

FCC Test Report

FCC ID : QXO-AP460
Equipment : Wireless Access Point
Brand Name : Extreme Networks, Inc.
Model Name : AP460i, AP460e
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 Aug. 13, 2019, and testing was started from Aug. 26, 2019 and completed on Nov. 12, 2019. 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

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TEL : 886-3-3273456
FAX : 886-3-3270973
Report Template No.: HE1-D1 Ver.2.4
FCC ID: QXO-AP460

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: Jenny Yang

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
5.15-5.25GHz	802.11ac VHT20	20	4TX
5.725-5.85GHz	802.11ac VHT20	20	4TX
5.15-5.25GHz	802.11ac VHT40	40	4TX
5.725-5.85GHz	802.11ac VHT40	40	4TX
5.15-5.25GHz	802.11ac VHT80	80	4TX
5.725-5.85GHz	802.11ac VHT80	80	4TX
5.15-5.25GHz	802.11ax HEW20	20	4TX
5.725-5.85GHz	802.11ax HEW20	20	4TX
5.15-5.25GHz	802.11ax HEW40	40	4TX
5.725-5.85GHz	802.11ax HEW40	40	4TX
5.15-5.25GHz	802.11ax HEW80	80	4TX
5.725-5.85GHz	802.11ax HEW80	80	4TX

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
5.15-5.25GHz	802.11ac VHT20-BF	20	4TX

Band	Mode	BWch (MHz)	Nant
5.725-5.85GHz	802.11ac VHT20-BF	20	4TX
5.15-5.25GHz	802.11ac VHT40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT40-BF	40	4TX
5.15-5.25GHz	802.11ac VHT80-BF	80	4TX
5.725-5.85GHz	802.11ac VHT80-BF	80	4TX
5.15-5.25GHz	802.11ax HEW20-BF	20	4TX
5.725-5.85GHz	802.11ax HEW20-BF	20	4TX
5.15-5.25GHz	802.11ax HEW40-BF	40	4TX
5.725-5.85GHz	802.11ax HEW40-BF	40	4TX
5.15-5.25GHz	802.11ax HEW80-BF	80	4TX
5.725-5.85GHz	802.11ax HEW80-BF	80	4TX

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

(AP460i) Internal Antenna

Ant.	Brand	Model Number (P/N)	Antenna Type	Connector	Antenna Gain (dBi)			Remark
					2.4GHz	5GHz	BLE/Thread	
1	SENAO	5718A0462300	PIFA	IPEX	-	5.58	-	Radio 2
2	SENAO	5718A0463300	PIFA	IPEX	-	5.58	-	Radio 2
3	SENAO	5718A0465300	PIFA	IPEX	-	5.58	-	Radio 2
4	SENAO	5718A0464300	PIFA	IPEX	-	5.58	-	Radio 2
5	SENAO	5718A0458300	PIFA	IPEX	4.82	-	-	Radio 1
6	SENAO	5718A0459300	PIFA	IPEX	4.82	-	-	Radio 1
7	SENAO	5718A0460300	PIFA	IPEX	4.87	5.02	-	Radio 3
8	SENAO	5718A0461300	PIFA	IPEX	4.87	5.02	-	Radio 3
9	SENAO	5718A0466300	PIFA	IPEX	-	-	4.65	Radio 4

(AP460e) 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	RP SMA male	3.17	4.85	-
2	Extreme	ML-2452-APA2-02	Omni	RP SMA male	3.17	4.85	-
3	Extreme	ML-2452-HPA5-036	Omni	RP SMA male	3.9	5.7	-
4	Extreme	ML-2452-HPAG4A6-01	Omni	N male	4	7.3	-
5	Extreme	ML-2452-PNA5-01R	Panel	Type N-Male	4.5	5	-
6	Extreme	ML-2452-PTA4M4-036	Omni	Rev-Polarity SMA Male 4x	5	6.6	-
7	Extreme	ML-2452-HPAG5A8-01	Omni	N male	5	8	-
8	Extreme	WS-AO-DQ04360N	Omni	N male	5.5	6	-
9	Extreme	AI-DQ04360S	Omni	RP SMA male	5.5	6	-
10	Extreme	ML-2452-SEC6M4-036 / WS-AI-DQ05120	Panel	RP SMA male	6.92	7.23	-
11	Extreme	WS-AI-DE07025	Panel	RP SMA male	7.5	6.5	-
12	Extreme	ML-2452-PNA7-01R	Panel 1	Type N-Male	7.8	10.7	7.8
13	Extreme	WS-AI-DE10055	Panel 2	RP SMA male	10.5	7.5	-
14	Extreme	ML-2499-HPA8-01	Dipole	N male	-	-	8

Note 1: Group 7, 12 and 13 were measured during the test for WLAN 2.4G Mode.

Note 2: Group 12 and 14 were measured during the test for Bluetooth/Thread Mode.

Note 3: Group 7 and 12 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.

For IEEE 802.11 a/n/ac/ax mode (4TX/4RX)

Port 1, port 2, port 3 and port 4 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	AP460i	The "i" in AP460i indicates that it comes with internal antennas and the "e" in AP460e indicates that the access point comes with external antenna connectors.
2	AP460e	

1.1.5 Mode Test Duty Cycle

Non-Beamforming

Sample 1 & 2_Radio 2_1T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq \frac{1}{T}$
802.11a_Nss1,(6Mbps)_1TX	0.952	0.21	2.066m	1k
802.11ac VHT20_Nss1,(MCS0)_1TX	0.985	0.07	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ac VHT40_Nss1,(MCS0)_1TX	0.971	0.13	953.75u	3k
802.11ac VHT80_Nss1,(MCS0)_1TX	0.942	0.26	461.25u	3k
802.11ax HEW20_Nss1,(MCS0)_1TX	0.979	0.09	1.489m	1k
802.11ax HEW40_Nss1,(MCS0)_1TX	0.963	0.16	773.75u	3k
802.11ax HEW80_Nss1,(MCS0)_1TX	0.928	0.32	402.5u	3k

Sample 1 & 2_Radio 2_2T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq \frac{1}{T}$
802.11a_Nss1,(6Mbps)_2TX	0.951	0.22	2.066m	1k
802.11ac VHT20_Nss2,(MCS0)_2TX	0.972	0.12	990.625u	3k
802.11ac VHT40_Nss2,(MCS0)_2TX	0.947	0.24	501.563u	3k
802.11ac VHT80_Nss2,(MCS0)_2TX	0.902	0.45	257.813u	10k
802.11ax HEW20_Nss2,(MCS0)_2TX	0.963	0.16	781.25u	3k
802.11ax HEW40_Nss2,(MCS0)_2TX	0.931	0.31	423.438u	3k
802.11ax HEW80_Nss2,(MCS0)_2TX	0.891	0.5	242.187u	10k

Sample 1 & 2_Radio 2_4T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq$ 1/T
802.11a_Nss1,(6Mbps)_4TX	0.952	0.21	2.066m	1k
802.11ac VHT20_Nss1,(MCS0)_4TX	0.986	0.06	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ac VHT40_Nss1,(MCS0)_4TX	0.972	0.12	953.75u	3k
802.11ac VHT80_Nss1,(MCS0)_4TX	0.942	0.26	461.25u	3k
802.11ax HEW20_Nss1,(MCS0)_4TX	0.979	0.09	1.489m	1k
802.11ax HEW40_Nss1,(MCS0)_4TX	0.963	0.16	773.75u	3k
802.11ax HEW80_Nss1,(MCS0)_4TX	0.929	0.32	402.5u	3k

Sample 1 & 2_Radio 2_4T4S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq$ 1/T
802.11ac VHT20_Nss4,(MCS0)_4TX	0.949	0.23	526.25u	3k
802.11ac VHT40_Nss4,(MCS0)_4TX	0.909	0.41	281.25u	10k
802.11ac VHT80_Nss4,(MCS0)_4TX	0.851	0.7	161.25u	10k
802.11ax HEW20_Nss4,(MCS0)_4TX	0.932	0.31	437.5u	3k
802.11ax HEW40_Nss4,(MCS0)_4TX	0.895	0.48	261.25u	10k
802.11ax HEW80_Nss4,(MCS0)_4TX	0.842	0.75	170u	10k

Sample 1 & 2_Radio 3_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	0.972	0.12	954.688u	3k
802.11ac VHT80_Nss1,(MCS0)_1TX	0.943	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 1 & 2_Radio 3_2T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq$ 1/T
802.11a_Nss1,(6Mbps)_2TX	0.952	0.21	2.065m	1k
802.11ac VHT20_Nss2,(MCS0)_2TX	0.964	0.16	781.25u	3k
802.11ac VHT40_Nss2,(MCS0)_2TX	0.931	0.31	423.75u	3k
802.11ac VHT80_Nss2,(MCS0)_2TX	0.89	0.51	241.25u	10k
802.11ax HEW20_Nss2,(MCS0)_2TX	0.973	0.12	990u	3k
802.11ax HEW40_Nss2,(MCS0)_2TX	0.947	0.24	501.25u	3k
802.11ax HEW80_Nss2,(MCS0)_2TX	0.902	0.45	257.5u	10k

Beamforming
Sample 1_Radio 2

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq$ 1/T
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	0.902	0.45	1.95m	1k
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	0.906	0.43	2.798m	1k
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	0.88	0.56	3.43m	300
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	0.867	0.62	1.503m	1k
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	0.88	0.56	2.224m	1k
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	0.714	1.46	3.843m	300

Sample 1& 2_Radio 3

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq$ 1/T
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	0.889	0.51	1.95m	1k
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	0.908	0.42	2.798m	1k
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	0.919	0.37	3.43m	300
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	0.875	0.58	1.503m	1k
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	0.881	0.55	2.224m	1k
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	0.929	0.32	3.844m	300

**Sample 2_Radio 2**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq$ 1/T
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	0.888	0.52	1.95m	1k
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	0.902	0.45	2.798m	1k
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	0.906	0.43	3.43m	300
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	0.775	1.11	1.503m	1k
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	0.891	0.5	2.224m	1k
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	0.72	1.43	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	20.9~22.1°C / 60.4~64.2%	08/Nov/2019~12/Nov/2019
RF Conducted	TH06-HY	Tim Chen	23.1~25°C / 61~67%	26/Aug/2019~09/Nov/2019
Radiated	03CH03-HY	Edward Wand	22.2~22.2°C / 51.8~51.8%	07/Sep/2019~18/Oct/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
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Non-Beamforming_ Sample 1_Radio 2_1T1S

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	21.25
5200MHz	29
5240MHz	29.75
5745MHz	30
5785MHz	30
5825MHz	30
802.11ac VHT20_Nss1,(MCS0)_1TX	-
5180MHz	21.25
5200MHz	29
5240MHz	29.25
5745MHz	30
5785MHz	30
5825MHz	30
802.11ac VHT40_Nss1,(MCS0)_1TX	-
5190MHz	18.5
5230MHz	27.5
5755MHz	28
5795MHz	28.25
802.11ac VHT80_Nss1,(MCS0)_1TX	-
5210MHz	20
5775MHz	19.75
802.11ax HEW20_Nss1,(MCS0)_1TX	-



Mode	Power Setting
5180MHz	21.25
5200MHz	29
5240MHz	29.25
5745MHz	30
5785MHz	30
5825MHz	30
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5190MHz	18.5
5230MHz	27.5
5755MHz	28
5795MHz	28.25
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5210MHz	20
5775MHz	19.75

Sample 1_Radio 2_2T2S

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	19
5200MHz	26.25
5240MHz	26.5
5745MHz	29.25
5785MHz	30
5825MHz	30
802.11ac VHT20_Nss2,(MCS0)_2TX	-
5180MHz	19.25
5200MHz	25.5
5240MHz	22.75
5745MHz	30
5785MHz	30
5825MHz	30
802.11ac VHT40_Nss2,(MCS0)_2TX	-
5190MHz	17
5230MHz	23.75
5755MHz	24
5795MHz	25.75
802.11ac VHT80_Nss2,(MCS0)_2TX	-
5210MHz	15.75
5775MHz	19.5
802.11ax HEW20_Nss2,(MCS0)_2TX	-
5180MHz	19.25
5200MHz	25.5
5240MHz	22.75
5745MHz	30
5785MHz	30
5825MHz	30
802.11ax HEW40_Nss2,(MCS0)_2TX	-
5190MHz	17
5230MHz	23.75
5755MHz	24
5795MHz	25.75



Mode	Power Setting
802.11ax HEW80_Nss2,(MCS0)_2TX	-
5210MHz	15.75
5775MHz	19.5

Sample 1 Radio 2_4T1S

Mode	Power Setting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	18.75
5200MHz	18.75
5240MHz	18.75
5745MHz	28
5785MHz	28
5825MHz	28.5
802.11ac VHT20_Nss1,(MCS0)_4TX	-
5180MHz	17.75
5200MHz	18.75
5240MHz	18.75
5745MHz	27.5
5785MHz	27.5
5825MHz	27.75
802.11ac VHT40_Nss1,(MCS0)_4TX	-
5190MHz	15.25
5230MHz	22
5755MHz	22.25
5795MHz	26.25
802.11ac VHT80_Nss1,(MCS0)_4TX	-
5210MHz	15.5
5775MHz	17.75
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5180MHz	17.75
5200MHz	18.75
5240MHz	18.75
5745MHz	27.5
5785MHz	27.5
5825MHz	27.75
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5190MHz	15.25
5230MHz	22
5755MHz	22.25
5795MHz	26.25



Mode	Power Setting
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5210MHz	15.5
5775MHz	17.75

**Sample 1_Radio 2_4T4S**

Mode	Power Setting
802.11ac VHT20_Nss4,(MCS0)_4TX	-
5180MHz	19.75
5200MHz	23.5
5240MHz	23.75
5745MHz	26.25
5785MHz	28
5825MHz	28
802.11ac VHT40_Nss4,(MCS0)_4TX	-
5190MHz	15
5230MHz	20.5
5755MHz	24.5
5795MHz	26.5
802.11ac VHT80_Nss4,(MCS0)_4TX	-
5210MHz	14.75
5775MHz	19
802.11ax HEW20_Nss4,(MCS0)_4TX	-
5180MHz	19.75
5200MHz	23.5
5240MHz	23.75
5745MHz	26.25
5785MHz	28
5825MHz	28
802.11ax HEW40_Nss4,(MCS0)_4TX	-
5190MHz	15
5230MHz	20.5
5755MHz	24.5
5795MHz	26.5
802.11ax HEW80_Nss4,(MCS0)_4TX	-
5210MHz	14.75
5775MHz	19

Sample 1 Radio 3 1T1S

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	21.5
5200MHz	24.75
5240MHz	23
5745MHz	23.5
5785MHz	20.75
5825MHz	21
802.11ac VHT20_Nss1,(MCS0)_1TX	-
5180MHz	20.25
5200MHz	24
5240MHz	22.5
5745MHz	22.5
5785MHz	21.25
5825MHz	21.25
802.11ac VHT40_Nss1,(MCS0)_1TX	-
5190MHz	18.5
5230MHz	22.25
5755MHz	22.25
5795MHz	21.75
802.11ac VHT80_Nss1,(MCS0)_1TX	-
5210MHz	18.25
5775MHz	21.75
802.11ax HEW20_Nss1,(MCS0)_1TX	-
5180MHz	20.25
5200MHz	24
5240MHz	22.5
5745MHz	22.5
5785MHz	21.25
5825MHz	21.25
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5190MHz	18.5
5230MHz	22.25
5755MHz	22.25
5795MHz	21.75



Mode	Power Setting
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5210MHz	18.25
5775MHz	21.75

**Sample 1 Radio 3 2T2S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	18.5
5200MHz	24
5240MHz	23.25
5745MHz	23
5785MHz	21.5
5825MHz	20.5
802.11ac VHT20_Nss2,(MCS0)_2TX	-
5180MHz	19.25
5200MHz	23.75
5240MHz	23.5
5745MHz	22.5
5785MHz	21.25
5825MHz	21
802.11ac VHT40_Nss2,(MCS0)_2TX	-
5190MHz	17
5230MHz	22.25
5755MHz	21
5795MHz	20.5
802.11ac VHT80_Nss2,(MCS0)_2TX	-
5210MHz	16.25
5775MHz	21
802.11ax HEW20_Nss2,(MCS0)_2TX	-
5180MHz	19.25
5200MHz	23.75
5240MHz	23.5
5745MHz	22.5
5785MHz	21.25
5825MHz	21
802.11ax HEW40_Nss2,(MCS0)_2TX	-
5190MHz	17
5230MHz	22.25
5755MHz	21
5795MHz	20.5



Mode	Power Setting
802.11ax HEW80_Nss2,(MCS0)_2TX	-
5210MHz	16.25
5775MHz	21

**Sample 2 Radio 2 Omni_1T1S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	23.5
5200MHz	29
5240MHz	29.5
5745MHz	30
5785MHz	30
5825MHz	30
802.11ac VHT20_Nss1,(MCS0)_1TX	-
5180MHz	21.25
5200MHz	28
5240MHz	28.75
5745MHz	30
5785MHz	30
5825MHz	30
802.11ac VHT40_Nss1,(MCS0)_1TX	-
5190MHz	18.5
5230MHz	24.5
5755MHz	26
5795MHz	26.75
802.11ac VHT80_Nss1,(MCS0)_1TX	-
5210MHz	19.25
5775MHz	19.5
802.11ax HEW20_Nss1,(MCS0)_1TX	-
5180MHz	21.25
5200MHz	28
5240MHz	28.75
5745MHz	30
5785MHz	30
5825MHz	30
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5190MHz	18.5
5230MHz	24.5
5755MHz	26
5795MHz	26.75



Mode	Power Setting
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5210MHz	19.25
5775MHz	19.5

**Sample 2_Radio 2_Omni_2T2S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	22
5200MHz	22.5
5240MHz	22.5
5745MHz	27.5
5785MHz	27.5
5825MHz	27.5
802.11ac VHT20_Nss2,(MCS0)_2TX	
5180MHz	20
5200MHz	27
5240MHz	24
5745MHz	27
5785MHz	27
5825MHz	27
802.11ac VHT40_Nss2,(MCS0)_2TX	
5190MHz	18.5
5230MHz	24.25
5755MHz	26.5
5795MHz	26.5
802.11ac VHT80_Nss2,(MCS0)_2TX	
5210MHz	19
5775MHz	20
802.11ax HEW20_Nss2,(MCS0)_2TX	
5180MHz	20
5200MHz	27
5240MHz	24
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss2,(MCS0)_2TX	
5190MHz	18.5
5230MHz	24.25
5755MHz	26.5
5795MHz	26.5



Mode	Power Setting
802.11ax HEW80_Nss2,(MCS0)_2TX	
5210MHz	19
5775MHz	20

**Sample 2_Radio 2_Omni_4T1S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	15.75
5200MHz	16.25
5240MHz	16.25
5745MHz	23.75
5785MHz	23.75
5825MHz	23.75
802.11ac VHT20_Nss1,(MCS0)_4TX	
5180MHz	16
5200MHz	16
5240MHz	16.25
5745MHz	23
5785MHz	23
5825MHz	23
802.11ac VHT40_Nss1,(MCS0)_4TX	
5190MHz	16.5
5230MHz	19.75
5755MHz	23
5795MHz	23
802.11ac VHT80_Nss1,(MCS0)_4TX	
5210MHz	16.5
5775MHz	17.75
802.11ax HEW20_Nss1,(MCS0)_4TX	
5180MHz	16
5200MHz	16
5240MHz	16.25
5745MHz	23
5785MHz	23
5825MHz	23
802.11ax HEW40_Nss1,(MCS0)_4TX	
5190MHz	16.5
5230MHz	19.75
5755MHz	23
5795MHz	23



Mode	Power Setting
802.11ax HEW80_Nss1,(MCS0)_4TX	
5210MHz	16.5
5775MHz	17.75

**Sample 2_Radio 2_Omni_4T4S**

Mode	Power Setting
802.11ac VHT20_Nss4,(MCS0)_4TX	-
5180MHz	18.75
5200MHz	24.75
5240MHz	25
5745MHz	23
5785MHz	23
5825MHz	23.25
802.11ac VHT40_Nss4,(MCS0)_4TX	-
5190MHz	15.25
5230MHz	22
5755MHz	21.75
5795MHz	23.75
802.11ac VHT80_Nss4,(MCS0)_4TX	-
5210MHz	16.25
5775MHz	17.75
802.11ax HEW20_Nss4,(MCS0)_4TX	-
5180MHz	18.75
5200MHz	24.75
5240MHz	25
5745MHz	23
5785MHz	23
5825MHz	23.25
802.11ax HEW40_Nss4,(MCS0)_4TX	-
5190MHz	15.25
5230MHz	22
5755MHz	21.75
5795MHz	23.75
802.11ax HEW80_Nss4,(MCS0)_4TX	-
5210MHz	16.25
5775MHz	17.75

**Sample 2_Radio 2_Panel 1_1T1S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	22.25
5200MHz	27.25
5240MHz	27.25
5745MHz	29.25
5785MHz	29.5
5825MHz	29.75
802.11ac VHT20_Nss1,(MCS0)_1TX	-
5180MHz	20.75
5200MHz	26.75
5240MHz	27
5745MHz	28.75
5785MHz	28.75
5825MHz	29
802.11ac VHT40_Nss1,(MCS0)_1TX	-
5190MHz	18.75
5230MHz	25.5
5755MHz	25.5
5795MHz	28.25
802.11ac VHT80_Nss1,(MCS0)_1TX	-
5210MHz	19
5775MHz	19.75
802.11ax HEW20_Nss1,(MCS0)_1TX	-
5180MHz	20.75
5200MHz	26.75
5240MHz	27
5745MHz	28.75
5785MHz	28.75
5825MHz	29
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5190MHz	18.75
5230MHz	25.5
5755MHz	25.5
5795MHz	28.25



Mode	Power Setting
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5210MHz	19
5775MHz	19.75

**Sample 2_Radio 2_Panel 1_2T2S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	18.5
5200MHz	18.5
5240MHz	18.5
5745MHz	19.75
5785MHz	19.75
5825MHz	19.75
802.11ac VHT20_Nss2,(MCS0)_2TX	-
5180MHz	20.25
5200MHz	21.75
5240MHz	21.5
5745MHz	22
5785MHz	22
5825MHz	22.25
802.11ac VHT40_Nss2,(MCS0)_2TX	-
5190MHz	17.5
5230MHz	21.25
5755MHz	21.75
5795MHz	22
802.11ac VHT80_Nss2,(MCS0)_2TX	-
5210MHz	18.5
5775MHz	19
802.11ax HEW20_Nss2,(MCS0)_2TX	-
5180MHz	20.25
5200MHz	21.75
5240MHz	21.5
5745MHz	22
5785MHz	22
5825MHz	22.25
802.11ax HEW40_Nss2,(MCS0)_2TX	-
5190MHz	17.5
5230MHz	21.25
5755MHz	21.75
5795MHz	22



Mode	Power Setting
802.11ax HEW80_Nss2,(MCS0)_2TX	-
5210MHz	18.5
5775MHz	19

**Sample 2_Radio 2_Panel 1_4T1S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	12.5
5200MHz	12.5
5240MHz	12.5
5745MHz	19
5785MHz	19
5825MHz	19.5
802.11ac VHT20_Nss1,(MCS0)_4TX	
5180MHz	12.75
5200MHz	12.75
5240MHz	12.75
5745MHz	18.5
5785MHz	18.5
5825MHz	18.75
802.11ac VHT40_Nss1,(MCS0)_4TX	
5190MHz	15.5
5230MHz	15.5
5755MHz	18.25
5795MHz	18.75
802.11ac VHT80_Nss1,(MCS0)_4TX	
5210MHz	17.25
5775MHz	18
802.11ax HEW20_Nss1,(MCS0)_4TX	
5180MHz	12.75
5200MHz	12.75
5240MHz	12.75
5745MHz	18.5
5785MHz	18.5
5825MHz	18.75
802.11ax HEW40_Nss1,(MCS0)_4TX	
5190MHz	15.5
5230MHz	15.5
5755MHz	18.25
5795MHz	18.75



Mode	Power Setting
802.11ax HEW80_Nss1,(MCS0)_4TX	
5210MHz	17.25
5775MHz	18

**Sample 2_Radio 2_Panel 1_4T4S**

Mode	Power Setting
802.11ac VHT20_Nss4,(MCS0)_4TX	-
5180MHz	18.5
5200MHz	18.5
5240MHz	18.5
5745MHz	18.25
5785MHz	18.25
5825MHz	18.75
802.11ac VHT40_Nss4,(MCS0)_4TX	
5190MHz	16.5
5230MHz	18.5
5755MHz	18.5
5795MHz	18.75
802.11ac VHT80_Nss4,(MCS0)_4TX	
5210MHz	16.5
5775MHz	19.25
802.11ax HEW20_Nss4,(MCS0)_4TX	
5180MHz	18.5
5200MHz	18.5
5240MHz	18.5
5745MHz	18.25
5785MHz	18.25
5825MHz	18.75
802.11ax HEW40_Nss4,(MCS0)_4TX	
5190MHz	16.5
5230MHz	18.5
5755MHz	18.5
5795MHz	18.75
802.11ax HEW80_Nss4,(MCS0)_4TX	
5210MHz	16.5
5775MHz	19.25

Sample 2_Radio 3_Omni_1T1S

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	19.25
5200MHz	22.25
5240MHz	23.75
5745MHz	23.25
5785MHz	22.75
5825MHz	24
802.11ac VHT20_Nss1,(MCS0)_1TX	
5180MHz	18.25
5200MHz	21
5240MHz	22.5
5745MHz	24.75
5785MHz	24
5825MHz	24.25
802.11ac VHT40_Nss1,(MCS0)_1TX	
5190MHz	18.75
5230MHz	23.25
5755MHz	24
5795MHz	25.25
802.11ac VHT80_Nss1,(MCS0)_1TX	
5210MHz	15.5
5775MHz	22
802.11ax HEW20_Nss1,(MCS0)_1TX	
5180MHz	18.25
5200MHz	21
5240MHz	22.5
5745MHz	24.75
5785MHz	24
5825MHz	24.25
802.11ax HEW40_Nss1,(MCS0)_1TX	
5190MHz	18.75
5230MHz	23.25
5755MHz	24
5795MHz	25.25



Mode	PowerSetting
802.11ax HEW80_Nss1,(MCS0)_1TX	
5210MHz	15.5
5775MHz	22

Sample 2_Radio 3_Omni_2T2S

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	16.5
5200MHz	18.75
5240MHz	18.5
5745MHz	24
5785MHz	21
5825MHz	23.25
802.11ac VHT20_Nss2,(MCS0)_2TX	
5180MHz	16.25
5200MHz	19.5
5240MHz	19.5
5745MHz	23.75
5785MHz	23.75
5825MHz	24
802.11ac VHT40_Nss2,(MCS0)_2TX	
5190MHz	17.5
5230MHz	22
5755MHz	23.5
5795MHz	23.75
802.11ac VHT80_Nss2,(MCS0)_2TX	
5210MHz	12.25
5775MHz	21
802.11ax HEW20_Nss2,(MCS0)_2TX	
5180MHz	16.25
5200MHz	19.5
5240MHz	19.5
5745MHz	23.75
5785MHz	23.75
5825MHz	24
802.11ax HEW40_Nss2,(MCS0)_2TX	
5190MHz	17.5
5230MHz	22
5755MHz	23.5
5795MHz	23.75



Mode	PowerSetting
802.11ax HEW80_Nss2,(MCS0)_2TX	
5210MHz	12.25
5775MHz	21

**Sample 2 Radio 3 Panel 1_1T1S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	17.75
5200MHz	22
5240MHz	24
5745MHz	23.25
5785MHz	23.5
5825MHz	23.5
802.11ac VHT20_Nss1,(MCS0)_1TX	-
5180MHz	18
5200MHz	21.75
5240MHz	23.75
5745MHz	23.25
5785MHz	23.5
5825MHz	23.25
802.11ac VHT40_Nss1,(MCS0)_1TX	-
5190MHz	18
5230MHz	23.5
5755MHz	23.25
5795MHz	23.25
802.11ac VHT80_Nss1,(MCS0)_1TX	-
5210MHz	14
5775MHz	20.25
802.11ax HEW20_Nss1,(MCS0)_1TX	-
5180MHz	18
5200MHz	21.75
5240MHz	23.75
5745MHz	23.25
5785MHz	23.5
5825MHz	23.25
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5190MHz	18
5230MHz	23.5
5755MHz	23.25
5795MHz	23.25



Mode	Power Setting
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5210MHz	14
5775MHz	20.25

**Sample 2 Radio 3 Panel 1 2T2S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	15.75
5200MHz	18.25
5240MHz	18.25
5745MHz	21.25
5785MHz	21.5
5825MHz	21.5
802.11ac VHT20_Nss2,(MCS0)_2TX	-
5180MHz	15.75
5200MHz	19.25
5240MHz	19
5745MHz	20.75
5785MHz	21.25
5825MHz	21.25
802.11ac VHT40_Nss2,(MCS0)_2TX	-
5190MHz	16.25
5230MHz	21.25
5755MHz	21
5795MHz	21
802.11ac VHT80_Nss2,(MCS0)_2TX	-
5210MHz	15.25
5775MHz	20
802.11ax HEW20_Nss2,(MCS0)_2TX	-
5180MHz	15.75
5200MHz	19.25
5240MHz	19
5745MHz	20.75
5785MHz	21.25
5825MHz	21.25
802.11ax HEW40_Nss2,(MCS0)_2TX	-
5190MHz	16.25
5230MHz	21.25
5755MHz	21
5795MHz	21



Mode	Power Setting
802.11ax HEW80_Nss2,(MCS0)_2TX	-
5210MHz	15.25
5775MHz	20

**Beamforming****Sample 1_Radio 2_4T1S**

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-
5180MHz	17
5200MHz	17
5240MHz	17
5745MHz	16.25
5785MHz	16.5
5825MHz	16.75
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-
5190MHz	13.75
5230MHz	17.25
5755MHz	16.75
5795MHz	16.75
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-
5210MHz	15
5775MHz	16
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5180MHz	17
5200MHz	17
5240MHz	17
5745MHz	16.25
5785MHz	16.5
5825MHz	16.75
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5190MHz	13.75
5230MHz	17.25
5755MHz	16.75
5795MHz	16.75
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5210MHz	15
5775MHz	16

**Sample 1_Radio 3_2T1S**

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
5180MHz	15.5
5200MHz	19.5
5240MHz	21
5745MHz	17
5785MHz	17
5825MHz	17
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-
5190MHz	11.25
5230MHz	17
5755MHz	20.75
5795MHz	21.25
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-
5210MHz	11.5
5775MHz	18.25
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
5180MHz	15.5
5200MHz	19.5
5240MHz	21
5745MHz	17
5785MHz	17
5825MHz	17
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
5190MHz	11.25
5230MHz	17
5755MHz	20.75
5795MHz	21.25
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-
5210MHz	11.5
5775MHz	18.25

**Sample 2_Radio 2_Omni_4T1S**

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-
5180MHz	13
5200MHz	13.25
5240MHz	14
5745MHz	14.75
5785MHz	15
5825MHz	15.25
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-
5190MHz	8.5
5230MHz	15.25
5755MHz	15.25
5795MHz	15.25
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-
5210MHz	8.75
5775MHz	13
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5180MHz	13
5200MHz	13.25
5240MHz	14
5745MHz	14.75
5785MHz	15
5825MHz	15.25
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5190MHz	8.5
5230MHz	15.25
5755MHz	15.25
5795MHz	15.25
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5210MHz	8.75
5775MHz	13

**Sample 2_Radio 2_Panel 1_4T1S**

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-
5180MHz	11.5
5200MHz	11.5
5240MHz	11.5
5745MHz	10.75
5785MHz	10.75
5825MHz	10.75
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	
5190MHz	10.5
5230MHz	11.25
5755MHz	11
5795MHz	11
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	
5210MHz	11
5775MHz	11
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	
5180MHz	11.5
5200MHz	11.5
5240MHz	11.5
5745MHz	10.75
5785MHz	10.75
5825MHz	10.75
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	
5190MHz	10.5
5230MHz	11.25
5755MHz	11
5795MHz	11
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	
5210MHz	11
5775MHz	11

**Sample 2_Radio 3_Omni_2T1S**

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
5180MHz	17
5200MHz	15
5240MHz	16.75
5745MHz	20
5785MHz	22
5825MHz	22
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	
5190MHz	14
5230MHz	18
5755MHz	20.5
5795MHz	22
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	
5210MHz	12.75
5775MHz	19
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	
5180MHz	17
5200MHz	15
5240MHz	16.75
5745MHz	20
5785MHz	22
5825MHz	22
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	
5190MHz	14
5230MHz	18
5755MHz	20.5
5795MHz	22
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	
5210MHz	12.75
5775MHz	19

**Sample 2_Radio 3_Panel 1_2T1S**

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_2TX	-
5180MHz	17.5
5200MHz	19.75
5240MHz	19.75
5745MHz	19.25
5785MHz	19.25
5825MHz	19.5
802.11ac VHT40-BF_Nss1,(MCS0)_2TX	-
5190MHz	15
5230MHz	19.5
5755MHz	19.25
5795MHz	19.25
802.11ac VHT80-BF_Nss1,(MCS0)_2TX	-
5210MHz	14.5
5775MHz	18.25
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
5180MHz	17.5
5200MHz	19.75
5240MHz	19.75
5745MHz	19.25
5785MHz	19.25
5825MHz	19.5
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
5190MHz	15
5230MHz	19.5
5755MHz	19.25
5795MHz	19.25
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-
5210MHz	14.5
5775MHz	18.25

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_Radio2)
2	PoE mode (Non-Beamforming_Sample 1_Radio3)
3	PoE mode (Non-Beamforming_Sample 2_Radio2)
4	PoE mode (Non-Beamforming_Sample 2_Radio3)
5	PoE mode (Beamforming_Sample 1_Radio2)
6	PoE mode (Beamforming_Sample 1_Radio3)
7	PoE mode (Beamforming_Sample 2_Radio2)
8	PoE mode (Beamforming_Sample 2_Radio3)

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_outdoor_Sample 1_Radio 2_1T1S)
2	PoE Mode (Non-Beamforming_outdoor_Sample 1_Radio 2_2T2S)
3	PoE Mode (Non-Beamforming_outdoor_Sample 1_Radio 2_4T1S)
4	PoE Mode (Non-Beamforming_outdoor_Sample 1_Radio 2_4T4S)
5	PoE Mode (Non-Beamforming_outdoor_Sample 1_Radio 3_1T1S)
6	PoE Mode (Non-Beamforming_outdoor_Sample 1_Radio 3_2T2S)
7	PoE Mode (Non-Beamforming_outdoor_Sample 2_Radio 2_Omni_1T1S)
8	PoE Mode (Non-Beamforming_outdoor_Sample 2_Radio 2_Omni_2T2S)
9	PoE Mode (Non-Beamforming_outdoor_Sample 2_Radio 2_Omni_4T1S)
10	PoE Mode (Non-Beamforming_outdoor_Sample 2_Radio 2_Omni_4T4S)

11	PoE Mode (Non-Beamforming_outdoor_Sample 2_Radio 2_Panel 1_1T1S)		
12	PoE Mode (Non-Beamforming_outdoor_Sample 2_Radio 2_Panel 1_2T2S)		
13	PoE Mode (Non-Beamforming_outdoor_Sample 2_Radio 2_Panel 1_4T1S)		
14	PoE Mode (Non-Beamforming_outdoor_Sample 2_Radio 2_Panel 1_4T4S)		
15	PoE Mode (Non-Beamforming_outdoor_Sample 2_Radio 3_Omni_1T1S)		
16	PoE Mode (Non-Beamforming_outdoor_Sample 2_Radio 3_Omni_2T2S)		
17	PoE Mode (Non-Beamforming_outdoor_Sample 2_Radio 3_Panel 1_1T1S)		
18	PoE Mode (Non-Beamforming_outdoor_Sample 2_Radio 3_Panel 1_2T2S)		
19	PoE Mode (Beamforming_outdoor_Sample 1_Radio 2_4T1S)		
20	PoE Mode (Beamforming_outdoor_Sample 1_Radio 3_2T1S)		
21	PoE Mode (Beamforming_outdoor_Sample 2_Radio 2_Omni_4T1S)		
22	PoE Mode (Beamforming_outdoor_Sample 2_Radio 2_Panel 1_4T1S)		
23	PoE Mode (Beamforming_outdoor_Sample 2_Radio 3_Omni_2T1S)		
24	PoE Mode (Beamforming_outdoor_Sample 2_Radio 3_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	WLAN 2.4G+ WLAN 5G+ WLAN 2.4G+Thread
2	WLAN 2.4G+ WLAN 5G+ WLAN 2.4G+BT
3	WLAN 2.4G+ WLAN 5G+ WLAN 5G+Thread
4	WLAN 2.4G+ WLAN 5G+ WLAN 5G+BT
Refer to Sporton Test Report No.: FA970235 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	LAN Cable	Power Sync	CAT-6E-01	-
3	LAN Cable	Power Sync	CAT-6E-10	-
4	PoE	EnGenius	EPA5006GP	-
5	AC Power Cable	-	-	-
6	Notebook (remote)	DELL	M-S69	-
7	LAN Cable(remote)	Power Sync	CAT-6E-01	-
8	Adapter for Notebook (remote)	DELL	M-S69	-

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

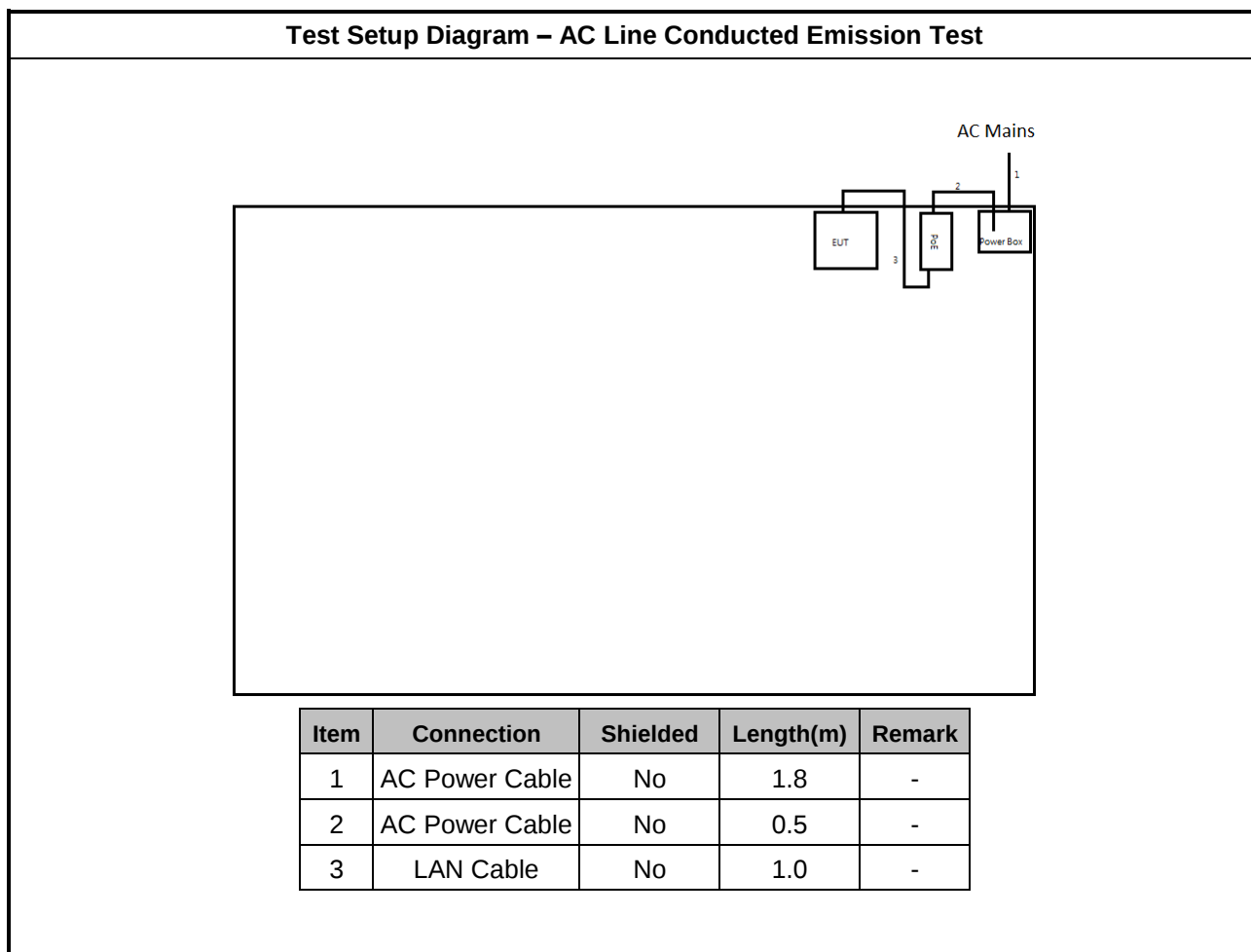
Support Equipment – RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC
3	Notebook	DELL	E5410	DoC
4	Adapter for NB	DELL	HA65NM130	DoC
5	PoE	EnGenius	EPA5006GP	-

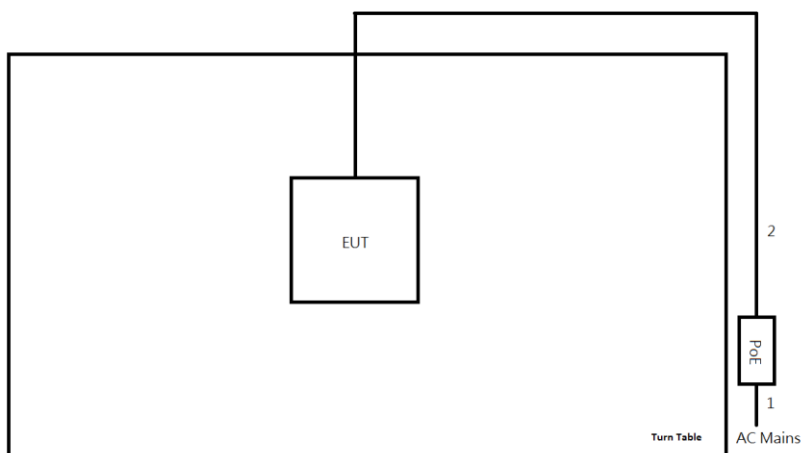
Note: Support equipment No.5 was provided by customer.

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 (remote)	EnGenius	EPA5006GP	-
5	AC Power Cable (remote)	-	-	-
6	Notebook (remote)	DELL	M-S69	-
7	LAN Cable (remote)	Power Sync	CAT-6E-01	-
8	Adapter for Notebook (remote)	DELL	M-S69	-

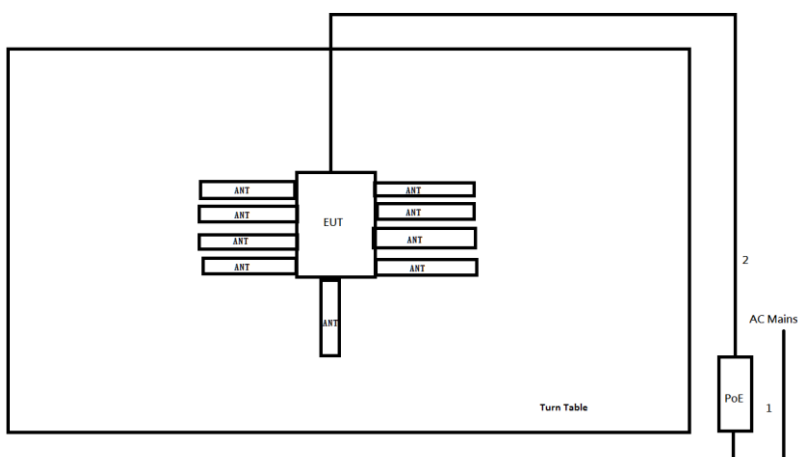
Note: Support equipment No.4, 5 were provided by customer.

2.5 Test Setup Diagram

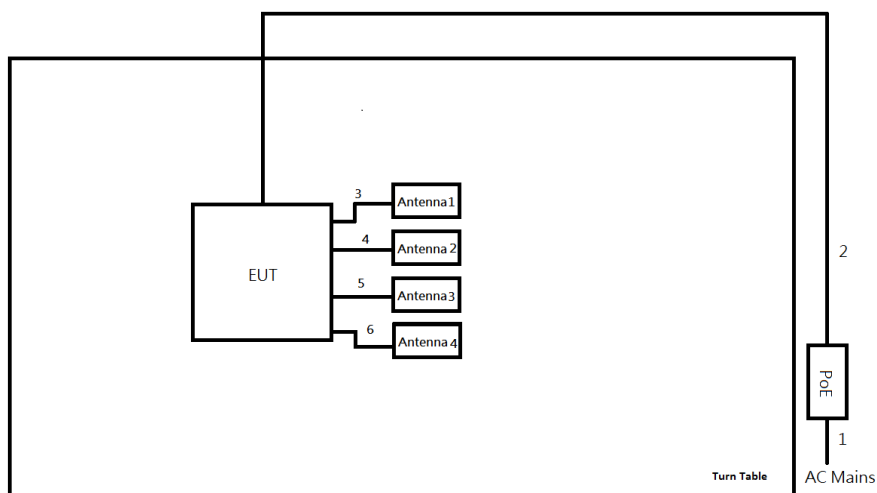


Test Setup Diagram - Radiated Test (Sample 1)


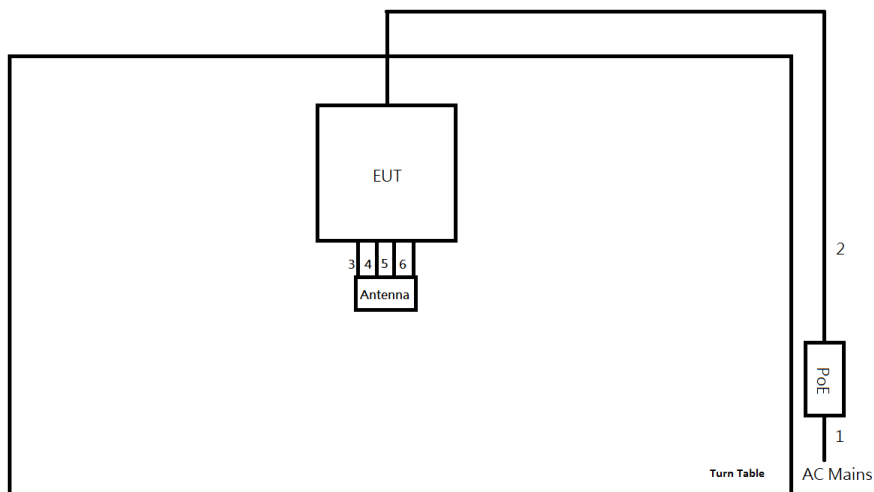
Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	0.5	-
2	LAN Cable	No	10.0	-

Test Setup Diagram - Radiated Test (Sample 2_Omni)


Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	0.5	-
2	LAN Cable	No	10.0	-

Test Setup Diagram - Radiated Test (Sample 2_Panel 1)


Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	0.5	-
2	LAN Cable	No	10.0	-
3	Antenna Cable	No	0.5	-
4	Antenna Cable	No	0.5	-
5	Antenna Cable	No	0.5	-
6	Antenna Cable	No	0.5	-

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


Item	Connection	Shielded	Length(m)	Remark
1	AC Power Cable	No	0.5	-
2	LAN Cable	No	10.0	-
3	Antenna Cable	No	0.5	-
4	Antenna Cable	No	0.5	-
5	Antenna Cable	No	0.5	-
6	Antenna Cable	No	0.5	-

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.		

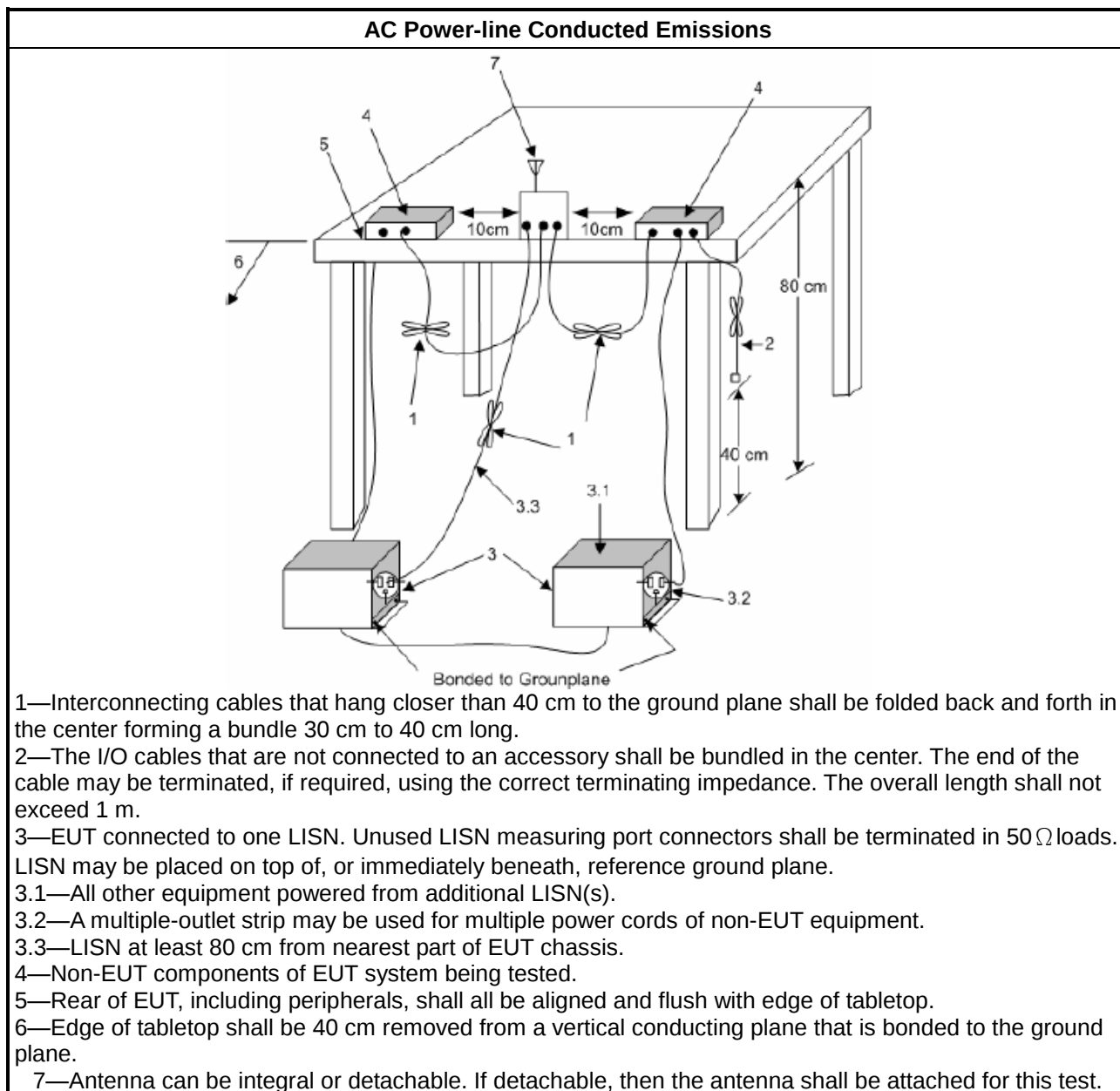
3.1.2 Measuring Instruments

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.

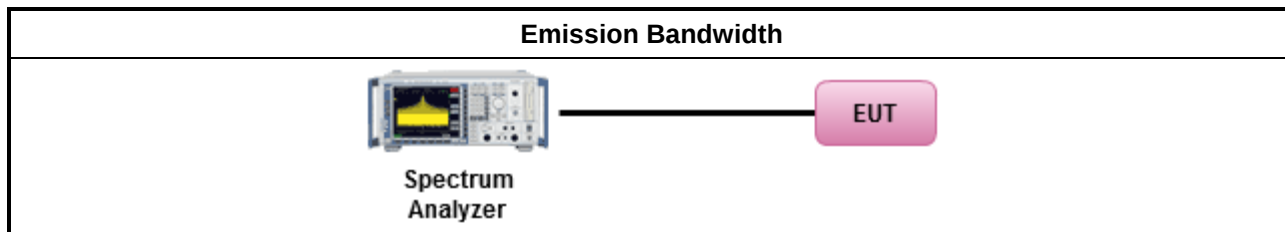
3.2.2 Measuring Instruments

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 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 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.	

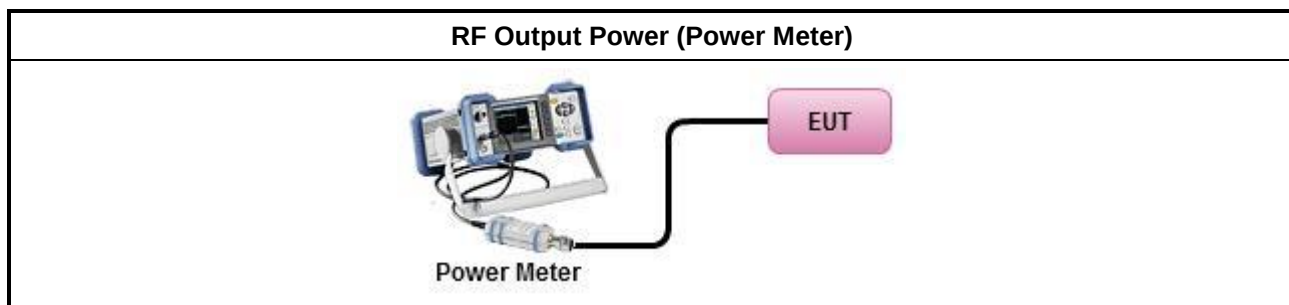
3.3.2 Measuring Instruments

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 the 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.	

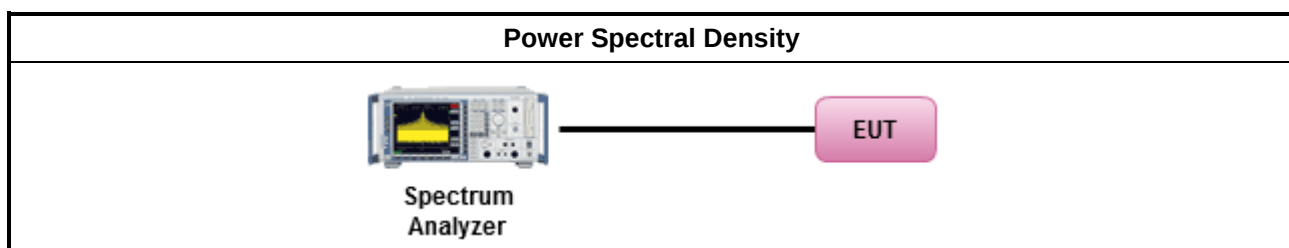
3.4.2 Measuring Instruments

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).	

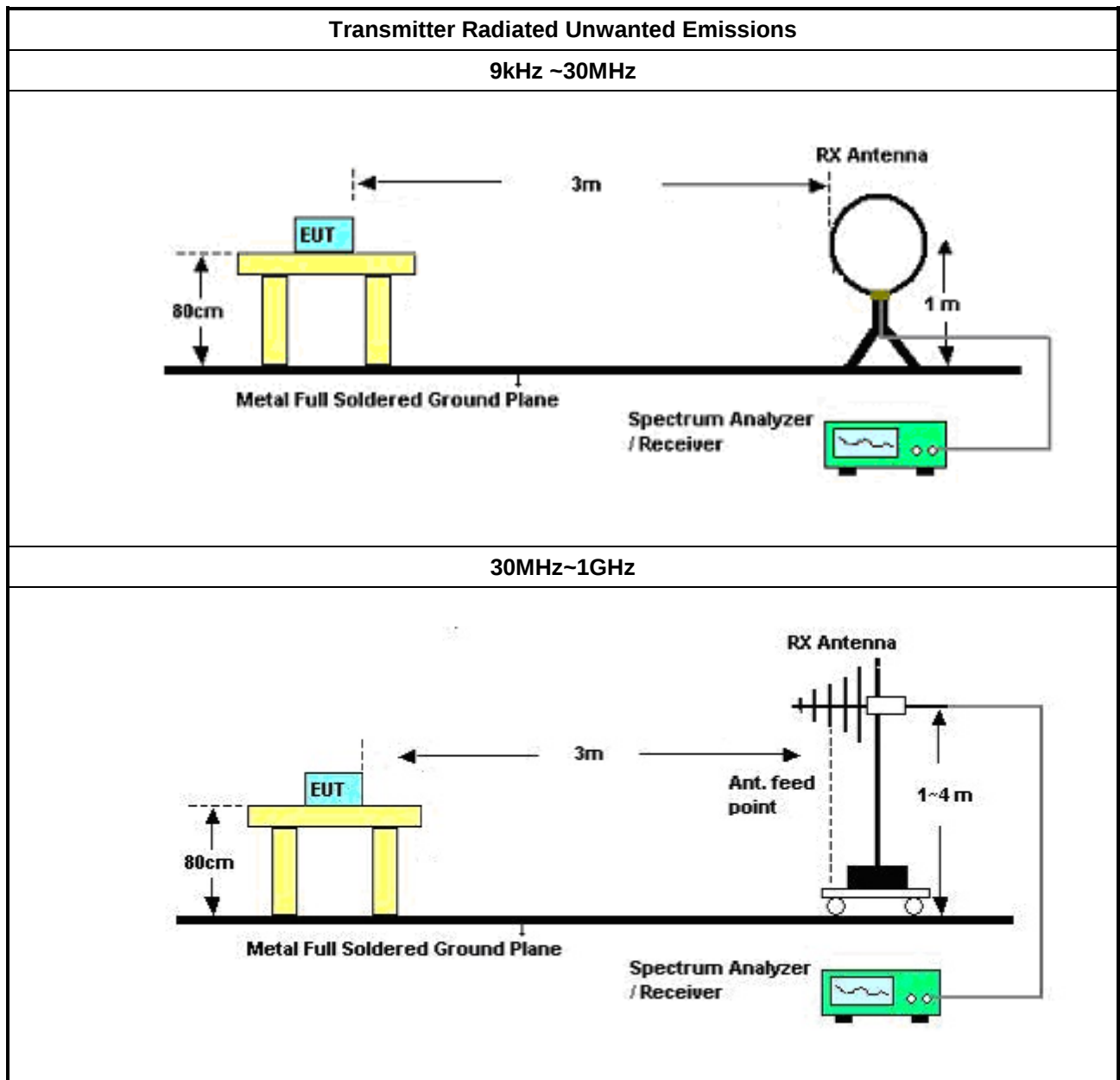
3.5.2 Measuring Instruments

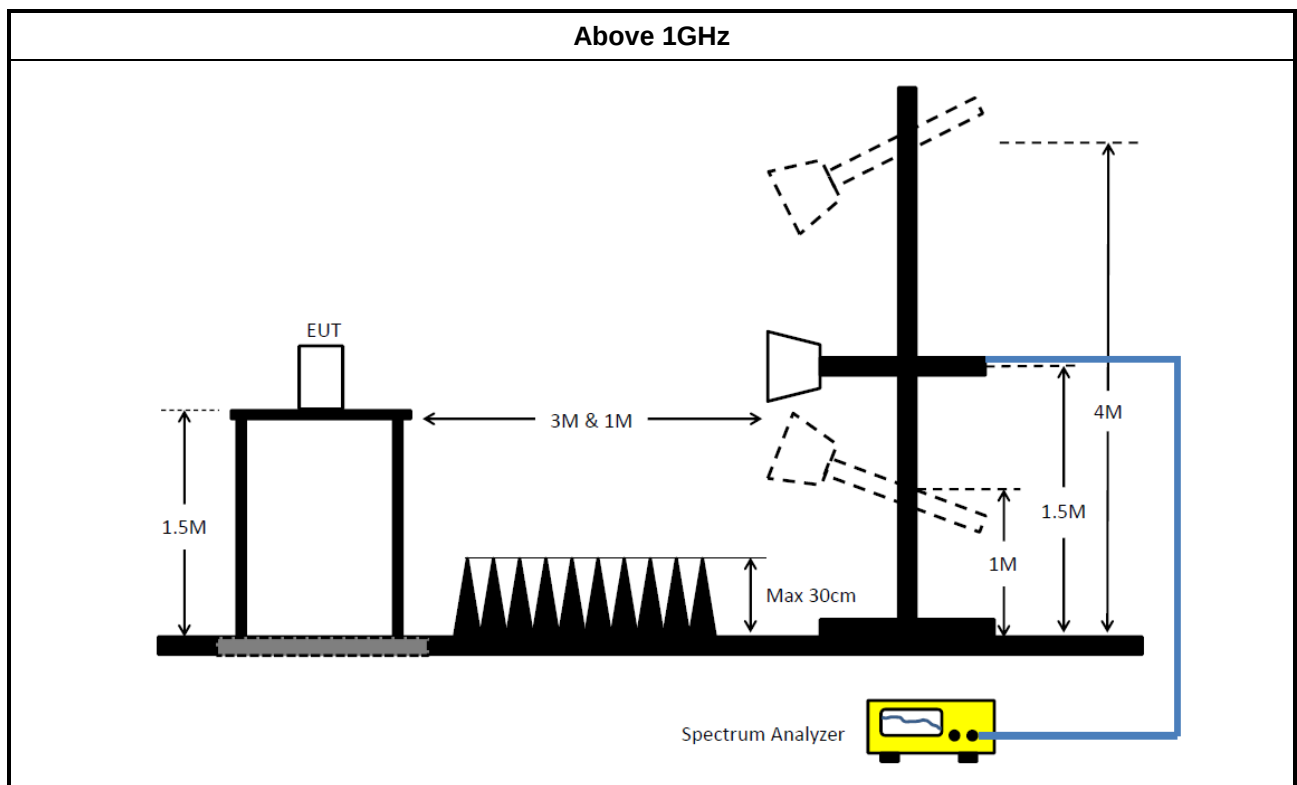
Refer a test equipment and calibration data table in this test report.

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



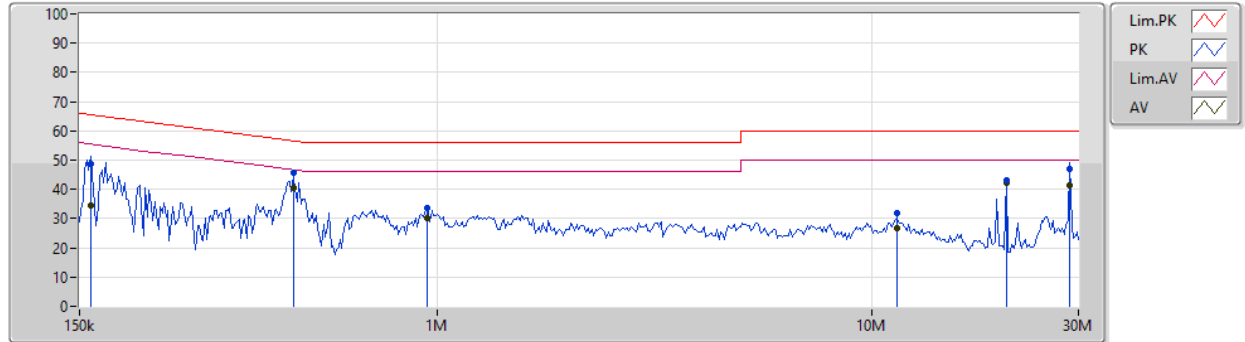
AC Power-line Conducted Emissions **Non Beamforming_Sample 1_Radio2**

Appendix A.1

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	Non Beamforming ; Sample 1 ; PoE mode ; Radio2 WIFI 5G TX		

08/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	159.228k	48.70	65.50	-16.80	19.48	Neutral	-	29.22	9.60	0.01	9.87			
AV	159.228k	34.30	55.50	-21.20	19.48	Neutral	-	14.82	9.60	0.01	9.87			
QP	466.367k	45.62	56.57	-10.95	19.48	Neutral	-	26.14	9.59	0.01	9.88			
AV	466.367k	40.63	46.57	-5.94	19.48	Neutral	"Worst"	21.15	9.59	0.01	9.88			
QP	945.247k	33.80	56.00	-22.20	19.49	Neutral	-	14.31	9.59	0.02	9.88			
AV	945.247k	30.15	46.00	-15.85	19.49	Neutral	-	10.66	9.59	0.02	9.88			
QP	11.487M	31.69	60.00	-28.31	19.64	Neutral	-	12.05	9.67	0.08	9.89			
AV	11.487M	26.77	50.00	-23.23	19.64	Neutral	-	7.13	9.67	0.08	9.89			
QP	20.457M	43.05	60.00	-16.95	19.69	Neutral	-	23.36	9.68	0.11	9.90			
AV	20.457M	42.16	50.00	-7.84	19.69	Neutral	-	22.47	9.68	0.11	9.90			
QP	28.693M	46.93	60.00	-13.07	19.70	Neutral	-	27.23	9.67	0.13	9.90			
AV	28.693M	41.48	50.00	-8.52	19.70	Neutral	-	21.78	9.67	0.13	9.90			



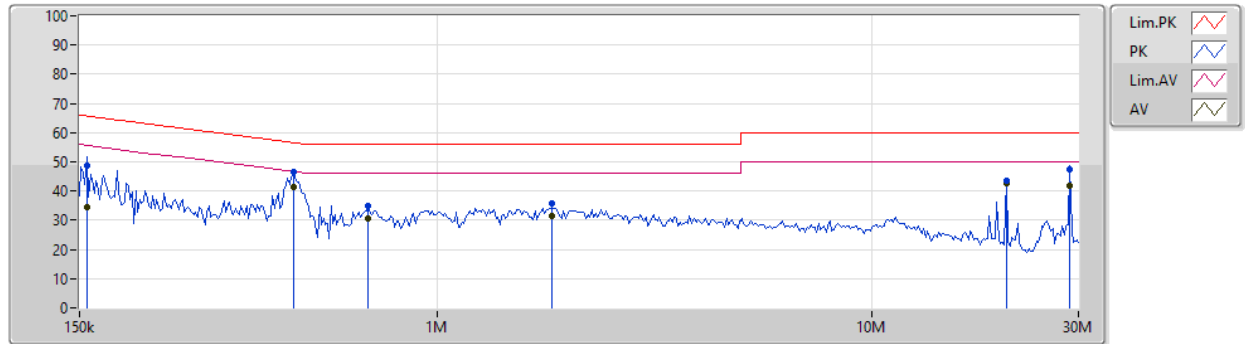
AC Power-line Conducted Emissions_ Non Beamforming_Sample 1_Radio2

Appendix A.1

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Non Beamforming ; Sample 1 ; PoE mode ; Radio2 WIFI 5G TX		

08/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	156.091k	48.70	65.67	-16.97	19.58	Line	-	29.12	9.60	0.11	9.87			
AV	156.091k	34.55	55.67	-21.12	19.58	Line	-	14.97	9.60	0.11	9.87			
QP	466.367k	46.57	56.57	-10.00	19.59	Line	-	26.98	9.59	0.13	9.87			
AV	466.367k	41.47	46.57	-5.10	19.59	Line	"Worst"	21.88	9.59	0.13	9.87			
QP	694.357k	35.05	56.00	-20.95	19.59	Line	-	15.46	9.60	0.12	9.87			
AV	694.357k	30.54	46.00	-15.46	19.59	Line	-	10.95	9.60	0.12	9.87			
QP	1.841M	35.79	56.00	-20.21	19.63	Line	-	16.16	9.62	0.14	9.87			
AV	1.841M	31.37	46.00	-14.63	19.63	Line	-	11.74	9.62	0.14	9.87			
QP	20.457M	43.71	60.00	-16.29	19.89	Line	-	23.82	9.63	0.37	9.89			
AV	20.457M	42.56	50.00	-7.44	19.89	Line	-	22.67	9.63	0.37	9.89			
QP	28.693M	47.47	60.00	-12.53	19.86	Line	-	27.61	9.54	0.44	9.88			
AV	28.693M	41.75	50.00	-8.25	19.86	Line	-	21.89	9.54	0.44	9.88			



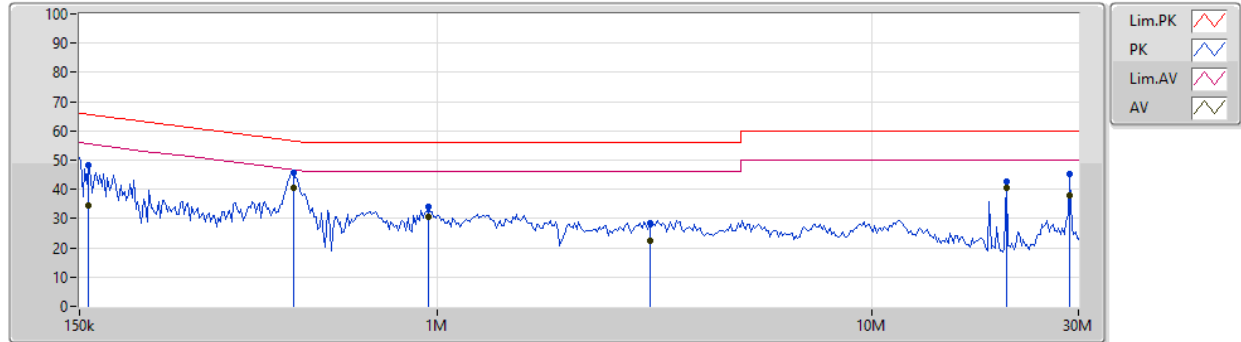
AC Power-line Conducted Emissions_ Non Beamforming_Sample 1_Radio3

Appendix A.2

AC Power-line Conducted Emissions Result

Operating Mode	2	Power Phase	Neutral
Operating Function	Non Beamforming ; Sample 1 ; PoE mode; Radio3 WIFI 5G TX		

08/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	157.652k	48.49	65.58	-17.09	19.58	Neutral	-	28.91	9.60	0.11	9.87			
AV	157.652k	34.41	55.58	-21.17	19.58	Neutral	-	14.83	9.60	0.11	9.87			
QP	466.367k	45.82	56.57	-10.75	19.59	Neutral	-	26.23	9.59	0.13	9.87			
AV	466.367k	40.63	46.57	-5.94	19.59	Neutral	"Worst"	21.04	9.59	0.13	9.87			
QP	954.7k	33.84	56.00	-22.16	19.58	Neutral	-	14.26	9.59	0.11	9.88			
AV	954.7k	30.51	46.00	-15.49	19.58	Neutral	-	10.93	9.59	0.11	9.88			
QP	3.089M	28.41	56.00	-27.59	19.66	Neutral	-	8.75	9.61	0.17	9.88			
AV	3.089M	22.35	46.00	-23.65	19.66	Neutral	-	2.69	9.61	0.17	9.88			
QP	20.457M	42.62	60.00	-17.38	19.94	Neutral	-	22.68	9.68	0.37	9.89			
AV	20.457M	40.51	50.00	-9.49	19.94	Neutral	-	20.57	9.68	0.37	9.89			
QP	28.693M	45.13	60.00	-14.87	19.99	Neutral	-	25.14	9.67	0.44	9.88			
AV	28.693M	37.93	50.00	-12.07	19.99	Neutral	-	17.94	9.67	0.44	9.88			



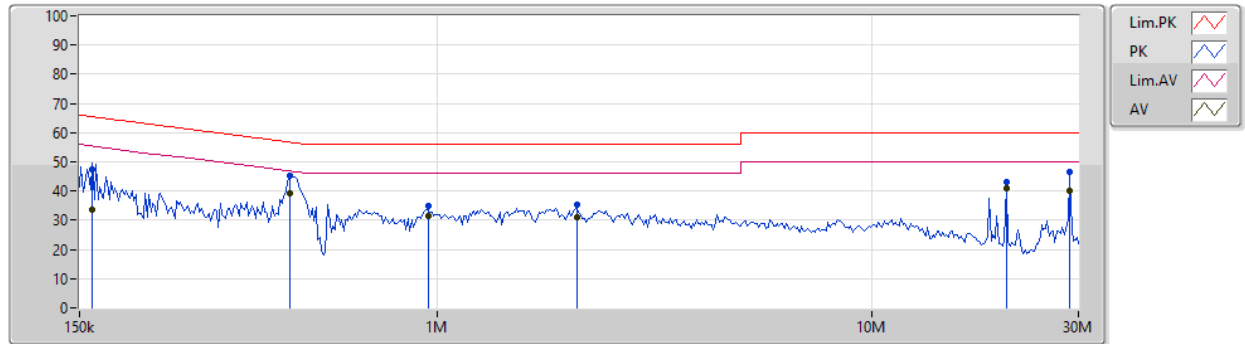
AC Power-line Conducted Emissions_ Non Beamforming_Sample 1_Radio3

Appendix A.2

AC Power-line Conducted Emissions Result

Operating Mode	2	Power Phase	Line
Operating Function	Non Beamforming ; Sample 1 ; PoE mode; Radio3 WIFI 5G TX		

08/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	160.82k	47.37	65.43	-18.06	19.58	Line	-	27.79	9.60	0.11	9.87			
AV	160.82k	33.71	55.43	-21.72	19.58	Line	-	14.13	9.60	0.11	9.87			
QP	457.178k	45.43	56.75	-11.32	19.59	Line	-	25.84	9.59	0.13	9.87			
AV	457.178k	39.22	46.75	-7.53	19.59	Line	"Worst"	19.63	9.59	0.13	9.87			
QP	954.7k	34.81	56.00	-21.19	19.59	Line	-	15.22	9.60	0.11	9.88			
AV	954.7k	31.51	46.00	-14.49	19.59	Line	-	11.92	9.60	0.11	9.88			
QP	2.095M	35.25	56.00	-20.75	19.64	Line	-	15.61	9.62	0.15	9.87			
AV	2.095M	31.12	46.00	-14.88	19.64	Line	-	11.48	9.62	0.15	9.87			
QP	20.457M	43.00	60.00	-17.00	19.89	Line	-	23.11	9.63	0.37	9.89			
AV	20.457M	40.74	50.00	-9.26	19.89	Line	-	20.85	9.63	0.37	9.89			
QP	28.693M	46.39	60.00	-13.61	19.86	Line	-	26.53	9.54	0.44	9.88			
AV	28.693M	40.12	50.00	-9.88	19.86	Line	-	20.26	9.54	0.44	9.88			



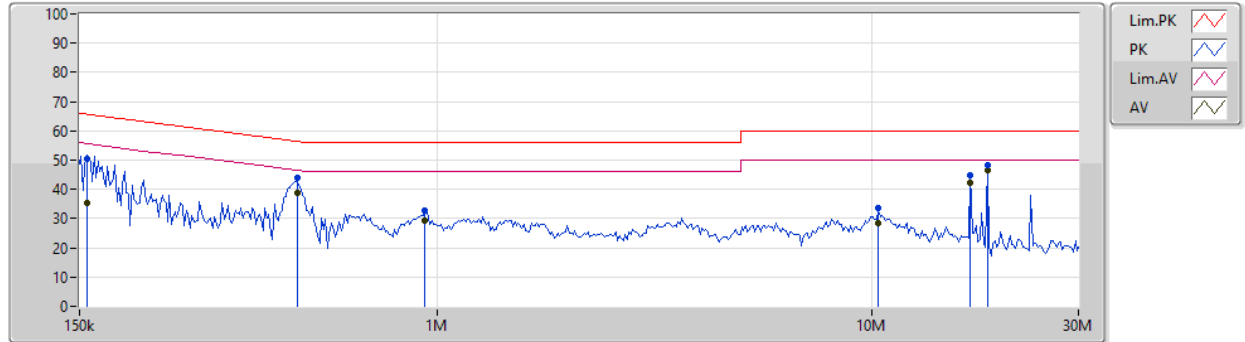
AC Power-line Conducted Emissions **Non Beamforming_Sample 2_Radio2**

Appendix A.3

AC Power-line Conducted Emissions Result

Operating Mode	3	Power Phase	Neutral
Operating Function	Non Beamforming ; Sample 2 ; PoE mode; Radio2 WIFI 5G TX		

11/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	156.091k	50.51	65.67	-15.16	19.58	Neutral	-	30.93	9.60	0.11	9.87			
AV	156.091k	35.16	55.67	-20.51	19.58	Neutral	-	15.58	9.60	0.11	9.87			
QP	475.741k	43.78	56.42	-12.64	19.59	Neutral	-	24.19	9.59	0.13	9.87			
AV	475.741k	38.63	46.42	-7.79	19.59	Neutral	-	19.04	9.59	0.13	9.87			
QP	935.888k	32.73	56.00	-23.27	19.58	Neutral	-	13.15	9.59	0.11	9.88			
AV	935.888k	29.19	46.00	-16.81	19.58	Neutral	-	9.61	9.59	0.11	9.88			
QP	10.399M	33.67	60.00	-26.33	19.82	Neutral	-	13.85	9.67	0.27	9.88			
AV	10.399M	28.53	50.00	-21.47	19.82	Neutral	-	8.71	9.67	0.27	9.88			
QP	16.933M	44.68	60.00	-15.32	19.89	Neutral	-	24.79	9.68	0.33	9.88			
AV	16.933M	42.10	50.00	-7.90	19.89	Neutral	-	22.21	9.68	0.33	9.88			
QP	18.52M	48.46	60.00	-11.54	19.92	Neutral	-	28.54	9.68	0.35	9.89			
AV	18.52M	46.64	50.00	-3.36	19.92	Neutral	"Worst"	26.72	9.68	0.35	9.89			



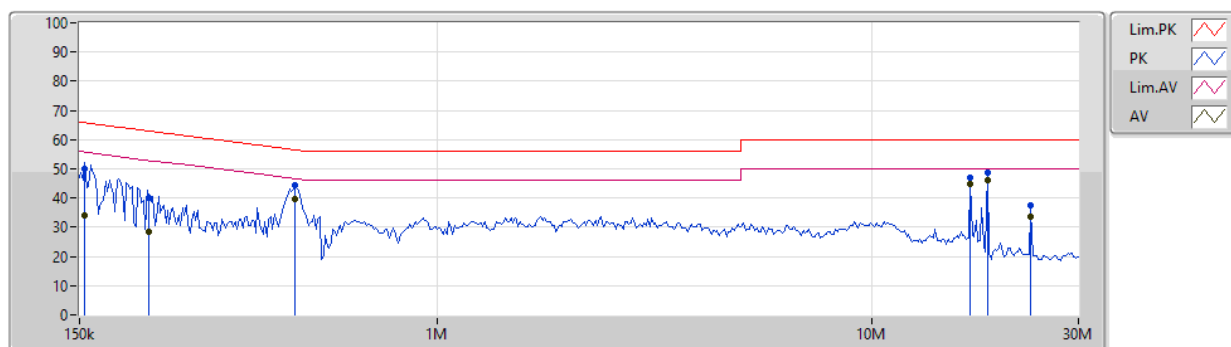
AC Power-line Conducted Emissions_ Non Beamforming_Sample 2_Radio2

Appendix A.3

AC Power-line Conducted Emissions Result

Operating Mode	3	Power Phase	Line
Operating Function	Non Beamforming ; Sample 2 ; PoE mode; Radio2 WIFI 5G TX		

11/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	154.545k	49.88	65.75	-15.87	19.58	Line	-	30.30	9.60	0.11	9.87			
AV	154.545k	34.17	55.75	-21.58	19.58	Line	-	14.59	9.60	0.11	9.87			
QP	216.761k	40.21	62.94	-22.73	19.58	Line	-	20.63	9.60	0.11	9.87			
AV	216.761k	28.26	52.94	-24.68	19.58	Line	-	8.68	9.60	0.11	9.87			
QP	471.031k	44.61	56.50	-11.89	19.59	Line	-	25.02	9.59	0.13	9.87			
AV	471.031k	39.73	46.50	-6.77	19.59	Line	-	20.14	9.59	0.13	9.87			
QP	16.933M	46.89	60.00	-13.11	19.85	Line	-	27.04	9.64	0.33	9.88			
AV	16.933M	44.90	50.00	-5.10	19.85	Line	-	25.05	9.64	0.33	9.88			
QP	18.52M	48.52	60.00	-11.48	19.87	Line	-	28.65	9.63	0.35	9.89			
AV	18.52M	46.15	50.00	-3.85	19.87	Line	"Worst"	26.28	9.63	0.35	9.89			
QP	23.282M	37.38	60.00	-22.62	19.87	Line	-	17.51	9.60	0.39	9.88			
AV	23.282M	33.80	50.00	-16.20	19.87	Line	-	13.93	9.60	0.39	9.88			



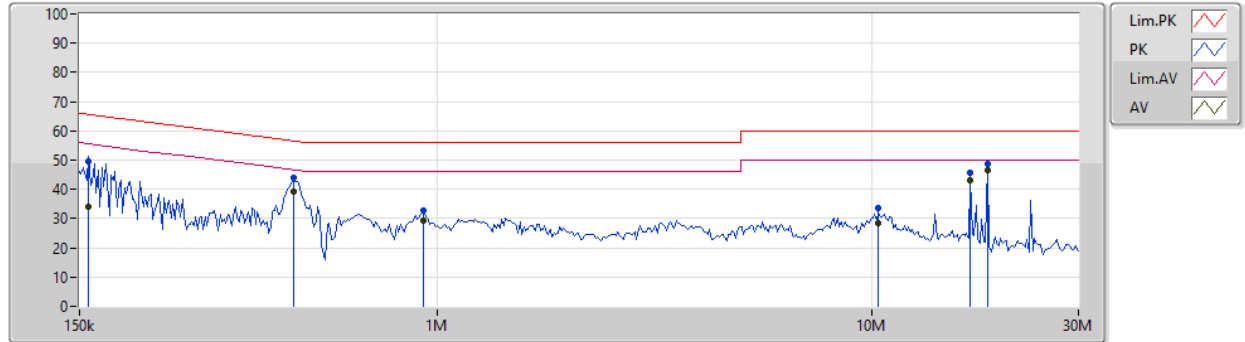
AC Power-line Conducted Emissions **Non Beamforming_Sample 2_Radio3**

Appendix A.4

AC Power-line Conducted Emissions Result

Operating Mode	4	Power Phase	Neutral
Operating Function	Non Beamforming ; Sample 2; PoE mode; Radio3 WIFI 5G TX		

11/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	157.652k	49.36	65.58	-16.22	19.58	Neutral	-	29.78	9.60	0.11	9.87			
AV	157.652k	34.26	55.58	-21.32	19.58	Neutral	-	14.68	9.60	0.11	9.87			
QP	466.367k	44.13	56.57	-12.44	19.59	Neutral	-	24.54	9.59	0.13	9.87			
AV	466.367k	39.14	46.57	-7.43	19.59	Neutral	-	19.55	9.59	0.13	9.87			
QP	926.622k	32.79	56.00	-23.21	19.58	Neutral	-	13.21	9.59	0.11	9.88			
AV	926.622k	29.32	46.00	-16.68	19.58	Neutral	-	9.74	9.59	0.11	9.88			
QP	10.399M	33.67	60.00	-26.33	19.82	Neutral	-	13.85	9.67	0.27	9.88			
AV	10.399M	28.32	50.00	-21.68	19.82	Neutral	-	8.50	9.67	0.27	9.88			
QP	16.933M	45.59	60.00	-14.41	19.89	Neutral	-	25.70	9.68	0.33	9.88			
AV	16.933M	43.14	50.00	-6.86	19.89	Neutral	-	23.25	9.68	0.33	9.88			
QP	18.52M	48.56	60.00	-11.44	19.92	Neutral	-	28.64	9.68	0.35	9.89			
AV	18.52M	46.48	50.00	-3.52	19.92	Neutral	"Worst"	26.56	9.68	0.35	9.89			



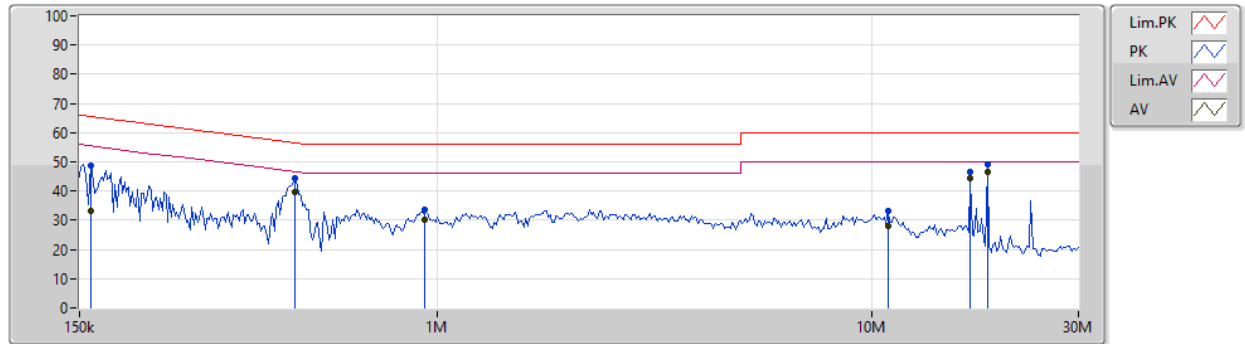
AC Power-line Conducted Emissions_ Non Beamforming_Sample 2_ Radio3

Appendix A.4

AC Power-line Conducted Emissions Result

Operating Mode	4	Power Phase	Line
Operating Function	Non Beamforming ; Sample 2; PoE mode; Radio3 WIFI 5G TX		

11/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	159.228k	48.60	65.50	-16.90	19.58	Line	-	29.02	9.60	0.11	9.87			
AV	159.228k	33.17	55.50	-22.33	19.58	Line	-	13.59	9.60	0.11	9.87			
QP	471.031k	44.60	56.50	-11.90	19.59	Line	-	25.01	9.59	0.13	9.87			
AV	471.031k	39.75	46.50	-6.75	19.59	Line	-	20.16	9.59	0.13	9.87			
QP	935.888k	33.80	56.00	-22.20	19.59	Line	-	14.21	9.60	0.11	9.88			
AV	935.888k	30.16	46.00	-15.84	19.59	Line	-	10.57	9.60	0.11	9.88			
QP	10.93M	33.18	60.00	-26.82	19.82	Line	-	13.36	9.66	0.28	9.88			
AV	10.93M	27.88	50.00	-22.12	19.82	Line	-	8.06	9.66	0.28	9.88			
QP	16.933M	46.59	60.00	-13.41	19.85	Line	-	26.74	9.64	0.33	9.88			
AV	16.933M	44.49	50.00	-5.51	19.85	Line	-	24.64	9.64	0.33	9.88			
QP	18.52M	49.00	60.00	-11.00	19.87	Line	-	29.13	9.63	0.35	9.89			
AV	18.52M	46.76	50.00	-3.24	19.87	Line	"Worst"	26.89	9.63	0.35	9.89			



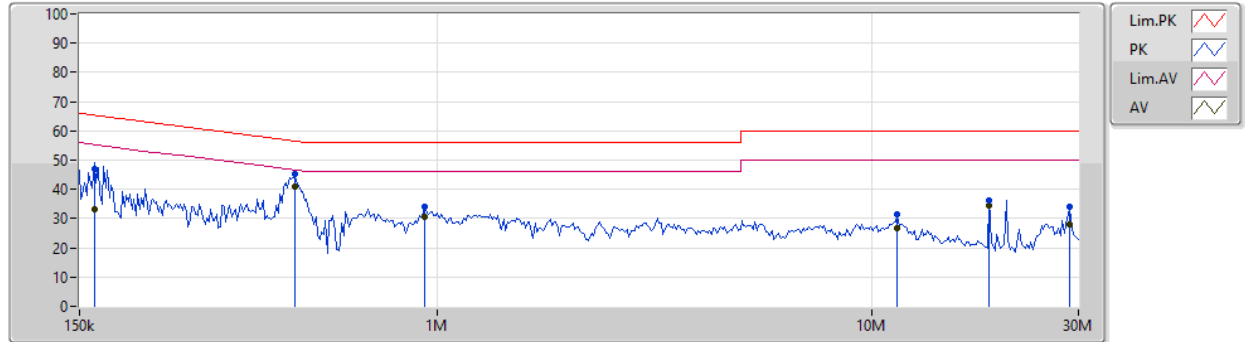
AC Power-line Conducted Emissions_ Beamforming_Sample 1_Radio2

Appendix A.5

AC Power-line Conducted Emissions Result

Operating Mode	5	Power Phase	Neutral
Operating Function	Beamforming ; Sample 1 ; PoE mode; Radio2 WIFI 5G TX		

08/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	162.429k	47.11	65.33	-18.22	19.58	Neutral	-	27.53	9.60	0.11	9.87			
AV	162.429k	33.26	55.33	-22.07	19.58	Neutral	-	13.68	9.60	0.11	9.87			
QP	471.031k	45.35	56.50	-11.15	19.59	Neutral	-	25.76	9.59	0.13	9.87			
AV	471.031k	40.80	46.50	-5.70	19.59	Neutral	"Worst"	21.21	9.59	0.13	9.87			
QP	935.888k	34.13	56.00	-21.87	19.58	Neutral	-	14.55	9.59	0.11	9.88			
AV	935.888k	30.40	46.00	-15.60	19.58	Neutral	-	10.82	9.59	0.11	9.88			
QP	11.487M	31.57	60.00	-28.43	19.83	Neutral	-	11.74	9.67	0.28	9.88			
AV	11.487M	26.74	50.00	-23.26	19.83	Neutral	-	6.91	9.67	0.28	9.88			
QP	18.705M	36.02	60.00	-23.98	19.92	Neutral	-	16.10	9.68	0.35	9.89			
AV	18.705M	34.48	50.00	-15.52	19.92	Neutral	-	14.56	9.68	0.35	9.89			
QP	28.693M	33.98	60.00	-26.02	19.99	Neutral	-	13.99	9.67	0.44	9.88			
AV	28.693M	28.19	50.00	-21.81	19.99	Neutral	-	8.20	9.67	0.44	9.88			



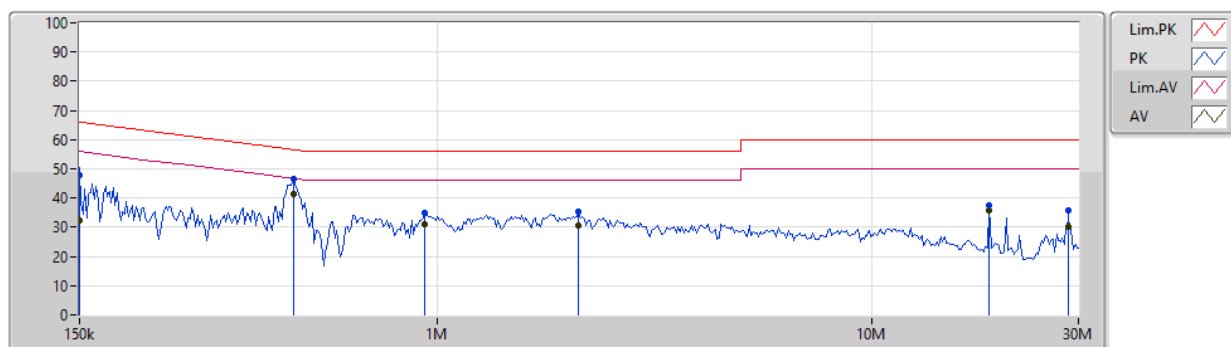
AC Power-line Conducted Emissions_ Beamforming_Sample 1_Radio2

Appendix A.5

AC Power-line Conducted Emissions Result

Operating Mode	5	Power Phase	Line
Operating Function	Beamforming ; Sample 1 ; PoE mode; Radio2 WIFI 5G TX		

08/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	150k	47.85	66.00	-18.15	19.58	Line	-	28.27	9.60	0.11	9.87			
AV	150k	32.40	56.00	-23.60	19.58	Line	-	12.82	9.60	0.11	9.87			
QP	466.367k	46.60	56.57	-9.97	19.59	Line	-	27.01	9.59	0.13	9.87			
AV	466.367k	41.19	46.57	-5.38	19.59	Line	"Worst"	21.60	9.59	0.13	9.87			
QP	935.888k	35.03	56.00	-20.97	19.59	Line	-	15.44	9.60	0.11	9.88			
AV	935.888k	31.24	46.00	-14.76	19.59	Line	-	11.65	9.60	0.11	9.88			
QP	2.116M	35.14	56.00	-20.86	19.64	Line	-	15.50	9.62	0.15	9.87			
AV	2.116M	30.75	46.00	-15.25	19.64	Line	-	11.11	9.62	0.15	9.87			
QP	18.705M	37.30	60.00	-22.70	19.87	Line	-	17.43	9.63	0.35	9.89			
AV	18.705M	35.65	50.00	-14.35	19.87	Line	-	15.78	9.63	0.35	9.89			
QP	28.409M	35.96	60.00	-24.04	19.87	Line	-	16.09	9.55	0.44	9.88			
AV	28.409M	30.37	50.00	-19.63	19.87	Line	-	10.50	9.55	0.44	9.88			



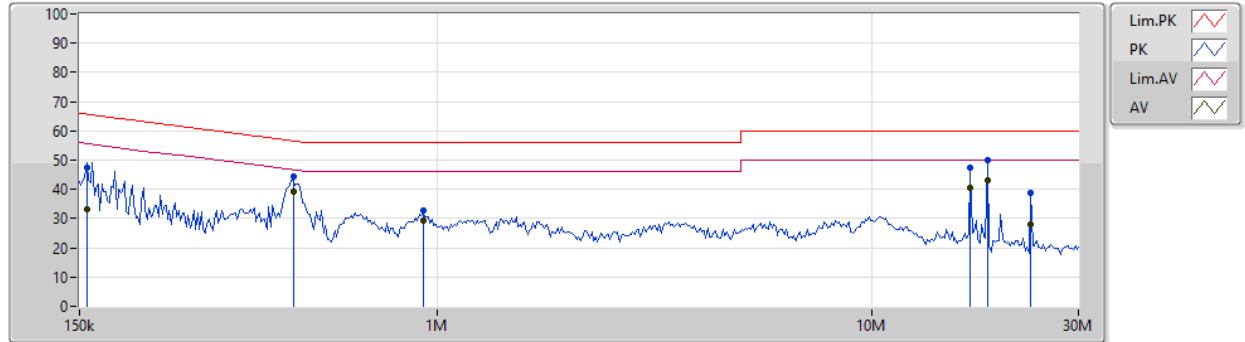
AC Power-line Conducted Emissions_ Beamforming_Sample 1_Radio3

Appendix A.6

AC Power-line Conducted Emissions Result

Operating Mode	6	Power Phase	Neutral
Operating Function	Beamforming ; Sample 1 ; PoE mode; Radio3 WIFI 5G TX		

12/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	156.091k	47.59	65.67	-18.08	19.58	Neutral	-	28.01	9.60	0.11	9.87			
AV	156.091k	33.40	55.67	-22.27	19.58	Neutral	-	13.82	9.60	0.11	9.87			
QP	466.367k	44.30	56.57	-12.27	19.59	Neutral	-	24.71	9.59	0.13	9.87			
AV	466.367k	39.38	46.57	-7.19	19.59	Neutral	-	19.79	9.59	0.13	9.87			
QP	926.622k	32.80	56.00	-23.20	19.58	Neutral	-	13.22	9.59	0.11	9.88			
AV	926.622k	29.47	46.00	-16.53	19.58	Neutral	-	9.89	9.59	0.11	9.88			
QP	16.933M	47.48	60.00	-12.52	19.89	Neutral	-	27.59	9.68	0.33	9.88			
AV	16.933M	40.59	50.00	-9.41	19.89	Neutral	-	20.70	9.68	0.33	9.88			
QP	18.52M	50.03	60.00	-9.97	19.92	Neutral	-	30.11	9.68	0.35	9.89			
AV	18.52M	43.02	50.00	-6.98	19.92	Neutral	"Worst"	23.10	9.68	0.35	9.89			
QP	23.282M	38.68	60.00	-21.32	19.95	Neutral	-	18.73	9.68	0.39	9.88			
AV	23.282M	28.18	50.00	-21.82	19.95	Neutral	-	8.23	9.68	0.39	9.88			



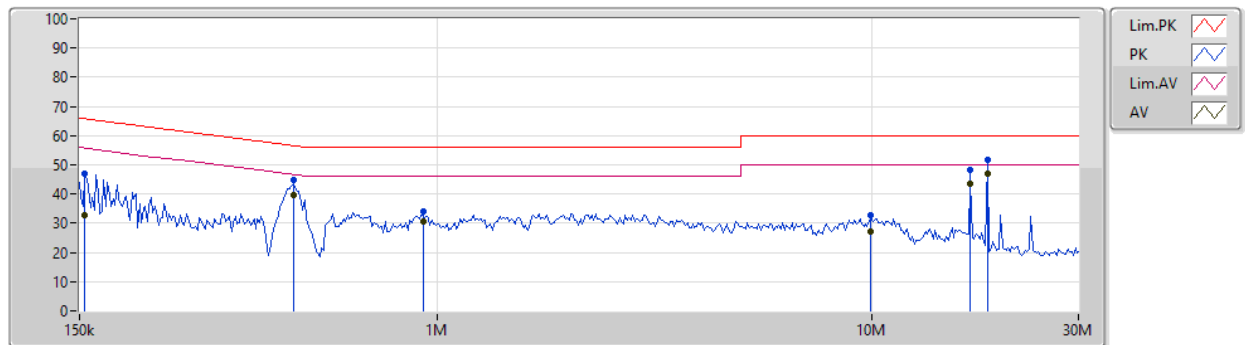
AC Power-line Conducted Emissions_ Beamforming_Sample 1_Radio3

Appendix A.6

AC Power-line Conducted Emissions Result

Operating Mode	6	Power Phase	Line
Operating Function	Beamforming ; Sample 1 ; PoE mode; Radio3 WIFI 5G TX		

12/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	154.545k	47.14	65.75	-18.61	19.58	Line	-	27.56	9.60	0.11	9.87			
AV	154.545k	32.86	55.75	-22.89	19.58	Line	-	13.28	9.60	0.11	9.87			
QP	466.367k	44.76	56.57	-11.81	19.59	Line	-	25.17	9.59	0.13	9.87			
AV	466.367k	39.75	46.57	-6.82	19.59	Line	-	20.16	9.59	0.13	9.87			
QP	926.622k	34.00	56.00	-22.00	19.59	Line	-	14.41	9.60	0.11	9.88			
AV	926.622k	30.54	46.00	-15.46	19.59	Line	-	10.95	9.60	0.11	9.88			
QP	9.993M	32.61	60.00	-27.39	19.82	Line	-	12.79	9.67	0.27	9.88			
AV	9.993M	27.32	50.00	-22.68	19.82	Line	-	7.50	9.67	0.27	9.88			
QP	16.933M	48.37	60.00	-11.63	19.85	Line	-	28.52	9.64	0.33	9.88			
AV	16.933M	43.59	50.00	-6.41	19.85	Line	-	23.74	9.64	0.33	9.88			
QP	18.52M	51.55	60.00	-8.45	19.87	Line	-	31.68	9.63	0.35	9.89			
AV	18.52M	46.81	50.00	-3.19	19.87	Line	"Worst"	26.94	9.63	0.35	9.89			



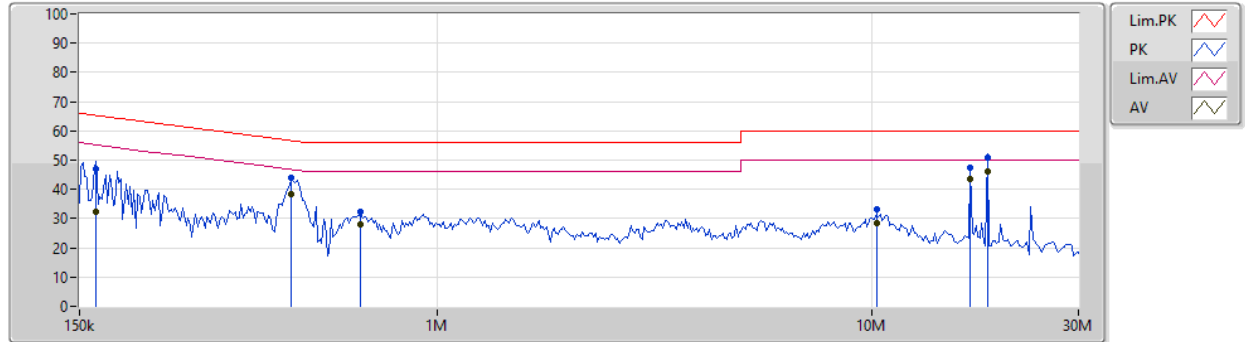
AC Power-line Conducted Emissions_ Beamforming_Sample 2_Radio2

Appendix A.7

AC Power-line Conducted Emissions Result

Operating Mode	7	Power Phase	Neutral
Operating Function	Beamforming ; Sample 2 ; PoE mode; Radio2 WIFI 5G TX		

12/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	164.053k	47.09	65.25	-18.16	19.58	Neutral	-	27.51	9.60	0.11	9.87			
AV	164.053k	32.26	55.25	-22.99	19.58	Neutral	-	12.68	9.60	0.11	9.87			
QP	461.75k	43.82	56.67	-12.85	19.59	Neutral	-	24.23	9.59	0.13	9.87			
AV	461.75k	38.20	46.67	-8.47	19.59	Neutral	-	18.61	9.59	0.13	9.87			
QP	667.263k	32.43	56.00	-23.57	19.58	Neutral	-	12.85	9.59	0.12	9.87			
AV	667.263k	28.18	46.00	-17.82	19.58	Neutral	-	8.60	9.59	0.12	9.87			
QP	10.296M	33.38	60.00	-26.62	19.82	Neutral	-	13.56	9.67	0.27	9.88			
AV	10.296M	28.24	50.00	-21.76	19.82	Neutral	-	8.42	9.67	0.27	9.88			
QP	16.933M	47.38	60.00	-12.62	19.89	Neutral	-	27.49	9.68	0.33	9.88			
AV	16.933M	43.63	50.00	-6.37	19.89	Neutral	-	23.74	9.68	0.33	9.88			
QP	18.52M	50.66	60.00	-9.34	19.92	Neutral	-	30.74	9.68	0.35	9.89			
AV	18.52M	46.32	50.00	-3.68	19.92	Neutral	"Worst"	26.40	9.68	0.35	9.89			



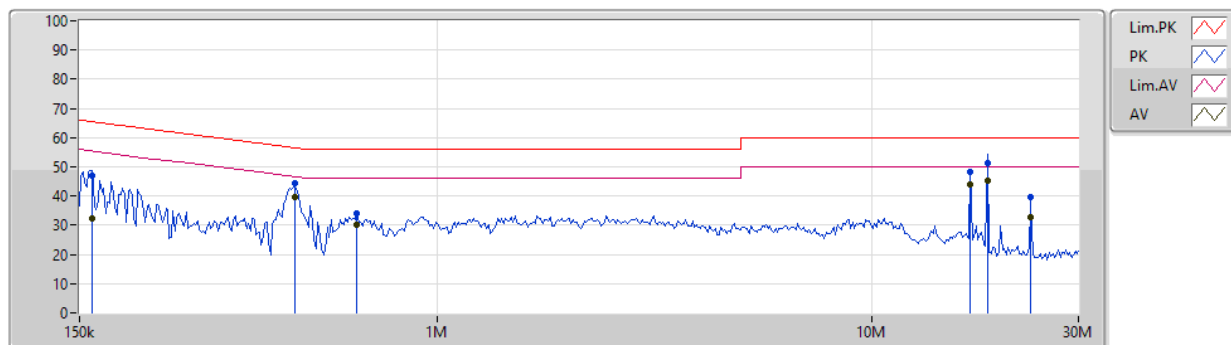
AC Power-line Conducted Emissions_ Beamforming_Sample 2_Radio2

Appendix A.7

AC Power-line Conducted Emissions Result

Operating Mode	7	Power Phase	Line
Operating Function	Beamforming ; Sample 2 ; PoE mode; Radio2 WIFI 5G TX		

12/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	160.82k	46.80	65.43	-18.63	19.58	Line	-	27.22	9.60	0.11	9.87			
AV	160.82k	32.19	55.43	-23.24	19.58	Line	-	12.61	9.60	0.11	9.87			
QP	471.031k	44.52	56.50	-11.98	19.59	Line	-	24.93	9.59	0.13	9.87			
AV	471.031k	39.71	46.50	-6.79	19.59	Line	-	20.12	9.59	0.13	9.87			
QP	654.116k	34.14	56.00	-21.86	19.59	Line	-	14.55	9.60	0.12	9.87			
AV	654.116k	30.10	46.00	-15.90	19.59	Line	-	10.51	9.60	0.12	9.87			
QP	16.933M	48.26	60.00	-11.74	19.85	Line	-	28.41	9.64	0.33	9.88			
AV	16.933M	44.15	50.00	-5.85	19.85	Line	-	24.30	9.64	0.33	9.88			
QP	18.52M	51.20	60.00	-8.80	19.87	Line	-	31.33	9.63	0.35	9.89			
AV	18.52M	45.37	50.00	-4.63	19.87	Line	"Worst"	25.50	9.63	0.35	9.89			
QP	23.282M	39.51	60.00	-20.49	19.87	Line	-	19.64	9.60	0.39	9.88			
AV	23.282M	32.83	50.00	-17.17	19.87	Line	-	12.96	9.60	0.39	9.88			



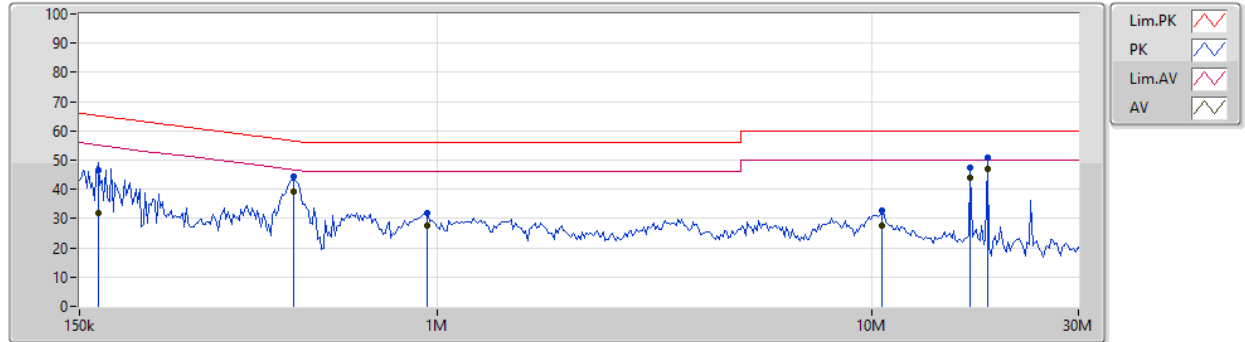
AC Power-line Conducted Emissions_ Beamforming_Sample 2_Radio3

Appendix A.8

AC Power-line Conducted Emissions Result

Operating Mode	8	Power Phase	Neutral
Operating Function	Beamforming ; Sample 2 ; PoE mode; Radio3 WIFI 5G TX		

12/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	165.693k	46.43	65.18	-18.75	19.58	Neutral	-	26.85	9.60	0.11	9.87			
AV	165.693k	31.79	55.18	-23.39	19.58	Neutral	-	12.21	9.60	0.11	9.87			
QP	466.367k	44.32	56.57	-12.25	19.59	Neutral	-	24.73	9.59	0.13	9.87			
AV	466.367k	39.41	46.57	-7.16	19.59	Neutral	-	19.82	9.59	0.13	9.87			
QP	945.247k	31.91	56.00	-24.09	19.58	Neutral	-	12.33	9.59	0.11	9.88			
AV	945.247k	27.74	46.00	-18.26	19.58	Neutral	-	8.16	9.59	0.11	9.88			
QP	10.608M	32.93	60.00	-27.07	19.83	Neutral	-	13.10	9.67	0.28	9.88			
AV	10.608M	27.80	50.00	-22.20	19.83	Neutral	-	7.97	9.67	0.28	9.88			
QP	16.933M	47.33	60.00	-12.67	19.89	Neutral	-	27.44	9.68	0.33	9.88			
AV	16.933M	43.99	50.00	-6.01	19.89	Neutral	-	24.10	9.68	0.33	9.88			
QP	18.52M	50.76	60.00	-9.24	19.92	Neutral	-	30.84	9.68	0.35	9.89			
AV	18.52M	46.78	50.00	-3.22	19.92	Neutral	"Worst"	26.86	9.68	0.35	9.89			



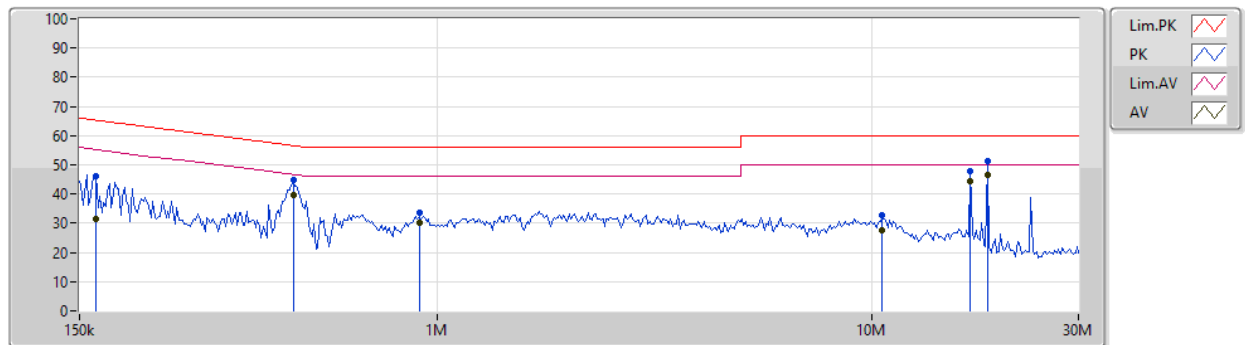
AC Power-line Conducted Emissions_ Beamforming_Sample 2_Radio3

Appendix A.8

AC Power-line Conducted Emissions Result

Operating Mode	8	Power Phase	Line
Operating Function	Beamforming ; Sample 2 ; PoE mode; Radio3 WIFI 5G TX		

12/11/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	164.053k	45.96	65.25	-19.29	19.58	Line	-	26.38	9.60	0.11	9.87			
AV	164.053k	31.40	55.25	-23.85	19.58	Line	-	11.82	9.60	0.11	9.87			
QP	466.367k	44.78	56.57	-11.79	19.59	Line	-	25.19	9.59	0.13	9.87			
AV	466.367k	39.81	46.57	-6.76	19.59	Line	-	20.22	9.59	0.13	9.87			
QP	908.364k	33.42	56.00	-22.58	19.59	Line	-	13.83	9.60	0.11	9.88			
AV	908.364k	30.31	46.00	-15.69	19.59	Line	-	10.72	9.60	0.11	9.88			
QP	10.608M	32.83	60.00	-27.17	19.82	Line	-	13.01	9.66	0.28	9.88			
AV	10.608M	27.76	50.00	-22.24	19.82	Line	-	7.94	9.66	0.28	9.88			
QP	16.933M	47.95	60.00	-12.05	19.85	Line	-	28.10	9.64	0.33	9.88			
AV	16.933M	44.51	50.00	-5.49	19.85	Line	-	24.66	9.64	0.33	9.88			
QP	18.52M	51.20	60.00	-8.80	19.87	Line	-	31.33	9.63	0.35	9.89			
AV	18.52M	46.58	50.00	-3.42	19.87	Line	-	26.71	9.63	0.35	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	43.56M	19.76M	19M8D1D	21.57M	16.612M
802.11ac VHT20_Nss1,(MCS0)_1TX	45.57M	19.31M	19M3D1D	21.81M	17.781M
802.11ac VHT40_Nss1,(MCS0)_1TX	76.62M	36.642M	36M6D1D	40.38M	36.222M
802.11ac VHT80_Nss1,(MCS0)_1TX	82.2M	75.682M	75M7D1D	82.2M	75.682M
802.11ax HEW20_Nss1,(MCS0)_1TX	43.47M	20.12M	20M1D1D	22.38M	18.981M
802.11ax HEW40_Nss1,(MCS0)_1TX	76.44M	37.901M	37M9D1D	40.02M	37.601M
802.11ax HEW80_Nss1,(MCS0)_1TX	82.08M	77.121M	77M1D1D	82.08M	77.121M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	16.32M	26.537M	26M5D1D	16.26M	25.277M
802.11ac VHT20_Nss1,(MCS0)_1TX	17.58M	28.606M	28M6D1D	17.52M	26.837M
802.11ac VHT40_Nss1,(MCS0)_1TX	36.3M	49.355M	49M4D1D	36.3M	43.478M
802.11ac VHT80_Nss1,(MCS0)_1TX	76.08M	75.802M	75M8D1D	76.08M	75.802M
802.11ax HEW20_Nss1,(MCS0)_1TX	18.9M	29.355M	29M4D1D	18.87M	28.756M
802.11ax HEW40_Nss1,(MCS0)_1TX	37.5M	48.936M	48M9D1D	37.26M	42.699M
802.11ax HEW80_Nss1,(MCS0)_1TX	76.8M	76.882M	76M9D1D	76.8M	76.882M

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

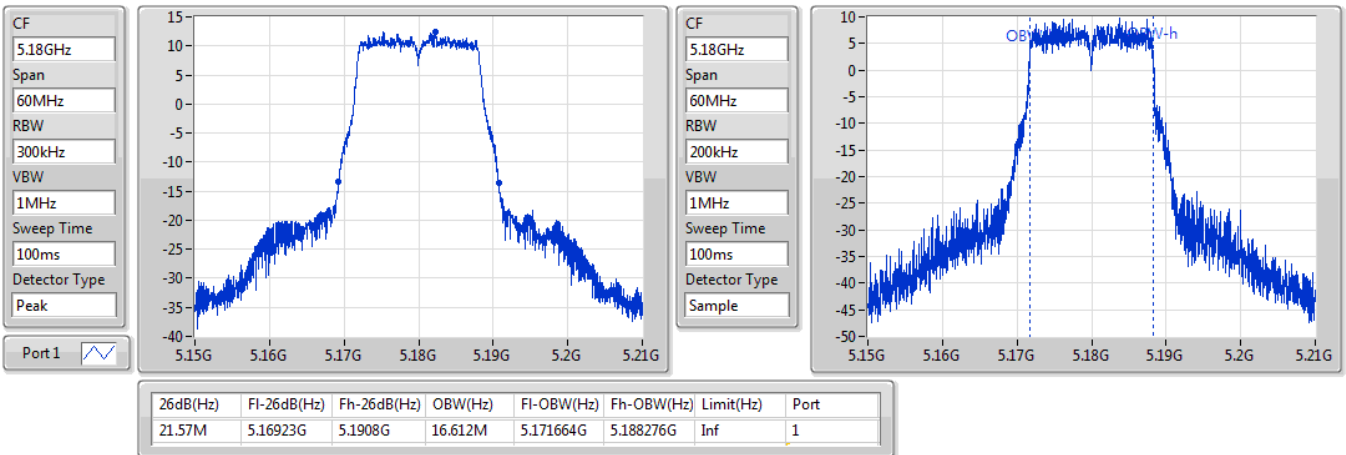
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.57M	16.612M
5200MHz_TnomVnom	Pass	Inf	43.32M	18.831M
5240MHz_TnomVnom	Pass	Inf	43.56M	19.76M
5745MHz_TnomVnom	Pass	500k	16.29M	25.277M
5785MHz_TnomVnom	Pass	500k	16.32M	26.057M
5825MHz_TnomVnom	Pass	500k	16.26M	26.537M
802.11ac_VHT20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.81M	17.781M
5200MHz_TnomVnom	Pass	Inf	45.57M	19.31M
5240MHz_TnomVnom	Pass	Inf	45.24M	19.07M
5745MHz_TnomVnom	Pass	500k	17.52M	26.837M
5785MHz_TnomVnom	Pass	500k	17.58M	28.606M
5825MHz_TnomVnom	Pass	500k	17.52M	28.036M
802.11ac_VHT40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	40.38M	36.222M
5230MHz_TnomVnom	Pass	Inf	76.62M	36.642M
5755MHz_TnomVnom	Pass	500k	36.3M	43.478M
5795MHz_TnomVnom	Pass	500k	36.3M	49.355M
802.11ac_VHT80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	82.2M	75.682M
5775MHz_TnomVnom	Pass	500k	76.08M	75.802M
802.11ax_HEW20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	22.38M	18.981M
5200MHz_TnomVnom	Pass	Inf	43.47M	20.12M
5240MHz_TnomVnom	Pass	Inf	41.76M	19.91M
5745MHz_TnomVnom	Pass	500k	18.87M	28.936M
5785MHz_TnomVnom	Pass	500k	18.87M	28.756M
5825MHz_TnomVnom	Pass	500k	18.9M	29.355M
802.11ax_HEW40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	40.02M	37.601M
5230MHz_TnomVnom	Pass	Inf	76.44M	37.901M
5755MHz_TnomVnom	Pass	500k	37.5M	42.699M
5795MHz_TnomVnom	Pass	500k	37.26M	48.936M
802.11ax_HEW80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	82.08M	77.121M
5775MHz_TnomVnom	Pass	500k	76.8M	76.882M

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

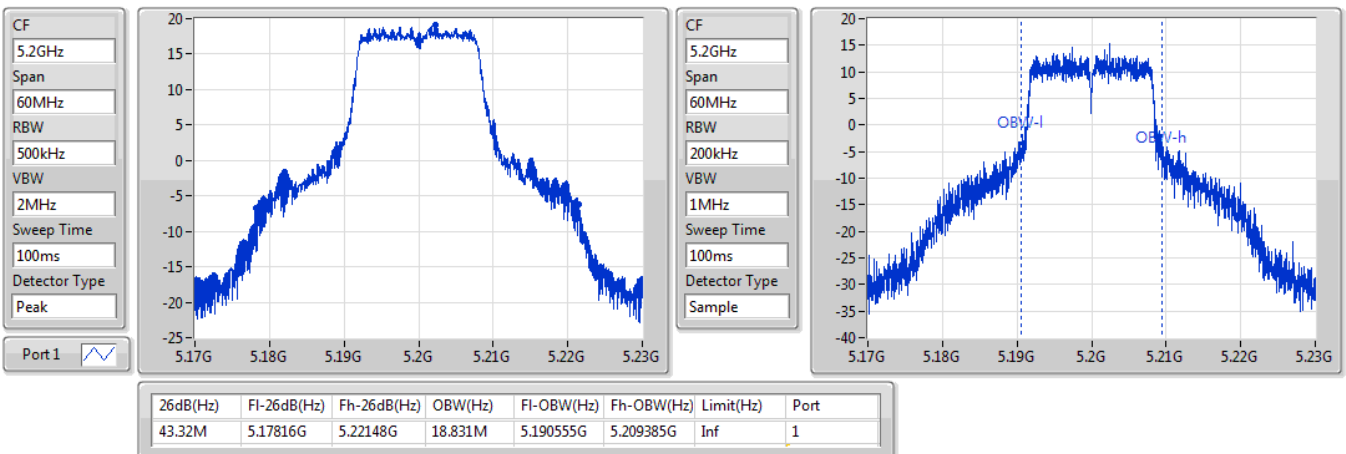
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_1TX
EBW
5180MHz

31/10/2019


802.11a_Nss1,(6Mbps)_1TX
EBW
5200MHz

31/10/2019

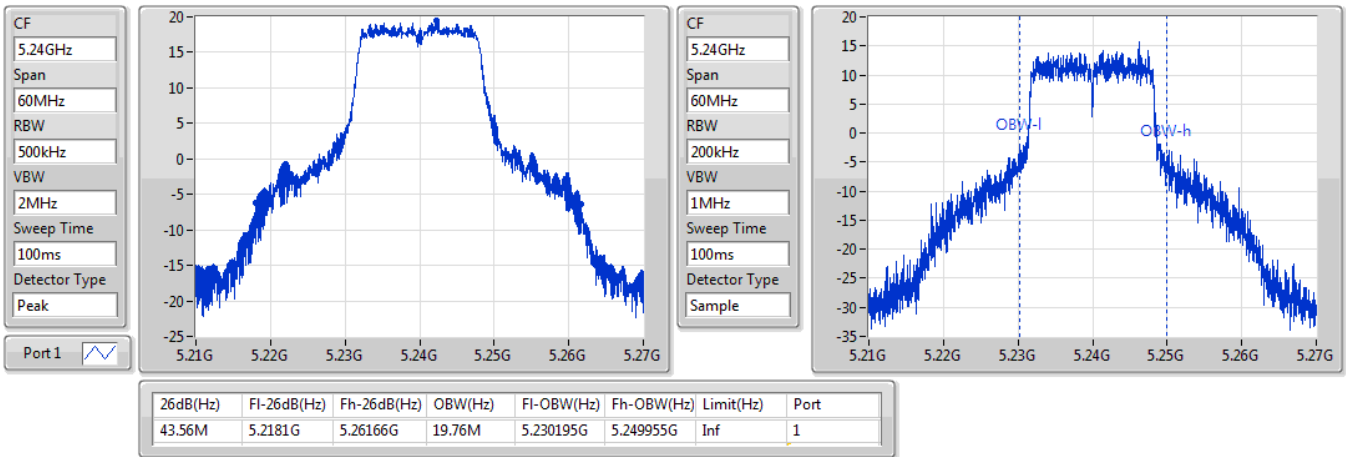


802.11a_Nss1,(6Mbps)_1TX

EBW

5240MHz

31/10/2019

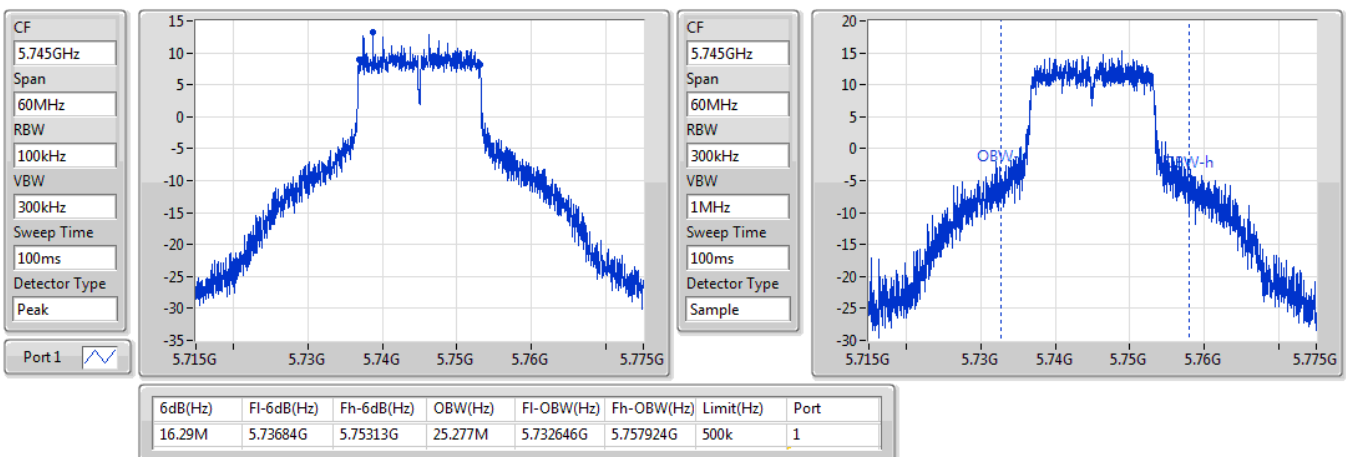


802.11a_Nss1,(6Mbps)_1TX

EBW

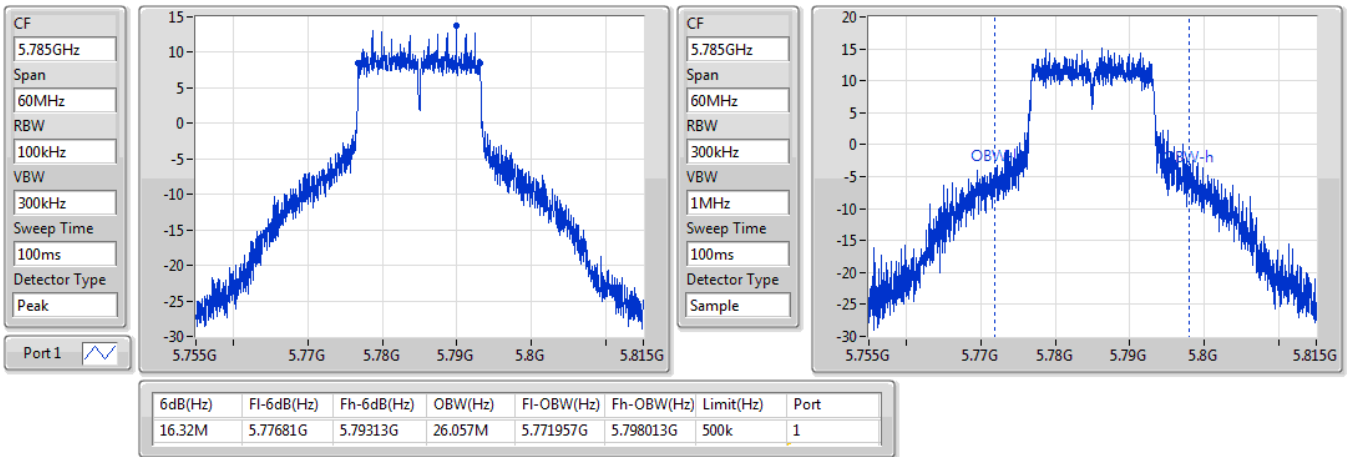
5745MHz

24/09/2019

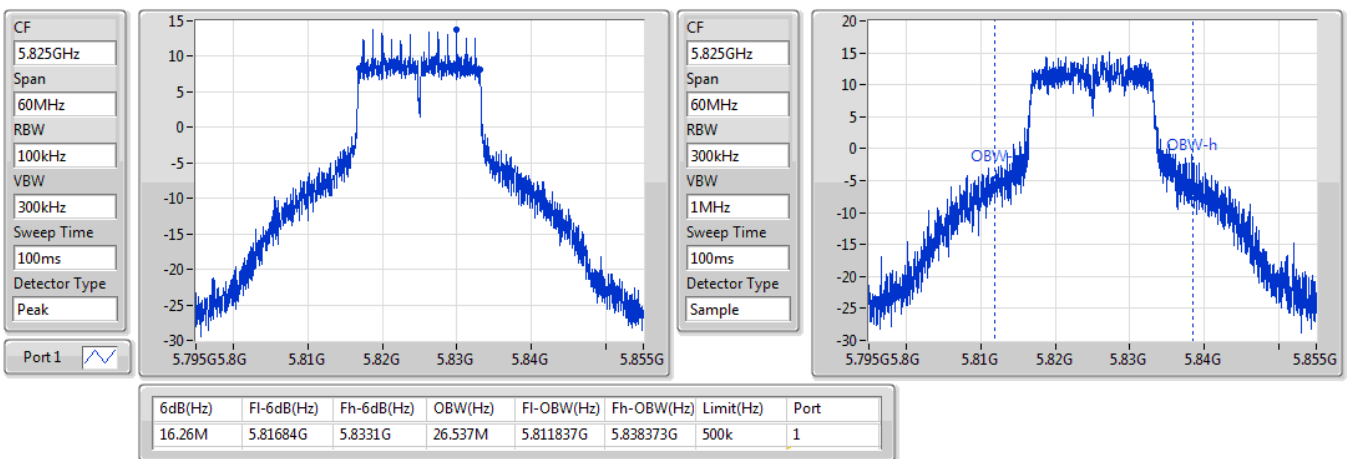


802.11a_Nss1,(6Mbps)_1TX
EBW
5785MHz

24/09/2019


802.11a_Nss1,(6Mbps)_1TX
EBW
5825MHz

24/09/2019

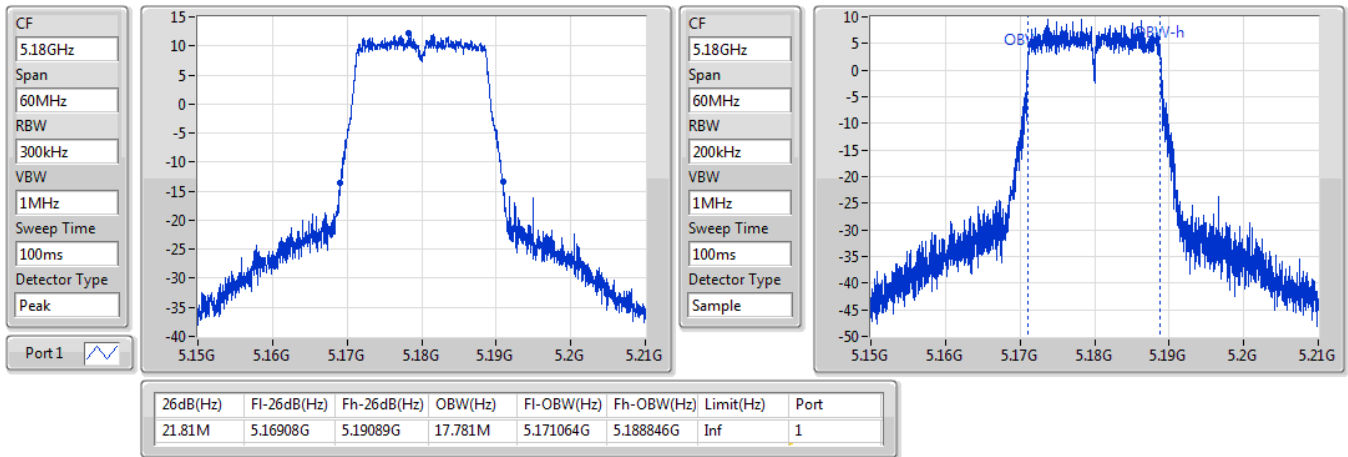


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

5180MHz

31/10/2019

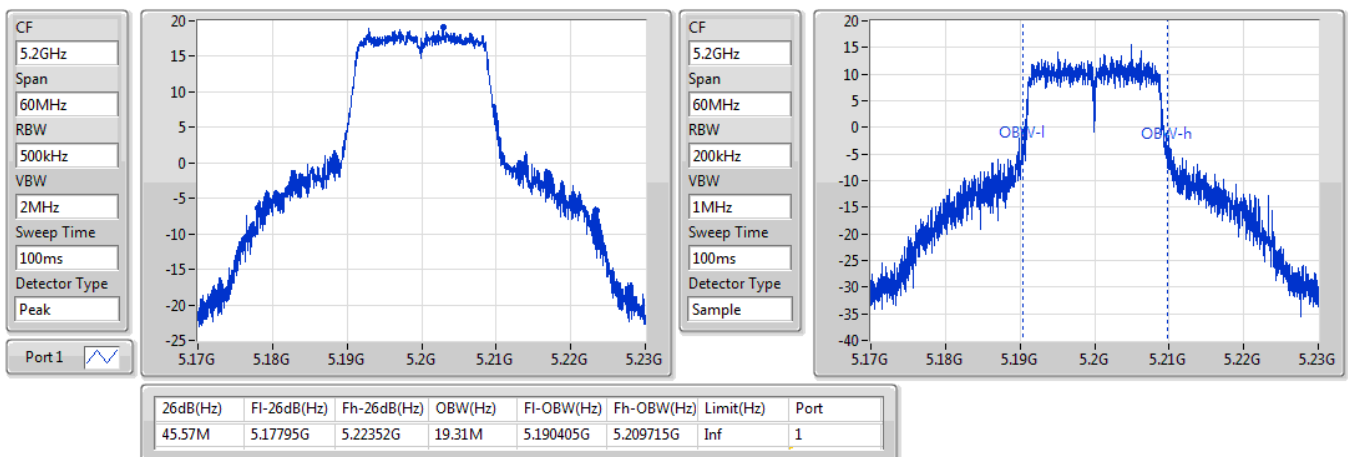


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

5200MHz

31/10/2019

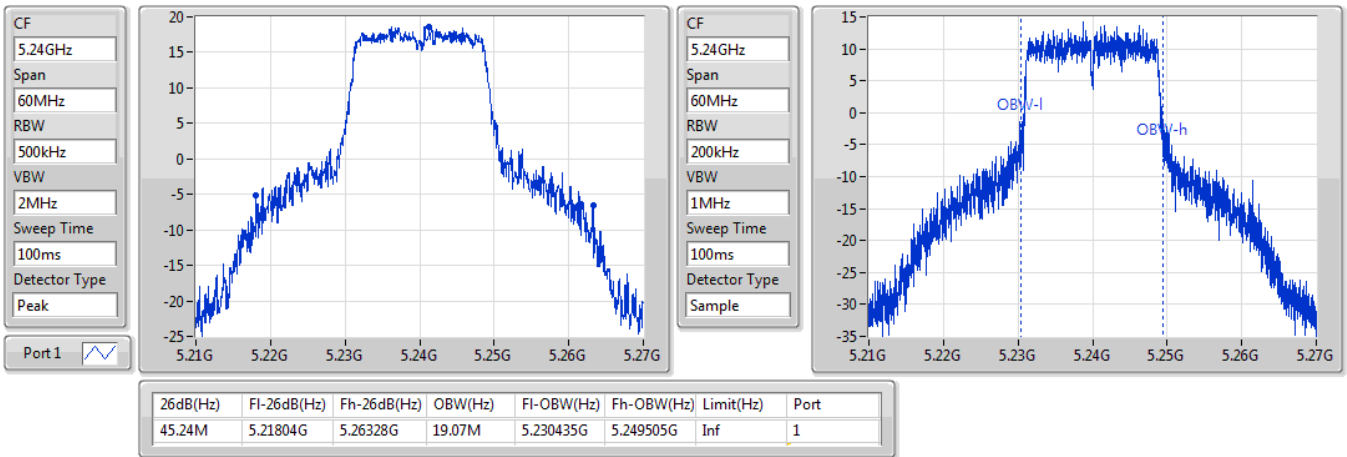


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

5240MHz

31/10/2019

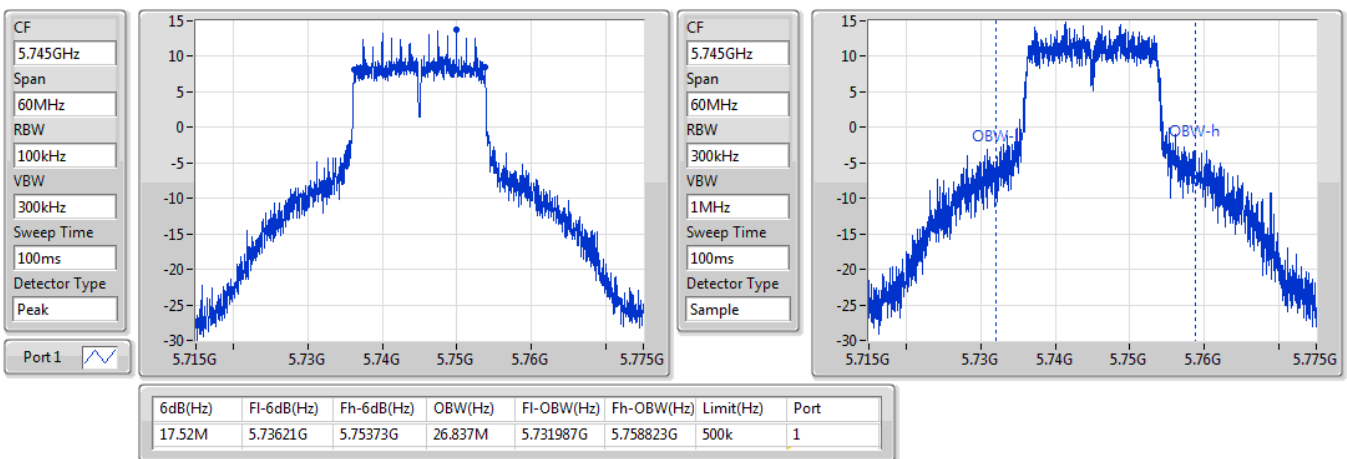


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

5745MHz

24/09/2019

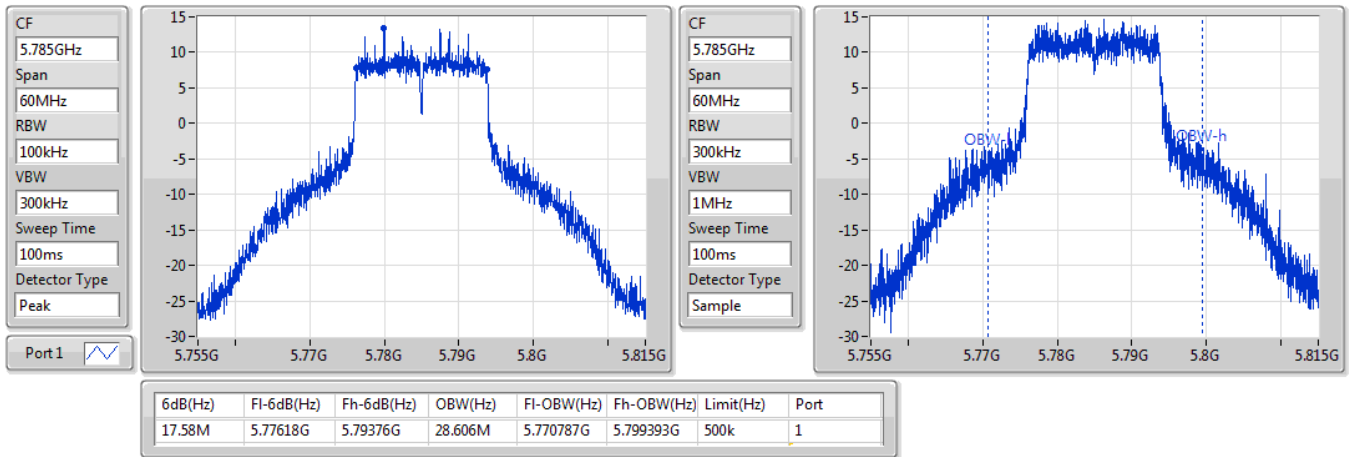


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

5785MHz

24/09/2019

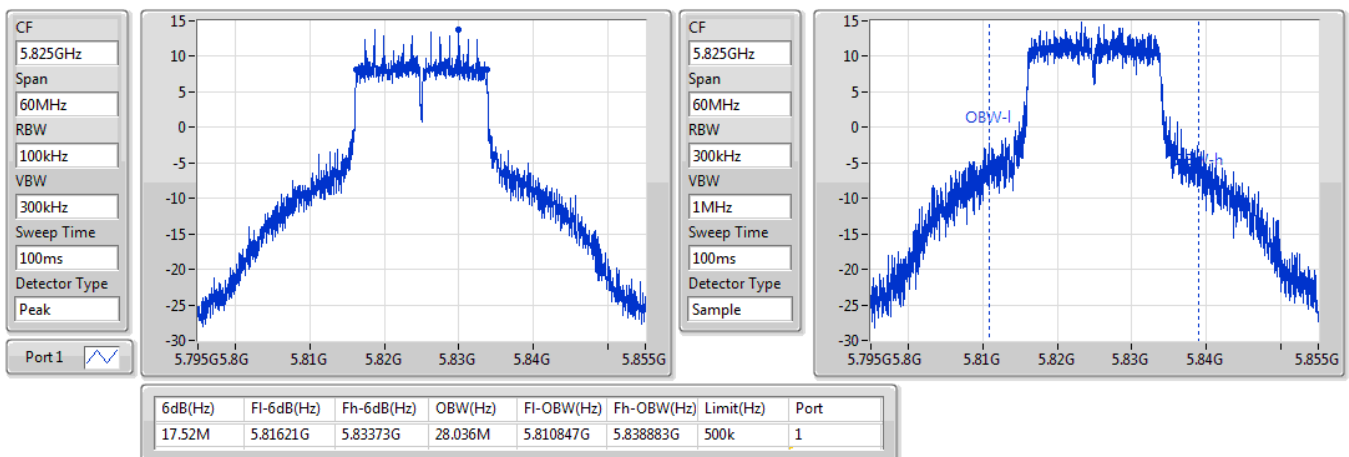


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

5825MHz

24/09/2019

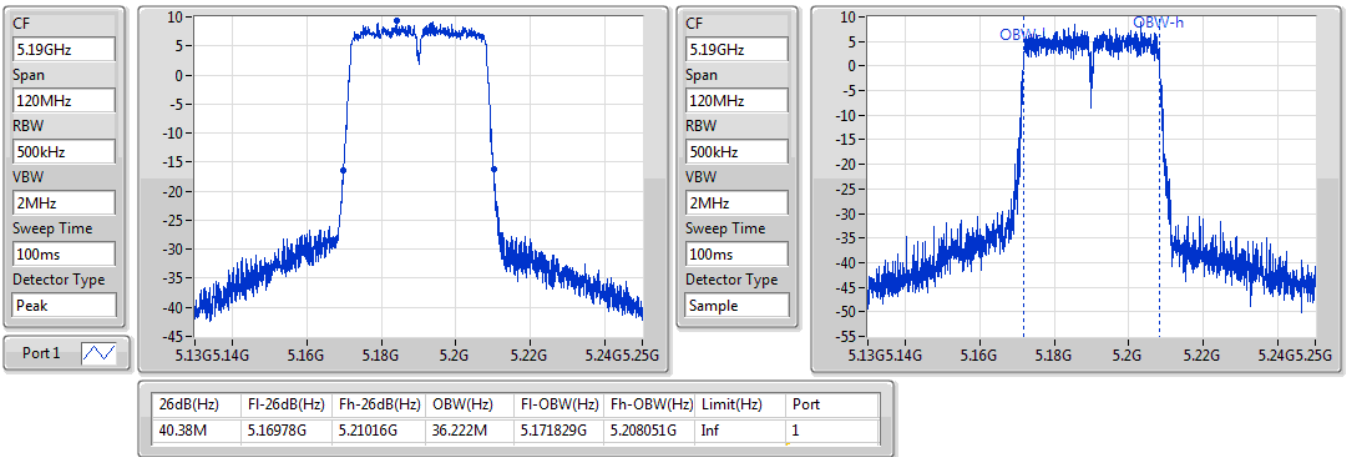


802.11ac VHT40_Nss1,(MCS0)_1TX

EBW

5190MHz

31/10/2019

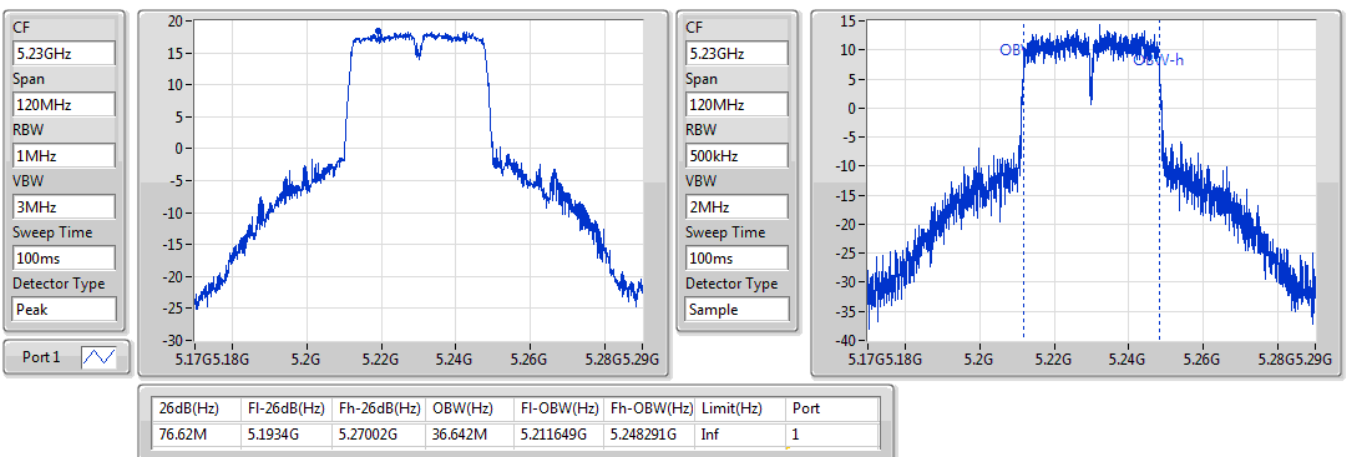


802.11ac VHT40_Nss1,(MCS0)_1TX

EBW

5230MHz

31/10/2019

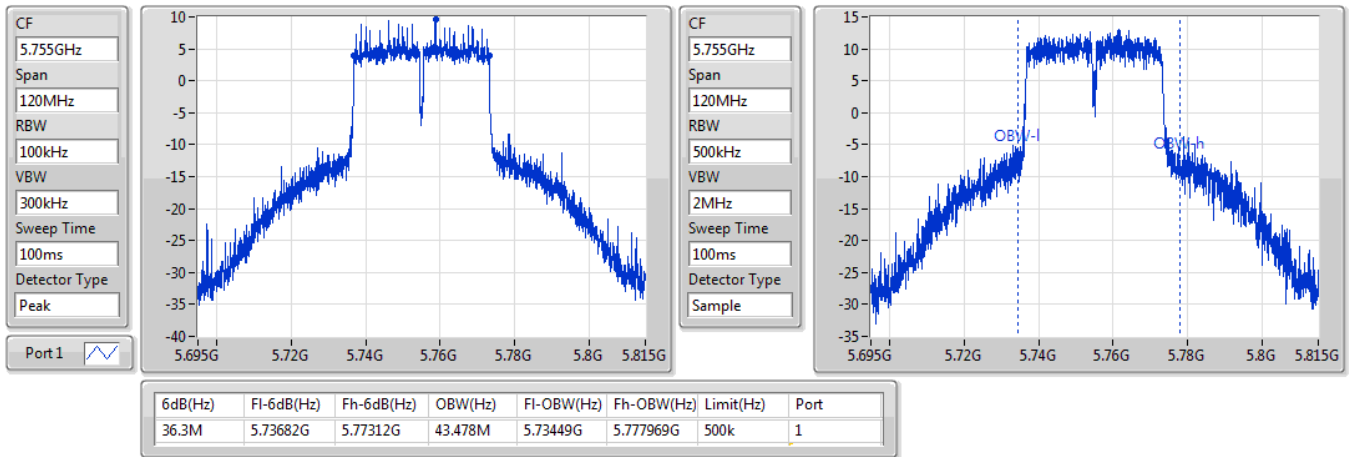


802.11ac VHT40_Nss1,(MCS0)_1TX

EBW

5755MHz

24/09/2019

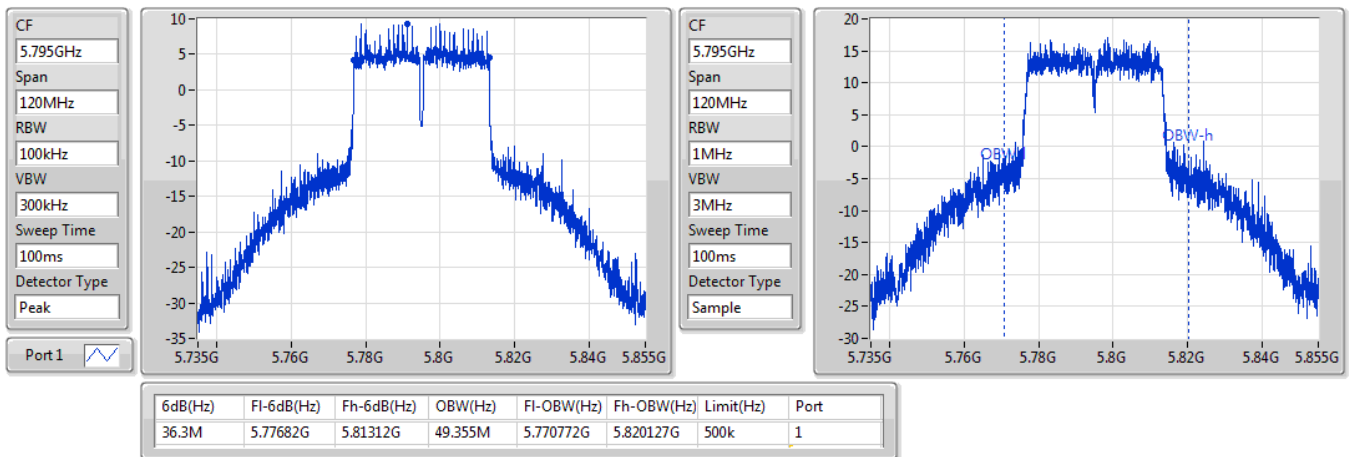


802.11ac VHT40_Nss1,(MCS0)_1TX

EBW

5795MHz

24/09/2019

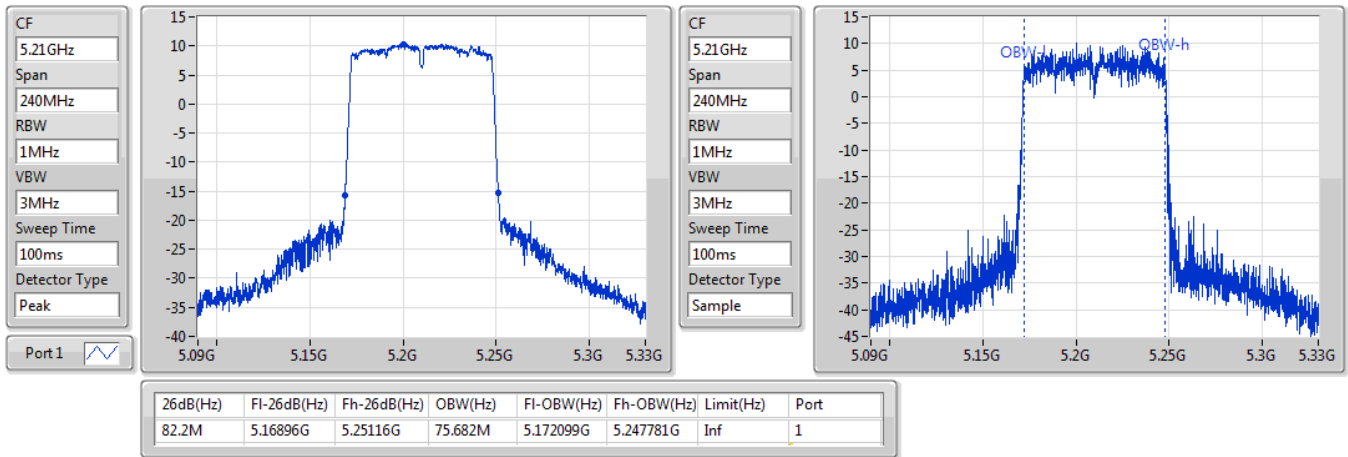


802.11ac VHT80_Nss1,(MCS0)_1TX

EBW

5210MHz

31/10/2019

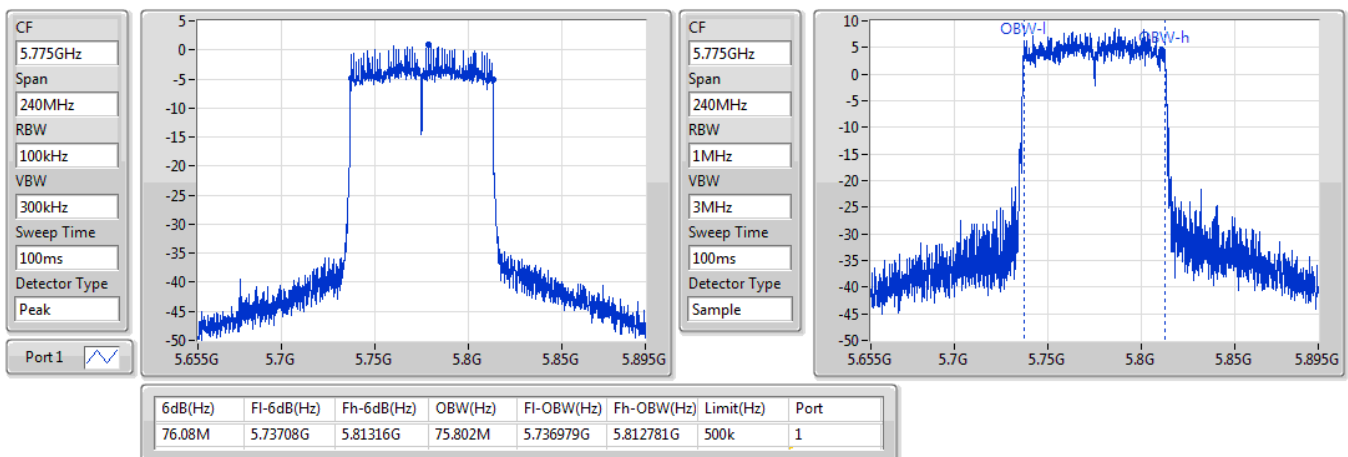


802.11ac VHT80_Nss1,(MCS0)_1TX

EBW

5775MHz

24/09/2019

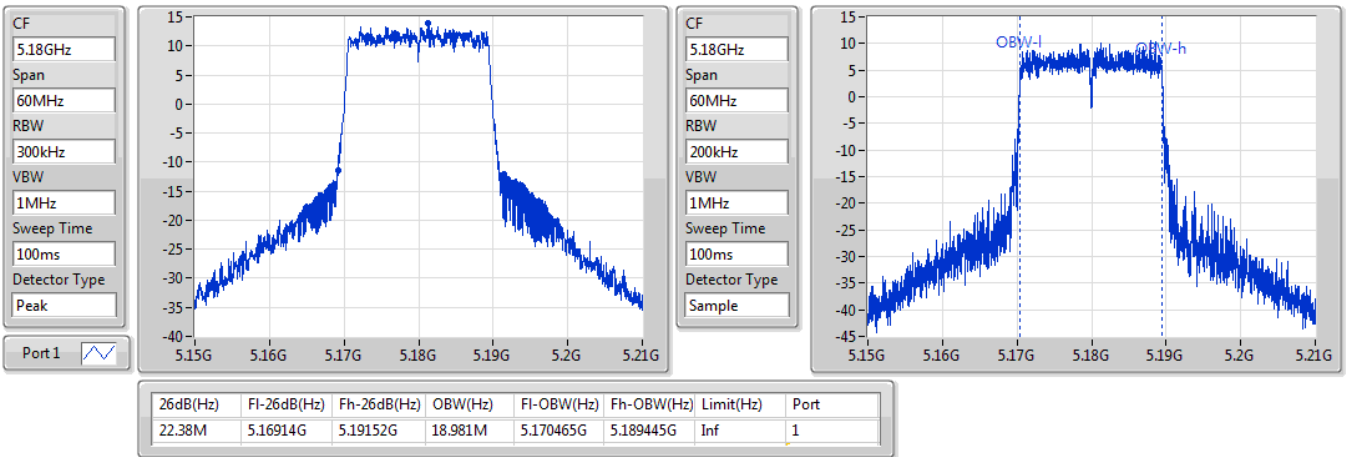


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5180MHz

31/10/2019

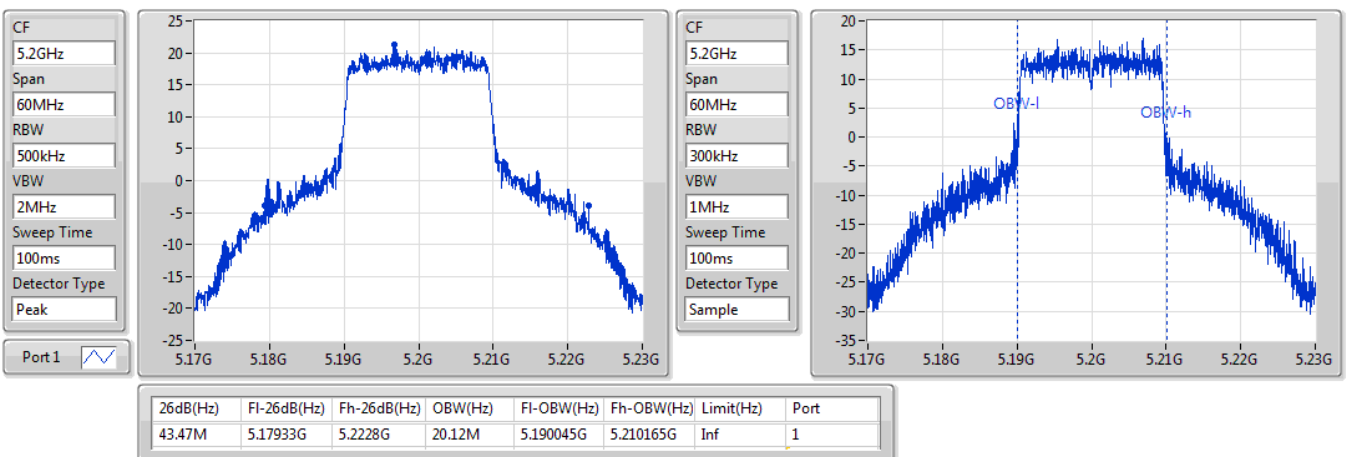


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5200MHz

31/10/2019

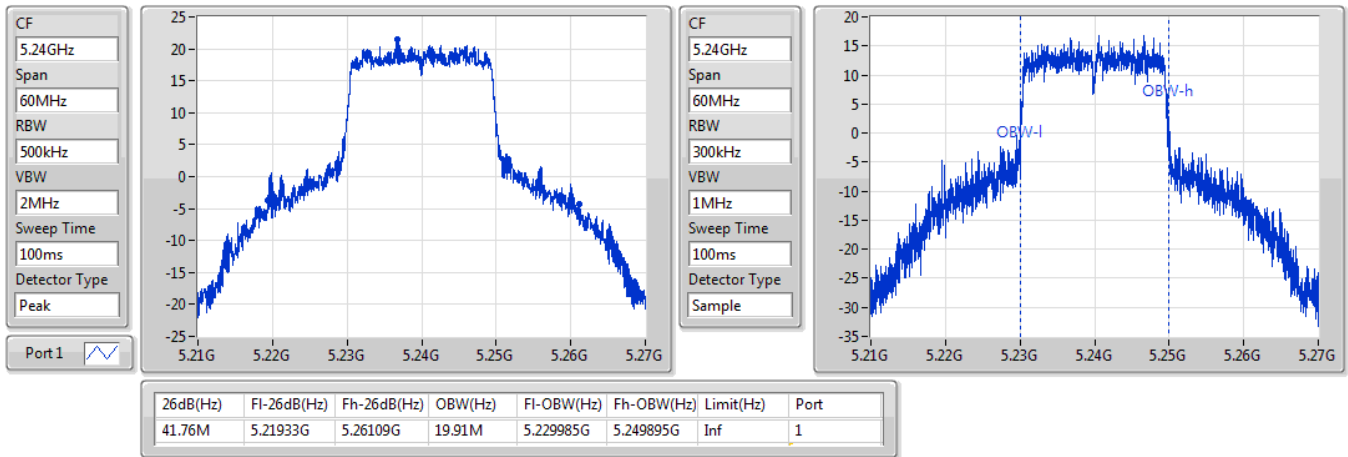


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5240MHz

31/10/2019

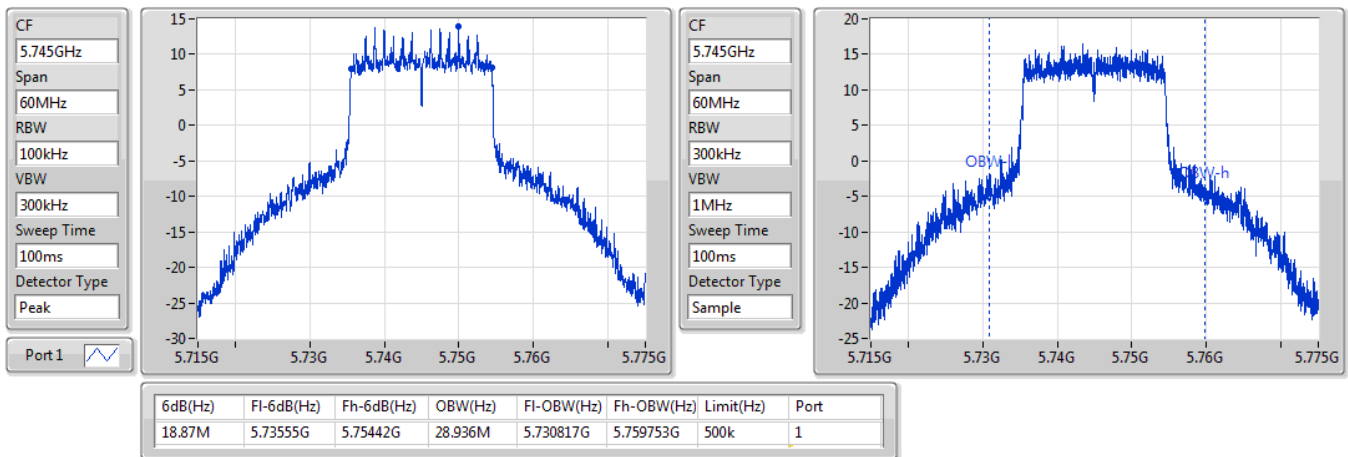


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5745MHz

24/09/2019

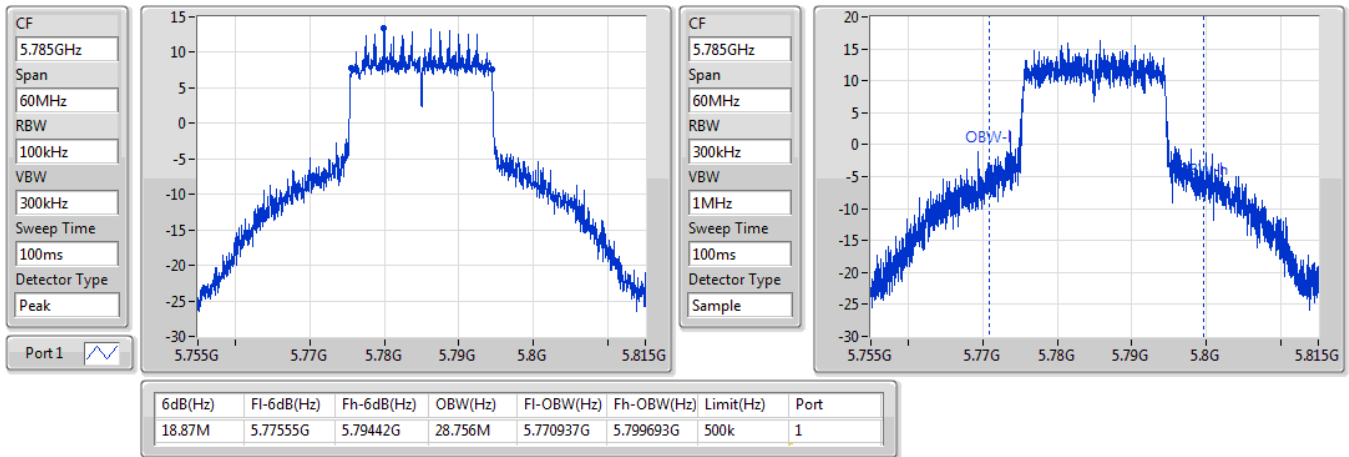


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5785MHz

24/09/2019

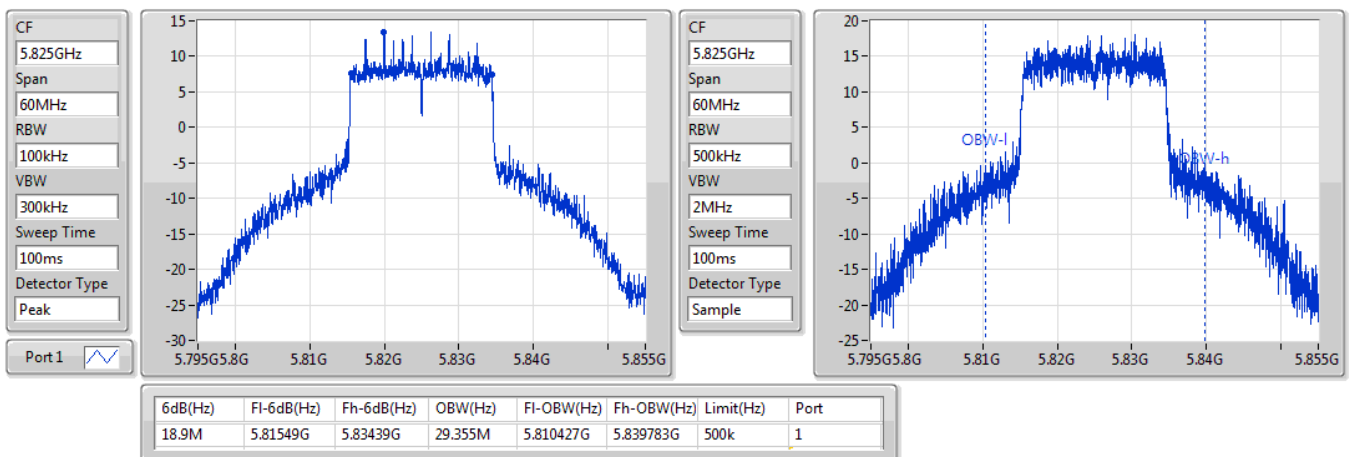


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5825MHz

24/09/2019

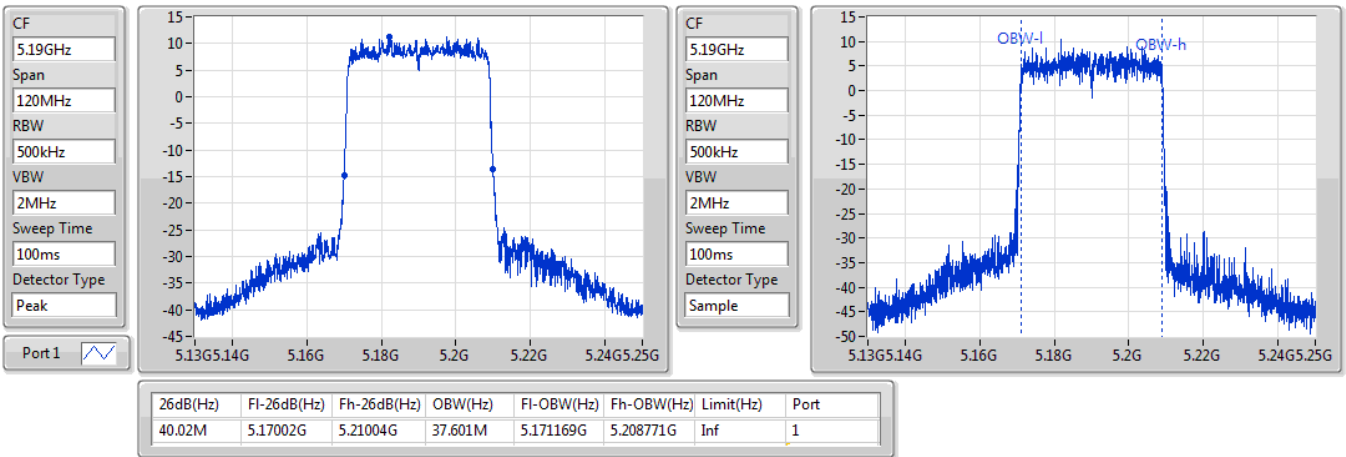


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5190MHz

31/10/2019

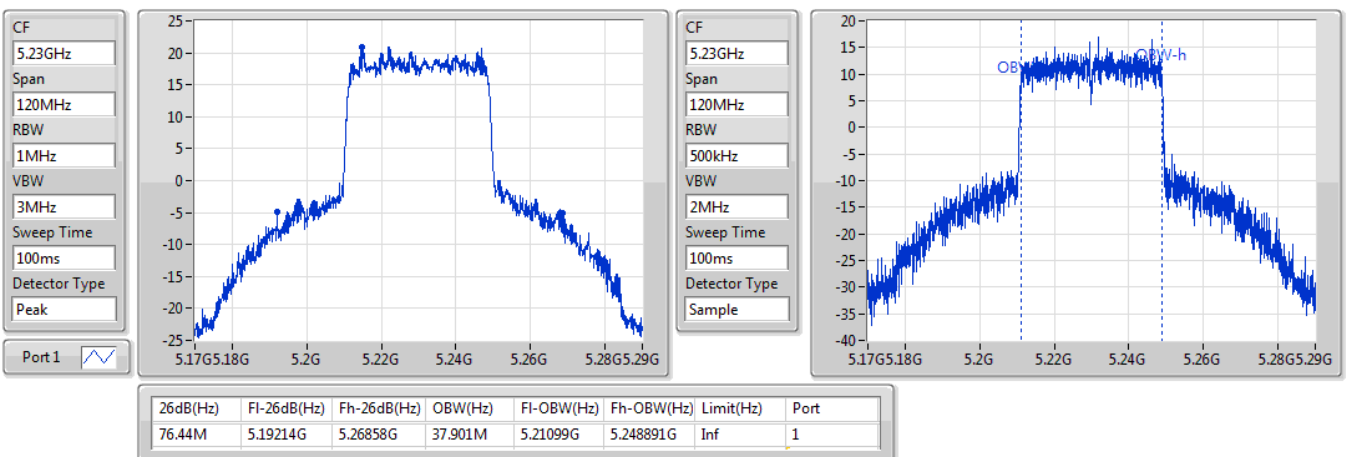


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5230MHz

31/10/2019

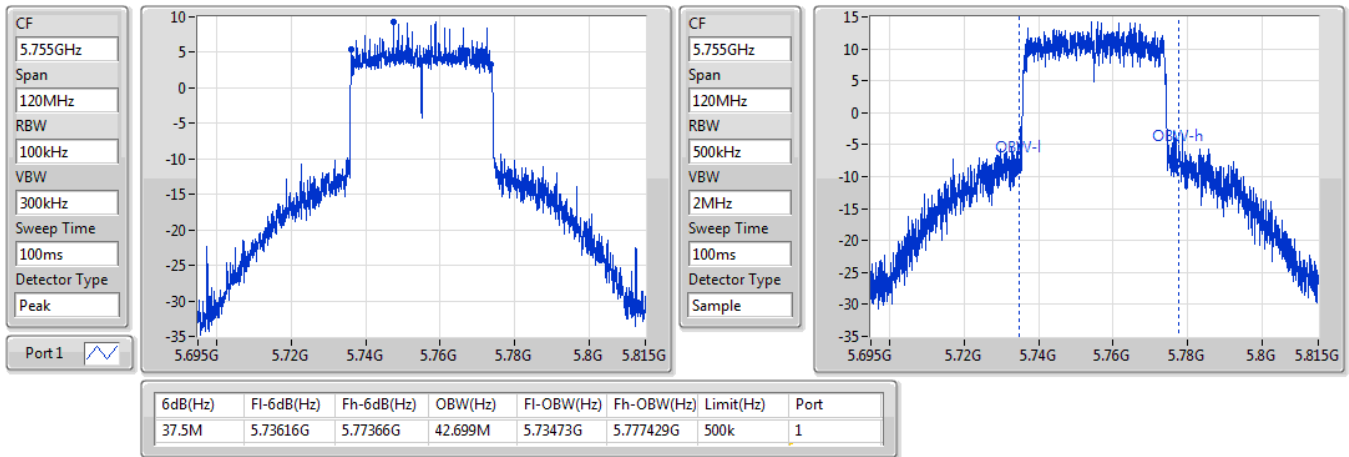


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5755MHz

24/09/2019

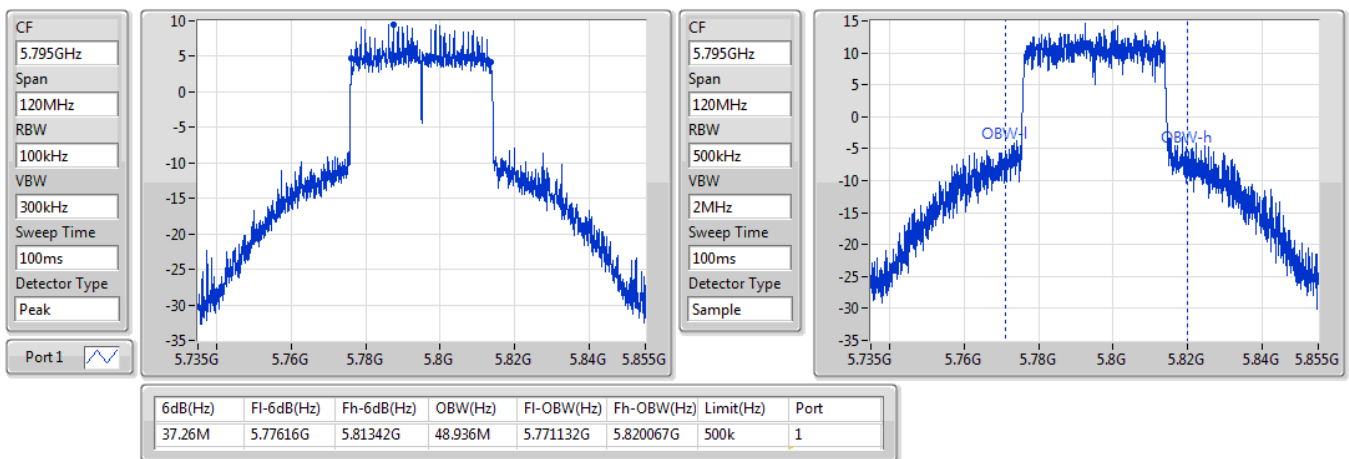


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5795MHz

24/09/2019

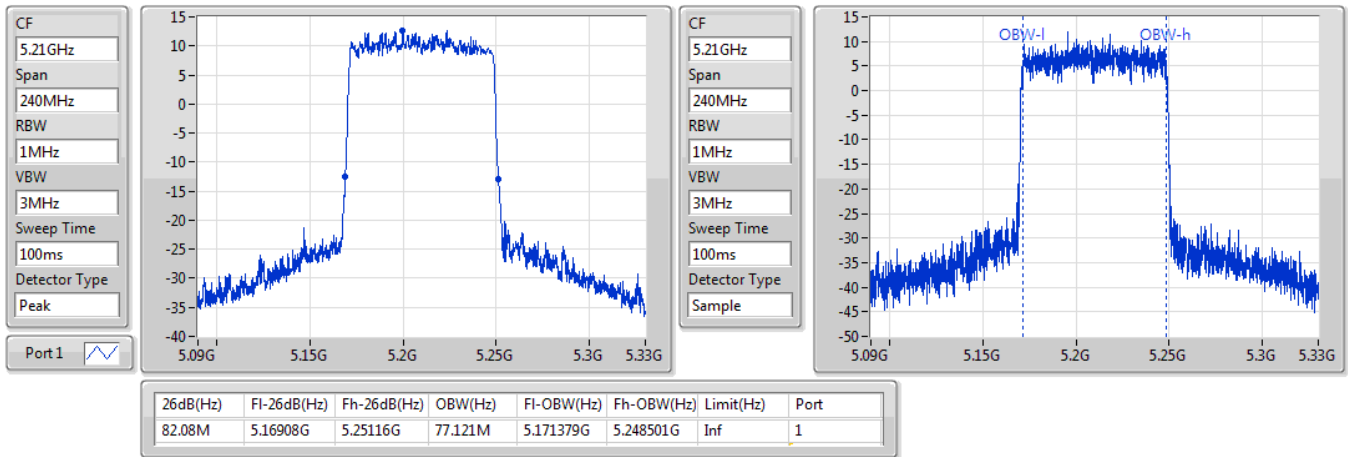


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5210MHz

31/10/2019

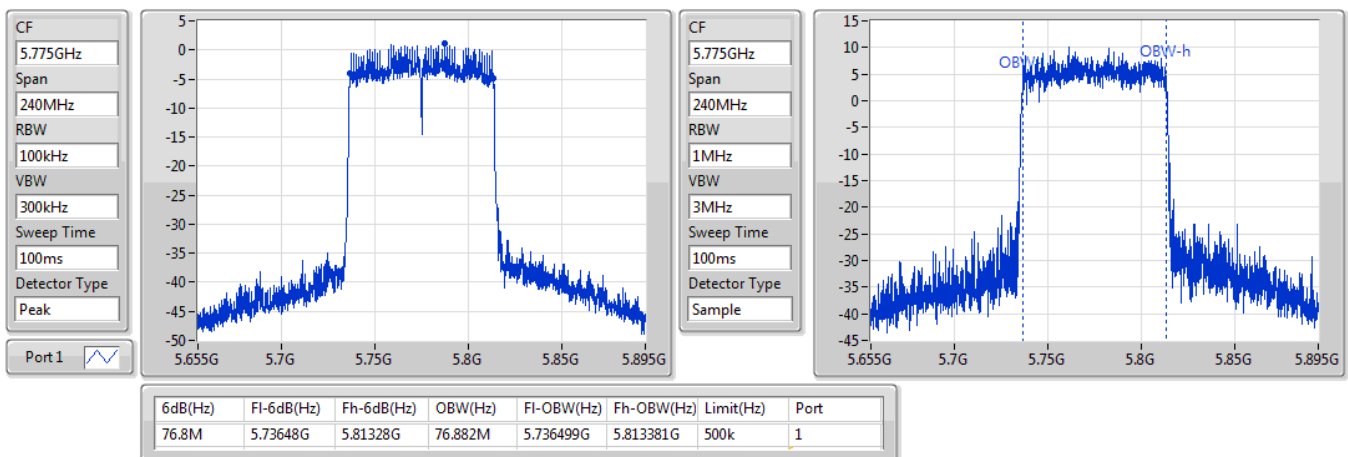


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5775MHz

24/09/2019



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	38.73M	16.852M	16M9D1D	21.48M	16.582M
802.11ac VHT20_Nss2,(MCS0)_2TX	33.12M	17.901M	17M9D1D	21.6M	17.751M
802.11ac VHT40_Nss2,(MCS0)_2TX	47.88M	36.342M	36M3D1D	39.72M	36.162M
802.11ac VHT80_Nss2,(MCS0)_2TX	81.6M	75.802M	75M8D1D	81.36M	75.562M
802.11ax HEW20_Nss2,(MCS0)_2TX	37.02M	19.04M	19M0D1D	21.51M	18.951M
802.11ax HEW40_Nss2,(MCS0)_2TX	55.26M	37.601M	37M6D1D	39.9M	37.541M
802.11ax HEW80_Nss2,(MCS0)_2TX	81.24M	77.001M	77M0D1D	81.12M	76.882M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.32M	33.013M	33M0D1D	16.29M	23.358M
802.11ac VHT20_Nss2,(MCS0)_2TX	17.55M	34.753M	34M8D1D	16.32M	27.286M
802.11ac VHT40_Nss2,(MCS0)_2TX	36.3M	44.018M	44M0D1D	36.12M	36.402M
802.11ac VHT80_Nss2,(MCS0)_2TX	76.32M	75.682M	75M7D1D	75.72M	75.682M
802.11ax HEW20_Nss2,(MCS0)_2TX	18.84M	35.862M	35M9D1D	17.7M	27.706M
802.11ax HEW40_Nss2,(MCS0)_2TX	37.62M	45.037M	45M0D1D	37.5M	37.841M
802.11ax HEW80_Nss2,(MCS0)_2TX	76.68M	77.121M	77M1D1D	75.36M	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_TnomVnom	Pass	Inf	21.48M	16.582M	21.51M	16.582M
5200MHz_TnomVnom	Pass	Inf	38.52M	16.732M	38.49M	16.852M
5240MHz_TnomVnom	Pass	Inf	38.55M	16.702M	38.73M	16.822M
5745MHz_TnomVnom	Pass	500k	16.32M	23.358M	16.29M	27.826M
5785MHz_TnomVnom	Pass	500k	16.32M	26.897M	16.32M	31.424M
5825MHz_TnomVnom	Pass	500k	16.29M	27.526M	16.29M	33.013M
802.11ac_VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.93M	17.751M	21.6M	17.751M
5200MHz_TnomVnom	Pass	Inf	30M	17.901M	33.12M	17.871M
5240MHz_TnomVnom	Pass	Inf	22.59M	17.751M	22.17M	17.781M
5745MHz_TnomVnom	Pass	500k	17.52M	27.286M	17.55M	31.754M
5785MHz_TnomVnom	Pass	500k	17.55M	27.946M	17.55M	33.913M
5825MHz_TnomVnom	Pass	500k	17.55M	28.906M	16.32M	34.753M
802.11ac_VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	39.78M	36.282M	39.84M	36.162M
5230MHz_TnomVnom	Pass	Inf	47.88M	36.282M	39.72M	36.342M
5755MHz_TnomVnom	Pass	500k	36.3M	36.402M	36.3M	36.642M
5795MHz_TnomVnom	Pass	500k	36.3M	36.942M	36.12M	44.018M
802.11ac_VHT80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	81.36M	75.562M	81.6M	75.802M
5775MHz_TnomVnom	Pass	500k	76.32M	75.682M	75.72M	75.682M
802.11ax_HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.78M	19.01M	21.51M	18.951M
5200MHz_TnomVnom	Pass	Inf	30.18M	19.01M	37.02M	19.04M
5240MHz_TnomVnom	Pass	Inf	21.81M	18.981M	23.85M	19.01M
5745MHz_TnomVnom	Pass	500k	18.84M	27.706M	18.24M	32.564M
5785MHz_TnomVnom	Pass	500k	18.57M	29.355M	17.7M	35.022M
5825MHz_TnomVnom	Pass	500k	18.6M	28.996M	18.15M	35.862M
802.11ax_HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	39.96M	37.601M	39.9M	37.541M
5230MHz_TnomVnom	Pass	Inf	55.26M	37.601M	40.74M	37.601M
5755MHz_TnomVnom	Pass	500k	37.62M	37.841M	37.5M	37.961M
5795MHz_TnomVnom	Pass	500k	37.62M	38.261M	37.5M	45.037M
802.11ax_HEW80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	81.24M	77.001M	81.12M	76.882M
5775MHz_TnomVnom	Pass	500k	76.68M	77.001M	75.36M	77.121M

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

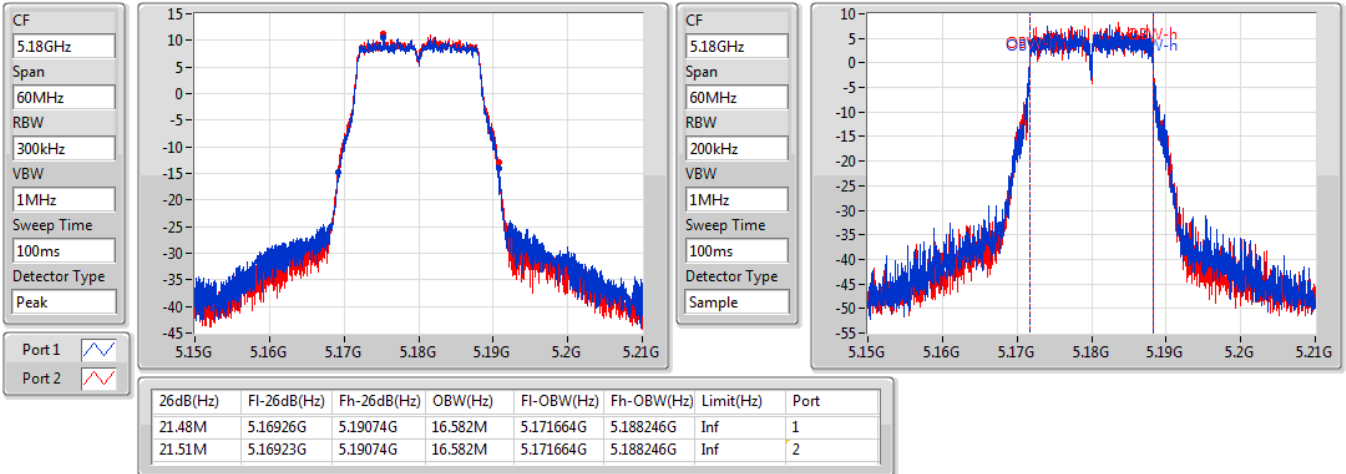
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_2TX

EBW

5180MHz

31/10/2019

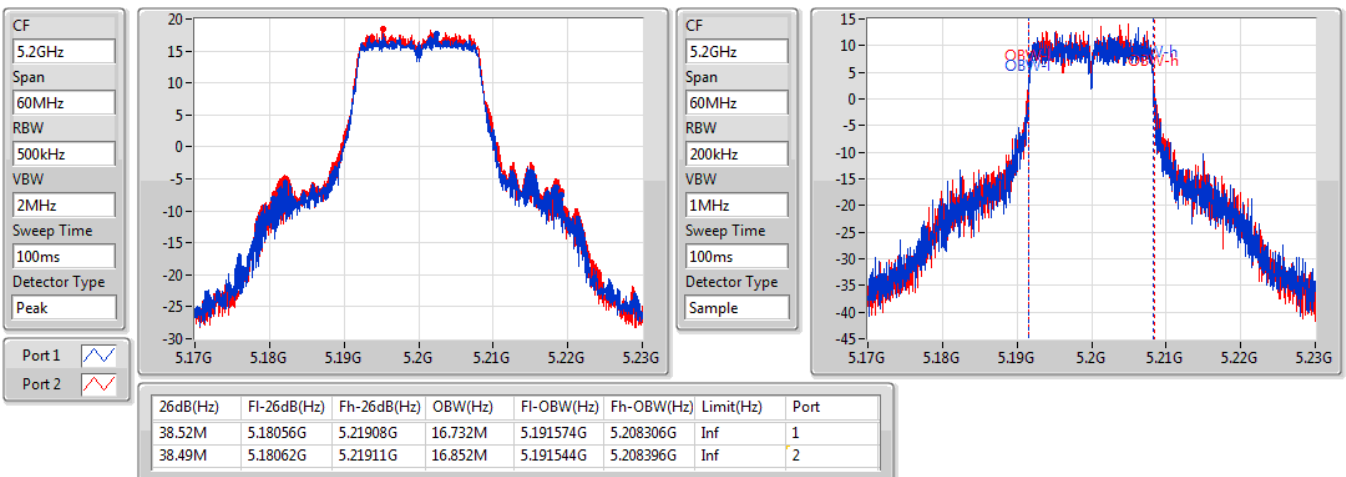


802.11a_Nss1,(6Mbps)_2TX

EBW

5200MHz

31/10/2019

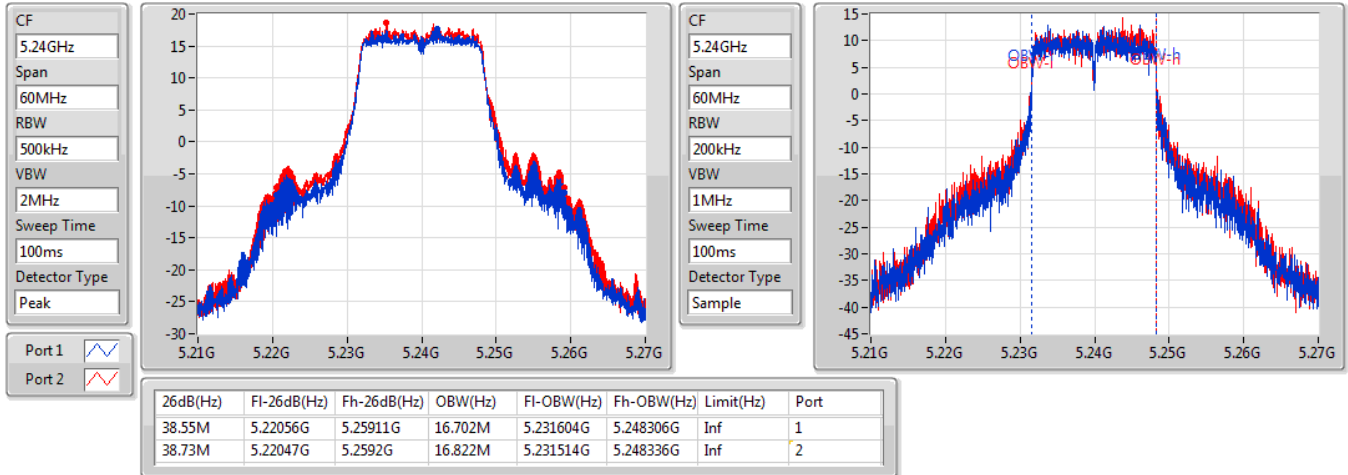


802.11a_Nss1,(6Mbps)_2TX

EBW

5240MHz

31/10/2019

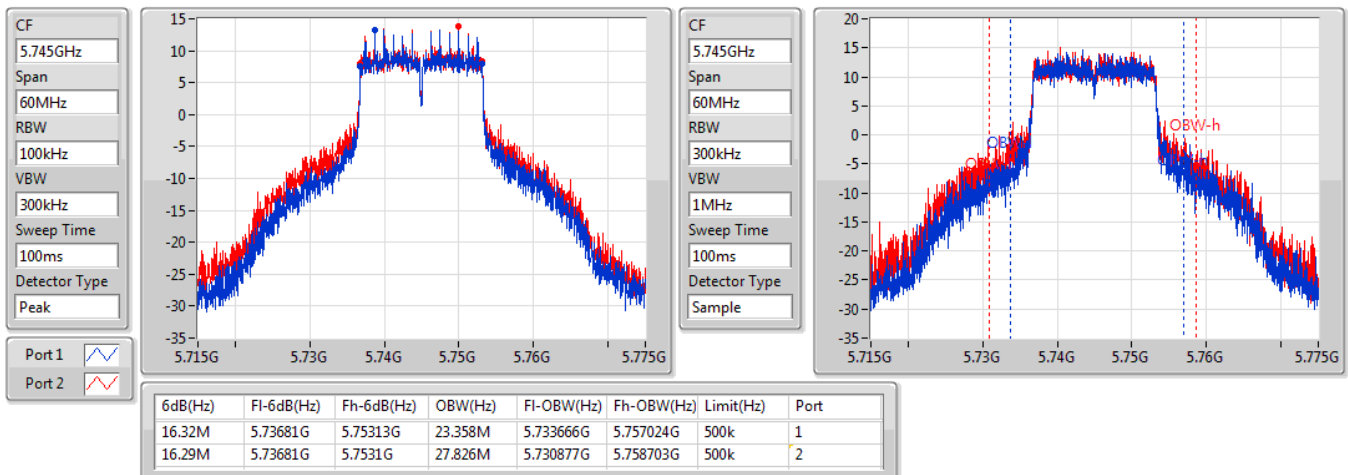


802.11a_Nss1,(6Mbps)_2TX

EBW

5745MHz

27/09/2019

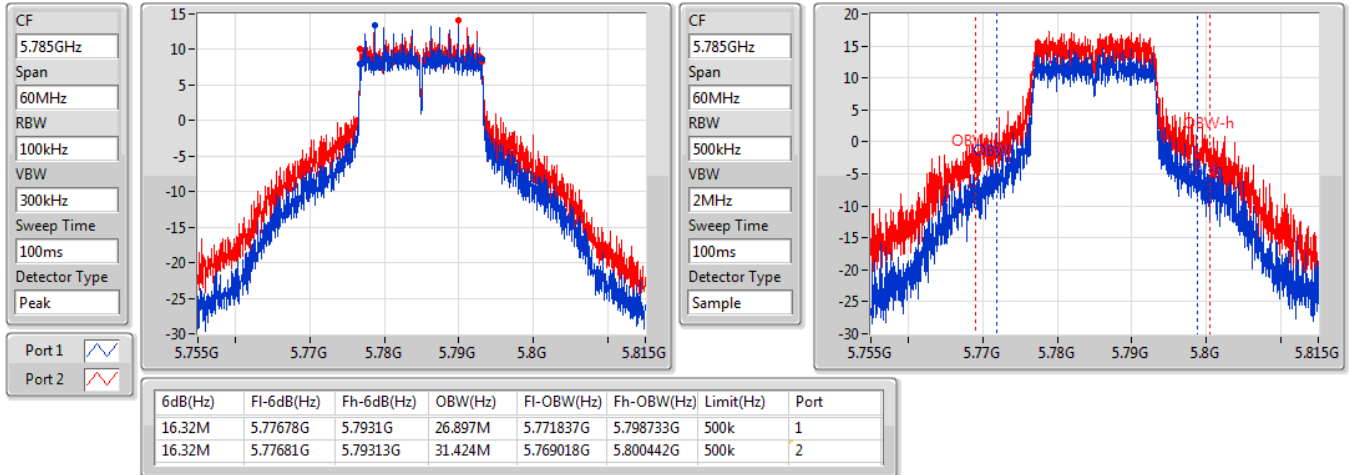


802.11a_Nss1,(6Mbps)_2TX

EBW

5785MHz

24/09/2019

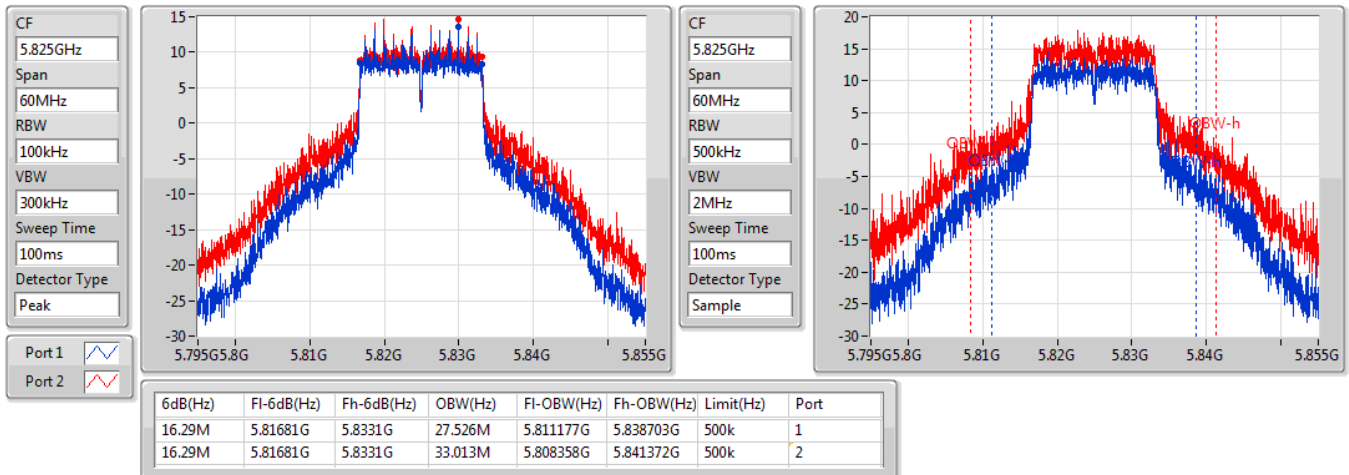


802.11a_Nss1,(6Mbps)_2TX

EBW

5825MHz

24/09/2019

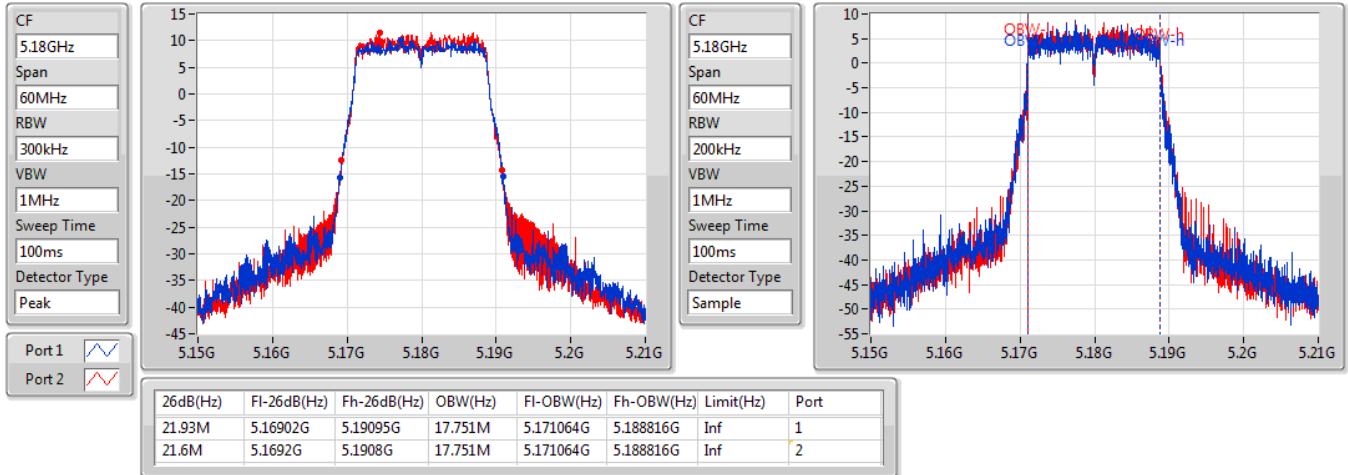


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5180MHz

31/10/2019

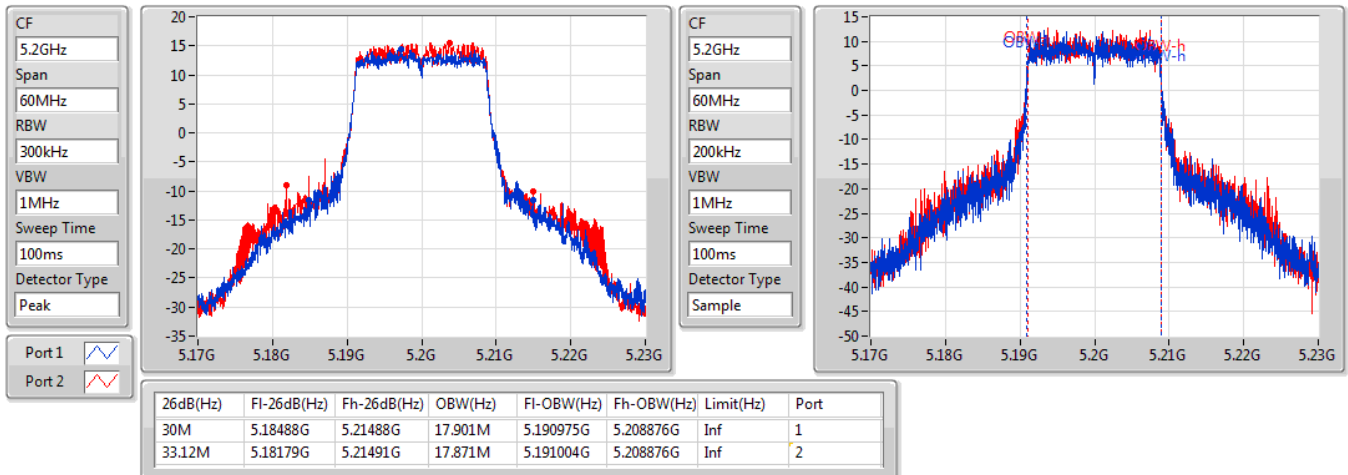


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5200MHz

31/10/2019

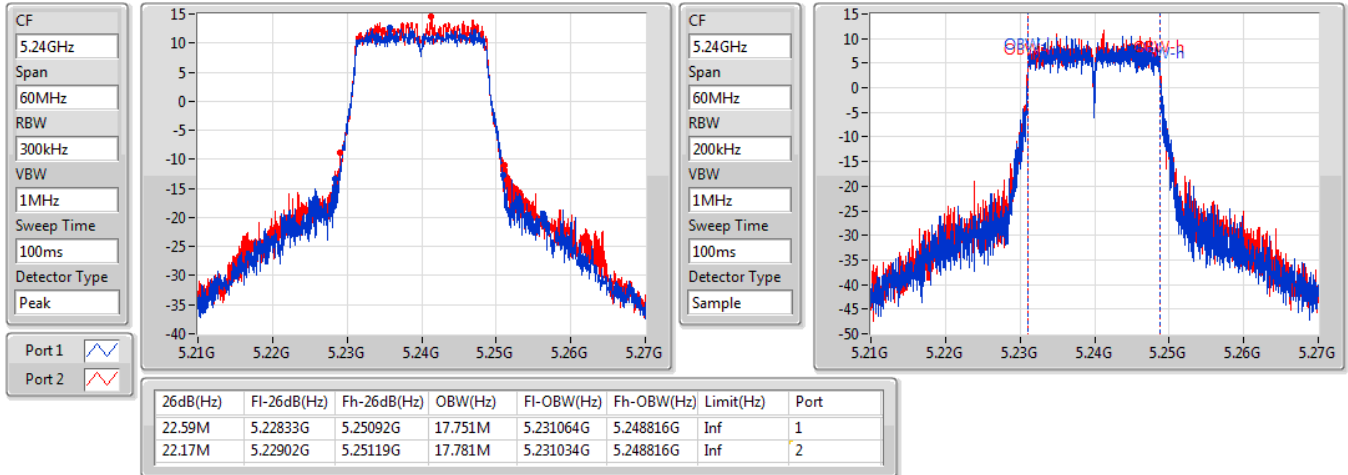


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5240MHz

31/10/2019

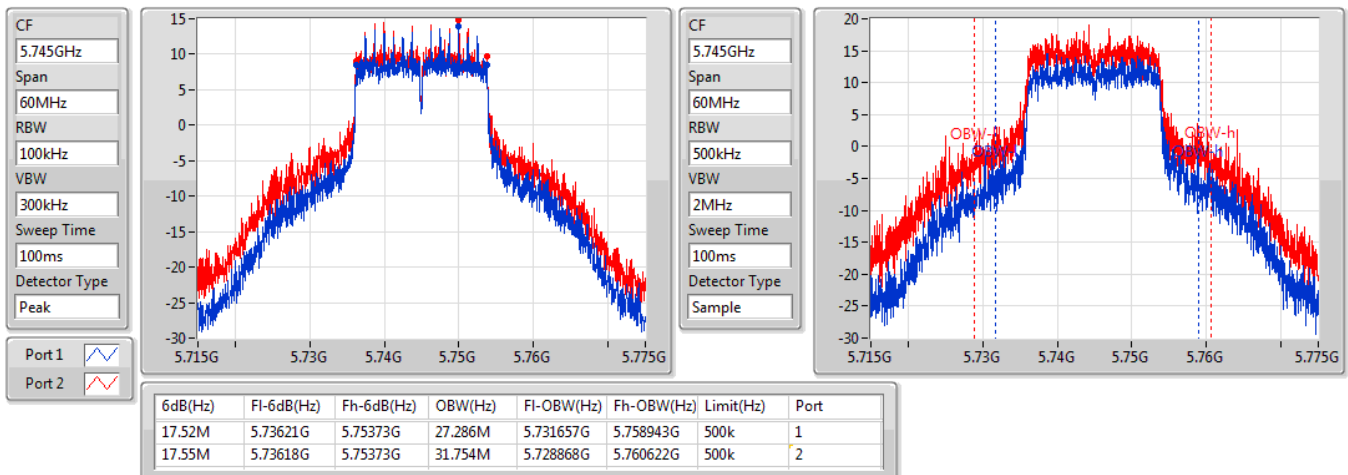


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5745MHz

24/09/2019

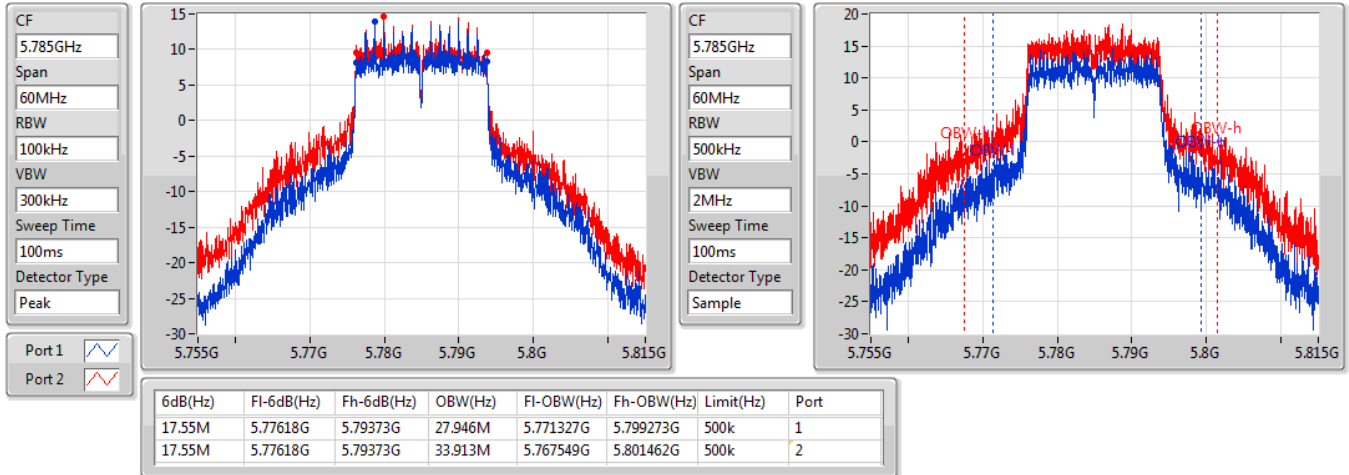


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5785MHz

24/09/2019

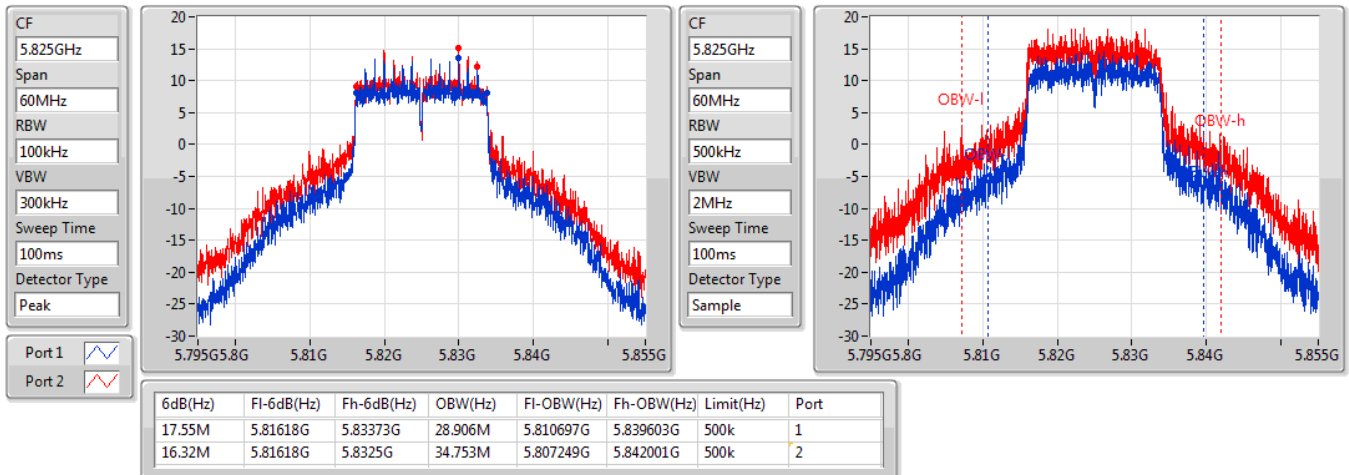


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5825MHz

24/09/2019

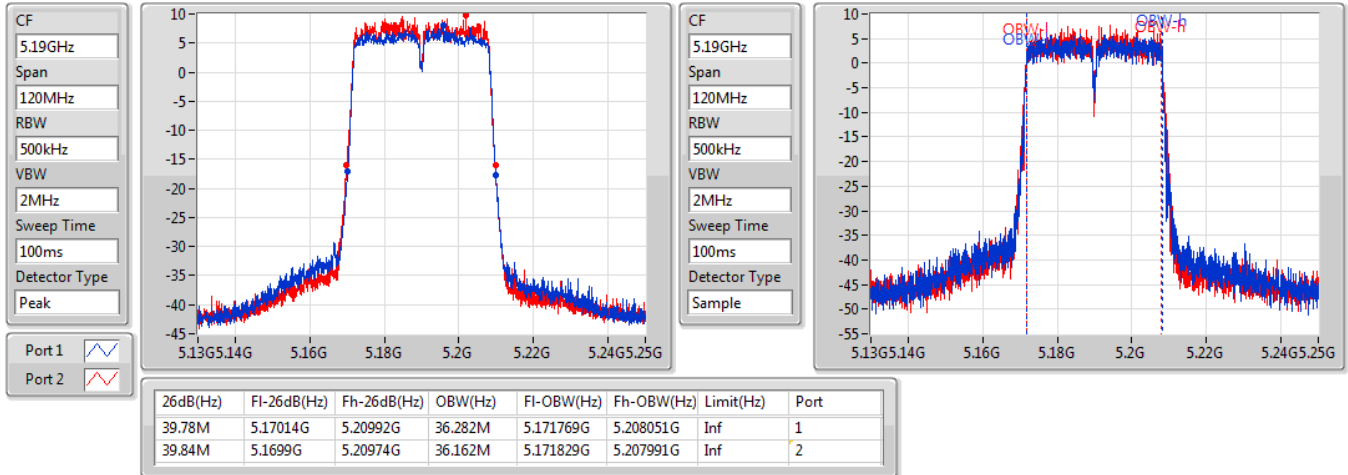


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5190MHz

31/10/2019

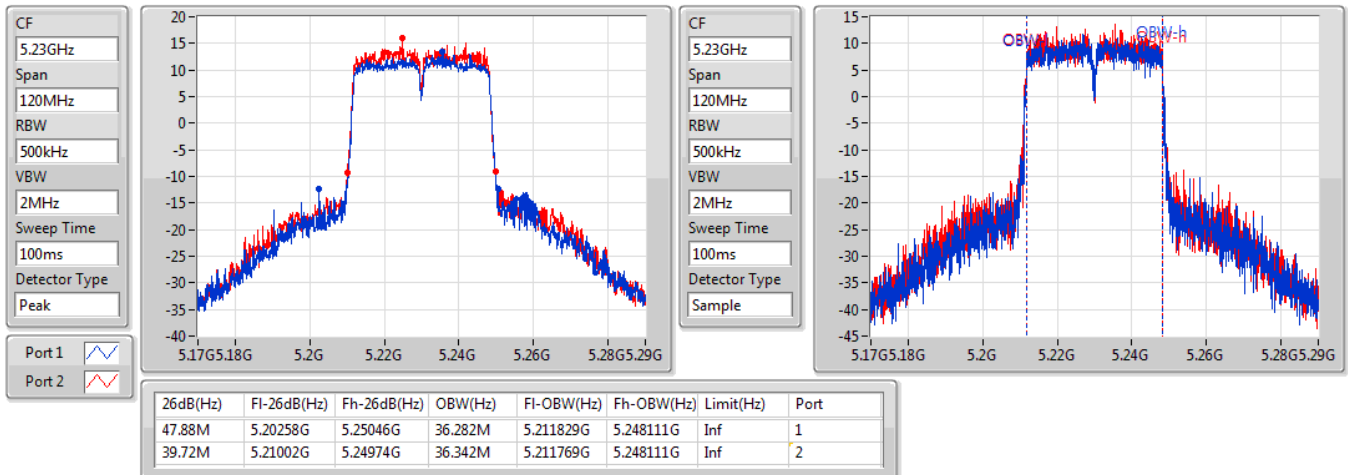


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5230MHz

31/10/2019

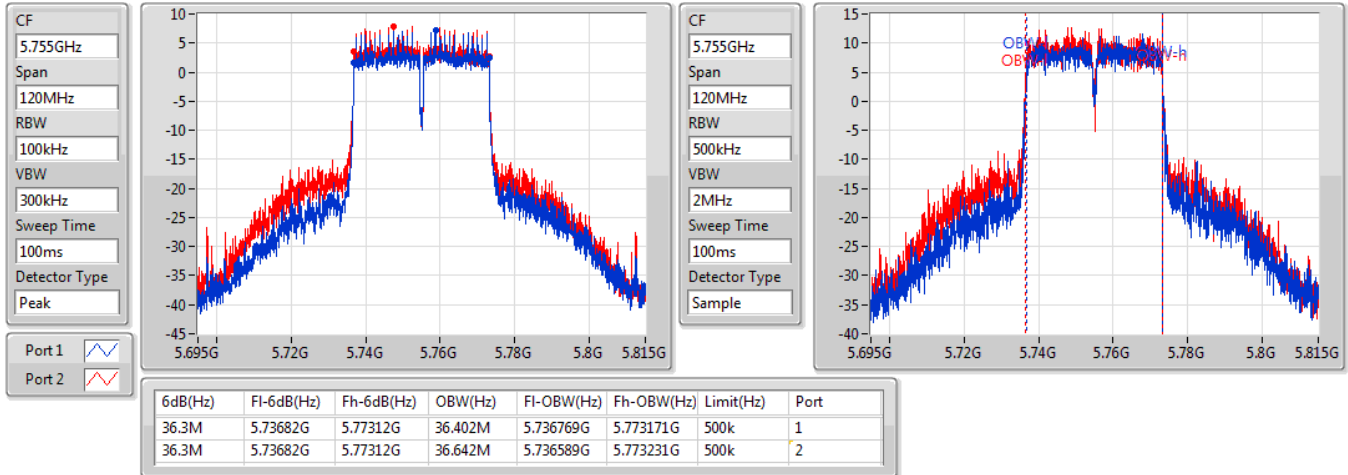


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5755MHz

24/09/2019

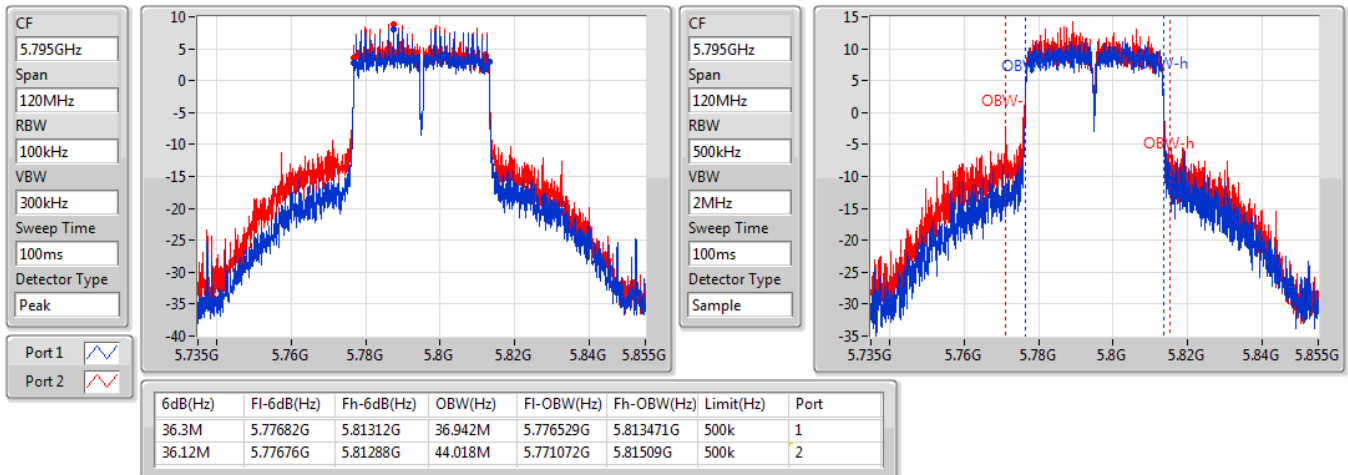


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5795MHz

24/09/2019

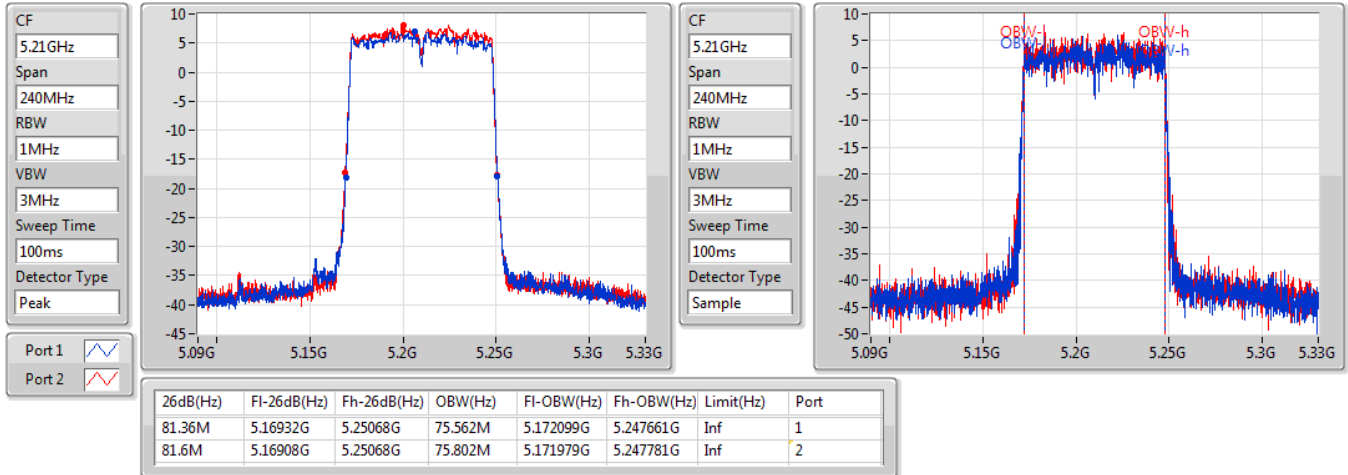


802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

5210MHz

31/10/2019

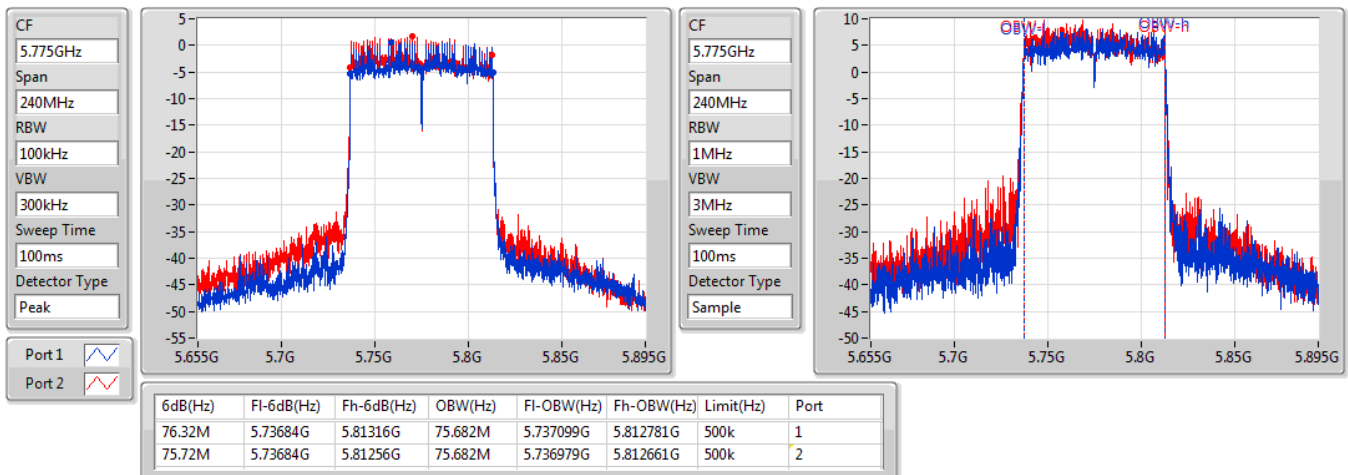


802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

5775MHz

24/09/2019

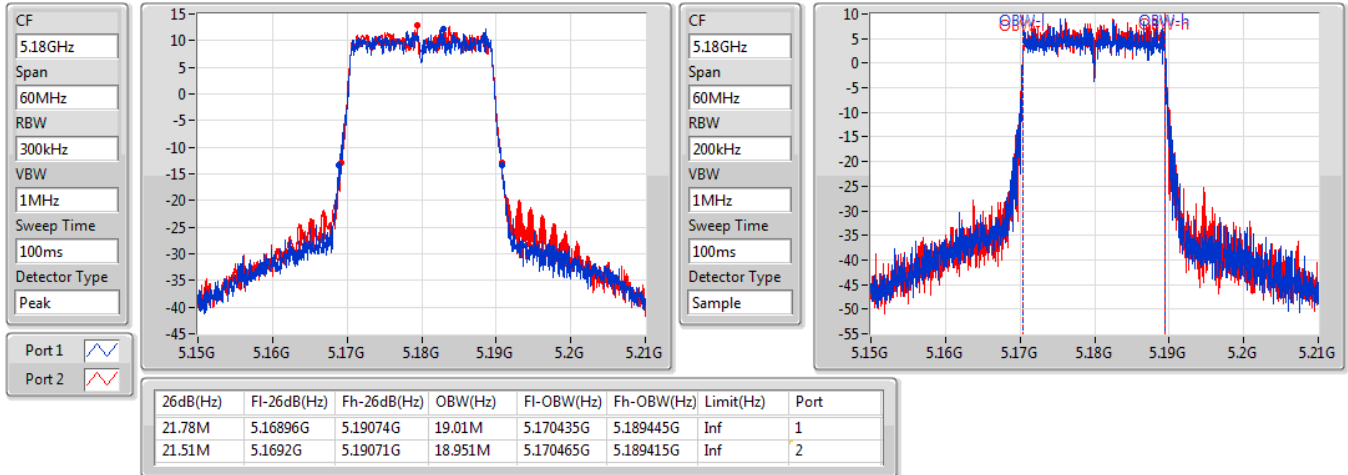


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5180MHz

31/10/2019

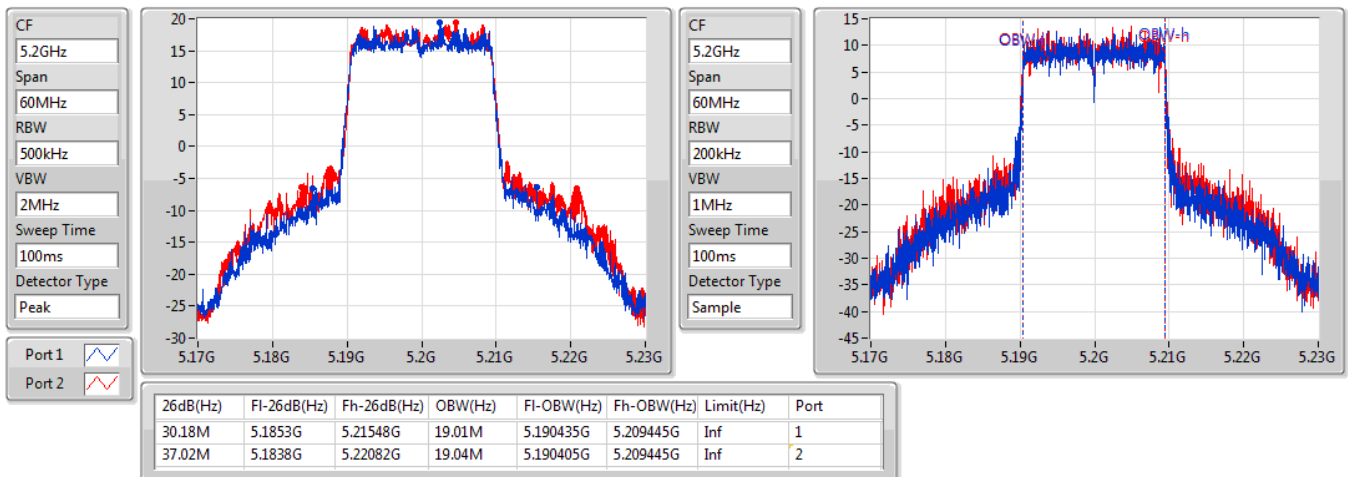


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5200MHz

31/10/2019

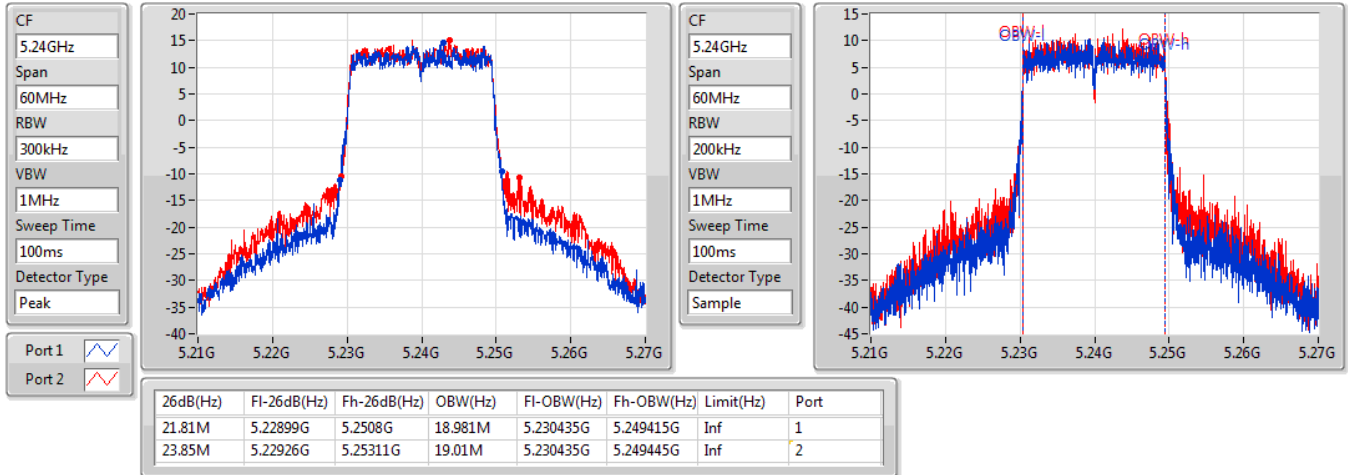


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5240MHz

31/10/2019

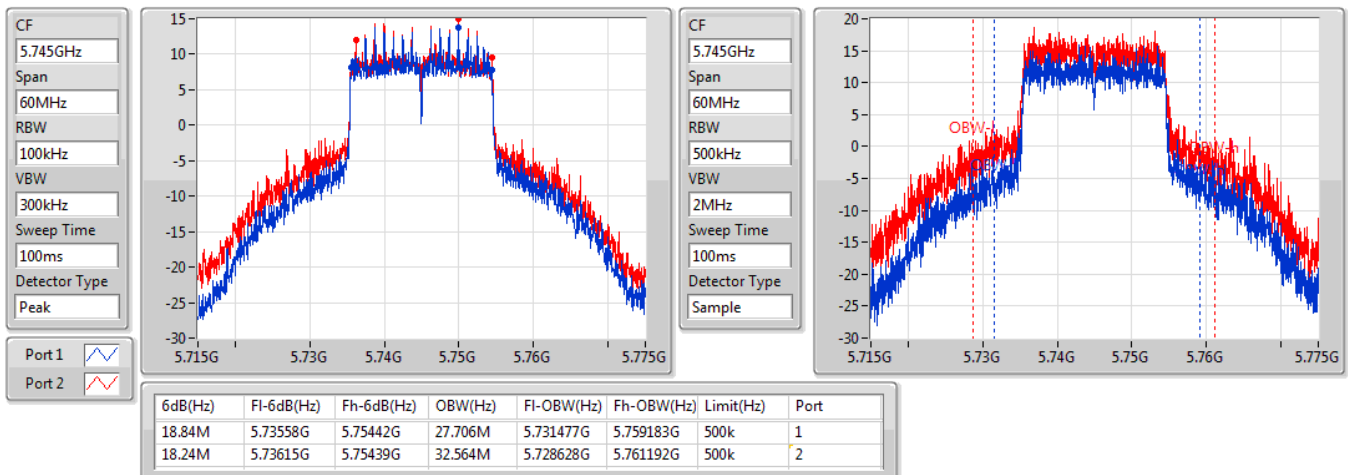


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5745MHz

24/09/2019

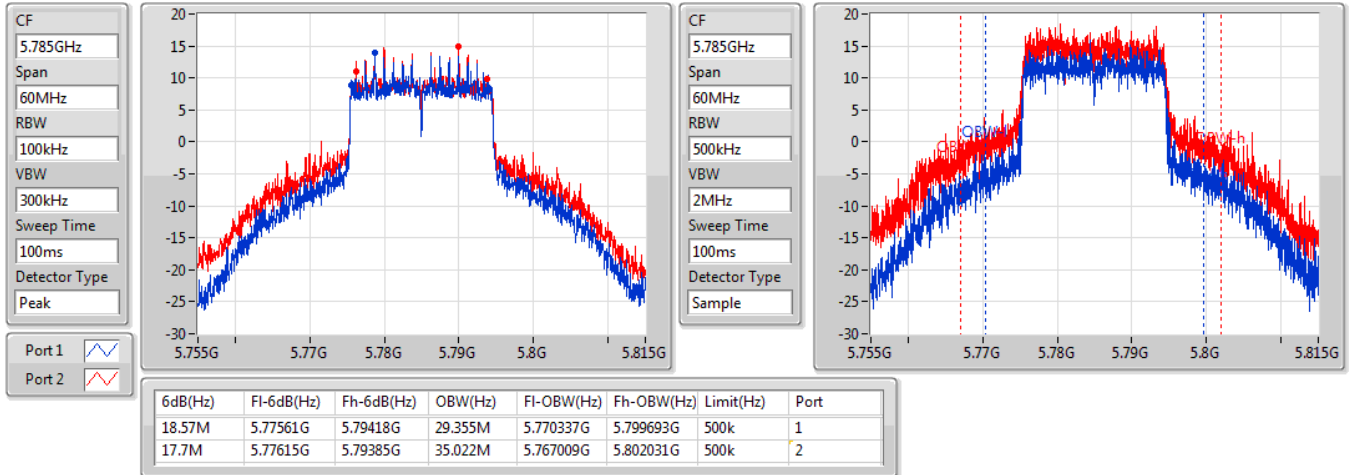


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5785MHz

24/09/2019

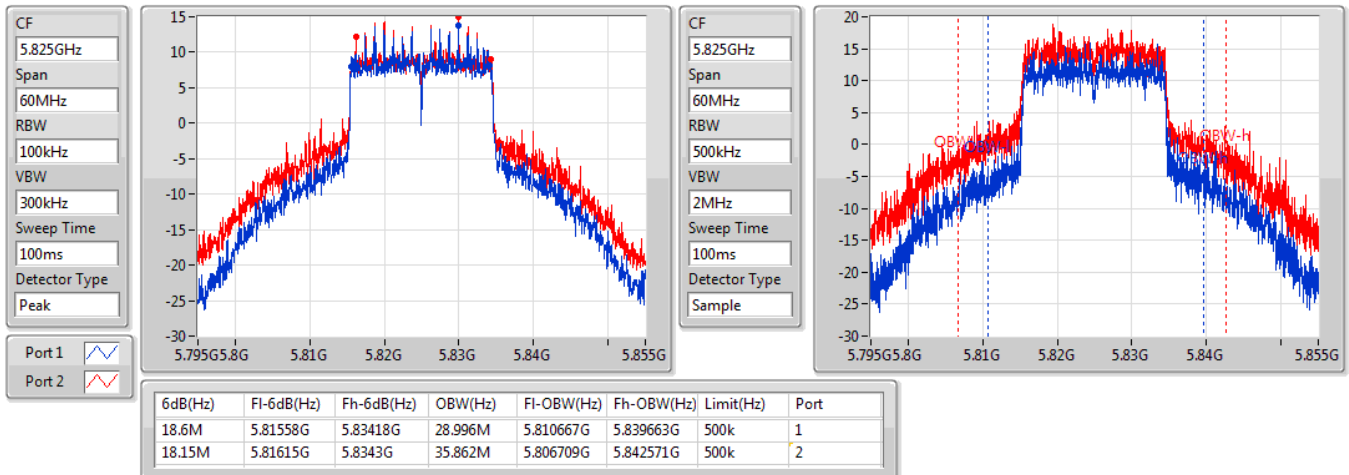


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5825MHz

24/09/2019

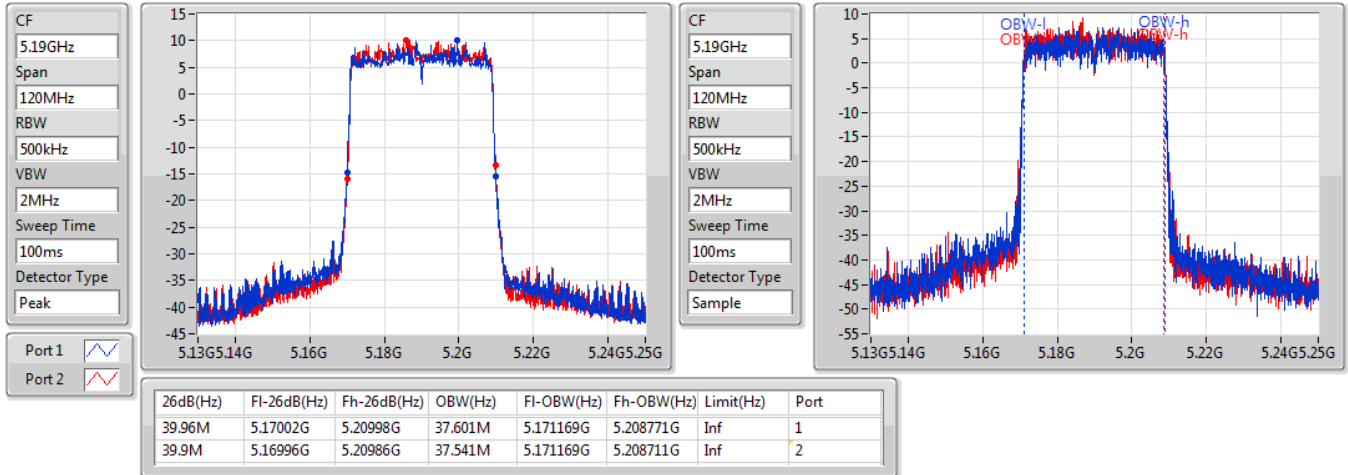


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5190MHz

31/10/2019

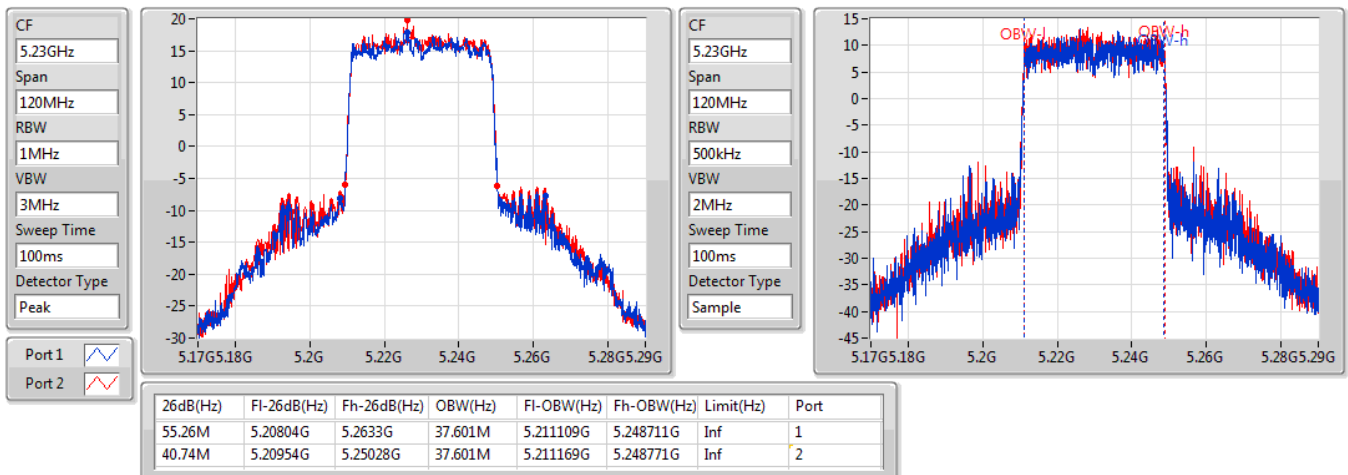


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5230MHz

31/10/2019

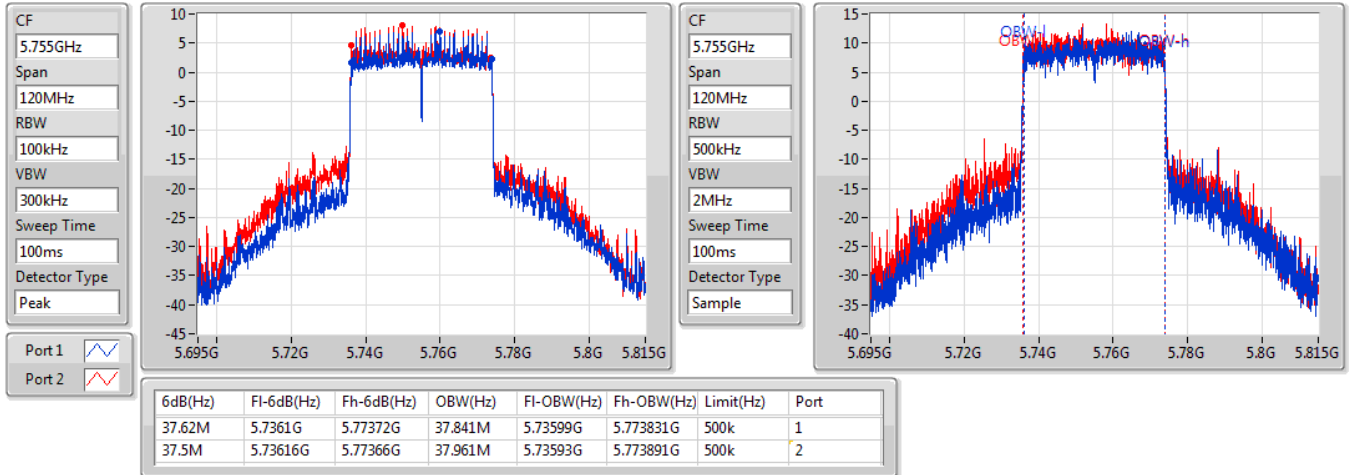


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5755MHz

24/09/2019

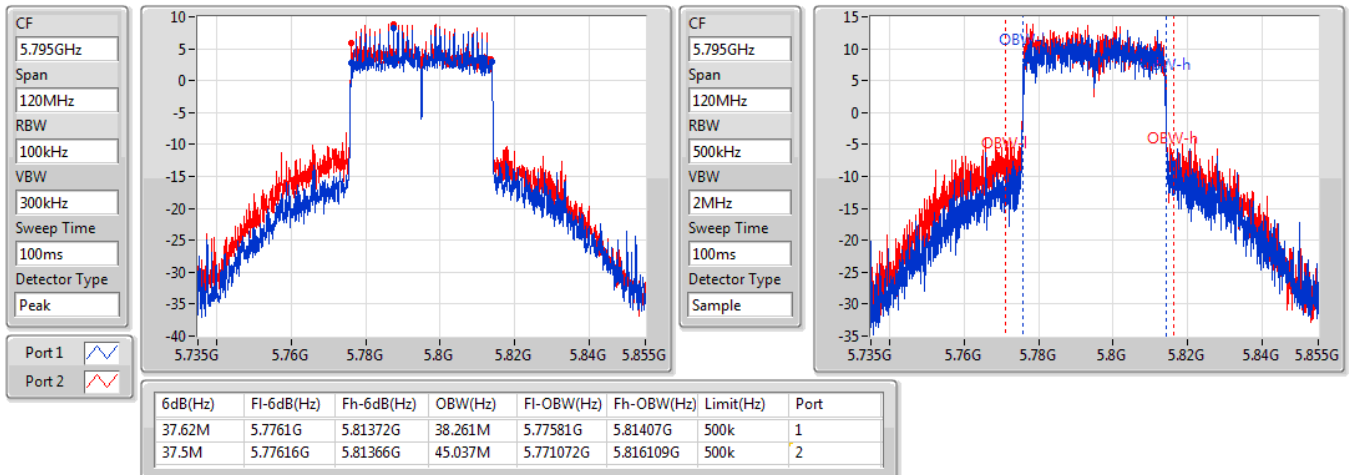


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5795MHz

24/09/2019

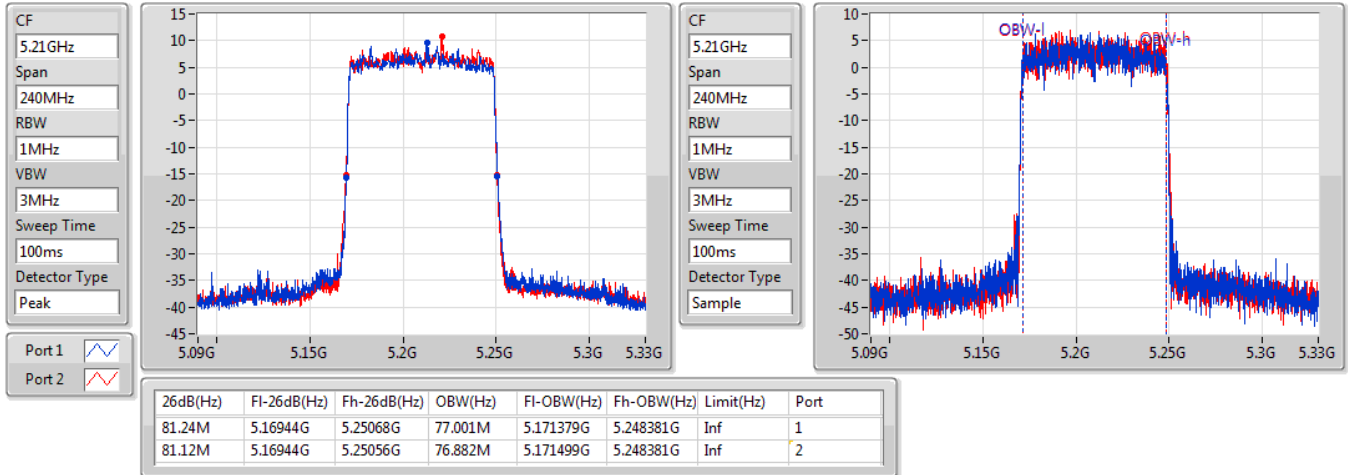


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5210MHz

31/10/2019

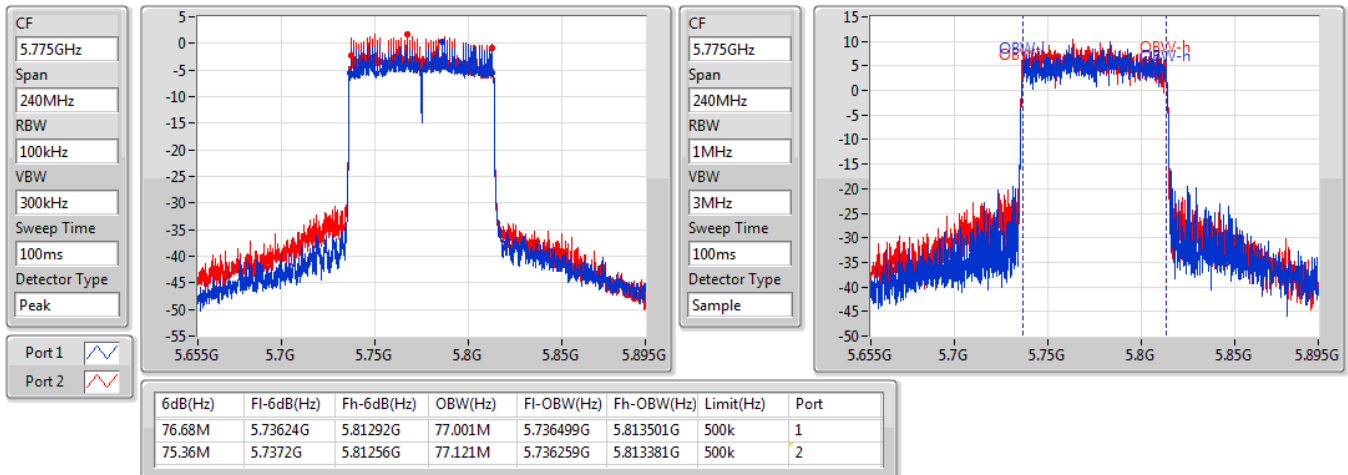


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5775MHz

24/09/2019



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)_4TX	22.08M	16.642M	16M6D1D	21.36M	16.522M
802.11ac VHT20_Nss1,(MCS0)_4TX	22.5M	17.781M	17M8D1D	21.42M	17.751M
802.11ac VHT40_Nss1,(MCS0)_4TX	74.34M	36.522M	36M5D1D	39.66M	36.162M
802.11ac VHT80_Nss1,(MCS0)_4TX	81.84M	75.922M	75M9D1D	81.12M	75.682M
802.11ax HEW20_Nss1,(MCS0)_4TX	25.53M	18.981M	19M0D1D	21.54M	18.951M
802.11ax HEW40_Nss1,(MCS0)_4TX	76.14M	37.841M	37M8D1D	39.72M	37.481M
802.11ax HEW80_Nss1,(MCS0)_4TX	82.2M	77.241M	77M2D1D	82.08M	77.001M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	16.38M	26.597M	26M6D1D	16.29M	20.69M
802.11ac VHT20_Nss1,(MCS0)_4TX	17.58M	26.447M	26M4D1D	17.55M	20.27M
802.11ac VHT40_Nss1,(MCS0)_4TX	36.36M	49.835M	49M8D1D	36.06M	36.342M
802.11ac VHT80_Nss1,(MCS0)_4TX	76.32M	75.922M	75M9D1D	75.84M	75.682M
802.11ax HEW20_Nss1,(MCS0)_4TX	18.96M	28.456M	28M5D1D	18.48M	21.019M
802.11ax HEW40_Nss1,(MCS0)_4TX	37.62M	51.214M	51M2D1D	37.14M	37.601M
802.11ax HEW80_Nss1,(MCS0)_4TX	77.52M	77.241M	77M2D1D	76.32M	76.762M

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)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.36M	16.582M	21.78M	16.552M	21.96M	16.582M	22.08M	16.642M
5200MHz_TnomVnom	Pass	Inf	21.45M	16.582M	21.57M	16.552M	21.84M	16.582M	21.78M	16.552M
5240MHz_TnomVnom	Pass	Inf	21.42M	16.582M	21.66M	16.552M	21.99M	16.612M	21.78M	16.522M
5745MHz_TnomVnom	Pass	500k	16.35M	20.69M	16.29M	23.838M	16.32M	24.948M	16.32M	22.669M
5785MHz_TnomVnom	Pass	500k	16.35M	20.87M	16.29M	24.948M	16.32M	25.637M	16.32M	23.238M
5825MHz_TnomVnom	Pass	500k	16.38M	22.069M	16.29M	26.597M	16.32M	25.847M	16.32M	24.498M
802.11ac_VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.78M	17.751M	21.69M	17.781M	21.42M	17.751M	21.9M	17.751M
5200MHz_TnomVnom	Pass	Inf	21.78M	17.781M	21.72M	17.751M	21.45M	17.781M	22.5M	17.751M
5240MHz_TnomVnom	Pass	Inf	21.75M	17.751M	21.6M	17.781M	21.51M	17.751M	21.78M	17.781M
5745MHz_TnomVnom	Pass	500k	17.55M	20.27M	17.55M	24.498M	17.55M	25.997M	17.58M	22.939M
5785MHz_TnomVnom	Pass	500k	17.55M	21.139M	17.55M	25.577M	17.58M	25.817M	17.58M	24.168M
5825MHz_TnomVnom	Pass	500k	17.55M	22.099M	17.55M	26.447M	17.55M	26.147M	17.55M	23.208M
802.11ac_VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	40.2M	36.162M	39.72M	36.162M	40.02M	36.342M	39.66M	36.282M
5230MHz_TnomVnom	Pass	Inf	73.86M	36.282M	73.62M	36.402M	67.5M	36.402M	74.34M	36.522M
5755MHz_TnomVnom	Pass	500k	36.3M	36.462M	36.3M	36.522M	36.36M	36.522M	36.06M	36.342M
5795MHz_TnomVnom	Pass	500k	36.36M	38.021M	36.36M	49.715M	36.3M	49.835M	36.3M	40.54M
802.11ac_VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	81.84M	75.682M	81.12M	75.922M	81.36M	75.682M	81.6M	75.802M
5775MHz_TnomVnom	Pass	500k	76.08M	75.682M	76.32M	75.682M	76.32M	75.682M	75.84M	75.922M
802.11ax_HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.54M	18.981M	22.32M	18.951M	22.44M	18.981M	23.16M	18.951M
5200MHz_TnomVnom	Pass	Inf	22.83M	18.951M	23.67M	18.951M	23.76M	18.981M	25.53M	18.951M
5240MHz_TnomVnom	Pass	Inf	22.83M	18.981M	22.89M	18.951M	22.92M	18.981M	25.44M	18.981M
5745MHz_TnomVnom	Pass	500k	18.96M	21.019M	18.63M	25.787M	18.57M	26.987M	18.75M	23.868M
5785MHz_TnomVnom	Pass	500k	18.87M	21.829M	18.72M	26.957M	18.6M	27.556M	18.78M	21.589M
5825MHz_TnomVnom	Pass	500k	18.6M	22.789M	18.48M	28.456M	18.48M	27.076M	18.72M	24.438M
802.11ax_HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	40.02M	37.541M	39.72M	37.481M	40.26M	37.481M	40.08M	37.541M
5230MHz_TnomVnom	Pass	Inf	46.98M	37.661M	66.48M	37.661M	48.24M	37.721M	76.14M	37.841M
5755MHz_TnomVnom	Pass	500k	37.62M	37.601M	37.26M	37.781M	37.5M	37.781M	37.32M	37.661M
5795MHz_TnomVnom	Pass	500k	37.5M	38.381M	37.14M	50.375M	37.56M	51.214M	37.32M	39.04M
802.11ax_HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	82.08M	77.001M	82.08M	77.001M	82.2M	77.241M	82.08M	77.001M
5775MHz_TnomVnom	Pass	500k	76.56M	77.001M	76.32M	77.121M	77.16M	77.241M	77.52M	76.762M

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

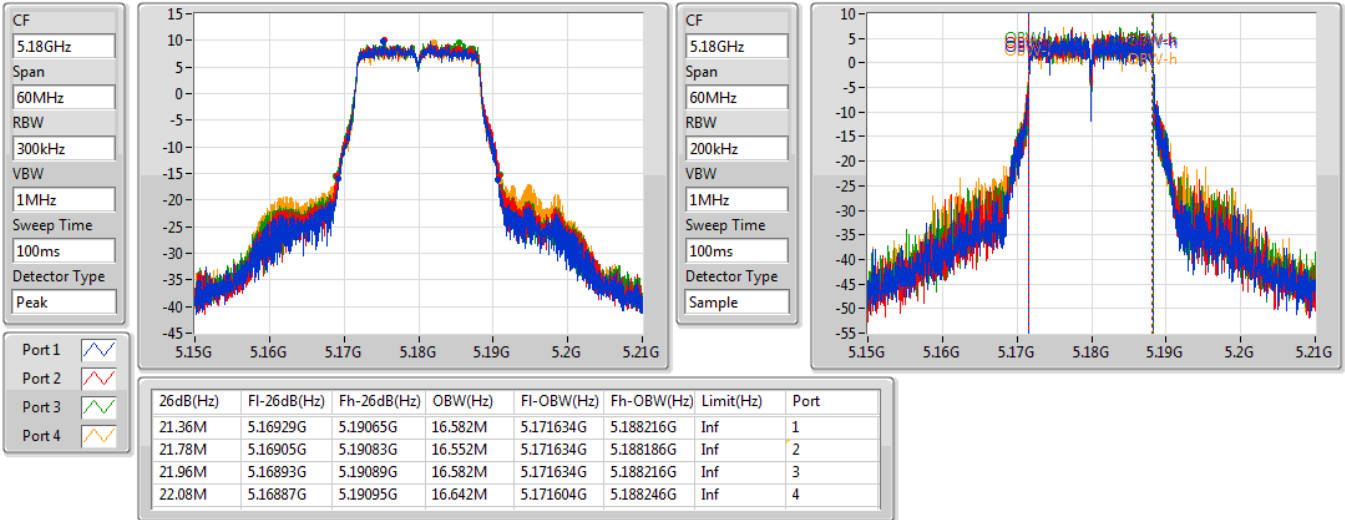
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_4TX

EBW

5180MHz

30/10/2019

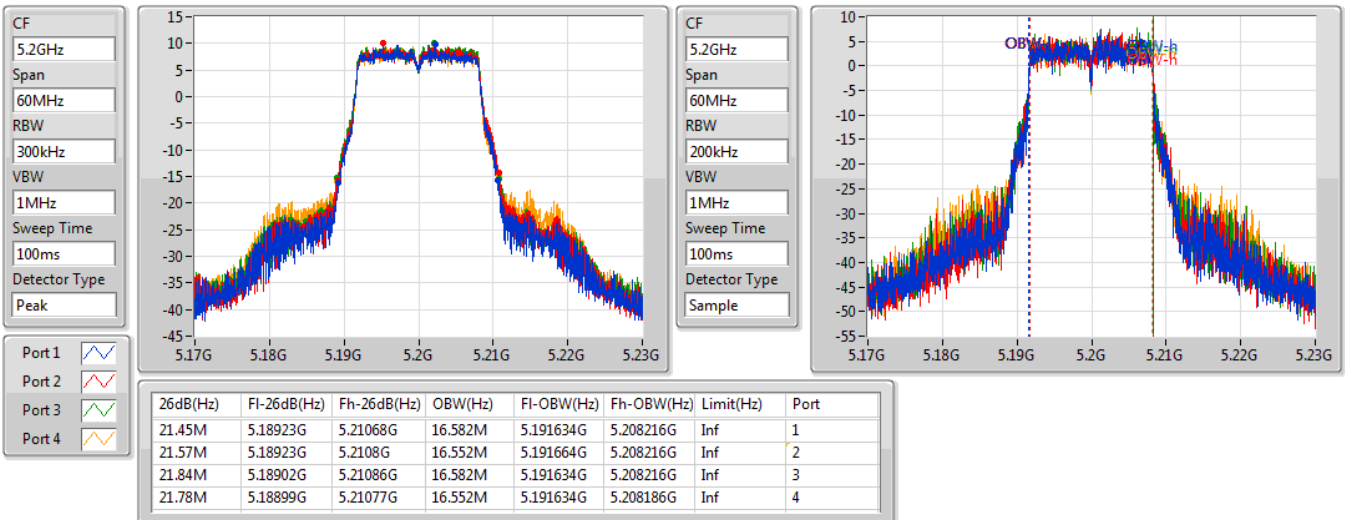


802.11a_Nss1,(6Mbps)_4TX

EBW

5200MHz

30/10/2019

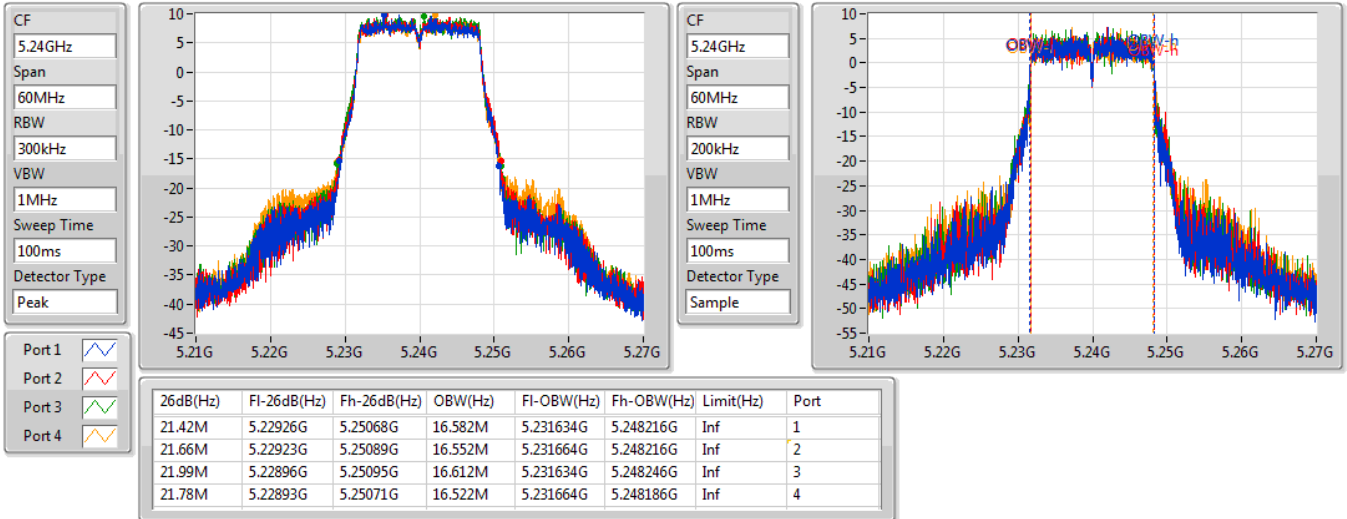


802.11a_Nss1,(6Mbps)_4TX

EBW

5240MHz

30/10/2019

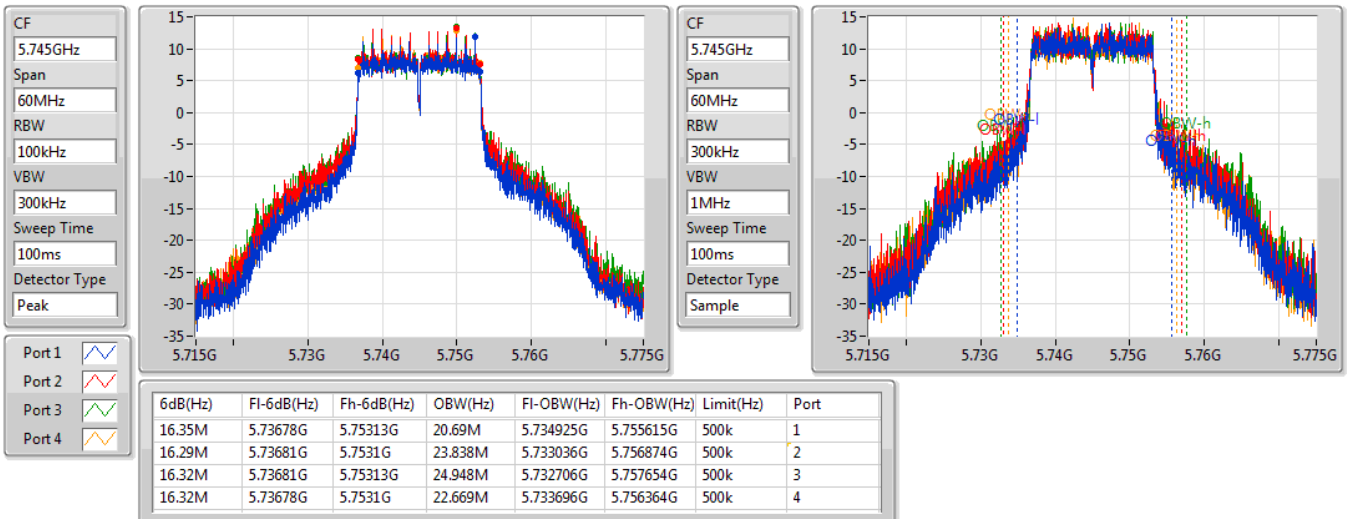


802.11a_Nss1,(6Mbps)_4TX

EBW

5745MHz

23/09/2019

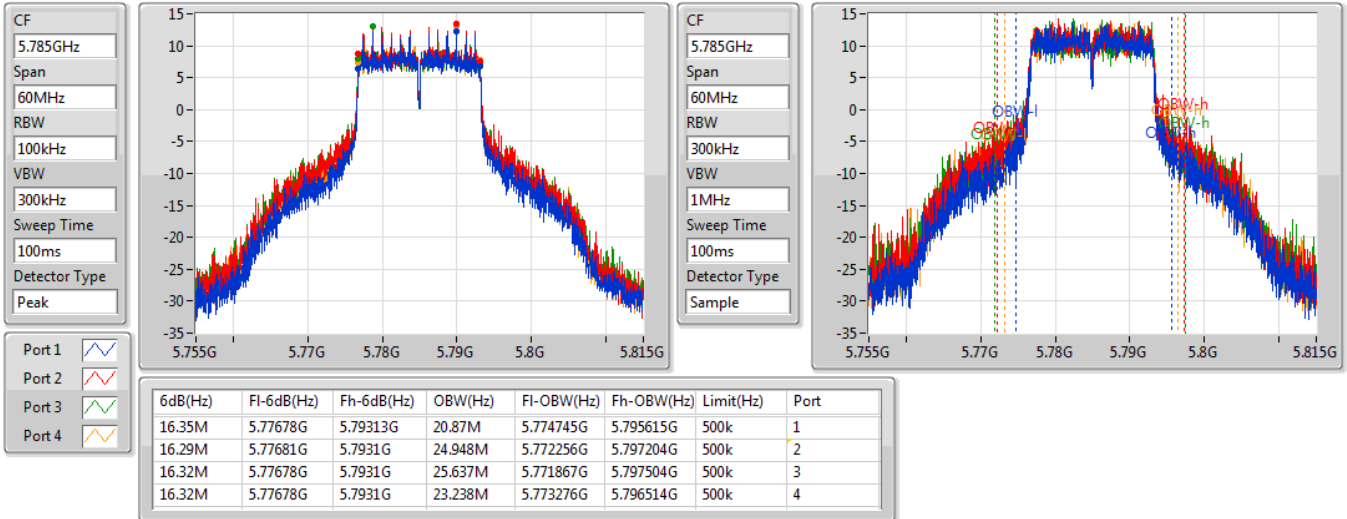


802.11a_Nss1,(6Mbps)_4TX

EBW

5785MHz

23/09/2019

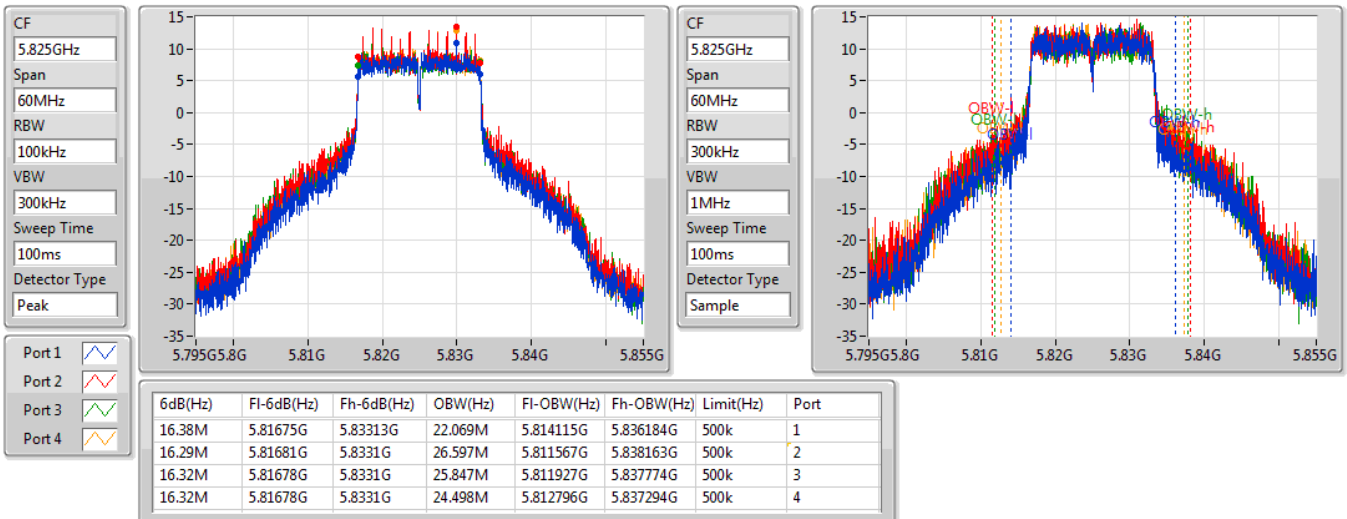


802.11a_Nss1,(6Mbps)_4TX

EBW

5825MHz

23/09/2019

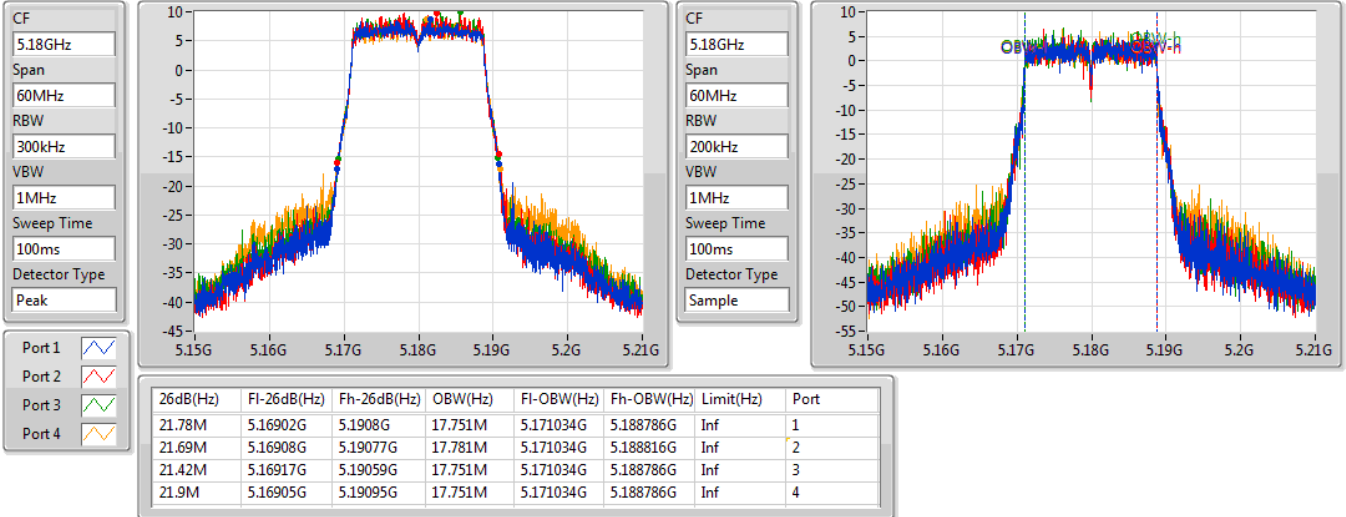


802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

5180MHz

30/10/2019

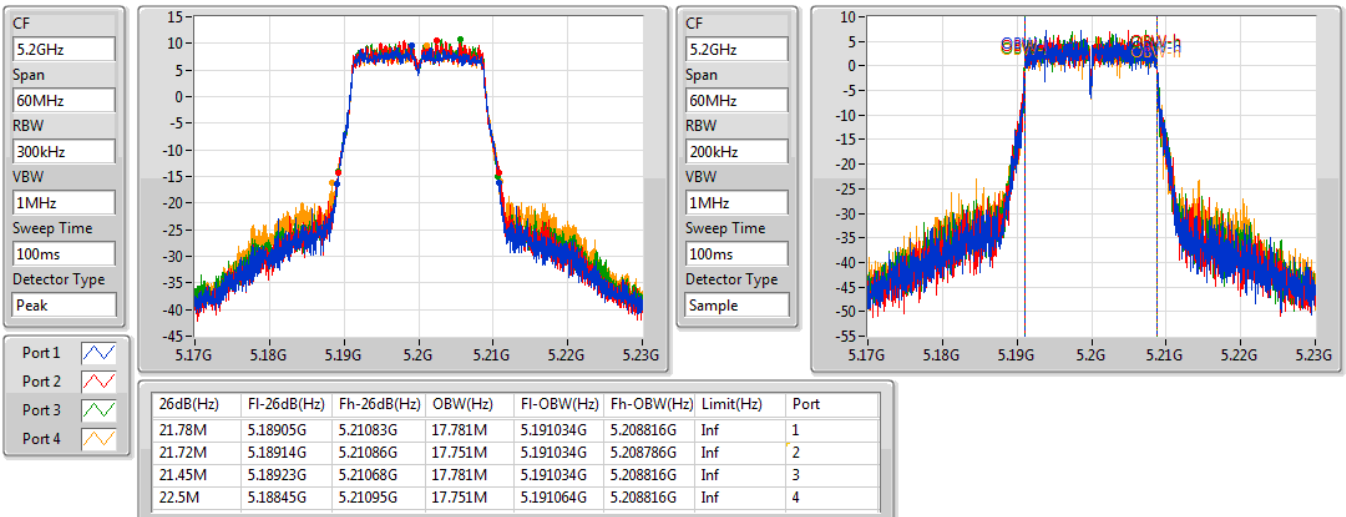


802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

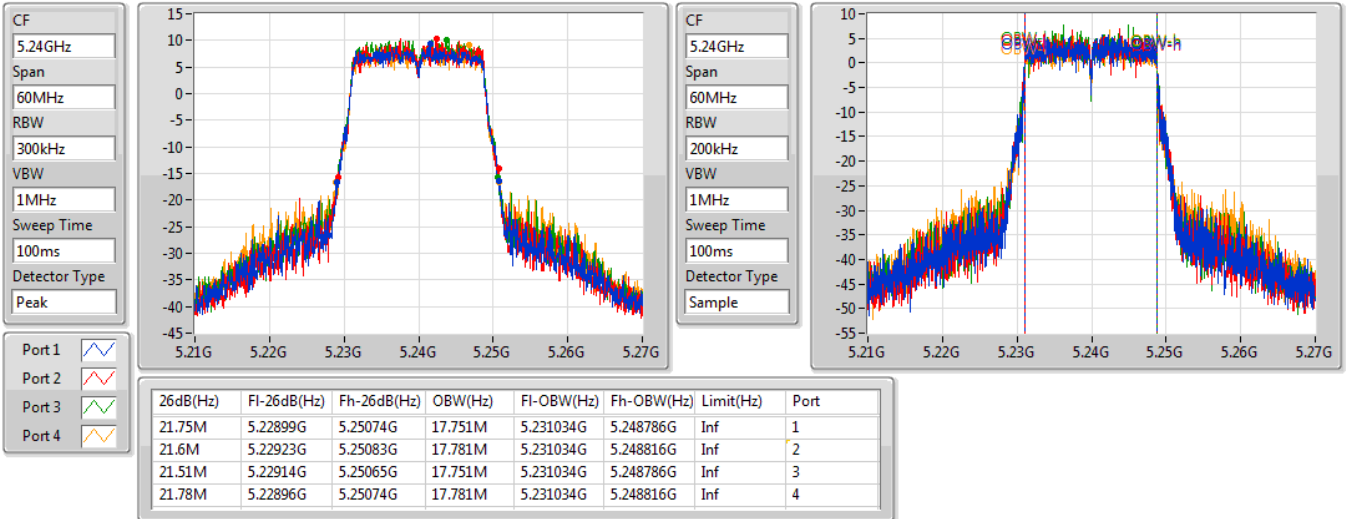
5200MHz

30/10/2019

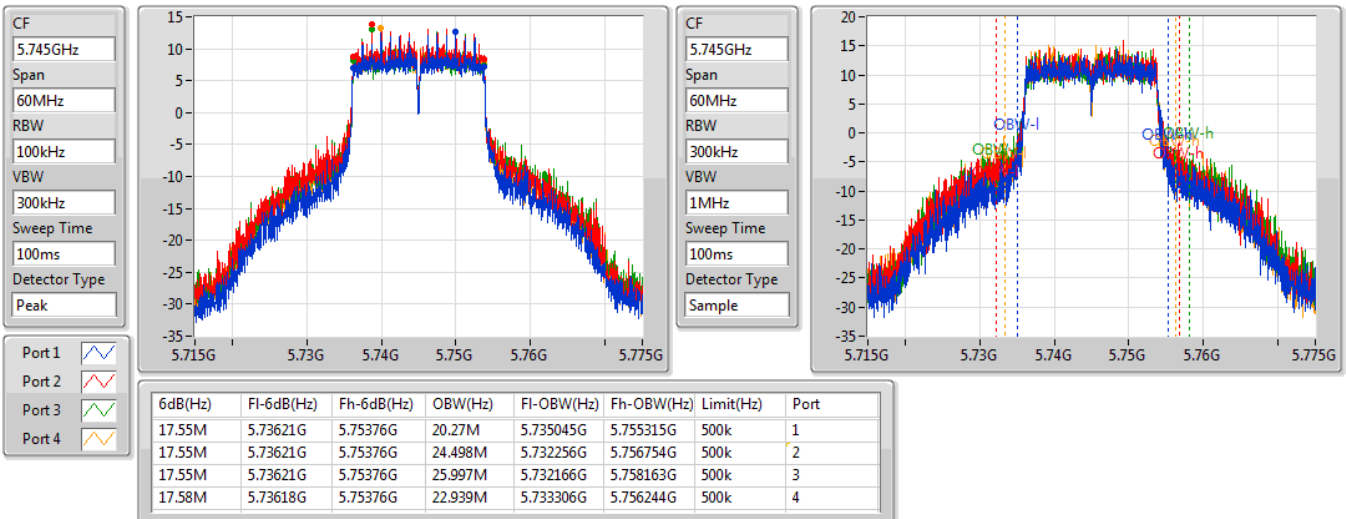


802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5240MHz

30/10/2019


802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5745MHz

23/09/2019

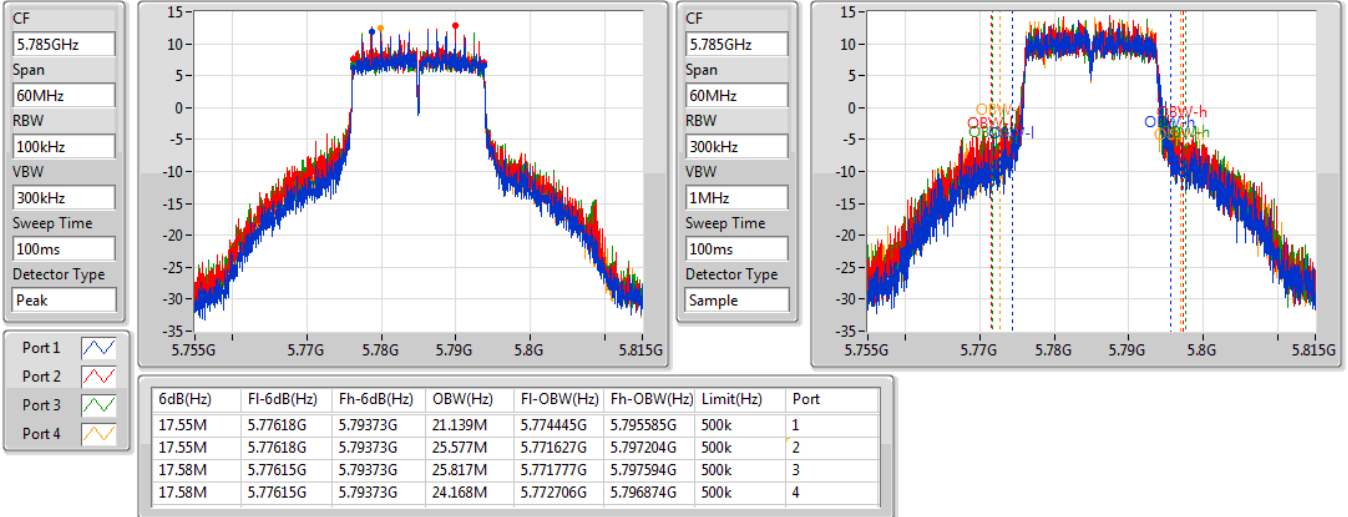


802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

5785MHz

24/09/2019

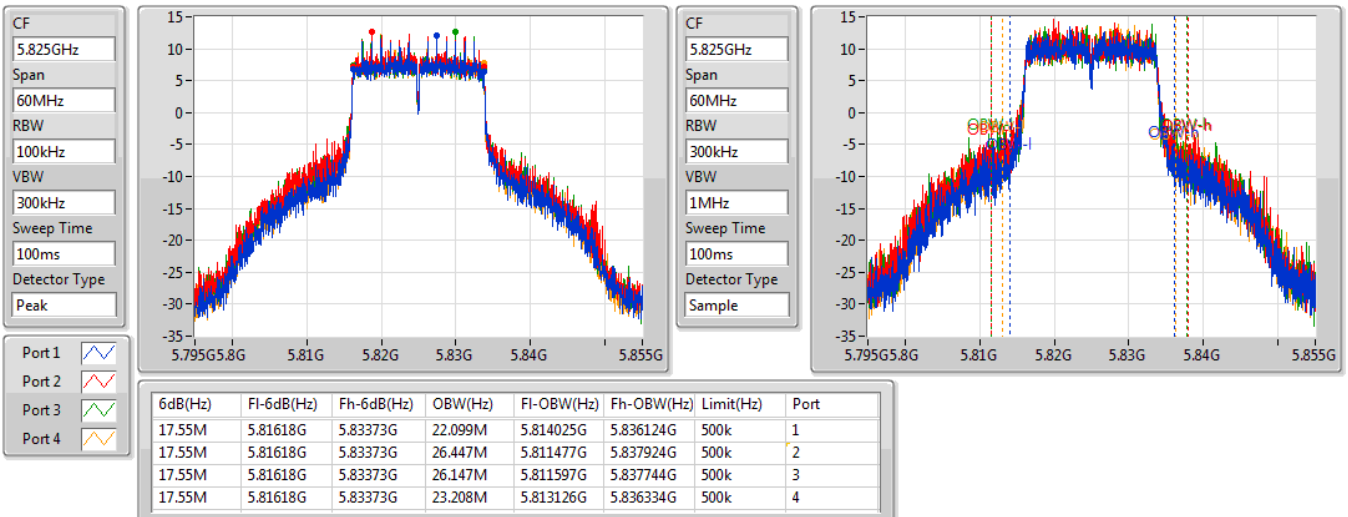


802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

5825MHz

24/09/2019

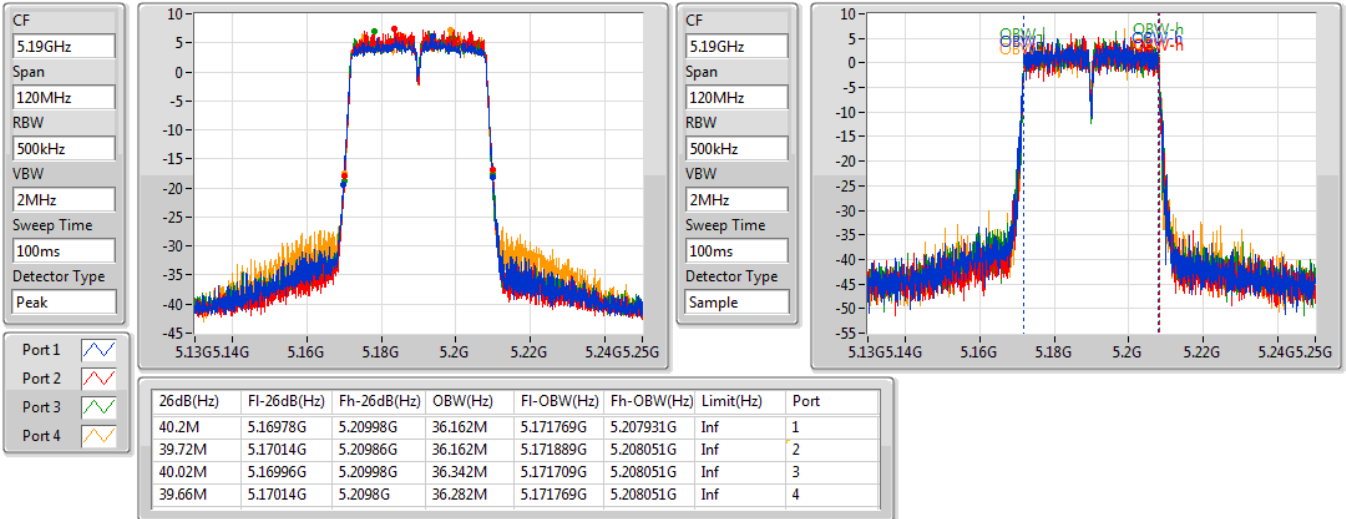


802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

5190MHz

30/10/2019

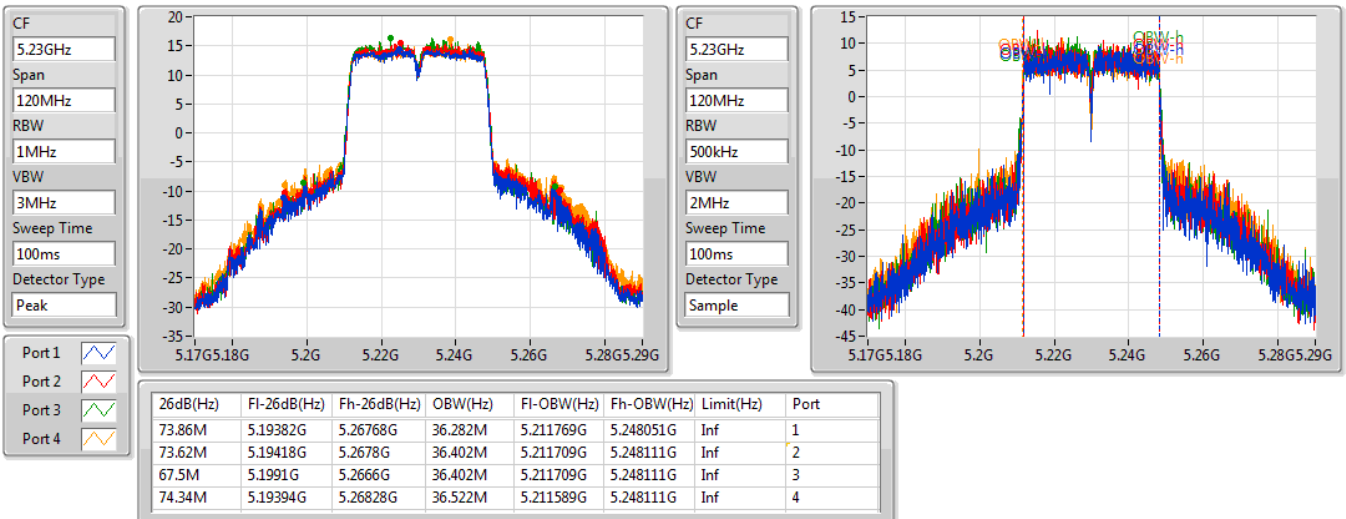


802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

5230MHz

30/10/2019

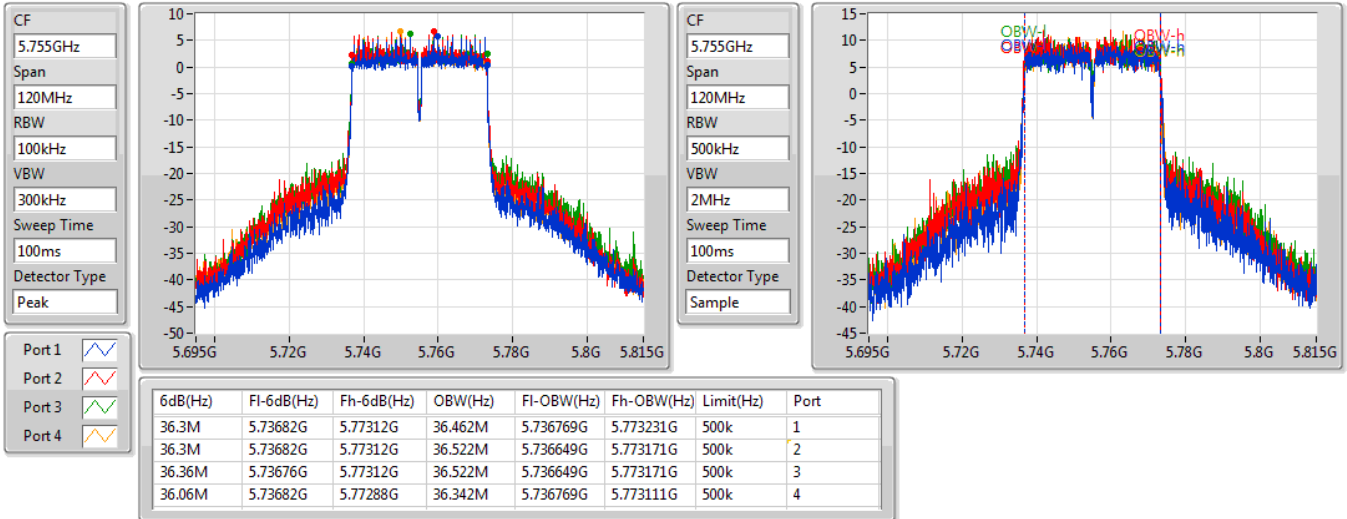


802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

5755MHz

24/09/2019

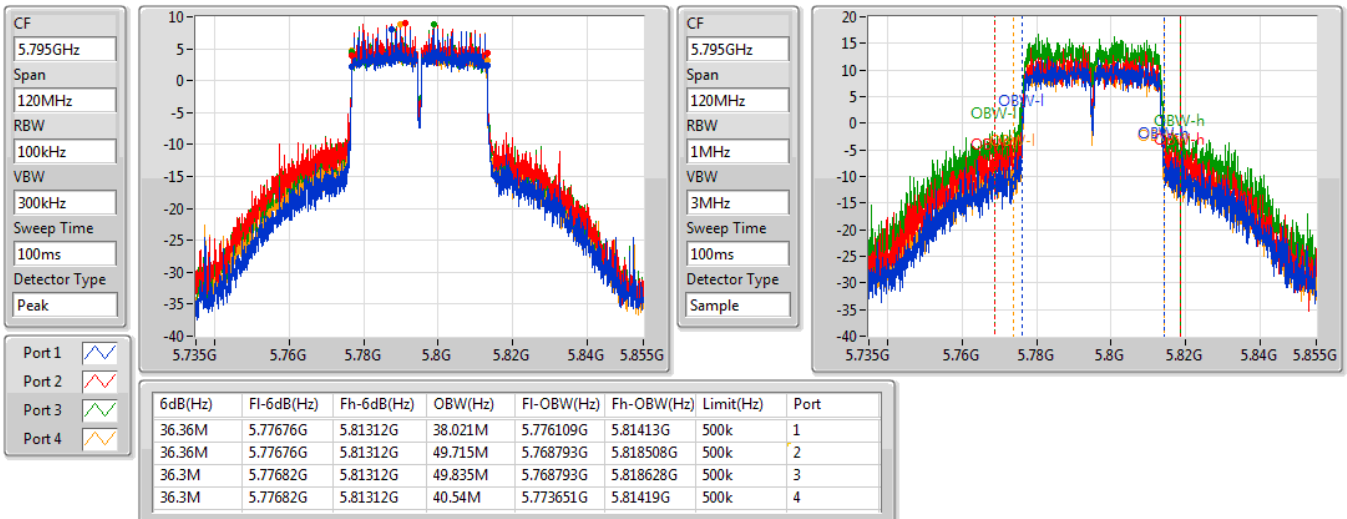


802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

5795MHz

24/09/2019

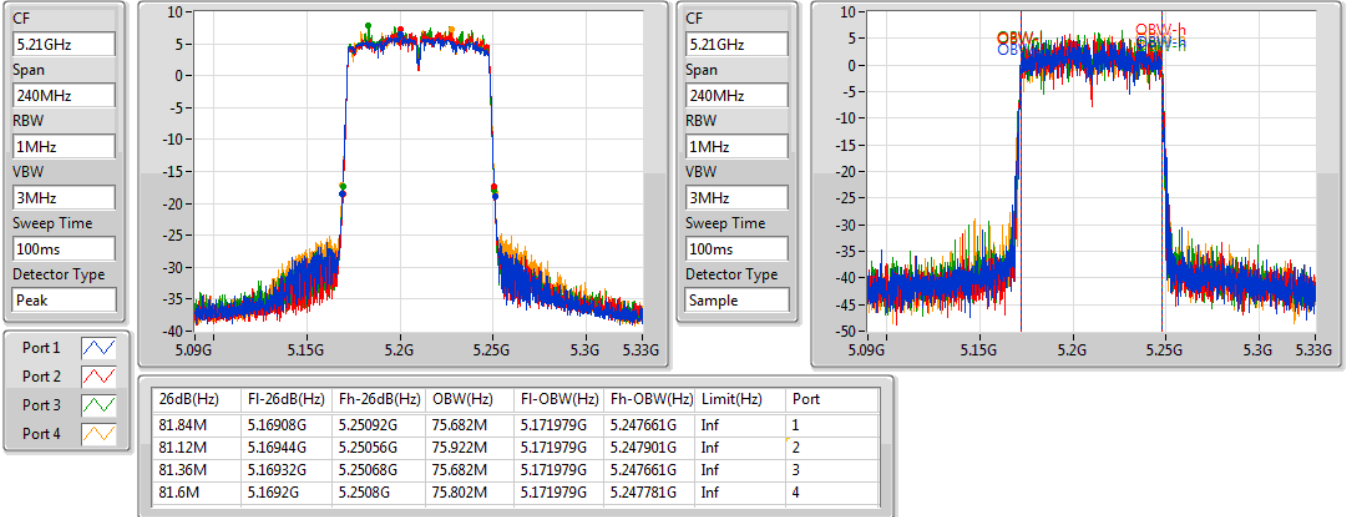


802.11ac VHT80_Nss1,(MCS0)_4TX

EBW

5210MHz

30/10/2019

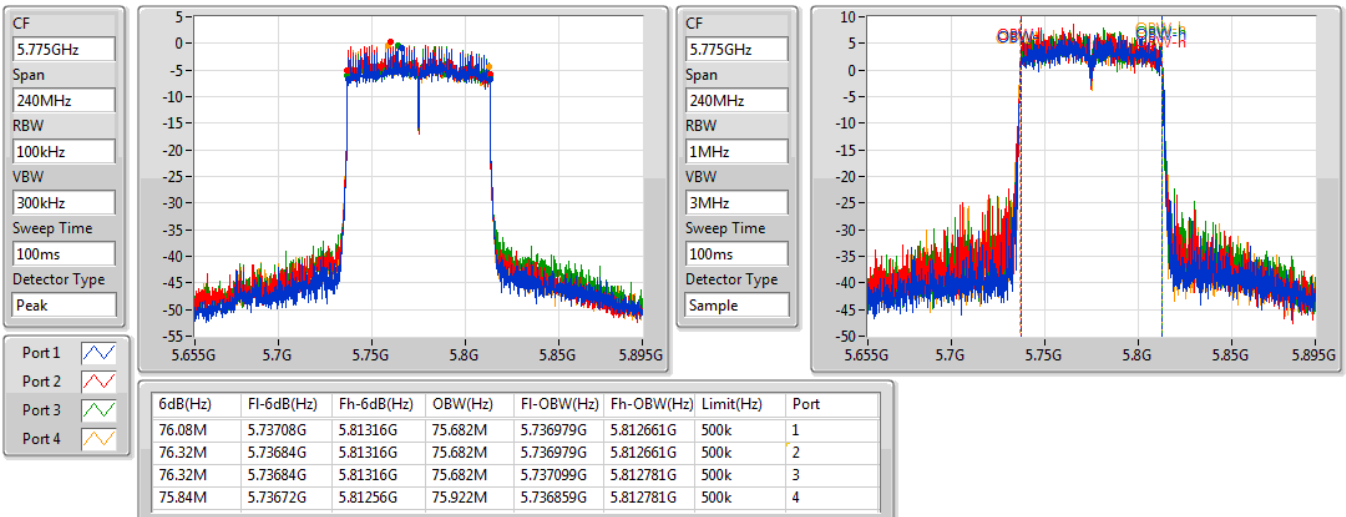


802.11ac VHT80_Nss1,(MCS0)_4TX

EBW

5775MHz

24/09/2019

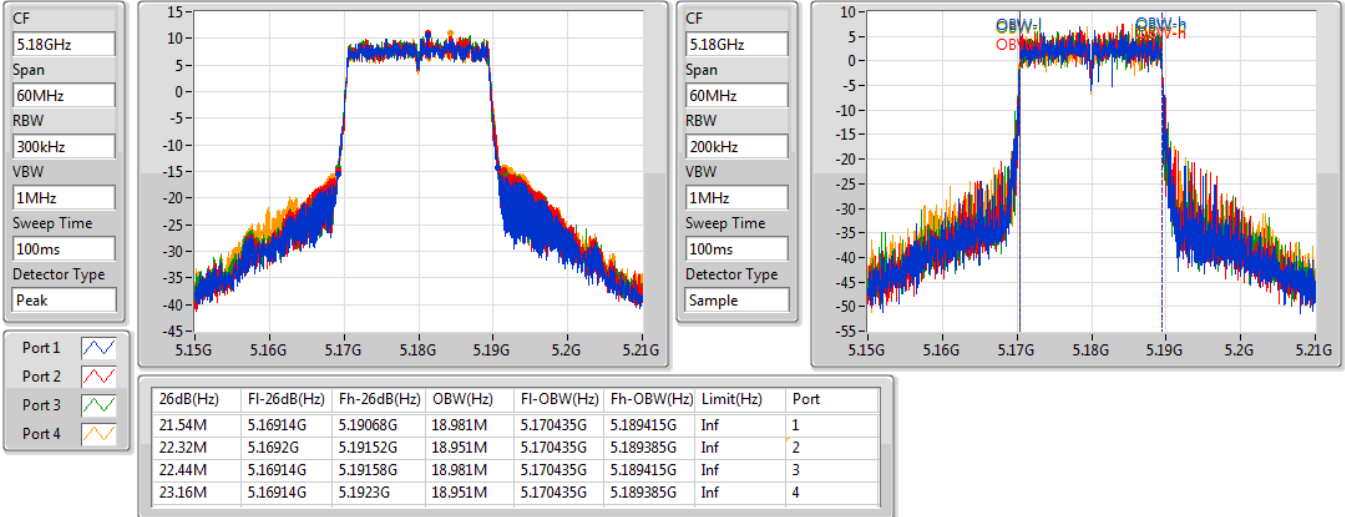


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5180MHz

30/10/2019

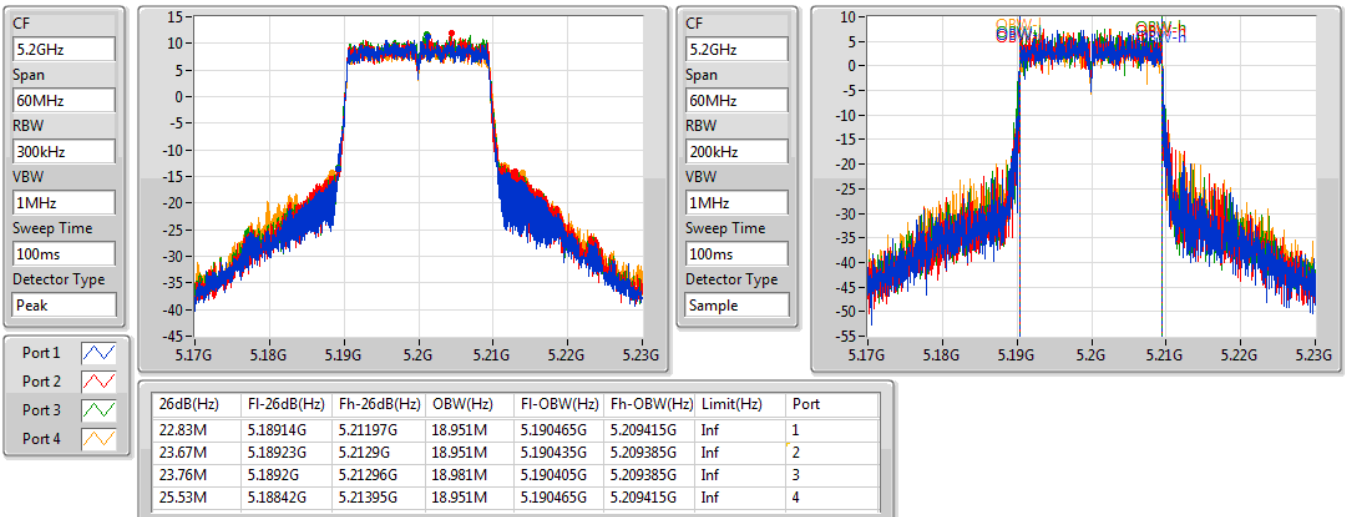


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

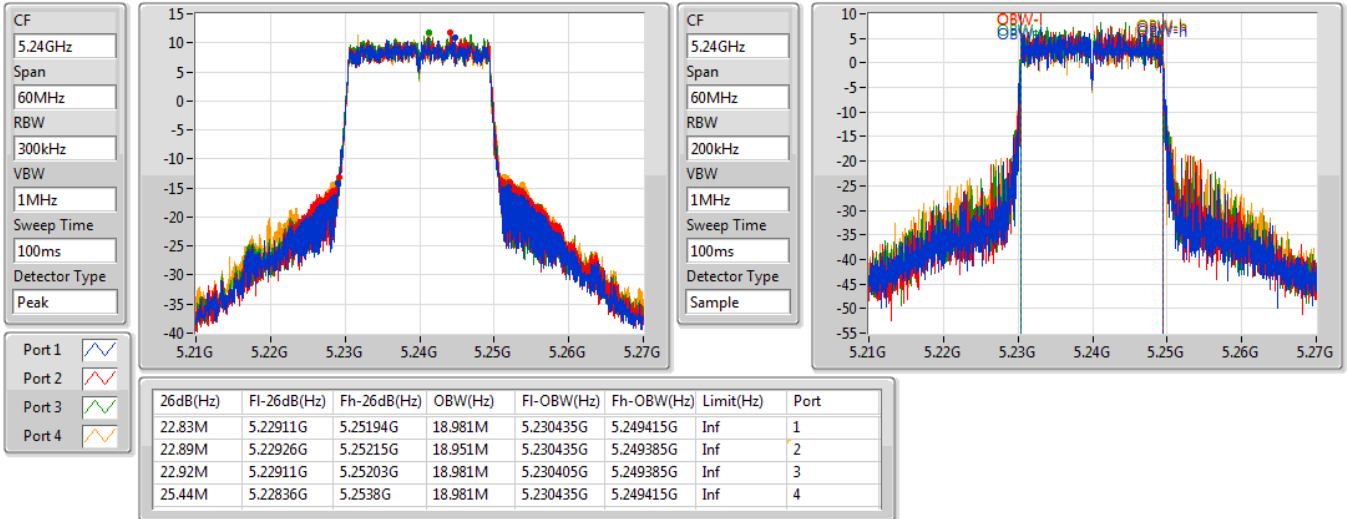
5200MHz

30/10/2019

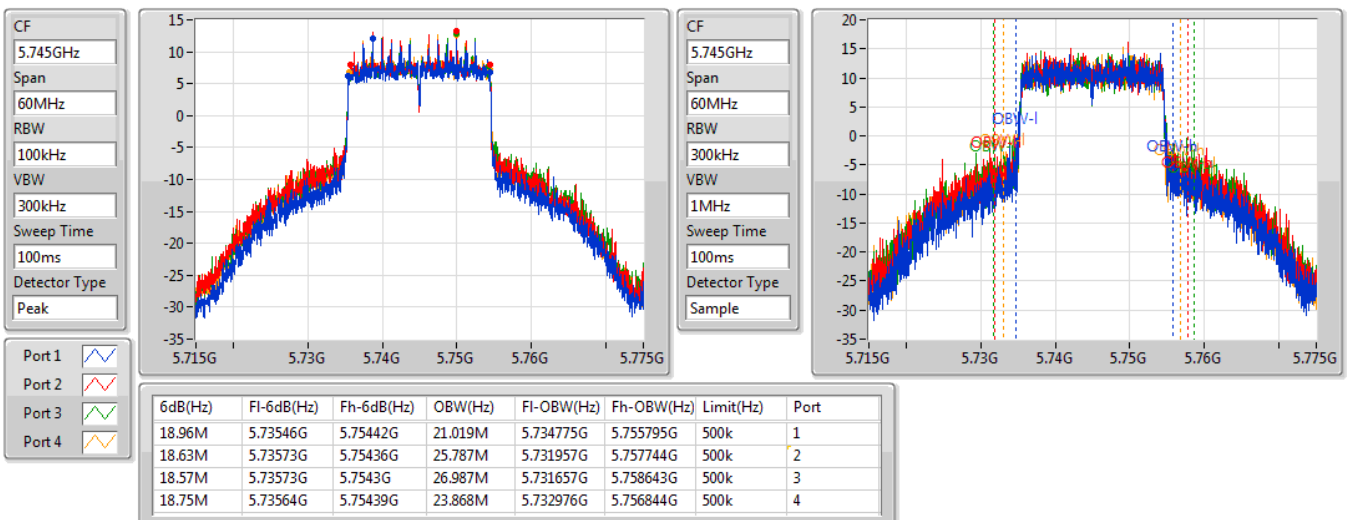


802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5240MHz

30/10/2019


802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5745MHz

23/09/2019

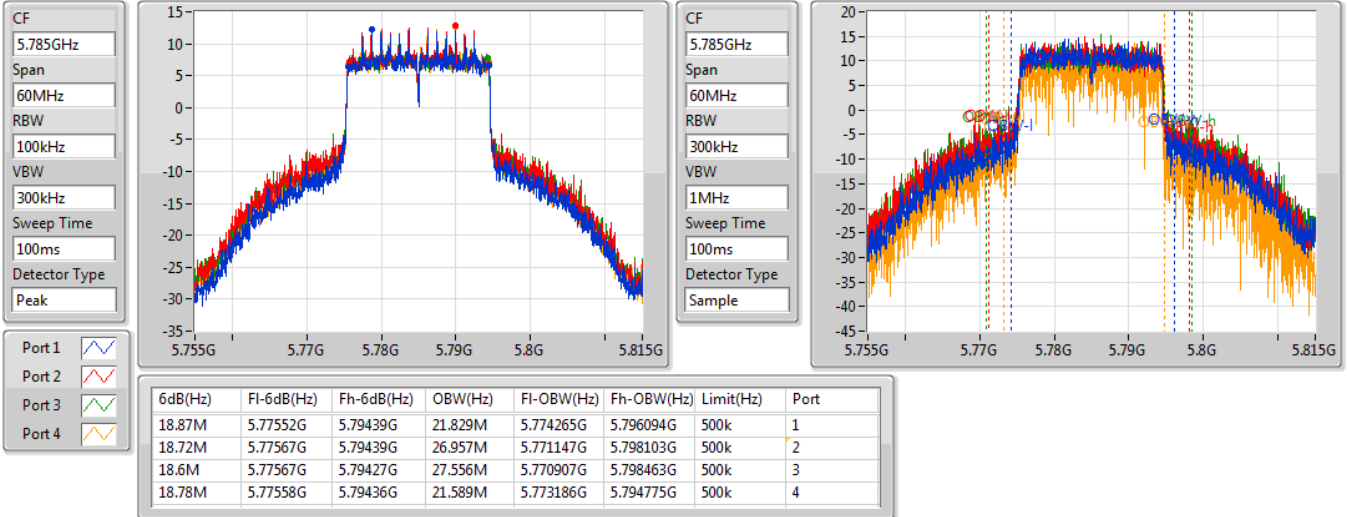


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5785MHz

23/09/2019

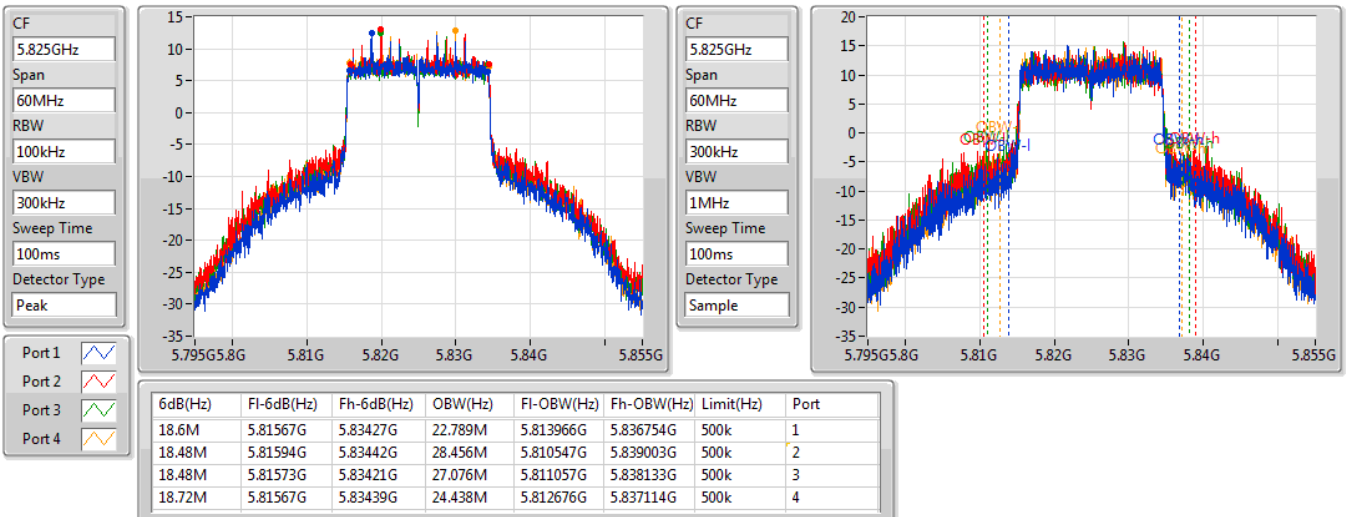


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5825MHz

23/09/2019

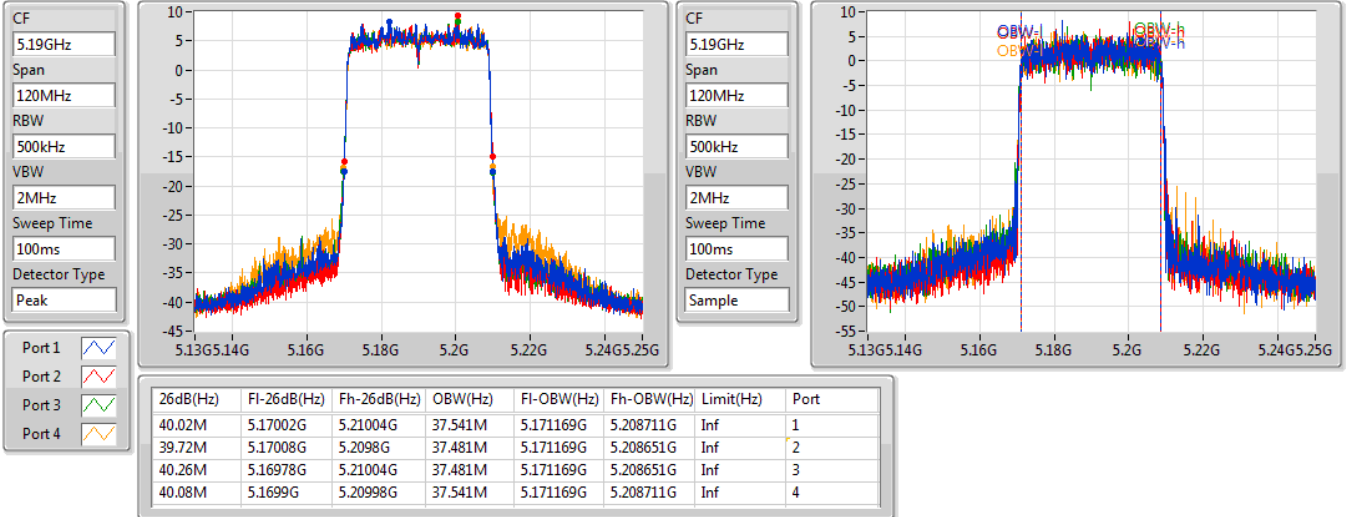


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5190MHz

30/10/2019

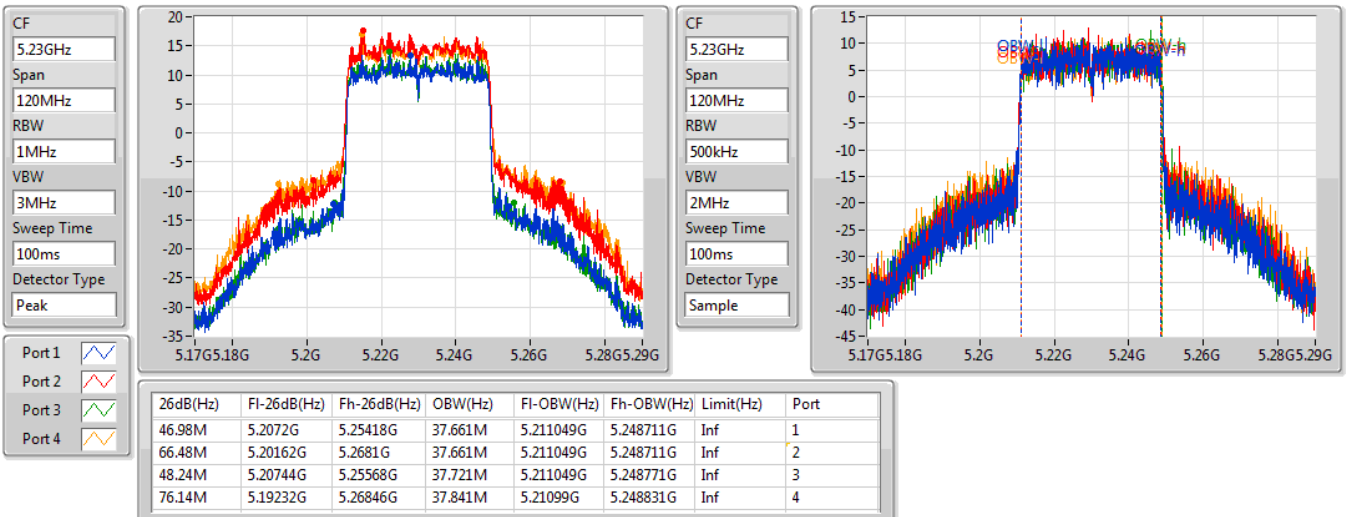


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5230MHz

30/10/2019

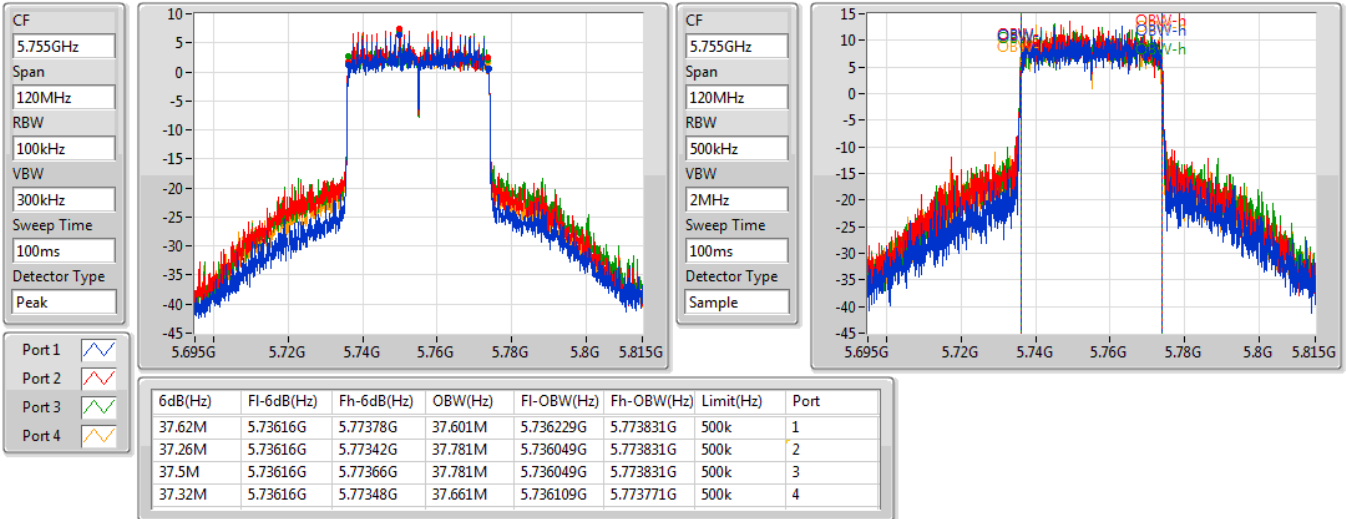


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5755MHz

23/09/2019

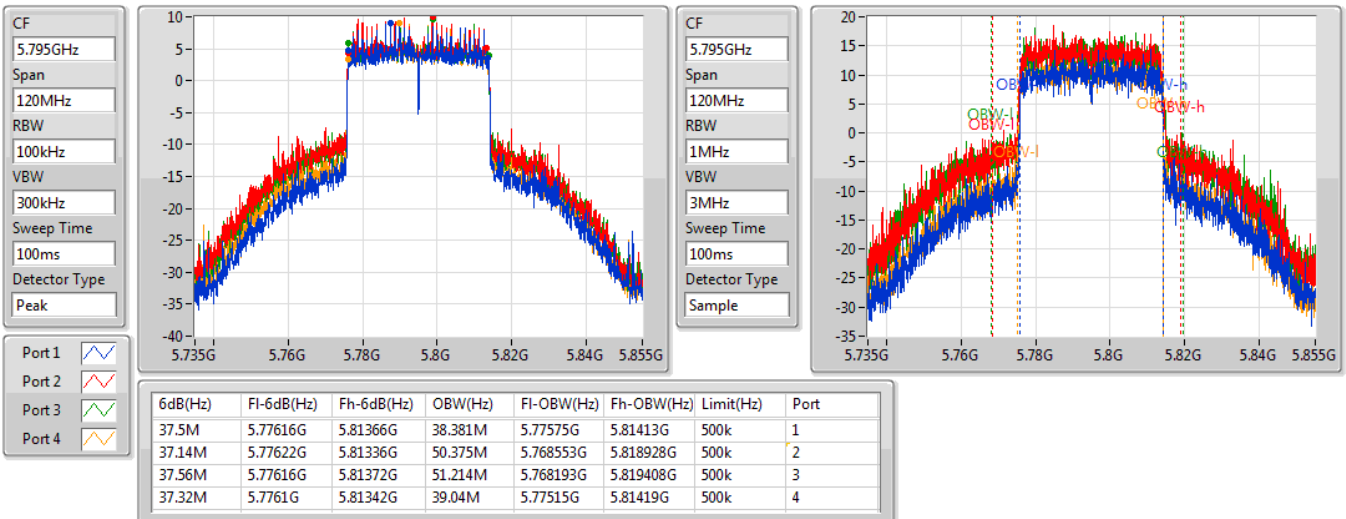


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5795MHz

23/09/2019

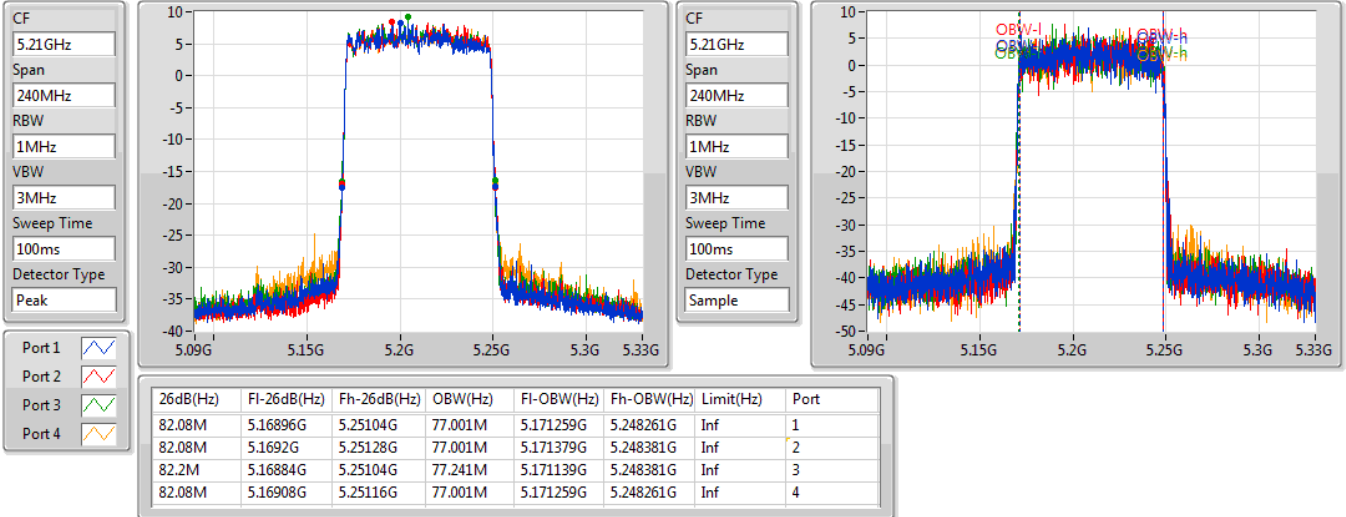


802.11ax HEW80_Nss1,(MCS0)_4TX

EBW

5210MHz

30/10/2019

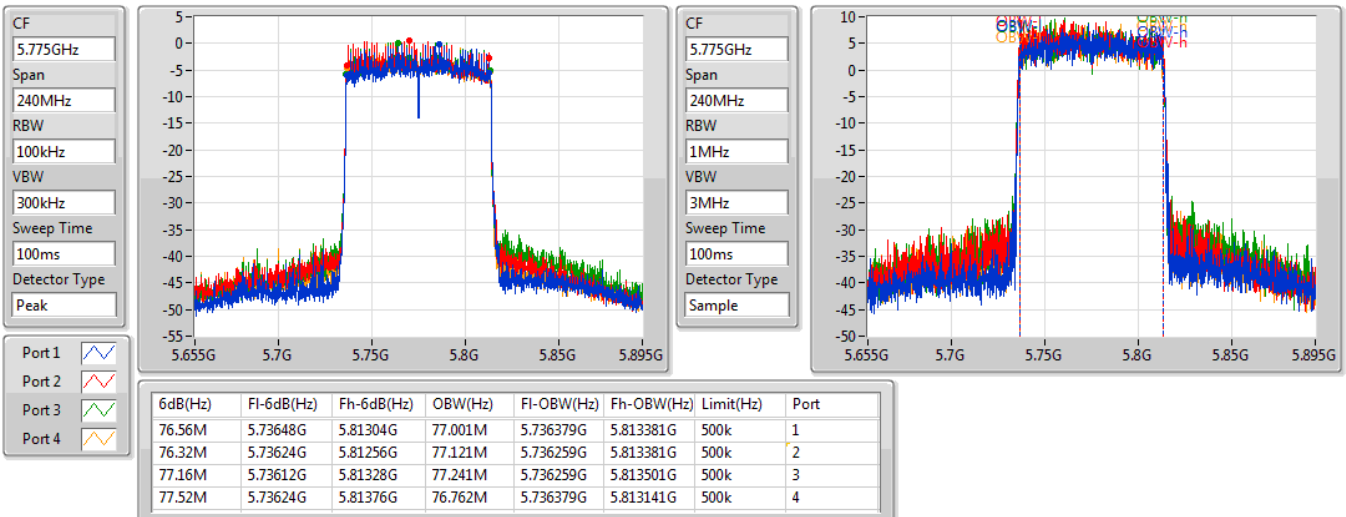


802.11ax HEW80_Nss1,(MCS0)_4TX

EBW

5775MHz

23/09/2019



**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT20_Nss4,(MCS0)_4TX	43.29M	19.97M	20M0D1D	21.81M	17.751M
802.11ac VHT40_Nss4,(MCS0)_4TX	76.02M	36.462M	36M5D1D	39.72M	36.162M
802.11ac VHT80_Nss4,(MCS0)_4TX	81.96M	75.802M	75M8D1D	81.12M	75.682M
802.11ax HEW20_Nss4,(MCS0)_4TX	44.34M	19.82M	19M8D1D	21.42M	18.981M
802.11ax HEW40_Nss4,(MCS0)_4TX	57.06M	37.721M	37M7D1D	39.78M	37.541M
802.11ax HEW80_Nss4,(MCS0)_4TX	81.48M	77.241M	77M2D1D	80.76M	76.882M
5.725-5.85GHz	-	-	-	-	-
802.11ac VHT20_Nss4,(MCS0)_4TX	17.55M	27.166M	27M2D1D	17.16M	18.231M
802.11ac VHT40_Nss4,(MCS0)_4TX	36.36M	53.253M	53M3D1D	35.88M	36.642M
802.11ac VHT80_Nss4,(MCS0)_4TX	76.32M	75.922M	75M9D1D	75.12M	75.682M
802.11ax HEW20_Nss4,(MCS0)_4TX	18.81M	28.546M	28M5D1D	18.12M	19.28M
802.11ax HEW40_Nss4,(MCS0)_4TX	37.68M	54.993M	55M0D1D	36.42M	37.901M
802.11ax HEW80_Nss4,(MCS0)_4TX	76.68M	77.241M	77M2D1D	76.32M	76.762M

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)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ac VHT20_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.84M	17.751M	21.81M	17.751M	22.68M	17.751M	28.53M	17.751M
5200MHz_TnomVnom	Pass	Inf	38.79M	17.991M	39.66M	18.201M	38.67M	18.201M	41.13M	19.97M
5240MHz_TnomVnom	Pass	Inf	38.28M	17.901M	40.89M	18.021M	39.9M	18.051M	43.29M	19.4M
5745MHz_TnomVnom	Pass	500k	17.55M	18.231M	17.55M	19.85M	17.55M	21.499M	17.55M	19.37M
5785MHz_TnomVnom	Pass	500k	17.49M	21.739M	17.31M	26.807M	17.16M	26.777M	17.55M	24.948M
5825MHz_TnomVnom	Pass	500k	17.55M	21.769M	17.55M	27.166M	17.52M	25.937M	17.55M	23.358M
802.11ac VHT40_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	40.08M	36.222M	39.9M	36.282M	39.72M	36.222M	39.96M	36.342M
5230MHz_TnomVnom	Pass	Inf	65.46M	36.222M	43.56M	36.222M	43.38M	36.162M	76.02M	36.462M
5755MHz_TnomVnom	Pass	500k	36.3M	36.642M	36.3M	37.121M	36.06M	37.841M	36.3M	36.702M
5795MHz_TnomVnom	Pass	500k	36.3M	39.58M	36.24M	51.934M	35.88M	53.253M	36.36M	45.337M
802.11ac VHT80_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	81.96M	75.802M	81.24M	75.802M	81.12M	75.682M	81.48M	75.682M
5775MHz_TnomVnom	Pass	500k	75.12M	75.802M	76.32M	75.922M	75.72M	75.682M	75.72M	75.682M
802.11ax HEW20_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.42M	19.01M	22.26M	19.01M	21.51M	18.981M	29.28M	19.04M
5200MHz_TnomVnom	Pass	Inf	33.12M	19.1M	42.18M	19.16M	37.86M	19.16M	41.31M	19.79M
5240MHz_TnomVnom	Pass	Inf	32.4M	19.1M	40.98M	19.16M	37.95M	19.19M	44.34M	19.82M
5745MHz_TnomVnom	Pass	500k	18.81M	19.28M	18.39M	19.91M	18.36M	21.889M	18.81M	19.76M
5785MHz_TnomVnom	Pass	500k	18.75M	22.669M	18.24M	27.586M	18.3M	28.546M	18.12M	25.547M
5825MHz_TnomVnom	Pass	500k	18.72M	23.178M	18.18M	27.526M	18.33M	27.526M	18.18M	24.348M
802.11ax HEW40_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	40.14M	37.601M	40.02M	37.601M	39.78M	37.541M	40.02M	37.721M
5230MHz_TnomVnom	Pass	Inf	44.64M	37.601M	40.14M	37.541M	39.78M	37.541M	57.06M	37.721M
5755MHz_TnomVnom	Pass	500k	37.68M	37.901M	36.72M	38.141M	37.56M	38.381M	36.48M	38.021M
5795MHz_TnomVnom	Pass	500k	37.62M	38.681M	36.48M	54.993M	37.62M	53.433M	36.42M	44.198M
802.11ax HEW80_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	81.24M	76.882M	80.76M	77.241M	81.48M	77.121M	81.48M	77.001M
5775MHz_TnomVnom	Pass	500k	76.32M	76.762M	76.68M	76.882M	76.44M	77.241M	76.68M	77.121M

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

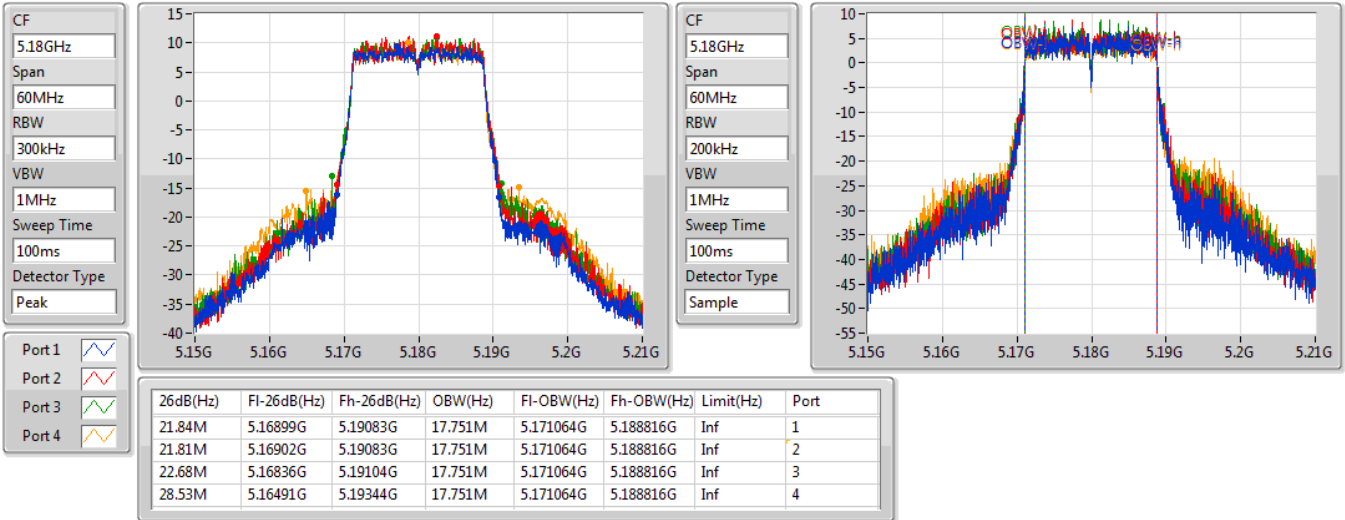
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT20_Nss4,(MCS0)_4TX

EBW

5180MHz

30/10/2019

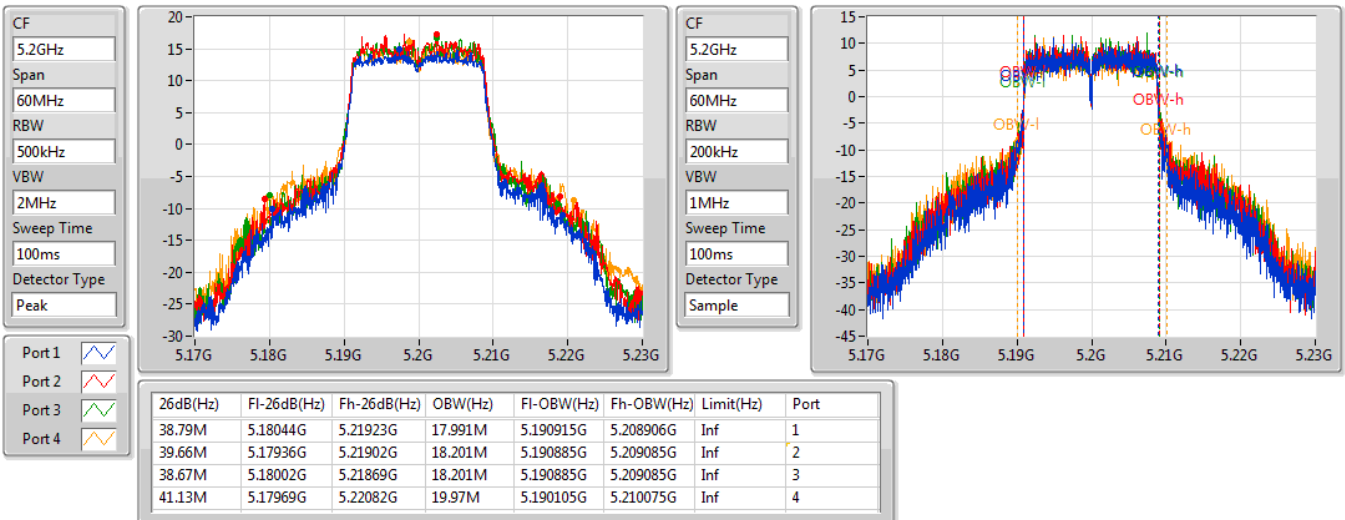


802.11ac VHT20_Nss4,(MCS0)_4TX

EBW

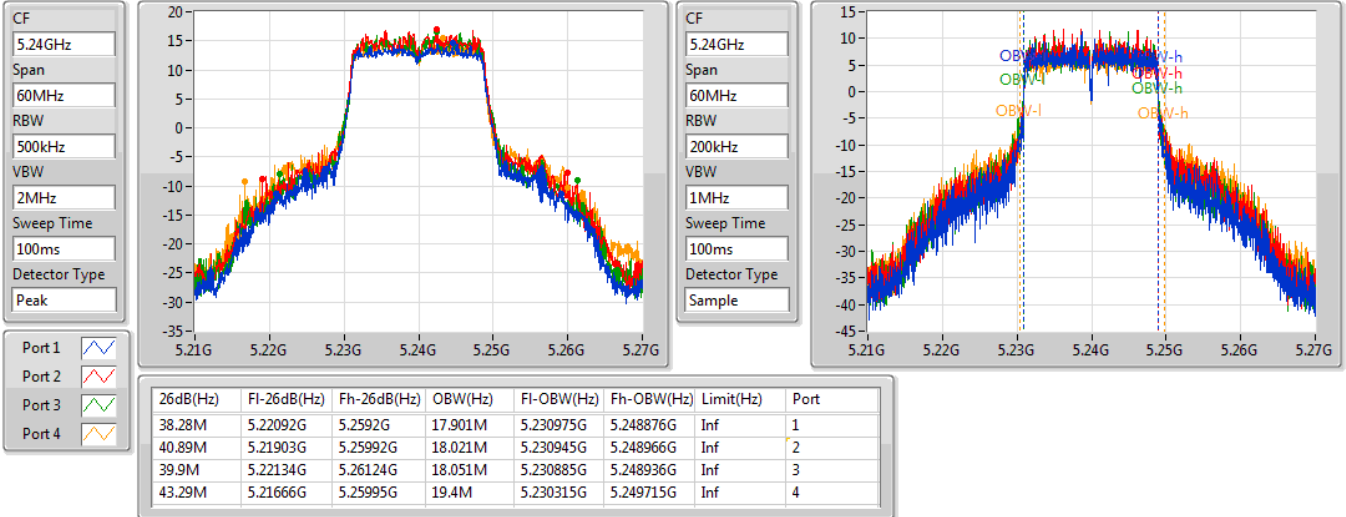
5200MHz

30/10/2019

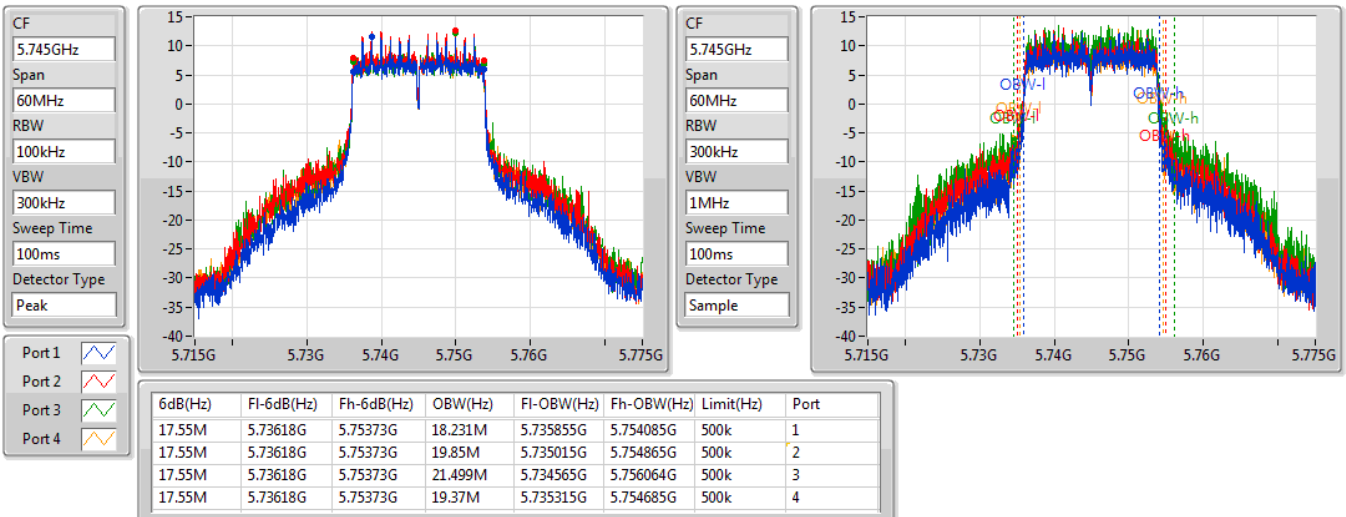


802.11ac VHT20_Nss4,(MCS0)_4TX
EBW
5240MHz

30/10/2019


802.11ac VHT20_Nss4,(MCS0)_4TX
EBW
5745MHz

23/09/2019

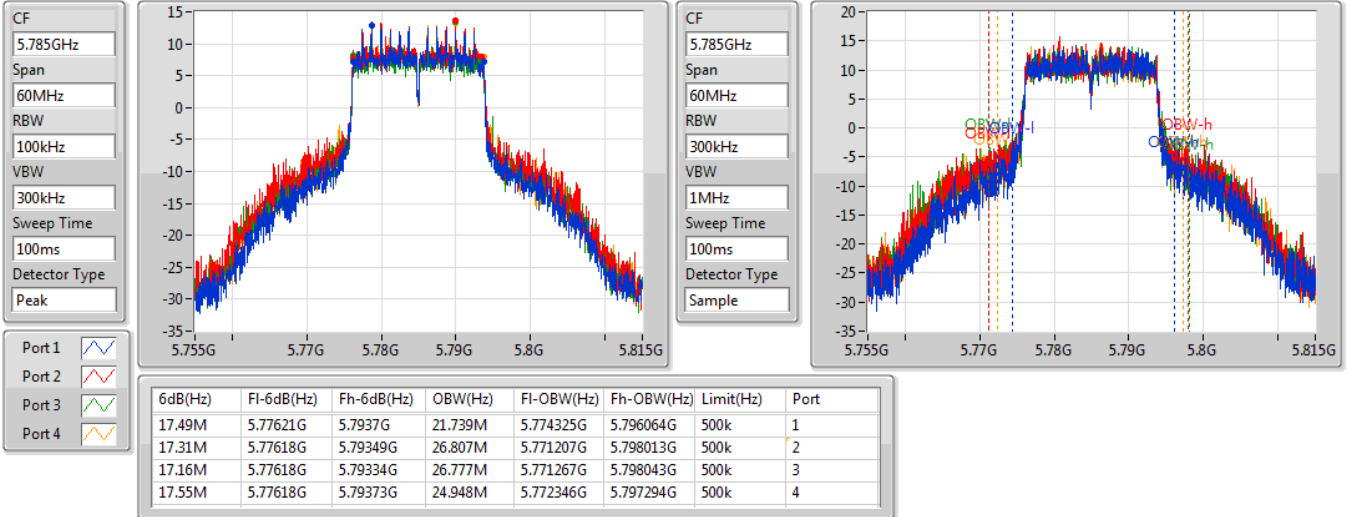


802.11ac VHT20_Nss4,(MCS0)_4TX

EBW

5785MHz

23/09/2019

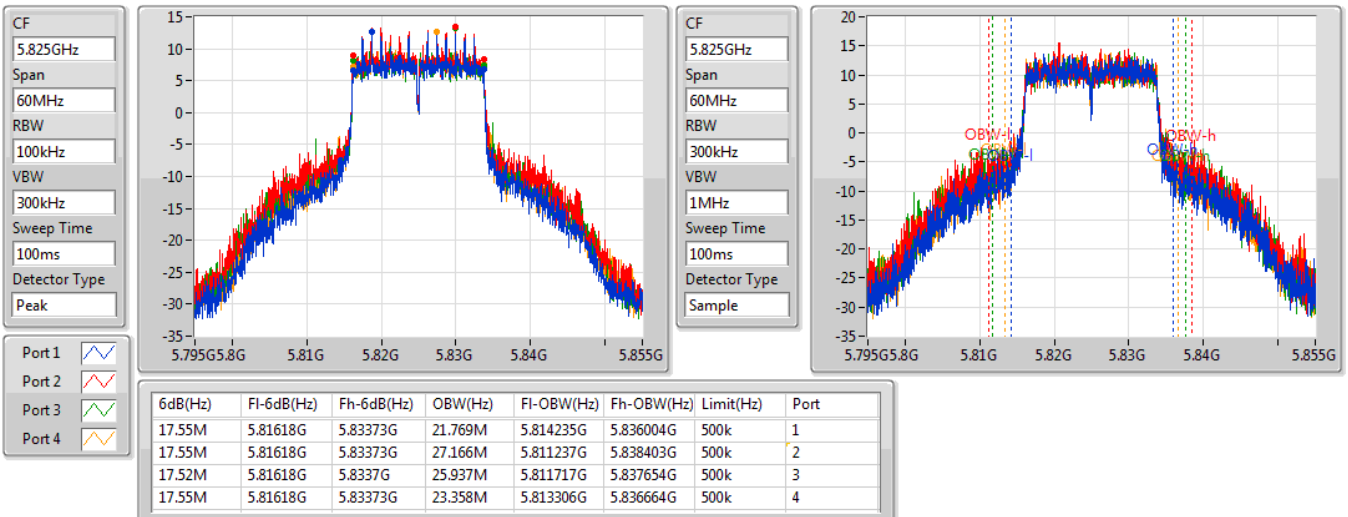


802.11ac VHT20_Nss4,(MCS0)_4TX

EBW

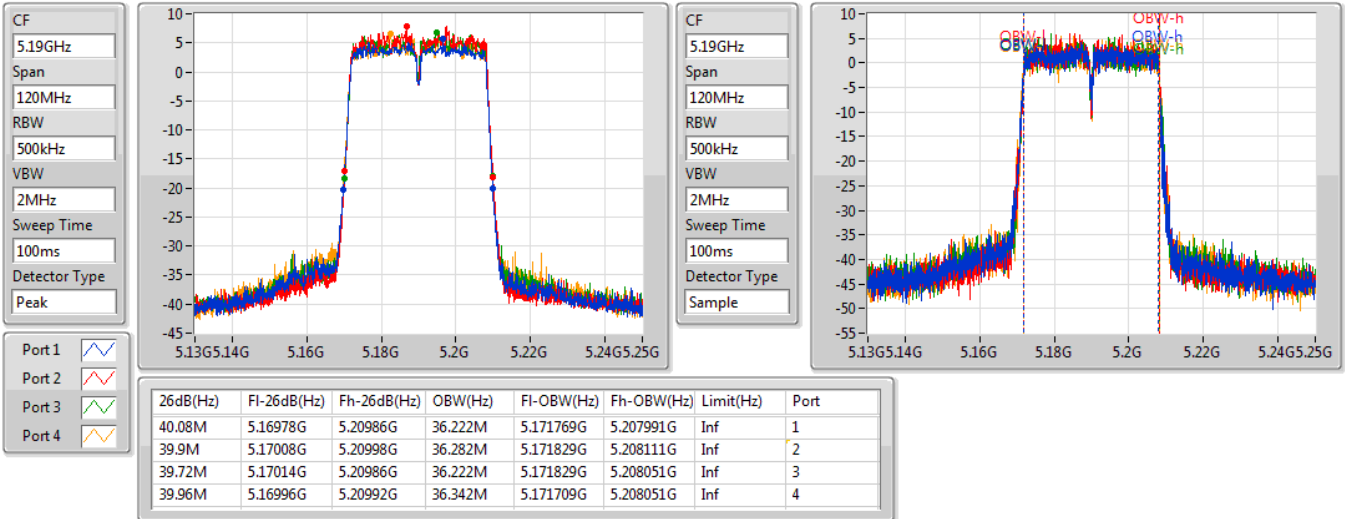
5825MHz

23/09/2019

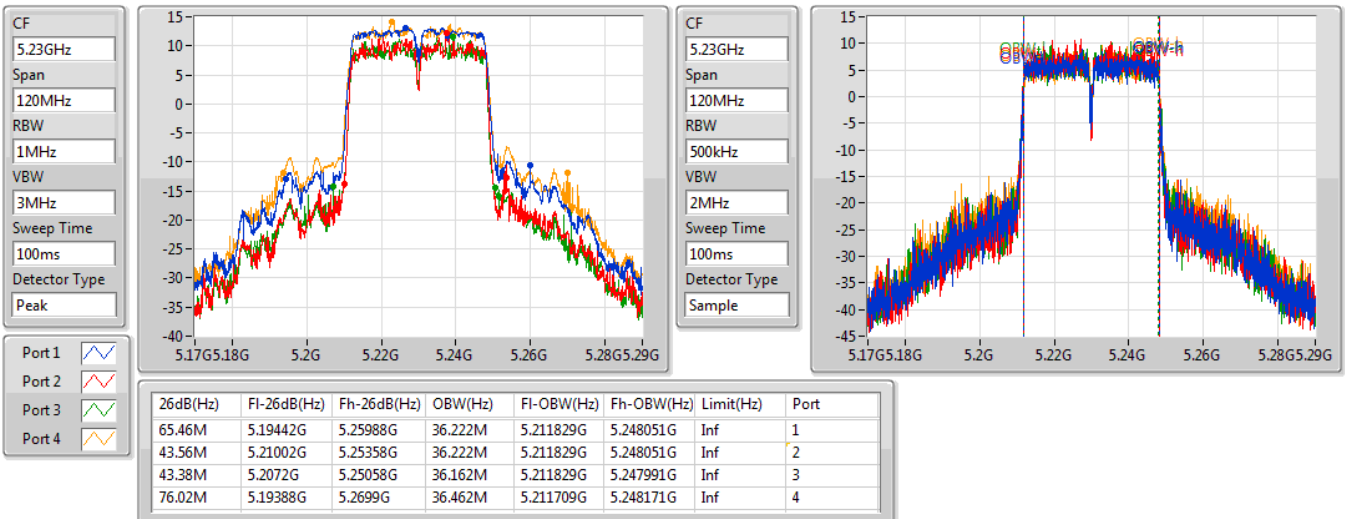


802.11ac VHT40_Nss4,(MCS0)_4TX
EBW
5190MHz

30/10/2019


802.11ac VHT40_Nss4,(MCS0)_4TX
EBW
5230MHz

30/10/2019

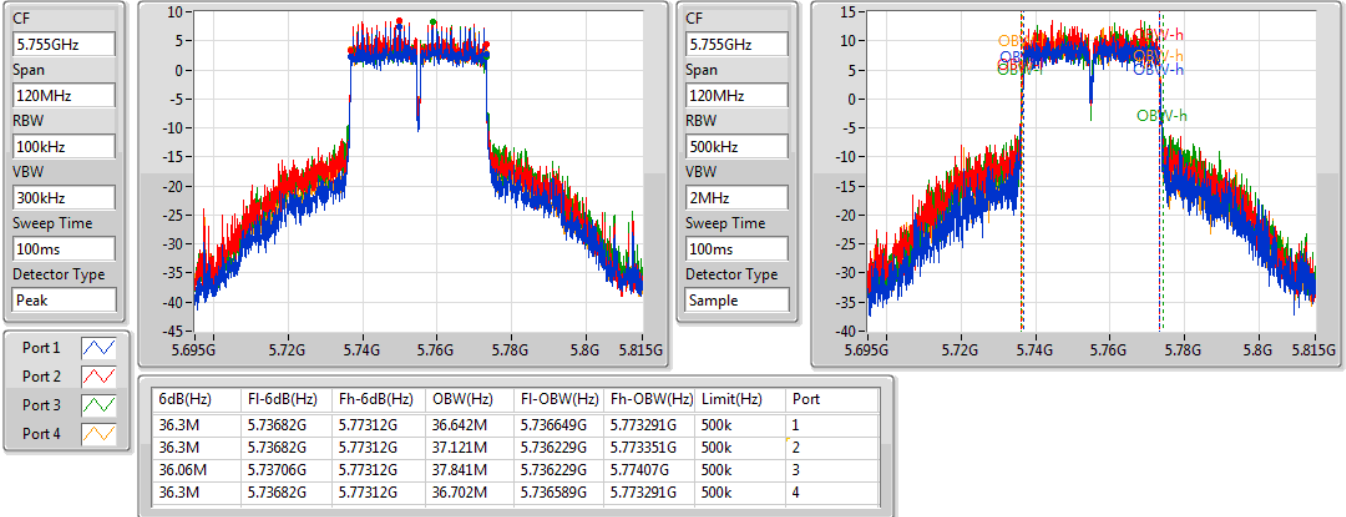


802.11ac VHT40_Nss4,(MCS0)_4TX

EBW

5755MHz

23/09/2019

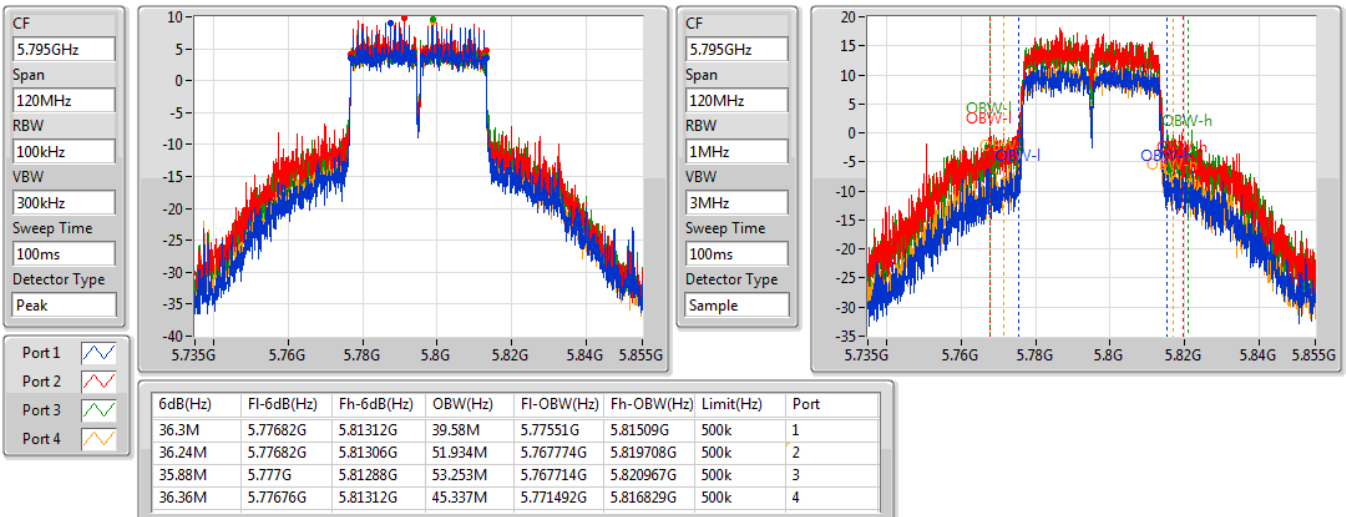


802.11ac VHT40_Nss4,(MCS0)_4TX

EBW

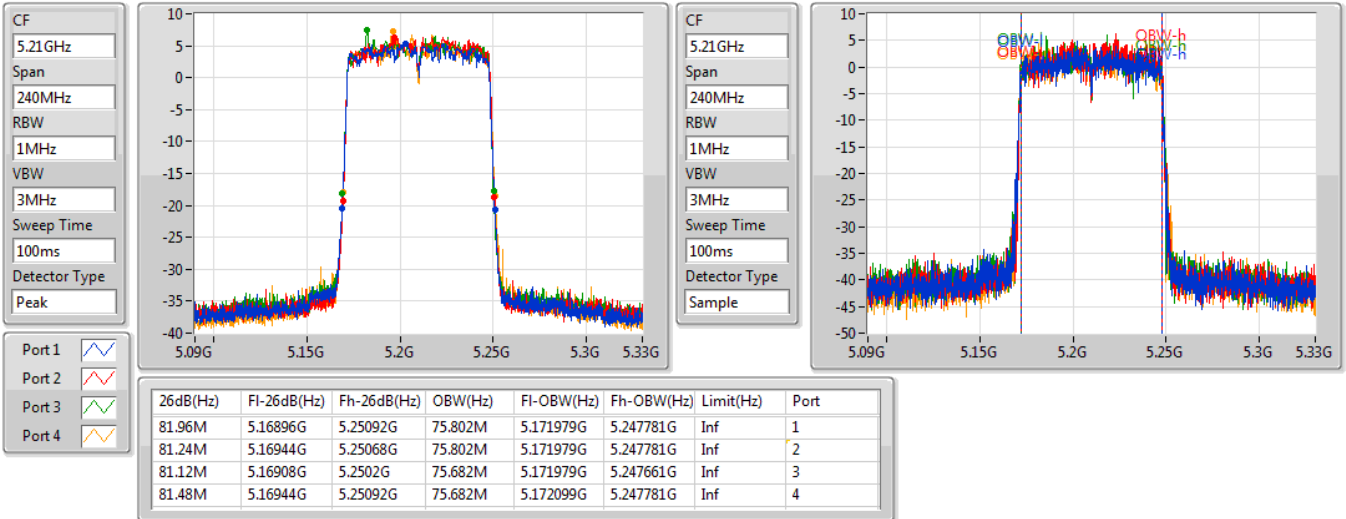
5795MHz

23/09/2019

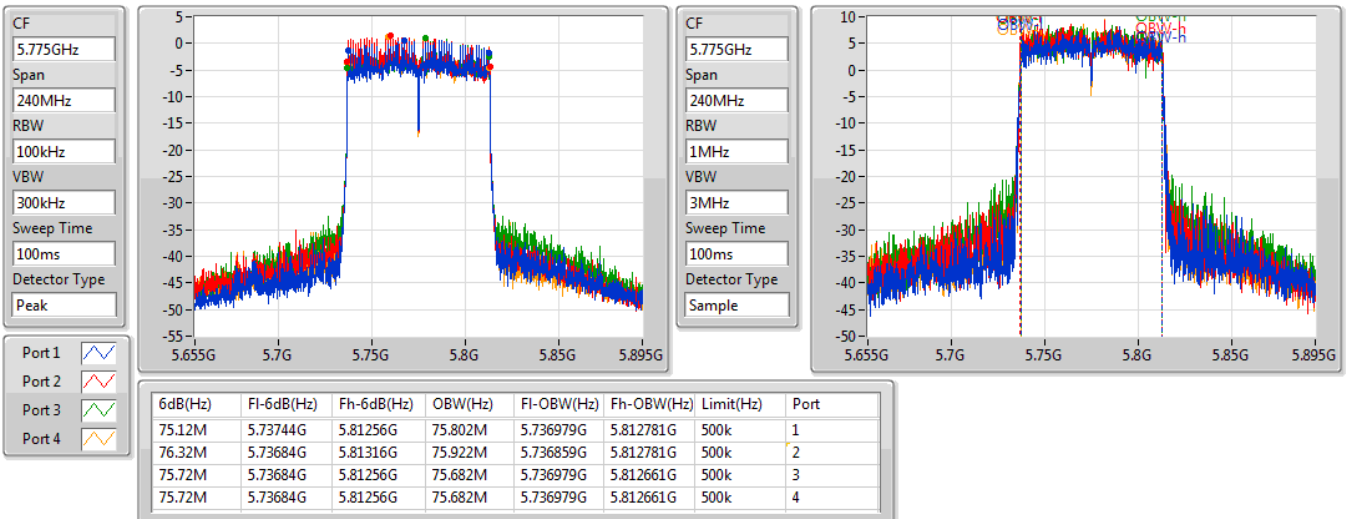


802.11ac VHT80_Nss4,(MCS0)_4TX
EBW
5210MHz

30/10/2019


802.11ac VHT80_Nss4,(MCS0)_4TX
EBW
5775MHz

23/09/2019

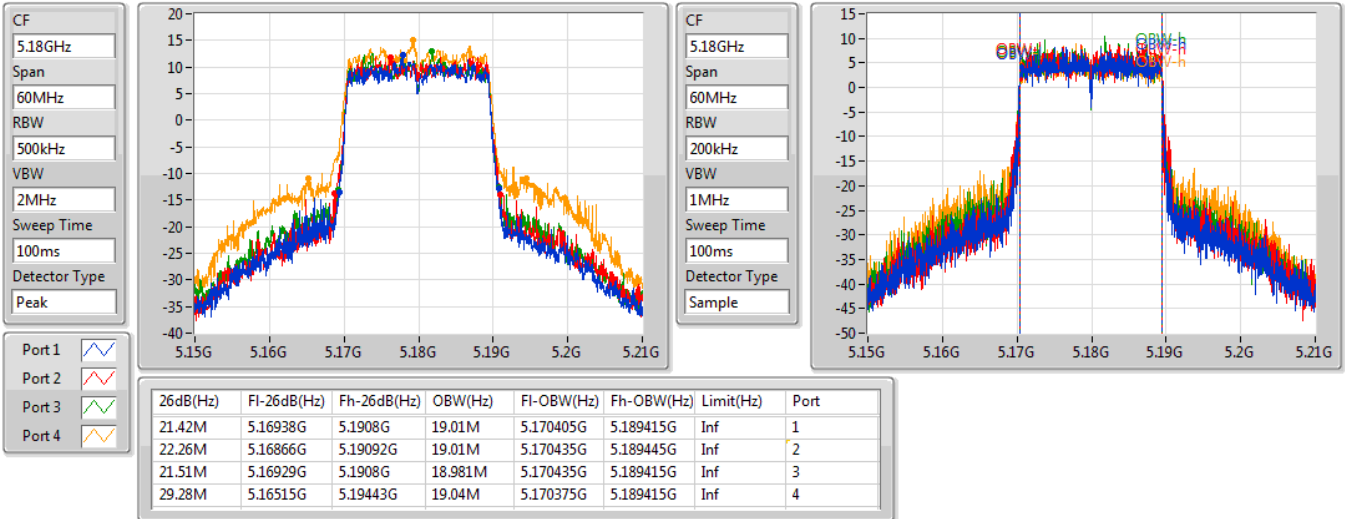


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5180MHz

30/10/2019

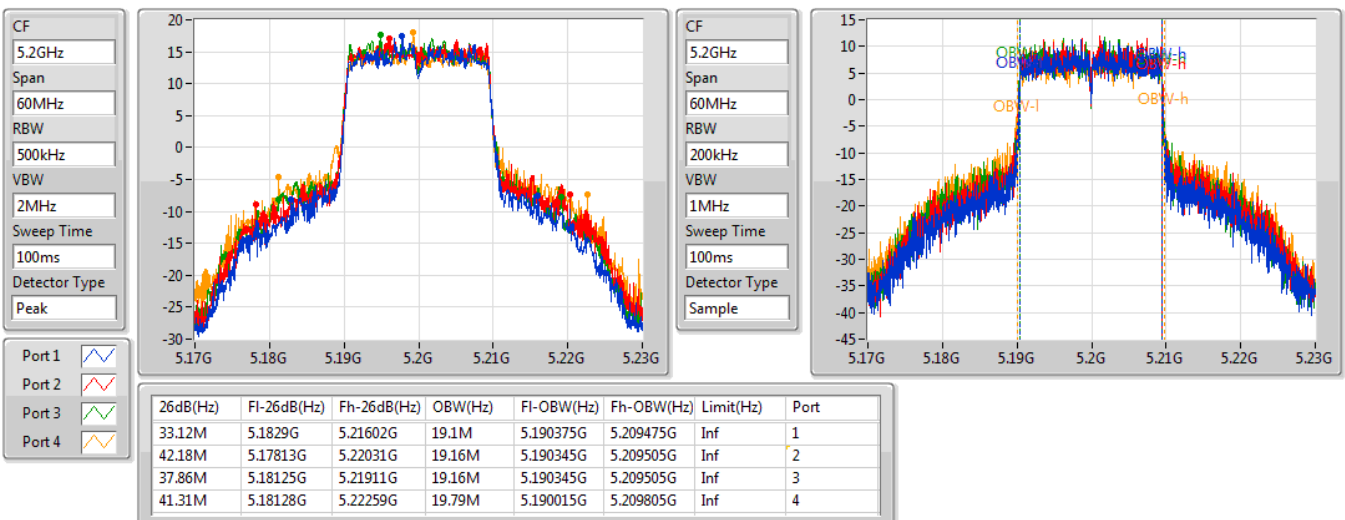


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5200MHz

30/10/2019

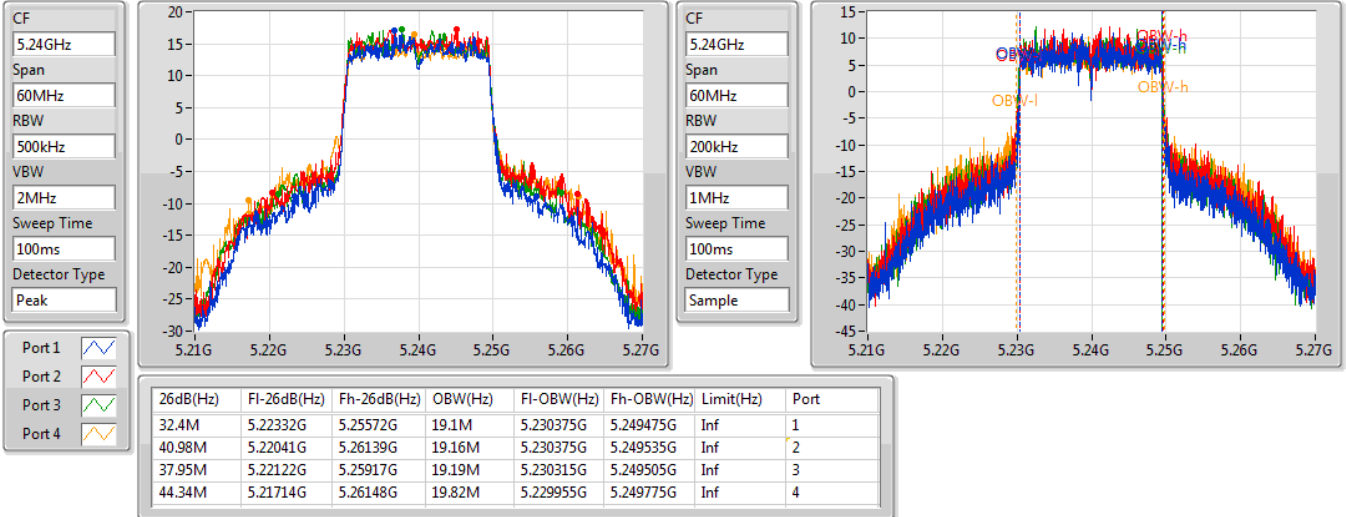


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5240MHz

30/10/2019

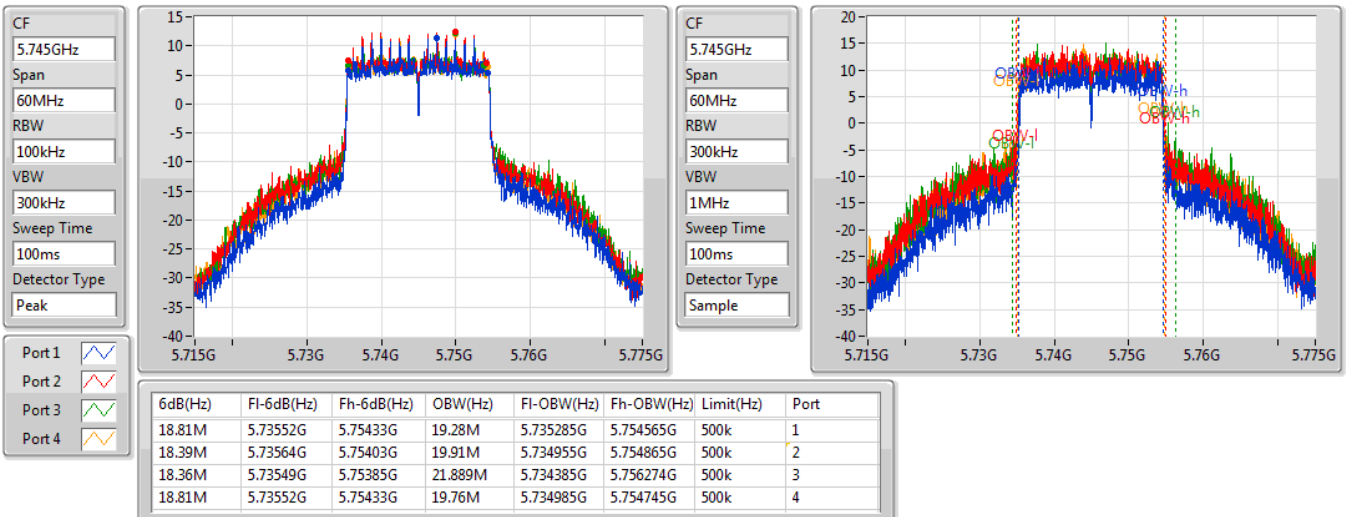


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5745MHz

23/09/2019

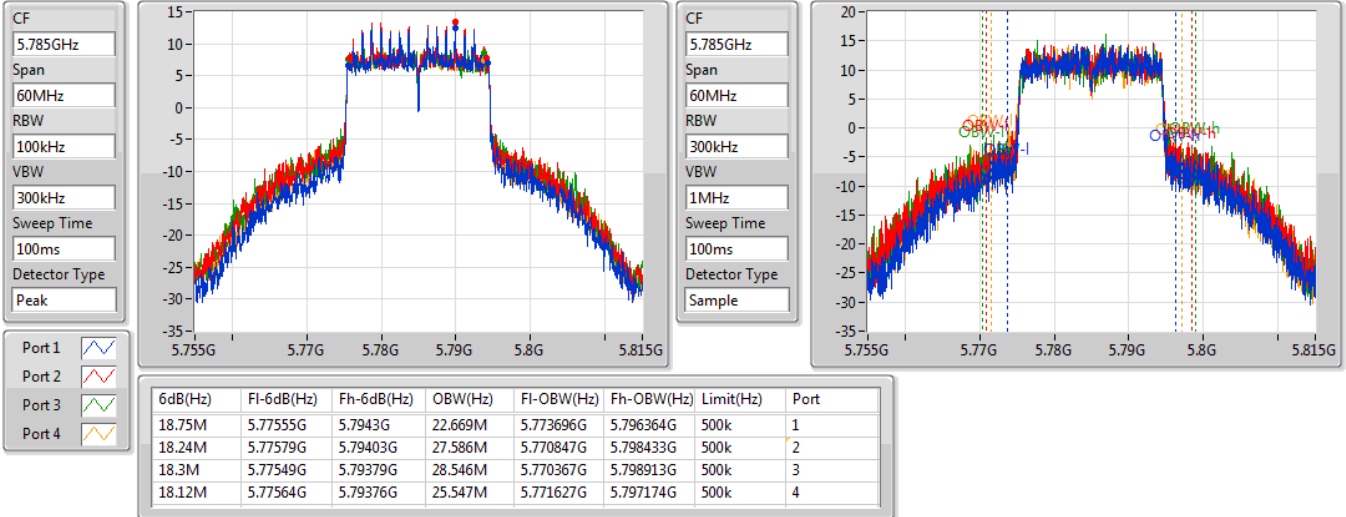


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5785MHz

23/09/2019

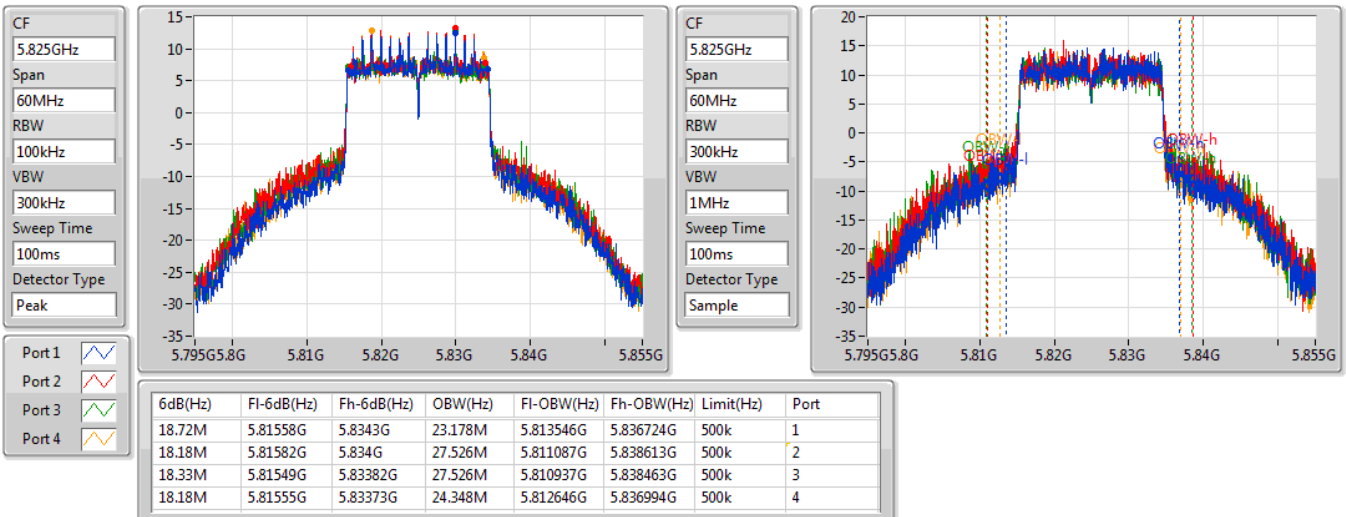


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5825MHz

23/09/2019

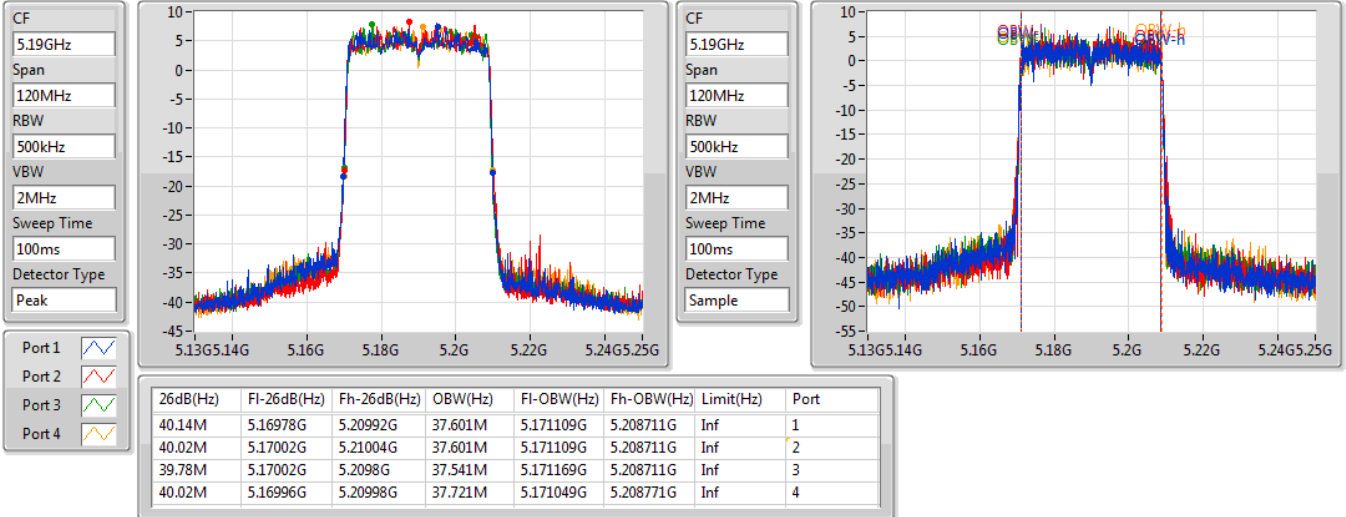


802.11ax HEW40_Nss4,(MCS0)_4TX

EBW

5190MHz

30/10/2019

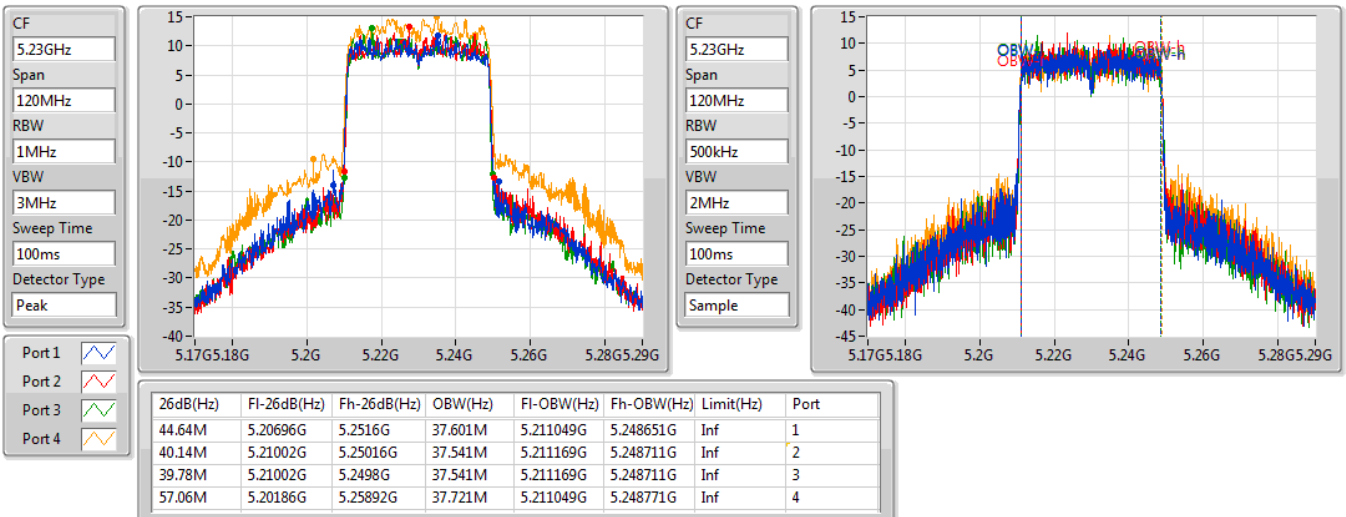


802.11ax HEW40_Nss4,(MCS0)_4TX

EBW

5230MHz

30/10/2019

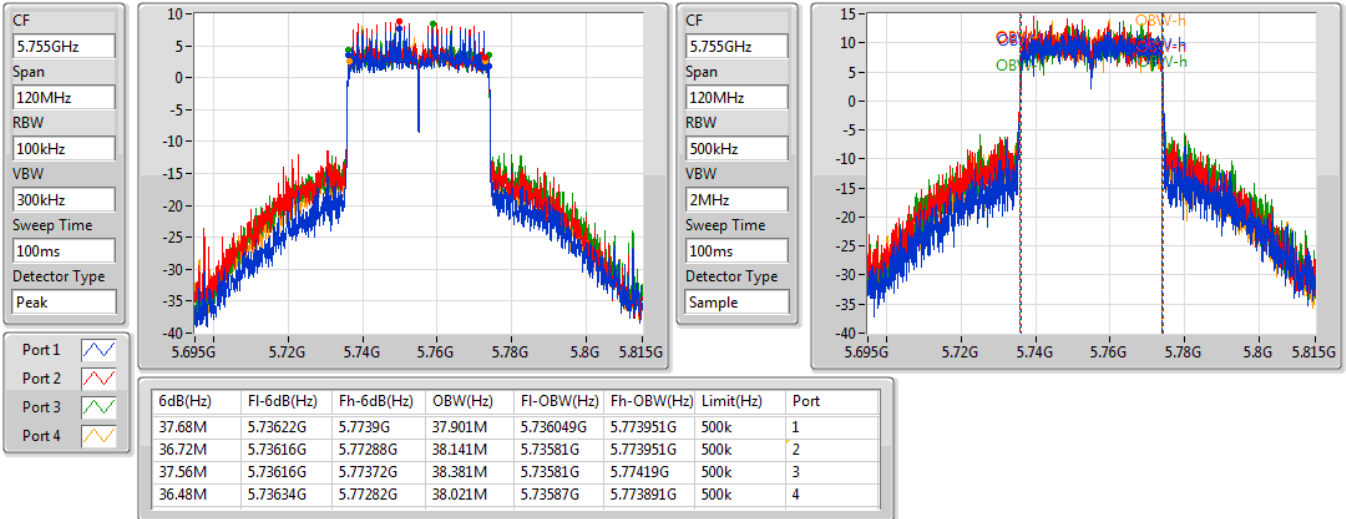


802.11ax HEW40_Nss4,(MCS0)_4TX

EBW

5755MHz

23/09/2019

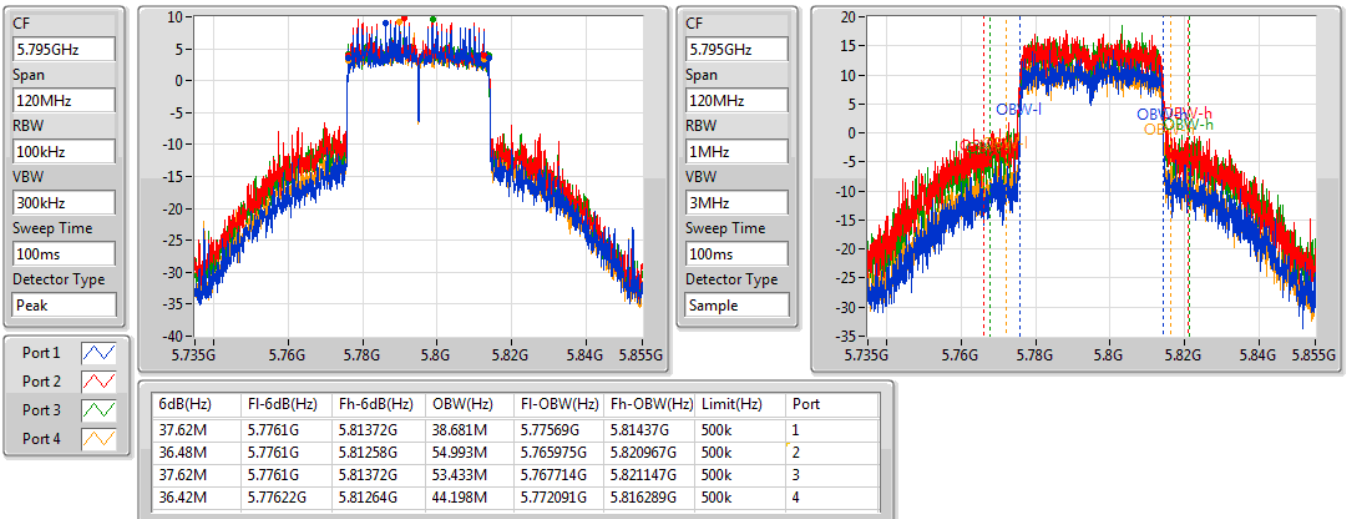


802.11ax HEW40_Nss4,(MCS0)_4TX

EBW

5795MHz

23/09/2019

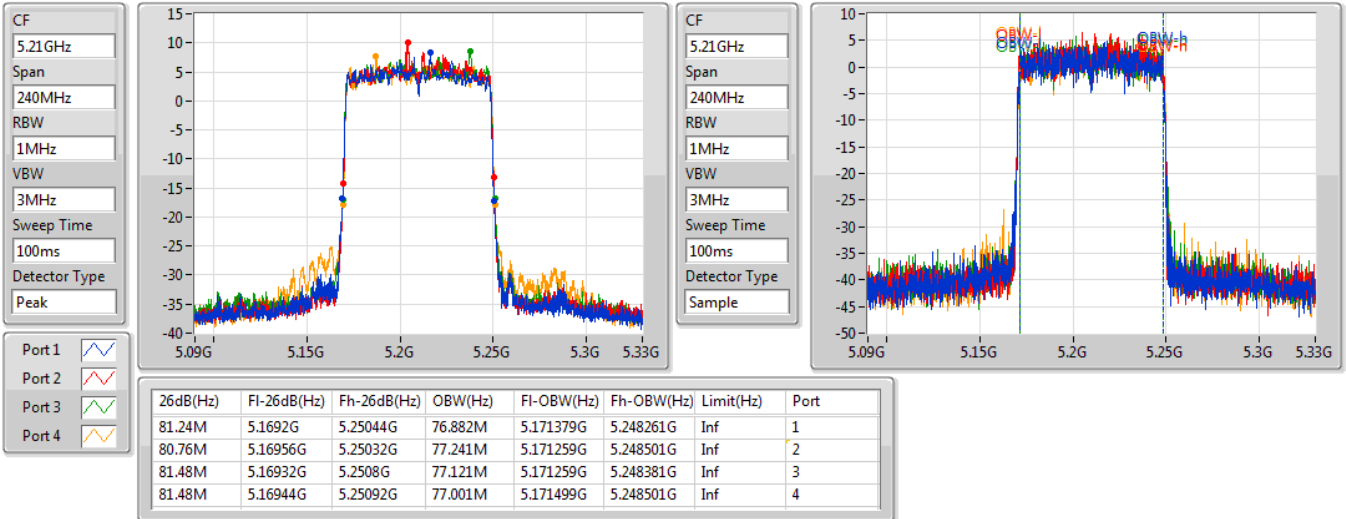


802.11ax HEW80_Nss4,(MCS0)_4TX

EBW

5210MHz

30/10/2019

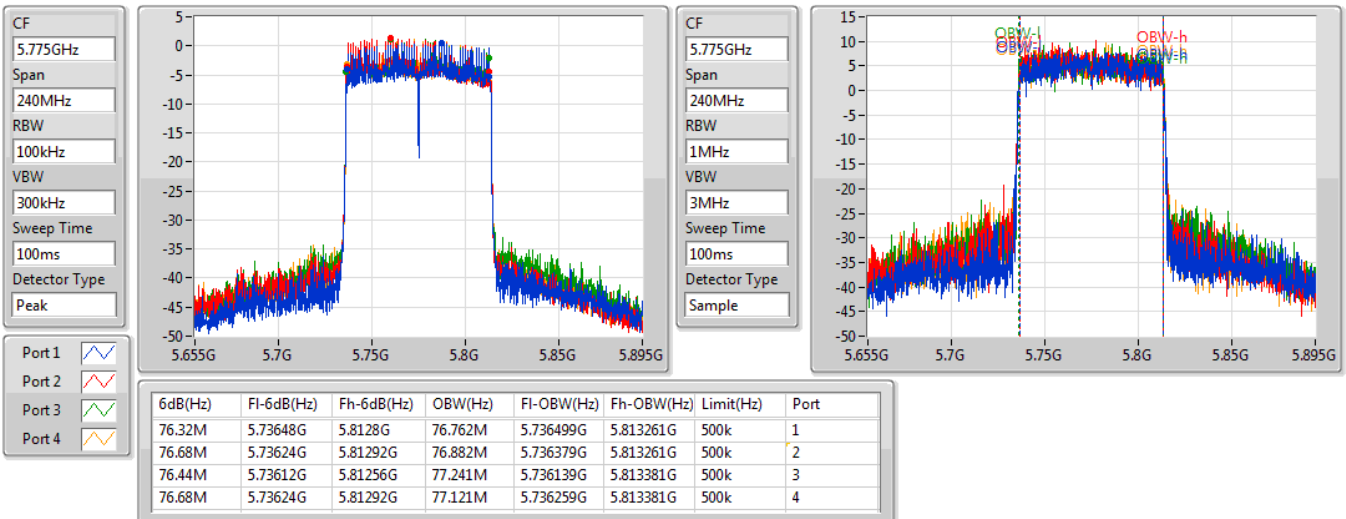


802.11ax HEW80_Nss4,(MCS0)_4TX

EBW

5775MHz

23/09/2019



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	52.77M	31.454M	31M5D1D	40.14M	17.151M
802.11ac VHT20_Nss1,(MCS0)_1TX	48.96M	28.096M	28M1D1D	29.4M	17.871M
802.11ac VHT40_Nss1,(MCS0)_1TX	88.44M	38.081M	38M1D1D	42.72M	36.222M
802.11ac VHT80_Nss1,(MCS0)_1TX	81.96M	75.562M	75M6D1D	81.96M	75.562M
802.11ax HEW20_Nss1,(MCS0)_1TX	49.56M	29.415M	29M4D1D	33.48M	18.981M
802.11ax HEW40_Nss1,(MCS0)_1TX	85.98M	38.441M	38M4D1D	40.2M	37.481M
802.11ax HEW80_Nss1,(MCS0)_1TX	82.32M	76.882M	76M9D1D	82.32M	76.882M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	16.35M	20.99M	21M0D1D	16.32M	16.612M
802.11ac VHT20_Nss1,(MCS0)_1TX	17.58M	18.141M	18M1D1D	17.58M	17.811M
802.11ac VHT40_Nss1,(MCS0)_1TX	36.3M	36.642M	36M6D1D	36.3M	36.522M
802.11ac VHT80_Nss1,(MCS0)_1TX	75.24M	76.162M	76M2D1D	75.24M	76.162M
802.11ax HEW20_Nss1,(MCS0)_1TX	18.96M	19.22M	19M2D1D	18.9M	19.04M
802.11ax HEW40_Nss1,(MCS0)_1TX	37.5M	37.841M	37M8D1D	37.5M	37.781M
802.11ax HEW80_Nss1,(MCS0)_1TX	77.04M	77.481M	77M5D1D	77.04M	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

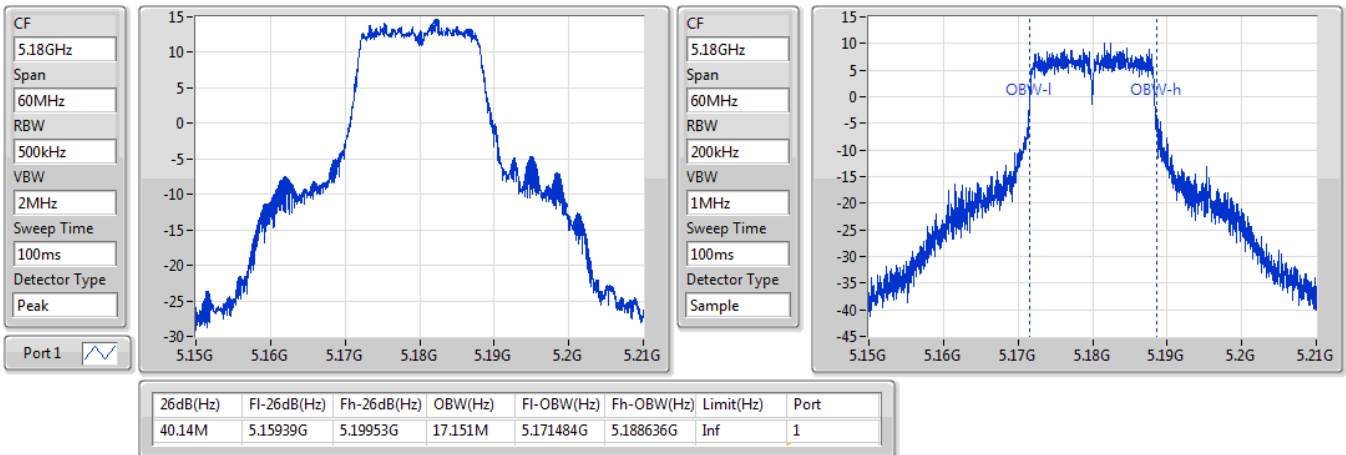
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	40.14M	17.151M
5200MHz_TnomVnom	Pass	Inf	52.77M	31.454M
5240MHz_TnomVnom	Pass	Inf	43.71M	19.67M
5745MHz_TnomVnom	Pass	500k	16.32M	20.99M
5785MHz_TnomVnom	Pass	500k	16.35M	16.642M
5825MHz_TnomVnom	Pass	500k	16.35M	16.612M
802.11ac_VHT20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	29.4M	17.871M
5200MHz_TnomVnom	Pass	Inf	48.96M	28.096M
5240MHz_TnomVnom	Pass	Inf	43.77M	18.261M
5745MHz_TnomVnom	Pass	500k	17.58M	18.141M
5785MHz_TnomVnom	Pass	500k	17.58M	17.811M
5825MHz_TnomVnom	Pass	500k	17.58M	17.871M
802.11ac_VHT40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	42.72M	36.222M
5230MHz_TnomVnom	Pass	Inf	88.44M	38.081M
5755MHz_TnomVnom	Pass	500k	36.3M	36.642M
5795MHz_TnomVnom	Pass	500k	36.3M	36.522M
802.11ac_VHT80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	81.96M	75.562M
5775MHz_TnomVnom	Pass	500k	75.24M	76.162M
802.11ax_HEW20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	33.48M	18.981M
5200MHz_TnomVnom	Pass	Inf	49.56M	29.415M
5240MHz_TnomVnom	Pass	Inf	43.35M	19.52M
5745MHz_TnomVnom	Pass	500k	18.9M	19.22M
5785MHz_TnomVnom	Pass	500k	18.96M	19.07M
5825MHz_TnomVnom	Pass	500k	18.96M	19.04M
802.11ax_HEW40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	40.2M	37.481M
5230MHz_TnomVnom	Pass	Inf	85.98M	38.441M
5755MHz_TnomVnom	Pass	500k	37.5M	37.841M
5795MHz_TnomVnom	Pass	500k	37.5M	37.781M
802.11ax_HEW80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	82.32M	76.882M
5775MHz_TnomVnom	Pass	500k	77.04M	77.481M

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

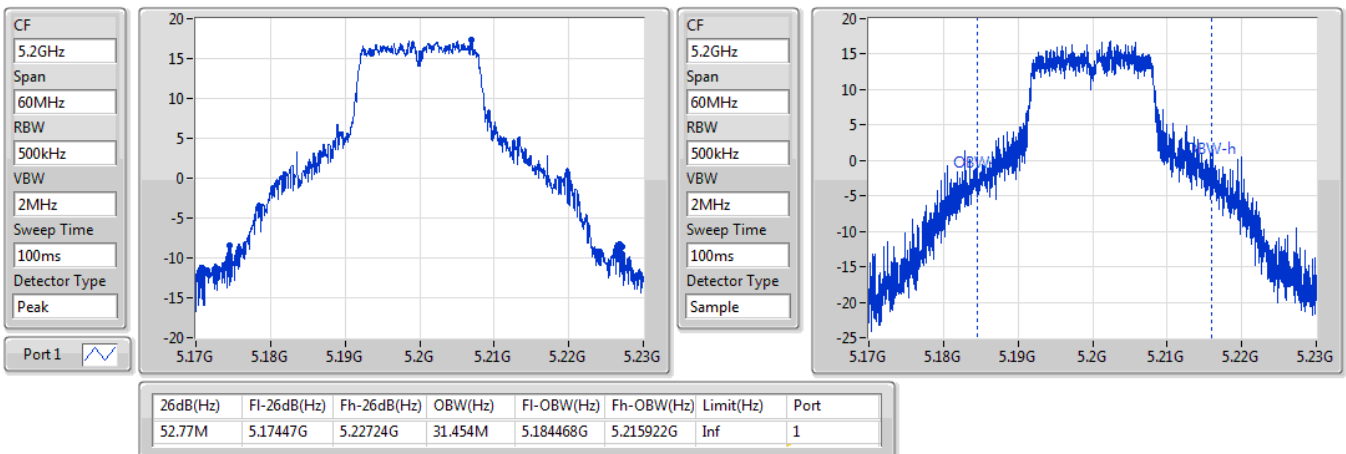
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_1TX
EBW
5180MHz

30/10/2019

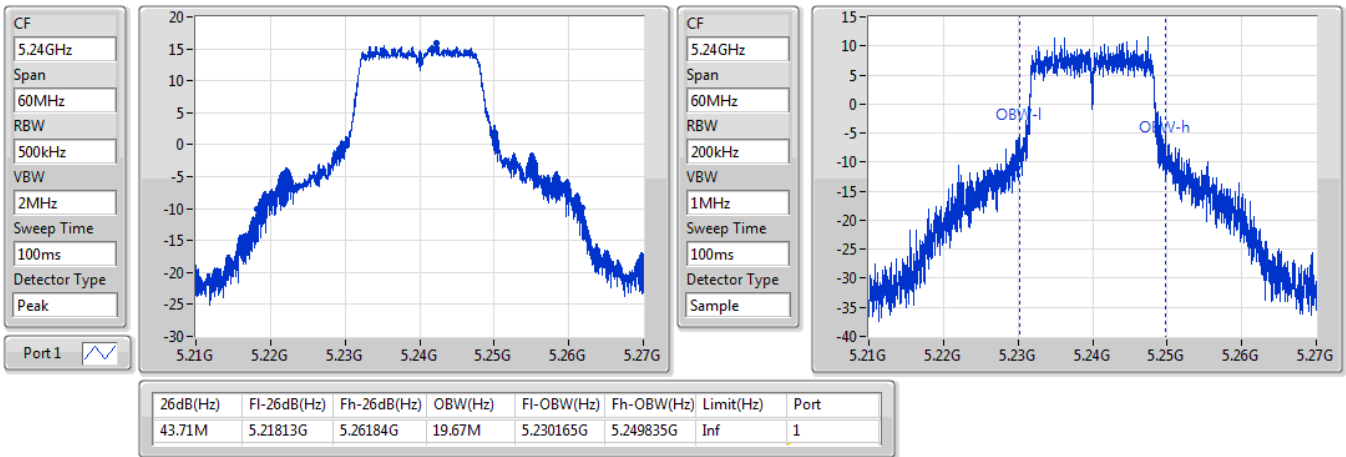

802.11a_Nss1,(6Mbps)_1TX
EBW
5200MHz

30/10/2019

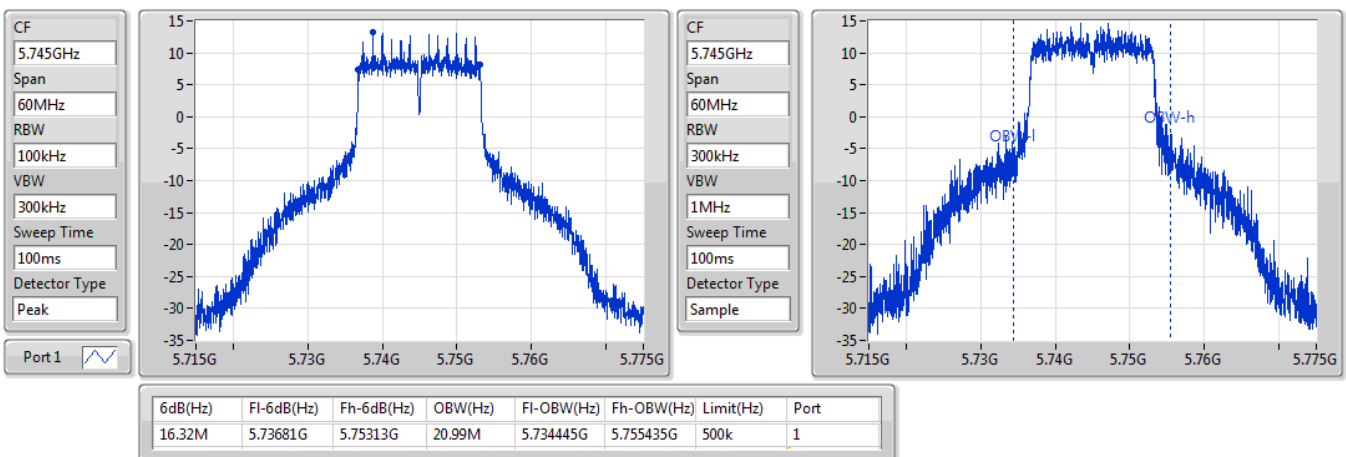


802.11a_Nss1,(6Mbps)_1TX
EBW
5240MHz

30/10/2019

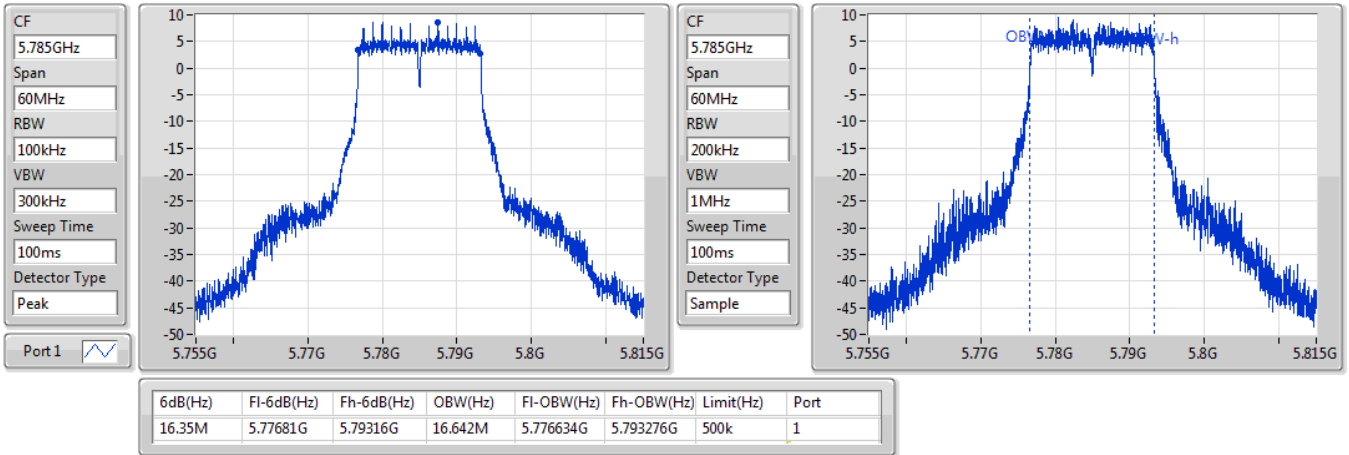

802.11a_Nss1,(6Mbps)_1TX
EBW
5745MHz

24/09/2019

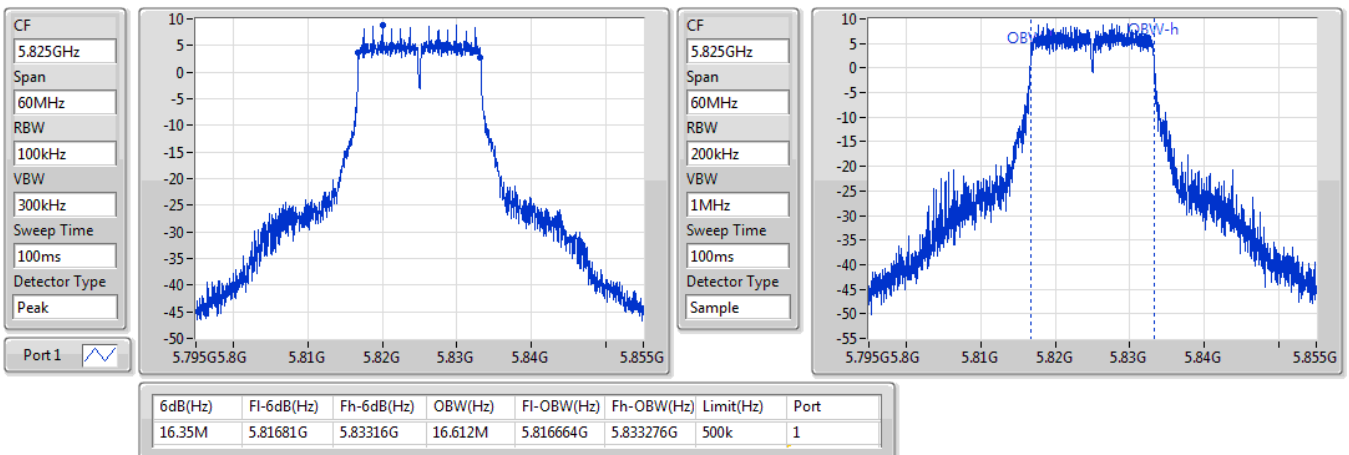


802.11a_Nss1,(6Mbps)_1TX
EBW
5785MHz

24/09/2019

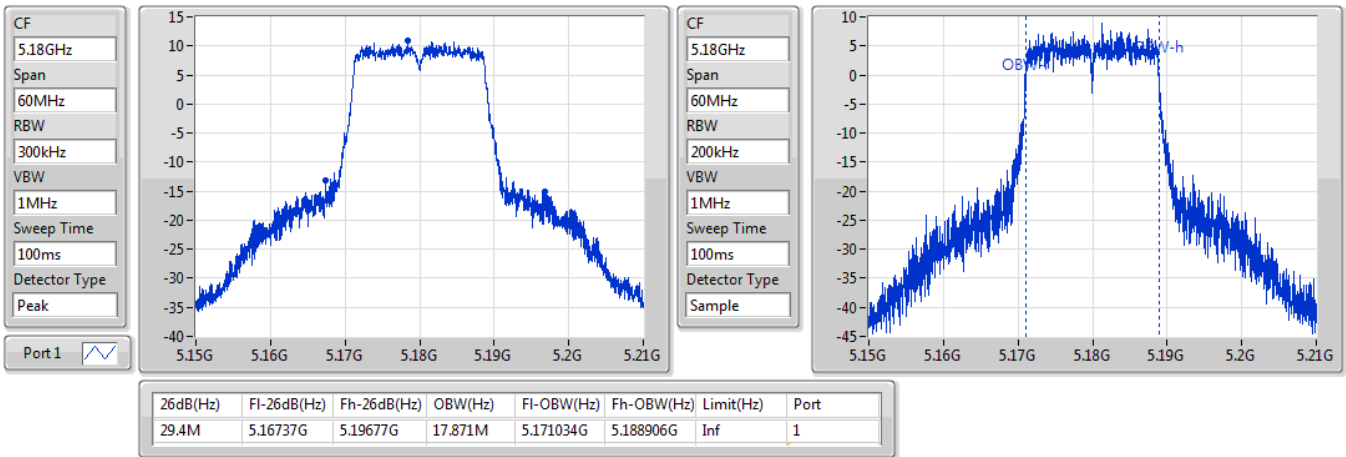

802.11a_Nss1,(6Mbps)_1TX
EBW
5825MHz

24/09/2019

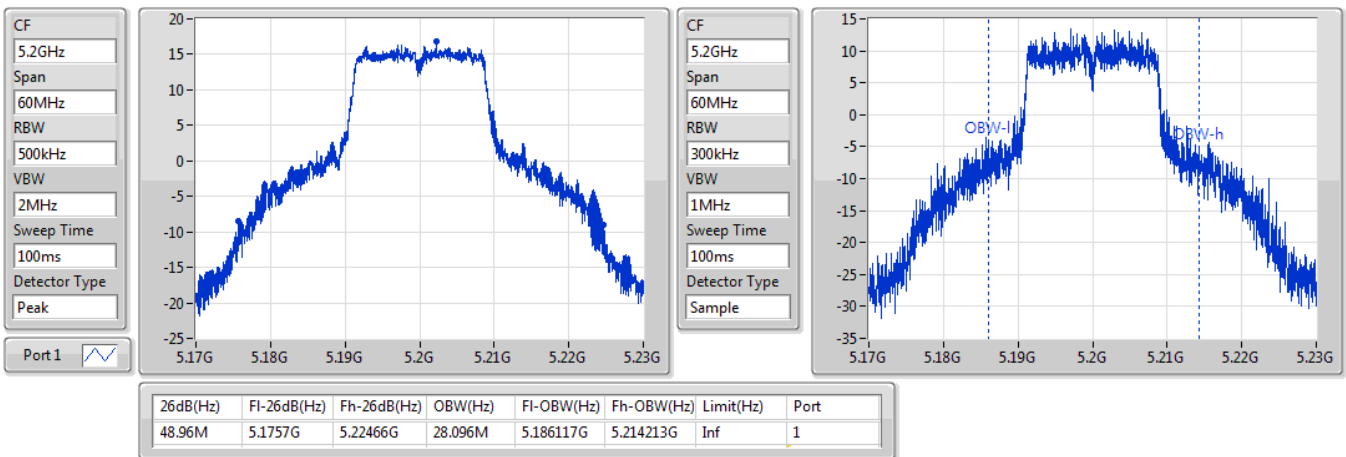


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5180MHz

30/10/2019

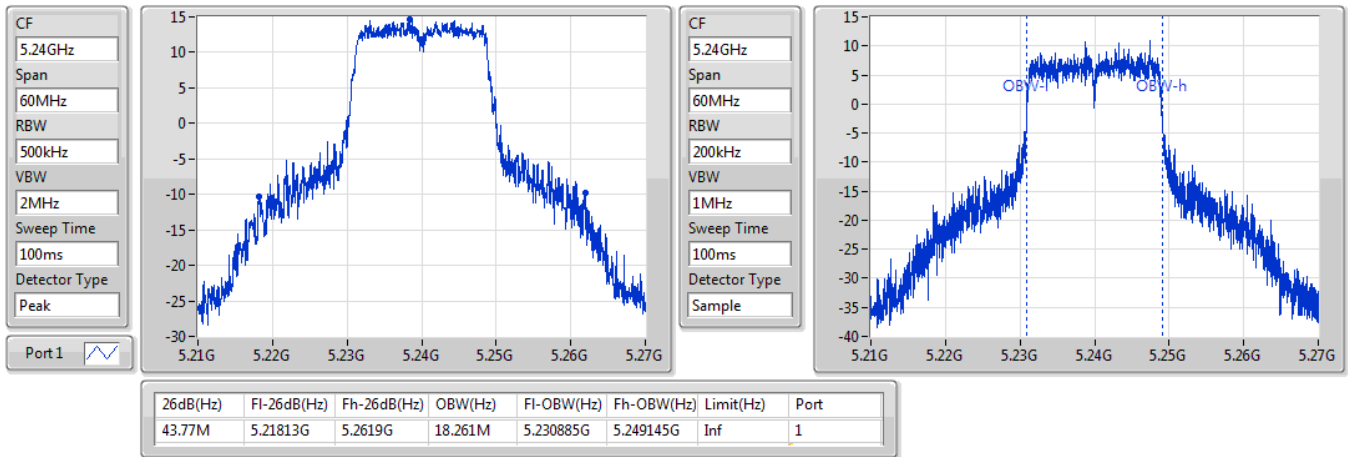

802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5200MHz

30/10/2019

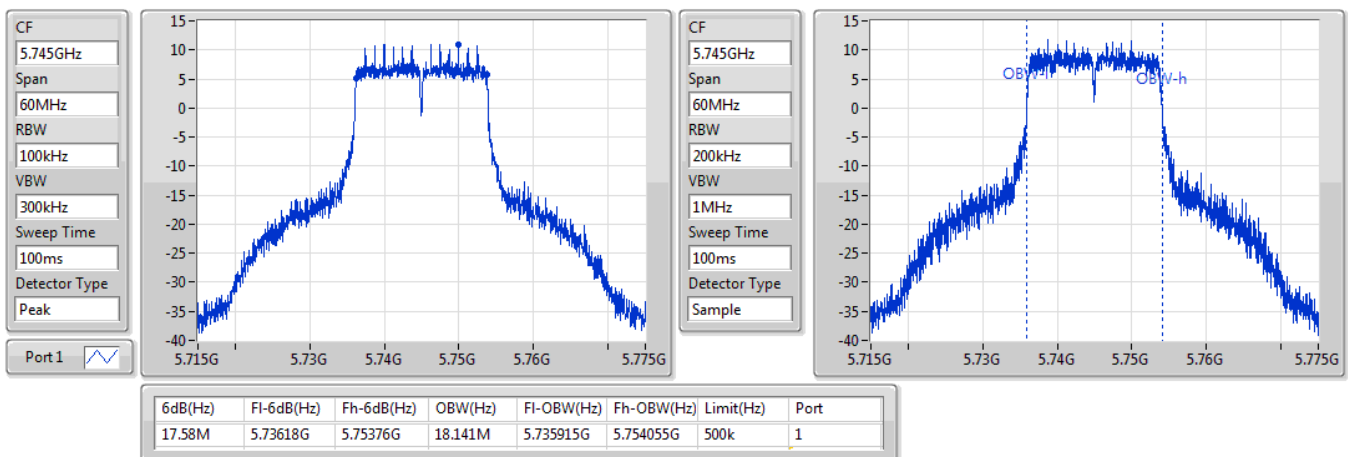


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5240MHz

30/10/2019


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5745MHz

24/09/2019

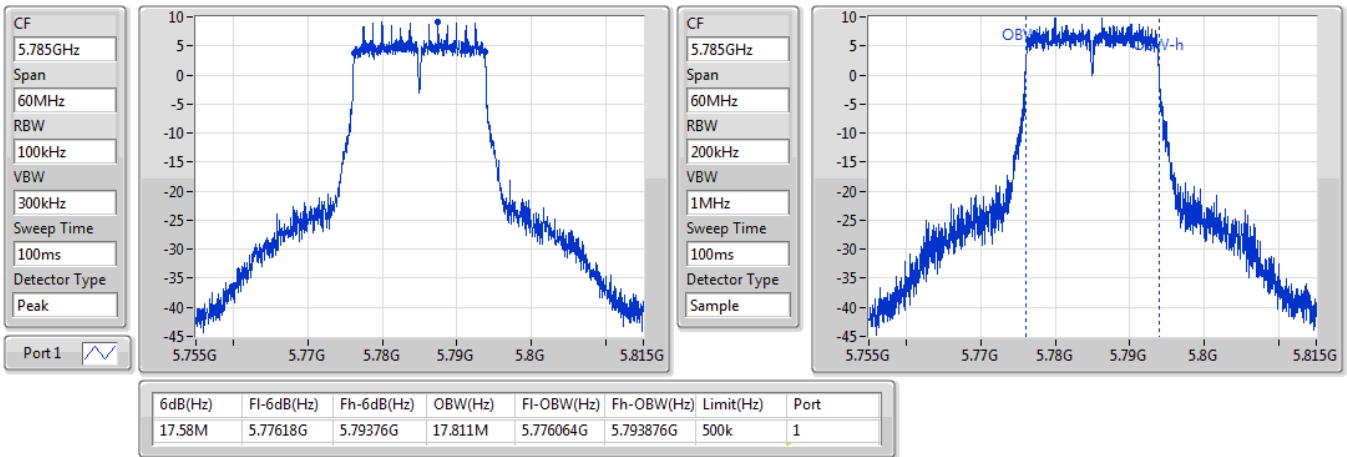


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

5785MHz

24/09/2019

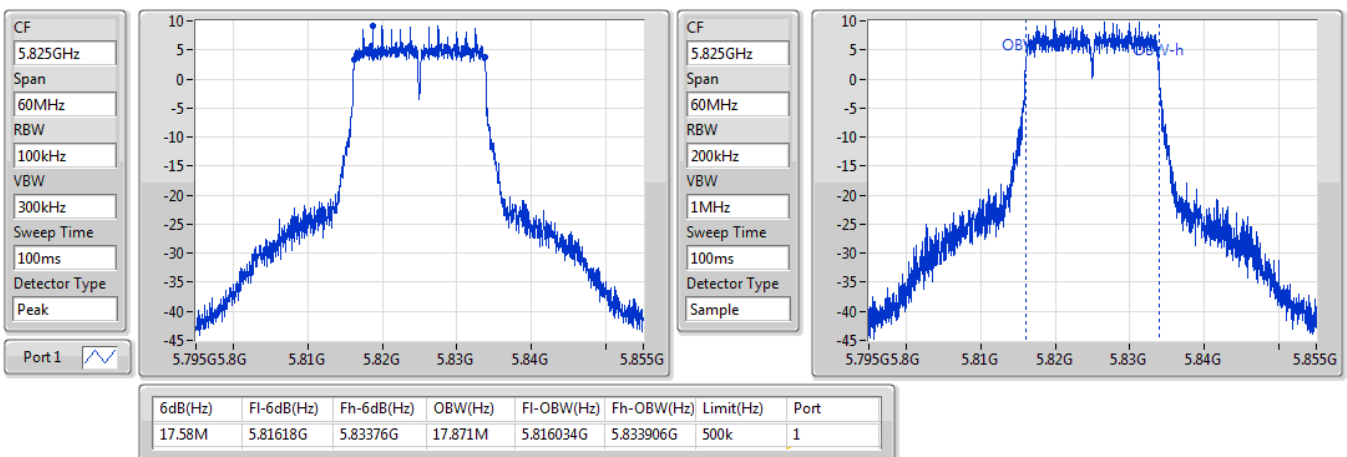


802.11ac VHT20_Nss1,(MCS0)_1TX

EBW

5825MHz

24/09/2019

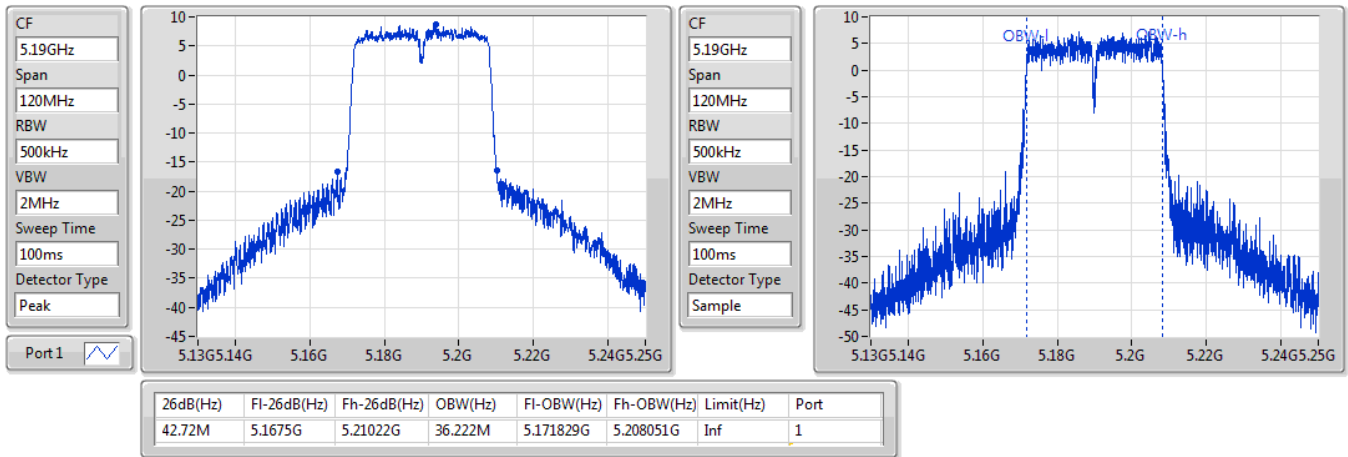


802.11ac VHT40_Nss1,(MCS0)_1TX

EBW

5190MHz

30/10/2019

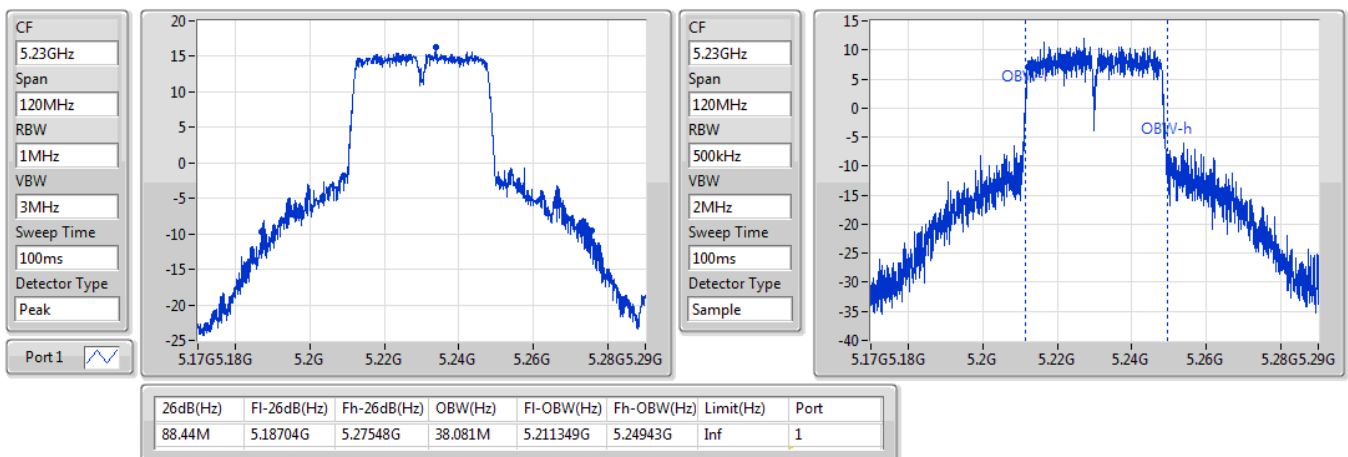


802.11ac VHT40_Nss1,(MCS0)_1TX

EBW

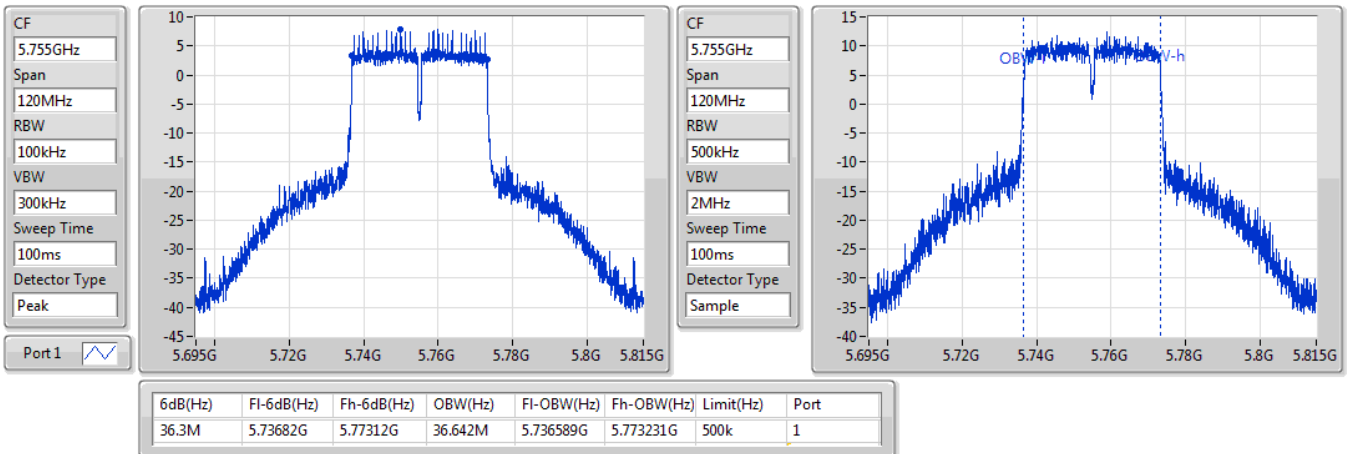
5230MHz

30/10/2019

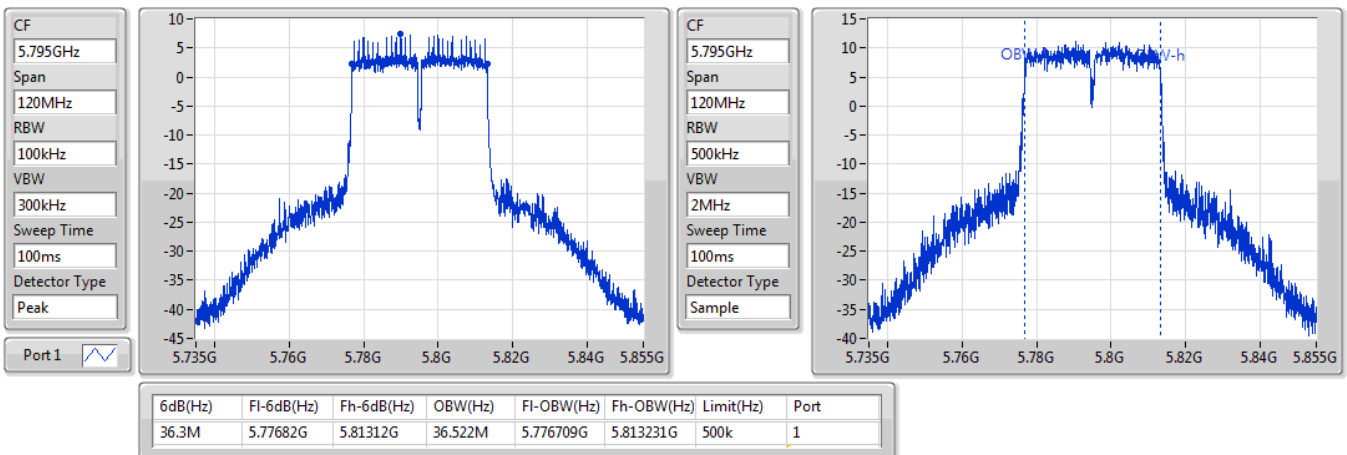


802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5755MHz

24/09/2019

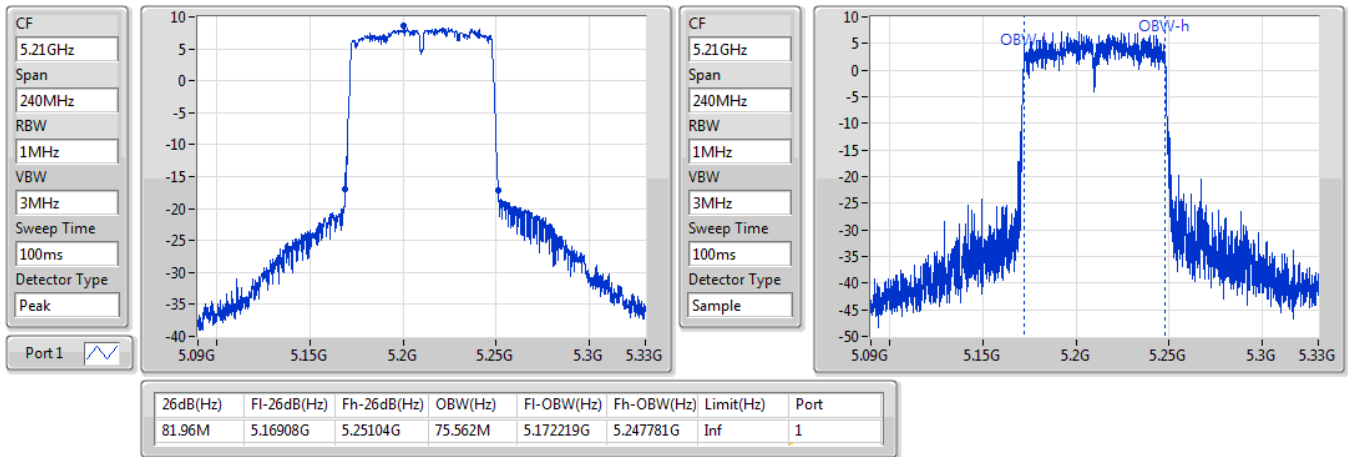

802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5795MHz

24/09/2019

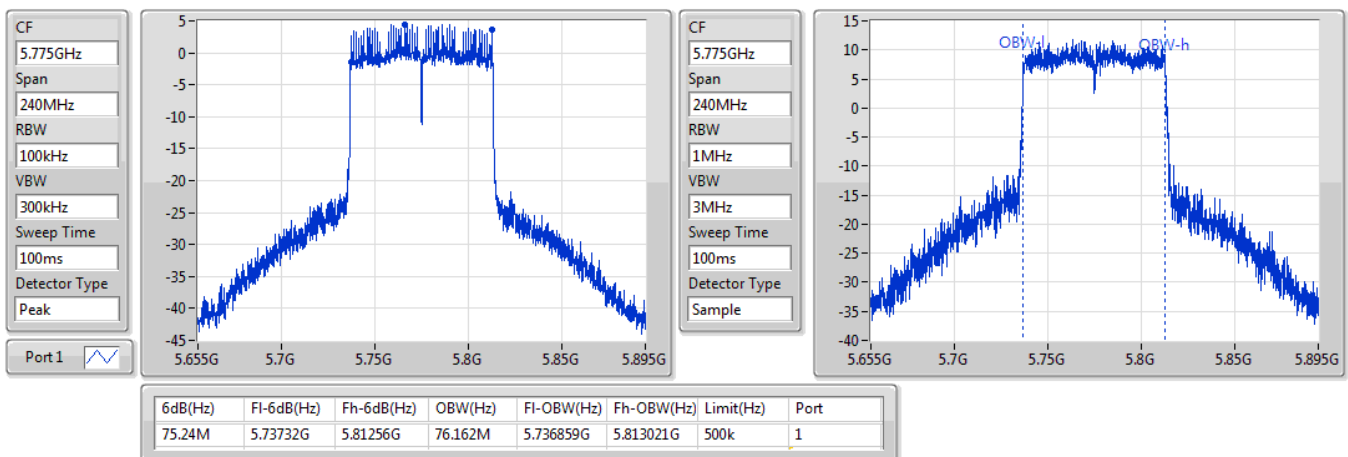


802.11ac VHT80_Nss1,(MCS0)_1TX
EBW
5210MHz

30/10/2019


802.11ac VHT80_Nss1,(MCS0)_1TX
EBW
5775MHz

24/09/2019

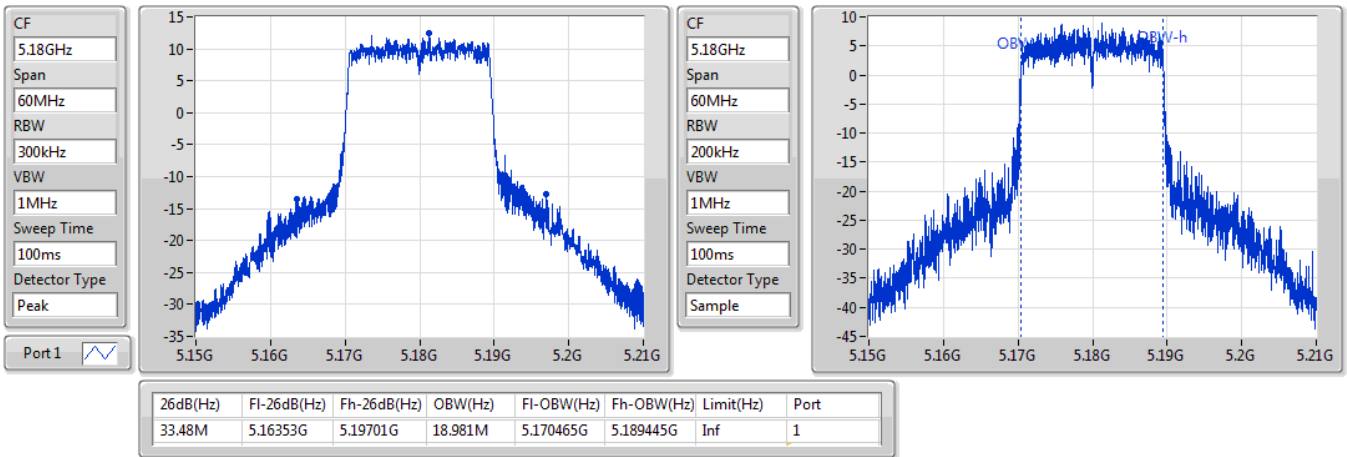


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5180MHz

30/10/2019

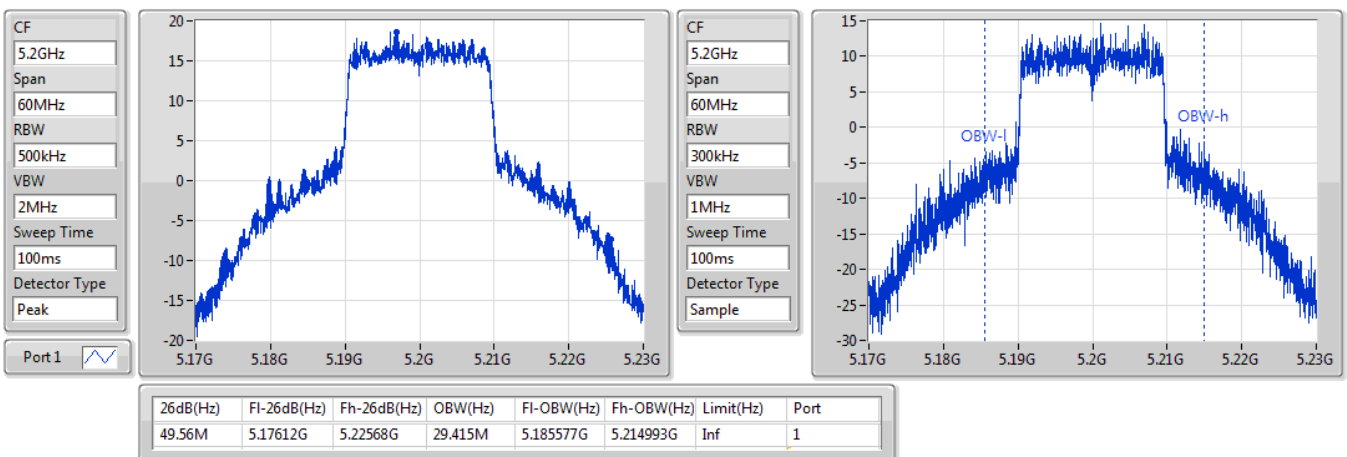


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

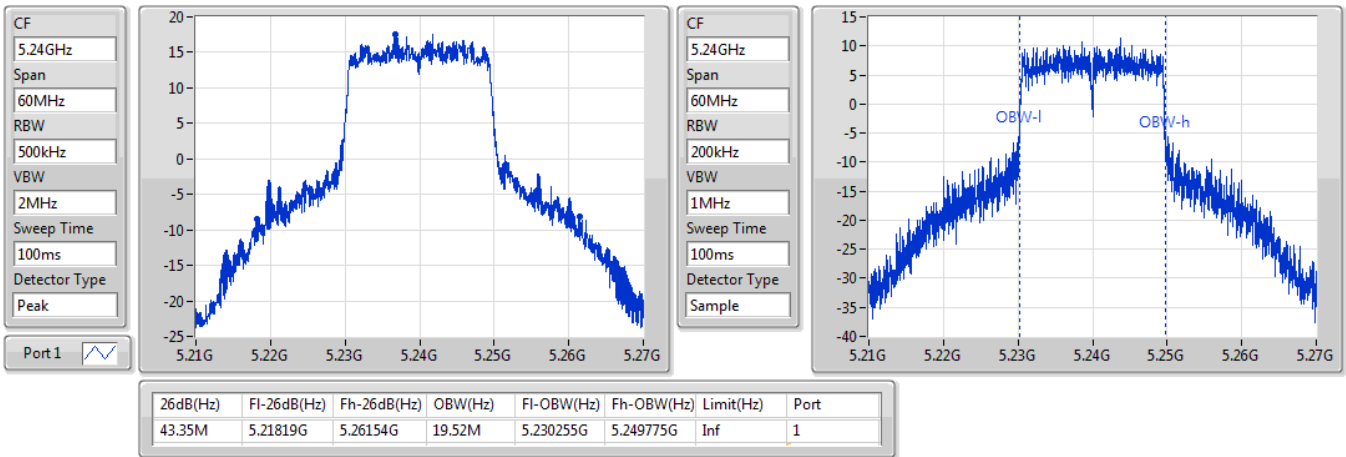
5200MHz

30/10/2019

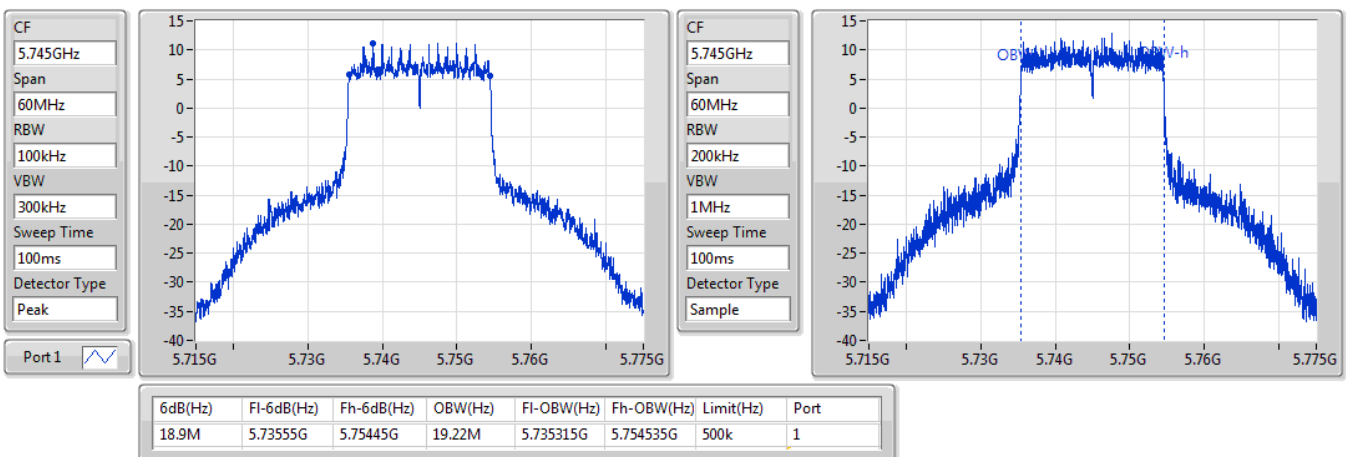


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5240MHz

30/10/2019


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5745MHz

24/09/2019

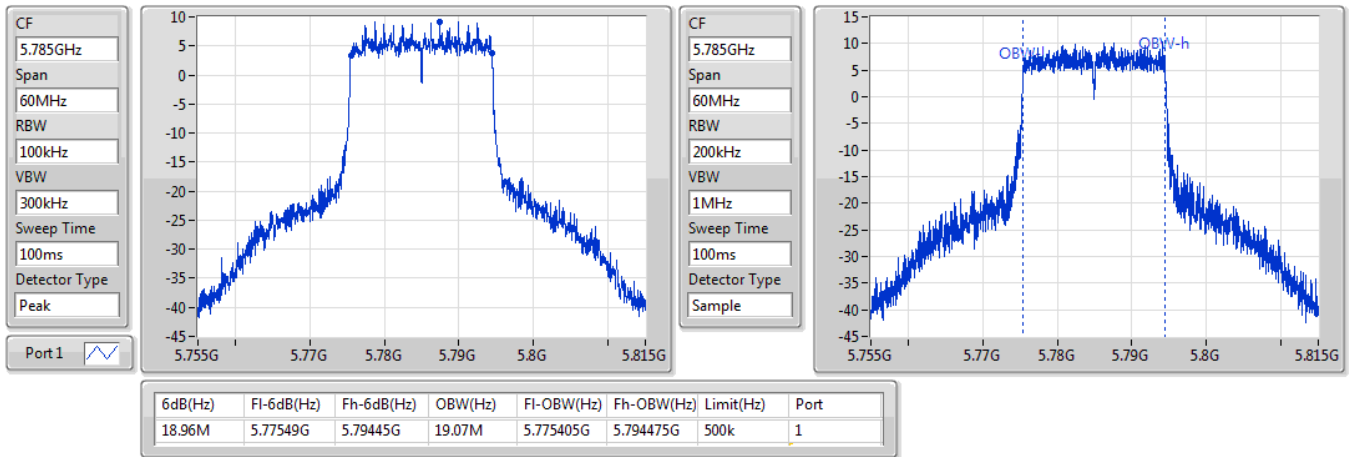


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5785MHz

24/09/2019

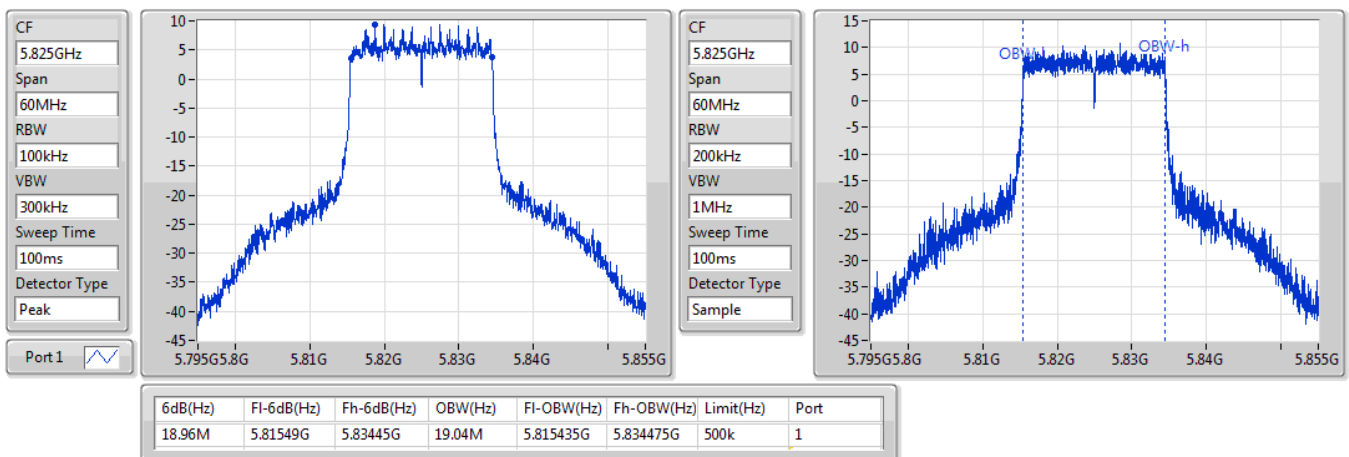


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

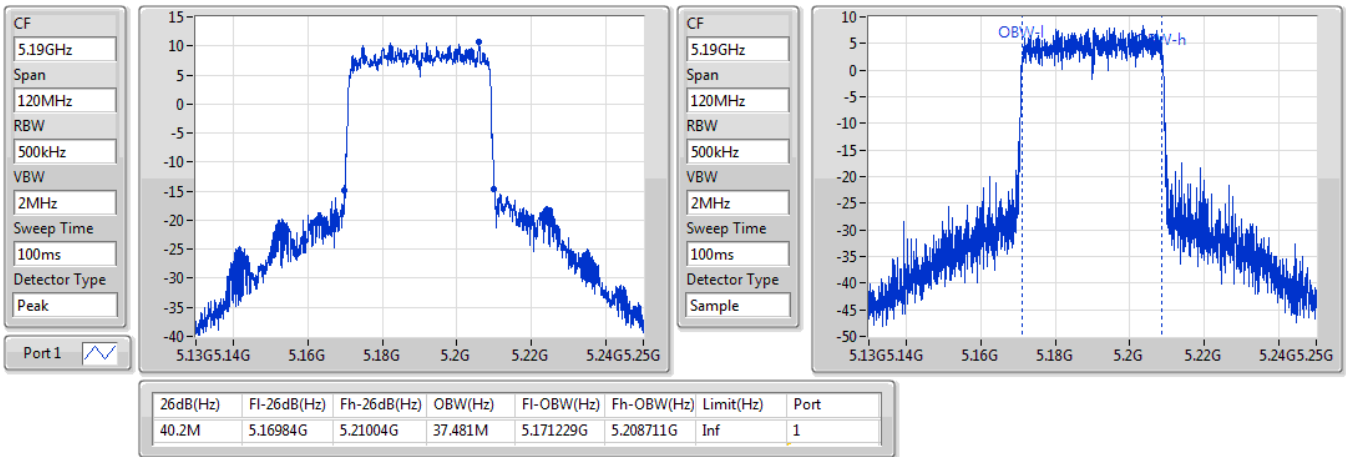
5825MHz

24/09/2019

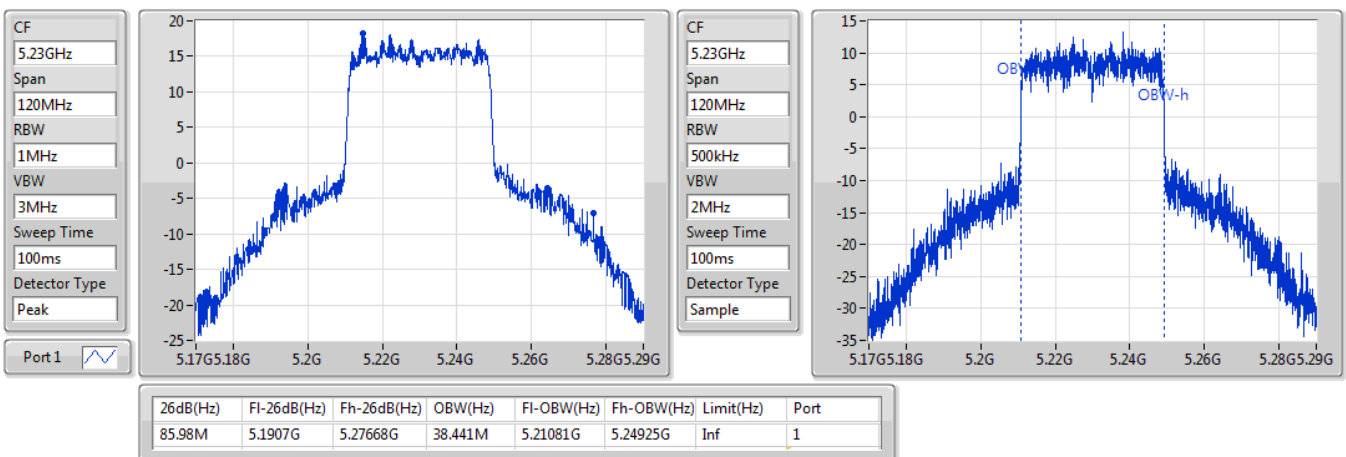


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5190MHz

30/10/2019


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5230MHz

30/10/2019

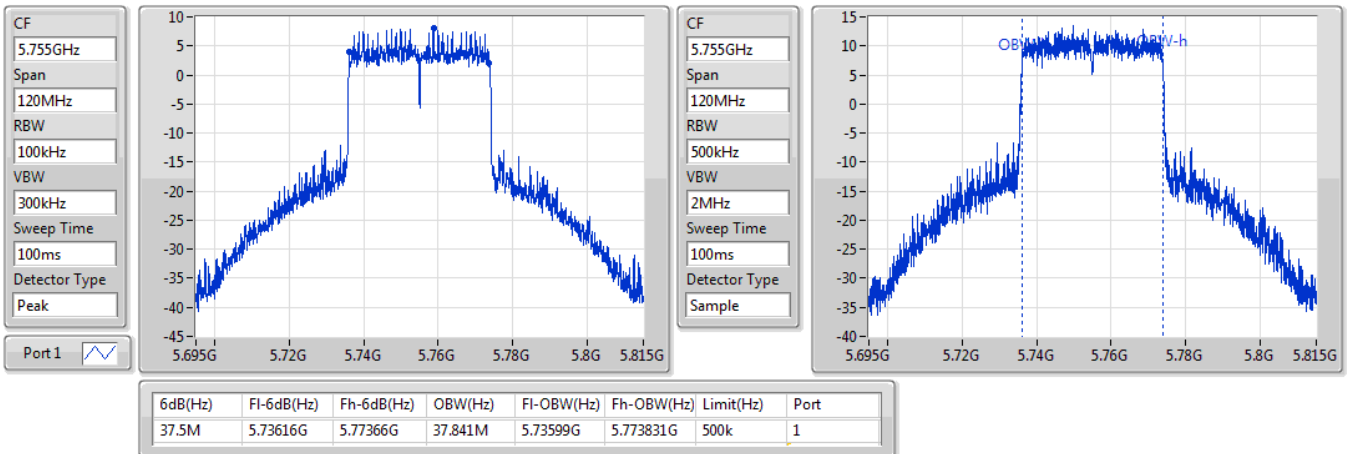


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5755MHz

24/09/2019

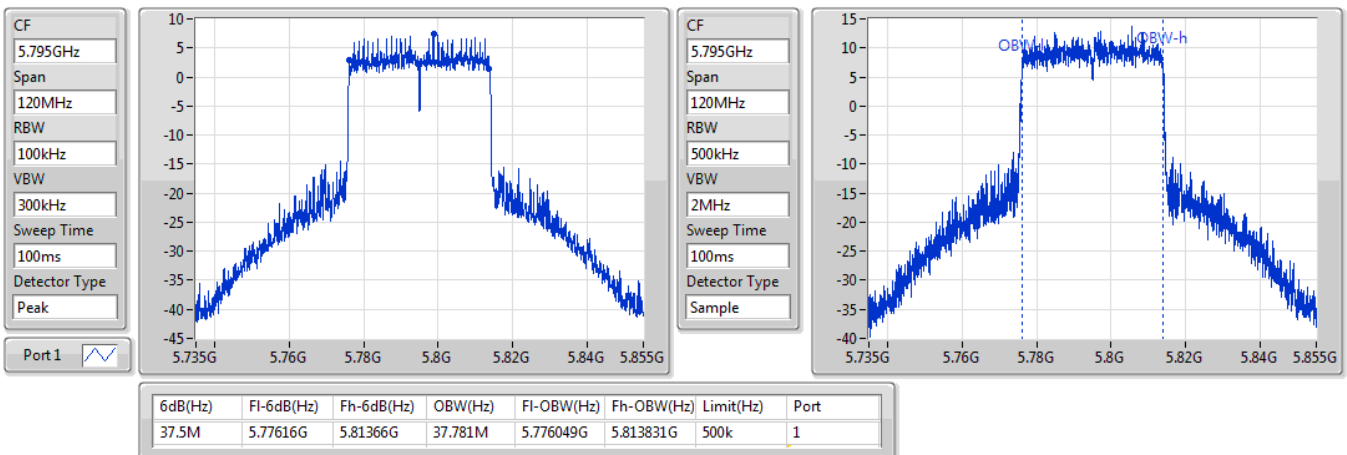


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

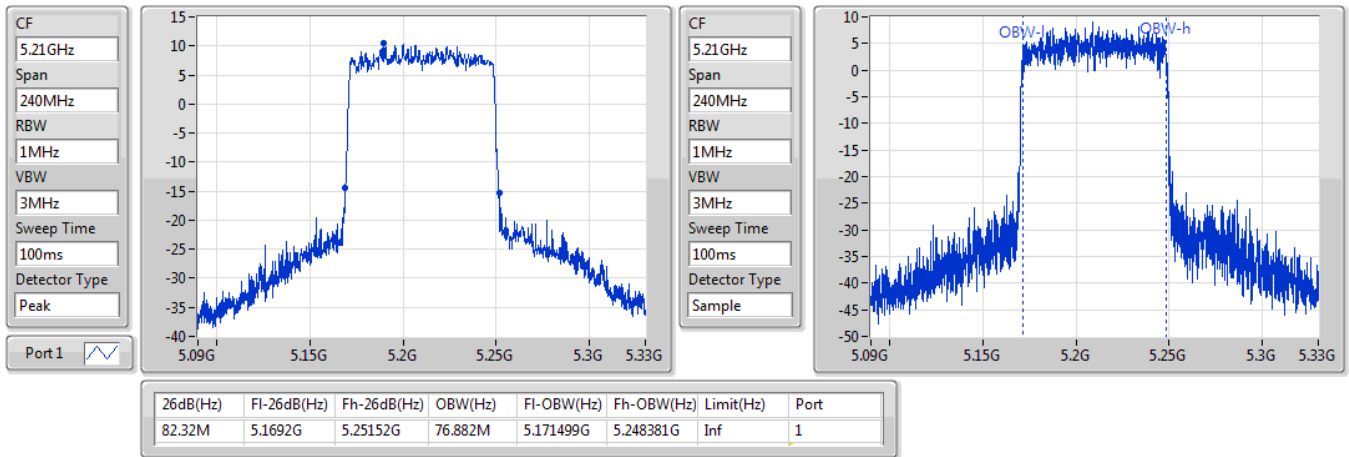
5795MHz

24/09/2019

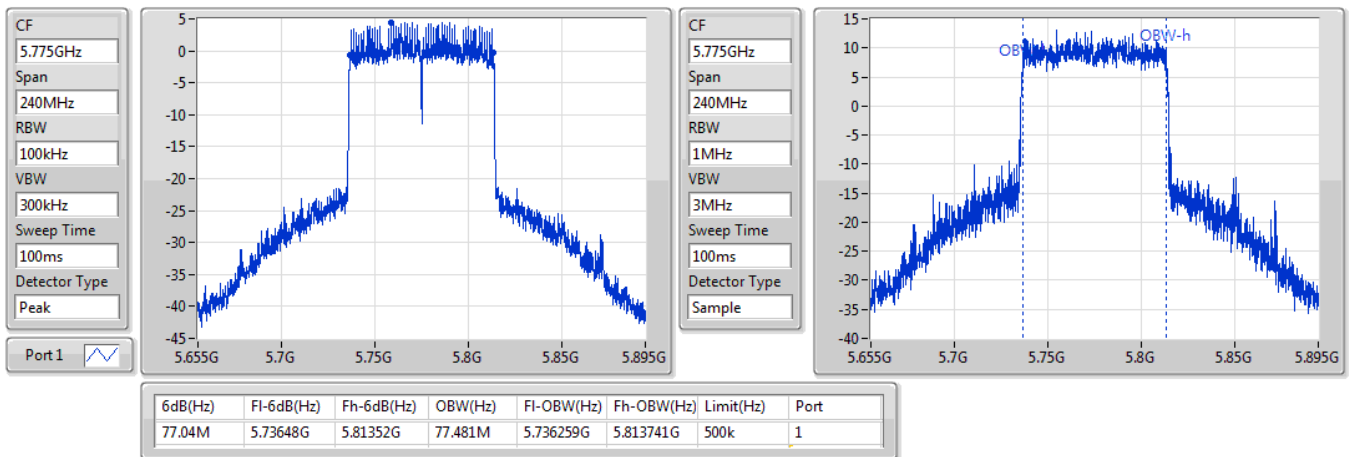


802.11ax HEW80_Nss1,(MCS0)_1TX
EBW
5210MHz

30/10/2019


802.11ax HEW80_Nss1,(MCS0)_1TX
EBW
5775MHz

24/09/2019



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	43.74M	20.75M	20M7D1D	21.6M	16.612M
802.11ac VHT20_Nss2,(MCS0)_2TX	46.47M	21.019M	21M0D1D	21.75M	17.751M
802.11ac VHT40_Nss2,(MCS0)_2TX	82.8M	36.462M	36M5D1D	39.78M	36.162M
802.11ac VHT80_Nss2,(MCS0)_2TX	81.6M	75.802M	75M8D1D	81.6M	75.562M
802.11ax HEW20_Nss2,(MCS0)_2TX	45.33M	21.079M	21M1D1D	21.45M	19.01M
802.11ax HEW40_Nss2,(MCS0)_2TX	76.14M	37.841M	37M8D1D	39.9M	37.481M
802.11ax HEW80_Nss2,(MCS0)_2TX	81.48M	77.121M	77M1D1D	81M	77.121M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.35M	17.841M	17M8D1D	16.32M	16.612M
802.11ac VHT20_Nss2,(MCS0)_2TX	17.58M	18.261M	18M3D1D	17.58M	17.751M
802.11ac VHT40_Nss2,(MCS0)_2TX	36.3M	36.342M	36M3D1D	36.3M	36.282M
802.11ac VHT80_Nss2,(MCS0)_2TX	75.96M	75.922M	75M9D1D	75.96M	75.802M
802.11ax HEW20_Nss2,(MCS0)_2TX	18.99M	19.22M	19M2D1D	18.81M	18.951M
802.11ax HEW40_Nss2,(MCS0)_2TX	37.62M	37.721M	37M7D1D	37.5M	37.541M
802.11ax HEW80_Nss2,(MCS0)_2TX	76.56M	77.121M	77M1D1D	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

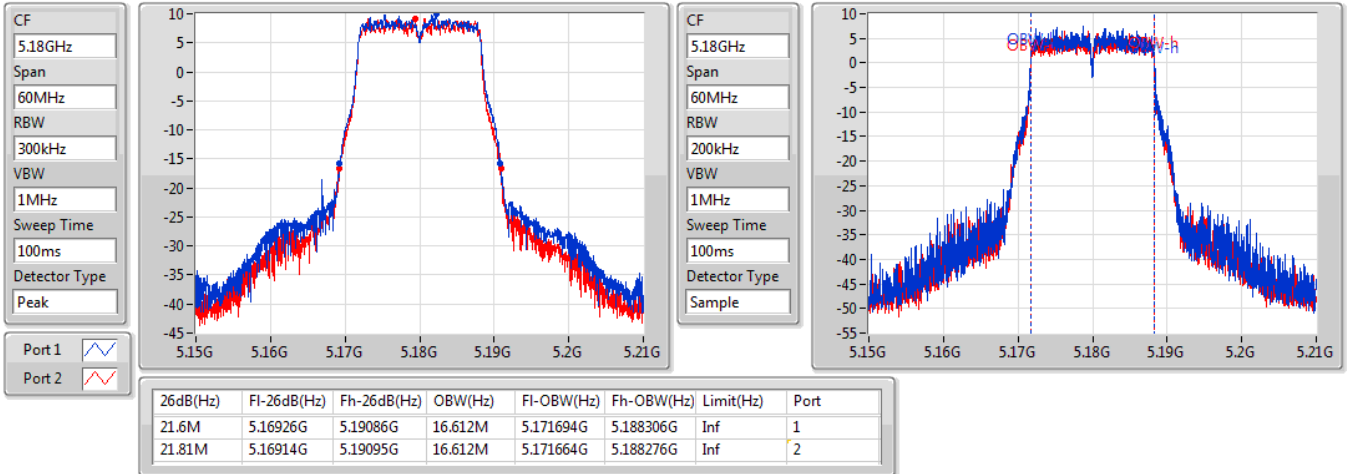
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.6M	16.612M	21.81M	16.612M
5200MHz_TnomVnom	Pass	Inf	43.74M	20.75M	42.9M	19.07M
5240MHz_TnomVnom	Pass	Inf	43.32M	18.111M	42.3M	17.631M
5745MHz_TnomVnom	Pass	500k	16.32M	17.841M	16.32M	16.852M
5785MHz_TnomVnom	Pass	500k	16.32M	16.702M	16.32M	16.672M
5825MHz_TnomVnom	Pass	500k	16.35M	16.612M	16.35M	16.642M
802.11ac_VHT20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	22.77M	17.811M	21.75M	17.751M
5200MHz_TnomVnom	Pass	Inf	46.47M	21.019M	44.13M	18.891M
5240MHz_TnomVnom	Pass	Inf	44.37M	18.831M	42.84M	18.441M
5745MHz_TnomVnom	Pass	500k	17.58M	18.261M	17.58M	17.871M
5785MHz_TnomVnom	Pass	500k	17.58M	17.871M	17.58M	17.811M
5825MHz_TnomVnom	Pass	500k	17.58M	17.841M	17.58M	17.751M
802.11ac_VHT40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	39.78M	36.282M	40.02M	36.162M
5230MHz_TnomVnom	Pass	Inf	82.8M	36.462M	64.5M	36.342M
5755MHz_TnomVnom	Pass	500k	36.3M	36.342M	36.3M	36.282M
5795MHz_TnomVnom	Pass	500k	36.3M	36.342M	36.3M	36.282M
802.11ac_VHT80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	81.6M	75.802M	81.6M	75.562M
5775MHz_TnomVnom	Pass	500k	75.96M	75.922M	75.96M	75.802M
802.11ax_HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.75M	19.01M	21.45M	19.01M
5200MHz_TnomVnom	Pass	Inf	45.33M	21.079M	43.17M	19.73M
5240MHz_TnomVnom	Pass	Inf	43.92M	19.4M	42.15M	19.31M
5745MHz_TnomVnom	Pass	500k	18.96M	19.22M	18.81M	19.1M
5785MHz_TnomVnom	Pass	500k	18.96M	19.07M	18.87M	19.01M
5825MHz_TnomVnom	Pass	500k	18.99M	19.01M	18.87M	18.951M
802.11ax_HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	40.02M	37.661M	39.9M	37.481M
5230MHz_TnomVnom	Pass	Inf	75.54M	37.841M	76.14M	37.721M
5755MHz_TnomVnom	Pass	500k	37.56M	37.721M	37.62M	37.541M
5795MHz_TnomVnom	Pass	500k	37.5M	37.601M	37.62M	37.541M
802.11ax_HEW80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	81.48M	77.121M	81M	77.121M
5775MHz_TnomVnom	Pass	500k	76.56M	77.121M	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

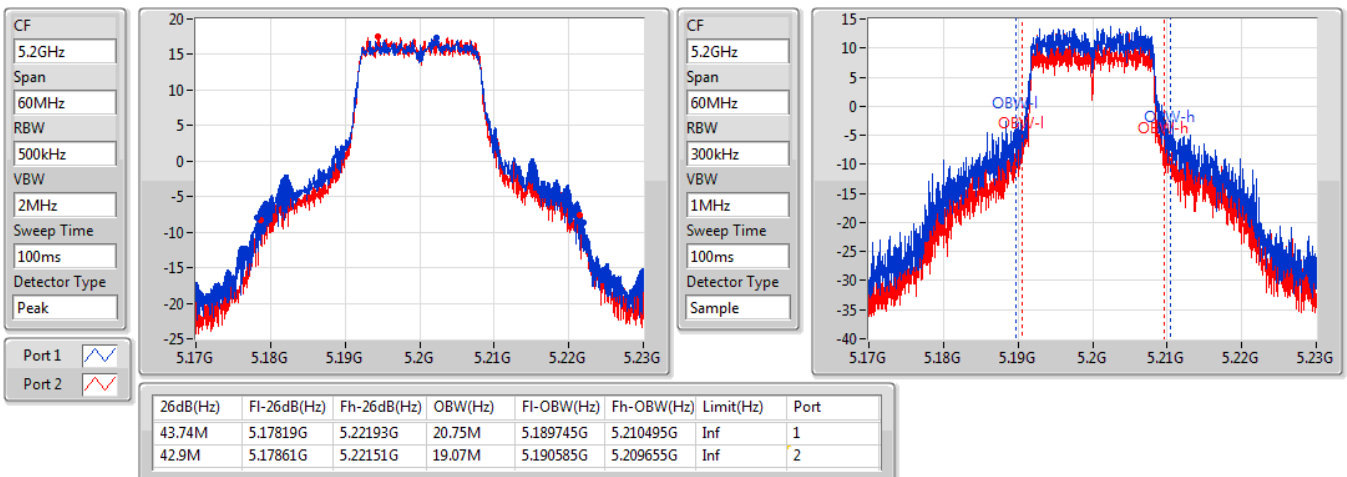
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_2TX
EBW
5180MHz

31/10/2019


802.11a_Nss1,(6Mbps)_2TX
EBW
5200MHz

31/10/2019

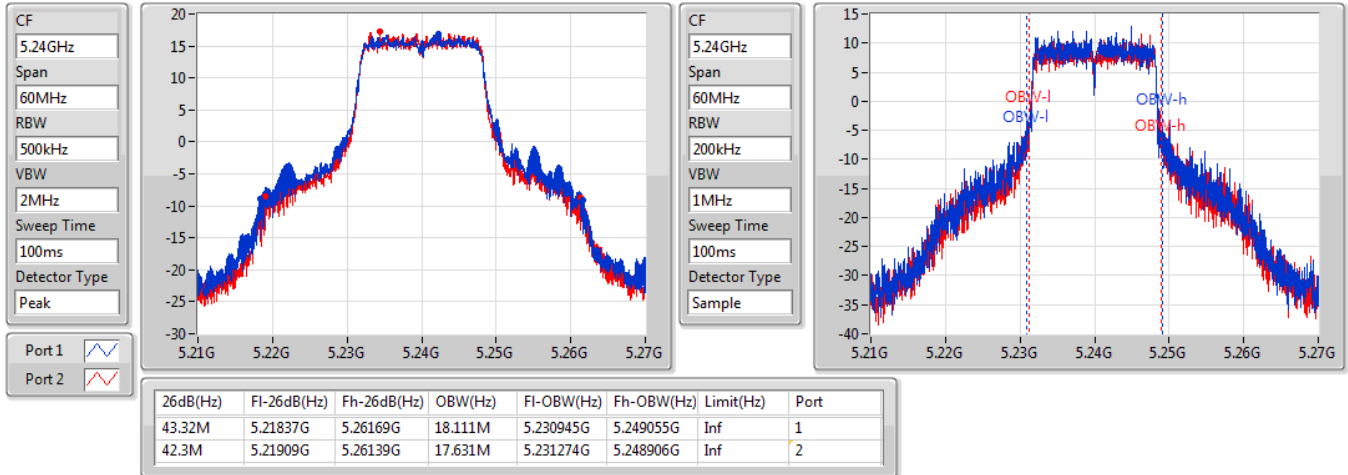


802.11a_Nss1,(6Mbps)_2TX

EBW

5240MHz

31/10/2019

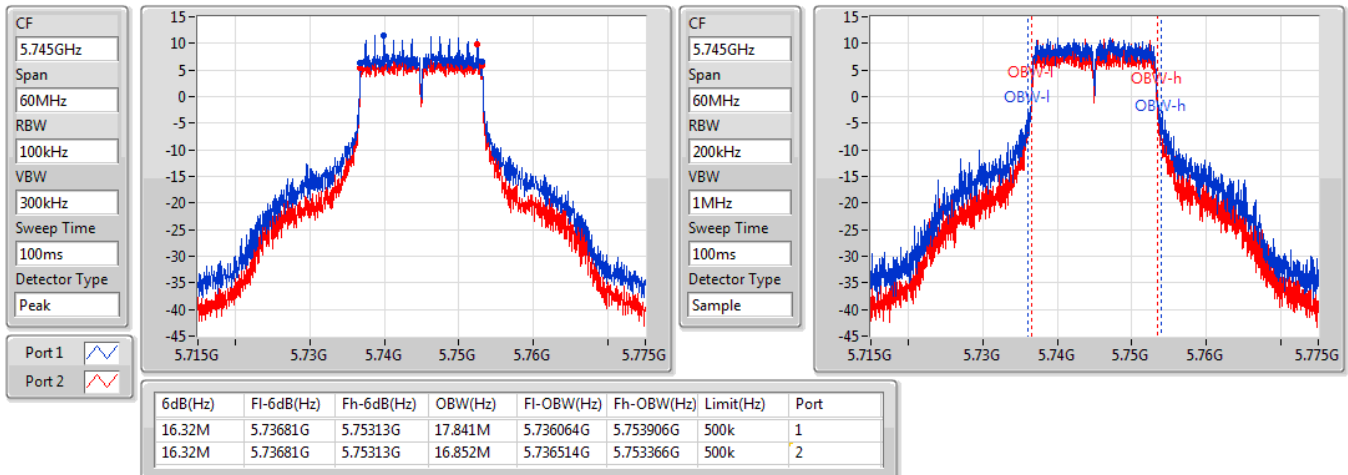


802.11a_Nss1,(6Mbps)_2TX

EBW

5745MHz

20/09/2019

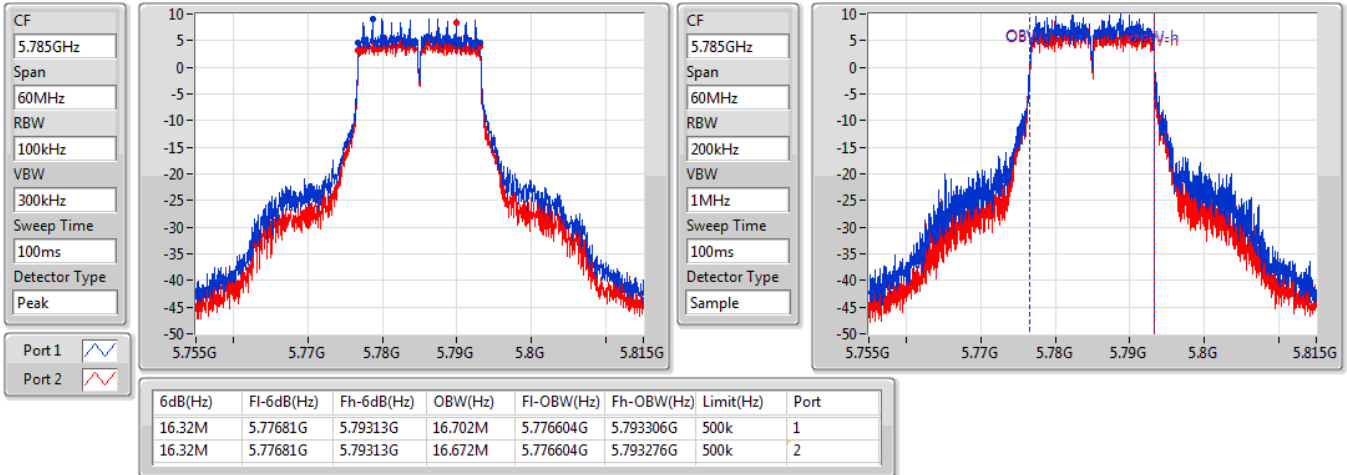


802.11a_Nss1,(6Mbps)_2TX

EBW

5785MHz

20/09/2019

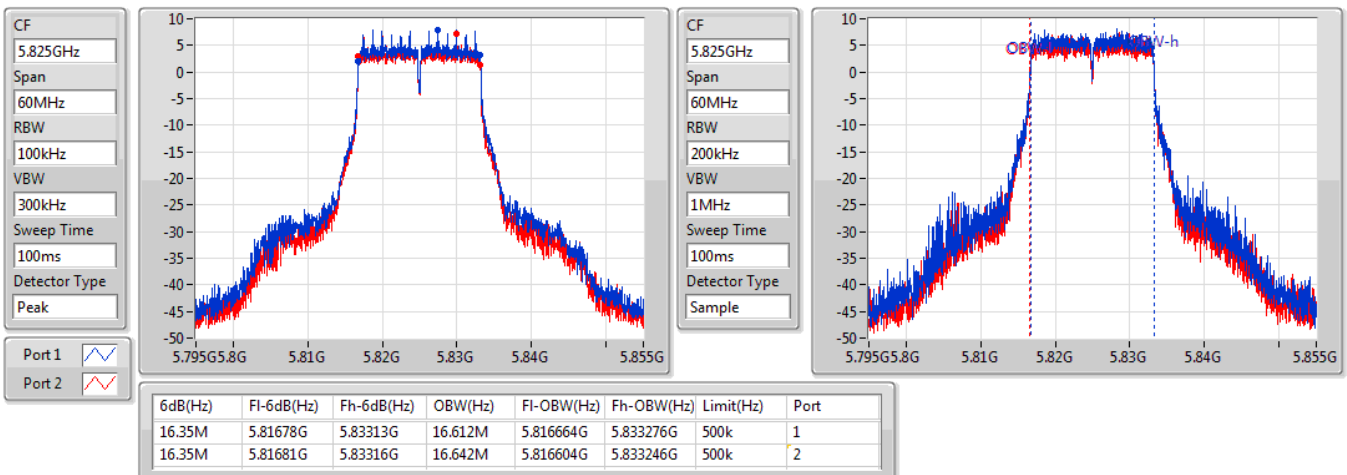


802.11a_Nss1,(6Mbps)_2TX

EBW

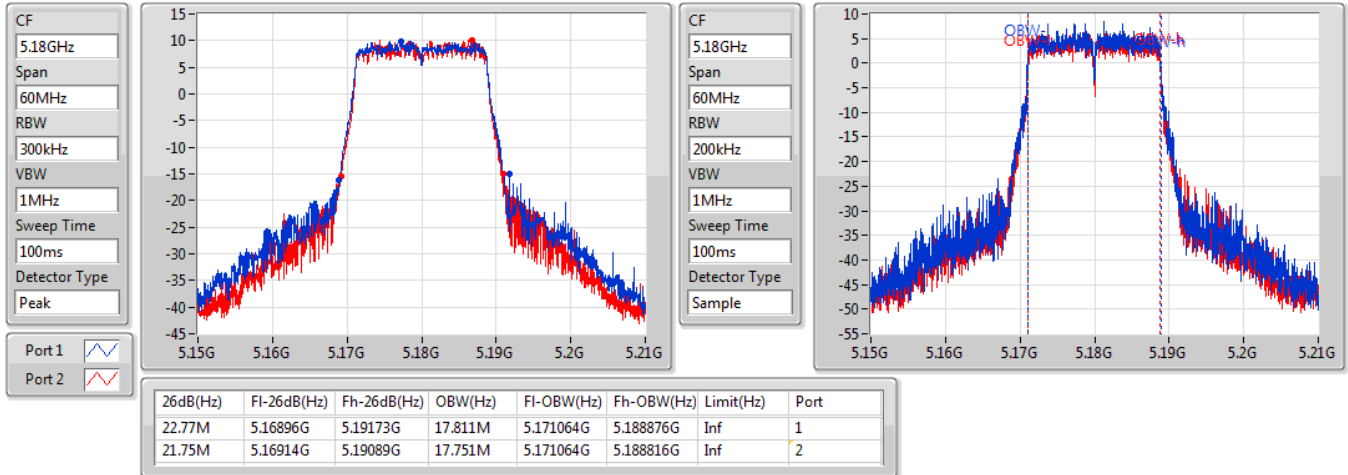
5825MHz

20/09/2019

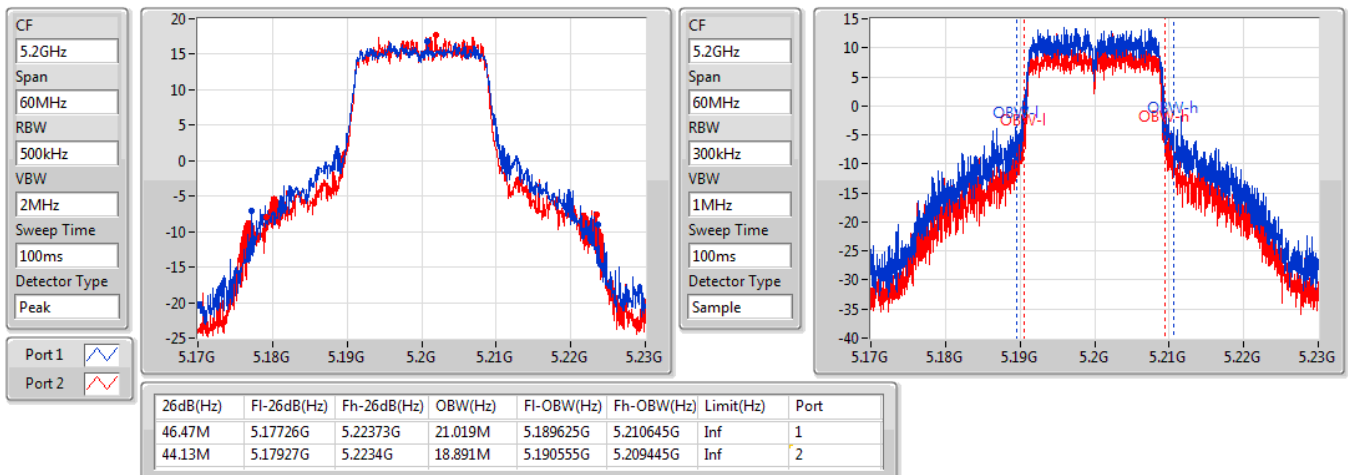


802.11ac VHT20_Nss2,(MCS0)_2TX
EBW
5180MHz

31/10/2019


802.11ac VHT20_Nss2,(MCS0)_2TX
EBW
5200MHz

31/10/2019

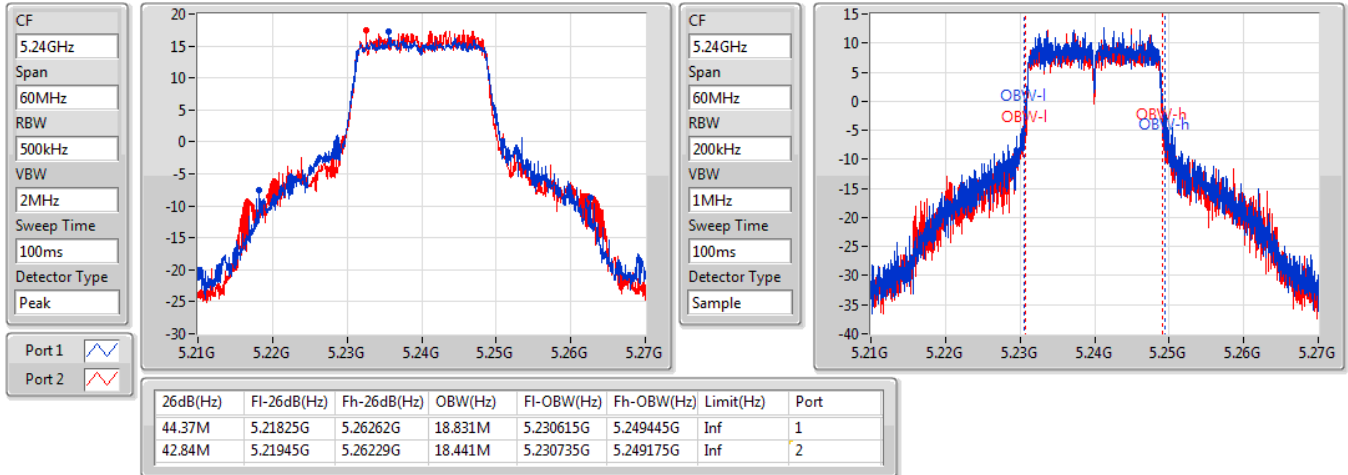


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5240MHz

31/10/2019

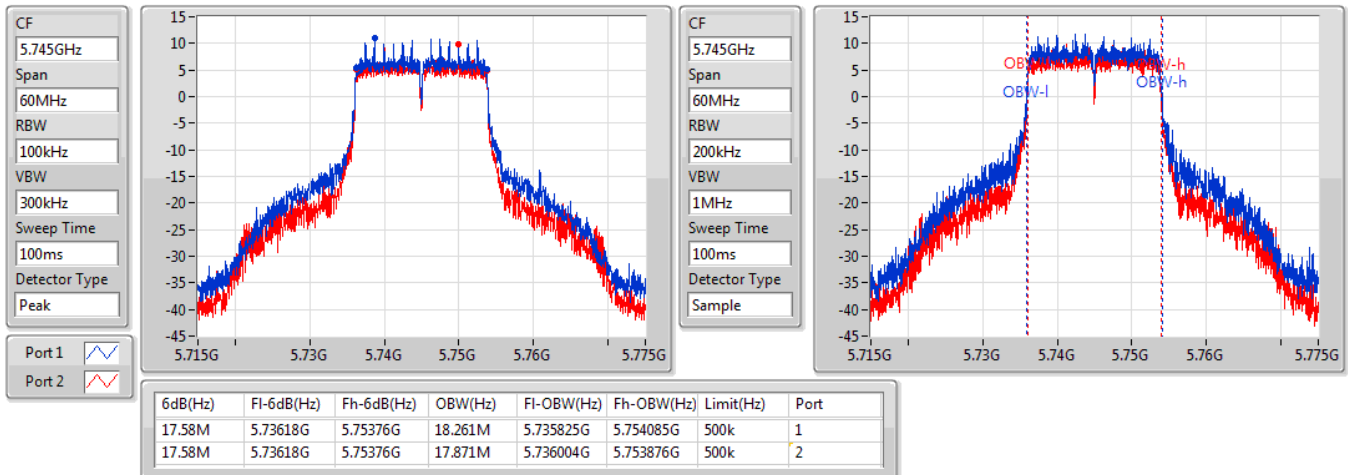


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5745MHz

20/09/2019

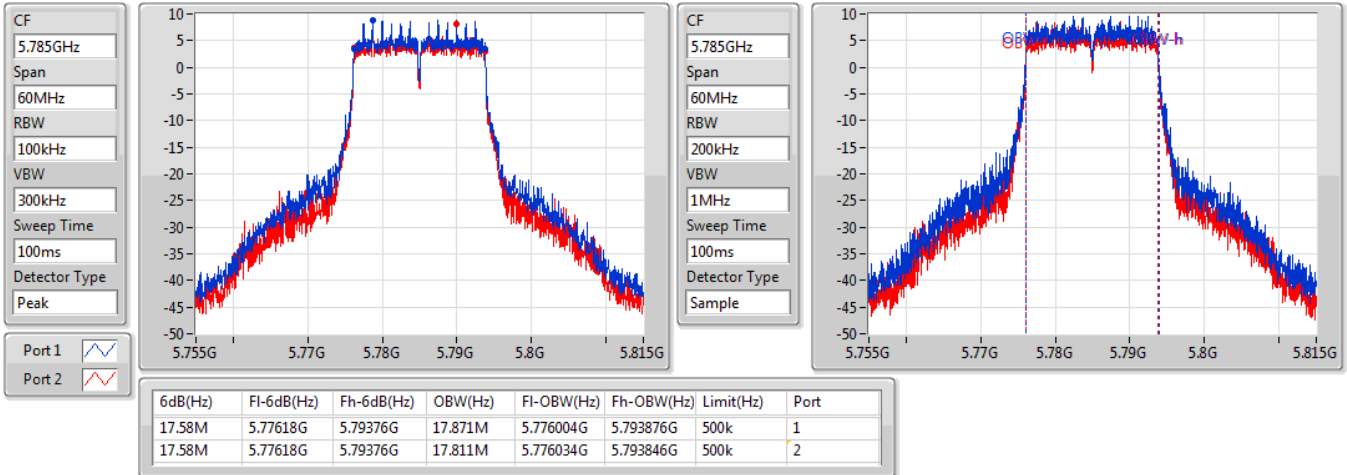


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

5785MHz

20/09/2019

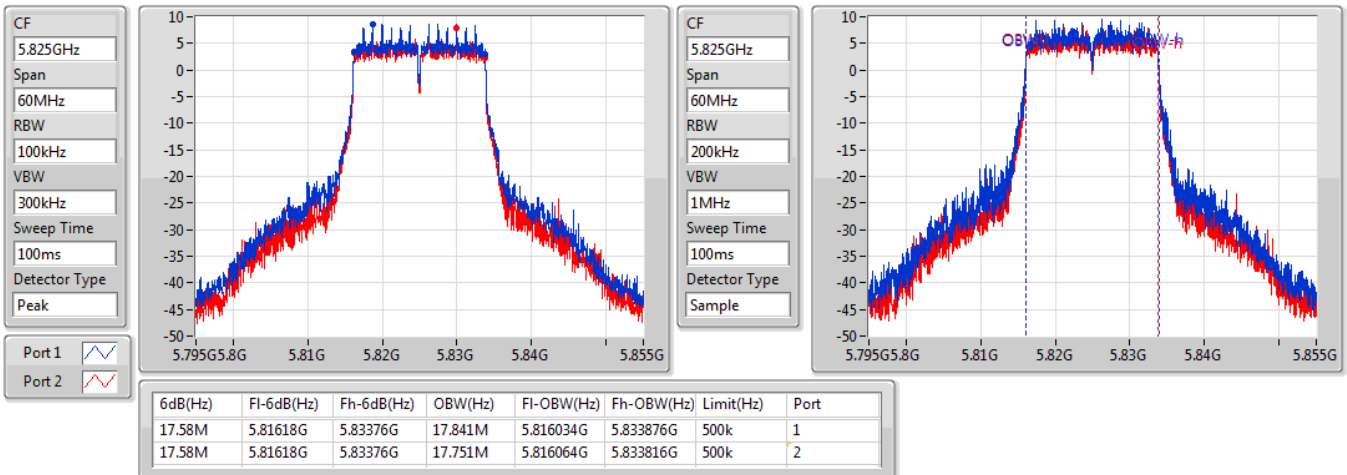


802.11ac VHT20_Nss2,(MCS0)_2TX

EBW

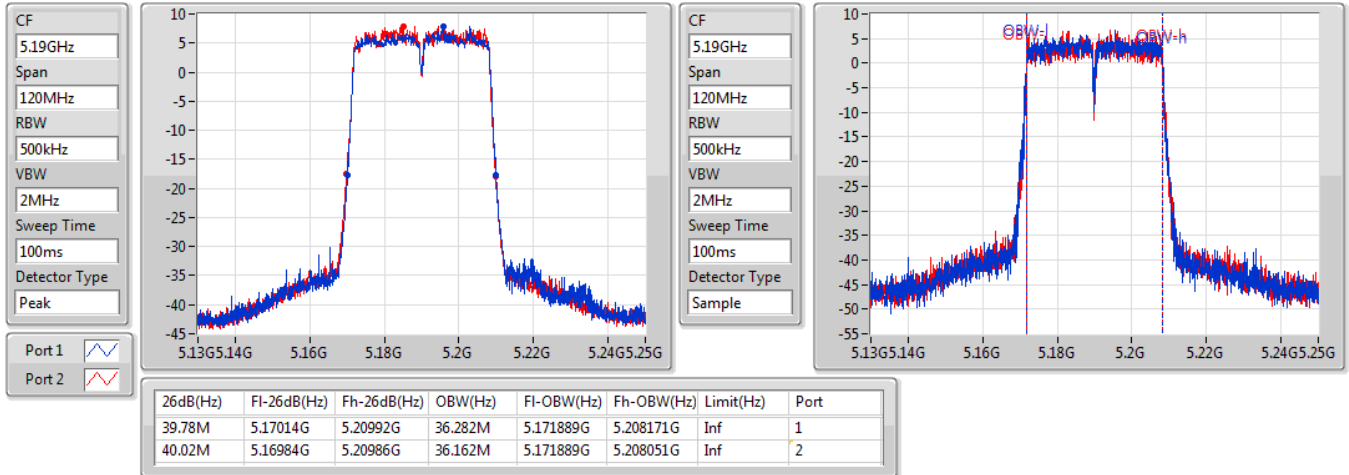
5825MHz

20/09/2019

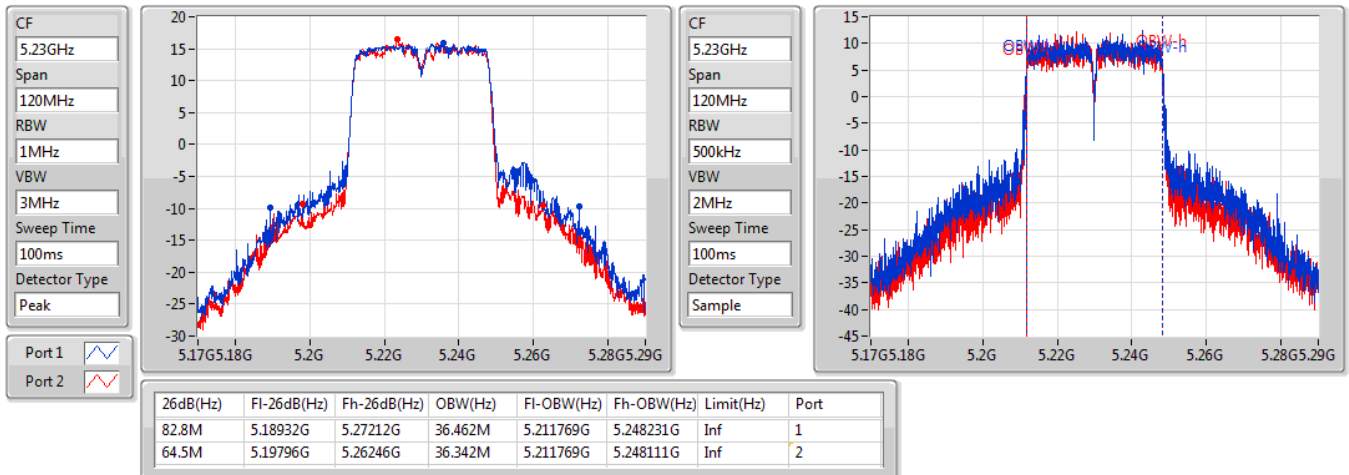


802.11ac VHT40_Nss2,(MCS0)_2TX
EBW
5190MHz

31/10/2019


802.11ac VHT40_Nss2,(MCS0)_2TX
EBW
5230MHz

31/10/2019

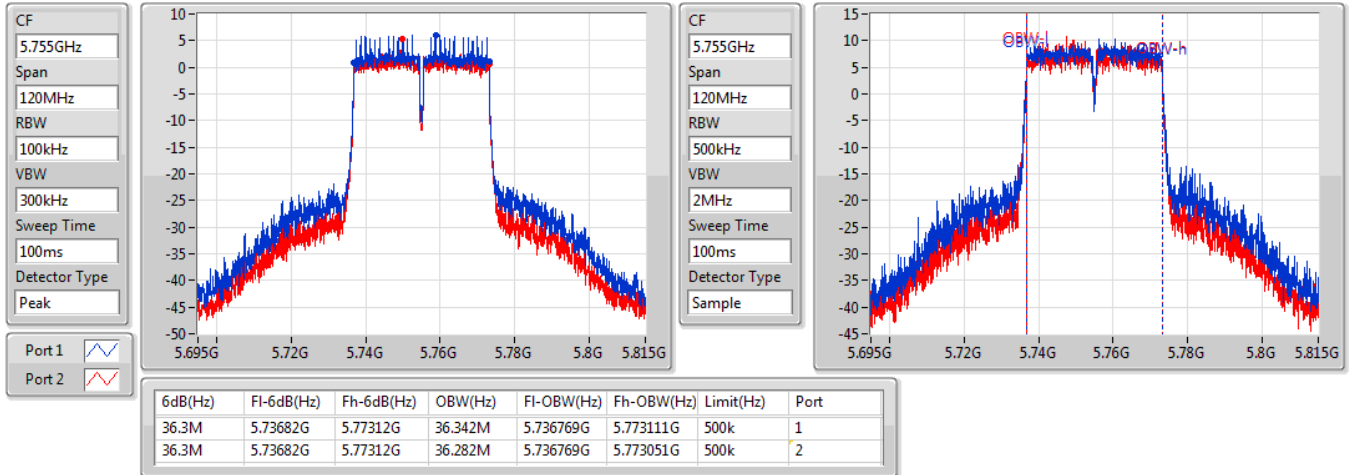


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5755MHz

20/09/2019

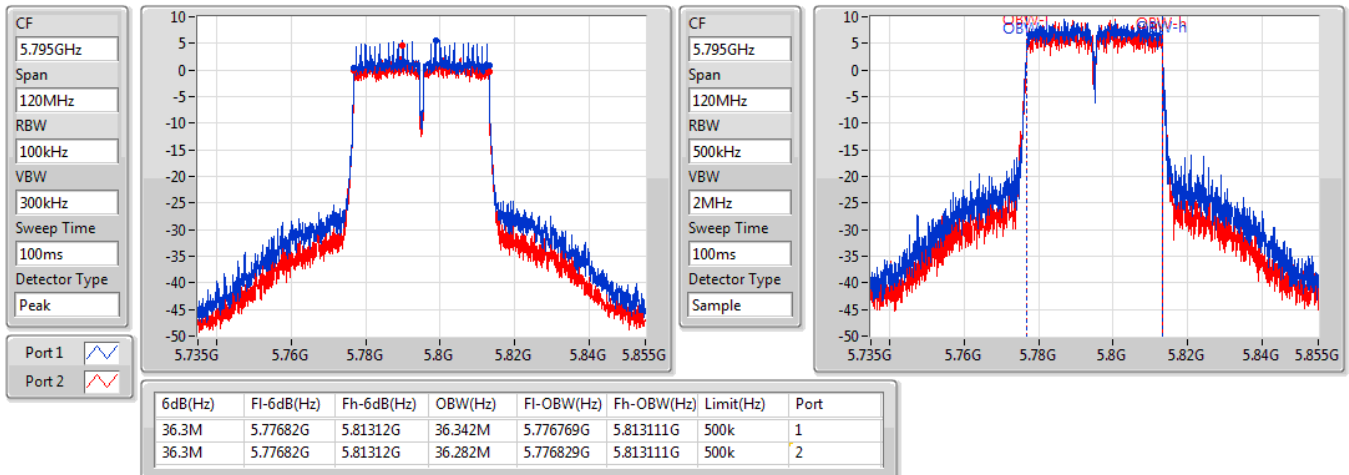


802.11ac VHT40_Nss2,(MCS0)_2TX

EBW

5795MHz

20/09/2019

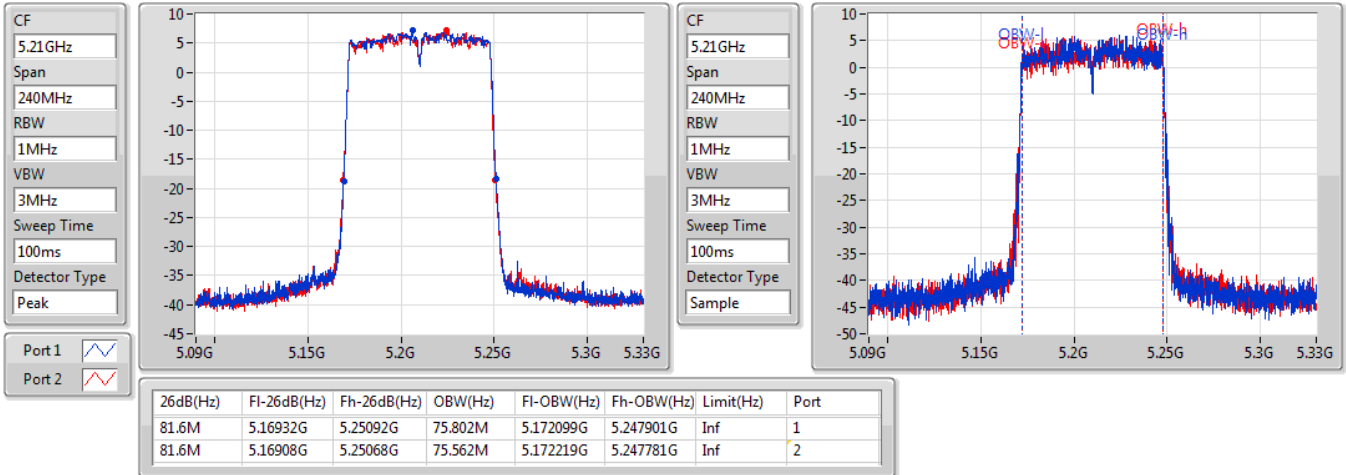


802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

5210MHz

31/10/2019

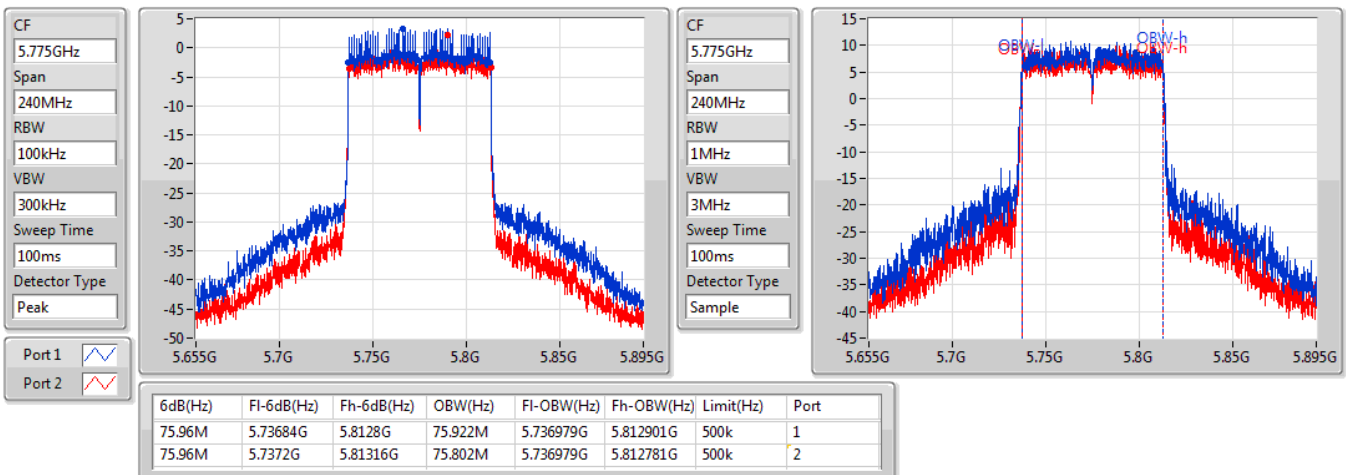


802.11ac VHT80_Nss2,(MCS0)_2TX

EBW

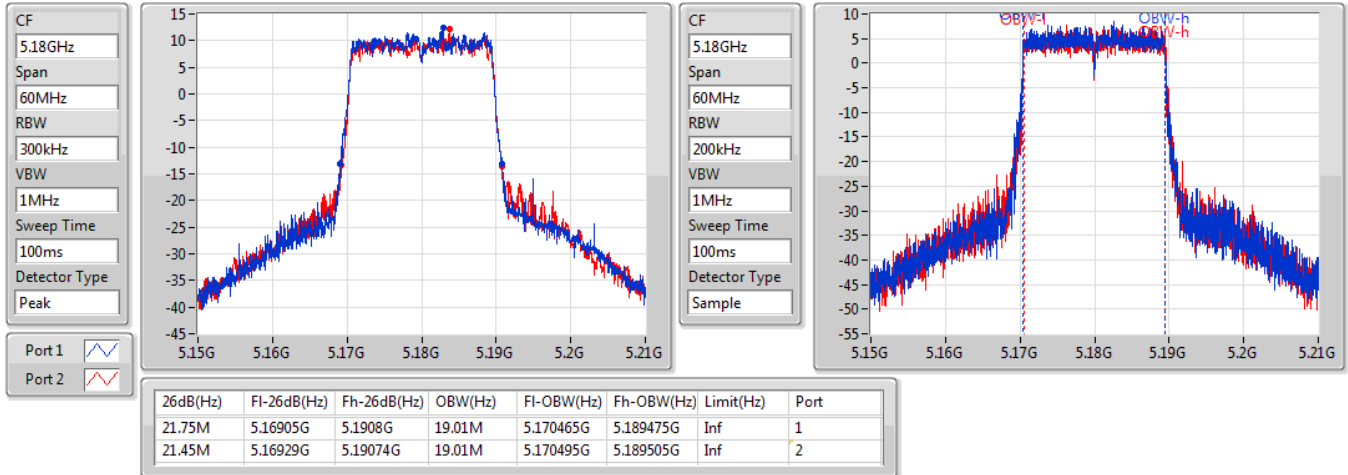
5775MHz

20/09/2019

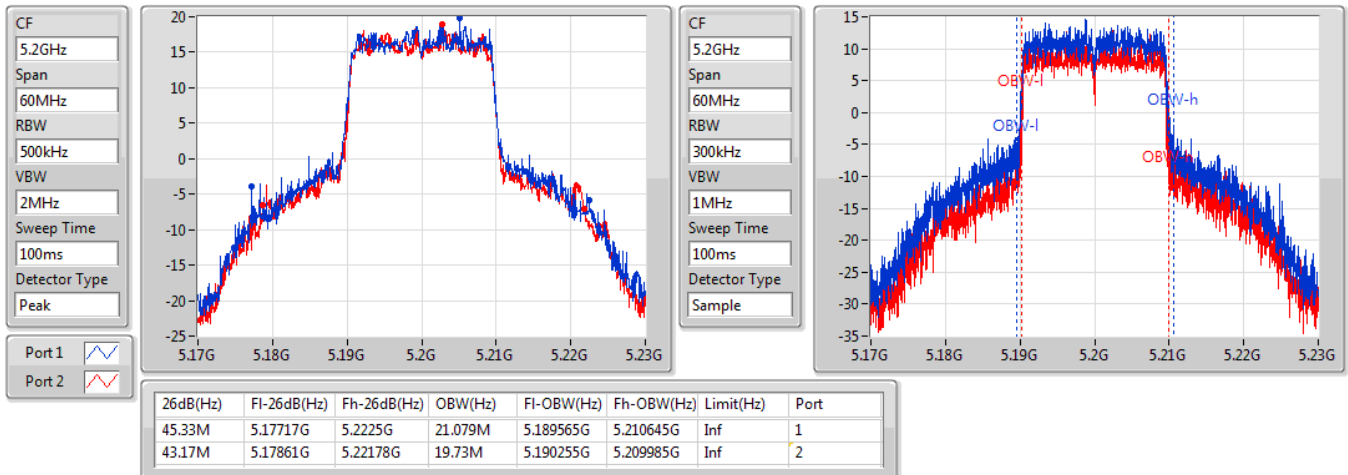


802.11ax HEW20_Nss2,(MCS0)_2TX
EBW
5180MHz

31/10/2019


802.11ax HEW20_Nss2,(MCS0)_2TX
EBW
5200MHz

31/10/2019

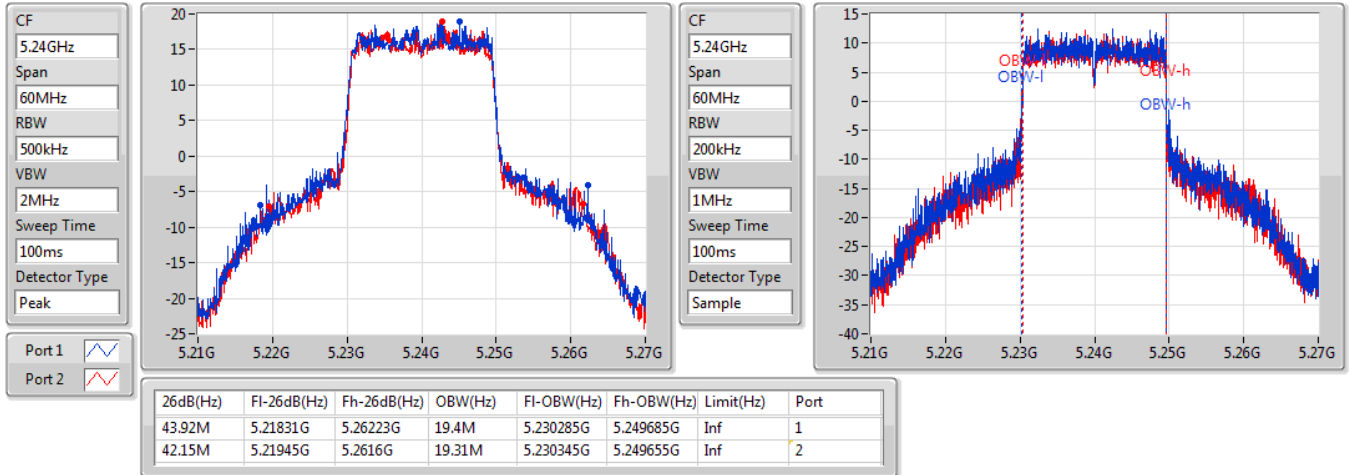


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5240MHz

31/10/2019

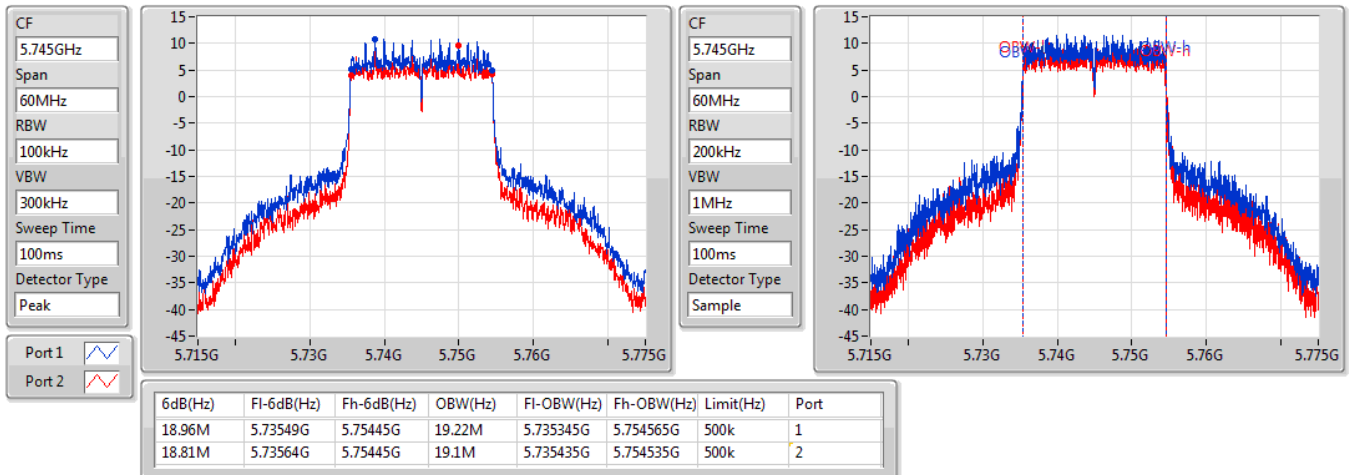


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5745MHz

20/09/2019

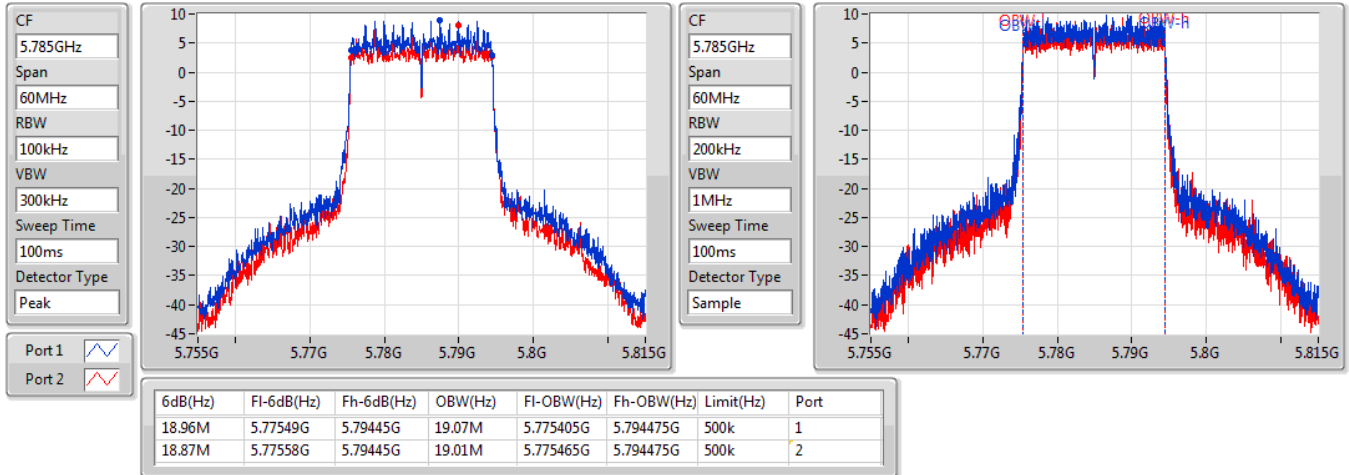


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5785MHz

20/09/2019

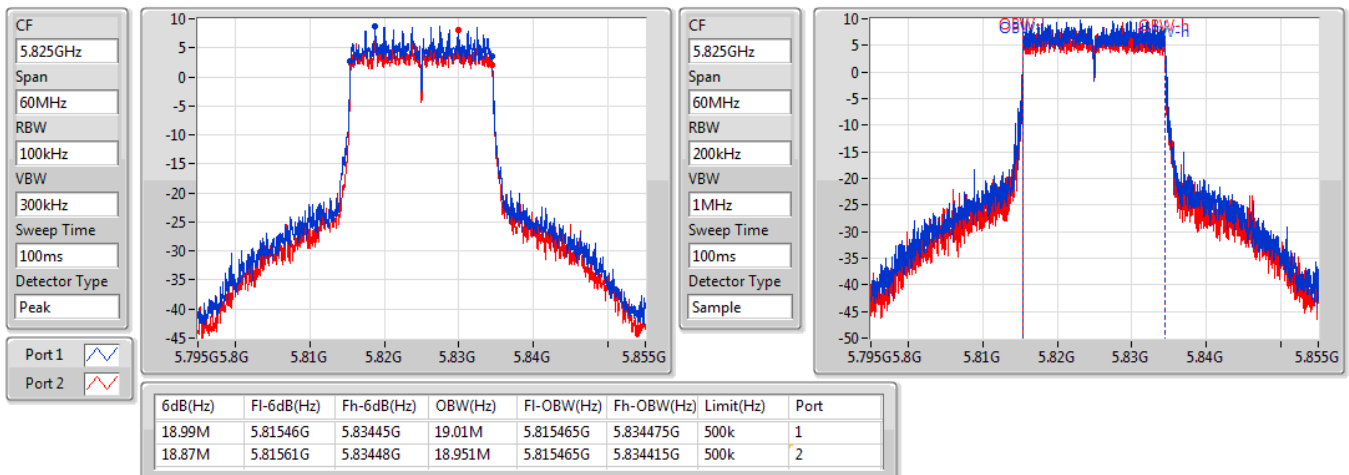


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5825MHz

20/09/2019

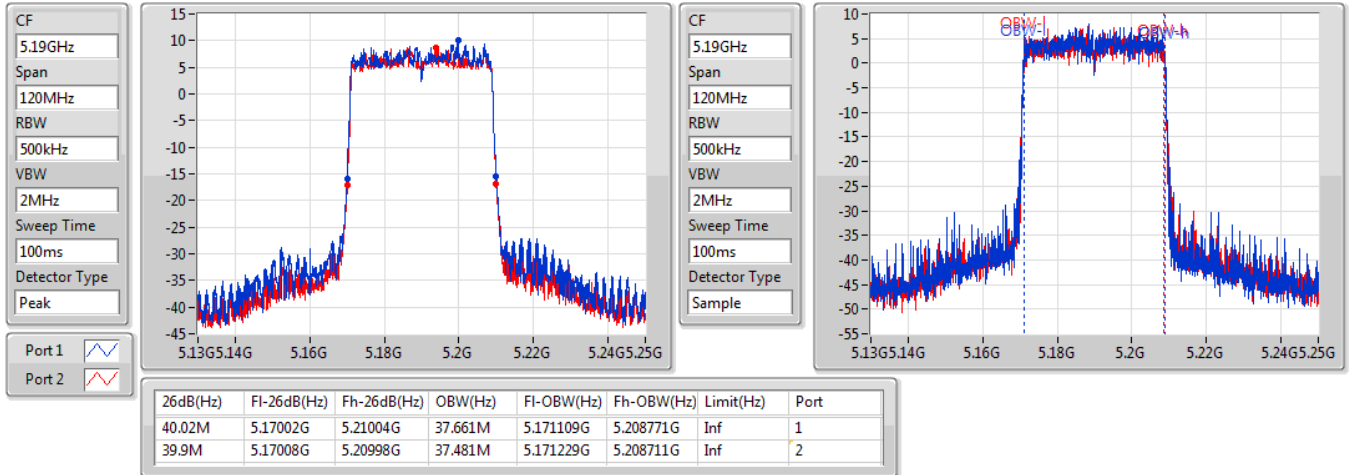


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5190MHz

31/10/2019

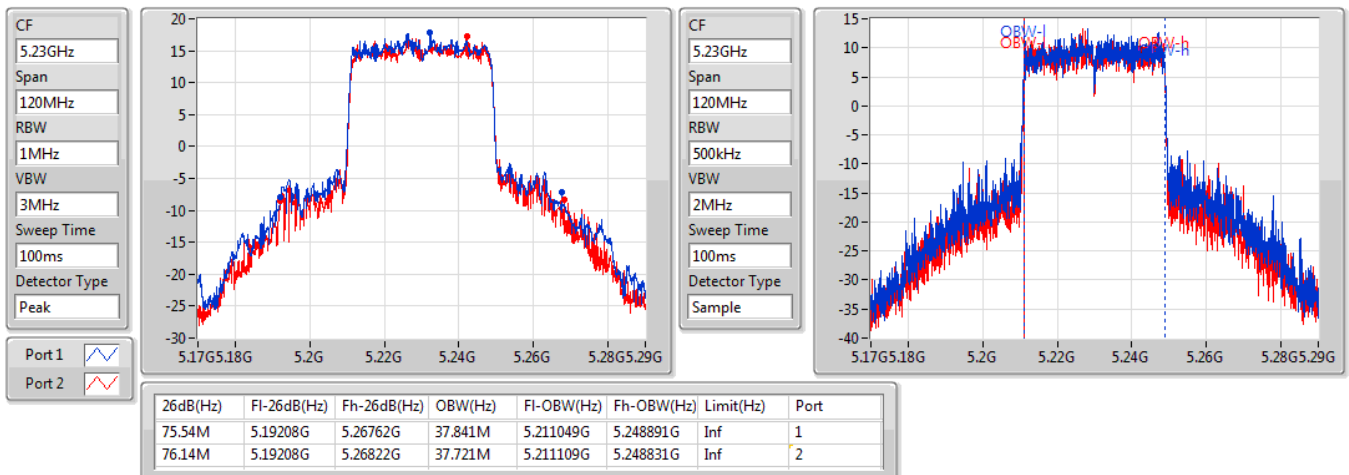


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5230MHz

31/10/2019

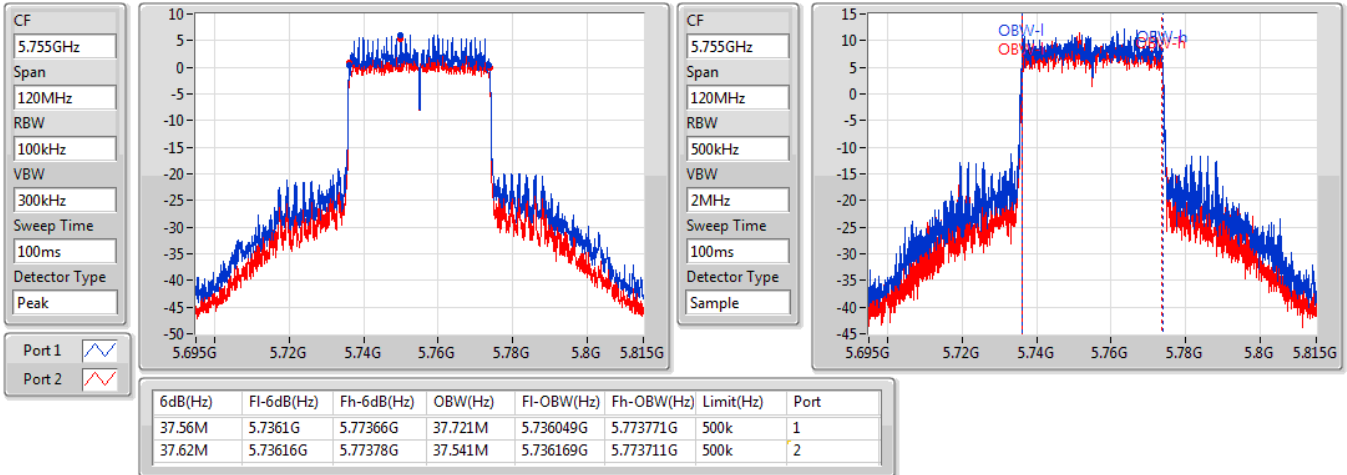


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5755MHz

20/09/2019



802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5795MHz

20/09/2019

