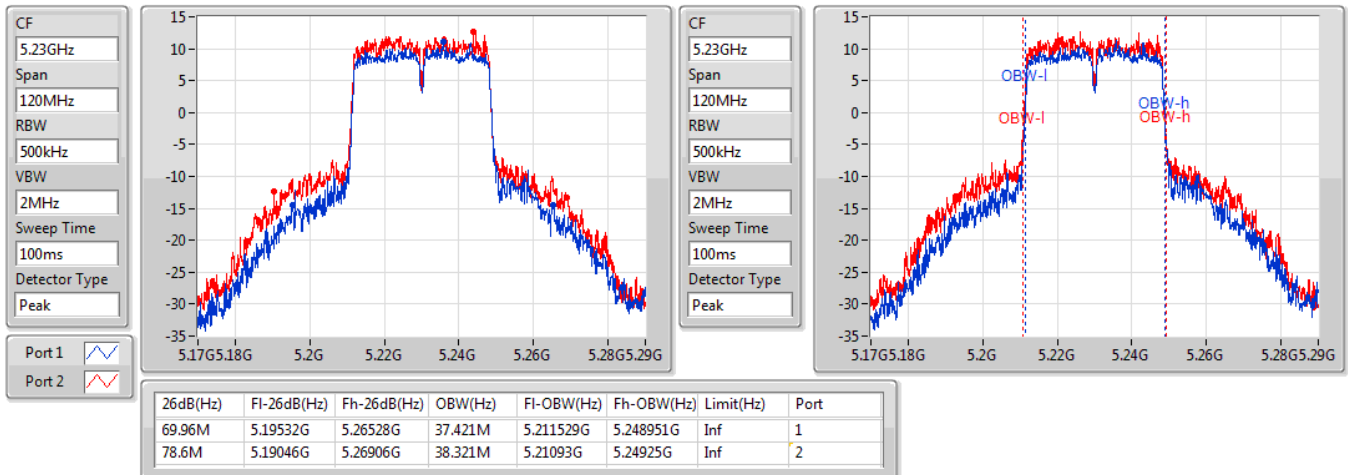


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5230MHz

18/12/2019

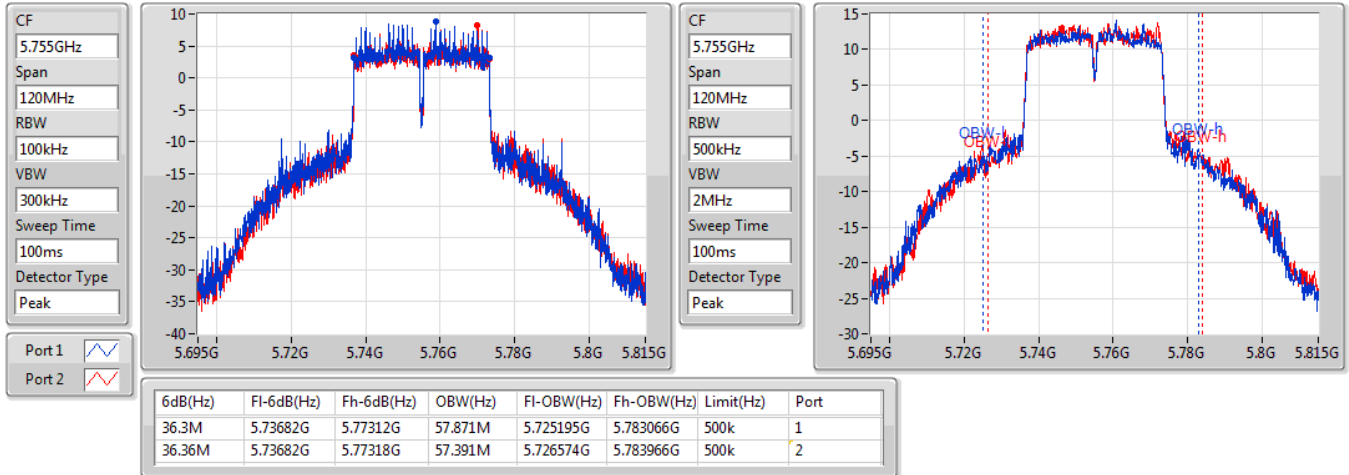


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5755MHz

18/12/2019

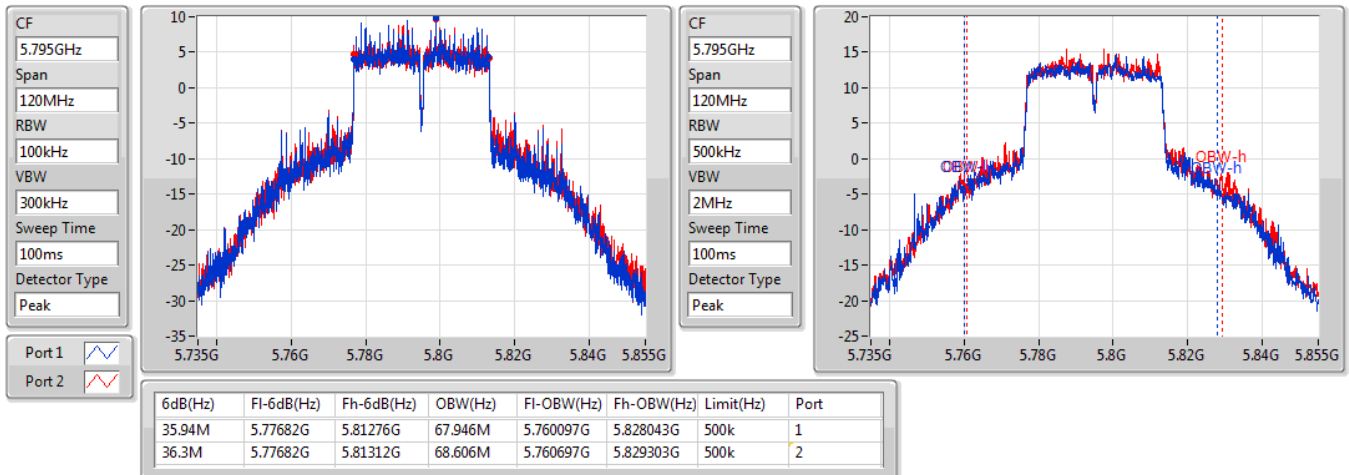


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5795MHz

18/12/2019

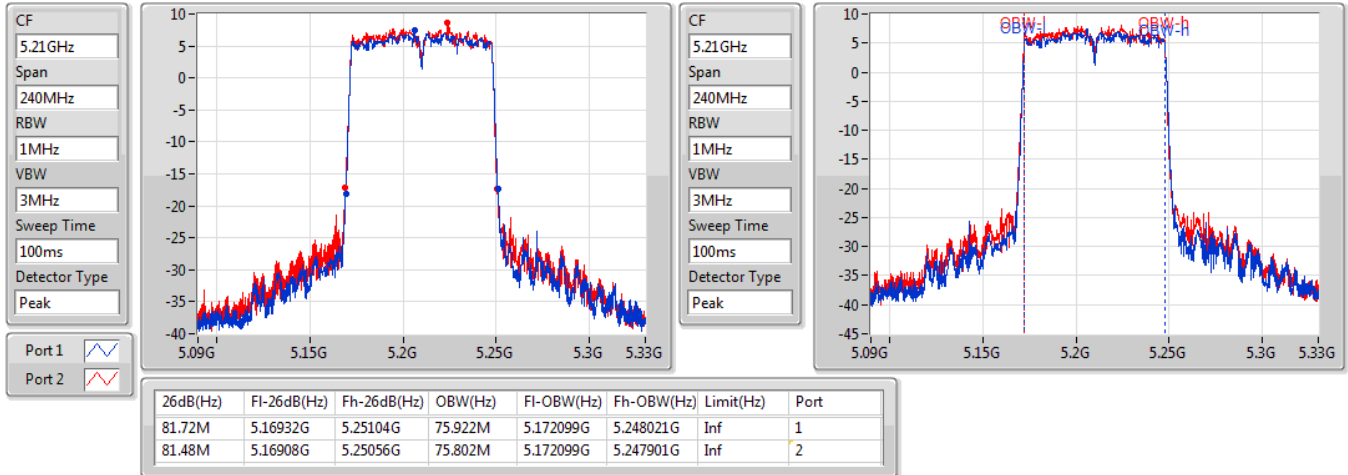


802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

5210MHz

18/12/2019

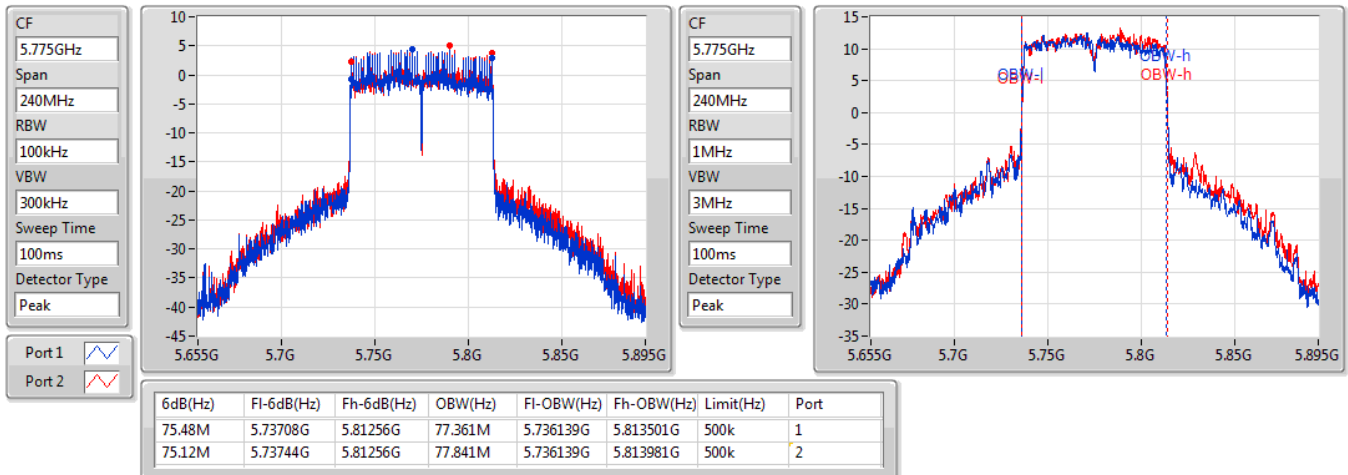


802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

5775MHz

18/12/2019

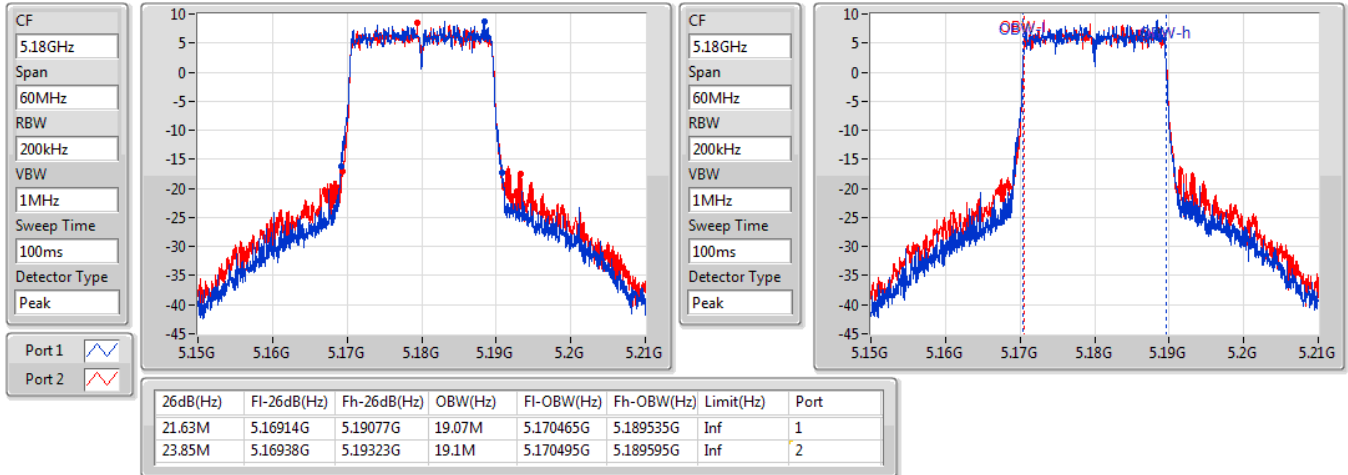


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5180MHz

18/12/2019

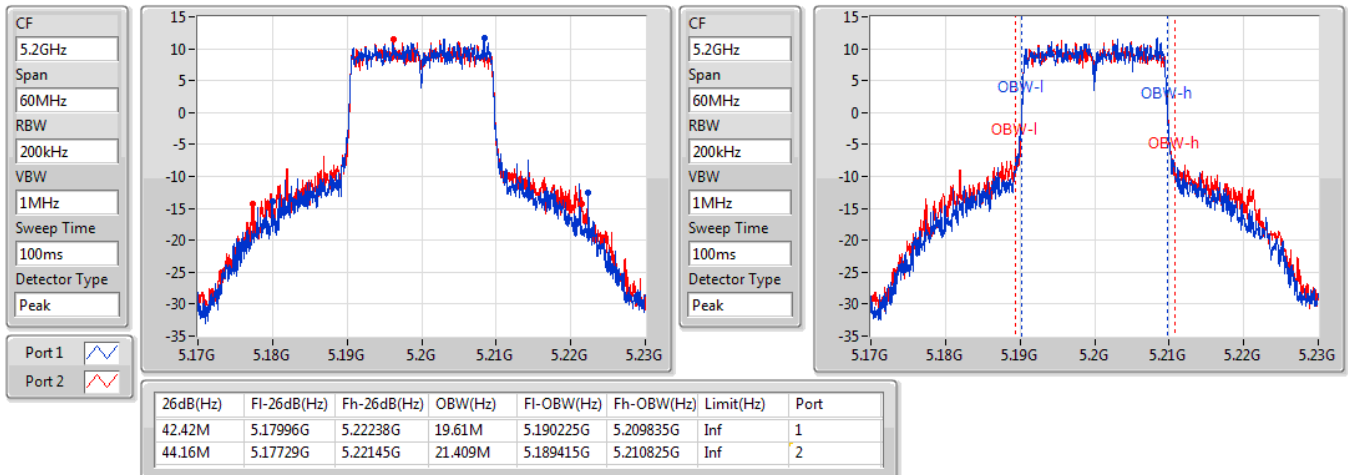


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5200MHz

18/12/2019

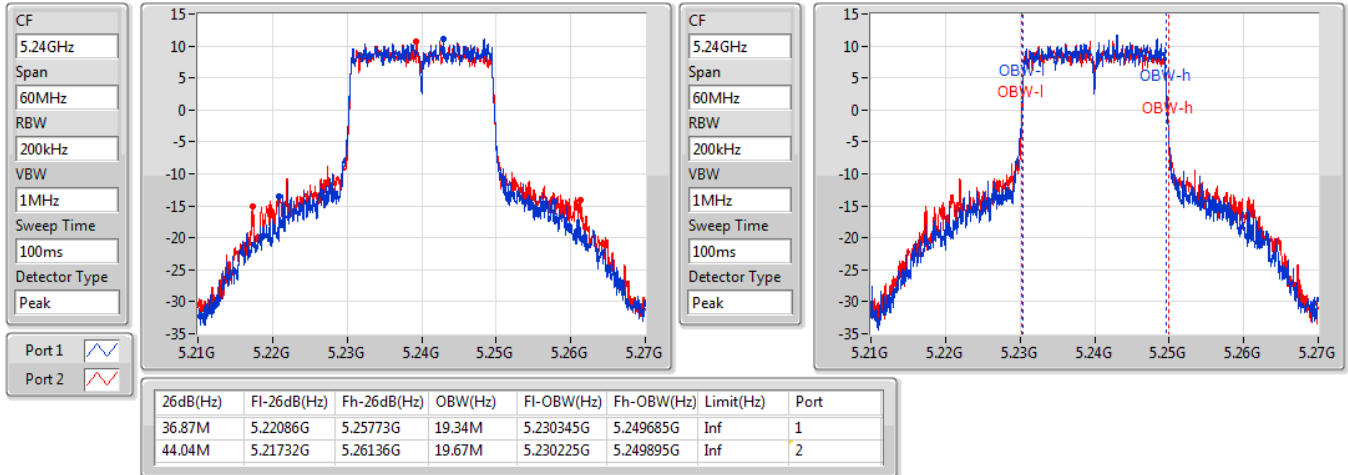


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5240MHz

18/12/2019

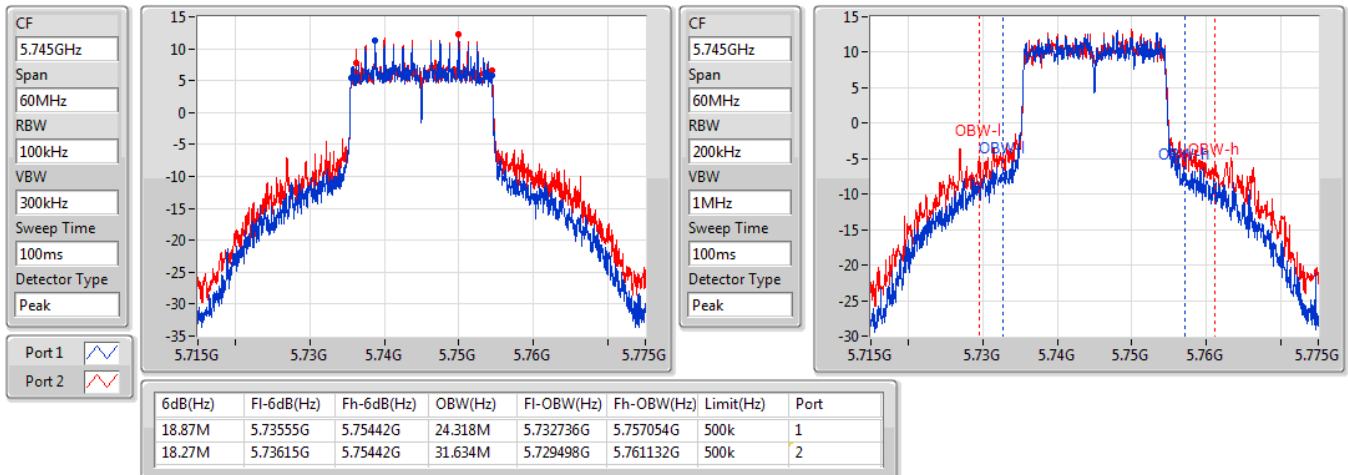


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5745MHz

18/12/2019

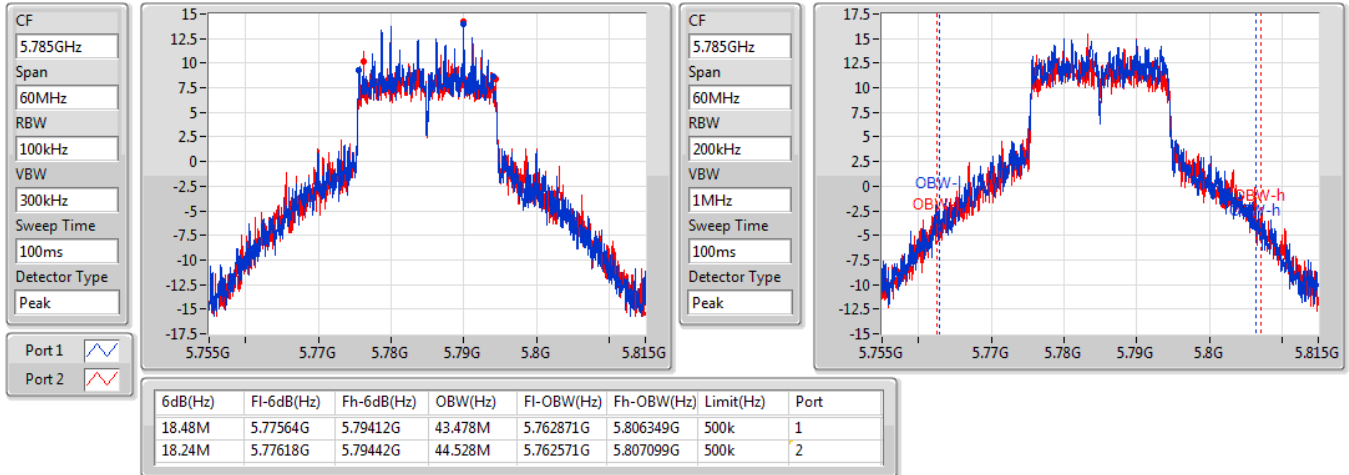


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5785MHz

18/12/2019

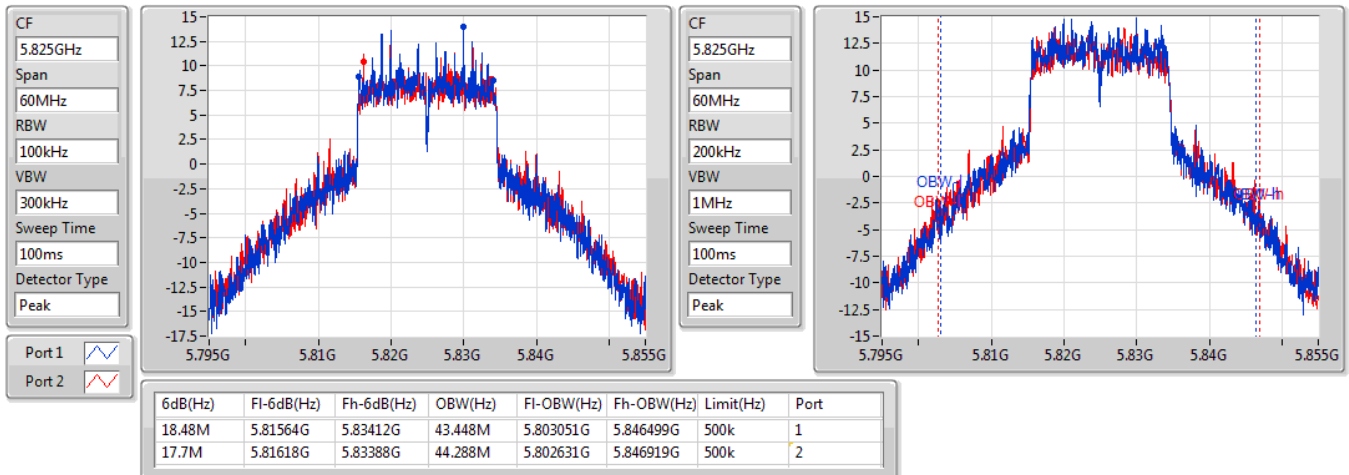


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5825MHz

18/12/2019

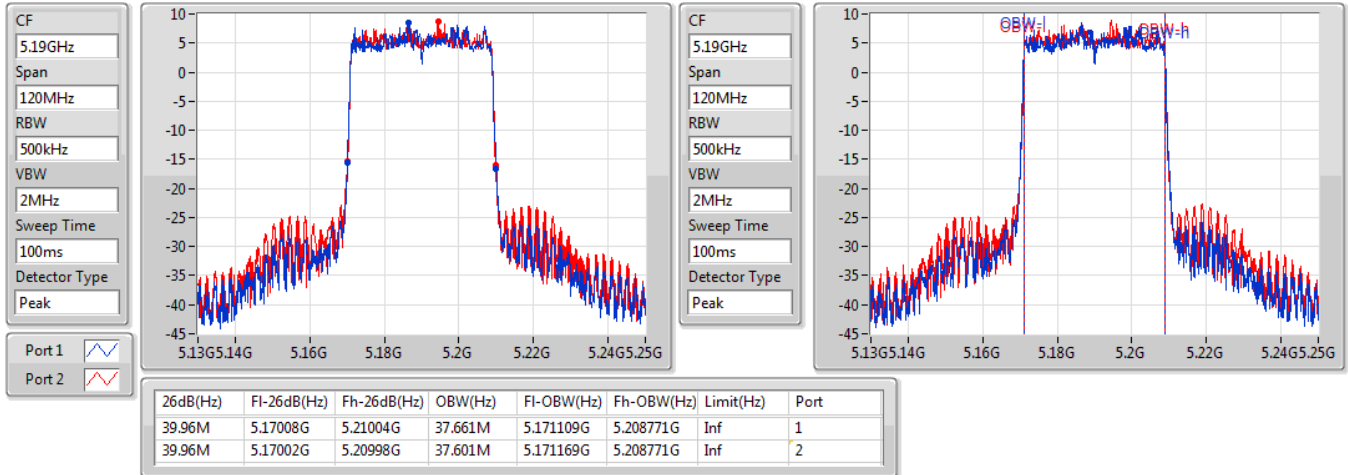


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5190MHz

18/12/2019

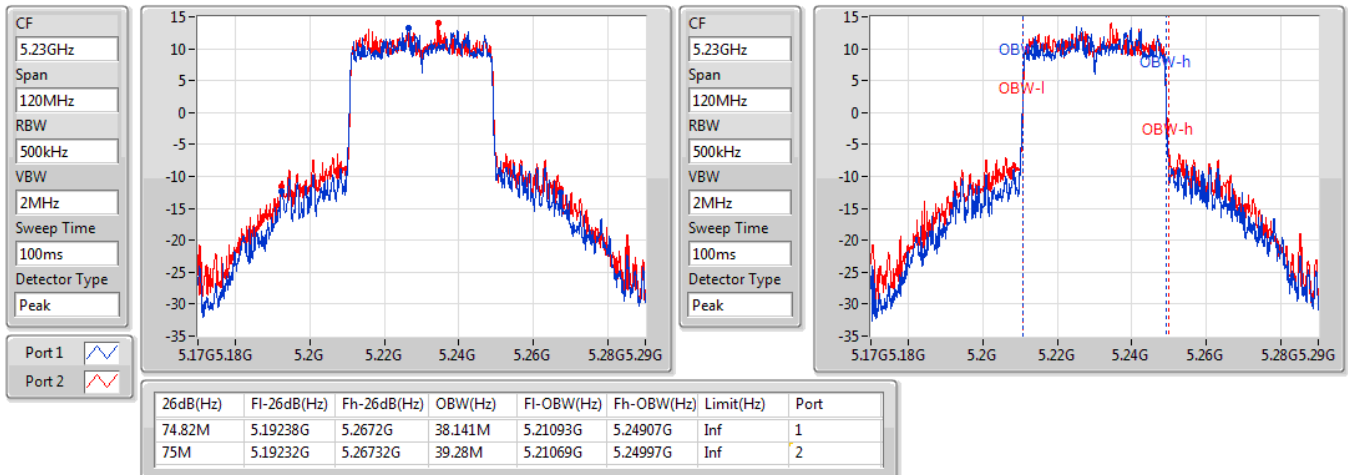


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5230MHz

18/12/2019

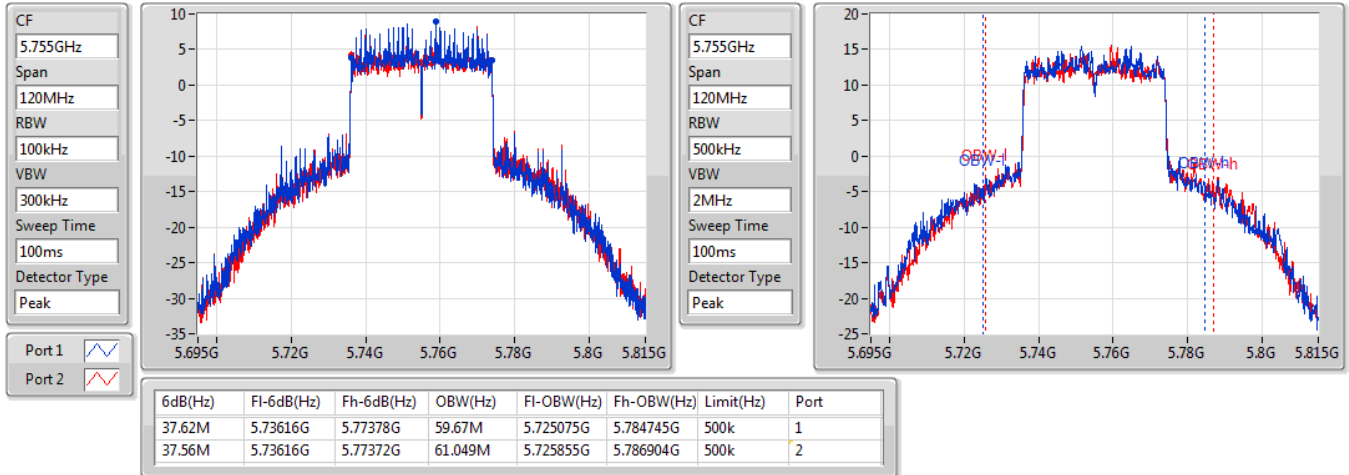


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5755MHz

18/12/2019

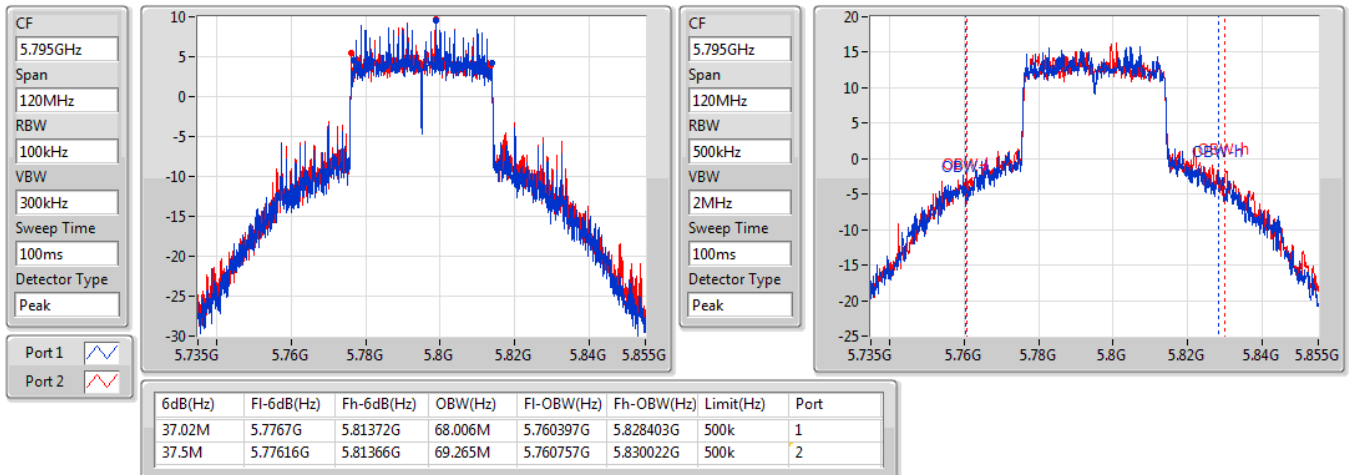


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5795MHz

18/12/2019

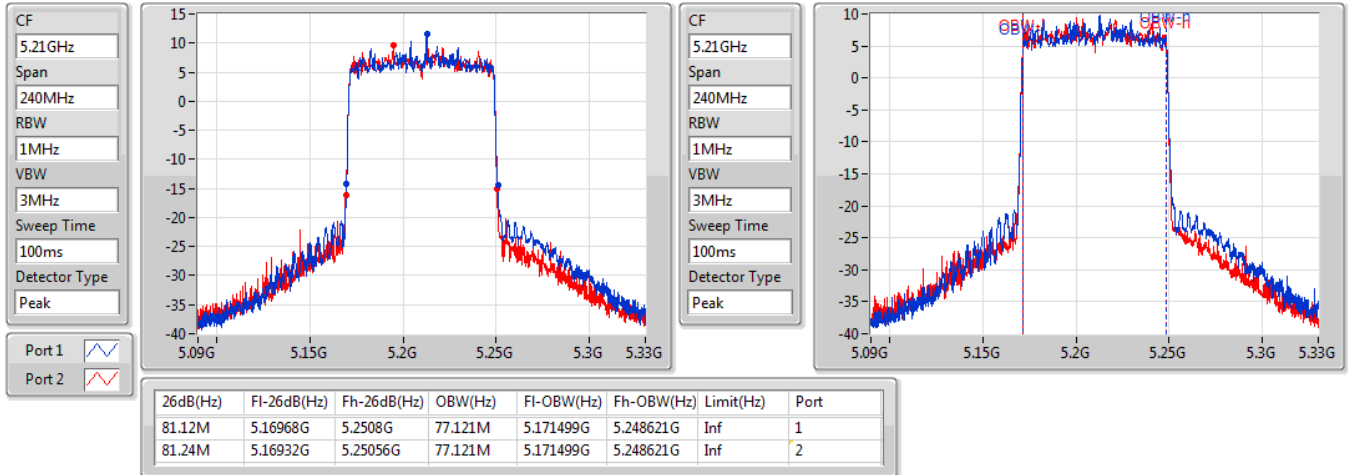


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5210MHz

18/12/2019

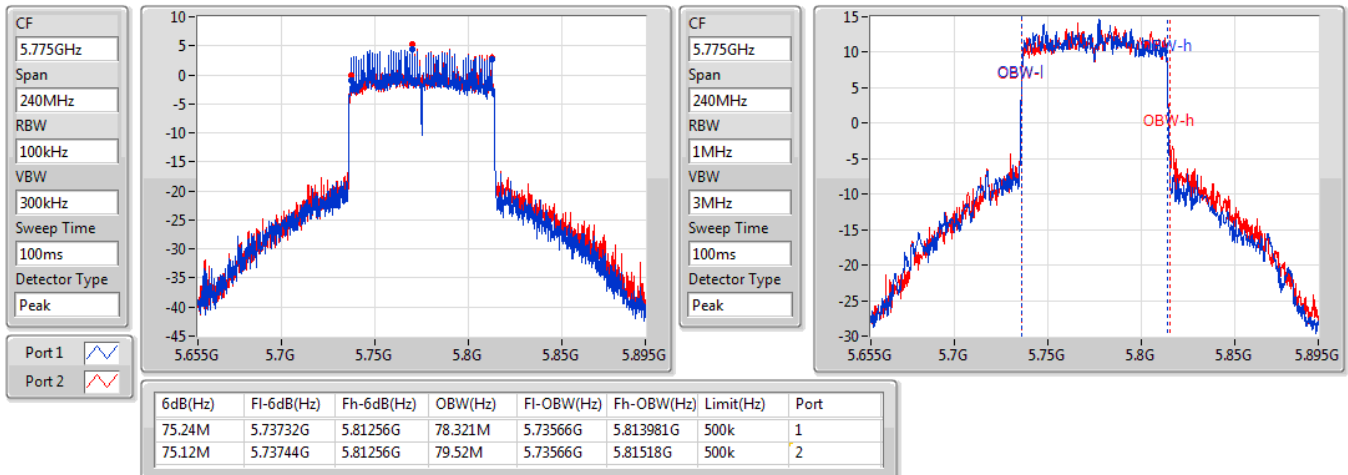


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5775MHz

18/12/2019



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	41.94M	25.187M	25M2D1D	21.39M	16.822M
802.11ac VHT20_Nss1,(MCS0)_1TX	42.09M	23.088M	23M1D1D	22.98M	17.961M
802.11ac VHT40_Nss1,(MCS0)_1TX	75.24M	37.421M	37M4D1D	40.26M	36.462M
802.11ac VHT80_Nss1,(MCS0)_1TX	82.32M	75.802M	75M8D1D	82.32M	75.802M
802.11ax HEW20_Nss1,(MCS0)_1TX	46.08M	23.688M	23M7D1D	25.35M	19.13M
802.11ax HEW40_Nss1,(MCS0)_1TX	76.02M	38.141M	38M1D1D	40.32M	37.541M
802.11ax HEW80_Nss1,(MCS0)_1TX	81.96M	77.121M	77M1D1D	81.96M	77.121M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	16.38M	26.057M	26M1D1D	16.32M	25.007M
802.11ac VHT20_Nss1,(MCS0)_1TX	17.55M	25.277M	25M3D1D	17.55M	18.831M
802.11ac VHT40_Nss1,(MCS0)_1TX	36.3M	55.352M	55M4D1D	36.3M	53.193M
802.11ac VHT80_Nss1,(MCS0)_1TX	75.6M	76.282M	76M3D1D	75.6M	76.282M
802.11ax HEW20_Nss1,(MCS0)_1TX	18.87M	26.027M	26M0D1D	18.81M	19.46M
802.11ax HEW40_Nss1,(MCS0)_1TX	37.62M	48.336M	48M3D1D	37.32M	46.777M
802.11ax HEW80_Nss1,(MCS0)_1TX	76.32M	77.481M	77M5D1D	76.32M	77.481M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Min-OBW = Minimum 99% occupied bandwidth;

Result

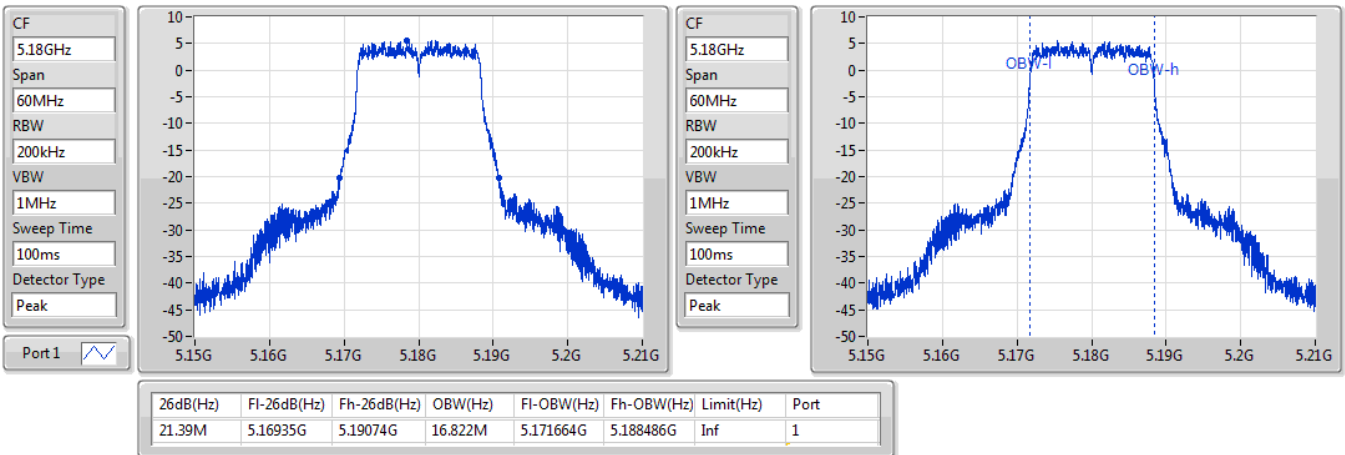
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.39M	16.822M
5200MHz_TnomVnom	Pass	Inf	41.94M	25.187M
5240MHz_TnomVnom	Pass	Inf	37.65M	17.901M
5745MHz_TnomVnom	Pass	500k	16.32M	26.057M
5785MHz_TnomVnom	Pass	500k	16.38M	25.007M
5825MHz_TnomVnom	Pass	500k	16.32M	25.847M
802.11ac VHT20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	22.98M	17.961M
5200MHz_TnomVnom	Pass	Inf	42.09M	23.088M
5240MHz_TnomVnom	Pass	Inf	36.48M	19.58M
5745MHz_TnomVnom	Pass	500k	17.55M	20.69M
5785MHz_TnomVnom	Pass	500k	17.55M	18.831M
5825MHz_TnomVnom	Pass	500k	17.55M	25.277M
802.11ac VHT40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	40.26M	36.462M
5230MHz_TnomVnom	Pass	Inf	75.24M	37.421M
5755MHz_TnomVnom	Pass	500k	36.3M	53.193M
5795MHz_TnomVnom	Pass	500k	36.3M	55.352M
802.11ac VHT80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	82.32M	75.802M
5775MHz_TnomVnom	Pass	500k	75.6M	76.282M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	25.35M	19.13M
5200MHz_TnomVnom	Pass	Inf	46.08M	23.688M
5240MHz_TnomVnom	Pass	Inf	41.07M	19.67M
5745MHz_TnomVnom	Pass	500k	18.84M	21.769M
5785MHz_TnomVnom	Pass	500k	18.87M	19.46M
5825MHz_TnomVnom	Pass	500k	18.81M	26.027M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	40.32M	37.541M
5230MHz_TnomVnom	Pass	Inf	76.02M	38.141M
5755MHz_TnomVnom	Pass	500k	37.32M	46.777M
5795MHz_TnomVnom	Pass	500k	37.62M	48.336M
802.11ax HEW80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	81.96M	77.121M
5775MHz_TnomVnom	Pass	500k	76.32M	77.481M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

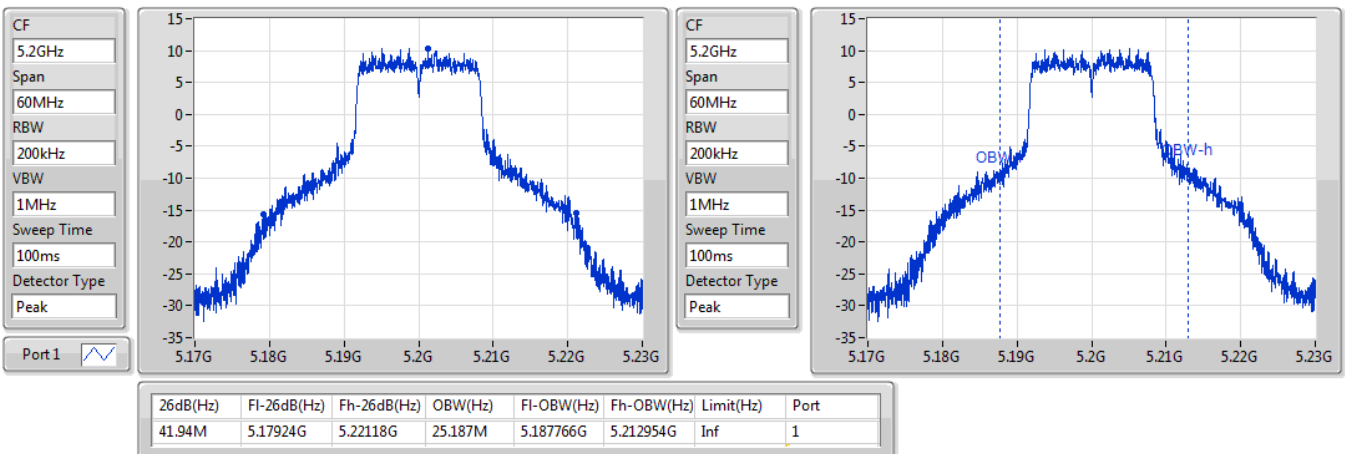
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_1TX
EBW
5180MHz

17/12/2019

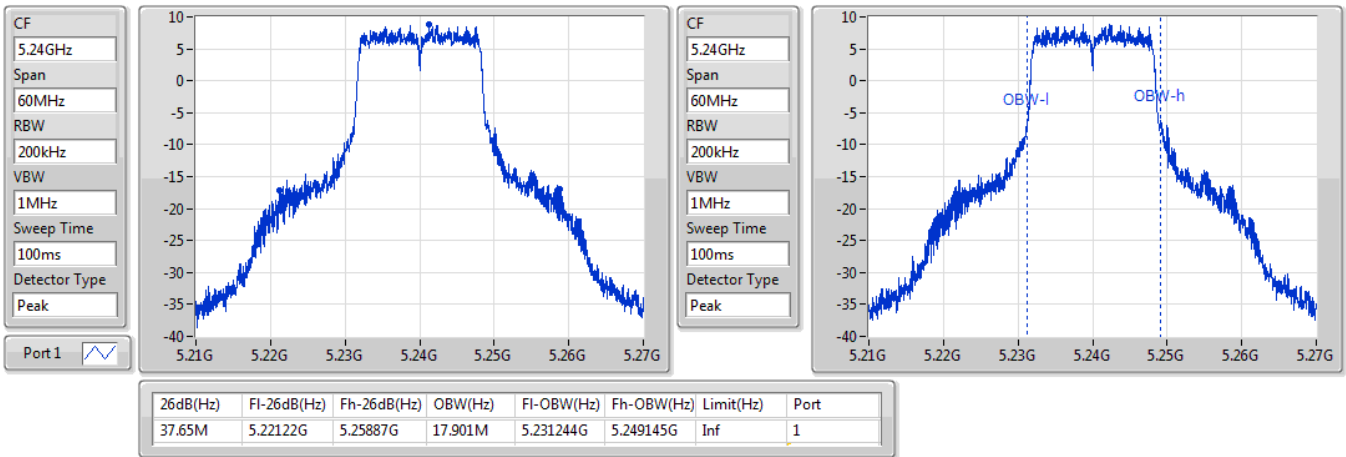

802.11a_Nss1,(6Mbps)_1TX
EBW
5200MHz

17/12/2019

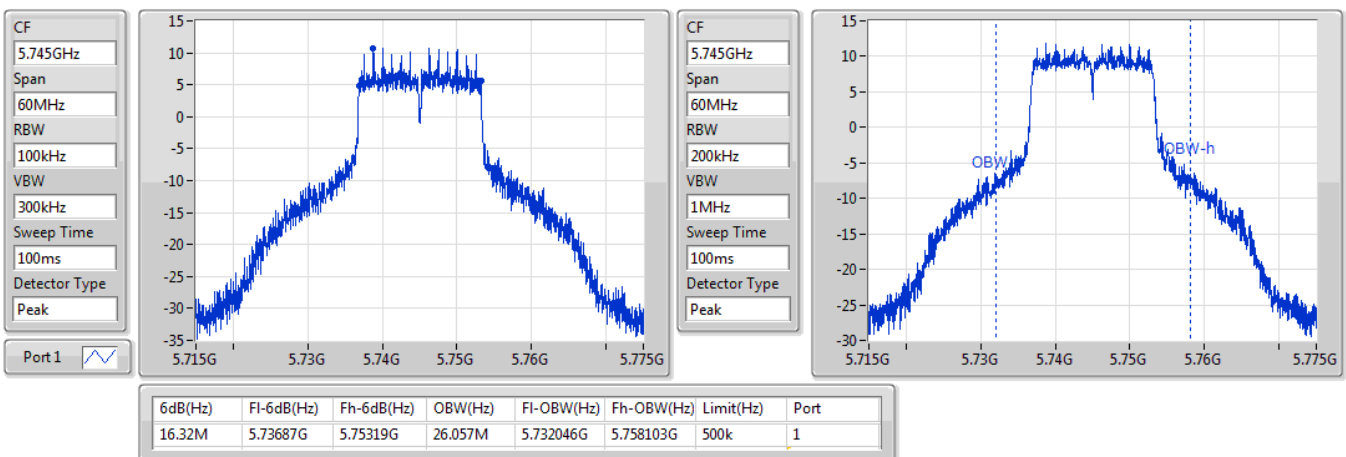


802.11a_Nss1,(6Mbps)_1TX
EBW
5240MHz

17/12/2019


802.11a_Nss1,(6Mbps)_1TX
EBW
5745MHz

18/12/2019

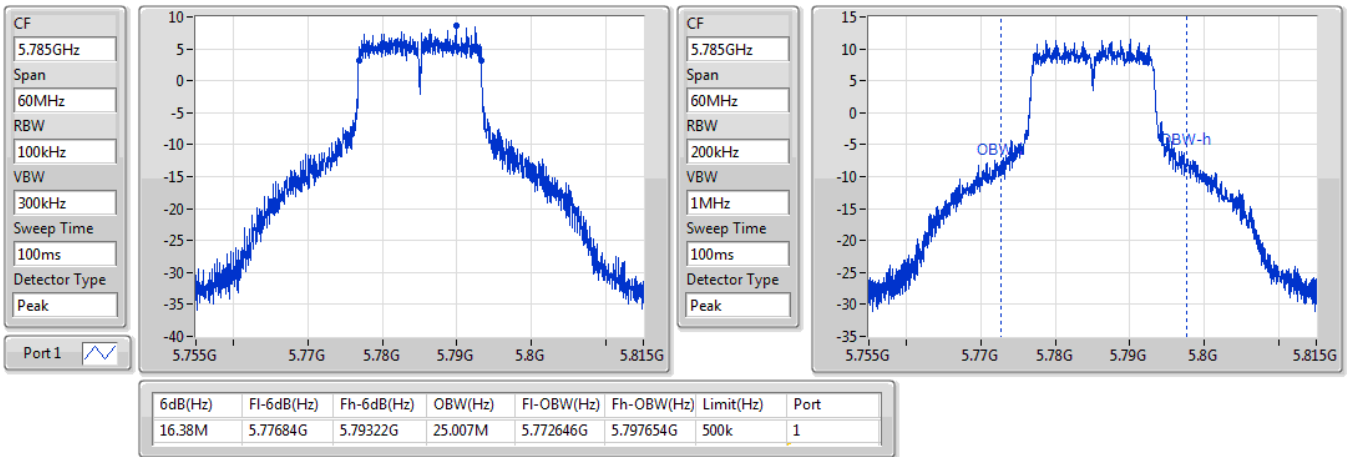


802.11a_Nss1,(6Mbps)_1TX

EBW

5785MHz

18/12/2019

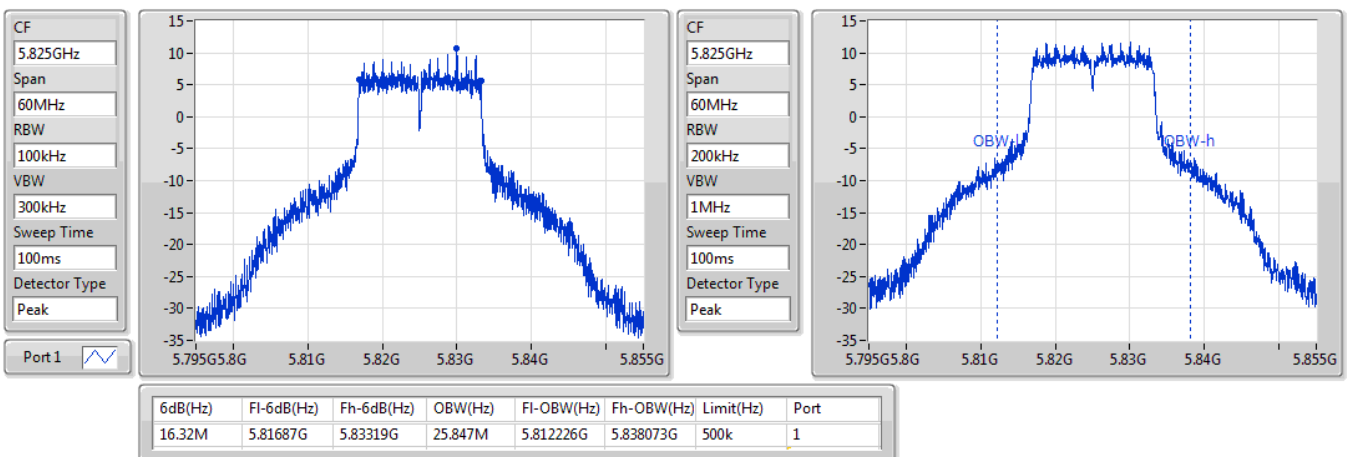


802.11a_Nss1,(6Mbps)_1TX

EBW

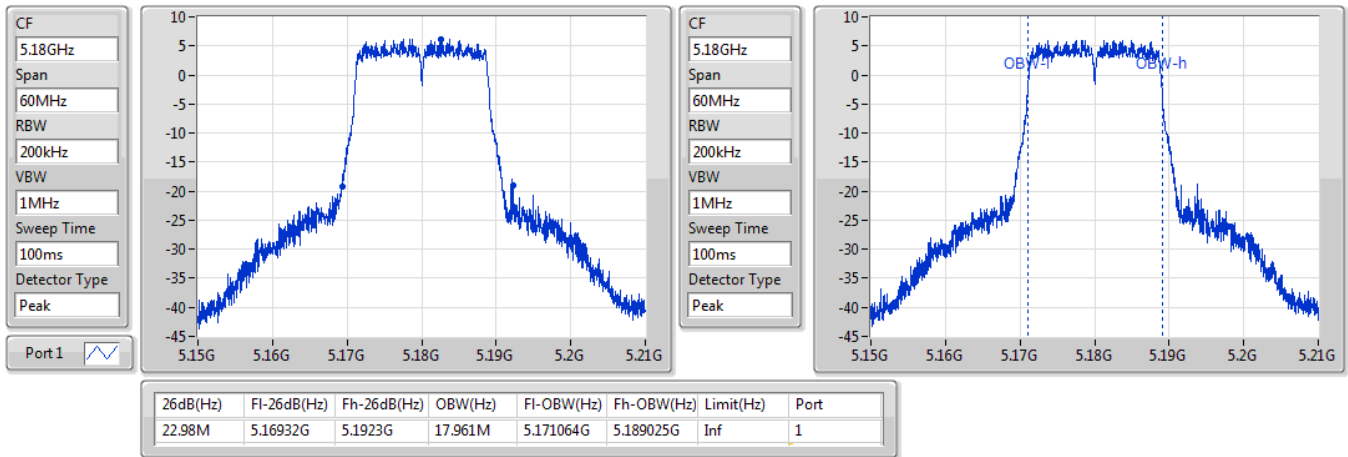
5825MHz

18/12/2019

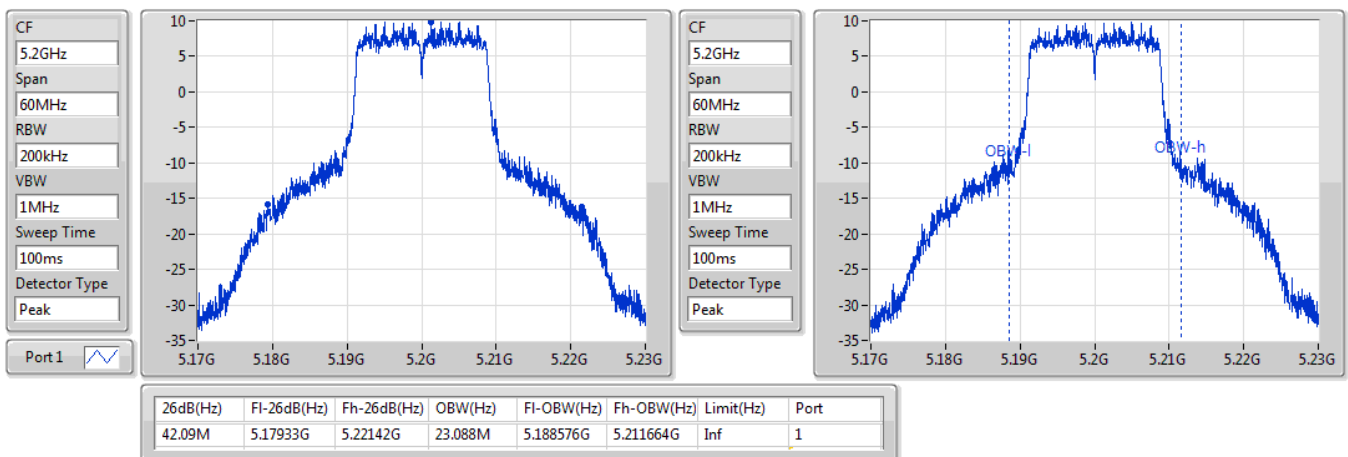


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5180MHz

18/12/2019

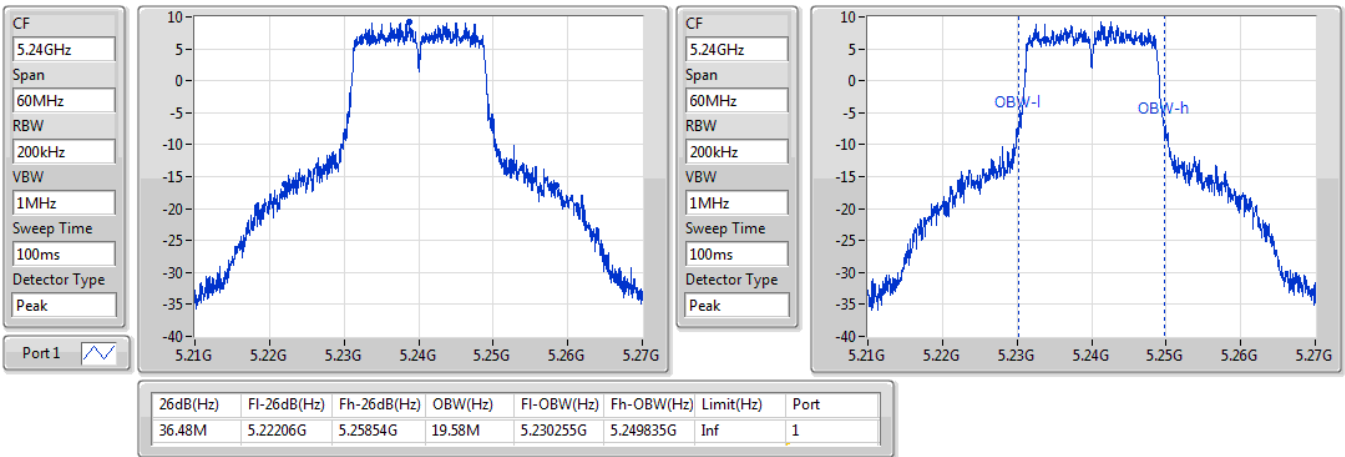

802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5200MHz

18/12/2019

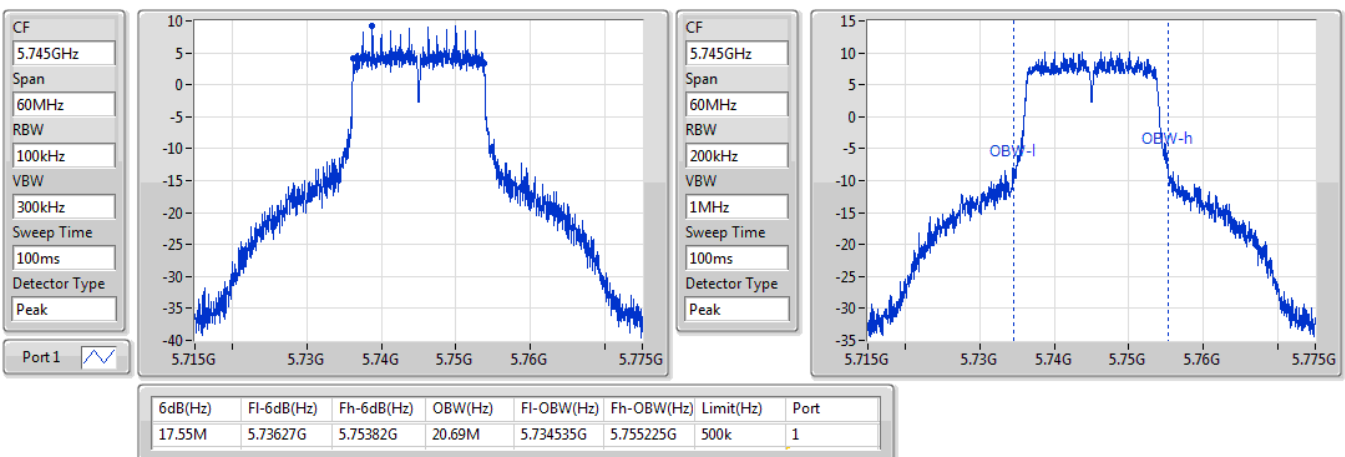


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5240MHz

18/12/2019

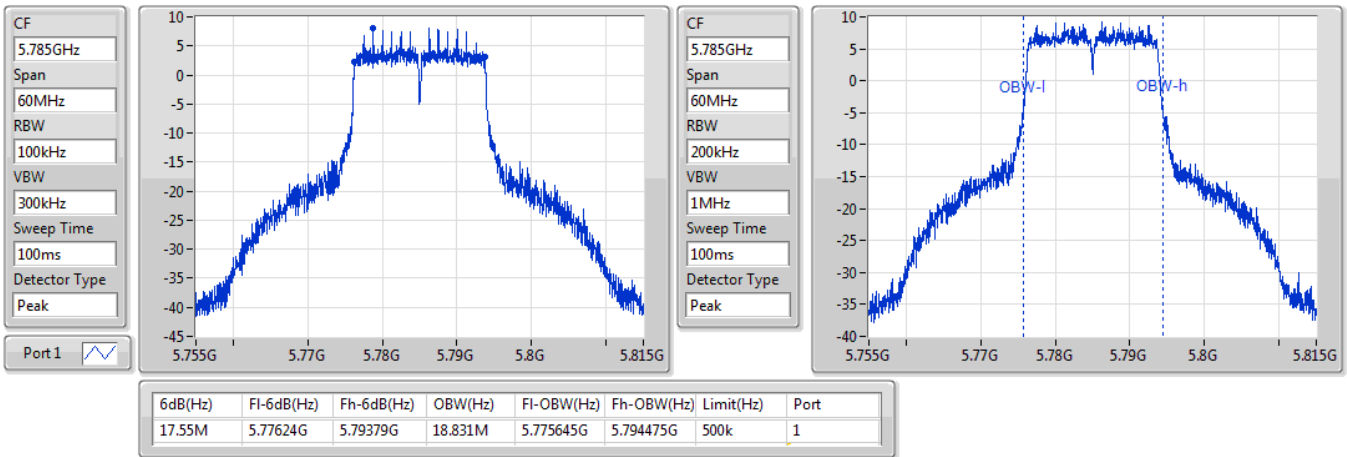

802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5745MHz

18/12/2019

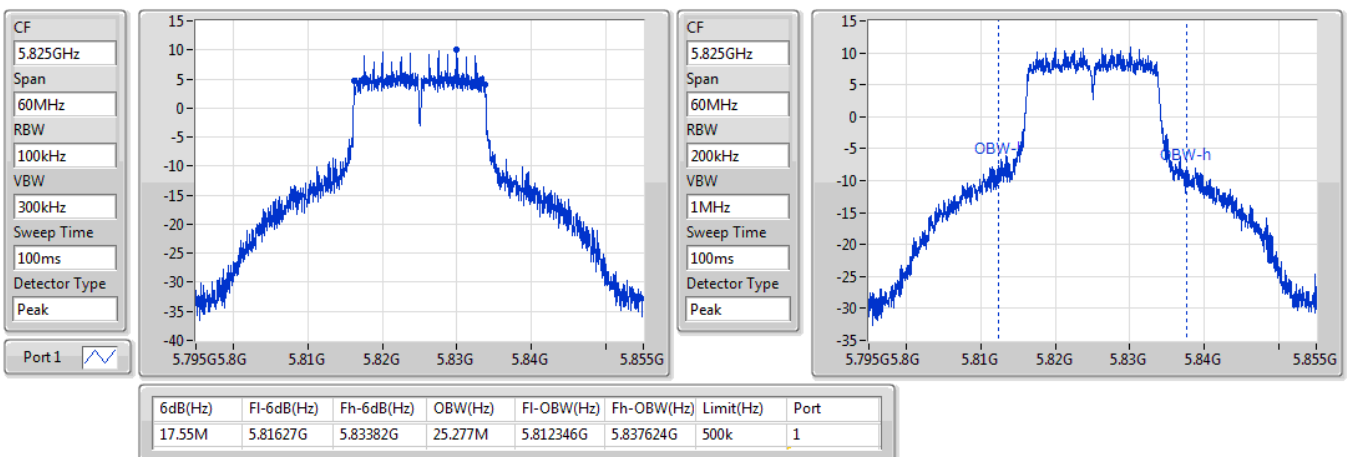


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5785MHz

18/12/2019

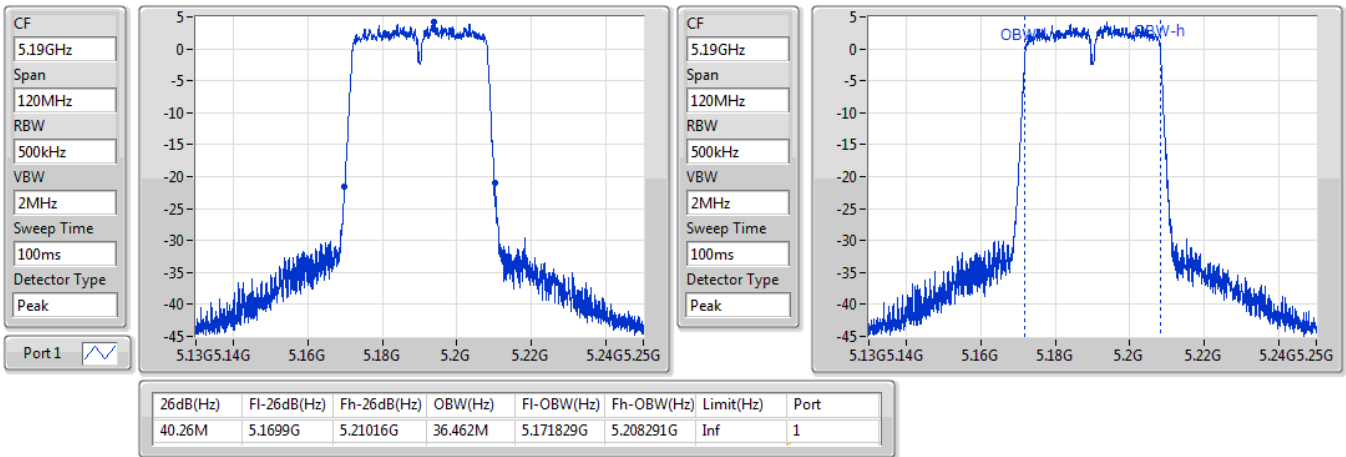

802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5825MHz

18/12/2019

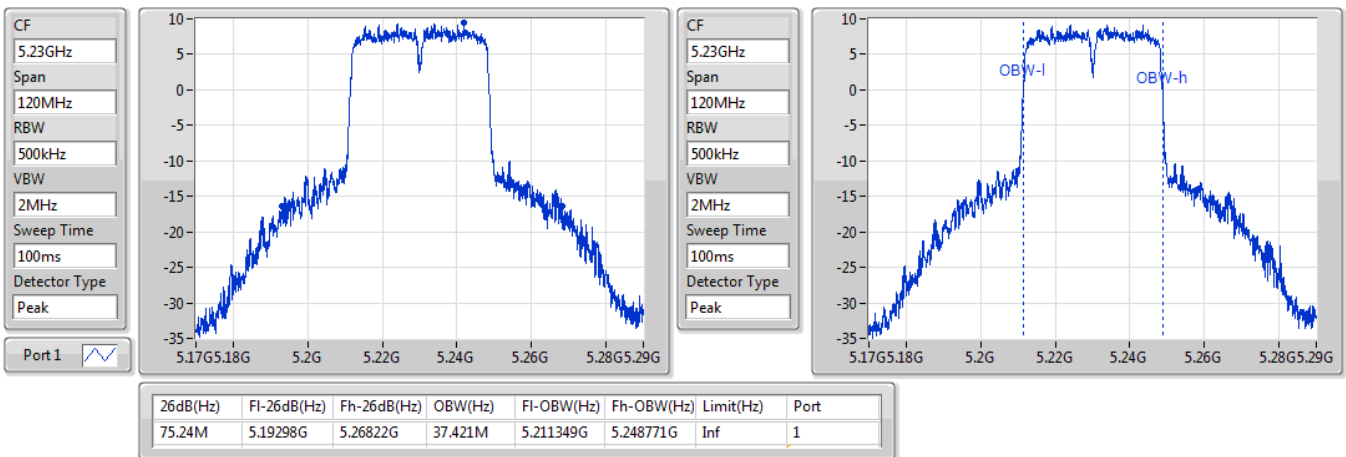


802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5190MHz

18/12/2019


802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5230MHz

18/12/2019

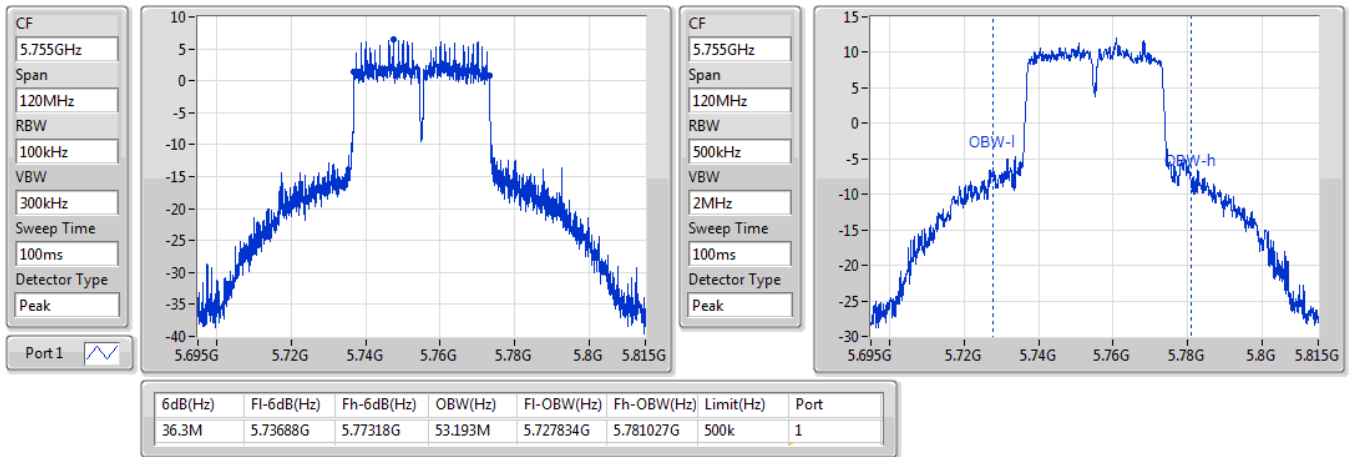


802.11ac VHT40_Nss1,(MCS0)_1TX

EBW

5755MHz

18/12/2019

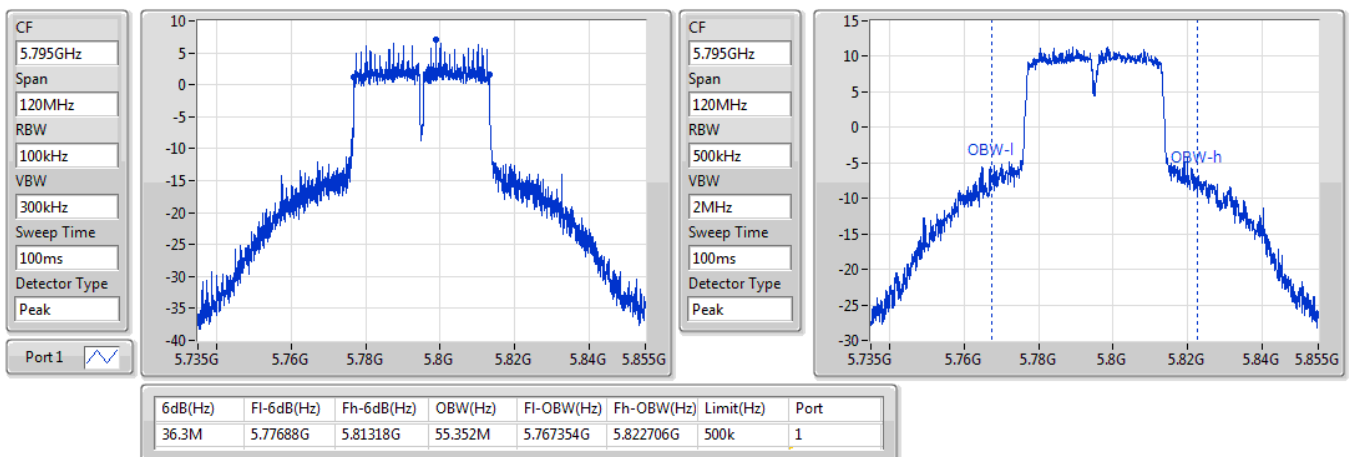


802.11ac VHT40_Nss1,(MCS0)_1TX

EBW

5795MHz

18/12/2019

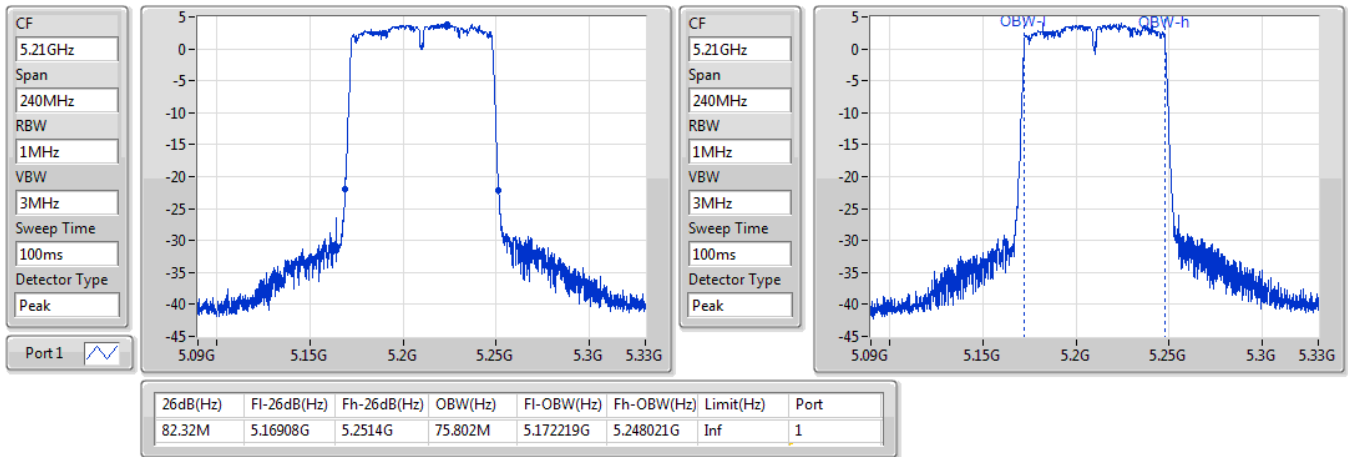


802.11ac VHT80_Nss1,(MCS0)_1TX

EBW

5210MHz

18/12/2019

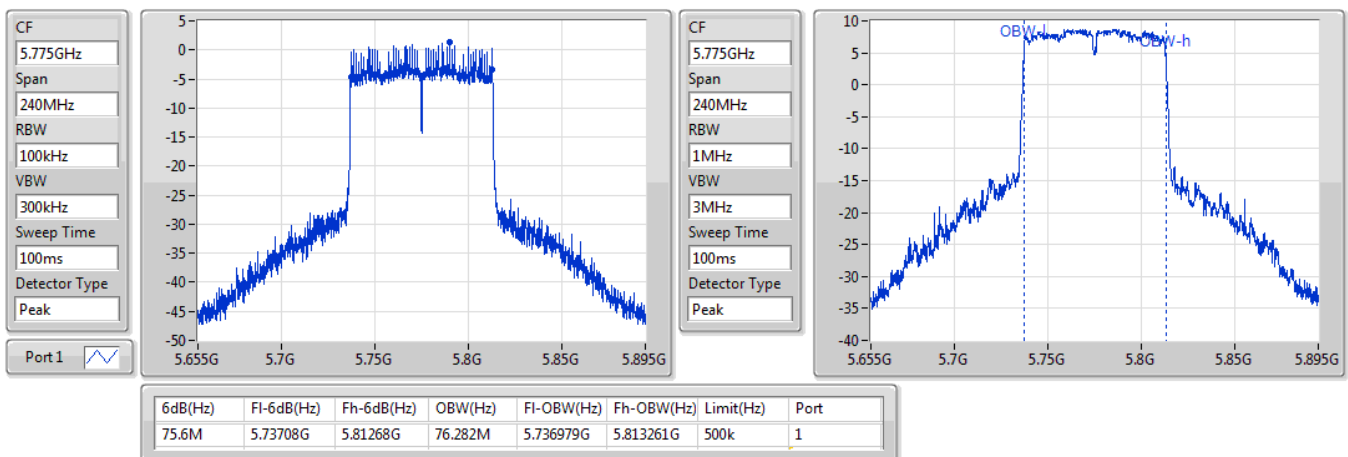


802.11ac VHT80_Nss1,(MCS0)_1TX

EBW

5775MHz

18/12/2019

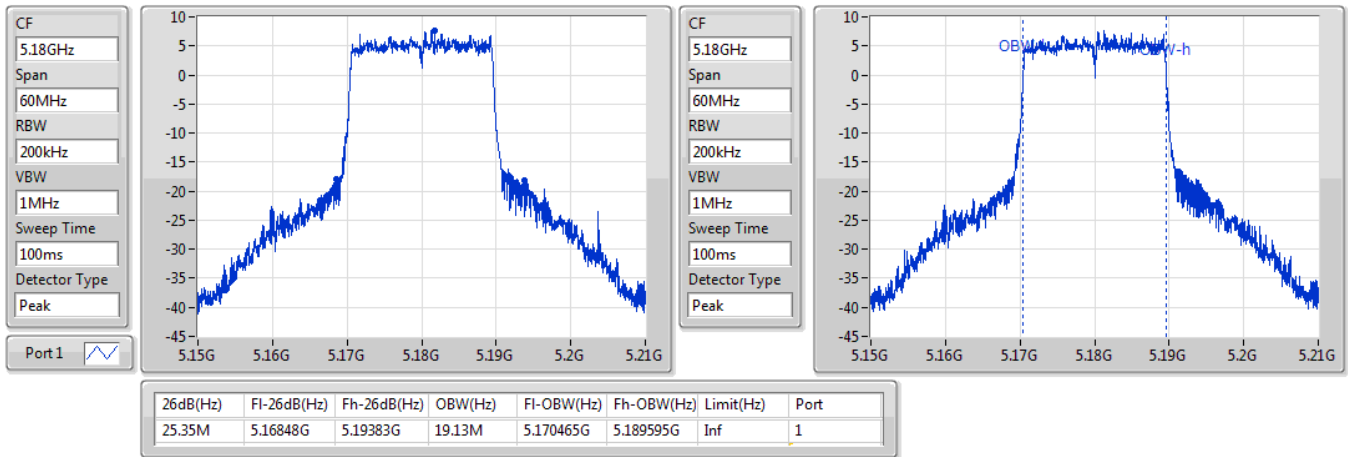


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5180MHz

18/12/2019

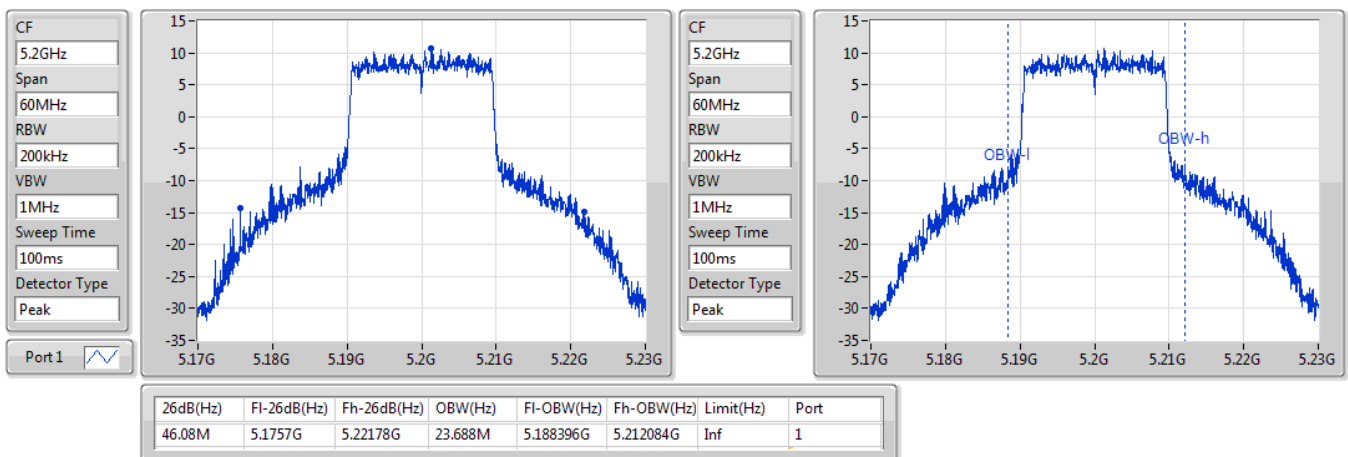


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

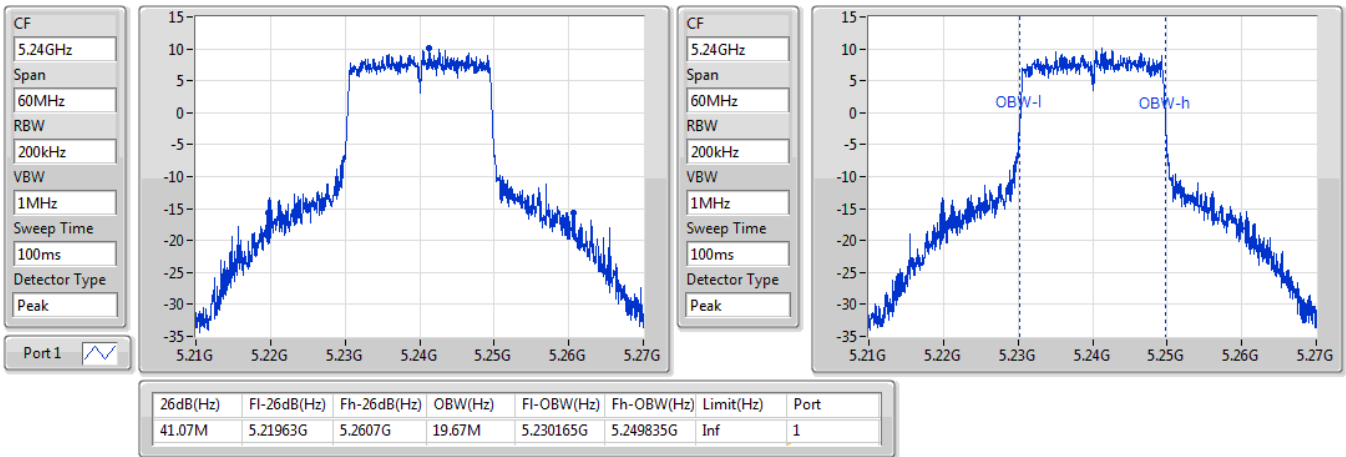
5200MHz

18/12/2019

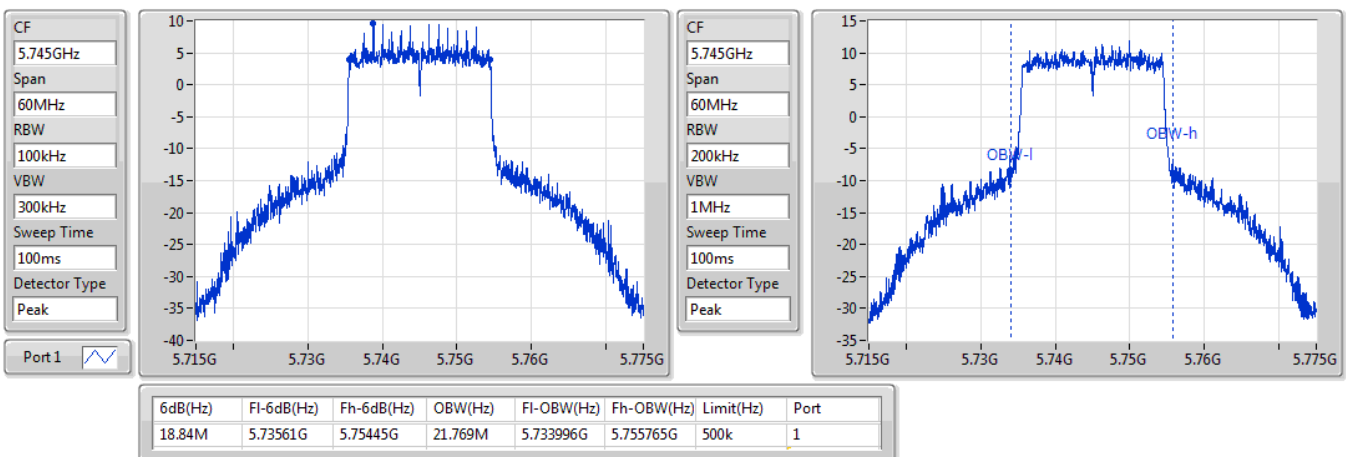


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5240MHz

18/12/2019

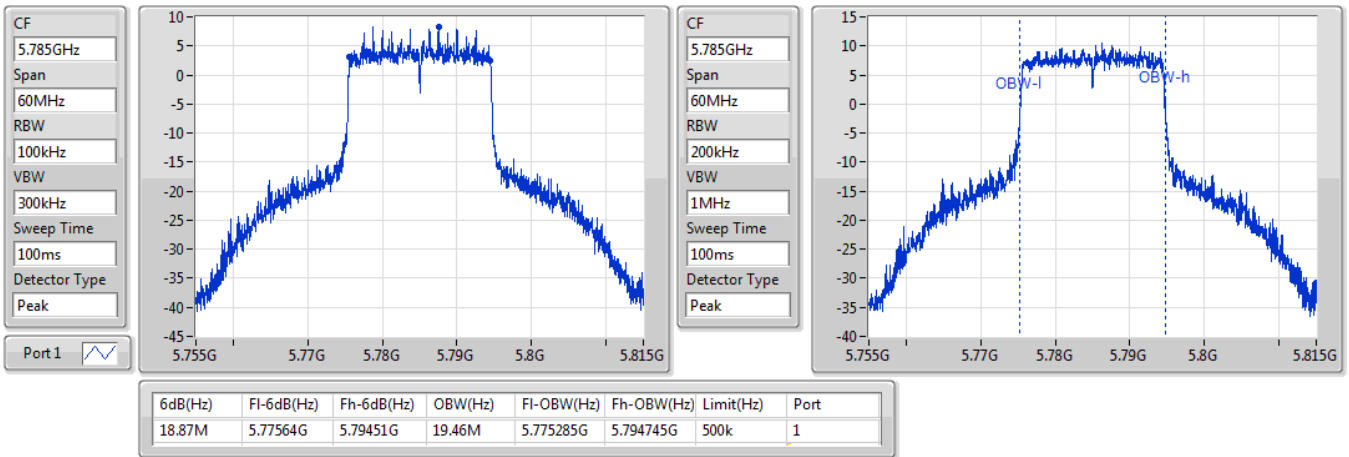

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5745MHz

18/12/2019

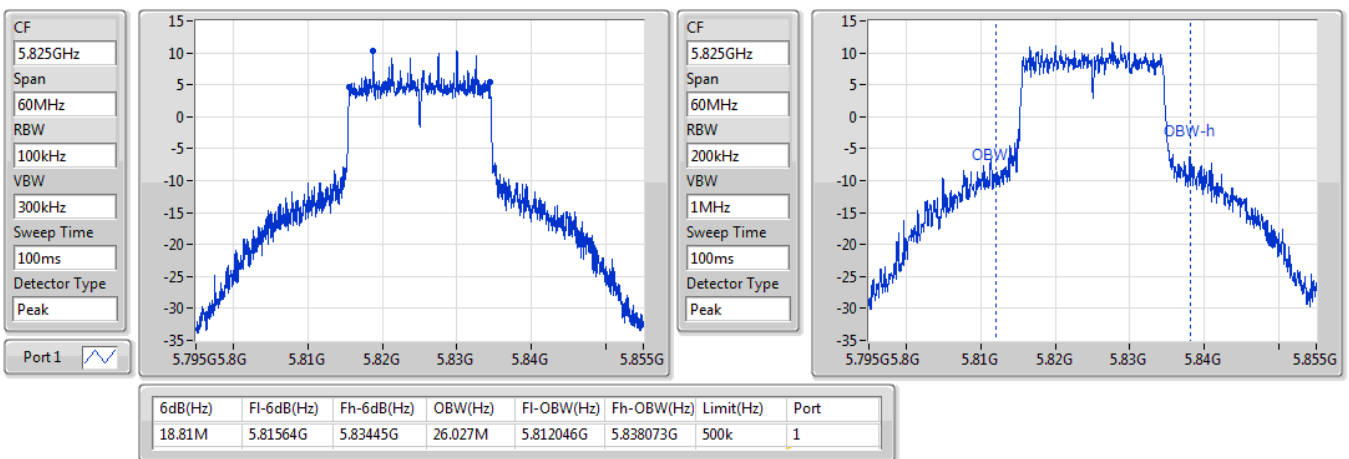


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5785MHz

18/12/2019


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5825MHz

18/12/2019

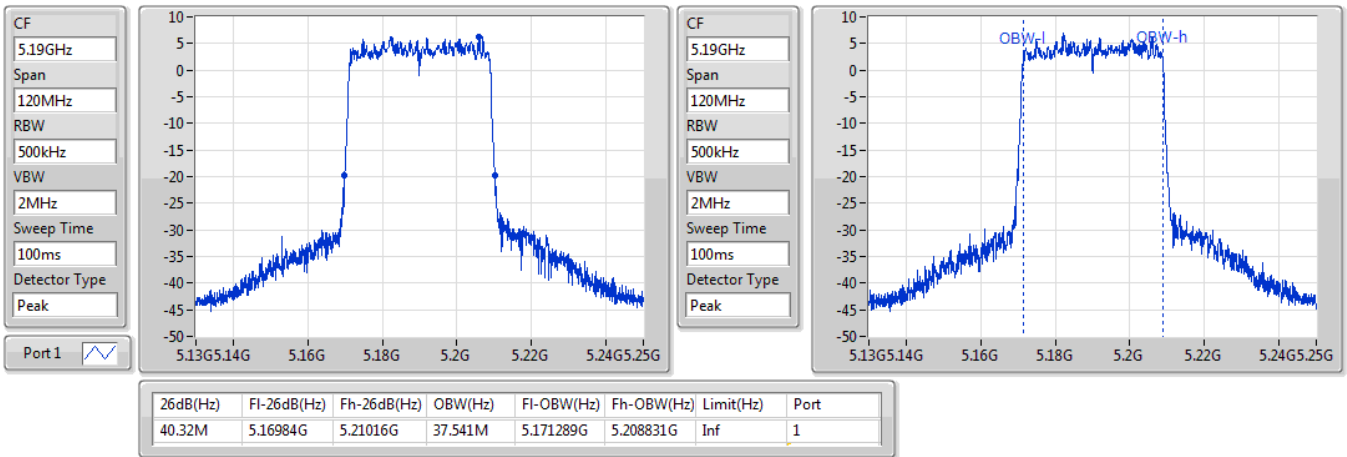


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5190MHz

18/12/2019

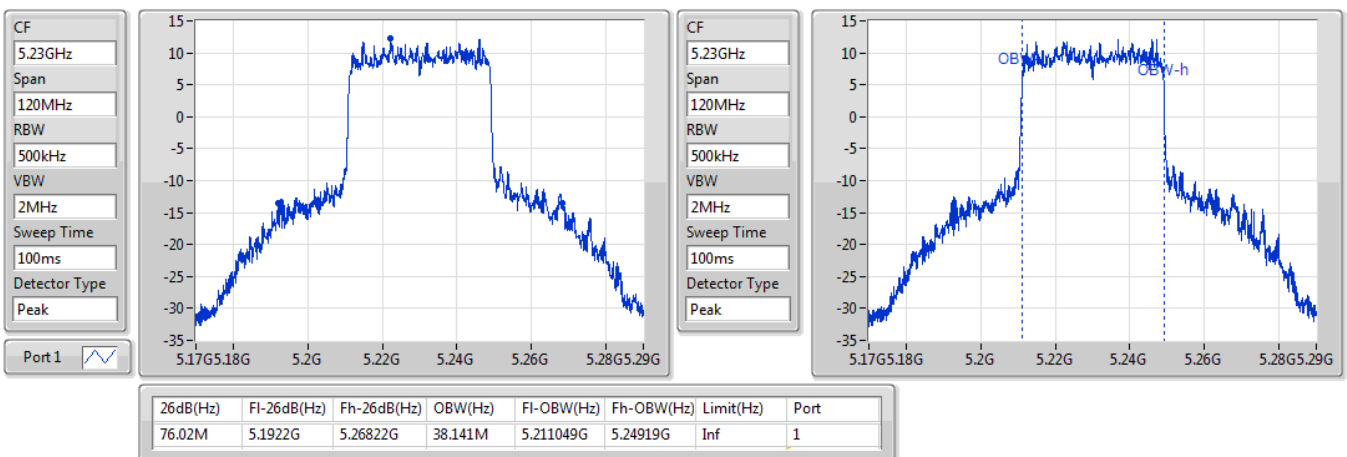


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

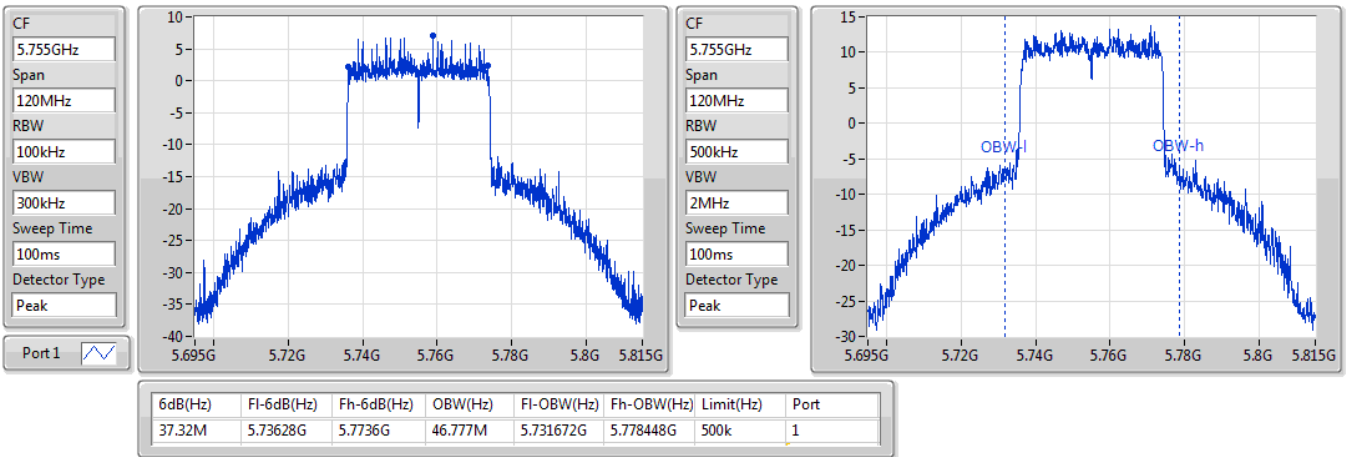
5230MHz

18/12/2019

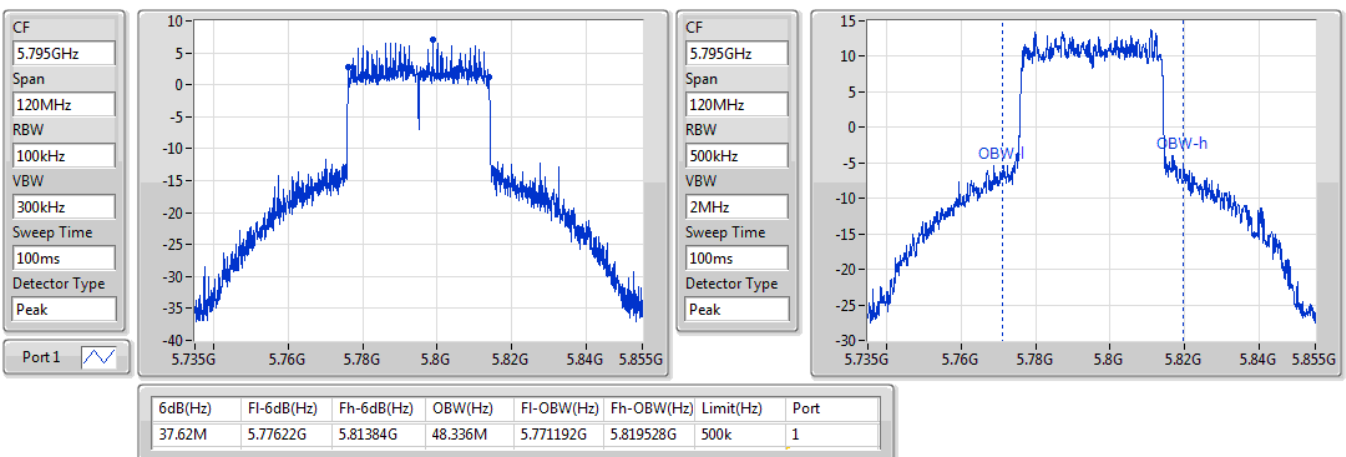


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5755MHz

18/12/2019

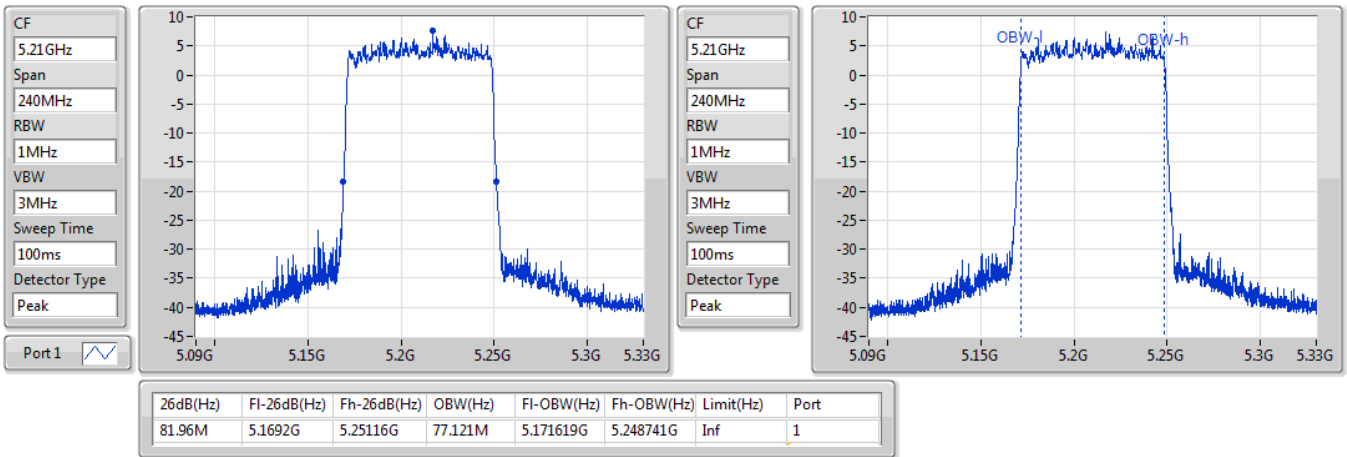

802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5795MHz

18/12/2019

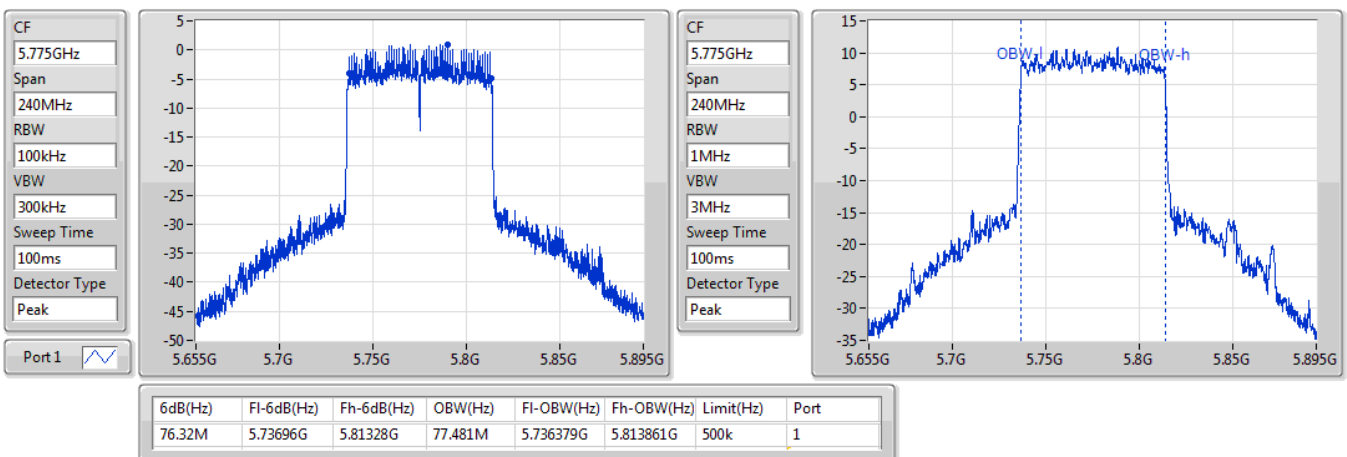


802.11ax HEW80_Nss1,(MCS0)_1TX
EBW
5210MHz

18/12/2019


802.11ax HEW80_Nss1,(MCS0)_1TX
EBW
5775MHz

18/12/2019



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	38.19M	20.66M	20M7D1D	21.27M	16.702M
802.11ac VHT20_Nss2,(MCS0)_2TX	40.92M	20.12M	20M1D1D	21.39M	17.811M
802.11ac VHT40_Nss2,(MCS0)_2TX	76.8M	38.501M	38M5D1D	39.78M	36.282M
802.11ac VHT80_Nss2,(MCS0)_2TX	81.6M	75.802M	75M8D1D	81.6M	75.802M
802.11ax HEW20_Nss2,(MCS0)_2TX	42.15M	19.79M	19M8D1D	21.3M	19.04M
802.11ax HEW40_Nss2,(MCS0)_2TX	75.48M	38.321M	38M3D1D	40.08M	37.601M
802.11ax HEW80_Nss2,(MCS0)_2TX	81.36M	77.121M	77M1D1D	81.36M	77.121M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.35M	27.826M	27M8D1D	16.26M	24.258M
802.11ac VHT20_Nss2,(MCS0)_2TX	17.61M	46.477M	46M5D1D	17.52M	32.804M
802.11ac VHT40_Nss2,(MCS0)_2TX	36.36M	49.835M	49M8D1D	36.3M	36.582M
802.11ac VHT80_Nss2,(MCS0)_2TX	75.96M	75.922M	75M9D1D	75.84M	75.922M
802.11ax HEW20_Nss2,(MCS0)_2TX	18.66M	47.376M	47M4D1D	17.7M	33.493M
802.11ax HEW40_Nss2,(MCS0)_2TX	37.62M	46.597M	46M6D1D	37.14M	37.901M
802.11ax HEW80_Nss2,(MCS0)_2TX	77.16M	77.361M	77M4D1D	76.08M	77.121M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

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)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.27M	16.792M	21.87M	16.702M
5200MHz_TnomVnom	Pass	Inf	37.71M	19.61M	38.19M	20.66M
5240MHz_TnomVnom	Pass	Inf	37.74M	19.1M	38.19M	19.37M
5745MHz_TnomVnom	Pass	500k	16.35M	24.468M	16.29M	27.826M
5785MHz_TnomVnom	Pass	500k	16.35M	24.258M	16.35M	25.907M
5825MHz_TnomVnom	Pass	500k	16.26M	26.297M	16.32M	27.706M
802.11ac_VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.66M	17.901M	21.39M	17.811M
5200MHz_TnomVnom	Pass	Inf	35.52M	19.4M	40.92M	20.12M
5240MHz_TnomVnom	Pass	Inf	37.38M	19.16M	40.92M	19.61M
5745MHz_TnomVnom	Pass	500k	17.55M	32.804M	17.55M	37.391M
5785MHz_TnomVnom	Pass	500k	17.52M	42.399M	17.58M	46.477M
5825MHz_TnomVnom	Pass	500k	17.55M	35.712M	17.61M	38.171M
802.11ac_VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	39.78M	36.402M	39.96M	36.282M
5230MHz_TnomVnom	Pass	Inf	76.8M	38.501M	56.64M	36.582M
5755MHz_TnomVnom	Pass	500k	36.36M	37.121M	36.36M	36.582M
5795MHz_TnomVnom	Pass	500k	36.36M	49.835M	36.3M	39.16M
802.11ac_VHT80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	81.6M	75.802M	81.6M	75.802M
5775MHz_TnomVnom	Pass	500k	75.84M	75.922M	75.96M	75.922M
802.11ax_HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.63M	19.04M	21.3M	19.07M
5200MHz_TnomVnom	Pass	Inf	37.47M	19.4M	42.15M	19.79M
5240MHz_TnomVnom	Pass	Inf	39.99M	19.4M	41.76M	19.67M
5745MHz_TnomVnom	Pass	500k	18.66M	33.493M	18.21M	37.031M
5785MHz_TnomVnom	Pass	500k	18.63M	43.628M	18.27M	47.376M
5825MHz_TnomVnom	Pass	500k	18.54M	35.802M	17.7M	37.631M
802.11ax_HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	40.08M	37.661M	40.08M	37.601M
5230MHz_TnomVnom	Pass	Inf	75.48M	38.321M	69.12M	37.901M
5755MHz_TnomVnom	Pass	500k	37.62M	38.081M	37.56M	37.901M
5795MHz_TnomVnom	Pass	500k	37.56M	46.597M	37.14M	38.861M
802.11ax_HEW80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	81.36M	77.121M	81.36M	77.121M
5775MHz_TnomVnom	Pass	500k	77.16M	77.361M	76.08M	77.121M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

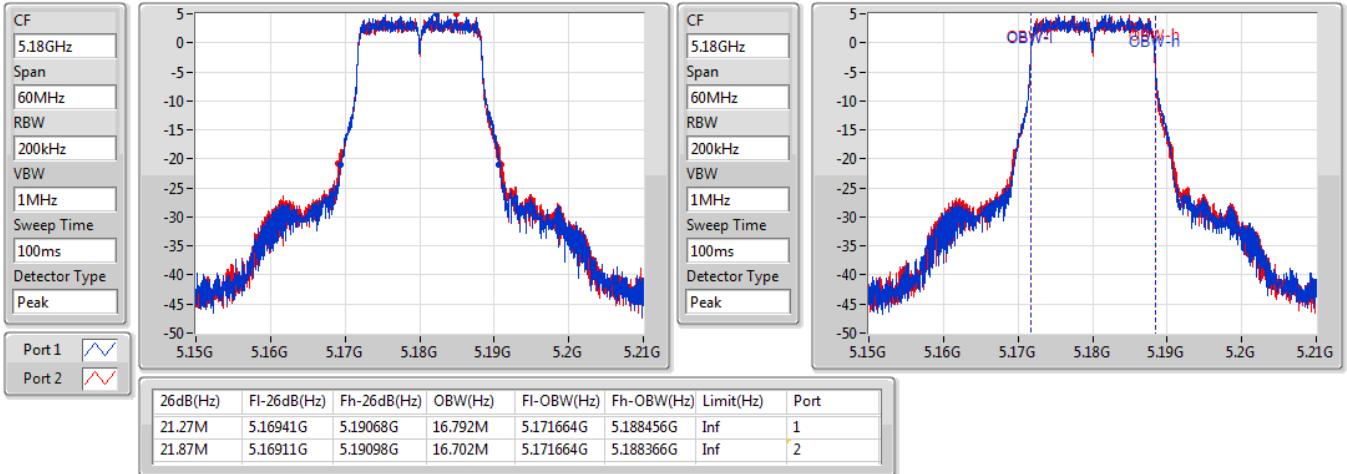
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_2TX

EBW

5180MHz

18/12/2019

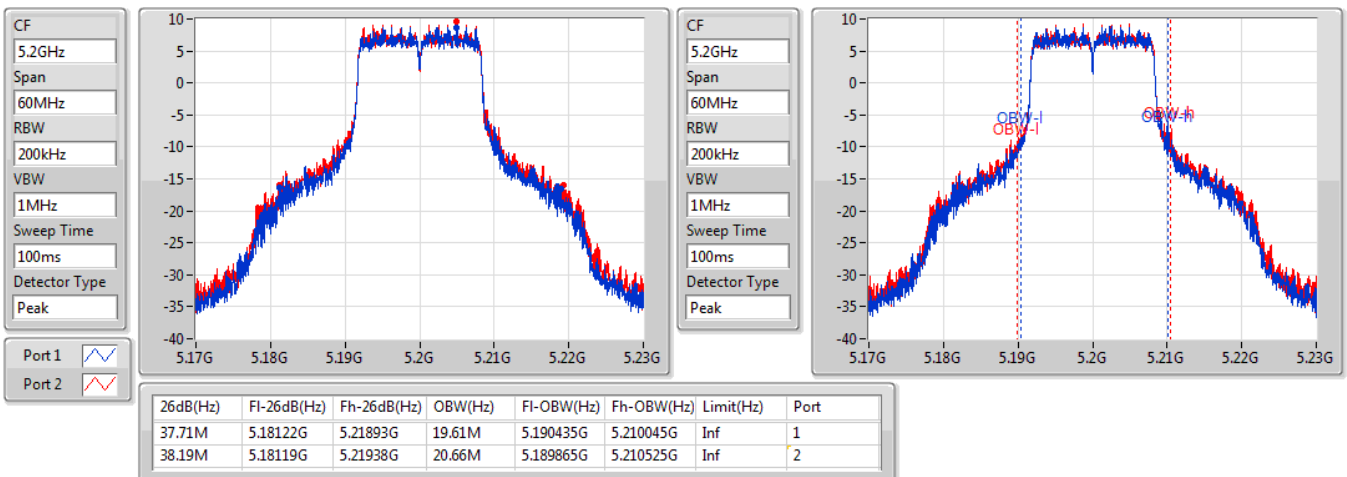


802.11a_Nss1,(6Mbps)_2TX

EBW

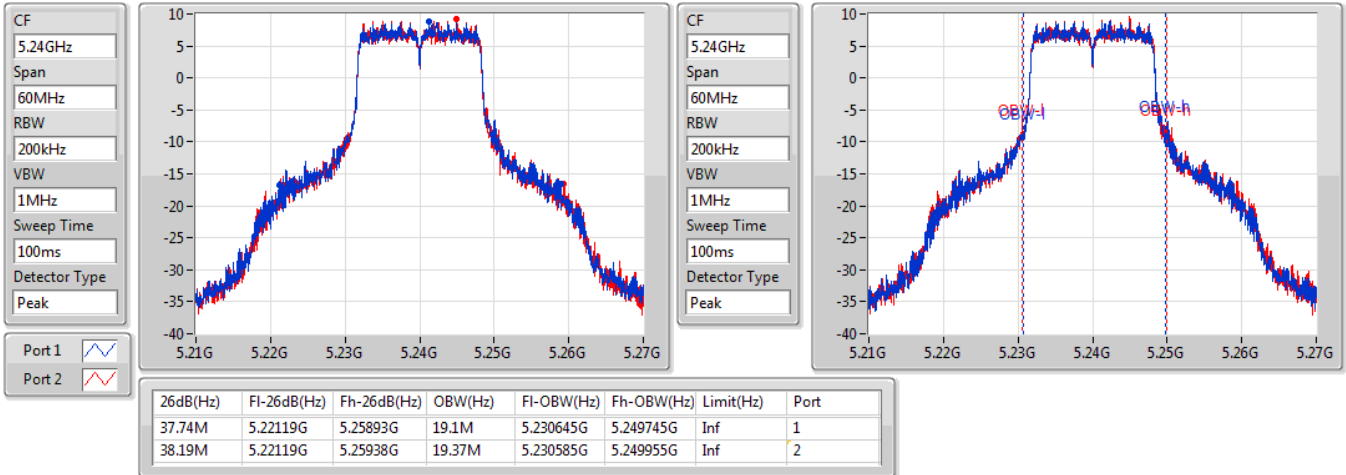
5200MHz

18/12/2019

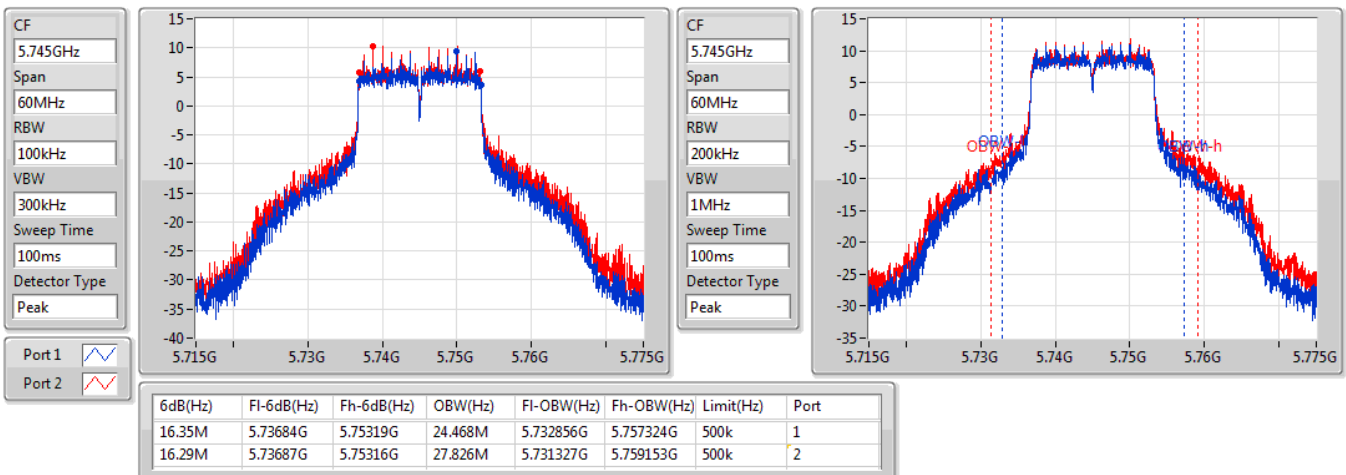


802.11a_Nss1,(6Mbps)_2TX
EBW
5240MHz

18/12/2019


802.11a_Nss1,(6Mbps)_2TX
EBW
5745MHz

18/12/2019

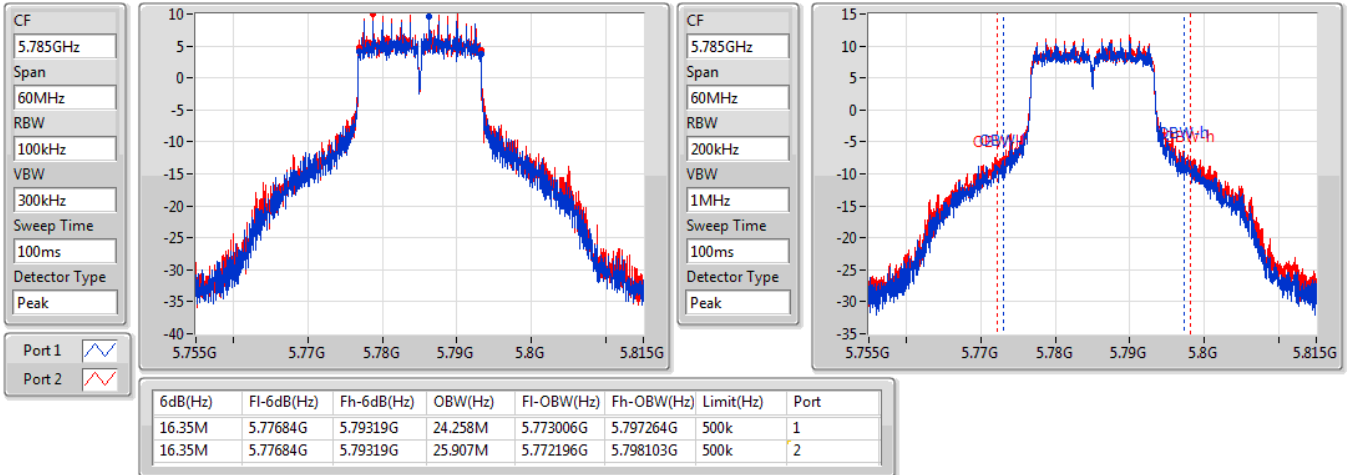


802.11a_Nss1,(6Mbps)_2TX

EBW

5785MHz

18/12/2019

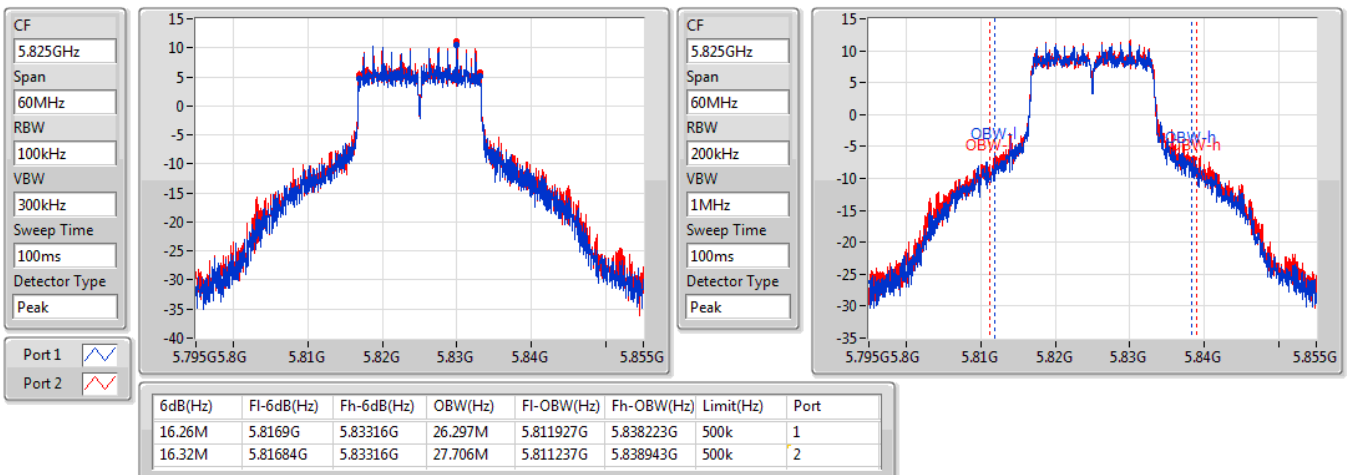


802.11a_Nss1,(6Mbps)_2TX

EBW

5825MHz

18/12/2019

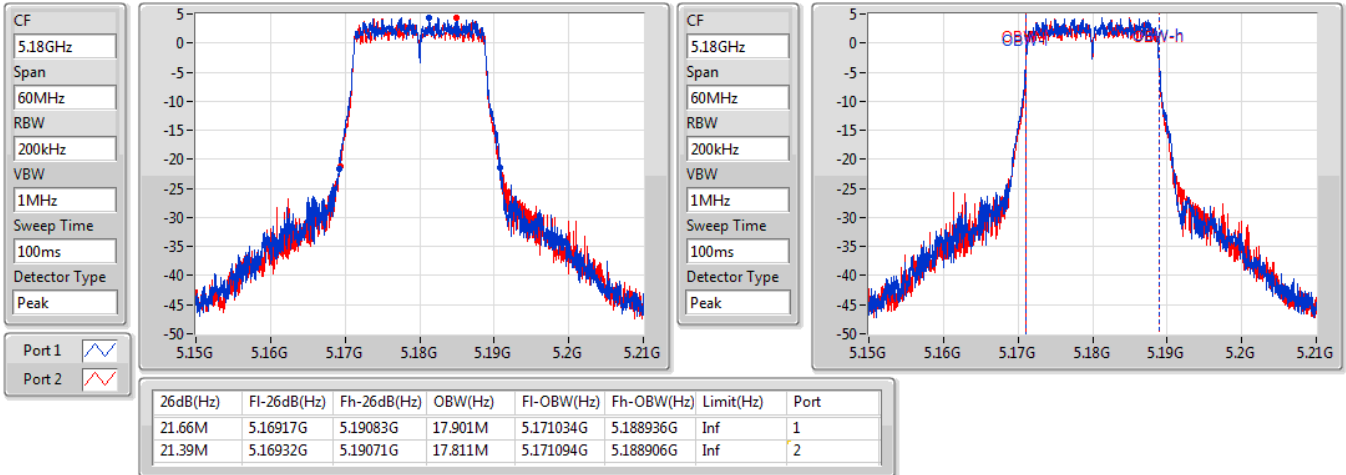


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5180MHz

18/12/2019

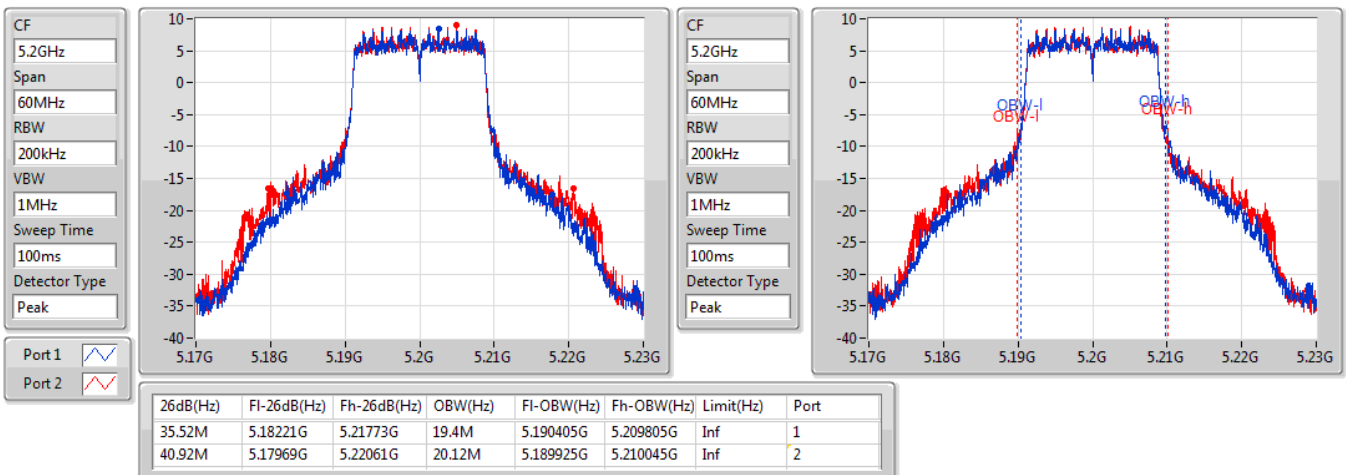


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5200MHz

18/12/2019

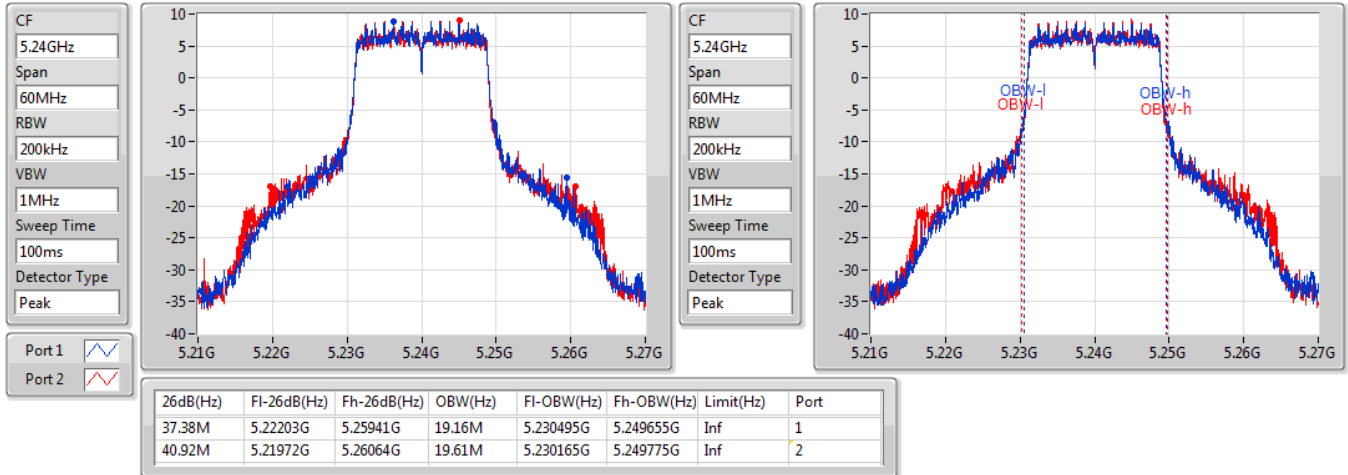


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5240MHz

18/12/2019

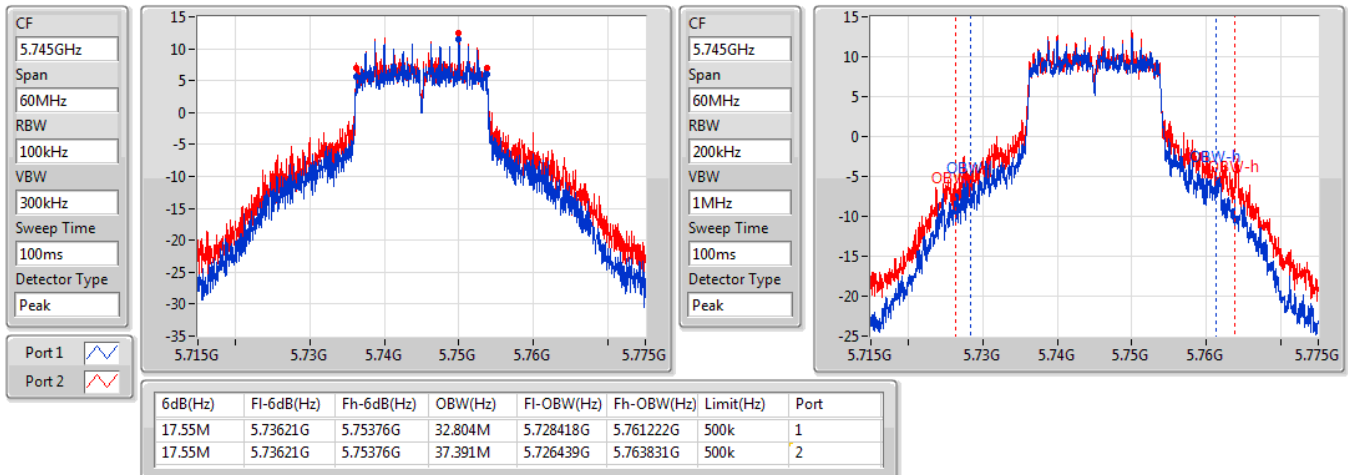


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5745MHz

18/12/2019

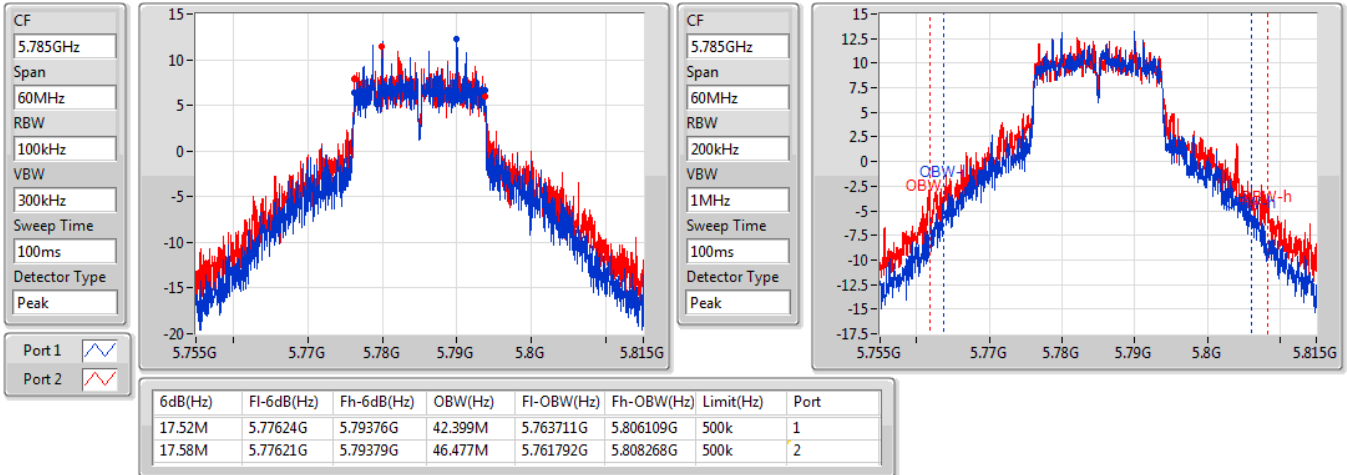


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5785MHz

18/12/2019

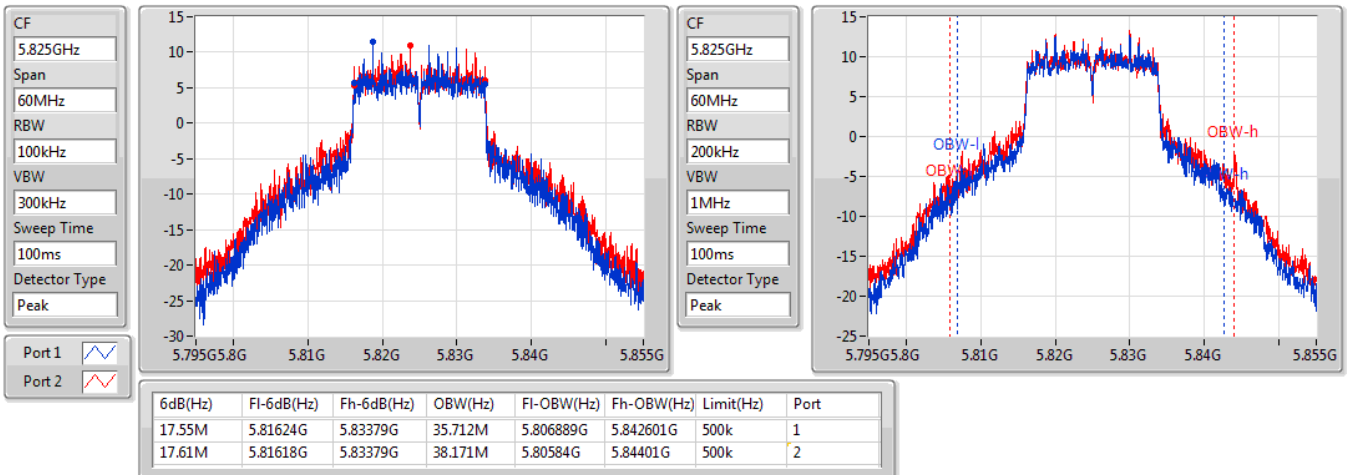


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5825MHz

18/12/2019

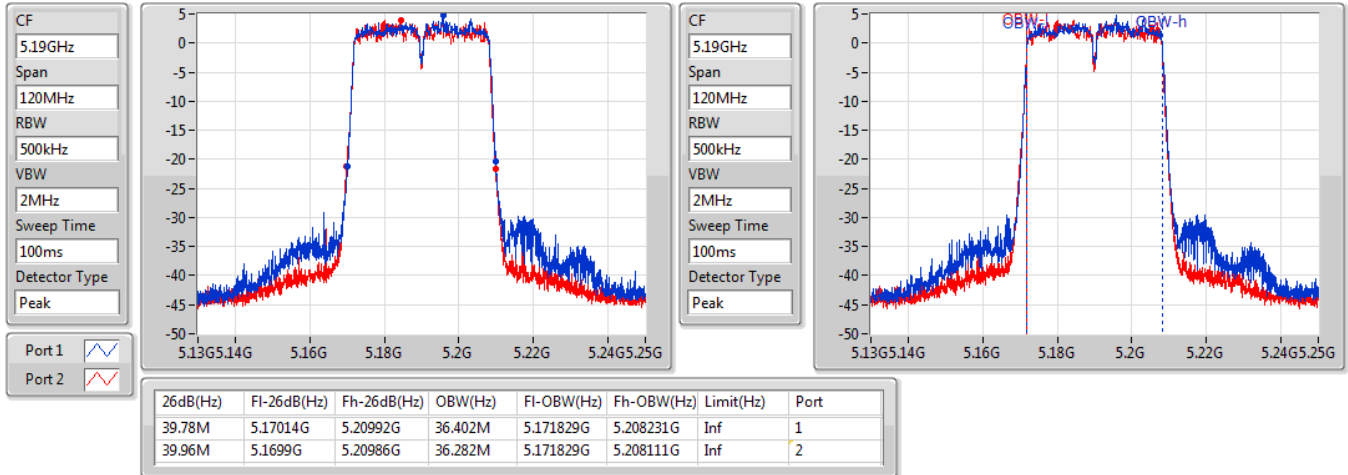


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5190MHz

18/12/2019

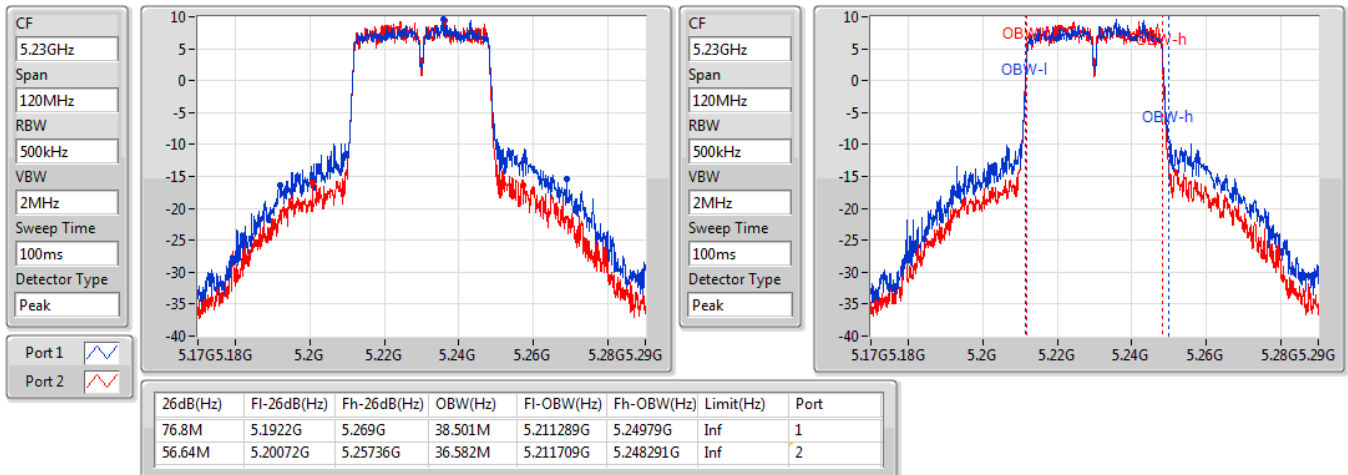


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5230MHz

18/12/2019

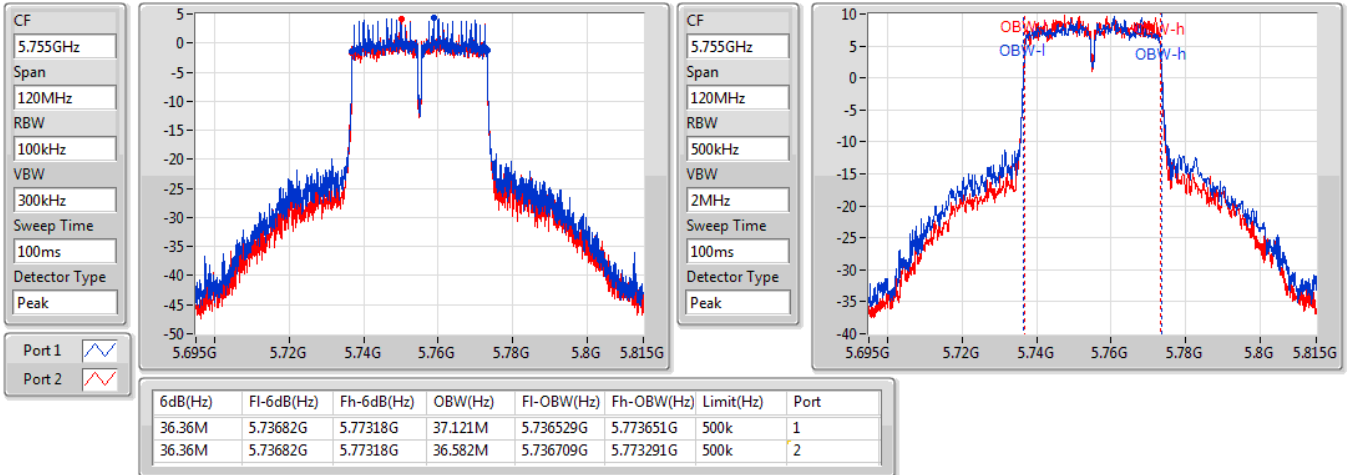


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5755MHz

18/12/2019

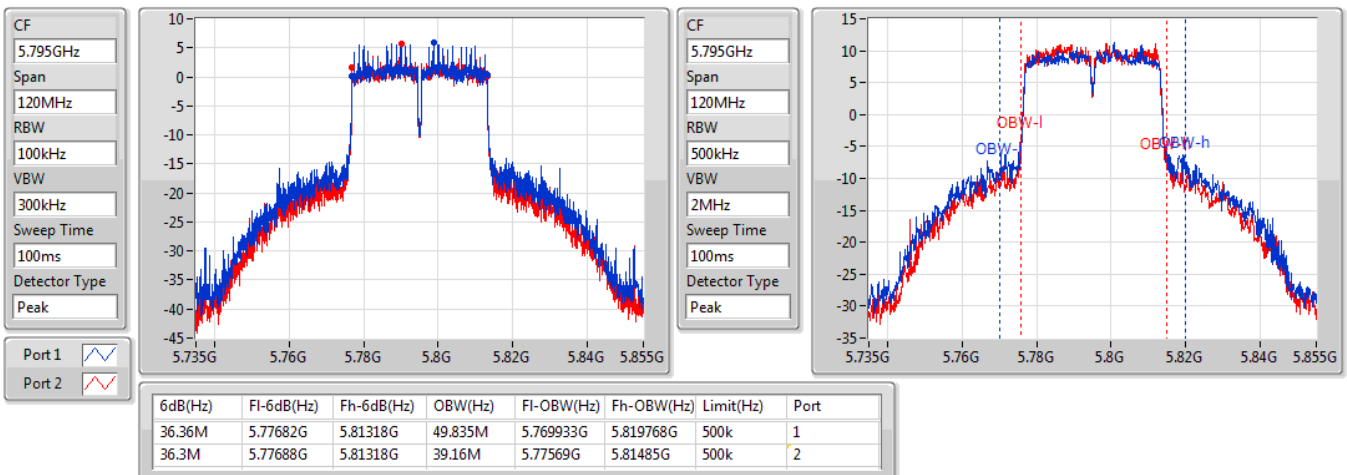


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5795MHz

18/12/2019

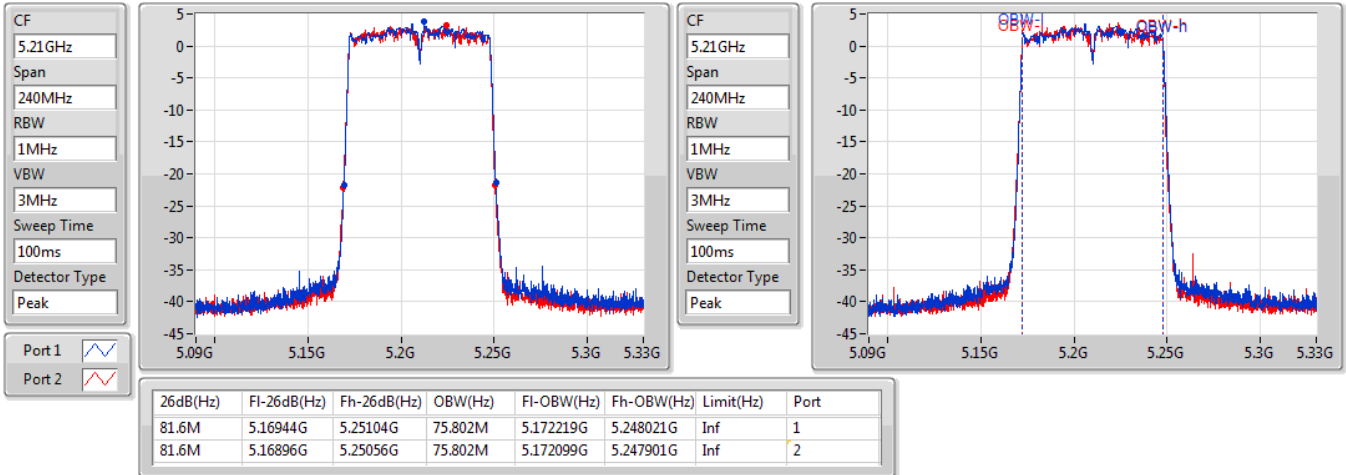


802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

5210MHz

18/12/2019

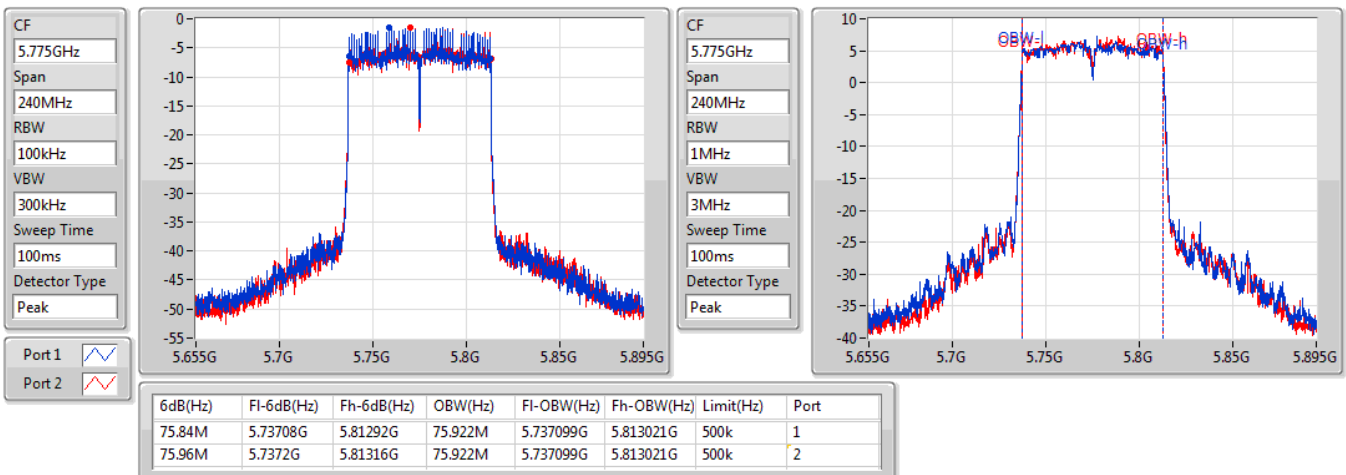


802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

5775MHz

18/12/2019

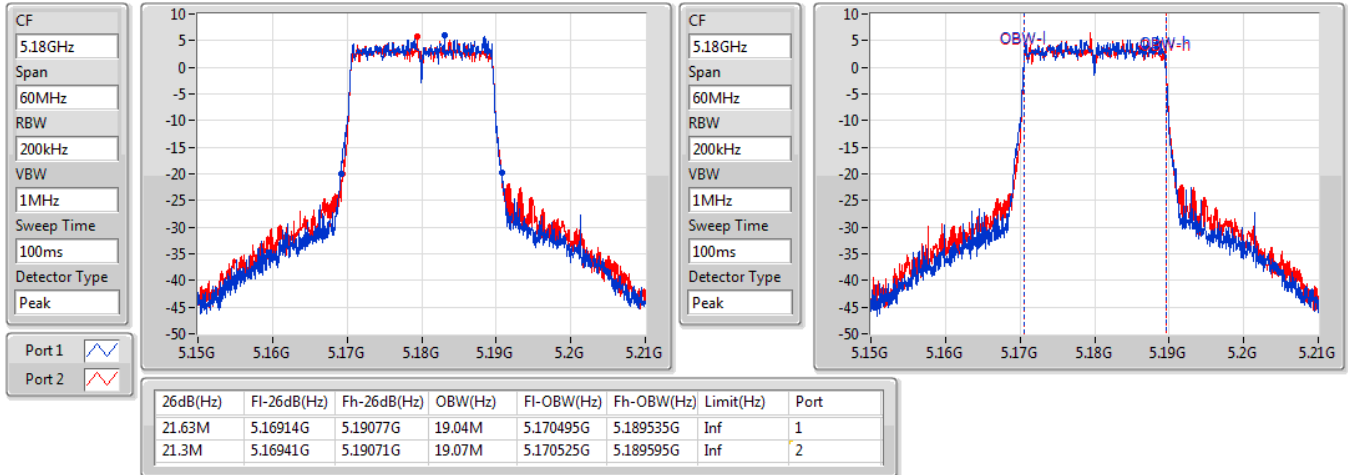


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5180MHz

18/12/2019

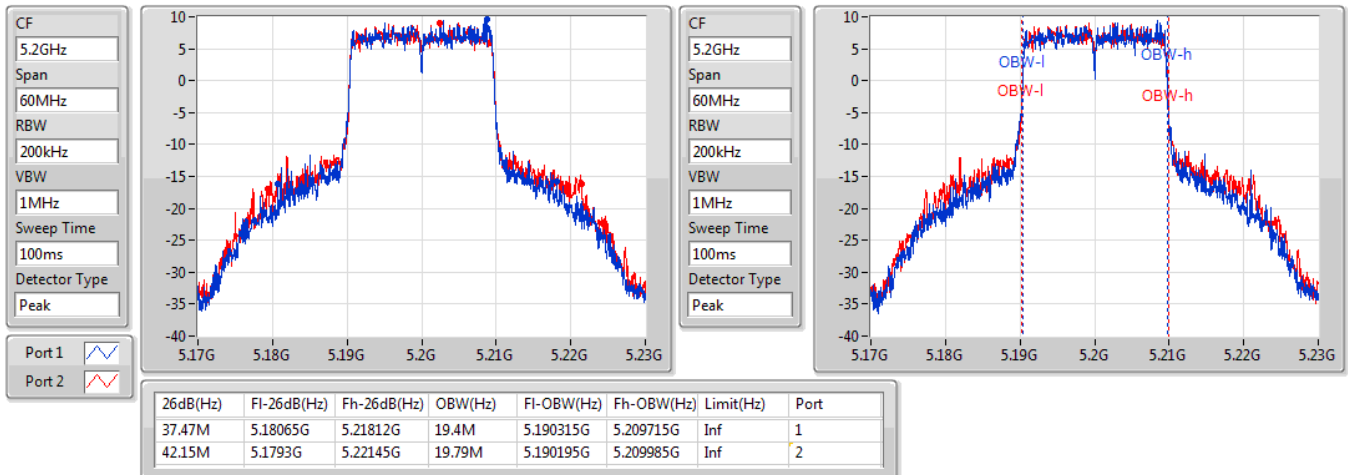


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5200MHz

18/12/2019

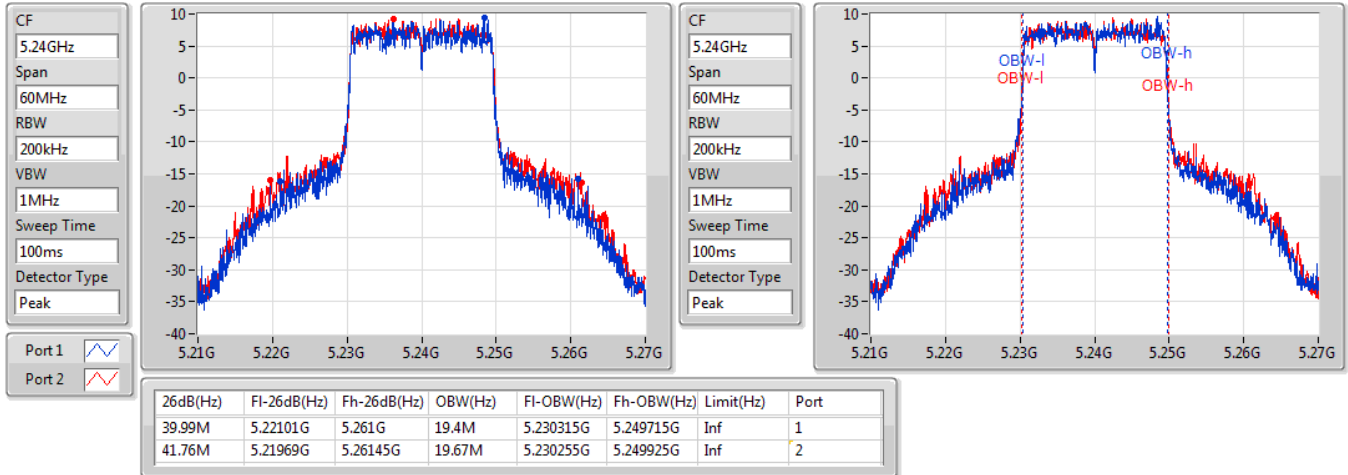


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5240MHz

18/12/2019

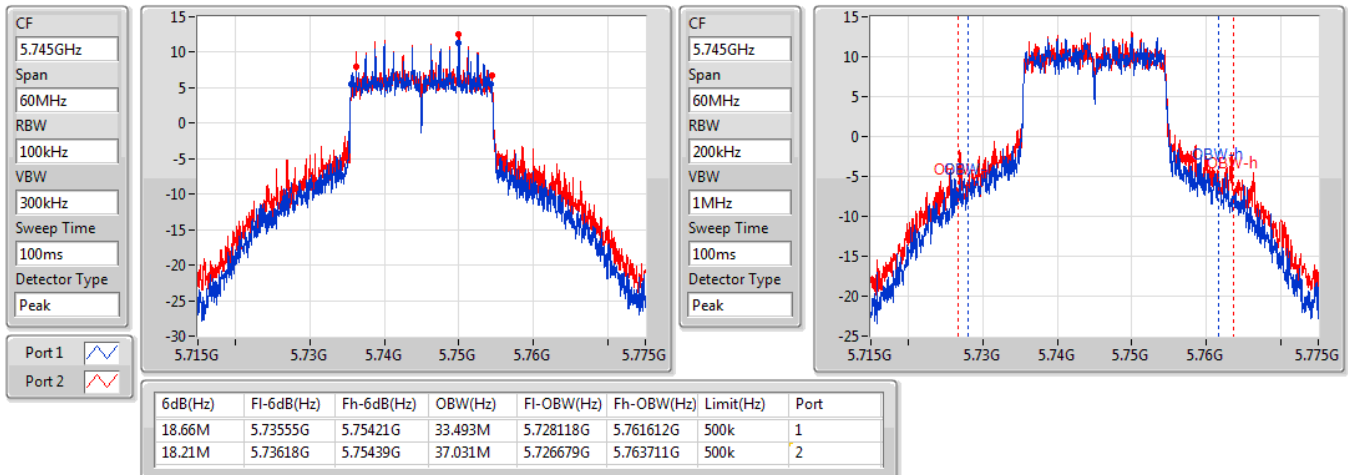


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5745MHz

18/12/2019

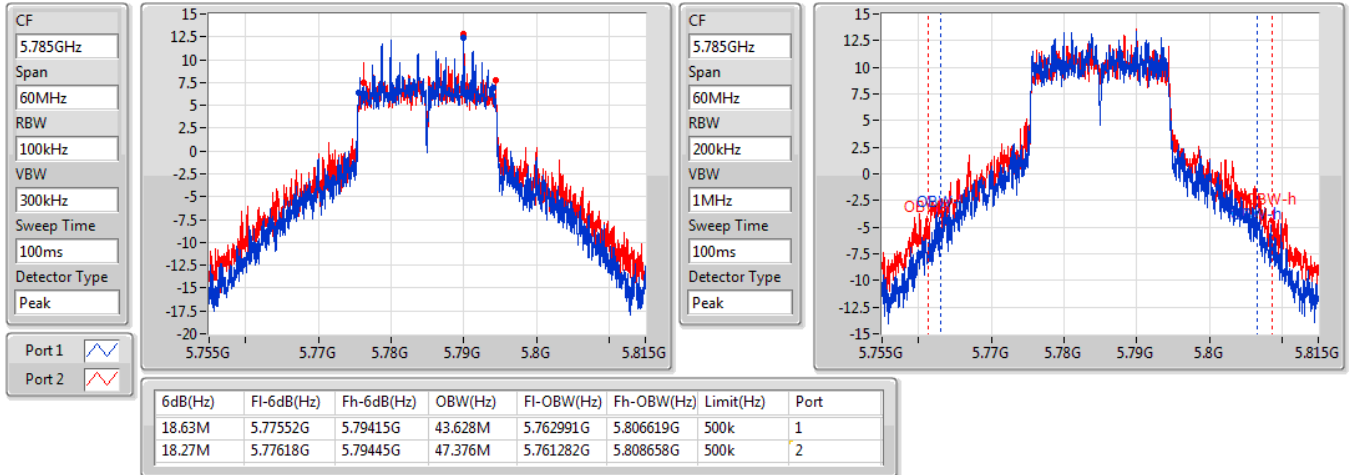


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5785MHz

18/12/2019

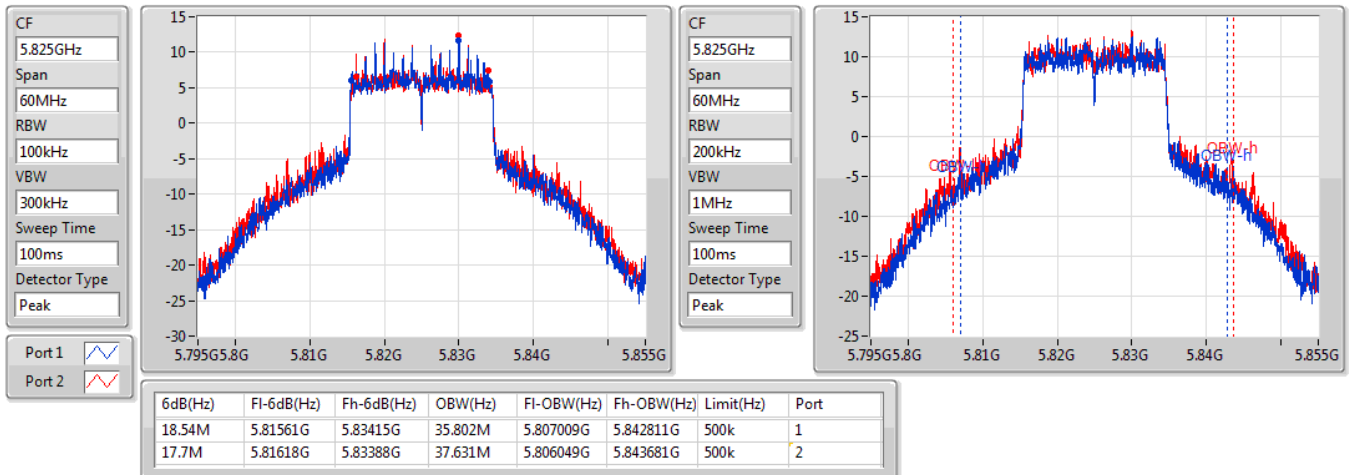


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5825MHz

18/12/2019

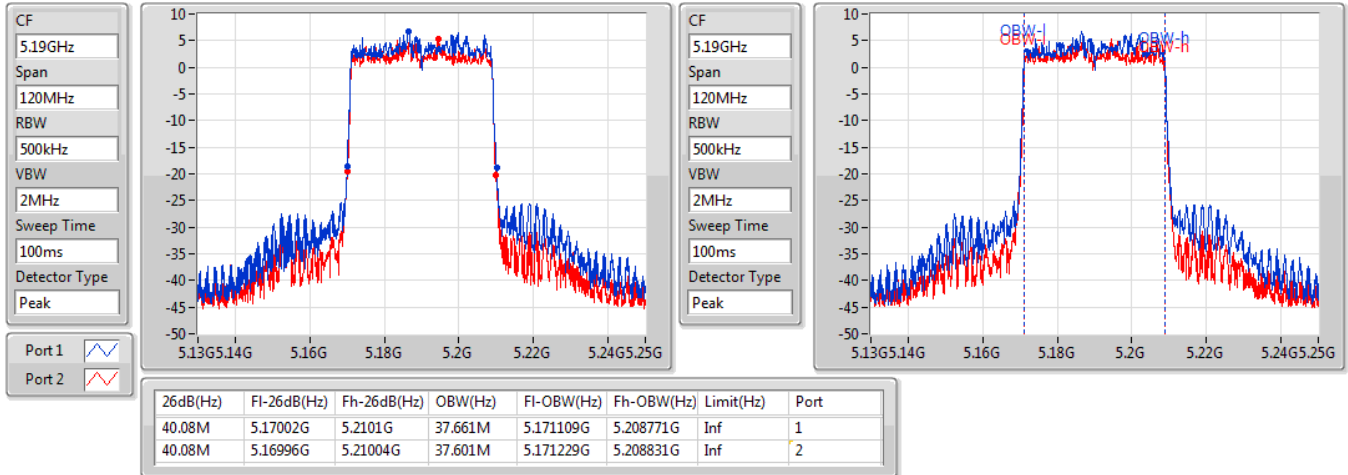


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5190MHz

18/12/2019

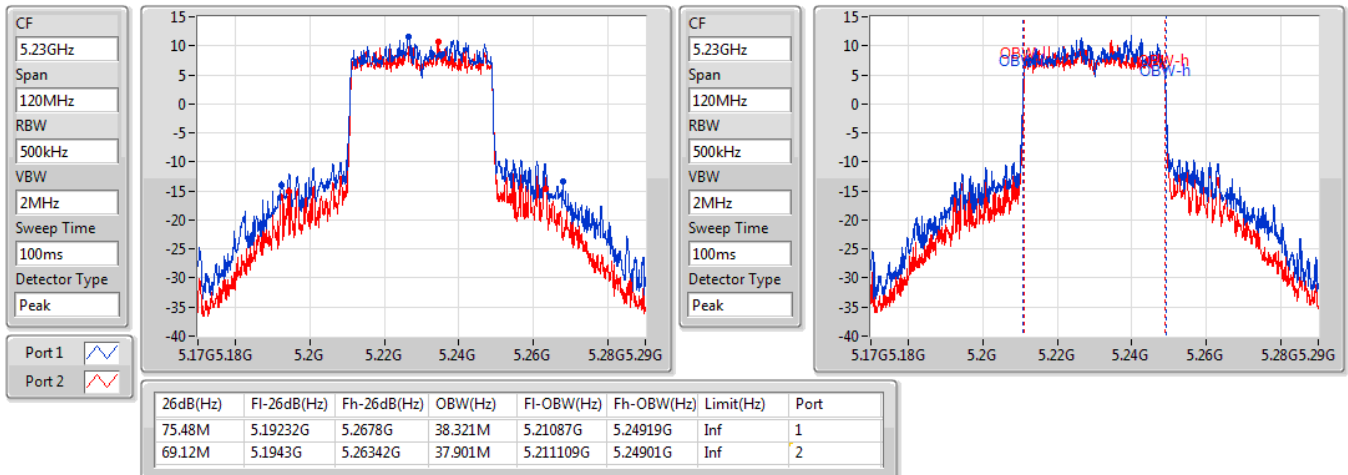


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5230MHz

18/12/2019

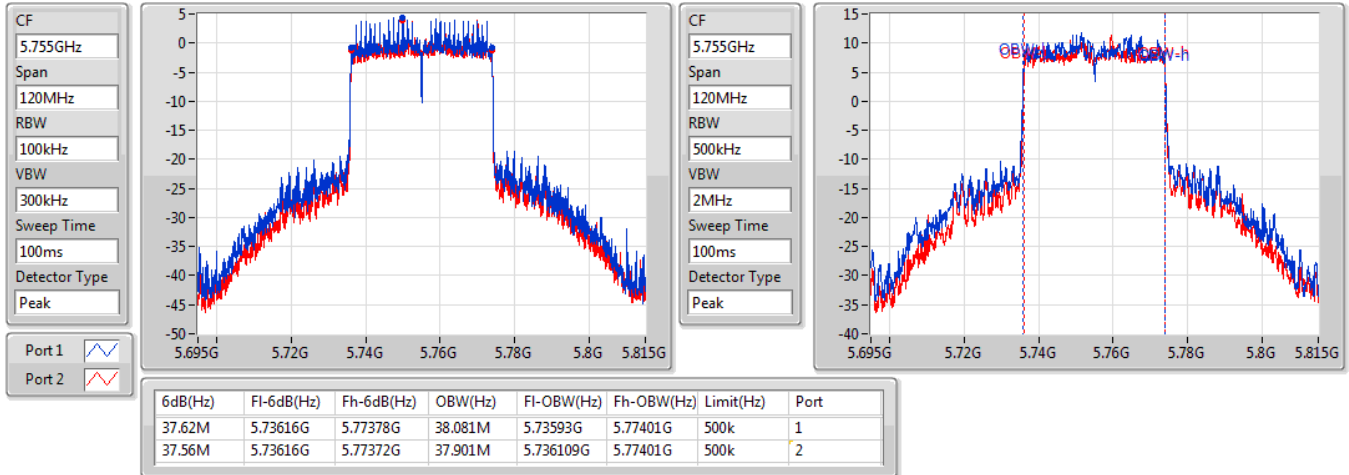


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5755MHz

18/12/2019

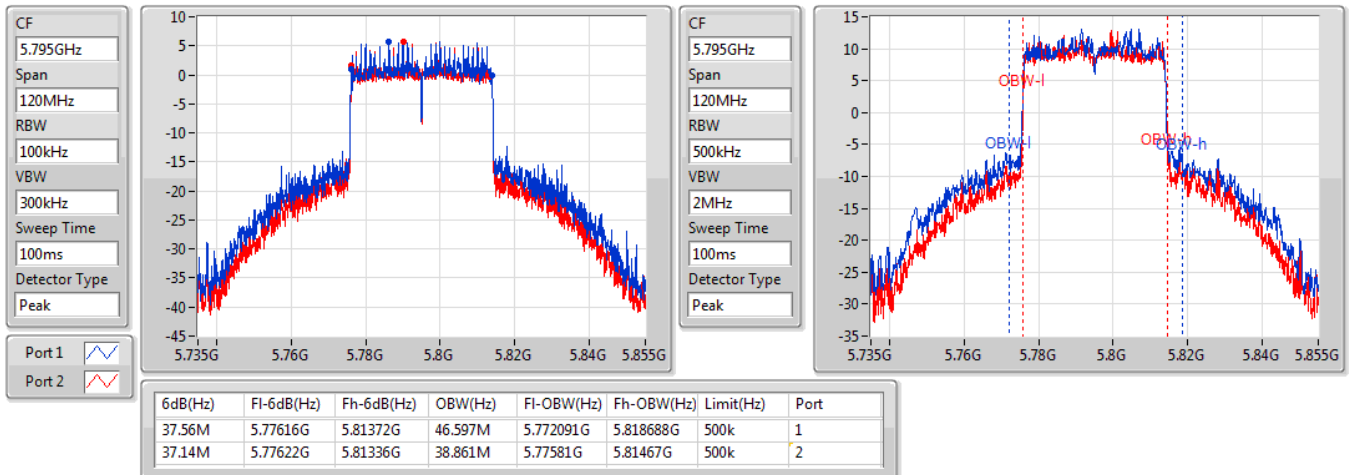


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5795MHz

18/12/2019

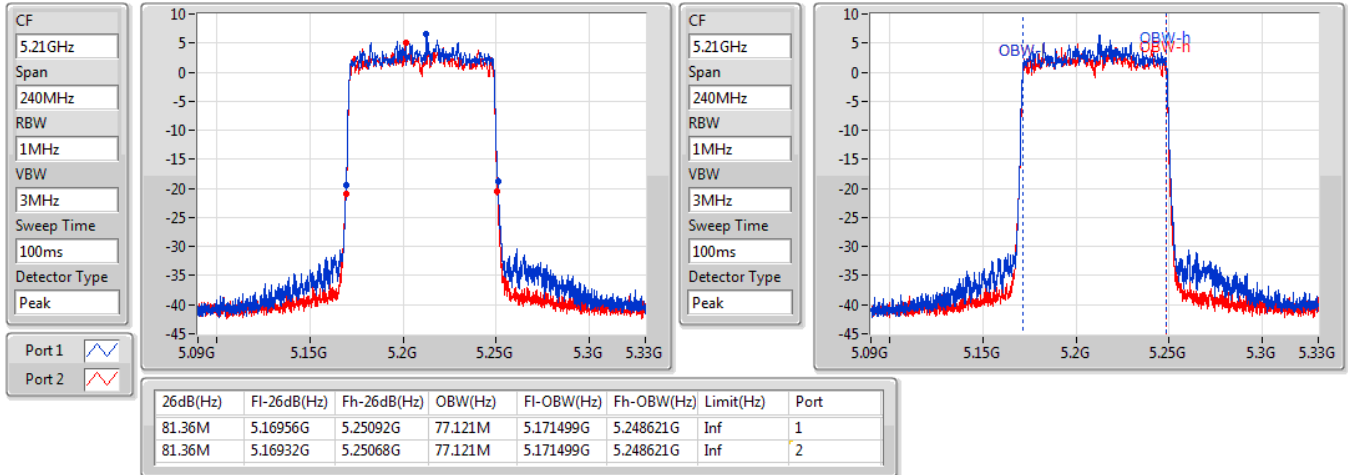


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5210MHz

18/12/2019

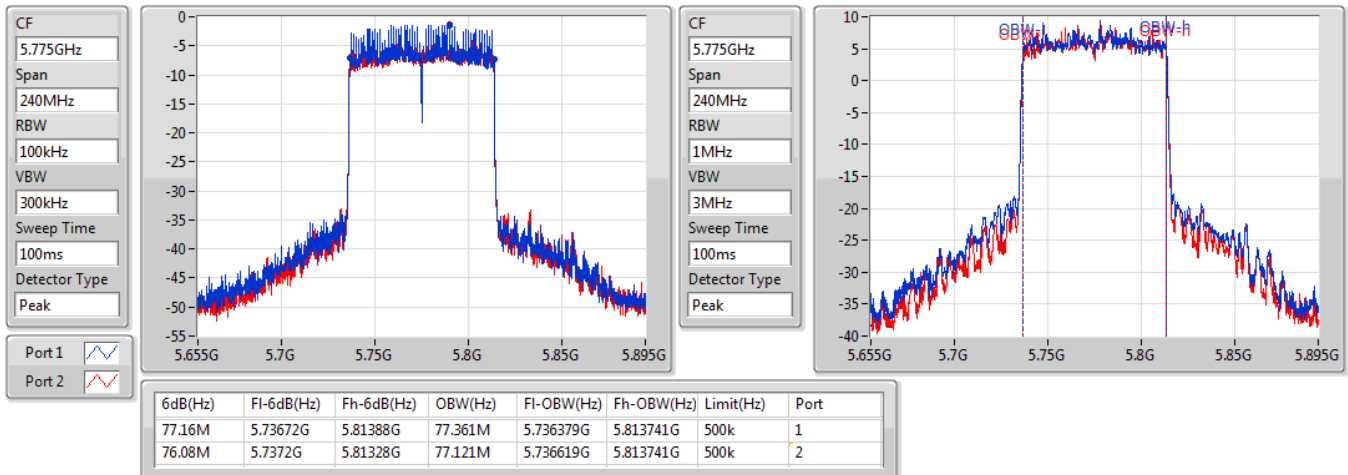


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5775MHz

18/12/2019



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	40.23M	23.988M	24M0D1D	21.45M	16.822M
802.11ac VHT20_Nss1,(MCS0)_1TX	39.15M	20.84M	20M8D1D	22.92M	17.901M
802.11ac VHT40_Nss1,(MCS0)_1TX	77.22M	38.681M	38M7D1D	40.26M	36.462M
802.11ac VHT80_Nss1,(MCS0)_1TX	81.96M	75.802M	75M8D1D	81.96M	75.802M
802.11ax HEW20_Nss1,(MCS0)_1TX	42.21M	21.979M	22M0D1D	22.95M	19.1M
802.11ax HEW40_Nss1,(MCS0)_1TX	75.6M	38.441M	38M4D1D	40.14M	37.541M
802.11ax HEW80_Nss1,(MCS0)_1TX	82.2M	77.001M	77M0D1D	82.2M	77.001M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	16.35M	40.69M	40M7D1D	16.32M	22.039M
802.11ac VHT20_Nss1,(MCS0)_1TX	17.55M	43.118M	43M1D1D	17.52M	29.295M
802.11ac VHT40_Nss1,(MCS0)_1TX	36.3M	59.07M	59M1D1D	36.06M	54.993M
802.11ac VHT80_Nss1,(MCS0)_1TX	75.12M	76.162M	76M2D1D	75.12M	76.162M
802.11ax HEW20_Nss1,(MCS0)_1TX	18.6M	43.958M	44M0D1D	17.67M	30.345M
802.11ax HEW40_Nss1,(MCS0)_1TX	37.38M	55.112M	55M1D1D	36.9M	48.396M
802.11ax HEW80_Nss1,(MCS0)_1TX	77.04M	77.361M	77M4D1D	77.04M	77.361M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Min-OBW = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5180MHz	Pass	Inf	21.45M	16.822M
5200MHz	Pass	Inf	40.23M	23.988M
5240MHz	Pass	Inf	37.68M	18.951M
5745MHz	Pass	500k	16.35M	22.039M
5785MHz	Pass	500k	16.32M	22.219M
5825MHz	Pass	500k	16.35M	40.69M
802.11ac VHT20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz	Pass	Inf	22.92M	17.901M
5200MHz	Pass	Inf	39.15M	20.84M
5240MHz	Pass	Inf	37.95M	19.1M
5745MHz	Pass	500k	17.55M	29.295M
5785MHz	Pass	500k	17.52M	43.118M
5825MHz	Pass	500k	17.55M	37.421M
802.11ac VHT40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz	Pass	Inf	40.26M	36.462M
5230MHz	Pass	Inf	77.22M	38.681M
5755MHz	Pass	500k	36.06M	54.993M
5795MHz	Pass	500k	36.3M	59.07M
802.11ac VHT80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz	Pass	Inf	81.96M	75.802M
5775MHz	Pass	500k	75.12M	76.162M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz	Pass	Inf	22.95M	19.1M
5200MHz	Pass	Inf	42.21M	21.979M
5240MHz	Pass	Inf	41.07M	19.79M
5745MHz	Pass	500k	18.48M	30.345M
5785MHz	Pass	500k	18.6M	43.958M
5825MHz	Pass	500k	17.67M	37.781M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz	Pass	Inf	40.14M	37.541M
5230MHz	Pass	Inf	75.6M	38.441M
5755MHz	Pass	500k	36.9M	48.396M
5795MHz	Pass	500k	37.38M	55.112M
802.11ax HEW80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz	Pass	Inf	82.2M	77.001M
5775MHz	Pass	500k	77.04M	77.361M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

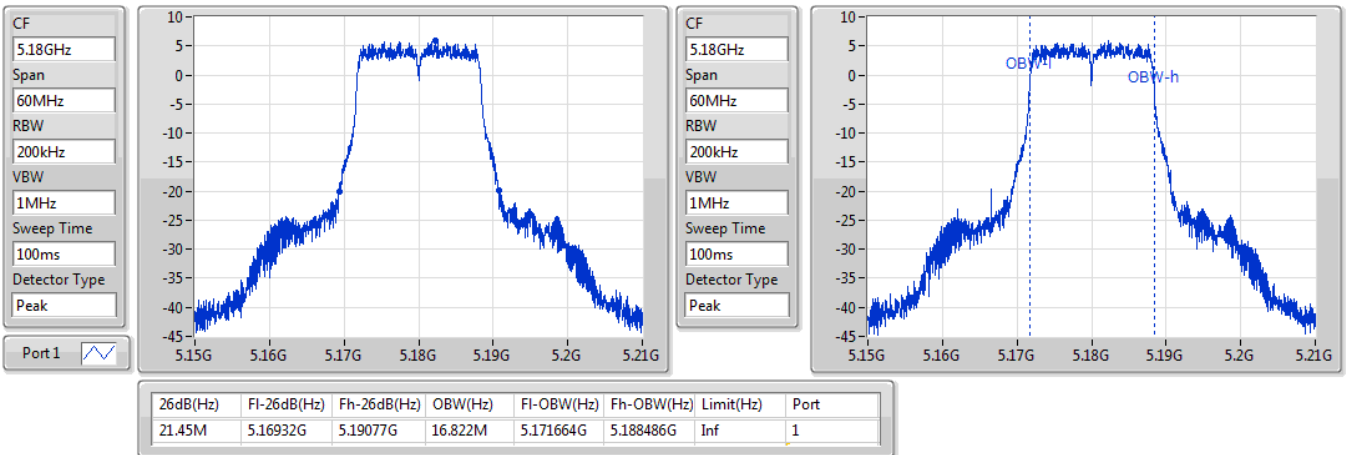
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_1TX

EBW

5180MHz

19/12/2019

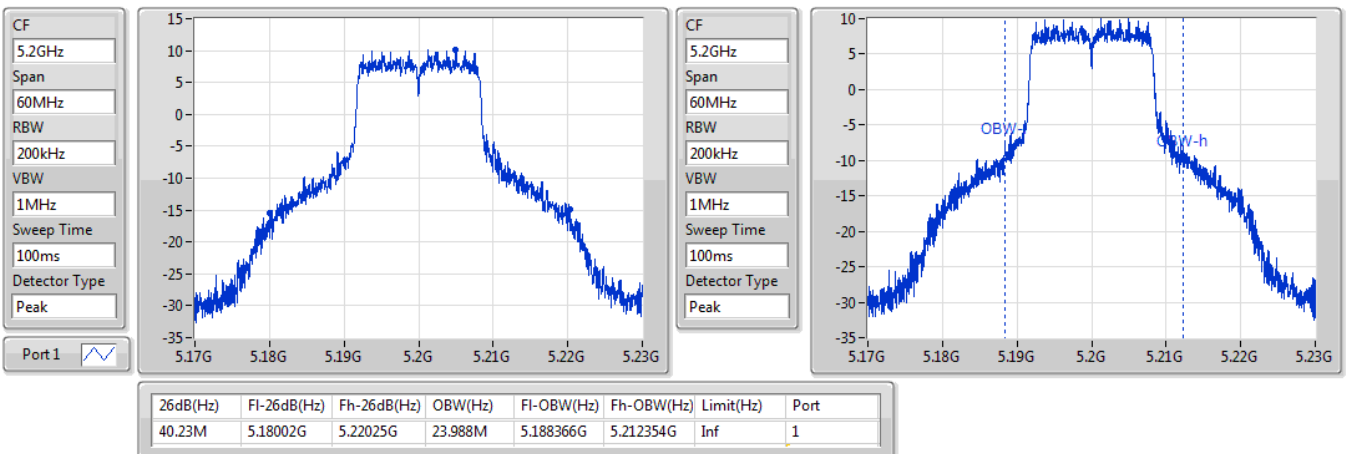


802.11a_Nss1,(6Mbps)_1TX

EBW

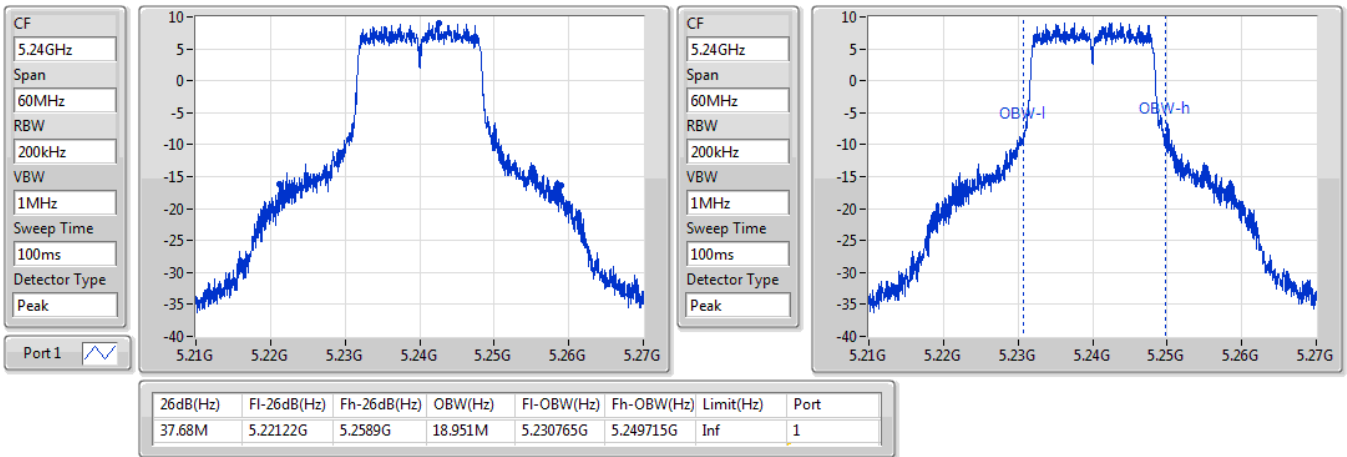
5200MHz

19/12/2019

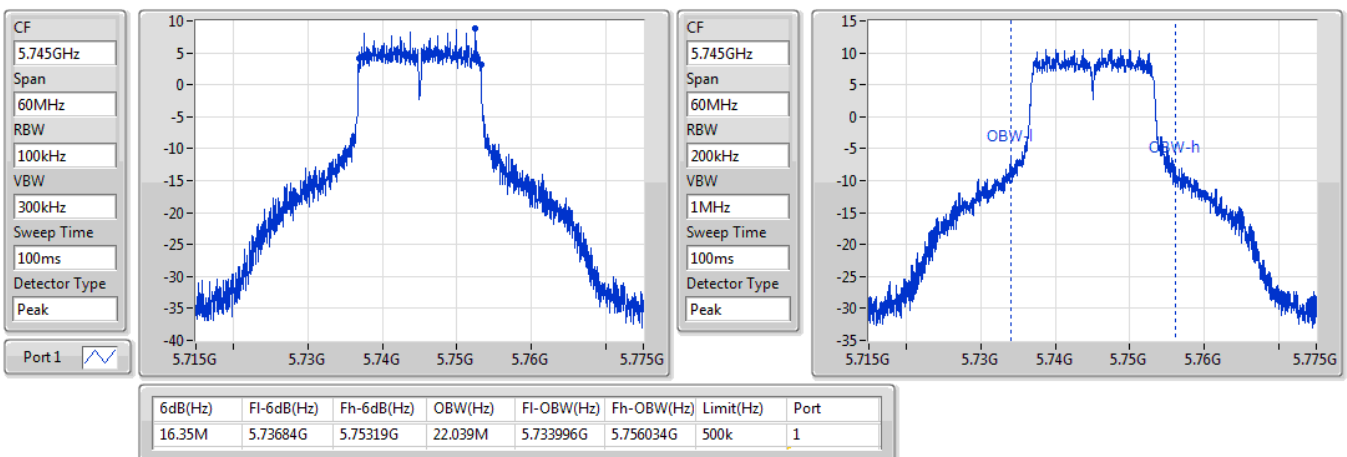


802.11a_Nss1,(6Mbps)_1TX
EBW
5240MHz

19/12/2019


802.11a_Nss1,(6Mbps)_1TX
EBW
5745MHz

19/12/2019

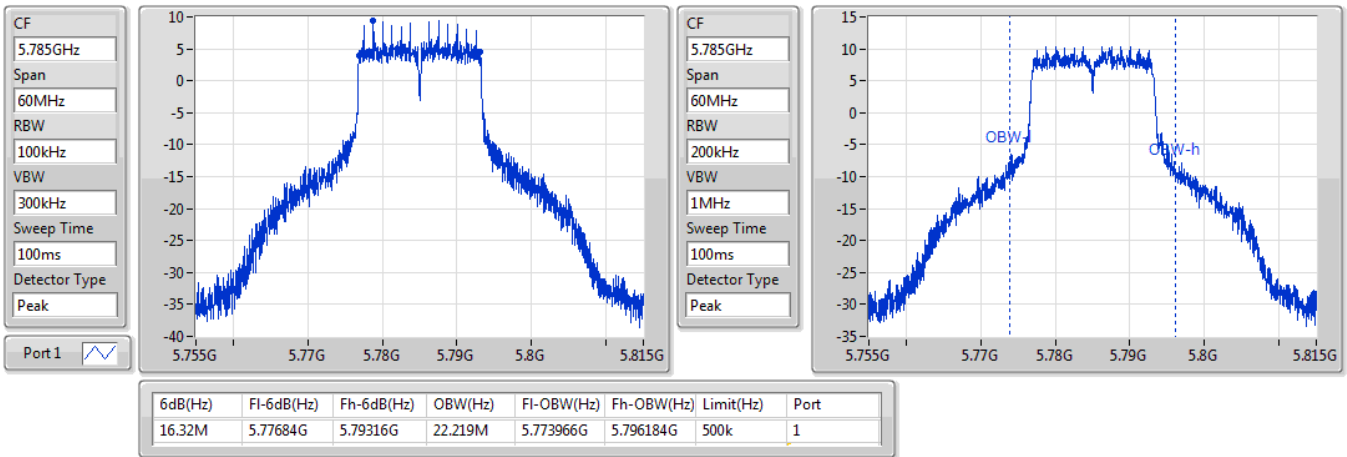


802.11a_Nss1,(6Mbps)_1TX

EBW

5785MHz

19/12/2019

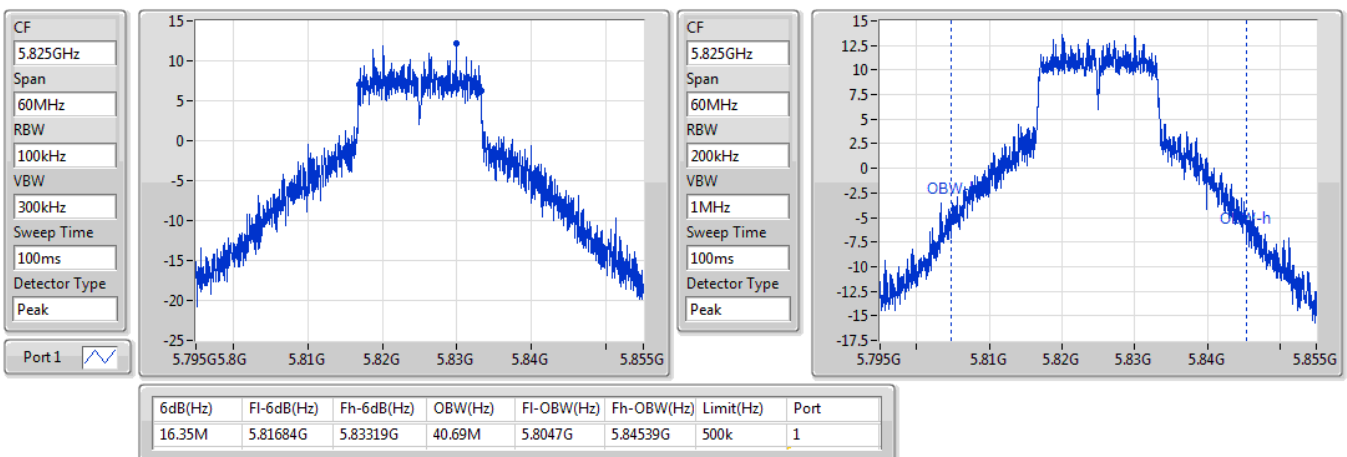


802.11a_Nss1,(6Mbps)_1TX

EBW

5825MHz

19/12/2019

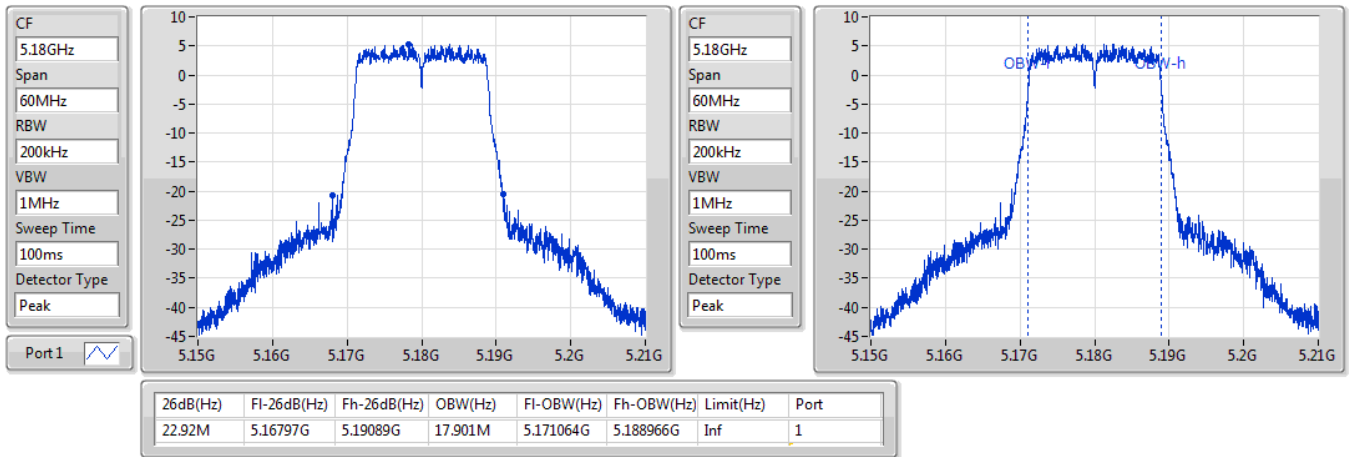


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

5180MHz

19/12/2019

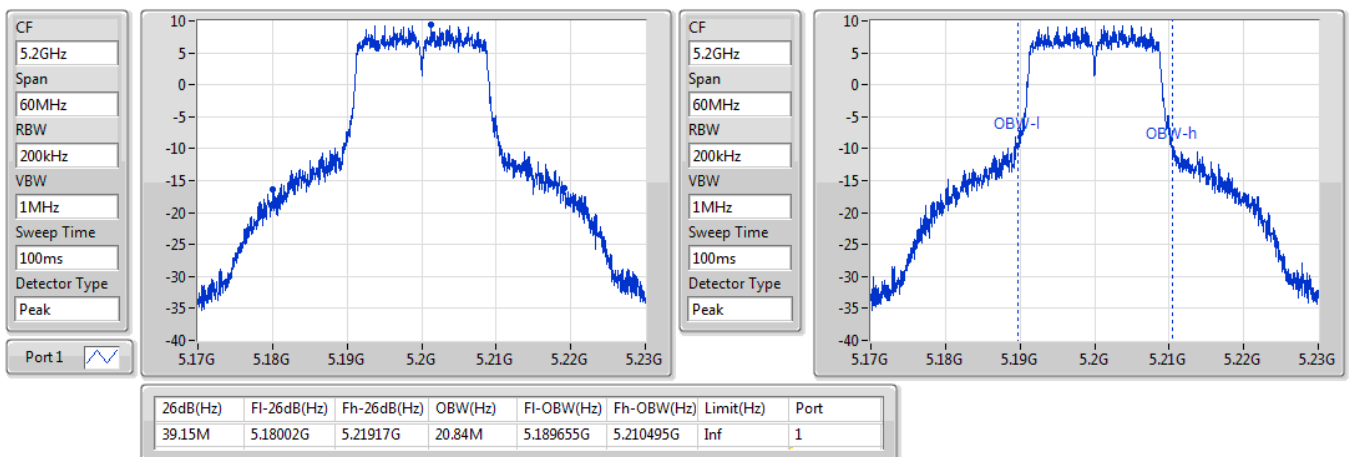


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

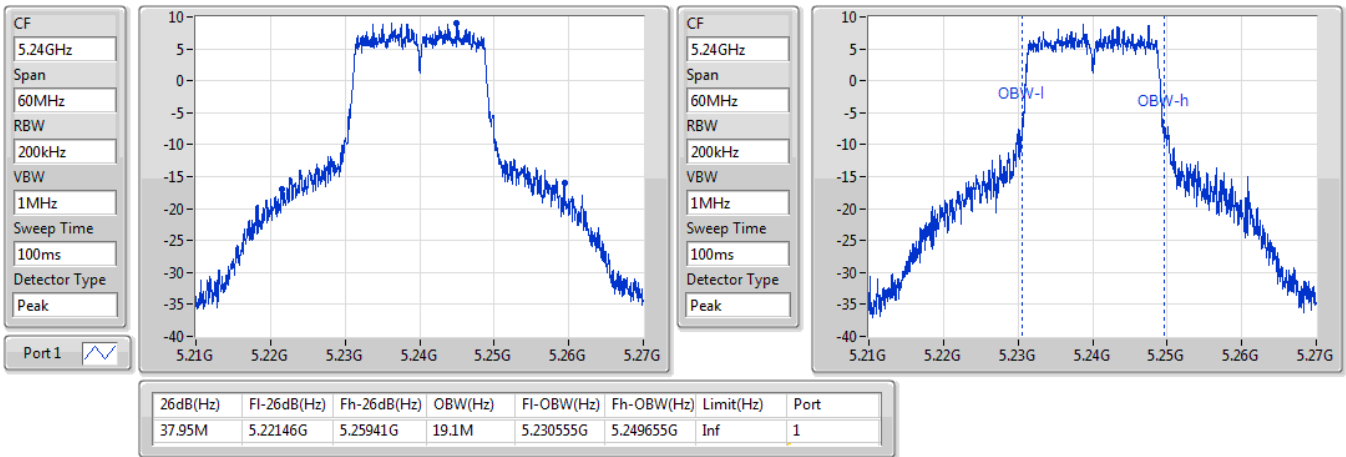
5200MHz

19/12/2019

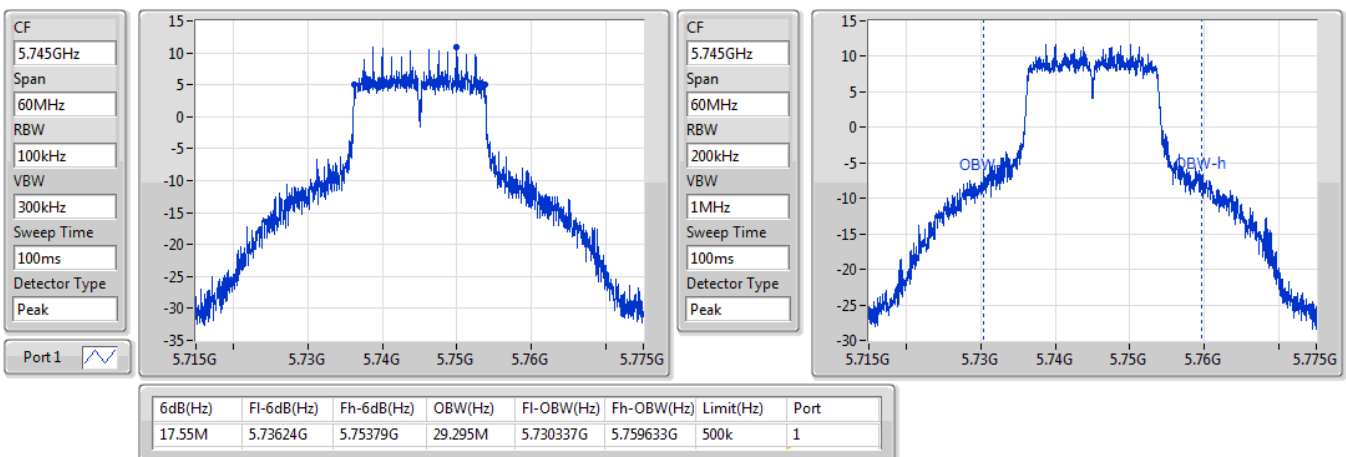


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5240MHz

19/12/2019

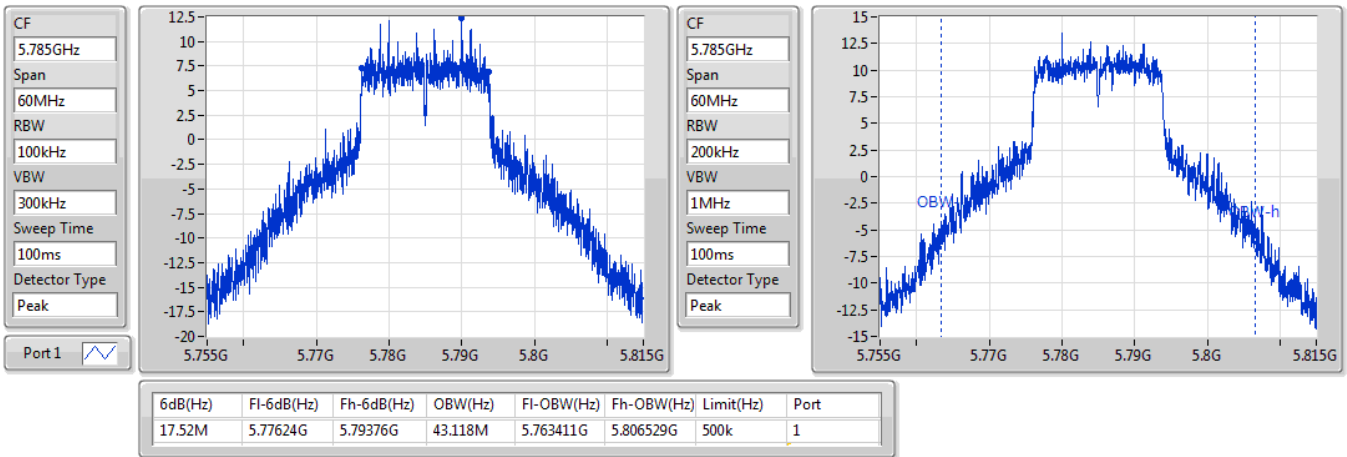

802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5745MHz

19/12/2019

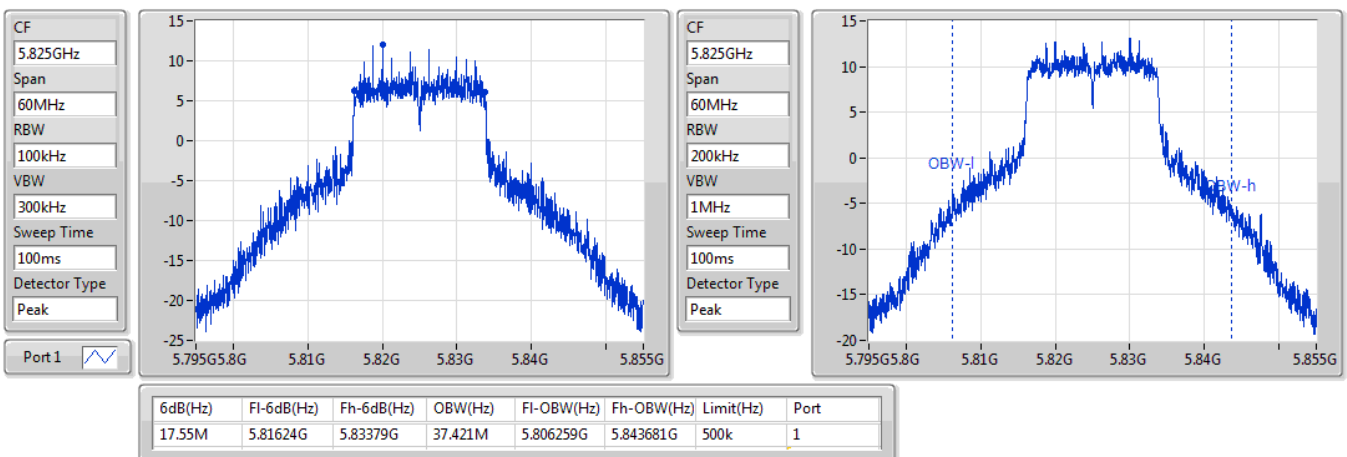


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5785MHz

19/12/2019


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5825MHz

19/12/2019

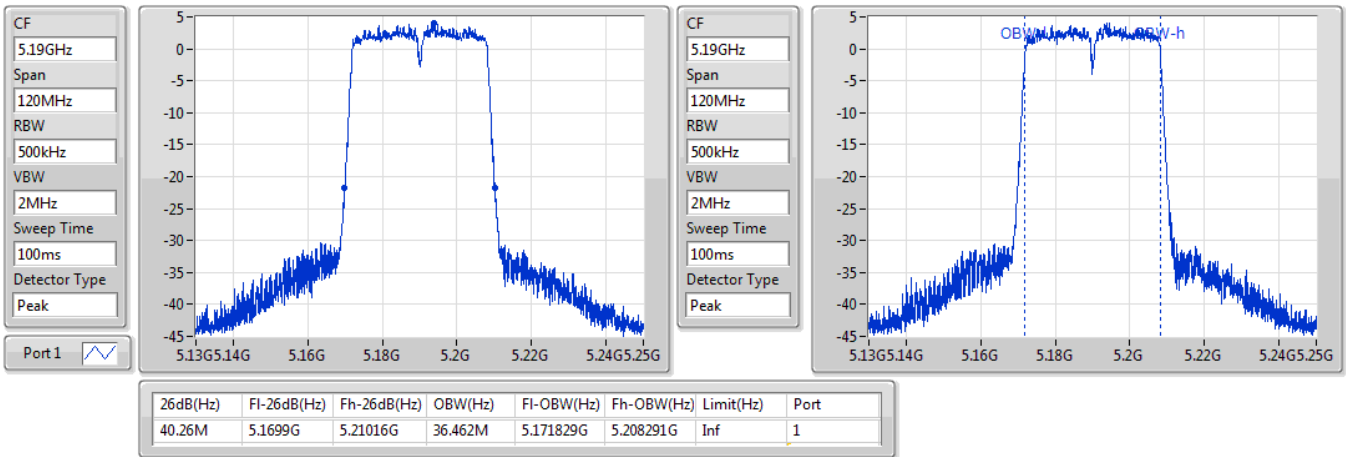


802.11ac VHT40_Nss1,(MCS0)_1TX

EBW

5190MHz

19/12/2019

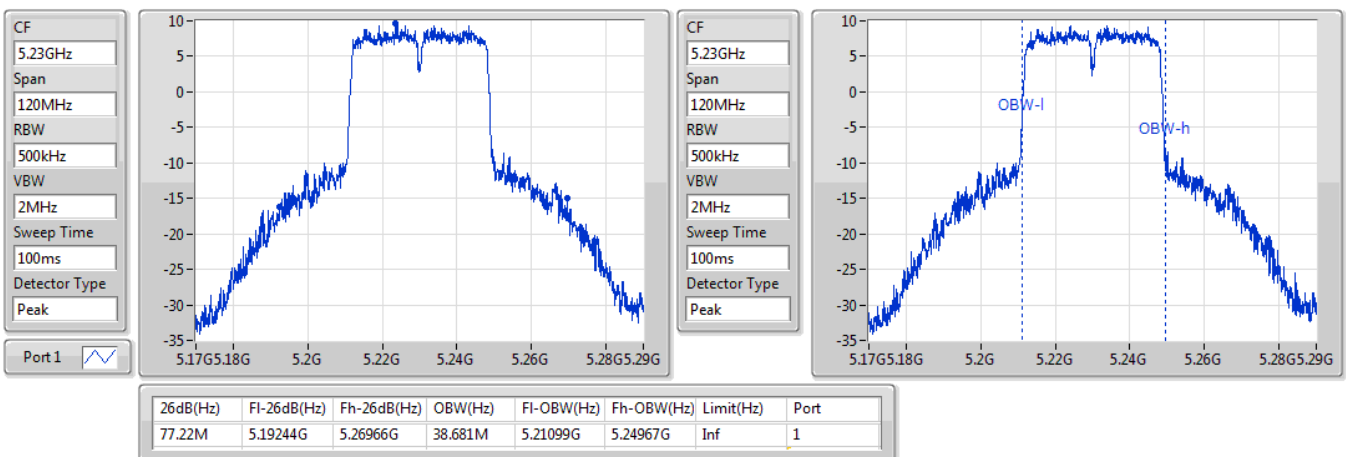


802.11ac VHT40_Nss1,(MCS0)_1TX

EBW

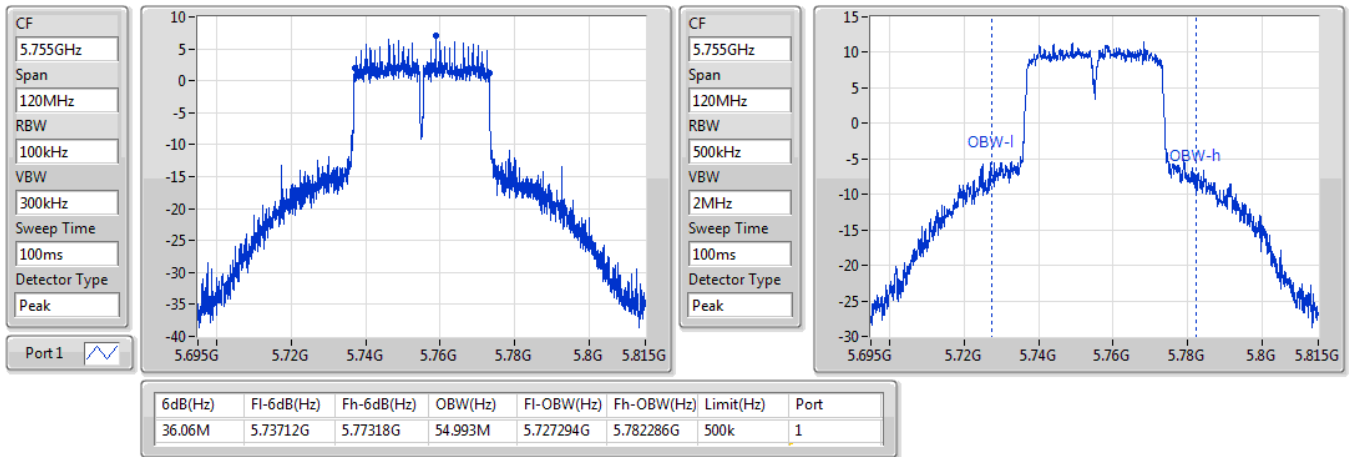
5230MHz

19/12/2019

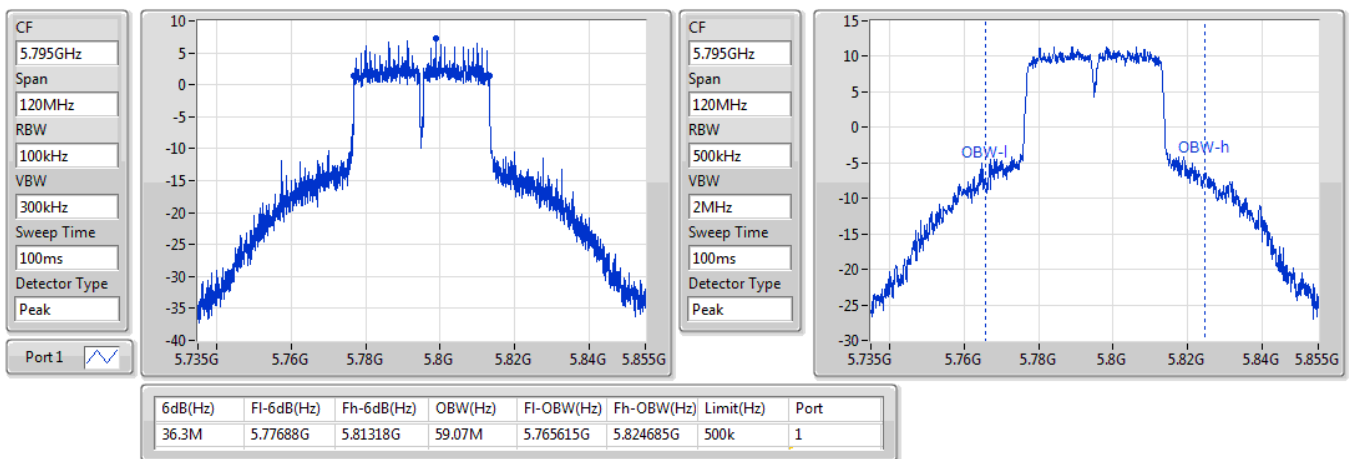


802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5755MHz

19/12/2019

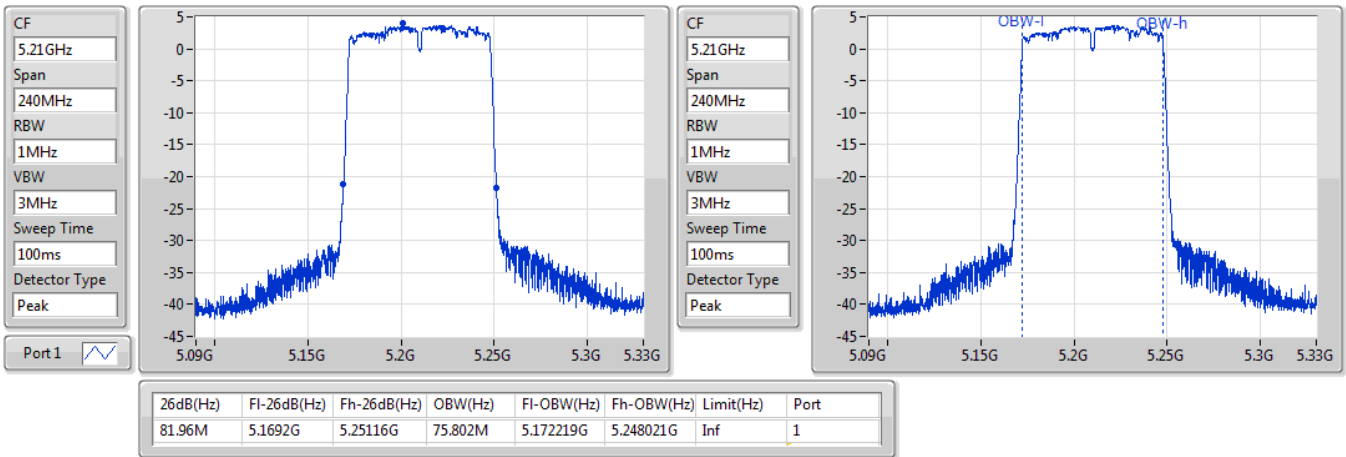

802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5795MHz

19/12/2019

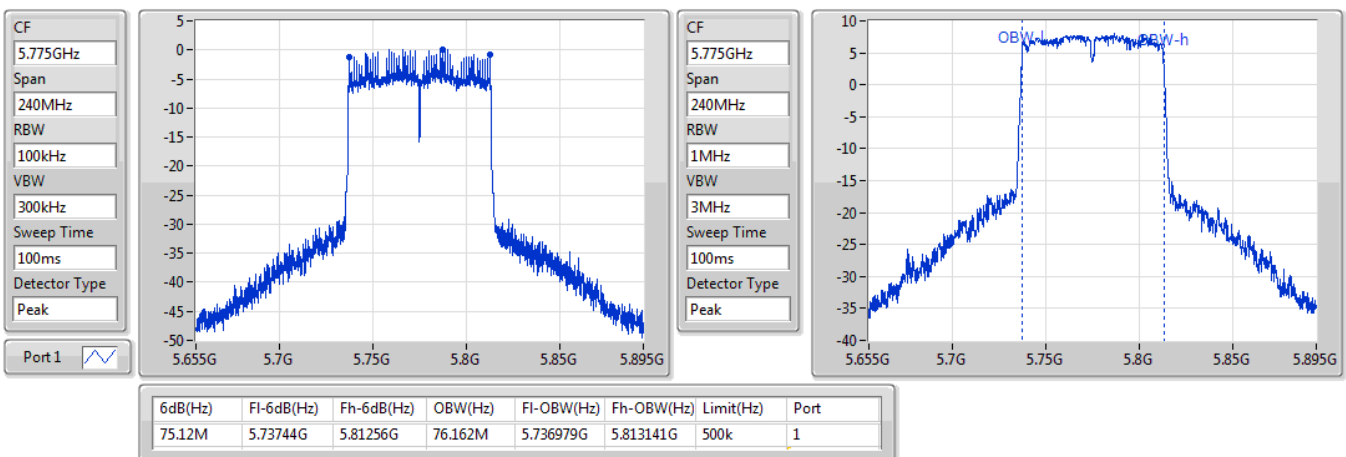


802.11ac VHT80_Nss1,(MCS0)_1TX
EBW
5210MHz

19/12/2019


802.11ac VHT80_Nss1,(MCS0)_1TX
EBW
5775MHz

19/12/2019

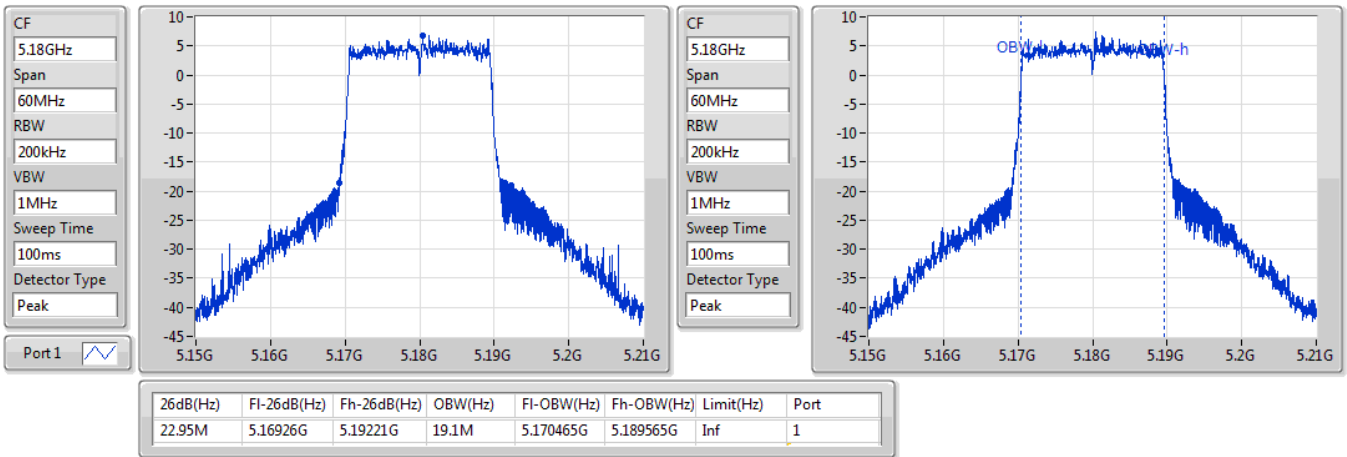


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5180MHz

19/12/2019

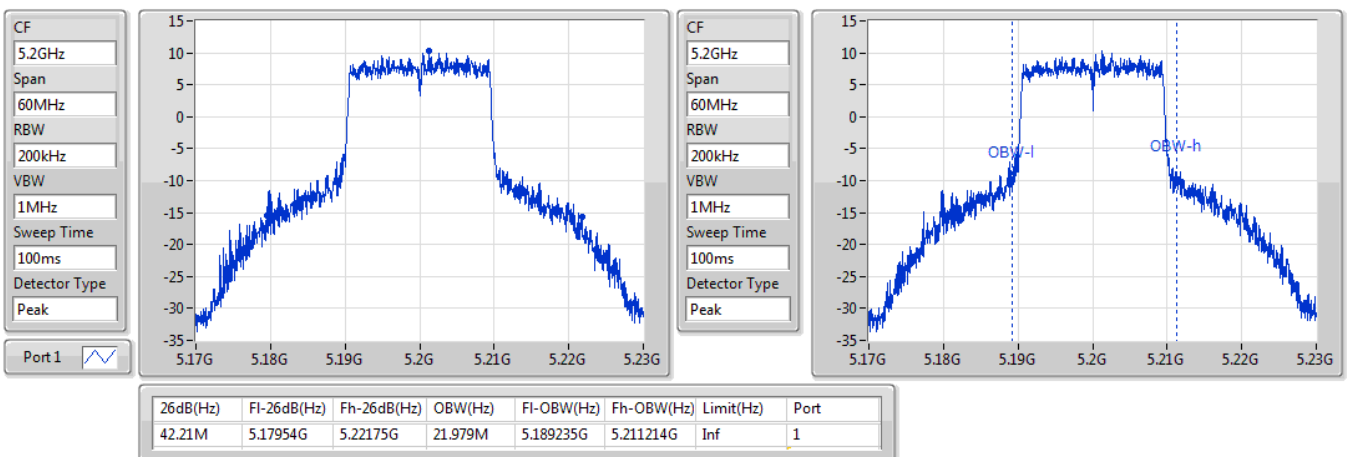


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

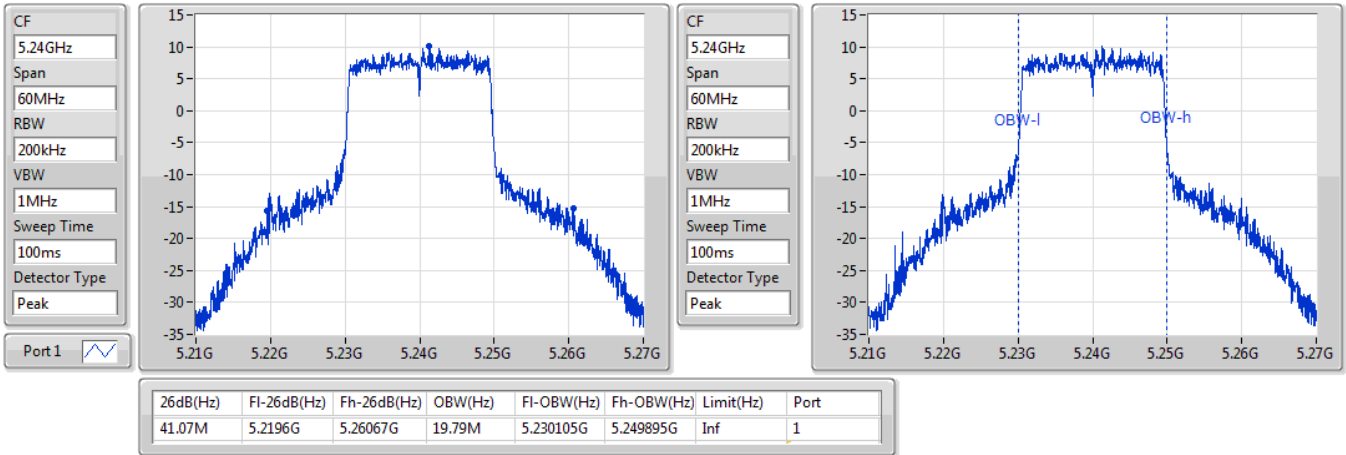
5200MHz

19/12/2019

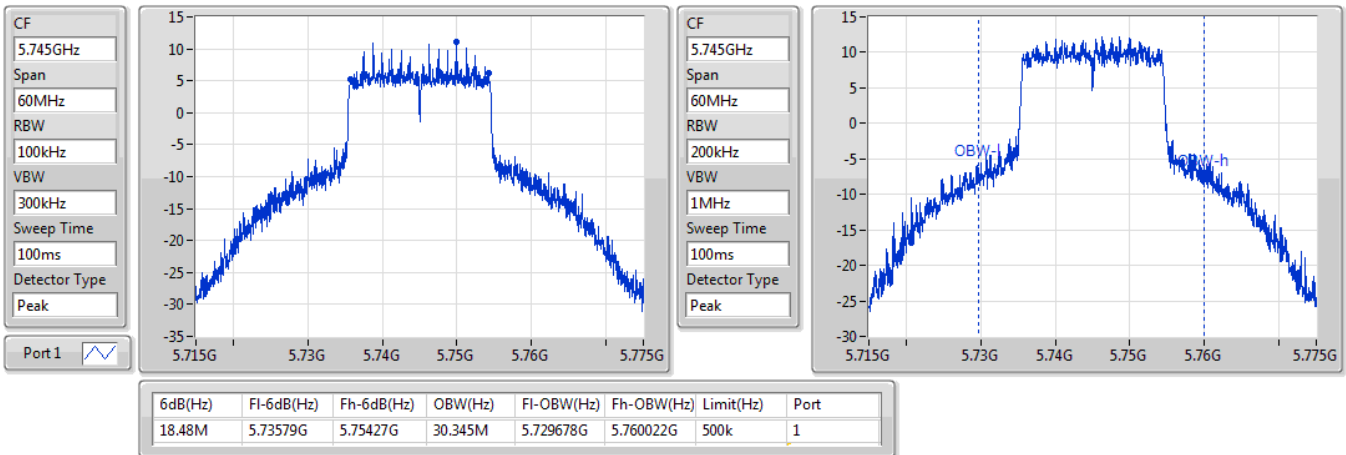


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5240MHz

19/12/2019

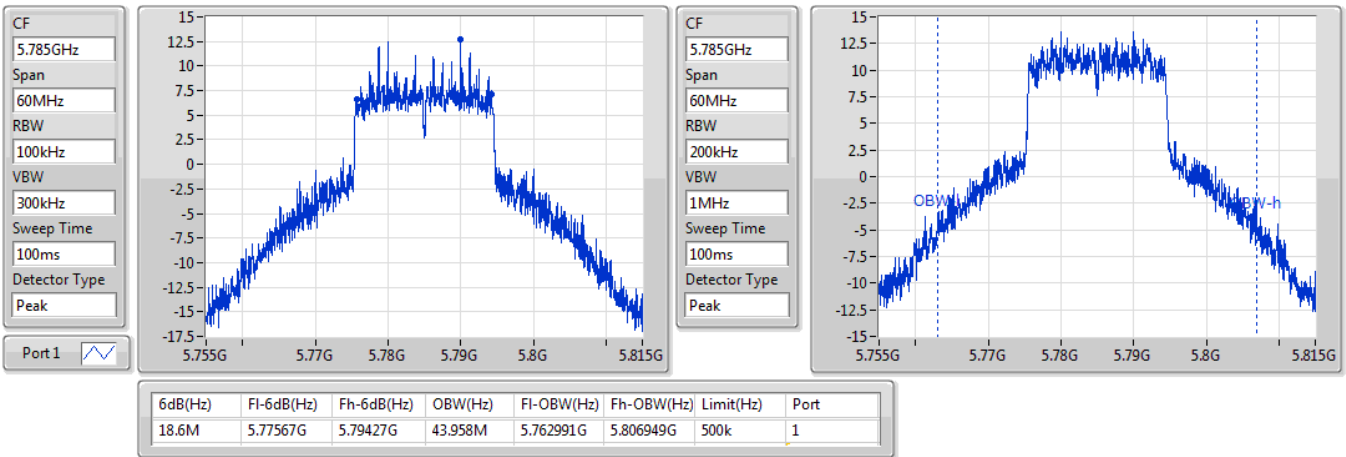

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5745MHz

19/12/2019

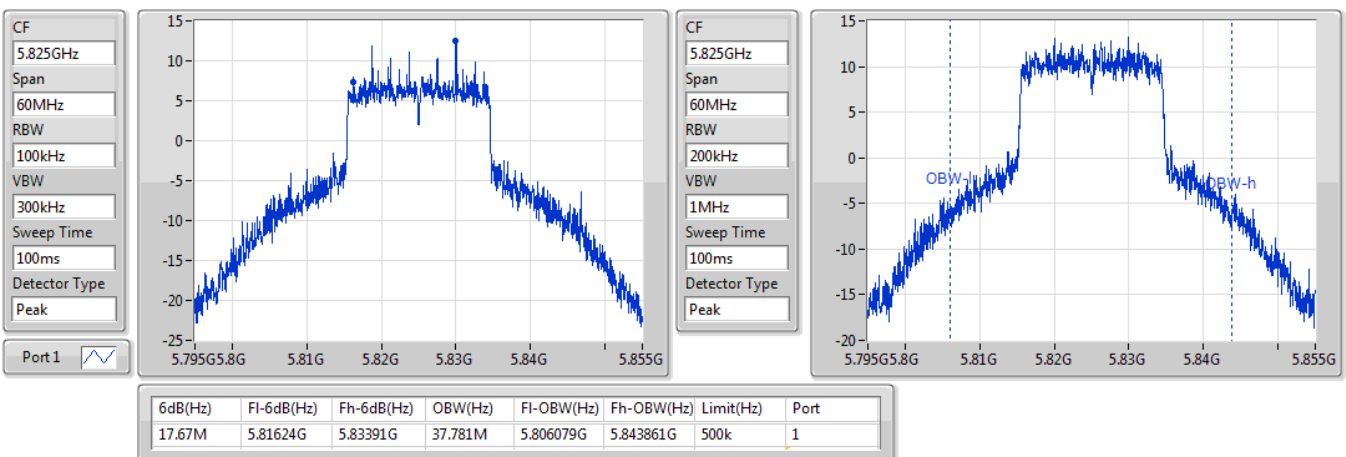


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5785MHz

19/12/2019


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5825MHz

19/12/2019

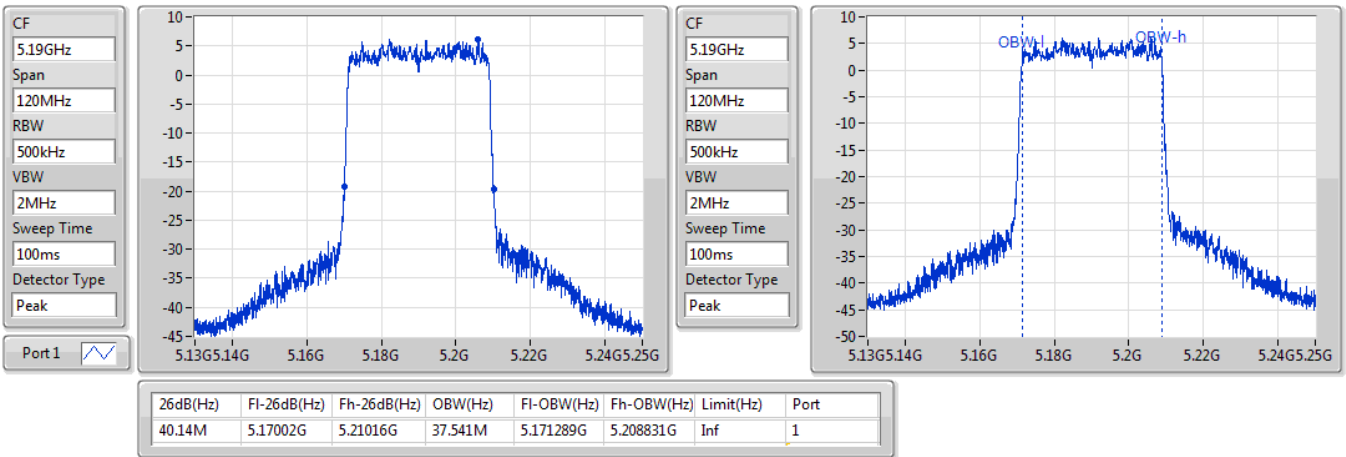


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5190MHz

19/12/2019

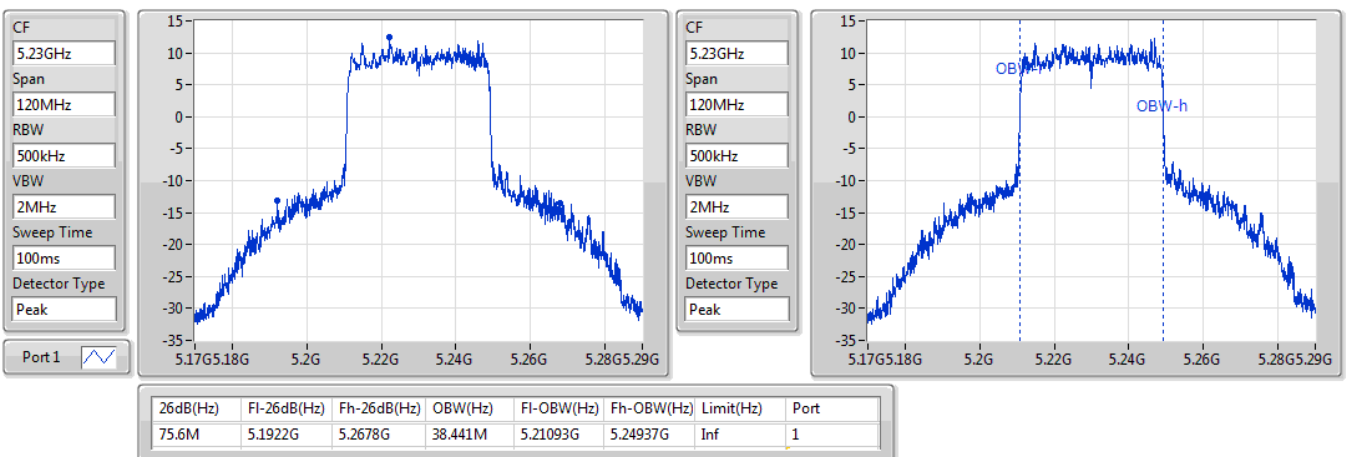


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

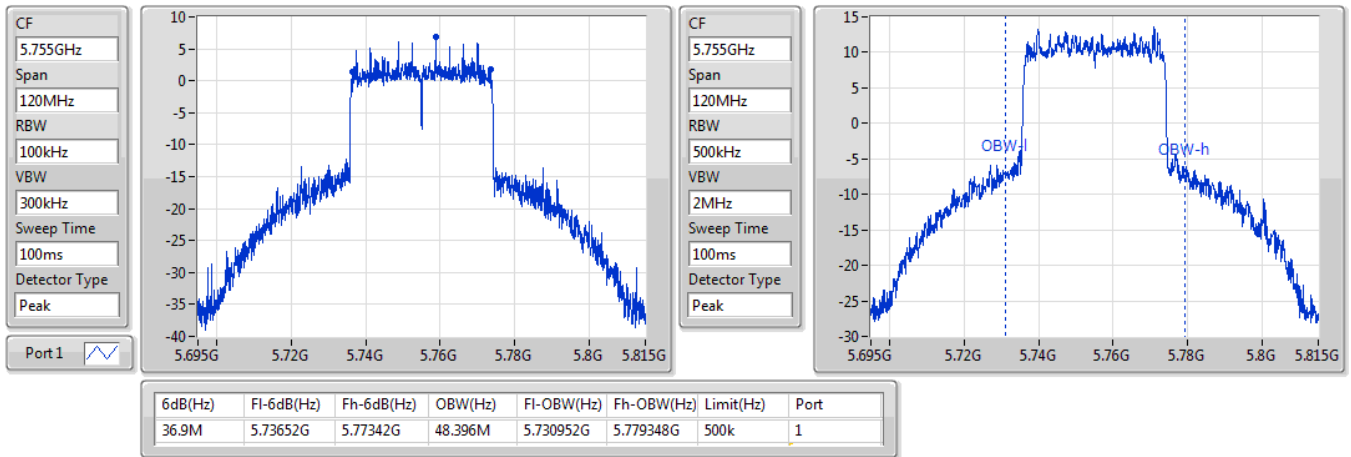
5230MHz

19/12/2019

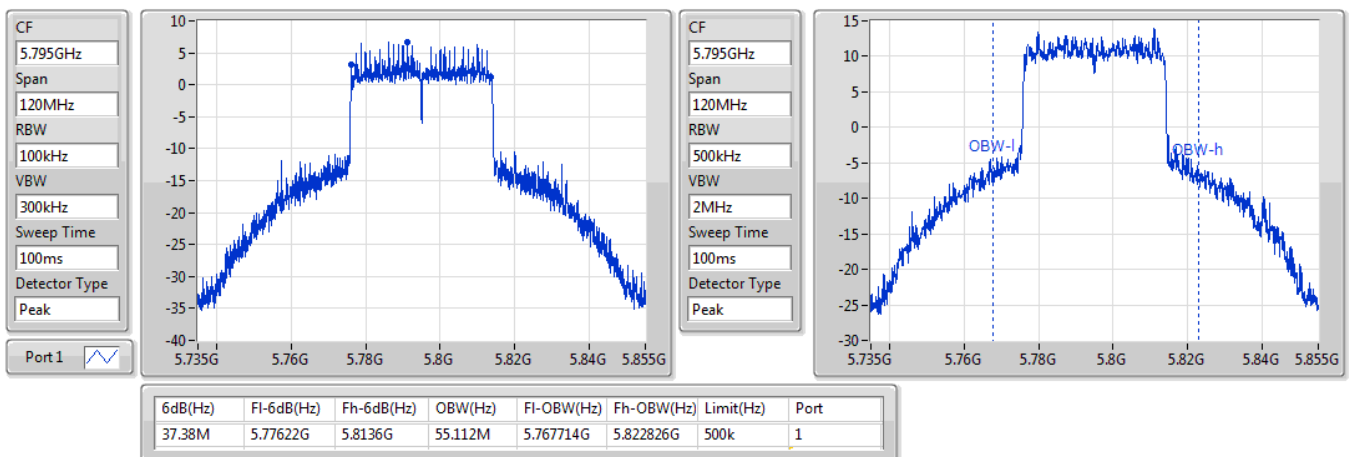


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5755MHz

19/12/2019

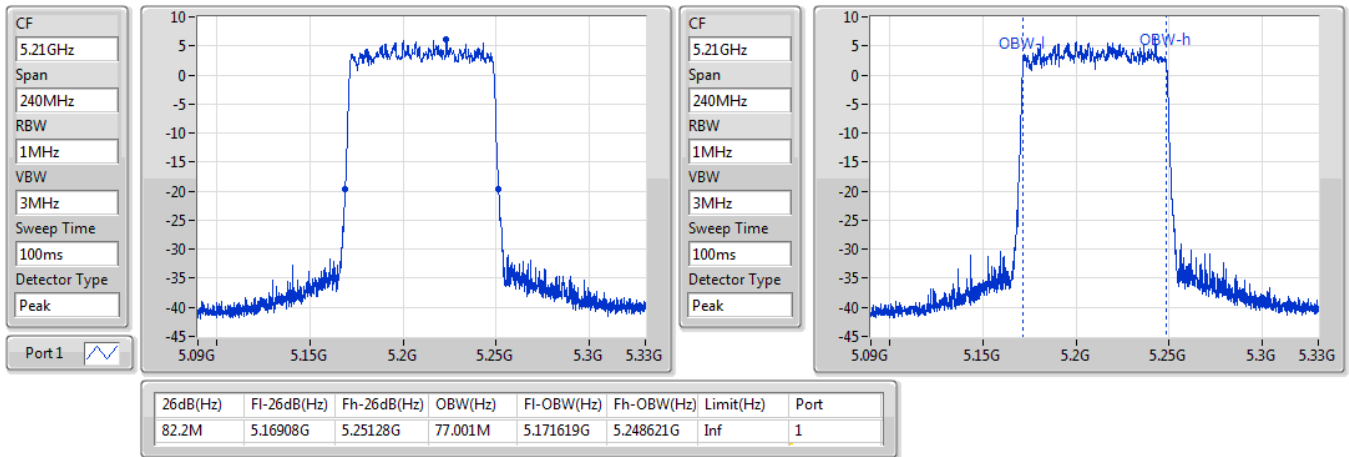

802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5795MHz

19/12/2019

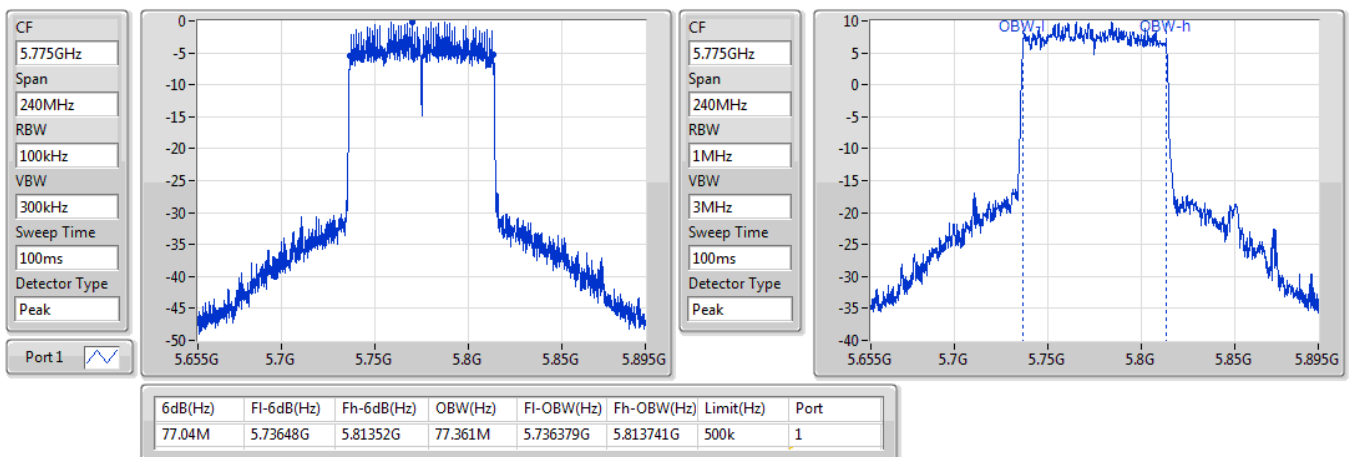


802.11ax HEW80_Nss1,(MCS0)_1TX
EBW
5210MHz

19/12/2019


802.11ax HEW80_Nss1,(MCS0)_1TX
EBW
5775MHz

19/12/2019



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	37.71M	19.34M	19M3D1D	21.27M	16.732M
802.11ac VHT20_Nss2,(MCS0)_2TX	39.09M	19.4M	19M4D1D	21.57M	17.811M
802.11ac VHT40_Nss2,(MCS0)_2TX	70.5M	37.241M	37M2D1D	39.78M	36.282M
802.11ac VHT80_Nss2,(MCS0)_2TX	81.72M	75.802M	75M8D1D	81.48M	75.802M
802.11ax HEW20_Nss2,(MCS0)_2TX	44.1M	19.73M	19M7D1D	21.39M	19.04M
802.11ax HEW40_Nss2,(MCS0)_2TX	74.94M	38.261M	38M3D1D	39.84M	37.541M
802.11ax HEW80_Nss2,(MCS0)_2TX	81.36M	77.121M	77M1D1D	81M	77.001M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.56M	24.588M	24M6D1D	16.29M	17.451M
802.11ac VHT20_Nss2,(MCS0)_2TX	17.58M	26.357M	26M4D1D	17.55M	22.009M
802.11ac VHT40_Nss2,(MCS0)_2TX	36.3M	47.436M	47M4D1D	36.24M	36.702M
802.11ac VHT80_Nss2,(MCS0)_2TX	75.84M	75.922M	75M9D1D	75.72M	75.802M
802.11ax HEW20_Nss2,(MCS0)_2TX	18.93M	26.537M	26M5D1D	18.48M	20.96M
802.11ax HEW40_Nss2,(MCS0)_2TX	37.62M	44.078M	44M1D1D	37.08M	38.021M
802.11ax HEW80_Nss2,(MCS0)_2TX	77.16M	77.121M	77M1D1D	76.56M	77.001M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

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)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.27M	16.792M	21.87M	16.732M
5200MHz	Pass	Inf	37.71M	18.351M	37.62M	19.25M
5240MHz	Pass	Inf	37.62M	18.501M	37.65M	19.34M
5745MHz	Pass	500k	16.56M	21.349M	16.29M	24.588M
5785MHz	Pass	500k	16.32M	17.451M	16.32M	17.691M
5825MHz	Pass	500k	16.35M	17.931M	16.32M	17.991M
802.11ac_VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.57M	17.901M	21.6M	17.811M
5200MHz	Pass	Inf	34.38M	18.711M	39.09M	19.19M
5240MHz	Pass	Inf	37.17M	19.07M	38.88M	19.4M
5745MHz	Pass	500k	17.58M	22.009M	17.58M	26.357M
5785MHz	Pass	500k	17.58M	23.388M	17.55M	26.357M
5825MHz	Pass	500k	17.55M	23.808M	17.55M	24.978M
802.11ac_VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	39.78M	36.342M	40.02M	36.282M
5230MHz	Pass	Inf	70.5M	37.241M	46.38M	36.462M
5755MHz	Pass	500k	36.24M	37.541M	36.24M	36.702M
5795MHz	Pass	500k	36.3M	47.436M	36.24M	37.361M
802.11ac_VHT80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	81.48M	75.802M	81.72M	75.802M
5775MHz	Pass	500k	75.84M	75.922M	75.72M	75.802M
802.11ax_HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.63M	19.04M	21.39M	19.07M
5200MHz	Pass	Inf	37.05M	19.34M	41.79M	19.55M
5240MHz	Pass	Inf	37.56M	19.58M	44.1M	19.73M
5745MHz	Pass	500k	18.93M	20.96M	18.48M	26.237M
5785MHz	Pass	500k	18.93M	22.549M	18.81M	26.537M
5825MHz	Pass	500k	18.78M	23.508M	18.66M	25.517M
802.11ax_HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	40.02M	37.661M	39.84M	37.541M
5230MHz	Pass	Inf	74.94M	38.261M	69.06M	37.841M
5755MHz	Pass	500k	37.62M	38.261M	37.14M	38.021M
5795MHz	Pass	500k	37.56M	44.078M	37.08M	38.741M
802.11ax_HEW80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	81.36M	77.001M	81M	77.121M
5775MHz	Pass	500k	77.16M	77.121M	76.56M	77.001M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

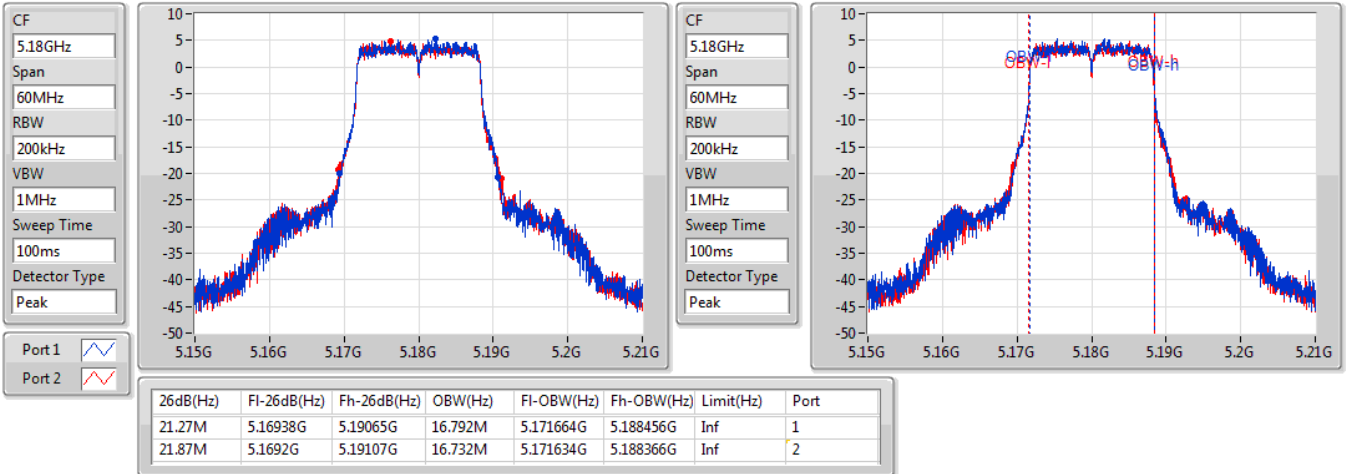
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_2TX

EBW

5180MHz

19/12/2019

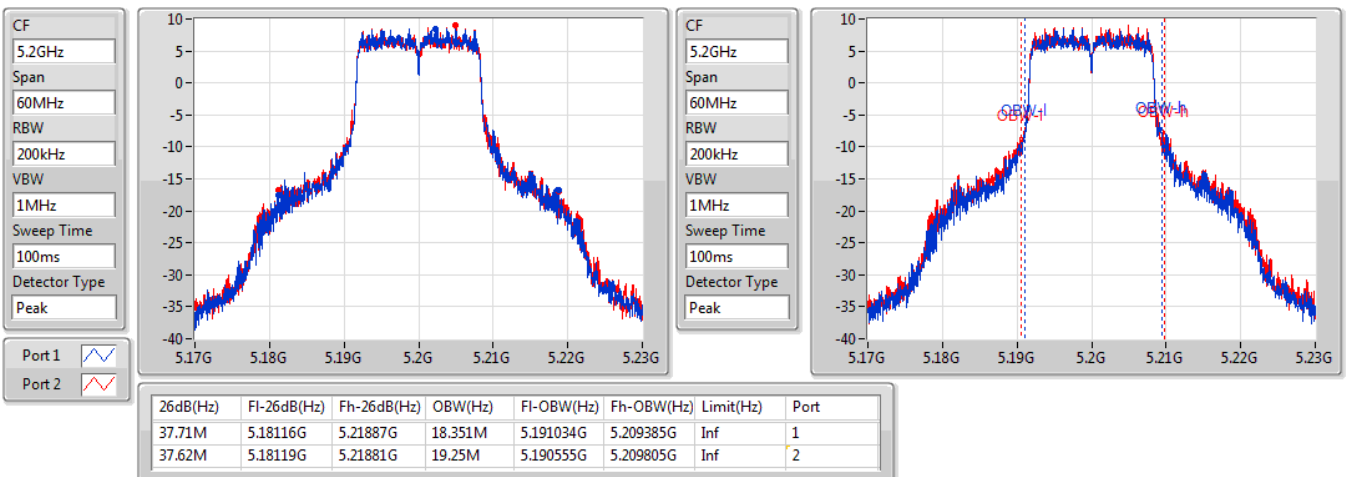


802.11a_Nss1,(6Mbps)_2TX

EBW

5200MHz

19/12/2019

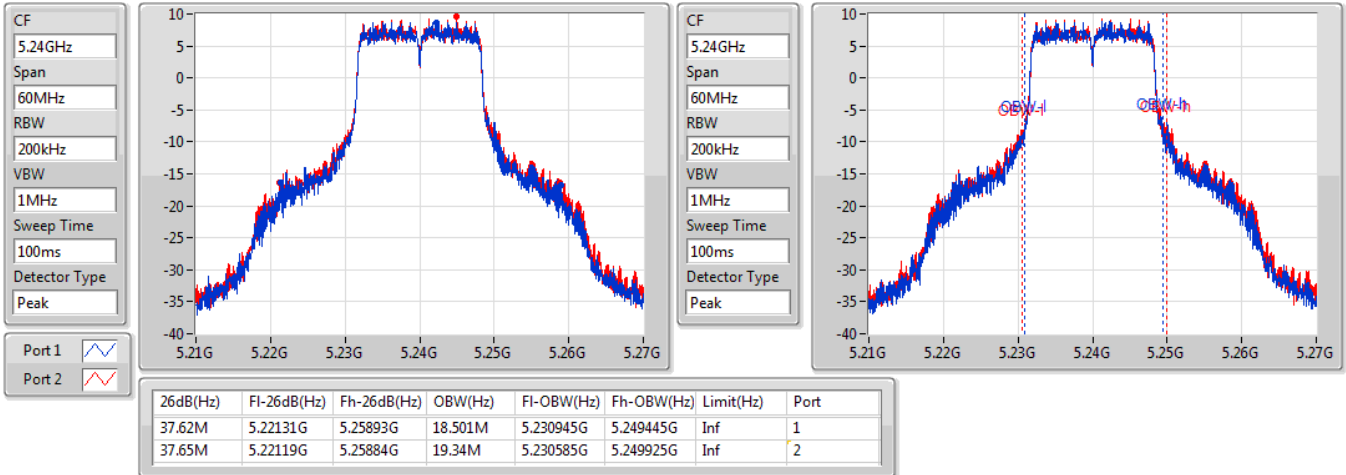


802.11a_Nss1,(6Mbps)_2TX

EBW

5240MHz

19/12/2019

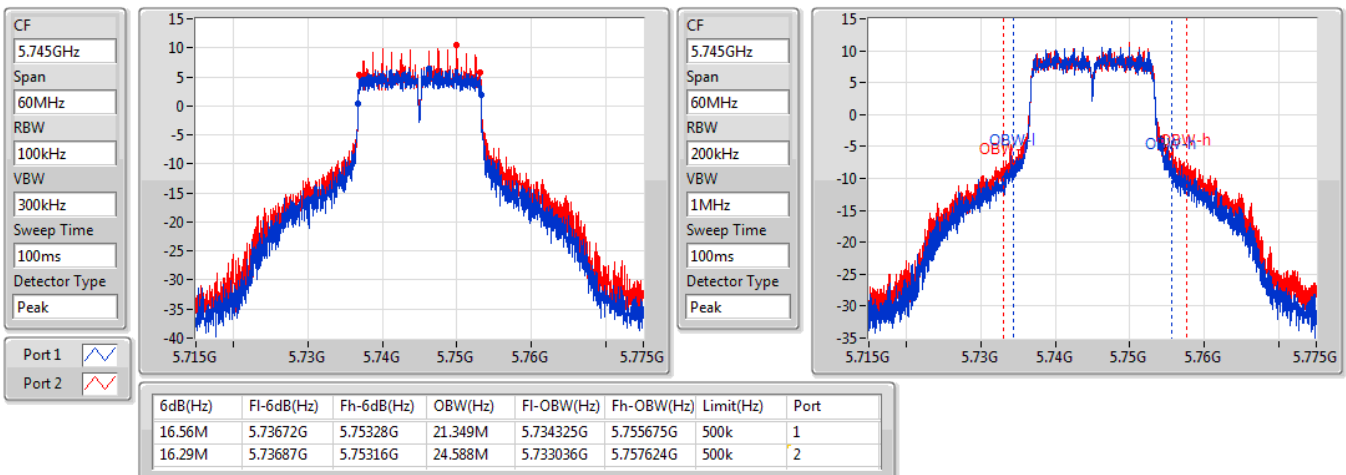


802.11a_Nss1,(6Mbps)_2TX

EBW

5745MHz

19/12/2019

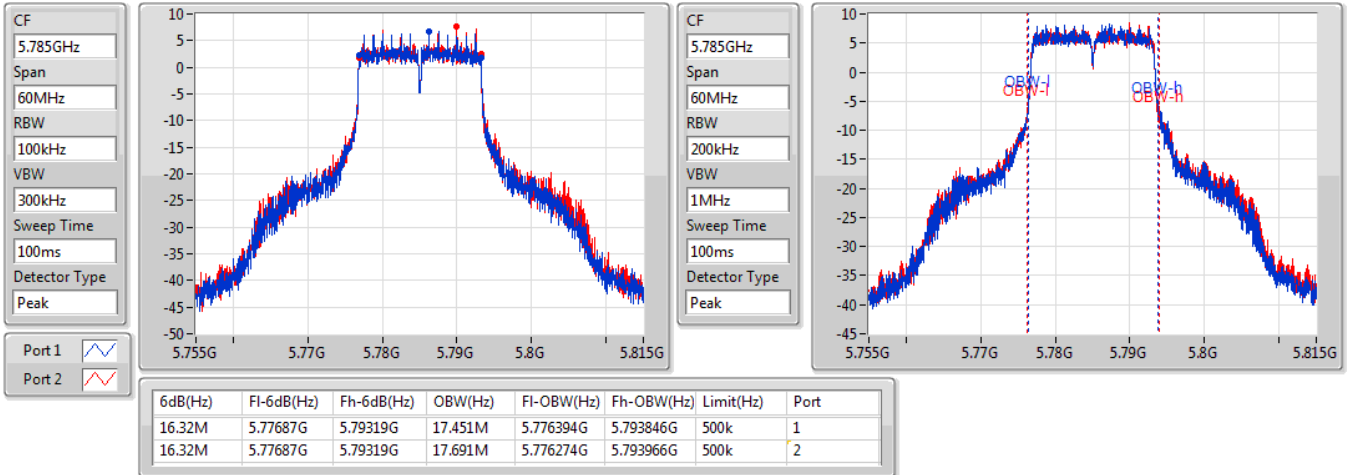


802.11a_Nss1,(6Mbps)_2TX

EBW

5785MHz

23/12/2019

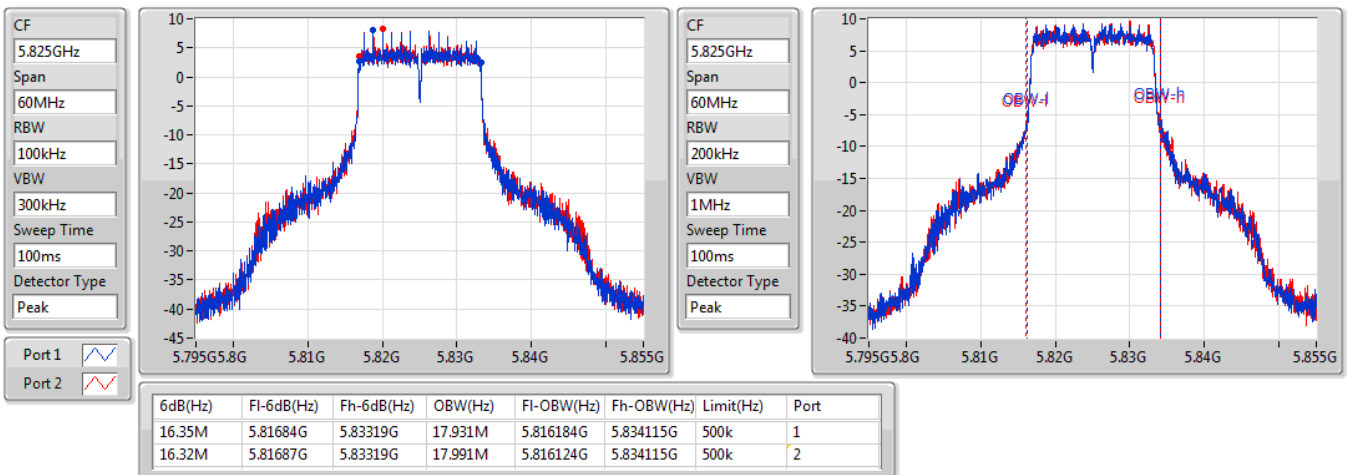


802.11a_Nss1,(6Mbps)_2TX

EBW

5825MHz

19/12/2019

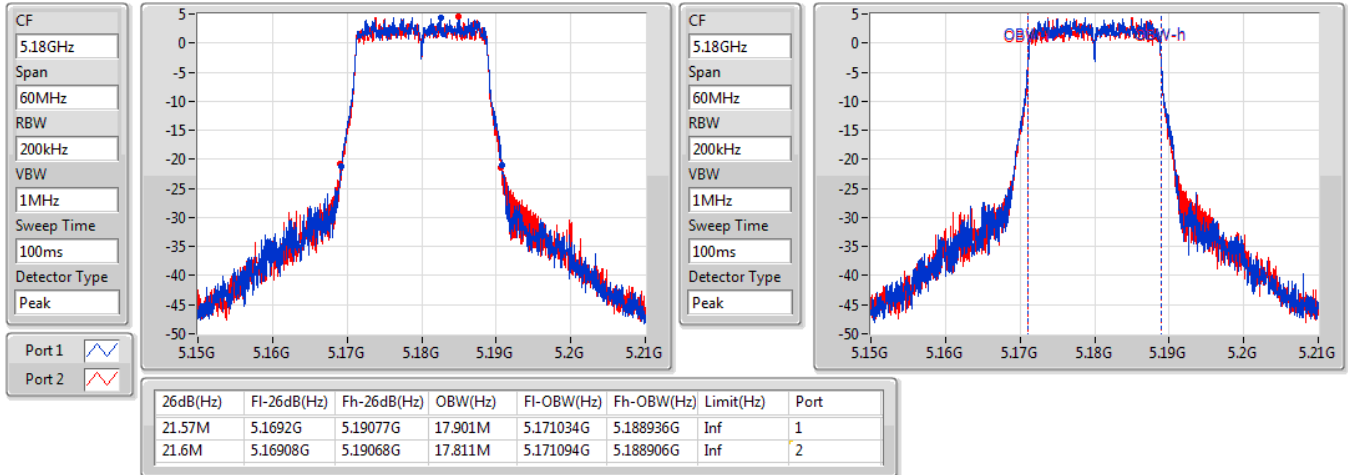


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5180MHz

19/12/2019

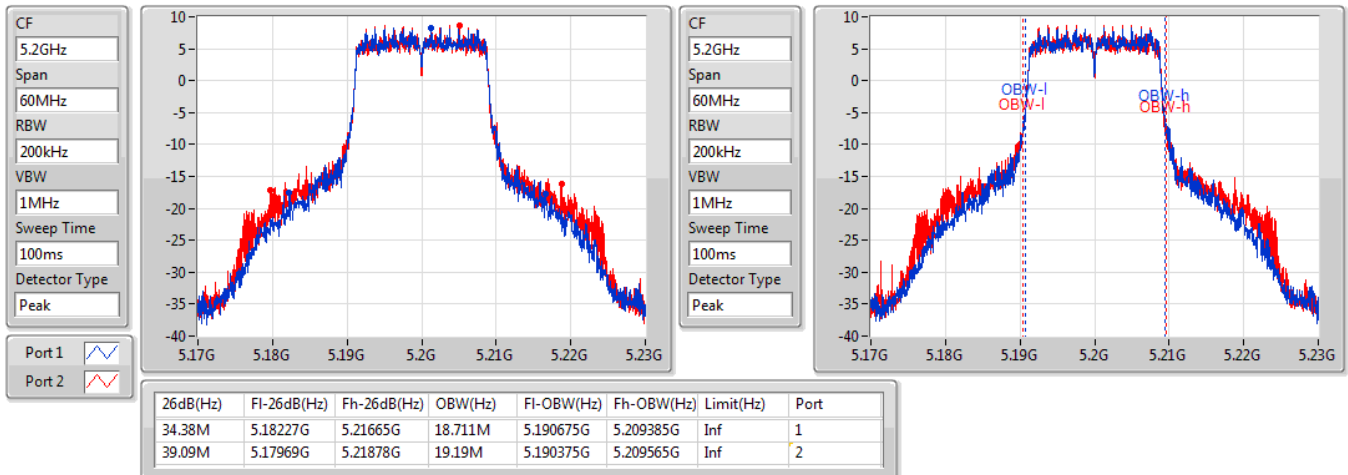


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

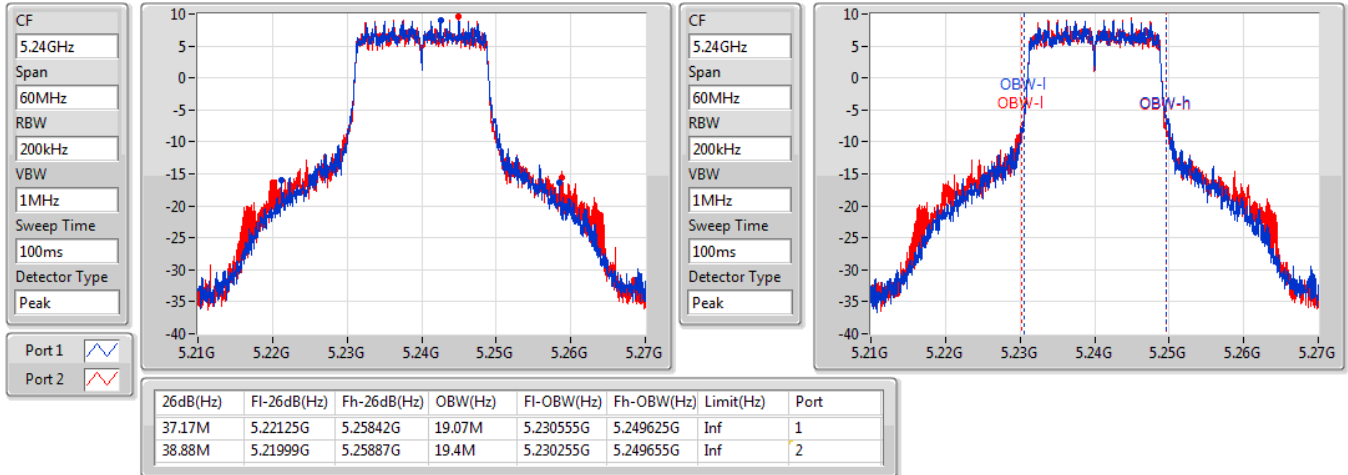
5200MHz

19/12/2019

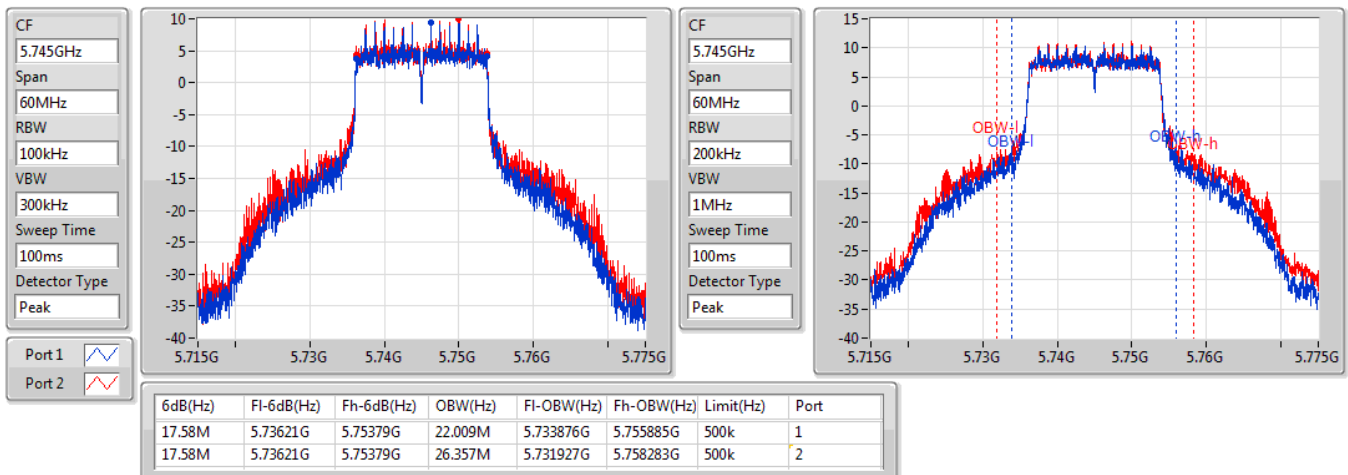


802.11ac VHT20_Nss2,(MCS0)_2TX
EBW
5240MHz

19/12/2019


802.11ac VHT20_Nss2,(MCS0)_2TX
EBW
5745MHz

19/12/2019

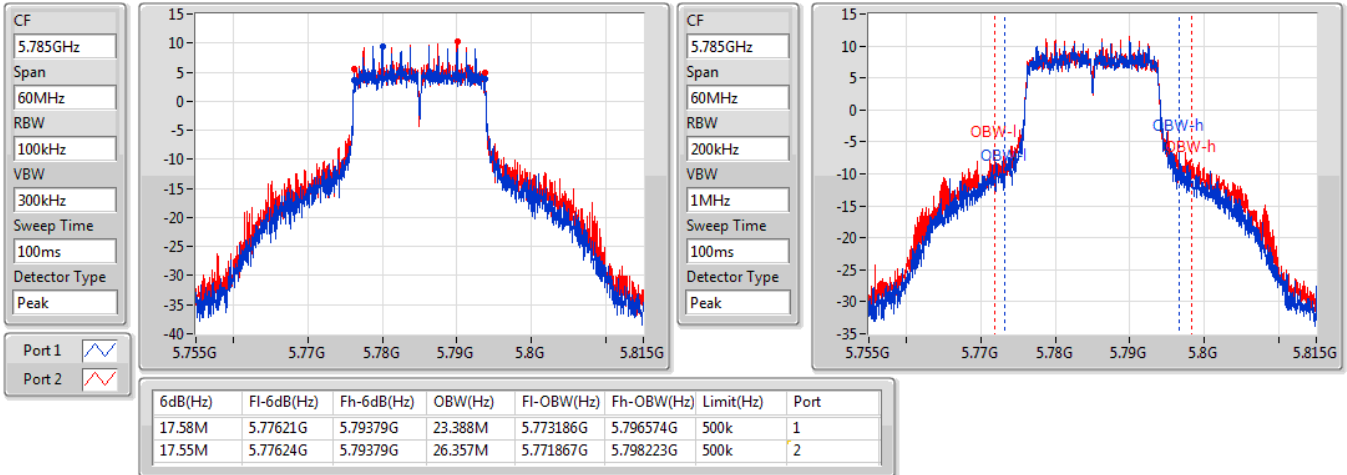


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5785MHz

19/12/2019

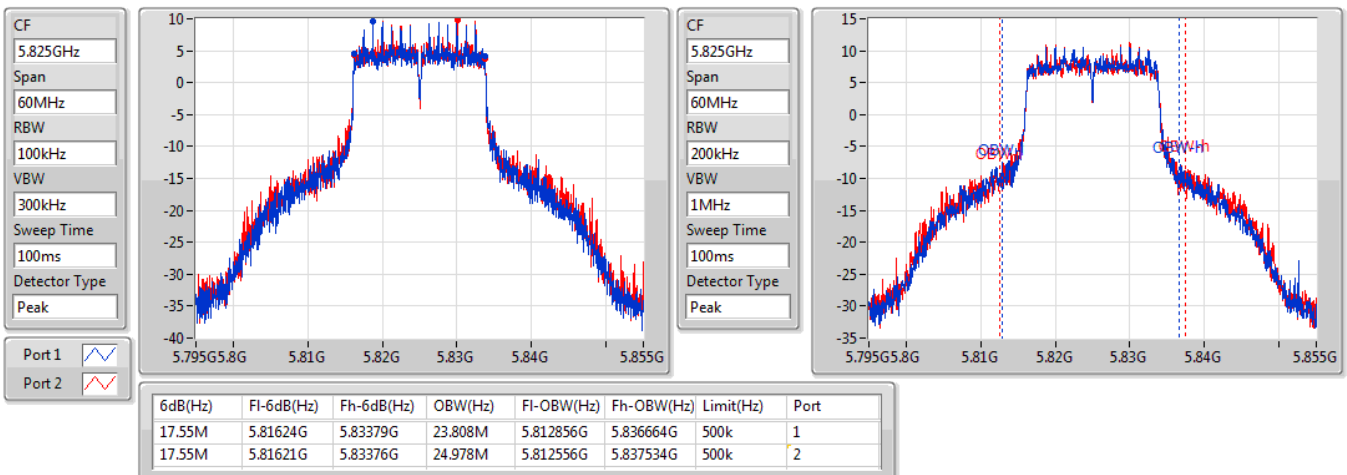


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5825MHz

19/12/2019

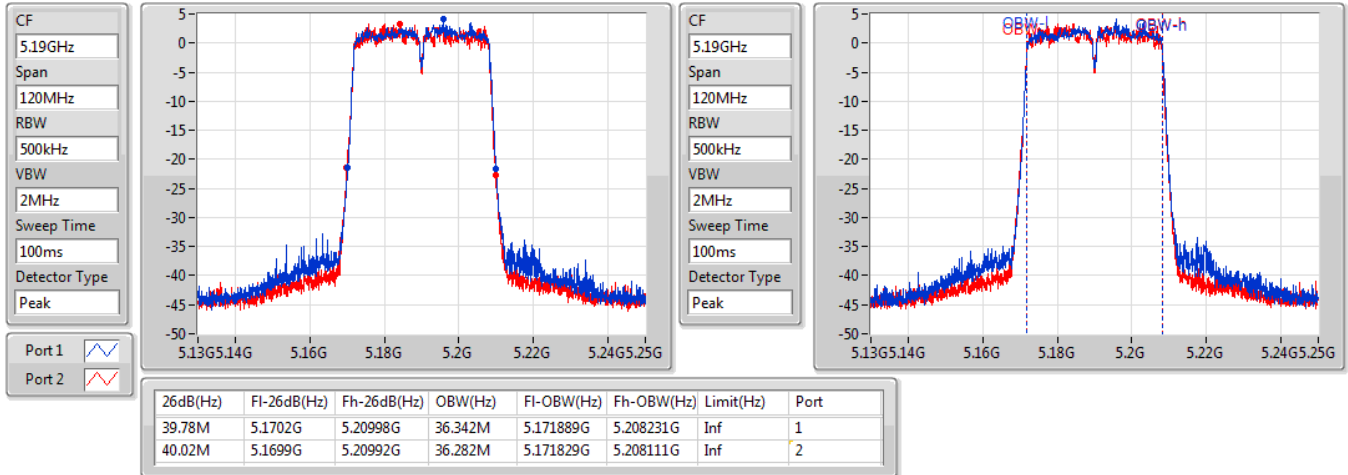


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5190MHz

19/12/2019

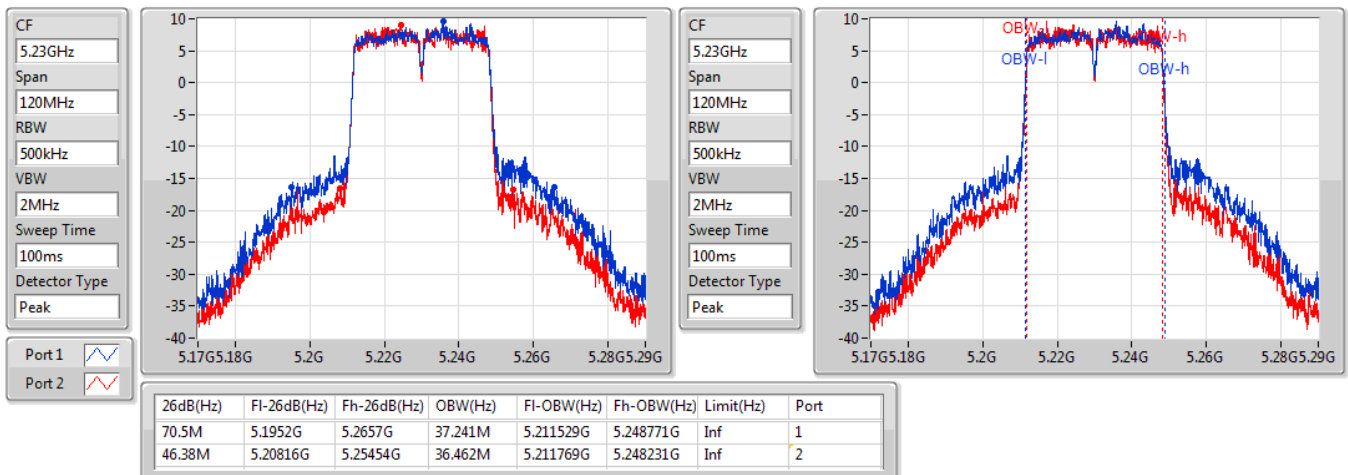


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5230MHz

19/12/2019

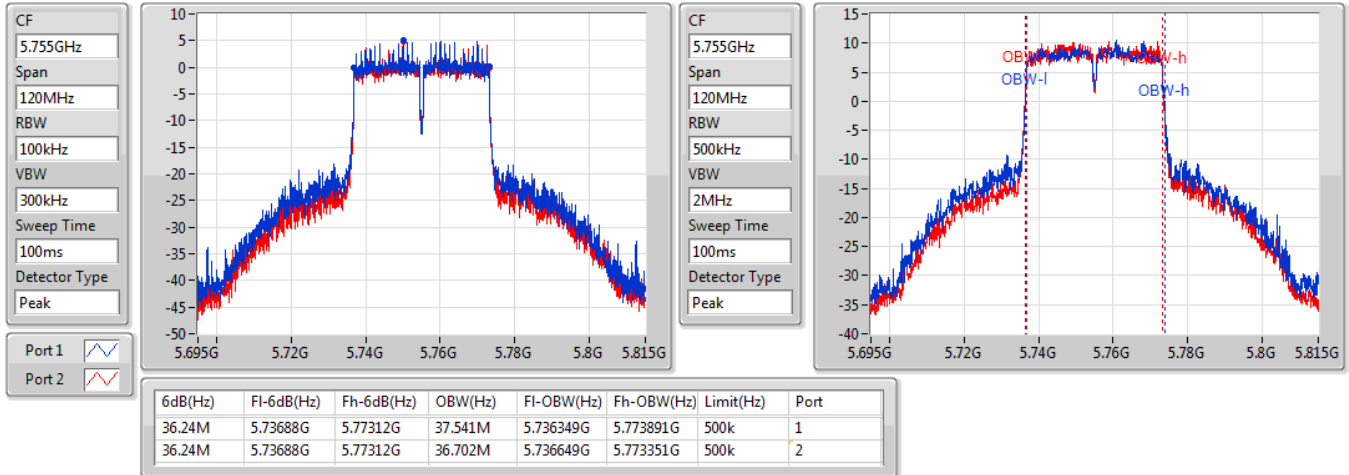


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5755MHz

19/12/2019

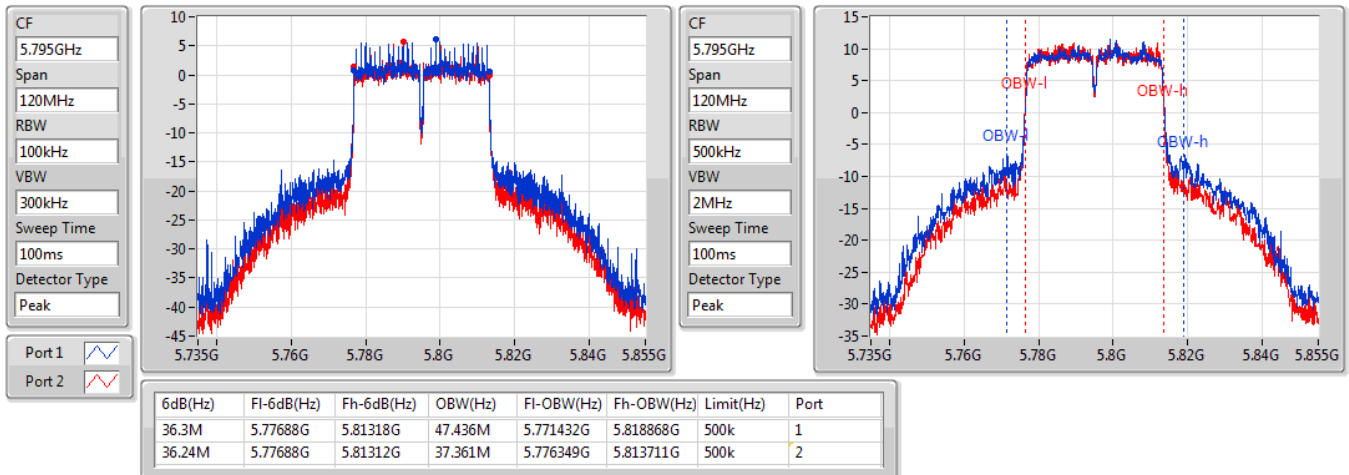


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5795MHz

19/12/2019

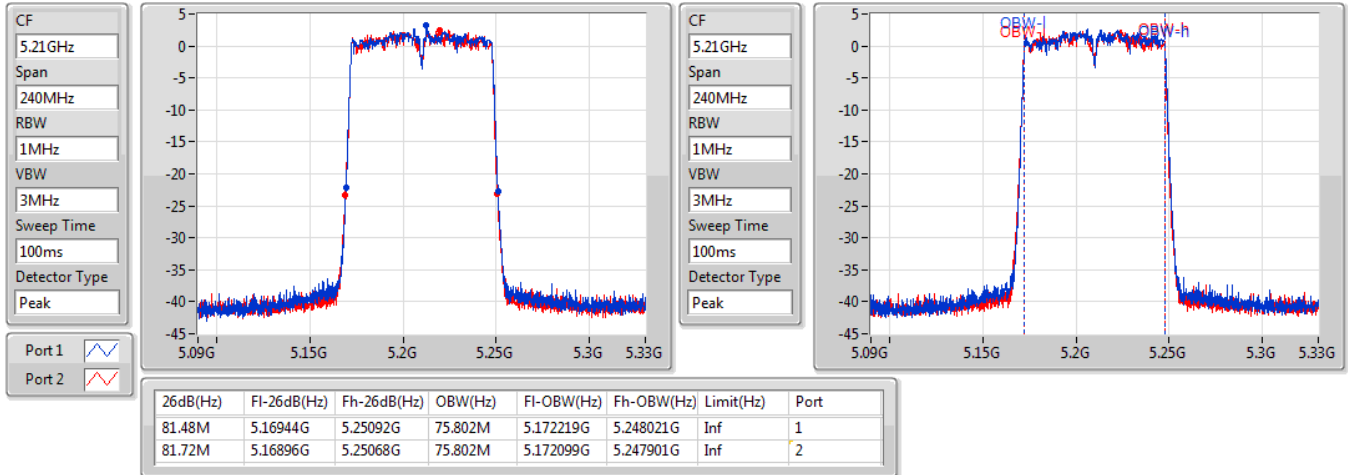


802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

5210MHz

19/12/2019

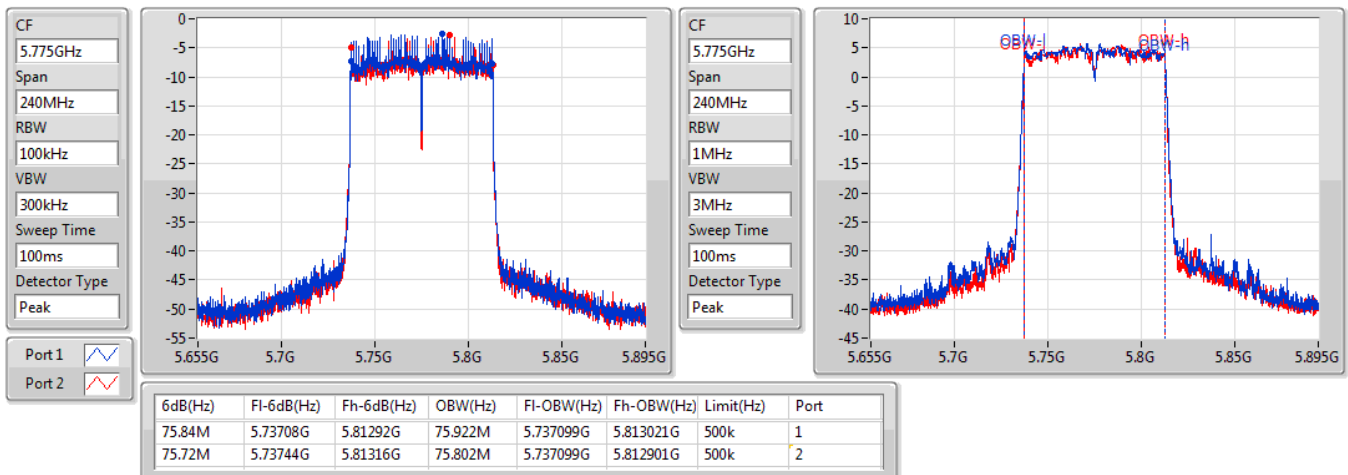


802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

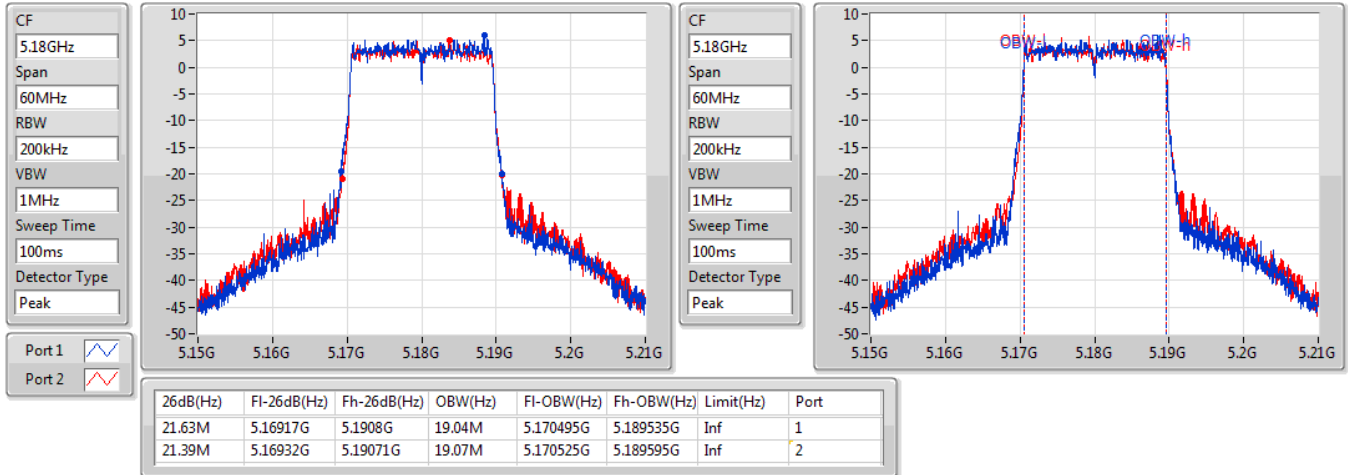
5775MHz

19/12/2019

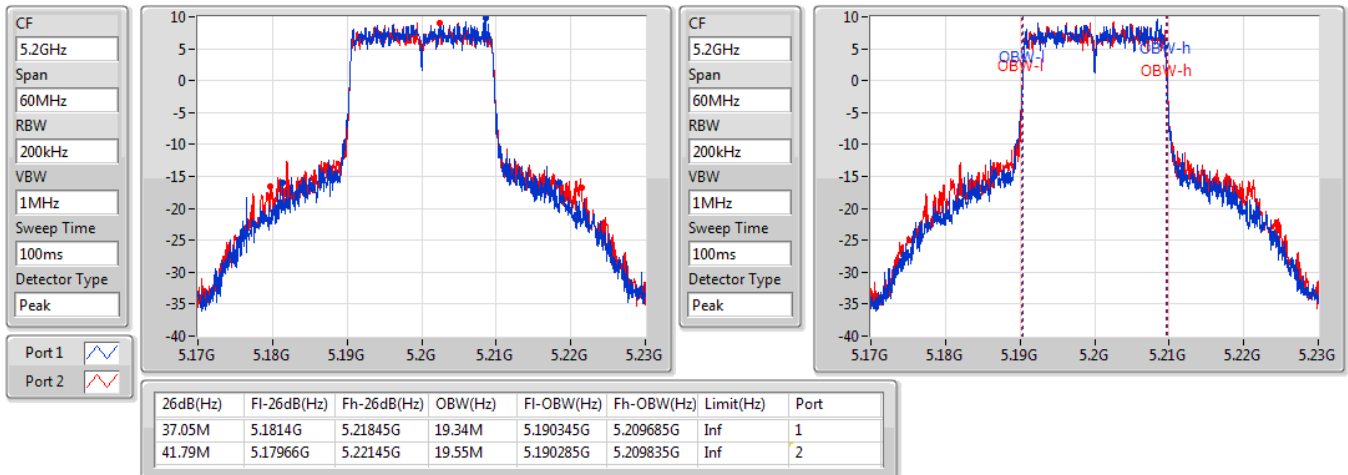


802.11ax HEW20_Nss2,(MCS0)_2TX
EBW
5180MHz

19/12/2019


802.11ax HEW20_Nss2,(MCS0)_2TX
EBW
5200MHz

19/12/2019

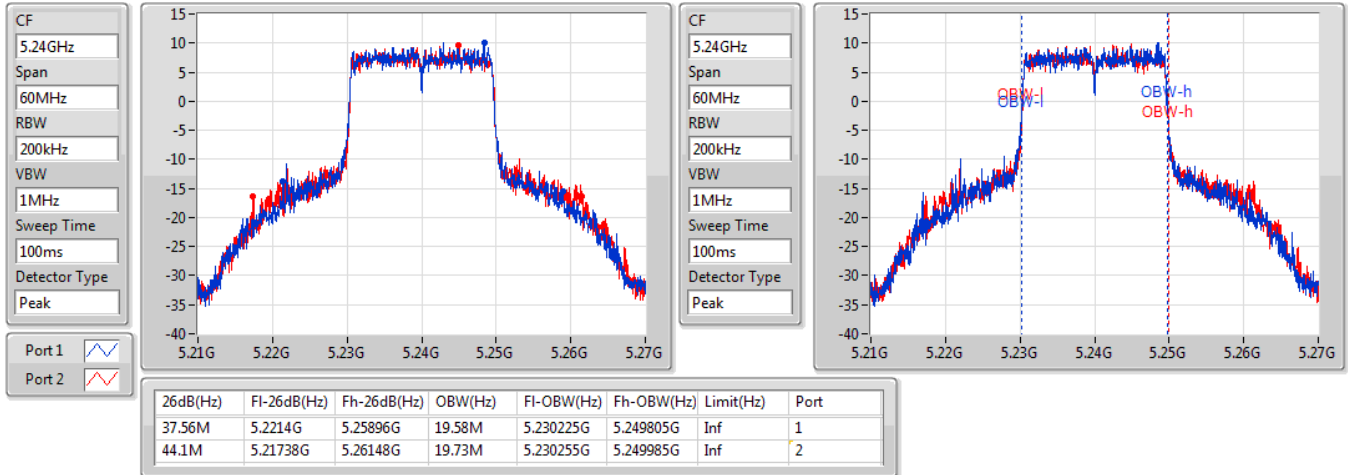


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5240MHz

19/12/2019

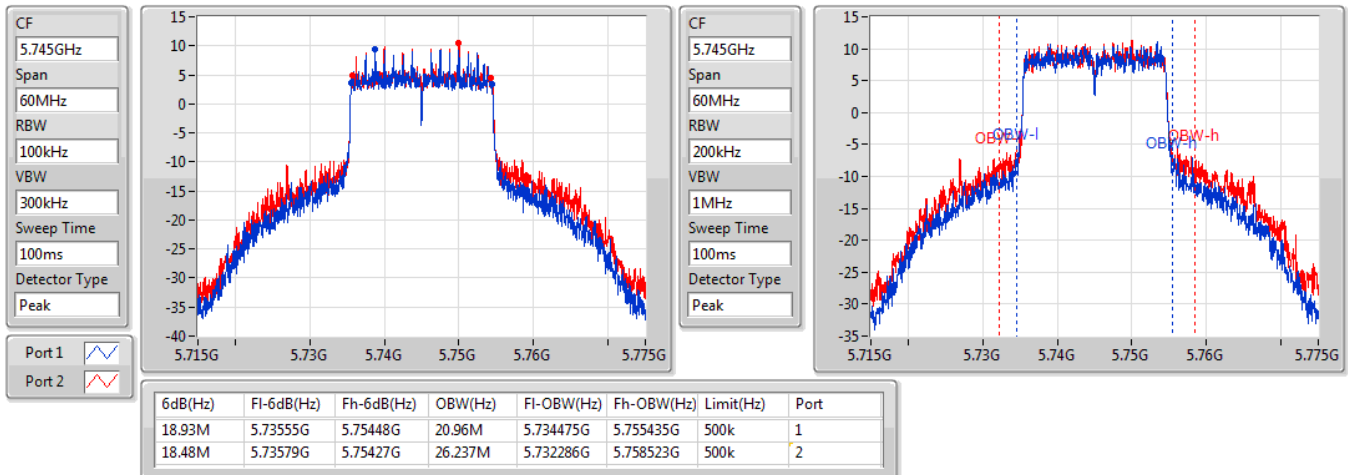


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5745MHz

19/12/2019

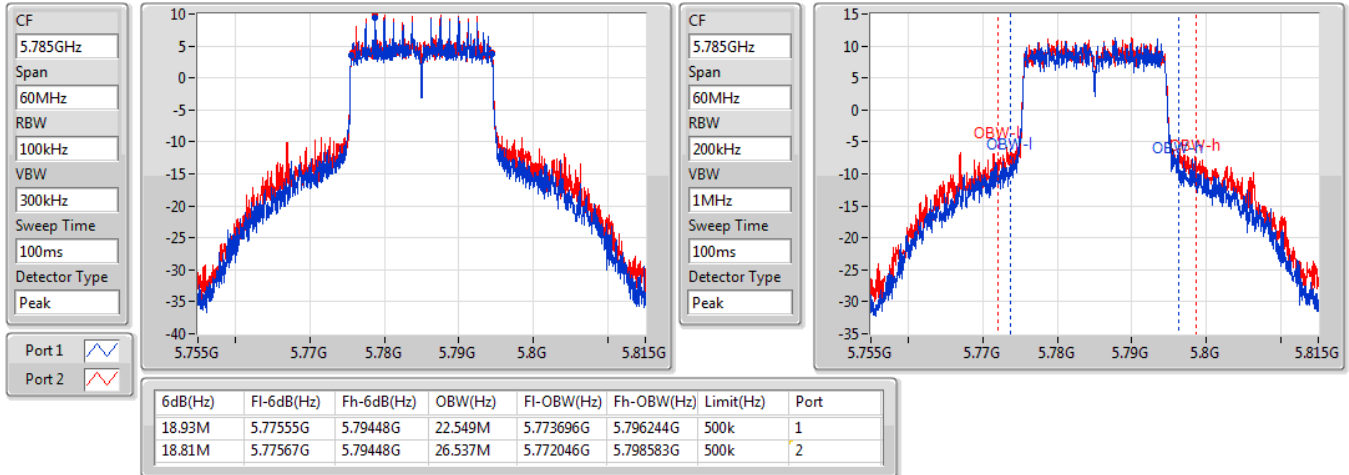


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5785MHz

19/12/2019

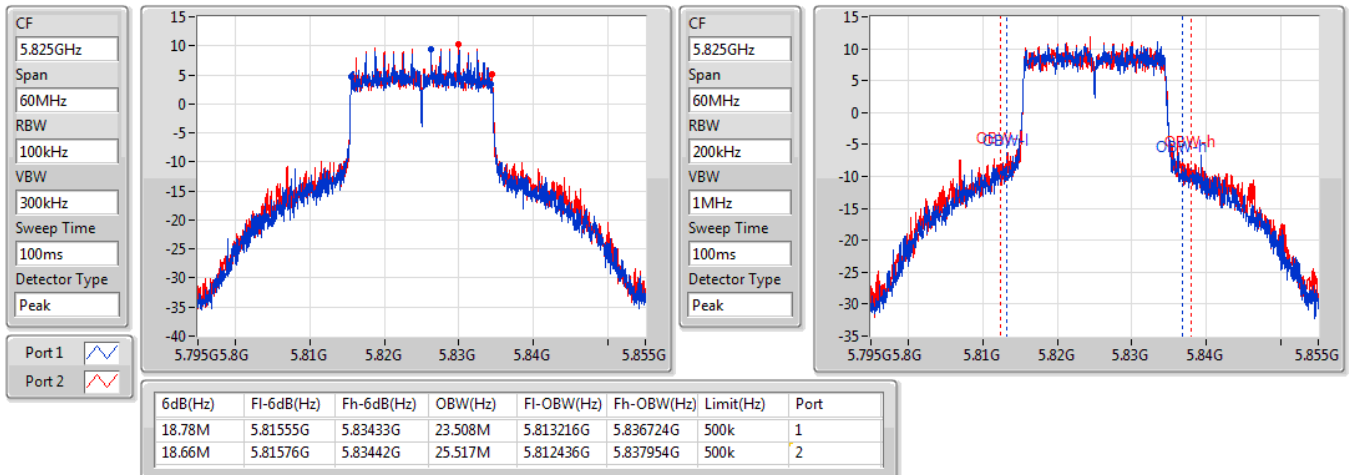


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5825MHz

19/12/2019

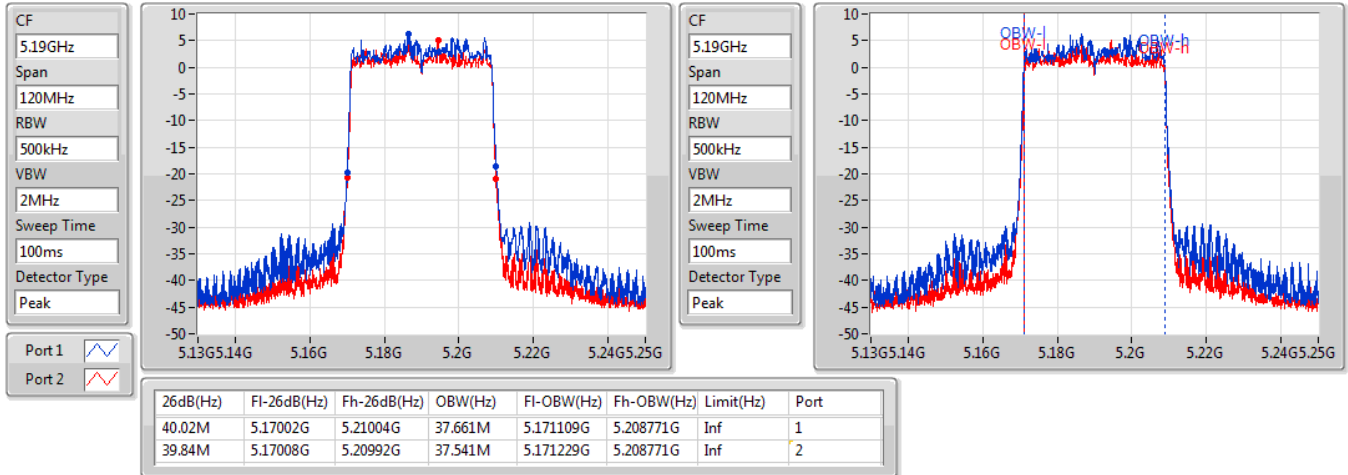


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5190MHz

19/12/2019

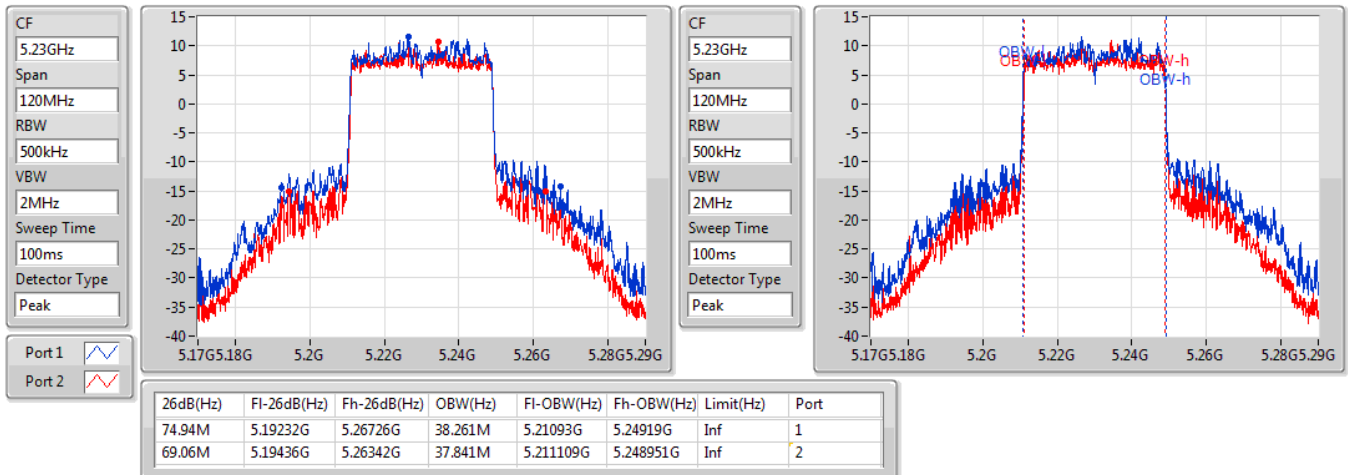


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5230MHz

19/12/2019

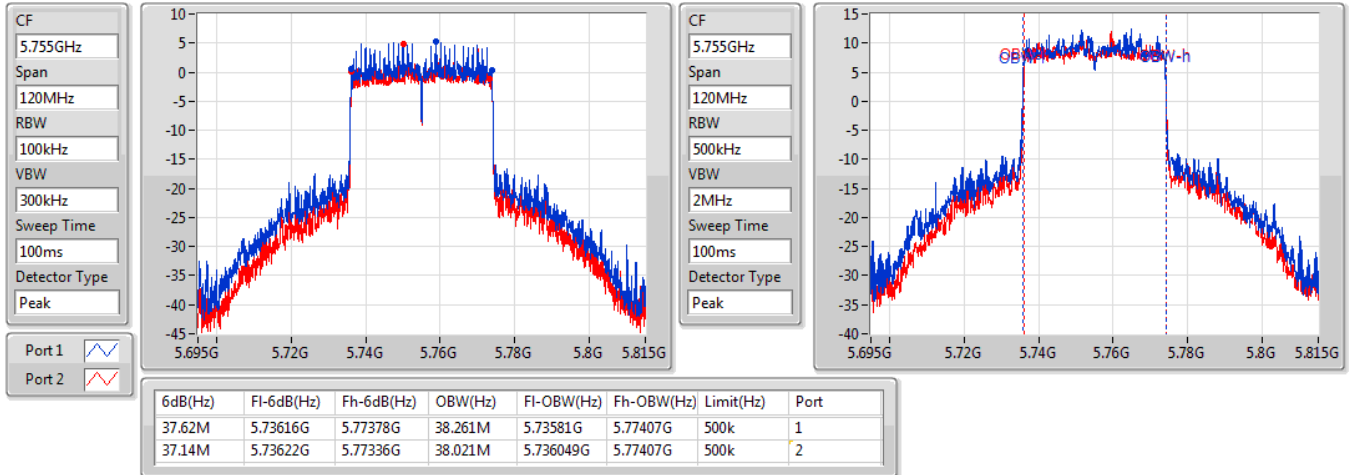


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5755MHz

19/12/2019



802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5795MHz

19/12/2019

